



Full wwPDB X-ray Structure Validation Report ⓘ

Sep 14, 2023 – 01:04 PM EDT

PDB ID : 4V7T
Title : Crystal structure of the E. coli ribosome bound to chloramphenicol.
Authors : Dunkle, J.A.; Xiong, L.; Mankin, A.S.; Cate, J.H.D.
Deposited on : 2010-08-14
Resolution : 3.19 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.35.1
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.35.1

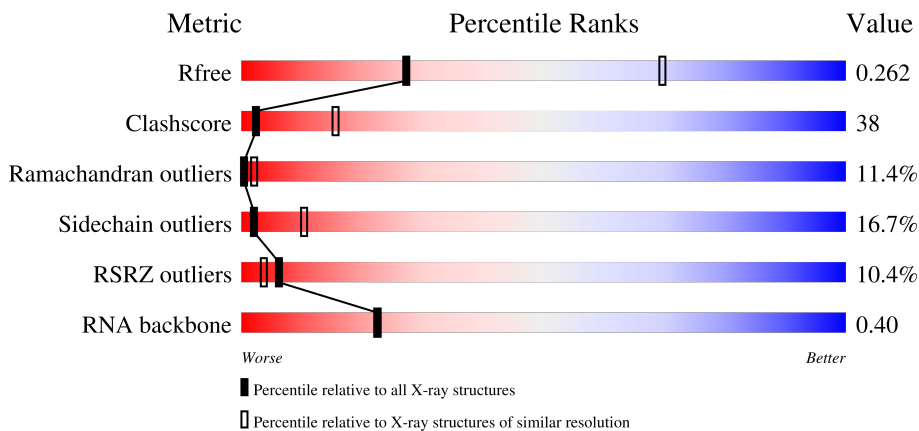
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.19 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



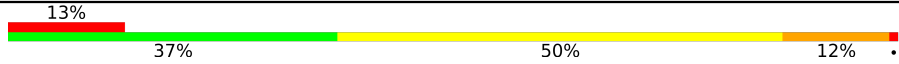
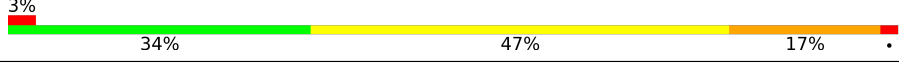
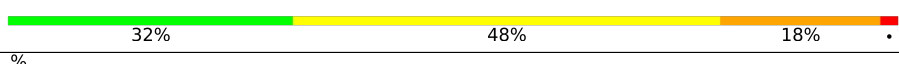
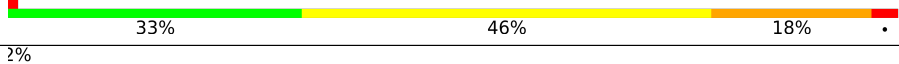
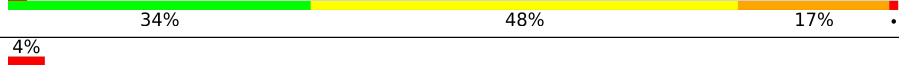
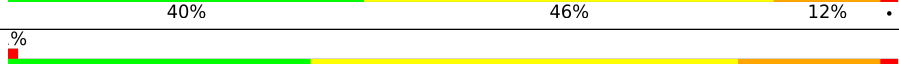
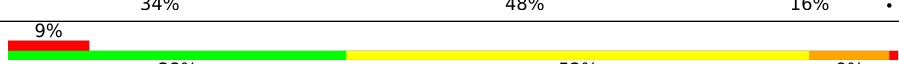
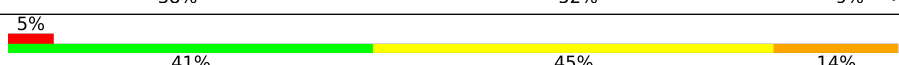
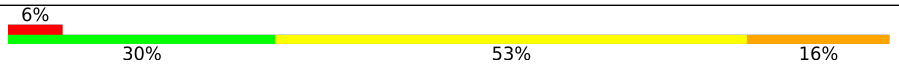

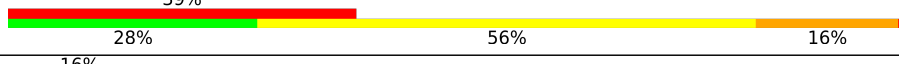
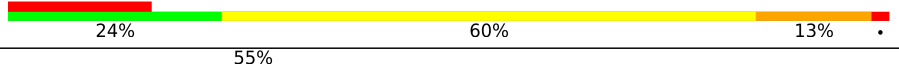
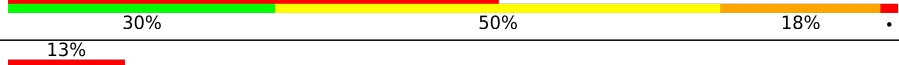

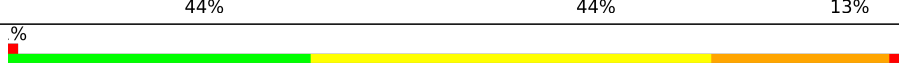
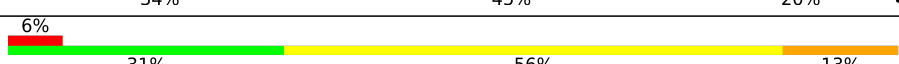
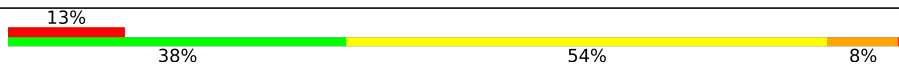
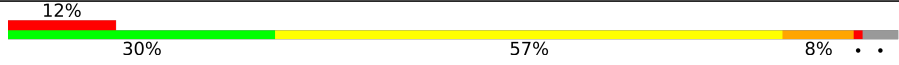
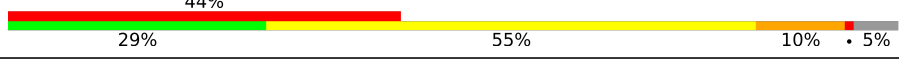



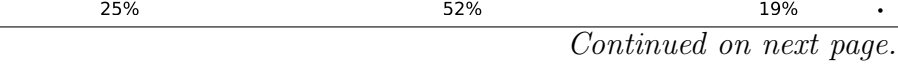


| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|-----------------------|--------------------------|----------------------------------------------------|
| R_{free} | 130704 | 1133 (3.20-3.20) |
| Clashscore | 141614 | 1253 (3.20-3.20) |
| Ramachandran outliers | 138981 | 1234 (3.20-3.20) |
| Sidechain outliers | 138945 | 1233 (3.20-3.20) |
| RSRZ outliers | 127900 | 1095 (3.20-3.20) |
| RNA backbone | 3102 | 1010 (3.50-2.90) |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the electron density. The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|----------------------|
| 1 | AA | 1533 | % 24% 44% 16% 17% |
| 2 | AB | 218 | 32% 25% 54% 18% |
| 2 | CB | 218 | 19% 30% 54% 14% |
| 3 | AC | 206 | 6% 36% 52% 10% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--------------------------------------------------------------------------------------|
| 3 | CC | 206 |  |
| 4 | AD | 205 |  |
| 4 | CD | 205 |  |
| 5 | AE | 150 |  |
| 5 | CE | 150 |  |
| 6 | AF | 100 |  |
| 6 | CF | 100 |  |
| 7 | AG | 151 |  |
| 8 | AH | 129 |  |
| 8 | CH | 129 |  |
| 9 | AI | 127 |  |
| 9 | CI | 127 |  |
| 10 | AJ | 98 |  |
| 10 | CJ | 98 |  |
| 11 | AK | 117 |  |
| 11 | CK | 117 |  |
| 12 | AL | 123 |  |
| 12 | CL | 123 |  |
| 13 | AM | 114 |  |
| 14 | AN | 100 |  |
| 14 | CN | 100 |  |
| 15 | AO | 88 |  |
| 15 | CO | 88 |  |
| 16 | AP | 82 |  |
| 17 | AQ | 80 |  |

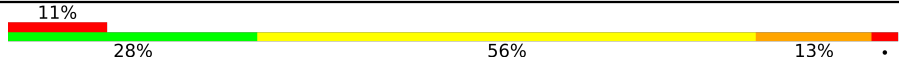
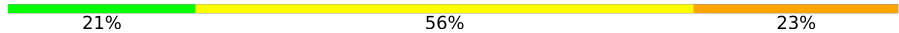
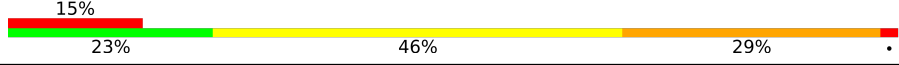
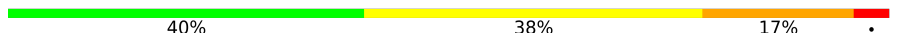
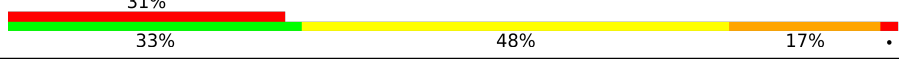
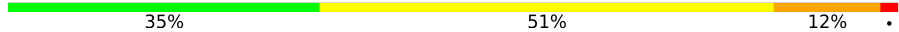

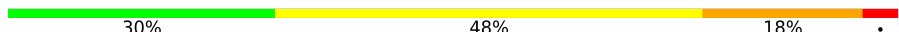
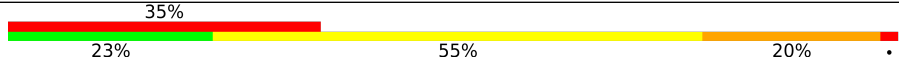
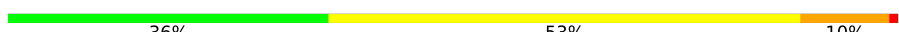
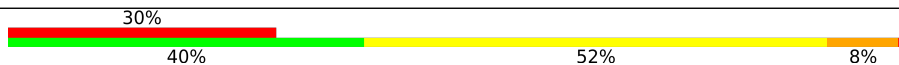

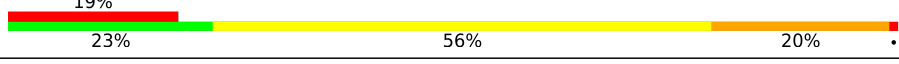
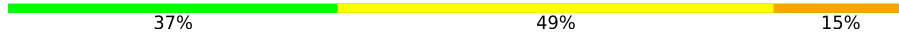
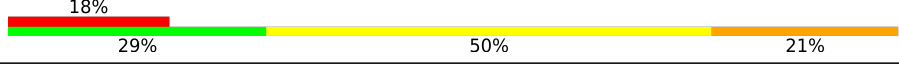
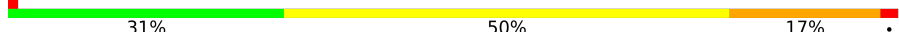
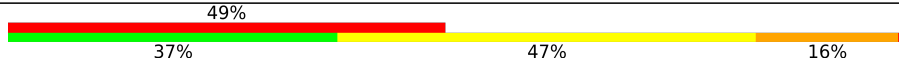
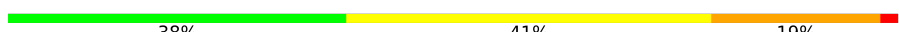
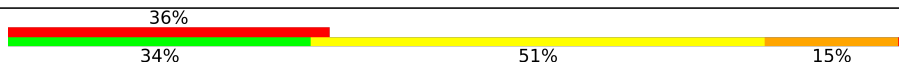

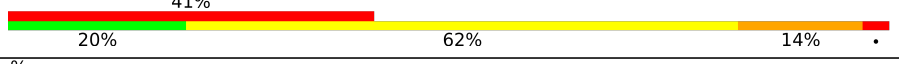
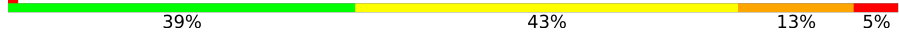
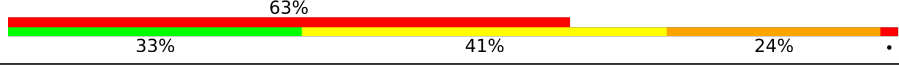

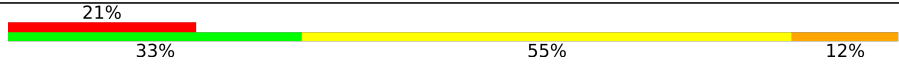
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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--------------------|
| 17 | CQ | 80 | 12% 31% 48% 20% |
| 18 | AR | 55 | 4% 38% 60% |
| 18 | CR | 55 | 38% 55% 7% |
| 19 | AS | 79 | 28% 37% 53% 10% |
| 19 | CS | 79 | 57% 37% 48% 14% |
| 20 | AT | 85 | 38% 40% 20% |
| 20 | CT | 85 | 20% 38% 47% 12% |
| 21 | AU | 51 | 41% 22% 55% 18% 6% |
| 21 | CU | 51 | 6% 29% 39% 24% 8% |
| 22 | BA | 2903 | 25% 39% 18% 15% |
| 23 | BB | 118 | 35% 39% 11% 15% |
| 24 | BC | 271 | 2% 32% 48% 17% |
| 24 | DC | 271 | 11% 26% 59% 14% |
| 25 | BD | 209 | 30% 46% 22% |
| 25 | DD | 209 | 18% 24% 56% 19% |
| 26 | BE | 201 | 32% 45% 20% |
| 26 | DE | 201 | 36% 29% 56% 13% |
| 27 | BF | 177 | 3% 29% 54% 16% |
| 28 | BG | 176 | 32% 47% 18% |
| 28 | DG | 176 | 45% 32% 47% 20% |
| 29 | BH | 149 | 41% 32% 45% 17% 5% |
| 29 | DH | 149 | 42% 32% 46% 18% |
| 30 | BI | 141 | 45% 30% 53% 15% |
| 30 | DI | 141 | 72% 38% 51% 10% |
| 31 | BJ | 142 | 27% 50% 19% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--------------------------------------------------------------------------------------|
| 31 | DJ | 142 |  |
| 32 | BK | 122 |  |
| 32 | DK | 122 |  |
| 33 | BL | 143 |  |
| 33 | DL | 143 |  |
| 34 | BM | 136 |  |
| 34 | DM | 136 |  |
| 35 | BN | 120 |  |
| 35 | DN | 120 |  |
| 36 | BO | 116 |  |
| 36 | DO | 116 |  |
| 37 | BP | 114 |  |
| 37 | DP | 114 |  |
| 38 | BQ | 117 |  |
| 38 | DQ | 117 |  |
| 39 | BR | 103 |  |
| 39 | DR | 103 |  |
| 40 | BS | 110 |  |
| 40 | DS | 110 |  |
| 41 | BT | 93 |  |
| 41 | DT | 93 |  |
| 42 | BU | 102 |  |
| 42 | DU | 102 |  |
| 43 | BV | 94 |  |
| 43 | DV | 94 |  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 44 | BW | 79 | |
| 44 | DW | 79 | |
| 45 | BX | 77 | |
| 45 | DX | 77 | |
| 46 | BY | 63 | |
| 46 | DY | 63 | |
| 47 | BZ | 58 | |
| 47 | DZ | 58 | |
| 48 | B0 | 56 | |
| 48 | D0 | 56 | |
| 49 | B1 | 50 | |
| 49 | D1 | 50 | |
| 50 | B2 | 46 | |
| 50 | D2 | 46 | |
| 51 | B3 | 64 | |
| 51 | D3 | 64 | |
| 52 | B4 | 38 | |
| 52 | D4 | 38 | |
| 53 | CA | 1530 | |
| 54 | CG | 150 | |
| 55 | CM | 113 | |
| 56 | CP | 80 | |
| 57 | DA | 2904 | |
| 58 | DB | 117 | |
| 59 | DF | 178 | |

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|------------|-------------|--------------|------------|------------------|-----------------|----------------|-------------------------|
| 60 | MG | DA | 3007 | - | - | - | X |
| 60 | MG | DA | 3019 | - | - | - | X |
| 60 | MG | DA | 3025 | - | - | - | X |
| 60 | MG | DA | 3061 | - | - | - | X |
| 60 | MG | DA | 3062 | - | - | - | X |
| 60 | MG | DA | 3063 | - | - | - | X |
| 60 | MG | DA | 3073 | - | - | - | X |
| 60 | MG | DA | 3075 | - | - | - | X |
| 60 | MG | DA | 3077 | - | - | - | X |
| 60 | MG | DA | 3107 | - | - | - | X |
| 60 | MG | DA | 3124 | - | - | - | X |
| 60 | MG | DA | 3127 | - | - | - | X |
| 60 | MG | DA | 3130 | - | - | - | X |
| 60 | MG | DJ | 201 | - | - | - | X |

2 Entry composition [i](#)

There are 63 unique types of molecules in this entry. The entry contains 284499 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a RNA chain called 16S rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|------|-------|------|---------|---------|-------|
| | | | Total | C | N | O | P | | | |
| 1 | AA | 1533 | 32895 | 14671 | 6036 | 10655 | 1533 | 0 | 0 | 0 |

- Molecule 2 is a protein called 30S ribosomal protein S2.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 2 | AB | 218 | 1705 | 1081 | 305 | 312 | 7 | 0 | 0 | 0 |
| 2 | CB | 218 | 1705 | 1081 | 305 | 312 | 7 | 0 | 0 | 0 |

- Molecule 3 is a protein called 30S ribosomal protein S3.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 3 | AC | 206 | 1625 | 1028 | 305 | 289 | 3 | 0 | 0 | 0 |
| 3 | CC | 206 | 1625 | 1028 | 305 | 289 | 3 | 0 | 0 | 0 |

- Molecule 4 is a protein called 30S ribosomal protein S4.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 4 | AD | 205 | 1643 | 1026 | 315 | 298 | 4 | 0 | 0 | 0 |
| 4 | CD | 205 | 1643 | 1026 | 315 | 298 | 4 | 0 | 0 | 0 |

- Molecule 5 is a protein called 30S ribosomal protein S5.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 5 | AE | 150 | 1106 | 687 | 211 | 202 | 6 | 0 | 0 | 0 |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 5 | CE | 150 | 1106 | 687 | 211 | 202 | 6 | 0 | 0 | 0 |

- Molecule 6 is a protein called 30S ribosomal protein S6.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 6 | AF | 100 | 818 | 515 | 148 | 149 | 6 | 0 | 0 | 0 |
| 6 | CF | 100 | 818 | 515 | 148 | 149 | 6 | 0 | 0 | 0 |

- Molecule 7 is a protein called 30S ribosomal protein S7.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 7 | AG | 151 | 1182 | 735 | 227 | 216 | 4 | 0 | 0 | 0 |

- Molecule 8 is a protein called 30S ribosomal protein S8.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 8 | AH | 129 | 979 | 616 | 173 | 184 | 6 | 0 | 0 | 0 |
| 8 | CH | 129 | 979 | 616 | 173 | 184 | 6 | 0 | 0 | 0 |

- Molecule 9 is a protein called 30S ribosomal protein S9.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 9 | AI | 127 | 1022 | 634 | 206 | 179 | 3 | 0 | 0 | 0 |
| 9 | CI | 127 | 1022 | 634 | 206 | 179 | 3 | 0 | 0 | 0 |

- Molecule 10 is a protein called 30S ribosomal protein S10.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 10 | AJ | 98 | 787 | 493 | 150 | 143 | 1 | 0 | 0 | 0 |
| 10 | CJ | 98 | 787 | 493 | 150 | 143 | 1 | 0 | 0 | 0 |

- Molecule 11 is a protein called 30S ribosomal protein S11.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 11 | AK | 117 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 877 | 540 | 174 | 160 | 3 | | | |
| 11 | CK | 117 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 877 | 540 | 174 | 160 | 3 | | | |

- Molecule 12 is a protein called 30S ribosomal protein S12.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 12 | AL | 123 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 955 | 590 | 196 | 165 | 4 | | | |
| 12 | CL | 123 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 955 | 590 | 196 | 165 | 4 | | | |

- Molecule 13 is a protein called 30S ribosomal protein S13.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 13 | AM | 114 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 884 | 546 | 178 | 157 | 3 | | | |

- Molecule 14 is a protein called 30S ribosomal protein S14.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 14 | AN | 96 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 774 | 483 | 160 | 128 | 3 | | | |
| 14 | CN | 95 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 769 | 480 | 159 | 127 | 3 | | | |

- Molecule 15 is a protein called 30S ribosomal protein S15.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 15 | AO | 88 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 714 | 439 | 144 | 130 | 1 | | | |
| 15 | CO | 88 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 714 | 439 | 144 | 130 | 1 | | | |

- Molecule 16 is a protein called 30S ribosomal protein S16.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 16 | AP | 82 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 649 | 406 | 128 | 114 | 1 | | | |

- Molecule 17 is a protein called 30S ribosomal protein S17.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 17 | AQ | 80 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 649 | 411 | 121 | 114 | 3 | | | |
| 17 | CQ | 80 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 649 | 411 | 121 | 114 | 3 | | | |

- Molecule 18 is a protein called 30S ribosomal protein S18.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 18 | AR | 55 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 456 | 288 | 86 | 82 | | | | |
| 18 | CR | 55 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 456 | 288 | 86 | 82 | | | | |

- Molecule 19 is a protein called 30S ribosomal protein S19.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 19 | AS | 79 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 638 | 408 | 120 | 108 | 2 | | | |
| 19 | CS | 79 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 638 | 408 | 120 | 108 | 2 | | | |

- Molecule 20 is a protein called 30S ribosomal protein S20.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 20 | AT | 85 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 665 | 411 | 137 | 114 | 3 | | | |
| 20 | CT | 85 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 665 | 411 | 137 | 114 | 3 | | | |

- Molecule 21 is a protein called 30S ribosomal protein S21.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 21 | AU | 51 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 426 | 265 | 86 | 74 | 1 | | | |
| 21 | CU | 51 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 426 | 265 | 86 | 74 | 1 | | | |

- Molecule 22 is a RNA chain called 23S rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|---------|-------|
| 22 | BA | 2854 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 61274 | 27334 | 11279 | 19807 | 2854 | | | |

- Molecule 23 is a RNA chain called 5S rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|---------|-------|
| | | | Total | C | N | O | P | | | |
| 23 | BB | 118 | 2529 | 1126 | 464 | 821 | 118 | 0 | 0 | 0 |

- Molecule 24 is a protein called 50S ribosomal protein L2.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 24 | BC | 271 | 2083 | 1288 | 423 | 365 | 7 | 0 | 0 | 0 |
| 24 | DC | 271 | 2083 | 1288 | 423 | 365 | 7 | 0 | 0 | 0 |

- Molecule 25 is a protein called 50S ribosomal protein L3.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 25 | BD | 209 | 1565 | 979 | 288 | 294 | 4 | 0 | 0 | 0 |
| 25 | DD | 209 | 1565 | 979 | 288 | 294 | 4 | 0 | 0 | 0 |

- Molecule 26 is a protein called 50S ribosomal protein L4.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 26 | BE | 201 | 1552 | 974 | 283 | 290 | 5 | 0 | 0 | 0 |
| 26 | DE | 201 | 1552 | 974 | 283 | 290 | 5 | 0 | 0 | 0 |

- Molecule 27 is a protein called 50S ribosomal protein L5.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 27 | BF | 177 | 1411 | 899 | 249 | 257 | 6 | 0 | 0 | 0 |

- Molecule 28 is a protein called 50S ribosomal protein L6.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 28 | BG | 176 | 1323 | 832 | 243 | 246 | 2 | 0 | 0 | 0 |
| 28 | DG | 176 | 1323 | 832 | 243 | 246 | 2 | 0 | 0 | 0 |

- Molecule 29 is a protein called 50S ribosomal protein L9.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 29 | BH | 149 | 1111 | 699 | 197 | 214 | 1 | 0 | 0 | 0 |
| 29 | DH | 149 | 1111 | 699 | 197 | 214 | 1 | 0 | 0 | 0 |

- Molecule 30 is a protein called 50S ribosomal protein L11.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 30 | BI | 141 | 1032 | 651 | 179 | 196 | 6 | 0 | 0 | 0 |
| 30 | DI | 141 | 1032 | 651 | 179 | 196 | 6 | 0 | 0 | 0 |

- Molecule 31 is a protein called 50S ribosomal protein L13.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 31 | BJ | 142 | 1129 | 714 | 212 | 199 | 4 | 0 | 0 | 0 |
| 31 | DJ | 142 | 1129 | 714 | 212 | 199 | 4 | 0 | 0 | 0 |

- Molecule 32 is a protein called 50S ribosomal protein L14.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 32 | BK | 122 | 939 | 587 | 180 | 166 | 6 | 0 | 0 | 0 |
| 32 | DK | 122 | 939 | 587 | 180 | 166 | 6 | 0 | 0 | 0 |

- Molecule 33 is a protein called 50S ribosomal protein L15.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 33 | BL | 143 | 1045 | 649 | 206 | 189 | 1 | 0 | 0 | 0 |
| 33 | DL | 143 | 1045 | 649 | 206 | 189 | 1 | 0 | 0 | 0 |

- Molecule 34 is a protein called 50S ribosomal protein L16.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 34 | BM | 136 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1074 | 686 | 205 | 177 | 6 | | | |
| 34 | DM | 136 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1074 | 686 | 205 | 177 | 6 | | | |

- Molecule 35 is a protein called 50S ribosomal protein L17.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 35 | BN | 120 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 961 | 593 | 196 | 167 | 5 | | | |
| 35 | DN | 120 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 961 | 593 | 196 | 167 | 5 | | | |

- Molecule 36 is a protein called 50S ribosomal protein L18.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 36 | BO | 116 | Total | C | N | O | 0 | 0 | 0 |
| | | | 892 | 552 | 178 | 162 | | | |
| 36 | DO | 116 | Total | C | N | O | 0 | 0 | 0 |
| | | | 892 | 552 | 178 | 162 | | | |

- Molecule 37 is a protein called 50S ribosomal protein L19.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 37 | BP | 114 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 917 | 574 | 179 | 163 | 1 | | | |
| 37 | DP | 114 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 917 | 574 | 179 | 163 | 1 | | | |

- Molecule 38 is a protein called 50S ribosomal protein L20.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 38 | BQ | 117 | Total | C | N | O | 0 | 0 | 0 |
| | | | 947 | 604 | 192 | 151 | | | |
| 38 | DQ | 117 | Total | C | N | O | 0 | 0 | 0 |
| | | | 947 | 604 | 192 | 151 | | | |

- Molecule 39 is a protein called 50S ribosomal protein L21.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 39 | BR | 103 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 816 | 516 | 153 | 145 | 2 | | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 39 | DR | 103 | 816 | 516 | 153 | 145 | 2 | 0 | 0 | 0 |

- Molecule 40 is a protein called 50S ribosomal protein L22.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 40 | BS | 110 | 857 | 532 | 166 | 156 | 3 | 0 | 0 | 0 |
| 40 | DS | 110 | 857 | 532 | 166 | 156 | 3 | 0 | 0 | 0 |

- Molecule 41 is a protein called 50S ribosomal protein L23.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 41 | BT | 93 | 739 | 466 | 139 | 132 | 2 | 0 | 0 | 0 |
| 41 | DT | 93 | 739 | 466 | 139 | 132 | 2 | 0 | 0 | 0 |

- Molecule 42 is a protein called 50S ribosomal protein L24.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| | | | Total | C | N | O | | | |
| 42 | BU | 102 | 780 | 492 | 146 | 142 | 0 | 0 | 0 |
| 42 | DU | 102 | 780 | 492 | 146 | 142 | 0 | 0 | 0 |

- Molecule 43 is a protein called 50S ribosomal protein L25.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 43 | BV | 94 | 753 | 479 | 137 | 134 | 3 | 0 | 0 | 0 |
| 43 | DV | 94 | 753 | 479 | 137 | 134 | 3 | 0 | 0 | 0 |

- Molecule 44 is a protein called 50S ribosomal protein L27.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 44 | BW | 79 | 596 | 367 | 120 | 108 | 1 | 0 | 0 | 0 |
| 44 | DW | 79 | 596 | 367 | 120 | 108 | 1 | 0 | 0 | 0 |

- Molecule 45 is a protein called 50S ribosomal protein L28.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 45 | BX | 77 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 625 | 388 | 129 | 106 | 2 | | | |
| 45 | DX | 77 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 625 | 388 | 129 | 106 | 2 | | | |

- Molecule 46 is a protein called 50S ribosomal protein L29.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 46 | BY | 63 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 509 | 313 | 99 | 95 | 2 | | | |
| 46 | DY | 63 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 509 | 313 | 99 | 95 | 2 | | | |

- Molecule 47 is a protein called 50S ribosomal protein L30.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 47 | BZ | 58 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 449 | 281 | 87 | 79 | 2 | | | |
| 47 | DZ | 58 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 449 | 281 | 87 | 79 | 2 | | | |

- Molecule 48 is a protein called 50S ribosomal protein L32.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 48 | B0 | 56 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 444 | 269 | 94 | 80 | 1 | | | |
| 48 | D0 | 56 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 444 | 269 | 94 | 80 | 1 | | | |

- Molecule 49 is a protein called 50S ribosomal protein L33.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 49 | B1 | 50 | Total | C | N | O | 0 | 0 | 0 |
| | | | 410 | 263 | 75 | 72 | | | |
| 49 | D1 | 50 | Total | C | N | O | 0 | 0 | 0 |
| | | | 410 | 263 | 75 | 72 | | | |

- Molecule 50 is a protein called 50S ribosomal protein L34.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 50 | B2 | 46 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 377 | 228 | 90 | 57 | 2 | | | |
| 50 | D2 | 46 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 377 | 228 | 90 | 57 | 2 | | | |

- Molecule 51 is a protein called 50S ribosomal protein L35.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
| 51 | B3 | 64 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 504 | 323 | 105 | 74 | 2 | | | |
| 51 | D3 | 64 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 504 | 323 | 105 | 74 | 2 | | | |

- Molecule 52 is a protein called 50S ribosomal protein L36.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 52 | B4 | 38 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 302 | 185 | 65 | 48 | 4 | | | |
| 52 | D4 | 38 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 302 | 185 | 65 | 48 | 4 | | | |

- Molecule 53 is a RNA chain called 16S rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|------|-------|------|---------|---------|-------|
| 53 | CA | 1530 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 32831 | 14642 | 6024 | 10635 | 1530 | | | |

- Molecule 54 is a protein called 30S ribosomal protein S7.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 54 | CG | 150 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1175 | 730 | 226 | 215 | 4 | | | |

- Molecule 55 is a protein called 30S ribosomal protein S13.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 55 | CM | 113 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 877 | 541 | 177 | 156 | 3 | | | |

- Molecule 56 is a protein called 30S ribosomal protein S16.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 56 | CP | 80 | 639 | 400 | 126 | 112 | 1 | 0 | 0 | 0 |

- Molecule 57 is a RNA chain called 23S rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|---------|-------|
| | | | Total | C | N | O | P | | | |
| 57 | DA | 2841 | 60995 | 27210 | 11229 | 19715 | 2841 | 0 | 0 | 0 |

- Molecule 58 is a RNA chain called 5S rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|---------|-------|
| | | | Total | C | N | O | P | | | |
| 58 | DB | 117 | 2507 | 1116 | 459 | 815 | 117 | 0 | 0 | 0 |

- Molecule 59 is a protein called 50S ribosomal protein L5.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 59 | DF | 178 | 1420 | 905 | 251 | 258 | 6 | 0 | 0 | 0 |

- Molecule 60 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

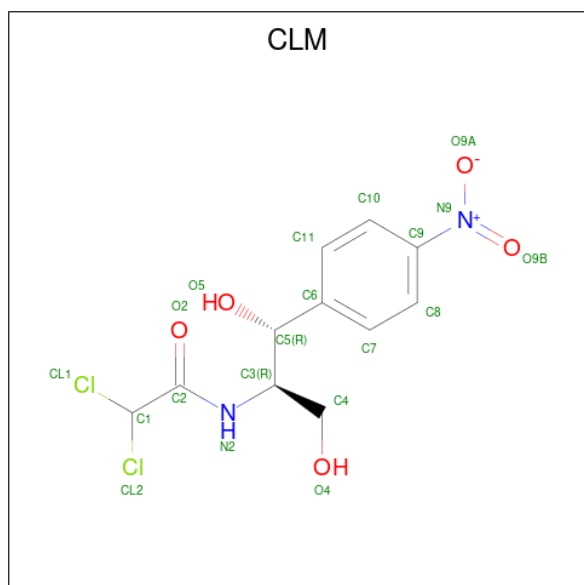
| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 60 | AA | 42 | Total | Mg | 0 | 0 |
| | | | 42 | 42 | | |
| 60 | AN | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 60 | BA | 135 | Total | Mg | 0 | 0 |
| | | | 135 | 135 | | |
| 60 | BB | 4 | Total | Mg | 0 | 0 |
| | | | 4 | 4 | | |
| 60 | BL | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 60 | CA | 42 | Total | Mg | 0 | 0 |
| | | | 42 | 42 | | |
| 60 | DA | 133 | Total | Mg | 0 | 0 |
| | | | 133 | 133 | | |
| 60 | DB | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 60 | DC | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |

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| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|-----|-------|----------|-----------------|---------|---------|
| 60 | DE | 1 | Total Mg 1 1 | 0 | 0 |
| 60 | DJ | 1 | Total Mg 1 1 | 0 | 0 |

- Molecule 61 is CHLORAMPHENICOL (three-letter code: CLM) (formula: $C_{11}H_{12}Cl_2N_2O_5$).



| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|-----|-------|----------|-------------------------------|---------|---------|
| 61 | BA | 1 | Total C Cl N O 20 11 2 2 5 | 0 | 0 |

- Molecule 62 is ZINC ION (three-letter code: ZN) (formula: Zn).

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|-----|-------|----------|-----------------|---------|---------|
| 62 | B4 | 1 | Total Zn 1 1 | 0 | 0 |
| 62 | D4 | 1 | Total Zn 1 1 | 0 | 0 |

- Molecule 63 is water.

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|-----|-------|----------|--------------------|---------|---------|
| 63 | AA | 197 | Total O 197 197 | 0 | 0 |
| 63 | AL | 2 | Total O 2 2 | 0 | 0 |

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| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|-----|-------|----------|--------------------|---------|---------|
| 63 | AN | 6 | Total O 6 6 | 0 | 0 |
| 63 | AT | 2 | Total O 2 2 | 0 | 0 |
| 63 | AU | 1 | Total O 1 1 | 0 | 0 |
| 63 | BA | 608 | Total O 608 608 | 0 | 0 |
| 63 | BB | 19 | Total O 19 19 | 0 | 0 |
| 63 | BC | 8 | Total O 8 8 | 0 | 0 |
| 63 | BD | 2 | Total O 2 2 | 0 | 0 |
| 63 | BE | 1 | Total O 1 1 | 0 | 0 |
| 63 | BL | 4 | Total O 4 4 | 0 | 0 |
| 63 | BN | 2 | Total O 2 2 | 0 | 0 |
| 63 | BQ | 1 | Total O 1 1 | 0 | 0 |
| 63 | BT | 2 | Total O 2 2 | 0 | 0 |
| 63 | BV | 1 | Total O 1 1 | 0 | 0 |
| 63 | B2 | 2 | Total O 2 2 | 0 | 0 |
| 63 | B3 | 2 | Total O 2 2 | 0 | 0 |
| 63 | B4 | 2 | Total O 2 2 | 0 | 0 |
| 63 | CA | 195 | Total O 195 195 | 0 | 0 |
| 63 | CE | 3 | Total O 3 3 | 0 | 0 |
| 63 | CI | 1 | Total O 1 1 | 0 | 0 |
| 63 | CL | 1 | Total O 1 1 | 0 | 0 |
| 63 | CN | 3 | Total O 3 3 | 0 | 0 |

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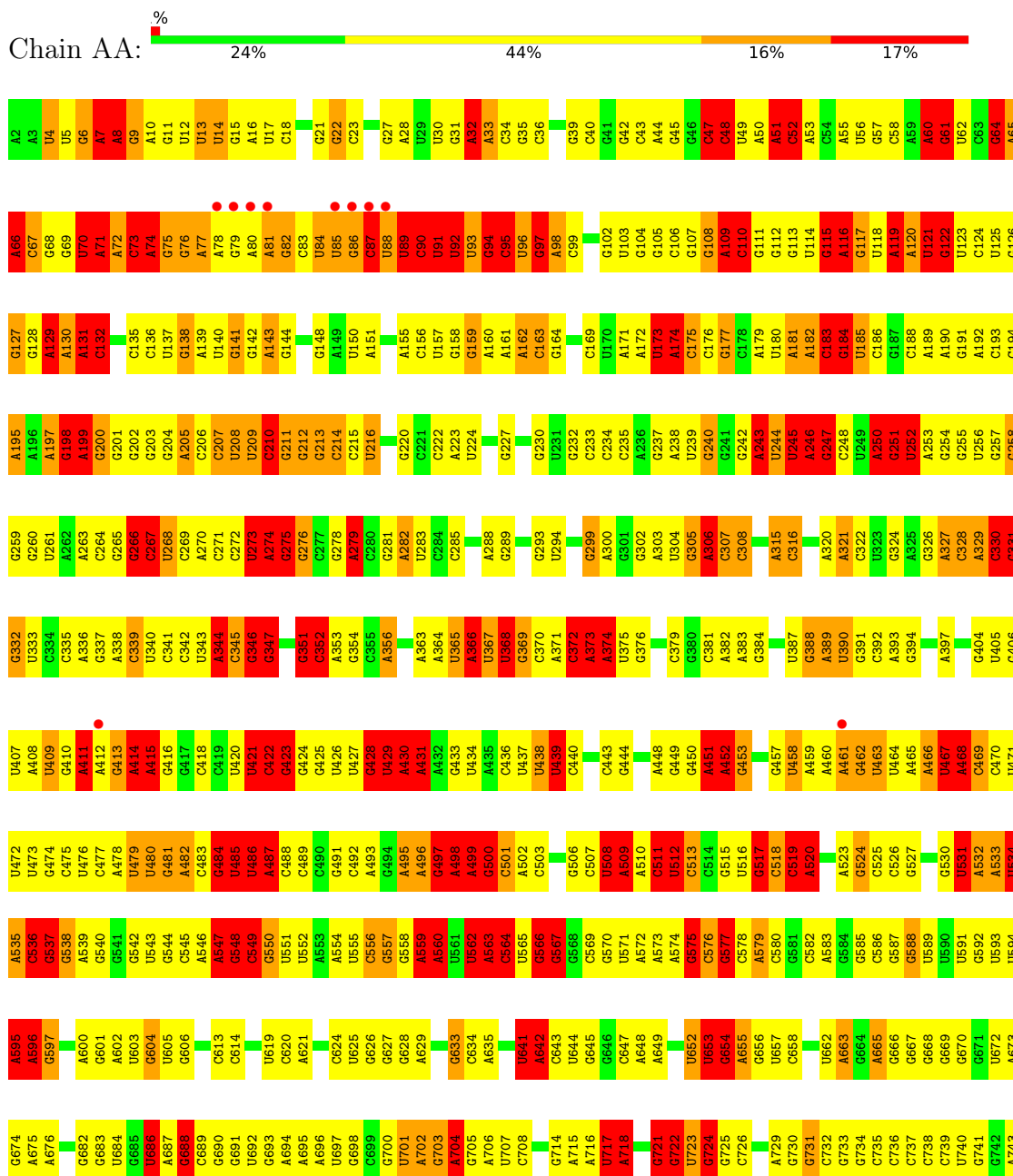
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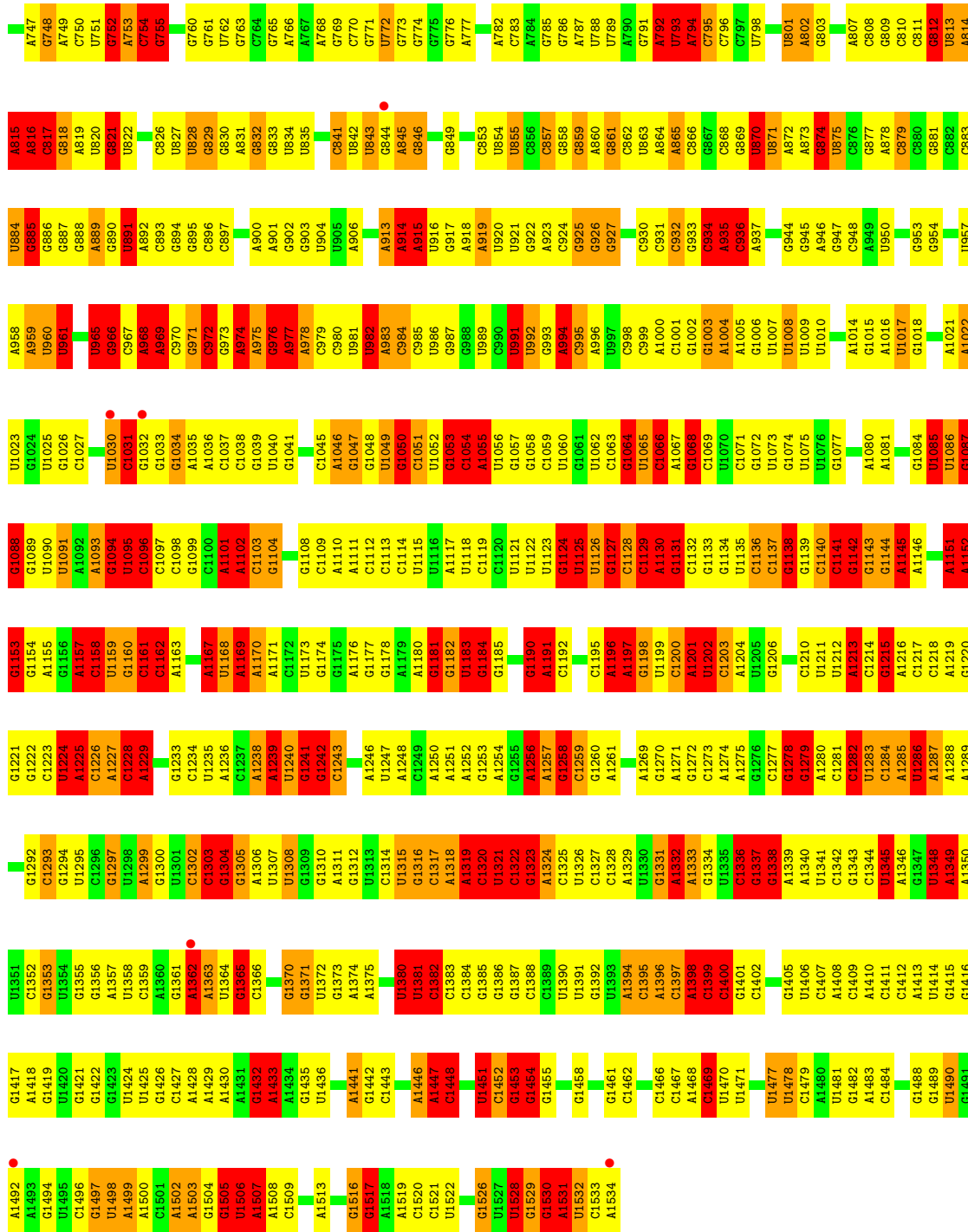
| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|-----|-------|----------|--------------------|---------|---------|
| 63 | CT | 2 | Total O 2 2 | 0 | 0 |
| 63 | CU | 2 | Total O 2 2 | 0 | 0 |
| 63 | DA | 603 | Total O 603 603 | 0 | 0 |
| 63 | DB | 4 | Total O 4 4 | 0 | 0 |
| 63 | DC | 10 | Total O 10 10 | 0 | 0 |
| 63 | DD | 1 | Total O 1 1 | 0 | 0 |
| 63 | DE | 3 | Total O 3 3 | 0 | 0 |
| 63 | DJ | 4 | Total O 4 4 | 0 | 0 |
| 63 | DL | 5 | Total O 5 5 | 0 | 0 |
| 63 | DN | 2 | Total O 2 2 | 0 | 0 |
| 63 | DT | 2 | Total O 2 2 | 0 | 0 |
| 63 | DU | 2 | Total O 2 2 | 0 | 0 |
| 63 | DV | 1 | Total O 1 1 | 0 | 0 |
| 63 | D2 | 1 | Total O 1 1 | 0 | 0 |
| 63 | D3 | 1 | Total O 1 1 | 0 | 0 |
| 63 | D4 | 4 | Total O 4 4 | 0 | 0 |

3 Residue-property plots [i](#)

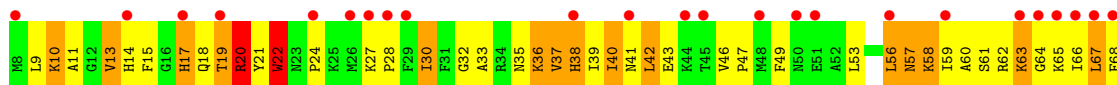
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density ($RSRZ > 2$). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

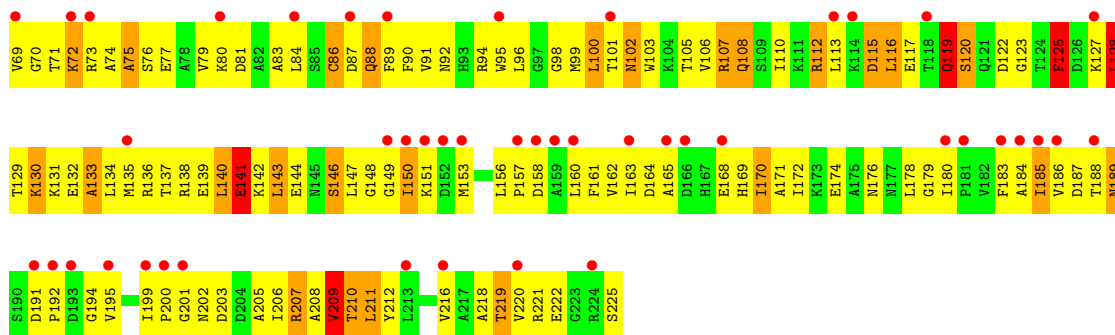
- Molecule 1: 16S rRNA



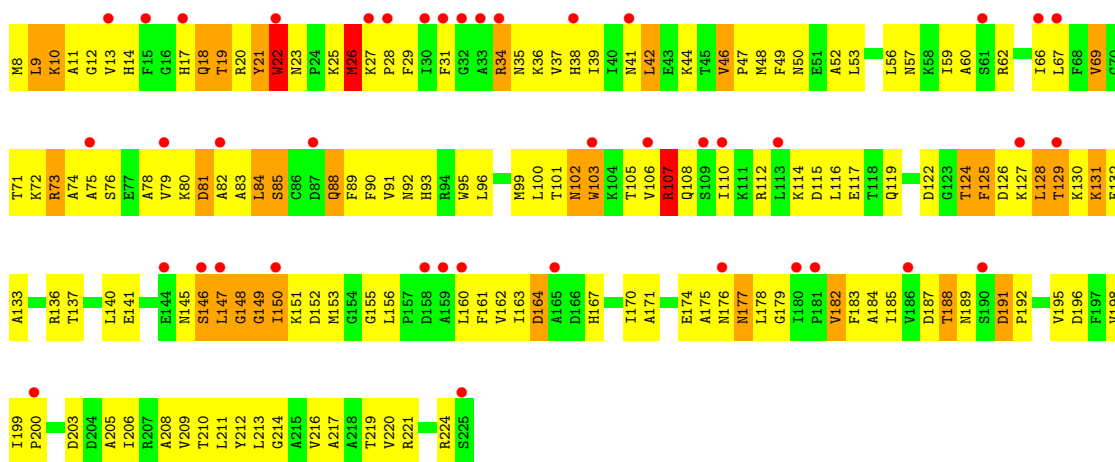


• Molecule 2: 30S ribosomal protein S2

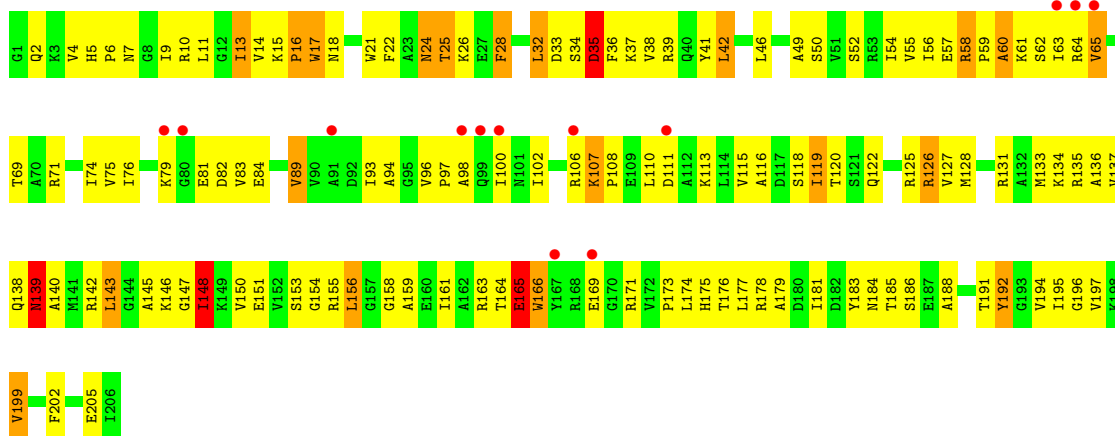




• Molecule 2: 30S ribosomal protein S2

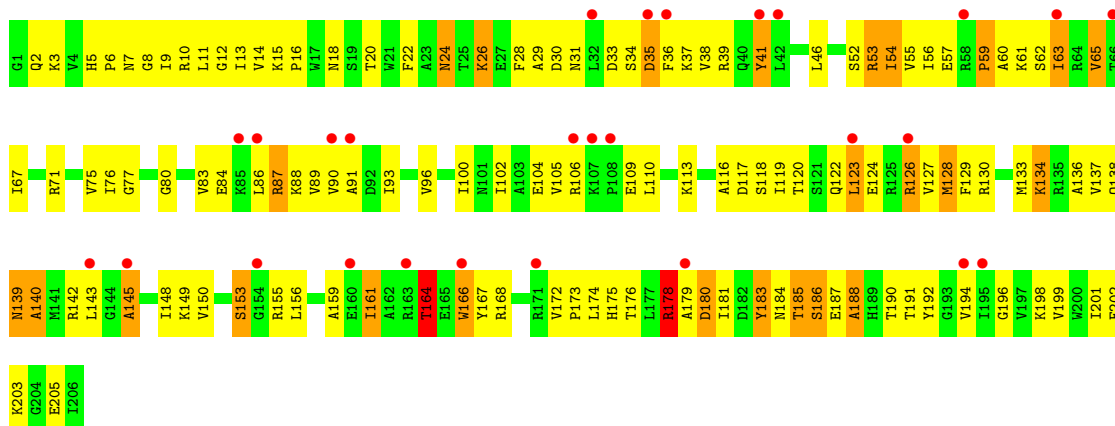


• Molecule 3: 30S ribosomal protein S3

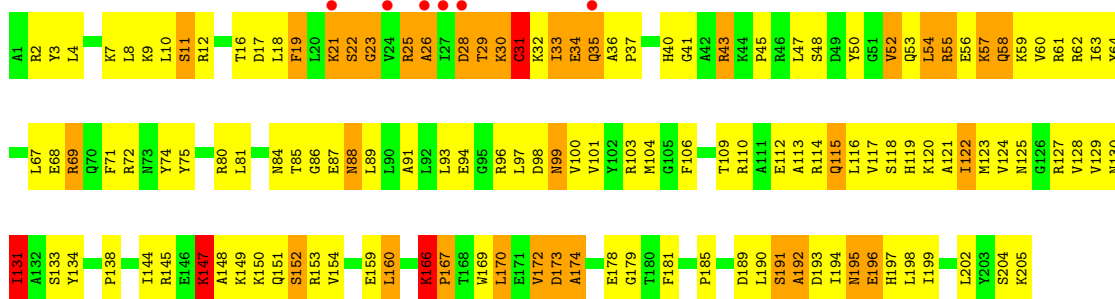


• Molecule 3: 30S ribosomal protein S3

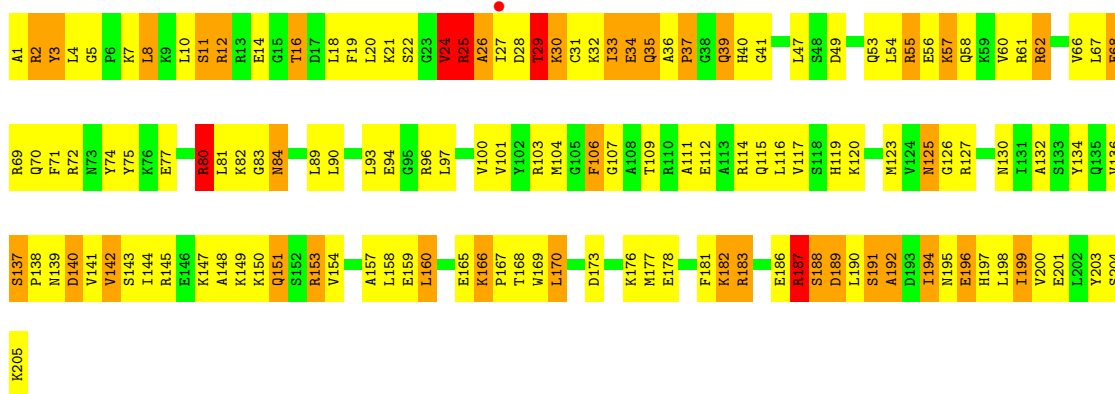




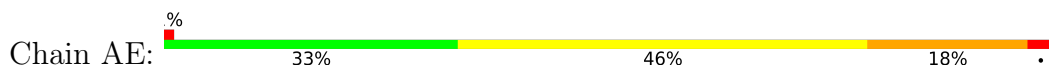
- Molecule 4: 30S ribosomal protein S4

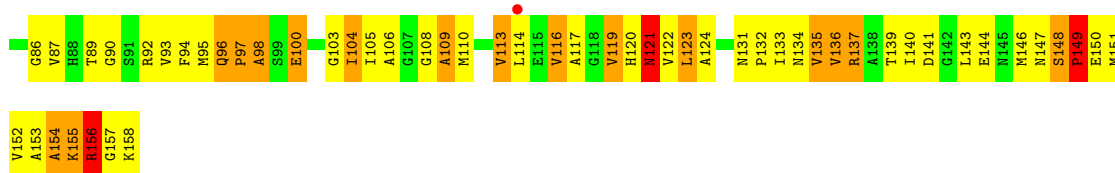


- Molecule 4: 30S ribosomal protein S4

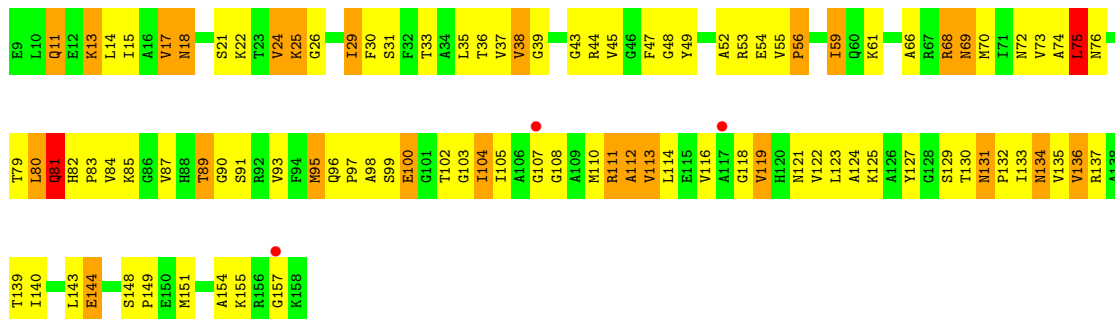


- Molecule 5: 30S ribosomal protein S5

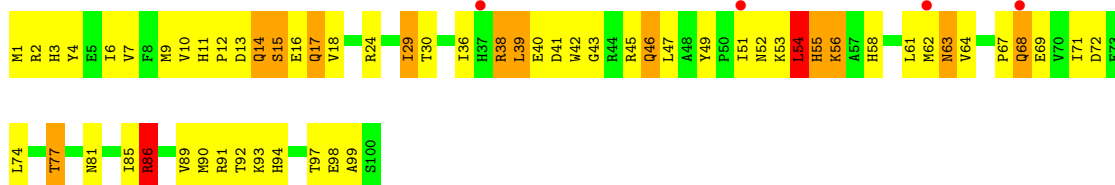




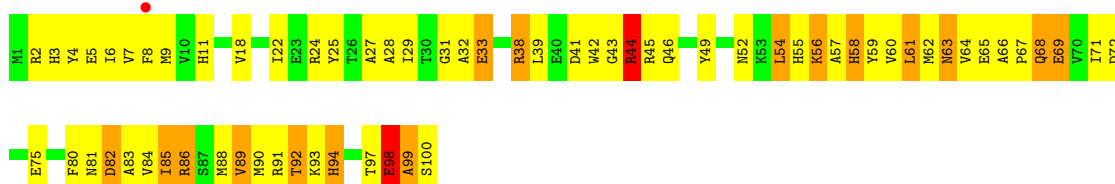
• Molecule 5: 30S ribosomal protein S5



• Molecule 6: 30S ribosomal protein S6

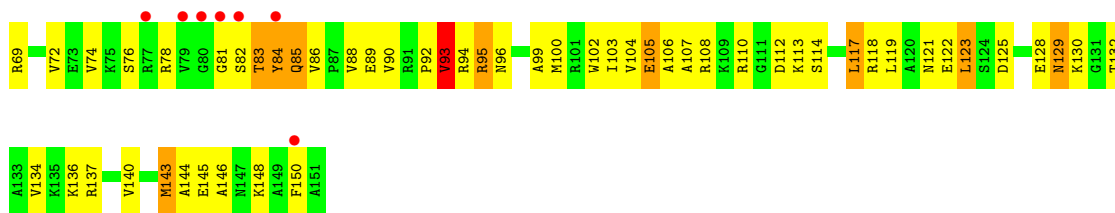


• Molecule 6: 30S ribosomal protein S6

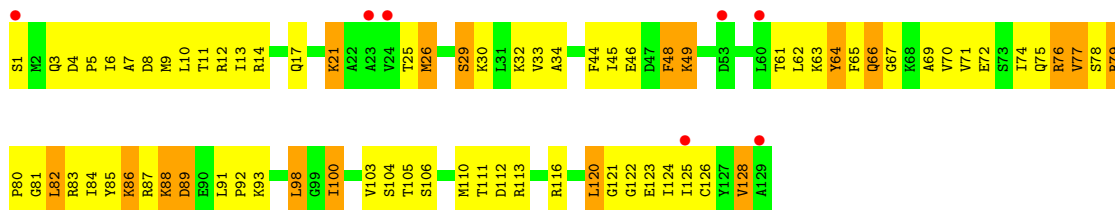
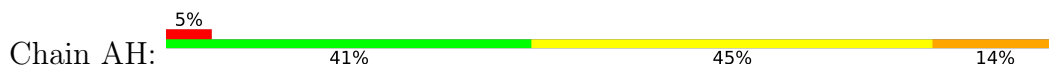


• Molecule 7: 30S ribosomal protein S7

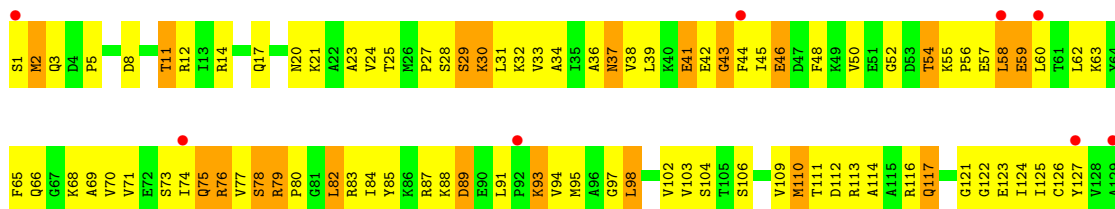




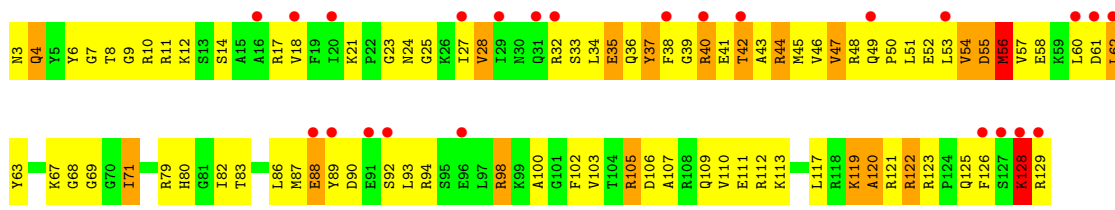
• Molecule 8: 30S ribosomal protein S8



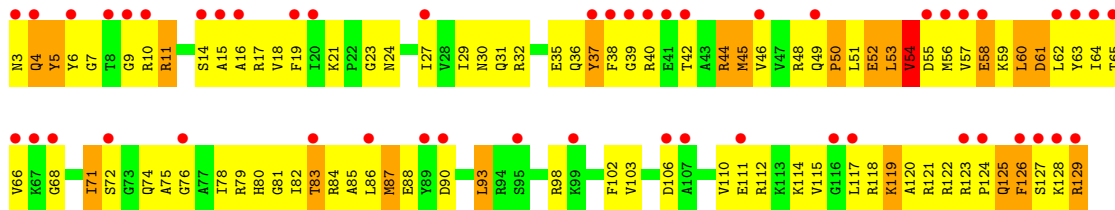
• Molecule 8: 30S ribosomal protein S8



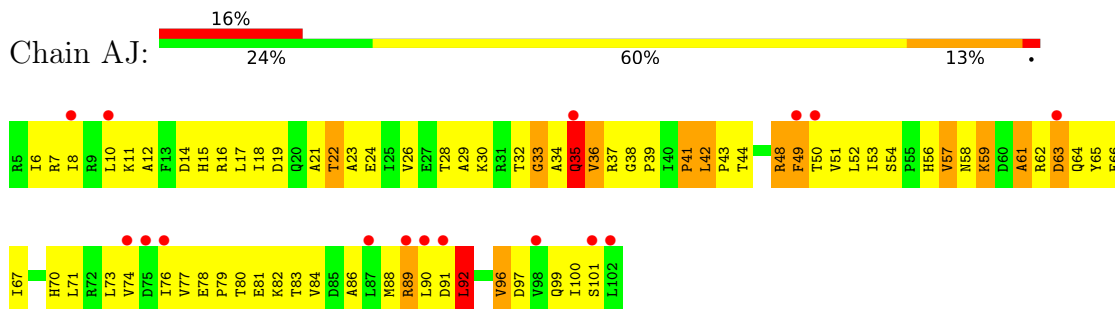
• Molecule 9: 30S ribosomal protein S9



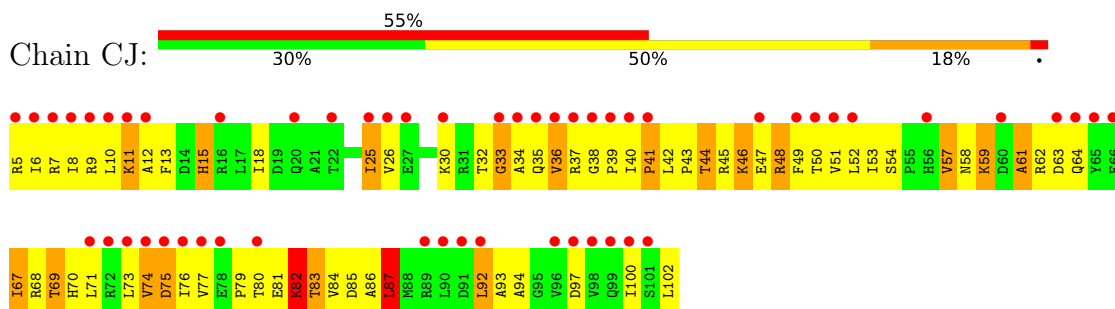
• Molecule 9: 30S ribosomal protein S9



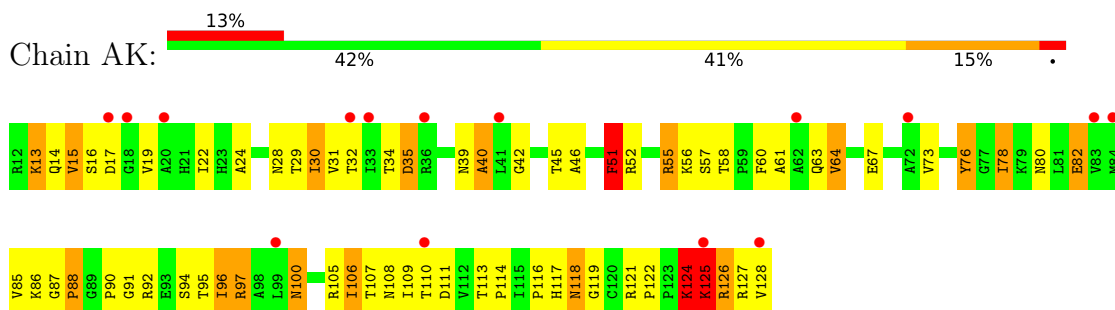
- Molecule 10: 30S ribosomal protein S10



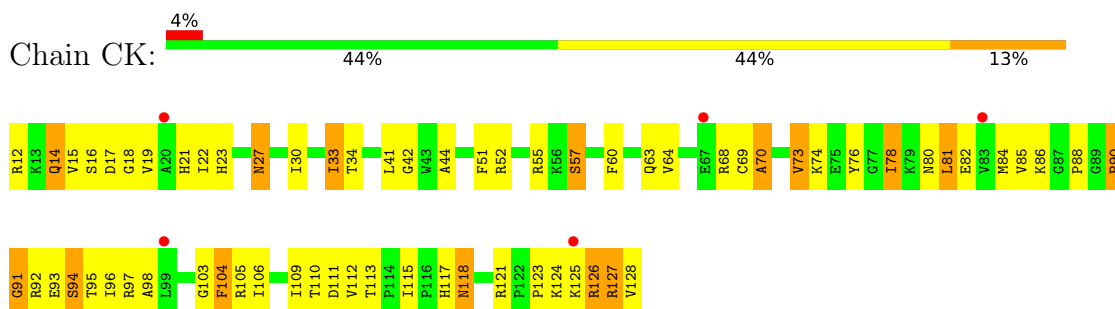
- Molecule 10: 30S ribosomal protein S10



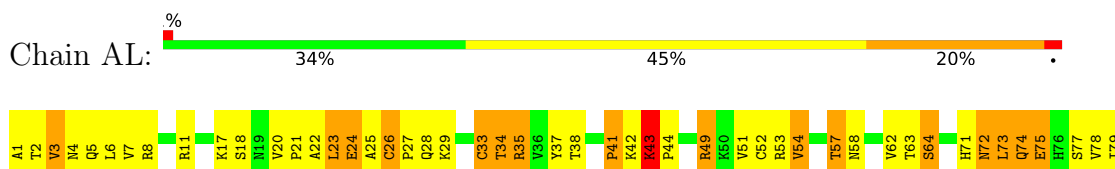
- Molecule 11: 30S ribosomal protein S11



- Molecule 11: 30S ribosomal protein S11

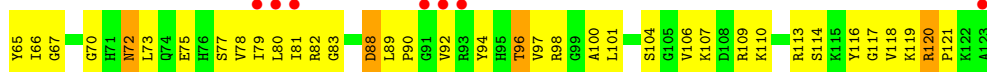


- Molecule 12: 30S ribosomal protein S12

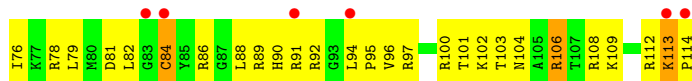
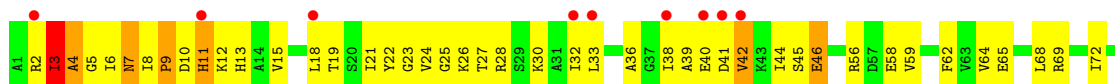
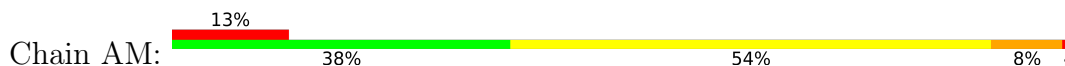




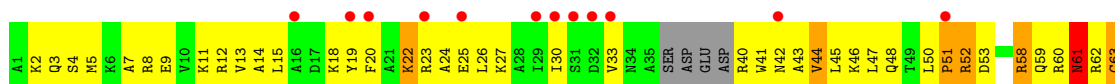
- Molecule 12: 30S ribosomal protein S12



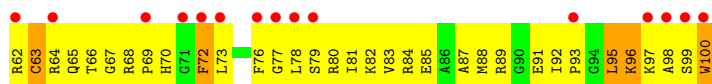
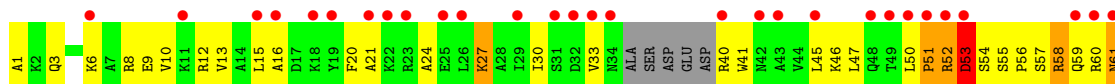
- Molecule 13: 30S ribosomal protein S13



- Molecule 14: 30S ribosomal protein S14

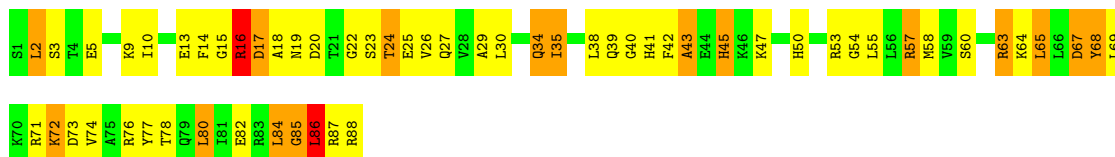


- Molecule 14: 30S ribosomal protein S14



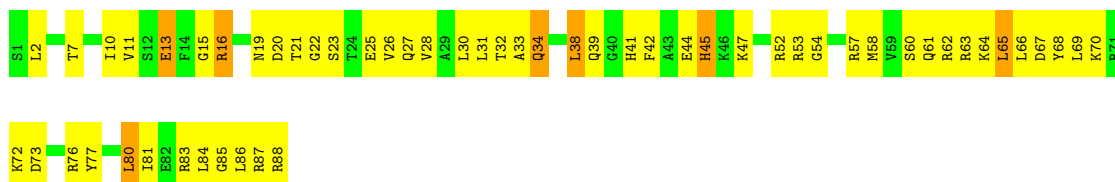
- Molecule 15: 30S ribosomal protein S15





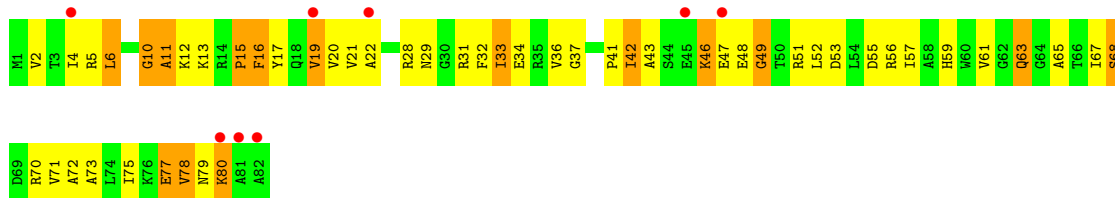
- Molecule 15: 30S ribosomal protein S15

Chain CO: 36% 56% 8%



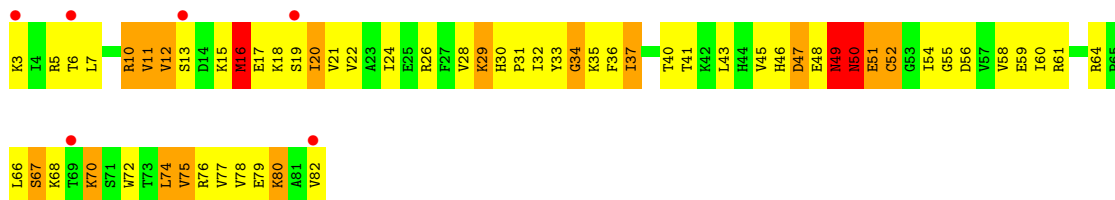
- Molecule 16: 30S ribosomal protein S16

Chain AP: 10% 38% 44% 18%



- Molecule 17: 30S ribosomal protein S17

Chain AQ: 8% 25% 52% 19%

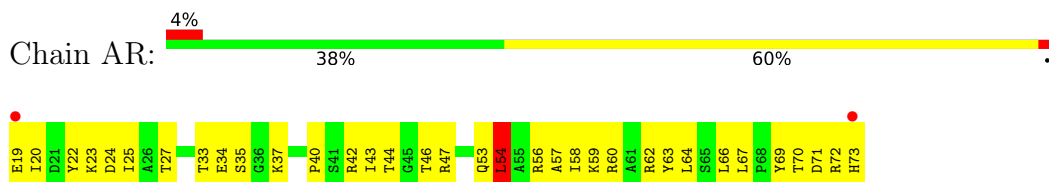


- Molecule 17: 30S ribosomal protein S17

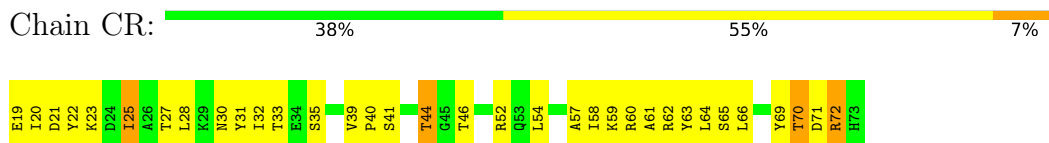
Chain CQ: 12% 31% 48% 20%



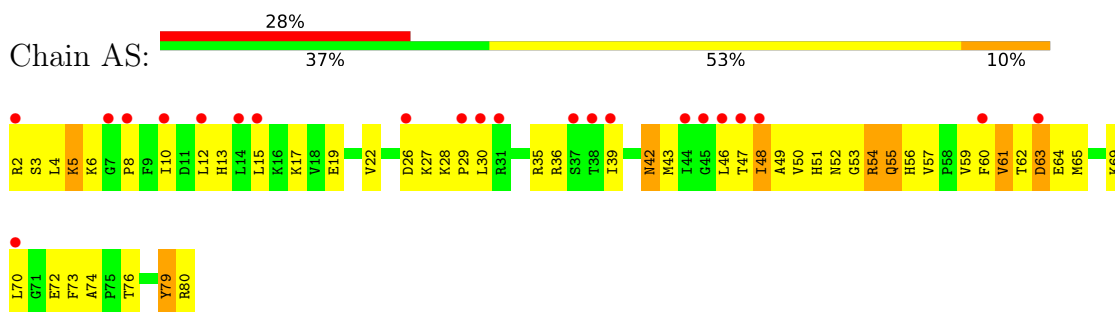
- Molecule 18: 30S ribosomal protein S18



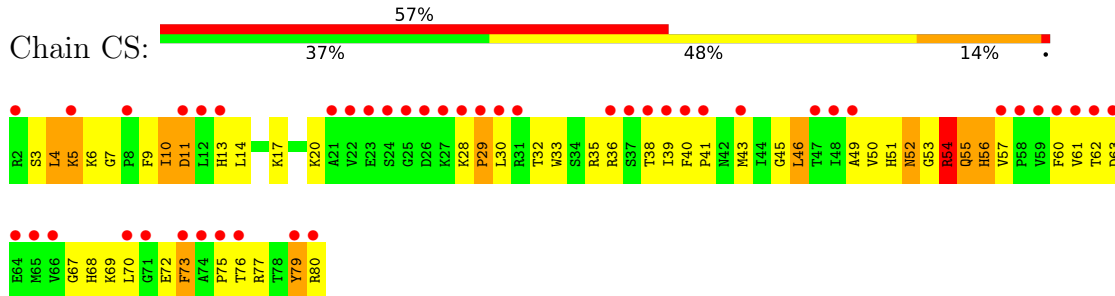
- Molecule 18: 30S ribosomal protein S18



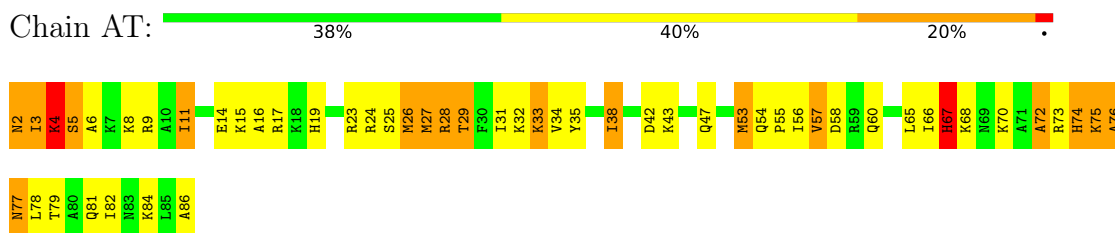
- Molecule 19: 30S ribosomal protein S19



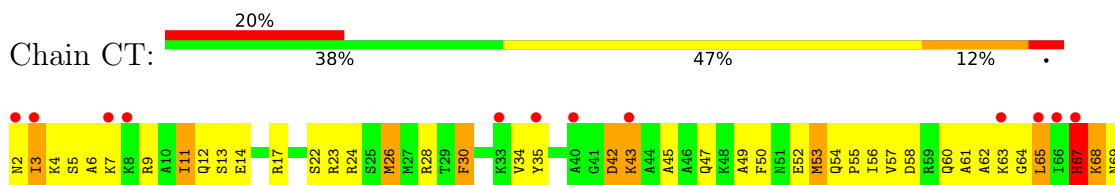
- Molecule 19: 30S ribosomal protein S19

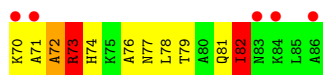


- Molecule 20: 30S ribosomal protein S20

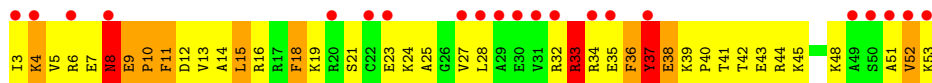
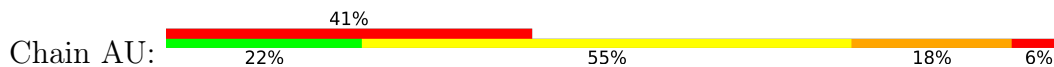


- Molecule 20: 30S ribosomal protein S20

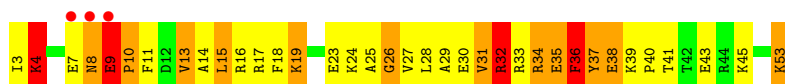




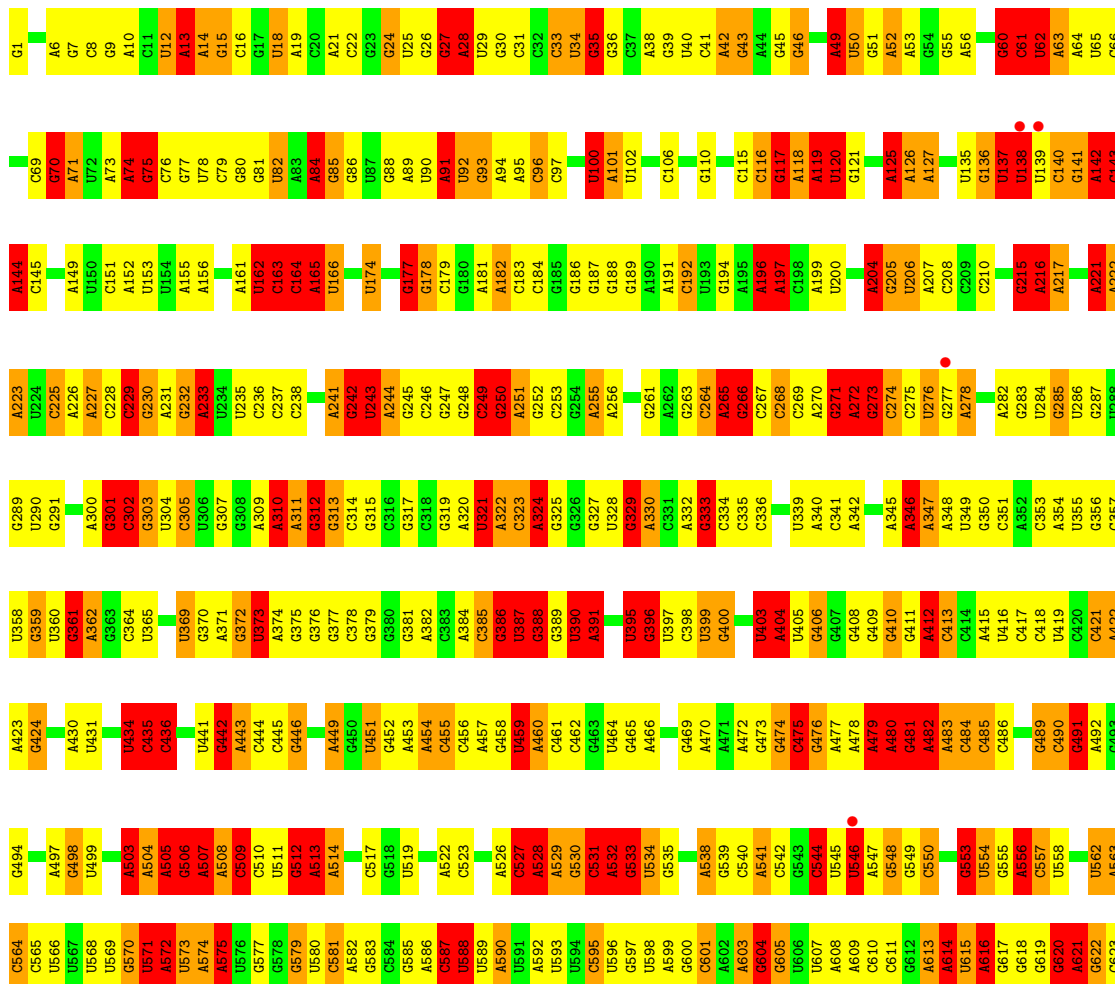
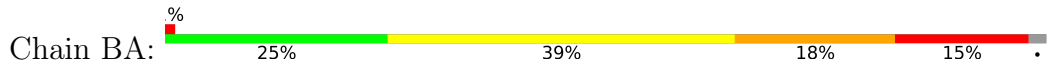
● Molecule 21: 30S ribosomal protein S21



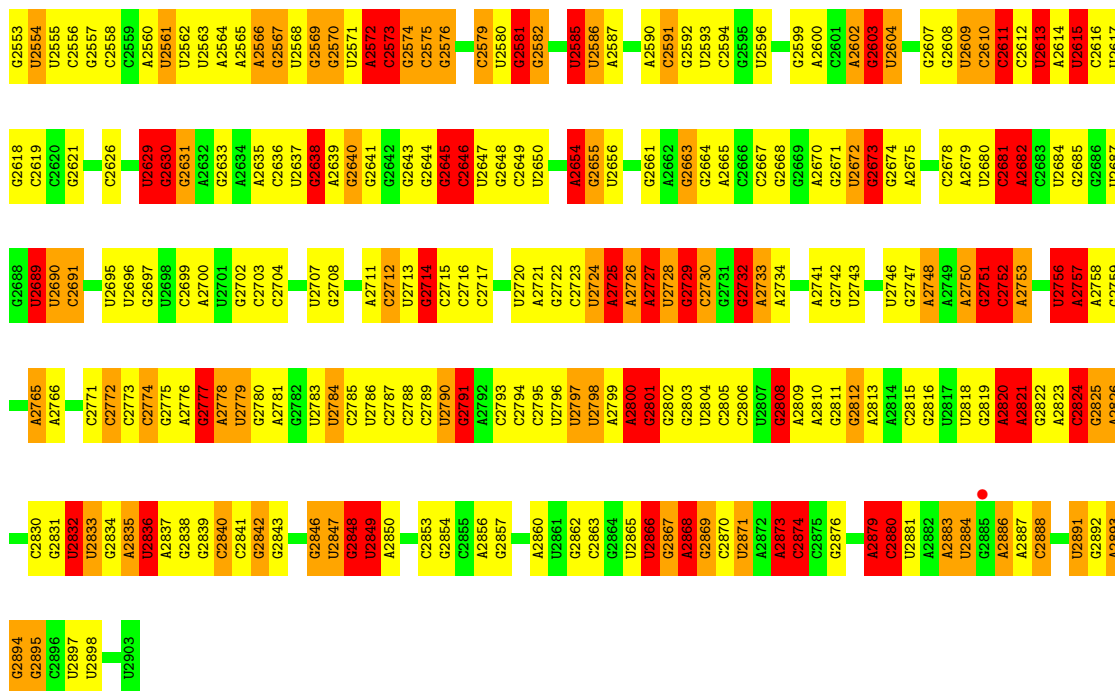
● Molecule 21: 30S ribosomal protein S21



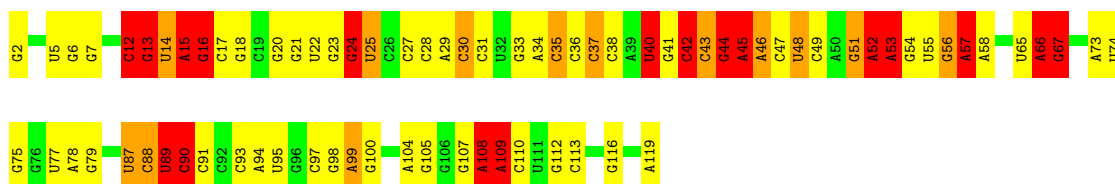
● Molecule 22: 23S rRNA



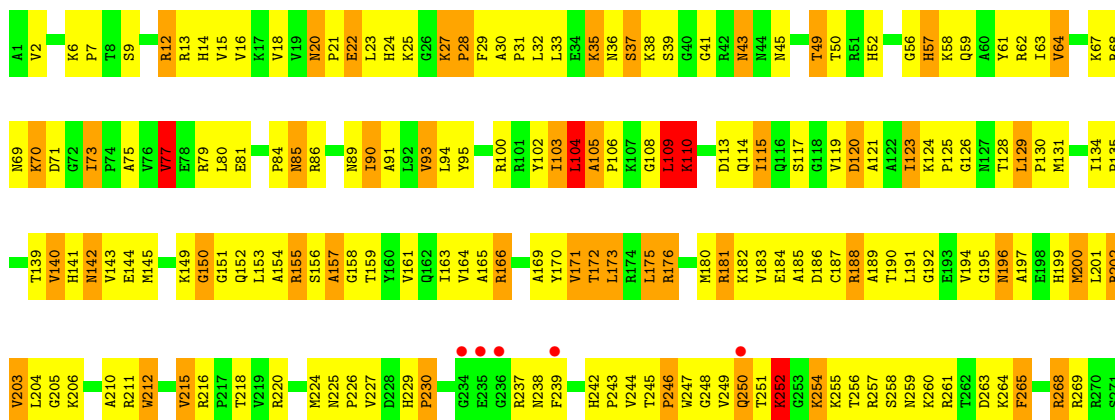
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| A1551 | A1552 | A1553 | A1554 | A1555 | A1556 | A1557 | A1558 | A1559 | A1560 | A1561 | A1562 | A1563 | A1564 | A1565 | A1566 | A1567 | A1568 | A1569 | A1570 | A1571 | C1575 | C1576 | C1577 | C1578 | A1579 | A1580 | A1581 | A1582 | A1583 | A1584 | A1585 | A1586 | A1587 | A1588 | A1589 | A1590 | A1591 | A1592 | A1593 | A1594 | A1597 | A1598 | C1600 | G1601 | G1602 | A1603 | C1604 | C1605 | C1606 | C1607 | A1608 | A1609 | A1610 | C1611 | C1612 | G1613 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G1482 | G1483 | G1484 | G1485 | G1486 | G1487 | G1488 | G1489 | G1490 | G1491 | G1492 | G1493 | G1494 | G1495 | G1496 | G1497 | G1498 | G1499 | G1500 | G1501 | A1502 | A1503 | A1504 | A1505 | A1506 | A1507 | A1508 | A1509 | A1510 | A1511 | A1512 | A1513 | A1514 | A1515 | A1516 | A1522 | A1523 | A1524 | A1525 | A1526 | A1527 | A1528 | A1529 | C1533 | C1534 | C1535 | C1536 | C1537 | C1538 | C1539 | C1540 | C1541 | C1542 | C1543 | C1544 | C1545 | C1546 | C1547 | C1548 | C1549 | C1550 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1414 | C1415 | C1416 | C1417 | C1418 | C1419 | C1420 | C1421 | C1422 | C1423 | C1424 | C1425 | C1426 | C1427 | C1428 | C1429 | C1430 | C1431 | C1432 | C1433 | C1434 | C1435 | C1436 | C1437 | C1438 | C1439 | C1440 | C1441 | C1442 | C1443 | C1444 | C1445 | C1446 | C1447 | C1450 | C1451 | C1452 | C1455 | C1456 | C1457 | C1458 | C1459 | C1460 | C1461 | C1462 | C1463 | C1464 | C1465 | C1466 | A1469 | A1470 | A1471 | A1472 | A1473 | A1474 | A1475 | A1476 | A1477 | A1478 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G1281 | G1282 | G1283 | A1286 | A1287 | A1288 | A1289 | A1290 | A1291 | A1292 | A1293 | A1294 | A1295 | A1296 | A1297 | A1298 | A1299 | A1300 | A1301 | A1302 | A1303 | A1304 | A1305 | G1309 | G1310 | G1311 | G1312 | G1313 | G1314 | G1315 | G1316 | G1317 | G1318 | G1319 | G1320 | A1321 | A1322 | A1323 | A1324 | A1325 | A1326 | A1327 | A1328 | A1329 | A1330 | A1331 | A1332 | A1333 | A1334 | A1335 | A1336 | A1337 | A1338 | A1339 | A1340 | A1341 | A1342 | A1343 | A1344 | A1345 | A1346 | A1347 | A1348 | A1349 | A1350 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U1344 | A1347 | A1348 | A1349 | A1350 | A1351 | A1352 | A1353 | A1354 | A1355 | A1356 | A1357 | A1358 | A1359 | A1360 | A1361 | A1362 | A1363 | A1364 | A1365 | A1366 | A1367 | C1370 | C1371 | C1372 | A1373 | A1374 | C1375 | C1376 | C1377 | C1378 | C1379 | C1380 | C1381 | C1382 | C1383 | A1384 | A1385 | C1386 | A1387 | A1392 | A1393 | A1394 | A1395 | A1396 | A1397 | A1398 | A1399 | A1400 | A1401 | A1402 | A1403 | A1404 | A1405 | A1406 | A1407 | A1408 | A1409 | A1410 | A1411 | A1412 | A1413 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| C1414 | C1415 | C1416 | C1417 | C1418 | C1419 | C1420 | C1421 | C1422 | C1423 | C1424 | C1425 | C1426 | C1427 | C1428 | C1429 | C1430 | C1431 | C1432 | C1433 | C1434 | C1435 | C1436 | C1437 | C1438 | C1439 | C1440 | C1441 | C1442 | C1443 | C1444 | C1445 | C1446 | C1447 | C1450 | C1451 | C1452 | C1455 | C1456 | C1457 | C1458 | C1459 | C1460 | C1461 | C1462 | C1463 | C1464 | C1465 | C1466 | A1469 | A1470 | A1471 | A1472 | A1473 | A1474 | A1475 | A1476 | A1477 | A1478 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G1220 | C1221 | G1222 | G1223 | G1224 | G1225 | A1226 | G1227 | G1228 | G1229 | A1230 | G1231 | G1232 | C1233 | G1234 | G1235 | G1236 | A1237 | G1238 | G1239 | G1240 | C1243 | A1244 | G1245 | A1246 | A1247 | G1248 | G1249 | G1250 | C1251 | G1252 | A1253 | A1254 | A1255 | G1256 | C1257 | A1258 | G1259 | A1260 | C1261 | A1262 | A1263 | A1264 | A1265 | G1266 | A1267 | A1268 | A1269 | C1270 | C1271 | A1272 | A1273 | A1274 | A1275 | A1276 | G1277 | C1278 | G1279 | G1280 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G1154 | A1155 | A1156 | G1157 | C1158 | C1159 | G1160 | C1161 | G1162 | C1163 | C1164 | A1165 | G1166 | C1167 | G1168 | A1169 | G1170 | C1171 | C1172 | A1175 | A1176 | G1177 | C1178 | G1179 | A1180 | G1181 | G1182 | A1183 | A1184 | G1185 | G1186 | G1187 | A1188 | A1189 | G1190 | G1191 | G1192 | G1193 | A1194 | A1199 | A1200 | A1203 | A1204 | A1205 | G1206 | C1207 | C1208 | A1209 | A1210 | C1211 | G1212 | A1213 | A1214 | A1215 | G1216 | G1217 | G1218 | G1219 | G1220 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G1024 | G1025 | G1026 | A1027 | A1028 | G1031 | A1032 | A1033 | A1034 | A1035 | G1036 | A1039 | A1040 | G1041 | G1042 | A1043 | C1044 | C1045 | C1046 | A1046 | A1047 | A1048 | A1049 | A1050 | G1055 | G1056 | A1057 | A1058 | A1059 | A1060 | A1001 | A1002 | A1003 | A1004 | A1005 | A1006 | A1007 | A1008 | A1009 | A1010 | A1011 | A1012 | A1013 | A1014 | A1015 | A1016 | A1017 | A1018 | A1019 | A1020 | A1021 | A1022 | A1023 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1089 | A1090 | G1091 | C1092 | A1093 | A1094 | A1095 | A1096 | A1097 | A1098 | A1099 | A1103 | C1104 | A1105 | G1106 | C1107 | A1108 | C1109 | G1110 | A1111 | G1112 | A1113 | C1114 | G1115 | G1116 | C1117 | G1118 | A1119 | G1120 | C1121 | G1122 | G1125 | A1126 | A1127 | A1128 | A1129 | A1130 | G1131 | A1132 | A1133 | A1134 | G1135 | G1136 | G1137 | A1138 | G1139 | C1140 | A1141 | A1142 | A1143 | A1144 | C1145 | C1146 | C1150 | A1151 | C1152 | C1153 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| U827 | U828 | A829 | C830 | U831 | U832 | A833 | U834 | U839 | U840 | U841 | U842 | U843 | U844 | U846 | U847 | U848 | U849 | U851 | C854 | C855 | C856 | U857 | C858 | C859 | U860 | A861 | A862 | A863 | A864 | A865 | A866 | U867 | U868 | U869 | U870 | U871 | U872 | C875 | C876 | C877 | C878 | C879 | C880 | C881 | C882 | C883 | C884 | C885 | C886 | C887 | C888 | C889 | C890 | C891 | C892 | C893 | C894 | C895 | C896 | C897 | C898 | C899 | C900 | C901 | C902 | C903 | C904 | C905 | C906 | C907 | C908 | C909 | C910 | C911 | C912 | C913 | C914 | C915 | C916 | C917 | C918 | C919 | C920 | C921 | C922 | C923 | C924 | C925 | C926 | C927 | C928 | C929 | C930 | C931 | C932 | C933 | C934 | C935 | C936 | C937 | C938 | C939 | C940 | C941 | C942 | C943 | C944 | C945 | C946 | C947 | C948 | C949 | C950 | C951 | C952 | C953 | C954 | C955 | C956 | C957 | C958 | C959 | C960 | C961 | C962 | C963 | C964 | C965 | C966 | C967 | C968 | C969 | C970 | C971 | C972 | C973 | C974 | C975 | C976 | C977 | C978 | C979 | C980 | C981 | C982 | C983 | C984 | C985 | C986 | C987 | C988 | C989 | C990 | C991 | C992 | C993 | C994 | C995 | C996 | C997 | C998 | C999 | A1000 | A1001 | A1002 | A1003 | A1004 | A1005 | A1006 | A1007 | A1008 | A1009 | A1010 | A1011 | A1012 | A1013 | A1014 | A1015 | A1016 | A1017 | A1018 | A1019 | A1020 | A1021 | A1022 | A1023 |
| C763 | A764 | C765 | C766 | U767 | U768 | U769 | G770 | G774 | A775 | G776 | G777 | G778 | U779 | U780 | U781 | U782 | A783 | A784 | C785 | C786 | C787 | C788 | C789 | C790 | C791 | C792 | C793 | C794 | C795 | C796 | C797 | C798 | C799 | A800 | A801 | A802 | U803 | A804 | C806 | U807 | U808 | U809 | U810 | U811 | U812 | U813 | U814 | U815 | C816 | C817 | C818 | C819 | U820 | U821 | U822 | U823 | U824 | U825 | U826 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| U694 | G697 | C698 | A699 | U703 | G704 | A705 | A706 | C635 | G707 | G708 | U709 | U710 | U714 | U715 | A716 | C717 | A718 | C719 | A722 | C723 | U724 | G725 | U726 | A727 | G728 | A729 | A730 | G733 | A734 | A735 | C736 | G737 | G738 | A739 | C740 | U741 | A742 | G745 | U746 | U747 | G748 | A749 | A750 | A751 | A752 | A753 | U754 | U755 | A756 | U757 | C758 | A761 | U762 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A624 | A627 | C628 | A631 | A632 | A633 | A634 | C635 | A636 | A637 | A638 | U639 | C640 | U641 | A642 | A643 | A644 | C645 | C646 | C647 | C648 | C649 | C650 | C651 | U652 | A653 | A654 | A655 | A656 | U657 | U658 | C659 | C660 | A661 | G664 | U665 | U666 | U667 | A668 | A669 | A670 | C671 | C672 | C673 | A674 | A675 | G681 | U682 | U683 | U684 | U685 | U686 | C687 | U688 | A693 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



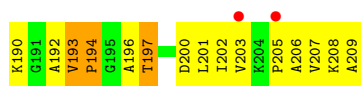
• Molecule 23: 5S rRNA



• Molecule 24: 50S ribosomal protein L2

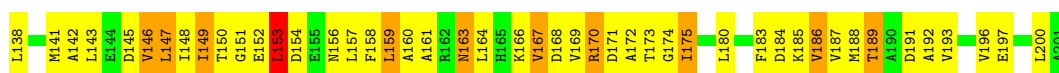


• Molecule 24: 50S ribosomal protein L2



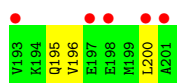
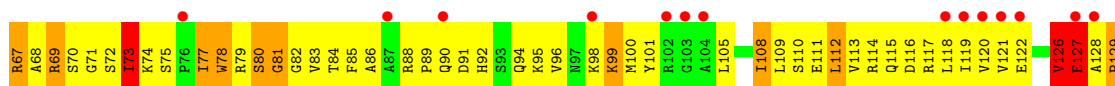
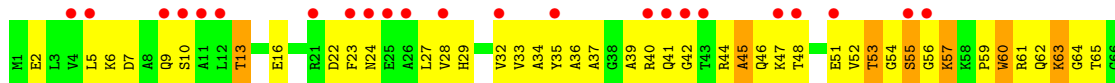
- Molecule 26: 50S ribosomal protein L4

Chain BE: 32% 45% 20%



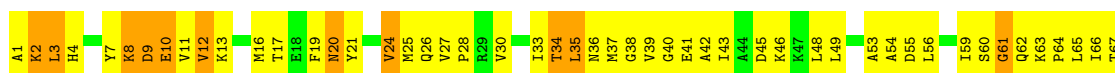
- Molecule 26: 50S ribosomal protein L4

Chain DE: 29% 36% 56% 13%

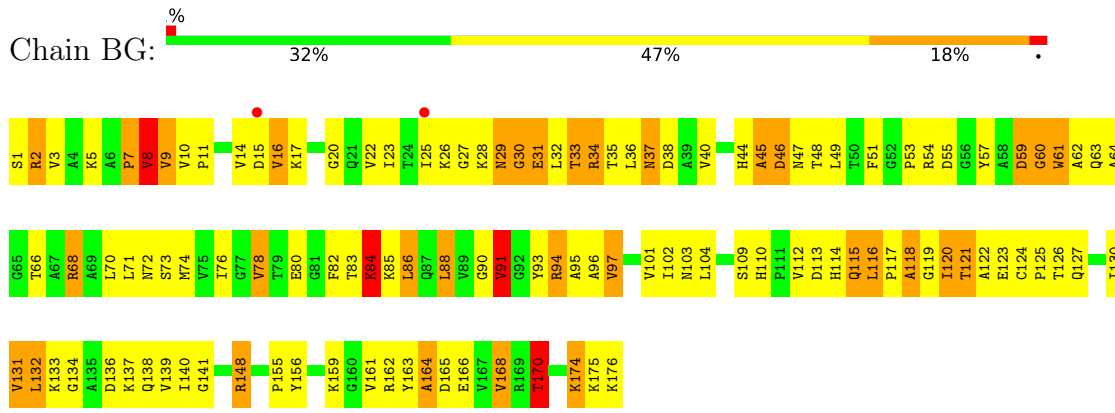


- Molecule 27: 50S ribosomal protein L5

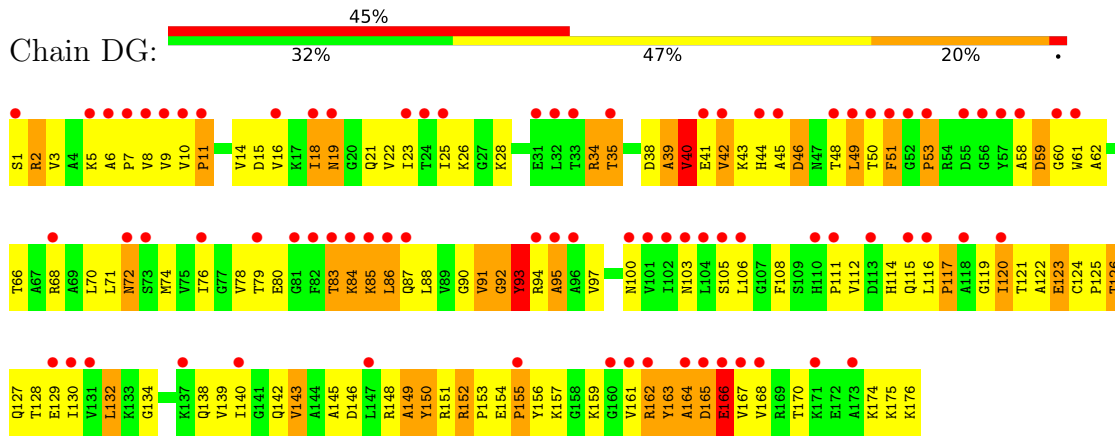
Chain BF: 3% 29% 54% 16%



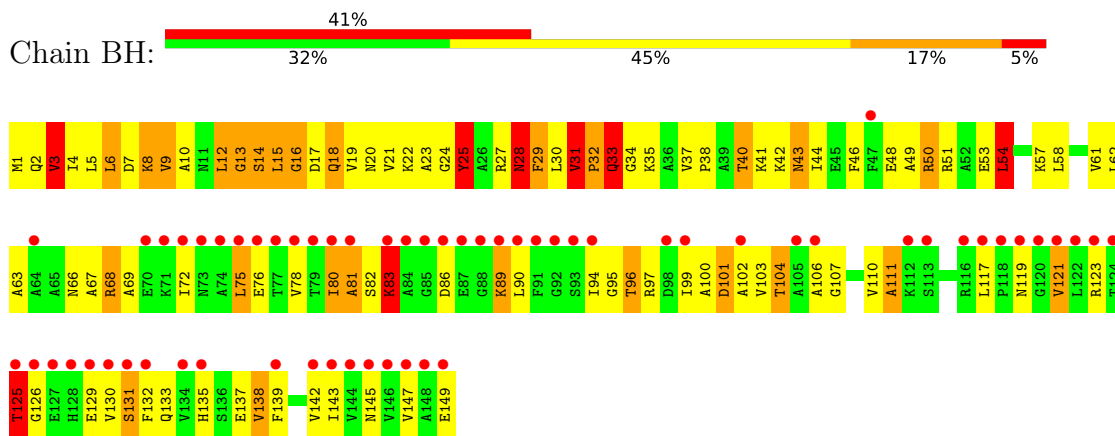
- Molecule 28: 50S ribosomal protein L6



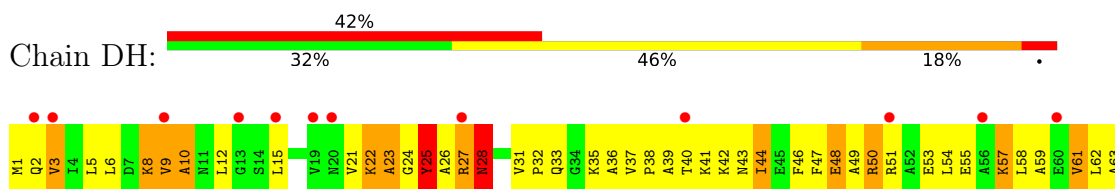
• Molecule 28: 50S ribosomal protein L6

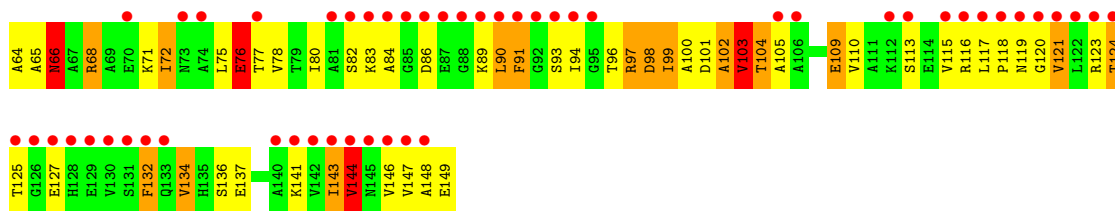


• Molecule 29: 50S ribosomal protein L9

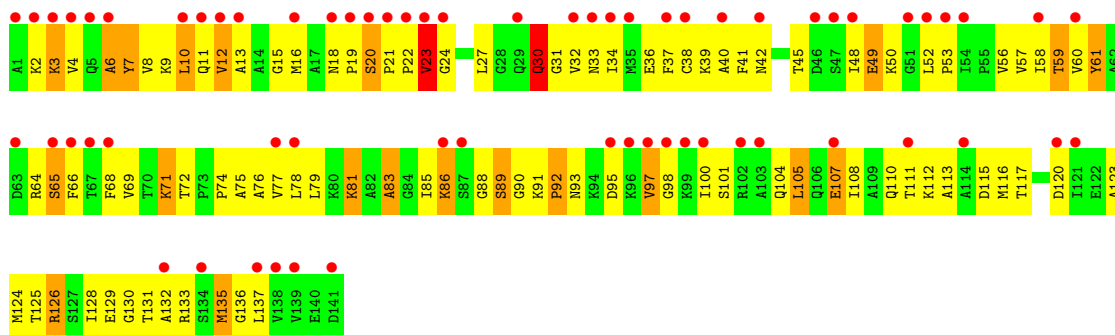


• Molecule 29: 50S ribosomal protein L9

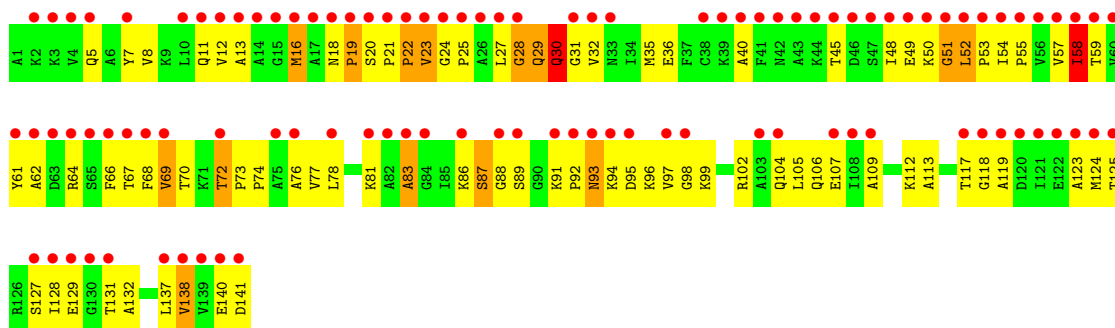
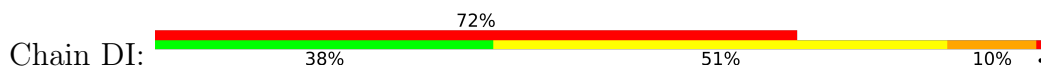




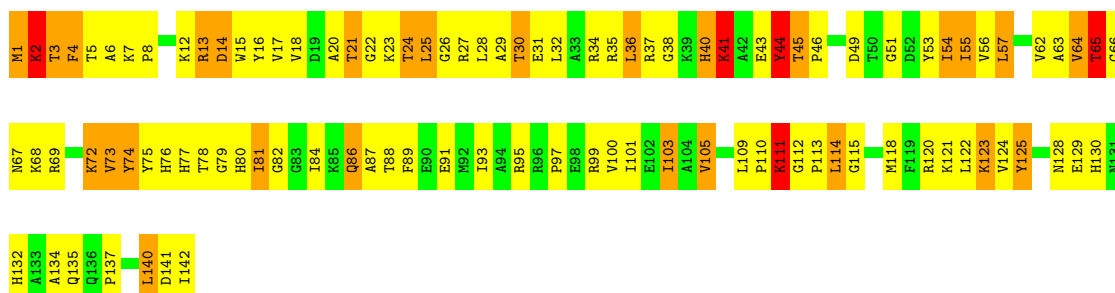
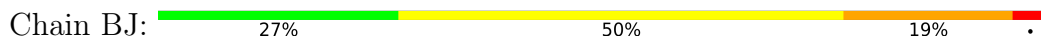
• Molecule 30: 50S ribosomal protein L11



• Molecule 30: 50S ribosomal protein L11

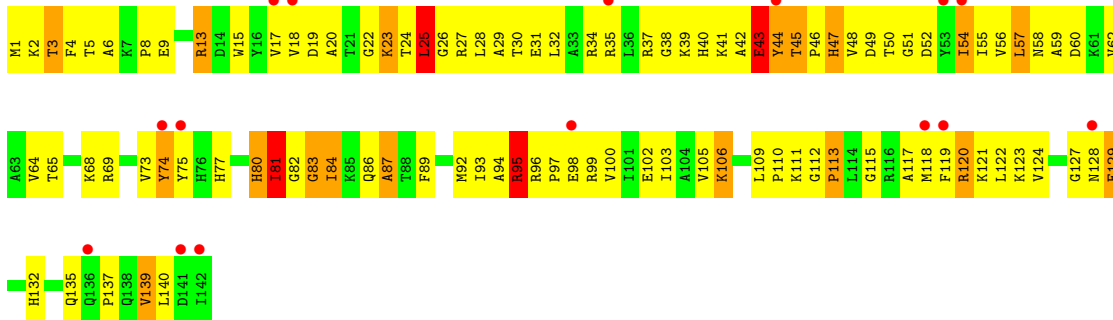


• Molecule 31: 50S ribosomal protein L13



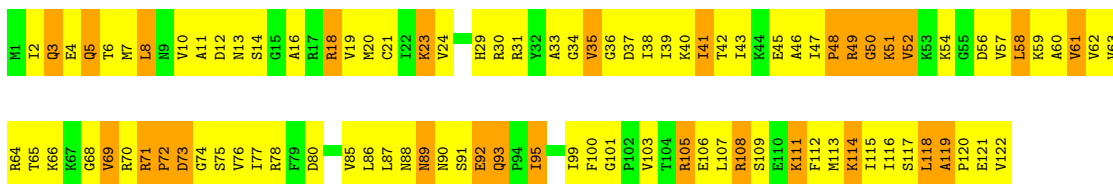
• Molecule 31: 50S ribosomal protein L13

Chain DJ: 



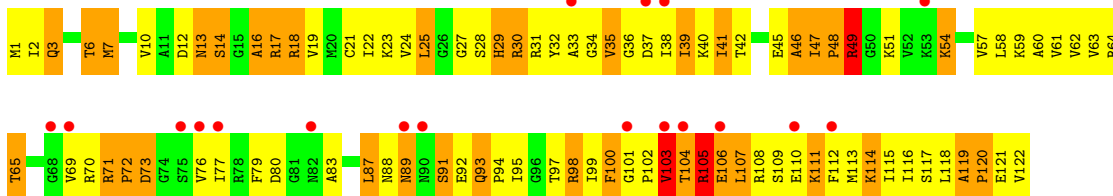
- Molecule 32: 50S ribosomal protein L14

Chain BK: 



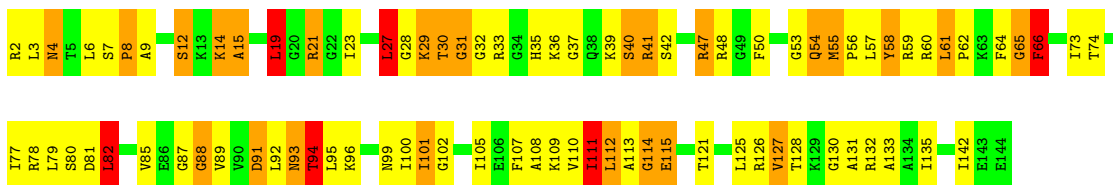
- Molecule 32: 50S ribosomal protein L14

Chain DK: 



- Molecule 33: 50S ribosomal protein L15

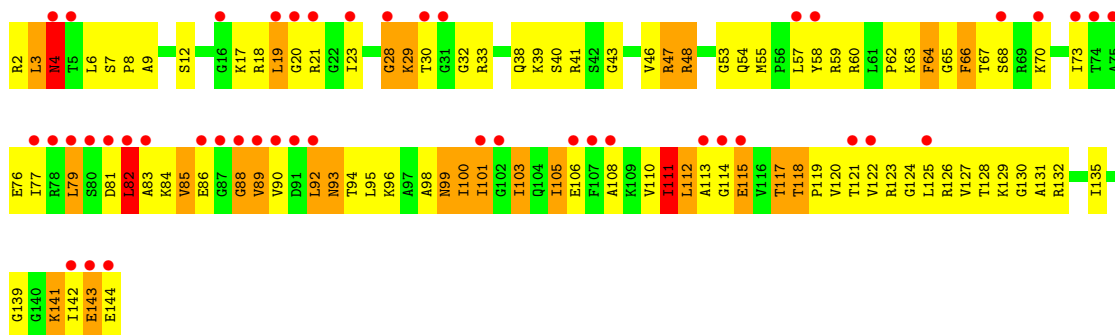
Chain BL: 



- Molecule 33: 50S ribosomal protein L15

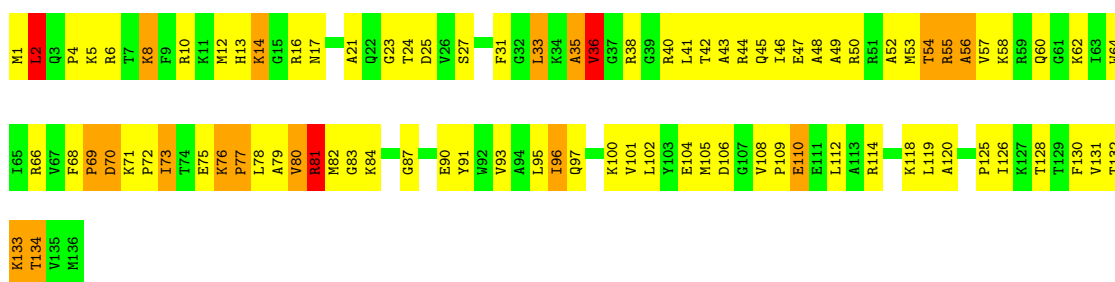
Chain DL: 





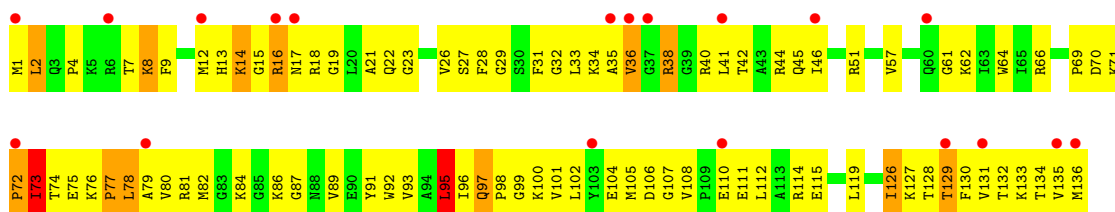
- Molecule 34: 50S ribosomal protein L16

Chain BM: 35% 51% 12% .



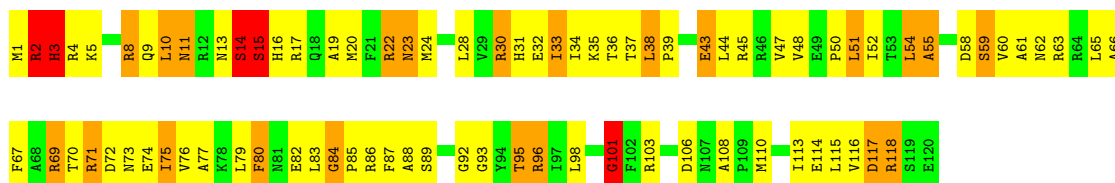
- Molecule 34: 50S ribosomal protein L16

Chain DM: 33% 57% 9% .



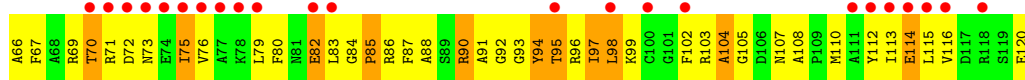
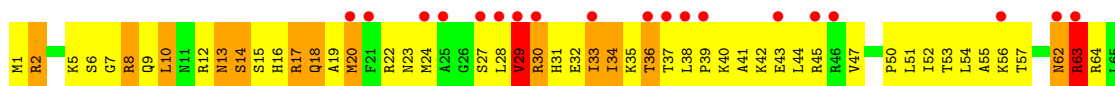
- Molecule 35: 50S ribosomal protein L17

Chain BN: 30% 48% 18% .

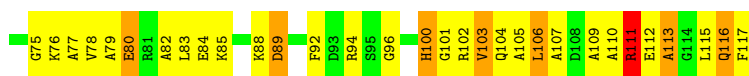
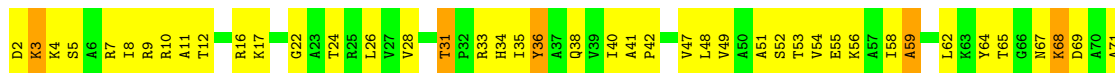
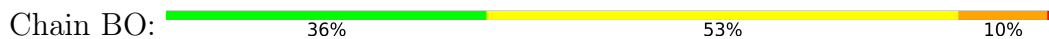


- Molecule 35: 50S ribosomal protein L17

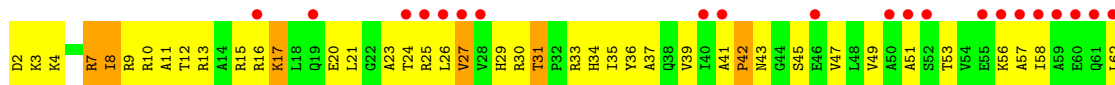
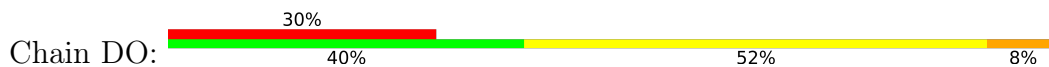
Chain DN: 23% 55% 20% .



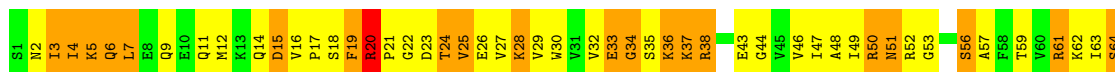
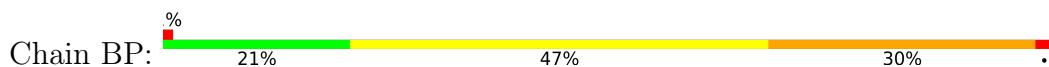
• Molecule 36: 50S ribosomal protein L18



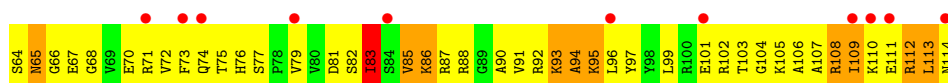
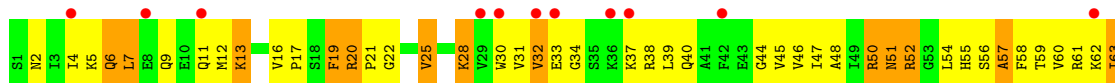
• Molecule 36: 50S ribosomal protein L18



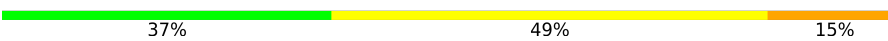
• Molecule 37: 50S ribosomal protein L19

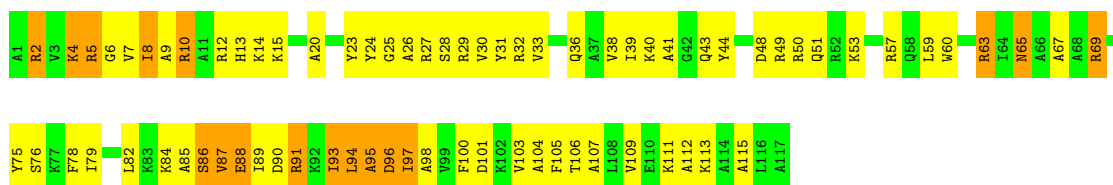


• Molecule 37: 50S ribosomal protein L19



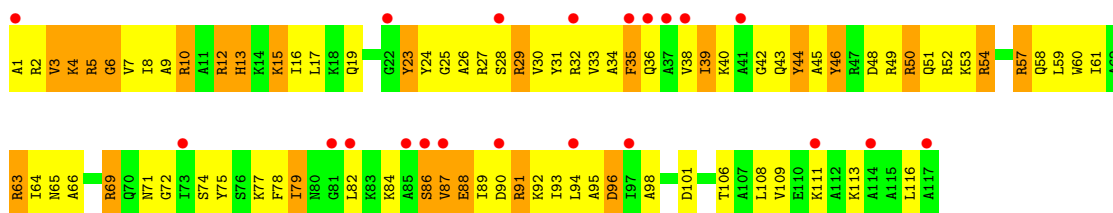
- Molecule 38: 50S ribosomal protein L20

Chain BQ:  37% 49% 15%

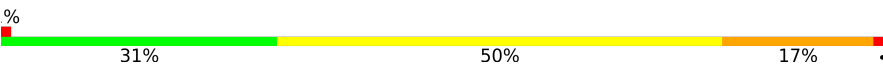


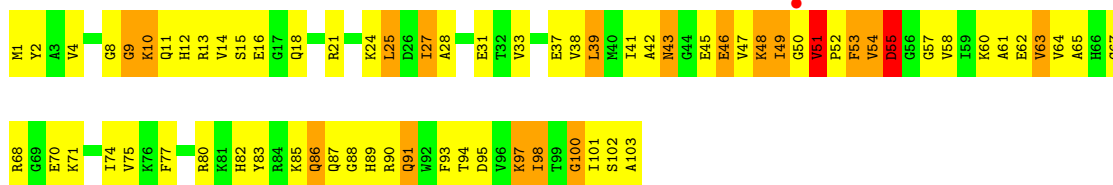
- Molecule 38: 50S ribosomal protein L20

Chain DQ:  18% 29% 50% 21%




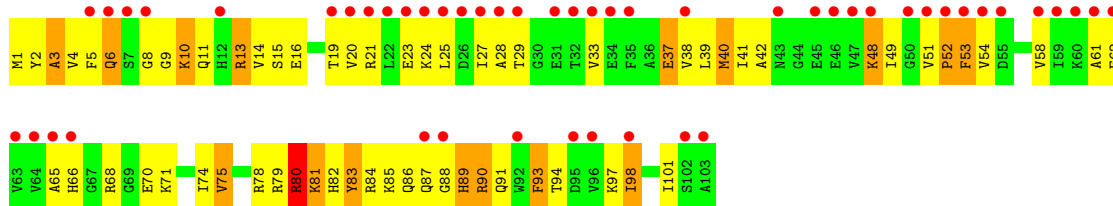
- Molecule 39: 50S ribosomal protein L21

Chain BR:  31% 50% 17%



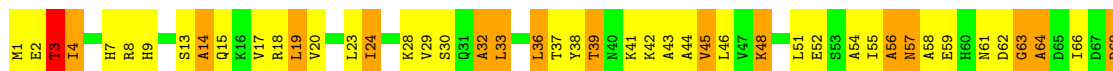
- Molecule 39: 50S ribosomal protein L21

Chain DR:  49% 37% 47% 16%



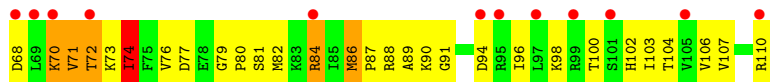
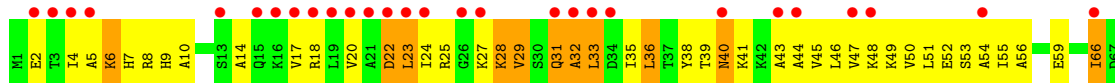
- Molecule 40: 50S ribosomal protein L22

Chain BS:  38% 41% 19%

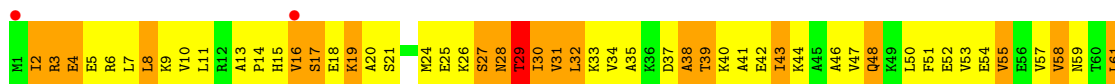
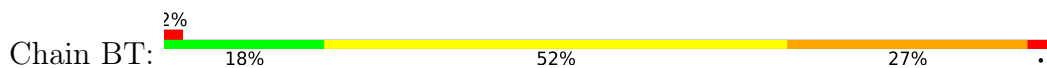




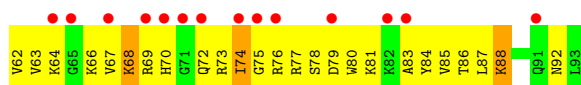
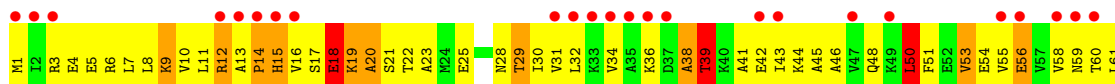
- Molecule 40: 50S ribosomal protein L22



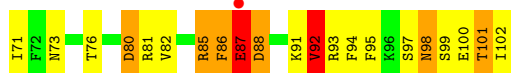
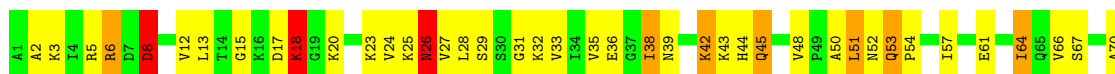
- Molecule 41: 50S ribosomal protein L23



- Molecule 41: 50S ribosomal protein L23

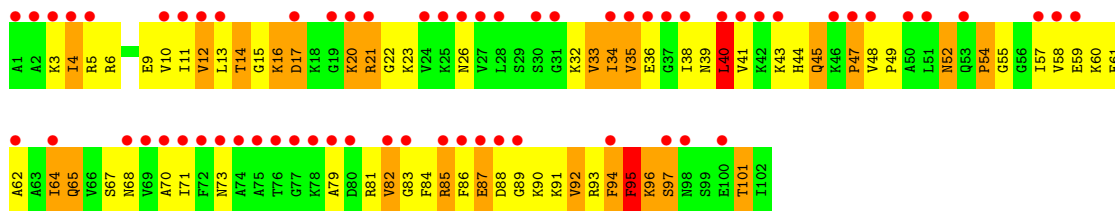


- Molecule 42: 50S ribosomal protein L24

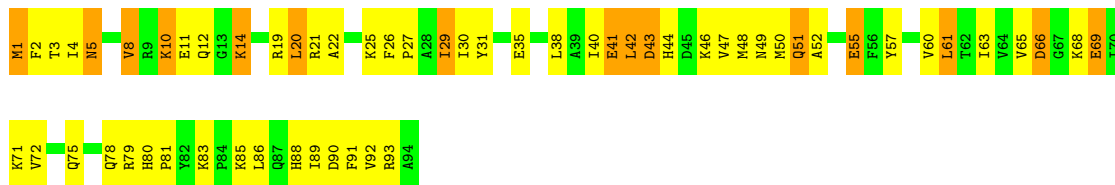


- Molecule 42: 50S ribosomal protein L24

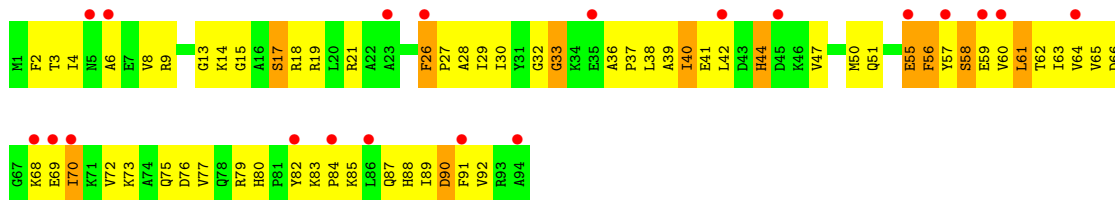




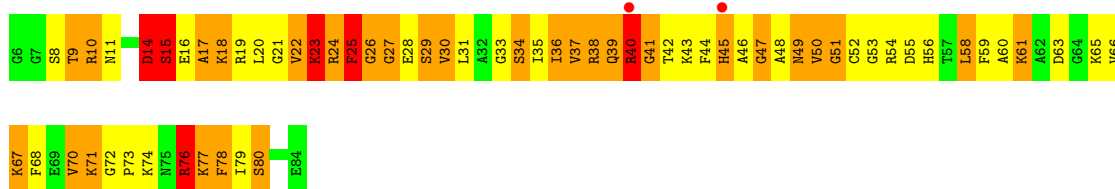
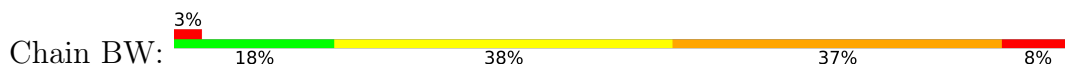
• Molecule 43: 50S ribosomal protein L25



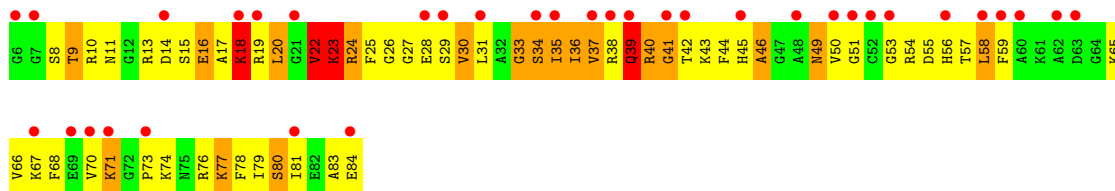
• Molecule 43: 50S ribosomal protein L25




• Molecule 44: 50S ribosomal protein L27

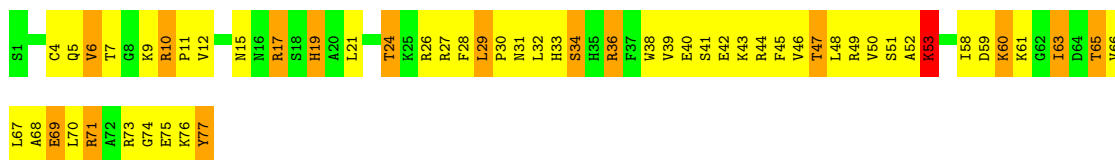


• Molecule 44: 50S ribosomal protein L27



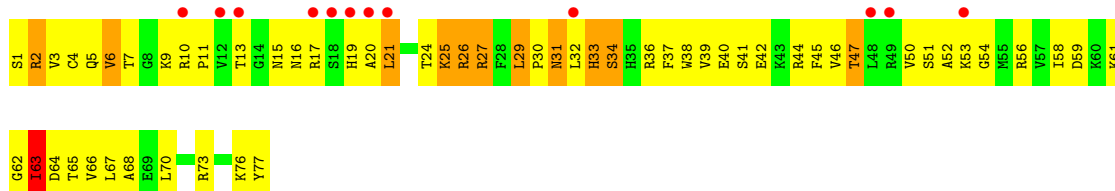
• Molecule 45: 50S ribosomal protein L28

Chain BX:  27% 52% 19%



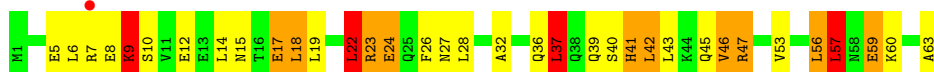
- Molecule 45: 50S ribosomal protein L28

Chain DX:  16% 25% 60% 14%



- Molecule 46: 50S ribosomal protein L29

Chain BY:  2% 44% 33% 16% 6%



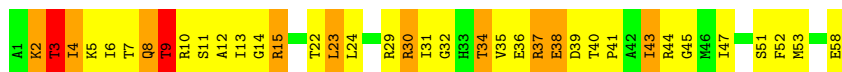
- Molecule 46: 50S ribosomal protein L29

Chain DY:  32% 40% 49% 11%



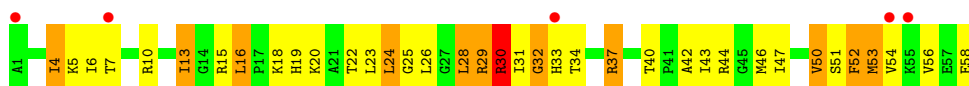
- Molecule 47: 50S ribosomal protein L30

Chain BZ:  36% 43% 17%



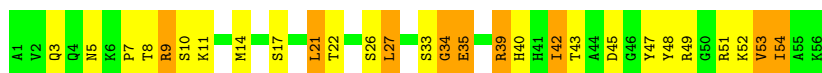
- Molecule 47: 50S ribosomal protein L30

Chain DZ:  9% 36% 43% 19%



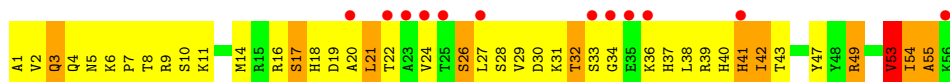
- Molecule 48: 50S ribosomal protein L32

Chain B0:  50% 34% 16%



• Molecule 48: 50S ribosomal protein L32

Chain D0:  21% 25% 55% 18%



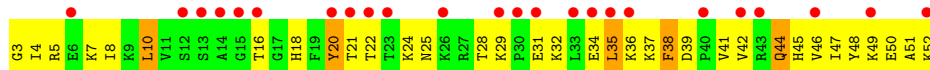
• Molecule 49: 50S ribosomal protein L33

Chain B1:  6% 34% 44% 20%

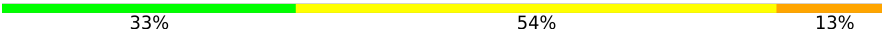


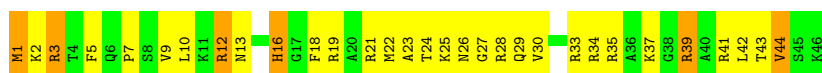
• Molecule 49: 50S ribosomal protein L33

Chain D1:  48% 32% 58% 10%



• Molecule 50: 50S ribosomal protein L34

Chain B2:  33% 54% 13%



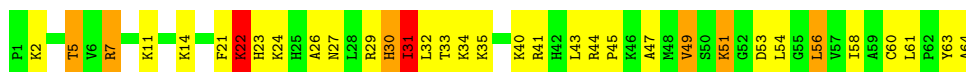
• Molecule 50: 50S ribosomal protein L34

Chain D2:  20% 39% 57%

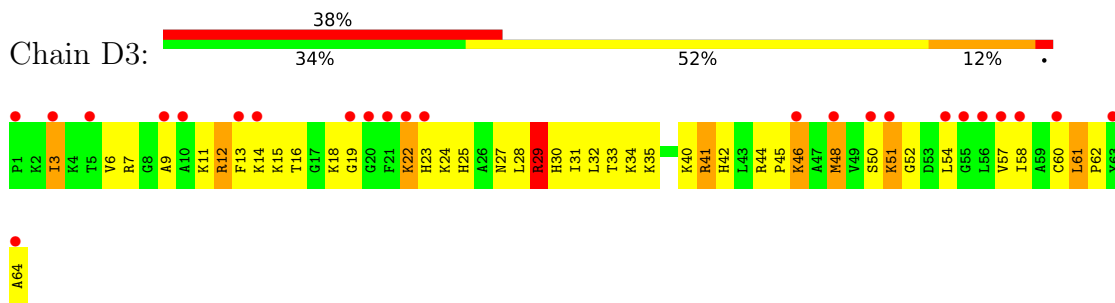


• Molecule 51: 50S ribosomal protein L35

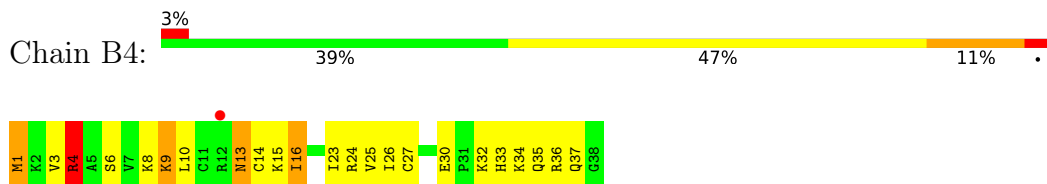
Chain B3:  47% 41% 9%



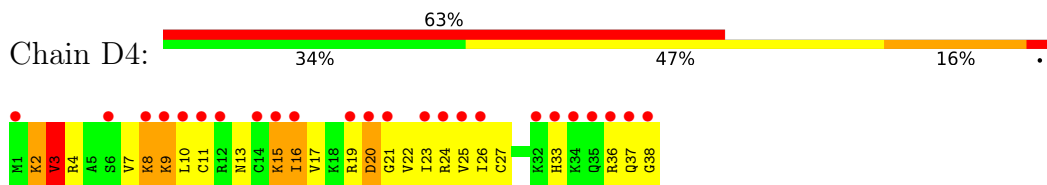
• Molecule 51: 50S ribosomal protein L35



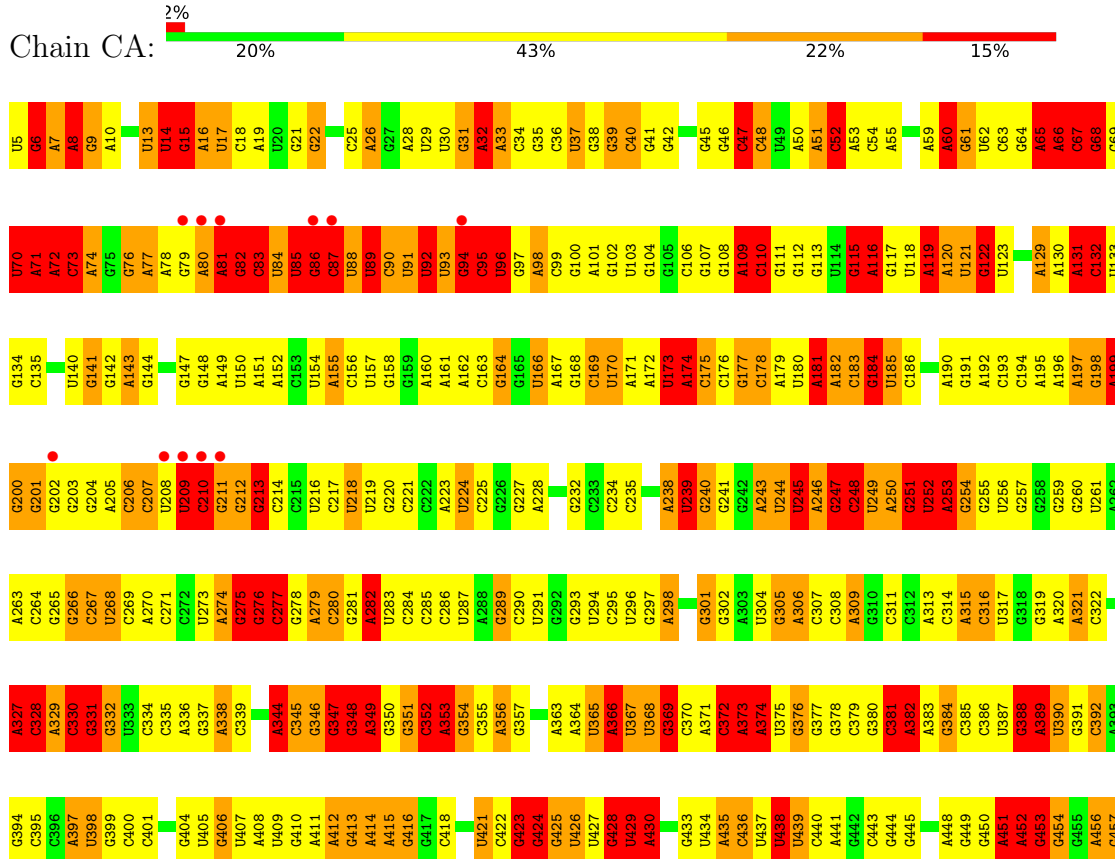
• Molecule 52: 50S ribosomal protein L36



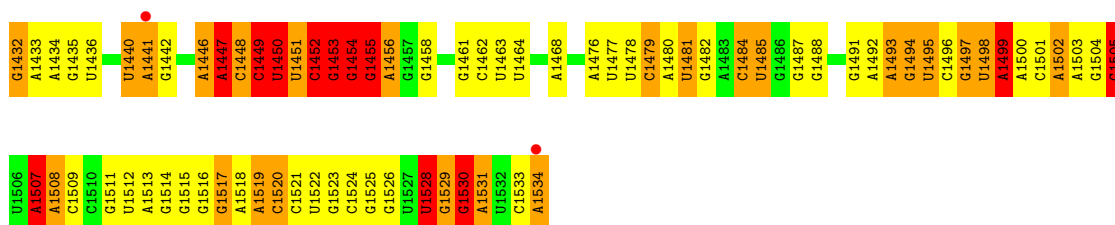
• Molecule 52: 50S ribosomal protein L36



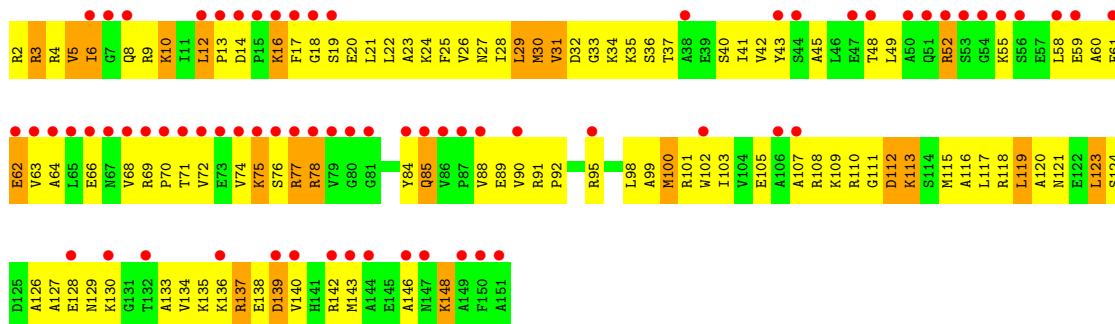
• Molecule 53: 16S rRNA



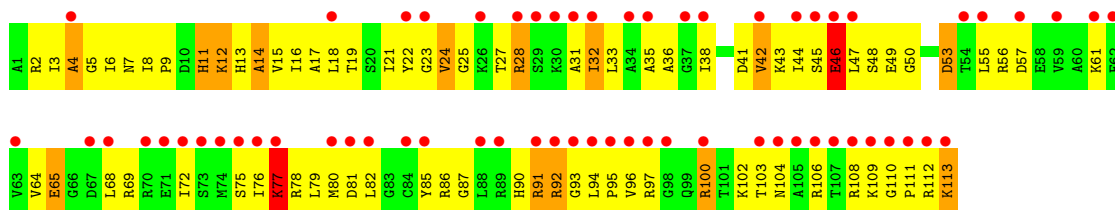
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| A489 | A520 | C580 | G654 | C719 | A784 | C8S3 | C924 | G988 | C1051 | C1112 | A1176 | A1238 | A1289 | U1364 |
| A460 | G521 | C582 | A655 | C720 | G785 | C8S4 | G925 | G989 | U1052 | C1113 | G1177 | A1239 | A1290 | A1365 |
| A461 | C522 | C583 | C658 | G721 | G790 | C8S5 | G926 | C990 | G1053 | C1114 | G1178 | U1240 | G1300 | C1366 |
| A462 | A523 | A584 | G659 | G722 | A790 | C8E6 | G927 | U991 | C1054 | A1117 | A1180 | G1241 | C1301 | C1367 |
| U463 | G524 | C585 | G660 | U723 | A792 | C8E7 | C931 | G993 | U1055 | U1118 | G1181 | C1242 | A1302 | A1368 |
| U464 | C525 | C586 | G661 | G724 | A793 | C8E8 | C932 | A994 | U1056 | U1119 | G1182 | G1243 | G1303 | C1369 |
| A465 | C526 | G587 | U662 | G725 | U794 | C8E9 | C933 | C995 | G1057 | C1119 | G1183 | G1244 | G1305 | G1370 |
| A466 | G527 | G588 | G663 | G726 | A795 | C8E0 | G934 | A996 | U1058 | C1120 | G1184 | C1245 | U1308 | G1371 |
| U467 | C528 | U589 | A664 | G727 | A796 | C8E1 | A935 | U997 | U1059 | G1123 | G1185 | U1246 | A1309 | A1372 |
| A468 | G529 | U590 | G664 | G728 | C795 | C8E2 | C935 | U998 | U1060 | U1124 | A1186 | U1247 | G1310 | G1373 |
| C469 | G530 | C595 | A665 | A729 | C796 | C8E3 | C936 | C998 | U1061 | U1125 | G1187 | A1248 | A1311 | A1374 |
| U471 | U531 | A596 | G666 | G730 | U801 | C8E4 | C937 | C999 | U1062 | U1126 | G1188 | C1249 | A1312 | A1375 |
| U472 | A532 | G597 | G667 | G731 | A802 | C8E5 | A938 | A1000 | C1063 | G1127 | A1188 | A1250 | G1312 | G1376 |
| U473 | A533 | U598 | G668 | G732 | G803 | C8E6 | G939 | C1001 | U1064 | C1128 | U1189 | A1251 | U1313 | C1378 |
| C474 | U534 | C599 | G669 | G733 | U804 | C8E7 | C940 | G1002 | U1065 | C1129 | G1190 | A1252 | C1314 | G1379 |
| C475 | A535 | A600 | G670 | G734 | U807 | C8E8 | G941 | G1003 | C1066 | A1130 | A1191 | G1253 | U1315 | U1380 |
| U476 | C536 | G604 | G671 | C735 | A807 | U870 | G942 | A1004 | U1067 | G1131 | C1192 | A1254 | U1316 | U1381 |
| C477 | G537 | G605 | U672 | G736 | C808 | U871 | G943 | U1005 | U1068 | C1132 | G1193 | G1255 | C1317 | C1382 |
| A478 | U538 | U606 | A673 | C737 | G809 | A872 | G944 | G1006 | C1069 | G1133 | U1194 | A1256 | A1318 | C1383 |
| U479 | C540 | G606 | G674 | C738 | G809 | A873 | A945 | U1007 | U1070 | G1134 | C1195 | A1257 | A1319 | C1384 |
| U480 | G541 | A607 | A675 | C739 | C811 | G874 | A946 | U1008 | C1071 | U1135 | A1196 | G1258 | C1320 | G1385 |
| G481 | G542 | A608 | A676 | U740 | C812 | U875 | A947 | U1009 | U1072 | C1136 | A1197 | C1259 | U1321 | G1386 |
| C482 | U543 | A609 | A677 | G741 | U813 | C876 | A948 | U1010 | U1073 | U1137 | G1198 | G1260 | U1322 | C1387 |
| C483 | G544 | A610 | U678 | G741 | A814 | G877 | A949 | C1011 | G1074 | G1138 | U1199 | A1261 | G1323 | G1388 |
| U485 | C545 | C611 | G686 | G745 | A815 | A878 | G951 | A1012 | U1075 | G1139 | C1200 | C1262 | A1324 | G1389 |
| A486 | U546 | C612 | U687 | A746 | C810 | C879 | G952 | A1013 | U1076 | C1140 | A1201 | C1263 | A1325 | U1390 |
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| U488 | C548 | C614 | G688 | G748 | C812 | C881 | G954 | G1015 | U1078 | C1142 | C1203 | C1265 | U1327 | U1393 |
| C489 | C549 | C615 | G689 | A749 | C813 | C882 | U955 | A1016 | U1079 | G1143 | U1211 | G1266 | A1328 | A1394 |
| C490 | U550 | C616 | U689 | G750 | U820 | C883 | A956 | U1017 | U1080 | G1144 | U1212 | C1267 | U1329 | C1395 |
| G491 | A551 | C617 | G690 | G752 | C821 | U884 | A957 | U1018 | A1081 | A1145 | G1206 | G1268 | U1330 | A1396 |
| A493 | U552 | C623 | A691 | G753 | U822 | C885 | U959 | A1019 | U1082 | A1146 | C1207 | A1269 | U1331 | C1397 |
| A494 | A553 | C624 | A692 | C754 | C823 | C886 | U960 | G1020 | U1083 | C1147 | C1208 | U1269 | A1332 | A1398 |
| A495 | A554 | C625 | A693 | G755 | C824 | C887 | C962 | A1021 | U1084 | C1148 | C1210 | A1271 | U1333 | C1399 |
| A496 | U555 | C626 | A694 | G756 | C825 | C888 | G963 | A1022 | U1085 | C1149 | U1211 | G1272 | U1334 | C1400 |
| A498 | A556 | C627 | A695 | G757 | C826 | C889 | A964 | U1023 | U1086 | A1150 | U1212 | C1273 | U1335 | G1401 |
| A499 | C556 | C628 | A696 | U757 | U827 | C890 | A965 | G1024 | U1087 | A1151 | A1214 | A1274 | U1336 | C1402 |
| G500 | U557 | C629 | A697 | C758 | U828 | C891 | U966 | U1025 | U1088 | A1152 | C1214 | A1275 | U1337 | C1403 |
| C501 | C558 | C630 | A698 | C759 | C829 | C892 | G967 | G1026 | U1089 | G1153 | G1215 | G1276 | U1338 | G1404 |
| A502 | A559 | C631 | A699 | G760 | C830 | C893 | C968 | U1029 | U1090 | G1154 | A1216 | C1277 | A1339 | U1406 |
| C503 | U560 | C632 | A700 | G761 | C831 | C894 | A969 | U1030 | U1091 | A1155 | C1217 | G1278 | A1340 | C1407 |
| C504 | A561 | C633 | A701 | G762 | C832 | C895 | C970 | G1031 | A1092 | G1156 | C1218 | G1279 | U1341 | A1408 |
| C505 | U562 | C634 | A702 | G763 | C833 | C896 | C971 | G1032 | A1093 | A1157 | A1157 | A1280 | U1342 | C1409 |
| G505 | C563 | C635 | A703 | C764 | U834 | A901 | G972 | G1033 | G1084 | C1158 | G1220 | C1281 | G1343 | A1410 |
| U508 | A564 | C636 | A704 | G765 | U835 | A906 | C973 | U1034 | U1095 | U1159 | G1221 | C1282 | U1344 | C1411 |
| A509 | C565 | C637 | A705 | G766 | C836 | A907 | C974 | A1036 | C1096 | G1160 | G1222 | U1283 | U1345 | C1412 |
| A510 | U566 | C638 | A706 | G767 | C837 | A909 | A975 | A1037 | C1097 | C1161 | C1223 | C1284 | A1346 | C1413 |
| C511 | C566 | C639 | A707 | G768 | C841 | C910 | G976 | C1038 | C1098 | C1162 | U1224 | A1285 | G1347 | A1414 |
| U512 | C567 | C640 | A708 | C769 | U842 | C911 | A977 | G1039 | U1099 | U1165 | A1225 | U1286 | U1348 | C1415 |
| C513 | U568 | C641 | A709 | C770 | U843 | A913 | A978 | U1040 | C1100 | U1166 | C1226 | A1287 | A1349 | G1416 |
| C514 | C569 | C642 | A710 | G771 | U844 | A914 | C979 | U1041 | U1096 | A1167 | A1227 | A1288 | A1350 | G1417 |
| C515 | A570 | C643 | A711 | G772 | C844 | A915 | C979 | G1041 | C1096 | A1168 | C1228 | U1289 | G1356 | U1420 |
| C516 | U571 | C644 | A712 | G773 | C845 | A916 | C979 | G1042 | C1097 | A1169 | A1229 | A1357 | U1357 | G1421 |
| C517 | C570 | C645 | A713 | G774 | C846 | A917 | U981 | G1043 | C1098 | A1170 | A1230 | U1358 | U1358 | C1422 |
| C518 | U572 | C646 | A714 | G775 | C847 | A918 | U982 | G1044 | U1105 | A1171 | G1231 | C1293 | C1359 | G1429 |
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| C521 | U575 | C649 | A717 | G778 | U849 | U921 | C985 | U1048 | G1108 | U1174 | U1236 | G1296 | A1362 | G1432 |
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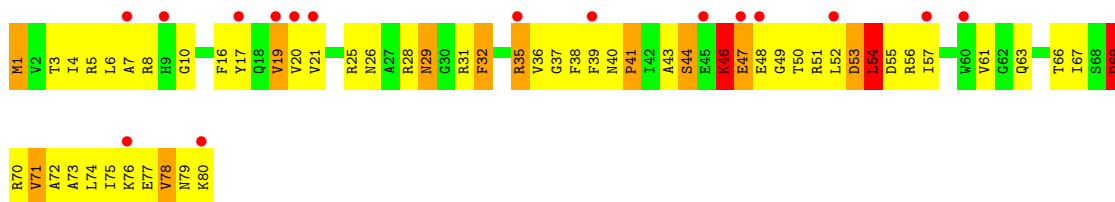
• Molecule 54: 30S ribosomal protein S7



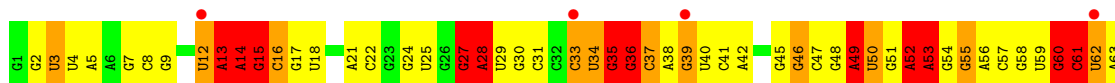
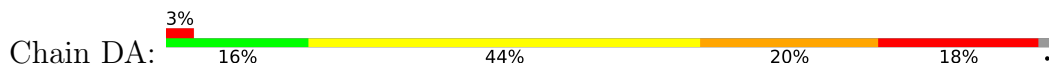
• Molecule 55: 30S ribosomal protein S13



• Molecule 56: 30S ribosomal protein S16

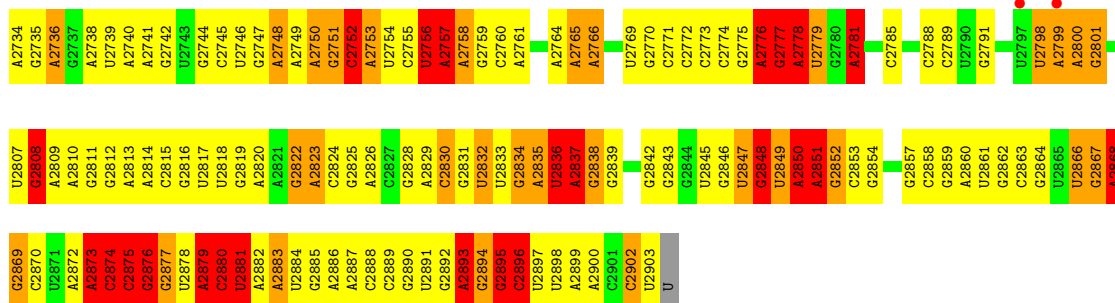


• Molecule 57: 23S rRNA

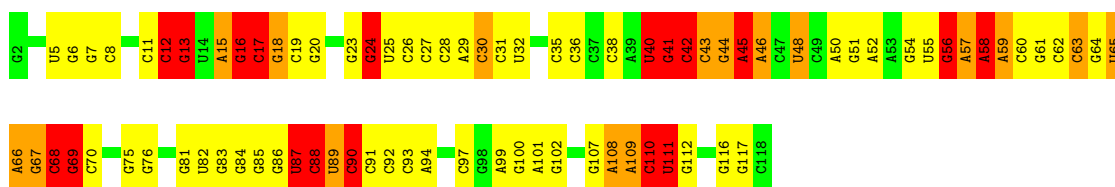


| | | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|------|
| G | A819 | U755 | G629 | U569 | A497 | U437 | G376 | G315 | G247 | G185 | A125 | A64 |
| G | A820 | A756 | G630 | G570 | G498 | G438 | G377 | C316 | G248 | G186 | A126 | U65 |
| G | A821 | G757 | A631 | U571 | U499 | A439 | G378 | G317 | C249 | G187 | A127 | G66 |
| G | G822 | G696 | A632 | A572 | A502 | C440 | G379 | C318 | C250 | G188 | C128 | U67 |
| U | C823 | A699 | A633 | A573 | A503 | U441 | G380 | G319 | A251 | G189 | C129 | G68 |
| C | U824 | G700 | C634 | A574 | A504 | G442 | G381 | A320 | A190 | A190 | C130 | G69 |
| A | A825 | G701 | C635 | A575 | A504 | A443 | A382 | U321 | A355 | A191 | A131 | G70 |
| U | U826 | U702 | G636 | U576 | A505 | C444 | A383 | A322 | A256 | A192 | G132 | A71 |
| C | U827 | U703 | A637 | G577 | G506 | C445 | A384 | C323 | G260 | U193 | U133 | U72 |
| C | U828 | G704 | G638 | A578 | A507 | G446 | C385 | A324 | G261 | G194 | G134 | A73 |
| C | A829 | A705 | U639 | G579 | A508 | A447 | G386 | A325 | A195 | A195 | U135 | A74 |
| G | G830 | A706 | C640 | U580 | C509 | U448 | U387 | G326 | A196 | G75 | U136 | G75 |
| A | U831 | G707 | G641 | C581 | G510 | A449 | G388 | G327 | U197 | G76 | U137 | C76 |
| C | U832 | G708 | U642 | A582 | U511 | G450 | G389 | U328 | C264 | C198 | U138 | G77 |
| U | A833 | U709 | A643 | G583 | G512 | U451 | U390 | G329 | A199 | U78 | U139 | U78 |
| U | G834 | G710 | A644 | C584 | A513 | A452 | A391 | A330 | U200 | C79 | C140 | C79 |
| A | C835 | G711 | C645 | A585 | A514 | A453 | U392 | C331 | G141 | G80 | G141 | G80 |
| C | C836 | G712 | U646 | A586 | A515 | A454 | G393 | A332 | U202 | G81 | A142 | G81 |
| C | C837 | G713 | G647 | C587 | C516 | C455 | U394 | A333 | U203 | U82 | C143 | U82 |
| C | C838 | G714 | G648 | U588 | C517 | C456 | G395 | C334 | A204 | A83 | A144 | A83 |
| U | U839 | A715 | G649 | U589 | G518 | A457 | G396 | C335 | G205 | A84 | A145 | A84 |
| U | C840 | A716 | C650 | A590 | U519 | A458 | U397 | C336 | U206 | A85 | C146 | A85 |
| A | G843 | A718 | U652 | U591 | G524 | U459 | C398 | C337 | C274 | G86 | A147 | G86 |
| C | A844 | A719 | U653 | U592 | A624 | A460 | U399 | C338 | A207 | C275 | C148 | G86 |
| A | A845 | U720 | A654 | U593 | A526 | A461 | G400 | G338 | U276 | U87 | U148 | U87 |
| C | U846 | A721 | A655 | U594 | A527 | A462 | A401 | U339 | G277 | G88 | A149 | G88 |
| C | U847 | G785 | U656 | C595 | C528 | A463 | A402 | A340 | A278 | A89 | U150 | A89 |
| C | C848 | G786 | G657 | U596 | A529 | G464 | U403 | C341 | A279 | U90 | C151 | U90 |
| U | A849 | G787 | U658 | U597 | A530 | U465 | U404 | A342 | U280 | A91 | C152 | A91 |
| U | U850 | A788 | G659 | U598 | G530 | A466 | U405 | A343 | U153 | U92 | U153 | U92 |
| C | U851 | G725 | G660 | U599 | G531 | A467 | G406 | A344 | G215 | G93 | G154 | G93 |
| C | C852 | G726 | C661 | G600 | A532 | A468 | G407 | A345 | A216 | A94 | A155 | A94 |
| C | U853 | A727 | A662 | C601 | A533 | A469 | G408 | A346 | A217 | A95 | A156 | A95 |
| C | C854 | G728 | G663 | U602 | G534 | A470 | G409 | A347 | C157 | C96 | C157 | C96 |
| C | A793 | G729 | G664 | A603 | A535 | A471 | G410 | A348 | A218 | G97 | G158 | G97 |
| C | A794 | A730 | A665 | G604 | G604 | A472 | G411 | U349 | A221 | U100 | A160 | U100 |
| C | C795 | A731 | U666 | G605 | G605 | A473 | A412 | G350 | A222 | A103 | C164 | A103 |
| C | C796 | C732 | A666 | G606 | U606 | C474 | C413 | C351 | U166 | A104 | U166 | A104 |
| C | G797 | G733 | U667 | U607 | U607 | C475 | C414 | A352 | U167 | C106 | A167 | C106 |
| C | G798 | A734 | A668 | A608 | U608 | A476 | A415 | C353 | C225 | G108 | G168 | G108 |
| C | G799 | A735 | G669 | A609 | A609 | A477 | U416 | A354 | A226 | C109 | U170 | C109 |
| C | A800 | C736 | A670 | C610 | A547 | A478 | C418 | U355 | A227 | G110 | U171 | G110 |
| C | G801 | C737 | C671 | C611 | G548 | A479 | U419 | U356 | C228 | A111 | A172 | A111 |
| C | A802 | G738 | C672 | C612 | G549 | A480 | U420 | C357 | C229 | A112 | U173 | A112 |
| C | U803 | A739 | C673 | A613 | C550 | G481 | C421 | U358 | G230 | G115 | G175 | G115 |
| C | A804 | C740 | G674 | A614 | G551 | A482 | A422 | G361 | A231 | C116 | A176 | C116 |
| C | G805 | U741 | A675 | U615 | U552 | A483 | A423 | A362 | A232 | G117 | G177 | G117 |
| C | C806 | A742 | A676 | A616 | G553 | A484 | A424 | A363 | A233 | A118 | G178 | A118 |
| C | U807 | A743 | A677 | G617 | U554 | C485 | G425 | G364 | U234 | A119 | C179 | A119 |
| C | G808 | U744 | C678 | G618 | G555 | C486 | C426 | U365 | U304 | U120 | G180 | U120 |
| C | U809 | G745 | C679 | G619 | U556 | C487 | U427 | C366 | C237 | G121 | A181 | G121 |
| C | U810 | U746 | G680 | U620 | U557 | G488 | A428 | G367 | U305 | G122 | A182 | G122 |
| C | U811 | U747 | G682 | A621 | G558 | A489 | A429 | A368 | G307 | C245 | G184 | C245 |
| C | C812 | G748 | U683 | G622 | U562 | A490 | A430 | U369 | G308 | C239 | C183 | C239 |
| C | U813 | U813 | G874 | C623 | A563 | C491 | U431 | G370 | G309 | C240 | C184 | G309 |
| C | G875 | A750 | A685 | C624 | C564 | A492 | A432 | A371 | A241 | A241 | C179 | A241 |
| C | C876 | A751 | U686 | G625 | C565 | G493 | A433 | G372 | A310 | G180 | G180 | G180 |
| C | A877 | A752 | C687 | U626 | U566 | G494 | U434 | U373 | U243 | G244 | A181 | A181 |
| C | U878 | C817 | U688 | A627 | G567 | G495 | C435 | A374 | A244 | G245 | A182 | A182 |
| G | G | C818 | A689 | G628 | U568 | C496 | C436 | G375 | C246 | G246 | C184 | C184 |

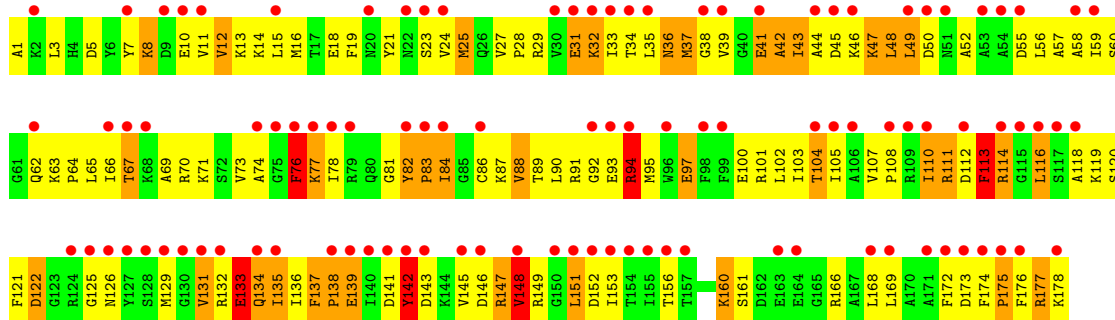
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|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| U1769 | C1706 | U1686 | C1575 | U1513 | C1451 | U1325 | A1265 | A1204 | A1142 | A1077 | C1013 | G949 |
| A1773 | G1707 | A1637 | U1576 | G1514 | C1452 | U1326 | G1266 | A1205 | A1143 | U1078 | A1014 | G950 |
| C1774 | C1708 | C1638 | C1577 | A1515 | A1453 | A1327 | U1267 | G1206 | A1144 | A1080 | G1016 | C951 |
| U1775 | U1709 | A1640 | A1578 | G1517 | C1454 | C1328 | A1268 | C1207 | C1145 | U1081 | U1019 | G952 |
| G1776 | G1710 | G1645 | A1579 | C1518 | G1455 | U1329 | A1269 | C1208 | C1146 | U1082 | A1020 | G953 |
| U1777 | A1711 | G1646 | A1580 | G1519 | C1456 | G1331 | G1270 | G1210 | A1147 | U1083 | G1002 | G956 |
| U1778 | U1712 | C1647 | C1582 | U1520 | U1457 | G1332 | A1272 | C1211 | G1149 | A1084 | G1021 | C957 |
| A1779 | A1713 | A1583 | A1583 | A1521 | U1458 | G1333 | C1273 | G1212 | A1085 | A1086 | A1022 | U958 |
| U1780 | U1648 | U1584 | U1584 | A1522 | A1459 | G1334 | A1274 | A1213 | C1152 | A1086 | G1023 | A959 |
| U1781 | G1715 | U1585 | C1585 | A1523 | U1460 | C1335 | A1275 | A1214 | C1153 | A1087 | U1024 | A960 |
| U1782 | U1716 | A1650 | A1586 | G1524 | C1461 | A1336 | A1276 | G1215 | G1154 | A1088 | G1025 | C961 |
| A1783 | A1717 | G1651 | G1587 | A1525 | C1462 | G1337 | G1277 | G1216 | A1155 | A1089 | G1026 | G962 |
| A1784 | G1718 | A1652 | G1588 | C1526 | U1462 | G1338 | C1278 | U1217 | A1156 | A1090 | A1027 | U963 |
| A1785 | G1653 | G1589 | U1589 | G1527 | G1465 | G1339 | G1279 | G1218 | A1157 | G1091 | A1028 | C964 |
| A1786 | A1654 | A1590 | U1590 | A1528 | U1466 | U1340 | G1280 | U1219 | C1158 | C1092 | A1029 | C965 |
| A1787 | A1655 | A1591 | A1591 | G1529 | U1467 | G1341 | U1281 | G1220 | A1159 | G1093 | G1031 | G966 |
| G1788 | C1592 | C1592 | C1592 | U1468 | U1467 | A1342 | U1282 | C1221 | G1160 | A1094 | A1032 | G969 |
| A1789 | A1593 | A1593 | A1593 | C1531 | A1469 | G1343 | G1283 | U1222 | C1161 | U1097 | U1033 | U970 |
| C1790 | U1594 | U1594 | U1594 | A1470 | A1470 | U1344 | A1284 | G1223 | A1162 | A1098 | G1034 | G971 |
| A1791 | C1533 | C1533 | C1533 | G1471 | U1405 | C1345 | A1285 | A1226 | G1163 | G1099 | U1035 | A972 |
| U1792 | A1596 | A1596 | A1596 | G1472 | U1406 | G1346 | A1286 | G1227 | C1164 | U1100 | G1036 | A973 |
| C1793 | A1597 | A1597 | A1597 | G1473 | G1407 | A1347 | A1287 | A1228 | A1165 | U1101 | G1037 | A974 |
| A1794 | A1598 | A1598 | A1598 | U1474 | U1408 | C1348 | G1288 | G1229 | G1166 | A1102 | G1038 | A975 |
| G1795 | G1537 | G1537 | U1409 | U1475 | U1409 | C1349 | G1289 | C1229 | G1167 | A1103 | A1039 | G976 |
| U1796 | G1538 | G1538 | G1410 | U1476 | G1410 | C1350 | C1290 | A1230 | G1168 | U1107 | C1043 | G977 |
| A1797 | U1539 | U1539 | U1411 | A1477 | U1411 | C1351 | C1291 | U1231 | A1169 | G1108 | U1051 | A980 |
| U1798 | G1540 | G1540 | U1412 | G1478 | U1412 | U1352 | G1292 | G1232 | C1170 | C1044 | G1052 | A981 |
| G1799 | C1541 | C1541 | A1413 | A1479 | A1413 | C1353 | C1293 | C1233 | G1171 | C1109 | A1045 | A982 |
| A1800 | C1604 | C1604 | A1414 | U1480 | A1414 | A1354 | U1294 | U1234 | A1172 | A1046 | A1050 | A983 |
| A1801 | C1605 | C1605 | U1415 | U1481 | U1415 | G1355 | C1295 | G1235 | U1173 | G1047 | U1059 | A984 |
| A1802 | G1605 | G1605 | G1416 | U1482 | G1416 | G1356 | G1296 | G1236 | U1174 | A1048 | A1054 | A985 |
| A1803 | C1607 | C1607 | G1417 | G1483 | U1417 | C1357 | C1297 | A1237 | A1175 | C1049 | G1055 | A986 |
| A1804 | A1608 | A1608 | U1418 | U1484 | U1418 | G1358 | C1298 | G1238 | U1176 | A1050 | U1060 | C985 |
| A1805 | A1609 | A1609 | A1419 | U1485 | U1419 | G1359 | G1299 | G1239 | A1177 | A1051 | G1056 | A988 |
| G1806 | A1610 | A1610 | A1420 | U1486 | U1420 | G1360 | G1300 | U1240 | C1178 | C1053 | A1054 | A990 |
| A1807 | G1611 | G1611 | G1421 | G1489 | G1421 | G1361 | A1301 | A1241 | G1179 | A1057 | G1057 | C991 |
| A1808 | C1612 | C1612 | U1422 | A1490 | U1422 | C1362 | A1302 | U1242 | U1180 | G1118 | U1065 | C992 |
| A1809 | G1613 | G1613 | G1425 | G1491 | G1425 | C1363 | G1303 | G1243 | U1181 | U1119 | U1066 | C993 |
| A1810 | A1614 | A1614 | A1426 | U1492 | A1426 | A1364 | A1304 | A1244 | U1182 | G1120 | G1068 | A996 |
| G1811 | C1615 | C1615 | C1493 | C1493 | C1493 | A1365 | C1305 | G1245 | U1183 | G1121 | G1069 | C997 |
| U1812 | A1616 | A1616 | A1494 | U1494 | A1494 | A1366 | A1306 | A1246 | U1184 | G1122 | A1070 | C998 |
| U1813 | C1617 | C1617 | U1495 | A1495 | U1495 | A1367 | A1307 | G1247 | G1185 | G1123 | G1071 | U999 |
| G1814 | A1618 | A1618 | U1496 | U1496 | U1496 | G1368 | A1308 | A1248 | G1186 | U1125 | U1067 | A1001 |
| A1815 | G1619 | G1619 | U1497 | U1497 | U1497 | G1369 | G1309 | U1249 | G1187 | G1126 | G1067 | A1002 |
| A1816 | U1559 | U1559 | A1431 | C1498 | A1431 | C1370 | G1310 | G1250 | A1188 | A1127 | A1067 | G1003 |
| C1816 | G1560 | G1560 | U1432 | C1499 | U1432 | G1371 | G1311 | C1251 | U1188 | G1128 | U1004 | U1004 |
| A1817 | U1562 | U1562 | A1433 | U1500 | A1433 | U1372 | U1312 | G1252 | A1189 | G1129 | A1069 | C1005 |
| U1818 | C1563 | C1563 | A1434 | G1501 | A1434 | A1373 | U1313 | A1253 | G1191 | A1129 | A1070 | C1006 |
| A1819 | G1564 | G1564 | G1435 | A1502 | G1435 | G1374 | C1314 | A1254 | G1192 | U1130 | G1072 | C1007 |
| U1820 | C1565 | C1565 | U1436 | A1503 | U1436 | U1375 | C1315 | U1255 | G1193 | G1131 | A1008 | A1009 |
| A1821 | A1566 | A1566 | C1437 | A1504 | G1436 | C1376 | G1316 | U1256 | A1194 | U1132 | A1073 | A1010 |
| C1822 | G1567 | G1567 | U1438 | U1505 | U1438 | A1377 | U1317 | G1257 | G1195 | A1133 | G1074 | A1011 |
| G1824 | U1506 | U1506 | A1439 | A1506 | A1439 | A1378 | U1318 | U1258 | G1196 | C1135 | C1075 | C1076 |
| U1825 | U1507 | U1507 | U1440 | A1507 | U1440 | A1379 | U1319 | G1259 | G1197 | G1136 | U1012 | U1012 |
| A1826 | A1508 | A1508 | G1441 | A1508 | G1441 | G1380 | C1320 | A1260 | U1198 | G1137 | A1073 | A1009 |
| U1827 | A1571 | A1571 | U1442 | A1509 | U1442 | G1381 | A1321 | G1261 | U1199 | G1138 | G1075 | A1010 |
| G1828 | G1511 | G1511 | C1447 | A1510 | C1447 | G1382 | A1322 | A1262 | C1200 | U1139 | C1076 | A1011 |
| A1829 | U1512 | U1512 | G1448 | C1512 | G1448 | A1384 | G1323 | A1264 | U1203 | C1140 | C1076 | U1012 |



• Molecule 58: 5S rRNA



• Molecule 59: 50S ribosomal protein L5



4 Data and refinement statistics

| Property | Value | Source |
|-------------------------------------------------------------------------|-------------------------------------------------------------|------------------|
| Space group | P 21 21 21 | Depositor |
| Cell constants a, b, c, α , β , γ | 211.46Å 434.08Å 621.23Å 90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 82.15 – 3.19 82.15 – 3.19 | Depositor EDS |
| % Data completeness (in resolution range) | 75.8 (82.15-3.19) 75.8 (82.15-3.19) | Depositor EDS |
| R_{merge} | 0.07 | Depositor |
| R_{sym} | (Not available) | Depositor |
| $\langle I/\sigma(I) \rangle$ ¹ | 1.61 (at 3.19Å) | Xtrriage |
| Refinement program | PHENIX, PHENIX (phenix.refine) | Depositor |
| R, R_{free} | 0.191 , 0.252 0.203 , 0.262 | Depositor DCC |
| R_{free} test set | 15290 reflections (2.01%) | wwPDB-VP |
| Wilson B-factor (Å ²) | 62.8 | Xtrriage |
| Anisotropy | 0.366 | Xtrriage |
| Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²) | 0.23 , 85.7 | EDS |
| L-test for twinning ² | $\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$ | Xtrriage |
| Estimated twinning fraction | No twinning to report. | Xtrriage |
| F_o, F_c correlation | 0.93 | EDS |
| Total number of atoms | 284499 | wwPDB-VP |
| Average B, all atoms (Å ²) | 113.0 | wwPDB-VP |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.14% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, MG, CLM

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|----------------|-------------|------------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 1 | AA | 0.50 | 6/36834 (0.0%) | 1.27 | 532/57462 (0.9%) |
| 2 | AB | 0.40 | 2/1736 (0.1%) | 0.57 | 4/2338 (0.2%) |
| 2 | CB | 0.37 | 2/1736 (0.1%) | 0.54 | 4/2338 (0.2%) |
| 3 | AC | 0.26 | 0/1652 | 0.50 | 0/2225 |
| 3 | CC | 0.23 | 0/1652 | 0.44 | 0/2225 |
| 4 | AD | 0.29 | 0/1665 | 0.52 | 0/2227 |
| 4 | CD | 0.34 | 0/1665 | 0.57 | 0/2227 |
| 5 | AE | 0.37 | 1/1119 (0.1%) | 0.59 | 0/1504 |
| 5 | CE | 0.31 | 0/1119 | 0.55 | 0/1504 |
| 6 | AF | 0.28 | 0/836 | 0.49 | 0/1128 |
| 6 | CF | 0.27 | 0/836 | 0.50 | 0/1128 |
| 7 | AG | 0.23 | 0/1196 | 0.46 | 0/1602 |
| 8 | AH | 0.29 | 0/989 | 0.54 | 0/1326 |
| 8 | CH | 0.26 | 0/989 | 0.49 | 0/1326 |
| 9 | AI | 0.23 | 0/1034 | 0.47 | 0/1375 |
| 9 | CI | 0.22 | 0/1034 | 0.42 | 0/1375 |
| 10 | AJ | 0.24 | 0/797 | 0.49 | 0/1077 |
| 10 | CJ | 0.22 | 0/797 | 0.47 | 0/1077 |
| 11 | AK | 0.27 | 0/893 | 0.52 | 0/1205 |
| 11 | CK | 0.25 | 0/893 | 0.51 | 0/1205 |
| 12 | AL | 0.36 | 0/969 | 0.67 | 0/1300 |
| 12 | CL | 0.40 | 1/969 (0.1%) | 0.56 | 0/1300 |
| 13 | AM | 0.22 | 0/893 | 0.47 | 0/1193 |
| 14 | AN | 0.25 | 0/785 | 0.49 | 0/1043 |
| 14 | CN | 0.21 | 0/780 | 0.39 | 0/1036 |
| 15 | AO | 0.27 | 0/722 | 0.47 | 0/964 |
| 15 | CO | 0.25 | 0/722 | 0.45 | 0/964 |
| 16 | AP | 0.28 | 0/659 | 0.49 | 0/884 |
| 17 | AQ | 0.35 | 0/658 | 0.56 | 0/881 |
| 17 | CQ | 0.27 | 0/658 | 0.51 | 0/881 |
| 18 | AR | 0.28 | 0/463 | 0.50 | 0/621 |
| 18 | CR | 0.28 | 0/463 | 0.46 | 0/621 |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|----------------|-------------|--------------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 19 | AS | 0.23 | 0/653 | 0.47 | 0/877 |
| 19 | CS | 0.21 | 0/653 | 0.42 | 0/877 |
| 20 | AT | 0.30 | 0/671 | 0.57 | 0/888 |
| 20 | CT | 0.25 | 0/671 | 0.50 | 0/888 |
| 21 | AU | 0.28 | 0/431 | 0.49 | 0/570 |
| 21 | CU | 0.31 | 0/431 | 0.60 | 0/570 |
| 22 | BA | 0.71 | 8/68626 (0.0%) | 1.50 | 1274/107056 (1.2%) |
| 23 | BB | 0.64 | 0/2828 | 1.43 | 38/4410 (0.9%) |
| 24 | BC | 0.41 | 0/2122 | 0.69 | 1/2852 (0.0%) |
| 24 | DC | 0.29 | 0/2122 | 0.53 | 0/2852 |
| 25 | BD | 0.48 | 0/1586 | 0.76 | 2/2134 (0.1%) |
| 25 | DD | 0.28 | 0/1586 | 0.57 | 0/2134 |
| 26 | BE | 0.40 | 0/1571 | 0.66 | 1/2113 (0.0%) |
| 26 | DE | 0.25 | 0/1571 | 0.47 | 0/2113 |
| 27 | BF | 0.31 | 0/1435 | 0.54 | 0/1926 |
| 28 | BG | 0.33 | 0/1343 | 0.60 | 0/1816 |
| 28 | DG | 0.22 | 0/1343 | 0.46 | 0/1816 |
| 29 | BH | 0.30 | 0/1122 | 0.50 | 0/1515 |
| 29 | DH | 0.34 | 1/1122 (0.1%) | 0.50 | 0/1515 |
| 30 | BI | 0.23 | 0/1046 | 0.47 | 0/1410 |
| 30 | DI | 0.21 | 0/1046 | 0.43 | 0/1410 |
| 31 | BJ | 0.51 | 0/1152 | 0.75 | 0/1551 |
| 31 | DJ | 0.26 | 0/1152 | 0.57 | 1/1551 (0.1%) |
| 32 | BK | 0.46 | 0/948 | 0.78 | 0/1268 |
| 32 | DK | 0.29 | 0/948 | 0.55 | 0/1268 |
| 33 | BL | 0.42 | 0/1054 | 0.75 | 1/1403 (0.1%) |
| 33 | DL | 0.24 | 0/1054 | 0.51 | 0/1403 |
| 34 | BM | 0.44 | 0/1093 | 0.67 | 0/1460 |
| 34 | DM | 0.27 | 0/1093 | 0.48 | 0/1460 |
| 35 | BN | 0.45 | 0/974 | 0.70 | 1/1301 (0.1%) |
| 35 | DN | 0.27 | 0/974 | 0.51 | 0/1301 |
| 36 | BO | 0.38 | 0/902 | 0.60 | 0/1209 |
| 36 | DO | 0.22 | 0/902 | 0.42 | 0/1209 |
| 37 | BP | 0.43 | 0/929 | 0.71 | 0/1242 |
| 37 | DP | 0.28 | 0/929 | 0.49 | 0/1242 |
| 38 | BQ | 0.52 | 0/960 | 0.76 | 0/1278 |
| 38 | DQ | 0.26 | 0/960 | 0.44 | 0/1278 |
| 39 | BR | 0.54 | 0/829 | 0.77 | 1/1107 (0.1%) |
| 39 | DR | 0.25 | 0/829 | 0.48 | 0/1107 |
| 40 | BS | 0.50 | 0/864 | 0.73 | 0/1156 |
| 40 | DS | 0.27 | 0/864 | 0.51 | 0/1156 |
| 41 | BT | 0.43 | 0/745 | 0.71 | 0/994 |
| 41 | DT | 0.22 | 0/745 | 0.48 | 0/994 |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|------------------|-------------|--------------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 42 | BU | 0.39 | 0/788 | 0.70 | 0/1051 |
| 42 | DU | 0.23 | 0/788 | 0.46 | 0/1051 |
| 43 | BV | 0.39 | 0/766 | 0.61 | 0/1025 |
| 43 | DV | 0.23 | 0/766 | 0.43 | 0/1025 |
| 44 | BW | 0.53 | 0/603 | 0.82 | 0/797 |
| 44 | DW | 0.25 | 0/603 | 0.49 | 0/797 |
| 45 | BX | 0.37 | 0/635 | 0.66 | 0/848 |
| 45 | DX | 0.27 | 0/635 | 0.56 | 0/848 |
| 46 | BY | 0.33 | 0/510 | 0.62 | 0/677 |
| 46 | DY | 0.21 | 0/510 | 0.43 | 0/677 |
| 47 | BZ | 0.45 | 0/453 | 0.80 | 0/605 |
| 47 | DZ | 0.25 | 0/453 | 0.50 | 0/605 |
| 48 | B0 | 0.43 | 0/450 | 0.71 | 0/599 |
| 48 | D0 | 0.26 | 0/450 | 0.50 | 0/599 |
| 49 | B1 | 0.31 | 0/417 | 0.57 | 0/554 |
| 49 | D1 | 0.24 | 0/417 | 0.45 | 0/554 |
| 50 | B2 | 0.41 | 0/380 | 0.71 | 0/498 |
| 50 | D2 | 0.26 | 0/380 | 0.51 | 0/498 |
| 51 | B3 | 0.43 | 0/513 | 0.66 | 0/676 |
| 51 | D3 | 0.27 | 0/513 | 0.52 | 0/676 |
| 52 | B4 | 0.39 | 0/303 | 0.69 | 0/397 |
| 52 | D4 | 0.43 | 0/303 | 0.54 | 0/397 |
| 53 | CA | 0.47 | 6/36762 (0.0%) | 1.24 | 525/57350 (0.9%) |
| 54 | CG | 0.22 | 0/1188 | 0.44 | 0/1591 |
| 55 | CM | 0.19 | 0/885 | 0.41 | 0/1181 |
| 56 | CP | 0.28 | 0/649 | 0.52 | 0/870 |
| 57 | DA | 0.46 | 0/68314 | 1.28 | 1097/106569 (1.0%) |
| 58 | DB | 0.51 | 1/2803 (0.0%) | 1.21 | 38/4371 (0.9%) |
| 59 | DF | 0.23 | 0/1444 | 0.48 | 0/1937 |
| All | All | 0.50 | 28/306773 (0.0%) | 1.19 | 3520/458565 (0.8%) |

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 2 | CB | 0 | 1 |
| 25 | BD | 0 | 1 |
| 35 | BN | 0 | 1 |
| All | All | 0 | 3 |

All (28) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|--------|-------------|----------|
| 58 | DB | 69 | G | O3'-P | -16.79 | 1.41 | 1.61 |
| 1 | AA | 1047 | G | O3'-P | -14.49 | 1.43 | 1.61 |
| 2 | AB | 107 | ARG | C-N | 11.33 | 1.60 | 1.34 |
| 53 | CA | 1396 | A | O3'-P | -11.26 | 1.47 | 1.61 |
| 2 | CB | 146 | SER | C-N | 10.14 | 1.57 | 1.34 |
| 1 | AA | 1390 | U | O3'-P | 9.48 | 1.72 | 1.61 |
| 53 | CA | 562 | U | O3'-P | -9.38 | 1.49 | 1.61 |
| 53 | CA | 26 | A | O3'-P | -8.83 | 1.50 | 1.61 |
| 53 | CA | 8 | A | O3'-P | -8.69 | 1.50 | 1.61 |
| 12 | CL | 21 | PRO | C-N | 8.56 | 1.53 | 1.34 |
| 22 | BA | 901 | C | O3'-P | -7.63 | 1.51 | 1.61 |
| 1 | AA | 557 | G | O3'-P | -7.45 | 1.52 | 1.61 |
| 53 | CA | 1047 | G | O3'-P | 7.32 | 1.70 | 1.61 |
| 29 | DH | 48 | GLU | C-N | 7.26 | 1.50 | 1.34 |
| 22 | BA | 1905 | C | O3'-P | -7.20 | 1.52 | 1.61 |
| 2 | AB | 146 | SER | C-N | 6.53 | 1.49 | 1.34 |
| 2 | CB | 107 | ARG | C-N | 6.44 | 1.48 | 1.34 |
| 22 | BA | 1142 | A | N9-C4 | -5.88 | 1.34 | 1.37 |
| 1 | AA | 566 | G | O3'-P | 5.81 | 1.68 | 1.61 |
| 1 | AA | 925 | G | O3'-P | 5.78 | 1.68 | 1.61 |
| 5 | AE | 149 | PRO | C-N | -5.67 | 1.21 | 1.34 |
| 22 | BA | 2092 | U | O3'-P | -5.63 | 1.54 | 1.61 |
| 1 | AA | 8 | A | O3'-P | -5.48 | 1.54 | 1.61 |
| 22 | BA | 572 | A | C6-N1 | -5.35 | 1.31 | 1.35 |
| 22 | BA | 1654 | A | N3-C4 | -5.34 | 1.31 | 1.34 |
| 22 | BA | 528 | A | N9-C4 | -5.15 | 1.34 | 1.37 |
| 53 | CA | 1495 | U | O3'-P | -5.13 | 1.54 | 1.61 |
| 22 | BA | 2448 | A | N9-C4 | -5.07 | 1.34 | 1.37 |

All (3520) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 53 | CA | 1396 | A | P-O3'-C3' | 16.36 | 139.33 | 119.70 |
| 57 | DA | 2586 | U | N1-C1'-C2' | -15.75 | 93.52 | 114.00 |
| 22 | BA | 2283 | C | N1-C1'-C2' | -15.29 | 94.12 | 114.00 |
| 57 | DA | 1997 | C | N1-C1'-C2' | -14.86 | 94.69 | 114.00 |
| 23 | BB | 90 | C | N1-C1'-C2' | -14.66 | 94.94 | 114.00 |
| 22 | BA | 1330 | C | N1-C1'-C2' | -14.51 | 95.13 | 114.00 |
| 57 | DA | 740 | C | N1-C1'-C2' | -14.50 | 95.15 | 114.00 |
| 22 | BA | 995 | C | O4'-C1'-N1 | -14.43 | 96.66 | 108.20 |
| 22 | BA | 627 | A | P-O3'-C3' | 14.34 | 136.91 | 119.70 |
| 22 | BA | 1013 | C | N1-C1'-C2' | -14.22 | 95.51 | 114.00 |
| 57 | DA | 304 | U | N1-C1'-C2' | -14.18 | 95.57 | 114.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 1 | AA | 52 | C | N1-C1'-C2' | -14.16 | 95.59 | 114.00 |
| 22 | BA | 531 | C | P-O3'-C3' | 14.14 | 136.67 | 119.70 |
| 22 | BA | 1603 | A | P-O3'-C3' | -14.04 | 102.85 | 119.70 |
| 22 | BA | 2425 | A | P-O3'-C3' | 14.00 | 136.50 | 119.70 |
| 53 | CA | 66 | A | P-O3'-C3' | -13.97 | 102.93 | 119.70 |
| 53 | CA | 328 | C | P-O3'-C3' | 13.96 | 136.45 | 119.70 |
| 22 | BA | 2447 | G | P-O3'-C3' | 13.93 | 136.41 | 119.70 |
| 22 | BA | 1647 | U | O4'-C1'-N1 | 13.76 | 119.21 | 108.20 |
| 53 | CA | 132 | C | N1-C1'-C2' | -13.73 | 96.16 | 114.00 |
| 1 | AA | 1202 | U | N1-C1'-C2' | -13.63 | 96.28 | 114.00 |
| 22 | BA | 2036 | C | N1-C1'-C2' | -13.59 | 96.33 | 114.00 |
| 57 | DA | 2283 | C | N1-C1'-C2' | -13.56 | 96.38 | 114.00 |
| 22 | BA | 728 | G | P-O3'-C3' | 13.53 | 135.94 | 119.70 |
| 22 | BA | 302 | C | N1-C1'-C2' | -13.46 | 96.50 | 114.00 |
| 53 | CA | 891 | U | N1-C1'-C2' | -13.43 | 96.55 | 114.00 |
| 22 | BA | 704 | G | P-O3'-C3' | 13.38 | 135.76 | 119.70 |
| 22 | BA | 249 | C | P-O3'-C3' | 13.38 | 135.75 | 119.70 |
| 22 | BA | 1967 | C | N1-C1'-C2' | -13.31 | 96.69 | 114.00 |
| 53 | CA | 245 | U | N1-C1'-C2' | -13.28 | 96.74 | 114.00 |
| 57 | DA | 2504 | U | N1-C1'-C2' | -13.26 | 96.76 | 114.00 |
| 22 | BA | 1012 | U | O4'-C1'-N1 | 13.22 | 118.77 | 108.20 |
| 22 | BA | 1247 | A | P-O3'-C3' | 13.21 | 135.56 | 119.70 |
| 22 | BA | 2385 | C | N1-C1'-C2' | -13.09 | 96.98 | 114.00 |
| 22 | BA | 1461 | C | N1-C1'-C2' | -13.04 | 97.05 | 114.00 |
| 58 | DB | 69 | G | O3'-P-O5' | -13.04 | 79.23 | 104.00 |
| 57 | DA | 2137 | U | N1-C1'-C2' | -13.03 | 97.06 | 114.00 |
| 57 | DA | 1023 | U | N1-C1'-C2' | -12.97 | 97.14 | 114.00 |
| 22 | BA | 961 | C | O4'-C1'-N1 | 12.95 | 118.56 | 108.20 |
| 57 | DA | 87 | U | N1-C1'-C2' | -12.90 | 97.23 | 114.00 |
| 57 | DA | 741 | U | N1-C1'-C2' | -12.89 | 97.24 | 114.00 |
| 53 | CA | 915 | A | P-O3'-C3' | -12.76 | 104.39 | 119.70 |
| 57 | DA | 2214 | C | N1-C1'-C2' | -12.73 | 97.44 | 114.00 |
| 57 | DA | 961 | C | P-O3'-C3' | 12.63 | 134.86 | 119.70 |
| 22 | BA | 249 | C | N1-C1'-C2' | 12.62 | 130.41 | 114.00 |
| 22 | BA | 2424 | C | N1-C1'-C2' | -12.60 | 97.62 | 114.00 |
| 1 | AA | 972 | C | N1-C1'-C2' | -12.58 | 97.65 | 114.00 |
| 53 | CA | 352 | C | N1-C1'-C2' | -12.55 | 97.69 | 114.00 |
| 22 | BA | 1997 | C | N1-C1'-C2' | -12.53 | 97.71 | 114.00 |
| 1 | AA | 1283 | U | N1-C1'-C2' | -12.51 | 97.74 | 114.00 |
| 57 | DA | 1512 | C | N1-C1'-C2' | -12.39 | 97.89 | 114.00 |
| 57 | DA | 2339 | C | N1-C1'-C2' | -12.39 | 97.89 | 114.00 |
| 22 | BA | 865 | C | P-O3'-C3' | 12.38 | 134.56 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 22 | BA | 805 | G | P-O3'-C3' | 12.38 | 134.56 | 119.70 |
| 22 | BA | 390 | U | P-O3'-C3' | 12.35 | 134.52 | 119.70 |
| 22 | BA | 2727 | A | P-O3'-C3' | -12.34 | 104.89 | 119.70 |
| 22 | BA | 2023 | C | N1-C1'-C2' | -12.30 | 98.01 | 114.00 |
| 57 | DA | 206 | U | N1-C1'-C2' | -12.27 | 98.05 | 114.00 |
| 58 | DB | 17 | C | O4'-C1'-N1 | 12.27 | 118.02 | 108.20 |
| 1 | AA | 1162 | C | N1-C1'-C2' | -12.26 | 98.06 | 114.00 |
| 22 | BA | 2689 | U | O4'-C1'-N1 | 12.24 | 117.99 | 108.20 |
| 22 | BA | 2214 | C | N1-C1'-C2' | -12.20 | 98.14 | 114.00 |
| 57 | DA | 235 | U | N1-C1'-C2' | -12.18 | 98.17 | 114.00 |
| 57 | DA | 1967 | C | N1-C1'-C2' | -12.15 | 98.20 | 114.00 |
| 53 | CA | 14 | U | N1-C1'-C2' | -12.15 | 98.21 | 114.00 |
| 57 | DA | 1968 | G | P-O3'-C3' | -12.14 | 105.13 | 119.70 |
| 22 | BA | 2712 | C | P-O3'-C3' | 12.13 | 134.25 | 119.70 |
| 22 | BA | 858 | G | P-O3'-C3' | 12.12 | 134.24 | 119.70 |
| 57 | DA | 2646 | C | N1-C1'-C2' | -12.12 | 98.25 | 114.00 |
| 22 | BA | 2319 | G | P-O3'-C3' | 12.10 | 134.22 | 119.70 |
| 22 | BA | 2629 | U | P-O3'-C3' | 12.09 | 134.21 | 119.70 |
| 57 | DA | 1267 | U | N1-C1'-C2' | -12.09 | 98.28 | 114.00 |
| 57 | DA | 1956 | U | N1-C1'-C2' | -12.09 | 98.28 | 114.00 |
| 57 | DA | 2615 | U | N1-C1'-C2' | -12.08 | 98.29 | 114.00 |
| 58 | DB | 110 | C | N1-C1'-C2' | -12.08 | 98.30 | 114.00 |
| 53 | CA | 330 | C | N1-C1'-C2' | -12.07 | 98.31 | 114.00 |
| 1 | AA | 512 | U | N1-C1'-C2' | -12.03 | 98.36 | 114.00 |
| 22 | BA | 531 | C | O4'-C1'-N1 | -12.02 | 98.59 | 108.20 |
| 22 | BA | 2137 | U | N1-C1'-C2' | -11.97 | 98.44 | 114.00 |
| 22 | BA | 2424 | C | P-O3'-C3' | -11.97 | 105.34 | 119.70 |
| 1 | AA | 1228 | C | N1-C1'-C2' | -11.93 | 98.49 | 114.00 |
| 57 | DA | 859 | G | P-O3'-C3' | 11.93 | 134.02 | 119.70 |
| 22 | BA | 2848 | G | P-O3'-C3' | 11.92 | 134.00 | 119.70 |
| 22 | BA | 2068 | U | N1-C1'-C2' | -11.91 | 98.51 | 114.00 |
| 22 | BA | 2321 | U | N1-C1'-C2' | -11.90 | 98.53 | 114.00 |
| 22 | BA | 2645 | G | P-O3'-C3' | 11.90 | 133.98 | 119.70 |
| 22 | BA | 49 | A | P-O3'-C3' | 11.89 | 133.97 | 119.70 |
| 22 | BA | 1941 | C | N1-C1'-C2' | -11.86 | 98.58 | 114.00 |
| 22 | BA | 2092 | U | OP2-P-O3' | 11.85 | 131.28 | 105.20 |
| 57 | DA | 533 | G | P-O3'-C3' | -11.85 | 105.48 | 119.70 |
| 22 | BA | 1210 | G | P-O3'-C3' | 11.84 | 133.90 | 119.70 |
| 57 | DA | 2225 | A | P-O3'-C3' | 11.83 | 133.90 | 119.70 |
| 22 | BA | 373 | U | N1-C1'-C2' | -11.83 | 98.62 | 114.00 |
| 22 | BA | 1993 | U | N1-C1'-C2' | -11.81 | 98.65 | 114.00 |
| 22 | BA | 2286 | G | P-O3'-C3' | 11.80 | 133.86 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 53 | CA | 92 | U | N1-C1'-C2' | -11.80 | 98.66 | 114.00 |
| 22 | BA | 1023 | U | N1-C1'-C2' | -11.76 | 98.71 | 114.00 |
| 22 | BA | 2573 | C | P-O3'-C3' | -11.75 | 105.60 | 119.70 |
| 22 | BA | 2035 | G | P-O3'-C3' | 11.68 | 133.72 | 119.70 |
| 58 | DB | 68 | C | N1-C1'-C2' | -11.65 | 98.86 | 114.00 |
| 22 | BA | 588 | U | N1-C1'-C2' | -11.64 | 98.86 | 114.00 |
| 1 | AA | 1399 | C | P-O3'-C3' | 11.62 | 133.64 | 119.70 |
| 53 | CA | 65 | A | P-O3'-C3' | 11.60 | 133.62 | 119.70 |
| 1 | AA | 1047 | G | P-O3'-C3' | -11.54 | 105.85 | 119.70 |
| 57 | DA | 1782 | U | P-O3'-C3' | -11.54 | 105.85 | 119.70 |
| 58 | DB | 69 | G | P-O3'-C3' | 11.54 | 133.55 | 119.70 |
| 22 | BA | 1963 | U | N1-C1'-C2' | -11.52 | 99.03 | 114.00 |
| 53 | CA | 1086 | U | N1-C1'-C2' | -11.52 | 99.03 | 114.00 |
| 22 | BA | 1653 | G | P-O3'-C3' | 11.51 | 133.51 | 119.70 |
| 23 | BB | 40 | U | P-O3'-C3' | 11.51 | 133.51 | 119.70 |
| 22 | BA | 196 | A | P-O3'-C3' | 11.49 | 133.49 | 119.70 |
| 22 | BA | 2752 | C | N1-C1'-C2' | -11.48 | 99.08 | 114.00 |
| 22 | BA | 667 | U | P-O3'-C3' | 11.46 | 133.46 | 119.70 |
| 1 | AA | 330 | C | N1-C1'-C2' | -11.45 | 99.11 | 114.00 |
| 22 | BA | 1324 | G | P-O3'-C3' | 11.44 | 133.42 | 119.70 |
| 22 | BA | 2347 | C | N1-C1'-C2' | -11.43 | 99.15 | 114.00 |
| 1 | AA | 422 | C | P-O3'-C3' | 11.41 | 133.39 | 119.70 |
| 58 | DB | 107 | G | O3'-P-O5' | -11.37 | 82.40 | 104.00 |
| 22 | BA | 200 | U | N1-C1'-C2' | -11.37 | 99.23 | 114.00 |
| 1 | AA | 352 | C | N1-C1'-C2' | -11.34 | 99.25 | 114.00 |
| 57 | DA | 1013 | C | N1-C1'-C2' | -11.34 | 99.25 | 114.00 |
| 57 | DA | 1158 | C | N1-C1'-C2' | -11.34 | 99.25 | 114.00 |
| 1 | AA | 1303 | C | N1-C1'-C2' | -11.34 | 99.26 | 114.00 |
| 1 | AA | 1141 | C | N1-C1'-C2' | -11.33 | 99.27 | 114.00 |
| 1 | AA | 267 | C | N1-C1'-C2' | -11.33 | 99.27 | 114.00 |
| 22 | BA | 2566 | A | P-O3'-C3' | 11.32 | 133.28 | 119.70 |
| 57 | DA | 1536 | C | P-O3'-C3' | 11.32 | 133.28 | 119.70 |
| 53 | CA | 1502 | A | P-O3'-C3' | 11.31 | 133.27 | 119.70 |
| 53 | CA | 643 | C | N1-C1'-C2' | -11.29 | 99.32 | 114.00 |
| 22 | BA | 2611 | C | N1-C1'-C2' | -11.29 | 99.32 | 114.00 |
| 57 | DA | 2037 | A | P-O3'-C3' | -11.29 | 106.15 | 119.70 |
| 53 | CA | 1230 | C | N1-C1'-C2' | -11.28 | 99.34 | 114.00 |
| 22 | BA | 2893 | A | P-O3'-C3' | 11.25 | 133.20 | 119.70 |
| 1 | AA | 913 | A | P-O3'-C3' | 11.24 | 133.19 | 119.70 |
| 22 | BA | 783 | A | P-O3'-C3' | -11.24 | 106.21 | 119.70 |
| 57 | DA | 1667 | G | P-O3'-C3' | 11.24 | 133.18 | 119.70 |
| 57 | DA | 726 | G | P-O3'-C3' | 11.21 | 133.16 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 57 | DA | 336 | C | N1-C1'-C2' | -11.21 | 99.42 | 114.00 |
| 22 | BA | 1326 | U | N1-C1'-C2' | -11.21 | 99.43 | 114.00 |
| 57 | DA | 2645 | G | P-O3'-C3' | 11.19 | 133.12 | 119.70 |
| 57 | DA | 1816 | C | N1-C1'-C2' | -11.18 | 99.46 | 114.00 |
| 22 | BA | 671 | C | N1-C1'-C2' | -11.18 | 99.47 | 114.00 |
| 22 | BA | 1265 | A | P-O3'-C3' | 11.18 | 133.11 | 119.70 |
| 22 | BA | 1648 | U | N1-C1'-C2' | -11.16 | 99.49 | 114.00 |
| 22 | BA | 1008 | A | P-O3'-C3' | 11.15 | 133.08 | 119.70 |
| 53 | CA | 512 | U | N1-C1'-C2' | -11.14 | 99.52 | 114.00 |
| 22 | BA | 2284 | A | P-O3'-C3' | -11.13 | 106.34 | 119.70 |
| 57 | DA | 2137 | U | P-O3'-C3' | -11.12 | 106.36 | 119.70 |
| 22 | BA | 2051 | A | P-O3'-C3' | 11.12 | 133.04 | 119.70 |
| 22 | BA | 957 | C | P-O3'-C3' | 11.11 | 133.04 | 119.70 |
| 57 | DA | 946 | C | N1-C1'-C2' | -11.10 | 99.57 | 114.00 |
| 1 | AA | 431 | A | P-O3'-C3' | -11.10 | 106.38 | 119.70 |
| 57 | DA | 991 | C | N1-C1'-C2' | -11.10 | 99.57 | 114.00 |
| 22 | BA | 2776 | A | P-O3'-C3' | 11.07 | 132.98 | 119.70 |
| 1 | AA | 119 | A | P-O3'-C3' | 11.06 | 132.97 | 119.70 |
| 53 | CA | 992 | U | P-O3'-C3' | 11.05 | 132.97 | 119.70 |
| 1 | AA | 641 | U | P-O3'-C3' | 11.04 | 132.95 | 119.70 |
| 22 | BA | 2585 | U | O4'-C1'-N1 | 11.03 | 117.03 | 108.20 |
| 22 | BA | 2613 | U | O4'-C1'-N1 | 11.00 | 117.00 | 108.20 |
| 1 | AA | 1345 | U | O4'-C1'-N1 | 10.97 | 116.97 | 108.20 |
| 22 | BA | 1556 | C | P-O3'-C3' | -10.95 | 106.56 | 119.70 |
| 57 | DA | 2348 | U | N1-C1'-C2' | -10.95 | 99.77 | 114.00 |
| 57 | DA | 765 | C | N1-C1'-C2' | -10.94 | 99.78 | 114.00 |
| 22 | BA | 229 | C | N1-C1'-C2' | -10.93 | 99.79 | 114.00 |
| 57 | DA | 2896 | C | N1-C1'-C2' | -10.93 | 99.79 | 114.00 |
| 53 | CA | 1148 | U | N1-C1'-C2' | -10.93 | 99.79 | 114.00 |
| 22 | BA | 812 | C | N1-C1'-C2' | -10.93 | 99.80 | 114.00 |
| 22 | BA | 227 | A | P-O3'-C3' | 10.92 | 132.80 | 119.70 |
| 22 | BA | 506 | G | P-O3'-C3' | 10.91 | 132.79 | 119.70 |
| 1 | AA | 891 | U | N1-C1'-C2' | -10.90 | 99.82 | 114.00 |
| 1 | AA | 1348 | U | N1-C1'-C2' | -10.89 | 99.84 | 114.00 |
| 22 | BA | 1144 | A | P-O3'-C3' | -10.87 | 106.66 | 119.70 |
| 57 | DA | 1417 | C | N1-C1'-C2' | -10.85 | 99.90 | 114.00 |
| 1 | AA | 547 | A | P-O3'-C3' | 10.83 | 132.69 | 119.70 |
| 22 | BA | 2835 | A | P-O3'-C3' | 10.82 | 132.68 | 119.70 |
| 22 | BA | 685 | A | P-O3'-C3' | 10.82 | 132.68 | 119.70 |
| 53 | CA | 1381 | U | N1-C1'-C2' | -10.82 | 99.94 | 114.00 |
| 57 | DA | 335 | C | N1-C1'-C2' | -10.80 | 99.95 | 114.00 |
| 22 | BA | 1498 | C | N1-C1'-C2' | -10.80 | 99.96 | 114.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 22 | BA | 1815 | A | P-O3'-C3' | 10.80 | 132.66 | 119.70 |
| 22 | BA | 2646 | C | N1-C1'-C2' | -10.80 | 99.96 | 114.00 |
| 22 | BA | 2068 | U | P-O3'-C3' | -10.78 | 106.76 | 119.70 |
| 22 | BA | 784 | G | P-O3'-C3' | 10.78 | 132.63 | 119.70 |
| 22 | BA | 915 | C | N1-C1'-C2' | -10.77 | 99.99 | 114.00 |
| 22 | BA | 2321 | U | P-O3'-C3' | -10.77 | 106.78 | 119.70 |
| 22 | BA | 1971 | U | N1-C1'-C2' | -10.77 | 100.00 | 114.00 |
| 22 | BA | 404 | A | P-O3'-C3' | 10.75 | 132.60 | 119.70 |
| 53 | CA | 1401 | G | P-O3'-C3' | -10.74 | 106.81 | 119.70 |
| 53 | CA | 1283 | U | N1-C1'-C2' | -10.73 | 100.06 | 114.00 |
| 53 | CA | 1298 | U | P-O3'-C3' | 10.70 | 132.54 | 119.70 |
| 53 | CA | 248 | C | N1-C1'-C2' | -10.70 | 100.09 | 114.00 |
| 22 | BA | 2498 | C | N1-C1'-C2' | -10.68 | 100.11 | 114.00 |
| 57 | DA | 2880 | C | N1-C1'-C2' | -10.67 | 100.13 | 114.00 |
| 53 | CA | 821 | G | P-O3'-C3' | -10.66 | 106.91 | 119.70 |
| 57 | DA | 2881 | U | N1-C1'-C2' | -10.62 | 100.20 | 114.00 |
| 22 | BA | 1859 | U | N1-C1'-C2' | -10.61 | 100.20 | 114.00 |
| 53 | CA | 513 | C | N1-C1'-C2' | -10.60 | 100.22 | 114.00 |
| 22 | BA | 2808 | G | P-O3'-C3' | 10.58 | 132.40 | 119.70 |
| 57 | DA | 1776 | G | P-O3'-C3' | -10.58 | 107.00 | 119.70 |
| 57 | DA | 1982 | U | N1-C1'-C2' | -10.57 | 100.25 | 114.00 |
| 22 | BA | 1236 | G | P-O3'-C3' | 10.55 | 132.36 | 119.70 |
| 22 | BA | 669 | G | P-O3'-C3' | 10.53 | 132.34 | 119.70 |
| 1 | AA | 961 | U | N1-C1'-C2' | -10.53 | 100.31 | 114.00 |
| 53 | CA | 116 | A | P-O3'-C3' | -10.52 | 107.08 | 119.70 |
| 57 | DA | 1565 | C | P-O3'-C3' | 10.52 | 132.32 | 119.70 |
| 57 | DA | 2458 | G | P-O3'-C3' | 10.52 | 132.32 | 119.70 |
| 53 | CA | 1068 | G | P-O3'-C3' | -10.49 | 107.11 | 119.70 |
| 57 | DA | 1119 | U | O4'-C1'-N1 | 10.49 | 116.59 | 108.20 |
| 57 | DA | 915 | C | N1-C1'-C2' | -10.48 | 100.37 | 114.00 |
| 1 | AA | 132 | C | N1-C1'-C2' | -10.48 | 100.38 | 114.00 |
| 57 | DA | 2498 | C | N1-C1'-C2' | -10.44 | 100.42 | 114.00 |
| 58 | DB | 17 | C | N1-C1'-C2' | -10.44 | 100.43 | 114.00 |
| 57 | DA | 2429 | G | P-O3'-C3' | -10.43 | 107.19 | 119.70 |
| 53 | CA | 520 | A | P-O3'-C3' | -10.42 | 107.20 | 119.70 |
| 22 | BA | 571 | U | O4'-C1'-N1 | 10.42 | 116.53 | 108.20 |
| 57 | DA | 2249 | U | P-O3'-C3' | 10.42 | 132.20 | 119.70 |
| 22 | BA | 2572 | A | P-O3'-C3' | 10.41 | 132.19 | 119.70 |
| 53 | CA | 344 | A | P-O3'-C3' | 10.40 | 132.18 | 119.70 |
| 22 | BA | 164 | C | N1-C1'-C2' | -10.40 | 100.48 | 114.00 |
| 57 | DA | 1064 | C | N1-C1'-C2' | -10.40 | 100.48 | 114.00 |
| 58 | DB | 90 | C | N1-C1'-C2' | -10.39 | 100.49 | 114.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 57 | DA | 484 | C | N1-C1'-C2' | -10.39 | 100.50 | 114.00 |
| 22 | BA | 1332 | G | P-O3'-C3' | 10.38 | 132.16 | 119.70 |
| 53 | CA | 1367 | C | N1-C1'-C2' | -10.36 | 100.53 | 114.00 |
| 53 | CA | 73 | C | N1-C1'-C2' | -10.36 | 100.54 | 114.00 |
| 57 | DA | 1145 | C | N1-C1'-C2' | -10.36 | 100.54 | 114.00 |
| 57 | DA | 1611 | C | N1-C1'-C2' | -10.34 | 100.55 | 114.00 |
| 57 | DA | 61 | C | N1-C1'-C2' | -10.32 | 100.59 | 114.00 |
| 53 | CA | 1147 | C | N1-C1'-C2' | -10.30 | 100.61 | 114.00 |
| 57 | DA | 243 | U | N1-C1'-C2' | -10.30 | 100.61 | 114.00 |
| 57 | DA | 1613 | G | P-O3'-C3' | -10.29 | 107.35 | 119.70 |
| 22 | BA | 995 | C | P-O3'-C3' | 10.29 | 132.05 | 119.70 |
| 57 | DA | 92 | U | N1-C1'-C2' | -10.29 | 100.62 | 114.00 |
| 57 | DA | 375 | G | P-O3'-C3' | -10.29 | 107.36 | 119.70 |
| 57 | DA | 2492 | U | N1-C1'-C2' | -10.29 | 100.63 | 114.00 |
| 22 | BA | 301 | G | P-O3'-C3' | 10.28 | 132.04 | 119.70 |
| 22 | BA | 1963 | U | P-O3'-C3' | -10.28 | 107.36 | 119.70 |
| 57 | DA | 1941 | C | N1-C1'-C2' | -10.28 | 100.64 | 114.00 |
| 22 | BA | 1522 | A | P-O3'-C3' | 10.27 | 132.03 | 119.70 |
| 1 | AA | 173 | U | O4'-C1'-N1 | 10.27 | 116.42 | 108.20 |
| 1 | AA | 1320 | C | N1-C1'-C2' | -10.27 | 100.65 | 114.00 |
| 22 | BA | 1240 | U | O4'-C1'-N1 | -10.27 | 99.98 | 108.20 |
| 22 | BA | 2312 | U | N1-C1'-C2' | -10.27 | 100.65 | 114.00 |
| 57 | DA | 1289 | C | N1-C1'-C2' | -10.26 | 100.66 | 114.00 |
| 22 | BA | 1779 | U | C5-C6-N1 | -10.25 | 117.58 | 122.70 |
| 22 | BA | 403 | U | P-O3'-C3' | 10.24 | 131.99 | 119.70 |
| 1 | AA | 87 | C | N1-C1'-C2' | -10.24 | 100.68 | 114.00 |
| 22 | BA | 1045 | C | P-O3'-C3' | 10.22 | 131.97 | 119.70 |
| 22 | BA | 143 | C | N1-C1'-C2' | -10.20 | 100.74 | 114.00 |
| 22 | BA | 1417 | C | N1-C1'-C2' | -10.20 | 100.75 | 114.00 |
| 58 | DB | 88 | C | P-O3'-C3' | 10.20 | 131.93 | 119.70 |
| 53 | CA | 721 | G | P-O3'-C3' | 10.19 | 131.93 | 119.70 |
| 1 | AA | 1095 | U | N1-C1'-C2' | -10.17 | 100.78 | 114.00 |
| 53 | CA | 1449 | C | N1-C1'-C2' | -10.16 | 100.79 | 114.00 |
| 22 | BA | 1635 | A | P-O3'-C3' | -10.15 | 107.52 | 119.70 |
| 57 | DA | 224 | U | N1-C1'-C2' | -10.14 | 100.82 | 114.00 |
| 57 | DA | 445 | C | N1-C1'-C2' | -10.14 | 100.82 | 114.00 |
| 57 | DA | 2752 | C | N1-C1'-C2' | -10.13 | 100.83 | 114.00 |
| 22 | BA | 61 | C | P-O3'-C3' | -10.13 | 107.55 | 119.70 |
| 22 | BA | 2333 | A | P-O3'-C3' | 10.12 | 131.84 | 119.70 |
| 57 | DA | 2440 | C | N1-C1'-C2' | -10.10 | 100.88 | 114.00 |
| 57 | DA | 1498 | C | N1-C1'-C2' | -10.09 | 100.88 | 114.00 |
| 57 | DA | 1786 | A | P-O3'-C3' | 10.09 | 131.81 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 22 | BA | 687 | C | N1-C1'-C2' | -10.08 | 100.90 | 114.00 |
| 22 | BA | 233 | A | P-O3'-C3' | -10.07 | 107.61 | 119.70 |
| 22 | BA | 2725 | A | P-O3'-C3' | 10.07 | 131.78 | 119.70 |
| 57 | DA | 1675 | C | N1-C1'-C2' | -10.07 | 100.91 | 114.00 |
| 57 | DA | 2068 | U | N1-C1'-C2' | -10.05 | 100.94 | 114.00 |
| 1 | AA | 984 | C | N1-C1'-C2' | -10.05 | 100.94 | 114.00 |
| 53 | CA | 109 | A | P-O3'-C3' | 10.04 | 131.75 | 119.70 |
| 22 | BA | 2200 | C | N1-C1'-C2' | -10.04 | 100.95 | 114.00 |
| 53 | CA | 1052 | U | N1-C1'-C2' | -10.01 | 100.99 | 114.00 |
| 1 | AA | 1336 | C | P-O3'-C3' | 10.01 | 131.71 | 119.70 |
| 22 | BA | 790 | U | P-O3'-C3' | -10.00 | 107.70 | 119.70 |
| 22 | BA | 1021 | A | P-O3'-C3' | -9.99 | 107.71 | 119.70 |
| 57 | DA | 451 | U | O4'-C1'-N1 | 9.99 | 116.19 | 108.20 |
| 57 | DA | 1902 | C | N1-C1'-C2' | -9.99 | 101.02 | 112.00 |
| 1 | AA | 724 | G | P-O3'-C3' | -9.98 | 107.72 | 119.70 |
| 1 | AA | 279 | A | P-O3'-C3' | 9.98 | 131.68 | 119.70 |
| 57 | DA | 1920 | C | N1-C1'-C2' | -9.98 | 101.02 | 112.00 |
| 22 | BA | 241 | A | P-O3'-C3' | 9.97 | 131.67 | 119.70 |
| 22 | BA | 435 | C | N1-C1'-C2' | -9.97 | 101.03 | 112.00 |
| 22 | BA | 2733 | A | P-O3'-C3' | -9.97 | 107.74 | 119.70 |
| 57 | DA | 2259 | U | N1-C1'-C2' | -9.97 | 101.04 | 112.00 |
| 53 | CA | 1217 | C | N1-C1'-C2' | -9.96 | 101.05 | 112.00 |
| 1 | AA | 1381 | U | N1-C1'-C2' | -9.95 | 101.05 | 112.00 |
| 22 | BA | 2613 | U | P-O3'-C3' | 9.95 | 131.64 | 119.70 |
| 1 | AA | 430 | A | P-O3'-C3' | -9.94 | 107.77 | 119.70 |
| 22 | BA | 482 | A | P-O3'-C3' | -9.94 | 107.78 | 119.70 |
| 57 | DA | 2052 | A | P-O3'-C3' | -9.94 | 107.78 | 119.70 |
| 22 | BA | 2880 | C | N1-C1'-C2' | -9.93 | 101.08 | 112.00 |
| 22 | BA | 1654 | A | N9-C1'-C2' | -9.92 | 101.08 | 112.00 |
| 22 | BA | 2266 | A | P-O3'-C3' | 9.92 | 131.60 | 119.70 |
| 22 | BA | 2691 | C | N1-C1'-C2' | -9.92 | 101.09 | 112.00 |
| 22 | BA | 449 | A | P-O3'-C3' | -9.91 | 107.80 | 119.70 |
| 57 | DA | 1249 | U | N1-C1'-C2' | -9.91 | 101.10 | 112.00 |
| 57 | DA | 2611 | C | N1-C1'-C2' | -9.90 | 101.11 | 112.00 |
| 22 | BA | 1324 | G | O4'-C1'-N9 | 9.89 | 116.11 | 108.20 |
| 22 | BA | 481 | G | P-O3'-C3' | 9.89 | 131.57 | 119.70 |
| 57 | DA | 2492 | U | P-O3'-C3' | -9.88 | 107.85 | 119.70 |
| 53 | CA | 1161 | C | N1-C1'-C2' | -9.88 | 101.14 | 112.00 |
| 57 | DA | 222 | A | P-O3'-C3' | 9.87 | 131.55 | 119.70 |
| 22 | BA | 1329 | U | P-O3'-C3' | 9.87 | 131.54 | 119.70 |
| 1 | AA | 536 | C | N1-C1'-C2' | -9.86 | 101.15 | 112.00 |
| 1 | AA | 7 | A | P-O3'-C3' | 9.86 | 131.53 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 22 | BA | 92 | U | N1-C1'-C2' | -9.86 | 101.16 | 112.00 |
| 22 | BA | 2609 | U | O4'-C1'-N1 | 9.86 | 116.09 | 108.20 |
| 22 | BA | 2781 | A | P-O3'-C3' | -9.85 | 107.89 | 119.70 |
| 22 | BA | 614 | A | P-O3'-C3' | 9.84 | 131.51 | 119.70 |
| 22 | BA | 2691 | C | P-O3'-C3' | -9.84 | 107.89 | 119.70 |
| 22 | BA | 2879 | A | P-O3'-C3' | 9.84 | 131.51 | 119.70 |
| 22 | BA | 531 | C | N1-C1'-C2' | 9.84 | 126.79 | 114.00 |
| 22 | BA | 1667 | G | P-O3'-C3' | 9.83 | 131.50 | 119.70 |
| 53 | CA | 96 | U | N1-C1'-C2' | -9.83 | 101.19 | 112.00 |
| 57 | DA | 2023 | C | O4'-C1'-N1 | 9.83 | 116.06 | 108.20 |
| 23 | BB | 57 | A | P-O3'-C3' | -9.83 | 107.91 | 119.70 |
| 58 | DB | 68 | C | O4'-C1'-N1 | 9.81 | 116.05 | 108.20 |
| 57 | DA | 576 | U | N1-C1'-C2' | -9.80 | 101.22 | 112.00 |
| 57 | DA | 1275 | A | P-O3'-C3' | 9.80 | 131.47 | 119.70 |
| 1 | AA | 889 | A | P-O3'-C3' | 9.80 | 131.46 | 119.70 |
| 57 | DA | 1918 | A | P-O3'-C3' | 9.79 | 131.45 | 119.70 |
| 22 | BA | 2542 | A | P-O3'-C3' | 9.79 | 131.44 | 119.70 |
| 22 | BA | 1033 | U | P-O3'-C3' | 9.78 | 131.44 | 119.70 |
| 57 | DA | 2023 | C | N1-C1'-C2' | -9.78 | 101.24 | 112.00 |
| 53 | CA | 173 | U | O4'-C1'-N1 | 9.77 | 116.02 | 108.20 |
| 53 | CA | 316 | C | N1-C1'-C2' | -9.77 | 101.25 | 112.00 |
| 57 | DA | 812 | C | P-O3'-C3' | -9.76 | 107.98 | 119.70 |
| 57 | DA | 1612 | C | N1-C1'-C2' | -9.76 | 101.26 | 112.00 |
| 1 | AA | 812 | G | P-O3'-C3' | 9.76 | 131.41 | 119.70 |
| 22 | BA | 2517 | C | O4'-C1'-N1 | 9.75 | 116.00 | 108.20 |
| 57 | DA | 1815 | A | P-O3'-C3' | 9.75 | 131.40 | 119.70 |
| 1 | AA | 14 | U | N1-C1'-C2' | -9.74 | 101.28 | 112.00 |
| 22 | BA | 2581 | G | P-O3'-C3' | 9.74 | 131.39 | 119.70 |
| 57 | DA | 860 | U | N1-C1'-C2' | -9.73 | 101.30 | 112.00 |
| 1 | AA | 1088 | G | P-O3'-C3' | -9.70 | 108.06 | 119.70 |
| 22 | BA | 2800 | A | P-O3'-C3' | 9.70 | 131.34 | 119.70 |
| 53 | CA | 1383 | C | N1-C1'-C2' | -9.70 | 101.33 | 112.00 |
| 57 | DA | 76 | C | N1-C1'-C2' | -9.70 | 101.33 | 112.00 |
| 53 | CA | 372 | C | O4'-C1'-N1 | 9.69 | 115.95 | 108.20 |
| 57 | DA | 829 | A | P-O3'-C3' | 9.69 | 131.32 | 119.70 |
| 57 | DA | 1782 | U | N1-C1'-C2' | -9.66 | 101.37 | 112.00 |
| 57 | DA | 2299 | U | N1-C1'-C2' | -9.66 | 101.38 | 112.00 |
| 57 | DA | 444 | C | O4'-C1'-N1 | 9.65 | 115.92 | 108.20 |
| 22 | BA | 934 | U | P-O3'-C3' | -9.65 | 108.12 | 119.70 |
| 57 | DA | 2520 | C | N1-C1'-C2' | -9.65 | 101.39 | 112.00 |
| 22 | BA | 604 | G | P-O3'-C3' | -9.64 | 108.13 | 119.70 |
| 1 | AA | 132 | C | P-O3'-C3' | -9.63 | 108.14 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 22 | BA | 2210 | U | P-O3'-C3' | 9.61 | 131.24 | 119.70 |
| 22 | BA | 2258 | C | P-O3'-C3' | 9.61 | 131.23 | 119.70 |
| 57 | DA | 1963 | U | N1-C1'-C2' | -9.61 | 101.43 | 112.00 |
| 22 | BA | 1965 | C | N1-C1'-C2' | -9.60 | 101.44 | 112.00 |
| 22 | BA | 961 | C | P-O3'-C3' | 9.60 | 131.22 | 119.70 |
| 57 | DA | 1902 | C | P-O3'-C3' | -9.59 | 108.19 | 119.70 |
| 57 | DA | 2875 | C | N1-C1'-C2' | -9.59 | 101.46 | 112.00 |
| 1 | AA | 115 | G | P-O3'-C3' | 9.58 | 131.19 | 119.70 |
| 1 | AA | 1282 | C | N1-C1'-C2' | -9.57 | 101.47 | 112.00 |
| 22 | BA | 2681 | C | P-O3'-C3' | 9.56 | 131.18 | 119.70 |
| 57 | DA | 1557 | C | N1-C1'-C2' | -9.56 | 101.48 | 112.00 |
| 22 | BA | 2226 | C | N1-C1'-C2' | -9.56 | 101.48 | 112.00 |
| 1 | AA | 66 | A | P-O3'-C3' | -9.56 | 108.23 | 119.70 |
| 22 | BA | 164 | C | P-O3'-C3' | -9.56 | 108.23 | 119.70 |
| 22 | BA | 2729 | G | P-O3'-C3' | -9.56 | 108.23 | 119.70 |
| 1 | AA | 315 | A | P-O3'-C3' | 9.55 | 131.16 | 119.70 |
| 57 | DA | 831 | G | P-O3'-C3' | -9.54 | 108.25 | 119.70 |
| 53 | CA | 110 | C | P-O3'-C3' | -9.54 | 108.26 | 119.70 |
| 53 | CA | 1065 | U | O4'-C1'-N1 | 9.54 | 115.83 | 108.20 |
| 57 | DA | 2347 | C | N1-C1'-C2' | -9.53 | 101.51 | 112.00 |
| 1 | AA | 642 | A | P-O3'-C3' | -9.53 | 108.26 | 119.70 |
| 1 | AA | 969 | A | P-O3'-C3' | -9.52 | 108.28 | 119.70 |
| 57 | DA | 2458 | G | O4'-C1'-N9 | 9.52 | 115.82 | 108.20 |
| 57 | DA | 1802 | A | P-O3'-C3' | -9.52 | 108.28 | 119.70 |
| 22 | BA | 2425 | A | O4'-C1'-N9 | 9.51 | 115.81 | 108.20 |
| 22 | BA | 34 | U | P-O3'-C3' | 9.51 | 131.11 | 119.70 |
| 57 | DA | 196 | A | P-O3'-C3' | 9.49 | 131.08 | 119.70 |
| 57 | DA | 2404 | U | N1-C1'-C2' | -9.46 | 101.60 | 112.00 |
| 53 | CA | 979 | C | N1-C1'-C2' | -9.45 | 101.60 | 112.00 |
| 22 | BA | 946 | C | N1-C1'-C2' | -9.45 | 101.61 | 112.00 |
| 57 | DA | 623 | C | N1-C1'-C2' | -9.45 | 101.61 | 112.00 |
| 57 | DA | 2226 | C | N1-C1'-C2' | -9.44 | 101.61 | 112.00 |
| 22 | BA | 765 | C | N1-C1'-C2' | -9.44 | 101.61 | 112.00 |
| 53 | CA | 566 | G | P-O3'-C3' | 9.44 | 131.02 | 119.70 |
| 57 | DA | 1682 | G | P-O3'-C3' | -9.44 | 108.38 | 119.70 |
| 22 | BA | 2449 | U | O4'-C1'-N1 | -9.44 | 100.65 | 108.20 |
| 22 | BA | 2458 | G | P-O3'-C3' | 9.43 | 131.02 | 119.70 |
| 53 | CA | 252 | U | N1-C1'-C2' | -9.42 | 101.63 | 112.00 |
| 53 | CA | 985 | C | N1-C1'-C2' | -9.42 | 101.63 | 112.00 |
| 22 | BA | 1126 | A | P-O3'-C3' | 9.42 | 131.00 | 119.70 |
| 53 | CA | 792 | A | P-O3'-C3' | 9.42 | 131.00 | 119.70 |
| 57 | DA | 976 | G | P-O3'-C3' | -9.40 | 108.42 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1228 | C | P-O3'-C3' | -9.39 | 108.43 | 119.70 |
| 22 | BA | 2335 | A | P-O3'-C3' | -9.39 | 108.43 | 119.70 |
| 57 | DA | 2876 | G | P-O3'-C3' | -9.39 | 108.43 | 119.70 |
| 1 | AA | 1053 | G | P-O3'-C3' | 9.38 | 130.96 | 119.70 |
| 22 | BA | 2296 | U | P-O3'-C3' | 9.36 | 130.93 | 119.70 |
| 57 | DA | 1804 | C | N1-C1'-C2' | -9.36 | 101.70 | 112.00 |
| 1 | AA | 1157 | A | P-O3'-C3' | 9.35 | 130.92 | 119.70 |
| 57 | DA | 2581 | G | P-O3'-C3' | 9.34 | 130.91 | 119.70 |
| 57 | DA | 1962 | C | P-O3'-C3' | 9.34 | 130.91 | 119.70 |
| 22 | BA | 2259 | U | N1-C1'-C2' | -9.34 | 101.73 | 112.00 |
| 22 | BA | 2613 | U | O3'-P-O5' | -9.34 | 86.26 | 104.00 |
| 22 | BA | 687 | C | P-O3'-C3' | -9.33 | 108.51 | 119.70 |
| 1 | AA | 1224 | U | O4'-C1'-N1 | 9.32 | 115.66 | 108.20 |
| 22 | BA | 1417 | C | P-O3'-C3' | -9.32 | 108.52 | 119.70 |
| 1 | AA | 960 | U | P-O3'-C3' | 9.32 | 130.88 | 119.70 |
| 1 | AA | 415 | A | P-O3'-C3' | -9.30 | 108.54 | 119.70 |
| 1 | AA | 1432 | G | P-O3'-C3' | 9.30 | 130.87 | 119.70 |
| 22 | BA | 2021 | C | O4'-C1'-N1 | 9.30 | 115.64 | 108.20 |
| 57 | DA | 957 | C | P-O3'-C3' | 9.30 | 130.86 | 119.70 |
| 53 | CA | 73 | C | O4'-C1'-N1 | 9.30 | 115.64 | 108.20 |
| 57 | DA | 386 | G | P-O3'-C3' | 9.29 | 130.85 | 119.70 |
| 1 | AA | 1167 | A | P-O3'-C3' | 9.29 | 130.84 | 119.70 |
| 22 | BA | 451 | U | O4'-C1'-N1 | 9.29 | 115.63 | 108.20 |
| 1 | AA | 1382 | C | N1-C1'-C2' | -9.28 | 101.79 | 112.00 |
| 23 | BB | 44 | G | P-O3'-C3' | 9.27 | 130.82 | 119.70 |
| 22 | BA | 1786 | A | O4'-C1'-N9 | 9.26 | 115.61 | 108.20 |
| 22 | BA | 954 | G | P-O3'-C3' | 9.26 | 130.81 | 119.70 |
| 53 | CA | 331 | G | P-O3'-C3' | -9.26 | 108.59 | 119.70 |
| 53 | CA | 388 | G | P-O3'-C3' | 9.26 | 130.81 | 119.70 |
| 1 | AA | 109 | A | P-O3'-C3' | 9.25 | 130.80 | 119.70 |
| 22 | BA | 829 | A | P-O3'-C3' | 9.24 | 130.79 | 119.70 |
| 53 | CA | 936 | C | O4'-C1'-N1 | 9.24 | 115.59 | 108.20 |
| 1 | AA | 1224 | U | P-O3'-C3' | 9.23 | 130.77 | 119.70 |
| 22 | BA | 1300 | G | P-O3'-C3' | 9.23 | 130.78 | 119.70 |
| 22 | BA | 934 | U | N1-C1'-C2' | -9.22 | 101.86 | 112.00 |
| 57 | DA | 1267 | U | O4'-C1'-N1 | 9.22 | 115.58 | 108.20 |
| 53 | CA | 519 | C | N1-C1'-C2' | -9.22 | 101.86 | 112.00 |
| 57 | DA | 1255 | U | N1-C1'-C2' | -9.19 | 101.89 | 112.00 |
| 53 | CA | 95 | C | N1-C1'-C2' | -9.19 | 101.89 | 112.00 |
| 1 | AA | 874 | G | P-O3'-C3' | -9.18 | 108.68 | 119.70 |
| 57 | DA | 812 | C | N1-C1'-C2' | -9.18 | 101.91 | 112.00 |
| 22 | BA | 505 | A | P-O3'-C3' | -9.17 | 108.69 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 22 | BA | 2573 | C | N1-C1'-C2' | -9.16 | 101.92 | 112.00 |
| 57 | DA | 687 | C | N1-C1'-C2' | -9.16 | 101.92 | 112.00 |
| 1 | AA | 915 | A | P-O3'-C3' | -9.15 | 108.72 | 119.70 |
| 22 | BA | 2312 | U | P-O3'-C3' | -9.14 | 108.73 | 119.70 |
| 57 | DA | 534 | U | N1-C1'-C2' | -9.14 | 101.94 | 112.00 |
| 57 | DA | 2850 | A | P-O3'-C3' | -9.14 | 108.73 | 119.70 |
| 57 | DA | 1818 | U | O4'-C1'-N1 | 9.13 | 115.50 | 108.20 |
| 57 | DA | 2691 | C | N1-C1'-C2' | -9.13 | 101.96 | 112.00 |
| 53 | CA | 85 | U | P-O3'-C3' | 9.12 | 130.64 | 119.70 |
| 53 | CA | 183 | C | O4'-C1'-N1 | 9.12 | 115.50 | 108.20 |
| 22 | BA | 2756 | U | P-O3'-C3' | 9.12 | 130.64 | 119.70 |
| 23 | BB | 108 | A | P-O3'-C3' | 9.11 | 130.63 | 119.70 |
| 53 | CA | 1348 | U | N1-C1'-C2' | -9.11 | 101.98 | 112.00 |
| 1 | AA | 1398 | A | P-O3'-C3' | -9.10 | 108.78 | 119.70 |
| 57 | DA | 917 | A | P-O3'-C3' | -9.10 | 108.78 | 119.70 |
| 23 | BB | 87 | U | O4'-C1'-N1 | 9.10 | 115.48 | 108.20 |
| 57 | DA | 234 | U | N1-C1'-C2' | -9.09 | 102.00 | 112.00 |
| 22 | BA | 1427 | A | P-O3'-C3' | 9.09 | 130.60 | 119.70 |
| 22 | BA | 475 | C | N1-C1'-C2' | -9.08 | 102.01 | 112.00 |
| 53 | CA | 1200 | C | P-O3'-C3' | 9.08 | 130.59 | 119.70 |
| 53 | CA | 1224 | U | P-O3'-C3' | 9.07 | 130.59 | 119.70 |
| 57 | DA | 1418 | G | P-O3'-C3' | -9.07 | 108.81 | 119.70 |
| 53 | CA | 1202 | U | N1-C1'-C2' | -9.07 | 102.03 | 112.00 |
| 1 | AA | 1528 | U | P-O3'-C3' | 9.05 | 130.56 | 119.70 |
| 22 | BA | 163 | C | O4'-C1'-N1 | 9.05 | 115.44 | 108.20 |
| 22 | BA | 740 | C | N1-C1'-C2' | -9.05 | 102.04 | 112.00 |
| 22 | BA | 865 | C | O4'-C1'-N1 | 9.05 | 115.44 | 108.20 |
| 22 | BA | 1634 | A | P-O3'-C3' | 9.04 | 130.55 | 119.70 |
| 22 | BA | 1564 | C | P-O3'-C3' | 9.04 | 130.55 | 119.70 |
| 1 | AA | 305 | G | P-O3'-C3' | 9.03 | 130.54 | 119.70 |
| 1 | AA | 1095 | U | O4'-C1'-N1 | 9.03 | 115.42 | 108.20 |
| 22 | BA | 1379 | U | N1-C1'-C2' | -9.02 | 102.08 | 112.00 |
| 22 | BA | 1556 | C | N1-C1'-C2' | -9.02 | 102.08 | 112.00 |
| 57 | DA | 1606 | C | P-O3'-C3' | 9.00 | 130.50 | 119.70 |
| 1 | AA | 577 | G | P-O3'-C3' | -9.00 | 108.90 | 119.70 |
| 1 | AA | 792 | A | O4'-C1'-N9 | 9.00 | 115.40 | 108.20 |
| 22 | BA | 1931 | U | N1-C1'-C2' | -8.99 | 102.11 | 112.00 |
| 22 | BA | 1954 | G | P-O3'-C3' | 8.98 | 130.47 | 119.70 |
| 22 | BA | 686 | U | O4'-C1'-N1 | 8.98 | 115.38 | 108.20 |
| 22 | BA | 811 | U | P-O3'-C3' | 8.98 | 130.47 | 119.70 |
| 57 | DA | 531 | C | P-O3'-C3' | 8.97 | 130.47 | 119.70 |
| 22 | BA | 2497 | A | P-O3'-C3' | 8.97 | 130.47 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | CA | 428 | G | P-O3'-C3' | 8.97 | 130.46 | 119.70 |
| 57 | DA | 164 | C | N1-C1'-C2' | -8.97 | 102.14 | 112.00 |
| 57 | DA | 2095 | A | P-O3'-C3' | -8.97 | 108.94 | 119.70 |
| 22 | BA | 1971 | U | P-O3'-C3' | -8.95 | 108.95 | 119.70 |
| 57 | DA | 1954 | G | P-O3'-C3' | 8.95 | 130.44 | 119.70 |
| 53 | CA | 753 | A | P-O3'-C3' | 8.94 | 130.43 | 119.70 |
| 22 | BA | 981 | A | O3'-P-O5' | -8.94 | 87.02 | 104.00 |
| 57 | DA | 1428 | C | O4'-C1'-N1 | 8.94 | 115.35 | 108.20 |
| 22 | BA | 2575 | C | O4'-C1'-N1 | 8.93 | 115.35 | 108.20 |
| 22 | BA | 27 | G | P-O3'-C3' | 8.93 | 130.42 | 119.70 |
| 1 | AA | 1506 | U | P-O3'-C3' | 8.93 | 130.41 | 119.70 |
| 22 | BA | 421 | C | P-O3'-C3' | 8.90 | 130.38 | 119.70 |
| 22 | BA | 2638 | G | P-O3'-C3' | 8.89 | 130.37 | 119.70 |
| 22 | BA | 906 | U | O4'-C1'-N1 | 8.88 | 115.31 | 108.20 |
| 53 | CA | 1528 | U | P-O3'-C3' | 8.88 | 130.35 | 119.70 |
| 57 | DA | 60 | G | P-O3'-C3' | 8.88 | 130.35 | 119.70 |
| 57 | DA | 1512 | C | O4'-C1'-N1 | 8.88 | 115.30 | 108.20 |
| 53 | CA | 576 | C | O4'-C1'-N1 | -8.87 | 101.10 | 108.20 |
| 57 | DA | 1389 | G | P-O3'-C3' | -8.87 | 109.05 | 119.70 |
| 1 | AA | 813 | U | P-O3'-C3' | -8.87 | 109.06 | 119.70 |
| 22 | BA | 144 | A | P-O3'-C3' | -8.86 | 109.06 | 119.70 |
| 22 | BA | 1141 | U | P-O3'-C3' | 8.86 | 130.33 | 119.70 |
| 57 | DA | 229 | C | N1-C1'-C2' | -8.86 | 102.26 | 112.00 |
| 57 | DA | 749 | A | P-O3'-C3' | -8.86 | 109.07 | 119.70 |
| 57 | DA | 606 | U | N1-C1'-C2' | -8.85 | 102.26 | 112.00 |
| 22 | BA | 323 | C | O4'-C1'-N1 | 8.85 | 115.28 | 108.20 |
| 57 | DA | 2043 | C | O4'-C1'-N1 | -8.85 | 101.12 | 108.20 |
| 53 | CA | 1051 | C | N1-C1'-C2' | -8.84 | 102.27 | 112.00 |
| 22 | BA | 2801 | G | P-O5'-C5' | -8.84 | 106.76 | 120.90 |
| 22 | BA | 646 | U | N1-C1'-C2' | -8.84 | 102.28 | 112.00 |
| 22 | BA | 1920 | C | N1-C1'-C2' | -8.83 | 102.29 | 112.00 |
| 53 | CA | 564 | C | N1-C1'-C2' | -8.83 | 102.29 | 112.00 |
| 53 | CA | 577 | G | P-O3'-C3' | -8.83 | 109.10 | 119.70 |
| 1 | AA | 1201 | A | P-O3'-C3' | 8.82 | 130.29 | 119.70 |
| 53 | CA | 701 | U | P-O3'-C3' | 8.82 | 130.28 | 119.70 |
| 57 | DA | 304 | U | P-O3'-C3' | -8.81 | 109.13 | 119.70 |
| 23 | BB | 52 | A | P-O3'-C3' | 8.80 | 130.27 | 119.70 |
| 57 | DA | 2629 | U | P-O3'-C3' | 8.80 | 130.26 | 119.70 |
| 53 | CA | 547 | A | P-O3'-C3' | 8.80 | 130.26 | 119.70 |
| 53 | CA | 486 | U | P-O3'-C3' | -8.79 | 109.15 | 119.70 |
| 53 | CA | 89 | U | N1-C1'-C2' | -8.78 | 102.34 | 112.00 |
| 53 | CA | 547 | A | O4'-C1'-N9 | 8.77 | 115.22 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 22 | BA | 1829 | A | P-O3'-C3' | -8.77 | 109.18 | 119.70 |
| 57 | DA | 1207 | C | N1-C1'-C2' | -8.76 | 102.36 | 112.00 |
| 57 | DA | 53 | A | P-O3'-C3' | -8.76 | 109.19 | 119.70 |
| 58 | DB | 87 | U | P-O3'-C3' | 8.76 | 130.21 | 119.70 |
| 22 | BA | 1867 | G | P-O3'-C3' | -8.75 | 109.20 | 119.70 |
| 57 | DA | 2586 | U | P-O3'-C3' | -8.74 | 109.21 | 119.70 |
| 1 | AA | 1258 | G | P-O3'-C3' | -8.74 | 109.21 | 119.70 |
| 57 | DA | 217 | A | P-O3'-C3' | -8.74 | 109.21 | 119.70 |
| 1 | AA | 717 | U | P-O3'-C3' | 8.74 | 130.19 | 119.70 |
| 57 | DA | 827 | U | P-O3'-C3' | 8.73 | 130.17 | 119.70 |
| 22 | BA | 1082 | U | O4'-C1'-N1 | 8.73 | 115.18 | 108.20 |
| 1 | AA | 1229 | A | P-O3'-C3' | -8.72 | 109.23 | 119.70 |
| 22 | BA | 386 | G | P-O3'-C3' | 8.72 | 130.17 | 119.70 |
| 53 | CA | 1399 | C | P-O3'-C3' | 8.72 | 130.16 | 119.70 |
| 2 | CB | 146 | SER | O-C-N | -8.71 | 108.76 | 122.70 |
| 22 | BA | 2225 | A | P-O3'-C3' | 8.71 | 130.15 | 119.70 |
| 1 | AA | 974 | A | P-O3'-C3' | 8.70 | 130.15 | 119.70 |
| 1 | AA | 32 | A | P-O3'-C3' | -8.69 | 109.27 | 119.70 |
| 57 | DA | 867 | C | N1-C1'-C2' | -8.70 | 102.44 | 112.00 |
| 22 | BA | 243 | U | N1-C1'-C2' | -8.69 | 102.44 | 112.00 |
| 22 | BA | 727 | A | P-O3'-C3' | -8.69 | 109.27 | 119.70 |
| 57 | DA | 2874 | C | P-O3'-C3' | -8.69 | 109.27 | 119.70 |
| 22 | BA | 2030 | A | P-O3'-C3' | 8.69 | 130.12 | 119.70 |
| 22 | BA | 1267 | U | N1-C1'-C2' | -8.69 | 102.45 | 112.00 |
| 1 | AA | 1064 | G | P-O3'-C3' | 8.68 | 130.11 | 119.70 |
| 22 | BA | 782 | A | P-O3'-C3' | 8.67 | 130.11 | 119.70 |
| 1 | AA | 486 | U | P-O5'-C5' | -8.67 | 107.03 | 120.90 |
| 53 | CA | 643 | C | O4'-C1'-N1 | 8.66 | 115.13 | 108.20 |
| 57 | DA | 2656 | U | N1-C1'-C2' | -8.65 | 102.49 | 112.00 |
| 57 | DA | 162 | U | P-O3'-C3' | 8.65 | 130.08 | 119.70 |
| 57 | DA | 2063 | C | N1-C1'-C2' | -8.64 | 102.49 | 112.00 |
| 57 | DA | 2440 | C | O4'-C1'-N1 | 8.64 | 115.11 | 108.20 |
| 57 | DA | 933 | A | P-O3'-C3' | -8.64 | 109.34 | 119.70 |
| 57 | DA | 2848 | G | P-O3'-C3' | 8.63 | 130.06 | 119.70 |
| 22 | BA | 119 | A | P-O3'-C3' | 8.63 | 130.05 | 119.70 |
| 53 | CA | 32 | A | P-O3'-C3' | -8.62 | 109.35 | 119.70 |
| 57 | DA | 2447 | G | P-O3'-C3' | 8.62 | 130.05 | 119.70 |
| 22 | BA | 527 | C | P-O3'-C3' | 8.62 | 130.05 | 119.70 |
| 22 | BA | 2874 | C | N1-C1'-C2' | -8.62 | 102.51 | 112.00 |
| 57 | DA | 235 | U | P-O3'-C3' | -8.62 | 109.35 | 119.70 |
| 22 | BA | 1013 | C | P-O3'-C3' | -8.61 | 109.36 | 119.70 |
| 57 | DA | 1699 | G | P-O3'-C3' | 8.61 | 130.03 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 22 | BA | 512 | G | O4'-C1'-N9 | 8.61 | 115.08 | 108.20 |
| 22 | BA | 454 | A | P-O3'-C3' | 8.60 | 130.02 | 119.70 |
| 53 | CA | 1499 | A | P-O3'-C3' | -8.60 | 109.38 | 119.70 |
| 22 | BA | 1997 | C | P-O3'-C3' | -8.59 | 109.39 | 119.70 |
| 22 | BA | 2611 | C | P-O3'-C3' | -8.59 | 109.39 | 119.70 |
| 22 | BA | 914 | G | P-O3'-C3' | -8.59 | 109.40 | 119.70 |
| 22 | BA | 1859 | U | P-O3'-C3' | -8.59 | 109.40 | 119.70 |
| 22 | BA | 1681 | G | P-O3'-C3' | 8.58 | 130.00 | 119.70 |
| 22 | BA | 84 | A | P-O3'-C3' | 8.58 | 129.99 | 119.70 |
| 1 | AA | 870 | U | P-O3'-C3' | 8.57 | 129.98 | 119.70 |
| 1 | AA | 1190 | G | P-O3'-C3' | 8.57 | 129.99 | 119.70 |
| 22 | BA | 2250 | G | O4'-C1'-N9 | -8.57 | 101.34 | 108.20 |
| 22 | BA | 178 | G | P-O3'-C3' | -8.56 | 109.43 | 119.70 |
| 57 | DA | 964 | C | N1-C1'-C2' | -8.56 | 102.59 | 112.00 |
| 22 | BA | 1816 | C | P-O3'-C3' | -8.55 | 109.44 | 119.70 |
| 22 | BA | 507 | A | P-O3'-C3' | -8.55 | 109.44 | 119.70 |
| 22 | BA | 1476 | U | N1-C1'-C2' | -8.55 | 102.60 | 112.00 |
| 53 | CA | 1152 | A | P-O3'-C3' | -8.54 | 109.45 | 119.70 |
| 1 | AA | 1196 | A | P-O3'-C3' | 8.53 | 129.94 | 119.70 |
| 57 | DA | 527 | C | P-O3'-C3' | 8.53 | 129.94 | 119.70 |
| 57 | DA | 1276 | A | P-O3'-C3' | -8.53 | 109.46 | 119.70 |
| 57 | DA | 2752 | C | O4'-C1'-N1 | 8.53 | 115.02 | 108.20 |
| 22 | BA | 2492 | U | N1-C1'-C2' | -8.53 | 102.62 | 112.00 |
| 53 | CA | 936 | C | N1-C1'-C2' | -8.53 | 102.62 | 112.00 |
| 57 | DA | 2034 | U | P-O3'-C3' | -8.52 | 109.47 | 119.70 |
| 22 | BA | 1809 | A | P-O3'-C3' | -8.52 | 109.47 | 119.70 |
| 22 | BA | 221 | A | P-O3'-C3' | 8.52 | 129.92 | 119.70 |
| 22 | BA | 1313 | U | P-O3'-C3' | -8.52 | 109.48 | 119.70 |
| 22 | BA | 783 | A | N9-C1'-C2' | -8.51 | 102.64 | 112.00 |
| 53 | CA | 962 | C | O4'-C1'-N1 | 8.50 | 115.00 | 108.20 |
| 57 | DA | 1803 | A | P-O3'-C3' | -8.50 | 109.50 | 119.70 |
| 57 | DA | 1539 | U | N1-C1'-C2' | -8.50 | 102.65 | 112.00 |
| 22 | BA | 2325 | G | P-O3'-C3' | -8.49 | 109.51 | 119.70 |
| 57 | DA | 672 | C | N1-C1'-C2' | -8.49 | 102.66 | 112.00 |
| 22 | BA | 1286 | A | P-O3'-C3' | 8.49 | 129.88 | 119.70 |
| 1 | AA | 991 | U | P-O3'-C3' | 8.49 | 129.88 | 119.70 |
| 57 | DA | 444 | C | N1-C1'-C2' | -8.49 | 102.67 | 112.00 |
| 57 | DA | 1512 | C | P-O3'-C3' | -8.48 | 109.52 | 119.70 |
| 57 | DA | 510 | C | N1-C1'-C2' | -8.48 | 102.67 | 112.00 |
| 57 | DA | 730 | A | P-O3'-C3' | -8.48 | 109.52 | 119.70 |
| 1 | AA | 1153 | G | P-O3'-C3' | -8.48 | 109.53 | 119.70 |
| 1 | AA | 968 | A | P-O3'-C3' | 8.47 | 129.87 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 57 | DA | 2334 | U | P-O3'-C3' | 8.47 | 129.87 | 119.70 |
| 57 | DA | 790 | U | O4'-C1'-N1 | 8.47 | 114.98 | 108.20 |
| 53 | CA | 424 | G | P-O3'-C3' | -8.47 | 109.54 | 119.70 |
| 57 | DA | 164 | C | P-O3'-C3' | -8.47 | 109.54 | 119.70 |
| 57 | DA | 1050 | A | P-O3'-C3' | -8.46 | 109.55 | 119.70 |
| 22 | BA | 2832 | U | P-O3'-C3' | 8.46 | 129.85 | 119.70 |
| 57 | DA | 530 | G | P-O3'-C3' | -8.45 | 109.56 | 119.70 |
| 57 | DA | 784 | G | O4'-C1'-N9 | 8.45 | 114.96 | 108.20 |
| 57 | DA | 1386 | C | O4'-C1'-N1 | 8.45 | 114.96 | 108.20 |
| 57 | DA | 1522 | A | P-O3'-C3' | 8.45 | 129.83 | 119.70 |
| 57 | DA | 15 | G | P-O3'-C3' | -8.44 | 109.57 | 119.70 |
| 1 | AA | 512 | U | P-O3'-C3' | -8.44 | 109.57 | 119.70 |
| 22 | BA | 138 | U | N1-C1'-C2' | -8.44 | 102.72 | 112.00 |
| 1 | AA | 1125 | U | P-O3'-C3' | 8.44 | 129.82 | 119.70 |
| 58 | DB | 69 | G | OP1-P-O3' | 8.44 | 123.76 | 105.20 |
| 22 | BA | 1732 | C | P-O3'-C3' | 8.43 | 129.82 | 119.70 |
| 53 | CA | 962 | C | N1-C1'-C2' | -8.43 | 102.72 | 112.00 |
| 1 | AA | 388 | G | P-O3'-C3' | 8.43 | 129.81 | 119.70 |
| 57 | DA | 1648 | U | N1-C1'-C2' | -8.42 | 102.73 | 112.00 |
| 57 | DA | 1674 | G | P-O3'-C3' | 8.42 | 129.80 | 119.70 |
| 57 | DA | 2024 | G | P-O3'-C3' | -8.42 | 109.60 | 119.70 |
| 22 | BA | 2385 | C | P-O3'-C3' | -8.41 | 109.60 | 119.70 |
| 57 | DA | 1072 | C | O4'-C1'-N1 | 8.41 | 114.93 | 108.20 |
| 57 | DA | 1144 | A | P-O3'-C3' | -8.41 | 109.60 | 119.70 |
| 57 | DA | 1615 | C | P-O3'-C3' | 8.41 | 129.80 | 119.70 |
| 23 | BB | 87 | U | P-O3'-C3' | 8.41 | 129.79 | 119.70 |
| 22 | BA | 385 | C | O4'-C1'-N1 | -8.41 | 101.47 | 108.20 |
| 22 | BA | 1698 | A | P-O3'-C3' | 8.41 | 129.79 | 119.70 |
| 57 | DA | 150 | U | O4'-C1'-N1 | 8.40 | 114.92 | 108.20 |
| 22 | BA | 985 | C | N1-C1'-C2' | -8.40 | 102.76 | 112.00 |
| 23 | BB | 15 | A | P-O3'-C3' | 8.40 | 129.78 | 119.70 |
| 22 | BA | 406 | G | P-O3'-C3' | -8.40 | 109.62 | 119.70 |
| 57 | DA | 2339 | C | O4'-C1'-N1 | 8.39 | 114.91 | 108.20 |
| 22 | BA | 1784 | A | P-O3'-C3' | 8.39 | 129.77 | 119.70 |
| 22 | BA | 2894 | G | P-O3'-C3' | -8.39 | 109.64 | 119.70 |
| 22 | BA | 1204 | A | P-O3'-C3' | 8.38 | 129.76 | 119.70 |
| 57 | DA | 1816 | C | O4'-C1'-N1 | 8.38 | 114.90 | 108.20 |
| 57 | DA | 2061 | G | P-O3'-C3' | 8.38 | 129.75 | 119.70 |
| 22 | BA | 2689 | U | N1-C1'-C2' | 8.38 | 124.89 | 114.00 |
| 53 | CA | 1528 | U | O4'-C1'-N1 | 8.37 | 114.90 | 108.20 |
| 57 | DA | 2669 | G | P-O3'-C3' | -8.38 | 109.65 | 119.70 |
| 23 | BB | 25 | U | P-O3'-C3' | -8.36 | 109.67 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 57 | DA | 2757 | A | P-O3'-C3' | -8.36 | 109.67 | 119.70 |
| 57 | DA | 1636 | U | P-O3'-C3' | -8.35 | 109.68 | 119.70 |
| 1 | AA | 1322 | C | P-O3'-C3' | 8.35 | 129.72 | 119.70 |
| 53 | CA | 717 | U | N1-C1'-C2' | 8.34 | 124.84 | 114.00 |
| 22 | BA | 2682 | A | P-O5'-C5' | -8.33 | 107.57 | 120.90 |
| 53 | CA | 132 | C | O4'-C1'-N1 | 8.33 | 114.86 | 108.20 |
| 22 | BA | 1611 | C | P-O3'-C3' | -8.33 | 109.71 | 119.70 |
| 22 | BA | 1351 | C | O4'-C1'-N1 | 8.32 | 114.86 | 108.20 |
| 1 | AA | 316 | C | P-O3'-C3' | -8.32 | 109.72 | 119.70 |
| 57 | DA | 1780 | A | P-O3'-C3' | 8.31 | 129.68 | 119.70 |
| 57 | DA | 868 | U | N1-C1'-C2' | -8.30 | 102.87 | 112.00 |
| 53 | CA | 60 | A | P-O3'-C3' | 8.30 | 129.66 | 119.70 |
| 53 | CA | 1345 | U | O4'-C1'-N1 | 8.29 | 114.83 | 108.20 |
| 57 | DA | 1900 | A | P-O3'-C3' | 8.29 | 129.65 | 119.70 |
| 57 | DA | 2238 | G | P-O3'-C3' | 8.29 | 129.64 | 119.70 |
| 57 | DA | 128 | C | N1-C1'-C2' | -8.28 | 102.89 | 112.00 |
| 1 | AA | 245 | U | P-O3'-C3' | -8.28 | 109.77 | 119.70 |
| 1 | AA | 595 | A | P-O3'-C3' | 8.28 | 129.63 | 119.70 |
| 53 | CA | 495 | A | P-O3'-C3' | 8.28 | 129.63 | 119.70 |
| 22 | BA | 1493 | C | P-O3'-C3' | 8.28 | 129.63 | 119.70 |
| 57 | DA | 104 | A | P-O3'-C3' | -8.27 | 109.78 | 119.70 |
| 1 | AA | 1152 | A | P-O3'-C3' | -8.26 | 109.79 | 119.70 |
| 1 | AA | 13 | U | P-O3'-C3' | 8.25 | 129.60 | 119.70 |
| 1 | AA | 1332 | A | P-O3'-C3' | -8.25 | 109.80 | 119.70 |
| 22 | BA | 1606 | C | P-O3'-C3' | 8.25 | 129.60 | 119.70 |
| 57 | DA | 2063 | C | P-O3'-C3' | -8.25 | 109.80 | 119.70 |
| 57 | DA | 1647 | U | P-O3'-C3' | 8.24 | 129.59 | 119.70 |
| 22 | BA | 1063 | G | P-O3'-C3' | -8.24 | 109.81 | 119.70 |
| 53 | CA | 439 | U | N1-C1'-C2' | -8.24 | 102.94 | 112.00 |
| 57 | DA | 2497 | A | P-O3'-C3' | 8.23 | 129.58 | 119.70 |
| 57 | DA | 2085 | U | O4'-C1'-N1 | 8.23 | 114.79 | 108.20 |
| 22 | BA | 996 | A | P-O3'-C3' | -8.23 | 109.82 | 119.70 |
| 53 | CA | 430 | A | P-O3'-C3' | -8.23 | 109.83 | 119.70 |
| 57 | DA | 1386 | C | N1-C1'-C2' | -8.23 | 102.95 | 112.00 |
| 1 | AA | 531 | U | P-O3'-C3' | 8.21 | 129.55 | 119.70 |
| 22 | BA | 705 | A | P-O3'-C3' | -8.21 | 109.85 | 119.70 |
| 22 | BA | 1273 | U | P-O5'-C5' | -8.20 | 107.78 | 120.90 |
| 57 | DA | 1476 | U | O4'-C1'-N1 | 8.20 | 114.76 | 108.20 |
| 57 | DA | 2490 | G | P-O3'-C3' | 8.20 | 129.53 | 119.70 |
| 22 | BA | 2543 | G | P-O3'-C3' | -8.19 | 109.87 | 119.70 |
| 22 | BA | 250 | G | P-O3'-C3' | -8.19 | 109.87 | 119.70 |
| 1 | AA | 1382 | C | P-O3'-C3' | -8.19 | 109.88 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 22 | BA | 1565 | C | N1-C1'-C2' | 8.19 | 124.64 | 114.00 |
| 22 | BA | 1626 | A | P-O3'-C3' | 8.18 | 129.51 | 119.70 |
| 57 | DA | 2493 | U | P-O3'-C3' | -8.18 | 109.89 | 119.70 |
| 22 | BA | 1675 | C | N1-C1'-C2' | -8.18 | 103.01 | 112.00 |
| 57 | DA | 2034 | U | N1-C1'-C2' | -8.17 | 103.01 | 112.00 |
| 22 | BA | 491 | G | P-O3'-C3' | -8.17 | 109.90 | 119.70 |
| 22 | BA | 1398 | C | N1-C1'-C2' | -8.16 | 103.03 | 112.00 |
| 53 | CA | 1455 | G | P-O3'-C3' | -8.16 | 109.91 | 119.70 |
| 57 | DA | 985 | C | N1-C1'-C2' | -8.15 | 103.03 | 112.00 |
| 53 | CA | 374 | A | P-O3'-C3' | -8.14 | 109.93 | 119.70 |
| 57 | DA | 2338 | C | O4'-C1'-N1 | 8.13 | 114.71 | 108.20 |
| 53 | CA | 253 | A | P-O3'-C3' | -8.13 | 109.95 | 119.70 |
| 1 | AA | 815 | A | P-O3'-C3' | 8.12 | 129.45 | 119.70 |
| 22 | BA | 1866 | A | P-O3'-C3' | -8.12 | 109.96 | 119.70 |
| 57 | DA | 1558 | C | P-O3'-C3' | 8.12 | 129.44 | 119.70 |
| 22 | BA | 1045 | C | O4'-C1'-N1 | 8.12 | 114.69 | 108.20 |
| 57 | DA | 2150 | C | N1-C1'-C2' | -8.12 | 103.07 | 112.00 |
| 57 | DA | 739 | A | P-O3'-C3' | 8.11 | 129.44 | 119.70 |
| 22 | BA | 1980 | G | P-O3'-C3' | 8.11 | 129.43 | 119.70 |
| 1 | AA | 1380 | U | P-O3'-C3' | 8.11 | 129.43 | 119.70 |
| 23 | BB | 67 | G | P-O3'-C3' | -8.11 | 109.97 | 119.70 |
| 57 | DA | 704 | G | P-O3'-C3' | 8.11 | 129.43 | 119.70 |
| 22 | BA | 866 | A | P-O3'-C3' | -8.10 | 109.98 | 119.70 |
| 57 | DA | 481 | G | O4'-C1'-N9 | 8.10 | 114.68 | 108.20 |
| 53 | CA | 1447 | A | P-O3'-C3' | 8.10 | 129.42 | 119.70 |
| 22 | BA | 821 | A | P-O3'-C3' | 8.09 | 129.41 | 119.70 |
| 53 | CA | 1498 | U | P-O3'-C3' | 8.08 | 129.40 | 119.70 |
| 57 | DA | 1019 | U | O4'-C1'-N1 | 8.08 | 114.67 | 108.20 |
| 22 | BA | 2250 | G | C5-N7-C8 | -8.08 | 100.26 | 104.30 |
| 22 | BA | 2250 | G | C4-C5-N7 | 8.08 | 114.03 | 110.80 |
| 57 | DA | 271 | G | P-O3'-C3' | 8.06 | 129.37 | 119.70 |
| 57 | DA | 669 | G | P-O3'-C3' | 8.06 | 129.37 | 119.70 |
| 22 | BA | 242 | G | P-O3'-C3' | 8.05 | 129.36 | 119.70 |
| 22 | BA | 620 | G | P-O3'-C3' | 8.05 | 129.36 | 119.70 |
| 53 | CA | 115 | G | P-O3'-C3' | 8.05 | 129.36 | 119.70 |
| 22 | BA | 1962 | C | P-O3'-C3' | 8.05 | 129.36 | 119.70 |
| 57 | DA | 807 | U | O4'-C1'-N1 | 8.05 | 114.64 | 108.20 |
| 57 | DA | 1145 | C | O4'-C1'-N1 | 8.04 | 114.63 | 108.20 |
| 22 | BA | 1394 | U | P-O3'-C3' | 8.03 | 129.34 | 119.70 |
| 1 | AA | 373 | A | P-O3'-C3' | -8.03 | 110.06 | 119.70 |
| 22 | BA | 33 | C | P-O3'-C3' | 8.03 | 129.33 | 119.70 |
| 22 | BA | 1273 | U | N1-C1'-C2' | -8.02 | 103.17 | 112.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 57 | DA | 336 | C | P-O3'-C3' | -8.02 | 110.07 | 119.70 |
| 57 | DA | 2136 | G | P-O3'-C3' | -8.02 | 110.08 | 119.70 |
| 23 | BB | 66 | A | P-O3'-C3' | 8.01 | 129.32 | 119.70 |
| 57 | DA | 2875 | C | O4'-C1'-N1 | 8.01 | 114.61 | 108.20 |
| 53 | CA | 213 | G | P-O3'-C3' | -8.01 | 110.09 | 119.70 |
| 1 | AA | 282 | A | P-O3'-C3' | -8.01 | 110.09 | 119.70 |
| 22 | BA | 791 | C | O4'-C1'-N1 | 8.01 | 114.61 | 108.20 |
| 57 | DA | 2314 | A | P-O3'-C3' | -8.00 | 110.10 | 119.70 |
| 1 | AA | 537 | G | P-O3'-C3' | -8.00 | 110.11 | 119.70 |
| 57 | DA | 1832 | C | O4'-C1'-N1 | 7.99 | 114.59 | 108.20 |
| 57 | DA | 2036 | C | N1-C1'-C2' | -7.99 | 103.22 | 112.00 |
| 1 | AA | 451 | A | P-O3'-C3' | 7.98 | 129.28 | 119.70 |
| 22 | BA | 310 | A | P-O3'-C3' | 7.97 | 129.27 | 119.70 |
| 22 | BA | 616 | A | P-O3'-C3' | -7.97 | 110.14 | 119.70 |
| 57 | DA | 2836 | U | N1-C1'-C2' | -7.97 | 103.23 | 112.00 |
| 1 | AA | 1162 | C | P-O3'-C3' | -7.96 | 110.14 | 119.70 |
| 22 | BA | 2732 | G | P-O3'-C3' | 7.96 | 129.26 | 119.70 |
| 22 | BA | 1900 | A | P-O3'-C3' | 7.96 | 129.25 | 119.70 |
| 53 | CA | 481 | G | P-O3'-C3' | 7.95 | 129.24 | 119.70 |
| 53 | CA | 961 | U | N1-C1'-C2' | -7.94 | 103.26 | 112.00 |
| 22 | BA | 2603 | G | P-O3'-C3' | -7.94 | 110.17 | 119.70 |
| 57 | DA | 2143 | C | P-O3'-C3' | 7.94 | 129.23 | 119.70 |
| 57 | DA | 1136 | G | P-O3'-C3' | -7.94 | 110.18 | 119.70 |
| 22 | BA | 1249 | U | O4'-C1'-N1 | -7.93 | 101.86 | 108.20 |
| 22 | BA | 1865 | U | N1-C1'-C2' | 7.93 | 124.30 | 114.00 |
| 22 | BA | 2800 | A | O3'-P-O5' | -7.92 | 88.94 | 104.00 |
| 57 | DA | 2267 | A | P-O3'-C3' | -7.92 | 110.19 | 119.70 |
| 1 | AA | 935 | A | P-O3'-C3' | -7.92 | 110.20 | 119.70 |
| 22 | BA | 1965 | C | P-O3'-C3' | -7.92 | 110.20 | 119.70 |
| 1 | AA | 884 | U | P-O3'-C3' | 7.91 | 129.19 | 119.70 |
| 57 | DA | 867 | C | O4'-C1'-N1 | 7.91 | 114.53 | 108.20 |
| 57 | DA | 1416 | G | P-O3'-C3' | 7.91 | 129.19 | 119.70 |
| 1 | AA | 1448 | C | N1-C1'-C2' | -7.91 | 103.30 | 112.00 |
| 22 | BA | 2520 | C | P-O3'-C3' | -7.91 | 110.21 | 119.70 |
| 22 | BA | 2468 | A | P-O3'-C3' | 7.91 | 129.19 | 119.70 |
| 22 | BA | 1839 | G | P-O3'-C3' | -7.91 | 110.21 | 119.70 |
| 53 | CA | 277 | C | P-O3'-C3' | -7.90 | 110.22 | 119.70 |
| 22 | BA | 2490 | G | P-O3'-C3' | 7.90 | 129.18 | 119.70 |
| 57 | DA | 2334 | U | N1-C1'-C2' | 7.89 | 124.26 | 114.00 |
| 57 | DA | 606 | U | O4'-C1'-N1 | 7.89 | 114.51 | 108.20 |
| 22 | BA | 1458 | U | P-O3'-C3' | 7.88 | 129.16 | 119.70 |
| 53 | CA | 1301 | U | P-O3'-C3' | -7.88 | 110.24 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 57 | DA | 1347 | A | P-O3'-C3' | -7.88 | 110.24 | 119.70 |
| 1 | AA | 821 | G | P-O3'-C3' | -7.88 | 110.25 | 119.70 |
| 57 | DA | 224 | U | P-O3'-C3' | -7.88 | 110.25 | 119.70 |
| 57 | DA | 1972 | G | P-O3'-C3' | -7.88 | 110.25 | 119.70 |
| 57 | DA | 1636 | U | N1-C1'-C2' | -7.88 | 103.34 | 112.00 |
| 57 | DA | 973 | A | P-O3'-C3' | 7.87 | 129.14 | 119.70 |
| 22 | BA | 764 | A | O4'-C1'-N9 | 7.87 | 114.49 | 108.20 |
| 22 | BA | 1555 | G | P-O3'-C3' | -7.86 | 110.26 | 119.70 |
| 57 | DA | 1998 | A | P-O3'-C3' | -7.86 | 110.27 | 119.70 |
| 53 | CA | 13 | U | P-O3'-C3' | 7.86 | 129.13 | 119.70 |
| 1 | AA | 500 | G | P-O3'-C3' | -7.86 | 110.27 | 119.70 |
| 22 | BA | 858 | G | O4'-C1'-N9 | 7.86 | 114.49 | 108.20 |
| 1 | AA | 85 | U | P-O3'-C3' | 7.86 | 129.13 | 119.70 |
| 57 | DA | 1915 | U | N1-C1'-C2' | -7.86 | 103.36 | 112.00 |
| 22 | BA | 1266 | G | P-O3'-C3' | 7.85 | 129.12 | 119.70 |
| 22 | BA | 774 | G | P-O3'-C3' | 7.85 | 129.12 | 119.70 |
| 22 | BA | 2543 | G | P-O5'-C5' | -7.85 | 108.34 | 120.90 |
| 57 | DA | 1821 | A | P-O3'-C3' | -7.85 | 110.28 | 119.70 |
| 1 | AA | 9 | G | P-O3'-C3' | -7.84 | 110.29 | 119.70 |
| 22 | BA | 1942 | C | P-O3'-C3' | -7.84 | 110.29 | 119.70 |
| 57 | DA | 775 | G | P-O3'-C3' | 7.83 | 129.09 | 119.70 |
| 1 | AA | 95 | C | P-O3'-C3' | -7.83 | 110.31 | 119.70 |
| 1 | AA | 480 | U | O4'-C1'-N1 | 7.83 | 114.46 | 108.20 |
| 22 | BA | 2581 | G | O4'-C1'-N9 | 7.82 | 114.46 | 108.20 |
| 53 | CA | 596 | A | P-O3'-C3' | -7.82 | 110.31 | 119.70 |
| 53 | CA | 889 | A | P-O3'-C3' | 7.82 | 129.09 | 119.70 |
| 22 | BA | 812 | C | P-O3'-C3' | -7.82 | 110.32 | 119.70 |
| 22 | BA | 1782 | U | N1-C1'-C2' | -7.82 | 103.40 | 112.00 |
| 1 | AA | 1320 | C | P-O3'-C3' | -7.81 | 110.32 | 119.70 |
| 22 | BA | 52 | A | P-O3'-C3' | -7.81 | 110.32 | 119.70 |
| 22 | BA | 1706 | C | O4'-C1'-N1 | 7.81 | 114.45 | 108.20 |
| 57 | DA | 1970 | A | P-O3'-C3' | 7.81 | 129.07 | 119.70 |
| 57 | DA | 1941 | C | P-O3'-C3' | -7.80 | 110.33 | 119.70 |
| 57 | DA | 484 | C | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |
| 53 | CA | 734 | G | P-O3'-C3' | -7.80 | 110.34 | 119.70 |
| 57 | DA | 1971 | U | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |
| 22 | BA | 2517 | C | P-O3'-C3' | 7.79 | 129.05 | 119.70 |
| 57 | DA | 370 | G | P-O3'-C3' | 7.79 | 129.05 | 119.70 |
| 53 | CA | 559 | A | P-O3'-C3' | 7.79 | 129.05 | 119.70 |
| 1 | AA | 374 | A | P-O3'-C3' | -7.79 | 110.35 | 119.70 |
| 1 | AA | 1124 | G | P-O3'-C3' | 7.79 | 129.04 | 119.70 |
| 1 | AA | 972 | C | O4'-C1'-N1 | 7.79 | 114.43 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 57 | DA | 1804 | C | P-O3'-C3' | -7.79 | 110.36 | 119.70 |
| 53 | CA | 110 | C | N1-C1'-C2' | -7.78 | 103.44 | 112.00 |
| 53 | CA | 1141 | C | N1-C1'-C2' | -7.78 | 103.44 | 112.00 |
| 57 | DA | 2286 | G | P-O3'-C3' | 7.78 | 129.03 | 119.70 |
| 57 | DA | 304 | U | O4'-C1'-N1 | 7.77 | 114.41 | 108.20 |
| 22 | BA | 1058 | U | O4'-C1'-N1 | 7.76 | 114.41 | 108.20 |
| 22 | BA | 126 | A | P-O3'-C3' | -7.76 | 110.39 | 119.70 |
| 2 | AB | 146 | SER | O-C-N | -7.75 | 110.29 | 122.70 |
| 57 | DA | 623 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 1 | AA | 1362 | A | O4'-C1'-N9 | 7.75 | 114.40 | 108.20 |
| 22 | BA | 1782 | U | P-O3'-C3' | -7.75 | 110.41 | 119.70 |
| 57 | DA | 2582 | G | P-O3'-C3' | -7.75 | 110.41 | 119.70 |
| 22 | BA | 459 | U | N1-C1'-C2' | -7.74 | 103.48 | 112.00 |
| 22 | BA | 1802 | A | P-O3'-C3' | -7.74 | 110.41 | 119.70 |
| 57 | DA | 121 | G | P-O3'-C3' | -7.74 | 110.41 | 119.70 |
| 1 | AA | 1502 | A | P-O3'-C3' | 7.74 | 128.99 | 119.70 |
| 53 | CA | 348 | G | P-O3'-C3' | -7.74 | 110.42 | 119.70 |
| 57 | DA | 1272 | A | P-O3'-C3' | 7.73 | 128.98 | 119.70 |
| 57 | DA | 1405 | U | O4'-C1'-N1 | 7.73 | 114.39 | 108.20 |
| 22 | BA | 2238 | G | P-O3'-C3' | 7.73 | 128.98 | 119.70 |
| 22 | BA | 1541 | C | P-O3'-C3' | -7.73 | 110.42 | 119.70 |
| 57 | DA | 794 | A | P-O3'-C3' | -7.72 | 110.43 | 119.70 |
| 1 | AA | 816 | A | P-O3'-C3' | -7.72 | 110.43 | 119.70 |
| 57 | DA | 1931 | U | N1-C1'-C2' | -7.72 | 103.51 | 112.00 |
| 57 | DA | 774 | G | P-O3'-C3' | 7.71 | 128.96 | 119.70 |
| 1 | AA | 486 | U | N1-C1'-C2' | -7.71 | 103.53 | 112.00 |
| 22 | BA | 790 | U | O4'-C1'-N1 | 7.71 | 114.36 | 108.20 |
| 22 | BA | 613 | A | P-O3'-C3' | 7.70 | 128.94 | 119.70 |
| 57 | DA | 1304 | A | P-O3'-C3' | -7.70 | 110.46 | 119.70 |
| 57 | DA | 990 | A | P-O3'-C3' | -7.69 | 110.47 | 119.70 |
| 22 | BA | 1716 | U | N1-C1'-C2' | -7.69 | 103.54 | 112.00 |
| 22 | BA | 2324 | U | N1-C1'-C2' | 7.69 | 124.00 | 114.00 |
| 57 | DA | 1265 | A | P-O3'-C3' | 7.69 | 128.93 | 119.70 |
| 22 | BA | 396 | G | P-O3'-C3' | -7.69 | 110.47 | 119.70 |
| 58 | DB | 107 | G | OP1-P-O3' | 7.68 | 122.10 | 105.20 |
| 57 | DA | 1991 | U | O4'-C1'-N1 | -7.68 | 102.06 | 108.20 |
| 53 | CA | 575 | G | P-O3'-C3' | 7.68 | 128.92 | 119.70 |
| 53 | CA | 1332 | A | P-O3'-C3' | -7.68 | 110.48 | 119.70 |
| 57 | DA | 1013 | C | P-O3'-C3' | -7.67 | 110.49 | 119.70 |
| 22 | BA | 1695 | G | P-O3'-C3' | -7.67 | 110.50 | 119.70 |
| 57 | DA | 534 | U | P-O3'-C3' | -7.67 | 110.49 | 119.70 |
| 57 | DA | 2251 | G | P-O3'-C3' | -7.67 | 110.50 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 216 | U | P-O3'-C3' | -7.66 | 110.50 | 119.70 |
| 53 | CA | 247 | G | P-O3'-C3' | -7.66 | 110.51 | 119.70 |
| 22 | BA | 62 | U | P-O3'-C3' | 7.65 | 128.88 | 119.70 |
| 22 | BA | 1499 | C | P-O3'-C3' | -7.65 | 110.52 | 119.70 |
| 23 | BB | 25 | U | N1-C1'-C2' | -7.65 | 103.59 | 112.00 |
| 53 | CA | 486 | U | P-O5'-C5' | -7.64 | 108.67 | 120.90 |
| 1 | AA | 439 | U | P-O3'-C3' | -7.64 | 110.53 | 119.70 |
| 22 | BA | 1884 | G | O4'-C1'-N9 | 7.64 | 114.31 | 108.20 |
| 22 | BA | 984 | A | C2-N3-C4 | -7.64 | 106.78 | 110.60 |
| 53 | CA | 381 | C | P-O3'-C3' | 7.64 | 128.87 | 119.70 |
| 22 | BA | 215 | G | P-O3'-C3' | 7.63 | 128.86 | 119.70 |
| 22 | BA | 2673 | G | P-O3'-C3' | -7.63 | 110.54 | 119.70 |
| 22 | BA | 587 | C | N1-C1'-C2' | 7.63 | 123.92 | 114.00 |
| 57 | DA | 1931 | U | P-O3'-C3' | -7.63 | 110.54 | 119.70 |
| 23 | BB | 42 | C | N1-C1'-C2' | -7.63 | 103.61 | 112.00 |
| 53 | CA | 184 | G | P-O3'-C3' | -7.63 | 110.55 | 119.70 |
| 1 | AA | 1161 | C | N1-C1'-C2' | -7.63 | 103.61 | 112.00 |
| 57 | DA | 1126 | A | P-O3'-C3' | 7.63 | 128.85 | 119.70 |
| 22 | BA | 2093 | G | N9-C1'-C2' | -7.62 | 103.61 | 112.00 |
| 53 | CA | 238 | A | P-O3'-C3' | 7.62 | 128.85 | 119.70 |
| 22 | BA | 996 | A | O5'-P-OP2 | -7.62 | 98.84 | 105.70 |
| 1 | AA | 1256 | A | P-O3'-C3' | 7.62 | 128.84 | 119.70 |
| 22 | BA | 575 | A | P-O3'-C3' | -7.62 | 110.56 | 119.70 |
| 53 | CA | 1282 | C | P-O3'-C3' | -7.62 | 110.56 | 119.70 |
| 22 | BA | 121 | G | P-O3'-C3' | -7.61 | 110.56 | 119.70 |
| 22 | BA | 2503 | A | P-O3'-C3' | 7.61 | 128.84 | 119.70 |
| 53 | CA | 68 | G | P-O3'-C3' | -7.61 | 110.56 | 119.70 |
| 1 | AA | 94 | G | P-O3'-C3' | 7.60 | 128.82 | 119.70 |
| 57 | DA | 865 | C | P-O3'-C3' | 7.60 | 128.82 | 119.70 |
| 22 | BA | 741 | U | P-O5'-C5' | -7.60 | 108.74 | 120.90 |
| 57 | DA | 2612 | C | O4'-C1'-N1 | 7.60 | 114.28 | 108.20 |
| 57 | DA | 1965 | C | N1-C1'-C2' | -7.60 | 103.64 | 112.00 |
| 23 | BB | 14 | U | P-O3'-C3' | 7.59 | 128.81 | 119.70 |
| 23 | BB | 12 | C | P-O3'-C3' | 7.59 | 128.81 | 119.70 |
| 22 | BA | 2645 | G | O4'-C1'-N9 | 7.59 | 114.27 | 108.20 |
| 22 | BA | 1689 | A | P-O3'-C3' | 7.59 | 128.80 | 119.70 |
| 53 | CA | 793 | U | P-O3'-C3' | -7.58 | 110.60 | 119.70 |
| 53 | CA | 802 | A | P-O3'-C3' | 7.58 | 128.80 | 119.70 |
| 53 | CA | 52 | C | N1-C1'-C2' | -7.58 | 103.67 | 112.00 |
| 57 | DA | 2542 | A | P-O3'-C3' | 7.57 | 128.78 | 119.70 |
| 22 | BA | 2866 | U | O4'-C1'-N1 | 7.57 | 114.25 | 108.20 |
| 1 | AA | 960 | U | N1-C1'-C2' | 7.56 | 123.83 | 114.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 22 | BA | 1416 | G | P-O3'-C3' | 7.56 | 128.77 | 119.70 |
| 57 | DA | 1483 | G | P-O3'-C3' | -7.56 | 110.63 | 119.70 |
| 57 | DA | 913 | U | P-O3'-C3' | 7.55 | 128.76 | 119.70 |
| 58 | DB | 90 | C | P-O3'-C3' | -7.55 | 110.64 | 119.70 |
| 57 | DA | 946 | C | O4'-C1'-N1 | 7.55 | 114.24 | 108.20 |
| 1 | AA | 575 | G | P-O3'-C3' | 7.55 | 128.76 | 119.70 |
| 1 | AA | 174 | A | P-O3'-C3' | -7.55 | 110.64 | 119.70 |
| 57 | DA | 2667 | C | N1-C1'-C2' | -7.55 | 103.70 | 112.00 |
| 22 | BA | 1627 | G | P-O3'-C3' | -7.55 | 110.64 | 119.70 |
| 53 | CA | 508 | U | P-O3'-C3' | 7.55 | 128.76 | 119.70 |
| 57 | DA | 763 | G | P-O3'-C3' | -7.55 | 110.64 | 119.70 |
| 57 | DA | 1079 | C | N1-C1'-C2' | -7.54 | 103.70 | 112.00 |
| 57 | DA | 2683 | C | N1-C1'-C2' | -7.54 | 103.71 | 112.00 |
| 53 | CA | 218 | U | O4'-C1'-N1 | 7.54 | 114.23 | 108.20 |
| 1 | AA | 347 | G | P-O3'-C3' | -7.53 | 110.66 | 119.70 |
| 22 | BA | 2092 | U | OP1-P-O3' | -7.53 | 88.63 | 105.20 |
| 57 | DA | 1247 | A | P-O3'-C3' | 7.53 | 128.74 | 119.70 |
| 57 | DA | 1427 | A | P-O3'-C3' | 7.53 | 128.74 | 119.70 |
| 57 | DA | 2609 | U | P-O3'-C3' | 7.53 | 128.74 | 119.70 |
| 58 | DB | 107 | G | P-O3'-C3' | 7.53 | 128.74 | 119.70 |
| 22 | BA | 739 | A | P-O3'-C3' | 7.53 | 128.74 | 119.70 |
| 57 | DA | 411 | G | P-O3'-C3' | 7.53 | 128.73 | 119.70 |
| 22 | BA | 1821 | A | P-O3'-C3' | -7.52 | 110.67 | 119.70 |
| 57 | DA | 334 | C | O4'-C1'-N1 | 7.52 | 114.22 | 108.20 |
| 1 | AA | 564 | C | N1-C1'-C2' | -7.52 | 103.73 | 112.00 |
| 53 | CA | 641 | U | P-O3'-C3' | 7.52 | 128.72 | 119.70 |
| 22 | BA | 1956 | U | N1-C1'-C2' | -7.51 | 103.74 | 112.00 |
| 57 | DA | 622 | G | P-O3'-C3' | -7.51 | 110.69 | 119.70 |
| 22 | BA | 2336 | A | P-O3'-C3' | 7.51 | 128.71 | 119.70 |
| 22 | BA | 1181 | U | O4'-C1'-N1 | 7.50 | 114.20 | 108.20 |
| 1 | AA | 1087 | G | P-O3'-C3' | -7.50 | 110.70 | 119.70 |
| 1 | AA | 1200 | C | P-O3'-C3' | 7.50 | 128.70 | 119.70 |
| 22 | BA | 2200 | C | P-O3'-C3' | -7.50 | 110.70 | 119.70 |
| 57 | DA | 2240 | U | O4'-C1'-N1 | 7.50 | 114.20 | 108.20 |
| 22 | BA | 2654 | A | P-O3'-C3' | 7.49 | 128.69 | 119.70 |
| 53 | CA | 122 | G | P-O3'-C3' | -7.49 | 110.71 | 119.70 |
| 57 | DA | 2312 | U | P-O3'-C3' | -7.49 | 110.71 | 119.70 |
| 57 | DA | 1080 | A | P-O3'-C3' | -7.49 | 110.71 | 119.70 |
| 22 | BA | 1615 | C | P-O3'-C3' | 7.49 | 128.69 | 119.70 |
| 22 | BA | 811 | U | O4'-C1'-N1 | 7.49 | 114.19 | 108.20 |
| 57 | DA | 2217 | G | P-O3'-C3' | -7.49 | 110.72 | 119.70 |
| 53 | CA | 1201 | A | P-O3'-C3' | 7.48 | 128.68 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | CA | 248 | C | O4'-C1'-N1 | 7.48 | 114.19 | 108.20 |
| 1 | AA | 91 | U | N1-C1'-C2' | -7.48 | 103.77 | 112.00 |
| 53 | CA | 86 | G | P-O3'-C3' | 7.48 | 128.68 | 119.70 |
| 22 | BA | 1181 | U | N1-C1'-C2' | -7.48 | 103.77 | 112.00 |
| 57 | DA | 1291 | C | N1-C1'-C2' | -7.48 | 103.77 | 112.00 |
| 53 | CA | 96 | U | P-O3'-C3' | -7.47 | 110.73 | 119.70 |
| 22 | BA | 206 | U | N1-C1'-C2' | -7.47 | 103.78 | 112.00 |
| 57 | DA | 1560 | G | P-O3'-C3' | -7.47 | 110.73 | 119.70 |
| 53 | CA | 70 | U | O4'-C1'-N1 | 7.47 | 114.18 | 108.20 |
| 1 | AA | 1433 | A | P-O3'-C3' | -7.47 | 110.74 | 119.70 |
| 1 | AA | 275 | G | P-O3'-C3' | -7.47 | 110.74 | 119.70 |
| 22 | BA | 1020 | A | P-O3'-C3' | 7.46 | 128.65 | 119.70 |
| 57 | DA | 2283 | C | P-O3'-C3' | -7.46 | 110.75 | 119.70 |
| 57 | DA | 2896 | C | P-O3'-C3' | -7.46 | 110.75 | 119.70 |
| 53 | CA | 1227 | A | P-O3'-C3' | 7.45 | 128.64 | 119.70 |
| 1 | AA | 511 | C | P-O3'-C3' | 7.45 | 128.64 | 119.70 |
| 22 | BA | 373 | U | P-O3'-C3' | -7.45 | 110.76 | 119.70 |
| 57 | DA | 1779 | U | O4'-C1'-N1 | 7.45 | 114.16 | 108.20 |
| 57 | DA | 2895 | G | P-O3'-C3' | -7.45 | 110.76 | 119.70 |
| 53 | CA | 1167 | A | P-O3'-C3' | 7.45 | 128.64 | 119.70 |
| 22 | BA | 1185 | G | P-O3'-C3' | -7.45 | 110.77 | 119.70 |
| 22 | BA | 2383 | G | P-O3'-C3' | -7.44 | 110.77 | 119.70 |
| 53 | CA | 1380 | U | P-O3'-C3' | 7.44 | 128.63 | 119.70 |
| 22 | BA | 1809 | A | P-O5'-C5' | -7.44 | 108.99 | 120.90 |
| 53 | CA | 1397 | C | N1-C1'-C2' | -7.44 | 103.82 | 112.00 |
| 53 | CA | 486 | U | N1-C1'-C2' | -7.44 | 103.82 | 112.00 |
| 53 | CA | 382 | A | P-O3'-C3' | 7.43 | 128.62 | 119.70 |
| 22 | BA | 1331 | G | P-O3'-C3' | -7.43 | 110.78 | 119.70 |
| 22 | BA | 2629 | U | O4'-C1'-N1 | -7.43 | 102.26 | 108.20 |
| 22 | BA | 854 | C | N1-C1'-C2' | -7.42 | 103.83 | 112.00 |
| 57 | DA | 1286 | A | P-O3'-C3' | 7.42 | 128.61 | 119.70 |
| 57 | DA | 1291 | C | O4'-C1'-N1 | 7.42 | 114.14 | 108.20 |
| 1 | AA | 534 | U | N1-C1'-C2' | -7.42 | 103.84 | 112.00 |
| 1 | AA | 1336 | C | O4'-C1'-N1 | 7.42 | 114.13 | 108.20 |
| 58 | DB | 40 | U | P-O3'-C3' | 7.41 | 128.59 | 119.70 |
| 1 | AA | 1345 | U | P-O3'-C3' | 7.41 | 128.59 | 119.70 |
| 22 | BA | 1919 | A | N9-C1'-C2' | -7.41 | 103.85 | 112.00 |
| 1 | AA | 1183 | U | N1-C1'-C2' | -7.41 | 103.85 | 112.00 |
| 22 | BA | 2226 | C | P-O3'-C3' | -7.41 | 110.81 | 119.70 |
| 57 | DA | 2392 | A | P-O3'-C3' | -7.41 | 110.81 | 119.70 |
| 57 | DA | 2585 | U | P-O3'-C3' | 7.41 | 128.59 | 119.70 |
| 2 | AB | 107 | ARG | O-C-N | -7.41 | 110.85 | 122.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | CA | 428 | G | O4'-C1'-N9 | 7.40 | 114.12 | 108.20 |
| 22 | BA | 671 | C | O4'-C1'-N1 | 7.40 | 114.12 | 108.20 |
| 22 | BA | 2504 | U | N1-C1'-C2' | -7.40 | 103.86 | 112.00 |
| 22 | BA | 385 | C | P-O3'-C3' | 7.40 | 128.58 | 119.70 |
| 57 | DA | 2881 | U | P-O3'-C3' | -7.39 | 110.83 | 119.70 |
| 1 | AA | 754 | C | N1-C1'-C2' | -7.39 | 103.87 | 112.00 |
| 22 | BA | 2797 | U | N1-C1'-C2' | 7.39 | 123.61 | 114.00 |
| 22 | BA | 165 | A | P-O3'-C3' | -7.39 | 110.84 | 119.70 |
| 22 | BA | 266 | G | P-O3'-C3' | -7.38 | 110.84 | 119.70 |
| 22 | BA | 1249 | U | N1-C1'-C2' | -7.38 | 103.88 | 112.00 |
| 22 | BA | 2282 | G | P-O3'-C3' | 7.38 | 128.56 | 119.70 |
| 57 | DA | 2689 | U | O4'-C1'-N1 | 7.38 | 114.10 | 108.20 |
| 1 | AA | 1181 | G | P-O3'-C3' | 7.38 | 128.55 | 119.70 |
| 22 | BA | 2426 | A | P-O3'-C3' | 7.38 | 128.55 | 119.70 |
| 22 | BA | 1865 | U | P-O3'-C3' | 7.37 | 128.55 | 119.70 |
| 22 | BA | 2423 | U | P-O3'-C3' | 7.37 | 128.54 | 119.70 |
| 57 | DA | 1047 | G | P-O3'-C3' | 7.37 | 128.54 | 119.70 |
| 22 | BA | 916 | G | P-O3'-C3' | -7.37 | 110.86 | 119.70 |
| 57 | DA | 801 | G | P-O3'-C3' | 7.37 | 128.54 | 119.70 |
| 22 | BA | 1386 | C | N1-C1'-C2' | -7.36 | 103.90 | 112.00 |
| 22 | BA | 790 | U | N1-C1'-C2' | -7.36 | 103.90 | 112.00 |
| 22 | BA | 1675 | C | P-O3'-C3' | -7.36 | 110.87 | 119.70 |
| 57 | DA | 964 | C | O4'-C1'-N1 | 7.36 | 114.09 | 108.20 |
| 22 | BA | 333 | G | P-O3'-C3' | -7.36 | 110.87 | 119.70 |
| 22 | BA | 2447 | G | O4'-C1'-N9 | 7.36 | 114.09 | 108.20 |
| 53 | CA | 87 | C | N1-C1'-C2' | -7.36 | 103.91 | 112.00 |
| 1 | AA | 245 | U | N1-C1'-C2' | -7.35 | 103.91 | 112.00 |
| 57 | DA | 606 | U | P-O3'-C3' | -7.35 | 110.88 | 119.70 |
| 1 | AA | 1505 | G | P-O3'-C3' | -7.34 | 110.89 | 119.70 |
| 53 | CA | 717 | U | P-O3'-C3' | 7.34 | 128.51 | 119.70 |
| 1 | AA | 1101 | A | P-O3'-C3' | 7.34 | 128.51 | 119.70 |
| 57 | DA | 1255 | U | O4'-C1'-N1 | 7.33 | 114.07 | 108.20 |
| 22 | BA | 204 | A | P-O3'-C3' | 7.33 | 128.50 | 119.70 |
| 22 | BA | 1885 | A | P-O3'-C3' | -7.33 | 110.90 | 119.70 |
| 22 | BA | 2013 | A | P-O3'-C3' | -7.33 | 110.90 | 119.70 |
| 53 | CA | 1143 | G | P-O3'-C3' | -7.32 | 110.91 | 119.70 |
| 22 | BA | 1333 | G | P-O3'-C3' | -7.32 | 110.92 | 119.70 |
| 22 | BA | 2199 | A | P-O3'-C3' | -7.32 | 110.92 | 119.70 |
| 22 | BA | 2542 | A | O4'-C1'-N9 | 7.32 | 114.05 | 108.20 |
| 22 | BA | 2629 | U | N1-C1'-C2' | 7.32 | 123.51 | 114.00 |
| 22 | BA | 2053 | G | O3'-P-O5' | -7.31 | 90.10 | 104.00 |
| 1 | AA | 722 | G | P-O3'-C3' | -7.31 | 110.93 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 528 | A | C5-N7-C8 | -7.31 | 100.25 | 103.90 |
| 22 | BA | 382 | A | P-O3'-C3' | -7.31 | 110.93 | 119.70 |
| 22 | BA | 1682 | G | P-O3'-C3' | -7.31 | 110.93 | 119.70 |
| 57 | DA | 459 | U | N1-C1'-C2' | -7.31 | 103.96 | 112.00 |
| 22 | BA | 1706 | C | P-O3'-C3' | 7.30 | 128.47 | 119.70 |
| 53 | CA | 979 | C | P-O3'-C3' | -7.30 | 110.93 | 119.70 |
| 53 | CA | 1142 | G | P-O3'-C3' | -7.30 | 110.94 | 119.70 |
| 22 | BA | 1654 | A | C3'-C2'-C1' | 7.30 | 107.34 | 101.50 |
| 53 | CA | 517 | G | P-O3'-C3' | 7.29 | 128.45 | 119.70 |
| 57 | DA | 916 | G | P-O3'-C3' | -7.29 | 110.95 | 119.70 |
| 57 | DA | 2384 | U | N1-C1'-C2' | 7.29 | 123.48 | 114.00 |
| 57 | DA | 404 | A | P-O3'-C3' | 7.29 | 128.45 | 119.70 |
| 22 | BA | 1942 | C | P-O5'-C5' | -7.29 | 109.24 | 120.90 |
| 57 | DA | 1397 | U | N1-C1'-C2' | 7.29 | 123.48 | 114.00 |
| 22 | BA | 2067 | G | P-O3'-C3' | 7.29 | 128.45 | 119.70 |
| 1 | AA | 1054 | C | P-O3'-C3' | 7.29 | 128.44 | 119.70 |
| 22 | BA | 1942 | C | N1-C1'-C2' | -7.29 | 103.98 | 112.00 |
| 57 | DA | 961 | C | N1-C1'-C2' | 7.29 | 123.47 | 114.00 |
| 22 | BA | 1272 | A | P-O3'-C3' | 7.28 | 128.44 | 119.70 |
| 57 | DA | 2881 | U | O4'-C1'-N1 | 7.28 | 114.03 | 108.20 |
| 53 | CA | 1383 | C | P-O3'-C3' | -7.28 | 110.97 | 119.70 |
| 57 | DA | 2830 | C | O4'-C1'-N1 | 7.28 | 114.02 | 108.20 |
| 57 | DA | 143 | C | N1-C1'-C2' | -7.28 | 104.00 | 112.00 |
| 22 | BA | 2322 | A | P-O3'-C3' | -7.27 | 110.97 | 119.70 |
| 22 | BA | 2202 | U | O4'-C1'-N1 | 7.27 | 114.02 | 108.20 |
| 22 | BA | 434 | U | P-O3'-C3' | 7.27 | 128.42 | 119.70 |
| 22 | BA | 479 | A | P-O3'-C3' | 7.27 | 128.42 | 119.70 |
| 53 | CA | 1381 | U | P-O3'-C3' | -7.26 | 110.98 | 119.70 |
| 53 | CA | 497 | G | P-O3'-C3' | -7.26 | 110.99 | 119.70 |
| 22 | BA | 1273 | U | P-O3'-C3' | -7.26 | 110.99 | 119.70 |
| 53 | CA | 209 | U | P-O3'-C3' | 7.26 | 128.41 | 119.70 |
| 57 | DA | 2210 | U | P-O3'-C3' | 7.25 | 128.40 | 119.70 |
| 1 | AA | 686 | U | P-O3'-C3' | 7.25 | 128.40 | 119.70 |
| 53 | CA | 173 | U | P-O3'-C3' | 7.25 | 128.40 | 119.70 |
| 53 | CA | 453 | G | P-O3'-C3' | -7.24 | 111.01 | 119.70 |
| 57 | DA | 868 | U | P-O3'-C3' | -7.24 | 111.01 | 119.70 |
| 22 | BA | 566 | U | P-O5'-C5' | -7.24 | 109.32 | 120.90 |
| 53 | CA | 92 | U | P-O3'-C3' | -7.24 | 111.01 | 119.70 |
| 53 | CA | 1383 | C | O4'-C1'-N1 | 7.23 | 113.99 | 108.20 |
| 57 | DA | 991 | C | P-O3'-C3' | -7.23 | 111.02 | 119.70 |
| 1 | AA | 1085 | U | P-O3'-C3' | 7.23 | 128.38 | 119.70 |
| 57 | DA | 573 | U | O4'-C1'-N1 | 7.23 | 113.99 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 22 | BA | 1558 | C | P-O3'-C3' | 7.23 | 128.38 | 119.70 |
| 22 | BA | 2047 | C | O4'-C1'-N1 | -7.23 | 102.42 | 108.20 |
| 1 | AA | 934 | C | O4'-C1'-N1 | 7.23 | 113.98 | 108.20 |
| 53 | CA | 536 | C | P-O3'-C3' | -7.22 | 111.03 | 119.70 |
| 22 | BA | 1759 | A | P-O3'-C3' | -7.22 | 111.03 | 119.70 |
| 22 | BA | 163 | C | N1-C1'-C2' | -7.22 | 104.06 | 112.00 |
| 57 | DA | 1460 | U | P-O3'-C3' | 7.22 | 128.36 | 119.70 |
| 22 | BA | 1026 | G | P-O3'-C3' | -7.21 | 111.05 | 119.70 |
| 53 | CA | 1140 | C | N1-C1'-C2' | -7.21 | 104.07 | 112.00 |
| 22 | BA | 1538 | G | P-O3'-C3' | -7.20 | 111.06 | 119.70 |
| 57 | DA | 2728 | U | O4'-C1'-N1 | 7.20 | 113.96 | 108.20 |
| 1 | AA | 485 | U | P-O3'-C3' | 7.20 | 128.34 | 119.70 |
| 1 | AA | 519 | C | N1-C1'-C2' | -7.20 | 104.08 | 112.00 |
| 53 | CA | 1398 | A | P-O3'-C3' | -7.20 | 111.06 | 119.70 |
| 1 | AA | 1068 | G | P-O3'-C3' | -7.20 | 111.07 | 119.70 |
| 58 | DB | 111 | U | N1-C1'-C2' | -7.19 | 104.09 | 112.00 |
| 22 | BA | 474 | G | P-O3'-C3' | 7.19 | 128.33 | 119.70 |
| 53 | CA | 513 | C | O4'-C1'-N1 | 7.19 | 113.95 | 108.20 |
| 22 | BA | 1700 | A | P-O3'-C3' | -7.19 | 111.07 | 119.70 |
| 1 | AA | 73 | C | N1-C1'-C2' | -7.19 | 104.09 | 112.00 |
| 57 | DA | 637 | A | P-O3'-C3' | 7.19 | 128.33 | 119.70 |
| 53 | CA | 132 | C | P-O3'-C3' | -7.19 | 111.08 | 119.70 |
| 1 | AA | 467 | U | O4'-C1'-N1 | 7.18 | 113.95 | 108.20 |
| 57 | DA | 1569 | A | P-O3'-C3' | -7.18 | 111.08 | 119.70 |
| 1 | AA | 122 | G | P-O3'-C3' | -7.18 | 111.08 | 119.70 |
| 22 | BA | 1380 | G | P-O3'-C3' | -7.18 | 111.08 | 119.70 |
| 22 | BA | 1714 | U | O4'-C1'-N1 | -7.18 | 102.46 | 108.20 |
| 57 | DA | 2611 | C | P-O3'-C3' | -7.18 | 111.08 | 119.70 |
| 1 | AA | 1394 | A | P-O3'-C3' | 7.17 | 128.31 | 119.70 |
| 57 | DA | 1064 | C | P-O3'-C3' | -7.17 | 111.09 | 119.70 |
| 57 | DA | 2874 | C | N1-C1'-C2' | -7.17 | 104.11 | 112.00 |
| 22 | BA | 1386 | C | P-O3'-C3' | -7.17 | 111.10 | 119.70 |
| 22 | BA | 177 | G | P-O3'-C3' | 7.17 | 128.30 | 119.70 |
| 53 | CA | 248 | C | P-O3'-C3' | -7.16 | 111.11 | 119.70 |
| 57 | DA | 2498 | C | P-O3'-C3' | -7.16 | 111.11 | 119.70 |
| 53 | CA | 654 | G | P-O3'-C3' | -7.15 | 111.12 | 119.70 |
| 22 | BA | 958 | U | P-O5'-C5' | -7.15 | 109.46 | 120.90 |
| 53 | CA | 421 | U | P-O3'-C3' | 7.15 | 128.28 | 119.70 |
| 57 | DA | 2501 | C | O4'-C1'-N1 | 7.15 | 113.92 | 108.20 |
| 57 | DA | 1998 | A | N9-C1'-C2' | -7.15 | 104.14 | 112.00 |
| 22 | BA | 137 | U | O4'-C1'-N1 | -7.14 | 102.49 | 108.20 |
| 57 | DA | 1475 | G | P-O3'-C3' | 7.14 | 128.27 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 57 | DA | 1497 | U | P-O3'-C3' | 7.14 | 128.27 | 119.70 |
| 1 | AA | 173 | U | P-O3'-C3' | 7.14 | 128.26 | 119.70 |
| 22 | BA | 61 | C | N1-C1'-C2' | -7.14 | 104.15 | 112.00 |
| 57 | DA | 846 | U | O4'-C1'-N1 | 7.13 | 113.91 | 108.20 |
| 1 | AA | 961 | U | P-O3'-C3' | -7.13 | 111.14 | 119.70 |
| 22 | BA | 1146 | C | O4'-C1'-N1 | 7.13 | 113.91 | 108.20 |
| 57 | DA | 1982 | U | P-O3'-C3' | -7.13 | 111.15 | 119.70 |
| 22 | BA | 1732 | C | N1-C1'-C2' | 7.12 | 123.26 | 114.00 |
| 22 | BA | 2836 | U | N1-C1'-C2' | -7.12 | 104.17 | 112.00 |
| 1 | AA | 247 | G | N9-C1'-C2' | -7.12 | 104.17 | 112.00 |
| 22 | BA | 1901 | A | P-O3'-C3' | -7.12 | 111.16 | 119.70 |
| 57 | DA | 762 | U | P-O3'-C3' | 7.11 | 128.24 | 119.70 |
| 57 | DA | 2149 | U | O4'-C1'-N1 | 7.11 | 113.89 | 108.20 |
| 57 | DA | 623 | C | P-O3'-C3' | -7.11 | 111.17 | 119.70 |
| 57 | DA | 702 | U | O4'-C1'-N1 | 7.10 | 113.88 | 108.20 |
| 1 | AA | 934 | C | P-O3'-C3' | 7.09 | 128.22 | 119.70 |
| 57 | DA | 2387 | U | N1-C1'-C2' | -7.09 | 104.20 | 112.00 |
| 57 | DA | 2289 | G | P-O3'-C3' | -7.09 | 111.19 | 119.70 |
| 57 | DA | 2299 | U | P-O3'-C3' | -7.09 | 111.19 | 119.70 |
| 22 | BA | 958 | U | N1-C1'-C2' | -7.09 | 104.20 | 112.00 |
| 1 | AA | 422 | C | N1-C1'-C2' | 7.09 | 123.21 | 114.00 |
| 22 | BA | 1918 | A | P-O3'-C3' | 7.09 | 128.20 | 119.70 |
| 53 | CA | 1064 | G | P-O3'-C3' | 7.08 | 128.20 | 119.70 |
| 22 | BA | 1734 | G | P-O3'-C3' | -7.08 | 111.21 | 119.70 |
| 57 | DA | 2299 | U | O4'-C1'-N1 | 7.08 | 113.86 | 108.20 |
| 53 | CA | 70 | U | P-O3'-C3' | 7.07 | 128.19 | 119.70 |
| 23 | BB | 88 | C | O4'-C1'-N1 | -7.07 | 102.54 | 108.20 |
| 53 | CA | 174 | A | P-O3'-C3' | -7.07 | 111.22 | 119.70 |
| 22 | BA | 1967 | C | P-O3'-C3' | -7.07 | 111.22 | 119.70 |
| 22 | BA | 2149 | U | N1-C1'-C2' | -7.07 | 104.23 | 112.00 |
| 53 | CA | 1230 | C | P-O3'-C3' | -7.07 | 111.22 | 119.70 |
| 23 | BB | 67 | G | P-O5'-C5' | -7.06 | 109.60 | 120.90 |
| 25 | BD | 151 | THR | C-N-CD | 7.06 | 143.23 | 128.40 |
| 22 | BA | 980 | A | P-O3'-C3' | -7.06 | 111.23 | 119.70 |
| 22 | BA | 2034 | U | N1-C1'-C2' | -7.06 | 104.24 | 112.00 |
| 1 | AA | 439 | U | N1-C1'-C2' | -7.05 | 104.24 | 112.00 |
| 22 | BA | 746 | U | P-O3'-C3' | 7.05 | 128.16 | 119.70 |
| 22 | BA | 498 | G | P-O5'-C5' | -7.05 | 109.62 | 120.90 |
| 22 | BA | 2384 | U | P-O3'-C3' | 7.05 | 128.16 | 119.70 |
| 22 | BA | 2239 | G | P-O5'-C5' | -7.04 | 109.63 | 120.90 |
| 22 | BA | 528 | A | N1-C6-N6 | 7.04 | 122.83 | 118.60 |
| 22 | BA | 1330 | C | P-O3'-C3' | -7.04 | 111.25 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | CA | 1053 | G | P-O3'-C3' | 7.04 | 128.15 | 119.70 |
| 57 | DA | 1378 | A | P-O3'-C3' | 7.04 | 128.15 | 119.70 |
| 57 | DA | 1920 | C | P-O3'-C3' | -7.04 | 111.25 | 119.70 |
| 53 | CA | 705 | G | P-O3'-C3' | -7.04 | 111.25 | 119.70 |
| 57 | DA | 235 | U | O4'-C1'-N1 | 7.03 | 113.83 | 108.20 |
| 22 | BA | 2752 | C | P-O3'-C3' | -7.03 | 111.26 | 119.70 |
| 22 | BA | 2824 | C | N3-C4-C5 | -7.03 | 119.09 | 121.90 |
| 57 | DA | 2425 | A | P-O3'-C3' | 7.03 | 128.13 | 119.70 |
| 57 | DA | 2450 | A | P-O3'-C3' | -7.03 | 111.27 | 119.70 |
| 22 | BA | 1603 | A | P-O5'-C5' | -7.02 | 109.66 | 120.90 |
| 57 | DA | 1717 | A | P-O3'-C3' | -7.02 | 111.28 | 119.70 |
| 57 | DA | 1739 | A | P-O3'-C3' | -7.02 | 111.28 | 119.70 |
| 22 | BA | 1812 | U | O4'-C1'-N1 | 7.01 | 113.81 | 108.20 |
| 53 | CA | 15 | G | P-O3'-C3' | -7.01 | 111.29 | 119.70 |
| 57 | DA | 2150 | C | O4'-C1'-N1 | 7.01 | 113.81 | 108.20 |
| 57 | DA | 1615 | C | N1-C1'-C2' | 7.01 | 123.11 | 114.00 |
| 57 | DA | 1626 | A | P-O3'-C3' | 7.01 | 128.11 | 119.70 |
| 1 | AA | 372 | C | P-O3'-C3' | 7.00 | 128.10 | 119.70 |
| 22 | BA | 1110 | G | P-O3'-C3' | 7.00 | 128.10 | 119.70 |
| 53 | CA | 240 | G | P-O3'-C3' | -7.00 | 111.30 | 119.70 |
| 53 | CA | 1367 | C | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 57 | DA | 421 | C | P-O3'-C3' | 6.99 | 128.09 | 119.70 |
| 22 | BA | 528 | A | P-O3'-C3' | -6.99 | 111.31 | 119.70 |
| 57 | DA | 1206 | G | P-O3'-C3' | -6.99 | 111.31 | 119.70 |
| 1 | AA | 267 | C | P-O5'-C5' | -6.99 | 109.72 | 120.90 |
| 53 | CA | 67 | C | O4'-C1'-N1 | 6.98 | 113.79 | 108.20 |
| 53 | CA | 245 | U | P-O3'-C3' | -6.98 | 111.33 | 119.70 |
| 57 | DA | 353 | C | P-O3'-C3' | 6.98 | 128.07 | 119.70 |
| 53 | CA | 1147 | C | P-O3'-C3' | -6.97 | 111.34 | 119.70 |
| 22 | BA | 788 | A | P-O3'-C3' | 6.96 | 128.06 | 119.70 |
| 22 | BA | 1461 | C | O4'-C1'-N1 | 6.96 | 113.77 | 108.20 |
| 53 | CA | 643 | C | P-O3'-C3' | -6.96 | 111.34 | 119.70 |
| 22 | BA | 1838 | C | P-O3'-C3' | 6.96 | 128.05 | 119.70 |
| 53 | CA | 686 | U | O4'-C1'-N1 | 6.96 | 113.76 | 108.20 |
| 22 | BA | 1898 | U | O4'-C1'-N1 | 6.95 | 113.76 | 108.20 |
| 53 | CA | 817 | C | P-O3'-C3' | 6.95 | 128.04 | 119.70 |
| 1 | AA | 452 | A | P-O3'-C3' | -6.95 | 111.36 | 119.70 |
| 1 | AA | 704 | A | P-O3'-C3' | -6.95 | 111.36 | 119.70 |
| 57 | DA | 1207 | C | P-O3'-C3' | -6.95 | 111.36 | 119.70 |
| 57 | DA | 741 | U | O4'-C1'-N1 | 6.95 | 113.76 | 108.20 |
| 57 | DA | 915 | C | P-O3'-C3' | -6.95 | 111.36 | 119.70 |
| 57 | DA | 1141 | U | P-O3'-C3' | 6.94 | 128.03 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 57 | DA | 963 | U | O4'-C1'-N1 | 6.94 | 113.75 | 108.20 |
| 22 | BA | 1206 | G | P-O3'-C3' | -6.93 | 111.38 | 119.70 |
| 22 | BA | 2791 | G | P-O3'-C3' | -6.93 | 111.38 | 119.70 |
| 22 | BA | 1311 | G | P-O3'-C3' | 6.93 | 128.02 | 119.70 |
| 22 | BA | 1112 | G | P-O3'-C3' | -6.93 | 111.39 | 119.70 |
| 1 | AA | 14 | U | P-O5'-C5' | -6.92 | 109.83 | 120.90 |
| 1 | AA | 1094 | G | P-O3'-C3' | 6.92 | 128.00 | 119.70 |
| 53 | CA | 315 | A | P-O3'-C3' | 6.92 | 128.00 | 119.70 |
| 57 | DA | 2609 | U | N1-C1'-C2' | 6.92 | 122.99 | 114.00 |
| 53 | CA | 1282 | C | N1-C1'-C2' | -6.92 | 104.39 | 112.00 |
| 22 | BA | 1250 | G | O4'-C1'-N9 | -6.91 | 102.67 | 108.20 |
| 1 | AA | 535 | A | P-O3'-C3' | 6.91 | 127.99 | 119.70 |
| 22 | BA | 866 | A | N9-C1'-C2' | -6.91 | 104.40 | 112.00 |
| 23 | BB | 90 | C | P-O5'-C5' | -6.91 | 109.85 | 120.90 |
| 22 | BA | 2063 | C | P-O3'-C3' | -6.90 | 111.42 | 119.70 |
| 1 | AA | 1297 | G | P-O3'-C3' | 6.90 | 127.98 | 119.70 |
| 22 | BA | 968 | C | N1-C1'-C2' | -6.90 | 104.41 | 112.00 |
| 22 | BA | 2307 | G | P-O3'-C3' | 6.90 | 127.98 | 119.70 |
| 53 | CA | 792 | A | O4'-C1'-N9 | 6.90 | 113.72 | 108.20 |
| 57 | DA | 784 | G | P-O3'-C3' | 6.90 | 127.98 | 119.70 |
| 57 | DA | 2408 | U | O4'-C1'-N1 | 6.90 | 113.72 | 108.20 |
| 57 | DA | 3 | U | O4'-C1'-N1 | 6.90 | 113.72 | 108.20 |
| 57 | DA | 1010 | A | P-O3'-C3' | -6.90 | 111.42 | 119.70 |
| 1 | AA | 1131 | G | P-O3'-C3' | -6.90 | 111.42 | 119.70 |
| 22 | BA | 2324 | U | P-O3'-C3' | 6.90 | 127.98 | 119.70 |
| 22 | BA | 2684 | U | O5'-P-OP2 | -6.90 | 99.49 | 105.70 |
| 57 | DA | 2419 | U | O4'-C1'-N1 | 6.90 | 113.72 | 108.20 |
| 1 | AA | 1055 | A | P-O3'-C3' | -6.90 | 111.42 | 119.70 |
| 57 | DA | 1135 | C | N1-C1'-C2' | -6.89 | 104.42 | 112.00 |
| 57 | DA | 2348 | U | O4'-C1'-N1 | 6.89 | 113.71 | 108.20 |
| 1 | AA | 110 | C | N1-C1'-C2' | -6.89 | 104.42 | 112.00 |
| 22 | BA | 486 | C | P-O3'-C3' | -6.89 | 111.44 | 119.70 |
| 22 | BA | 1071 | G | P-O3'-C3' | 6.88 | 127.96 | 119.70 |
| 22 | BA | 1034 | G | P-O3'-C3' | -6.88 | 111.45 | 119.70 |
| 53 | CA | 914 | A | P-O3'-C3' | -6.88 | 111.45 | 119.70 |
| 1 | AA | 1145 | A | P-O3'-C3' | 6.88 | 127.95 | 119.70 |
| 23 | BB | 15 | A | P-O5'-C5' | -6.88 | 109.90 | 120.90 |
| 57 | DA | 1236 | G | P-O3'-C3' | 6.88 | 127.95 | 119.70 |
| 1 | AA | 519 | C | P-O3'-C3' | -6.87 | 111.45 | 119.70 |
| 1 | AA | 216 | U | N1-C1'-C2' | -6.87 | 104.44 | 112.00 |
| 57 | DA | 2712 | C | O4'-C1'-N1 | 6.87 | 113.70 | 108.20 |
| 53 | CA | 1215 | G | P-O3'-C3' | -6.87 | 111.46 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 57 | DA | 129 | C | N1-C1'-C2' | -6.87 | 104.44 | 112.00 |
| 57 | DA | 1655 | A | P-O3'-C3' | -6.87 | 111.46 | 119.70 |
| 57 | DA | 1838 | C | P-O3'-C3' | 6.87 | 127.94 | 119.70 |
| 53 | CA | 349 | A | P-O3'-C3' | -6.86 | 111.47 | 119.70 |
| 53 | CA | 1366 | C | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |
| 22 | BA | 2812 | G | P-O3'-C3' | -6.86 | 111.47 | 119.70 |
| 22 | BA | 2326 | C | P-O3'-C3' | 6.85 | 127.92 | 119.70 |
| 57 | DA | 407 | G | P-O3'-C3' | -6.85 | 111.48 | 119.70 |
| 22 | BA | 972 | A | P-O3'-C3' | 6.85 | 127.92 | 119.70 |
| 22 | BA | 2656 | U | P-O3'-C3' | -6.85 | 111.48 | 119.70 |
| 53 | CA | 1217 | C | O4'-C1'-N1 | 6.85 | 113.68 | 108.20 |
| 22 | BA | 1265 | A | O5'-P-OP2 | -6.85 | 99.54 | 105.70 |
| 22 | BA | 1728 | C | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 53 | CA | 974 | A | P-O3'-C3' | 6.84 | 127.91 | 119.70 |
| 57 | DA | 2622 | U | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 22 | BA | 2289 | G | P-O3'-C3' | -6.83 | 111.50 | 119.70 |
| 57 | DA | 2875 | C | P-O3'-C3' | -6.83 | 111.50 | 119.70 |
| 22 | BA | 640 | C | P-O3'-C3' | 6.83 | 127.90 | 119.70 |
| 22 | BA | 2777 | G | O4'-C1'-N9 | -6.83 | 102.74 | 108.20 |
| 22 | BA | 931 | U | P-O3'-C3' | 6.83 | 127.89 | 119.70 |
| 22 | BA | 1693 | U | O4'-C1'-N1 | 6.83 | 113.66 | 108.20 |
| 22 | BA | 2682 | A | P-O3'-C3' | -6.82 | 111.51 | 119.70 |
| 22 | BA | 2850 | A | P-O3'-C3' | -6.82 | 111.51 | 119.70 |
| 1 | AA | 1184 | G | P-O3'-C3' | -6.82 | 111.52 | 119.70 |
| 22 | BA | 1966 | A | P-O3'-C3' | 6.82 | 127.88 | 119.70 |
| 22 | BA | 763 | G | P-O3'-C3' | -6.82 | 111.52 | 119.70 |
| 57 | DA | 1942 | C | P-O3'-C3' | -6.81 | 111.53 | 119.70 |
| 57 | DA | 2566 | A | P-O3'-C3' | 6.81 | 127.87 | 119.70 |
| 53 | CA | 512 | U | P-O3'-C3' | -6.81 | 111.53 | 119.70 |
| 22 | BA | 1033 | U | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 22 | BA | 1799 | G | P-O3'-C3' | 6.80 | 127.86 | 119.70 |
| 1 | AA | 266 | G | P-O3'-C3' | 6.80 | 127.86 | 119.70 |
| 22 | BA | 1238 | G | N9-C1'-C2' | -6.80 | 104.52 | 112.00 |
| 22 | BA | 2849 | U | O4'-C1'-N1 | -6.79 | 102.77 | 108.20 |
| 22 | BA | 1653 | G | O3'-P-O5' | 6.79 | 116.90 | 104.00 |
| 22 | BA | 2035 | G | O4'-C1'-N9 | 6.79 | 113.63 | 108.20 |
| 57 | DA | 1738 | G | P-O3'-C3' | 6.79 | 127.85 | 119.70 |
| 1 | AA | 1202 | U | O4'-C1'-N1 | 6.79 | 113.63 | 108.20 |
| 57 | DA | 1681 | G | P-O3'-C3' | 6.79 | 127.84 | 119.70 |
| 22 | BA | 2407 | A | P-O3'-C3' | -6.79 | 111.56 | 119.70 |
| 53 | CA | 1349 | A | P-O3'-C3' | -6.78 | 111.56 | 119.70 |
| 53 | CA | 451 | A | P-O3'-C3' | 6.78 | 127.84 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 792 | A | P-O3'-C3' | 6.78 | 127.84 | 119.70 |
| 22 | BA | 1512 | C | P-O3'-C3' | -6.78 | 111.56 | 119.70 |
| 22 | BA | 2561 | U | O4'-C1'-N1 | 6.78 | 113.62 | 108.20 |
| 57 | DA | 945 | A | O4'-C1'-N9 | 6.78 | 113.62 | 108.20 |
| 22 | BA | 577 | G | OP2-P-O3' | 6.78 | 120.11 | 105.20 |
| 57 | DA | 424 | G | P-O3'-C3' | -6.78 | 111.57 | 119.70 |
| 57 | DA | 2620 | C | O4'-C1'-N1 | -6.78 | 102.78 | 108.20 |
| 57 | DA | 1993 | U | N1-C1'-C2' | -6.77 | 104.55 | 112.00 |
| 1 | AA | 509 | A | P-O3'-C3' | -6.77 | 111.58 | 119.70 |
| 22 | BA | 503 | A | P-O3'-C3' | 6.77 | 127.82 | 119.70 |
| 22 | BA | 1766 | G | P-O5'-C5' | -6.77 | 110.07 | 120.90 |
| 57 | DA | 1498 | C | P-O3'-C3' | -6.77 | 111.58 | 119.70 |
| 1 | AA | 566 | G | P-O3'-C3' | 6.77 | 127.82 | 119.70 |
| 53 | CA | 534 | U | N1-C1'-C2' | -6.76 | 104.56 | 112.00 |
| 57 | DA | 1398 | C | P-O3'-C3' | -6.76 | 111.59 | 119.70 |
| 57 | DA | 1554 | U | P-O3'-C3' | 6.76 | 127.81 | 119.70 |
| 22 | BA | 1178 | C | O4'-C1'-N1 | 6.76 | 113.61 | 108.20 |
| 57 | DA | 685 | A | P-O5'-C5' | -6.76 | 110.09 | 120.90 |
| 57 | DA | 783 | A | N9-C1'-C2' | -6.75 | 104.57 | 112.00 |
| 22 | BA | 2880 | C | P-O5'-C5' | -6.75 | 110.10 | 120.90 |
| 22 | BA | 2615 | U | P-O3'-C3' | -6.75 | 111.60 | 119.70 |
| 57 | DA | 2267 | A | N9-C1'-C2' | -6.74 | 104.58 | 112.00 |
| 22 | BA | 2821 | A | N9-C1'-C2' | -6.74 | 104.58 | 112.00 |
| 57 | DA | 1971 | U | N1-C1'-C2' | -6.74 | 104.58 | 112.00 |
| 1 | AA | 1337 | G | P-O3'-C3' | -6.74 | 111.61 | 119.70 |
| 53 | CA | 116 | A | N9-C1'-C2' | -6.74 | 104.58 | 112.00 |
| 57 | DA | 2406 | A | P-O3'-C3' | 6.74 | 127.79 | 119.70 |
| 22 | BA | 2874 | C | P-O5'-C5' | -6.74 | 110.12 | 120.90 |
| 1 | AA | 116 | A | P-O3'-C3' | -6.74 | 111.62 | 119.70 |
| 22 | BA | 995 | C | N1-C1'-C2' | 6.73 | 122.75 | 114.00 |
| 57 | DA | 1758 | U | P-O3'-C3' | 6.73 | 127.78 | 119.70 |
| 1 | AA | 411 | A | P-O3'-C3' | 6.73 | 127.78 | 119.70 |
| 22 | BA | 2273 | A | P-O3'-C3' | 6.73 | 127.77 | 119.70 |
| 57 | DA | 805 | G | P-O3'-C3' | 6.73 | 127.77 | 119.70 |
| 22 | BA | 2772 | C | O4'-C1'-N1 | -6.72 | 102.82 | 108.20 |
| 57 | DA | 2039 | U | O4'-C1'-N1 | 6.72 | 113.58 | 108.20 |
| 22 | BA | 2714 | G | P-O3'-C3' | -6.72 | 111.64 | 119.70 |
| 57 | DA | 2468 | A | P-O3'-C3' | 6.72 | 127.76 | 119.70 |
| 57 | DA | 52 | A | P-O3'-C3' | -6.72 | 111.64 | 119.70 |
| 53 | CA | 1228 | C | N1-C1'-C2' | -6.71 | 104.61 | 112.00 |
| 22 | BA | 1858 | A | P-O3'-C3' | -6.71 | 111.65 | 119.70 |
| 22 | BA | 1707 | G | P-O3'-C3' | -6.71 | 111.65 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 2216 | G | P-O3'-C3' | -6.71 | 111.65 | 119.70 |
| 22 | BA | 2239 | G | P-O3'-C3' | -6.71 | 111.65 | 119.70 |
| 22 | BA | 2582 | G | P-O3'-C3' | -6.71 | 111.65 | 119.70 |
| 53 | CA | 1367 | C | P-O3'-C3' | -6.71 | 111.65 | 119.70 |
| 53 | CA | 1285 | A | P-O3'-C3' | 6.70 | 127.75 | 119.70 |
| 57 | DA | 1020 | A | P-O3'-C3' | 6.70 | 127.75 | 119.70 |
| 1 | AA | 131 | A | P-O3'-C3' | -6.70 | 111.66 | 119.70 |
| 22 | BA | 1326 | U | C3'-C2'-C1' | 6.70 | 106.86 | 101.50 |
| 1 | AA | 1399 | C | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 22 | BA | 2756 | U | N1-C1'-C2' | 6.70 | 122.71 | 114.00 |
| 53 | CA | 331 | G | N9-C1'-C2' | -6.70 | 104.63 | 112.00 |
| 57 | DA | 162 | U | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 1 | AA | 1140 | C | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 57 | DA | 1759 | A | P-O3'-C3' | -6.70 | 111.66 | 119.70 |
| 22 | BA | 1009 | A | P-O5'-C5' | -6.70 | 110.19 | 120.90 |
| 22 | BA | 1329 | U | N1-C1'-C2' | 6.69 | 122.70 | 114.00 |
| 53 | CA | 794 | A | P-O3'-C3' | -6.69 | 111.67 | 119.70 |
| 57 | DA | 335 | C | O4'-C1'-N1 | 6.69 | 113.55 | 108.20 |
| 22 | BA | 1980 | G | O4'-C1'-N9 | 6.69 | 113.55 | 108.20 |
| 22 | BA | 1385 | A | P-O3'-C3' | 6.68 | 127.72 | 119.70 |
| 22 | BA | 1944 | U | P-O5'-C5' | -6.68 | 110.20 | 120.90 |
| 22 | BA | 1340 | U | P-O3'-C3' | 6.68 | 127.72 | 119.70 |
| 22 | BA | 2457 | U | O4'-C1'-N1 | 6.68 | 113.55 | 108.20 |
| 53 | CA | 1211 | U | P-O3'-C3' | 6.68 | 127.72 | 119.70 |
| 57 | DA | 1305 | C | O4'-C1'-N1 | 6.68 | 113.55 | 108.20 |
| 53 | CA | 996 | A | P-O3'-C3' | -6.68 | 111.69 | 119.70 |
| 57 | DA | 1327 | A | C3'-C2'-C1' | 6.68 | 106.84 | 101.50 |
| 22 | BA | 434 | U | O4'-C1'-N1 | 6.67 | 113.54 | 108.20 |
| 53 | CA | 94 | G | P-O3'-C3' | 6.67 | 127.71 | 119.70 |
| 22 | BA | 1023 | U | C3'-C2'-C1' | 6.67 | 106.83 | 101.50 |
| 57 | DA | 2214 | C | P-O3'-C3' | -6.67 | 111.70 | 119.70 |
| 57 | DA | 1603 | A | P-O3'-C3' | -6.67 | 111.70 | 119.70 |
| 57 | DA | 1320 | C | P-O3'-C3' | 6.66 | 127.70 | 119.70 |
| 1 | AA | 1395 | C | P-O5'-C5' | -6.66 | 110.24 | 120.90 |
| 22 | BA | 2757 | A | P-O3'-C3' | -6.66 | 111.71 | 119.70 |
| 1 | AA | 688 | G | N9-C1'-C2' | -6.66 | 104.67 | 112.00 |
| 22 | BA | 2092 | U | N1-C1'-C2' | 6.66 | 122.66 | 114.00 |
| 57 | DA | 302 | C | N1-C1'-C2' | -6.66 | 104.67 | 112.00 |
| 22 | BA | 786 | C | C6-N1-C2 | 6.66 | 122.96 | 120.30 |
| 1 | AA | 1162 | C | O4'-C1'-N1 | 6.65 | 113.52 | 108.20 |
| 57 | DA | 1113 | U | O4'-C1'-N1 | 6.65 | 113.52 | 108.20 |
| 57 | DA | 1558 | C | N1-C1'-C2' | 6.65 | 122.65 | 114.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 1735 | A | P-O3'-C3' | -6.65 | 111.72 | 119.70 |
| 57 | DA | 980 | A | P-O3'-C3' | 6.65 | 127.68 | 119.70 |
| 57 | DA | 1563 | U | O4'-C1'-N1 | 6.65 | 113.52 | 108.20 |
| 53 | CA | 1160 | G | N9-C1'-C2' | -6.64 | 104.69 | 112.00 |
| 22 | BA | 783 | A | C5-N7-C8 | -6.64 | 100.58 | 103.90 |
| 57 | DA | 917 | A | N9-C1'-C2' | -6.64 | 104.69 | 112.00 |
| 57 | DA | 1967 | C | P-O3'-C3' | -6.64 | 111.73 | 119.70 |
| 22 | BA | 2458 | G | O3'-P-O5' | -6.64 | 91.38 | 104.00 |
| 53 | CA | 885 | G | P-O3'-C3' | -6.64 | 111.73 | 119.70 |
| 57 | DA | 1839 | G | P-O3'-C3' | -6.64 | 111.73 | 119.70 |
| 53 | CA | 1297 | G | P-O3'-C3' | 6.64 | 127.67 | 119.70 |
| 53 | CA | 1288 | A | P-O3'-C3' | -6.64 | 111.73 | 119.70 |
| 1 | AA | 306 | A | P-O3'-C3' | -6.64 | 111.74 | 119.70 |
| 22 | BA | 1635 | A | P-O5'-C5' | -6.63 | 110.29 | 120.90 |
| 1 | AA | 653 | U | O4'-C1'-N1 | 6.63 | 113.51 | 108.20 |
| 22 | BA | 1555 | G | P-O5'-C5' | -6.63 | 110.29 | 120.90 |
| 57 | DA | 2147 | A | P-O3'-C3' | -6.63 | 111.74 | 119.70 |
| 22 | BA | 2474 | U | O4'-C1'-N1 | 6.63 | 113.50 | 108.20 |
| 22 | BA | 196 | A | O4'-C1'-N9 | 6.63 | 113.50 | 108.20 |
| 22 | BA | 2552 | U | O4'-C1'-N1 | -6.62 | 102.90 | 108.20 |
| 57 | DA | 1602 | U | P-O3'-C3' | 6.62 | 127.65 | 119.70 |
| 57 | DA | 1213 | A | P-O3'-C3' | -6.62 | 111.75 | 119.70 |
| 57 | DA | 627 | A | P-O3'-C3' | 6.62 | 127.65 | 119.70 |
| 57 | DA | 2385 | C | N1-C1'-C2' | -6.62 | 104.72 | 112.00 |
| 1 | AA | 344 | A | P-O3'-C3' | 6.62 | 127.64 | 119.70 |
| 22 | BA | 2874 | C | P-O3'-C3' | -6.61 | 111.76 | 119.70 |
| 53 | CA | 931 | C | O4'-C1'-N1 | 6.61 | 113.49 | 108.20 |
| 57 | DA | 1996 | C | P-O3'-C3' | 6.61 | 127.63 | 119.70 |
| 53 | CA | 95 | C | P-O3'-C3' | -6.60 | 111.78 | 119.70 |
| 22 | BA | 2150 | C | O4'-C1'-N1 | 6.60 | 113.48 | 108.20 |
| 57 | DA | 1027 | A | P-O3'-C3' | -6.60 | 111.78 | 119.70 |
| 53 | CA | 595 | A | P-O3'-C3' | 6.60 | 127.62 | 119.70 |
| 58 | DB | 45 | A | P-O3'-C3' | -6.60 | 111.78 | 119.70 |
| 1 | AA | 1507 | A | P-O3'-C3' | -6.59 | 111.79 | 119.70 |
| 22 | BA | 2311 | A | P-O3'-C3' | 6.59 | 127.61 | 119.70 |
| 23 | BB | 48 | U | P-O5'-C5' | -6.59 | 110.35 | 120.90 |
| 53 | CA | 14 | U | P-O3'-C3' | -6.59 | 111.79 | 119.70 |
| 1 | AA | 653 | U | P-O3'-C3' | 6.59 | 127.61 | 119.70 |
| 22 | BA | 1159 | U | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 22 | BA | 572 | A | C3'-C2'-C1' | 6.59 | 106.77 | 101.50 |
| 1 | AA | 1530 | G | N9-C1'-C2' | -6.59 | 104.75 | 112.00 |
| 1 | AA | 351 | G | O4'-C1'-N9 | 6.58 | 113.47 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | CA | 803 | G | P-O3'-C3' | -6.58 | 111.80 | 119.70 |
| 57 | DA | 1535 | A | P-O3'-C3' | 6.58 | 127.60 | 119.70 |
| 1 | AA | 1401 | G | P-O3'-C3' | -6.58 | 111.80 | 119.70 |
| 22 | BA | 633 | A | P-O3'-C3' | 6.58 | 127.60 | 119.70 |
| 57 | DA | 91 | A | P-O3'-C3' | 6.58 | 127.60 | 119.70 |
| 1 | AA | 243 | A | P-O3'-C3' | 6.58 | 127.59 | 119.70 |
| 1 | AA | 755 | G | P-O3'-C3' | -6.58 | 111.81 | 119.70 |
| 1 | AA | 14 | U | P-O3'-C3' | -6.58 | 111.81 | 119.70 |
| 22 | BA | 2052 | A | P-O3'-C3' | -6.58 | 111.81 | 119.70 |
| 53 | CA | 1495 | U | P-O3'-C3' | 6.58 | 127.59 | 119.70 |
| 57 | DA | 1275 | A | C3'-C2'-C1' | 6.58 | 106.76 | 101.50 |
| 57 | DA | 2656 | U | P-O3'-C3' | -6.58 | 111.81 | 119.70 |
| 22 | BA | 2848 | G | O4'-C1'-N9 | 6.57 | 113.46 | 108.20 |
| 22 | BA | 1378 | A | P-O3'-C3' | 6.57 | 127.58 | 119.70 |
| 57 | DA | 577 | G | P-O3'-C3' | 6.57 | 127.58 | 119.70 |
| 57 | DA | 375 | G | N9-C1'-C2' | -6.57 | 104.78 | 112.00 |
| 57 | DA | 390 | U | N1-C1'-C2' | 6.57 | 122.54 | 114.00 |
| 57 | DA | 958 | U | P-O3'-C3' | -6.56 | 111.82 | 119.70 |
| 1 | AA | 74 | A | P-O3'-C3' | -6.56 | 111.82 | 119.70 |
| 22 | BA | 1009 | A | P-O3'-C3' | -6.56 | 111.83 | 119.70 |
| 22 | BA | 855 | G | P-O3'-C3' | -6.56 | 111.83 | 119.70 |
| 53 | CA | 1226 | C | P-O3'-C3' | 6.56 | 127.57 | 119.70 |
| 22 | BA | 92 | U | P-O3'-C3' | -6.56 | 111.83 | 119.70 |
| 39 | BR | 9 | GLY | N-CA-C | -6.55 | 96.72 | 113.10 |
| 22 | BA | 784 | G | O4'-C1'-N9 | -6.55 | 102.96 | 108.20 |
| 57 | DA | 222 | A | O4'-C1'-N9 | 6.55 | 113.44 | 108.20 |
| 22 | BA | 681 | G | P-O5'-C5' | -6.55 | 110.42 | 120.90 |
| 53 | CA | 251 | G | P-O3'-C3' | 6.55 | 127.56 | 119.70 |
| 1 | AA | 984 | C | P-O3'-C3' | -6.55 | 111.84 | 119.70 |
| 57 | DA | 802 | A | P-O3'-C3' | -6.55 | 111.84 | 119.70 |
| 22 | BA | 2689 | U | C2-N1-C1' | -6.54 | 109.85 | 117.70 |
| 57 | DA | 1329 | U | P-O3'-C3' | 6.54 | 127.55 | 119.70 |
| 1 | AA | 252 | U | N1-C1'-C2' | -6.54 | 104.80 | 112.00 |
| 22 | BA | 962 | G | P-O5'-C5' | -6.54 | 110.43 | 120.90 |
| 22 | BA | 1848 | A | P-O3'-C3' | -6.54 | 111.85 | 119.70 |
| 53 | CA | 531 | U | O4'-C1'-N1 | 6.54 | 113.44 | 108.20 |
| 53 | CA | 381 | C | N1-C1'-C2' | 6.54 | 122.50 | 114.00 |
| 22 | BA | 628 | G | P-O5'-C5' | -6.54 | 110.44 | 120.90 |
| 57 | DA | 589 | U | O4'-C1'-N1 | 6.54 | 113.43 | 108.20 |
| 58 | DB | 40 | U | N1-C1'-C2' | 6.54 | 122.50 | 114.00 |
| 57 | DA | 2440 | C | C3'-C2'-C1' | 6.53 | 106.73 | 101.50 |
| 22 | BA | 653 | U | P-O3'-C3' | 6.53 | 127.53 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 1968 | G | N9-C1'-C2' | -6.52 | 104.83 | 112.00 |
| 1 | AA | 184 | G | P-O3'-C3' | -6.52 | 111.88 | 119.70 |
| 1 | AA | 552 | U | P-O3'-C3' | -6.52 | 111.88 | 119.70 |
| 57 | DA | 752 | A | O4'-C1'-N9 | 6.51 | 113.41 | 108.20 |
| 57 | DA | 1980 | G | P-O3'-C3' | 6.51 | 127.52 | 119.70 |
| 57 | DA | 2023 | C | P-O3'-C3' | -6.51 | 111.89 | 119.70 |
| 53 | CA | 486 | U | O4'-C1'-N1 | -6.51 | 102.99 | 108.20 |
| 57 | DA | 1491 | G | P-O3'-C3' | -6.50 | 111.89 | 119.70 |
| 57 | DA | 2409 | G | P-O3'-C3' | -6.50 | 111.89 | 119.70 |
| 57 | DA | 73 | A | P-O3'-C3' | -6.50 | 111.90 | 119.70 |
| 1 | AA | 1213 | A | P-O3'-C3' | 6.50 | 127.50 | 119.70 |
| 1 | AA | 1447 | A | P-O3'-C3' | 6.50 | 127.50 | 119.70 |
| 22 | BA | 1325 | U | O4'-C1'-N1 | 6.50 | 113.40 | 108.20 |
| 1 | AA | 801 | U | O4'-C1'-N1 | 6.50 | 113.40 | 108.20 |
| 53 | CA | 72 | A | P-O3'-C3' | -6.50 | 111.91 | 119.70 |
| 22 | BA | 1249 | U | P-O3'-C3' | -6.49 | 111.91 | 119.70 |
| 57 | DA | 1707 | G | P-O3'-C3' | -6.49 | 111.91 | 119.70 |
| 1 | AA | 70 | U | P-O3'-C3' | 6.49 | 127.49 | 119.70 |
| 22 | BA | 399 | U | P-O3'-C3' | 6.49 | 127.49 | 119.70 |
| 22 | BA | 1222 | U | O4'-C1'-N1 | 6.49 | 113.39 | 108.20 |
| 57 | DA | 1333 | G | P-O3'-C3' | -6.49 | 111.91 | 119.70 |
| 57 | DA | 1838 | C | O4'-C1'-N1 | 6.49 | 113.39 | 108.20 |
| 22 | BA | 1213 | A | P-O5'-C5' | -6.49 | 110.52 | 120.90 |
| 53 | CA | 575 | G | C4-N9-C1' | -6.49 | 118.07 | 126.50 |
| 22 | BA | 729 | G | P-O3'-C3' | -6.48 | 111.92 | 119.70 |
| 22 | BA | 2866 | U | P-O3'-C3' | 6.48 | 127.48 | 119.70 |
| 57 | DA | 1063 | G | P-O3'-C3' | -6.48 | 111.92 | 119.70 |
| 22 | BA | 2250 | G | C6-C5-N7 | -6.48 | 126.51 | 130.40 |
| 22 | BA | 1619 | G | P-O3'-C3' | -6.48 | 111.92 | 119.70 |
| 57 | DA | 445 | C | P-O3'-C3' | -6.48 | 111.92 | 119.70 |
| 57 | DA | 2817 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 1 | AA | 1066 | C | N1-C1'-C2' | -6.48 | 104.88 | 112.00 |
| 57 | DA | 1919 | A | P-O3'-C3' | -6.48 | 111.93 | 119.70 |
| 1 | AA | 60 | A | P-O3'-C3' | 6.47 | 127.47 | 119.70 |
| 22 | BA | 271 | G | P-O3'-C3' | 6.47 | 127.47 | 119.70 |
| 57 | DA | 1963 | U | P-O3'-C3' | -6.47 | 111.93 | 119.70 |
| 22 | BA | 977 | G | P-O3'-C3' | -6.47 | 111.94 | 119.70 |
| 22 | BA | 2036 | C | C3'-C2'-C1' | 6.47 | 106.67 | 101.50 |
| 57 | DA | 1114 | C | O4'-C1'-N1 | 6.47 | 113.38 | 108.20 |
| 58 | DB | 56 | G | P-O3'-C3' | 6.47 | 127.46 | 119.70 |
| 22 | BA | 2447 | G | O3'-P-O5' | -6.47 | 91.71 | 104.00 |
| 1 | AA | 1239 | A | P-O3'-C3' | 6.46 | 127.45 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | CA | 937 | A | P-O3'-C3' | -6.46 | 111.94 | 119.70 |
| 57 | DA | 964 | C | C3'-C2'-C1' | 6.46 | 106.67 | 101.50 |
| 1 | AA | 85 | U | N1-C1'-C2' | 6.46 | 122.40 | 114.00 |
| 57 | DA | 1456 | G | P-O3'-C3' | -6.46 | 111.95 | 119.70 |
| 58 | DB | 58 | A | C3'-C2'-C1' | 6.46 | 106.67 | 101.50 |
| 57 | DA | 87 | U | O4'-C1'-N1 | 6.46 | 113.37 | 108.20 |
| 57 | DA | 776 | G | C4-N9-C1' | 6.46 | 134.90 | 126.50 |
| 57 | DA | 2667 | C | P-O3'-C3' | -6.46 | 111.95 | 119.70 |
| 1 | AA | 891 | U | P-O3'-C3' | -6.45 | 111.96 | 119.70 |
| 22 | BA | 1459 | G | P-O3'-C3' | -6.45 | 111.96 | 119.70 |
| 57 | DA | 227 | A | P-O3'-C3' | 6.45 | 127.44 | 119.70 |
| 57 | DA | 2195 | U | O4'-C1'-N1 | 6.45 | 113.36 | 108.20 |
| 22 | BA | 1497 | U | N1-C1'-C2' | 6.45 | 122.38 | 114.00 |
| 57 | DA | 77 | G | P-O3'-C3' | -6.45 | 111.97 | 119.70 |
| 22 | BA | 2689 | U | P-O3'-C3' | 6.44 | 127.43 | 119.70 |
| 57 | DA | 1785 | A | P-O3'-C3' | -6.44 | 111.97 | 119.70 |
| 22 | BA | 2356 | U | O4'-C1'-N1 | 6.44 | 113.35 | 108.20 |
| 22 | BA | 1941 | C | O4'-C1'-N1 | -6.44 | 103.05 | 108.20 |
| 22 | BA | 479 | A | O4'-C1'-N9 | 6.44 | 113.35 | 108.20 |
| 1 | AA | 1478 | U | P-O5'-C5' | -6.43 | 110.61 | 120.90 |
| 22 | BA | 1265 | A | OP1-P-O3' | 6.43 | 119.35 | 105.20 |
| 22 | BA | 390 | U | N1-C1'-C2' | 6.43 | 122.36 | 114.00 |
| 22 | BA | 2249 | U | P-O3'-C3' | 6.43 | 127.42 | 119.70 |
| 53 | CA | 239 | U | N1-C1'-C2' | -6.43 | 104.93 | 112.00 |
| 22 | BA | 2309 | A | P-O3'-C3' | -6.43 | 111.99 | 119.70 |
| 22 | BA | 1560 | G | N9-C1'-C2' | -6.42 | 104.93 | 112.00 |
| 57 | DA | 2069 | G | N9-C1'-C2' | -6.42 | 104.93 | 112.00 |
| 53 | CA | 436 | C | O4'-C1'-N1 | -6.42 | 103.06 | 108.20 |
| 57 | DA | 782 | A | P-O3'-C3' | 6.42 | 127.41 | 119.70 |
| 1 | AA | 48 | C | O4'-C1'-N1 | 6.42 | 113.33 | 108.20 |
| 2 | CB | 107 | ARG | O-C-N | -6.42 | 112.43 | 122.70 |
| 57 | DA | 1856 | U | O4'-C1'-N1 | 6.42 | 113.33 | 108.20 |
| 22 | BA | 975 | A | N9-C1'-C2' | -6.42 | 104.94 | 112.00 |
| 22 | BA | 1637 | A | P-O5'-C5' | -6.42 | 110.64 | 120.90 |
| 53 | CA | 440 | C | O4'-C1'-N1 | 6.42 | 113.33 | 108.20 |
| 57 | DA | 2873 | A | P-O3'-C3' | 6.42 | 127.40 | 119.70 |
| 22 | BA | 1674 | G | P-O3'-C3' | 6.41 | 127.39 | 119.70 |
| 57 | DA | 2259 | U | P-O3'-C3' | -6.41 | 112.01 | 119.70 |
| 57 | DA | 446 | G | C3'-C2'-C1' | 6.40 | 106.62 | 101.50 |
| 1 | AA | 331 | G | P-O3'-C3' | -6.40 | 112.02 | 119.70 |
| 22 | BA | 2214 | C | P-O3'-C3' | -6.40 | 112.02 | 119.70 |
| 57 | DA | 775 | G | O4'-C1'-N9 | 6.40 | 113.32 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 438 | U | P-O3'-C3' | 6.40 | 127.38 | 119.70 |
| 1 | AA | 1129 | C | N1-C1'-C2' | 6.40 | 122.32 | 114.00 |
| 22 | BA | 556 | A | P-O3'-C3' | -6.40 | 112.02 | 119.70 |
| 57 | DA | 671 | C | N1-C1'-C2' | -6.40 | 104.96 | 112.00 |
| 57 | DA | 129 | C | P-O3'-C3' | -6.39 | 112.03 | 119.70 |
| 57 | DA | 2226 | C | C3'-C2'-C1' | 6.39 | 106.62 | 101.50 |
| 57 | DA | 947 | A | C3'-C2'-C1' | 6.39 | 106.61 | 101.50 |
| 57 | DA | 2339 | C | P-O3'-C3' | -6.39 | 112.03 | 119.70 |
| 57 | DA | 620 | G | P-O3'-C3' | 6.39 | 127.37 | 119.70 |
| 1 | AA | 547 | A | O4'-C1'-N9 | 6.39 | 113.31 | 108.20 |
| 57 | DA | 302 | C | O4'-C1'-N1 | 6.39 | 113.31 | 108.20 |
| 22 | BA | 1611 | C | P-O5'-C5' | -6.38 | 110.69 | 120.90 |
| 57 | DA | 1400 | U | N1-C1'-C2' | -6.38 | 104.98 | 112.00 |
| 53 | CA | 485 | U | O4'-C1'-N1 | -6.38 | 103.10 | 108.20 |
| 53 | CA | 564 | C | P-O3'-C3' | -6.38 | 112.05 | 119.70 |
| 57 | DA | 575 | A | P-O3'-C3' | -6.38 | 112.05 | 119.70 |
| 22 | BA | 1025 | G | P-O3'-C3' | 6.38 | 127.35 | 119.70 |
| 57 | DA | 397 | U | O4'-C1'-N1 | 6.38 | 113.30 | 108.20 |
| 57 | DA | 1993 | U | C3'-C2'-C1' | 6.38 | 106.60 | 101.50 |
| 57 | DA | 1415 | U | P-O3'-C3' | 6.37 | 127.34 | 119.70 |
| 22 | BA | 763 | G | C3'-C2'-C1' | 6.37 | 106.60 | 101.50 |
| 57 | DA | 1023 | U | P-O3'-C3' | -6.37 | 112.06 | 119.70 |
| 22 | BA | 1008 | A | O3'-P-O5' | 6.37 | 116.10 | 104.00 |
| 57 | DA | 670 | A | O4'-C1'-N9 | -6.37 | 103.11 | 108.20 |
| 22 | BA | 1568 | G | P-O3'-C3' | -6.36 | 112.07 | 119.70 |
| 1 | AA | 428 | G | P-O3'-C3' | 6.36 | 127.33 | 119.70 |
| 57 | DA | 777 | G | N9-C1'-C2' | -6.36 | 105.00 | 112.00 |
| 53 | CA | 995 | C | N1-C1'-C2' | -6.36 | 105.01 | 112.00 |
| 57 | DA | 963 | U | N1-C1'-C2' | -6.36 | 105.01 | 112.00 |
| 57 | DA | 1699 | G | C3'-C2'-C1' | -6.36 | 96.42 | 101.50 |
| 22 | BA | 489 | G | P-O3'-C3' | 6.35 | 127.33 | 119.70 |
| 57 | DA | 1733 | G | P-O3'-C3' | -6.35 | 112.08 | 119.70 |
| 1 | AA | 1095 | U | C3'-C2'-C1' | 6.35 | 106.58 | 101.50 |
| 53 | CA | 328 | C | O4'-C1'-N1 | -6.35 | 103.12 | 108.20 |
| 57 | DA | 1552 | A | O4'-C1'-N9 | 6.35 | 113.28 | 108.20 |
| 57 | DA | 1617 | C | O4'-C1'-N1 | 6.35 | 113.28 | 108.20 |
| 22 | BA | 2459 | A | P-O3'-C3' | -6.35 | 112.08 | 119.70 |
| 57 | DA | 2572 | A | P-O3'-C3' | 6.35 | 127.32 | 119.70 |
| 22 | BA | 2137 | U | P-O3'-C3' | -6.35 | 112.08 | 119.70 |
| 53 | CA | 68 | G | N9-C1'-C2' | -6.35 | 105.02 | 112.00 |
| 22 | BA | 321 | U | P-O3'-C3' | 6.34 | 127.31 | 119.70 |
| 22 | BA | 2873 | A | P-O3'-C3' | 6.34 | 127.31 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | CA | 247 | G | N9-C1'-C2' | -6.34 | 105.03 | 112.00 |
| 57 | DA | 2493 | U | N1-C1'-C2' | -6.34 | 105.02 | 112.00 |
| 57 | DA | 2800 | A | C3'-C2'-C1' | 6.34 | 106.57 | 101.50 |
| 22 | BA | 846 | U | P-O3'-C3' | 6.34 | 127.31 | 119.70 |
| 1 | AA | 686 | U | N1-C1'-C2' | 6.34 | 122.24 | 114.00 |
| 22 | BA | 2615 | U | N1-C1'-C2' | -6.33 | 105.03 | 112.00 |
| 22 | BA | 783 | A | N1-C6-N6 | 6.33 | 122.40 | 118.60 |
| 57 | DA | 1937 | A | P-O3'-C3' | 6.33 | 127.30 | 119.70 |
| 1 | AA | 47 | C | P-O3'-C3' | 6.33 | 127.30 | 119.70 |
| 22 | BA | 2063 | C | N1-C1'-C2' | -6.33 | 105.03 | 112.00 |
| 22 | BA | 957 | C | O4'-C1'-N1 | 6.33 | 113.26 | 108.20 |
| 22 | BA | 73 | A | P-O3'-C3' | -6.33 | 112.11 | 119.70 |
| 22 | BA | 920 | A | P-O3'-C3' | -6.33 | 112.11 | 119.70 |
| 22 | BA | 2151 | U | O4'-C1'-N1 | 6.33 | 113.26 | 108.20 |
| 57 | DA | 2520 | C | C3'-C2'-C1' | 6.33 | 106.56 | 101.50 |
| 57 | DA | 1110 | G | P-O3'-C3' | 6.33 | 127.29 | 119.70 |
| 22 | BA | 2609 | U | P-O3'-C3' | 6.33 | 127.29 | 119.70 |
| 57 | DA | 1325 | U | P-O3'-C3' | 6.32 | 127.29 | 119.70 |
| 57 | DA | 1493 | C | N1-C1'-C2' | 6.32 | 122.22 | 114.00 |
| 57 | DA | 2438 | U | O4'-C1'-N1 | 6.32 | 113.26 | 108.20 |
| 22 | BA | 914 | G | N9-C1'-C2' | -6.32 | 105.05 | 112.00 |
| 22 | BA | 2820 | A | P-O3'-C3' | 6.32 | 127.29 | 119.70 |
| 1 | AA | 688 | G | P-O3'-C3' | -6.32 | 112.12 | 119.70 |
| 22 | BA | 197 | A | P-O3'-C3' | -6.32 | 112.12 | 119.70 |
| 22 | BA | 1769 | U | O4'-C1'-N1 | 6.31 | 113.25 | 108.20 |
| 1 | AA | 1068 | G | N9-C1'-C2' | -6.31 | 105.06 | 112.00 |
| 22 | BA | 1627 | G | C8-N9-C4 | -6.31 | 103.88 | 106.40 |
| 57 | DA | 244 | A | C3'-C2'-C1' | 6.31 | 106.55 | 101.50 |
| 57 | DA | 230 | G | P-O3'-C3' | -6.31 | 112.13 | 119.70 |
| 57 | DA | 2094 | A | C3'-C2'-C1' | 6.31 | 106.55 | 101.50 |
| 22 | BA | 763 | G | C4-N9-C1' | 6.31 | 134.70 | 126.50 |
| 22 | BA | 1872 | A | C3'-C2'-C1' | 6.31 | 106.55 | 101.50 |
| 57 | DA | 1458 | U | P-O3'-C3' | 6.31 | 127.27 | 119.70 |
| 1 | AA | 982 | U | P-O3'-C3' | 6.30 | 127.27 | 119.70 |
| 1 | AA | 1202 | U | C3'-C2'-C1' | 6.30 | 106.54 | 101.50 |
| 22 | BA | 588 | U | C3'-C2'-C1' | 6.30 | 106.54 | 101.50 |
| 22 | BA | 1494 | A | P-O3'-C3' | -6.30 | 112.14 | 119.70 |
| 1 | AA | 1131 | G | N9-C1'-C2' | -6.30 | 105.07 | 112.00 |
| 22 | BA | 1157 | G | P-O3'-C3' | -6.30 | 112.14 | 119.70 |
| 22 | BA | 1250 | G | N9-C1'-C2' | 6.30 | 122.19 | 114.00 |
| 57 | DA | 813 | U | O4'-C1'-N1 | 6.30 | 113.24 | 108.20 |
| 22 | BA | 1533 | C | O4'-C1'-N1 | -6.30 | 103.16 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 729 | G | C3'-C2'-C1' | 6.30 | 106.54 | 101.50 |
| 22 | BA | 2215 | C | N1-C1'-C2' | -6.30 | 105.07 | 112.00 |
| 22 | BA | 2215 | C | P-O3'-C3' | -6.29 | 112.15 | 119.70 |
| 22 | BA | 1476 | U | C3'-C2'-C1' | 6.29 | 106.53 | 101.50 |
| 22 | BA | 442 | G | P-O3'-C3' | 6.29 | 127.25 | 119.70 |
| 22 | BA | 1350 | C | P-O3'-C3' | -6.29 | 112.15 | 119.70 |
| 53 | CA | 697 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 22 | BA | 1034 | G | P-O5'-C5' | -6.29 | 110.84 | 120.90 |
| 1 | AA | 977 | A | P-O3'-C3' | -6.29 | 112.16 | 119.70 |
| 1 | AA | 1349 | A | P-O3'-C3' | -6.29 | 112.16 | 119.70 |
| 22 | BA | 645 | C | P-O5'-C5' | -6.29 | 110.84 | 120.90 |
| 22 | BA | 831 | G | P-O3'-C3' | -6.29 | 112.16 | 119.70 |
| 22 | BA | 1707 | G | C3'-C2'-C1' | 6.29 | 106.53 | 101.50 |
| 57 | DA | 163 | C | N1-C1'-C2' | -6.29 | 105.08 | 112.00 |
| 1 | AA | 90 | C | O4'-C1'-N1 | 6.28 | 113.23 | 108.20 |
| 1 | AA | 721 | G | P-O3'-C3' | 6.28 | 127.24 | 119.70 |
| 22 | BA | 166 | U | P-O3'-C3' | -6.28 | 112.16 | 119.70 |
| 22 | BA | 2498 | C | P-O3'-C3' | -6.28 | 112.16 | 119.70 |
| 53 | CA | 316 | C | O4'-C1'-N1 | 6.28 | 113.23 | 108.20 |
| 57 | DA | 1077 | A | P-O3'-C3' | -6.28 | 112.16 | 119.70 |
| 1 | AA | 1282 | C | P-O3'-C3' | -6.28 | 112.16 | 119.70 |
| 23 | BB | 45 | A | N9-C1'-C2' | -6.28 | 105.09 | 112.00 |
| 23 | BB | 53 | A | P-O3'-C3' | -6.28 | 112.17 | 119.70 |
| 53 | CA | 452 | A | P-O3'-C3' | -6.28 | 112.17 | 119.70 |
| 57 | DA | 2392 | A | N9-C1'-C2' | -6.28 | 105.09 | 112.00 |
| 57 | DA | 741 | U | P-O3'-C3' | -6.28 | 112.17 | 119.70 |
| 22 | BA | 1429 | G | N9-C1'-C2' | -6.27 | 105.10 | 112.00 |
| 53 | CA | 509 | A | P-O3'-C3' | -6.27 | 112.17 | 119.70 |
| 57 | DA | 1290 | C | O4'-C1'-N1 | 6.27 | 113.22 | 108.20 |
| 57 | DA | 76 | C | O4'-C1'-N1 | 6.27 | 113.22 | 108.20 |
| 57 | DA | 788 | A | P-O3'-C3' | 6.27 | 127.22 | 119.70 |
| 1 | AA | 344 | A | O4'-C1'-N9 | 6.26 | 113.21 | 108.20 |
| 22 | BA | 2517 | C | C6-N1-C2 | 6.26 | 122.81 | 120.30 |
| 57 | DA | 546 | U | O4'-C1'-N1 | 6.26 | 113.21 | 108.20 |
| 53 | CA | 421 | U | O4'-C1'-N1 | 6.26 | 113.21 | 108.20 |
| 57 | DA | 1942 | C | N1-C1'-C2' | -6.26 | 105.11 | 112.00 |
| 22 | BA | 2552 | U | P-O3'-C3' | -6.26 | 112.19 | 119.70 |
| 22 | BA | 75 | G | P-O3'-C3' | -6.26 | 112.19 | 119.70 |
| 57 | DA | 2339 | C | C3'-C2'-C1' | 6.26 | 106.50 | 101.50 |
| 57 | DA | 2868 | A | C3'-C2'-C1' | 6.26 | 106.50 | 101.50 |
| 53 | CA | 1151 | A | P-O3'-C3' | 6.25 | 127.20 | 119.70 |
| 1 | AA | 368 | U | N1-C1'-C2' | -6.25 | 105.12 | 112.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1451 | U | N1-C1'-C2' | 6.25 | 122.13 | 114.00 |
| 53 | CA | 129 | A | P-O3'-C3' | 6.25 | 127.20 | 119.70 |
| 53 | CA | 1336 | C | P-O3'-C3' | 6.25 | 127.20 | 119.70 |
| 57 | DA | 374 | A | C3'-C2'-C1' | 6.25 | 106.50 | 101.50 |
| 57 | DA | 1612 | C | C3'-C2'-C1' | 6.25 | 106.50 | 101.50 |
| 1 | AA | 1046 | A | O4'-C1'-N9 | 6.25 | 113.20 | 108.20 |
| 22 | BA | 1499 | C | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 22 | BA | 533 | G | P-O3'-C3' | -6.24 | 112.21 | 119.70 |
| 57 | DA | 130 | C | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 53 | CA | 1161 | C | P-O3'-C3' | -6.24 | 112.22 | 119.70 |
| 57 | DA | 959 | A | C3'-C2'-C1' | 6.24 | 106.49 | 101.50 |
| 53 | CA | 1449 | C | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 57 | DA | 122 | G | P-O3'-C3' | -6.24 | 112.22 | 119.70 |
| 53 | CA | 1196 | A | P-O3'-C3' | 6.23 | 127.18 | 119.70 |
| 1 | AA | 1200 | C | N1-C1'-C2' | 6.23 | 122.10 | 114.00 |
| 57 | DA | 335 | C | P-O3'-C3' | -6.23 | 112.22 | 119.70 |
| 22 | BA | 2847 | U | P-O3'-C3' | 6.23 | 127.18 | 119.70 |
| 22 | BA | 1129 | A | C3'-C2'-C1' | 6.23 | 106.48 | 101.50 |
| 53 | CA | 81 | A | P-O3'-C3' | 6.23 | 127.17 | 119.70 |
| 1 | AA | 1319 | A | P-O3'-C3' | 6.22 | 127.17 | 119.70 |
| 57 | DA | 959 | A | P-O3'-C3' | -6.22 | 112.23 | 119.70 |
| 22 | BA | 120 | U | P-O3'-C3' | 6.22 | 127.17 | 119.70 |
| 22 | BA | 2880 | C | P-O3'-C3' | -6.22 | 112.23 | 119.70 |
| 23 | BB | 13 | G | P-O5'-C5' | -6.22 | 110.94 | 120.90 |
| 22 | BA | 395 | U | N1-C1'-C2' | 6.22 | 122.09 | 114.00 |
| 1 | AA | 120 | A | O4'-C1'-N9 | -6.22 | 103.22 | 108.20 |
| 53 | CA | 1127 | G | P-O3'-C3' | -6.22 | 112.24 | 119.70 |
| 57 | DA | 1268 | A | C3'-C2'-C1' | 6.22 | 106.48 | 101.50 |
| 1 | AA | 559 | A | P-O3'-C3' | 6.21 | 127.16 | 119.70 |
| 57 | DA | 740 | C | C3'-C2'-C1' | 6.21 | 106.47 | 101.50 |
| 57 | DA | 2776 | A | P-O3'-C3' | 6.21 | 127.15 | 119.70 |
| 1 | AA | 81 | A | P-O3'-C3' | 6.21 | 127.15 | 119.70 |
| 1 | AA | 965 | U | P-O3'-C3' | 6.21 | 127.15 | 119.70 |
| 57 | DA | 250 | G | P-O3'-C3' | -6.21 | 112.25 | 119.70 |
| 57 | DA | 628 | G | C3'-C2'-C1' | 6.21 | 106.47 | 101.50 |
| 53 | CA | 1160 | G | P-O3'-C3' | -6.20 | 112.25 | 119.70 |
| 1 | AA | 1283 | U | P-O3'-C3' | -6.20 | 112.26 | 119.70 |
| 22 | BA | 2609 | U | C6-N1-C2 | 6.20 | 124.72 | 121.00 |
| 57 | DA | 765 | C | C3'-C2'-C1' | 6.20 | 106.46 | 101.50 |
| 57 | DA | 2581 | G | O4'-C1'-N9 | 6.20 | 113.16 | 108.20 |
| 53 | CA | 1530 | G | P-O3'-C3' | -6.20 | 112.26 | 119.70 |
| 22 | BA | 2427 | C | P-O5'-C5' | -6.20 | 110.98 | 120.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | CA | 884 | U | O4'-C1'-N1 | 6.20 | 113.16 | 108.20 |
| 57 | DA | 436 | C | O4'-C1'-N1 | 6.20 | 113.16 | 108.20 |
| 57 | DA | 2391 | G | P-O3'-C3' | 6.20 | 127.14 | 119.70 |
| 22 | BA | 933 | A | C3'-C2'-C1' | 6.20 | 106.46 | 101.50 |
| 57 | DA | 1839 | G | N9-C1'-C2' | -6.20 | 105.18 | 112.00 |
| 22 | BA | 451 | U | P-O3'-C3' | 6.20 | 127.13 | 119.70 |
| 22 | BA | 1135 | C | C3'-C2'-C1' | 6.19 | 106.45 | 101.50 |
| 1 | AA | 1498 | U | P-O3'-C3' | 6.19 | 127.13 | 119.70 |
| 22 | BA | 740 | C | O5'-P-OP2 | -6.19 | 100.13 | 105.70 |
| 1 | AA | 1127 | G | P-O3'-C3' | -6.19 | 112.27 | 119.70 |
| 22 | BA | 125 | A | P-O3'-C3' | 6.19 | 127.12 | 119.70 |
| 22 | BA | 740 | C | P-O5'-C5' | -6.19 | 111.00 | 120.90 |
| 22 | BA | 1693 | U | P-O3'-C3' | 6.19 | 127.12 | 119.70 |
| 1 | AA | 1064 | G | O4'-C1'-N9 | 6.18 | 113.15 | 108.20 |
| 22 | BA | 1498 | C | P-O3'-C3' | -6.18 | 112.28 | 119.70 |
| 22 | BA | 1993 | U | C3'-C2'-C1' | 6.18 | 106.45 | 101.50 |
| 57 | DA | 49 | A | P-O3'-C3' | 6.18 | 127.12 | 119.70 |
| 1 | AA | 365 | U | C5-C6-N1 | -6.18 | 119.61 | 122.70 |
| 53 | CA | 83 | C | O4'-C1'-N1 | 6.18 | 113.14 | 108.20 |
| 53 | CA | 499 | A | P-O3'-C3' | 6.18 | 127.11 | 119.70 |
| 57 | DA | 2716 | C | O4'-C1'-N1 | 6.18 | 113.14 | 108.20 |
| 1 | AA | 1129 | C | P-O3'-C3' | 6.17 | 127.11 | 119.70 |
| 23 | BB | 45 | A | C3'-C2'-C1' | 6.17 | 106.44 | 101.50 |
| 1 | AA | 914 | A | C3'-C2'-C1' | 6.17 | 106.44 | 101.50 |
| 22 | BA | 1602 | U | P-O3'-C3' | 6.17 | 127.10 | 119.70 |
| 53 | CA | 914 | A | C3'-C2'-C1' | 6.17 | 106.44 | 101.50 |
| 53 | CA | 1308 | U | O4'-C1'-N1 | 6.17 | 113.14 | 108.20 |
| 22 | BA | 2454 | G | P-O5'-C5' | -6.16 | 111.04 | 120.90 |
| 22 | BA | 2640 | G | P-O5'-C5' | -6.16 | 111.04 | 120.90 |
| 57 | DA | 116 | C | O4'-C1'-N1 | 6.16 | 113.13 | 108.20 |
| 58 | DB | 41 | G | P-O3'-C3' | -6.16 | 112.31 | 119.70 |
| 22 | BA | 2249 | U | N1-C1'-C2' | 6.16 | 122.01 | 114.00 |
| 22 | BA | 637 | A | P-O3'-C3' | 6.16 | 127.09 | 119.70 |
| 57 | DA | 28 | A | C3'-C2'-C1' | 6.16 | 106.43 | 101.50 |
| 57 | DA | 1674 | G | C4-N9-C1' | 6.16 | 134.51 | 126.50 |
| 53 | CA | 414 | A | P-O3'-C3' | -6.16 | 112.31 | 119.70 |
| 57 | DA | 1247 | A | O4'-C1'-N9 | 6.16 | 113.13 | 108.20 |
| 22 | BA | 61 | C | P-O5'-C5' | -6.16 | 111.05 | 120.90 |
| 57 | DA | 391 | A | C3'-C2'-C1' | 6.16 | 106.42 | 101.50 |
| 1 | AA | 1141 | C | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 22 | BA | 406 | G | N9-C1'-C2' | -6.15 | 105.23 | 112.00 |
| 22 | BA | 1944 | U | O5'-P-OP2 | -6.15 | 100.16 | 105.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 1682 | G | N9-C1'-C2' | -6.15 | 105.23 | 112.00 |
| 22 | BA | 628 | G | P-O3'-C3' | -6.15 | 112.32 | 119.70 |
| 22 | BA | 321 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 1 | AA | 971 | G | O4'-C1'-N9 | 6.15 | 113.12 | 108.20 |
| 22 | BA | 1237 | A | P-O3'-C3' | 6.15 | 127.08 | 119.70 |
| 22 | BA | 747 | U | N1-C1'-C2' | -6.14 | 105.24 | 112.00 |
| 22 | BA | 2284 | A | P-O5'-C5' | -6.14 | 111.07 | 120.90 |
| 1 | AA | 91 | U | C3'-C2'-C1' | 6.14 | 106.41 | 101.50 |
| 1 | AA | 169 | C | O4'-C1'-N1 | 6.14 | 113.11 | 108.20 |
| 22 | BA | 475 | C | C3'-C2'-C1' | 6.14 | 106.41 | 101.50 |
| 57 | DA | 2879 | A | P-O3'-C3' | 6.14 | 127.07 | 119.70 |
| 22 | BA | 1920 | C | P-O3'-C3' | -6.14 | 112.33 | 119.70 |
| 22 | BA | 2250 | G | N7-C8-N9 | 6.14 | 116.17 | 113.10 |
| 22 | BA | 2047 | C | P-O5'-C5' | -6.14 | 111.08 | 120.90 |
| 57 | DA | 687 | C | C3'-C2'-C1' | 6.13 | 106.41 | 101.50 |
| 57 | DA | 531 | C | N1-C1'-C2' | 6.13 | 121.97 | 114.00 |
| 22 | BA | 2393 | U | O4'-C1'-N1 | 6.13 | 113.11 | 108.20 |
| 53 | CA | 995 | C | P-O3'-C3' | -6.13 | 112.34 | 119.70 |
| 22 | BA | 2891 | U | O4'-C1'-N1 | -6.13 | 103.30 | 108.20 |
| 53 | CA | 1094 | G | P-O3'-C3' | 6.13 | 127.06 | 119.70 |
| 57 | DA | 412 | A | C3'-C2'-C1' | 6.13 | 106.40 | 101.50 |
| 57 | DA | 1803 | A | C3'-C2'-C1' | 6.13 | 106.40 | 101.50 |
| 1 | AA | 1302 | C | N1-C1'-C2' | -6.12 | 105.26 | 112.00 |
| 57 | DA | 335 | C | C3'-C2'-C1' | 6.12 | 106.40 | 101.50 |
| 22 | BA | 13 | A | P-O3'-C3' | 6.12 | 127.05 | 119.70 |
| 1 | AA | 97 | G | C3'-C2'-C1' | 6.12 | 106.40 | 101.50 |
| 22 | BA | 1255 | U | P-O3'-C3' | 6.12 | 127.04 | 119.70 |
| 22 | BA | 435 | C | C3'-C2'-C1' | 6.12 | 106.39 | 101.50 |
| 22 | BA | 762 | U | P-O3'-C3' | 6.12 | 127.04 | 119.70 |
| 22 | BA | 1429 | G | C3'-C2'-C1' | 6.12 | 106.39 | 101.50 |
| 23 | BB | 90 | C | P-O3'-C3' | -6.12 | 112.36 | 119.70 |
| 57 | DA | 858 | G | P-O3'-C3' | 6.12 | 127.04 | 119.70 |
| 57 | DA | 1089 | A | P-O3'-C3' | 6.12 | 127.04 | 119.70 |
| 57 | DA | 1401 | G | P-O3'-C3' | -6.12 | 112.36 | 119.70 |
| 57 | DA | 611 | C | O4'-C1'-N1 | 6.12 | 113.09 | 108.20 |
| 57 | DA | 1993 | U | P-O3'-C3' | -6.12 | 112.36 | 119.70 |
| 57 | DA | 2498 | C | C3'-C2'-C1' | 6.12 | 106.39 | 101.50 |
| 22 | BA | 206 | U | P-O3'-C3' | -6.11 | 112.36 | 119.70 |
| 53 | CA | 356 | A | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 53 | CA | 875 | U | O4'-C1'-N1 | 6.11 | 113.09 | 108.20 |
| 57 | DA | 605 | G | C3'-C2'-C1' | 6.11 | 106.39 | 101.50 |
| 57 | DA | 2036 | C | P-O3'-C3' | -6.11 | 112.36 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 1794 | A | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 53 | CA | 982 | U | P-O3'-C3' | 6.11 | 127.03 | 119.70 |
| 57 | DA | 974 | G | P-O3'-C3' | 6.11 | 127.03 | 119.70 |
| 1 | AA | 198 | G | C3'-C2'-C1' | 6.10 | 106.38 | 101.50 |
| 57 | DA | 449 | A | C3'-C2'-C1' | 6.10 | 106.38 | 101.50 |
| 57 | DA | 1455 | G | P-O3'-C3' | -6.10 | 112.38 | 119.70 |
| 57 | DA | 1008 | A | P-O3'-C3' | 6.10 | 127.02 | 119.70 |
| 57 | DA | 2021 | C | N1-C1'-C2' | 6.10 | 121.93 | 114.00 |
| 22 | BA | 116 | C | P-O3'-C3' | 6.09 | 127.01 | 119.70 |
| 22 | BA | 2086 | U | O4'-C1'-N1 | 6.09 | 113.08 | 108.20 |
| 53 | CA | 765 | G | P-O3'-C3' | -6.09 | 112.39 | 119.70 |
| 22 | BA | 527 | C | N1-C1'-C2' | 6.09 | 121.92 | 114.00 |
| 22 | BA | 962 | G | P-O3'-C3' | -6.09 | 112.39 | 119.70 |
| 53 | CA | 555 | U | P-O3'-C3' | -6.09 | 112.39 | 119.70 |
| 53 | CA | 960 | U | P-O3'-C3' | 6.09 | 127.01 | 119.70 |
| 57 | DA | 477 | A | C3'-C2'-C1' | 6.09 | 106.37 | 101.50 |
| 57 | DA | 2727 | A | P-O3'-C3' | -6.09 | 112.39 | 119.70 |
| 1 | AA | 559 | A | O4'-C1'-N9 | 6.09 | 113.07 | 108.20 |
| 53 | CA | 1507 | A | P-O3'-C3' | -6.09 | 112.39 | 119.70 |
| 53 | CA | 1184 | G | C3'-C2'-C1' | 6.09 | 106.37 | 101.50 |
| 57 | DA | 1158 | C | P-O3'-C3' | -6.09 | 112.40 | 119.70 |
| 57 | DA | 2069 | G | P-O3'-C3' | -6.09 | 112.40 | 119.70 |
| 57 | DA | 2384 | U | P-O3'-C3' | 6.09 | 127.00 | 119.70 |
| 1 | AA | 479 | U | O4'-C1'-N1 | 6.08 | 113.07 | 108.20 |
| 22 | BA | 557 | C | P-O5'-C5' | -6.08 | 111.16 | 120.90 |
| 57 | DA | 60 | G | C4-N9-C1' | -6.08 | 118.59 | 126.50 |
| 22 | BA | 1130 | U | N1-C1'-C2' | 6.08 | 121.90 | 114.00 |
| 22 | BA | 1524 | G | N9-C1'-C2' | -6.08 | 105.32 | 112.00 |
| 22 | BA | 2656 | U | N1-C1'-C2' | -6.08 | 105.32 | 112.00 |
| 53 | CA | 1244 | G | C3'-C2'-C1' | 6.08 | 106.36 | 101.50 |
| 57 | DA | 2311 | A | P-O3'-C3' | 6.08 | 126.99 | 119.70 |
| 57 | DA | 1396 | U | P-O3'-C3' | 6.07 | 126.99 | 119.70 |
| 57 | DA | 1919 | A | N9-C1'-C2' | -6.07 | 105.32 | 112.00 |
| 22 | BA | 2384 | U | N1-C1'-C2' | 6.07 | 121.89 | 114.00 |
| 53 | CA | 704 | A | C3'-C2'-C1' | 6.07 | 106.36 | 101.50 |
| 57 | DA | 1817 | G | P-O3'-C3' | -6.07 | 112.42 | 119.70 |
| 1 | AA | 279 | A | O4'-C1'-N9 | -6.07 | 103.34 | 108.20 |
| 53 | CA | 1202 | U | P-O3'-C3' | -6.07 | 112.42 | 119.70 |
| 57 | DA | 1822 | C | O4'-C1'-N1 | 6.07 | 113.06 | 108.20 |
| 22 | BA | 2250 | G | N1-C6-O6 | 6.07 | 123.54 | 119.90 |
| 53 | CA | 985 | C | O4'-C1'-N1 | 6.07 | 113.05 | 108.20 |
| 1 | AA | 429 | U | P-O3'-C3' | 6.07 | 126.98 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1142 | G | P-O3'-C3' | -6.07 | 112.42 | 119.70 |
| 1 | AA | 1320 | C | O4'-C1'-N1 | 6.07 | 113.05 | 108.20 |
| 57 | DA | 638 | G | P-O3'-C3' | -6.07 | 112.42 | 119.70 |
| 22 | BA | 913 | U | P-O3'-C3' | 6.06 | 126.98 | 119.70 |
| 22 | BA | 2001 | C | O5'-P-OP2 | -6.06 | 100.24 | 105.70 |
| 57 | DA | 61 | C | C3'-C2'-C1' | 6.06 | 106.35 | 101.50 |
| 57 | DA | 1399 | C | N1-C1'-C2' | -6.06 | 105.33 | 112.00 |
| 1 | AA | 508 | U | P-O3'-C3' | 6.06 | 126.97 | 119.70 |
| 22 | BA | 1062 | G | C3'-C2'-C1' | 6.06 | 106.35 | 101.50 |
| 22 | BA | 1396 | U | O3'-P-O5' | -6.06 | 92.48 | 104.00 |
| 22 | BA | 1734 | G | C3'-C2'-C1' | 6.06 | 106.35 | 101.50 |
| 1 | AA | 884 | U | O4'-C1'-N1 | 6.06 | 113.05 | 108.20 |
| 1 | AA | 1506 | U | O4'-C1'-N1 | 6.06 | 113.05 | 108.20 |
| 57 | DA | 2225 | A | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 53 | CA | 438 | U | P-O3'-C3' | 6.06 | 126.97 | 119.70 |
| 22 | BA | 946 | C | C3'-C2'-C1' | 6.05 | 106.34 | 101.50 |
| 22 | BA | 2759 | G | P-O5'-C5' | -6.05 | 111.21 | 120.90 |
| 53 | CA | 170 | U | O4'-C1'-N1 | 6.05 | 113.04 | 108.20 |
| 53 | CA | 1217 | C | C3'-C2'-C1' | 6.05 | 106.34 | 101.50 |
| 53 | CA | 1319 | A | P-O3'-C3' | 6.05 | 126.97 | 119.70 |
| 57 | DA | 2060 | A | P-O3'-C3' | 6.05 | 126.97 | 119.70 |
| 22 | BA | 1858 | A | C3'-C2'-C1' | 6.05 | 106.34 | 101.50 |
| 22 | BA | 1784 | A | N1-C6-N6 | 6.05 | 122.23 | 118.60 |
| 57 | DA | 1902 | C | O4'-C1'-N1 | 6.05 | 113.04 | 108.20 |
| 53 | CA | 63 | C | O4'-C1'-N1 | 6.05 | 113.04 | 108.20 |
| 1 | AA | 1365 | G | P-O3'-C3' | -6.05 | 112.44 | 119.70 |
| 22 | BA | 554 | U | O4'-C1'-N1 | 6.05 | 113.04 | 108.20 |
| 22 | BA | 1394 | U | O4'-C1'-N1 | -6.05 | 103.36 | 108.20 |
| 22 | BA | 1524 | G | P-O3'-C3' | -6.05 | 112.44 | 119.70 |
| 53 | CA | 239 | U | P-O3'-C3' | -6.05 | 112.44 | 119.70 |
| 1 | AA | 935 | A | C3'-C2'-C1' | 6.04 | 106.34 | 101.50 |
| 57 | DA | 2386 | A | P-O3'-C3' | -6.04 | 112.44 | 119.70 |
| 57 | DA | 273 | G | C3'-C2'-C1' | 6.04 | 106.34 | 101.50 |
| 22 | BA | 2043 | C | O4'-C1'-N1 | -6.04 | 103.37 | 108.20 |
| 22 | BA | 2343 | U | O4'-C1'-N1 | -6.04 | 103.37 | 108.20 |
| 1 | AA | 95 | C | N1-C1'-C2' | -6.04 | 105.36 | 112.00 |
| 57 | DA | 1024 | G | C3'-C2'-C1' | 6.04 | 106.33 | 101.50 |
| 22 | BA | 1118 | C | P-O5'-C5' | -6.04 | 111.24 | 120.90 |
| 1 | AA | 654 | G | C3'-C2'-C1' | 6.04 | 106.33 | 101.50 |
| 22 | BA | 1310 | G | P-O5'-C5' | -6.04 | 111.24 | 120.90 |
| 22 | BA | 1490 | A | P-O3'-C3' | 6.04 | 126.94 | 119.70 |
| 22 | BA | 2483 | C | C6-N1-C2 | 6.04 | 122.71 | 120.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 52 | C | P-O3'-C3' | -6.03 | 112.46 | 119.70 |
| 53 | CA | 71 | A | C3'-C2'-C1' | 6.03 | 106.33 | 101.50 |
| 53 | CA | 428 | G | C4-N9-C1' | -6.03 | 118.66 | 126.50 |
| 58 | DB | 111 | U | P-O3'-C3' | -6.03 | 112.47 | 119.70 |
| 22 | BA | 794 | A | P-O3'-C3' | -6.03 | 112.47 | 119.70 |
| 53 | CA | 654 | G | C3'-C2'-C1' | 6.03 | 106.32 | 101.50 |
| 53 | CA | 1345 | U | P-O3'-C3' | 6.03 | 126.93 | 119.70 |
| 57 | DA | 1568 | G | P-O3'-C3' | -6.03 | 112.47 | 119.70 |
| 22 | BA | 386 | G | O4'-C1'-N9 | 6.03 | 113.02 | 108.20 |
| 22 | BA | 562 | U | O4'-C1'-N1 | -6.03 | 103.38 | 108.20 |
| 22 | BA | 1330 | C | C3'-C2'-C1' | 6.03 | 106.32 | 101.50 |
| 22 | BA | 2034 | U | P-O3'-C3' | -6.03 | 112.47 | 119.70 |
| 22 | BA | 2307 | G | O4'-C1'-N9 | 6.03 | 113.02 | 108.20 |
| 23 | BB | 12 | C | N1-C1'-C2' | 6.03 | 121.83 | 114.00 |
| 57 | DA | 1304 | A | C3'-C2'-C1' | 6.03 | 106.32 | 101.50 |
| 1 | AA | 794 | A | P-O3'-C3' | -6.02 | 112.47 | 119.70 |
| 22 | BA | 2427 | C | C3'-C2'-C1' | 6.02 | 106.32 | 101.50 |
| 57 | DA | 103 | A | C3'-C2'-C1' | 6.02 | 106.32 | 101.50 |
| 22 | BA | 412 | A | N9-C1'-C2' | -6.02 | 105.38 | 112.00 |
| 57 | DA | 14 | A | C3'-C2'-C1' | 6.02 | 106.31 | 101.50 |
| 57 | DA | 576 | U | C3'-C2'-C1' | 6.02 | 106.32 | 101.50 |
| 57 | DA | 1916 | A | P-O3'-C3' | -6.02 | 112.48 | 119.70 |
| 57 | DA | 2239 | G | C3'-C2'-C1' | 6.02 | 106.32 | 101.50 |
| 22 | BA | 144 | A | N9-C1'-C2' | -6.02 | 105.38 | 112.00 |
| 23 | BB | 24 | G | P-O3'-C3' | 6.02 | 126.92 | 119.70 |
| 57 | DA | 1458 | U | O4'-C1'-N1 | 6.02 | 113.01 | 108.20 |
| 1 | AA | 184 | G | C3'-C2'-C1' | 6.01 | 106.31 | 101.50 |
| 53 | CA | 210 | C | N1-C1'-C2' | 6.01 | 121.82 | 114.00 |
| 57 | DA | 2712 | C | P-O3'-C3' | 6.01 | 126.92 | 119.70 |
| 22 | BA | 208 | C | C6-N1-C2 | 6.01 | 122.70 | 120.30 |
| 53 | CA | 513 | C | C3'-C2'-C1' | 6.01 | 106.31 | 101.50 |
| 1 | AA | 976 | G | C3'-C2'-C1' | 6.01 | 106.31 | 101.50 |
| 57 | DA | 13 | A | P-O3'-C3' | 6.01 | 126.91 | 119.70 |
| 57 | DA | 1539 | U | C3'-C2'-C1' | 6.01 | 106.31 | 101.50 |
| 22 | BA | 556 | A | P-O5'-C5' | -6.01 | 111.28 | 120.90 |
| 23 | BB | 40 | U | O4'-C1'-N1 | 6.01 | 113.01 | 108.20 |
| 22 | BA | 1009 | A | O5'-P-OP2 | -6.01 | 100.29 | 105.70 |
| 57 | DA | 2593 | U | P-O3'-C3' | -6.01 | 112.49 | 119.70 |
| 1 | AA | 816 | A | C3'-C2'-C1' | 6.00 | 106.30 | 101.50 |
| 22 | BA | 2423 | U | O4'-C1'-N1 | -6.00 | 103.40 | 108.20 |
| 1 | AA | 654 | G | P-O3'-C3' | -6.00 | 112.50 | 119.70 |
| 22 | BA | 324 | A | N9-C1'-C2' | -6.00 | 105.39 | 112.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 2239 | G | P-O3'-C3' | -6.00 | 112.50 | 119.70 |
| 22 | BA | 1022 | G | P-O3'-C3' | 6.00 | 126.90 | 119.70 |
| 57 | DA | 234 | U | C3'-C2'-C1' | 6.00 | 106.30 | 101.50 |
| 1 | AA | 500 | G | N9-C1'-C2' | -6.00 | 105.40 | 112.00 |
| 22 | BA | 1250 | G | P-O3'-C3' | 6.00 | 126.90 | 119.70 |
| 57 | DA | 1828 | G | P-O3'-C3' | 6.00 | 126.89 | 119.70 |
| 57 | DA | 2657 | A | C3'-C2'-C1' | 6.00 | 106.30 | 101.50 |
| 57 | DA | 2851 | A | C3'-C2'-C1' | 6.00 | 106.30 | 101.50 |
| 1 | AA | 520 | A | P-O3'-C3' | -6.00 | 112.51 | 119.70 |
| 22 | BA | 1933 | G | P-O3'-C3' | 5.99 | 126.89 | 119.70 |
| 57 | DA | 484 | C | P-O3'-C3' | -5.99 | 112.51 | 119.70 |
| 1 | AA | 199 | A | C3'-C2'-C1' | 5.99 | 106.29 | 101.50 |
| 22 | BA | 2297 | A | P-O3'-C3' | -5.99 | 112.51 | 119.70 |
| 53 | CA | 1160 | G | C3'-C2'-C1' | 5.99 | 106.29 | 101.50 |
| 57 | DA | 1654 | A | C3'-C2'-C1' | 5.99 | 106.29 | 101.50 |
| 1 | AA | 1323 | G | C3'-C2'-C1' | 5.99 | 106.29 | 101.50 |
| 57 | DA | 1733 | G | N9-C1'-C2' | -5.99 | 105.41 | 112.00 |
| 1 | AA | 517 | G | P-O3'-C3' | 5.99 | 126.89 | 119.70 |
| 57 | DA | 588 | U | O4'-C1'-N1 | -5.99 | 103.41 | 108.20 |
| 57 | DA | 1693 | U | N1-C1'-C2' | 5.99 | 121.78 | 114.00 |
| 57 | DA | 2866 | U | O4'-C1'-N1 | 5.99 | 112.99 | 108.20 |
| 1 | AA | 1282 | C | C3'-C2'-C1' | 5.99 | 106.29 | 101.50 |
| 22 | BA | 671 | C | C3'-C2'-C1' | 5.99 | 106.29 | 101.50 |
| 22 | BA | 951 | C | N3-C2-O2 | 5.99 | 126.09 | 121.90 |
| 53 | CA | 277 | C | N1-C1'-C2' | -5.99 | 105.42 | 112.00 |
| 53 | CA | 643 | C | C3'-C2'-C1' | 5.99 | 106.29 | 101.50 |
| 57 | DA | 2364 | C | O4'-C1'-N1 | 5.99 | 112.99 | 108.20 |
| 22 | BA | 1072 | C | N1-C1'-C2' | -5.98 | 105.42 | 112.00 |
| 53 | CA | 885 | G | C3'-C2'-C1' | 5.98 | 106.29 | 101.50 |
| 57 | DA | 2143 | C | O4'-C1'-N1 | 5.98 | 112.99 | 108.20 |
| 22 | BA | 2635 | A | P-O5'-C5' | -5.98 | 111.33 | 120.90 |
| 53 | CA | 996 | A | C3'-C2'-C1' | 5.98 | 106.28 | 101.50 |
| 57 | DA | 2250 | G | O4'-C1'-N9 | -5.98 | 103.42 | 108.20 |
| 22 | BA | 1289 | C | N1-C1'-C2' | -5.98 | 105.42 | 112.00 |
| 1 | AA | 966 | G | P-O3'-C3' | -5.98 | 112.53 | 119.70 |
| 57 | DA | 2051 | A | P-O3'-C3' | 5.98 | 126.87 | 119.70 |
| 1 | AA | 793 | U | P-O3'-C3' | -5.98 | 112.53 | 119.70 |
| 1 | AA | 1380 | U | O4'-C1'-N1 | 5.97 | 112.98 | 108.20 |
| 22 | BA | 2368 | C | P-O3'-C3' | -5.97 | 112.53 | 119.70 |
| 57 | DA | 2272 | U | O4'-C1'-N1 | -5.97 | 103.42 | 108.20 |
| 57 | DA | 2496 | C | O4'-C1'-N1 | 5.97 | 112.98 | 108.20 |
| 57 | DA | 265 | A | O4'-C1'-N9 | 5.97 | 112.98 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 1451 | C | N1-C1'-C2' | 5.97 | 121.76 | 114.00 |
| 1 | AA | 423 | G | C3'-C2'-C1' | 5.97 | 106.27 | 101.50 |
| 53 | CA | 615 | G | O4'-C1'-N9 | 5.97 | 112.97 | 108.20 |
| 22 | BA | 802 | A | P-O3'-C3' | -5.97 | 112.54 | 119.70 |
| 22 | BA | 1654 | A | P-O3'-C3' | -5.97 | 112.54 | 119.70 |
| 57 | DA | 1901 | A | C3'-C2'-C1' | 5.97 | 106.27 | 101.50 |
| 1 | AA | 1169 | A | C3'-C2'-C1' | 5.96 | 106.27 | 101.50 |
| 22 | BA | 273 | G | C3'-C2'-C1' | 5.96 | 106.27 | 101.50 |
| 22 | BA | 528 | A | N9-C1'-C2' | -5.96 | 105.44 | 112.00 |
| 22 | BA | 1707 | G | N9-C1'-C2' | -5.96 | 105.44 | 112.00 |
| 22 | BA | 142 | A | C3'-C2'-C1' | 5.96 | 106.27 | 101.50 |
| 57 | DA | 2462 | C | O4'-C1'-N1 | 5.96 | 112.97 | 108.20 |
| 53 | CA | 122 | G | N9-C1'-C2' | -5.96 | 105.44 | 112.00 |
| 23 | BB | 42 | C | C3'-C2'-C1' | 5.96 | 106.27 | 101.50 |
| 53 | CA | 1052 | U | P-O3'-C3' | -5.96 | 112.55 | 119.70 |
| 1 | AA | 1091 | U | O4'-C1'-N1 | 5.96 | 112.97 | 108.20 |
| 22 | BA | 528 | A | C6-C5-N7 | -5.95 | 128.13 | 132.30 |
| 22 | BA | 2808 | G | O5'-P-OP2 | -5.95 | 100.34 | 105.70 |
| 57 | DA | 2052 | A | N9-C1'-C2' | -5.95 | 105.45 | 112.00 |
| 1 | AA | 1453 | G | P-O3'-C3' | -5.95 | 112.56 | 119.70 |
| 57 | DA | 1717 | A | C3'-C2'-C1' | 5.95 | 106.26 | 101.50 |
| 1 | AA | 330 | C | P-O3'-C3' | -5.95 | 112.56 | 119.70 |
| 57 | DA | 1021 | A | C3'-C2'-C1' | 5.95 | 106.26 | 101.50 |
| 57 | DA | 1034 | G | C3'-C2'-C1' | 5.95 | 106.26 | 101.50 |
| 1 | AA | 794 | A | C3'-C2'-C1' | 5.95 | 106.26 | 101.50 |
| 22 | BA | 208 | C | N3-C2-O2 | 5.95 | 126.06 | 121.90 |
| 22 | BA | 1091 | G | O4'-C1'-N9 | 5.95 | 112.96 | 108.20 |
| 1 | AA | 596 | A | C3'-C2'-C1' | 5.95 | 106.26 | 101.50 |
| 22 | BA | 1181 | U | C3'-C2'-C1' | 5.95 | 106.26 | 101.50 |
| 57 | DA | 2777 | G | C3'-C2'-C1' | 5.95 | 106.26 | 101.50 |
| 31 | DJ | 25 | LEU | CA-CB-CG | 5.95 | 128.98 | 115.30 |
| 53 | CA | 199 | A | C3'-C2'-C1' | 5.94 | 106.25 | 101.50 |
| 57 | DA | 861 | A | C3'-C2'-C1' | 5.94 | 106.25 | 101.50 |
| 57 | DA | 1523 | U | O4'-C1'-N1 | 5.94 | 112.95 | 108.20 |
| 57 | DA | 2682 | A | C3'-C2'-C1' | 5.94 | 106.25 | 101.50 |
| 1 | AA | 162 | A | P-O3'-C3' | 5.93 | 126.82 | 119.70 |
| 22 | BA | 1828 | G | P-O3'-C3' | 5.93 | 126.82 | 119.70 |
| 57 | DA | 369 | U | O4'-C1'-N1 | 5.93 | 112.95 | 108.20 |
| 57 | DA | 2603 | G | P-O3'-C3' | -5.93 | 112.58 | 119.70 |
| 22 | BA | 18 | U | P-O5'-C5' | -5.93 | 111.41 | 120.90 |
| 22 | BA | 528 | A | N7-C8-N9 | 5.93 | 116.77 | 113.80 |
| 22 | BA | 2797 | U | P-O3'-C3' | 5.93 | 126.82 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | CA | 1288 | A | C3'-C2'-C1' | 5.93 | 106.25 | 101.50 |
| 57 | DA | 2808 | G | P-O3'-C3' | 5.93 | 126.82 | 119.70 |
| 1 | AA | 497 | G | C3'-C2'-C1' | 5.93 | 106.24 | 101.50 |
| 1 | AA | 718 | A | P-O3'-C3' | -5.93 | 112.58 | 119.70 |
| 22 | BA | 1476 | U | O4'-C1'-N1 | 5.93 | 112.94 | 108.20 |
| 22 | BA | 74 | A | P-O3'-C3' | 5.93 | 126.81 | 119.70 |
| 22 | BA | 2211 | A | O4'-C1'-N9 | 5.93 | 112.94 | 108.20 |
| 1 | AA | 121 | U | N1-C1'-C2' | -5.93 | 105.48 | 112.00 |
| 1 | AA | 372 | C | O4'-C1'-N1 | 5.93 | 112.94 | 108.20 |
| 22 | BA | 1779 | U | P-O5'-C5' | -5.92 | 111.42 | 120.90 |
| 53 | CA | 575 | G | C8-N9-C1' | 5.92 | 134.70 | 127.00 |
| 1 | AA | 1323 | G | P-O3'-C3' | -5.92 | 112.59 | 119.70 |
| 22 | BA | 579 | G | P-O3'-C3' | 5.92 | 126.81 | 119.70 |
| 57 | DA | 231 | A | P-O3'-C3' | -5.92 | 112.60 | 119.70 |
| 22 | BA | 1963 | U | C3'-C2'-C1' | 5.92 | 106.23 | 101.50 |
| 22 | BA | 2547 | A | P-O3'-C3' | 5.92 | 126.80 | 119.70 |
| 53 | CA | 1299 | A | P-O3'-C3' | -5.92 | 112.60 | 119.70 |
| 57 | DA | 1396 | U | O4'-C1'-N1 | 5.92 | 112.94 | 108.20 |
| 57 | DA | 1695 | G | C3'-C2'-C1' | 5.92 | 106.23 | 101.50 |
| 57 | DA | 2893 | A | P-O3'-C3' | 5.92 | 126.80 | 119.70 |
| 53 | CA | 519 | C | C3'-C2'-C1' | 5.92 | 106.23 | 101.50 |
| 57 | DA | 2214 | C | C3'-C2'-C1' | 5.92 | 106.23 | 101.50 |
| 53 | CA | 131 | A | P-O3'-C3' | -5.91 | 112.60 | 119.70 |
| 1 | AA | 213 | G | P-O3'-C3' | 5.91 | 126.79 | 119.70 |
| 22 | BA | 2297 | A | O4'-C1'-N9 | -5.91 | 103.47 | 108.20 |
| 1 | AA | 1151 | A | P-O3'-C3' | 5.91 | 126.79 | 119.70 |
| 22 | BA | 1742 | U | P-O3'-C3' | 5.91 | 126.79 | 119.70 |
| 22 | BA | 2149 | U | C3'-C2'-C1' | 5.91 | 106.23 | 101.50 |
| 57 | DA | 2150 | C | C3'-C2'-C1' | 5.91 | 106.23 | 101.50 |
| 57 | DA | 87 | U | C3'-C2'-C1' | 5.91 | 106.22 | 101.50 |
| 57 | DA | 1929 | G | OP1-P-O3' | 5.91 | 118.19 | 105.20 |
| 57 | DA | 1997 | C | C3'-C2'-C1' | 5.90 | 106.22 | 101.50 |
| 1 | AA | 1381 | U | C3'-C2'-C1' | 5.90 | 106.22 | 101.50 |
| 57 | DA | 1839 | G | C3'-C2'-C1' | 5.90 | 106.22 | 101.50 |
| 53 | CA | 291 | U | O4'-C1'-N1 | 5.90 | 112.92 | 108.20 |
| 22 | BA | 1497 | U | O4'-C1'-N1 | 5.90 | 112.92 | 108.20 |
| 1 | AA | 468 | A | P-O3'-C3' | -5.90 | 112.62 | 119.70 |
| 22 | BA | 2012 | G | O5'-P-OP2 | -5.89 | 100.39 | 105.70 |
| 57 | DA | 1451 | C | P-O3'-C3' | 5.89 | 126.77 | 119.70 |
| 57 | DA | 2578 | G | P-O3'-C3' | -5.89 | 112.63 | 119.70 |
| 53 | CA | 884 | U | P-O3'-C3' | 5.89 | 126.77 | 119.70 |
| 53 | CA | 1381 | U | C3'-C2'-C1' | 5.89 | 106.21 | 101.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 77 | G | C3'-C2'-C1' | 5.89 | 106.21 | 101.50 |
| 53 | CA | 331 | G | C3'-C2'-C1' | 5.89 | 106.21 | 101.50 |
| 57 | DA | 1079 | C | P-O3'-C3' | -5.89 | 112.63 | 119.70 |
| 22 | BA | 919 | U | O4'-C1'-N1 | -5.89 | 103.49 | 108.20 |
| 22 | BA | 1254 | A | C3'-C2'-C1' | 5.89 | 106.21 | 101.50 |
| 53 | CA | 1127 | G | C3'-C2'-C1' | 5.89 | 106.21 | 101.50 |
| 22 | BA | 391 | A | P-O3'-C3' | -5.89 | 112.64 | 119.70 |
| 57 | DA | 1669 | A | C3'-C2'-C1' | 5.89 | 106.21 | 101.50 |
| 22 | BA | 748 | G | O4'-C1'-N9 | 5.88 | 112.91 | 108.20 |
| 53 | CA | 816 | A | C3'-C2'-C1' | 5.88 | 106.21 | 101.50 |
| 22 | BA | 671 | C | P-O3'-C3' | -5.88 | 112.64 | 119.70 |
| 1 | AA | 1241 | G | C3'-C2'-C1' | 5.88 | 106.20 | 101.50 |
| 22 | BA | 1451 | C | P-O3'-C3' | 5.88 | 126.76 | 119.70 |
| 53 | CA | 47 | C | P-O3'-C3' | 5.88 | 126.76 | 119.70 |
| 57 | DA | 60 | G | C8-N9-C1' | 5.88 | 134.64 | 127.00 |
| 22 | BA | 1234 | U | O4'-C1'-N1 | 5.88 | 112.90 | 108.20 |
| 22 | BA | 2504 | U | P-O3'-C3' | -5.88 | 112.65 | 119.70 |
| 57 | DA | 916 | G | C3'-C2'-C1' | 5.88 | 106.20 | 101.50 |
| 57 | DA | 1400 | U | C3'-C2'-C1' | 5.88 | 106.20 | 101.50 |
| 22 | BA | 1379 | U | C3'-C2'-C1' | 5.88 | 106.20 | 101.50 |
| 22 | BA | 1658 | C | O4'-C1'-N1 | -5.88 | 103.50 | 108.20 |
| 57 | DA | 1206 | G | C3'-C2'-C1' | 5.88 | 106.20 | 101.50 |
| 22 | BA | 1287 | A | C3'-C2'-C1' | 5.87 | 106.20 | 101.50 |
| 57 | DA | 1722 | A | P-O3'-C3' | -5.87 | 112.65 | 119.70 |
| 57 | DA | 2615 | U | C3'-C2'-C1' | 5.87 | 106.20 | 101.50 |
| 1 | AA | 89 | U | O4'-C1'-N1 | 5.87 | 112.89 | 108.20 |
| 22 | BA | 1565 | C | P-O3'-C3' | 5.87 | 126.74 | 119.70 |
| 57 | DA | 231 | A | C3'-C2'-C1' | 5.87 | 106.19 | 101.50 |
| 57 | DA | 1735 | A | C3'-C2'-C1' | 5.87 | 106.19 | 101.50 |
| 57 | DA | 1157 | G | P-O3'-C3' | -5.87 | 112.66 | 119.70 |
| 22 | BA | 2148 | G | C3'-C2'-C1' | 5.86 | 106.19 | 101.50 |
| 57 | DA | 1956 | U | C3'-C2'-C1' | 5.86 | 106.19 | 101.50 |
| 53 | CA | 448 | A | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |
| 57 | DA | 142 | A | P-O3'-C3' | 5.86 | 126.73 | 119.70 |
| 57 | DA | 1430 | G | C3'-C2'-C1' | 5.86 | 106.19 | 101.50 |
| 22 | BA | 2440 | C | C3'-C2'-C1' | 5.86 | 106.19 | 101.50 |
| 53 | CA | 247 | G | C3'-C2'-C1' | 5.86 | 106.19 | 101.50 |
| 53 | CA | 253 | A | C3'-C2'-C1' | 5.86 | 106.19 | 101.50 |
| 53 | CA | 1395 | C | P-O3'-C3' | -5.86 | 112.67 | 119.70 |
| 57 | DA | 2150 | C | P-O3'-C3' | -5.86 | 112.67 | 119.70 |
| 22 | BA | 91 | A | P-O3'-C3' | 5.86 | 126.73 | 119.70 |
| 22 | BA | 485 | C | P-O3'-C3' | -5.86 | 112.67 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 70 | G | P-O3'-C3' | 5.85 | 126.72 | 119.70 |
| 57 | DA | 217 | A | C3'-C2'-C1' | 5.85 | 106.18 | 101.50 |
| 22 | BA | 1303 | G | P-O3'-C3' | -5.85 | 112.68 | 119.70 |
| 53 | CA | 1449 | C | C3'-C2'-C1' | 5.85 | 106.18 | 101.50 |
| 22 | BA | 2774 | C | P-O5'-C5' | -5.85 | 111.54 | 120.90 |
| 53 | CA | 1202 | U | C3'-C2'-C1' | 5.85 | 106.18 | 101.50 |
| 57 | DA | 1217 | U | O4'-C1'-N1 | 5.85 | 112.88 | 108.20 |
| 53 | CA | 567 | G | C3'-C2'-C1' | 5.85 | 106.18 | 101.50 |
| 1 | AA | 972 | C | P-O3'-C3' | -5.85 | 112.69 | 119.70 |
| 57 | DA | 571 | U | P-O3'-C3' | 5.85 | 126.72 | 119.70 |
| 57 | DA | 2409 | G | C3'-C2'-C1' | 5.85 | 106.18 | 101.50 |
| 1 | AA | 1087 | G | C3'-C2'-C1' | 5.84 | 106.17 | 101.50 |
| 1 | AA | 1158 | C | N1-C1'-C2' | -5.84 | 105.57 | 112.00 |
| 1 | AA | 1531 | A | P-O3'-C3' | -5.84 | 112.69 | 119.70 |
| 57 | DA | 2266 | A | P-O3'-C3' | 5.84 | 126.72 | 119.70 |
| 1 | AA | 368 | U | C3'-C2'-C1' | 5.84 | 106.17 | 101.50 |
| 22 | BA | 243 | U | P-O3'-C3' | -5.84 | 112.69 | 119.70 |
| 1 | AA | 567 | G | C3'-C2'-C1' | 5.84 | 106.17 | 101.50 |
| 22 | BA | 2267 | A | C3'-C2'-C1' | 5.84 | 106.17 | 101.50 |
| 57 | DA | 492 | A | P-O3'-C3' | -5.84 | 112.69 | 119.70 |
| 57 | DA | 604 | G | C3'-C2'-C1' | 5.84 | 106.17 | 101.50 |
| 22 | BA | 2021 | C | O3'-P-O5' | -5.84 | 92.91 | 104.00 |
| 53 | CA | 423 | G | C3'-C2'-C1' | 5.84 | 106.17 | 101.50 |
| 2 | CB | 146 | SER | C-N-CA | 5.84 | 136.29 | 121.70 |
| 57 | DA | 1576 | U | O4'-C1'-N1 | 5.83 | 112.87 | 108.20 |
| 1 | AA | 132 | C | O4'-C1'-N1 | 5.83 | 112.87 | 108.20 |
| 1 | AA | 414 | A | C3'-C2'-C1' | 5.83 | 106.17 | 101.50 |
| 1 | AA | 972 | C | C3'-C2'-C1' | 5.83 | 106.17 | 101.50 |
| 22 | BA | 35 | G | C3'-C2'-C1' | 5.83 | 106.17 | 101.50 |
| 53 | CA | 652 | U | P-O3'-C3' | 5.83 | 126.70 | 119.70 |
| 53 | CA | 885 | G | N9-C1'-C2' | -5.83 | 105.59 | 112.00 |
| 57 | DA | 861 | A | P-O3'-C3' | -5.83 | 112.70 | 119.70 |
| 22 | BA | 655 | A | P-O3'-C3' | 5.83 | 126.70 | 119.70 |
| 53 | CA | 733 | G | P-O3'-C3' | 5.83 | 126.69 | 119.70 |
| 53 | CA | 1505 | G | C3'-C2'-C1' | 5.83 | 106.16 | 101.50 |
| 22 | BA | 781 | A | P-O3'-C3' | 5.83 | 126.69 | 119.70 |
| 22 | BA | 1289 | C | C3'-C2'-C1' | 5.83 | 106.16 | 101.50 |
| 22 | BA | 807 | U | P-O5'-C5' | -5.83 | 111.58 | 120.90 |
| 22 | BA | 1537 | G | C3'-C2'-C1' | 5.83 | 106.16 | 101.50 |
| 57 | DA | 492 | A | C3'-C2'-C1' | 5.83 | 106.16 | 101.50 |
| 57 | DA | 2573 | C | N1-C1'-C2' | -5.83 | 105.59 | 112.00 |
| 1 | AA | 90 | C | N1-C1'-C2' | -5.82 | 105.59 | 112.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 549 | C | C3'-C2'-C1' | 5.82 | 106.16 | 101.50 |
| 22 | BA | 1733 | G | P-O3'-C3' | -5.82 | 112.71 | 119.70 |
| 53 | CA | 969 | A | P-O3'-C3' | -5.82 | 112.71 | 119.70 |
| 1 | AA | 857 | C | O4'-C1'-N1 | 5.82 | 112.86 | 108.20 |
| 57 | DA | 995 | C | P-O3'-C3' | 5.82 | 126.69 | 119.70 |
| 1 | AA | 51 | A | P-O3'-C3' | 5.82 | 126.69 | 119.70 |
| 22 | BA | 302 | C | P-O3'-C3' | -5.82 | 112.72 | 119.70 |
| 57 | DA | 2348 | U | C3'-C2'-C1' | 5.82 | 106.16 | 101.50 |
| 57 | DA | 397 | U | C3'-C2'-C1' | 5.82 | 106.16 | 101.50 |
| 22 | BA | 2267 | A | P-O3'-C3' | -5.82 | 112.72 | 119.70 |
| 53 | CA | 500 | G | N9-C1'-C2' | -5.82 | 105.60 | 112.00 |
| 1 | AA | 366 | A | P-O3'-C3' | 5.82 | 126.68 | 119.70 |
| 22 | BA | 553 | G | P-O3'-C3' | -5.82 | 112.72 | 119.70 |
| 22 | BA | 2836 | U | P-O3'-C3' | -5.82 | 112.72 | 119.70 |
| 22 | BA | 1992 | G | C4-N9-C1' | -5.81 | 118.94 | 126.50 |
| 22 | BA | 2136 | G | C3'-C2'-C1' | 5.81 | 106.15 | 101.50 |
| 22 | BA | 2615 | U | C3'-C2'-C1' | 5.81 | 106.15 | 101.50 |
| 57 | DA | 230 | G | C3'-C2'-C1' | 5.81 | 106.15 | 101.50 |
| 57 | DA | 1649 | G | P-O3'-C3' | -5.81 | 112.72 | 119.70 |
| 57 | DA | 1734 | G | C3'-C2'-C1' | 5.81 | 106.15 | 101.50 |
| 22 | BA | 268 | C | P-O3'-C3' | -5.81 | 112.73 | 119.70 |
| 1 | AA | 247 | G | P-O3'-C3' | -5.81 | 112.73 | 119.70 |
| 1 | AA | 1469 | C | P-O5'-C5' | -5.81 | 111.61 | 120.90 |
| 22 | BA | 2630 | G | P-O3'-C3' | -5.81 | 112.73 | 119.70 |
| 53 | CA | 353 | A | O4'-C1'-N9 | 5.81 | 112.85 | 108.20 |
| 53 | CA | 497 | G | C3'-C2'-C1' | 5.81 | 106.15 | 101.50 |
| 22 | BA | 2327 | A | C3'-C2'-C1' | 5.81 | 106.15 | 101.50 |
| 57 | DA | 1649 | G | C3'-C2'-C1' | 5.81 | 106.15 | 101.50 |
| 57 | DA | 1653 | G | P-O3'-C3' | 5.81 | 126.67 | 119.70 |
| 22 | BA | 346 | A | P-O3'-C3' | -5.80 | 112.73 | 119.70 |
| 22 | BA | 570 | G | P-O5'-C5' | -5.80 | 111.61 | 120.90 |
| 53 | CA | 821 | G | N9-C1'-C2' | -5.80 | 105.62 | 112.00 |
| 53 | CA | 1148 | U | C3'-C2'-C1' | 5.80 | 106.14 | 101.50 |
| 53 | CA | 891 | U | C3'-C2'-C1' | 5.80 | 106.14 | 101.50 |
| 53 | CA | 1367 | C | C3'-C2'-C1' | 5.80 | 106.14 | 101.50 |
| 22 | BA | 482 | A | C3'-C2'-C1' | 5.80 | 106.14 | 101.50 |
| 58 | DB | 17 | C | P-O3'-C3' | -5.80 | 112.74 | 119.70 |
| 22 | BA | 410 | G | P-O3'-C3' | 5.80 | 126.66 | 119.70 |
| 22 | BA | 229 | C | C3'-C2'-C1' | 5.80 | 106.14 | 101.50 |
| 1 | AA | 950 | U | O4'-C1'-N1 | 5.79 | 112.84 | 108.20 |
| 57 | DA | 1555 | G | N9-C1'-C2' | -5.79 | 105.63 | 112.00 |
| 22 | BA | 2570 | G | P-O3'-C3' | -5.79 | 112.75 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | CA | 248 | C | C3'-C2'-C1' | 5.79 | 106.13 | 101.50 |
| 57 | DA | 1961 | C | O4'-C1'-N1 | 5.79 | 112.83 | 108.20 |
| 22 | BA | 1694 | C | P-O3'-C3' | 5.79 | 126.64 | 119.70 |
| 22 | BA | 2470 | G | P-O3'-C3' | 5.79 | 126.64 | 119.70 |
| 53 | CA | 1244 | G | P-O3'-C3' | -5.79 | 112.76 | 119.70 |
| 57 | DA | 670 | A | P-O3'-C3' | 5.79 | 126.64 | 119.70 |
| 22 | BA | 436 | C | O4'-C1'-N1 | 5.78 | 112.83 | 108.20 |
| 53 | CA | 452 | A | C3'-C2'-C1' | 5.78 | 106.12 | 101.50 |
| 22 | BA | 2062 | A | N9-C1'-C2' | -5.78 | 105.64 | 112.00 |
| 53 | CA | 870 | U | N1-C1'-C2' | 5.78 | 121.51 | 114.00 |
| 1 | AA | 13 | U | O4'-C1'-N1 | 5.78 | 112.82 | 108.20 |
| 1 | AA | 210 | C | P-O3'-C3' | 5.78 | 126.63 | 119.70 |
| 22 | BA | 1929 | G | P-O3'-C3' | 5.78 | 126.63 | 119.70 |
| 57 | DA | 777 | G | P-O3'-C3' | -5.78 | 112.77 | 119.70 |
| 1 | AA | 1365 | G | N9-C1'-C2' | -5.78 | 105.65 | 112.00 |
| 53 | CA | 1452 | C | P-O3'-C3' | 5.78 | 126.63 | 119.70 |
| 57 | DA | 303 | G | C3'-C2'-C1' | 5.78 | 106.12 | 101.50 |
| 57 | DA | 353 | C | O4'-C1'-N1 | -5.78 | 103.58 | 108.20 |
| 57 | DA | 2458 | G | C4-N9-C1' | 5.78 | 134.01 | 126.50 |
| 57 | DA | 2459 | A | C3'-C2'-C1' | 5.78 | 106.12 | 101.50 |
| 22 | BA | 1493 | C | O4'-C1'-N1 | 5.77 | 112.82 | 108.20 |
| 22 | BA | 2385 | C | C3'-C2'-C1' | 5.77 | 106.12 | 101.50 |
| 23 | BB | 45 | A | P-O3'-C3' | -5.77 | 112.77 | 119.70 |
| 2 | CB | 146 | SER | CA-C-N | 5.77 | 129.90 | 117.20 |
| 57 | DA | 143 | C | C3'-C2'-C1' | 5.77 | 106.12 | 101.50 |
| 57 | DA | 1386 | C | P-O3'-C3' | -5.77 | 112.77 | 119.70 |
| 53 | CA | 1031 | C | P-O3'-C3' | 5.77 | 126.62 | 119.70 |
| 53 | CA | 1168 | U | C3'-C2'-C1' | 5.77 | 106.12 | 101.50 |
| 57 | DA | 638 | G | C3'-C2'-C1' | 5.77 | 106.11 | 101.50 |
| 1 | AA | 116 | A | N9-C1'-C2' | -5.77 | 105.66 | 112.00 |
| 1 | AA | 266 | G | O3'-P-O5' | 5.77 | 114.96 | 104.00 |
| 22 | BA | 1250 | G | P-O5'-C5' | -5.77 | 111.67 | 120.90 |
| 53 | CA | 439 | U | P-O5'-C5' | -5.77 | 111.67 | 120.90 |
| 57 | DA | 1010 | A | C3'-C2'-C1' | 5.77 | 106.11 | 101.50 |
| 22 | BA | 456 | C | O4'-C1'-N1 | -5.76 | 103.59 | 108.20 |
| 22 | BA | 1615 | C | O3'-P-O5' | -5.76 | 93.05 | 104.00 |
| 22 | BA | 1022 | G | N9-C4-C5 | 5.76 | 107.70 | 105.40 |
| 58 | DB | 110 | C | P-O3'-C3' | -5.76 | 112.78 | 119.70 |
| 1 | AA | 652 | U | P-O3'-C3' | 5.76 | 126.61 | 119.70 |
| 53 | CA | 210 | C | P-O3'-C3' | 5.76 | 126.61 | 119.70 |
| 57 | DA | 1388 | G | C3'-C2'-C1' | 5.76 | 106.11 | 101.50 |
| 22 | BA | 346 | A | N9-C1'-C2' | -5.76 | 105.67 | 112.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 562 | U | O4'-C1'-N1 | -5.76 | 103.59 | 108.20 |
| 57 | DA | 2136 | G | C3'-C2'-C1' | 5.76 | 106.11 | 101.50 |
| 22 | BA | 96 | C | C6-N1-C2 | 5.76 | 122.60 | 120.30 |
| 22 | BA | 1062 | G | P-O3'-C3' | -5.76 | 112.79 | 119.70 |
| 57 | DA | 1274 | A | C3'-C2'-C1' | 5.76 | 106.11 | 101.50 |
| 22 | BA | 1538 | G | C3'-C2'-C1' | 5.75 | 106.10 | 101.50 |
| 22 | BA | 763 | G | C8-N9-C1' | -5.75 | 119.52 | 127.00 |
| 22 | BA | 783 | A | C4-C5-N7 | 5.75 | 113.58 | 110.70 |
| 22 | BA | 329 | G | P-O3'-C3' | 5.75 | 126.60 | 119.70 |
| 22 | BA | 1119 | U | P-O3'-C3' | -5.75 | 112.80 | 119.70 |
| 53 | CA | 82 | G | C3'-C2'-C1' | 5.75 | 106.10 | 101.50 |
| 53 | CA | 1366 | C | N1-C1'-C2' | -5.75 | 105.67 | 112.00 |
| 57 | DA | 92 | U | C3'-C2'-C1' | 5.75 | 106.10 | 101.50 |
| 22 | BA | 728 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 22 | BA | 2062 | A | C3'-C2'-C1' | 5.75 | 106.10 | 101.50 |
| 53 | CA | 686 | U | P-O3'-C3' | 5.75 | 126.60 | 119.70 |
| 57 | DA | 510 | C | C3'-C2'-C1' | 5.75 | 106.10 | 101.50 |
| 57 | DA | 1821 | A | C3'-C2'-C1' | 5.75 | 106.10 | 101.50 |
| 1 | AA | 1047 | G | OP2-P-O3' | 5.75 | 117.84 | 105.20 |
| 22 | BA | 2417 | C | P-O5'-C5' | -5.75 | 111.71 | 120.90 |
| 22 | BA | 2492 | U | C3'-C2'-C1' | 5.75 | 106.10 | 101.50 |
| 57 | DA | 945 | A | P-O3'-C3' | 5.75 | 126.59 | 119.70 |
| 57 | DA | 860 | U | P-O3'-C3' | -5.75 | 112.81 | 119.70 |
| 57 | DA | 1274 | A | P-O3'-C3' | -5.75 | 112.81 | 119.70 |
| 22 | BA | 1276 | A | P-O3'-C3' | -5.74 | 112.81 | 119.70 |
| 53 | CA | 984 | C | O4'-C1'-N1 | 5.74 | 112.79 | 108.20 |
| 53 | CA | 1217 | C | P-O3'-C3' | -5.74 | 112.81 | 119.70 |
| 57 | DA | 2683 | C | C3'-C2'-C1' | 5.74 | 106.09 | 101.50 |
| 1 | AA | 74 | A | N9-C1'-C2' | -5.74 | 105.68 | 112.00 |
| 57 | DA | 1077 | A | C3'-C2'-C1' | 5.74 | 106.09 | 101.50 |
| 1 | AA | 251 | G | O4'-C1'-N9 | -5.74 | 103.61 | 108.20 |
| 22 | BA | 1060 | U | P-O3'-C3' | 5.74 | 126.59 | 119.70 |
| 53 | CA | 536 | C | N1-C1'-C2' | -5.74 | 105.69 | 112.00 |
| 57 | DA | 1274 | A | N9-C1'-C2' | -5.74 | 105.69 | 112.00 |
| 57 | DA | 2756 | U | P-O3'-C3' | 5.74 | 126.59 | 119.70 |
| 53 | CA | 1139 | G | P-O3'-C3' | 5.74 | 126.59 | 119.70 |
| 57 | DA | 2880 | C | C3'-C2'-C1' | 5.74 | 106.09 | 101.50 |
| 57 | DA | 2896 | C | O4'-C1'-N1 | 5.74 | 112.79 | 108.20 |
| 22 | BA | 390 | U | O4'-C1'-N1 | -5.74 | 103.61 | 108.20 |
| 22 | BA | 1993 | U | P-O3'-C3' | -5.74 | 112.81 | 119.70 |
| 57 | DA | 1340 | U | P-O3'-C3' | 5.74 | 126.58 | 119.70 |
| 1 | AA | 1424 | U | O4'-C1'-N1 | 5.73 | 112.79 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 1145 | C | P-O3'-C3' | -5.73 | 112.82 | 119.70 |
| 22 | BA | 919 | U | C5-C6-N1 | 5.73 | 125.57 | 122.70 |
| 22 | BA | 1696 | G | P-O3'-C3' | -5.73 | 112.82 | 119.70 |
| 53 | CA | 224 | U | O4'-C1'-N1 | 5.73 | 112.78 | 108.20 |
| 22 | BA | 1885 | A | C3'-C2'-C1' | 5.73 | 106.08 | 101.50 |
| 57 | DA | 527 | C | N1-C1'-C2' | 5.73 | 121.45 | 114.00 |
| 53 | CA | 686 | U | N1-C1'-C2' | 5.73 | 121.45 | 114.00 |
| 1 | AA | 1141 | C | C3'-C2'-C1' | 5.73 | 106.08 | 101.50 |
| 53 | CA | 509 | A | C3'-C2'-C1' | 5.73 | 106.08 | 101.50 |
| 57 | DA | 1158 | C | C3'-C2'-C1' | 5.73 | 106.08 | 101.50 |
| 58 | DB | 16 | G | C3'-C2'-C1' | 5.73 | 106.08 | 101.50 |
| 1 | AA | 1055 | A | N9-C1'-C2' | -5.73 | 105.70 | 112.00 |
| 22 | BA | 1931 | U | P-O3'-C3' | -5.73 | 112.83 | 119.70 |
| 1 | AA | 984 | C | C3'-C2'-C1' | 5.72 | 106.08 | 101.50 |
| 1 | AA | 1066 | C | P-O3'-C3' | -5.72 | 112.83 | 119.70 |
| 22 | BA | 1499 | C | C3'-C2'-C1' | 5.72 | 106.08 | 101.50 |
| 57 | DA | 1204 | A | P-O3'-C3' | 5.72 | 126.57 | 119.70 |
| 57 | DA | 1492 | G | C3'-C2'-C1' | 5.72 | 106.08 | 101.50 |
| 22 | BA | 571 | U | P-O3'-C3' | 5.72 | 126.56 | 119.70 |
| 22 | BA | 2836 | U | P-O5'-C5' | -5.72 | 111.75 | 120.90 |
| 57 | DA | 1025 | G | P-O3'-C3' | 5.72 | 126.56 | 119.70 |
| 22 | BA | 2405 | G | P-O3'-C3' | 5.72 | 126.56 | 119.70 |
| 23 | BB | 57 | A | P-O5'-C5' | -5.72 | 111.75 | 120.90 |
| 53 | CA | 914 | A | N9-C1'-C2' | -5.72 | 105.71 | 112.00 |
| 23 | BB | 16 | G | P-O3'-C3' | -5.72 | 112.84 | 119.70 |
| 57 | DA | 229 | C | O4'-C1'-N1 | 5.72 | 112.77 | 108.20 |
| 57 | DA | 442 | G | P-O3'-C3' | 5.72 | 126.56 | 119.70 |
| 1 | AA | 914 | A | P-O3'-C3' | -5.71 | 112.84 | 119.70 |
| 22 | BA | 1130 | U | P-O3'-C3' | 5.71 | 126.56 | 119.70 |
| 57 | DA | 639 | U | C3'-C2'-C1' | 5.71 | 106.07 | 101.50 |
| 57 | DA | 2603 | G | N9-C1'-C2' | -5.71 | 105.71 | 112.00 |
| 22 | BA | 944 | C | O4'-C1'-N1 | 5.71 | 112.77 | 108.20 |
| 22 | BA | 1013 | C | C3'-C2'-C1' | 5.71 | 106.07 | 101.50 |
| 53 | CA | 316 | C | C3'-C2'-C1' | 5.71 | 106.07 | 101.50 |
| 57 | DA | 406 | G | P-O3'-C3' | -5.71 | 112.84 | 119.70 |
| 57 | DA | 491 | G | C3'-C2'-C1' | 5.71 | 106.07 | 101.50 |
| 57 | DA | 1157 | G | C3'-C2'-C1' | 5.71 | 106.07 | 101.50 |
| 22 | BA | 1648 | U | P-O3'-C3' | -5.71 | 112.85 | 119.70 |
| 57 | DA | 1633 | G | P-O3'-C3' | 5.71 | 126.55 | 119.70 |
| 57 | DA | 1557 | C | C3'-C2'-C1' | 5.71 | 106.07 | 101.50 |
| 57 | DA | 1997 | C | P-O3'-C3' | -5.71 | 112.85 | 119.70 |
| 57 | DA | 2459 | A | P-O3'-C3' | -5.71 | 112.85 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 2756 | U | N1-C1'-C2' | 5.71 | 121.42 | 114.00 |
| 22 | BA | 1494 | A | C3'-C2'-C1' | 5.71 | 106.06 | 101.50 |
| 57 | DA | 2063 | C | C3'-C2'-C1' | 5.71 | 106.07 | 101.50 |
| 1 | AA | 92 | U | P-O3'-C3' | -5.71 | 112.85 | 119.70 |
| 22 | BA | 120 | U | P-O5'-C5' | -5.71 | 111.77 | 120.90 |
| 22 | BA | 746 | U | N1-C1'-C2' | 5.71 | 121.42 | 114.00 |
| 57 | DA | 2386 | A | C3'-C2'-C1' | 5.71 | 106.06 | 101.50 |
| 22 | BA | 1045 | C | N1-C1'-C2' | 5.70 | 121.41 | 114.00 |
| 53 | CA | 347 | G | C3'-C2'-C1' | 5.70 | 106.06 | 101.50 |
| 53 | CA | 688 | G | N9-C1'-C2' | -5.70 | 105.72 | 112.00 |
| 57 | DA | 575 | A | C3'-C2'-C1' | 5.70 | 106.06 | 101.50 |
| 1 | AA | 9 | G | N9-C1'-C2' | -5.70 | 105.73 | 112.00 |
| 1 | AA | 1283 | U | O4'-C1'-N1 | 5.70 | 112.76 | 108.20 |
| 57 | DA | 618 | G | P-O3'-C3' | -5.70 | 112.86 | 119.70 |
| 22 | BA | 2440 | C | P-O3'-C3' | -5.70 | 112.86 | 119.70 |
| 53 | CA | 353 | A | C3'-C2'-C1' | 5.70 | 106.06 | 101.50 |
| 57 | DA | 1132 | U | O4'-C1'-N1 | -5.70 | 103.64 | 108.20 |
| 1 | AA | 486 | U | P-O3'-C3' | -5.70 | 112.86 | 119.70 |
| 57 | DA | 229 | C | P-O3'-C3' | -5.70 | 112.86 | 119.70 |
| 22 | BA | 1647 | U | P-O3'-C3' | 5.70 | 126.53 | 119.70 |
| 57 | DA | 1635 | A | N9-C1'-C2' | -5.70 | 105.74 | 112.00 |
| 57 | DA | 2333 | A | P-O3'-C3' | 5.70 | 126.53 | 119.70 |
| 1 | AA | 1184 | G | N9-C1'-C2' | -5.69 | 105.74 | 112.00 |
| 22 | BA | 672 | C | O5'-P-OP2 | -5.69 | 100.58 | 105.70 |
| 22 | BA | 2631 | G | P-O5'-C5' | -5.69 | 111.80 | 120.90 |
| 33 | BL | 82 | LEU | CA-CB-CG | 5.69 | 128.39 | 115.30 |
| 57 | DA | 459 | U | C3'-C2'-C1' | 5.69 | 106.05 | 101.50 |
| 57 | DA | 1385 | A | P-O3'-C3' | 5.69 | 126.53 | 119.70 |
| 57 | DA | 2216 | G | C3'-C2'-C1' | 5.69 | 106.05 | 101.50 |
| 57 | DA | 2699 | C | O4'-C1'-N1 | 5.69 | 112.75 | 108.20 |
| 53 | CA | 577 | G | C3'-C2'-C1' | 5.69 | 106.05 | 101.50 |
| 57 | DA | 484 | C | C3'-C2'-C1' | 5.69 | 106.05 | 101.50 |
| 57 | DA | 2382 | G | P-O3'-C3' | 5.69 | 126.53 | 119.70 |
| 1 | AA | 1283 | U | C3'-C2'-C1' | 5.69 | 106.05 | 101.50 |
| 22 | BA | 621 | A | P-O5'-C5' | -5.69 | 111.80 | 120.90 |
| 22 | BA | 1785 | A | C3'-C2'-C1' | 5.69 | 106.05 | 101.50 |
| 22 | BA | 1027 | A | P-O3'-C3' | -5.69 | 112.88 | 119.70 |
| 22 | BA | 1499 | C | N1-C1'-C2' | -5.68 | 105.75 | 112.00 |
| 53 | CA | 92 | U | C3'-C2'-C1' | 5.68 | 106.05 | 101.50 |
| 1 | AA | 564 | C | P-O3'-C3' | -5.68 | 112.88 | 119.70 |
| 22 | BA | 2752 | C | C3'-C2'-C1' | 5.68 | 106.05 | 101.50 |
| 1 | AA | 772 | U | P-O3'-C3' | -5.68 | 112.89 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | CA | 1326 | U | O4'-C1'-N1 | 5.68 | 112.74 | 108.20 |
| 57 | DA | 141 | G | P-O3'-C3' | 5.68 | 126.52 | 119.70 |
| 1 | AA | 468 | A | C3'-C2'-C1' | 5.68 | 106.04 | 101.50 |
| 53 | CA | 816 | A | P-O3'-C3' | -5.68 | 112.89 | 119.70 |
| 1 | AA | 686 | U | O4'-C1'-N1 | 5.68 | 112.74 | 108.20 |
| 22 | BA | 1181 | U | P-O3'-C3' | -5.68 | 112.89 | 119.70 |
| 53 | CA | 366 | A | P-O3'-C3' | 5.68 | 126.51 | 119.70 |
| 1 | AA | 1095 | U | P-O3'-C3' | -5.67 | 112.89 | 119.70 |
| 57 | DA | 2492 | U | C3'-C2'-C1' | 5.67 | 106.04 | 101.50 |
| 1 | AA | 865 | A | P-O3'-C3' | 5.67 | 126.51 | 119.70 |
| 57 | DA | 1510 | G | C3'-C2'-C1' | 5.67 | 106.04 | 101.50 |
| 57 | DA | 1784 | A | P-O3'-C3' | 5.67 | 126.51 | 119.70 |
| 22 | BA | 379 | G | P-O5'-C5' | -5.67 | 111.83 | 120.90 |
| 57 | DA | 424 | G | N9-C1'-C2' | -5.67 | 105.76 | 112.00 |
| 57 | DA | 2611 | C | C3'-C2'-C1' | 5.67 | 106.04 | 101.50 |
| 22 | BA | 369 | U | N1-C1'-C2' | 5.67 | 121.37 | 114.00 |
| 57 | DA | 1060 | U | N1-C1'-C2' | 5.67 | 121.37 | 114.00 |
| 57 | DA | 1009 | A | C3'-C2'-C1' | 5.67 | 106.03 | 101.50 |
| 57 | DA | 1114 | C | N1-C1'-C2' | -5.67 | 105.77 | 112.00 |
| 22 | BA | 1986 | C | P-O3'-C3' | -5.66 | 112.90 | 119.70 |
| 53 | CA | 1146 | A | C3'-C2'-C1' | 5.66 | 106.03 | 101.50 |
| 53 | CA | 1161 | C | O4'-C1'-N1 | 5.66 | 112.73 | 108.20 |
| 57 | DA | 1027 | A | C3'-C2'-C1' | 5.66 | 106.03 | 101.50 |
| 57 | DA | 1857 | G | P-O3'-C3' | 5.66 | 126.50 | 119.70 |
| 53 | CA | 642 | A | P-O3'-C3' | -5.66 | 112.91 | 119.70 |
| 57 | DA | 407 | G | C3'-C2'-C1' | 5.66 | 106.03 | 101.50 |
| 22 | BA | 1313 | U | O4'-C1'-N1 | 5.66 | 112.73 | 108.20 |
| 53 | CA | 199 | A | P-O3'-C3' | -5.66 | 112.91 | 119.70 |
| 57 | DA | 105 | C | O4'-C1'-N1 | 5.66 | 112.73 | 108.20 |
| 22 | BA | 1249 | U | C3'-C2'-C1' | 5.66 | 106.03 | 101.50 |
| 57 | DA | 490 | C | O4'-C1'-N1 | -5.66 | 103.67 | 108.20 |
| 57 | DA | 1739 | A | C3'-C2'-C1' | 5.66 | 106.03 | 101.50 |
| 57 | DA | 2199 | A | P-O3'-C3' | -5.66 | 112.91 | 119.70 |
| 22 | BA | 1821 | A | P-O5'-C5' | -5.65 | 111.85 | 120.90 |
| 1 | AA | 915 | A | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 22 | BA | 1919 | A | C3'-C2'-C1' | 5.65 | 106.02 | 101.50 |
| 57 | DA | 1291 | C | C3'-C2'-C1' | 5.65 | 106.02 | 101.50 |
| 57 | DA | 1457 | U | O4'-C1'-N1 | 5.65 | 112.72 | 108.20 |
| 53 | CA | 1349 | A | C3'-C2'-C1' | 5.65 | 106.02 | 101.50 |
| 57 | DA | 783 | A | C3'-C2'-C1' | 5.65 | 106.02 | 101.50 |
| 58 | DB | 68 | C | P-O3'-C3' | -5.65 | 112.92 | 119.70 |
| 1 | AA | 267 | C | C3'-C2'-C1' | 5.65 | 106.02 | 101.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 1073 | A | C3'-C2'-C1' | 5.65 | 106.02 | 101.50 |
| 22 | BA | 1288 | G | O5'-P-OP2 | -5.65 | 100.62 | 105.70 |
| 57 | DA | 206 | U | P-O3'-C3' | -5.65 | 112.92 | 119.70 |
| 22 | BA | 2086 | U | P-O3'-C3' | 5.65 | 126.47 | 119.70 |
| 57 | DA | 2217 | G | N9-C1'-C2' | -5.65 | 105.79 | 112.00 |
| 22 | BA | 2849 | U | P-O5'-C5' | -5.64 | 111.87 | 120.90 |
| 53 | CA | 915 | A | N9-C1'-C2' | -5.64 | 105.79 | 112.00 |
| 57 | DA | 1682 | G | C3'-C2'-C1' | 5.64 | 106.02 | 101.50 |
| 1 | AA | 817 | C | N1-C1'-C2' | 5.64 | 121.33 | 114.00 |
| 22 | BA | 1866 | A | C3'-C2'-C1' | 5.64 | 106.01 | 101.50 |
| 53 | CA | 1332 | A | N9-C1'-C2' | -5.64 | 105.79 | 112.00 |
| 57 | DA | 727 | A | C3'-C2'-C1' | 5.64 | 106.01 | 101.50 |
| 57 | DA | 1415 | U | O4'-C1'-N1 | 5.64 | 112.71 | 108.20 |
| 22 | BA | 593 | U | O4'-C1'-N1 | 5.64 | 112.71 | 108.20 |
| 23 | BB | 42 | C | P-O3'-C3' | -5.64 | 112.93 | 119.70 |
| 53 | CA | 965 | U | P-O3'-C3' | 5.64 | 126.47 | 119.70 |
| 22 | BA | 958 | U | C3'-C2'-C1' | 5.64 | 106.01 | 101.50 |
| 22 | BA | 2504 | U | P-O5'-C5' | -5.64 | 111.88 | 120.90 |
| 57 | DA | 2543 | G | P-O3'-C3' | -5.64 | 112.93 | 119.70 |
| 53 | CA | 66 | A | O4'-C1'-N9 | -5.64 | 103.69 | 108.20 |
| 1 | AA | 813 | U | N1-C1'-C2' | -5.64 | 105.80 | 112.00 |
| 22 | BA | 763 | G | N9-C1'-C2' | -5.64 | 105.80 | 112.00 |
| 53 | CA | 6 | G | P-O3'-C3' | -5.64 | 112.94 | 119.70 |
| 53 | CA | 37 | U | O4'-C1'-N1 | 5.64 | 112.71 | 108.20 |
| 53 | CA | 87 | C | O4'-C1'-N1 | 5.63 | 112.71 | 108.20 |
| 53 | CA | 1145 | A | P-O3'-C3' | 5.63 | 126.46 | 119.70 |
| 57 | DA | 2683 | C | O4'-C1'-N1 | 5.63 | 112.71 | 108.20 |
| 58 | DB | 68 | C | C3'-C2'-C1' | 5.63 | 106.01 | 101.50 |
| 58 | DB | 110 | C | C3'-C2'-C1' | 5.63 | 106.01 | 101.50 |
| 22 | BA | 1926 | U | P-O3'-C3' | -5.63 | 112.94 | 119.70 |
| 1 | AA | 1383 | C | C6-N1-C2 | 5.63 | 122.55 | 120.30 |
| 22 | BA | 412 | A | C3'-C2'-C1' | 5.63 | 106.00 | 101.50 |
| 22 | BA | 1459 | G | C3'-C2'-C1' | 5.63 | 106.01 | 101.50 |
| 53 | CA | 520 | A | C3'-C2'-C1' | 5.63 | 106.00 | 101.50 |
| 57 | DA | 656 | G | C3'-C2'-C1' | 5.63 | 106.01 | 101.50 |
| 1 | AA | 439 | U | C3'-C2'-C1' | 5.63 | 106.00 | 101.50 |
| 22 | BA | 387 | U | P-O5'-C5' | -5.63 | 111.89 | 120.90 |
| 53 | CA | 429 | U | P-O3'-C3' | 5.63 | 126.45 | 119.70 |
| 57 | DA | 1114 | C | C3'-C2'-C1' | 5.63 | 106.00 | 101.50 |
| 57 | DA | 1401 | G | C3'-C2'-C1' | 5.63 | 106.00 | 101.50 |
| 22 | BA | 2424 | C | C5-C6-N1 | -5.63 | 118.19 | 121.00 |
| 22 | BA | 656 | G | C8-N9-C4 | -5.63 | 104.15 | 106.40 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 1367 | A | P-O3'-C3' | 5.63 | 126.45 | 119.70 |
| 1 | AA | 198 | G | P-O3'-C3' | -5.62 | 112.95 | 119.70 |
| 1 | AA | 436 | C | O4'-C1'-N1 | 5.62 | 112.70 | 108.20 |
| 1 | AA | 509 | A | C3'-C2'-C1' | 5.62 | 106.00 | 101.50 |
| 22 | BA | 1491 | G | P-O3'-C3' | -5.62 | 112.95 | 119.70 |
| 57 | DA | 389 | G | C3'-C2'-C1' | 5.62 | 106.00 | 101.50 |
| 57 | DA | 475 | C | O4'-C1'-N1 | -5.62 | 103.70 | 108.20 |
| 57 | DA | 1491 | G | C3'-C2'-C1' | 5.62 | 106.00 | 101.50 |
| 53 | CA | 184 | G | C3'-C2'-C1' | 5.62 | 106.00 | 101.50 |
| 53 | CA | 1450 | U | O4'-C1'-N1 | 5.62 | 112.70 | 108.20 |
| 1 | AA | 173 | U | N1-C1'-C2' | 5.62 | 121.30 | 114.00 |
| 22 | BA | 906 | U | P-O5'-C5' | -5.62 | 111.91 | 120.90 |
| 57 | DA | 2299 | U | C3'-C2'-C1' | 5.62 | 105.99 | 101.50 |
| 1 | AA | 487 | A | P-O3'-C3' | -5.62 | 112.96 | 119.70 |
| 22 | BA | 687 | C | P-O5'-C5' | -5.62 | 111.91 | 120.90 |
| 57 | DA | 35 | G | C3'-C2'-C1' | 5.62 | 105.99 | 101.50 |
| 1 | AA | 498 | A | C3'-C2'-C1' | 5.61 | 105.99 | 101.50 |
| 1 | AA | 998 | C | O4'-C1'-N1 | 5.61 | 112.69 | 108.20 |
| 1 | AA | 1477 | U | P-O5'-C5' | -5.61 | 111.92 | 120.90 |
| 53 | CA | 414 | A | C3'-C2'-C1' | 5.61 | 105.99 | 101.50 |
| 57 | DA | 479 | A | P-O3'-C3' | 5.61 | 126.44 | 119.70 |
| 57 | DA | 1680 | U | O4'-C1'-N1 | 5.61 | 112.69 | 108.20 |
| 22 | BA | 1510 | G | P-O3'-C3' | -5.61 | 112.97 | 119.70 |
| 22 | BA | 2512 | C | O4'-C1'-N1 | 5.61 | 112.69 | 108.20 |
| 57 | DA | 1144 | A | C3'-C2'-C1' | 5.61 | 105.99 | 101.50 |
| 57 | DA | 1333 | G | C3'-C2'-C1' | 5.61 | 105.99 | 101.50 |
| 57 | DA | 1825 | U | P-O3'-C3' | -5.61 | 112.97 | 119.70 |
| 53 | CA | 821 | G | C3'-C2'-C1' | 5.61 | 105.99 | 101.50 |
| 57 | DA | 2729 | G | C3'-C2'-C1' | 5.61 | 105.99 | 101.50 |
| 22 | BA | 2309 | A | C3'-C2'-C1' | 5.61 | 105.99 | 101.50 |
| 57 | DA | 1996 | C | N1-C1'-C2' | 5.61 | 121.29 | 114.00 |
| 57 | DA | 2450 | A | C3'-C2'-C1' | 5.61 | 105.98 | 101.50 |
| 22 | BA | 2846 | G | P-O5'-C5' | -5.61 | 111.93 | 120.90 |
| 53 | CA | 119 | A | P-O3'-C3' | 5.61 | 126.43 | 119.70 |
| 1 | AA | 1168 | U | O4'-C1'-N1 | 5.60 | 112.68 | 108.20 |
| 22 | BA | 16 | C | P-O3'-C3' | -5.60 | 112.98 | 119.70 |
| 53 | CA | 1245 | C | O4'-C1'-N1 | 5.60 | 112.68 | 108.20 |
| 57 | DA | 1034 | G | P-O3'-C3' | -5.60 | 112.98 | 119.70 |
| 22 | BA | 528 | A | C4-C5-N7 | 5.60 | 113.50 | 110.70 |
| 22 | BA | 2319 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 22 | BA | 2297 | A | N9-C1'-C2' | -5.60 | 105.84 | 112.00 |
| 22 | BA | 2430 | A | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 1561 | C | C3'-C2'-C1' | 5.60 | 105.98 | 101.50 |
| 57 | DA | 2259 | U | C3'-C2'-C1' | 5.60 | 105.98 | 101.50 |
| 58 | DB | 12 | C | P-O3'-C3' | 5.60 | 126.42 | 119.70 |
| 22 | BA | 814 | C | O5'-P-OP2 | -5.60 | 100.66 | 105.70 |
| 22 | BA | 1981 | A | P-O3'-C3' | -5.60 | 112.98 | 119.70 |
| 57 | DA | 811 | U | P-O3'-C3' | 5.60 | 126.42 | 119.70 |
| 57 | DA | 2036 | C | C3'-C2'-C1' | 5.60 | 105.98 | 101.50 |
| 57 | DA | 104 | A | C3'-C2'-C1' | 5.59 | 105.98 | 101.50 |
| 57 | DA | 2459 | A | N9-C1'-C2' | -5.59 | 105.85 | 112.00 |
| 22 | BA | 182 | A | P-O5'-C5' | -5.59 | 111.95 | 120.90 |
| 53 | CA | 1300 | G | P-O3'-C3' | -5.59 | 112.99 | 119.70 |
| 57 | DA | 73 | A | C3'-C2'-C1' | 5.59 | 105.97 | 101.50 |
| 1 | AA | 316 | C | P-O5'-C5' | -5.59 | 111.95 | 120.90 |
| 22 | BA | 621 | A | C3'-C2'-C1' | 5.59 | 105.97 | 101.50 |
| 22 | BA | 1374 | G | O4'-C1'-N9 | -5.59 | 103.73 | 108.20 |
| 22 | BA | 2044 | C | P-O5'-C5' | -5.59 | 111.95 | 120.90 |
| 53 | CA | 688 | G | P-O3'-C3' | -5.59 | 112.99 | 119.70 |
| 57 | DA | 207 | A | C3'-C2'-C1' | 5.59 | 105.97 | 101.50 |
| 57 | DA | 1829 | A | N9-C1'-C2' | -5.59 | 105.85 | 112.00 |
| 22 | BA | 324 | A | C3'-C2'-C1' | 5.59 | 105.97 | 101.50 |
| 22 | BA | 459 | U | C3'-C2'-C1' | 5.59 | 105.97 | 101.50 |
| 22 | BA | 1437 | C | P-O5'-C5' | -5.59 | 111.95 | 120.90 |
| 22 | BA | 2001 | C | P-O3'-C3' | -5.59 | 112.99 | 119.70 |
| 53 | CA | 1283 | U | P-O3'-C3' | -5.59 | 112.99 | 119.70 |
| 57 | DA | 1256 | G | C3'-C2'-C1' | 5.59 | 105.97 | 101.50 |
| 1 | AA | 519 | C | C3'-C2'-C1' | 5.59 | 105.97 | 101.50 |
| 1 | AA | 1088 | G | N9-C1'-C2' | -5.59 | 105.85 | 112.00 |
| 53 | CA | 508 | U | O4'-C1'-N1 | 5.59 | 112.67 | 108.20 |
| 22 | BA | 117 | G | P-O5'-C5' | -5.59 | 111.96 | 120.90 |
| 22 | BA | 192 | C | P-O5'-C5' | -5.59 | 111.96 | 120.90 |
| 53 | CA | 132 | C | C3'-C2'-C1' | 5.59 | 105.97 | 101.50 |
| 57 | DA | 671 | C | C2-N1-C1' | 5.59 | 124.95 | 118.80 |
| 57 | DA | 2874 | C | C3'-C2'-C1' | 5.59 | 105.97 | 101.50 |
| 1 | AA | 110 | C | C3'-C2'-C1' | 5.58 | 105.97 | 101.50 |
| 22 | BA | 645 | C | P-O3'-C3' | 5.58 | 126.40 | 119.70 |
| 53 | CA | 511 | C | N1-C1'-C2' | 5.58 | 121.26 | 114.00 |
| 1 | AA | 718 | A | C3'-C2'-C1' | 5.58 | 105.97 | 101.50 |
| 1 | AA | 1031 | C | P-O3'-C3' | 5.58 | 126.40 | 119.70 |
| 22 | BA | 1260 | A | P-O3'-C3' | 5.58 | 126.40 | 119.70 |
| 22 | BA | 1386 | C | C3'-C2'-C1' | 5.58 | 105.97 | 101.50 |
| 53 | CA | 276 | G | C3'-C2'-C1' | 5.58 | 105.97 | 101.50 |
| 57 | DA | 2337 | G | C3'-C2'-C1' | 5.58 | 105.97 | 101.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 512 | U | C3'-C2'-C1' | 5.58 | 105.96 | 101.50 |
| 53 | CA | 96 | U | C3'-C2'-C1' | 5.58 | 105.97 | 101.50 |
| 57 | DA | 230 | G | N9-C1'-C2' | -5.58 | 105.86 | 112.00 |
| 1 | AA | 497 | G | P-O3'-C3' | -5.58 | 113.00 | 119.70 |
| 22 | BA | 948 | C | P-O5'-C5' | -5.58 | 111.98 | 120.90 |
| 22 | BA | 1967 | C | C3'-C2'-C1' | 5.58 | 105.96 | 101.50 |
| 53 | CA | 1499 | A | N9-C1'-C2' | -5.58 | 105.86 | 112.00 |
| 57 | DA | 1758 | U | N1-C1'-C2' | 5.58 | 121.25 | 114.00 |
| 1 | AA | 1215 | G | P-O3'-C3' | -5.58 | 113.01 | 119.70 |
| 53 | CA | 14 | U | C3'-C2'-C1' | 5.58 | 105.96 | 101.50 |
| 57 | DA | 1108 | U | O4'-C1'-N1 | 5.58 | 112.66 | 108.20 |
| 53 | CA | 1440 | U | P-O3'-C3' | 5.57 | 126.39 | 119.70 |
| 57 | DA | 2876 | G | C3'-C2'-C1' | 5.57 | 105.96 | 101.50 |
| 22 | BA | 513 | A | C3'-C2'-C1' | 5.57 | 105.96 | 101.50 |
| 22 | BA | 747 | U | C3'-C2'-C1' | 5.57 | 105.96 | 101.50 |
| 53 | CA | 6 | G | C3'-C2'-C1' | 5.57 | 105.96 | 101.50 |
| 57 | DA | 976 | G | C3'-C2'-C1' | 5.57 | 105.96 | 101.50 |
| 57 | DA | 1888 | G | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 22 | BA | 386 | G | O3'-P-O5' | -5.57 | 93.42 | 104.00 |
| 22 | BA | 2071 | A | P-O3'-C3' | 5.57 | 126.38 | 119.70 |
| 22 | BA | 2821 | A | P-O3'-C3' | -5.57 | 113.02 | 119.70 |
| 23 | BB | 51 | G | P-O3'-C3' | 5.57 | 126.38 | 119.70 |
| 53 | CA | 1484 | C | O4'-C1'-N1 | 5.57 | 112.66 | 108.20 |
| 57 | DA | 2314 | A | C3'-C2'-C1' | 5.57 | 105.95 | 101.50 |
| 22 | BA | 638 | G | P-O3'-C3' | -5.57 | 113.02 | 119.70 |
| 53 | CA | 131 | A | C3'-C2'-C1' | 5.57 | 105.95 | 101.50 |
| 53 | CA | 1284 | C | P-O3'-C3' | 5.56 | 126.38 | 119.70 |
| 1 | AA | 704 | A | C3'-C2'-C1' | 5.56 | 105.95 | 101.50 |
| 22 | BA | 1200 | C | C6-N1-C2 | 5.56 | 122.53 | 120.30 |
| 53 | CA | 734 | G | C3'-C2'-C1' | 5.56 | 105.95 | 101.50 |
| 57 | DA | 1636 | U | C3'-C2'-C1' | 5.56 | 105.95 | 101.50 |
| 24 | BC | 109 | LEU | CA-CB-CG | 5.56 | 128.09 | 115.30 |
| 57 | DA | 995 | C | N1-C1'-C2' | 5.56 | 121.23 | 114.00 |
| 22 | BA | 951 | C | C6-N1-C2 | 5.56 | 122.52 | 120.30 |
| 22 | BA | 2543 | G | C8-N9-C4 | -5.56 | 104.18 | 106.40 |
| 57 | DA | 122 | G | C3'-C2'-C1' | 5.56 | 105.95 | 101.50 |
| 1 | AA | 379 | C | O4'-C1'-N1 | 5.56 | 112.64 | 108.20 |
| 1 | AA | 1054 | C | P-O5'-C5' | -5.56 | 112.01 | 120.90 |
| 1 | AA | 1395 | C | C3'-C2'-C1' | 5.56 | 105.95 | 101.50 |
| 22 | BA | 388 | G | P-O5'-C5' | -5.56 | 112.01 | 120.90 |
| 22 | BA | 904 | G | P-O3'-C3' | -5.56 | 113.03 | 119.70 |
| 22 | BA | 1912 | A | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 2757 | A | N9-C1'-C2' | -5.56 | 105.89 | 112.00 |
| 53 | CA | 1485 | U | O4'-C1'-N1 | 5.56 | 112.65 | 108.20 |
| 22 | BA | 2311 | A | P-O5'-C5' | -5.56 | 112.01 | 120.90 |
| 1 | AA | 971 | G | C4-N9-C1' | -5.55 | 119.28 | 126.50 |
| 22 | BA | 1943 | U | P-O3'-C3' | 5.55 | 126.37 | 119.70 |
| 22 | BA | 1976 | U | O4'-C1'-N1 | -5.55 | 103.76 | 108.20 |
| 53 | CA | 1449 | C | P-O3'-C3' | -5.55 | 113.03 | 119.70 |
| 57 | DA | 2276 | G | C3'-C2'-C1' | 5.55 | 105.94 | 101.50 |
| 57 | DA | 2781 | A | C3'-C2'-C1' | 5.55 | 105.94 | 101.50 |
| 53 | CA | 368 | U | N1-C1'-C2' | -5.55 | 105.89 | 112.00 |
| 57 | DA | 1167 | C | O4'-C1'-N1 | 5.55 | 112.64 | 108.20 |
| 22 | BA | 783 | A | N7-C8-N9 | 5.55 | 116.58 | 113.80 |
| 57 | DA | 1812 | U | O4'-C1'-N1 | 5.55 | 112.64 | 108.20 |
| 1 | AA | 1348 | U | P-O3'-C3' | -5.55 | 113.04 | 119.70 |
| 22 | BA | 2335 | A | C3'-C2'-C1' | 5.55 | 105.94 | 101.50 |
| 1 | AA | 61 | G | C3'-C2'-C1' | 5.54 | 105.94 | 101.50 |
| 22 | BA | 162 | U | P-O3'-C3' | 5.54 | 126.35 | 119.70 |
| 22 | BA | 2346 | A | P-O3'-C3' | 5.54 | 126.36 | 119.70 |
| 53 | CA | 15 | G | C3'-C2'-C1' | 5.54 | 105.94 | 101.50 |
| 1 | AA | 641 | U | N1-C1'-C2' | 5.54 | 121.21 | 114.00 |
| 22 | BA | 2024 | G | P-O5'-C5' | -5.54 | 112.03 | 120.90 |
| 57 | DA | 1346 | G | P-O3'-C3' | -5.54 | 113.05 | 119.70 |
| 57 | DA | 1945 | G | C3'-C2'-C1' | 5.54 | 105.93 | 101.50 |
| 57 | DA | 2646 | C | P-O3'-C3' | -5.54 | 113.05 | 119.70 |
| 57 | DA | 2868 | A | P-O3'-C3' | -5.54 | 113.05 | 119.70 |
| 22 | BA | 388 | G | C3'-C2'-C1' | 5.54 | 105.93 | 101.50 |
| 22 | BA | 1905 | C | O4'-C1'-N1 | 5.54 | 112.63 | 108.20 |
| 22 | BA | 2888 | C | P-O3'-C3' | -5.54 | 113.05 | 119.70 |
| 57 | DA | 1398 | C | N1-C1'-C2' | -5.54 | 105.90 | 112.00 |
| 22 | BA | 1184 | U | O4'-C1'-N1 | -5.54 | 103.77 | 108.20 |
| 53 | CA | 1191 | A | C3'-C2'-C1' | 5.54 | 105.93 | 101.50 |
| 57 | DA | 1456 | G | C3'-C2'-C1' | 5.54 | 105.93 | 101.50 |
| 57 | DA | 2313 | C | N1-C1'-C2' | -5.54 | 105.91 | 112.00 |
| 57 | DA | 2725 | A | P-O3'-C3' | 5.54 | 126.35 | 119.70 |
| 1 | AA | 537 | G | N9-C1'-C2' | -5.54 | 105.91 | 112.00 |
| 1 | AA | 1242 | G | P-O3'-C3' | -5.54 | 113.06 | 119.70 |
| 22 | BA | 1524 | G | P-O5'-C5' | -5.54 | 112.04 | 120.90 |
| 57 | DA | 2404 | U | C3'-C2'-C1' | 5.54 | 105.93 | 101.50 |
| 1 | AA | 1152 | A | C3'-C2'-C1' | 5.53 | 105.93 | 101.50 |
| 22 | BA | 1447 | C | N1-C1'-C2' | -5.53 | 105.91 | 112.00 |
| 53 | CA | 1051 | C | O4'-C1'-N1 | 5.53 | 112.63 | 108.20 |
| 22 | BA | 2296 | U | N1-C1'-C2' | 5.53 | 121.19 | 114.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 2359 | C | O4'-C1'-N1 | 5.53 | 112.62 | 108.20 |
| 57 | DA | 2407 | A | C3'-C2'-C1' | 5.53 | 105.93 | 101.50 |
| 22 | BA | 942 | G | OP1-P-O3' | 5.53 | 117.37 | 105.20 |
| 57 | DA | 273 | G | P-O3'-C3' | -5.53 | 113.06 | 119.70 |
| 57 | DA | 2567 | G | P-O3'-C3' | -5.53 | 113.06 | 119.70 |
| 22 | BA | 1157 | G | C3'-C2'-C1' | 5.53 | 105.92 | 101.50 |
| 22 | BA | 2210 | U | N1-C1'-C2' | 5.53 | 121.19 | 114.00 |
| 22 | BA | 2840 | C | O5'-P-OP2 | -5.53 | 100.72 | 105.70 |
| 57 | DA | 336 | C | O4'-C1'-N1 | 5.53 | 112.62 | 108.20 |
| 57 | DA | 828 | U | C3'-C2'-C1' | 5.53 | 105.92 | 101.50 |
| 57 | DA | 2387 | U | C3'-C2'-C1' | 5.53 | 105.92 | 101.50 |
| 57 | DA | 2638 | G | P-O3'-C3' | 5.53 | 126.33 | 119.70 |
| 58 | DB | 24 | G | P-O3'-C3' | 5.53 | 126.33 | 119.70 |
| 1 | AA | 1349 | A | C3'-C2'-C1' | 5.53 | 105.92 | 101.50 |
| 1 | AA | 1365 | G | C3'-C2'-C1' | 5.53 | 105.92 | 101.50 |
| 22 | BA | 1912 | A | P-O3'-C3' | 5.53 | 126.33 | 119.70 |
| 57 | DA | 2493 | U | C3'-C2'-C1' | 5.53 | 105.92 | 101.50 |
| 22 | BA | 2063 | C | C3'-C2'-C1' | 5.52 | 105.92 | 101.50 |
| 1 | AA | 1530 | G | P-O3'-C3' | -5.52 | 113.07 | 119.70 |
| 57 | DA | 915 | C | C3'-C2'-C1' | 5.52 | 105.92 | 101.50 |
| 57 | DA | 1026 | G | C3'-C2'-C1' | 5.52 | 105.92 | 101.50 |
| 25 | BD | 10 | GLY | N-CA-C | 5.52 | 126.90 | 113.10 |
| 1 | AA | 339 | C | O4'-C1'-N1 | 5.52 | 112.62 | 108.20 |
| 57 | DA | 1255 | U | C2-N1-C1' | 5.52 | 124.32 | 117.70 |
| 1 | AA | 275 | G | N9-C1'-C2' | -5.52 | 105.93 | 112.00 |
| 53 | CA | 511 | C | P-O3'-C3' | 5.52 | 126.32 | 119.70 |
| 57 | DA | 324 | A | P-O3'-C3' | -5.52 | 113.08 | 119.70 |
| 57 | DA | 1722 | A | C3'-C2'-C1' | 5.52 | 105.91 | 101.50 |
| 57 | DA | 1782 | U | C3'-C2'-C1' | 5.52 | 105.92 | 101.50 |
| 53 | CA | 722 | G | C3'-C2'-C1' | 5.52 | 105.91 | 101.50 |
| 1 | AA | 1228 | C | C3'-C2'-C1' | 5.51 | 105.91 | 101.50 |
| 22 | BA | 590 | A | P-O5'-C5' | -5.51 | 112.08 | 120.90 |
| 22 | BA | 2751 | G | P-O5'-C5' | -5.51 | 112.08 | 120.90 |
| 53 | CA | 1396 | A | OP2-P-O3' | 5.51 | 117.33 | 105.20 |
| 22 | BA | 959 | A | P-O3'-C3' | -5.51 | 113.08 | 119.70 |
| 57 | DA | 2282 | G | P-O3'-C3' | 5.51 | 126.31 | 119.70 |
| 57 | DA | 2428 | G | P-O3'-C3' | -5.51 | 113.08 | 119.70 |
| 22 | BA | 507 | A | N9-C1'-C2' | -5.51 | 105.94 | 112.00 |
| 22 | BA | 1941 | C | C3'-C2'-C1' | 5.51 | 105.91 | 101.50 |
| 57 | DA | 621 | A | C3'-C2'-C1' | 5.51 | 105.91 | 101.50 |
| 1 | AA | 870 | U | N1-C1'-C2' | 5.51 | 121.16 | 114.00 |
| 57 | DA | 78 | U | O4'-C1'-N1 | 5.51 | 112.61 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 324 | A | C3'-C2'-C1' | 5.51 | 105.91 | 101.50 |
| 1 | AA | 306 | A | C3'-C2'-C1' | 5.51 | 105.91 | 101.50 |
| 53 | CA | 1395 | C | C3'-C2'-C1' | 5.51 | 105.91 | 101.50 |
| 57 | DA | 746 | U | N1-C1'-C2' | 5.51 | 121.16 | 114.00 |
| 22 | BA | 1282 | U | P-O5'-C5' | -5.51 | 112.09 | 120.90 |
| 22 | BA | 1901 | A | C3'-C2'-C1' | 5.51 | 105.91 | 101.50 |
| 53 | CA | 832 | G | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 57 | DA | 1557 | C | P-O3'-C3' | -5.51 | 113.09 | 119.70 |
| 57 | DA | 1675 | C | C3'-C2'-C1' | 5.51 | 105.91 | 101.50 |
| 22 | BA | 1392 | A | P-O3'-C3' | 5.50 | 126.31 | 119.70 |
| 22 | BA | 1535 | A | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 57 | DA | 2428 | G | C3'-C2'-C1' | 5.50 | 105.90 | 101.50 |
| 22 | BA | 660 | C | P-O3'-C3' | -5.50 | 113.10 | 119.70 |
| 57 | DA | 424 | G | C3'-C2'-C1' | 5.50 | 105.90 | 101.50 |
| 1 | AA | 534 | U | C3'-C2'-C1' | 5.50 | 105.90 | 101.50 |
| 1 | AA | 1258 | G | C3'-C2'-C1' | 5.50 | 105.90 | 101.50 |
| 22 | BA | 2734 | A | P-O3'-C3' | -5.50 | 113.10 | 119.70 |
| 22 | BA | 2800 | A | N9-C1'-C2' | -5.50 | 105.95 | 112.00 |
| 53 | CA | 1066 | C | N1-C1'-C2' | -5.50 | 105.95 | 112.00 |
| 57 | DA | 505 | A | C3'-C2'-C1' | 5.50 | 105.90 | 101.50 |
| 57 | DA | 1700 | A | C3'-C2'-C1' | 5.50 | 105.90 | 101.50 |
| 22 | BA | 443 | A | P-O5'-C5' | -5.50 | 112.10 | 120.90 |
| 22 | BA | 572 | A | O4'-C1'-N9 | -5.50 | 103.80 | 108.20 |
| 53 | CA | 1499 | A | P-O5'-C5' | -5.50 | 112.10 | 120.90 |
| 57 | DA | 615 | U | N1-C1'-C2' | 5.50 | 121.15 | 114.00 |
| 57 | DA | 617 | G | C3'-C2'-C1' | 5.50 | 105.90 | 101.50 |
| 22 | BA | 783 | A | C6-C5-N7 | -5.50 | 128.45 | 132.30 |
| 22 | BA | 1301 | A | P-O5'-C5' | -5.50 | 112.11 | 120.90 |
| 22 | BA | 1461 | C | C3'-C2'-C1' | 5.50 | 105.90 | 101.50 |
| 22 | BA | 1396 | U | P-O3'-C3' | 5.49 | 126.29 | 119.70 |
| 53 | CA | 389 | A | C3'-C2'-C1' | 5.49 | 105.90 | 101.50 |
| 57 | DA | 1112 | G | C3'-C2'-C1' | 5.49 | 105.89 | 101.50 |
| 57 | DA | 53 | A | N9-C1'-C2' | -5.49 | 105.96 | 112.00 |
| 57 | DA | 390 | U | P-O3'-C3' | 5.49 | 126.29 | 119.70 |
| 1 | AA | 110 | C | P-O3'-C3' | -5.49 | 113.11 | 119.70 |
| 22 | BA | 1322 | A | P-O3'-C3' | 5.49 | 126.29 | 119.70 |
| 22 | BA | 2337 | G | P-O3'-C3' | -5.49 | 113.11 | 119.70 |
| 58 | DB | 13 | G | C3'-C2'-C1' | 5.49 | 105.89 | 101.50 |
| 1 | AA | 131 | A | C3'-C2'-C1' | 5.49 | 105.89 | 101.50 |
| 57 | DA | 1181 | U | O4'-C1'-N1 | 5.49 | 112.59 | 108.20 |
| 22 | BA | 1343 | G | C3'-C2'-C1' | 5.49 | 105.89 | 101.50 |
| 22 | BA | 1996 | C | P-O3'-C3' | 5.49 | 126.28 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | CA | 369 | G | C3'-C2'-C1' | 5.49 | 105.89 | 101.50 |
| 57 | DA | 128 | C | P-O3'-C3' | -5.49 | 113.12 | 119.70 |
| 57 | DA | 1554 | U | N1-C1'-C2' | 5.49 | 121.13 | 114.00 |
| 57 | DA | 2405 | G | P-O3'-C3' | 5.49 | 126.28 | 119.70 |
| 1 | AA | 1338 | G | P-O3'-C3' | -5.48 | 113.12 | 119.70 |
| 53 | CA | 1184 | G | P-O3'-C3' | -5.48 | 113.12 | 119.70 |
| 1 | AA | 724 | G | N9-C1'-C2' | -5.48 | 105.97 | 112.00 |
| 22 | BA | 2873 | A | O4'-C1'-N9 | 5.48 | 112.58 | 108.20 |
| 53 | CA | 252 | U | C3'-C2'-C1' | 5.48 | 105.88 | 101.50 |
| 57 | DA | 1972 | G | N9-C1'-C2' | -5.48 | 105.97 | 112.00 |
| 57 | DA | 2832 | U | O4'-C1'-N1 | 5.48 | 112.58 | 108.20 |
| 1 | AA | 250 | A | P-O3'-C3' | 5.48 | 126.27 | 119.70 |
| 22 | BA | 601 | C | P-O3'-C3' | -5.48 | 113.12 | 119.70 |
| 53 | CA | 365 | U | P-O3'-C3' | 5.48 | 126.28 | 119.70 |
| 57 | DA | 958 | U | N1-C1'-C2' | -5.48 | 105.97 | 112.00 |
| 22 | BA | 312 | G | C3'-C2'-C1' | 5.48 | 105.88 | 101.50 |
| 22 | BA | 765 | C | C3'-C2'-C1' | 5.48 | 105.88 | 101.50 |
| 53 | CA | 316 | C | P-O3'-C3' | -5.48 | 113.13 | 119.70 |
| 57 | DA | 1314 | C | C3'-C2'-C1' | 5.48 | 105.88 | 101.50 |
| 1 | AA | 74 | A | C3'-C2'-C1' | 5.48 | 105.88 | 101.50 |
| 53 | CA | 276 | G | N9-C1'-C2' | -5.48 | 105.98 | 112.00 |
| 1 | AA | 752 | G | P-O3'-C3' | 5.47 | 126.27 | 119.70 |
| 22 | BA | 100 | U | P-O3'-C3' | 5.47 | 126.27 | 119.70 |
| 22 | BA | 443 | A | C3'-C2'-C1' | 5.47 | 105.88 | 101.50 |
| 22 | BA | 669 | G | P-O5'-C5' | 5.47 | 129.66 | 120.90 |
| 22 | BA | 1856 | U | O4'-C1'-N1 | 5.47 | 112.58 | 108.20 |
| 53 | CA | 352 | C | C3'-C2'-C1' | 5.47 | 105.88 | 101.50 |
| 57 | DA | 36 | G | C3'-C2'-C1' | 5.47 | 105.88 | 101.50 |
| 57 | DA | 1080 | A | C3'-C2'-C1' | 5.47 | 105.88 | 101.50 |
| 22 | BA | 528 | A | C2-N3-C4 | -5.47 | 107.87 | 110.60 |
| 22 | BA | 572 | A | C4-C5-C6 | 5.47 | 119.73 | 117.00 |
| 57 | DA | 1613 | G | N9-C1'-C2' | -5.47 | 105.98 | 112.00 |
| 57 | DA | 2836 | U | C3'-C2'-C1' | 5.47 | 105.88 | 101.50 |
| 22 | BA | 422 | A | P-O3'-C3' | -5.47 | 113.14 | 119.70 |
| 53 | CA | 962 | C | P-O3'-C3' | -5.47 | 113.14 | 119.70 |
| 1 | AA | 549 | C | N1-C1'-C2' | -5.47 | 105.99 | 112.00 |
| 22 | BA | 1135 | C | N1-C1'-C2' | -5.47 | 105.99 | 112.00 |
| 57 | DA | 1695 | G | P-O3'-C3' | -5.47 | 113.14 | 119.70 |
| 57 | DA | 1945 | G | P-O3'-C3' | -5.47 | 113.14 | 119.70 |
| 22 | BA | 1398 | C | C3'-C2'-C1' | 5.46 | 105.87 | 101.50 |
| 57 | DA | 946 | C | C3'-C2'-C1' | 5.46 | 105.87 | 101.50 |
| 57 | DA | 1023 | U | C3'-C2'-C1' | 5.46 | 105.87 | 101.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 1555 | G | C3'-C2'-C1' | 5.46 | 105.87 | 101.50 |
| 22 | BA | 2211 | A | P-O3'-C3' | 5.46 | 126.26 | 119.70 |
| 53 | CA | 979 | C | C3'-C2'-C1' | 5.46 | 105.87 | 101.50 |
| 1 | AA | 1169 | A | P-O3'-C3' | -5.46 | 113.15 | 119.70 |
| 22 | BA | 302 | C | C3'-C2'-C1' | 5.46 | 105.87 | 101.50 |
| 22 | BA | 1455 | G | P-O3'-C3' | -5.46 | 113.15 | 119.70 |
| 1 | AA | 414 | A | P-O3'-C3' | -5.46 | 113.15 | 119.70 |
| 1 | AA | 1530 | G | C3'-C2'-C1' | 5.46 | 105.86 | 101.50 |
| 22 | BA | 1222 | U | P-O3'-C3' | -5.46 | 113.15 | 119.70 |
| 22 | BA | 2383 | G | C3'-C2'-C1' | 5.46 | 105.86 | 101.50 |
| 57 | DA | 199 | A | O4'-C1'-N9 | 5.46 | 112.56 | 108.20 |
| 1 | AA | 64 | G | P-O3'-C3' | 5.45 | 126.24 | 119.70 |
| 22 | BA | 480 | A | C3'-C2'-C1' | 5.45 | 105.86 | 101.50 |
| 22 | BA | 1765 | U | P-O5'-C5' | -5.45 | 112.18 | 120.90 |
| 57 | DA | 128 | C | C3'-C2'-C1' | 5.45 | 105.86 | 101.50 |
| 1 | AA | 92 | U | C3'-C2'-C1' | 5.45 | 105.86 | 101.50 |
| 22 | BA | 1837 | C | O4'-C1'-N1 | 5.45 | 112.56 | 108.20 |
| 22 | BA | 2195 | U | O4'-C1'-N1 | 5.45 | 112.56 | 108.20 |
| 57 | DA | 606 | U | C3'-C2'-C1' | 5.45 | 105.86 | 101.50 |
| 1 | AA | 87 | C | C3'-C2'-C1' | 5.45 | 105.86 | 101.50 |
| 1 | AA | 1243 | C | O4'-C1'-N1 | 5.45 | 112.56 | 108.20 |
| 22 | BA | 2347 | C | C3'-C2'-C1' | 5.45 | 105.86 | 101.50 |
| 57 | DA | 119 | A | P-O3'-C3' | 5.45 | 126.24 | 119.70 |
| 57 | DA | 1942 | C | C3'-C2'-C1' | 5.45 | 105.86 | 101.50 |
| 57 | DA | 774 | G | C8-N9-C1' | 5.45 | 134.08 | 127.00 |
| 53 | CA | 1161 | C | C3'-C2'-C1' | 5.45 | 105.86 | 101.50 |
| 1 | AA | 755 | G | C3'-C2'-C1' | 5.44 | 105.86 | 101.50 |
| 53 | CA | 828 | U | O4'-C1'-N1 | 5.44 | 112.56 | 108.20 |
| 57 | DA | 2489 | U | O4'-C1'-N1 | 5.44 | 112.56 | 108.20 |
| 53 | CA | 1157 | A | P-O3'-C3' | 5.44 | 126.23 | 119.70 |
| 57 | DA | 2585 | U | N1-C1'-C2' | 5.44 | 121.08 | 114.00 |
| 22 | BA | 1379 | U | O5'-P-OP2 | -5.44 | 100.81 | 105.70 |
| 1 | AA | 499 | A | P-O3'-C3' | 5.44 | 126.22 | 119.70 |
| 1 | AA | 1454 | G | C3'-C2'-C1' | 5.44 | 105.85 | 101.50 |
| 22 | BA | 1992 | G | C8-N9-C1' | 5.44 | 134.07 | 127.00 |
| 22 | BA | 1816 | C | C3'-C2'-C1' | 5.43 | 105.85 | 101.50 |
| 57 | DA | 373 | U | N1-C1'-C2' | -5.43 | 106.02 | 112.00 |
| 57 | DA | 443 | A | C3'-C2'-C1' | 5.43 | 105.85 | 101.50 |
| 57 | DA | 2447 | G | O4'-C1'-N9 | 5.43 | 112.55 | 108.20 |
| 57 | DA | 2866 | U | P-O3'-C3' | 5.43 | 126.22 | 119.70 |
| 58 | DB | 45 | A | C3'-C2'-C1' | 5.43 | 105.84 | 101.50 |
| 22 | BA | 238 | C | P-O3'-C3' | -5.43 | 113.19 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 346 | A | C3'-C2'-C1' | 5.43 | 105.84 | 101.50 |
| 22 | BA | 2011 | U | P-O3'-C3' | -5.43 | 113.19 | 119.70 |
| 57 | DA | 118 | A | P-O3'-C3' | 5.43 | 126.21 | 119.70 |
| 57 | DA | 989 | G | P-O3'-C3' | 5.43 | 126.21 | 119.70 |
| 57 | DA | 1213 | A | N9-C1'-C2' | -5.43 | 106.03 | 112.00 |
| 22 | BA | 2712 | C | N1-C1'-C2' | 5.43 | 121.05 | 114.00 |
| 57 | DA | 1207 | C | C3'-C2'-C1' | 5.43 | 105.84 | 101.50 |
| 57 | DA | 1919 | A | C3'-C2'-C1' | 5.43 | 105.84 | 101.50 |
| 1 | AA | 982 | U | N1-C1'-C2' | 5.42 | 121.05 | 114.00 |
| 1 | AA | 1241 | G | N9-C1'-C2' | -5.42 | 106.03 | 112.00 |
| 22 | BA | 2449 | U | C5-C6-N1 | -5.42 | 119.99 | 122.70 |
| 22 | BA | 2603 | G | C3'-C2'-C1' | 5.42 | 105.84 | 101.50 |
| 57 | DA | 336 | C | C3'-C2'-C1' | 5.42 | 105.84 | 101.50 |
| 57 | DA | 991 | C | C3'-C2'-C1' | 5.42 | 105.84 | 101.50 |
| 57 | DA | 991 | C | O4'-C1'-N1 | 5.42 | 112.54 | 108.20 |
| 57 | DA | 1498 | C | C3'-C2'-C1' | 5.42 | 105.84 | 101.50 |
| 57 | DA | 1915 | U | C3'-C2'-C1' | 5.42 | 105.84 | 101.50 |
| 57 | DA | 2024 | G | C3'-C2'-C1' | 5.42 | 105.84 | 101.50 |
| 22 | BA | 1111 | A | P-O3'-C3' | 5.42 | 126.21 | 119.70 |
| 22 | BA | 1867 | G | N9-C1'-C2' | -5.42 | 106.03 | 112.00 |
| 1 | AA | 1142 | G | C3'-C2'-C1' | 5.42 | 105.84 | 101.50 |
| 57 | DA | 1865 | U | N1-C1'-C2' | 5.42 | 121.05 | 114.00 |
| 57 | DA | 2298 | A | C3'-C2'-C1' | 5.42 | 105.84 | 101.50 |
| 57 | DA | 1455 | G | C3'-C2'-C1' | 5.42 | 105.84 | 101.50 |
| 22 | BA | 1714 | U | C3'-C2'-C1' | 5.42 | 105.84 | 101.50 |
| 1 | AA | 52 | C | C3'-C2'-C1' | 5.42 | 105.83 | 101.50 |
| 1 | AA | 274 | A | O4'-C1'-N9 | 5.42 | 112.53 | 108.20 |
| 22 | BA | 1336 | A | P-O3'-C3' | -5.42 | 113.20 | 119.70 |
| 53 | CA | 84 | U | O4'-C1'-N1 | 5.42 | 112.53 | 108.20 |
| 53 | CA | 1283 | U | C3'-C2'-C1' | 5.42 | 105.83 | 101.50 |
| 57 | DA | 811 | U | O4'-C1'-N1 | 5.42 | 112.53 | 108.20 |
| 1 | AA | 116 | A | C3'-C2'-C1' | 5.42 | 105.83 | 101.50 |
| 22 | BA | 2587 | A | P-O5'-C5' | -5.42 | 112.24 | 120.90 |
| 22 | BA | 951 | C | N1-C2-O2 | -5.41 | 115.65 | 118.90 |
| 22 | BA | 1655 | A | O5'-P-OP2 | -5.41 | 100.83 | 105.70 |
| 22 | BA | 2609 | U | C5-C6-N1 | -5.41 | 119.99 | 122.70 |
| 1 | AA | 1304 | G | C3'-C2'-C1' | 5.41 | 105.83 | 101.50 |
| 1 | AA | 1381 | U | P-O3'-C3' | -5.41 | 113.20 | 119.70 |
| 1 | AA | 1451 | U | P-O3'-C3' | 5.41 | 126.19 | 119.70 |
| 22 | BA | 2275 | C | N1-C1'-C2' | 5.41 | 121.03 | 114.00 |
| 57 | DA | 741 | U | C3'-C2'-C1' | 5.41 | 105.83 | 101.50 |
| 57 | DA | 2543 | G | C3'-C2'-C1' | 5.41 | 105.83 | 101.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 805 | G | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 57 | DA | 2504 | U | C3'-C2'-C1' | 5.41 | 105.83 | 101.50 |
| 22 | BA | 532 | A | N7-C8-N9 | 5.40 | 116.50 | 113.80 |
| 57 | DA | 2646 | C | P-O5'-C5' | -5.40 | 112.25 | 120.90 |
| 22 | BA | 174 | U | P-O3'-C3' | -5.40 | 113.22 | 119.70 |
| 22 | BA | 446 | G | P-O3'-C3' | 5.40 | 126.18 | 119.70 |
| 22 | BA | 2437 | G | O5'-P-OP2 | -5.40 | 100.84 | 105.70 |
| 57 | DA | 395 | U | O4'-C1'-N1 | 5.40 | 112.52 | 108.20 |
| 57 | DA | 491 | G | P-O3'-C3' | -5.40 | 113.22 | 119.70 |
| 53 | CA | 985 | C | C3'-C2'-C1' | 5.40 | 105.82 | 101.50 |
| 57 | DA | 1716 | U | N1-C1'-C2' | -5.40 | 106.06 | 112.00 |
| 1 | AA | 365 | U | O4'-C1'-N1 | 5.40 | 112.52 | 108.20 |
| 22 | BA | 1156 | A | P-O3'-C3' | 5.40 | 126.18 | 119.70 |
| 22 | BA | 1839 | G | C3'-C2'-C1' | 5.40 | 105.82 | 101.50 |
| 57 | DA | 1288 | G | P-O3'-C3' | 5.40 | 126.18 | 119.70 |
| 1 | AA | 1348 | U | C3'-C2'-C1' | 5.40 | 105.82 | 101.50 |
| 22 | BA | 2044 | C | P-O3'-C3' | -5.39 | 113.23 | 119.70 |
| 57 | DA | 2567 | G | C3'-C2'-C1' | 5.39 | 105.82 | 101.50 |
| 57 | DA | 86 | G | P-O3'-C3' | -5.39 | 113.23 | 119.70 |
| 57 | DA | 1050 | A | C3'-C2'-C1' | 5.39 | 105.81 | 101.50 |
| 57 | DA | 2079 | U | P-O3'-C3' | 5.39 | 126.17 | 119.70 |
| 1 | AA | 885 | G | C3'-C2'-C1' | 5.39 | 105.81 | 101.50 |
| 1 | AA | 994 | A | C3'-C2'-C1' | 5.39 | 105.81 | 101.50 |
| 53 | CA | 718 | A | P-O3'-C3' | -5.39 | 113.23 | 119.70 |
| 22 | BA | 915 | C | C3'-C2'-C1' | 5.39 | 105.81 | 101.50 |
| 22 | BA | 1260 | A | OP2-P-O3' | 5.39 | 117.06 | 105.20 |
| 57 | DA | 249 | C | P-O3'-C3' | 5.39 | 126.17 | 119.70 |
| 57 | DA | 1810 | A | C3'-C2'-C1' | 5.39 | 105.81 | 101.50 |
| 57 | DA | 1944 | U | O4'-C1'-N1 | 5.39 | 112.51 | 108.20 |
| 26 | BE | 46 | GLN | N-CA-C | 5.39 | 125.55 | 111.00 |
| 1 | AA | 1303 | C | C3'-C2'-C1' | 5.39 | 105.81 | 101.50 |
| 22 | BA | 727 | A | C3'-C2'-C1' | 5.39 | 105.81 | 101.50 |
| 22 | BA | 813 | U | P-O3'-C3' | -5.38 | 113.24 | 119.70 |
| 53 | CA | 194 | C | O4'-C1'-N1 | -5.38 | 103.89 | 108.20 |
| 57 | DA | 572 | A | C3'-C2'-C1' | 5.38 | 105.81 | 101.50 |
| 57 | DA | 2778 | A | P-O3'-C3' | 5.38 | 126.16 | 119.70 |
| 22 | BA | 480 | A | O5'-P-OP2 | -5.38 | 100.86 | 105.70 |
| 53 | CA | 1453 | G | C3'-C2'-C1' | 5.38 | 105.81 | 101.50 |
| 57 | DA | 2632 | A | P-O3'-C3' | 5.38 | 126.16 | 119.70 |
| 22 | BA | 1272 | A | P-O5'-C5' | -5.38 | 112.29 | 120.90 |
| 22 | BA | 1330 | C | O4'-C1'-N1 | 5.38 | 112.50 | 108.20 |
| 57 | DA | 1388 | G | P-O3'-C3' | -5.38 | 113.24 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 1455 | G | P-O5'-C5' | -5.38 | 112.29 | 120.90 |
| 53 | CA | 68 | G | C3'-C2'-C1' | 5.38 | 105.80 | 101.50 |
| 22 | BA | 243 | U | C3'-C2'-C1' | 5.38 | 105.80 | 101.50 |
| 22 | BA | 1932 | A | P-O3'-C3' | -5.38 | 113.25 | 119.70 |
| 22 | BA | 2199 | A | P-O5'-C5' | -5.38 | 112.30 | 120.90 |
| 22 | BA | 400 | G | P-O3'-C3' | 5.38 | 126.15 | 119.70 |
| 22 | BA | 2497 | A | P-O5'-C5' | 5.38 | 129.50 | 120.90 |
| 22 | BA | 1786 | A | P-O3'-C3' | 5.37 | 126.15 | 119.70 |
| 57 | DA | 1663 | G | P-O3'-C3' | 5.37 | 126.15 | 119.70 |
| 57 | DA | 1916 | A | C3'-C2'-C1' | 5.37 | 105.80 | 101.50 |
| 22 | BA | 2398 | U | P-O3'-C3' | 5.37 | 126.15 | 119.70 |
| 22 | BA | 2695 | U | P-O3'-C3' | 5.37 | 126.14 | 119.70 |
| 57 | DA | 1674 | G | C8-N9-C1' | -5.37 | 120.02 | 127.00 |
| 22 | BA | 2136 | G | P-O3'-C3' | -5.37 | 113.26 | 119.70 |
| 22 | BA | 2498 | C | P-O5'-C5' | -5.37 | 112.31 | 120.90 |
| 57 | DA | 2876 | G | N9-C1'-C2' | -5.37 | 106.10 | 112.00 |
| 22 | BA | 1664 | A | O3'-P-O5' | -5.37 | 93.81 | 104.00 |
| 53 | CA | 1129 | C | P-O3'-C3' | 5.37 | 126.14 | 119.70 |
| 53 | CA | 1366 | C | P-O3'-C3' | -5.37 | 113.26 | 119.70 |
| 57 | DA | 2727 | A | C3'-C2'-C1' | 5.37 | 105.79 | 101.50 |
| 22 | BA | 251 | A | O3'-P-O5' | -5.36 | 93.81 | 104.00 |
| 22 | BA | 860 | U | C3'-C2'-C1' | 5.36 | 105.79 | 101.50 |
| 22 | BA | 1498 | C | C3'-C2'-C1' | 5.36 | 105.79 | 101.50 |
| 22 | BA | 1508 | A | P-O3'-C3' | 5.36 | 126.14 | 119.70 |
| 22 | BA | 1956 | U | C3'-C2'-C1' | 5.36 | 105.79 | 101.50 |
| 22 | BA | 2820 | A | O3'-P-O5' | -5.36 | 93.81 | 104.00 |
| 53 | CA | 1481 | U | O4'-C1'-N1 | 5.36 | 112.49 | 108.20 |
| 57 | DA | 860 | U | C3'-C2'-C1' | 5.36 | 105.79 | 101.50 |
| 57 | DA | 985 | C | P-O3'-C3' | -5.36 | 113.27 | 119.70 |
| 57 | DA | 1785 | A | C3'-C2'-C1' | 5.36 | 105.79 | 101.50 |
| 57 | DA | 2275 | C | P-O3'-C3' | 5.36 | 126.14 | 119.70 |
| 53 | CA | 705 | G | C3'-C2'-C1' | 5.36 | 105.79 | 101.50 |
| 57 | DA | 53 | A | C3'-C2'-C1' | 5.36 | 105.79 | 101.50 |
| 57 | DA | 510 | C | P-O3'-C3' | -5.36 | 113.27 | 119.70 |
| 58 | DB | 111 | U | C3'-C2'-C1' | 5.36 | 105.79 | 101.50 |
| 22 | BA | 2060 | A | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 53 | CA | 327 | A | P-O3'-C3' | 5.36 | 126.13 | 119.70 |
| 22 | BA | 223 | A | C3'-C2'-C1' | 5.36 | 105.78 | 101.50 |
| 57 | DA | 1345 | C | N1-C1'-C2' | -5.36 | 106.11 | 112.00 |
| 53 | CA | 428 | G | C8-N9-C1' | 5.35 | 133.96 | 127.00 |
| 22 | BA | 1036 | G | P-O5'-C5' | -5.35 | 112.34 | 120.90 |
| 22 | BA | 2613 | U | OP2-P-O3' | 5.35 | 116.98 | 105.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | CA | 275 | G | C3'-C2'-C1' | 5.35 | 105.78 | 101.50 |
| 53 | CA | 1317 | C | O4'-C1'-N1 | 5.35 | 112.48 | 108.20 |
| 57 | DA | 1267 | U | C3'-C2'-C1' | 5.35 | 105.78 | 101.50 |
| 57 | DA | 1324 | G | O4'-C1'-N9 | 5.35 | 112.48 | 108.20 |
| 57 | DA | 1569 | A | C3'-C2'-C1' | 5.35 | 105.78 | 101.50 |
| 22 | BA | 2344 | U | O4'-C1'-N1 | -5.35 | 103.92 | 108.20 |
| 57 | DA | 2847 | U | P-O3'-C3' | 5.35 | 126.12 | 119.70 |
| 22 | BA | 1992 | G | N3-C4-N9 | -5.35 | 122.79 | 126.00 |
| 53 | CA | 309 | A | P-O3'-C3' | -5.35 | 113.28 | 119.70 |
| 57 | DA | 61 | C | O4'-C1'-N1 | 5.35 | 112.48 | 108.20 |
| 22 | BA | 1021 | A | C3'-C2'-C1' | 5.35 | 105.78 | 101.50 |
| 1 | AA | 1130 | A | P-O3'-C3' | -5.34 | 113.29 | 119.70 |
| 22 | BA | 989 | G | P-O3'-C3' | 5.34 | 126.11 | 119.70 |
| 53 | CA | 939 | G | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 22 | BA | 2708 | G | P-O3'-C3' | -5.34 | 113.29 | 119.70 |
| 22 | BA | 305 | C | P-O5'-C5' | -5.34 | 112.36 | 120.90 |
| 22 | BA | 805 | G | O4'-C1'-N9 | -5.34 | 103.93 | 108.20 |
| 22 | BA | 1695 | G | C3'-C2'-C1' | 5.34 | 105.77 | 101.50 |
| 57 | DA | 2683 | C | P-O3'-C3' | -5.34 | 113.29 | 119.70 |
| 1 | AA | 411 | A | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 22 | BA | 484 | C | O4'-C1'-N1 | -5.34 | 103.93 | 108.20 |
| 22 | BA | 2791 | G | N9-C1'-C2' | -5.34 | 106.13 | 112.00 |
| 57 | DA | 1136 | G | N9-C1'-C2' | -5.34 | 106.13 | 112.00 |
| 57 | DA | 406 | G | C3'-C2'-C1' | 5.34 | 105.77 | 101.50 |
| 57 | DA | 1713 | A | P-O3'-C3' | 5.34 | 126.11 | 119.70 |
| 57 | DA | 2836 | U | P-O3'-C3' | -5.34 | 113.30 | 119.70 |
| 22 | BA | 2591 | C | P-O5'-C5' | -5.34 | 112.36 | 120.90 |
| 57 | DA | 223 | A | C3'-C2'-C1' | 5.34 | 105.77 | 101.50 |
| 57 | DA | 1312 | U | P-O3'-C3' | 5.34 | 126.10 | 119.70 |
| 22 | BA | 2569 | G | P-O3'-C3' | 5.33 | 126.10 | 119.70 |
| 57 | DA | 1769 | U | O4'-C1'-N1 | 5.33 | 112.47 | 108.20 |
| 1 | AA | 885 | G | N9-C1'-C2' | -5.33 | 106.13 | 112.00 |
| 22 | BA | 1716 | U | C3'-C2'-C1' | 5.33 | 105.77 | 101.50 |
| 22 | BA | 2431 | U | P-O5'-C5' | -5.33 | 112.37 | 120.90 |
| 22 | BA | 2582 | G | N3-C4-C5 | -5.33 | 125.93 | 128.60 |
| 57 | DA | 2423 | U | P-O3'-C3' | 5.33 | 126.10 | 119.70 |
| 22 | BA | 948 | C | O4'-C1'-N1 | -5.33 | 103.94 | 108.20 |
| 22 | BA | 1060 | U | N1-C1'-C2' | 5.33 | 120.93 | 114.00 |
| 22 | BA | 1943 | U | N1-C1'-C2' | 5.33 | 120.93 | 114.00 |
| 53 | CA | 81 | A | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 57 | DA | 1511 | G | P-O3'-C3' | -5.33 | 113.31 | 119.70 |
| 57 | DA | 1648 | U | C3'-C2'-C1' | 5.33 | 105.76 | 101.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1158 | C | C3'-C2'-C1' | 5.33 | 105.76 | 101.50 |
| 22 | BA | 200 | U | P-O5'-C5' | -5.33 | 112.38 | 120.90 |
| 22 | BA | 600 | G | P-O5'-C5' | -5.33 | 112.38 | 120.90 |
| 22 | BA | 1221 | C | P-O3'-C3' | -5.33 | 113.31 | 119.70 |
| 1 | AA | 891 | U | P-O5'-C5' | -5.33 | 112.38 | 120.90 |
| 53 | CA | 239 | U | C5-C6-N1 | 5.33 | 125.36 | 122.70 |
| 57 | DA | 2895 | G | C3'-C2'-C1' | 5.33 | 105.76 | 101.50 |
| 22 | BA | 1759 | A | P-O5'-C5' | -5.32 | 112.38 | 120.90 |
| 22 | BA | 2868 | A | P-O5'-C5' | -5.32 | 112.38 | 120.90 |
| 53 | CA | 765 | G | C4-N9-C1' | 5.32 | 133.42 | 126.50 |
| 57 | DA | 1303 | G | C3'-C2'-C1' | 5.32 | 105.76 | 101.50 |
| 22 | BA | 60 | G | P-O3'-C3' | 5.32 | 126.09 | 119.70 |
| 22 | BA | 685 | A | P-O5'-C5' | -5.32 | 112.38 | 120.90 |
| 1 | AA | 919 | A | P-O3'-C3' | 5.32 | 126.08 | 119.70 |
| 22 | BA | 509 | C | C6-N1-C2 | -5.32 | 118.17 | 120.30 |
| 22 | BA | 2424 | C | N3-C4-N4 | -5.32 | 114.28 | 118.00 |
| 57 | DA | 224 | U | C3'-C2'-C1' | 5.32 | 105.76 | 101.50 |
| 57 | DA | 604 | G | N9-C1'-C2' | -5.32 | 106.15 | 112.00 |
| 22 | BA | 1317 | G | P-O3'-C3' | -5.32 | 113.32 | 119.70 |
| 53 | CA | 439 | U | P-O3'-C3' | -5.32 | 113.32 | 119.70 |
| 57 | DA | 1076 | C | O4'-C1'-N1 | 5.32 | 112.45 | 108.20 |
| 57 | DA | 1733 | G | C3'-C2'-C1' | 5.32 | 105.75 | 101.50 |
| 1 | AA | 421 | U | P-O3'-C3' | 5.32 | 126.08 | 119.70 |
| 1 | AA | 1303 | C | P-O3'-C3' | -5.32 | 113.32 | 119.70 |
| 57 | DA | 2714 | G | N9-C1'-C2' | -5.32 | 106.15 | 112.00 |
| 22 | BA | 266 | G | N9-C1'-C2' | -5.32 | 106.15 | 112.00 |
| 22 | BA | 1370 | C | P-O3'-C3' | 5.32 | 126.08 | 119.70 |
| 22 | BA | 1651 | G | O3'-P-O5' | -5.32 | 93.90 | 104.00 |
| 22 | BA | 2730 | C | P-O3'-C3' | -5.32 | 113.32 | 119.70 |
| 57 | DA | 480 | A | C3'-C2'-C1' | 5.32 | 105.75 | 101.50 |
| 57 | DA | 618 | G | C3'-C2'-C1' | 5.32 | 105.75 | 101.50 |
| 57 | DA | 1329 | U | N1-C1'-C2' | 5.32 | 120.91 | 114.00 |
| 57 | DA | 2752 | C | C3'-C2'-C1' | 5.31 | 105.75 | 101.50 |
| 1 | AA | 1153 | G | C3'-C2'-C1' | 5.31 | 105.75 | 101.50 |
| 22 | BA | 1328 | A | P-O3'-C3' | 5.31 | 126.08 | 119.70 |
| 22 | BA | 1927 | A | P-O3'-C3' | 5.31 | 126.08 | 119.70 |
| 53 | CA | 26 | A | P-O3'-C3' | 5.31 | 126.07 | 119.70 |
| 57 | DA | 765 | C | P-O3'-C3' | -5.31 | 113.33 | 119.70 |
| 57 | DA | 1399 | C | C3'-C2'-C1' | 5.31 | 105.75 | 101.50 |
| 57 | DA | 2572 | A | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 22 | BA | 807 | U | P-O3'-C3' | 5.31 | 126.07 | 119.70 |
| 53 | CA | 169 | C | O4'-C1'-N1 | 5.31 | 112.45 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 2215 | C | P-O3'-C3' | -5.31 | 113.33 | 119.70 |
| 1 | AA | 977 | A | C3'-C2'-C1' | 5.31 | 105.75 | 101.50 |
| 22 | BA | 764 | A | P-O3'-C3' | 5.31 | 126.07 | 119.70 |
| 22 | BA | 2342 | C | P-O5'-C5' | -5.31 | 112.41 | 120.90 |
| 22 | BA | 2419 | U | N1-C1'-C2' | -5.31 | 106.16 | 112.00 |
| 22 | BA | 2540 | C | P-O5'-C5' | -5.31 | 112.41 | 120.90 |
| 1 | AA | 816 | A | N9-C1'-C2' | -5.31 | 106.16 | 112.00 |
| 22 | BA | 1986 | C | P-O5'-C5' | -5.31 | 112.41 | 120.90 |
| 1 | AA | 430 | A | C3'-C2'-C1' | 5.30 | 105.74 | 101.50 |
| 22 | BA | 1956 | U | P-O3'-C3' | -5.30 | 113.33 | 119.70 |
| 22 | BA | 2440 | C | N1-C1'-C2' | -5.30 | 106.17 | 112.00 |
| 57 | DA | 396 | G | N9-C1'-C2' | -5.30 | 106.17 | 112.00 |
| 58 | DB | 42 | C | P-O3'-C3' | -5.30 | 113.33 | 119.70 |
| 22 | BA | 517 | C | P-O3'-C3' | -5.30 | 113.34 | 119.70 |
| 22 | BA | 583 | G | P-O3'-C3' | -5.30 | 113.34 | 119.70 |
| 22 | BA | 833 | A | P-O3'-C3' | -5.30 | 113.34 | 119.70 |
| 53 | CA | 1358 | U | O4'-C1'-N1 | 5.30 | 112.44 | 108.20 |
| 57 | DA | 1515 | A | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 1 | AA | 61 | G | P-O3'-C3' | -5.30 | 113.34 | 119.70 |
| 2 | AB | 146 | SER | CA-C-N | 5.30 | 128.86 | 117.20 |
| 22 | BA | 639 | U | N1-C1'-C2' | 5.30 | 120.89 | 114.00 |
| 53 | CA | 534 | U | C3'-C2'-C1' | 5.30 | 105.74 | 101.50 |
| 53 | CA | 1102 | A | N9-C1'-C2' | -5.30 | 106.17 | 112.00 |
| 57 | DA | 1817 | G | C3'-C2'-C1' | 5.30 | 105.74 | 101.50 |
| 1 | AA | 1337 | G | C3'-C2'-C1' | 5.30 | 105.74 | 101.50 |
| 53 | CA | 794 | A | C3'-C2'-C1' | 5.30 | 105.74 | 101.50 |
| 57 | DA | 2289 | G | C3'-C2'-C1' | 5.30 | 105.74 | 101.50 |
| 22 | BA | 607 | U | N1-C1'-C2' | -5.29 | 106.17 | 112.00 |
| 1 | AA | 1478 | U | O4'-C1'-N1 | -5.29 | 103.97 | 108.20 |
| 22 | BA | 2052 | A | O5'-P-OP2 | -5.29 | 100.94 | 105.70 |
| 22 | BA | 739 | A | C4'-C3'-C2' | 5.29 | 107.89 | 102.60 |
| 53 | CA | 389 | A | N9-C1'-C2' | -5.29 | 106.18 | 112.00 |
| 53 | CA | 534 | U | P-O3'-C3' | -5.29 | 113.35 | 119.70 |
| 1 | AA | 452 | A | C3'-C2'-C1' | 5.29 | 105.73 | 101.50 |
| 22 | BA | 637 | A | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 53 | CA | 32 | A | C3'-C2'-C1' | 5.29 | 105.73 | 101.50 |
| 57 | DA | 423 | A | P-O3'-C3' | 5.29 | 126.05 | 119.70 |
| 1 | AA | 438 | U | O4'-C1'-N1 | 5.29 | 112.43 | 108.20 |
| 22 | BA | 361 | G | P-O3'-C3' | 5.29 | 126.05 | 119.70 |
| 53 | CA | 689 | C | O4'-C1'-N1 | -5.29 | 103.97 | 108.20 |
| 53 | CA | 883 | C | N1-C1'-C2' | 5.29 | 120.87 | 114.00 |
| 1 | AA | 246 | A | P-O3'-C3' | 5.29 | 126.04 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 2519 | U | O4'-C1'-N1 | 5.29 | 112.43 | 108.20 |
| 57 | DA | 2544 | G | C3'-C2'-C1' | 5.29 | 105.73 | 101.50 |
| 22 | BA | 802 | A | C3'-C2'-C1' | 5.28 | 105.73 | 101.50 |
| 53 | CA | 282 | A | C3'-C2'-C1' | 5.28 | 105.73 | 101.50 |
| 53 | CA | 1479 | C | O4'-C1'-N1 | 5.28 | 112.43 | 108.20 |
| 57 | DA | 975 | A | P-O3'-C3' | -5.28 | 113.36 | 119.70 |
| 57 | DA | 2148 | G | P-O3'-C3' | -5.28 | 113.36 | 119.70 |
| 22 | BA | 52 | A | C3'-C2'-C1' | 5.28 | 105.72 | 101.50 |
| 22 | BA | 2682 | A | C8-N9-C4 | -5.28 | 103.69 | 105.80 |
| 57 | DA | 639 | U | N1-C1'-C2' | -5.28 | 106.19 | 112.00 |
| 53 | CA | 1052 | U | P-O5'-C5' | 5.28 | 129.35 | 120.90 |
| 57 | DA | 445 | C | O4'-C1'-N1 | 5.28 | 112.42 | 108.20 |
| 1 | AA | 53 | A | O5'-P-OP2 | -5.28 | 100.95 | 105.70 |
| 1 | AA | 874 | G | C3'-C2'-C1' | 5.28 | 105.72 | 101.50 |
| 1 | AA | 1286 | U | N1-C1'-C2' | 5.28 | 120.86 | 114.00 |
| 1 | AA | 1318 | A | P-O3'-C3' | 5.28 | 126.03 | 119.70 |
| 57 | DA | 1901 | A | P-O3'-C3' | -5.28 | 113.37 | 119.70 |
| 22 | BA | 809 | G | N3-C4-C5 | -5.28 | 125.96 | 128.60 |
| 22 | BA | 1848 | A | C3'-C2'-C1' | 5.28 | 105.72 | 101.50 |
| 35 | BN | 101 | GLY | N-CA-C | 5.28 | 126.29 | 113.10 |
| 22 | BA | 2824 | C | P-O3'-C3' | 5.27 | 126.03 | 119.70 |
| 53 | CA | 803 | G | C3'-C2'-C1' | 5.27 | 105.72 | 101.50 |
| 1 | AA | 537 | G | C3'-C2'-C1' | 5.27 | 105.72 | 101.50 |
| 53 | CA | 174 | A | C3'-C2'-C1' | 5.27 | 105.72 | 101.50 |
| 53 | CA | 388 | G | O3'-P-O5' | -5.27 | 93.98 | 104.00 |
| 53 | CA | 913 | A | P-O3'-C3' | 5.27 | 126.03 | 119.70 |
| 53 | CA | 960 | U | O4'-C1'-N1 | 5.27 | 112.42 | 108.20 |
| 57 | DA | 603 | A | P-O3'-C3' | 5.27 | 126.03 | 119.70 |
| 58 | DB | 12 | C | O4'-C1'-N1 | -5.27 | 103.98 | 108.20 |
| 57 | DA | 2037 | A | N9-C1'-C2' | -5.27 | 106.20 | 112.00 |
| 57 | DA | 2429 | G | C3'-C2'-C1' | 5.27 | 105.72 | 101.50 |
| 1 | AA | 717 | U | N1-C1'-C2' | 5.27 | 120.85 | 114.00 |
| 1 | AA | 1321 | U | P-O3'-C3' | -5.27 | 113.38 | 119.70 |
| 1 | AA | 352 | C | C3'-C2'-C1' | 5.27 | 105.71 | 101.50 |
| 57 | DA | 1820 | U | O4'-C1'-N1 | -5.27 | 103.99 | 108.20 |
| 1 | AA | 351 | G | C4-N9-C1' | 5.26 | 133.34 | 126.50 |
| 1 | AA | 467 | U | N1-C1'-C2' | -5.26 | 106.21 | 112.00 |
| 22 | BA | 509 | C | P-O3'-C3' | -5.26 | 113.38 | 119.70 |
| 53 | CA | 1085 | U | P-O3'-C3' | 5.26 | 126.02 | 119.70 |
| 1 | AA | 267 | C | P-O3'-C3' | -5.26 | 113.39 | 119.70 |
| 1 | AA | 500 | G | C3'-C2'-C1' | 5.26 | 105.71 | 101.50 |
| 22 | BA | 127 | A | P-O3'-C3' | 5.26 | 126.02 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | CA | 439 | U | C3'-C2'-C1' | 5.26 | 105.71 | 101.50 |
| 1 | AA | 129 | A | P-O3'-C3' | 5.26 | 126.01 | 119.70 |
| 22 | BA | 1654 | A | C1'-O4'-C4' | 5.26 | 114.11 | 109.90 |
| 53 | CA | 276 | G | P-O3'-C3' | -5.26 | 113.39 | 119.70 |
| 22 | BA | 265 | A | P-O3'-C3' | 5.26 | 126.01 | 119.70 |
| 1 | AA | 1127 | G | C3'-C2'-C1' | 5.26 | 105.71 | 101.50 |
| 1 | AA | 1225 | A | P-O5'-C5' | -5.26 | 112.49 | 120.90 |
| 53 | CA | 1301 | U | C3'-C2'-C1' | 5.26 | 105.70 | 101.50 |
| 57 | DA | 622 | G | C3'-C2'-C1' | 5.26 | 105.70 | 101.50 |
| 57 | DA | 1406 | U | O4'-C1'-N1 | 5.26 | 112.41 | 108.20 |
| 22 | BA | 1709 | U | O4'-C1'-N1 | -5.25 | 104.00 | 108.20 |
| 53 | CA | 969 | A | C3'-C2'-C1' | 5.25 | 105.70 | 101.50 |
| 57 | DA | 27 | G | P-O3'-C3' | 5.25 | 126.01 | 119.70 |
| 22 | BA | 225 | C | O4'-C1'-N1 | 5.25 | 112.40 | 108.20 |
| 22 | BA | 506 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 22 | BA | 645 | C | N1-C1'-C2' | 5.25 | 120.83 | 114.00 |
| 22 | BA | 2630 | G | C3'-C2'-C1' | 5.25 | 105.70 | 101.50 |
| 1 | AA | 174 | A | C3'-C2'-C1' | 5.25 | 105.70 | 101.50 |
| 1 | AA | 1362 | A | P-O3'-C3' | 5.25 | 126.00 | 119.70 |
| 57 | DA | 2207 | C | O4'-C1'-N1 | 5.25 | 112.40 | 108.20 |
| 53 | CA | 475 | C | P-O3'-C3' | -5.25 | 113.40 | 119.70 |
| 1 | AA | 1448 | C | C3'-C2'-C1' | 5.25 | 105.70 | 101.50 |
| 22 | BA | 1779 | U | C6-N1-C2 | 5.25 | 124.15 | 121.00 |
| 53 | CA | 1451 | U | O4'-C1'-N1 | 5.25 | 112.40 | 108.20 |
| 57 | DA | 1759 | A | C3'-C2'-C1' | 5.25 | 105.70 | 101.50 |
| 53 | CA | 32 | A | N9-C1'-C2' | -5.25 | 106.23 | 112.00 |
| 1 | AA | 306 | A | N9-C1'-C2' | -5.24 | 106.23 | 112.00 |
| 1 | AA | 511 | C | N1-C1'-C2' | 5.24 | 120.82 | 114.00 |
| 22 | BA | 223 | A | P-O3'-C3' | -5.24 | 113.41 | 119.70 |
| 22 | BA | 1324 | G | O3'-P-O5' | -5.24 | 94.04 | 104.00 |
| 22 | BA | 2276 | G | P-O3'-C3' | -5.24 | 113.41 | 119.70 |
| 22 | BA | 2382 | G | P-O3'-C3' | 5.24 | 125.99 | 119.70 |
| 53 | CA | 213 | G | C3'-C2'-C1' | 5.24 | 105.69 | 101.50 |
| 57 | DA | 1757 | A | P-O3'-C3' | 5.24 | 125.99 | 119.70 |
| 22 | BA | 996 | A | C3'-C2'-C1' | 5.24 | 105.69 | 101.50 |
| 22 | BA | 2260 | C | P-O5'-C5' | -5.24 | 112.52 | 120.90 |
| 53 | CA | 277 | C | O4'-C1'-N1 | 5.24 | 112.39 | 108.20 |
| 1 | AA | 536 | C | C3'-C2'-C1' | 5.24 | 105.69 | 101.50 |
| 53 | CA | 1086 | U | C3'-C2'-C1' | 5.24 | 105.69 | 101.50 |
| 57 | DA | 1389 | G | C3'-C2'-C1' | 5.24 | 105.69 | 101.50 |
| 57 | DA | 1967 | C | C3'-C2'-C1' | 5.24 | 105.69 | 101.50 |
| 22 | BA | 574 | A | P-O3'-C3' | 5.24 | 125.98 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 1026 | G | C3'-C2'-C1' | 5.24 | 105.69 | 101.50 |
| 53 | CA | 110 | C | O4'-C1'-N1 | 5.24 | 112.39 | 108.20 |
| 53 | CA | 210 | C | C2-N1-C1' | 5.24 | 124.56 | 118.80 |
| 22 | BA | 932 | U | N1-C1'-C2' | -5.23 | 106.24 | 112.00 |
| 22 | BA | 2194 | U | P-O3'-C3' | -5.23 | 113.42 | 119.70 |
| 57 | DA | 1291 | C | P-O3'-C3' | -5.23 | 113.42 | 119.70 |
| 22 | BA | 142 | A | P-O3'-C3' | -5.23 | 113.42 | 119.70 |
| 22 | BA | 1635 | A | C3'-C2'-C1' | 5.23 | 105.69 | 101.50 |
| 57 | DA | 1417 | C | O4'-C1'-N1 | 5.23 | 112.39 | 108.20 |
| 22 | BA | 1931 | U | C3'-C2'-C1' | 5.23 | 105.68 | 101.50 |
| 22 | BA | 456 | C | O5'-P-OP2 | -5.23 | 100.99 | 105.70 |
| 22 | BA | 1320 | C | P-O3'-C3' | 5.23 | 125.97 | 119.70 |
| 22 | BA | 1996 | C | C4'-C3'-C2' | 5.23 | 107.83 | 102.60 |
| 1 | AA | 879 | C | N1-C1'-C2' | -5.23 | 106.25 | 112.00 |
| 1 | AA | 1400 | C | O4'-C1'-N1 | -5.23 | 104.02 | 108.20 |
| 53 | CA | 392 | C | O4'-C1'-N1 | 5.23 | 112.38 | 108.20 |
| 53 | CA | 874 | G | C3'-C2'-C1' | 5.23 | 105.68 | 101.50 |
| 53 | CA | 1282 | C | C3'-C2'-C1' | 5.23 | 105.68 | 101.50 |
| 57 | DA | 477 | A | P-O3'-C3' | -5.23 | 113.43 | 119.70 |
| 57 | DA | 2403 | C | O4'-C1'-N1 | 5.23 | 112.38 | 108.20 |
| 53 | CA | 1141 | C | P-O3'-C3' | -5.23 | 113.43 | 119.70 |
| 57 | DA | 1275 | A | O4'-C1'-N9 | 5.23 | 112.38 | 108.20 |
| 57 | DA | 2307 | G | P-O3'-C3' | 5.23 | 125.97 | 119.70 |
| 57 | DA | 2873 | A | O4'-C1'-N9 | 5.23 | 112.38 | 108.20 |
| 1 | AA | 548 | G | C3'-C2'-C1' | 5.22 | 105.68 | 101.50 |
| 22 | BA | 2137 | U | C3'-C2'-C1' | 5.22 | 105.68 | 101.50 |
| 22 | BA | 2264 | C | P-O5'-C5' | -5.22 | 112.54 | 120.90 |
| 53 | CA | 1507 | A | C3'-C2'-C1' | 5.22 | 105.68 | 101.50 |
| 57 | DA | 396 | G | C3'-C2'-C1' | 5.22 | 105.68 | 101.50 |
| 22 | BA | 980 | A | OP1-P-O3' | 5.22 | 116.69 | 105.20 |
| 22 | BA | 2689 | U | C6-N1-C1' | 5.22 | 128.51 | 121.20 |
| 53 | CA | 874 | G | P-O3'-C3' | -5.22 | 113.43 | 119.70 |
| 57 | DA | 2324 | U | P-O3'-C3' | 5.22 | 125.97 | 119.70 |
| 22 | BA | 616 | A | C3'-C2'-C1' | 5.22 | 105.68 | 101.50 |
| 57 | DA | 52 | A | C3'-C2'-C1' | 5.22 | 105.68 | 101.50 |
| 57 | DA | 730 | A | N9-C1'-C2' | -5.22 | 106.26 | 112.00 |
| 22 | BA | 422 | A | C3'-C2'-C1' | 5.22 | 105.68 | 101.50 |
| 1 | AA | 373 | A | C3'-C2'-C1' | 5.22 | 105.67 | 101.50 |
| 1 | AA | 1152 | A | N9-C1'-C2' | -5.22 | 106.26 | 112.00 |
| 53 | CA | 1401 | G | N9-C1'-C2' | -5.22 | 106.26 | 112.00 |
| 22 | BA | 831 | G | N9-C1'-C2' | -5.21 | 106.27 | 112.00 |
| 22 | BA | 2492 | U | P-O3'-C3' | -5.21 | 113.44 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 1078 | U | O4'-C1'-N1 | 5.21 | 112.37 | 108.20 |
| 57 | DA | 1992 | G | P-O3'-C3' | 5.21 | 125.95 | 119.70 |
| 22 | BA | 682 | G | O4'-C1'-N9 | -5.21 | 104.03 | 108.20 |
| 22 | BA | 1145 | C | P-O3'-C3' | -5.21 | 113.45 | 119.70 |
| 22 | BA | 1358 | G | P-O5'-C5' | -5.21 | 112.56 | 120.90 |
| 22 | BA | 2353 | G | P-O5'-C5' | -5.21 | 112.56 | 120.90 |
| 53 | CA | 1052 | U | C3'-C2'-C1' | 5.21 | 105.67 | 101.50 |
| 57 | DA | 1397 | U | P-O3'-C3' | 5.21 | 125.95 | 119.70 |
| 53 | CA | 1066 | C | P-O3'-C3' | -5.21 | 113.45 | 119.70 |
| 1 | AA | 1197 | A | P-O3'-C3' | -5.21 | 113.45 | 119.70 |
| 22 | BA | 505 | A | C8-N9-C4 | -5.21 | 103.72 | 105.80 |
| 22 | BA | 1677 | A | P-O3'-C3' | -5.21 | 113.45 | 119.70 |
| 57 | DA | 2347 | C | C3'-C2'-C1' | 5.21 | 105.67 | 101.50 |
| 1 | AA | 936 | C | P-O3'-C3' | -5.21 | 113.45 | 119.70 |
| 22 | BA | 1326 | U | P-O3'-C3' | -5.21 | 113.45 | 119.70 |
| 57 | DA | 16 | C | O4'-C1'-N1 | 5.21 | 112.37 | 108.20 |
| 57 | DA | 763 | G | C3'-C2'-C1' | 5.21 | 105.67 | 101.50 |
| 53 | CA | 719 | C | O4'-C1'-N1 | 5.21 | 112.36 | 108.20 |
| 57 | DA | 617 | G | P-O3'-C3' | -5.21 | 113.45 | 119.70 |
| 57 | DA | 623 | C | C3'-C2'-C1' | 5.21 | 105.66 | 101.50 |
| 22 | BA | 1971 | U | C3'-C2'-C1' | 5.20 | 105.66 | 101.50 |
| 57 | DA | 1145 | C | C3'-C2'-C1' | 5.20 | 105.66 | 101.50 |
| 57 | DA | 1635 | A | P-O5'-C5' | -5.20 | 112.58 | 120.90 |
| 57 | DA | 1714 | U | O4'-C1'-N1 | -5.20 | 104.04 | 108.20 |
| 1 | AA | 567 | G | P-O5'-C5' | -5.20 | 112.58 | 120.90 |
| 22 | BA | 531 | C | O3'-P-O5' | -5.20 | 94.12 | 104.00 |
| 22 | BA | 2611 | C | C3'-C2'-C1' | 5.20 | 105.66 | 101.50 |
| 57 | DA | 1675 | C | P-O5'-C5' | -5.20 | 112.58 | 120.90 |
| 1 | AA | 331 | G | C3'-C2'-C1' | 5.20 | 105.66 | 101.50 |
| 22 | BA | 1672 | A | P-O5'-C5' | -5.20 | 112.58 | 120.90 |
| 22 | BA | 2519 | U | O3'-P-O5' | -5.20 | 94.13 | 104.00 |
| 1 | AA | 1050 | G | N9-C1'-C2' | -5.20 | 106.29 | 112.00 |
| 22 | BA | 2500 | U | O5'-P-OP1 | 5.20 | 116.94 | 110.70 |
| 57 | DA | 776 | G | N3-C4-C5 | -5.19 | 126.00 | 128.60 |
| 57 | DA | 868 | U | C3'-C2'-C1' | 5.19 | 105.66 | 101.50 |
| 57 | DA | 1135 | C | C3'-C2'-C1' | 5.19 | 105.66 | 101.50 |
| 1 | AA | 267 | C | O4'-C1'-N1 | 5.19 | 112.36 | 108.20 |
| 22 | BA | 2880 | C | C3'-C2'-C1' | 5.19 | 105.65 | 101.50 |
| 1 | AA | 552 | U | O4'-C1'-N1 | 5.19 | 112.35 | 108.20 |
| 22 | BA | 581 | C | P-O3'-C3' | 5.19 | 125.93 | 119.70 |
| 22 | BA | 2200 | C | C3'-C2'-C1' | 5.19 | 105.65 | 101.50 |
| 53 | CA | 13 | U | O4'-C1'-N1 | 5.19 | 112.35 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | CA | 181 | A | P-O3'-C3' | 5.19 | 125.93 | 119.70 |
| 53 | CA | 596 | A | C3'-C2'-C1' | 5.19 | 105.65 | 101.50 |
| 53 | CA | 1191 | A | P-O3'-C3' | -5.19 | 113.47 | 119.70 |
| 57 | DA | 2199 | A | C3'-C2'-C1' | 5.19 | 105.65 | 101.50 |
| 1 | AA | 252 | U | P-O3'-C3' | -5.19 | 113.47 | 119.70 |
| 2 | AB | 146 | SER | C-N-CA | 5.19 | 134.67 | 121.70 |
| 22 | BA | 2518 | A | O4'-C1'-N9 | -5.19 | 104.05 | 108.20 |
| 57 | DA | 374 | A | P-O3'-C3' | -5.19 | 113.47 | 119.70 |
| 57 | DA | 705 | A | P-O3'-C3' | -5.19 | 113.47 | 119.70 |
| 57 | DA | 1938 | A | P-O3'-C3' | 5.19 | 125.92 | 119.70 |
| 22 | BA | 544 | C | O4'-C1'-N1 | -5.19 | 104.05 | 108.20 |
| 23 | BB | 67 | G | C3'-C2'-C1' | 5.19 | 105.65 | 101.50 |
| 22 | BA | 1183 | U | O3'-P-O5' | -5.18 | 94.15 | 104.00 |
| 22 | BA | 2259 | U | P-O3'-C3' | -5.18 | 113.48 | 119.70 |
| 22 | BA | 1733 | G | N9-C1'-C2' | -5.18 | 106.30 | 112.00 |
| 22 | BA | 2017 | U | O4'-C1'-N1 | 5.18 | 112.35 | 108.20 |
| 53 | CA | 1184 | G | N9-C1'-C2' | -5.18 | 106.30 | 112.00 |
| 22 | BA | 946 | C | P-O3'-C3' | -5.18 | 113.48 | 119.70 |
| 22 | BA | 1606 | C | P-O5'-C5' | -5.18 | 112.61 | 120.90 |
| 22 | BA | 24 | G | P-O3'-C3' | 5.18 | 125.91 | 119.70 |
| 57 | DA | 2148 | G | C3'-C2'-C1' | 5.18 | 105.64 | 101.50 |
| 57 | DA | 2350 | C | O4'-C1'-N1 | 5.18 | 112.34 | 108.20 |
| 1 | AA | 346 | G | P-O5'-C5' | -5.18 | 112.62 | 120.90 |
| 22 | BA | 829 | A | C8-N9-C4 | 5.18 | 107.87 | 105.80 |
| 22 | BA | 1560 | G | C3'-C2'-C1' | 5.18 | 105.64 | 101.50 |
| 57 | DA | 615 | U | P-O3'-C3' | 5.18 | 125.91 | 119.70 |
| 57 | DA | 2584 | U | O4'-C1'-N1 | 5.18 | 112.34 | 108.20 |
| 22 | BA | 143 | C | C3'-C2'-C1' | 5.17 | 105.64 | 101.50 |
| 22 | BA | 794 | A | P-O5'-C5' | -5.17 | 112.62 | 120.90 |
| 22 | BA | 1157 | G | OP1-P-OP2 | 5.17 | 127.36 | 119.60 |
| 22 | BA | 1669 | A | C3'-C2'-C1' | 5.17 | 105.64 | 101.50 |
| 53 | CA | 374 | A | C3'-C2'-C1' | 5.17 | 105.64 | 101.50 |
| 1 | AA | 330 | C | C3'-C2'-C1' | 5.17 | 105.64 | 101.50 |
| 22 | BA | 2325 | G | C3'-C2'-C1' | 5.17 | 105.64 | 101.50 |
| 53 | CA | 937 | A | N9-C1'-C2' | -5.17 | 106.31 | 112.00 |
| 57 | DA | 232 | G | P-O3'-C3' | 5.17 | 125.91 | 119.70 |
| 57 | DA | 129 | C | O4'-C1'-N1 | 5.17 | 112.34 | 108.20 |
| 57 | DA | 1600 | C | O4'-C1'-N1 | -5.17 | 104.06 | 108.20 |
| 57 | DA | 2851 | A | P-O3'-C3' | -5.17 | 113.50 | 119.70 |
| 22 | BA | 1357 | C | P-O3'-C3' | -5.17 | 113.50 | 119.70 |
| 53 | CA | 500 | G | P-O3'-C3' | -5.17 | 113.50 | 119.70 |
| 53 | CA | 1453 | G | P-O3'-C3' | -5.17 | 113.50 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 236 | C | O4'-C1'-N1 | 5.17 | 112.33 | 108.20 |
| 1 | AA | 1321 | U | N1-C1'-C2' | -5.17 | 106.32 | 112.00 |
| 22 | BA | 1838 | C | N1-C1'-C2' | 5.17 | 120.72 | 114.00 |
| 22 | BA | 2283 | C | C3'-C2'-C1' | 5.17 | 105.63 | 101.50 |
| 22 | BA | 2431 | U | O4'-C1'-N1 | -5.17 | 104.07 | 108.20 |
| 53 | CA | 936 | C | P-O3'-C3' | -5.17 | 113.50 | 119.70 |
| 57 | DA | 1034 | G | N9-C1'-C2' | -5.17 | 106.32 | 112.00 |
| 57 | DA | 1625 | C | O4'-C1'-N1 | 5.17 | 112.33 | 108.20 |
| 1 | AA | 84 | U | N1-C1'-C2' | 5.17 | 120.72 | 114.00 |
| 22 | BA | 272 | A | O4'-C1'-N9 | 5.17 | 112.33 | 108.20 |
| 22 | BA | 35 | G | P-O5'-C5' | -5.16 | 112.64 | 120.90 |
| 57 | DA | 250 | G | C3'-C2'-C1' | 5.16 | 105.63 | 101.50 |
| 22 | BA | 1558 | C | O3'-P-O5' | 5.16 | 113.81 | 104.00 |
| 22 | BA | 1777 | U | P-O5'-C5' | -5.16 | 112.64 | 120.90 |
| 1 | AA | 497 | G | N9-C1'-C2' | -5.16 | 106.33 | 112.00 |
| 1 | AA | 1050 | G | C3'-C2'-C1' | 5.16 | 105.63 | 101.50 |
| 22 | BA | 2487 | G | P-O3'-C3' | 5.16 | 125.89 | 119.70 |
| 22 | BA | 1648 | U | C3'-C2'-C1' | 5.16 | 105.62 | 101.50 |
| 22 | BA | 1941 | C | P-O3'-C3' | -5.16 | 113.51 | 119.70 |
| 22 | BA | 2391 | G | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 22 | BA | 2423 | U | N1-C1'-C2' | 5.16 | 120.70 | 114.00 |
| 53 | CA | 84 | U | N1-C1'-C2' | 5.16 | 120.70 | 114.00 |
| 53 | CA | 794 | A | N9-C1'-C2' | -5.16 | 106.33 | 112.00 |
| 57 | DA | 2137 | U | O4'-C1'-N1 | 5.16 | 112.33 | 108.20 |
| 22 | BA | 742 | A | P-O3'-C3' | -5.16 | 113.51 | 119.70 |
| 53 | CA | 1348 | U | C3'-C2'-C1' | 5.16 | 105.62 | 101.50 |
| 57 | DA | 776 | G | C8-N9-C1' | -5.16 | 120.30 | 127.00 |
| 57 | DA | 990 | A | C3'-C2'-C1' | 5.16 | 105.62 | 101.50 |
| 57 | DA | 1483 | G | C3'-C2'-C1' | 5.16 | 105.62 | 101.50 |
| 1 | AA | 108 | G | O4'-C1'-N9 | 5.15 | 112.32 | 108.20 |
| 22 | BA | 1398 | C | P-O3'-C3' | -5.15 | 113.52 | 119.70 |
| 1 | AA | 1161 | C | P-O3'-C3' | -5.15 | 113.52 | 119.70 |
| 53 | CA | 1225 | A | P-O3'-C3' | 5.15 | 125.88 | 119.70 |
| 1 | AA | 273 | U | P-O3'-C3' | -5.15 | 113.52 | 119.70 |
| 1 | AA | 1229 | A | C3'-C2'-C1' | 5.15 | 105.62 | 101.50 |
| 22 | BA | 1185 | G | P-O5'-C5' | -5.15 | 112.66 | 120.90 |
| 23 | BB | 109 | A | N9-C1'-C2' | -5.15 | 106.33 | 112.00 |
| 53 | CA | 482 | A | P-O3'-C3' | -5.15 | 113.52 | 119.70 |
| 57 | DA | 36 | G | P-O3'-C3' | -5.15 | 113.52 | 119.70 |
| 57 | DA | 1606 | C | O4'-C1'-N1 | 5.15 | 112.32 | 108.20 |
| 1 | AA | 1398 | A | N9-C1'-C2' | -5.15 | 106.34 | 112.00 |
| 57 | DA | 1561 | C | N1-C1'-C2' | -5.15 | 106.34 | 112.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 564 | C | C3'-C2'-C1' | 5.15 | 105.62 | 101.50 |
| 57 | DA | 1326 | U | N1-C1'-C2' | -5.15 | 106.34 | 112.00 |
| 57 | DA | 1613 | G | C3'-C2'-C1' | 5.15 | 105.62 | 101.50 |
| 22 | BA | 70 | G | C4'-C3'-C2' | 5.14 | 107.74 | 102.60 |
| 22 | BA | 509 | C | C2-N1-C1' | 5.14 | 124.46 | 118.80 |
| 22 | BA | 2150 | C | N1-C1'-C2' | -5.14 | 106.34 | 112.00 |
| 1 | AA | 1184 | G | C3'-C2'-C1' | 5.14 | 105.61 | 101.50 |
| 22 | BA | 854 | C | O4'-C1'-N1 | 5.14 | 112.31 | 108.20 |
| 22 | BA | 938 | G | P-O3'-C3' | -5.14 | 113.53 | 119.70 |
| 22 | BA | 1689 | A | P-O5'-C5' | -5.14 | 112.67 | 120.90 |
| 53 | CA | 980 | C | O4'-C1'-N1 | 5.14 | 112.31 | 108.20 |
| 53 | CA | 1283 | U | O4'-C1'-N1 | 5.14 | 112.31 | 108.20 |
| 1 | AA | 1096 | C | O4'-C1'-N1 | 5.14 | 112.31 | 108.20 |
| 22 | BA | 1128 | G | O5'-P-OP2 | -5.14 | 101.07 | 105.70 |
| 57 | DA | 164 | C | C3'-C2'-C1' | 5.14 | 105.61 | 101.50 |
| 1 | AA | 1153 | G | N9-C1'-C2' | -5.14 | 106.35 | 112.00 |
| 57 | DA | 1510 | G | P-O3'-C3' | -5.14 | 113.53 | 119.70 |
| 22 | BA | 1331 | G | N9-C1'-C2' | -5.14 | 106.35 | 112.00 |
| 1 | AA | 1505 | G | C3'-C2'-C1' | 5.14 | 105.61 | 101.50 |
| 53 | CA | 718 | A | C3'-C2'-C1' | 5.14 | 105.61 | 101.50 |
| 22 | BA | 782 | A | P-O5'-C5' | 5.13 | 129.12 | 120.90 |
| 22 | BA | 2626 | C | C6-N1-C2 | 5.13 | 122.35 | 120.30 |
| 53 | CA | 72 | A | C3'-C2'-C1' | 5.13 | 105.61 | 101.50 |
| 53 | CA | 1454 | G | C3'-C2'-C1' | 5.13 | 105.61 | 101.50 |
| 22 | BA | 1063 | G | C3'-C2'-C1' | 5.13 | 105.61 | 101.50 |
| 53 | CA | 536 | C | C3'-C2'-C1' | 5.13 | 105.61 | 101.50 |
| 57 | DA | 2668 | G | P-O3'-C3' | -5.13 | 113.54 | 119.70 |
| 22 | BA | 459 | U | P-O3'-C3' | -5.13 | 113.54 | 119.70 |
| 53 | CA | 401 | C | P-O5'-C5' | -5.13 | 112.69 | 120.90 |
| 1 | AA | 1102 | A | C3'-C2'-C1' | 5.13 | 105.60 | 101.50 |
| 22 | BA | 398 | C | P-O5'-C5' | -5.13 | 112.69 | 120.90 |
| 53 | CA | 373 | A | N9-C1'-C2' | -5.13 | 106.36 | 112.00 |
| 57 | DA | 1276 | A | C3'-C2'-C1' | 5.13 | 105.60 | 101.50 |
| 57 | DA | 2757 | A | C3'-C2'-C1' | 5.13 | 105.60 | 101.50 |
| 22 | BA | 490 | C | N1-C1'-C2' | -5.12 | 106.36 | 112.00 |
| 57 | DA | 206 | U | C3'-C2'-C1' | 5.12 | 105.60 | 101.50 |
| 57 | DA | 729 | G | N9-C4-C5 | 5.12 | 107.45 | 105.40 |
| 57 | DA | 1787 | A | C3'-C2'-C1' | 5.12 | 105.60 | 101.50 |
| 1 | AA | 117 | G | O5'-P-OP2 | -5.12 | 101.09 | 105.70 |
| 1 | AA | 1191 | A | C3'-C2'-C1' | 5.12 | 105.60 | 101.50 |
| 22 | BA | 2227 | A | O5'-P-OP2 | -5.12 | 101.09 | 105.70 |
| 57 | DA | 2837 | A | C3'-C2'-C1' | 5.12 | 105.60 | 101.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 1311 | G | N3-C4-C5 | 5.12 | 131.16 | 128.60 |
| 22 | BA | 2214 | C | C3'-C2'-C1' | 5.12 | 105.60 | 101.50 |
| 57 | DA | 2489 | U | P-O3'-C3' | 5.12 | 125.84 | 119.70 |
| 1 | AA | 1453 | G | C3'-C2'-C1' | 5.12 | 105.59 | 101.50 |
| 22 | BA | 1829 | A | N9-C1'-C2' | -5.12 | 106.37 | 112.00 |
| 22 | BA | 1936 | A | C2-N3-C4 | -5.12 | 108.04 | 110.60 |
| 22 | BA | 2847 | U | O4'-C1'-N1 | 5.12 | 112.30 | 108.20 |
| 22 | BA | 272 | A | P-O3'-C3' | -5.12 | 113.56 | 119.70 |
| 22 | BA | 2750 | A | P-O3'-C3' | 5.12 | 125.84 | 119.70 |
| 57 | DA | 763 | G | N9-C1'-C2' | -5.12 | 106.37 | 112.00 |
| 57 | DA | 2544 | G | P-O3'-C3' | -5.12 | 113.56 | 119.70 |
| 1 | AA | 245 | U | C3'-C2'-C1' | 5.12 | 105.59 | 101.50 |
| 22 | BA | 177 | G | O4'-C1'-N9 | 5.12 | 112.29 | 108.20 |
| 23 | BB | 89 | U | P-O5'-C5' | -5.12 | 112.71 | 120.90 |
| 53 | CA | 96 | U | O4'-C1'-N1 | 5.12 | 112.29 | 108.20 |
| 53 | CA | 512 | U | C3'-C2'-C1' | 5.12 | 105.59 | 101.50 |
| 53 | CA | 977 | A | P-O3'-C3' | -5.12 | 113.56 | 119.70 |
| 57 | DA | 2896 | C | C3'-C2'-C1' | 5.12 | 105.59 | 101.50 |
| 22 | BA | 1135 | C | O4'-C1'-N1 | -5.11 | 104.11 | 108.20 |
| 22 | BA | 2633 | G | O3'-P-O5' | -5.11 | 94.28 | 104.00 |
| 22 | BA | 1866 | A | N9-C1'-C2' | -5.11 | 106.38 | 112.00 |
| 57 | DA | 1388 | G | N9-C1'-C2' | -5.11 | 106.38 | 112.00 |
| 1 | AA | 722 | G | C3'-C2'-C1' | 5.11 | 105.59 | 101.50 |
| 1 | AA | 1406 | U | P-O3'-C3' | -5.11 | 113.57 | 119.70 |
| 1 | AA | 1526 | G | P-O5'-C5' | -5.11 | 112.72 | 120.90 |
| 22 | BA | 534 | U | O5'-P-OP2 | -5.11 | 101.10 | 105.70 |
| 22 | BA | 2481 | G | P-O5'-C5' | -5.11 | 112.72 | 120.90 |
| 53 | CA | 812 | G | P-O3'-C3' | 5.11 | 125.83 | 119.70 |
| 53 | CA | 1383 | C | C3'-C2'-C1' | 5.11 | 105.59 | 101.50 |
| 57 | DA | 2068 | U | C3'-C2'-C1' | 5.11 | 105.59 | 101.50 |
| 22 | BA | 1808 | A | P-O3'-C3' | 5.11 | 125.83 | 119.70 |
| 53 | CA | 85 | U | N1-C1'-C2' | 5.11 | 120.64 | 114.00 |
| 1 | AA | 534 | U | P-O3'-C3' | -5.11 | 113.57 | 119.70 |
| 22 | BA | 2670 | A | P-O5'-C5' | -5.11 | 112.73 | 120.90 |
| 1 | AA | 51 | A | C3'-C2'-C1' | 5.11 | 105.58 | 101.50 |
| 57 | DA | 407 | G | O4'-C1'-N9 | 5.11 | 112.28 | 108.20 |
| 57 | DA | 992 | C | O4'-C1'-N1 | 5.11 | 112.28 | 108.20 |
| 57 | DA | 1489 | C | P-O3'-C3' | 5.11 | 125.83 | 119.70 |
| 57 | DA | 2024 | G | N9-C1'-C2' | -5.11 | 106.38 | 112.00 |
| 22 | BA | 1714 | U | P-O3'-C3' | -5.10 | 113.58 | 119.70 |
| 57 | DA | 828 | U | O4'-C1'-N1 | 5.10 | 112.28 | 108.20 |
| 57 | DA | 2289 | G | N9-C1'-C2' | -5.10 | 106.39 | 112.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 183 | C | O4'-C1'-N1 | 5.10 | 112.28 | 108.20 |
| 1 | AA | 431 | A | P-O5'-C5' | -5.10 | 112.74 | 120.90 |
| 1 | AA | 801 | U | P-O3'-C3' | -5.10 | 113.58 | 119.70 |
| 1 | AA | 817 | C | P-O3'-C3' | 5.10 | 125.82 | 119.70 |
| 53 | CA | 644 | U | O4'-C1'-N1 | 5.10 | 112.28 | 108.20 |
| 57 | DA | 764 | A | P-O5'-C5' | -5.10 | 112.73 | 120.90 |
| 57 | DA | 1777 | U | O5'-P-OP2 | -5.10 | 101.11 | 105.70 |
| 57 | DA | 2656 | U | C3'-C2'-C1' | 5.10 | 105.58 | 101.50 |
| 22 | BA | 2150 | C | P-O3'-C3' | -5.10 | 113.58 | 119.70 |
| 1 | AA | 891 | U | C3'-C2'-C1' | 5.10 | 105.58 | 101.50 |
| 22 | BA | 919 | U | C2-N1-C1' | 5.10 | 123.82 | 117.70 |
| 57 | DA | 749 | A | C3'-C2'-C1' | 5.10 | 105.58 | 101.50 |
| 57 | DA | 2714 | G | P-O3'-C3' | -5.10 | 113.58 | 119.70 |
| 22 | BA | 373 | U | C3'-C2'-C1' | 5.10 | 105.58 | 101.50 |
| 22 | BA | 509 | C | C5-C6-N1 | 5.10 | 123.55 | 121.00 |
| 22 | BA | 727 | A | P-O5'-C5' | -5.10 | 112.74 | 120.90 |
| 22 | BA | 2389 | G | P-O3'-C3' | 5.10 | 125.82 | 119.70 |
| 57 | DA | 1063 | G | C3'-C2'-C1' | 5.10 | 105.58 | 101.50 |
| 57 | DA | 1313 | U | C3'-C2'-C1' | 5.10 | 105.58 | 101.50 |
| 57 | DA | 1619 | G | N9-C1'-C2' | -5.10 | 106.39 | 112.00 |
| 1 | AA | 4 | U | C2-N1-C1' | 5.10 | 123.81 | 117.70 |
| 22 | BA | 705 | A | N9-C1'-C2' | -5.10 | 106.39 | 112.00 |
| 53 | CA | 1398 | A | N9-C1'-C2' | -5.10 | 106.39 | 112.00 |
| 22 | BA | 475 | C | P-O5'-C5' | -5.09 | 112.75 | 120.90 |
| 22 | BA | 1142 | A | C2-N3-C4 | -5.09 | 108.05 | 110.60 |
| 57 | DA | 1048 | A | P-O3'-C3' | 5.09 | 125.81 | 119.70 |
| 22 | BA | 396 | G | N9-C1'-C2' | -5.09 | 106.40 | 112.00 |
| 53 | CA | 73 | C | C3'-C2'-C1' | 5.09 | 105.58 | 101.50 |
| 53 | CA | 968 | A | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 53 | CA | 1213 | A | P-O3'-C3' | 5.09 | 125.81 | 119.70 |
| 57 | DA | 794 | A | C3'-C2'-C1' | 5.09 | 105.58 | 101.50 |
| 22 | BA | 1288 | G | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 22 | BA | 1634 | A | C4'-C3'-C2' | 5.09 | 107.69 | 102.60 |
| 22 | BA | 2491 | U | O5'-P-OP2 | -5.09 | 101.12 | 105.70 |
| 53 | CA | 1382 | C | O4'-C1'-N1 | 5.09 | 112.27 | 108.20 |
| 22 | BA | 1406 | U | N1-C1'-C2' | 5.09 | 120.61 | 114.00 |
| 22 | BA | 2181 | U | O4'-C1'-N1 | -5.09 | 104.13 | 108.20 |
| 22 | BA | 2801 | G | P-O3'-C3' | -5.09 | 113.59 | 119.70 |
| 22 | BA | 2842 | G | N1-C6-O6 | 5.09 | 122.95 | 119.90 |
| 57 | DA | 197 | A | C3'-C2'-C1' | 5.09 | 105.57 | 101.50 |
| 57 | DA | 1207 | C | O4'-C1'-N1 | 5.09 | 112.27 | 108.20 |
| 1 | AA | 560 | A | P-O3'-C3' | -5.09 | 113.59 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 22 | BA | 585 | G | O5'-P-OP2 | -5.09 | 101.12 | 105.70 |
| 22 | BA | 1151 | A | P-O3'-C3' | -5.09 | 113.60 | 119.70 |
| 22 | BA | 1616 | A | P-O5'-C5' | -5.09 | 112.76 | 120.90 |
| 22 | BA | 2025 | C | P-O3'-C3' | 5.09 | 125.80 | 119.70 |
| 53 | CA | 245 | U | C3'-C2'-C1' | 5.09 | 105.57 | 101.50 |
| 57 | DA | 1635 | A | P-O3'-C3' | -5.09 | 113.60 | 119.70 |
| 57 | DA | 2023 | C | C3'-C2'-C1' | 5.09 | 105.57 | 101.50 |
| 22 | BA | 1971 | U | O3'-P-O5' | -5.08 | 94.34 | 104.00 |
| 22 | BA | 1273 | U | C3'-C2'-C1' | 5.08 | 105.57 | 101.50 |
| 57 | DA | 1915 | U | P-O3'-C3' | -5.08 | 113.60 | 119.70 |
| 22 | BA | 1142 | A | C5-N7-C8 | -5.08 | 101.36 | 103.90 |
| 22 | BA | 1263 | U | C5-C4-O4 | -5.08 | 122.85 | 125.90 |
| 22 | BA | 2784 | U | P-O5'-C5' | -5.08 | 112.77 | 120.90 |
| 1 | AA | 835 | U | P-O3'-C3' | -5.08 | 113.60 | 119.70 |
| 22 | BA | 75 | G | N9-C1'-C2' | -5.08 | 106.41 | 112.00 |
| 22 | BA | 143 | C | O4'-C1'-N1 | 5.08 | 112.26 | 108.20 |
| 53 | CA | 970 | C | O4'-C1'-N1 | 5.08 | 112.26 | 108.20 |
| 57 | DA | 984 | A | P-O3'-C3' | 5.08 | 125.79 | 119.70 |
| 22 | BA | 636 | G | P-O3'-C3' | 5.08 | 125.79 | 119.70 |
| 57 | DA | 1931 | U | C3'-C2'-C1' | 5.08 | 105.56 | 101.50 |
| 1 | AA | 373 | A | N9-C1'-C2' | -5.08 | 106.42 | 112.00 |
| 22 | BA | 33 | C | C6-N1-C2 | 5.07 | 122.33 | 120.30 |
| 22 | BA | 1665 | A | P-O5'-C5' | -5.07 | 112.78 | 120.90 |
| 53 | CA | 815 | A | P-O3'-C3' | 5.07 | 125.79 | 119.70 |
| 57 | DA | 1882 | U | O4'-C1'-N1 | 5.07 | 112.26 | 108.20 |
| 57 | DA | 2615 | U | P-O3'-C3' | -5.07 | 113.61 | 119.70 |
| 22 | BA | 252 | G | O4'-C1'-N9 | -5.07 | 104.14 | 108.20 |
| 22 | BA | 595 | C | O5'-P-OP2 | -5.07 | 101.14 | 105.70 |
| 22 | BA | 872 | U | P-O3'-C3' | -5.07 | 113.61 | 119.70 |
| 58 | DB | 90 | C | C3'-C2'-C1' | 5.07 | 105.56 | 101.50 |
| 53 | CA | 808 | C | O4'-C1'-N1 | 5.07 | 112.25 | 108.20 |
| 22 | BA | 805 | G | P-O5'-C5' | -5.07 | 112.79 | 120.90 |
| 1 | AA | 959 | A | P-O3'-C3' | 5.07 | 125.78 | 119.70 |
| 22 | BA | 1555 | G | C3'-C2'-C1' | 5.07 | 105.55 | 101.50 |
| 22 | BA | 2656 | U | C3'-C2'-C1' | 5.07 | 105.55 | 101.50 |
| 57 | DA | 397 | U | N1-C1'-C2' | -5.07 | 106.43 | 112.00 |
| 57 | DA | 1429 | G | C3'-C2'-C1' | 5.07 | 105.55 | 101.50 |
| 57 | DA | 1647 | U | O4'-C1'-N1 | 5.07 | 112.25 | 108.20 |
| 57 | DA | 2021 | C | P-O3'-C3' | 5.07 | 125.78 | 119.70 |
| 57 | DA | 2069 | G | C3'-C2'-C1' | 5.07 | 105.55 | 101.50 |
| 57 | DA | 2149 | U | N1-C1'-C2' | -5.07 | 106.43 | 112.00 |
| 57 | DA | 2691 | C | C3'-C2'-C1' | 5.07 | 105.55 | 101.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 642 | A | N9-C1'-C2' | -5.06 | 106.43 | 112.00 |
| 1 | AA | 1278 | G | P-O3'-C3' | 5.06 | 125.77 | 119.70 |
| 57 | DA | 2850 | A | C3'-C2'-C1' | 5.06 | 105.55 | 101.50 |
| 22 | BA | 984 | A | N3-C4-C5 | 5.06 | 130.34 | 126.80 |
| 53 | CA | 977 | A | C3'-C2'-C1' | 5.06 | 105.55 | 101.50 |
| 57 | DA | 528 | A | P-O3'-C3' | -5.06 | 113.63 | 119.70 |
| 1 | AA | 71 | A | C3'-C2'-C1' | 5.06 | 105.55 | 101.50 |
| 22 | BA | 1144 | A | C3'-C2'-C1' | 5.06 | 105.55 | 101.50 |
| 53 | CA | 1394 | A | P-O3'-C3' | 5.06 | 125.77 | 119.70 |
| 57 | DA | 1982 | U | C3'-C2'-C1' | 5.06 | 105.55 | 101.50 |
| 22 | BA | 435 | C | P-O3'-C3' | -5.06 | 113.63 | 119.70 |
| 22 | BA | 2714 | G | P-O5'-C5' | -5.06 | 112.81 | 120.90 |
| 22 | BA | 2892 | G | O5'-P-OP1 | -5.06 | 101.15 | 105.70 |
| 53 | CA | 1073 | U | O4'-C1'-N1 | 5.06 | 112.25 | 108.20 |
| 57 | DA | 1655 | A | C3'-C2'-C1' | 5.06 | 105.55 | 101.50 |
| 57 | DA | 2681 | C | P-O3'-C3' | 5.06 | 125.77 | 119.70 |
| 53 | CA | 95 | C | C3'-C2'-C1' | 5.06 | 105.55 | 101.50 |
| 57 | DA | 339 | U | O4'-C1'-N1 | 5.06 | 112.25 | 108.20 |
| 53 | CA | 1140 | C | P-O3'-C3' | -5.05 | 113.64 | 119.70 |
| 57 | DA | 604 | G | P-O3'-C3' | -5.05 | 113.63 | 119.70 |
| 57 | DA | 1802 | A | C3'-C2'-C1' | 5.05 | 105.54 | 101.50 |
| 57 | DA | 2837 | A | P-O3'-C3' | -5.05 | 113.64 | 119.70 |
| 53 | CA | 381 | C | C2-N1-C1' | 5.05 | 124.36 | 118.80 |
| 53 | CA | 199 | A | N9-C1'-C2' | -5.05 | 106.44 | 112.00 |
| 57 | DA | 235 | U | C3'-C2'-C1' | 5.05 | 105.54 | 101.50 |
| 1 | AA | 794 | A | N9-C1'-C2' | -5.05 | 106.44 | 112.00 |
| 1 | AA | 1517 | G | P-O3'-C3' | -5.05 | 113.64 | 119.70 |
| 53 | CA | 1101 | A | P-O3'-C3' | 5.05 | 125.76 | 119.70 |
| 22 | BA | 970 | U | OP2-P-O3' | 5.05 | 116.30 | 105.20 |
| 22 | BA | 1152 | C | N1-C1'-C2' | -5.04 | 106.45 | 112.00 |
| 22 | BA | 1597 | A | P-O3'-C3' | 5.04 | 125.75 | 119.70 |
| 22 | BA | 2312 | U | O4'-C1'-N1 | 5.04 | 112.23 | 108.20 |
| 53 | CA | 1287 | A | C3'-C2'-C1' | 5.04 | 105.53 | 101.50 |
| 57 | DA | 774 | G | C4-N9-C1' | -5.04 | 119.94 | 126.50 |
| 57 | DA | 783 | A | C4-N9-C1' | 5.04 | 135.38 | 126.30 |
| 22 | BA | 216 | A | P-O3'-C3' | -5.04 | 113.65 | 119.70 |
| 22 | BA | 2199 | A | O4'-C1'-N9 | -5.04 | 104.17 | 108.20 |
| 57 | DA | 616 | A | P-O3'-C3' | -5.04 | 113.65 | 119.70 |
| 57 | DA | 1078 | U | P-O3'-C3' | 5.04 | 125.75 | 119.70 |
| 57 | DA | 121 | G | C3'-C2'-C1' | 5.04 | 105.53 | 101.50 |
| 22 | BA | 1224 | U | N1-C1'-C2' | 5.04 | 120.55 | 114.00 |
| 1 | AA | 422 | C | O4'-C1'-N1 | 5.04 | 112.23 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1279 | G | P-O3'-C3' | -5.04 | 113.66 | 119.70 |
| 22 | BA | 30 | G | P-O5'-C5' | -5.04 | 112.84 | 120.90 |
| 22 | BA | 137 | U | P-O3'-C3' | 5.04 | 125.74 | 119.70 |
| 22 | BA | 2067 | G | O4'-C1'-N9 | 5.04 | 112.23 | 108.20 |
| 22 | BA | 2031 | A | C5-C6-N6 | -5.03 | 119.67 | 123.70 |
| 57 | DA | 730 | A | C3'-C2'-C1' | 5.03 | 105.53 | 101.50 |
| 58 | DB | 88 | C | N1-C1'-C2' | 5.03 | 120.54 | 114.00 |
| 22 | BA | 1281 | G | O3'-P-O5' | -5.03 | 94.44 | 104.00 |
| 22 | BA | 1560 | G | P-O3'-C3' | -5.03 | 113.66 | 119.70 |
| 53 | CA | 1399 | C | O4'-C1'-N1 | 5.03 | 112.22 | 108.20 |
| 22 | BA | 28 | A | C3'-C2'-C1' | 5.03 | 105.52 | 101.50 |
| 22 | BA | 2258 | C | C4'-C3'-C2' | 5.03 | 107.63 | 102.60 |
| 22 | BA | 533 | G | C3'-C2'-C1' | 5.03 | 105.52 | 101.50 |
| 57 | DA | 476 | G | P-O3'-C3' | -5.03 | 113.67 | 119.70 |
| 1 | AA | 1516 | G | P-O3'-C3' | 5.03 | 125.73 | 119.70 |
| 22 | BA | 958 | U | P-O3'-C3' | -5.03 | 113.67 | 119.70 |
| 57 | DA | 2275 | C | N1-C1'-C2' | 5.03 | 120.53 | 114.00 |
| 1 | AA | 484 | G | P-O3'-C3' | 5.02 | 125.73 | 119.70 |
| 22 | BA | 2689 | U | C1'-O4'-C4' | -5.02 | 105.88 | 109.90 |
| 57 | DA | 1808 | A | P-O3'-C3' | 5.02 | 125.73 | 119.70 |
| 1 | AA | 1168 | U | P-O3'-C3' | 5.02 | 125.73 | 119.70 |
| 22 | BA | 532 | A | C8-N9-C4 | -5.02 | 103.79 | 105.80 |
| 22 | BA | 990 | A | P-O3'-C3' | -5.02 | 113.67 | 119.70 |
| 22 | BA | 990 | A | N9-C1'-C2' | -5.02 | 106.48 | 112.00 |
| 22 | BA | 2020 | A | O5'-P-OP2 | -5.02 | 101.18 | 105.70 |
| 57 | DA | 566 | U | P-O3'-C3' | -5.02 | 113.67 | 119.70 |
| 57 | DA | 1654 | A | P-O3'-C3' | -5.02 | 113.67 | 119.70 |
| 22 | BA | 265 | A | O4'-C1'-N9 | 5.02 | 112.22 | 108.20 |
| 22 | BA | 2250 | G | C2-N3-C4 | -5.02 | 109.39 | 111.90 |
| 53 | CA | 52 | C | C3'-C2'-C1' | 5.02 | 105.52 | 101.50 |
| 53 | CA | 1066 | C | C3'-C2'-C1' | 5.02 | 105.52 | 101.50 |
| 53 | CA | 1146 | A | P-O3'-C3' | -5.02 | 113.68 | 119.70 |
| 1 | AA | 467 | U | P-O3'-C3' | -5.02 | 113.68 | 119.70 |
| 1 | AA | 563 | A | C3'-C2'-C1' | 5.02 | 105.52 | 101.50 |
| 1 | AA | 916 | U | C2-N1-C1' | 5.02 | 123.72 | 117.70 |
| 22 | BA | 729 | G | P-O5'-C5' | -5.02 | 112.87 | 120.90 |
| 57 | DA | 210 | C | O4'-C1'-N1 | 5.02 | 112.21 | 108.20 |
| 57 | DA | 1537 | G | C3'-C2'-C1' | 5.02 | 105.51 | 101.50 |
| 57 | DA | 2217 | G | C3'-C2'-C1' | 5.02 | 105.51 | 101.50 |
| 22 | BA | 28 | A | N9-C1'-C2' | -5.01 | 106.48 | 112.00 |
| 22 | BA | 919 | U | C4-C5-C6 | -5.01 | 116.69 | 119.70 |
| 22 | BA | 2894 | G | C3'-C2'-C1' | 5.01 | 105.51 | 101.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | DA | 92 | U | P-O3'-C3' | -5.01 | 113.68 | 119.70 |
| 57 | DA | 1965 | C | P-O3'-C3' | -5.01 | 113.68 | 119.70 |
| 1 | AA | 1138 | G | C3'-C2'-C1' | 5.01 | 105.51 | 101.50 |
| 22 | BA | 673 | C | P-O5'-C5' | -5.01 | 112.88 | 120.90 |
| 22 | BA | 1209 | U | O4'-C1'-N1 | 5.01 | 112.21 | 108.20 |
| 53 | CA | 87 | C | C3'-C2'-C1' | 5.01 | 105.51 | 101.50 |
| 53 | CA | 973 | G | P-O3'-C3' | 5.01 | 125.72 | 119.70 |
| 1 | AA | 1338 | G | C3'-C2'-C1' | 5.01 | 105.51 | 101.50 |
| 22 | BA | 490 | C | P-O5'-C5' | -5.01 | 112.88 | 120.90 |
| 57 | DA | 163 | C | C3'-C2'-C1' | 5.01 | 105.51 | 101.50 |
| 57 | DA | 1079 | C | C3'-C2'-C1' | 5.01 | 105.51 | 101.50 |
| 57 | DA | 1699 | G | O4'-C1'-N9 | 5.01 | 112.21 | 108.20 |
| 22 | BA | 546 | U | P-O3'-C3' | 5.01 | 125.71 | 119.70 |
| 22 | BA | 1668 | A | P-O3'-C3' | 5.01 | 125.71 | 119.70 |
| 22 | BA | 620 | G | O4'-C1'-N9 | 5.00 | 112.20 | 108.20 |
| 57 | DA | 831 | G | C3'-C2'-C1' | 5.00 | 105.50 | 101.50 |
| 22 | BA | 1952 | A | P-O3'-C3' | 5.00 | 125.70 | 119.70 |
| 22 | BA | 2871 | U | O5'-P-OP2 | -5.00 | 101.20 | 105.70 |
| 22 | BA | 1992 | G | C4'-C3'-C2' | 5.00 | 107.60 | 102.60 |
| 53 | CA | 500 | G | C3'-C2'-C1' | 5.00 | 105.50 | 101.50 |
| 53 | CA | 559 | A | O4'-C1'-N9 | 5.00 | 112.20 | 108.20 |
| 53 | CA | 567 | G | P-O3'-C3' | -5.00 | 113.70 | 119.70 |
| 57 | DA | 963 | U | P-O3'-C3' | -5.00 | 113.70 | 119.70 |

There are no chirality outliers.

All (3) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 25 | BD | 9 | VAL | Peptide |
| 35 | BN | 101 | GLY | Peptide |
| 2 | CB | 107 | ARG | Mainchain |

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | AA | 32895 | 0 | 16553 | 1473 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 2 | AB | 1705 | 0 | 1732 | 195 | 0 |
| 2 | CB | 1705 | 0 | 1732 | 176 | 0 |
| 3 | AC | 1625 | 0 | 1699 | 121 | 0 |
| 3 | CC | 1625 | 0 | 1699 | 127 | 0 |
| 4 | AD | 1643 | 0 | 1710 | 166 | 0 |
| 4 | CD | 1643 | 0 | 1710 | 177 | 0 |
| 5 | AE | 1106 | 0 | 1147 | 146 | 0 |
| 5 | CE | 1106 | 0 | 1148 | 123 | 0 |
| 6 | AF | 818 | 0 | 808 | 76 | 0 |
| 6 | CF | 818 | 0 | 808 | 74 | 0 |
| 7 | AG | 1182 | 0 | 1240 | 89 | 0 |
| 8 | AH | 979 | 0 | 1034 | 102 | 0 |
| 8 | CH | 979 | 0 | 1034 | 115 | 0 |
| 9 | AI | 1022 | 0 | 1070 | 91 | 0 |
| 9 | CI | 1022 | 0 | 1070 | 108 | 0 |
| 10 | AJ | 787 | 0 | 828 | 83 | 0 |
| 10 | CJ | 787 | 0 | 828 | 93 | 0 |
| 11 | AK | 877 | 0 | 887 | 91 | 0 |
| 11 | CK | 877 | 0 | 887 | 79 | 0 |
| 12 | AL | 955 | 0 | 1019 | 92 | 0 |
| 12 | CL | 955 | 0 | 1019 | 100 | 0 |
| 13 | AM | 884 | 0 | 944 | 70 | 0 |
| 14 | AN | 774 | 0 | 827 | 81 | 0 |
| 14 | CN | 769 | 0 | 822 | 85 | 0 |
| 15 | AO | 714 | 0 | 737 | 59 | 0 |
| 15 | CO | 714 | 0 | 737 | 58 | 0 |
| 16 | AP | 649 | 0 | 666 | 62 | 0 |
| 17 | AQ | 649 | 0 | 691 | 81 | 0 |
| 17 | CQ | 649 | 0 | 691 | 70 | 0 |
| 18 | AR | 456 | 0 | 478 | 31 | 0 |
| 18 | CR | 456 | 0 | 478 | 47 | 0 |
| 19 | AS | 638 | 0 | 665 | 47 | 0 |
| 19 | CS | 638 | 0 | 665 | 64 | 0 |
| 20 | AT | 665 | 0 | 714 | 65 | 0 |
| 20 | CT | 665 | 0 | 714 | 61 | 0 |
| 21 | AU | 426 | 0 | 449 | 79 | 0 |
| 21 | CU | 426 | 0 | 449 | 80 | 0 |
| 22 | BA | 61274 | 0 | 30819 | 2356 | 0 |
| 23 | BB | 2529 | 0 | 1281 | 83 | 0 |
| 24 | BC | 2083 | 0 | 2157 | 223 | 0 |
| 24 | DC | 2083 | 0 | 2157 | 262 | 0 |
| 25 | BD | 1565 | 0 | 1616 | 223 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 25 | DD | 1565 | 0 | 1616 | 197 | 0 |
| 26 | BE | 1552 | 0 | 1619 | 152 | 0 |
| 26 | DE | 1552 | 0 | 1619 | 179 | 0 |
| 27 | BF | 1411 | 0 | 1447 | 140 | 0 |
| 28 | BG | 1323 | 0 | 1374 | 147 | 0 |
| 28 | DG | 1323 | 0 | 1374 | 131 | 0 |
| 29 | BH | 1111 | 0 | 1148 | 107 | 0 |
| 29 | DH | 1111 | 0 | 1148 | 115 | 0 |
| 30 | BI | 1032 | 0 | 1088 | 109 | 0 |
| 30 | DI | 1032 | 0 | 1088 | 76 | 0 |
| 31 | BJ | 1129 | 0 | 1162 | 171 | 0 |
| 31 | DJ | 1129 | 0 | 1162 | 133 | 0 |
| 32 | BK | 939 | 0 | 1012 | 113 | 0 |
| 32 | DK | 939 | 0 | 1012 | 128 | 0 |
| 33 | BL | 1045 | 0 | 1117 | 122 | 0 |
| 33 | DL | 1045 | 0 | 1117 | 117 | 0 |
| 34 | BM | 1074 | 0 | 1157 | 99 | 0 |
| 34 | DM | 1074 | 0 | 1157 | 107 | 0 |
| 35 | BN | 961 | 0 | 1000 | 96 | 0 |
| 35 | DN | 961 | 0 | 1000 | 134 | 0 |
| 36 | BO | 892 | 0 | 923 | 75 | 0 |
| 36 | DO | 892 | 0 | 923 | 71 | 0 |
| 37 | BP | 917 | 0 | 965 | 139 | 0 |
| 37 | DP | 917 | 0 | 965 | 130 | 0 |
| 38 | BQ | 947 | 0 | 1022 | 153 | 0 |
| 38 | DQ | 947 | 0 | 1022 | 124 | 0 |
| 39 | BR | 816 | 0 | 839 | 116 | 0 |
| 39 | DR | 816 | 0 | 839 | 87 | 0 |
| 40 | BS | 857 | 0 | 922 | 81 | 0 |
| 40 | DS | 857 | 0 | 922 | 78 | 0 |
| 41 | BT | 739 | 0 | 807 | 112 | 0 |
| 41 | DT | 739 | 0 | 807 | 108 | 0 |
| 42 | BU | 780 | 0 | 834 | 52 | 0 |
| 42 | DU | 780 | 0 | 834 | 92 | 0 |
| 43 | BV | 753 | 0 | 780 | 70 | 0 |
| 43 | DV | 753 | 0 | 780 | 71 | 0 |
| 44 | BW | 596 | 0 | 610 | 201 | 0 |
| 44 | DW | 596 | 0 | 610 | 117 | 0 |
| 45 | BX | 625 | 0 | 655 | 67 | 0 |
| 45 | DX | 625 | 0 | 655 | 85 | 0 |
| 46 | BY | 509 | 0 | 543 | 44 | 0 |
| 46 | DY | 509 | 0 | 543 | 63 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 47 | BZ | 449 | 0 | 491 | 39 | 0 |
| 47 | DZ | 449 | 0 | 491 | 42 | 0 |
| 48 | B0 | 444 | 0 | 461 | 33 | 0 |
| 48 | D0 | 444 | 0 | 461 | 64 | 0 |
| 49 | B1 | 410 | 0 | 440 | 38 | 0 |
| 49 | D1 | 410 | 0 | 440 | 38 | 0 |
| 50 | B2 | 377 | 0 | 418 | 37 | 0 |
| 50 | D2 | 377 | 0 | 418 | 31 | 0 |
| 51 | B3 | 504 | 0 | 574 | 46 | 0 |
| 51 | D3 | 504 | 0 | 574 | 56 | 0 |
| 52 | B4 | 302 | 0 | 340 | 39 | 0 |
| 52 | D4 | 302 | 0 | 343 | 36 | 0 |
| 53 | CA | 32831 | 0 | 16521 | 1811 | 0 |
| 54 | CG | 1175 | 0 | 1230 | 125 | 0 |
| 55 | CM | 877 | 0 | 937 | 97 | 0 |
| 56 | CP | 639 | 0 | 656 | 71 | 0 |
| 57 | DA | 60995 | 0 | 30679 | 3815 | 0 |
| 58 | DB | 2507 | 0 | 1270 | 168 | 0 |
| 59 | DF | 1420 | 0 | 1460 | 194 | 0 |
| 60 | AA | 42 | 0 | 0 | 0 | 0 |
| 60 | AN | 1 | 0 | 0 | 0 | 0 |
| 60 | BA | 135 | 0 | 0 | 0 | 0 |
| 60 | BB | 4 | 0 | 0 | 0 | 0 |
| 60 | BL | 1 | 0 | 0 | 0 | 0 |
| 60 | CA | 42 | 0 | 0 | 0 | 0 |
| 60 | DA | 133 | 0 | 0 | 0 | 0 |
| 60 | DB | 1 | 0 | 0 | 0 | 0 |
| 60 | DC | 1 | 0 | 0 | 0 | 0 |
| 60 | DE | 1 | 0 | 0 | 0 | 0 |
| 60 | DJ | 1 | 0 | 0 | 0 | 0 |
| 61 | BA | 20 | 0 | 11 | 1 | 0 |
| 62 | B4 | 1 | 0 | 0 | 0 | 0 |
| 62 | D4 | 1 | 0 | 0 | 0 | 0 |
| 63 | AA | 197 | 0 | 0 | 11 | 0 |
| 63 | AL | 2 | 0 | 0 | 0 | 0 |
| 63 | AN | 6 | 0 | 0 | 1 | 0 |
| 63 | AT | 2 | 0 | 0 | 0 | 0 |
| 63 | AU | 1 | 0 | 0 | 0 | 0 |
| 63 | B2 | 2 | 0 | 0 | 0 | 0 |
| 63 | B3 | 2 | 0 | 0 | 0 | 0 |
| 63 | B4 | 2 | 0 | 0 | 0 | 0 |
| 63 | BA | 608 | 0 | 0 | 43 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 63 | BB | 19 | 0 | 0 | 0 | 0 |
| 63 | BC | 8 | 0 | 0 | 0 | 0 |
| 63 | BD | 2 | 0 | 0 | 3 | 0 |
| 63 | BE | 1 | 0 | 0 | 0 | 0 |
| 63 | BL | 4 | 0 | 0 | 1 | 0 |
| 63 | BN | 2 | 0 | 0 | 0 | 0 |
| 63 | BQ | 1 | 0 | 0 | 0 | 0 |
| 63 | BT | 2 | 0 | 0 | 1 | 0 |
| 63 | BV | 1 | 0 | 0 | 1 | 0 |
| 63 | CA | 195 | 0 | 0 | 7 | 0 |
| 63 | CE | 3 | 0 | 0 | 1 | 0 |
| 63 | CI | 1 | 0 | 0 | 0 | 0 |
| 63 | CL | 1 | 0 | 0 | 0 | 0 |
| 63 | CN | 3 | 0 | 0 | 0 | 0 |
| 63 | CT | 2 | 0 | 0 | 0 | 0 |
| 63 | CU | 2 | 0 | 0 | 0 | 0 |
| 63 | D2 | 1 | 0 | 0 | 1 | 0 |
| 63 | D3 | 1 | 0 | 0 | 0 | 0 |
| 63 | D4 | 4 | 0 | 0 | 0 | 0 |
| 63 | DA | 603 | 0 | 0 | 19 | 0 |
| 63 | DB | 4 | 0 | 0 | 0 | 0 |
| 63 | DC | 10 | 0 | 0 | 0 | 0 |
| 63 | DD | 1 | 0 | 0 | 0 | 0 |
| 63 | DE | 3 | 0 | 0 | 0 | 0 |
| 63 | DJ | 4 | 0 | 0 | 0 | 0 |
| 63 | DL | 5 | 0 | 0 | 0 | 0 |
| 63 | DN | 2 | 0 | 0 | 0 | 0 |
| 63 | DT | 2 | 0 | 0 | 0 | 0 |
| 63 | DU | 2 | 0 | 0 | 0 | 0 |
| 63 | DV | 1 | 0 | 0 | 0 | 0 |
| All | All | 284499 | 0 | 190851 | 17927 | 0 |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 38.

All (17927) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 57:DA:2092:U:H1' | 57:DA:2093:G:C8 | 1.52 | 1.43 |
| 38:BQ:63:ARG:NH1 | 38:BQ:96:ASP:HA | 1.44 | 1.29 |
| 57:DA:2092:U:O2' | 57:DA:2093:G:H5'' | 1.08 | 1.24 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:BQ:63:ARG:HH12 | 38:BQ:96:ASP:CA | 1.55 | 1.20 |
| 28:BG:83:THR:HA | 28:BG:84:LYS:NZ | 1.57 | 1.19 |
| 25:BD:151:THR:HG22 | 25:BD:152:PRO:HD3 | 1.22 | 1.16 |
| 37:BP:50:ARG:HB3 | 37:BP:57:ALA:H | 1.09 | 1.16 |
| 39:BR:49:ILE:HD12 | 39:BR:52:PRO:HA | 1.18 | 1.14 |
| 12:AL:49:ARG:HH11 | 12:AL:49:ARG:HG2 | 1.06 | 1.14 |
| 22:BA:855:G:H21 | 44:BW:23:LYS:HG2 | 1.11 | 1.13 |
| 9:AI:98:ARG:HG2 | 9:AI:103:VAL:HG21 | 1.24 | 1.13 |
| 57:DA:197:A:H62 | 57:DA:2430:A:H2' | 1.11 | 1.13 |
| 58:DB:58:A:H2' | 58:DB:59:A:H8 | 1.13 | 1.13 |
| 21:CU:16:ARG:HG3 | 21:CU:19:LYS:HG2 | 1.29 | 1.13 |
| 44:BW:9:THR:HG23 | 44:BW:10:ARG:HD3 | 1.28 | 1.13 |
| 37:BP:50:ARG:HD3 | 37:BP:56:SER:HB3 | 1.20 | 1.13 |
| 57:DA:2216:G:O2' | 57:DA:2217:G:H8 | 1.32 | 1.12 |
| 40:BS:84:ARG:HB2 | 40:BS:96:ILE:HD11 | 1.31 | 1.12 |
| 53:CA:254:G:H21 | 17:CQ:17:GLU:HG3 | 1.10 | 1.12 |
| 58:DB:58:A:H2' | 58:DB:59:A:C8 | 1.85 | 1.12 |
| 20:AT:43:LYS:HB3 | 20:AT:86:ALA:HB1 | 1.31 | 1.12 |
| 57:DA:2092:U:O2' | 57:DA:2093:G:C5' | 1.98 | 1.12 |
| 53:CA:986:U:H2' | 53:CA:987:G:C8 | 1.84 | 1.11 |
| 50:B2:3:ARG:HH21 | 50:B2:3:ARG:HG2 | 1.14 | 1.11 |
| 57:DA:2135:A:H3' | 57:DA:2136:G:H5'' | 1.33 | 1.11 |
| 5:CE:29:ILE:HG23 | 5:CE:30:PHE:H | 1.09 | 1.11 |
| 57:DA:2296:U:H4' | 57:DA:2297:A:OP1 | 1.39 | 1.11 |
| 29:BH:31:VAL:HB | 29:BH:32:PRO:HD2 | 1.31 | 1.10 |
| 44:DW:40:ARG:HH11 | 44:DW:40:ARG:HG2 | 1.02 | 1.10 |
| 5:AE:80:LEU:HD23 | 5:AE:122:VAL:HG11 | 1.27 | 1.09 |
| 27:BF:35:LEU:HB3 | 27:BF:153:ILE:HG22 | 1.29 | 1.09 |
| 32:BK:51:LYS:HG3 | 32:BK:95:ILE:HD11 | 1.30 | 1.09 |
| 1:AA:1129:C:H5'' | 9:AI:17:ARG:HH22 | 1.07 | 1.09 |
| 25:BD:12:THR:HG22 | 25:BD:13:ARG:H | 1.04 | 1.09 |
| 57:DA:1915:U:H2' | 57:DA:1916:A:C8 | 1.87 | 1.09 |
| 6:AF:6:ILE:HG12 | 6:AF:89:VAL:HG23 | 1.31 | 1.09 |
| 44:BW:39:GLN:HG2 | 44:BW:41:GLY:H | 1.16 | 1.09 |
| 52:D4:16:ILE:HG12 | 52:D4:25:VAL:HG22 | 1.32 | 1.09 |
| 38:BQ:69:ARG:HH21 | 38:BQ:69:ARG:HB2 | 1.12 | 1.09 |
| 57:DA:604:G:O2' | 57:DA:605:G:H5' | 1.53 | 1.09 |
| 57:DA:1024:G:H3' | 57:DA:1025:G:H5'' | 1.33 | 1.09 |
| 53:CA:279:A:H5'' | 53:CA:280:C:H3' | 1.35 | 1.08 |
| 57:DA:2092:U:C1' | 57:DA:2093:G:H8 | 1.65 | 1.08 |
| 6:AF:16:GLU:CG | 4:CD:191:SER:HB2 | 1.84 | 1.08 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CH:11:THR:HG22 | 8:CH:14:ARG:HH12 | 1.15 | 1.08 |
| 17:AQ:16:MET:HB2 | 17:AQ:19:SER:HB3 | 1.28 | 1.08 |
| 38:BQ:4:LYS:HG3 | 38:BQ:5:ARG:H | 1.16 | 1.08 |
| 37:BP:50:ARG:CB | 37:BP:57:ALA:H | 1.67 | 1.07 |
| 57:DA:216:A:O2' | 57:DA:217:A:H8 | 1.37 | 1.07 |
| 22:BA:762:U:H4' | 22:BA:763:G:O5' | 1.52 | 1.07 |
| 28:BG:84:LYS:HG3 | 28:BG:132:LEU:H | 1.15 | 1.07 |
| 33:BL:27:LEU:H | 33:BL:27:LEU:HD12 | 1.16 | 1.07 |
| 21:AU:9:GLU:HG3 | 21:AU:10:PRO:HD3 | 1.30 | 1.07 |
| 44:BW:18:LYS:HA | 44:BW:36:ILE:HG13 | 1.25 | 1.07 |
| 24:BC:251:THR:HG22 | 24:BC:252:LYS:H | 1.19 | 1.06 |
| 33:BL:109:LYS:HG2 | 33:BL:126:ARG:HB3 | 1.35 | 1.06 |
| 32:BK:18:ARG:HH11 | 32:BK:18:ARG:HG3 | 1.17 | 1.06 |
| 32:BK:47:ILE:HG13 | 32:BK:48:PRO:HD2 | 1.37 | 1.06 |
| 2:CB:114:LYS:HE3 | 2:CB:151:LYS:HB2 | 1.36 | 1.06 |
| 12:CL:43:LYS:HB3 | 12:CL:44:PRO:HD2 | 1.10 | 1.06 |
| 57:DA:2092:U:H4' | 57:DA:2093:G:OP1 | 1.29 | 1.06 |
| 22:BA:1060:U:H4' | 22:BA:1061:U:H5' | 1.37 | 1.05 |
| 30:BI:79:LEU:HA | 30:BI:83:ALA:HB3 | 1.34 | 1.05 |
| 44:BW:51:GLY:HA3 | 44:BW:59:PHE:CE2 | 1.91 | 1.05 |
| 31:BJ:44:TYR:HB2 | 38:BQ:63:ARG:HB3 | 1.34 | 1.05 |
| 57:DA:668:A:H2' | 57:DA:670:A:H62 | 1.20 | 1.05 |
| 44:DW:37:VAL:HG12 | 44:DW:55:ASP:HB2 | 1.37 | 1.05 |
| 28:BG:84:LYS:HG3 | 28:BG:132:LEU:N | 1.70 | 1.05 |
| 53:CA:1213:A:O2' | 53:CA:1214:C:H5' | 1.55 | 1.05 |
| 53:CA:1067:A:H1' | 53:CA:1068:G:C8 | 1.90 | 1.05 |
| 53:CA:1182:G:H4' | 53:CA:1183:U:H5' | 1.31 | 1.05 |
| 32:DK:71:ARG:HB3 | 32:DK:72:PRO:HD3 | 1.38 | 1.05 |
| 37:DP:20:ARG:HG2 | 37:DP:112:ARG:HH12 | 1.17 | 1.05 |
| 6:AF:16:GLU:HG2 | 4:CD:191:SER:CB | 1.87 | 1.04 |
| 53:CA:373:A:O2' | 53:CA:374:A:H5' | 1.53 | 1.04 |
| 57:DA:589:U:O2' | 57:DA:590:A:H5' | 1.55 | 1.04 |
| 57:DA:1784:A:H4' | 57:DA:1785:A:O5' | 1.55 | 1.04 |
| 57:DA:2093:G:O6 | 57:DA:2225:A:H3' | 1.58 | 1.04 |
| 4:CD:2:ARG:HH21 | 4:CD:114:ARG:HD3 | 1.20 | 1.04 |
| 1:AA:243:A:H4' | 1:AA:244:U:H5'' | 1.35 | 1.04 |
| 54:CG:22:LEU:HA | 54:CG:25:PHE:HB3 | 1.39 | 1.04 |
| 8:CH:28:SER:HA | 8:CH:58:LEU:HD12 | 1.36 | 1.03 |
| 57:DA:2439:A:H4' | 57:DA:2440:C:O5' | 1.58 | 1.03 |
| 38:DQ:40:LYS:HD2 | 38:DQ:44:TYR:HE2 | 1.21 | 1.03 |
| 12:AL:82:ARG:HH11 | 12:AL:82:ARG:HG2 | 1.20 | 1.02 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1117:C:O2' | 57:DA:1118:C:H5' | 1.57 | 1.02 |
| 31:BJ:65:THR:HG22 | 31:BJ:68:LYS:HE3 | 1.42 | 1.02 |
| 4:AD:109:THR:HG23 | 4:AD:112:GLU:H | 1.23 | 1.02 |
| 57:DA:33:C:O2' | 57:DA:34:U:H5' | 1.58 | 1.02 |
| 35:DN:35:LYS:HZ2 | 35:DN:112:TYR:HE1 | 1.07 | 1.02 |
| 10:CJ:84:VAL:HG23 | 10:CJ:85:ASP:H | 1.23 | 1.01 |
| 57:DA:2092:U:C1' | 57:DA:2093:G:C8 | 2.38 | 1.01 |
| 1:AA:1239:A:H62 | 1:AA:1299:A:N6 | 1.56 | 1.01 |
| 44:BW:28:GLU:HB3 | 44:BW:31:LEU:HD21 | 1.39 | 1.01 |
| 38:DQ:87:VAL:HG21 | 39:DR:52:PRO:HD3 | 1.38 | 1.01 |
| 2:AB:40:ILE:HD13 | 2:AB:201:GLY:HA2 | 1.39 | 1.01 |
| 57:DA:1032:A:H1' | 52:D4:23:ILE:HD13 | 1.39 | 1.01 |
| 22:BA:1179:G:H3' | 22:BA:1180:U:H4' | 1.43 | 1.01 |
| 53:CA:1183:U:H3' | 53:CA:1184:G:H5'' | 1.40 | 1.01 |
| 58:DB:112:G:H21 | 36:DO:45:SER:HA | 1.21 | 1.01 |
| 57:DA:2060:A:H2' | 26:DE:63:LYS:HZ2 | 1.23 | 1.00 |
| 33:BL:93:ASN:HD22 | 33:BL:94:THR:N | 1.58 | 1.00 |
| 34:BM:35:ALA:O | 34:BM:36:VAL:HB | 1.60 | 1.00 |
| 2:AB:89:PHE:HB3 | 2:AB:149:GLY:HA2 | 1.39 | 1.00 |
| 53:CA:407:U:H2' | 53:CA:408:A:H8 | 1.24 | 1.00 |
| 25:DD:8:LYS:HB2 | 25:DD:201:LEU:HD11 | 1.43 | 1.00 |
| 53:CA:32:A:H2' | 53:CA:33:A:C8 | 1.96 | 1.00 |
| 1:AA:975:A:H4' | 1:AA:976:G:H5'' | 1.38 | 1.00 |
| 54:CG:74:VAL:HG13 | 54:CG:140:VAL:HG13 | 1.42 | 0.99 |
| 22:BA:84:A:H62 | 22:BA:101:A:H2 | 1.00 | 0.99 |
| 17:AQ:18:LYS:HA | 17:AQ:47:ASP:HB2 | 1.38 | 0.99 |
| 35:DN:22:ARG:HG3 | 35:DN:70:THR:HA | 1.45 | 0.99 |
| 57:DA:1387:A:HO2' | 57:DA:1388:G:H8 | 1.01 | 0.99 |
| 28:BG:83:THR:HA | 28:BG:84:LYS:HZ3 | 1.28 | 0.99 |
| 22:BA:1993:U:H4' | 25:BD:133:THR:HG21 | 1.43 | 0.99 |
| 52:B4:10:LEU:HD12 | 52:B4:33:HIS:HD2 | 1.27 | 0.99 |
| 53:CA:664:G:H22 | 53:CA:741:G:H1 | 1.08 | 0.99 |
| 17:AQ:45:VAL:HG21 | 17:AQ:60:ILE:HD13 | 1.42 | 0.99 |
| 10:CJ:15:HIS:HA | 10:CJ:18:ILE:HG22 | 1.44 | 0.98 |
| 12:CL:43:LYS:HB3 | 12:CL:44:PRO:CD | 1.93 | 0.98 |
| 57:DA:302:C:O2' | 57:DA:303:G:H8 | 1.45 | 0.98 |
| 9:CI:51:LEU:HG | 9:CI:86:LEU:HD22 | 1.45 | 0.98 |
| 34:DM:19:GLY:H | 34:DM:38:ARG:NH2 | 1.58 | 0.98 |
| 44:DW:9:THR:HG23 | 44:DW:10:ARG:HG3 | 1.43 | 0.98 |
| 37:BP:4:ILE:HG22 | 37:BP:5:LYS:H | 1.26 | 0.98 |
| 57:DA:2093:G:C6 | 57:DA:2225:A:H2' | 1.97 | 0.98 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 31:BJ:81:ILE:HG23 | 31:BJ:82:GLY:H | 1.29 | 0.98 |
| 53:CA:764:C:H2' | 53:CA:765:G:H5' | 1.44 | 0.98 |
| 1:AA:654:G:H2' | 1:AA:655:A:H8 | 1.27 | 0.98 |
| 25:BD:12:THR:HG22 | 25:BD:13:ARG:N | 1.78 | 0.98 |
| 47:DZ:16:LEU:H | 47:DZ:16:LEU:HD22 | 1.27 | 0.98 |
| 22:BA:243:U:OP1 | 51:B3:5:THR:HG21 | 1.64 | 0.97 |
| 22:BA:265:A:H4' | 22:BA:266:G:OP1 | 1.63 | 0.97 |
| 25:BD:106:LYS:HB3 | 25:BD:206:ALA:HB3 | 1.44 | 0.97 |
| 57:DA:647:G:H2' | 57:DA:648:G:H8 | 1.26 | 0.97 |
| 57:DA:2880:C:H1' | 35:DN:93:GLY:H | 1.25 | 0.97 |
| 1:AA:1338:G:H2' | 1:AA:1339:A:C8 | 1.99 | 0.97 |
| 57:DA:2321:U:O2 | 57:DA:2321:U:H3' | 1.64 | 0.97 |
| 58:DB:69:G:H3' | 58:DB:70:C:H6 | 1.29 | 0.97 |
| 31:DJ:44:TYR:HB2 | 38:DQ:63:ARG:CZ | 1.95 | 0.97 |
| 1:AA:204:G:H3' | 1:AA:205:A:H5'' | 1.46 | 0.97 |
| 34:BM:35:ALA:O | 34:BM:128:THR:HA | 1.64 | 0.97 |
| 2:CB:114:LYS:HA | 2:CB:117:GLU:HG2 | 1.46 | 0.97 |
| 29:DH:3:VAL:HG12 | 29:DH:38:PRO:HA | 1.46 | 0.97 |
| 22:BA:2680:U:OP2 | 25:BD:114:LYS:HE2 | 1.64 | 0.97 |
| 24:BC:246:PRO:HG2 | 24:BC:247:TRP:CZ3 | 2.00 | 0.97 |
| 43:BV:80:HIS:HD2 | 43:BV:83:LYS:H | 1.09 | 0.97 |
| 44:BW:24:ARG:HD2 | 44:BW:25:PHE:N | 1.78 | 0.97 |
| 57:DA:2051:A:H4' | 57:DA:2052:A:OP1 | 1.64 | 0.97 |
| 57:DA:2093:G:C5 | 57:DA:2225:A:H2' | 2.00 | 0.97 |
| 57:DA:2149:U:HO2' | 57:DA:2150:C:H6 | 1.09 | 0.97 |
| 15:AO:63:ARG:HG2 | 15:AO:87:ARG:HH12 | 1.30 | 0.96 |
| 1:AA:243:A:H4' | 1:AA:244:U:C5' | 1.95 | 0.96 |
| 58:DB:110:C:O2' | 58:DB:111:U:H5' | 1.65 | 0.96 |
| 22:BA:1941:C:H5' | 22:BA:1941:C:H6 | 1.30 | 0.96 |
| 57:DA:1537:G:H2' | 57:DA:1538:G:H4' | 1.44 | 0.96 |
| 57:DA:2215:C:HO2' | 57:DA:2216:G:H8 | 1.07 | 0.96 |
| 29:DH:115:VAL:HG12 | 29:DH:132:PHE:HB2 | 1.45 | 0.96 |
| 3:AC:166:TRP:H | 3:AC:166:TRP:HE3 | 1.10 | 0.96 |
| 57:DA:2092:U:HO2' | 57:DA:2093:G:H5'' | 1.29 | 0.96 |
| 57:DA:674:G:O2' | 26:DE:69:ARG:HG2 | 1.66 | 0.96 |
| 58:DB:24:G:H1' | 58:DB:27:C:N4 | 1.81 | 0.96 |
| 1:AA:92:U:H2' | 1:AA:93:U:C6 | 2.01 | 0.96 |
| 3:AC:56:ILE:HG12 | 3:AC:65:VAL:HG22 | 1.46 | 0.96 |
| 22:BA:728:G:HO2' | 22:BA:730:A:H8 | 1.08 | 0.96 |
| 22:BA:2062:A:O2' | 22:BA:2063:C:H5' | 1.66 | 0.96 |
| 11:CK:74:LYS:HA | 11:CK:78:ILE:HD11 | 1.48 | 0.96 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 6:AF:16:GLU:HG2 | 4:CD:191:SER:HB2 | 0.98 | 0.96 |
| 4:CD:25:ARG:HH12 | 4:CD:30:LYS:HG2 | 1.29 | 0.96 |
| 57:DA:1079:C:H41 | 57:DA:1088:A:H5'' | 1.28 | 0.96 |
| 57:DA:1676:A:C2 | 57:DA:1993:U:H5' | 2.01 | 0.96 |
| 45:BX:5:GLN:NE2 | 45:BX:49:ARG:H | 1.64 | 0.96 |
| 53:CA:1074:G:H4' | 2:CB:102:ASN:HB2 | 1.47 | 0.96 |
| 54:CG:91:ARG:HG2 | 54:CG:92:PRO:HD2 | 1.48 | 0.96 |
| 57:DA:2313:C:HO2' | 57:DA:2314:A:H8 | 0.96 | 0.96 |
| 57:DA:61:C:O2' | 57:DA:62:U:H5' | 1.66 | 0.95 |
| 57:DA:665:U:H2' | 57:DA:666:A:H8 | 1.31 | 0.95 |
| 57:DA:1207:C:HO2' | 57:DA:1208:C:H6 | 1.01 | 0.95 |
| 57:DA:1716:U:O2' | 57:DA:1717:A:H8 | 1.47 | 0.95 |
| 34:DM:27:SER:H | 34:DM:66:ARG:NH2 | 1.64 | 0.95 |
| 45:DX:53:LYS:HA | 45:DX:56:ARG:HB3 | 1.48 | 0.95 |
| 4:AD:145:ARG:HH11 | 4:AD:147:LYS:HE3 | 1.31 | 0.95 |
| 22:BA:1179:G:C5 | 22:BA:1180:U:H1' | 2.01 | 0.95 |
| 31:BJ:6:ALA:CB | 31:BJ:45:THR:HG21 | 1.95 | 0.95 |
| 53:CA:560:A:H4' | 53:CA:561:U:H5'' | 1.48 | 0.95 |
| 5:CE:29:ILE:HG23 | 5:CE:30:PHE:N | 1.81 | 0.95 |
| 57:DA:1060:U:H4' | 57:DA:1061:U:O5' | 1.67 | 0.95 |
| 57:DA:2060:A:H2' | 26:DE:63:LYS:NZ | 1.80 | 0.95 |
| 57:DA:2214:C:O2' | 57:DA:2215:C:H5' | 1.65 | 0.95 |
| 25:BD:5:VAL:H | 25:BD:32:ASN:HD21 | 1.10 | 0.95 |
| 41:BT:67:VAL:HG12 | 41:BT:76:ARG:HG3 | 1.47 | 0.95 |
| 52:B4:9:LYS:HD3 | 52:B4:9:LYS:H | 1.28 | 0.95 |
| 22:BA:1509:A:H1' | 22:BA:1510:G:H5' | 1.46 | 0.95 |
| 53:CA:986:U:H2' | 53:CA:987:G:H8 | 1.22 | 0.95 |
| 53:CA:1143:G:H2' | 53:CA:1144:G:H8 | 1.27 | 0.95 |
| 44:BW:17:ALA:HA | 44:BW:35:ILE:HG23 | 1.49 | 0.95 |
| 57:DA:1676:A:H2 | 57:DA:1993:U:H5' | 1.31 | 0.95 |
| 57:DA:2847:U:H2' | 57:DA:2848:G:H5' | 1.48 | 0.95 |
| 38:DQ:61:ILE:HD11 | 38:DQ:92:LYS:HD3 | 1.44 | 0.95 |
| 53:CA:407:U:H2' | 53:CA:408:A:C8 | 2.01 | 0.95 |
| 53:CA:1228:C:HO2' | 53:CA:1229:A:H8 | 0.96 | 0.95 |
| 1:AA:1123:U:H4' | 10:AJ:39:PRO:HD2 | 1.47 | 0.95 |
| 53:CA:335:C:H2' | 53:CA:336:A:C8 | 2.01 | 0.95 |
| 53:CA:348:G:H2' | 53:CA:349:A:H8 | 1.32 | 0.95 |
| 4:AD:25:ARG:HH11 | 4:AD:30:LYS:HE3 | 1.31 | 0.95 |
| 6:AF:3:HIS:H | 6:AF:92:THR:HG23 | 1.31 | 0.95 |
| 24:BC:12:ARG:HH11 | 24:BC:12:ARG:HG2 | 1.32 | 0.95 |
| 24:BC:16:VAL:H | 24:BC:203:VAL:HG12 | 1.31 | 0.95 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:1313:U:H2' | 57:DA:1313:U:O2 | 1.64 | 0.95 |
| 57:DA:1915:U:H2' | 57:DA:1916:A:H8 | 1.25 | 0.95 |
| 38:BQ:69:ARG:HH21 | 38:BQ:69:ARG:CB | 1.79 | 0.94 |
| 26:DE:130:LYS:HB3 | 26:DE:133:LEU:HB3 | 1.49 | 0.94 |
| 29:DH:48:GLU:HG2 | 29:DH:51:ARG:HH21 | 1.30 | 0.94 |
| 43:BV:80:HIS:CD2 | 43:BV:83:LYS:H | 1.85 | 0.94 |
| 57:DA:1401:G:H2' | 57:DA:1402:U:C6 | 2.01 | 0.94 |
| 24:DC:144:GLU:HA | 24:DC:151:GLY:HA2 | 1.49 | 0.94 |
| 22:BA:1073:A:H3' | 22:BA:1074:G:H5'' | 1.45 | 0.94 |
| 38:BQ:63:ARG:HH12 | 38:BQ:96:ASP:HA | 0.79 | 0.94 |
| 4:CD:77:GLU:HG3 | 4:CD:81:LEU:HD11 | 1.50 | 0.94 |
| 57:DA:1387:A:H5' | 57:DA:1469:A:H1' | 1.50 | 0.94 |
| 30:BI:15:GLY:HA2 | 30:BI:50:LYS:HB3 | 1.47 | 0.94 |
| 46:BY:47:ARG:HH21 | 46:BY:47:ARG:HG3 | 1.28 | 0.94 |
| 1:AA:842:U:H3' | 1:AA:843:U:H5'' | 1.48 | 0.94 |
| 33:BL:29:LYS:HG2 | 33:BL:30:THR:HG23 | 1.49 | 0.94 |
| 41:BT:39:THR:HB | 41:BT:42:GLU:HB2 | 1.50 | 0.94 |
| 57:DA:2385:C:HO2' | 57:DA:2386:A:H8 | 1.13 | 0.94 |
| 7:AG:12:LEU:H | 7:AG:12:LEU:HD22 | 1.33 | 0.94 |
| 5:CE:103:GLY:O | 5:CE:104:ILE:HG22 | 1.65 | 0.94 |
| 8:CH:103:VAL:HG12 | 8:CH:124:ILE:HA | 1.47 | 0.94 |
| 39:DR:39:LEU:HA | 39:DR:49:ILE:HG21 | 1.47 | 0.94 |
| 38:BQ:69:ARG:HB2 | 38:BQ:69:ARG:NH2 | 1.83 | 0.94 |
| 39:BR:51:VAL:HB | 39:BR:52:PRO:CD | 1.98 | 0.94 |
| 23:BB:90:C:H5'' | 23:BB:90:C:H6 | 1.32 | 0.94 |
| 38:BQ:65:ASN:ND2 | 38:BQ:69:ARG:HH22 | 1.64 | 0.94 |
| 53:CA:82:G:O2' | 53:CA:83:C:H4' | 1.65 | 0.94 |
| 57:DA:1021:A:O2' | 57:DA:1022:G:H4' | 1.68 | 0.94 |
| 57:DA:1695:G:C8 | 24:DC:7:PRO:HB2 | 2.03 | 0.94 |
| 57:DA:2544:G:H2' | 57:DA:2545:G:H8 | 1.32 | 0.94 |
| 24:DC:146:LYS:HB2 | 24:DC:149:LYS:HB2 | 1.48 | 0.94 |
| 22:BA:509:C:H5'' | 22:BA:509:C:H6 | 1.32 | 0.94 |
| 43:BV:80:HIS:HD2 | 43:BV:83:LYS:N | 1.64 | 0.94 |
| 53:CA:1299:A:H2' | 53:CA:1299:A:N3 | 1.83 | 0.94 |
| 2:CB:110:ILE:HD13 | 2:CB:151:LYS:HA | 1.50 | 0.94 |
| 1:AA:1238:A:H5' | 1:AA:1336:C:H41 | 1.32 | 0.94 |
| 2:CB:206:ILE:HA | 2:CB:209:VAL:HG22 | 1.50 | 0.94 |
| 53:CA:1329:A:H5'' | 55:CM:25:GLY:H | 1.31 | 0.93 |
| 8:CH:68:LYS:HD3 | 8:CH:69:ALA:H | 1.32 | 0.93 |
| 35:DN:37:THR:HG22 | 35:DN:39:PRO:HD2 | 1.48 | 0.93 |
| 3:AC:128:MET:HB3 | 3:AC:131:ARG:HG3 | 1.50 | 0.93 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:2352:A:C2 | 44:BW:30:VAL:HG11 | 2.03 | 0.93 |
| 57:DA:1429:G:O2' | 57:DA:1430:G:H8 | 1.48 | 0.93 |
| 31:DJ:99:ARG:HA | 31:DJ:102:GLU:HB3 | 1.49 | 0.93 |
| 1:AA:6:G:HO2' | 1:AA:7:A:H8 | 0.97 | 0.93 |
| 1:AA:373:A:O2' | 1:AA:374:A:H5' | 1.68 | 0.93 |
| 20:CT:23:ARG:HB3 | 20:CT:60:GLN:NE2 | 1.83 | 0.93 |
| 53:CA:519:C:H2' | 53:CA:520:A:C8 | 2.04 | 0.93 |
| 11:CK:27:ASN:N | 11:CK:27:ASN:HD22 | 1.66 | 0.93 |
| 57:DA:1669:A:H2' | 57:DA:1669:A:N3 | 1.80 | 0.93 |
| 57:DA:2324:U:H5' | 57:DA:2325:G:H5'' | 1.49 | 0.93 |
| 34:DM:19:GLY:H | 34:DM:38:ARG:HH21 | 1.13 | 0.93 |
| 9:AI:23:GLY:H | 9:AI:60:LEU:HA | 1.34 | 0.93 |
| 22:BA:784:G:C6 | 24:BC:227:VAL:HG11 | 2.02 | 0.93 |
| 53:CA:1168:U:H2' | 53:CA:1168:U:O2 | 1.64 | 0.93 |
| 57:DA:2875:C:O2' | 57:DA:2876:G:H8 | 1.49 | 0.93 |
| 21:AU:52:VAL:HG13 | 21:AU:53:LYS:H | 1.34 | 0.93 |
| 52:B4:10:LEU:HD12 | 52:B4:33:HIS:CD2 | 2.04 | 0.93 |
| 57:DA:508:A:H62 | 40:DS:9:HIS:CE1 | 1.85 | 0.93 |
| 57:DA:2725:A:O2' | 57:DA:2726:A:H2' | 1.69 | 0.93 |
| 25:BD:12:THR:CG2 | 25:BD:13:ARG:H | 1.82 | 0.93 |
| 22:BA:636:G:C6 | 33:BL:111:ILE:HD11 | 2.04 | 0.93 |
| 35:BN:23:ASN:H | 35:BN:23:ASN:HD22 | 1.17 | 0.92 |
| 22:BA:1733:G:HO2' | 22:BA:1734:G:H8 | 0.96 | 0.92 |
| 20:CT:73:ARG:HH11 | 20:CT:73:ARG:HG2 | 1.34 | 0.92 |
| 21:CU:24:LYS:HG3 | 21:CU:25:ALA:H | 1.32 | 0.92 |
| 1:AA:1441:A:H62 | 1:AA:1461:G:H21 | 1.10 | 0.92 |
| 31:BJ:111:LYS:HD3 | 31:BJ:112:GLY:H | 1.34 | 0.92 |
| 30:BI:23:VAL:HB | 30:BI:27:LEU:HB3 | 1.49 | 0.92 |
| 31:BJ:2:LYS:HD3 | 31:BJ:2:LYS:H | 1.33 | 0.92 |
| 57:DA:374:A:H2' | 57:DA:375:G:C8 | 2.03 | 0.92 |
| 6:CF:86:ARG:NH1 | 18:CR:63:TYR:HB3 | 1.84 | 0.92 |
| 2:AB:69:VAL:HB | 2:AB:162:VAL:HG12 | 1.51 | 0.92 |
| 57:DA:1324:G:H1' | 57:DA:1616:A:N6 | 1.83 | 0.92 |
| 32:DK:61:VAL:HG11 | 32:DK:112:PHE:HE2 | 1.35 | 0.92 |
| 8:AH:105:THR:HG21 | 8:AH:120:LEU:HD13 | 1.49 | 0.92 |
| 15:AO:63:ARG:HD3 | 15:AO:87:ARG:HH22 | 1.35 | 0.92 |
| 22:BA:1073:A:C3' | 22:BA:1074:G:H5'' | 1.99 | 0.92 |
| 22:BA:1996:C:H4' | 22:BA:1997:C:OP1 | 1.68 | 0.92 |
| 2:AB:9:LEU:HD12 | 2:AB:42:LEU:HD13 | 1.52 | 0.92 |
| 21:AU:16:ARG:HH11 | 21:AU:19:LYS:HG3 | 1.32 | 0.92 |
| 27:BF:134:GLN:HE21 | 27:BF:134:GLN:H | 1.13 | 0.92 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:CT:2:ASN:N | 20:CT:7:LYS:HZ3 | 1.66 | 0.92 |
| 22:BA:1084:A:H2' | 22:BA:1085:A:C8 | 2.04 | 0.91 |
| 24:DC:144:GLU:HB3 | 24:DC:187:CYS:HB2 | 1.51 | 0.91 |
| 45:DX:31:ASN:HD22 | 45:DX:31:ASN:H | 1.18 | 0.91 |
| 5:AE:155:LYS:HA | 5:AE:158:LYS:NZ | 1.83 | 0.91 |
| 22:BA:1929:G:H4' | 22:BA:1930:G:OP1 | 1.66 | 0.91 |
| 4:AD:36:ALA:HA | 4:AD:41:GLY:HA3 | 1.52 | 0.91 |
| 38:BQ:91:ARG:NH2 | 38:BQ:93:ILE:HD13 | 1.84 | 0.91 |
| 53:CA:522:C:H41 | 12:CL:49:ARG:HH22 | 1.11 | 0.91 |
| 57:DA:232:G:H4' | 57:DA:233:A:OP1 | 1.68 | 0.91 |
| 2:AB:108:GLN:HE21 | 2:AB:108:GLN:H | 1.13 | 0.91 |
| 32:BK:51:LYS:HG3 | 32:BK:95:ILE:CD1 | 2.01 | 0.91 |
| 57:DA:1036:G:H2' | 57:DA:1037:G:H5' | 1.52 | 0.91 |
| 57:DA:1731:G:O2' | 57:DA:1732:C:H5'' | 1.69 | 0.91 |
| 44:DW:27:GLY:HA2 | 44:DW:31:LEU:HD11 | 1.52 | 0.91 |
| 22:BA:932:U:H4' | 22:BA:933:A:H5'' | 1.53 | 0.91 |
| 27:BF:35:LEU:HB3 | 27:BF:153:ILE:CG2 | 1.99 | 0.91 |
| 1:AA:94:G:H4' | 1:AA:95:C:C5' | 1.99 | 0.91 |
| 3:AC:156:LEU:HD12 | 3:AC:156:LEU:H | 1.35 | 0.91 |
| 57:DA:297:G:H5'' | 42:DU:84:PHE:HB2 | 1.52 | 0.91 |
| 57:DA:1166:G:H22 | 57:DA:1184:U:H1' | 1.33 | 0.91 |
| 57:DA:2023:C:HO2' | 57:DA:2024:G:H8 | 0.96 | 0.91 |
| 39:DR:27:ILE:HG22 | 39:DR:28:ALA:H | 1.34 | 0.91 |
| 11:AK:22:ILE:HD13 | 11:AK:95:THR:HG21 | 1.52 | 0.91 |
| 29:BH:31:VAL:HB | 29:BH:32:PRO:CD | 2.00 | 0.91 |
| 57:DA:249:C:H5'' | 57:DA:2394:C:O2' | 1.71 | 0.91 |
| 57:DA:2093:G:N2 | 57:DA:2094:A:N7 | 2.19 | 0.91 |
| 53:CA:6:G:H2' | 53:CA:6:G:N3 | 1.85 | 0.91 |
| 55:CM:95:PRO:HD3 | 55:CM:108:ARG:HG2 | 1.50 | 0.91 |
| 57:DA:217:A:H2' | 57:DA:218:A:C8 | 2.05 | 0.91 |
| 57:DA:1469:A:H2' | 57:DA:1470:A:C8 | 2.05 | 0.91 |
| 59:DF:74:ALA:HB3 | 59:DF:78:ILE:HB | 1.53 | 0.91 |
| 53:CA:876:C:H1' | 8:CH:11:THR:HG21 | 1.51 | 0.90 |
| 57:DA:2401:U:H3' | 57:DA:2402:U:H5'' | 1.53 | 0.90 |
| 10:AJ:57:VAL:HG22 | 10:AJ:58:ASN:H | 1.36 | 0.90 |
| 22:BA:2269:G:H4' | 44:BW:18:LYS:HE2 | 1.54 | 0.90 |
| 53:CA:94:G:H4' | 53:CA:95:C:OP1 | 1.70 | 0.90 |
| 54:CG:28:ILE:HG21 | 54:CG:100:MET:HG3 | 1.53 | 0.90 |
| 57:DA:1326:U:HO2' | 57:DA:1327:A:H8 | 1.14 | 0.90 |
| 22:BA:996:A:H4' | 38:BQ:91:ARG:HG2 | 1.53 | 0.90 |
| 38:BQ:43:GLN:HE21 | 39:BR:77:PHE:HB3 | 1.35 | 0.90 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 54:CG:134:VAL:HB | 54:CG:137:ARG:HH21 | 1.37 | 0.90 |
| 22:BA:1188:U:O2' | 22:BA:1189:A:H5' | 1.71 | 0.90 |
| 25:BD:97:SER:O | 25:BD:99:GLU:HG2 | 1.72 | 0.90 |
| 1:AA:566:G:H4' | 1:AA:567:G:OP1 | 1.68 | 0.90 |
| 53:CA:135:C:O2 | 56:CP:1:MET:HB2 | 1.70 | 0.90 |
| 1:AA:274:A:O2' | 1:AA:275:G:C8 | 2.24 | 0.90 |
| 22:BA:1885:A:H2' | 22:BA:1886:U:C6 | 2.07 | 0.90 |
| 45:DX:63:ILE:HD12 | 45:DX:64:ASP:H | 1.34 | 0.90 |
| 1:AA:563:A:H2' | 1:AA:563:A:N3 | 1.85 | 0.90 |
| 57:DA:1141:U:H4' | 57:DA:1142:A:O5' | 1.72 | 0.90 |
| 57:DA:1662:U:H2' | 57:DA:1663:G:H5'' | 1.52 | 0.90 |
| 5:AE:109:ALA:O | 5:AE:110:MET:HG2 | 1.70 | 0.90 |
| 37:DP:91:VAL:HG22 | 37:DP:109:ILE:HG21 | 1.54 | 0.90 |
| 1:AA:620:C:C2 | 4:AD:131:ILE:HG21 | 2.07 | 0.90 |
| 22:BA:859:G:H22 | 22:BA:916:G:H2' | 1.36 | 0.90 |
| 31:BJ:77:HIS:HD2 | 31:BJ:79:GLY:H | 1.20 | 0.90 |
| 55:CM:33:LEU:HB3 | 55:CM:38:ILE:HB | 1.51 | 0.90 |
| 57:DA:1440:U:H2' | 57:DA:1441:G:H8 | 1.35 | 0.90 |
| 29:DH:72:ILE:HD11 | 29:DH:141:LYS:H | 1.36 | 0.90 |
| 53:CA:738:C:H2' | 53:CA:739:C:H6 | 1.33 | 0.90 |
| 57:DA:1307:A:H62 | 57:DA:1606:C:H6 | 1.20 | 0.90 |
| 57:DA:1565:C:O2' | 57:DA:1566:A:H2' | 1.70 | 0.90 |
| 57:DA:2503:A:H4' | 57:DA:2504:U:OP1 | 1.72 | 0.90 |
| 32:DK:38:ILE:HG12 | 32:DK:61:VAL:HG12 | 1.54 | 0.90 |
| 1:AA:6:G:O6 | 5:AE:98:ALA:HB1 | 1.71 | 0.89 |
| 44:BW:9:THR:CG2 | 44:BW:10:ARG:HD3 | 2.02 | 0.89 |
| 14:AN:40:ARG:HH12 | 14:AN:44:VAL:HG11 | 1.36 | 0.89 |
| 17:CQ:3:LYS:NZ | 17:CQ:6:THR:HG21 | 1.86 | 0.89 |
| 18:CR:72:ARG:HE | 18:CR:72:ARG:H | 1.17 | 0.89 |
| 44:BW:23:LYS:O | 44:BW:66:VAL:HB | 1.72 | 0.89 |
| 53:CA:1159:U:H5 | 53:CA:1182:G:HO2' | 1.07 | 0.89 |
| 57:DA:1458:U:O3' | 57:DA:1459:G:H4' | 1.71 | 0.89 |
| 12:AL:49:ARG:HG2 | 12:AL:49:ARG:NH1 | 1.80 | 0.89 |
| 24:BC:77:VAL:HA | 24:BC:93:VAL:HA | 1.54 | 0.89 |
| 6:CF:18:VAL:HG21 | 6:CF:58:HIS:CD2 | 2.08 | 0.89 |
| 43:BV:10:LYS:HD3 | 43:BV:10:LYS:H | 1.38 | 0.89 |
| 57:DA:959:A:H2' | 57:DA:960:A:C8 | 2.08 | 0.89 |
| 12:AL:34:THR:HB | 12:AL:35:ARG:HG2 | 1.54 | 0.89 |
| 53:CA:1182:G:C4' | 53:CA:1183:U:H5' | 2.03 | 0.89 |
| 2:CB:99:MET:HA | 2:CB:106:VAL:HG21 | 1.52 | 0.89 |
| 57:DA:1537:G:C2' | 57:DA:1538:G:H4' | 2.02 | 0.89 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:CA:1124:G:H4' | 53:CA:1125:U:OP1 | 1.67 | 0.89 |
| 57:DA:834:G:H1' | 57:DA:2358:A:N3 | 1.88 | 0.89 |
| 32:BK:113:MET:O | 32:BK:116:ILE:HG13 | 1.73 | 0.89 |
| 53:CA:1268:G:H21 | 53:CA:1327:C:H1' | 1.36 | 0.89 |
| 57:DA:774:G:HO2' | 57:DA:775:G:H8 | 1.21 | 0.89 |
| 57:DA:1026:G:O2' | 57:DA:1027:A:H5' | 1.72 | 0.89 |
| 31:DJ:75:TYR:CD1 | 31:DJ:84:ILE:HD11 | 2.07 | 0.89 |
| 1:AA:877:G:H21 | 8:AH:1:SER:HB2 | 1.35 | 0.89 |
| 9:AI:40:ARG:HA | 9:AI:44:ARG:HB3 | 1.53 | 0.89 |
| 11:CK:44:ALA:HB3 | 11:CK:69:CYS:HB2 | 1.53 | 0.89 |
| 10:CJ:57:VAL:HG22 | 10:CJ:58:ASN:H | 1.38 | 0.88 |
| 20:CT:4:LYS:HE3 | 20:CT:5:SER:H | 1.37 | 0.88 |
| 57:DA:1345:C:HO2' | 57:DA:1346:G:H8 | 0.93 | 0.88 |
| 34:DM:35:ALA:HB3 | 34:DM:99:GLY:H | 1.37 | 0.88 |
| 1:AA:1441:A:N6 | 1:AA:1461:G:H21 | 1.71 | 0.88 |
| 9:AI:51:LEU:HB3 | 9:AI:56:MET:HG2 | 1.56 | 0.88 |
| 53:CA:982:U:H4' | 53:CA:983:A:O5' | 1.72 | 0.88 |
| 2:CB:163:ILE:HG23 | 2:CB:185:ILE:HD11 | 1.54 | 0.88 |
| 1:AA:1007:U:H2' | 1:AA:1008:U:H5'' | 1.53 | 0.88 |
| 2:AB:66:ILE:HB | 2:AB:88:GLN:HB3 | 1.53 | 0.88 |
| 22:BA:232:G:H4' | 22:BA:233:A:OP1 | 1.73 | 0.88 |
| 22:BA:2790:U:H4' | 22:BA:2791:G:OP1 | 1.73 | 0.88 |
| 1:AA:1129:C:H5'' | 9:AI:17:ARG:NH2 | 1.87 | 0.88 |
| 54:CG:110:ARG:HG3 | 54:CG:111:GLY:H | 1.37 | 0.88 |
| 59:DF:137:PHE:HB2 | 59:DF:138:PRO:HD2 | 1.55 | 0.88 |
| 1:AA:1021:A:H2' | 1:AA:1022:A:H5'' | 1.55 | 0.88 |
| 22:BA:272:A:HO2' | 22:BA:273:G:H8 | 0.94 | 0.88 |
| 39:BR:42:ALA:HA | 39:BR:46:GLU:HB2 | 1.53 | 0.88 |
| 53:CA:16:A:O2' | 53:CA:17:U:H5' | 1.73 | 0.88 |
| 53:CA:1143:G:H2' | 53:CA:1144:G:C8 | 2.07 | 0.88 |
| 4:CD:30:LYS:HD3 | 4:CD:30:LYS:N | 1.89 | 0.88 |
| 57:DA:2304:G:H22 | 57:DA:2312:U:H3 | 1.18 | 0.88 |
| 57:DA:2544:G:H2' | 57:DA:2545:G:C8 | 2.08 | 0.88 |
| 1:AA:202:G:H21 | 1:AA:466:A:H61 | 1.20 | 0.88 |
| 8:CH:52:GLY:HA3 | 8:CH:56:PRO:HA | 1.56 | 0.88 |
| 1:AA:94:G:H4' | 1:AA:95:C:O5' | 1.72 | 0.88 |
| 1:AA:1241:G:HO2' | 1:AA:1242:G:H8 | 0.92 | 0.88 |
| 22:BA:1499:C:H2' | 22:BA:1500:G:H8 | 1.37 | 0.88 |
| 25:BD:91:THR:O | 25:BD:93:GLY:N | 2.04 | 0.88 |
| 31:BJ:2:LYS:HD3 | 31:BJ:2:LYS:N | 1.86 | 0.88 |
| 53:CA:1218:C:H2' | 53:CA:1219:A:C8 | 2.09 | 0.88 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:CA:1365:G:O2' | 53:CA:1366:C:H5' | 1.73 | 0.88 |
| 57:DA:2346:A:H3' | 57:DA:2347:C:H5'' | 1.53 | 0.88 |
| 26:BE:108:ILE:HD11 | 26:BE:180:LEU:HB3 | 1.56 | 0.88 |
| 53:CA:961:U:HO2' | 53:CA:962:C:H6 | 0.89 | 0.88 |
| 4:CD:109:THR:HG22 | 4:CD:111:ALA:H | 1.38 | 0.88 |
| 57:DA:649:G:H2' | 57:DA:650:C:H6 | 1.38 | 0.88 |
| 37:DP:88:ARG:HE | 37:DP:112:ARG:HH21 | 1.18 | 0.88 |
| 34:BM:57:VAL:HA | 34:BM:112:LEU:HD21 | 1.56 | 0.88 |
| 30:DI:91:LYS:HB3 | 30:DI:94:LYS:HB2 | 1.56 | 0.88 |
| 53:CA:1458:G:O3' | 20:CT:22:SER:HA | 1.74 | 0.88 |
| 57:DA:2728:U:HO2' | 57:DA:2729:G:H8 | 1.19 | 0.88 |
| 22:BA:1941:C:H5' | 22:BA:1941:C:C6 | 2.09 | 0.87 |
| 24:BC:166:ARG:O | 24:BC:166:ARG:HG3 | 1.72 | 0.87 |
| 28:BG:104:LEU:HB2 | 28:BG:112:VAL:CG2 | 2.03 | 0.87 |
| 31:BJ:64:VAL:O | 31:BJ:65:THR:HB | 1.72 | 0.87 |
| 53:CA:1226:C:H41 | 55:CM:102:LYS:HA | 1.36 | 0.87 |
| 28:DG:93:TYR:H | 28:DG:93:TYR:HD2 | 1.22 | 0.87 |
| 44:DW:40:ARG:HG2 | 44:DW:40:ARG:NH1 | 1.81 | 0.87 |
| 24:BC:68:ARG:HD3 | 24:BC:103:ILE:HD11 | 1.56 | 0.87 |
| 53:CA:1054:C:O2' | 53:CA:1055:A:H5'' | 1.73 | 0.87 |
| 1:AA:511:C:O2' | 1:AA:512:U:H5'' | 1.74 | 0.87 |
| 2:AB:110:ILE:HD12 | 2:AB:147:LEU:HD13 | 1.56 | 0.87 |
| 2:AB:110:ILE:CD1 | 2:AB:147:LEU:HD13 | 2.03 | 0.87 |
| 28:BG:97:VAL:HG22 | 28:BG:102:ILE:HG12 | 1.54 | 0.87 |
| 31:BJ:130:HIS:HD2 | 31:BJ:132:HIS:H | 1.22 | 0.87 |
| 57:DA:1290:C:O2' | 57:DA:1291:C:H6 | 1.57 | 0.87 |
| 57:DA:1709:U:H2' | 57:DA:1710:G:C8 | 2.09 | 0.87 |
| 25:BD:107:VAL:H | 25:BD:206:ALA:H | 1.17 | 0.87 |
| 57:DA:616:A:O2' | 57:DA:617:G:H8 | 1.56 | 0.87 |
| 25:DD:119:ALA:HB3 | 25:DD:163:GLY:H | 1.37 | 0.87 |
| 44:DW:17:ALA:O | 44:DW:18:LYS:HB3 | 1.75 | 0.87 |
| 22:BA:1084:A:H2' | 22:BA:1085:A:H8 | 1.37 | 0.87 |
| 49:D1:7:LYS:HD3 | 51:D3:33:THR:HG21 | 1.56 | 0.87 |
| 22:BA:2813:A:H2 | 22:BA:2887:A:N6 | 1.72 | 0.87 |
| 51:B3:31:ILE:HD11 | 51:B3:34:LYS:HD2 | 1.55 | 0.87 |
| 53:CA:519:C:O2' | 53:CA:520:A:H5' | 1.74 | 0.87 |
| 38:DQ:91:ARG:NH1 | 39:DR:10:LYS:HB3 | 1.88 | 0.87 |
| 1:AA:1063:C:H2' | 1:AA:1064:G:C8 | 2.09 | 0.87 |
| 33:BL:27:LEU:HD12 | 33:BL:27:LEU:N | 1.88 | 0.87 |
| 46:BY:32:ALA:HB2 | 46:BY:37:LEU:HD12 | 1.54 | 0.87 |
| 5:CE:104:ILE:H | 5:CE:122:VAL:H | 1.20 | 0.87 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:84:A:H4' | 57:DA:85:G:O5' | 1.73 | 0.87 |
| 57:DA:1508:A:H4' | 57:DA:1509:A:OP1 | 1.73 | 0.87 |
| 57:DA:1951:U:H2' | 57:DA:1953:A:OP2 | 1.73 | 0.87 |
| 1:AA:1398:A:H8 | 1:AA:1398:A:H5'' | 1.37 | 0.87 |
| 3:AC:76:ILE:HA | 3:AC:83:VAL:HG23 | 1.56 | 0.87 |
| 22:BA:855:G:N2 | 44:BW:23:LYS:HG2 | 1.90 | 0.87 |
| 22:BA:2389:G:H5'' | 22:BA:2390:U:H5' | 1.55 | 0.87 |
| 53:CA:335:C:H2' | 53:CA:336:A:H8 | 1.38 | 0.87 |
| 15:CO:63:ARG:HH22 | 57:DA:715:A:C5' | 1.86 | 0.87 |
| 57:DA:335:C:HO2' | 57:DA:336:C:H6 | 0.93 | 0.87 |
| 57:DA:374:A:H2' | 57:DA:375:G:H8 | 1.40 | 0.87 |
| 34:DM:41:LEU:HD23 | 34:DM:46:ILE:HG22 | 1.56 | 0.87 |
| 21:AU:16:ARG:NH1 | 21:AU:19:LYS:HG3 | 1.89 | 0.86 |
| 53:CA:668:G:O2' | 15:CO:45:HIS:HB3 | 1.75 | 0.86 |
| 57:DA:1919:A:O2' | 57:DA:1920:C:H5' | 1.74 | 0.86 |
| 1:AA:439:U:O2' | 1:AA:440:C:H5' | 1.74 | 0.86 |
| 4:AD:43:ARG:O | 4:AD:45:PRO:HD3 | 1.75 | 0.86 |
| 22:BA:2093:G:O2' | 22:BA:2094:A:H5' | 1.74 | 0.86 |
| 29:BH:89:LYS:HG2 | 29:BH:90:LEU:H | 1.39 | 0.86 |
| 53:CA:91:U:HO2' | 53:CA:92:U:H6 | 1.18 | 0.86 |
| 37:DP:63:ILE:HA | 37:DP:68:GLY:HA2 | 1.56 | 0.86 |
| 22:BA:2136:G:H2' | 22:BA:2137:U:H5 | 1.40 | 0.86 |
| 23:BB:30:C:H2' | 23:BB:31:C:H5' | 1.57 | 0.86 |
| 23:BB:45:A:H2' | 23:BB:46:A:H8 | 1.40 | 0.86 |
| 32:BK:21:CYS:HB2 | 32:BK:39:ILE:HD11 | 1.57 | 0.86 |
| 53:CA:330:C:HO2' | 53:CA:331:G:H8 | 0.92 | 0.86 |
| 58:DB:69:G:H3' | 58:DB:70:C:C6 | 2.10 | 0.86 |
| 1:AA:1328:C:H5'' | 13:AM:27:THR:HG21 | 1.54 | 0.86 |
| 1:AA:1468:A:C2' | 1:AA:1469:C:H5'' | 2.04 | 0.86 |
| 22:BA:780:G:H21 | 22:BA:783:A:H62 | 1.21 | 0.86 |
| 57:DA:616:A:HO2' | 57:DA:617:G:H8 | 0.92 | 0.86 |
| 57:DA:873:C:H4' | 34:DM:64:TRP:NE1 | 1.90 | 0.86 |
| 33:DL:79:LEU:HA | 33:DL:82:LEU:HD11 | 1.56 | 0.86 |
| 10:AJ:51:VAL:HB | 14:AN:80:ARG:HB2 | 1.55 | 0.86 |
| 14:AN:60:ARG:O | 14:AN:61:ASN:HB2 | 1.75 | 0.86 |
| 22:BA:655:A:O2' | 22:BA:656:G:C8 | 2.27 | 0.86 |
| 33:BL:74:THR:HG22 | 33:BL:107:PHE:HB2 | 1.55 | 0.86 |
| 28:DG:124:CYS:HB3 | 28:DG:130:ILE:HA | 1.58 | 0.86 |
| 1:AA:560:A:H5' | 1:AA:566:G:N2 | 1.91 | 0.86 |
| 1:AA:1277:C:HO2' | 1:AA:1279:G:H8 | 0.91 | 0.86 |
| 12:AL:33:CYS:HA | 12:AL:54:VAL:HA | 1.58 | 0.86 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:1857:G:H1' | 57:DA:1884:G:H22 | 1.41 | 0.86 |
| 1:AA:1151:A:O2' | 1:AA:1152:A:H5'' | 1.76 | 0.86 |
| 22:BA:2214:C:H6 | 22:BA:2214:C:H5' | 1.40 | 0.86 |
| 38:BQ:97:ILE:HD11 | 38:BQ:105:PHE:N | 1.91 | 0.86 |
| 53:CA:32:A:H2' | 53:CA:33:A:H8 | 1.39 | 0.86 |
| 53:CA:801:U:H2' | 53:CA:802:A:H8 | 1.39 | 0.86 |
| 4:CD:55:ARG:HA | 4:CD:55:ARG:HH11 | 1.41 | 0.86 |
| 57:DA:143:C:H2' | 57:DA:144:A:C8 | 2.11 | 0.86 |
| 57:DA:464:U:H1' | 57:DA:686:U:H5 | 1.39 | 0.86 |
| 25:BD:151:THR:HG22 | 25:BD:152:PRO:CD | 2.05 | 0.86 |
| 57:DA:234:U:O2' | 57:DA:235:U:H5' | 1.76 | 0.86 |
| 22:BA:1780:A:O2' | 22:BA:1781:U:C5 | 2.27 | 0.86 |
| 3:CC:109:GLU:HG2 | 3:CC:139:ASN:HB2 | 1.57 | 0.86 |
| 57:DA:1038:G:H2' | 57:DA:1039:A:H5' | 1.56 | 0.86 |
| 57:DA:2800:A:O2' | 57:DA:2801:G:H4' | 1.75 | 0.86 |
| 57:DA:2868:A:H2' | 57:DA:2869:G:C8 | 2.11 | 0.86 |
| 58:DB:17:C:H42 | 58:DB:68:C:H42 | 1.21 | 0.86 |
| 1:AA:16:A:O2' | 1:AA:17:U:H5' | 1.76 | 0.86 |
| 22:BA:2728:U:O2' | 22:BA:2729:G:H5'' | 1.75 | 0.86 |
| 28:BG:73:SER:HA | 28:BG:76:ILE:CG2 | 2.06 | 0.86 |
| 38:BQ:65:ASN:HD21 | 38:BQ:69:ARG:HH22 | 1.20 | 0.86 |
| 39:BR:28:ALA:O | 39:BR:63:VAL:HG21 | 1.75 | 0.86 |
| 44:DW:28:GLU:H | 44:DW:31:LEU:HD21 | 1.38 | 0.86 |
| 22:BA:923:G:N3 | 44:BW:23:LYS:HE2 | 1.91 | 0.85 |
| 26:BE:112:LEU:HD13 | 26:BE:186:VAL:HG11 | 1.57 | 0.85 |
| 31:BJ:6:ALA:HB3 | 31:BJ:45:THR:HG21 | 1.56 | 0.85 |
| 32:BK:76:VAL:HB | 37:BP:72:VAL:CG2 | 2.04 | 0.85 |
| 52:B4:9:LYS:H | 52:B4:9:LYS:CD | 1.89 | 0.85 |
| 53:CA:366:A:O2' | 53:CA:394:G:N2 | 2.09 | 0.85 |
| 53:CA:694:A:H3' | 53:CA:695:A:H5'' | 1.58 | 0.85 |
| 2:CB:79:VAL:HA | 2:CB:213:LEU:HD21 | 1.58 | 0.85 |
| 58:DB:44:G:H5'' | 59:DF:91:ARG:CZ | 2.06 | 0.85 |
| 1:AA:826:C:H5' | 8:AH:12:ARG:HH21 | 1.41 | 0.85 |
| 44:BW:19:ARG:NH2 | 44:BW:22:VAL:HG21 | 1.91 | 0.85 |
| 12:AL:62:VAL:HG21 | 12:AL:94:TYR:CE2 | 2.11 | 0.85 |
| 12:AL:113:ARG:HB3 | 12:AL:118:VAL:HB | 1.58 | 0.85 |
| 29:DH:90:LEU:HB2 | 29:DH:123:ARG:HB3 | 1.57 | 0.85 |
| 41:DT:39:THR:HG21 | 41:DT:42:GLU:HB2 | 1.57 | 0.85 |
| 22:BA:1179:G:C6 | 22:BA:1180:U:H1' | 2.12 | 0.85 |
| 32:BK:70:ARG:HD3 | 32:BK:76:VAL:HG22 | 1.56 | 0.85 |
| 30:DI:45:THR:HG23 | 30:DI:54:ILE:HD13 | 1.58 | 0.85 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 44:DW:39:GLN:HE22 | 44:DW:58:LEU:HD23 | 1.39 | 0.85 |
| 53:CA:977:A:O2' | 53:CA:978:A:H5'' | 1.76 | 0.85 |
| 16:AP:28:ARG:HE | 16:AP:29:ASN:HD21 | 1.23 | 0.85 |
| 22:BA:2615:U:C2 | 48:B0:3:GLN:HA | 2.12 | 0.85 |
| 28:BG:84:LYS:CG | 28:BG:132:LEU:H | 1.88 | 0.85 |
| 49:B1:8:ILE:HG23 | 49:B1:51:ALA:HA | 1.58 | 0.85 |
| 51:B3:22:LYS:HA | 51:B3:47:ALA:O | 1.76 | 0.85 |
| 25:BD:104:VAL:O | 25:BD:177:VAL:HG21 | 1.77 | 0.85 |
| 57:DA:1931:U:H2' | 57:DA:1932:A:H8 | 1.40 | 0.85 |
| 47:DZ:16:LEU:H | 47:DZ:16:LEU:CD2 | 1.88 | 0.85 |
| 24:BC:141:HIS:HB2 | 24:BC:190:THR:HB | 1.59 | 0.85 |
| 53:CA:990:C:H2' | 53:CA:991:U:O4' | 1.76 | 0.85 |
| 41:DT:29:THR:HB | 41:DT:87:LEU:H | 1.40 | 0.85 |
| 52:D4:7:VAL:HG13 | 52:D4:8:LYS:H | 1.42 | 0.85 |
| 12:AL:24:GLU:HB2 | 12:AL:26:CYS:SG | 2.17 | 0.85 |
| 22:BA:84:A:H4' | 22:BA:85:G:O5' | 1.76 | 0.85 |
| 24:BC:180:MET:HG3 | 24:BC:268:ARG:HH11 | 1.41 | 0.85 |
| 12:CL:3:VAL:HG23 | 12:CL:4:ASN:H | 1.42 | 0.85 |
| 12:CL:43:LYS:CB | 12:CL:44:PRO:HD2 | 2.03 | 0.85 |
| 57:DA:1654:A:O2' | 57:DA:1655:A:H8 | 1.59 | 0.85 |
| 28:DG:112:VAL:HG12 | 28:DG:114:HIS:H | 1.42 | 0.85 |
| 2:AB:148:GLY:HA2 | 2:AB:151:LYS:HB3 | 1.58 | 0.84 |
| 4:AD:16:THR:HG22 | 4:AD:17:ASP:H | 1.42 | 0.84 |
| 22:BA:1022:G:N2 | 22:BA:1142:A:C2 | 2.45 | 0.84 |
| 17:CQ:30:HIS:HE1 | 17:CQ:32:ILE:HG13 | 1.42 | 0.84 |
| 57:DA:1156:A:OP1 | 57:DA:1156:A:H8 | 1.60 | 0.84 |
| 57:DA:2699:C:H2' | 57:DA:2700:A:C8 | 2.12 | 0.84 |
| 29:BH:8:LYS:O | 29:BH:9:VAL:HB | 1.76 | 0.84 |
| 31:BJ:17:VAL:HG23 | 31:BJ:137:PRO:HB2 | 1.59 | 0.84 |
| 57:DA:1639:C:H2' | 57:DA:1640:A:H5'' | 1.59 | 0.84 |
| 38:DQ:40:LYS:HD2 | 38:DQ:44:TYR:CE2 | 2.12 | 0.84 |
| 20:AT:66:ILE:HD11 | 20:AT:70:LYS:HE3 | 1.59 | 0.84 |
| 25:BD:114:LYS:HE3 | 25:BD:114:LYS:N | 1.92 | 0.84 |
| 27:BF:134:GLN:H | 27:BF:134:GLN:NE2 | 1.74 | 0.84 |
| 50:B2:3:ARG:HG2 | 50:B2:3:ARG:NH2 | 1.85 | 0.84 |
| 57:DA:118:A:N3 | 57:DA:178:G:H1' | 1.93 | 0.84 |
| 57:DA:1166:G:N2 | 57:DA:1184:U:H1' | 1.92 | 0.84 |
| 57:DA:2776:A:H4' | 57:DA:2777:G:O5' | 1.77 | 0.84 |
| 1:AA:1142:G:H2' | 1:AA:1143:G:O4' | 1.77 | 0.84 |
| 22:BA:1779:U:H5 | 22:BA:1784:A:N7 | 1.74 | 0.84 |
| 44:BW:46:ALA:HB3 | 44:BW:79:ILE:O | 1.77 | 0.84 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 24:DC:62:ARG:HG2 | 24:DC:62:ARG:HH21 | 1.42 | 0.84 |
| 1:AA:415:A:H2' | 1:AA:416:G:C8 | 2.12 | 0.84 |
| 22:BA:100:U:H4' | 22:BA:101:A:O5' | 1.77 | 0.84 |
| 22:BA:802:A:H2' | 22:BA:803:U:C6 | 2.13 | 0.84 |
| 22:BA:1458:U:H4' | 22:BA:1459:G:O5' | 1.75 | 0.84 |
| 24:BC:12:ARG:HH11 | 24:BC:12:ARG:CG | 1.89 | 0.84 |
| 32:BK:19:VAL:HG23 | 32:BK:43:ILE:HA | 1.59 | 0.84 |
| 4:CD:143:SER:HB3 | 4:CD:178:GLU:HG3 | 1.58 | 0.84 |
| 4:CD:176:LYS:HG3 | 4:CD:178:GLU:HB2 | 1.57 | 0.84 |
| 6:CF:11:HIS:CD2 | 6:CF:54:LEU:HD21 | 2.11 | 0.84 |
| 54:CG:88:VAL:HG22 | 54:CG:89:GLU:H | 1.41 | 0.84 |
| 57:DA:802:A:H2' | 57:DA:803:U:C6 | 2.12 | 0.84 |
| 57:DA:1275:A:H2' | 57:DA:1275:A:N3 | 1.90 | 0.84 |
| 57:DA:2748:A:H1' | 28:DG:66:THR:HG22 | 1.59 | 0.84 |
| 33:DL:79:LEU:HB2 | 33:DL:113:ALA:H | 1.42 | 0.84 |
| 1:AA:539:A:H2' | 1:AA:540:G:C8 | 2.12 | 0.84 |
| 43:BV:44:HIS:HE1 | 43:BV:86:LEU:H | 1.21 | 0.84 |
| 53:CA:1452:C:H4' | 53:CA:1453:G:O5' | 1.74 | 0.84 |
| 58:DB:57:A:O2' | 58:DB:58:A:H8 | 1.59 | 0.84 |
| 58:DB:75:G:H1 | 58:DB:102:G:H22 | 1.23 | 0.84 |
| 37:DP:50:ARG:HB3 | 37:DP:57:ALA:H | 1.42 | 0.84 |
| 22:BA:571:U:H4' | 22:BA:572:A:OP1 | 1.77 | 0.84 |
| 53:CA:1157:A:H4' | 53:CA:1158:C:O5' | 1.77 | 0.84 |
| 6:CF:92:THR:HG22 | 6:CF:94:HIS:H | 1.42 | 0.84 |
| 8:CH:11:THR:HG22 | 8:CH:14:ARG:NH1 | 1.92 | 0.84 |
| 8:CH:57:GLU:HG3 | 8:CH:58:LEU:H | 1.41 | 0.84 |
| 57:DA:197:A:N6 | 57:DA:2430:A:H2' | 1.93 | 0.84 |
| 32:DK:13:ASN:HD21 | 32:DK:97:THR:H | 1.24 | 0.84 |
| 42:DU:14:THR:HB | 42:DU:68:ASN:HB3 | 1.60 | 0.84 |
| 4:CD:25:ARG:NH1 | 4:CD:30:LYS:HG2 | 1.91 | 0.84 |
| 10:CJ:47:GLU:HB2 | 10:CJ:67:ILE:HG13 | 1.59 | 0.84 |
| 35:DN:62:ASN:O | 35:DN:63:ARG:HB2 | 1.76 | 0.84 |
| 41:DT:50:LEU:HD23 | 41:DT:51:PHE:H | 1.43 | 0.84 |
| 25:BD:120:GLY:HA2 | 25:BD:162:ALA:CB | 2.07 | 0.84 |
| 36:BO:49:VAL:HG21 | 36:BO:82:ALA:HA | 1.60 | 0.84 |
| 53:CA:936:C:HO2' | 53:CA:937:A:H8 | 0.88 | 0.84 |
| 9:CI:71:ILE:HD12 | 9:CI:72:SER:H | 1.41 | 0.84 |
| 57:DA:127:A:N7 | 50:D2:46:LYS:HE3 | 1.93 | 0.84 |
| 57:DA:777:G:N7 | 57:DA:793:A:H2 | 1.74 | 0.84 |
| 57:DA:1913:A:H4' | 57:DA:1914:C:OP1 | 1.77 | 0.84 |
| 57:DA:2091:C:N4 | 57:DA:2092:U:C4 | 2.46 | 0.84 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:2092:U:C4' | 57:DA:2093:G:OP1 | 2.21 | 0.84 |
| 57:DA:2517:C:O2' | 57:DA:2518:A:H3' | 1.77 | 0.84 |
| 24:DC:166:ARG:HB2 | 24:DC:171:VAL:HG22 | 1.58 | 0.84 |
| 1:AA:198:G:HO2' | 1:AA:199:A:H8 | 0.87 | 0.84 |
| 22:BA:750:A:O2' | 22:BA:752:A:OP1 | 1.96 | 0.84 |
| 28:BG:86:LEU:HB3 | 28:BG:162:ARG:O | 1.78 | 0.84 |
| 54:CG:45:ALA:HB1 | 54:CG:120:ALA:HB2 | 1.60 | 0.84 |
| 15:CO:23:SER:O | 15:CO:26:VAL:HB | 1.77 | 0.84 |
| 57:DA:2093:G:N2 | 57:DA:2094:A:C5 | 2.46 | 0.84 |
| 36:DO:115:LEU:H | 36:DO:115:LEU:HD13 | 1.39 | 0.84 |
| 12:AL:28:GLN:HB2 | 12:AL:81:ILE:O | 1.78 | 0.83 |
| 22:BA:1967:C:O2' | 22:BA:1968:G:H5' | 1.76 | 0.83 |
| 52:B4:36:ARG:HG2 | 52:B4:37:GLN:H | 1.42 | 0.83 |
| 53:CA:120:A:C3' | 53:CA:121:U:H5'' | 2.07 | 0.83 |
| 57:DA:704:G:H2' | 57:DA:726:G:H22 | 1.40 | 0.83 |
| 57:DA:2757:A:N1 | 28:DG:66:THR:HG21 | 1.93 | 0.83 |
| 25:DD:137:SER:HB3 | 25:DD:138:LEU:HD22 | 1.60 | 0.83 |
| 33:DL:92:LEU:HD22 | 33:DL:124:GLY:HA3 | 1.56 | 0.83 |
| 44:DW:23:LYS:HD2 | 44:DW:24:ARG:N | 1.93 | 0.83 |
| 8:AH:25:THR:O | 8:AH:26:MET:HB3 | 1.77 | 0.83 |
| 22:BA:74:A:H4' | 22:BA:75:G:O5' | 1.76 | 0.83 |
| 31:BJ:111:LYS:HD3 | 31:BJ:112:GLY:N | 1.92 | 0.83 |
| 19:CS:40:PHE:HB3 | 19:CS:41:PRO:HD2 | 1.58 | 0.83 |
| 57:DA:96:C:H4' | 46:DY:41:HIS:CD2 | 2.13 | 0.83 |
| 38:DQ:10:ARG:HA | 38:DQ:13:HIS:HB2 | 1.60 | 0.83 |
| 39:BR:49:ILE:O | 39:BR:49:ILE:HG13 | 1.77 | 0.83 |
| 53:CA:1458:G:O2' | 20:CT:22:SER:HB3 | 1.76 | 0.83 |
| 6:CF:86:ARG:HD3 | 18:CR:63:TYR:O | 1.77 | 0.83 |
| 21:CU:24:LYS:CG | 21:CU:25:ALA:H | 1.90 | 0.83 |
| 57:DA:822:G:O6 | 57:DA:943:A:H2 | 1.62 | 0.83 |
| 12:AL:82:ARG:HG2 | 12:AL:82:ARG:NH1 | 1.93 | 0.83 |
| 22:BA:2150:C:H2' | 22:BA:2151:U:C5 | 2.13 | 0.83 |
| 22:BA:2420:C:OP1 | 51:B3:33:THR:HB | 1.78 | 0.83 |
| 53:CA:330:C:O2' | 53:CA:331:G:H8 | 1.60 | 0.83 |
| 53:CA:1221:G:H4' | 19:CS:35:ARG:NH2 | 1.93 | 0.83 |
| 21:CU:38:GLU:H | 21:CU:40:PRO:HD2 | 1.42 | 0.83 |
| 32:DK:70:ARG:HB3 | 32:DK:76:VAL:HG22 | 1.57 | 0.83 |
| 25:BD:150:GLN:O | 25:BD:150:GLN:HG3 | 1.79 | 0.83 |
| 29:BH:96:THR:O | 29:BH:97:ARG:HG3 | 1.78 | 0.83 |
| 53:CA:822:U:H2' | 53:CA:823:C:H6 | 1.43 | 0.83 |
| 57:DA:873:C:H4' | 34:DM:64:TRP:CD1 | 2.14 | 0.83 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 58:DB:57:A:HO2' | 58:DB:58:A:H8 | 0.84 | 0.83 |
| 1:AA:1319:A:H4' | 1:AA:1320:C:OP1 | 1.79 | 0.83 |
| 22:BA:2353:G:H1' | 44:BW:30:VAL:HG13 | 1.60 | 0.83 |
| 53:CA:932:C:H5'' | 54:CG:2:ARG:HD3 | 1.61 | 0.83 |
| 57:DA:2513:A:H2 | 25:DD:148:GLN:HE21 | 1.25 | 0.83 |
| 24:DC:59:GLN:HE21 | 24:DC:84:PRO:HB2 | 1.42 | 0.83 |
| 25:DD:114:LYS:HD2 | 25:DD:116:LYS:NZ | 1.93 | 0.83 |
| 28:DG:120:ILE:HG13 | 28:DG:140:ILE:HG22 | 1.60 | 0.83 |
| 5:AE:106:ALA:HB2 | 5:AE:124:ALA:HB3 | 1.59 | 0.83 |
| 22:BA:869:G:O2' | 34:BM:8:LYS:HD3 | 1.78 | 0.83 |
| 34:BM:72:PRO:O | 34:BM:91:TYR:O | 1.95 | 0.83 |
| 57:DA:637:A:H4' | 57:DA:638:G:O5' | 1.78 | 0.83 |
| 37:BP:4:ILE:HG22 | 37:BP:5:LYS:N | 1.93 | 0.83 |
| 43:BV:72:VAL:HG12 | 43:BV:93:ARG:HA | 1.59 | 0.83 |
| 24:DC:68:ARG:HH12 | 24:DC:115:ILE:HD12 | 1.43 | 0.83 |
| 1:AA:1151:A:O2' | 1:AA:1152:A:H8 | 1.62 | 0.83 |
| 3:CC:110:LEU:HD21 | 3:CC:203:LYS:HD2 | 1.60 | 0.83 |
| 33:DL:47:ARG:HH21 | 33:DL:47:ARG:HG2 | 1.42 | 0.83 |
| 1:AA:887:G:H2' | 1:AA:888:G:H5' | 1.61 | 0.83 |
| 1:AA:1138:G:N3 | 1:AA:1138:G:H2' | 1.92 | 0.83 |
| 22:BA:494:G:H21 | 40:BS:57:ASN:HD21 | 1.22 | 0.83 |
| 22:BA:1287:A:H5' | 35:BN:103:ARG:HD2 | 1.61 | 0.83 |
| 28:BG:22:VAL:HG22 | 28:BG:36:LEU:HD11 | 1.59 | 0.83 |
| 53:CA:33:A:H2' | 53:CA:34:C:H6 | 1.44 | 0.83 |
| 57:DA:1492:G:H3' | 57:DA:1493:C:C5' | 2.09 | 0.83 |
| 1:AA:198:G:O2' | 1:AA:199:A:H8 | 1.62 | 0.82 |
| 5:AE:155:LYS:HA | 5:AE:158:LYS:HZ1 | 1.42 | 0.82 |
| 22:BA:1993:U:H4' | 25:BD:133:THR:CG2 | 2.09 | 0.82 |
| 25:BD:46:ARG:HG3 | 25:BD:84:LEU:HB2 | 1.59 | 0.82 |
| 28:BG:83:THR:HA | 28:BG:84:LYS:HZ2 | 1.42 | 0.82 |
| 41:BT:32:LEU:H | 41:BT:83:ALA:HB3 | 1.41 | 0.82 |
| 57:DA:647:G:H2' | 57:DA:648:G:C8 | 2.14 | 0.82 |
| 57:DA:2091:C:N4 | 57:DA:2092:U:O4 | 2.12 | 0.82 |
| 58:DB:16:G:O2' | 58:DB:17:C:H5' | 1.79 | 0.82 |
| 1:AA:531:U:H4' | 1:AA:532:A:O5' | 1.79 | 0.82 |
| 1:AA:747:A:H5' | 1:AA:748:G:OP2 | 1.79 | 0.82 |
| 22:BA:1011:G:O2' | 22:BA:1013:C:H5'' | 1.79 | 0.82 |
| 25:BD:120:GLY:HA2 | 25:BD:162:ALA:HB1 | 1.61 | 0.82 |
| 32:BK:71:ARG:HB2 | 32:BK:72:PRO:HD3 | 1.60 | 0.82 |
| 53:CA:721:G:H4' | 53:CA:722:G:O5' | 1.77 | 0.82 |
| 53:CA:1067:A:H1' | 53:CA:1068:G:H8 | 1.40 | 0.82 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 58:DB:56:G:H4' | 58:DB:57:A:O5' | 1.78 | 0.82 |
| 41:DT:14:PRO:O | 41:DT:15:HIS:HB2 | 1.79 | 0.82 |
| 45:DX:31:ASN:H | 45:DX:31:ASN:ND2 | 1.77 | 0.82 |
| 53:CA:1129:C:H1' | 53:CA:1146:A:H61 | 1.45 | 0.82 |
| 20:CT:73:ARG:HH11 | 20:CT:73:ARG:CG | 1.92 | 0.82 |
| 57:DA:141:G:H3' | 57:DA:142:A:O4' | 1.79 | 0.82 |
| 57:DA:1346:G:HO2' | 57:DA:1347:A:H8 | 1.25 | 0.82 |
| 57:DA:1490:A:N3 | 57:DA:1490:A:H5' | 1.94 | 0.82 |
| 57:DA:2415:G:H4' | 33:DL:66:PHE:HB2 | 1.60 | 0.82 |
| 24:DC:183:VAL:HG13 | 24:DC:185:ALA:H | 1.44 | 0.82 |
| 24:BC:165:ALA:HB3 | 24:BC:172:THR:HG23 | 1.60 | 0.82 |
| 57:DA:1799:G:H8 | 24:DC:179:GLU:OE1 | 1.60 | 0.82 |
| 1:AA:1338:G:H2' | 1:AA:1339:A:H8 | 1.42 | 0.82 |
| 8:AH:17:GLN:HE21 | 8:AH:71:VAL:HG23 | 1.43 | 0.82 |
| 11:AK:28:ASN:OD1 | 11:AK:46:ALA:HB3 | 1.80 | 0.82 |
| 14:AN:19:TYR:O | 14:AN:22:LYS:HB3 | 1.79 | 0.82 |
| 35:BN:71:ARG:HH21 | 35:BN:71:ARG:CG | 1.93 | 0.82 |
| 22:BA:1429:G:O2' | 22:BA:1430:G:H5' | 1.80 | 0.82 |
| 22:BA:2492:U:O2' | 22:BA:2493:U:H5' | 1.78 | 0.82 |
| 26:BE:117:ARG:HA | 26:BE:185:LYS:HD3 | 1.62 | 0.82 |
| 53:CA:665:A:H2' | 53:CA:725:G:N2 | 1.94 | 0.82 |
| 33:DL:79:LEU:HB3 | 33:DL:114:GLY:H | 1.43 | 0.82 |
| 1:AA:32:A:H2' | 1:AA:33:A:C8 | 2.13 | 0.82 |
| 1:AA:338:A:N1 | 1:AA:351:G:O6 | 2.13 | 0.82 |
| 1:AA:366:A:O2' | 1:AA:394:G:N2 | 2.13 | 0.82 |
| 22:BA:729:G:N3 | 22:BA:729:G:H2' | 1.95 | 0.82 |
| 53:CA:65:A:H2' | 53:CA:382:A:H61 | 1.43 | 0.82 |
| 57:DA:2468:A:O2' | 57:DA:2469:A:H8 | 1.61 | 0.82 |
| 59:DF:49:LEU:H | 59:DF:49:LEU:HD22 | 1.44 | 0.82 |
| 35:DN:5:LYS:HG2 | 35:DN:6:SER:H | 1.45 | 0.82 |
| 50:D2:34:ARG:HB3 | 50:D2:42:LEU:HD11 | 1.62 | 0.82 |
| 7:AG:121:ASN:O | 7:AG:125:ASP:HB2 | 1.80 | 0.82 |
| 22:BA:2573:C:OP1 | 63:BA:3715:HOH:O | 1.97 | 0.82 |
| 57:DA:95:A:H1' | 46:DY:40:SER:HB2 | 1.61 | 0.82 |
| 57:DA:1552:A:O2' | 57:DA:1553:A:H5' | 1.80 | 0.82 |
| 57:DA:1807:G:H2' | 57:DA:1808:A:H5' | 1.62 | 0.82 |
| 57:DA:2092:U:C2' | 57:DA:2093:G:H8 | 1.92 | 0.82 |
| 1:AA:116:A:H2' | 1:AA:117:G:C8 | 2.15 | 0.82 |
| 21:AU:13:VAL:HG13 | 21:AU:15:LEU:HG | 1.62 | 0.82 |
| 22:BA:1867:G:O2' | 22:BA:1868:C:H5' | 1.79 | 0.82 |
| 35:BN:79:LEU:O | 35:BN:80:PHE:HB2 | 1.79 | 0.82 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 18:CR:62:ARG:HB3 | 18:CR:69:TYR:CE1 | 2.14 | 0.82 |
| 57:DA:2408:U:O2' | 57:DA:2409:G:H8 | 1.61 | 0.82 |
| 22:BA:197:A:N6 | 22:BA:2430:A:H2' | 1.95 | 0.82 |
| 22:BA:1585:C:H2' | 22:BA:1586:A:O4' | 1.79 | 0.82 |
| 53:CA:702:A:OP1 | 53:CA:702:A:H8 | 1.62 | 0.82 |
| 53:CA:920:U:H2' | 53:CA:921:U:C6 | 2.15 | 0.82 |
| 53:CA:1347:G:N2 | 53:CA:1373:G:H2' | 1.95 | 0.82 |
| 57:DA:2356:U:H4' | 44:DW:16:GLU:HG3 | 1.62 | 0.82 |
| 58:DB:44:G:H3' | 59:DF:91:ARG:HE | 1.45 | 0.82 |
| 36:DO:12:THR:HG23 | 36:DO:16:ARG:HH11 | 1.44 | 0.82 |
| 38:DQ:24:TYR:O | 38:DQ:27:ARG:HB3 | 1.79 | 0.82 |
| 9:AI:28:VAL:HB | 9:AI:63:TYR:HD2 | 1.44 | 0.81 |
| 25:BD:13:ARG:HH12 | 37:BP:74:GLN:NE2 | 1.77 | 0.81 |
| 37:BP:50:ARG:CD | 37:BP:51:ASN:H | 1.93 | 0.81 |
| 57:DA:1069:A:N6 | 57:DA:1073:A:H5'' | 1.94 | 0.81 |
| 26:DE:148:ILE:HD13 | 26:DE:187:VAL:HG21 | 1.62 | 0.81 |
| 22:BA:2502:G:H5' | 22:BA:2503:A:H5'' | 1.62 | 0.81 |
| 21:CU:24:LYS:HG3 | 21:CU:25:ALA:N | 1.94 | 0.81 |
| 57:DA:533:G:H2' | 57:DA:534:U:C6 | 2.15 | 0.81 |
| 26:DE:128:ALA:HB1 | 26:DE:129:PRO:HD2 | 1.62 | 0.81 |
| 31:DJ:35:ARG:HG2 | 31:DJ:40:HIS:CD2 | 2.16 | 0.81 |
| 27:BF:34:THR:HG23 | 27:BF:89:THR:HG23 | 1.62 | 0.81 |
| 53:CA:374:A:H5'' | 53:CA:452:A:N1 | 1.95 | 0.81 |
| 53:CA:1101:A:H4' | 53:CA:1102:A:O5' | 1.80 | 0.81 |
| 53:CA:1278:G:H4' | 53:CA:1279:G:O5' | 1.80 | 0.81 |
| 10:CJ:64:GLN:HB2 | 14:CN:98:ALA:HB3 | 1.62 | 0.81 |
| 57:DA:1275:A:O2' | 57:DA:1276:A:O4' | 1.96 | 0.81 |
| 57:DA:1792:G:H5'' | 24:DC:203:VAL:HG22 | 1.62 | 0.81 |
| 25:DD:184:ARG:HH22 | 37:DP:6:GLN:HE21 | 1.28 | 0.81 |
| 29:DH:97:ARG:O | 29:DH:98:ASP:HB2 | 1.80 | 0.81 |
| 35:DN:71:ARG:HH21 | 35:DN:71:ARG:HB2 | 1.43 | 0.81 |
| 24:BC:123:ILE:O | 24:BC:123:ILE:HG12 | 1.79 | 0.81 |
| 25:BD:172:VAL:O | 25:BD:173:GLN:HB2 | 1.79 | 0.81 |
| 50:B2:43:THR:O | 50:B2:44:VAL:HG23 | 1.81 | 0.81 |
| 14:CN:76:PHE:HE2 | 14:CN:92:ILE:HG21 | 1.45 | 0.81 |
| 57:DA:915:C:H2' | 57:DA:916:G:C8 | 2.15 | 0.81 |
| 57:DA:2875:C:HO2' | 57:DA:2876:G:H8 | 0.87 | 0.81 |
| 25:DD:34:VAL:HG12 | 25:DD:48:ILE:HD11 | 1.63 | 0.81 |
| 32:DK:61:VAL:HG11 | 32:DK:112:PHE:CE2 | 2.15 | 0.81 |
| 34:DM:42:THR:HG22 | 34:DM:44:ARG:H | 1.44 | 0.81 |
| 1:AA:451:A:H4' | 1:AA:452:A:O5' | 1.80 | 0.81 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 24:BC:170:TYR:CD2 | 24:BC:184:GLU:HA | 2.15 | 0.81 |
| 53:CA:532:A:C8 | 3:CC:192:TYR:HE2 | 1.99 | 0.81 |
| 57:DA:33:C:N4 | 57:DA:446:G:O2' | 2.13 | 0.81 |
| 57:DA:91:A:O2' | 57:DA:92:U:H5'' | 1.80 | 0.81 |
| 58:DB:42:C:H41 | 59:DF:87:LYS:NZ | 1.78 | 0.81 |
| 58:DB:88:C:OP2 | 58:DB:88:C:H3' | 1.81 | 0.81 |
| 1:AA:109:A:H2' | 1:AA:326:G:N2 | 1.96 | 0.81 |
| 33:BL:95:LEU:HD13 | 33:BL:100:ILE:HD11 | 1.60 | 0.81 |
| 57:DA:528:A:O2' | 57:DA:529:A:H5'' | 1.81 | 0.81 |
| 57:DA:861:A:H2' | 57:DA:862:G:H8 | 1.45 | 0.81 |
| 32:DK:111:LYS:H | 32:DK:111:LYS:HE3 | 1.46 | 0.81 |
| 1:AA:96:U:HO2' | 1:AA:97:G:H8 | 1.28 | 0.81 |
| 16:AP:28:ARG:NE | 16:AP:29:ASN:HD21 | 1.79 | 0.81 |
| 25:BD:169:ARG:O | 25:BD:170:VAL:HG13 | 1.80 | 0.81 |
| 27:BF:132:ARG:O | 27:BF:133:GLU:HB3 | 1.80 | 0.81 |
| 53:CA:254:G:N2 | 17:CQ:17:GLU:HG3 | 1.93 | 0.81 |
| 57:DA:2093:G:O6 | 57:DA:2225:A:C3' | 2.27 | 0.81 |
| 35:DN:56:LYS:HA | 35:DN:84:GLY:HA2 | 1.62 | 0.81 |
| 40:DS:14:ALA:O | 40:DS:18:ARG:HB2 | 1.80 | 0.81 |
| 36:BO:31:THR:HG22 | 36:BO:34:HIS:H | 1.46 | 0.81 |
| 38:BQ:4:LYS:HG3 | 38:BQ:5:ARG:N | 1.95 | 0.81 |
| 53:CA:337:G:H2' | 53:CA:338:A:C8 | 2.15 | 0.81 |
| 57:DA:867:C:O2' | 57:DA:868:U:H6 | 1.64 | 0.81 |
| 57:DA:1554:U:H5'' | 57:DA:1555:G:OP2 | 1.79 | 0.81 |
| 57:DA:1586:A:H2' | 57:DA:1587:G:H8 | 1.46 | 0.81 |
| 34:DM:17:ASN:HB3 | 34:DM:38:ARG:HH22 | 1.45 | 0.81 |
| 43:DV:77:VAL:HA | 43:DV:89:ILE:HG22 | 1.62 | 0.81 |
| 5:AE:89:THR:HG22 | 5:AE:90:GLY:N | 1.96 | 0.81 |
| 11:AK:88:PRO:HD3 | 21:AU:28:LEU:HD13 | 1.62 | 0.81 |
| 22:BA:1073:A:H2' | 22:BA:1074:G:H5'' | 1.60 | 0.81 |
| 29:BH:32:PRO:HB3 | 45:BX:38:TRP:HB3 | 1.61 | 0.81 |
| 57:DA:310:A:HO2' | 57:DA:311:A:H8 | 0.83 | 0.81 |
| 25:DD:114:LYS:HD2 | 25:DD:116:LYS:HZ2 | 1.45 | 0.81 |
| 31:DJ:44:TYR:HD1 | 38:DQ:63:ARG:NH2 | 1.78 | 0.81 |
| 46:DY:20:ASN:HD22 | 46:DY:50:VAL:HG22 | 1.45 | 0.81 |
| 4:AD:25:ARG:NH1 | 4:AD:30:LYS:HE3 | 1.96 | 0.80 |
| 10:AJ:53:ILE:HG22 | 10:AJ:61:ALA:HB1 | 1.63 | 0.80 |
| 22:BA:1416:G:HO2' | 22:BA:1417:C:H6 | 1.26 | 0.80 |
| 22:BA:1941:C:H2' | 22:BA:1942:C:C6 | 2.16 | 0.80 |
| 25:BD:151:THR:CG2 | 25:BD:152:PRO:HD3 | 2.09 | 0.80 |
| 57:DA:2190:G:H5' | 57:DA:2191:A:OP2 | 1.81 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:DD:11:MET:HE1 | 25:DD:192:ALA:HA | 1.62 | 0.80 |
| 35:DN:38:LEU:HB3 | 35:DN:39:PRO:HD3 | 1.61 | 0.80 |
| 19:AS:28:LYS:HB3 | 19:AS:29:PRO:HD2 | 1.62 | 0.80 |
| 22:BA:1073:A:C2' | 22:BA:1074:G:H5'' | 2.11 | 0.80 |
| 22:BA:2801:G:O2' | 22:BA:2802:G:H5' | 1.80 | 0.80 |
| 25:BD:4:LEU:HD22 | 25:BD:101:PHE:CE1 | 2.16 | 0.80 |
| 37:BP:105:LYS:HA | 37:BP:108:ARG:HH21 | 1.46 | 0.80 |
| 49:B1:49:LYS:HG2 | 49:B1:50:GLU:H | 1.45 | 0.80 |
| 21:CU:39:LYS:N | 21:CU:40:PRO:HD2 | 1.97 | 0.80 |
| 57:DA:15:G:OP1 | 48:D0:20:ALA:HB2 | 1.82 | 0.80 |
| 31:DJ:57:LEU:HD11 | 31:DJ:129:GLU:H | 1.46 | 0.80 |
| 22:BA:545:U:H2' | 22:BA:546:U:H4' | 1.62 | 0.80 |
| 22:BA:1199:U:H2' | 22:BA:1200:C:C6 | 2.16 | 0.80 |
| 53:CA:245:U:O2' | 53:CA:246:A:H5' | 1.80 | 0.80 |
| 57:DA:142:A:H2' | 57:DA:143:C:C6 | 2.16 | 0.80 |
| 1:AA:94:G:H4' | 1:AA:95:C:H5'' | 1.61 | 0.80 |
| 1:AA:204:G:H3' | 1:AA:205:A:C5' | 2.11 | 0.80 |
| 19:AS:6:LYS:HE2 | 19:AS:6:LYS:HA | 1.64 | 0.80 |
| 28:BG:3:VAL:O | 28:BG:68:ARG:HG3 | 1.81 | 0.80 |
| 32:BK:18:ARG:H | 32:BK:45:GLU:HB2 | 1.47 | 0.80 |
| 39:BR:60:LYS:H | 39:BR:100:GLY:HA3 | 1.45 | 0.80 |
| 53:CA:338:A:H61 | 53:CA:351:G:H1 | 1.29 | 0.80 |
| 53:CA:496:A:N3 | 53:CA:496:A:H2' | 1.95 | 0.80 |
| 3:CC:18:ASN:HA | 3:CC:55:VAL:HG12 | 1.61 | 0.80 |
| 3:CC:63:ILE:HG12 | 3:CC:65:VAL:HG23 | 1.64 | 0.80 |
| 4:CD:3:TYR:O | 4:CD:4:LEU:HB2 | 1.80 | 0.80 |
| 5:CE:95:MET:HB3 | 5:CE:124:ALA:HB2 | 1.63 | 0.80 |
| 21:CU:38:GLU:HA | 21:CU:41:THR:OG1 | 1.81 | 0.80 |
| 57:DA:714:U:H2' | 57:DA:716:A:OP2 | 1.82 | 0.80 |
| 57:DA:861:A:H2' | 57:DA:862:G:C8 | 2.15 | 0.80 |
| 57:DA:2716:C:H2' | 57:DA:2717:C:H6 | 1.44 | 0.80 |
| 1:AA:1256:A:H1' | 1:AA:1258:G:C5 | 2.16 | 0.80 |
| 9:AI:32:ARG:HG2 | 9:AI:36:GLN:HB3 | 1.64 | 0.80 |
| 13:AM:2:ARG:O | 13:AM:3:ILE:HG12 | 1.82 | 0.80 |
| 22:BA:2834:G:H2' | 22:BA:2879:A:H61 | 1.47 | 0.80 |
| 53:CA:1347:G:H22 | 53:CA:1373:G:H2' | 1.45 | 0.80 |
| 57:DA:1245:G:H4' | 26:DE:33:VAL:HG11 | 1.62 | 0.80 |
| 33:BL:77:ILE:CD1 | 33:BL:108:ALA:HB1 | 2.12 | 0.80 |
| 57:DA:649:G:H2' | 57:DA:650:C:C6 | 2.15 | 0.80 |
| 57:DA:2092:U:O2' | 57:DA:2093:G:H8 | 1.64 | 0.80 |
| 26:DE:6:LYS:HB2 | 26:DE:121:VAL:HG12 | 1.63 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:DT:67:VAL:HG23 | 41:DT:75:GLY:O | 1.81 | 0.80 |
| 8:AH:17:GLN:NE2 | 8:AH:71:VAL:HG23 | 1.96 | 0.80 |
| 22:BA:684:G:OP1 | 50:B2:16:HIS:HD2 | 1.64 | 0.80 |
| 24:BC:180:MET:HG3 | 24:BC:268:ARG:NH1 | 1.97 | 0.80 |
| 26:BE:79:ARG:HG2 | 26:BE:80:SER:H | 1.47 | 0.80 |
| 27:BF:9:ASP:O | 27:BF:10:GLU:HB2 | 1.80 | 0.80 |
| 28:BG:104:LEU:HB2 | 28:BG:112:VAL:HG21 | 1.63 | 0.80 |
| 53:CA:794:A:H2' | 53:CA:795:C:C6 | 2.17 | 0.80 |
| 2:CB:19:THR:HG22 | 2:CB:37:VAL:HG23 | 1.63 | 0.80 |
| 4:CD:61:ARG:HH21 | 4:CD:67:LEU:HA | 1.46 | 0.80 |
| 57:DA:1012:U:O4 | 31:DJ:30:THR:HG21 | 1.80 | 0.80 |
| 57:DA:1056:G:H1' | 57:DA:1103:A:H61 | 1.45 | 0.80 |
| 57:DA:1126:A:H4' | 57:DA:1127:A:O5' | 1.81 | 0.80 |
| 57:DA:2851:A:H2' | 57:DA:2852:G:C8 | 2.16 | 0.80 |
| 24:DC:75:ALA:HB2 | 24:DC:95:TYR:CD1 | 2.16 | 0.80 |
| 42:DU:33:VAL:O | 42:DU:34:ILE:HG13 | 1.82 | 0.80 |
| 1:AA:977:A:H2' | 1:AA:977:A:N3 | 1.96 | 0.80 |
| 1:AA:982:U:H4' | 1:AA:983:A:O5' | 1.79 | 0.80 |
| 22:BA:2198:A:H3' | 22:BA:2198:A:OP2 | 1.82 | 0.80 |
| 36:BO:40:ILE:HG12 | 36:BO:47:VAL:HG12 | 1.63 | 0.80 |
| 39:BR:4:VAL:HG23 | 39:BR:39:LEU:HG | 1.64 | 0.80 |
| 39:BR:51:VAL:HB | 39:BR:52:PRO:HD2 | 1.62 | 0.80 |
| 57:DA:1359:A:C2 | 57:DA:1360:G:H1' | 2.16 | 0.80 |
| 59:DF:91:ARG:HH21 | 59:DF:91:ARG:HB3 | 1.46 | 0.80 |
| 1:AA:596:A:H2' | 1:AA:597:G:H8 | 1.47 | 0.80 |
| 1:AA:654:G:H2' | 1:AA:655:A:C8 | 2.17 | 0.80 |
| 4:AD:117:VAL:N | 4:AD:122:ILE:HD11 | 1.97 | 0.80 |
| 17:AQ:12:VAL:HG13 | 17:AQ:13:SER:N | 1.97 | 0.80 |
| 20:AT:27:MET:HE1 | 20:AT:57:VAL:HG22 | 1.63 | 0.80 |
| 22:BA:1190:G:OP1 | 33:BL:32:GLY:HA2 | 1.81 | 0.80 |
| 29:BH:18:GLN:HE21 | 29:BH:18:GLN:HA | 1.45 | 0.80 |
| 11:CK:111:ASP:H | 21:CU:3:ILE:N | 1.79 | 0.80 |
| 28:DG:1:SER:HB2 | 28:DG:61:TRP:HB3 | 1.62 | 0.80 |
| 32:DK:60:ALA:HA | 32:DK:87:LEU:HD23 | 1.62 | 0.80 |
| 1:AA:1065:U:H5'' | 1:AA:1190:G:N2 | 1.97 | 0.80 |
| 1:AA:1336:C:O2' | 1:AA:1337:G:OP2 | 2.00 | 0.80 |
| 4:AD:96:ARG:HB3 | 4:AD:98:ASP:OD1 | 1.81 | 0.80 |
| 22:BA:1032:A:H1' | 52:B4:23:ILE:HD13 | 1.64 | 0.80 |
| 25:BD:9:VAL:HG22 | 25:BD:26:VAL:HB | 1.63 | 0.80 |
| 57:DA:397:U:OP1 | 45:DX:30:PRO:HA | 1.81 | 0.80 |
| 57:DA:922:C:H1' | 44:DW:22:VAL:HG21 | 1.64 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:AD:10:LEU:HD22 | 4:AD:62:ARG:HG3 | 1.64 | 0.79 |
| 5:AE:153:ALA:HA | 5:AE:156:ARG:HB2 | 1.64 | 0.79 |
| 9:AI:112:ARG:HH22 | 10:AJ:64:GLN:HE22 | 1.28 | 0.79 |
| 22:BA:459:U:O2' | 22:BA:460:A:H5' | 1.81 | 0.79 |
| 22:BA:1050:A:C2 | 22:BA:2751:G:C5 | 2.69 | 0.79 |
| 22:BA:2573:C:H2' | 63:BA:3714:HOH:O | 1.81 | 0.79 |
| 26:BE:119:ILE:HD11 | 26:BE:187:VAL:HG22 | 1.63 | 0.79 |
| 44:BW:49:ASN:HA | 44:BW:61:LYS:HB2 | 1.61 | 0.79 |
| 53:CA:15:G:H2' | 53:CA:16:A:C8 | 2.16 | 0.79 |
| 57:DA:1388:G:O2' | 57:DA:1389:G:H5' | 1.81 | 0.79 |
| 59:DF:43:ILE:HG23 | 59:DF:44:ALA:H | 1.48 | 0.79 |
| 1:AA:15:G:O4' | 5:AE:28:ARG:NH1 | 2.15 | 0.79 |
| 1:AA:1279:G:H1' | 1:AA:1282:C:N4 | 1.96 | 0.79 |
| 11:AK:126:ARG:HB2 | 21:AU:33:ARG:NH1 | 1.96 | 0.79 |
| 22:BA:2328:A:H2' | 22:BA:2329:U:C6 | 2.16 | 0.79 |
| 57:DA:2135:A:H8 | 57:DA:2135:A:OP2 | 1.66 | 0.79 |
| 42:DU:95:PHE:HD1 | 42:DU:95:PHE:H | 1.24 | 0.79 |
| 44:DW:40:ARG:HH11 | 44:DW:40:ARG:CG | 1.91 | 0.79 |
| 1:AA:721:G:H4' | 1:AA:722:G:O5' | 1.81 | 0.79 |
| 10:AJ:49:PHE:HE1 | 10:AJ:67:ILE:HG13 | 1.47 | 0.79 |
| 22:BA:859:G:N2 | 22:BA:916:G:H2' | 1.97 | 0.79 |
| 44:BW:30:VAL:HA | 44:BW:60:ALA:HB3 | 1.63 | 0.79 |
| 53:CA:764:C:C2' | 53:CA:765:G:H5' | 2.13 | 0.79 |
| 53:CA:1011:C:H2' | 53:CA:1012:A:H8 | 1.46 | 0.79 |
| 57:DA:867:C:HO2' | 57:DA:868:U:H6 | 0.82 | 0.79 |
| 25:DD:106:LYS:HB3 | 25:DD:206:ALA:HB3 | 1.64 | 0.79 |
| 32:DK:35:VAL:HG23 | 32:DK:36:GLY:H | 1.46 | 0.79 |
| 1:AA:1157:A:H1' | 1:AA:1181:G:N2 | 1.98 | 0.79 |
| 2:AB:163:ILE:HG23 | 2:AB:164:ASP:H | 1.46 | 0.79 |
| 22:BA:1287:A:O2' | 22:BA:1288:G:H5' | 1.82 | 0.79 |
| 57:DA:95:A:H4' | 46:DY:38:GLN:O | 1.80 | 0.79 |
| 57:DA:575:A:O2' | 57:DA:576:U:H5' | 1.82 | 0.79 |
| 57:DA:1352:U:H5 | 57:DA:1377:G:C6 | 2.01 | 0.79 |
| 57:DA:1364:G:C5 | 45:DX:1:SER:HB2 | 2.18 | 0.79 |
| 57:DA:1474:U:H2' | 57:DA:1475:G:H5' | 1.63 | 0.79 |
| 57:DA:2752:C:H2' | 57:DA:2753:A:C8 | 2.17 | 0.79 |
| 59:DF:177:ARG:NE | 59:DF:178:LYS:H | 1.79 | 0.79 |
| 34:DM:66:ARG:CZ | 34:DM:101:VAL:HG11 | 2.12 | 0.79 |
| 30:BI:53:PRO:HD2 | 30:BI:77:VAL:HG21 | 1.64 | 0.79 |
| 31:BJ:44:TYR:HB2 | 38:BQ:63:ARG:CB | 2.11 | 0.79 |
| 40:BS:17:VAL:HG12 | 40:BS:76:VAL:HG11 | 1.64 | 0.79 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 4:CD:66:VAL:HG22 | 4:CD:96:ARG:NH1 | 1.97 | 0.79 |
| 11:CK:55:ARG:H | 11:CK:55:ARG:HD2 | 1.47 | 0.79 |
| 57:DA:1511:G:HO2' | 57:DA:1512:C:H6 | 1.28 | 0.79 |
| 57:DA:2092:U:O2' | 57:DA:2093:G:C8 | 2.35 | 0.79 |
| 57:DA:2135:A:C3' | 57:DA:2136:G:H5'' | 2.12 | 0.79 |
| 1:AA:1157:A:H1' | 1:AA:1181:G:C2 | 2.18 | 0.79 |
| 22:BA:856:G:H1' | 44:BW:23:LYS:HB3 | 1.62 | 0.79 |
| 53:CA:1245:C:H2' | 53:CA:1246:A:H8 | 1.48 | 0.79 |
| 57:DA:616:A:C2' | 57:DA:617:G:H8 | 1.96 | 0.79 |
| 57:DA:1387:A:N6 | 57:DA:1401:G:C6 | 2.50 | 0.79 |
| 57:DA:1817:G:O2' | 57:DA:1818:U:H5' | 1.83 | 0.79 |
| 57:DA:2104:C:O2 | 57:DA:2105:U:H5 | 1.65 | 0.79 |
| 57:DA:2286:G:H4' | 57:DA:2287:A:O4' | 1.83 | 0.79 |
| 2:AB:137:THR:HA | 2:AB:140:LEU:HD13 | 1.64 | 0.79 |
| 22:BA:1056:G:H5'' | 22:BA:1057:A:H5' | 1.64 | 0.79 |
| 37:BP:50:ARG:HB3 | 37:BP:57:ALA:N | 1.94 | 0.79 |
| 53:CA:982:U:H1' | 53:CA:983:A:N7 | 1.98 | 0.79 |
| 53:CA:1152:A:H2' | 53:CA:1153:G:C8 | 2.18 | 0.79 |
| 57:DA:1069:A:O2' | 57:DA:1070:A:H5' | 1.83 | 0.79 |
| 57:DA:1391:U:H4' | 41:DT:19:LYS:HZ1 | 1.48 | 0.79 |
| 25:DD:124:ARG:HD3 | 25:DD:125:TRP:NE1 | 1.98 | 0.79 |
| 31:DJ:5:THR:HA | 31:DJ:44:TYR:CD2 | 2.17 | 0.79 |
| 51:D3:41:ARG:HG3 | 51:D3:41:ARG:HH21 | 1.48 | 0.79 |
| 1:AA:116:A:H2' | 1:AA:117:G:H8 | 1.46 | 0.79 |
| 35:BN:24:MET:HG2 | 35:BN:44:LEU:HD22 | 1.64 | 0.79 |
| 51:B3:21:PHE:HB2 | 51:B3:49:VAL:CG1 | 2.13 | 0.79 |
| 53:CA:78:A:H2' | 53:CA:79:G:C8 | 2.18 | 0.79 |
| 53:CA:1349:A:H2' | 53:CA:1350:A:C8 | 2.17 | 0.79 |
| 15:CO:63:ARG:HH22 | 57:DA:715:A:H5' | 1.46 | 0.79 |
| 57:DA:1069:A:H4' | 57:DA:1070:A:O5' | 1.83 | 0.79 |
| 57:DA:2214:C:H2' | 57:DA:2215:C:C6 | 2.18 | 0.79 |
| 58:DB:24:G:H1' | 58:DB:27:C:H42 | 1.42 | 0.79 |
| 24:DC:128:THR:HG22 | 24:DC:188:ARG:HB3 | 1.64 | 0.79 |
| 4:AD:129:VAL:HG13 | 4:AD:131:ILE:HD12 | 1.63 | 0.79 |
| 25:BD:182:ALA:C | 25:BD:184:ARG:H | 1.85 | 0.79 |
| 34:BM:73:ILE:HG21 | 34:BM:91:TYR:CZ | 2.17 | 0.79 |
| 41:DT:3:ARG:HD2 | 41:DT:42:GLU:HG2 | 1.64 | 0.79 |
| 6:CF:54:LEU:HD12 | 6:CF:56:LYS:O | 1.83 | 0.79 |
| 55:CM:64:VAL:HG12 | 55:CM:65:GLU:H | 1.47 | 0.79 |
| 17:CQ:3:LYS:HZ3 | 17:CQ:6:THR:HG21 | 1.43 | 0.79 |
| 57:DA:1237:A:C2 | 57:DA:1238:G:H1' | 2.18 | 0.79 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:DA:1326:U:O2' | 57:DA:1327:A:H8 | 1.65 | 0.79 |
| 57:DA:2319:G:O2' | 57:DA:2321:U:O4 | 2.00 | 0.79 |
| 1:AA:1361:G:H2' | 1:AA:1362:A:H5' | 1.63 | 0.78 |
| 22:BA:18:U:O2' | 22:BA:19:A:H5' | 1.83 | 0.78 |
| 25:BD:186:LEU:HD11 | 37:BP:3:ILE:HD11 | 1.62 | 0.78 |
| 30:BI:100:ILE:HG22 | 30:BI:101:SER:H | 1.47 | 0.78 |
| 41:BT:50:LEU:H | 41:BT:50:LEU:HD12 | 1.47 | 0.78 |
| 53:CA:801:U:H2' | 53:CA:802:A:C8 | 2.18 | 0.78 |
| 53:CA:814:A:H5' | 53:CA:1511:G:H4' | 1.63 | 0.78 |
| 5:CE:76:ASN:O | 5:CE:79:THR:HG22 | 1.83 | 0.78 |
| 57:DA:207:A:H2' | 57:DA:208:C:C6 | 2.18 | 0.78 |
| 57:DA:668:A:H2' | 57:DA:670:A:N6 | 1.96 | 0.78 |
| 57:DA:1277:G:H5' | 35:DN:20:MET:HE3 | 1.65 | 0.78 |
| 30:DI:104:GLN:HA | 30:DI:107:GLU:HB2 | 1.65 | 0.78 |
| 31:DJ:44:TYR:HD1 | 38:DQ:63:ARG:HH21 | 1.31 | 0.78 |
| 2:AB:163:ILE:O | 2:AB:185:ILE:HG12 | 1.83 | 0.78 |
| 22:BA:2757:A:N1 | 28:BG:66:THR:HG21 | 1.98 | 0.78 |
| 53:CA:113:G:H21 | 53:CA:353:A:H8 | 1.28 | 0.78 |
| 57:DA:1038:G:C2' | 57:DA:1039:A:H5' | 2.13 | 0.78 |
| 57:DA:2136:G:H2' | 57:DA:2137:U:C6 | 2.19 | 0.78 |
| 57:DA:2291:U:H2' | 57:DA:2292:U:C6 | 2.17 | 0.78 |
| 57:DA:2542:A:H4' | 57:DA:2543:G:C5' | 2.12 | 0.78 |
| 57:DA:2612:C:H5'' | 57:DA:2613:U:OP1 | 1.83 | 0.78 |
| 30:DI:74:PRO:HB2 | 30:DI:77:VAL:HG22 | 1.63 | 0.78 |
| 1:AA:842:U:H3' | 1:AA:843:U:C5' | 2.13 | 0.78 |
| 22:BA:1141:U:H4' | 22:BA:1142:A:O5' | 1.82 | 0.78 |
| 22:BA:2636:C:H2' | 22:BA:2637:U:C6 | 2.17 | 0.78 |
| 28:BG:120:ILE:HD11 | 28:BG:132:LEU:HB2 | 1.65 | 0.78 |
| 53:CA:948:C:H5'' | 55:CM:104:ASN:HB3 | 1.63 | 0.78 |
| 57:DA:1491:G:O2' | 57:DA:1492:G:H5' | 1.83 | 0.78 |
| 57:DA:1492:G:H3' | 57:DA:1493:C:H5' | 1.66 | 0.78 |
| 57:DA:1635:A:O2' | 57:DA:1636:U:H5' | 1.82 | 0.78 |
| 57:DA:1993:U:H2' | 57:DA:1994:C:C6 | 2.18 | 0.78 |
| 44:DW:27:GLY:CA | 44:DW:31:LEU:HD11 | 2.13 | 0.78 |
| 1:AA:121:U:H6 | 1:AA:121:U:H5'' | 1.47 | 0.78 |
| 2:AB:100:LEU:HD12 | 2:AB:178:LEU:HD23 | 1.64 | 0.78 |
| 57:DA:491:G:H2' | 57:DA:492:A:H8 | 1.48 | 0.78 |
| 29:DH:27:ARG:NH1 | 45:DX:59:ASP:HA | 1.99 | 0.78 |
| 36:DO:53:THR:HB | 36:DO:65:THR:HG22 | 1.65 | 0.78 |
| 5:AE:79:THR:HB | 5:AE:121:ASN:ND2 | 1.99 | 0.78 |
| 15:AO:63:ARG:HD3 | 15:AO:87:ARG:NH2 | 1.96 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:BI:33:ASN:HB3 | 30:BI:36:GLU:HB2 | 1.66 | 0.78 |
| 37:BP:50:ARG:HG2 | 37:BP:57:ALA:N | 1.99 | 0.78 |
| 41:BT:30:ILE:HG23 | 41:BT:85:VAL:HB | 1.64 | 0.78 |
| 53:CA:238:A:H2' | 53:CA:239:U:H5'' | 1.64 | 0.78 |
| 53:CA:481:G:H4' | 53:CA:482:A:OP1 | 1.84 | 0.78 |
| 53:CA:1430:A:H2' | 53:CA:1431:A:O4' | 1.83 | 0.78 |
| 3:CC:36:PHE:HE1 | 14:CN:91:GLU:HB3 | 1.48 | 0.78 |
| 12:CL:2:THR:HB | 12:CL:5:GLN:HB2 | 1.65 | 0.78 |
| 57:DA:915:C:H2' | 57:DA:916:G:H8 | 1.48 | 0.78 |
| 58:DB:57:A:C6 | 59:DF:25:MET:HG2 | 2.19 | 0.78 |
| 22:BA:1073:A:H3' | 22:BA:1074:G:C5' | 2.12 | 0.78 |
| 22:BA:1286:A:H4' | 22:BA:1287:A:OP1 | 1.84 | 0.78 |
| 22:BA:1734:G:HO2' | 22:BA:1735:A:H8 | 1.28 | 0.78 |
| 22:BA:2355:G:H4' | 44:BW:20:LEU:HD13 | 1.66 | 0.78 |
| 24:BC:14:HIS:O | 24:BC:203:VAL:HG11 | 1.83 | 0.78 |
| 53:CA:560:A:C5 | 5:CE:127:TYR:CE2 | 2.71 | 0.78 |
| 57:DA:762:U:H4' | 57:DA:763:G:O5' | 1.83 | 0.78 |
| 45:DX:30:PRO:HG2 | 45:DX:32:LEU:HD21 | 1.65 | 0.78 |
| 1:AA:1055:A:H1' | 3:AC:155:ARG:HH21 | 1.48 | 0.78 |
| 12:AL:23:LEU:HB2 | 12:AL:58:ASN:ND2 | 1.98 | 0.78 |
| 22:BA:2264:C:H41 | 44:BW:11:ASN:HD21 | 1.32 | 0.78 |
| 28:BG:96:ALA:HB3 | 28:BG:103:ASN:HB3 | 1.64 | 0.78 |
| 33:BL:112:LEU:HD12 | 33:BL:130:GLY:HA3 | 1.64 | 0.78 |
| 53:CA:1387:G:H2' | 53:CA:1388:C:H6 | 1.48 | 0.78 |
| 57:DA:443:A:H61 | 26:DE:36:ALA:HB1 | 1.47 | 0.78 |
| 57:DA:2056:G:H21 | 48:D0:1:ALA:H3 | 1.30 | 0.78 |
| 58:DB:42:C:H2' | 58:DB:43:C:C6 | 2.18 | 0.78 |
| 1:AA:587:G:H4' | 8:AH:3:GLN:HA | 1.66 | 0.78 |
| 6:AF:71:ILE:HD11 | 6:AF:89:VAL:HG21 | 1.63 | 0.78 |
| 22:BA:1060:U:H4' | 22:BA:1061:U:C5' | 2.14 | 0.78 |
| 24:BC:20:ASN:HD22 | 24:BC:20:ASN:C | 1.86 | 0.78 |
| 53:CA:704:A:H2' | 53:CA:705:G:C8 | 2.19 | 0.78 |
| 9:CI:17:ARG:HB2 | 9:CI:65:THR:HB | 1.65 | 0.78 |
| 57:DA:310:A:O2' | 57:DA:311:A:H8 | 1.65 | 0.78 |
| 57:DA:593:U:H2' | 57:DA:594:U:C6 | 2.18 | 0.78 |
| 57:DA:1036:G:C2' | 57:DA:1037:G:H5' | 2.14 | 0.78 |
| 57:DA:1789:A:H5'' | 24:DC:218:THR:O | 1.84 | 0.78 |
| 22:BA:78:U:H2' | 22:BA:79:C:C6 | 2.17 | 0.78 |
| 28:BG:115:GLN:CD | 28:BG:115:GLN:H | 1.87 | 0.78 |
| 34:BM:132:THR:HG22 | 34:BM:133:LYS:H | 1.47 | 0.78 |
| 53:CA:120:A:C2' | 53:CA:121:U:H5'' | 2.13 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:CA:1125:U:C5 | 10:CJ:40:ILE:HG12 | 2.18 | 0.78 |
| 53:CA:1241:G:H2' | 53:CA:1242:G:H8 | 1.48 | 0.78 |
| 57:DA:2468:A:O2' | 57:DA:2469:A:C8 | 2.37 | 0.78 |
| 42:DU:54:PRO:HG2 | 42:DU:55:GLY:H | 1.47 | 0.78 |
| 3:AC:76:ILE:HD11 | 3:AC:102:ILE:HG12 | 1.65 | 0.78 |
| 4:AD:16:THR:HG22 | 4:AD:17:ASP:N | 1.98 | 0.78 |
| 22:BA:357:C:H2' | 22:BA:358:U:C6 | 2.18 | 0.78 |
| 22:BA:914:G:H5'' | 22:BA:914:G:H8 | 1.48 | 0.78 |
| 22:BA:2388:A:H5' | 22:BA:2389:G:OP2 | 1.84 | 0.78 |
| 25:BD:101:PHE:HE2 | 25:BD:203:VAL:HG22 | 1.47 | 0.78 |
| 30:BI:3:LYS:HD2 | 30:BI:4:VAL:HG23 | 1.66 | 0.78 |
| 38:BQ:85:ALA:O | 38:BQ:86:SER:C | 2.20 | 0.78 |
| 11:CK:126:ARG:HB2 | 21:CU:33:ARG:HD2 | 1.65 | 0.78 |
| 57:DA:919:U:H2' | 57:DA:920:A:C8 | 2.18 | 0.78 |
| 25:DD:53:GLY:HA3 | 25:DD:77:ARG:HG3 | 1.66 | 0.78 |
| 37:DP:50:ARG:HA | 37:DP:57:ALA:O | 1.82 | 0.78 |
| 24:BC:173:LEU:HD22 | 24:BC:183:VAL:HG21 | 1.66 | 0.77 |
| 53:CA:1144:G:H21 | 53:CA:1146:A:H62 | 1.31 | 0.77 |
| 53:CA:1382:C:O2' | 53:CA:1383:C:H5' | 1.83 | 0.77 |
| 57:DA:2149:U:O2' | 57:DA:2150:C:H6 | 1.65 | 0.77 |
| 58:DB:5:U:H2' | 58:DB:6:G:C8 | 2.18 | 0.77 |
| 26:DE:126:VAL:HG21 | 26:DE:134:LEU:HD13 | 1.66 | 0.77 |
| 1:AA:259:G:H2' | 1:AA:260:G:H8 | 1.48 | 0.77 |
| 1:AA:497:G:O2' | 1:AA:498:A:H5' | 1.84 | 0.77 |
| 22:BA:250:G:H2' | 22:BA:251:A:C8 | 2.18 | 0.77 |
| 22:BA:513:A:O2' | 22:BA:514:A:H5' | 1.83 | 0.77 |
| 53:CA:77:A:H2' | 53:CA:78:A:C8 | 2.19 | 0.77 |
| 53:CA:495:A:H4' | 53:CA:496:A:O5' | 1.81 | 0.77 |
| 10:CJ:11:LYS:HB3 | 10:CJ:71:LEU:HD13 | 1.66 | 0.77 |
| 57:DA:449:A:O2' | 57:DA:450:G:H5' | 1.84 | 0.77 |
| 57:DA:2091:C:C4 | 57:DA:2092:U:C4 | 2.73 | 0.77 |
| 25:DD:68:PHE:HB3 | 25:DD:73:VAL:HA | 1.64 | 0.77 |
| 5:AE:81:GLN:HG2 | 5:AE:149:PRO:HG3 | 1.67 | 0.77 |
| 22:BA:276:U:O2' | 22:BA:278:A:N7 | 2.17 | 0.77 |
| 27:BF:40:GLY:CA | 27:BF:84:ILE:HD11 | 2.15 | 0.77 |
| 53:CA:120:A:H3' | 53:CA:121:U:H5'' | 1.65 | 0.77 |
| 12:CL:79:ILE:HD12 | 12:CL:96:THR:HG21 | 1.64 | 0.77 |
| 57:DA:921:C:C2' | 57:DA:922:C:H5' | 2.14 | 0.77 |
| 57:DA:1024:G:H3' | 57:DA:1025:G:C5' | 2.14 | 0.77 |
| 57:DA:1097:U:H2' | 57:DA:1098:A:O4' | 1.85 | 0.77 |
| 57:DA:1117:C:O2' | 57:DA:1118:C:C5' | 2.33 | 0.77 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:2143:C:H5' | 57:DA:2144:G:OP2 | 1.83 | 0.77 |
| 57:DA:2232:C:P | 45:DX:26:ARG:HH12 | 2.06 | 0.77 |
| 57:DA:2384:U:H5'' | 57:DA:2386:A:OP1 | 1.83 | 0.77 |
| 57:DA:2728:U:O2' | 57:DA:2729:G:H8 | 1.67 | 0.77 |
| 58:DB:57:A:C4 | 59:DF:25:MET:HB2 | 2.19 | 0.77 |
| 29:DH:80:ILE:HB | 29:DH:101:ASP:CB | 2.14 | 0.77 |
| 1:AA:1218:C:H2' | 1:AA:1219:A:C8 | 2.19 | 0.77 |
| 17:AQ:51:GLU:HG3 | 17:AQ:74:LEU:HD21 | 1.67 | 0.77 |
| 21:AU:39:LYS:H | 21:AU:40:PRO:HD2 | 1.49 | 0.77 |
| 22:BA:1020:A:H4' | 22:BA:1021:A:O5' | 1.82 | 0.77 |
| 22:BA:1784:A:H4' | 22:BA:1785:A:O5' | 1.81 | 0.77 |
| 25:BD:16:THR:HG23 | 25:BD:18:ASP:OD1 | 1.83 | 0.77 |
| 37:BP:95:LYS:HG2 | 37:BP:97:TYR:CZ | 2.18 | 0.77 |
| 53:CA:983:A:O2' | 53:CA:984:C:H5' | 1.83 | 0.77 |
| 57:DA:67:U:H2' | 57:DA:68:G:H8 | 1.49 | 0.77 |
| 34:DM:17:ASN:HB3 | 34:DM:38:ARG:NH2 | 1.98 | 0.77 |
| 22:BA:2680:U:P | 25:BD:114:LYS:HE2 | 2.23 | 0.77 |
| 30:BI:104:GLN:O | 30:BI:105:LEU:HB2 | 1.84 | 0.77 |
| 31:BJ:73:VAL:HG23 | 31:BJ:74:TYR:H | 1.48 | 0.77 |
| 32:BK:18:ARG:HG3 | 32:BK:18:ARG:NH1 | 1.91 | 0.77 |
| 38:BQ:63:ARG:HH22 | 38:BQ:96:ASP:N | 1.82 | 0.77 |
| 44:BW:8:SER:O | 44:BW:9:THR:HG22 | 1.83 | 0.77 |
| 31:DJ:20:ALA:HA | 31:DJ:23:LYS:HG3 | 1.64 | 0.77 |
| 31:DJ:89:PHE:HE2 | 31:DJ:100:VAL:HG11 | 1.48 | 0.77 |
| 37:DP:91:VAL:HG11 | 37:DP:96:LEU:HD11 | 1.65 | 0.77 |
| 1:AA:619:U:H3 | 4:AD:130:ASN:HB3 | 1.49 | 0.77 |
| 4:AD:172:VAL:HG22 | 4:AD:173:ASP:H | 1.48 | 0.77 |
| 7:AG:26:VAL:HG12 | 7:AG:42:VAL:HG21 | 1.65 | 0.77 |
| 38:BQ:111:LYS:HE3 | 39:BR:50:GLY:HA2 | 1.65 | 0.77 |
| 53:CA:239:U:H6 | 53:CA:239:U:C5' | 1.97 | 0.77 |
| 53:CA:858:G:N7 | 63:CA:1822:HOH:O | 2.18 | 0.77 |
| 11:CK:81:LEU:HD11 | 11:CK:104:PHE:CD2 | 2.18 | 0.77 |
| 57:DA:675:A:OP1 | 26:DE:60:TRP:HZ2 | 1.67 | 0.77 |
| 57:DA:1181:U:H2' | 57:DA:1182:G:H8 | 1.49 | 0.77 |
| 32:DK:54:LYS:H | 32:DK:54:LYS:HD2 | 1.49 | 0.77 |
| 2:AB:46:VAL:HB | 2:AB:47:PRO:HD3 | 1.67 | 0.77 |
| 4:AD:53:GLN:HE21 | 4:AD:202:LEU:HA | 1.49 | 0.77 |
| 12:AL:43:LYS:HB2 | 12:AL:44:PRO:CD | 2.15 | 0.77 |
| 16:AP:22:ALA:HA | 16:AP:33:ILE:HG13 | 1.65 | 0.77 |
| 22:BA:321:U:HO2' | 22:BA:340:A:HO2' | 1.32 | 0.77 |
| 22:BA:2502:G:H5' | 22:BA:2503:A:C5' | 2.14 | 0.77 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:CA:313:A:H2' | 53:CA:314:C:C6 | 2.20 | 0.77 |
| 2:CB:130:LYS:HA | 2:CB:133:ALA:HB3 | 1.65 | 0.77 |
| 57:DA:1049:C:O2' | 57:DA:1050:A:H5' | 1.85 | 0.77 |
| 52:D4:19:ARG:O | 52:D4:20:ASP:HB2 | 1.85 | 0.77 |
| 2:AB:89:PHE:HB3 | 2:AB:149:GLY:CA | 2.14 | 0.77 |
| 15:AO:29:ALA:HA | 15:AO:84:LEU:HD21 | 1.66 | 0.77 |
| 22:BA:284:U:H2' | 22:BA:285:G:H8 | 1.49 | 0.77 |
| 22:BA:973:A:O4' | 22:BA:1188:U:C6 | 2.37 | 0.77 |
| 24:BC:212:TRP:HD1 | 24:BC:212:TRP:O | 1.67 | 0.77 |
| 53:CA:1285:A:H4' | 53:CA:1286:U:OP1 | 1.84 | 0.77 |
| 53:CA:1391:U:H2' | 53:CA:1392:G:C8 | 2.20 | 0.77 |
| 3:CC:140:ALA:O | 3:CC:145:ALA:HB3 | 1.85 | 0.77 |
| 57:DA:279:A:N6 | 57:DA:361:G:H1' | 2.00 | 0.77 |
| 57:DA:320:A:H4' | 57:DA:322:A:N7 | 2.00 | 0.77 |
| 58:DB:65:U:H3' | 58:DB:108:A:N6 | 1.99 | 0.77 |
| 26:DE:149:ILE:O | 26:DE:188:MET:HA | 1.83 | 0.77 |
| 38:DQ:60:TRP:O | 38:DQ:63:ARG:HG2 | 1.85 | 0.77 |
| 1:AA:57:G:H2' | 1:AA:58:C:C6 | 2.20 | 0.77 |
| 1:AA:1441:A:H62 | 1:AA:1461:G:N2 | 1.83 | 0.77 |
| 39:BR:24:LYS:HA | 39:BR:94:THR:HG23 | 1.66 | 0.77 |
| 53:CA:79:G:H2' | 53:CA:80:A:H8 | 1.49 | 0.77 |
| 57:DA:915:C:O2' | 57:DA:916:G:H5' | 1.84 | 0.77 |
| 57:DA:1364:G:N7 | 45:DX:1:SER:HB2 | 1.99 | 0.77 |
| 57:DA:1967:C:H6 | 57:DA:1967:C:H5'' | 1.49 | 0.77 |
| 44:DW:13:ARG:HG3 | 44:DW:14:ASP:H | 1.49 | 0.77 |
| 53:CA:209:U:H5'' | 53:CA:210:C:OP2 | 1.85 | 0.77 |
| 4:CD:2:ARG:NH2 | 4:CD:114:ARG:HD3 | 1.98 | 0.77 |
| 8:CH:75:GLN:O | 8:CH:126:CYS:HB2 | 1.85 | 0.77 |
| 57:DA:83:A:H61 | 57:DA:101:A:H5' | 1.48 | 0.77 |
| 57:DA:1346:G:O2' | 57:DA:1347:A:H8 | 1.66 | 0.77 |
| 57:DA:2420:C:OP1 | 51:D3:33:THR:HB | 1.85 | 0.77 |
| 1:AA:87:C:H2' | 1:AA:88:U:H6 | 1.50 | 0.76 |
| 1:AA:667:G:H4' | 15:AO:50:HIS:CE1 | 2.20 | 0.76 |
| 10:AJ:35:GLN:HG2 | 10:AJ:77:VAL:HB | 1.67 | 0.76 |
| 22:BA:1257:C:H5' | 26:BE:78:TRP:CZ3 | 2.19 | 0.76 |
| 25:BD:110:THR:HG23 | 25:BD:171:THR:HG22 | 1.66 | 0.76 |
| 28:BG:84:LYS:HD2 | 28:BG:133:LYS:HG2 | 1.65 | 0.76 |
| 32:BK:71:ARG:HG3 | 32:BK:106:GLU:OE2 | 1.85 | 0.76 |
| 2:CB:184:ALA:O | 2:CB:199:ILE:HG12 | 1.86 | 0.76 |
| 5:CE:103:GLY:HA3 | 5:CE:121:ASN:HA | 1.68 | 0.76 |
| 57:DA:1534:U:H6 | 57:DA:1538:G:H1 | 1.32 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:2752:C:H2' | 57:DA:2753:A:H8 | 1.48 | 0.76 |
| 24:DC:131:MET:HA | 24:DC:134:ILE:HG12 | 1.67 | 0.76 |
| 45:DX:31:ASN:HD22 | 45:DX:31:ASN:N | 1.80 | 0.76 |
| 7:AG:110:ARG:NH1 | 7:AG:122:GLU:HG2 | 2.01 | 0.76 |
| 22:BA:587:C:H42 | 33:BL:33:ARG:HD3 | 1.49 | 0.76 |
| 22:BA:946:C:O2' | 22:BA:947:A:H5' | 1.85 | 0.76 |
| 22:BA:1558:C:H4' | 22:BA:1559:U:O5' | 1.83 | 0.76 |
| 39:BR:16:GLU:HA | 39:BR:98:ILE:HG22 | 1.67 | 0.76 |
| 54:CG:14:ASP:HB3 | 54:CG:18:GLY:H | 1.49 | 0.76 |
| 9:CI:23:GLY:H | 9:CI:60:LEU:HA | 1.50 | 0.76 |
| 28:DG:162:ARG:H | 28:DG:162:ARG:HD2 | 1.49 | 0.76 |
| 33:DL:20:GLY:HA2 | 33:DL:28:GLY:HA2 | 1.66 | 0.76 |
| 40:DS:8:ARG:O | 40:DS:9:HIS:HB2 | 1.85 | 0.76 |
| 47:DZ:30:ARG:NH2 | 47:DZ:33:HIS:HB2 | 2.00 | 0.76 |
| 1:AA:270:A:H2' | 1:AA:271:C:C6 | 2.19 | 0.76 |
| 1:AA:1236:A:H4' | 1:AA:1304:G:H4' | 1.66 | 0.76 |
| 22:BA:1060:U:O4' | 22:BA:1062:G:H5'' | 1.84 | 0.76 |
| 22:BA:1069:A:O2' | 22:BA:1070:A:H5'' | 1.85 | 0.76 |
| 47:BZ:12:ALA:HA | 47:BZ:15:ARG:HD3 | 1.67 | 0.76 |
| 53:CA:792:A:O2' | 53:CA:794:A:N7 | 2.18 | 0.76 |
| 2:CB:46:VAL:HG13 | 2:CB:47:PRO:HD3 | 1.67 | 0.76 |
| 21:CU:39:LYS:H | 21:CU:40:PRO:HD2 | 1.50 | 0.76 |
| 57:DA:379:G:C6 | 57:DA:396:G:O6 | 2.39 | 0.76 |
| 57:DA:781:A:H5'' | 57:DA:782:A:OP1 | 1.86 | 0.76 |
| 57:DA:1027:A:O2' | 57:DA:1028:A:C8 | 2.38 | 0.76 |
| 57:DA:1905:C:O4' | 57:DA:1928:A:C2 | 2.39 | 0.76 |
| 57:DA:1993:U:H2' | 57:DA:1994:C:H6 | 1.50 | 0.76 |
| 57:DA:2136:G:H2' | 57:DA:2137:U:C5 | 2.20 | 0.76 |
| 57:DA:2311:A:H3' | 57:DA:2312:U:H6 | 1.50 | 0.76 |
| 36:DO:23:ALA:O | 36:DO:42:PRO:HG3 | 1.84 | 0.76 |
| 41:DT:44:LYS:O | 41:DT:48:GLN:HG2 | 1.85 | 0.76 |
| 1:AA:923:A:H5'' | 5:AE:25:LYS:HE2 | 1.65 | 0.76 |
| 1:AA:1253:G:H2' | 1:AA:1254:A:H8 | 1.50 | 0.76 |
| 2:AB:185:ILE:HA | 2:AB:199:ILE:HB | 1.68 | 0.76 |
| 3:AC:143:LEU:H | 3:AC:143:LEU:HD22 | 1.51 | 0.76 |
| 22:BA:323:C:H2' | 26:BE:163:ASN:OD1 | 1.85 | 0.76 |
| 22:BA:767:U:O2' | 22:BA:768:G:H5' | 1.86 | 0.76 |
| 22:BA:2579:C:OP1 | 63:BA:3541:HOH:O | 2.02 | 0.76 |
| 44:BW:18:LYS:HA | 44:BW:36:ILE:CG1 | 2.11 | 0.76 |
| 53:CA:251:G:H4' | 53:CA:252:U:C5' | 2.15 | 0.76 |
| 53:CA:274:A:O2' | 53:CA:275:G:H8 | 1.68 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:CA:1081:A:H5' | 5:CE:22:LYS:HD2 | 1.68 | 0.76 |
| 8:CH:68:LYS:HD3 | 8:CH:69:ALA:N | 2.01 | 0.76 |
| 57:DA:1490:A:C8 | 24:DC:73:ILE:HD12 | 2.20 | 0.76 |
| 58:DB:86:G:H2' | 58:DB:87:U:H5'' | 1.67 | 0.76 |
| 24:DC:106:PRO:HB3 | 24:DC:141:HIS:HE1 | 1.49 | 0.76 |
| 26:DE:170:ARG:HH22 | 26:DE:176:ASP:HB2 | 1.50 | 0.76 |
| 37:DP:57:ALA:HA | 37:DP:75:THR:HB | 1.64 | 0.76 |
| 40:DS:70:LYS:H | 40:DS:70:LYS:HE3 | 1.51 | 0.76 |
| 1:AA:475:C:H2' | 1:AA:476:U:H6 | 1.50 | 0.76 |
| 9:AI:34:LEU:HD11 | 9:AI:47:VAL:HG21 | 1.67 | 0.76 |
| 14:AN:44:VAL:HG23 | 14:AN:45:LEU:H | 1.51 | 0.76 |
| 22:BA:2352:A:N1 | 44:BW:30:VAL:HG11 | 2.01 | 0.76 |
| 22:BA:2585:U:O2' | 22:BA:2586:U:H5' | 1.85 | 0.76 |
| 26:BE:44:ARG:HH21 | 26:BE:44:ARG:HG3 | 1.50 | 0.76 |
| 30:BI:7:TYR:HB3 | 30:BI:58:ILE:H | 1.50 | 0.76 |
| 34:BM:66:ARG:NH1 | 34:BM:101:VAL:HG11 | 2.01 | 0.76 |
| 40:BS:96:ILE:O | 40:BS:96:ILE:HG13 | 1.85 | 0.76 |
| 44:BW:30:VAL:HG22 | 44:BW:30:VAL:O | 1.84 | 0.76 |
| 2:CB:185:ILE:HG22 | 2:CB:199:ILE:HG13 | 1.66 | 0.76 |
| 54:CG:71:THR:HG23 | 54:CG:72:VAL:HG23 | 1.68 | 0.76 |
| 12:CL:19:ASN:H | 12:CL:19:ASN:HD22 | 1.33 | 0.76 |
| 15:CO:38:LEU:O | 15:CO:41:HIS:HB3 | 1.86 | 0.76 |
| 56:CP:48:GLU:HG3 | 56:CP:51:ARG:HH21 | 1.50 | 0.76 |
| 21:CU:36:PHE:HD1 | 21:CU:40:PRO:HB3 | 1.50 | 0.76 |
| 57:DA:206:U:HO2' | 57:DA:207:A:H8 | 1.30 | 0.76 |
| 38:DQ:57:ARG:NH1 | 38:DQ:92:LYS:HE2 | 2.00 | 0.76 |
| 47:DZ:16:LEU:HD22 | 47:DZ:16:LEU:N | 2.00 | 0.76 |
| 1:AA:519:C:H2' | 1:AA:520:A:C8 | 2.20 | 0.76 |
| 22:BA:272:A:O2' | 22:BA:273:G:H8 | 1.67 | 0.76 |
| 23:BB:45:A:H2' | 23:BB:46:A:C8 | 2.20 | 0.76 |
| 25:BD:174:SER:O | 25:BD:175:LEU:HB2 | 1.84 | 0.76 |
| 38:BQ:109:VAL:HG12 | 38:BQ:113:LYS:HD2 | 1.68 | 0.76 |
| 53:CA:575:G:H4' | 53:CA:576:C:O5' | 1.85 | 0.76 |
| 3:CC:36:PHE:CE1 | 14:CN:91:GLU:HB3 | 2.20 | 0.76 |
| 57:DA:859:G:O2' | 57:DA:860:U:OP2 | 2.02 | 0.76 |
| 57:DA:1270:C:H2' | 57:DA:1648:U:H5'' | 1.68 | 0.76 |
| 57:DA:1345:C:O2' | 57:DA:1346:G:H8 | 1.69 | 0.76 |
| 57:DA:1358:G:H2' | 57:DA:1372:U:O4 | 1.85 | 0.76 |
| 34:DM:96:ILE:HD13 | 34:DM:102:LEU:HD11 | 1.67 | 0.76 |
| 35:DN:24:MET:HG2 | 35:DN:44:LEU:HD22 | 1.66 | 0.76 |
| 1:AA:1151:A:HO2' | 1:AA:1152:A:H8 | 0.80 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 18:AR:40:PRO:HB2 | 18:AR:42:ARG:HG2 | 1.67 | 0.76 |
| 22:BA:996:A:C2 | 22:BA:997:G:C8 | 2.73 | 0.76 |
| 28:BG:10:VAL:O | 28:BG:10:VAL:HG23 | 1.84 | 0.76 |
| 31:BJ:21:THR:HG22 | 31:BJ:22:GLY:N | 2.00 | 0.76 |
| 53:CA:327:A:O2' | 53:CA:329:A:H5'' | 1.84 | 0.76 |
| 5:CE:131:ASN:HD22 | 5:CE:132:PRO:HD2 | 1.49 | 0.76 |
| 1:AA:486:U:O2' | 1:AA:487:A:H5' | 1.85 | 0.76 |
| 22:BA:1347:A:O2' | 22:BA:1348:C:H5' | 1.86 | 0.76 |
| 22:BA:1434:A:H2' | 22:BA:1435:G:H8 | 1.51 | 0.76 |
| 24:BC:230:PRO:HD2 | 24:BC:246:PRO:HA | 1.68 | 0.76 |
| 32:BK:18:ARG:HH11 | 32:BK:18:ARG:CG | 1.97 | 0.76 |
| 38:BQ:20:ALA:HA | 38:BQ:23:TYR:CE1 | 2.21 | 0.76 |
| 38:BQ:86:SER:HB2 | 39:BR:50:GLY:O | 1.86 | 0.76 |
| 44:BW:47:GLY:O | 44:BW:49:ASN:N | 2.18 | 0.76 |
| 44:BW:51:GLY:HA3 | 44:BW:59:PHE:HE2 | 1.47 | 0.76 |
| 5:CE:55:VAL:O | 5:CE:59:ILE:HG22 | 1.86 | 0.76 |
| 56:CP:74:LEU:O | 56:CP:78:VAL:HG23 | 1.85 | 0.76 |
| 57:DA:510:C:H2' | 57:DA:511:U:C6 | 2.21 | 0.76 |
| 57:DA:1688:U:O2 | 57:DA:1700:A:H5' | 1.86 | 0.76 |
| 57:DA:2631:G:H2' | 57:DA:2632:A:H5'' | 1.66 | 0.76 |
| 4:AD:47:LEU:HD21 | 4:AD:52:VAL:HG12 | 1.68 | 0.76 |
| 53:CA:624:C:O2' | 56:CP:10:GLY:HA2 | 1.84 | 0.76 |
| 12:CL:109:ARG:HB2 | 12:CL:118:VAL:HG21 | 1.68 | 0.76 |
| 57:DA:1327:A:H2' | 57:DA:1328:A:C8 | 2.21 | 0.76 |
| 57:DA:1430:G:H2' | 57:DA:1431:A:C8 | 2.20 | 0.76 |
| 57:DA:2680:U:OP2 | 25:DD:114:LYS:HD3 | 1.86 | 0.76 |
| 24:DC:52:HIS:HA | 24:DC:216:ARG:HB2 | 1.67 | 0.76 |
| 59:DF:49:LEU:HA | 59:DF:52:ALA:HB3 | 1.68 | 0.76 |
| 32:DK:18:ARG:HB2 | 32:DK:45:GLU:HB2 | 1.67 | 0.76 |
| 38:BQ:48:ASP:HA | 38:BQ:51:GLN:HB2 | 1.68 | 0.76 |
| 57:DA:794:A:H2' | 57:DA:795:C:C6 | 2.21 | 0.76 |
| 25:DD:10:GLY:O | 25:DD:11:MET:HB2 | 1.86 | 0.76 |
| 35:DN:63:ARG:O | 35:DN:67:PHE:HB2 | 1.86 | 0.76 |
| 23:BB:7:G:O2' | 36:BO:38:GLN:NE2 | 2.19 | 0.75 |
| 53:CA:511:C:O2' | 53:CA:512:U:H5'' | 1.84 | 0.75 |
| 4:CD:58:GLN:O | 4:CD:62:ARG:HG2 | 1.86 | 0.75 |
| 15:CO:47:LYS:HD2 | 15:CO:47:LYS:H | 1.49 | 0.75 |
| 57:DA:456:C:O2' | 41:DT:73:ARG:HG3 | 1.85 | 0.75 |
| 57:DA:976:G:H2' | 57:DA:977:G:H8 | 1.49 | 0.75 |
| 57:DA:1051:G:H5' | 57:DA:2752:C:H1' | 1.66 | 0.75 |
| 38:BQ:63:ARG:CZ | 38:BQ:96:ASP:HA | 2.16 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 44:BW:39:GLN:NE2 | 44:BW:43:LYS:H | 1.84 | 0.75 |
| 46:BY:45:GLN:O | 46:BY:46:VAL:HB | 1.86 | 0.75 |
| 53:CA:1526:G:OP1 | 21:CU:38:GLU:HG3 | 1.86 | 0.75 |
| 57:DA:84:A:C4 | 57:DA:103:A:N6 | 2.54 | 0.75 |
| 32:DK:71:ARG:HB3 | 32:DK:72:PRO:CD | 2.13 | 0.75 |
| 35:DN:28:LEU:HD21 | 35:DN:115:LEU:HD21 | 1.68 | 0.75 |
| 22:BA:65:U:H2' | 22:BA:66:C:H6 | 1.50 | 0.75 |
| 22:BA:2148:G:H2' | 22:BA:2149:U:O4' | 1.86 | 0.75 |
| 38:BQ:111:LYS:CE | 39:BR:50:GLY:HA2 | 2.17 | 0.75 |
| 20:CT:22:SER:O | 20:CT:26:MET:HB2 | 1.85 | 0.75 |
| 57:DA:995:C:O2 | 31:DJ:3:THR:HG23 | 1.86 | 0.75 |
| 57:DA:1038:G:C2 | 57:DA:1039:A:C8 | 2.74 | 0.75 |
| 57:DA:1327:A:H2' | 57:DA:1328:A:H8 | 1.50 | 0.75 |
| 57:DA:1812:U:H2' | 57:DA:1813:G:H8 | 1.51 | 0.75 |
| 5:AE:11:GLN:HE21 | 5:AE:11:GLN:HA | 1.52 | 0.75 |
| 24:BC:117:SER:HB2 | 24:BC:128:THR:HB | 1.68 | 0.75 |
| 38:BQ:26:ALA:HB1 | 38:BQ:30:VAL:HG23 | 1.68 | 0.75 |
| 40:BS:84:ARG:HB2 | 40:BS:96:ILE:CD1 | 2.15 | 0.75 |
| 53:CA:348:G:H2' | 53:CA:349:A:C8 | 2.18 | 0.75 |
| 53:CA:1254:A:H2' | 53:CA:1255:G:C8 | 2.21 | 0.75 |
| 57:DA:491:G:H2' | 57:DA:492:A:C8 | 2.21 | 0.75 |
| 57:DA:1024:G:C3' | 57:DA:1025:G:H5'' | 2.16 | 0.75 |
| 57:DA:1391:U:H4' | 41:DT:19:LYS:NZ | 2.02 | 0.75 |
| 57:DA:1490:A:H8 | 24:DC:73:ILE:HD12 | 1.51 | 0.75 |
| 57:DA:1827:U:H4' | 57:DA:1970:A:O2' | 1.85 | 0.75 |
| 25:DD:105:LYS:HA | 25:DD:177:VAL:HG22 | 1.68 | 0.75 |
| 41:DT:29:THR:H | 41:DT:87:LEU:HB2 | 1.50 | 0.75 |
| 47:DZ:4:ILE:HD12 | 47:DZ:58:GLU:HA | 1.66 | 0.75 |
| 14:AN:22:LYS:HG3 | 14:AN:23:ARG:H | 1.52 | 0.75 |
| 22:BA:1927:A:H2' | 22:BA:1928:A:C8 | 2.22 | 0.75 |
| 44:BW:23:LYS:HD2 | 44:BW:24:ARG:N | 2.01 | 0.75 |
| 53:CA:532:A:C8 | 3:CC:192:TYR:CE2 | 2.75 | 0.75 |
| 57:DA:286:U:H2' | 57:DA:287:G:C8 | 2.22 | 0.75 |
| 57:DA:739:A:O2' | 57:DA:740:C:C5 | 2.40 | 0.75 |
| 57:DA:1534:U:H6 | 57:DA:1538:G:N1 | 1.84 | 0.75 |
| 57:DA:1929:G:H4' | 57:DA:1930:G:OP1 | 1.87 | 0.75 |
| 24:DC:145:MET:HE2 | 24:DC:181:ARG:HH22 | 1.52 | 0.75 |
| 59:DF:41:GLU:HG2 | 59:DF:42:ALA:H | 1.51 | 0.75 |
| 47:DZ:23:LEU:HD12 | 47:DZ:28:LEU:HD21 | 1.68 | 0.75 |
| 14:AN:40:ARG:NH1 | 14:AN:44:VAL:HG11 | 2.01 | 0.75 |
| 21:AU:16:ARG:HH11 | 21:AU:19:LYS:CG | 2.00 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:1079:C:N4 | 22:BA:1088:A:H2 | 1.84 | 0.75 |
| 22:BA:1707:G:H2' | 22:BA:1708:C:C6 | 2.21 | 0.75 |
| 53:CA:451:A:H4' | 53:CA:452:A:O5' | 1.85 | 0.75 |
| 53:CA:936:C:O2' | 53:CA:937:A:H8 | 1.68 | 0.75 |
| 53:CA:1329:A:H5'' | 55:CM:25:GLY:N | 2.00 | 0.75 |
| 53:CA:1493:A:H8 | 57:DA:1913:A:H61 | 1.33 | 0.75 |
| 8:CH:1:SER:HB3 | 8:CH:3:GLN:HG3 | 1.69 | 0.75 |
| 57:DA:2210:U:H4' | 57:DA:2211:A:O5' | 1.84 | 0.75 |
| 24:DC:173:LEU:HD22 | 24:DC:181:ARG:O | 1.87 | 0.75 |
| 42:DU:45:GLN:HA | 42:DU:45:GLN:HE21 | 1.49 | 0.75 |
| 21:AU:9:GLU:CG | 21:AU:10:PRO:HD3 | 2.13 | 0.75 |
| 22:BA:479:A:O2' | 22:BA:481:G:H5' | 1.86 | 0.75 |
| 22:BA:636:G:C5 | 33:BL:111:ILE:HD11 | 2.22 | 0.75 |
| 22:BA:2602:A:H4' | 22:BA:2603:G:OP2 | 1.85 | 0.75 |
| 29:BH:14:SER:OG | 29:BH:17:ASP:HB2 | 1.87 | 0.75 |
| 53:CA:969:A:O2' | 53:CA:970:C:H5' | 1.87 | 0.75 |
| 4:CD:104:MET:HG2 | 4:CD:104:MET:O | 1.86 | 0.75 |
| 5:CE:13:LYS:HE2 | 5:CE:13:LYS:HA | 1.68 | 0.75 |
| 57:DA:160:A:N6 | 57:DA:167:A:H1' | 2.01 | 0.75 |
| 57:DA:656:G:H2' | 57:DA:657:U:C6 | 2.22 | 0.75 |
| 57:DA:1070:A:H5' | 57:DA:1071:G:H5'' | 1.68 | 0.75 |
| 57:DA:1809:A:O2' | 57:DA:1810:A:C8 | 2.39 | 0.75 |
| 57:DA:2204:G:H5' | 24:DC:149:LYS:HG3 | 1.69 | 0.75 |
| 57:DA:2324:U:H5' | 57:DA:2325:G:C5' | 2.16 | 0.75 |
| 32:DK:7:MET:HA | 32:DK:7:MET:CE | 2.16 | 0.75 |
| 35:DN:56:LYS:HD3 | 35:DN:88:ALA:HA | 1.67 | 0.75 |
| 1:AA:792:A:O2' | 1:AA:794:A:N7 | 2.18 | 0.75 |
| 1:AA:1279:G:H2' | 1:AA:1279:G:N3 | 2.02 | 0.75 |
| 22:BA:1491:G:O2' | 22:BA:1492:G:H5' | 1.87 | 0.75 |
| 36:BO:41:ALA:HB2 | 36:BO:48:LEU:HD21 | 1.67 | 0.75 |
| 37:BP:50:ARG:CB | 37:BP:57:ALA:N | 2.48 | 0.75 |
| 47:BZ:35:VAL:HG21 | 47:BZ:37:ARG:NH1 | 2.02 | 0.75 |
| 53:CA:247:G:O6 | 53:CA:278:G:C6 | 2.40 | 0.75 |
| 53:CA:252:U:H2' | 53:CA:253:A:C8 | 2.22 | 0.75 |
| 5:CE:98:ALA:HB2 | 5:CE:123:LEU:HG | 1.68 | 0.75 |
| 6:CF:25:TYR:O | 6:CF:29:ILE:HD13 | 1.86 | 0.75 |
| 28:DG:106:LEU:HB2 | 28:DG:108:PHE:HE1 | 1.51 | 0.75 |
| 32:DK:25:LEU:HD23 | 32:DK:25:LEU:H | 1.52 | 0.75 |
| 22:BA:289:G:H2' | 22:BA:290:U:O4' | 1.87 | 0.75 |
| 50:B2:24:THR:HG23 | 50:B2:27:GLY:H | 1.50 | 0.75 |
| 52:B4:1:MET:HB3 | 52:B4:34:LYS:HG2 | 1.68 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 53:CA:33:A:H2' | 53:CA:34:C:C6 | 2.20 | 0.75 |
| 53:CA:198:G:HO2' | 53:CA:199:A:H8 | 1.34 | 0.75 |
| 53:CA:920:U:H2' | 53:CA:921:U:H6 | 1.52 | 0.75 |
| 4:CD:66:VAL:HG22 | 4:CD:96:ARG:HH11 | 1.52 | 0.75 |
| 5:CE:44:ARG:HG2 | 5:CE:72:ASN:HA | 1.68 | 0.75 |
| 57:DA:1906:G:H8 | 57:DA:1929:G:H2' | 1.50 | 0.75 |
| 36:DO:17:LYS:HE3 | 36:DO:17:LYS:O | 1.86 | 0.75 |
| 51:D3:3:ILE:HG21 | 51:D3:62:PRO:HG2 | 1.68 | 0.75 |
| 53:CA:345:C:H4' | 53:CA:346:G:H5'' | 1.69 | 0.74 |
| 2:CB:74:ALA:HB1 | 2:CB:206:ILE:HD11 | 1.67 | 0.74 |
| 57:DA:480:A:H3' | 57:DA:481:G:C5' | 2.17 | 0.74 |
| 57:DA:1709:U:H2' | 57:DA:1710:G:H8 | 1.51 | 0.74 |
| 28:DG:112:VAL:HG13 | 28:DG:150:TYR:HE1 | 1.51 | 0.74 |
| 36:DO:23:ALA:HB1 | 36:DO:90:VAL:HG12 | 1.69 | 0.74 |
| 1:AA:60:A:H4' | 1:AA:61:G:O5' | 1.85 | 0.74 |
| 22:BA:2747:G:O2' | 28:BG:66:THR:HG22 | 1.87 | 0.74 |
| 34:BM:40:ARG:HB2 | 34:BM:93:VAL:HG21 | 1.69 | 0.74 |
| 44:BW:39:GLN:HG3 | 44:BW:42:THR:N | 2.01 | 0.74 |
| 10:CJ:15:HIS:CE1 | 10:CJ:68:ARG:HD3 | 2.21 | 0.74 |
| 57:DA:857:G:H1' | 44:DW:19:ARG:NE | 2.02 | 0.74 |
| 57:DA:1430:G:H2' | 57:DA:1431:A:H8 | 1.53 | 0.74 |
| 57:DA:1912:A:N6 | 57:DA:1917:U:H3 | 1.85 | 0.74 |
| 34:DM:7:THR:HG22 | 34:DM:9:PHE:H | 1.51 | 0.74 |
| 42:DU:35:VAL:HB | 42:DU:38:ILE:HD13 | 1.69 | 0.74 |
| 1:AA:61:G:H2' | 1:AA:62:U:C6 | 2.22 | 0.74 |
| 22:BA:1499:C:O2' | 22:BA:1500:G:H5' | 1.87 | 0.74 |
| 22:BA:2834:G:H2' | 22:BA:2879:A:N6 | 2.02 | 0.74 |
| 27:BF:133:GLU:H | 27:BF:150:GLY:CA | 1.99 | 0.74 |
| 34:BM:43:ALA:HA | 34:BM:46:ILE:HG13 | 1.67 | 0.74 |
| 49:B1:24:LYS:HE2 | 49:B1:52:LYS:HB2 | 1.67 | 0.74 |
| 53:CA:752:G:H1' | 53:CA:754:C:N4 | 2.02 | 0.74 |
| 57:DA:2392:A:C8 | 57:DA:2429:G:C2 | 2.75 | 0.74 |
| 57:DA:2720:U:H5'' | 37:DP:52:ARG:NH2 | 2.02 | 0.74 |
| 58:DB:44:G:H3' | 59:DF:91:ARG:NE | 2.01 | 0.74 |
| 58:DB:58:A:C2' | 58:DB:59:A:H8 | 1.99 | 0.74 |
| 38:DQ:87:VAL:HG11 | 39:DR:52:PRO:HG3 | 1.68 | 0.74 |
| 42:DU:92:VAL:HB | 42:DU:101:THR:CG2 | 2.17 | 0.74 |
| 1:AA:1239:A:H62 | 1:AA:1299:A:H62 | 1.35 | 0.74 |
| 8:AH:88:LYS:HA | 8:AH:91:LEU:HD12 | 1.68 | 0.74 |
| 22:BA:1936:A:H2 | 22:BA:1943:U:C5 | 2.05 | 0.74 |
| 22:BA:2210:U:H4' | 22:BA:2211:A:O5' | 1.88 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:BF:97:GLU:O | 27:BF:101:ARG:HG2 | 1.85 | 0.74 |
| 30:BI:78:LEU:HD13 | 30:BI:108:ILE:HG23 | 1.69 | 0.74 |
| 30:BI:115:ASP:O | 30:BI:116:MET:HG2 | 1.86 | 0.74 |
| 53:CA:181:A:H1' | 53:CA:182:A:C2 | 2.23 | 0.74 |
| 53:CA:491:G:O2' | 53:CA:492:C:H5' | 1.86 | 0.74 |
| 53:CA:501:C:H2' | 53:CA:502:A:H8 | 1.50 | 0.74 |
| 53:CA:818:G:O2' | 53:CA:819:A:H5'' | 1.87 | 0.74 |
| 57:DA:1429:G:HO2' | 57:DA:1430:G:H8 | 0.78 | 0.74 |
| 57:DA:1847:A:O2' | 57:DA:1848:A:C8 | 2.40 | 0.74 |
| 30:DI:57:VAL:HG12 | 30:DI:58:ILE:H | 1.51 | 0.74 |
| 1:AA:545:C:H5' | 4:AD:68:GLU:HG3 | 1.67 | 0.74 |
| 1:AA:601:G:H2' | 1:AA:602:A:C8 | 2.22 | 0.74 |
| 1:AA:1129:C:C5' | 9:AI:17:ARG:HH22 | 1.95 | 0.74 |
| 1:AA:1218:C:H2' | 1:AA:1219:A:H8 | 1.53 | 0.74 |
| 1:AA:1251:A:H2' | 1:AA:1252:A:C8 | 2.22 | 0.74 |
| 5:AE:89:THR:HG22 | 5:AE:90:GLY:H | 1.51 | 0.74 |
| 33:BL:93:ASN:ND2 | 33:BL:94:THR:N | 2.36 | 0.74 |
| 53:CA:501:C:H2' | 53:CA:502:A:C8 | 2.22 | 0.74 |
| 53:CA:537:G:H5'' | 12:CL:109:ARG:NH1 | 2.02 | 0.74 |
| 53:CA:563:A:H2' | 53:CA:563:A:N3 | 2.02 | 0.74 |
| 3:CC:39:ARG:HG2 | 3:CC:54:ILE:HD13 | 1.69 | 0.74 |
| 6:CF:3:HIS:ND1 | 6:CF:92:THR:HG23 | 2.02 | 0.74 |
| 6:CF:92:THR:O | 6:CF:93:LYS:HG2 | 1.87 | 0.74 |
| 54:CG:59:GLU:OE2 | 54:CG:63:VAL:HG23 | 1.86 | 0.74 |
| 57:DA:241:A:H4' | 57:DA:242:G:OP1 | 1.88 | 0.74 |
| 2:AB:17:HIS:CD2 | 2:AB:202:ASN:HD21 | 2.05 | 0.74 |
| 2:AB:131:LYS:O | 2:AB:135:MET:HB2 | 1.88 | 0.74 |
| 22:BA:1062:G:H2' | 22:BA:1063:G:C8 | 2.23 | 0.74 |
| 22:BA:1343:G:H2' | 22:BA:1344:U:C6 | 2.21 | 0.74 |
| 53:CA:1139:G:H4' | 53:CA:1140:C:O5' | 1.86 | 0.74 |
| 55:CM:78:ARG:HH21 | 55:CM:79:LEU:HD23 | 1.52 | 0.74 |
| 18:CR:21:ASP:HB3 | 18:CR:23:LYS:HG2 | 1.69 | 0.74 |
| 57:DA:286:U:H2' | 57:DA:287:G:H8 | 1.51 | 0.74 |
| 57:DA:464:U:H1' | 57:DA:686:U:C5 | 2.22 | 0.74 |
| 57:DA:686:U:O4 | 50:D2:12:ARG:HG3 | 1.87 | 0.74 |
| 57:DA:1439:A:N7 | 57:DA:1440:U:C1' | 2.51 | 0.74 |
| 24:DC:33:LEU:O | 24:DC:34:GLU:HB3 | 1.86 | 0.74 |
| 1:AA:47:C:H4' | 1:AA:48:C:O5' | 1.87 | 0.74 |
| 1:AA:1251:A:H2' | 1:AA:1252:A:H8 | 1.51 | 0.74 |
| 9:AI:83:THR:HG21 | 9:AI:102:PHE:HB3 | 1.70 | 0.74 |
| 24:BC:251:THR:HG22 | 24:BC:252:LYS:N | 2.01 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:BF:43:ILE:HG22 | 27:BF:82:TYR:CE1 | 2.23 | 0.74 |
| 42:BU:73:ASN:ND2 | 42:BU:76:THR:HG23 | 2.02 | 0.74 |
| 53:CA:413:G:N1 | 4:CD:32:LYS:HE3 | 2.03 | 0.74 |
| 53:CA:513:C:O2' | 53:CA:514:C:O4' | 2.05 | 0.74 |
| 4:CD:2:ARG:NH2 | 4:CD:114:ARG:HH11 | 1.86 | 0.74 |
| 10:CJ:40:ILE:HG22 | 10:CJ:42:LEU:HD12 | 1.69 | 0.74 |
| 56:CP:8:ARG:HB3 | 56:CP:28:ARG:NH1 | 2.03 | 0.74 |
| 57:DA:1494:A:H2' | 57:DA:1495:A:C8 | 2.22 | 0.74 |
| 57:DA:2311:A:H5' | 57:DA:2312:U:C6 | 2.23 | 0.74 |
| 57:DA:2321:U:O2 | 57:DA:2321:U:C3' | 2.35 | 0.74 |
| 24:DC:52:HIS:NE2 | 24:DC:218:THR:HG23 | 2.03 | 0.74 |
| 24:DC:67:LYS:HB3 | 24:DC:150:GLY:HA2 | 1.70 | 0.74 |
| 59:DF:12:VAL:HA | 59:DF:15:LEU:HB2 | 1.69 | 0.74 |
| 1:AA:601:G:H2' | 1:AA:602:A:H8 | 1.52 | 0.74 |
| 2:AB:148:GLY:O | 2:AB:151:LYS:HG2 | 1.87 | 0.74 |
| 30:BI:79:LEU:HD13 | 30:BI:135:MET:SD | 2.28 | 0.74 |
| 31:BJ:77:HIS:CD2 | 31:BJ:79:GLY:H | 2.04 | 0.74 |
| 35:BN:1:MET:O | 35:BN:2:ARG:HB2 | 1.86 | 0.74 |
| 40:BS:2:GLU:O | 40:BS:107:VAL:O | 2.05 | 0.74 |
| 53:CA:15:G:H2' | 53:CA:16:A:H8 | 1.52 | 0.74 |
| 10:CJ:12:ALA:HB3 | 10:CJ:18:ILE:HB | 1.69 | 0.74 |
| 11:CK:27:ASN:N | 11:CK:27:ASN:ND2 | 2.36 | 0.74 |
| 57:DA:774:G:O2' | 57:DA:775:G:H8 | 1.70 | 0.74 |
| 57:DA:996:A:H4' | 38:DQ:91:ARG:HD2 | 1.69 | 0.74 |
| 57:DA:1574:C:O5' | 57:DA:1574:C:H6 | 1.70 | 0.74 |
| 57:DA:2771:C:H2' | 57:DA:2772:C:H6 | 1.52 | 0.74 |
| 59:DF:28:PRO:HB2 | 59:DF:168:LEU:HD21 | 1.70 | 0.74 |
| 1:AA:299:G:H2' | 1:AA:300:A:C8 | 2.22 | 0.74 |
| 1:AA:1130:A:H5' | 1:AA:1130:A:H8 | 1.52 | 0.74 |
| 10:AJ:36:VAL:HG22 | 10:AJ:76:ILE:HG23 | 1.69 | 0.74 |
| 22:BA:1139:G:O2' | 22:BA:1140:C:H5' | 1.87 | 0.74 |
| 30:BI:126:ARG:HA | 30:BI:129:GLU:HB2 | 1.69 | 0.74 |
| 46:BY:56:LEU:O | 46:BY:57:LEU:HB3 | 1.86 | 0.74 |
| 53:CA:559:A:H4' | 53:CA:560:A:O5' | 1.86 | 0.74 |
| 53:CA:1322:C:O2' | 53:CA:1323:G:H5' | 1.87 | 0.74 |
| 53:CA:1408:A:C2 | 53:CA:1492:A:N6 | 2.55 | 0.74 |
| 21:CU:38:GLU:N | 21:CU:40:PRO:HD2 | 2.03 | 0.74 |
| 57:DA:784:G:O2' | 57:DA:785:G:H8 | 1.69 | 0.74 |
| 57:DA:1654:A:HO2' | 57:DA:1655:A:H8 | 0.80 | 0.74 |
| 44:DW:49:ASN:ND2 | 44:DW:81:ILE:HG23 | 2.01 | 0.74 |
| 6:AF:91:ARG:HG3 | 6:AF:92:THR:H | 1.52 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:AJ:42:LEU:HB3 | 10:AJ:43:PRO:HD2 | 1.70 | 0.74 |
| 22:BA:1019:U:H3 | 22:BA:1142:A:H62 | 1.33 | 0.74 |
| 28:BG:88:LEU:HD11 | 28:BG:95:ALA:HB2 | 1.70 | 0.74 |
| 41:BT:38:ALA:HB1 | 41:BT:43:ILE:HG22 | 1.67 | 0.74 |
| 44:BW:23:LYS:HG3 | 44:BW:24:ARG:O | 1.88 | 0.74 |
| 53:CA:320:A:O2' | 53:CA:1435:G:H1' | 1.88 | 0.74 |
| 53:CA:587:G:OP1 | 8:CH:80:PRO:HB3 | 1.88 | 0.74 |
| 54:CG:117:LEU:HA | 54:CG:121:ASN:HB2 | 1.68 | 0.74 |
| 11:CK:27:ASN:HD22 | 11:CK:27:ASN:H | 1.32 | 0.74 |
| 55:CM:13:HIS:HB3 | 55:CM:16:ILE:HB | 1.68 | 0.74 |
| 15:CO:25:GLU:HG2 | 15:CO:80:LEU:HG | 1.69 | 0.74 |
| 58:DB:42:C:O2' | 58:DB:43:C:H5' | 1.87 | 0.74 |
| 25:DD:125:TRP:CD1 | 25:DD:160:LYS:HB3 | 2.23 | 0.74 |
| 30:DI:113:ALA:HB1 | 30:DI:124:MET:SD | 2.28 | 0.74 |
| 1:AA:181:A:N6 | 1:AA:195:A:OP2 | 2.20 | 0.73 |
| 22:BA:1797:G:O3' | 24:BC:255:LYS:HA | 1.87 | 0.73 |
| 22:BA:1859:U:H2' | 22:BA:1860:G:H8 | 1.53 | 0.73 |
| 25:BD:99:GLU:HG3 | 25:BD:100:LEU:N | 2.03 | 0.73 |
| 53:CA:820:U:H4' | 53:CA:821:G:OP2 | 1.86 | 0.73 |
| 54:CG:68:VAL:HG22 | 54:CG:134:VAL:HG12 | 1.69 | 0.73 |
| 10:CJ:35:GLN:HG2 | 10:CJ:76:ILE:HG23 | 1.68 | 0.73 |
| 17:CQ:30:HIS:CE1 | 17:CQ:32:ILE:HG13 | 2.23 | 0.73 |
| 57:DA:320:A:H2' | 26:DE:131:THR:OG1 | 1.87 | 0.73 |
| 57:DA:989:G:H4' | 57:DA:990:A:OP1 | 1.86 | 0.73 |
| 1:AA:430:A:OP1 | 4:AD:8:LEU:HB2 | 1.88 | 0.73 |
| 11:AK:15:VAL:HG13 | 11:AK:78:ILE:HG23 | 1.68 | 0.73 |
| 24:BC:70:LYS:HE2 | 24:BC:73:ILE:HG13 | 1.69 | 0.73 |
| 53:CA:47:C:O2' | 53:CA:48:C:H5' | 1.87 | 0.73 |
| 53:CA:1038:C:H2' | 53:CA:1039:G:C8 | 2.22 | 0.73 |
| 9:CI:51:LEU:HB2 | 9:CI:56:MET:SD | 2.29 | 0.73 |
| 57:DA:92:U:H2' | 57:DA:93:G:O4' | 1.87 | 0.73 |
| 57:DA:142:A:O2' | 57:DA:143:C:H5' | 1.88 | 0.73 |
| 57:DA:616:A:H2' | 57:DA:617:G:C8 | 2.24 | 0.73 |
| 57:DA:1399:C:O2' | 57:DA:1400:U:H5' | 1.89 | 0.73 |
| 34:DM:35:ALA:HB3 | 34:DM:99:GLY:N | 2.03 | 0.73 |
| 44:DW:18:LYS:HD3 | 44:DW:19:ARG:N | 2.02 | 0.73 |
| 50:D2:31:LEU:HA | 50:D2:34:ARG:HB2 | 1.70 | 0.73 |
| 1:AA:49:U:O4 | 1:AA:365:U:H5 | 1.70 | 0.73 |
| 22:BA:1931:U:H5' | 22:BA:1931:U:H6 | 1.53 | 0.73 |
| 29:BH:38:PRO:HB2 | 29:BH:40:THR:HG23 | 1.69 | 0.73 |
| 41:BT:70:HIS:HB2 | 41:BT:73:ARG:O | 1.88 | 0.73 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:CA:1169:A:H2' | 53:CA:1170:A:C8 | 2.24 | 0.73 |
| 2:CB:49:PHE:HA | 2:CB:52:ALA:HB3 | 1.70 | 0.73 |
| 6:CF:3:HIS:HD2 | 6:CF:65:GLU:HG2 | 1.52 | 0.73 |
| 57:DA:503:A:H4' | 57:DA:504:A:O5' | 1.88 | 0.73 |
| 34:DM:72:PRO:O | 34:DM:73:ILE:HB | 1.87 | 0.73 |
| 1:AA:974:A:H4' | 1:AA:975:A:H5' | 1.67 | 0.73 |
| 1:AA:1225:A:H2' | 1:AA:1226:C:C5 | 2.23 | 0.73 |
| 1:AA:1239:A:N6 | 1:AA:1299:A:N6 | 2.35 | 0.73 |
| 8:AH:103:VAL:HG12 | 8:AH:124:ILE:HG22 | 1.69 | 0.73 |
| 13:AM:106:ARG:HH12 | 13:AM:109:LYS:HD3 | 1.53 | 0.73 |
| 25:BD:34:VAL:HG22 | 25:BD:94:GLN:H | 1.54 | 0.73 |
| 31:BJ:13:ARG:O | 31:BJ:14:ASP:HB2 | 1.88 | 0.73 |
| 31:BJ:81:ILE:HG23 | 31:BJ:82:GLY:N | 2.03 | 0.73 |
| 32:BK:21:CYS:HA | 32:BK:41:ILE:HD12 | 1.70 | 0.73 |
| 32:BK:33:ALA:HB1 | 32:BK:37:ASP:HB2 | 1.71 | 0.73 |
| 56:CP:73:ALA:HA | 56:CP:76:LYS:HB2 | 1.70 | 0.73 |
| 57:DA:963:U:HO2' | 57:DA:964:C:H6 | 1.36 | 0.73 |
| 57:DA:1352:U:C5 | 57:DA:1377:G:C6 | 2.76 | 0.73 |
| 32:DK:108:ARG:HA | 32:DK:116:ILE:HD13 | 1.70 | 0.73 |
| 1:AA:1381:U:O2' | 1:AA:1382:C:H5' | 1.89 | 0.73 |
| 7:AG:61:PHE:CE1 | 7:AG:65:LEU:HD22 | 2.23 | 0.73 |
| 21:AU:48:LYS:HA | 21:AU:51:ALA:HB3 | 1.71 | 0.73 |
| 22:BA:1085:A:H3' | 22:BA:1086:A:C2 | 2.23 | 0.73 |
| 22:BA:2499:C:OP1 | 63:BA:3689:HOH:O | 2.06 | 0.73 |
| 22:BA:2800:A:C2 | 22:BA:2895:G:H1' | 2.24 | 0.73 |
| 24:BC:140:VAL:CG1 | 24:BC:189:ALA:HB1 | 2.18 | 0.73 |
| 26:BE:24:ASN:O | 26:BE:28:VAL:HG12 | 1.87 | 0.73 |
| 46:BY:39:GLN:HB2 | 46:BY:41:HIS:CD2 | 2.23 | 0.73 |
| 20:CT:26:MET:HE3 | 20:CT:56:ILE:HD13 | 1.69 | 0.73 |
| 57:DA:1351:C:H4' | 57:DA:1572:A:O4' | 1.89 | 0.73 |
| 57:DA:1447:C:H2' | 57:DA:1448:G:C8 | 2.23 | 0.73 |
| 57:DA:1647:U:H5'' | 57:DA:1648:U:OP1 | 1.88 | 0.73 |
| 57:DA:2135:A:H2' | 57:DA:2136:G:O4' | 1.89 | 0.73 |
| 57:DA:2707:U:H2' | 57:DA:2708:G:C8 | 2.22 | 0.73 |
| 6:AF:86:ARG:NH1 | 18:AR:63:TYR:HB3 | 2.02 | 0.73 |
| 26:BE:44:ARG:HH21 | 26:BE:44:ARG:CG | 2.02 | 0.73 |
| 44:BW:28:GLU:OE2 | 44:BW:28:GLU:HA | 1.88 | 0.73 |
| 53:CA:538:G:H5'' | 12:CL:110:LYS:HB2 | 1.68 | 0.73 |
| 53:CA:1135:U:H5' | 53:CA:1136:C:OP2 | 1.88 | 0.73 |
| 57:DA:873:C:H4' | 34:DM:64:TRP:HE1 | 1.52 | 0.73 |
| 57:DA:1265:A:H4' | 57:DA:1266:G:O5' | 1.87 | 0.73 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:DA:1827:U:C4' | 57:DA:1970:A:O2' | 2.35 | 0.73 |
| 57:DA:1996:C:H4' | 57:DA:1997:C:OP1 | 1.87 | 0.73 |
| 57:DA:2074:U:O2' | 57:DA:2075:U:H5' | 1.89 | 0.73 |
| 58:DB:57:A:C5 | 59:DF:25:MET:HB2 | 2.24 | 0.73 |
| 1:AA:109:A:H2' | 1:AA:326:G:H21 | 1.54 | 0.73 |
| 38:BQ:86:SER:O | 38:BQ:88:GLU:HB2 | 1.88 | 0.73 |
| 39:BR:90:ARG:O | 39:BR:91:GLN:HB3 | 1.86 | 0.73 |
| 40:BS:72:THR:O | 40:BS:73:LYS:HD2 | 1.89 | 0.73 |
| 41:BT:44:LYS:HG3 | 41:BT:55:VAL:HG11 | 1.70 | 0.73 |
| 53:CA:704:A:H2' | 53:CA:705:G:H8 | 1.53 | 0.73 |
| 2:CB:103:TRP:HA | 2:CB:106:VAL:HB | 1.71 | 0.73 |
| 57:DA:395:U:HO2' | 57:DA:396:G:H8 | 1.36 | 0.73 |
| 57:DA:1810:A:H3' | 57:DA:1811:G:H8 | 1.54 | 0.73 |
| 57:DA:1998:A:H2' | 57:DA:1999:C:C6 | 2.24 | 0.73 |
| 57:DA:2056:G:N2 | 48:D0:1:ALA:N | 2.36 | 0.73 |
| 24:DC:147:PRO:HA | 24:DC:187:CYS:HB3 | 1.68 | 0.73 |
| 40:DS:73:LYS:HB2 | 40:DS:106:VAL:HB | 1.68 | 0.73 |
| 1:AA:8:A:H62 | 4:AD:204:SER:HB2 | 1.53 | 0.73 |
| 1:AA:653:U:O2' | 1:AA:654:G:H5' | 1.89 | 0.73 |
| 2:AB:127:LYS:HG3 | 2:AB:128:LEU:H | 1.52 | 0.73 |
| 8:AH:76:ARG:NE | 8:AH:78:SER:O | 2.22 | 0.73 |
| 22:BA:310:A:O2' | 22:BA:311:A:H5'' | 1.89 | 0.73 |
| 22:BA:1791:A:O2' | 24:BC:205:GLY:HA2 | 1.89 | 0.73 |
| 41:BT:13:ALA:O | 41:BT:32:LEU:HB2 | 1.88 | 0.73 |
| 53:CA:337:G:H2' | 53:CA:338:A:H8 | 1.52 | 0.73 |
| 53:CA:371:A:O2' | 53:CA:372:C:H5' | 1.88 | 0.73 |
| 12:CL:98:ARG:HB2 | 12:CL:116:TYR:HA | 1.71 | 0.73 |
| 57:DA:173:A:H2' | 57:DA:174:U:H6 | 1.54 | 0.73 |
| 57:DA:990:A:O2' | 57:DA:991:C:H5'' | 1.87 | 0.73 |
| 57:DA:1655:A:H2' | 57:DA:1656:C:C6 | 2.23 | 0.73 |
| 57:DA:2881:U:H2' | 57:DA:2882:A:H8 | 1.53 | 0.73 |
| 26:DE:108:ILE:HD11 | 26:DE:181:ILE:HB | 1.71 | 0.73 |
| 28:DG:167:VAL:HG23 | 28:DG:168:VAL:H | 1.54 | 0.73 |
| 1:AA:1299:A:H2' | 1:AA:1299:A:N3 | 2.03 | 0.73 |
| 2:AB:89:PHE:CZ | 2:AB:153:MET:HB2 | 2.24 | 0.73 |
| 22:BA:2353:G:H1' | 44:BW:30:VAL:CG1 | 2.18 | 0.73 |
| 53:CA:269:C:H2' | 53:CA:270:A:C8 | 2.24 | 0.73 |
| 53:CA:597:G:H2' | 53:CA:598:U:H5' | 1.70 | 0.73 |
| 53:CA:1011:C:H2' | 53:CA:1012:A:C8 | 2.24 | 0.73 |
| 57:DA:397:U:OP2 | 45:DX:9:LYS:HE2 | 1.89 | 0.73 |
| 57:DA:1870:C:H5'' | 57:DA:1871:A:C2 | 2.24 | 0.73 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:2023:C:O2' | 57:DA:2024:G:H8 | 1.69 | 0.73 |
| 57:DA:2345:G:H4' | 57:DA:2346:A:H5'' | 1.70 | 0.73 |
| 58:DB:75:G:H1 | 58:DB:102:G:N2 | 1.87 | 0.73 |
| 46:DY:28:LEU:HG | 46:DY:42:LEU:HD22 | 1.71 | 0.73 |
| 1:AA:129:A:O2' | 1:AA:130:A:H5'' | 1.88 | 0.73 |
| 7:AG:76:SER:HA | 7:AG:85:GLN:HB2 | 1.71 | 0.73 |
| 22:BA:2198:A:P | 22:BA:2198:A:H2' | 2.28 | 0.73 |
| 27:BF:68:LYS:HD2 | 27:BF:68:LYS:H | 1.54 | 0.73 |
| 29:BH:67:ALA:HA | 29:BH:138:VAL:HB | 1.71 | 0.73 |
| 30:BI:33:ASN:HD22 | 30:BI:64:ARG:NH2 | 1.85 | 0.73 |
| 53:CA:260:G:OP1 | 20:CT:74:HIS:HE1 | 1.70 | 0.73 |
| 53:CA:456:A:H2' | 53:CA:457:G:H8 | 1.54 | 0.73 |
| 57:DA:1027:A:O2' | 57:DA:1028:A:H8 | 1.70 | 0.73 |
| 32:DK:101:GLY:O | 32:DK:120:PRO:HB3 | 1.88 | 0.73 |
| 43:DV:63:ILE:O | 43:DV:70:ILE:HD11 | 1.87 | 0.73 |
| 6:AF:29:ILE:HG12 | 6:AF:64:VAL:HG11 | 1.70 | 0.72 |
| 22:BA:310:A:HO2' | 22:BA:311:A:H5'' | 1.53 | 0.72 |
| 31:BJ:44:TYR:C | 31:BJ:44:TYR:HD1 | 1.92 | 0.72 |
| 38:BQ:8:ILE:C | 38:BQ:8:ILE:HD12 | 2.08 | 0.72 |
| 38:BQ:97:ILE:HD11 | 38:BQ:105:PHE:CA | 2.18 | 0.72 |
| 53:CA:1387:G:H2' | 53:CA:1388:C:C6 | 2.23 | 0.72 |
| 57:DA:2385:C:O2' | 57:DA:2386:A:H8 | 1.70 | 0.72 |
| 32:DK:69:VAL:HG11 | 32:DK:106:GLU:HG2 | 1.69 | 0.72 |
| 42:DU:83:GLY:O | 42:DU:93:ARG:HA | 1.89 | 0.72 |
| 1:AA:423:G:H2' | 1:AA:423:G:N3 | 2.04 | 0.72 |
| 21:AU:35:GLU:O | 21:AU:36:PHE:HB2 | 1.87 | 0.72 |
| 22:BA:397:U:OP2 | 45:BX:9:LYS:NZ | 2.21 | 0.72 |
| 22:BA:919:U:C4 | 22:BA:920:A:N7 | 2.57 | 0.72 |
| 35:BN:98:LEU:HD22 | 48:B0:42:ILE:HD11 | 1.69 | 0.72 |
| 38:BQ:91:ARG:NH1 | 39:BR:10:LYS:HB3 | 2.03 | 0.72 |
| 44:BW:24:ARG:HB2 | 44:BW:65:LYS:HD3 | 1.71 | 0.72 |
| 53:CA:79:G:H2' | 53:CA:80:A:C8 | 2.24 | 0.72 |
| 53:CA:1278:G:H4' | 53:CA:1279:G:C5' | 2.19 | 0.72 |
| 9:CI:18:VAL:HG11 | 9:CI:82:ILE:HA | 1.69 | 0.72 |
| 15:CO:63:ARG:HH22 | 57:DA:715:A:H5'' | 1.54 | 0.72 |
| 57:DA:100:U:H1' | 57:DA:101:A:C5 | 2.24 | 0.72 |
| 57:DA:589:U:H2' | 57:DA:590:A:H8 | 1.53 | 0.72 |
| 57:DA:2543:G:H2' | 57:DA:2544:G:C8 | 2.25 | 0.72 |
| 14:AN:22:LYS:HG3 | 14:AN:23:ARG:N | 2.04 | 0.72 |
| 22:BA:2136:G:H2' | 22:BA:2137:U:C5 | 2.25 | 0.72 |
| 51:B3:54:LEU:O | 51:B3:58:ILE:HG13 | 1.89 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:CA:564:C:H5' | 53:CA:564:C:H6 | 1.53 | 0.72 |
| 8:CH:77:VAL:HG12 | 8:CH:84:ILE:HG13 | 1.70 | 0.72 |
| 56:CP:44:SER:H | 56:CP:46:LYS:NZ | 1.87 | 0.72 |
| 57:DA:747:U:H2' | 57:DA:2613:U:O4 | 1.89 | 0.72 |
| 57:DA:1731:G:H4' | 57:DA:1732:C:OP1 | 1.88 | 0.72 |
| 38:DQ:4:LYS:HZ2 | 38:DQ:6:GLY:HA3 | 1.54 | 0.72 |
| 1:AA:275:G:O2' | 1:AA:276:G:H5' | 1.89 | 0.72 |
| 1:AA:495:A:H4' | 1:AA:496:A:O5' | 1.89 | 0.72 |
| 1:AA:967:C:H1' | 9:AI:129:ARG:HH22 | 1.55 | 0.72 |
| 9:AI:6:TYR:HE2 | 9:AI:17:ARG:HB2 | 1.55 | 0.72 |
| 18:AR:56:ARG:O | 18:AR:60:ARG:HB2 | 1.88 | 0.72 |
| 44:BW:37:VAL:HG13 | 44:BW:55:ASP:O | 1.89 | 0.72 |
| 53:CA:66:A:H2' | 53:CA:66:A:N3 | 2.04 | 0.72 |
| 53:CA:373:A:HO2' | 53:CA:374:A:H5' | 1.52 | 0.72 |
| 53:CA:547:A:H4' | 53:CA:548:G:O5' | 1.89 | 0.72 |
| 53:CA:1279:G:H5'' | 10:CJ:9:ARG:HH22 | 1.54 | 0.72 |
| 54:CG:137:ARG:CZ | 54:CG:138:GLU:HG2 | 2.18 | 0.72 |
| 57:DA:1965:C:H3' | 57:DA:1966:A:C5' | 2.20 | 0.72 |
| 57:DA:1998:A:H2' | 57:DA:1999:C:H6 | 1.53 | 0.72 |
| 57:DA:2287:A:O2' | 57:DA:2288:A:H3' | 1.89 | 0.72 |
| 35:DN:35:LYS:HG2 | 35:DN:112:TYR:CE1 | 2.24 | 0.72 |
| 1:AA:1239:A:H4' | 1:AA:1240:U:C5' | 2.20 | 0.72 |
| 10:AJ:11:LYS:HG3 | 10:AJ:97:ASP:HB3 | 1.71 | 0.72 |
| 13:AM:106:ARG:HH21 | 13:AM:112:ARG:HB3 | 1.55 | 0.72 |
| 20:AT:8:LYS:HA | 20:AT:11:ILE:HG23 | 1.72 | 0.72 |
| 21:AU:40:PRO:HA | 21:AU:43:GLU:HB2 | 1.70 | 0.72 |
| 25:BD:186:LEU:HD11 | 37:BP:3:ILE:CD1 | 2.19 | 0.72 |
| 31:BJ:44:TYR:CD1 | 31:BJ:44:TYR:O | 2.42 | 0.72 |
| 19:CS:35:ARG:HH21 | 19:CS:51:HIS:HD2 | 1.36 | 0.72 |
| 21:CU:35:GLU:HG3 | 21:CU:36:PHE:H | 1.54 | 0.72 |
| 57:DA:73:A:H8 | 57:DA:73:A:O5' | 1.72 | 0.72 |
| 57:DA:874:G:H5' | 57:DA:875:G:OP2 | 1.89 | 0.72 |
| 57:DA:1135:C:N4 | 57:DA:1139:G:C6 | 2.57 | 0.72 |
| 30:DI:55:PRO:HG2 | 30:DI:70:THR:HG23 | 1.70 | 0.72 |
| 22:BA:1076:C:H2' | 22:BA:1077:A:H8 | 1.54 | 0.72 |
| 22:BA:1494:A:H2' | 22:BA:1495:A:C8 | 2.25 | 0.72 |
| 32:BK:63:VAL:CG1 | 32:BK:103:VAL:HG12 | 2.18 | 0.72 |
| 44:BW:37:VAL:HG12 | 44:BW:38:ARG:N | 2.03 | 0.72 |
| 57:DA:125:A:H4' | 57:DA:126:A:OP2 | 1.90 | 0.72 |
| 57:DA:2215:C:O2' | 57:DA:2216:G:H8 | 1.72 | 0.72 |
| 57:DA:2619:C:H5' | 25:DD:157:LYS:HA | 1.69 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 58:DB:40:U:O2 | 58:DB:43:C:H2' | 1.89 | 0.72 |
| 24:DC:65:ASP:OD2 | 24:DC:68:ARG:HG2 | 1.89 | 0.72 |
| 31:DJ:17:VAL:HG23 | 31:DJ:137:PRO:HB2 | 1.70 | 0.72 |
| 35:DN:54:LEU:HD11 | 35:DN:66:ALA:HB2 | 1.71 | 0.72 |
| 6:AF:38:ARG:HG3 | 6:AF:39:LEU:N | 2.03 | 0.72 |
| 13:AM:26:LYS:O | 13:AM:30:LYS:HG3 | 1.88 | 0.72 |
| 22:BA:528:A:C2 | 22:BA:2043:C:H4' | 2.24 | 0.72 |
| 22:BA:2339:C:H2' | 22:BA:2340:A:C8 | 2.24 | 0.72 |
| 27:BF:64:PRO:HA | 27:BF:88:VAL:HG23 | 1.71 | 0.72 |
| 47:BZ:23:LEU:HD21 | 47:BZ:53:MET:CE | 2.20 | 0.72 |
| 53:CA:1249:C:H2' | 53:CA:1250:A:H5'' | 1.70 | 0.72 |
| 8:CH:54:THR:O | 8:CH:56:PRO:HD3 | 1.88 | 0.72 |
| 55:CM:12:LYS:HA | 55:CM:12:LYS:HE3 | 1.71 | 0.72 |
| 57:DA:247:G:H4' | 57:DA:386:G:C5 | 2.25 | 0.72 |
| 57:DA:249:C:H4' | 57:DA:250:G:O5' | 1.90 | 0.72 |
| 57:DA:980:A:H5'' | 57:DA:981:A:OP2 | 1.90 | 0.72 |
| 57:DA:1127:A:N7 | 57:DA:2488:G:O2' | 2.21 | 0.72 |
| 57:DA:1639:C:C2' | 57:DA:1640:A:H5'' | 2.19 | 0.72 |
| 57:DA:1956:U:O2 | 57:DA:1985:C:H4' | 1.89 | 0.72 |
| 35:DN:92:GLY:H | 35:DN:94:TYR:HE1 | 1.37 | 0.72 |
| 1:AA:1468:A:C3' | 1:AA:1469:C:H5'' | 2.18 | 0.72 |
| 22:BA:215:G:H4' | 22:BA:216:A:OP1 | 1.88 | 0.72 |
| 22:BA:387:U:H4' | 22:BA:388:G:O5' | 1.88 | 0.72 |
| 22:BA:1070:A:C2 | 30:BI:9:LYS:HG2 | 2.24 | 0.72 |
| 22:BA:2615:U:O2' | 22:BA:2616:C:H5' | 1.90 | 0.72 |
| 33:BL:27:LEU:H | 33:BL:27:LEU:CD1 | 1.91 | 0.72 |
| 36:BO:53:THR:HB | 36:BO:65:THR:HG22 | 1.72 | 0.72 |
| 53:CA:254:G:H5'' | 17:CQ:70:LYS:CD | 2.20 | 0.72 |
| 53:CA:1118:U:H1' | 53:CA:1179:A:C4 | 2.25 | 0.72 |
| 21:CU:36:PHE:HB3 | 21:CU:40:PRO:HD3 | 1.71 | 0.72 |
| 57:DA:7:G:HO2' | 31:DJ:15:TRP:HZ2 | 1.38 | 0.72 |
| 57:DA:684:G:H5' | 50:D2:16:HIS:CE1 | 2.24 | 0.72 |
| 57:DA:2267:A:H61 | 57:DA:2272:U:H3 | 1.35 | 0.72 |
| 22:BA:933:A:H2' | 22:BA:933:A:N3 | 2.04 | 0.72 |
| 22:BA:1182:G:H2' | 22:BA:1183:U:O4' | 1.90 | 0.72 |
| 53:CA:794:A:H5'' | 53:CA:794:A:H8 | 1.55 | 0.72 |
| 57:DA:445:C:O2' | 57:DA:446:G:O4' | 2.08 | 0.72 |
| 57:DA:738:G:H2' | 57:DA:739:A:C8 | 2.25 | 0.72 |
| 29:DH:93:SER:HB3 | 29:DH:121:VAL:HG21 | 1.70 | 0.72 |
| 22:BA:1747:U:H2' | 22:BA:1748:C:C6 | 2.25 | 0.72 |
| 22:BA:2309:A:O2' | 22:BA:2310:C:H5' | 1.90 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 26:BE:73:ILE:O | 26:BE:73:ILE:HG12 | 1.90 | 0.72 |
| 37:BP:21:PRO:HA | 37:BP:46:VAL:HG12 | 1.72 | 0.72 |
| 3:CC:29:ALA:HB1 | 14:CN:64:ARG:NH1 | 2.04 | 0.72 |
| 5:CE:154:ALA:HB1 | 8:CH:65:PHE:HE2 | 1.54 | 0.72 |
| 57:DA:921:C:H2' | 57:DA:922:C:H5' | 1.71 | 0.72 |
| 57:DA:2199:A:H2' | 57:DA:2200:C:H6 | 1.55 | 0.72 |
| 58:DB:42:C:H41 | 59:DF:87:LYS:HZ3 | 1.37 | 0.72 |
| 34:DM:36:VAL:HG22 | 43:DV:82:TYR:HB2 | 1.72 | 0.72 |
| 1:AA:684:U:H1' | 11:AK:39:ASN:O | 1.90 | 0.71 |
| 1:AA:686:U:O2' | 1:AA:687:A:C8 | 2.41 | 0.71 |
| 15:AO:73:ASP:CG | 15:AO:76:ARG:HG3 | 2.09 | 0.71 |
| 22:BA:481:G:C4 | 22:BA:507:A:C2 | 2.78 | 0.71 |
| 22:BA:729:G:H2' | 22:BA:1775:U:H1' | 1.72 | 0.71 |
| 22:BA:1045:C:C5' | 22:BA:1046:A:H5' | 2.20 | 0.71 |
| 26:BE:44:ARG:HG3 | 26:BE:44:ARG:NH2 | 2.05 | 0.71 |
| 30:BI:33:ASN:HD22 | 30:BI:64:ARG:HH22 | 1.36 | 0.71 |
| 38:BQ:60:TRP:O | 38:BQ:63:ARG:HG3 | 1.90 | 0.71 |
| 46:BY:57:LEU:HA | 46:BY:60:LYS:HB3 | 1.69 | 0.71 |
| 53:CA:198:G:O6 | 53:CA:220:G:C4 | 2.43 | 0.71 |
| 5:CE:29:ILE:CG2 | 5:CE:30:PHE:N | 2.51 | 0.71 |
| 17:CQ:18:LYS:HD3 | 17:CQ:48:GLU:OE2 | 1.89 | 0.71 |
| 57:DA:5:A:C2 | 57:DA:2899:A:C2 | 2.78 | 0.71 |
| 57:DA:876:C:H3' | 57:DA:877:A:H8 | 1.54 | 0.71 |
| 57:DA:2502:G:H5' | 57:DA:2503:A:H5'' | 1.72 | 0.71 |
| 34:DM:34:LYS:HD3 | 34:DM:131:VAL:HG21 | 1.72 | 0.71 |
| 4:AD:195:ASN:O | 4:AD:196:GLU:HG3 | 1.89 | 0.71 |
| 5:AE:156:ARG:O | 5:AE:158:LYS:N | 2.22 | 0.71 |
| 9:AI:51:LEU:HB3 | 9:AI:56:MET:CG | 2.20 | 0.71 |
| 22:BA:855:G:H1' | 44:BW:23:LYS:HD3 | 1.72 | 0.71 |
| 22:BA:2199:A:C8 | 22:BA:2199:A:H5'' | 2.25 | 0.71 |
| 40:BS:73:LYS:HA | 40:BS:73:LYS:CE | 2.20 | 0.71 |
| 53:CA:1014:A:H4' | 19:CS:13:HIS:CD2 | 2.25 | 0.71 |
| 53:CA:1228:C:O2' | 53:CA:1229:A:H8 | 1.71 | 0.71 |
| 53:CA:1284:C:H5'' | 53:CA:1285:A:OP2 | 1.90 | 0.71 |
| 4:CD:34:GLU:O | 4:CD:36:ALA:N | 2.22 | 0.71 |
| 5:CE:14:LEU:HD22 | 5:CE:59:ILE:HD13 | 1.70 | 0.71 |
| 57:DA:279:A:H61 | 57:DA:361:G:H1' | 1.55 | 0.71 |
| 57:DA:1616:A:H2' | 57:DA:1616:A:OP1 | 1.90 | 0.71 |
| 57:DA:2199:A:H2' | 57:DA:2200:C:C6 | 2.24 | 0.71 |
| 28:DG:86:LEU:HA | 28:DG:163:TYR:HB3 | 1.72 | 0.71 |
| 41:DT:4:GLU:HG3 | 41:DT:6:ARG:HH21 | 1.55 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:BD:101:PHE:CE2 | 25:BD:203:VAL:HG22 | 2.24 | 0.71 |
| 27:BF:134:GLN:HE21 | 27:BF:134:GLN:N | 1.88 | 0.71 |
| 28:BG:11:PRO:O | 28:BG:14:VAL:HG22 | 1.90 | 0.71 |
| 53:CA:876:C:C1' | 8:CH:11:THR:HG21 | 2.20 | 0.71 |
| 53:CA:1304:G:H1' | 53:CA:1333:A:H61 | 1.55 | 0.71 |
| 3:CC:166:TRP:O | 3:CC:167:TYR:HB2 | 1.90 | 0.71 |
| 57:DA:1346:G:O2' | 57:DA:1347:A:C8 | 2.39 | 0.71 |
| 57:DA:1870:C:H5'' | 57:DA:1871:A:H2 | 1.53 | 0.71 |
| 25:DD:106:LYS:HB3 | 25:DD:206:ALA:H | 1.55 | 0.71 |
| 32:DK:97:THR:O | 32:DK:98:ARG:HB2 | 1.90 | 0.71 |
| 5:AE:14:LEU:HD13 | 5:AE:14:LEU:O | 1.91 | 0.71 |
| 20:AT:68:LYS:HB2 | 20:AT:68:LYS:NZ | 2.06 | 0.71 |
| 33:BL:29:LYS:HG2 | 33:BL:30:THR:CG2 | 2.20 | 0.71 |
| 42:BU:43:LYS:O | 42:BU:57:ILE:HA | 1.90 | 0.71 |
| 53:CA:239:U:H6 | 53:CA:239:U:H5' | 1.55 | 0.71 |
| 53:CA:1239:A:H1' | 53:CA:1241:G:C4 | 2.25 | 0.71 |
| 3:CC:18:ASN:HD21 | 3:CC:53:ARG:NH1 | 1.88 | 0.71 |
| 12:CL:113:ARG:HB3 | 12:CL:118:VAL:HB | 1.70 | 0.71 |
| 55:CM:13:HIS:HB2 | 55:CM:43:LYS:HE2 | 1.72 | 0.71 |
| 17:CQ:46:HIS:HB2 | 17:CQ:70:LYS:HE3 | 1.72 | 0.71 |
| 19:CS:35:ARG:HA | 19:CS:70:LEU:HB2 | 1.72 | 0.71 |
| 21:CU:16:ARG:CG | 21:CU:19:LYS:HG2 | 2.16 | 0.71 |
| 57:DA:2689:U:H4' | 57:DA:2690:U:OP2 | 1.88 | 0.71 |
| 57:DA:2838:G:H1' | 35:DN:45:ARG:HH22 | 1.55 | 0.71 |
| 25:DD:107:VAL:H | 25:DD:206:ALA:H | 1.36 | 0.71 |
| 39:DR:1:MET:HG3 | 39:DR:101:ILE:HD12 | 1.71 | 0.71 |
| 42:DU:82:VAL:H | 42:DU:96:LYS:HZ2 | 1.38 | 0.71 |
| 1:AA:701:U:O2 | 1:AA:701:U:H2' | 1.88 | 0.71 |
| 22:BA:1310:G:H2' | 22:BA:1311:G:H5' | 1.71 | 0.71 |
| 44:BW:9:THR:HG22 | 44:BW:10:ARG:HH11 | 1.55 | 0.71 |
| 53:CA:665:A:H2' | 53:CA:725:G:H22 | 1.53 | 0.71 |
| 53:CA:752:G:H1' | 53:CA:754:C:H41 | 1.55 | 0.71 |
| 53:CA:1383:C:O2' | 53:CA:1384:C:H5' | 1.89 | 0.71 |
| 6:CF:86:ARG:HH11 | 18:CR:63:TYR:HB3 | 1.56 | 0.71 |
| 54:CG:64:ALA:HB2 | 54:CG:126:ALA:HB1 | 1.73 | 0.71 |
| 8:CH:54:THR:HG23 | 8:CH:55:LYS:H | 1.54 | 0.71 |
| 57:DA:185:G:H2' | 57:DA:186:G:C8 | 2.25 | 0.71 |
| 57:DA:678:C:H2' | 57:DA:679:C:C6 | 2.26 | 0.71 |
| 57:DA:2466:C:OP1 | 52:D4:4:ARG:HB3 | 1.90 | 0.71 |
| 59:DF:39:VAL:HA | 59:DF:49:LEU:HG | 1.71 | 0.71 |
| 59:DF:42:ALA:HB2 | 59:DF:49:LEU:HD21 | 1.71 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:DT:13:ALA:O | 41:DT:32:LEU:HB2 | 1.90 | 0.71 |
| 1:AA:68:G:C5 | 1:AA:69:G:H1' | 2.25 | 0.71 |
| 1:AA:205:A:OP1 | 1:AA:205:A:H4' | 1.91 | 0.71 |
| 22:BA:475:C:O2' | 22:BA:476:G:H5' | 1.90 | 0.71 |
| 53:CA:60:A:H4' | 53:CA:61:G:O5' | 1.89 | 0.71 |
| 53:CA:701:U:H4' | 53:CA:702:A:H5'' | 1.71 | 0.71 |
| 57:DA:565:C:H2' | 57:DA:566:U:O4' | 1.89 | 0.71 |
| 57:DA:665:U:H2' | 57:DA:666:A:C8 | 2.22 | 0.71 |
| 57:DA:2893:A:H4' | 57:DA:2894:G:O5' | 1.89 | 0.71 |
| 25:DD:51:THR:CG2 | 25:DD:76:GLY:HA3 | 2.21 | 0.71 |
| 40:DS:20:VAL:HG23 | 40:DS:23:LEU:HD12 | 1.71 | 0.71 |
| 1:AA:559:A:H4' | 1:AA:560:A:O5' | 1.90 | 0.71 |
| 22:BA:62:U:H4' | 22:BA:63:A:OP1 | 1.90 | 0.71 |
| 22:BA:2197:U:O3' | 22:BA:2198:A:H2' | 1.90 | 0.71 |
| 24:BC:16:VAL:H | 24:BC:203:VAL:CG1 | 2.04 | 0.71 |
| 26:BE:146:VAL:HG23 | 26:BE:167:VAL:CG2 | 2.21 | 0.71 |
| 29:BH:82:SER:O | 29:BH:83:LYS:HB2 | 1.91 | 0.71 |
| 40:BS:20:VAL:HA | 40:BS:23:LEU:HD12 | 1.72 | 0.71 |
| 53:CA:1378:C:H3' | 53:CA:1379:G:H5'' | 1.72 | 0.71 |
| 12:CL:19:ASN:H | 12:CL:19:ASN:ND2 | 1.88 | 0.71 |
| 57:DA:249:C:O2 | 57:DA:249:C:H2' | 1.91 | 0.71 |
| 57:DA:1799:G:H4' | 57:DA:1800:C:O5' | 1.90 | 0.71 |
| 57:DA:1808:A:N7 | 45:DX:27:ARG:NH1 | 2.39 | 0.71 |
| 57:DA:1936:A:H2' | 57:DA:1945:G:O6 | 1.90 | 0.71 |
| 34:DM:8:LYS:HA | 34:DM:8:LYS:HE3 | 1.72 | 0.71 |
| 1:AA:563:A:H1' | 1:AA:566:G:O2' | 1.90 | 0.71 |
| 5:AE:83:PRO:HB3 | 5:AE:96:GLN:NE2 | 2.05 | 0.71 |
| 36:BO:111:ARG:O | 36:BO:113:ALA:N | 2.24 | 0.71 |
| 37:BP:4:ILE:CG2 | 37:BP:5:LYS:H | 2.03 | 0.71 |
| 53:CA:6:G:N3 | 53:CA:6:G:C2' | 2.54 | 0.71 |
| 53:CA:1005:A:C5 | 53:CA:1006:G:H1' | 2.25 | 0.71 |
| 53:CA:1293:C:H2' | 53:CA:1294:G:C8 | 2.25 | 0.71 |
| 57:DA:739:A:H4' | 57:DA:740:C:OP1 | 1.89 | 0.71 |
| 57:DA:2379:G:H2' | 57:DA:2380:C:H6 | 1.54 | 0.71 |
| 58:DB:67:G:HO2' | 58:DB:68:C:H6 | 1.37 | 0.71 |
| 59:DF:64:PRO:HA | 59:DF:88:VAL:HG22 | 1.72 | 0.71 |
| 31:DJ:25:LEU:HB2 | 31:DJ:62:VAL:HG21 | 1.72 | 0.71 |
| 52:D4:7:VAL:HG13 | 52:D4:8:LYS:N | 2.05 | 0.71 |
| 1:AA:642:A:H2' | 1:AA:643:C:C6 | 2.26 | 0.71 |
| 1:AA:1447:A:H5'' | 1:AA:1448:C:H5 | 1.56 | 0.71 |
| 4:AD:21:LYS:O | 4:AD:21:LYS:HD3 | 1.91 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:105:ILE:HD11 | 5:AE:123:LEU:HD23 | 1.71 | 0.71 |
| 13:AM:88:LEU:HD23 | 13:AM:91:ARG:HH21 | 1.56 | 0.71 |
| 22:BA:704:G:O2' | 22:BA:705:A:OP2 | 2.09 | 0.71 |
| 22:BA:1432:G:O2' | 22:BA:1433:A:H5' | 1.90 | 0.71 |
| 22:BA:2211:A:OP2 | 22:BA:2211:A:H4' | 1.90 | 0.71 |
| 24:BC:212:TRP:O | 24:BC:212:TRP:CD1 | 2.44 | 0.71 |
| 31:BJ:18:VAL:HG23 | 31:BJ:54:ILE:HD13 | 1.72 | 0.71 |
| 33:BL:110:VAL:O | 33:BL:111:ILE:HB | 1.89 | 0.71 |
| 39:BR:21:ARG:NH2 | 39:BR:93:PHE:CE1 | 2.58 | 0.71 |
| 42:BU:97:SER:O | 42:BU:98:ASN:HB3 | 1.91 | 0.71 |
| 45:BX:38:TRP:HB2 | 45:BX:45:PHE:CE2 | 2.26 | 0.71 |
| 2:CB:89:PHE:HE2 | 2:CB:152:ASP:HB2 | 1.56 | 0.71 |
| 57:DA:455:C:H3' | 57:DA:456:C:H5' | 1.71 | 0.71 |
| 57:DA:1036:G:C2 | 57:DA:1037:G:C8 | 2.79 | 0.71 |
| 57:DA:1645:G:OP1 | 57:DA:1646:C:H5' | 1.90 | 0.71 |
| 57:DA:2815:C:H2' | 57:DA:2816:G:C8 | 2.26 | 0.71 |
| 28:DG:115:GLN:HG2 | 28:DG:116:LEU:N | 2.04 | 0.71 |
| 50:D2:19:ARG:HH21 | 50:D2:19:ARG:HB3 | 1.56 | 0.71 |
| 1:AA:688:G:H5'' | 1:AA:688:G:H8 | 1.54 | 0.71 |
| 8:AH:29:SER:HB3 | 8:AH:32:LYS:HG3 | 1.72 | 0.71 |
| 20:AT:82:ILE:O | 20:AT:86:ALA:HB3 | 1.91 | 0.71 |
| 31:BJ:73:VAL:HG23 | 31:BJ:74:TYR:N | 2.05 | 0.71 |
| 6:CF:18:VAL:O | 6:CF:22:ILE:HG12 | 1.91 | 0.71 |
| 26:DE:126:VAL:HG11 | 26:DE:134:LEU:HD22 | 1.73 | 0.71 |
| 1:AA:110:C:H2' | 1:AA:111:G:C8 | 2.26 | 0.70 |
| 2:AB:22:TRP:O | 2:AB:22:TRP:CG | 2.42 | 0.70 |
| 5:AE:120:HIS:O | 5:AE:121:ASN:HB3 | 1.89 | 0.70 |
| 5:AE:155:LYS:HD2 | 5:AE:156:ARG:H | 1.56 | 0.70 |
| 6:AF:86:ARG:CZ | 18:AR:63:TYR:HB3 | 2.21 | 0.70 |
| 12:AL:86:VAL:HG12 | 12:AL:86:VAL:O | 1.91 | 0.70 |
| 33:BL:9:ALA:O | 33:BL:12:SER:HB3 | 1.90 | 0.70 |
| 44:BW:19:ARG:NH1 | 44:BW:22:VAL:HG11 | 2.06 | 0.70 |
| 3:CC:76:ILE:HD11 | 3:CC:102:ILE:HD11 | 1.72 | 0.70 |
| 57:DA:781:A:H2' | 57:DA:1777:U:H1' | 1.73 | 0.70 |
| 57:DA:782:A:N7 | 24:DC:219:VAL:HG21 | 2.05 | 0.70 |
| 57:DA:973:A:OP1 | 57:DA:973:A:H8 | 1.74 | 0.70 |
| 57:DA:2296:U:H5 | 36:DO:9:ARG:NH2 | 1.89 | 0.70 |
| 57:DA:2311:A:H5' | 57:DA:2312:U:C5 | 2.26 | 0.70 |
| 29:DH:59:ALA:HA | 29:DH:63:ALA:HB3 | 1.71 | 0.70 |
| 34:DM:42:THR:HB | 34:DM:45:GLN:HG3 | 1.73 | 0.70 |
| 40:DS:86:MET:SD | 40:DS:87:PRO:HD2 | 2.31 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:89:U:O2' | 1:AA:90:C:H5'' | 1.91 | 0.70 |
| 1:AA:209:U:H5' | 1:AA:210:C:OP2 | 1.92 | 0.70 |
| 22:BA:506:G:H4' | 22:BA:507:A:H5' | 1.73 | 0.70 |
| 22:BA:752:A:N7 | 22:BA:1781:U:C1' | 2.54 | 0.70 |
| 22:BA:2485:G:H5'' | 34:BM:45:GLN:HE21 | 1.55 | 0.70 |
| 32:BK:10:VAL:HB | 32:BK:16:ALA:HB1 | 1.73 | 0.70 |
| 53:CA:765:G:C8 | 53:CA:812:G:C2 | 2.79 | 0.70 |
| 53:CA:960:U:H4' | 53:CA:961:U:C5' | 2.21 | 0.70 |
| 53:CA:1328:C:H5'' | 55:CM:27:THR:HG21 | 1.73 | 0.70 |
| 53:CA:1530:G:O2' | 53:CA:1531:A:C8 | 2.44 | 0.70 |
| 3:CC:126:ARG:HA | 3:CC:126:ARG:HE | 1.55 | 0.70 |
| 11:CK:23:HIS:HB3 | 11:CK:30:ILE:HB | 1.73 | 0.70 |
| 57:DA:1812:U:H2' | 57:DA:1813:G:C8 | 2.26 | 0.70 |
| 31:DJ:23:LYS:HB3 | 31:DJ:28:LEU:HD13 | 1.73 | 0.70 |
| 4:AD:69:ARG:HA | 4:AD:69:ARG:HE | 1.56 | 0.70 |
| 10:AJ:52:LEU:HD23 | 10:AJ:62:ARG:HG3 | 1.73 | 0.70 |
| 22:BA:1870:C:H4' | 22:BA:1871:A:OP1 | 1.91 | 0.70 |
| 22:BA:2310:C:H2' | 27:BF:76:PHE:HE1 | 1.56 | 0.70 |
| 31:BJ:55:ILE:O | 31:BJ:55:ILE:HG13 | 1.88 | 0.70 |
| 32:BK:71:ARG:CB | 32:BK:72:PRO:HD3 | 2.22 | 0.70 |
| 34:BM:40:ARG:HB2 | 34:BM:93:VAL:CG2 | 2.21 | 0.70 |
| 41:BT:61:LEU:HA | 63:BT:101:HOH:O | 1.90 | 0.70 |
| 42:BU:80:ASP:OD1 | 42:BU:95:PHE:HB3 | 1.90 | 0.70 |
| 57:DA:727:A:H2' | 57:DA:728:G:C8 | 2.25 | 0.70 |
| 57:DA:1076:C:O2 | 30:DI:92:PRO:HG2 | 1.90 | 0.70 |
| 58:DB:45:A:H2' | 58:DB:46:A:C8 | 2.26 | 0.70 |
| 35:DN:71:ARG:HB2 | 35:DN:71:ARG:NH2 | 2.06 | 0.70 |
| 1:AA:1227:A:N3 | 1:AA:1227:A:H2' | 2.03 | 0.70 |
| 1:AA:1303:C:H2' | 1:AA:1304:G:C8 | 2.27 | 0.70 |
| 2:AB:101:THR:HG22 | 2:AB:174:GLU:OE1 | 1.92 | 0.70 |
| 2:AB:209:VAL:HG23 | 2:AB:210:THR:H | 1.56 | 0.70 |
| 5:AE:80:LEU:HD12 | 5:AE:146:MET:SD | 2.31 | 0.70 |
| 29:BH:117:LEU:HD11 | 29:BH:130:VAL:HG11 | 1.71 | 0.70 |
| 31:BJ:3:THR:HG21 | 38:BQ:60:TRP:HE1 | 1.55 | 0.70 |
| 53:CA:1129:C:O2' | 53:CA:1130:A:C8 | 2.45 | 0.70 |
| 53:CA:1134:G:C6 | 53:CA:1135:U:H1' | 2.26 | 0.70 |
| 53:CA:1226:C:N4 | 55:CM:102:LYS:HA | 2.06 | 0.70 |
| 57:DA:923:G:H1' | 44:DW:23:LYS:NZ | 2.06 | 0.70 |
| 57:DA:1997:C:O2' | 57:DA:1998:A:H5' | 1.91 | 0.70 |
| 57:DA:2093:G:C2 | 57:DA:2094:A:N7 | 2.60 | 0.70 |
| 58:DB:12:C:H4' | 58:DB:13:G:OP1 | 1.90 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:DP:105:LYS:HA | 37:DP:108:ARG:NE | 2.07 | 0.70 |
| 43:DV:80:HIS:CD2 | 43:DV:82:TYR:H | 2.08 | 0.70 |
| 46:DY:1:MET:HG2 | 46:DY:4:LYS:HZ1 | 1.56 | 0.70 |
| 1:AA:92:U:H2' | 1:AA:93:U:H6 | 1.56 | 0.70 |
| 1:AA:887:G:C2' | 1:AA:888:G:H5' | 2.21 | 0.70 |
| 17:AQ:11:VAL:HG12 | 17:AQ:12:VAL:N | 2.07 | 0.70 |
| 22:BA:216:A:H2' | 22:BA:217:A:H8 | 1.56 | 0.70 |
| 22:BA:915:C:H6 | 22:BA:915:C:H5'' | 1.56 | 0.70 |
| 23:BB:30:C:C2' | 23:BB:31:C:H5' | 2.21 | 0.70 |
| 24:BC:106:PRO:HG3 | 24:BC:141:HIS:CE1 | 2.26 | 0.70 |
| 24:BC:244:VAL:HG12 | 24:BC:250:GLN:HA | 1.73 | 0.70 |
| 36:BO:76:LYS:O | 36:BO:80:GLU:HG2 | 1.92 | 0.70 |
| 53:CA:268:U:H2' | 53:CA:269:C:C6 | 2.26 | 0.70 |
| 53:CA:520:A:H2' | 53:CA:521:G:O4' | 1.92 | 0.70 |
| 54:CG:107:ALA:O | 54:CG:118:ARG:HB3 | 1.92 | 0.70 |
| 9:CI:75:ALA:HA | 9:CI:78:ILE:HD12 | 1.73 | 0.70 |
| 10:CJ:84:VAL:HG23 | 10:CJ:85:ASP:N | 2.02 | 0.70 |
| 57:DA:1723:G:H2' | 57:DA:1724:G:H8 | 1.55 | 0.70 |
| 57:DA:1734:G:H2' | 57:DA:1735:A:C8 | 2.26 | 0.70 |
| 57:DA:2269:G:H2' | 57:DA:2270:A:H8 | 1.56 | 0.70 |
| 57:DA:2657:A:H2' | 57:DA:2658:C:C6 | 2.26 | 0.70 |
| 25:DD:159:LYS:HE2 | 25:DD:160:LYS:H | 1.57 | 0.70 |
| 33:DL:73:ILE:O | 33:DL:105:ILE:HA | 1.91 | 0.70 |
| 39:DR:87:GLN:HG2 | 39:DR:88:GLY:H | 1.55 | 0.70 |
| 45:DX:11:PRO:HB2 | 45:DX:27:ARG:HH21 | 1.56 | 0.70 |
| 2:AB:218:ALA:HA | 2:AB:221:ARG:HH21 | 1.56 | 0.70 |
| 22:BA:1603:A:H5'' | 22:BA:1604:C:OP2 | 1.91 | 0.70 |
| 29:BH:68:ARG:NH2 | 29:BH:72:ILE:HG21 | 2.05 | 0.70 |
| 42:BU:15:GLY:O | 42:BU:17:ASP:N | 2.24 | 0.70 |
| 44:BW:19:ARG:HH22 | 44:BW:22:VAL:HG21 | 1.55 | 0.70 |
| 53:CA:1151:A:O3' | 10:CJ:70:HIS:CE1 | 2.44 | 0.70 |
| 57:DA:339:U:H2' | 57:DA:340:A:C8 | 2.27 | 0.70 |
| 57:DA:687:C:H2' | 57:DA:688:U:C6 | 2.26 | 0.70 |
| 57:DA:992:C:H5' | 39:DR:87:GLN:HE22 | 1.55 | 0.70 |
| 57:DA:1204:A:H4' | 57:DA:1205:A:O5' | 1.91 | 0.70 |
| 57:DA:1324:G:O2' | 57:DA:1616:A:C6 | 2.44 | 0.70 |
| 57:DA:1341:G:O2' | 57:DA:1398:C:H5' | 1.92 | 0.70 |
| 57:DA:1440:U:H2' | 57:DA:1441:G:C8 | 2.23 | 0.70 |
| 25:DD:106:LYS:HB3 | 25:DD:206:ALA:CB | 2.21 | 0.70 |
| 25:DD:125:TRP:CG | 25:DD:160:LYS:HB3 | 2.26 | 0.70 |
| 59:DF:76:PHE:HD2 | 59:DF:76:PHE:H | 1.38 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:DH:84:ALA:H | 29:DH:148:ALA:HA | 1.56 | 0.70 |
| 42:DU:26:ASN:OD1 | 42:DU:34:ILE:HD12 | 1.92 | 0.70 |
| 1:AA:496:A:H2' | 1:AA:496:A:N3 | 2.04 | 0.70 |
| 12:AL:23:LEU:HB2 | 12:AL:58:ASN:HD22 | 1.56 | 0.70 |
| 21:AU:36:PHE:HD1 | 21:AU:39:LYS:HB3 | 1.56 | 0.70 |
| 22:BA:2830:C:O2' | 22:BA:2831:G:H5' | 1.91 | 0.70 |
| 33:BL:65:GLY:O | 33:BL:66:PHE:HB3 | 1.90 | 0.70 |
| 53:CA:1239:A:H5'' | 54:CG:118:ARG:HH12 | 1.55 | 0.70 |
| 2:CB:209:VAL:O | 2:CB:213:LEU:HB2 | 1.92 | 0.70 |
| 4:CD:8:LEU:CD2 | 4:CD:21:LYS:HD2 | 2.21 | 0.70 |
| 57:DA:1343:G:H2' | 57:DA:1344:U:C5 | 2.26 | 0.70 |
| 57:DA:1511:G:O2' | 57:DA:1512:C:H6 | 1.75 | 0.70 |
| 57:DA:2328:A:H2' | 57:DA:2329:U:C6 | 2.27 | 0.70 |
| 26:DE:35:TYR:CE2 | 26:DE:177:PRO:HD2 | 2.27 | 0.70 |
| 31:DJ:75:TYR:HD1 | 31:DJ:84:ILE:HD11 | 1.54 | 0.70 |
| 1:AA:1356:G:H2' | 1:AA:1357:A:C8 | 2.27 | 0.70 |
| 6:AF:4:TYR:O | 6:AF:63:ASN:HA | 1.91 | 0.70 |
| 22:BA:321:U:O2' | 22:BA:340:A:O2' | 2.08 | 0.70 |
| 22:BA:372:G:H5'' | 45:BX:60:LYS:HE3 | 1.73 | 0.70 |
| 22:BA:1347:A:C2' | 22:BA:1348:C:H5' | 2.22 | 0.70 |
| 22:BA:1714:U:H2' | 22:BA:1714:U:O2 | 1.91 | 0.70 |
| 22:BA:1871:A:O2' | 22:BA:1872:A:C8 | 2.43 | 0.70 |
| 22:BA:2813:A:H2 | 22:BA:2887:A:H61 | 1.40 | 0.70 |
| 23:BB:12:C:H4' | 23:BB:13:G:OP1 | 1.90 | 0.70 |
| 29:BH:5:LEU:HD13 | 29:BH:13:GLY:HA2 | 1.74 | 0.70 |
| 37:BP:96:LEU:HB3 | 37:BP:99:LEU:HD22 | 1.74 | 0.70 |
| 43:BV:80:HIS:CD2 | 43:BV:83:LYS:HB2 | 2.27 | 0.70 |
| 53:CA:72:A:O2' | 53:CA:73:C:H5' | 1.90 | 0.70 |
| 53:CA:93:U:H2' | 53:CA:95:C:H5 | 1.56 | 0.70 |
| 20:CT:30:PHE:HE2 | 20:CT:52:GLU:HG2 | 1.57 | 0.70 |
| 57:DA:79:C:H2' | 57:DA:80:G:O4' | 1.91 | 0.70 |
| 57:DA:2210:U:H4' | 57:DA:2211:A:C5' | 2.21 | 0.70 |
| 32:DK:2:ILE:HG22 | 32:DK:3:GLN:N | 2.05 | 0.70 |
| 1:AA:214:C:H2' | 1:AA:215:C:H6 | 1.56 | 0.70 |
| 16:AP:51:ARG:NH2 | 16:AP:53:ASP:HB2 | 2.06 | 0.70 |
| 22:BA:1778:U:H2' | 22:BA:1784:A:N6 | 2.07 | 0.70 |
| 27:BF:142:TYR:O | 27:BF:145:VAL:HG22 | 1.92 | 0.70 |
| 35:BN:71:ARG:HH21 | 35:BN:71:ARG:HG3 | 1.55 | 0.70 |
| 42:BU:25:LYS:O | 42:BU:26:ASN:HB3 | 1.91 | 0.70 |
| 53:CA:84:U:O2' | 53:CA:85:U:H5' | 1.92 | 0.70 |
| 53:CA:518:C:H2' | 53:CA:530:G:N7 | 2.07 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:CC:29:ALA:HB1 | 14:CN:64:ARG:HH12 | 1.57 | 0.70 |
| 4:CD:144:ILE:HD12 | 4:CD:177:MET:HB3 | 1.73 | 0.70 |
| 5:CE:79:THR:HA | 5:CE:121:ASN:OD1 | 1.91 | 0.70 |
| 6:CF:42:TRP:HE1 | 6:CF:61:LEU:HD23 | 1.57 | 0.70 |
| 57:DA:866:A:HO2' | 57:DA:867:C:H6 | 1.39 | 0.70 |
| 57:DA:1539:U:O2' | 57:DA:1540:G:O4' | 2.10 | 0.70 |
| 57:DA:2716:C:H2' | 57:DA:2717:C:C6 | 2.27 | 0.70 |
| 31:DJ:74:TYR:HE2 | 31:DJ:103:ILE:HD11 | 1.57 | 0.70 |
| 43:DV:44:HIS:NE2 | 43:DV:85:LYS:HB2 | 2.07 | 0.70 |
| 1:AA:214:C:H2' | 1:AA:215:C:C6 | 2.27 | 0.70 |
| 3:AC:139:ASN:HA | 3:AC:142:ARG:HB2 | 1.74 | 0.70 |
| 5:AE:104:ILE:HG13 | 5:AE:114:LEU:HD23 | 1.73 | 0.70 |
| 5:AE:148:SER:HB2 | 5:AE:151:MET:HB2 | 1.74 | 0.70 |
| 20:AT:25:SER:O | 20:AT:28:ARG:HG3 | 1.92 | 0.70 |
| 20:AT:47:GLN:HE21 | 20:AT:82:ILE:HD13 | 1.56 | 0.70 |
| 22:BA:197:A:H62 | 22:BA:2430:A:H2' | 1.56 | 0.70 |
| 41:BT:39:THR:HG22 | 41:BT:39:THR:O | 1.91 | 0.70 |
| 53:CA:177:G:O2' | 53:CA:1448:C:H5'' | 1.92 | 0.70 |
| 53:CA:913:A:H4' | 53:CA:914:A:O5' | 1.92 | 0.70 |
| 10:CJ:38:GLY:O | 10:CJ:40:ILE:HD12 | 1.92 | 0.70 |
| 12:CL:66:ILE:HD13 | 12:CL:73:LEU:HD12 | 1.74 | 0.70 |
| 17:CQ:61:ARG:HG2 | 17:CQ:75:VAL:HG11 | 1.73 | 0.70 |
| 57:DA:216:A:O2' | 57:DA:217:A:C8 | 2.25 | 0.70 |
| 57:DA:513:A:H2' | 57:DA:514:A:C8 | 2.27 | 0.70 |
| 57:DA:2056:G:H21 | 48:D0:1:ALA:N | 1.90 | 0.70 |
| 57:DA:2389:G:H5'' | 57:DA:2390:U:H5' | 1.74 | 0.70 |
| 57:DA:2798:U:H5' | 57:DA:2800:A:N7 | 2.07 | 0.70 |
| 58:DB:67:G:O2' | 58:DB:68:C:H6 | 1.75 | 0.70 |
| 31:DJ:44:TYR:CD1 | 38:DQ:63:ARG:NH2 | 2.59 | 0.70 |
| 1:AA:914:A:H2' | 1:AA:915:A:H8 | 1.55 | 0.69 |
| 1:AA:1160:G:O6 | 1:AA:1181:G:C6 | 2.44 | 0.69 |
| 2:AB:67:LEU:HD21 | 2:AB:91:VAL:HG23 | 1.73 | 0.69 |
| 2:AB:108:GLN:HE21 | 2:AB:108:GLN:N | 1.89 | 0.69 |
| 22:BA:163:C:H6 | 22:BA:163:C:OP1 | 1.75 | 0.69 |
| 22:BA:1734:G:O2' | 22:BA:1735:A:H8 | 1.75 | 0.69 |
| 22:BA:2531:A:OP1 | 28:BG:174:LYS:HG3 | 1.92 | 0.69 |
| 37:BP:3:ILE:HD13 | 37:BP:3:ILE:O | 1.91 | 0.69 |
| 40:BS:73:LYS:CB | 40:BS:106:VAL:HB | 2.22 | 0.69 |
| 47:BZ:29:ARG:O | 47:BZ:30:ARG:HG3 | 1.92 | 0.69 |
| 50:B2:3:ARG:HH21 | 50:B2:3:ARG:CG | 1.99 | 0.69 |
| 53:CA:91:U:O2' | 53:CA:92:U:H6 | 1.75 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:1038:C:H2' | 53:CA:1039:G:H8 | 1.57 | 0.69 |
| 53:CA:1074:G:C4' | 2:CB:102:ASN:HB2 | 2.22 | 0.69 |
| 10:CJ:26:VAL:O | 10:CJ:30:LYS:HB3 | 1.91 | 0.69 |
| 57:DA:607:U:O4 | 57:DA:619:G:H2' | 1.92 | 0.69 |
| 43:DV:14:LYS:HG3 | 43:DV:18:ARG:HD2 | 1.72 | 0.69 |
| 50:D2:19:ARG:HB3 | 50:D2:19:ARG:NH2 | 2.06 | 0.69 |
| 3:AC:21:TRP:HB3 | 3:AC:58:ARG:H | 1.56 | 0.69 |
| 5:AE:97:PRO:HA | 5:AE:122:VAL:HG12 | 1.75 | 0.69 |
| 7:AG:114:SER:HB3 | 7:AG:117:LEU:HG | 1.74 | 0.69 |
| 9:AI:112:ARG:HH22 | 10:AJ:64:GLN:NE2 | 1.91 | 0.69 |
| 13:AM:10:ASP:CG | 13:AM:11:HIS:N | 2.46 | 0.69 |
| 22:BA:789:A:OP1 | 22:BA:790:U:C5 | 2.45 | 0.69 |
| 22:BA:979:A:H2' | 22:BA:982:C:H42 | 1.57 | 0.69 |
| 22:BA:1060:U:C4' | 22:BA:1061:U:H5' | 2.21 | 0.69 |
| 22:BA:2311:A:H1' | 27:BF:78:ILE:HD13 | 1.74 | 0.69 |
| 27:BF:126:ASN:OD1 | 27:BF:156:THR:HA | 1.91 | 0.69 |
| 36:BO:75:GLY:HA3 | 36:BO:109:ALA:HB3 | 1.74 | 0.69 |
| 44:BW:37:VAL:HG12 | 44:BW:38:ARG:H | 1.57 | 0.69 |
| 53:CA:502:A:H1' | 53:CA:550:G:H5' | 1.74 | 0.69 |
| 53:CA:1151:A:H2' | 53:CA:1152:A:H8 | 1.57 | 0.69 |
| 4:CD:106:PHE:CD1 | 4:CD:158:LEU:HD21 | 2.27 | 0.69 |
| 5:CE:24:VAL:HG23 | 5:CE:26:GLY:H | 1.57 | 0.69 |
| 54:CG:30:MET:O | 54:CG:31:VAL:HB | 1.91 | 0.69 |
| 9:CI:10:ARG:HG3 | 9:CI:14:SER:O | 1.91 | 0.69 |
| 57:DA:965:C:H5'' | 63:DA:3344:HOH:O | 1.92 | 0.69 |
| 57:DA:1816:C:H2' | 24:DC:61:TYR:CZ | 2.27 | 0.69 |
| 57:DA:2076:U:H5'' | 57:DA:2238:G:H22 | 1.58 | 0.69 |
| 1:AA:546:A:P | 4:AD:68:GLU:HB2 | 2.31 | 0.69 |
| 1:AA:788:U:H2' | 1:AA:789:U:C6 | 2.27 | 0.69 |
| 1:AA:1405:G:O4' | 1:AA:1519:A:H4' | 1.92 | 0.69 |
| 6:AF:55:HIS:O | 6:AF:56:LYS:HB2 | 1.91 | 0.69 |
| 22:BA:915:C:O2' | 22:BA:916:G:H5' | 1.92 | 0.69 |
| 22:BA:1671:U:O2 | 22:BA:1673:G:H8 | 1.75 | 0.69 |
| 22:BA:1673:G:H2' | 22:BA:1674:G:H5' | 1.74 | 0.69 |
| 25:BD:69:ALA:HA | 25:BD:73:VAL:HG13 | 1.72 | 0.69 |
| 27:BF:134:GLN:HG2 | 27:BF:135:ILE:N | 2.07 | 0.69 |
| 28:BG:59:ASP:HB2 | 28:BG:63:GLN:HG2 | 1.74 | 0.69 |
| 44:BW:23:LYS:CE | 44:BW:24:ARG:HG3 | 2.22 | 0.69 |
| 2:CB:114:LYS:CA | 2:CB:117:GLU:HG2 | 2.19 | 0.69 |
| 8:CH:102:VAL:HG23 | 8:CH:125:ILE:HD12 | 1.74 | 0.69 |
| 10:CJ:51:VAL:HB | 14:CN:80:ARG:HB2 | 1.74 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:70:G:O2' | 57:DA:71:A:C5' | 2.40 | 0.69 |
| 57:DA:84:A:C5 | 57:DA:103:A:N6 | 2.60 | 0.69 |
| 57:DA:851:C:H2' | 57:DA:852:U:C6 | 2.27 | 0.69 |
| 57:DA:1826:G:OP2 | 24:DC:220:ARG:HB3 | 1.91 | 0.69 |
| 57:DA:2001:C:H4' | 57:DA:2689:U:H2' | 1.75 | 0.69 |
| 31:DJ:18:VAL:HG13 | 31:DJ:56:VAL:HA | 1.73 | 0.69 |
| 39:DR:4:VAL:HG23 | 39:DR:39:LEU:HG | 1.74 | 0.69 |
| 42:DU:14:THR:HG23 | 42:DU:15:GLY:H | 1.58 | 0.69 |
| 7:AG:69:ARG:HG3 | 7:AG:95:ARG:HG2 | 1.73 | 0.69 |
| 8:AH:6:ILE:HB | 8:AH:76:ARG:HH12 | 1.56 | 0.69 |
| 22:BA:2472:G:H2' | 22:BA:2475:C:H42 | 1.55 | 0.69 |
| 30:BI:89:SER:HB3 | 30:BI:92:PRO:HG3 | 1.72 | 0.69 |
| 33:BL:91:ASP:H | 33:BL:94:THR:HG21 | 1.57 | 0.69 |
| 38:BQ:91:ARG:HB2 | 38:BQ:94:LEU:HB2 | 1.73 | 0.69 |
| 53:CA:940:C:H5' | 54:CG:101:ARG:NH2 | 2.06 | 0.69 |
| 19:CS:54:ARG:HG2 | 19:CS:55:GLN:H | 1.56 | 0.69 |
| 57:DA:1722:A:N6 | 57:DA:1738:G:H1' | 2.08 | 0.69 |
| 57:DA:1799:G:C8 | 24:DC:179:GLU:OE1 | 2.46 | 0.69 |
| 57:DA:2408:U:HO2' | 57:DA:2409:G:H8 | 0.78 | 0.69 |
| 57:DA:2847:U:C2' | 57:DA:2848:G:H5' | 2.21 | 0.69 |
| 25:DD:124:ARG:HD3 | 25:DD:125:TRP:CD1 | 2.27 | 0.69 |
| 3:AC:146:LYS:HB2 | 3:AC:202:PHE:CD2 | 2.28 | 0.69 |
| 5:AE:106:ALA:CB | 5:AE:124:ALA:HB3 | 2.21 | 0.69 |
| 16:AP:4:ILE:HG12 | 16:AP:21:VAL:HG22 | 1.74 | 0.69 |
| 22:BA:802:A:H2' | 22:BA:803:U:H6 | 1.58 | 0.69 |
| 22:BA:1733:G:O2' | 22:BA:1734:G:H8 | 1.72 | 0.69 |
| 23:BB:66:A:H4' | 23:BB:67:G:OP1 | 1.92 | 0.69 |
| 30:BI:74:PRO:O | 30:BI:77:VAL:HG22 | 1.93 | 0.69 |
| 30:BI:98:GLY:HA3 | 30:BI:137:LEU:HD23 | 1.75 | 0.69 |
| 53:CA:1071:C:H2' | 53:CA:1072:G:C8 | 2.27 | 0.69 |
| 2:CB:160:LEU:HB2 | 2:CB:182:VAL:HG12 | 1.73 | 0.69 |
| 20:CT:4:LYS:HB3 | 20:CT:6:ALA:H | 1.57 | 0.69 |
| 57:DA:95:A:O2' | 46:DY:41:HIS:HD2 | 1.75 | 0.69 |
| 57:DA:172:A:H2' | 57:DA:173:A:C8 | 2.27 | 0.69 |
| 57:DA:765:C:H2' | 57:DA:766:U:H6 | 1.57 | 0.69 |
| 57:DA:975:A:HO2' | 57:DA:976:G:H8 | 1.41 | 0.69 |
| 57:DA:2060:A:O2' | 63:DA:3511:HOH:O | 2.09 | 0.69 |
| 34:DM:61:GLY:HA2 | 34:DM:107:GLY:HA3 | 1.73 | 0.69 |
| 38:DQ:4:LYS:NZ | 38:DQ:6:GLY:HA3 | 2.07 | 0.69 |
| 2:AB:13:VAL:HG22 | 2:AB:207:ARG:HH22 | 1.58 | 0.69 |
| 22:BA:529:A:H4' | 22:BA:530:G:OP1 | 1.91 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 24:BC:52:HIS:NE2 | 24:BC:218:THR:HG23 | 2.06 | 0.69 |
| 33:BL:19:LEU:HB2 | 33:BL:27:LEU:HD22 | 1.74 | 0.69 |
| 33:BL:109:LYS:CG | 33:BL:126:ARG:HB3 | 2.20 | 0.69 |
| 37:BP:28:LYS:HE3 | 37:BP:28:LYS:H | 1.58 | 0.69 |
| 40:BS:19:LEU:O | 48:B0:21:LEU:HD12 | 1.92 | 0.69 |
| 44:BW:72:GLY:N | 44:BW:73:PRO:HD2 | 2.07 | 0.69 |
| 5:CE:38:VAL:HG12 | 5:CE:39:GLY:N | 2.08 | 0.69 |
| 5:CE:154:ALA:HB1 | 8:CH:65:PHE:CE2 | 2.27 | 0.69 |
| 57:DA:1453:A:H4' | 57:DA:1454:C:OP2 | 1.92 | 0.69 |
| 57:DA:1734:G:H2' | 57:DA:1735:A:H8 | 1.58 | 0.69 |
| 57:DA:2353:G:H1' | 44:DW:30:VAL:HG13 | 1.72 | 0.69 |
| 26:DE:35:TYR:HE2 | 26:DE:177:PRO:HD2 | 1.55 | 0.69 |
| 33:DL:124:GLY:H | 33:DL:143:GLU:HG3 | 1.57 | 0.69 |
| 37:DP:28:LYS:HB2 | 37:DP:28:LYS:HZ2 | 1.58 | 0.69 |
| 45:DX:63:ILE:CD1 | 45:DX:64:ASP:H | 2.05 | 0.69 |
| 1:AA:111:G:O6 | 1:AA:330:C:N4 | 2.26 | 0.69 |
| 1:AA:473:U:H2' | 1:AA:474:G:H8 | 1.57 | 0.69 |
| 1:AA:1468:A:H2' | 1:AA:1469:C:H5'' | 1.75 | 0.69 |
| 19:AS:50:VAL:HG21 | 19:AS:70:LEU:HB3 | 1.75 | 0.69 |
| 22:BA:2873:A:H5'' | 22:BA:2874:C:OP2 | 1.91 | 0.69 |
| 24:BC:129:LEU:HD23 | 24:BC:130:PRO:HD2 | 1.73 | 0.69 |
| 29:BH:49:ALA:HB3 | 29:BH:50:ARG:NH2 | 2.08 | 0.69 |
| 35:BN:38:LEU:O | 35:BN:38:LEU:HD12 | 1.93 | 0.69 |
| 41:BT:61:LEU:C | 41:BT:61:LEU:HD12 | 2.13 | 0.69 |
| 8:CH:76:ARG:HD3 | 8:CH:77:VAL:N | 2.07 | 0.69 |
| 57:DA:78:U:O2' | 57:DA:79:C:H5' | 1.93 | 0.69 |
| 57:DA:975:A:O2' | 57:DA:976:G:H8 | 1.76 | 0.69 |
| 57:DA:1422:G:H4' | 57:DA:1493:C:OP1 | 1.93 | 0.69 |
| 57:DA:2285:C:H5 | 49:D1:5:ARG:NH2 | 1.91 | 0.69 |
| 58:DB:17:C:N4 | 58:DB:68:C:H42 | 1.91 | 0.69 |
| 24:DC:15:VAL:HG22 | 24:DC:205:GLY:HA3 | 1.75 | 0.69 |
| 29:DH:93:SER:CB | 29:DH:121:VAL:HG21 | 2.23 | 0.69 |
| 37:DP:50:ARG:HB3 | 37:DP:57:ALA:N | 2.07 | 0.69 |
| 41:DT:5:GLU:HA | 41:DT:8:LEU:HD12 | 1.74 | 0.69 |
| 45:DX:58:ILE:HG12 | 45:DX:66:VAL:HG11 | 1.74 | 0.69 |
| 51:D3:28:LEU:HA | 51:D3:32:LEU:HD21 | 1.75 | 0.69 |
| 1:AA:731:G:OP1 | 1:AA:766:A:H1' | 1.93 | 0.69 |
| 15:AO:2:LEU:HD22 | 15:AO:34:GLN:HG2 | 1.75 | 0.69 |
| 21:AU:10:PRO:O | 21:AU:11:PHE:HB3 | 1.92 | 0.69 |
| 22:BA:434:U:H4' | 22:BA:435:C:OP1 | 1.92 | 0.69 |
| 22:BA:1277:G:H5' | 35:BN:20:MET:HE1 | 1.74 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:1315:C:OP2 | 63:BA:3762:HOH:O | 2.11 | 0.69 |
| 22:BA:2383:G:H5'' | 22:BA:2383:G:H8 | 1.58 | 0.69 |
| 25:BD:99:GLU:CG | 25:BD:100:LEU:N | 2.55 | 0.69 |
| 25:BD:182:ALA:C | 25:BD:184:ARG:N | 2.43 | 0.69 |
| 26:BE:79:ARG:HG2 | 26:BE:80:SER:N | 2.07 | 0.69 |
| 26:BE:79:ARG:CG | 26:BE:80:SER:H | 2.03 | 0.69 |
| 27:BF:35:LEU:HD13 | 27:BF:56:LEU:HD22 | 1.74 | 0.69 |
| 32:BK:108:ARG:HH21 | 37:BP:34:GLY:HA3 | 1.58 | 0.69 |
| 39:BR:15:SER:H | 39:BR:18:GLN:NE2 | 1.90 | 0.69 |
| 41:BT:2:ILE:HG13 | 41:BT:3:ARG:CZ | 2.23 | 0.69 |
| 43:BV:40:ILE:HG22 | 43:BV:41:GLU:N | 2.08 | 0.69 |
| 44:BW:45:HIS:HB2 | 44:BW:50:VAL:HG13 | 1.75 | 0.69 |
| 49:B1:27:ARG:O | 49:B1:30:PRO:HD3 | 1.92 | 0.69 |
| 53:CA:794:A:H2' | 53:CA:795:C:H6 | 1.57 | 0.69 |
| 53:CA:822:U:H2' | 53:CA:823:C:C6 | 2.26 | 0.69 |
| 4:CD:58:GLN:OE1 | 4:CD:58:GLN:HA | 1.91 | 0.69 |
| 56:CP:57:ILE:O | 56:CP:61:VAL:HG23 | 1.91 | 0.69 |
| 57:DA:41:C:H2' | 57:DA:42:A:C8 | 2.28 | 0.69 |
| 57:DA:508:A:N6 | 40:DS:9:HIS:CE1 | 2.60 | 0.69 |
| 57:DA:746:U:H5'' | 57:DA:748:G:H5' | 1.75 | 0.69 |
| 57:DA:1906:G:C8 | 57:DA:1929:G:H2' | 2.27 | 0.69 |
| 57:DA:2275:C:O2' | 34:DM:84:LYS:HA | 1.92 | 0.69 |
| 57:DA:2860:A:H8 | 57:DA:2860:A:O5' | 1.74 | 0.69 |
| 58:DB:8:C:H5'' | 36:DO:15:ARG:HH12 | 1.57 | 0.69 |
| 42:DU:92:VAL:HB | 42:DU:101:THR:HG21 | 1.74 | 0.69 |
| 49:D1:51:ALA:O | 49:D1:52:LYS:HB2 | 1.91 | 0.69 |
| 1:AA:1095:U:O2' | 1:AA:1096:C:O4' | 2.10 | 0.69 |
| 1:AA:1409:C:O2' | 1:AA:1410:A:H5' | 1.93 | 0.69 |
| 31:BJ:3:THR:HB | 31:BJ:44:TYR:OH | 1.92 | 0.69 |
| 31:BJ:6:ALA:HB2 | 31:BJ:45:THR:HG21 | 1.73 | 0.69 |
| 37:BP:51:ASN:O | 37:BP:52:ARG:HG2 | 1.93 | 0.69 |
| 4:CD:24:VAL:HG23 | 4:CD:25:ARG:HB2 | 1.73 | 0.69 |
| 17:CQ:4:ILE:HG22 | 17:CQ:5:ARG:H | 1.58 | 0.69 |
| 57:DA:335:C:O2' | 57:DA:336:C:H6 | 1.72 | 0.69 |
| 57:DA:1258:U:H2' | 57:DA:1259:G:C8 | 2.28 | 0.69 |
| 57:DA:2666:C:H2' | 57:DA:2667:C:H5' | 1.75 | 0.69 |
| 26:DE:75:SER:O | 26:DE:78:TRP:HB2 | 1.91 | 0.69 |
| 28:DG:94:ARG:CZ | 28:DG:105:SER:HB2 | 2.23 | 0.69 |
| 37:DP:87:ARG:NH1 | 37:DP:111:GLU:HG3 | 2.08 | 0.69 |
| 39:DR:23:GLU:O | 39:DR:25:LEU:HD22 | 1.93 | 0.69 |
| 1:AA:891:U:O2' | 1:AA:892:A:H5' | 1.92 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:137:VAL:HA | 3:AC:148:ILE:HD13 | 1.74 | 0.69 |
| 22:BA:509:C:H6 | 22:BA:509:C:C5' | 2.05 | 0.69 |
| 42:BU:73:ASN:HD22 | 42:BU:76:THR:H | 1.41 | 0.69 |
| 47:BZ:23:LEU:HD21 | 47:BZ:53:MET:HE1 | 1.74 | 0.69 |
| 50:B2:35:ARG:HG2 | 50:B2:42:LEU:HD11 | 1.73 | 0.69 |
| 53:CA:373:A:H2' | 53:CA:374:A:H8 | 1.58 | 0.69 |
| 4:CD:144:ILE:HG22 | 4:CD:145:ARG:O | 1.93 | 0.69 |
| 54:CG:100:MET:CE | 54:CG:100:MET:H | 2.05 | 0.69 |
| 57:DA:502:A:H5' | 57:DA:503:A:OP2 | 1.92 | 0.69 |
| 57:DA:644:A:O2' | 57:DA:645:C:H5' | 1.91 | 0.69 |
| 57:DA:1695:G:H8 | 24:DC:7:PRO:O | 1.76 | 0.69 |
| 57:DA:2056:G:C2 | 57:DA:2057:G:C8 | 2.81 | 0.69 |
| 57:DA:2230:G:H1' | 45:DX:31:ASN:HB3 | 1.74 | 0.69 |
| 57:DA:2581:G:H1 | 57:DA:2610:C:HO2' | 1.40 | 0.69 |
| 57:DA:2614:A:H4' | 57:DA:2615:U:OP1 | 1.93 | 0.69 |
| 40:DS:49:LYS:HB3 | 40:DS:49:LYS:NZ | 2.08 | 0.69 |
| 1:AA:536:C:H5' | 1:AA:536:C:H6 | 1.58 | 0.68 |
| 1:AA:1050:G:O2' | 1:AA:1051:C:H5' | 1.93 | 0.68 |
| 1:AA:1063:C:H2' | 1:AA:1064:G:H8 | 1.58 | 0.68 |
| 22:BA:1011:G:H4' | 22:BA:1012:U:OP1 | 1.93 | 0.68 |
| 22:BA:1062:G:OP1 | 22:BA:1070:A:H4' | 1.93 | 0.68 |
| 32:BK:91:SER:O | 32:BK:93:GLN:HB2 | 1.93 | 0.68 |
| 38:BQ:27:ARG:HG3 | 38:BQ:27:ARG:HH11 | 1.58 | 0.68 |
| 39:BR:39:LEU:HA | 39:BR:49:ILE:HG21 | 1.74 | 0.68 |
| 53:CA:495:A:C2 | 53:CA:496:A:C6 | 2.81 | 0.68 |
| 53:CA:499:A:C6 | 53:CA:547:A:C8 | 2.81 | 0.68 |
| 53:CA:961:U:O2' | 53:CA:962:C:H6 | 1.69 | 0.68 |
| 54:CG:91:ARG:CG | 54:CG:92:PRO:HD2 | 2.22 | 0.68 |
| 21:CU:28:LEU:O | 21:CU:28:LEU:HD23 | 1.94 | 0.68 |
| 57:DA:755:U:O2' | 57:DA:756:A:H5' | 1.93 | 0.68 |
| 57:DA:960:A:H2' | 57:DA:962:G:H5' | 1.74 | 0.68 |
| 57:DA:1310:G:H2' | 57:DA:1311:G:O4' | 1.93 | 0.68 |
| 57:DA:1931:U:H2' | 57:DA:1932:A:C8 | 2.27 | 0.68 |
| 57:DA:2771:C:H2' | 57:DA:2772:C:C6 | 2.27 | 0.68 |
| 57:DA:2837:A:H2' | 57:DA:2838:G:C8 | 2.28 | 0.68 |
| 24:DC:131:MET:HG2 | 24:DC:134:ILE:HD11 | 1.74 | 0.68 |
| 42:DU:10:VAL:HG12 | 42:DU:71:ILE:HA | 1.75 | 0.68 |
| 42:DU:44:HIS:HD2 | 42:DU:57:ILE:HG21 | 1.57 | 0.68 |
| 51:D3:35:LYS:HB2 | 51:D3:40:LYS:HD3 | 1.75 | 0.68 |
| 1:AA:21:G:H2' | 1:AA:22:G:C8 | 2.28 | 0.68 |
| 1:AA:82:G:N2 | 1:AA:84:U:H3 | 1.91 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:642:A:H2' | 1:AA:643:C:H6 | 1.56 | 0.68 |
| 1:AA:958:A:C6 | 1:AA:959:A:N1 | 2.61 | 0.68 |
| 22:BA:532:A:HO2' | 22:BA:2021:C:H5 | 1.40 | 0.68 |
| 22:BA:855:G:N3 | 44:BW:23:LYS:HD3 | 2.09 | 0.68 |
| 22:BA:1178:C:H2' | 22:BA:1179:G:N7 | 2.08 | 0.68 |
| 22:BA:1319:C:O2' | 22:BA:1320:C:H5' | 1.93 | 0.68 |
| 22:BA:2352:A:N1 | 44:BW:30:VAL:HG21 | 2.08 | 0.68 |
| 25:BD:104:VAL:HA | 25:BD:106:LYS:NZ | 2.08 | 0.68 |
| 28:BG:95:ALA:HB2 | 28:BG:104:LEU:HD23 | 1.75 | 0.68 |
| 30:BI:20:SER:HB3 | 30:BI:21:PRO:HD3 | 1.74 | 0.68 |
| 31:BJ:65:THR:CG2 | 31:BJ:68:LYS:HE3 | 2.22 | 0.68 |
| 34:BM:1:MET:O | 34:BM:2:LEU:HB2 | 1.92 | 0.68 |
| 41:BT:43:ILE:O | 41:BT:47:VAL:HG23 | 1.93 | 0.68 |
| 43:BV:61:LEU:O | 43:BV:71:LYS:HA | 1.92 | 0.68 |
| 44:BW:39:GLN:HG2 | 44:BW:41:GLY:N | 2.00 | 0.68 |
| 53:CA:198:G:O2' | 53:CA:199:A:H8 | 1.76 | 0.68 |
| 53:CA:1348:U:HO2' | 53:CA:1349:A:H8 | 1.42 | 0.68 |
| 57:DA:375:G:C8 | 57:DA:375:G:H5'' | 2.27 | 0.68 |
| 57:DA:1299:G:H22 | 57:DA:1640:A:H5' | 1.56 | 0.68 |
| 57:DA:1401:G:H2' | 57:DA:1402:U:H6 | 1.56 | 0.68 |
| 57:DA:1739:A:H2' | 57:DA:1740:G:C8 | 2.27 | 0.68 |
| 28:DG:48:THR:O | 28:DG:49:LEU:HB2 | 1.92 | 0.68 |
| 35:DN:37:THR:HB | 35:DN:40:LYS:HB2 | 1.75 | 0.68 |
| 39:DR:39:LEU:O | 39:DR:40:MET:HB2 | 1.92 | 0.68 |
| 43:DV:61:LEU:HD23 | 43:DV:61:LEU:H | 1.57 | 0.68 |
| 1:AA:841:C:C2 | 1:AA:843:U:H5' | 2.28 | 0.68 |
| 1:AA:1138:G:O2' | 1:AA:1139:G:H4' | 1.93 | 0.68 |
| 1:AA:1349:A:H2' | 1:AA:1350:A:C8 | 2.28 | 0.68 |
| 22:BA:215:G:H4' | 22:BA:216:A:H4' | 1.76 | 0.68 |
| 22:BA:620:G:H4' | 22:BA:621:A:O5' | 1.93 | 0.68 |
| 34:BM:43:ALA:HA | 34:BM:46:ILE:CG1 | 2.23 | 0.68 |
| 40:BS:84:ARG:CB | 40:BS:96:ILE:HD11 | 2.16 | 0.68 |
| 53:CA:87:C:O2' | 53:CA:88:U:H4' | 1.93 | 0.68 |
| 53:CA:566:G:H4' | 53:CA:567:G:OP1 | 1.94 | 0.68 |
| 53:CA:998:C:H2' | 53:CA:999:C:H6 | 1.58 | 0.68 |
| 53:CA:1264:U:H2' | 53:CA:1265:C:C6 | 2.28 | 0.68 |
| 3:CC:59:PRO:HG2 | 3:CC:62:SER:HB3 | 1.74 | 0.68 |
| 21:CU:19:LYS:HZ3 | 21:CU:19:LYS:N | 1.91 | 0.68 |
| 29:DH:1:MET:HB3 | 29:DH:21:VAL:O | 1.93 | 0.68 |
| 31:DJ:57:LEU:HG | 31:DJ:128:ASN:H | 1.58 | 0.68 |
| 31:DJ:59:ALA:O | 31:DJ:62:VAL:HG12 | 1.91 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:DT:1:MET:HG2 | 41:DT:4:GLU:HA | 1.73 | 0.68 |
| 47:DZ:40:THR:H | 47:DZ:43:ILE:HD11 | 1.57 | 0.68 |
| 1:AA:736:C:H2' | 1:AA:737:C:C6 | 2.28 | 0.68 |
| 1:AA:1386:G:H2' | 1:AA:1387:G:H8 | 1.58 | 0.68 |
| 2:AB:95:TRP:HZ2 | 2:AB:100:LEU:HD23 | 1.57 | 0.68 |
| 9:AI:113:LYS:HG3 | 9:AI:119:LYS:HA | 1.75 | 0.68 |
| 12:AL:27:PRO:HB2 | 12:AL:28:GLN:OE1 | 1.91 | 0.68 |
| 24:BC:43:ASN:HB3 | 24:BC:45:ASN:H | 1.58 | 0.68 |
| 24:BC:104:LEU:O | 24:BC:105:ALA:HB2 | 1.93 | 0.68 |
| 29:BH:2:GLN:O | 29:BH:3:VAL:HG22 | 1.93 | 0.68 |
| 51:B3:26:ALA:O | 51:B3:27:ASN:HB2 | 1.91 | 0.68 |
| 53:CA:818:G:C2' | 53:CA:819:A:H5'' | 2.24 | 0.68 |
| 4:CD:56:GLU:HA | 4:CD:56:GLU:OE1 | 1.92 | 0.68 |
| 55:CM:64:VAL:HG12 | 55:CM:65:GLU:HG3 | 1.76 | 0.68 |
| 57:DA:13:A:O2' | 57:DA:15:G:N7 | 2.27 | 0.68 |
| 57:DA:2426:A:H3' | 57:DA:2427:C:H5' | 1.75 | 0.68 |
| 57:DA:2507:C:H1' | 57:DA:2583:G:C2 | 2.29 | 0.68 |
| 32:DK:7:MET:HA | 32:DK:7:MET:HE2 | 1.75 | 0.68 |
| 38:DQ:34:ALA:O | 38:DQ:38:VAL:HG23 | 1.93 | 0.68 |
| 41:DT:6:ARG:O | 41:DT:9:LYS:HD2 | 1.92 | 0.68 |
| 44:DW:18:LYS:H | 44:DW:36:ILE:HG12 | 1.56 | 0.68 |
| 46:DY:2:LYS:HD2 | 46:DY:4:LYS:HE3 | 1.75 | 0.68 |
| 51:D3:15:LYS:NZ | 51:D3:19:GLY:HA2 | 2.08 | 0.68 |
| 4:AD:160:LEU:H | 4:AD:160:LEU:HD13 | 1.58 | 0.68 |
| 5:AE:14:LEU:HB2 | 5:AE:36:THR:HG22 | 1.74 | 0.68 |
| 9:AI:32:ARG:HG2 | 9:AI:36:GLN:CB | 2.22 | 0.68 |
| 24:BC:141:HIS:HD2 | 24:BC:192:GLY:O | 1.75 | 0.68 |
| 44:BW:23:LYS:HE3 | 44:BW:24:ARG:HG3 | 1.75 | 0.68 |
| 53:CA:753:A:H4' | 53:CA:754:C:O5' | 1.93 | 0.68 |
| 53:CA:1190:G:H3' | 3:CC:2:GLN:O | 1.94 | 0.68 |
| 9:CI:24:ASN:O | 9:CI:61:ASP:HA | 1.94 | 0.68 |
| 14:CN:66:THR:HG23 | 14:CN:82:LYS:HE3 | 1.75 | 0.68 |
| 56:CP:44:SER:H | 56:CP:46:LYS:HZ3 | 1.42 | 0.68 |
| 57:DA:1062:G:O4' | 57:DA:1088:A:N7 | 2.27 | 0.68 |
| 57:DA:2683:C:O2' | 57:DA:2684:U:H5' | 1.93 | 0.68 |
| 57:DA:2813:A:H2' | 57:DA:2814:A:C8 | 2.27 | 0.68 |
| 59:DF:136:ILE:O | 59:DF:137:PHE:O | 2.12 | 0.68 |
| 40:DS:4:ILE:HG22 | 40:DS:106:VAL:HG13 | 1.76 | 0.68 |
| 52:D4:16:ILE:CG1 | 52:D4:25:VAL:HG22 | 2.19 | 0.68 |
| 1:AA:182:A:N3 | 1:AA:184:G:C8 | 2.62 | 0.68 |
| 1:AA:202:G:N2 | 1:AA:466:A:H61 | 1.91 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:255:G:H4' | 17:AQ:18:LYS:HE3 | 1.75 | 0.68 |
| 1:AA:1278:G:O5' | 1:AA:1279:G:H5' | 1.94 | 0.68 |
| 6:AF:3:HIS:H | 6:AF:92:THR:CG2 | 2.04 | 0.68 |
| 8:AH:9:MET:HE2 | 8:AH:32:LYS:HG2 | 1.76 | 0.68 |
| 11:AK:121:ARG:CZ | 21:AU:35:GLU:HG3 | 2.24 | 0.68 |
| 22:BA:1063:G:OP1 | 30:BI:76:ALA:HB3 | 1.94 | 0.68 |
| 24:BC:143:VAL:HG12 | 24:BC:144:GLU:O | 1.94 | 0.68 |
| 30:BI:7:TYR:HA | 30:BI:58:ILE:HB | 1.75 | 0.68 |
| 31:BJ:65:THR:HG23 | 31:BJ:66:GLY:N | 2.09 | 0.68 |
| 31:BJ:99:ARG:O | 31:BJ:103:ILE:HG23 | 1.92 | 0.68 |
| 34:BM:2:LEU:HD23 | 34:BM:69:PRO:HD2 | 1.76 | 0.68 |
| 53:CA:1148:U:O2' | 53:CA:1149:C:H5' | 1.94 | 0.68 |
| 53:CA:1181:G:H2' | 53:CA:1182:G:C8 | 2.29 | 0.68 |
| 54:CG:22:LEU:HA | 54:CG:25:PHE:CB | 2.19 | 0.68 |
| 57:DA:36:G:C6 | 57:DA:445:C:N4 | 2.62 | 0.68 |
| 57:DA:181:A:H2 | 57:DA:434:U:H1' | 1.59 | 0.68 |
| 57:DA:945:A:H5' | 57:DA:946:C:OP2 | 1.94 | 0.68 |
| 57:DA:1398:C:HO2' | 57:DA:1399:C:H6 | 1.42 | 0.68 |
| 1:AA:486:U:C6 | 1:AA:486:U:H5'' | 2.29 | 0.68 |
| 1:AA:577:G:O2' | 1:AA:578:C:H5' | 1.92 | 0.68 |
| 1:AA:1130:A:H5'' | 1:AA:1130:A:C8 | 2.29 | 0.68 |
| 1:AA:1167:A:C8 | 1:AA:1169:A:N6 | 2.62 | 0.68 |
| 3:AC:119:ILE:HG21 | 3:AC:197:VAL:HG11 | 1.75 | 0.68 |
| 22:BA:2857:G:N2 | 22:BA:2860:A:OP2 | 2.24 | 0.68 |
| 53:CA:608:A:H2' | 53:CA:609:A:O4' | 1.93 | 0.68 |
| 12:CL:50:LYS:HD2 | 12:CL:50:LYS:N | 2.09 | 0.68 |
| 57:DA:298:G:H2' | 57:DA:339:U:O4 | 1.93 | 0.68 |
| 57:DA:765:C:H2' | 57:DA:766:U:C6 | 2.28 | 0.68 |
| 57:DA:784:G:HO2' | 57:DA:785:G:H8 | 1.38 | 0.68 |
| 57:DA:1263:U:O2' | 48:D0:7:PRO:HD2 | 1.93 | 0.68 |
| 57:DA:1290:C:HO2' | 57:DA:1291:C:H6 | 0.75 | 0.68 |
| 57:DA:1751:U:H2' | 57:DA:1752:C:C6 | 2.28 | 0.68 |
| 57:DA:2232:C:P | 45:DX:26:ARG:NH1 | 2.67 | 0.68 |
| 59:DF:43:ILE:HG12 | 59:DF:77:LYS:HD3 | 1.76 | 0.68 |
| 42:DU:58:VAL:HG13 | 42:DU:60:LYS:HG2 | 1.76 | 0.68 |
| 51:D3:22:LYS:H | 51:D3:48:MET:HB3 | 1.57 | 0.68 |
| 1:AA:1277:C:O2' | 1:AA:1279:G:H8 | 1.71 | 0.68 |
| 1:AA:1287:A:H2' | 1:AA:1288:A:C8 | 2.29 | 0.68 |
| 2:AB:42:LEU:HG | 2:AB:43:GLU:HG3 | 1.76 | 0.68 |
| 11:AK:42:GLY:HA3 | 11:AK:73:VAL:HG12 | 1.74 | 0.68 |
| 43:BV:10:LYS:NZ | 43:BV:11:GLU:HG3 | 2.08 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:CI:11:ARG:HD3 | 9:CI:106:ASP:OD1 | 1.94 | 0.68 |
| 57:DA:184:C:H2' | 57:DA:185:G:C8 | 2.29 | 0.68 |
| 57:DA:391:A:H2' | 57:DA:392:U:H6 | 1.59 | 0.68 |
| 57:DA:512:G:OP2 | 57:DA:1235:G:H5' | 1.93 | 0.68 |
| 57:DA:1935:G:H1' | 57:DA:1964:G:N2 | 2.08 | 0.68 |
| 57:DA:2149:U:O2' | 57:DA:2150:C:C6 | 2.42 | 0.68 |
| 51:D3:31:ILE:HG21 | 51:D3:34:LYS:NZ | 2.08 | 0.68 |
| 1:AA:243:A:C4' | 1:AA:244:U:H5'' | 2.20 | 0.68 |
| 16:AP:73:ALA:O | 16:AP:77:GLU:HB2 | 1.93 | 0.68 |
| 22:BA:962:G:N2 | 22:BA:2250:G:H1 | 1.92 | 0.68 |
| 22:BA:1050:A:C2 | 22:BA:2751:G:C4 | 2.82 | 0.68 |
| 22:BA:2887:A:H2' | 22:BA:2887:A:N3 | 2.08 | 0.68 |
| 31:BJ:31:GLU:HG3 | 31:BJ:142:ILE:HG21 | 1.76 | 0.68 |
| 35:BN:23:ASN:H | 35:BN:23:ASN:ND2 | 1.92 | 0.68 |
| 37:BP:105:LYS:HA | 37:BP:108:ARG:NH2 | 2.09 | 0.68 |
| 40:BS:63:GLY:O | 40:BS:64:ALA:HB3 | 1.93 | 0.68 |
| 44:BW:28:GLU:HB3 | 44:BW:31:LEU:CD2 | 2.18 | 0.68 |
| 53:CA:1090:U:H2' | 53:CA:1091:U:H6 | 1.59 | 0.68 |
| 53:CA:1113:C:H2' | 53:CA:1114:C:H6 | 1.59 | 0.68 |
| 53:CA:1300:G:H22 | 53:CA:1334:G:H2' | 1.58 | 0.68 |
| 57:DA:397:U:O2' | 57:DA:398:C:O4' | 2.12 | 0.68 |
| 57:DA:672:C:O2' | 26:DE:77:ILE:HD11 | 1.92 | 0.68 |
| 57:DA:1024:G:H2' | 57:DA:1025:G:C8 | 2.29 | 0.68 |
| 57:DA:1827:U:H2' | 57:DA:1828:G:O4' | 1.92 | 0.68 |
| 57:DA:2529:G:H4' | 28:DG:174:LYS:HD3 | 1.74 | 0.68 |
| 57:DA:2626:C:O2' | 57:DA:2627:G:H5' | 1.93 | 0.68 |
| 57:DA:2850:A:O2' | 57:DA:2851:A:H5' | 1.93 | 0.68 |
| 1:AA:206:C:H2' | 1:AA:207:C:O4' | 1.94 | 0.68 |
| 1:AA:1458:G:H5' | 20:AT:26:MET:HB3 | 1.77 | 0.68 |
| 17:AQ:55:GLY:HA3 | 17:AQ:82:VAL:HG11 | 1.76 | 0.68 |
| 20:AT:77:ASN:HD22 | 20:AT:78:LEU:N | 1.92 | 0.68 |
| 22:BA:947:A:HO2' | 22:BA:984:A:H2 | 1.41 | 0.68 |
| 22:BA:1259:G:O2' | 22:BA:1260:A:H5' | 1.94 | 0.68 |
| 22:BA:2798:U:OP2 | 22:BA:2798:U:H2' | 1.94 | 0.68 |
| 25:BD:182:ALA:O | 25:BD:184:ARG:N | 2.26 | 0.68 |
| 29:BH:90:LEU:HB2 | 29:BH:123:ARG:HB3 | 1.73 | 0.68 |
| 34:BM:64:TRP:CZ3 | 34:BM:106:ASP:HB2 | 2.29 | 0.68 |
| 35:BN:103:ARG:HD3 | 35:BN:110:MET:HE3 | 1.76 | 0.68 |
| 37:BP:50:ARG:HD2 | 37:BP:51:ASN:N | 2.08 | 0.68 |
| 44:BW:26:GLY:O | 44:BW:27:GLY:C | 2.32 | 0.68 |
| 53:CA:142:G:C2 | 53:CA:143:A:H1' | 2.28 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 53:CA:1147:C:HO2' | 53:CA:1148:U:H6 | 1.40 | 0.68 |
| 57:DA:1815:A:H4' | 57:DA:1816:C:OP1 | 1.93 | 0.68 |
| 57:DA:2135:A:H3' | 57:DA:2136:G:C5' | 2.20 | 0.68 |
| 57:DA:2662:A:H2' | 57:DA:2663:G:O4' | 1.94 | 0.68 |
| 58:DB:94:A:OP1 | 43:DV:19:ARG:HD3 | 1.94 | 0.68 |
| 24:DC:128:THR:CG2 | 24:DC:188:ARG:HB3 | 2.24 | 0.68 |
| 25:DD:9:VAL:O | 37:DP:4:ILE:HD11 | 1.93 | 0.68 |
| 33:DL:92:LEU:CD2 | 33:DL:124:GLY:HA3 | 2.23 | 0.68 |
| 5:AE:80:LEU:HD23 | 5:AE:122:VAL:CG1 | 2.16 | 0.67 |
| 22:BA:1417:C:O2' | 22:BA:1418:G:H5' | 1.93 | 0.67 |
| 27:BF:131:VAL:HG21 | 27:BF:151:LEU:HG | 1.76 | 0.67 |
| 33:BL:78:ARG:HB3 | 33:BL:113:ALA:HB3 | 1.74 | 0.67 |
| 53:CA:413:G:C6 | 4:CD:32:LYS:HE3 | 2.30 | 0.67 |
| 53:CA:738:C:H2' | 53:CA:739:C:C6 | 2.23 | 0.67 |
| 53:CA:1051:C:O2' | 53:CA:1052:U:O5' | 2.07 | 0.67 |
| 54:CG:24:LYS:O | 54:CG:28:ILE:HG12 | 1.92 | 0.67 |
| 9:CI:49:GLN:N | 9:CI:50:PRO:HD2 | 2.10 | 0.67 |
| 21:CU:39:LYS:N | 21:CU:40:PRO:CD | 2.57 | 0.67 |
| 57:DA:832:U:P | 33:DL:38:GLN:H | 2.17 | 0.67 |
| 57:DA:1668:A:O4' | 57:DA:1669:A:C2 | 2.47 | 0.67 |
| 31:DJ:110:PRO:HG2 | 31:DJ:111:LYS:HG2 | 1.76 | 0.67 |
| 39:DR:82:HIS:O | 39:DR:82:HIS:CG | 2.47 | 0.67 |
| 44:DW:18:LYS:HD3 | 44:DW:19:ARG:HG2 | 1.75 | 0.67 |
| 46:DY:28:LEU:HD11 | 46:DY:43:LEU:HD13 | 1.74 | 0.67 |
| 1:AA:1239:A:N6 | 1:AA:1299:A:H62 | 1.92 | 0.67 |
| 9:AI:112:ARG:NH2 | 10:AJ:64:GLN:HE22 | 1.93 | 0.67 |
| 22:BA:284:U:H2' | 22:BA:285:G:C8 | 2.29 | 0.67 |
| 22:BA:480:A:OP2 | 42:BU:43:LYS:HD2 | 1.94 | 0.67 |
| 22:BA:1045:C:H5'' | 22:BA:1046:A:H5' | 1.75 | 0.67 |
| 22:BA:1113:U:H2' | 22:BA:1114:C:H6 | 1.59 | 0.67 |
| 22:BA:2339:C:H2' | 22:BA:2340:A:H8 | 1.57 | 0.67 |
| 25:BD:24:VAL:HA | 25:BD:191:GLY:H | 1.59 | 0.67 |
| 26:BE:149:ILE:HD11 | 26:BE:172:ALA:HA | 1.76 | 0.67 |
| 44:BW:50:VAL:O | 44:BW:52:CYS:N | 2.26 | 0.67 |
| 53:CA:1071:C:H2' | 53:CA:1072:G:H8 | 1.60 | 0.67 |
| 53:CA:1152:A:H2' | 53:CA:1153:G:H8 | 1.58 | 0.67 |
| 53:CA:1458:G:O2' | 20:CT:22:SER:CB | 2.41 | 0.67 |
| 9:CI:35:GLU:HA | 9:CI:39:GLY:HA3 | 1.77 | 0.67 |
| 20:CT:42:ASP:HB3 | 20:CT:45:ALA:HB3 | 1.76 | 0.67 |
| 57:DA:712:G:N2 | 57:DA:720:U:H1' | 2.09 | 0.67 |
| 57:DA:1056:G:H1' | 57:DA:1103:A:N6 | 2.09 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:DA:2145:C:H3' | 57:DA:2147:A:OP2 | 1.94 | 0.67 |
| 58:DB:17:C:H42 | 58:DB:68:C:N4 | 1.91 | 0.67 |
| 33:DL:63:LYS:HB3 | 51:D3:12:ARG:HD2 | 1.76 | 0.67 |
| 45:DX:30:PRO:HG2 | 45:DX:32:LEU:CD2 | 2.24 | 0.67 |
| 1:AA:408:A:OP1 | 4:AD:109:THR:HG21 | 1.95 | 0.67 |
| 1:AA:548:G:H2' | 1:AA:549:C:C6 | 2.29 | 0.67 |
| 53:CA:571:U:H5'' | 53:CA:572:A:OP2 | 1.94 | 0.67 |
| 53:CA:1348:U:H4' | 9:CI:121:ARG:HG3 | 1.75 | 0.67 |
| 19:CS:49:ALA:HB1 | 19:CS:56:HIS:HB3 | 1.75 | 0.67 |
| 57:DA:45:G:H5' | 57:DA:46:G:H5' | 1.77 | 0.67 |
| 57:DA:531:C:H4' | 57:DA:532:A:C8 | 2.30 | 0.67 |
| 57:DA:1181:U:H2' | 57:DA:1182:G:C8 | 2.30 | 0.67 |
| 57:DA:1635:A:H2' | 57:DA:1636:U:H6 | 1.58 | 0.67 |
| 29:DH:41:LYS:HA | 29:DH:44:ILE:HG12 | 1.74 | 0.67 |
| 33:DL:142:ILE:HG22 | 33:DL:144:GLU:H | 1.58 | 0.67 |
| 38:DQ:91:ARG:HG3 | 39:DR:11:GLN:CD | 2.15 | 0.67 |
| 1:AA:1094:G:HO2' | 1:AA:1095:U:P | 2.18 | 0.67 |
| 19:AS:51:HIS:CD2 | 19:AS:53:GLY:H | 2.12 | 0.67 |
| 22:BA:714:U:H5' | 22:BA:715:A:OP2 | 1.93 | 0.67 |
| 22:BA:800:A:H4' | 22:BA:801:G:O5' | 1.92 | 0.67 |
| 22:BA:1779:U:C5 | 22:BA:1784:A:N7 | 2.62 | 0.67 |
| 31:BJ:44:TYR:O | 31:BJ:45:THR:HG22 | 1.94 | 0.67 |
| 52:B4:10:LEU:HB2 | 52:B4:33:HIS:CD2 | 2.29 | 0.67 |
| 3:CC:76:ILE:HA | 3:CC:83:VAL:HG13 | 1.76 | 0.67 |
| 9:CI:114:LYS:HB2 | 9:CI:117:LEU:HD12 | 1.76 | 0.67 |
| 9:CI:118:ARG:NH2 | 9:CI:122:ARG:HE | 1.90 | 0.67 |
| 14:CN:47:LEU:O | 14:CN:50:LEU:HG | 1.93 | 0.67 |
| 57:DA:475:C:H2' | 57:DA:476:G:C8 | 2.30 | 0.67 |
| 57:DA:876:C:H3' | 57:DA:877:A:C8 | 2.28 | 0.67 |
| 57:DA:1056:G:N2 | 57:DA:1102:C:H5 | 1.92 | 0.67 |
| 57:DA:1695:G:H8 | 24:DC:7:PRO:HB2 | 1.59 | 0.67 |
| 57:DA:2282:G:H1' | 57:DA:2390:U:C5 | 2.28 | 0.67 |
| 57:DA:2389:G:C5' | 57:DA:2390:U:H5' | 2.23 | 0.67 |
| 57:DA:2756:U:O2' | 57:DA:2757:A:H5' | 1.95 | 0.67 |
| 47:DZ:20:LYS:O | 47:DZ:24:LEU:HD13 | 1.94 | 0.67 |
| 1:AA:265:G:C2' | 1:AA:266:G:H5' | 2.25 | 0.67 |
| 1:AA:265:G:H2' | 1:AA:266:G:H5' | 1.76 | 0.67 |
| 1:AA:1285:A:H5' | 1:AA:1286:U:C4 | 2.29 | 0.67 |
| 1:AA:1373:G:H5'' | 7:AG:35:LYS:HB2 | 1.74 | 0.67 |
| 5:AE:152:VAL:HB | 5:AE:155:LYS:HZ2 | 1.58 | 0.67 |
| 9:AI:46:VAL:HA | 9:AI:49:GLN:HG3 | 1.75 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:AJ:14:ASP:HB3 | 10:AJ:17:LEU:HB3 | 1.76 | 0.67 |
| 22:BA:1343:G:H2' | 22:BA:1344:U:H6 | 1.60 | 0.67 |
| 22:BA:1506:U:H2' | 22:BA:1507:C:C6 | 2.30 | 0.67 |
| 27:BF:161:SER:OG | 27:BF:164:GLU:HG3 | 1.95 | 0.67 |
| 29:BH:41:LYS:HA | 29:BH:44:ILE:HG12 | 1.76 | 0.67 |
| 34:BM:8:LYS:HD2 | 34:BM:8:LYS:N | 2.07 | 0.67 |
| 43:BV:48:MET:O | 43:BV:51:GLN:HG3 | 1.94 | 0.67 |
| 10:CJ:15:HIS:HE1 | 10:CJ:68:ARG:HD3 | 1.57 | 0.67 |
| 14:CN:46:LYS:HE3 | 19:CS:10:ILE:HB | 1.77 | 0.67 |
| 57:DA:2360:G:H1' | 33:DL:60:ARG:HH21 | 1.60 | 0.67 |
| 25:DD:30:GLU:HG2 | 25:DD:185:ASN:ND2 | 2.08 | 0.67 |
| 1:AA:345:C:O2' | 32:BK:116:ILE:HD13 | 1.94 | 0.67 |
| 25:BD:5:VAL:N | 25:BD:32:ASN:HD21 | 1.90 | 0.67 |
| 49:B1:34:GLU:HG2 | 49:B1:49:LYS:HG3 | 1.77 | 0.67 |
| 51:B3:40:LYS:HA | 51:B3:43:LEU:HD12 | 1.75 | 0.67 |
| 53:CA:996:A:N1 | 53:CA:1046:A:H5' | 2.09 | 0.67 |
| 53:CA:1298:U:H5 | 54:CG:113:LYS:HA | 1.58 | 0.67 |
| 4:CD:176:LYS:HE2 | 4:CD:178:GLU:CD | 2.14 | 0.67 |
| 19:CS:40:PHE:CB | 19:CS:41:PRO:HD2 | 2.23 | 0.67 |
| 20:CT:23:ARG:HB3 | 20:CT:60:GLN:HE21 | 1.59 | 0.67 |
| 57:DA:324:A:C2 | 57:DA:325:G:H1' | 2.29 | 0.67 |
| 57:DA:923:G:H1' | 44:DW:23:LYS:HZ2 | 1.59 | 0.67 |
| 57:DA:1303:G:O2' | 57:DA:1304:A:H8 | 1.76 | 0.67 |
| 57:DA:1590:A:H2' | 57:DA:1591:A:C8 | 2.29 | 0.67 |
| 57:DA:1695:G:H2' | 57:DA:1696:G:O4' | 1.95 | 0.67 |
| 57:DA:1965:C:H5' | 57:DA:1966:A:H5'' | 1.75 | 0.67 |
| 59:DF:104:THR:HG22 | 59:DF:105:ILE:HG13 | 1.76 | 0.67 |
| 40:DS:14:ALA:HB1 | 40:DS:18:ARG:NH2 | 2.08 | 0.67 |
| 1:AA:246:A:H4' | 1:AA:247:G:OP1 | 1.93 | 0.67 |
| 1:AA:363:A:OP1 | 12:AL:57:THR:HG21 | 1.95 | 0.67 |
| 22:BA:143:C:HO2' | 22:BA:144:A:H8 | 1.42 | 0.67 |
| 22:BA:1157:G:N2 | 22:BA:1158:C:C2 | 2.63 | 0.67 |
| 22:BA:2032:G:N7 | 63:BA:3534:HOH:O | 2.28 | 0.67 |
| 25:BD:106:LYS:H | 25:BD:106:LYS:HD2 | 1.59 | 0.67 |
| 41:BT:32:LEU:N | 41:BT:83:ALA:HB3 | 2.08 | 0.67 |
| 44:BW:24:ARG:HD3 | 44:BW:65:LYS:CE | 2.25 | 0.67 |
| 53:CA:1268:G:N2 | 53:CA:1327:C:H1' | 2.09 | 0.67 |
| 53:CA:1513:A:H2' | 53:CA:1514:G:H8 | 1.60 | 0.67 |
| 57:DA:1635:A:H5' | 57:DA:1635:A:H8 | 1.58 | 0.67 |
| 57:DA:1915:U:O2' | 57:DA:1916:A:H5' | 1.95 | 0.67 |
| 57:DA:2271:G:O2' | 57:DA:2272:U:H5' | 1.94 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:2360:G:C1' | 33:DL:60:ARG:HH21 | 2.06 | 0.67 |
| 42:DU:17:ASP:HB2 | 42:DU:38:ILE:HA | 1.76 | 0.67 |
| 52:D4:7:VAL:CG1 | 52:D4:8:LYS:H | 2.08 | 0.67 |
| 1:AA:461:A:H3' | 1:AA:461:A:N3 | 2.08 | 0.67 |
| 2:AB:40:ILE:HG21 | 2:AB:201:GLY:H | 1.58 | 0.67 |
| 4:AD:33:ILE:O | 4:AD:34:GLU:HB3 | 1.95 | 0.67 |
| 8:AH:93:LYS:HE3 | 8:AH:116:ARG:HH12 | 1.60 | 0.67 |
| 13:AM:10:ASP:CG | 13:AM:11:HIS:H | 1.96 | 0.67 |
| 22:BA:13:A:O2' | 22:BA:15:G:N7 | 2.28 | 0.67 |
| 22:BA:1277:G:H5' | 35:BN:20:MET:CE | 2.24 | 0.67 |
| 22:BA:1327:A:OP2 | 63:BA:3612:HOH:O | 2.13 | 0.67 |
| 22:BA:1434:A:H2' | 22:BA:1435:G:C8 | 2.28 | 0.67 |
| 22:BA:2356:U:H4' | 44:BW:16:GLU:HG3 | 1.77 | 0.67 |
| 32:BK:63:VAL:HG11 | 32:BK:103:VAL:HG12 | 1.77 | 0.67 |
| 53:CA:523:A:H61 | 12:CL:49:ARG:HH12 | 1.41 | 0.67 |
| 53:CA:985:C:C4 | 53:CA:986:U:O4 | 2.48 | 0.67 |
| 53:CA:1239:A:H3' | 54:CG:118:ARG:HH22 | 1.60 | 0.67 |
| 53:CA:1250:A:H2' | 53:CA:1251:A:O4' | 1.94 | 0.67 |
| 53:CA:1399:C:H4' | 53:CA:1400:C:O5' | 1.95 | 0.67 |
| 2:CB:125:PHE:HD1 | 2:CB:137:THR:HG22 | 1.59 | 0.67 |
| 14:CN:40:ARG:NH1 | 19:CS:6:LYS:HB2 | 2.10 | 0.67 |
| 57:DA:1669:A:N3 | 57:DA:1669:A:C2' | 2.58 | 0.67 |
| 57:DA:2429:G:H3' | 57:DA:2429:G:OP2 | 1.95 | 0.67 |
| 24:DC:181:ARG:HG3 | 24:DC:265:PHE:O | 1.95 | 0.67 |
| 28:DG:16:VAL:HG11 | 28:DG:44:HIS:CD2 | 2.30 | 0.67 |
| 1:AA:251:G:H4' | 1:AA:252:U:O5' | 1.94 | 0.67 |
| 1:AA:300:A:H1' | 1:AA:565:U:O2 | 1.94 | 0.67 |
| 1:AA:624:C:H4' | 16:AP:10:GLY:O | 1.95 | 0.67 |
| 5:AE:155:LYS:HA | 5:AE:158:LYS:HZ3 | 1.60 | 0.67 |
| 9:AI:40:ARG:CA | 9:AI:44:ARG:HB3 | 2.23 | 0.67 |
| 21:AU:10:PRO:HG2 | 3:CC:71:ARG:NH2 | 2.10 | 0.67 |
| 22:BA:204:A:H4' | 22:BA:205:G:OP1 | 1.94 | 0.67 |
| 28:BG:126:THR:HG22 | 28:BG:127:GLN:H | 1.60 | 0.67 |
| 43:BV:80:HIS:CD2 | 43:BV:83:LYS:N | 2.52 | 0.67 |
| 53:CA:183:C:O2' | 53:CA:184:G:H5' | 1.94 | 0.67 |
| 53:CA:995:C:H42 | 53:CA:1046:A:H1' | 1.58 | 0.67 |
| 53:CA:1200:C:O2' | 53:CA:1201:A:OP2 | 2.12 | 0.67 |
| 2:CB:184:ALA:HB3 | 2:CB:195:VAL:HG21 | 1.76 | 0.67 |
| 57:DA:655:A:O2' | 57:DA:656:G:C8 | 2.48 | 0.67 |
| 57:DA:1328:A:H2' | 57:DA:1330:C:C4 | 2.30 | 0.67 |
| 57:DA:1590:A:H2' | 57:DA:1591:A:H8 | 1.60 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 40:DS:71:VAL:O | 40:DS:71:VAL:HG13 | 1.95 | 0.67 |
| 42:DU:81:ARG:HD2 | 42:DU:81:ARG:N | 2.10 | 0.67 |
| 46:DY:18:LEU:O | 46:DY:22:LEU:HD13 | 1.95 | 0.67 |
| 1:AA:259:G:H2' | 1:AA:260:G:C8 | 2.30 | 0.67 |
| 1:AA:953:G:C2 | 1:AA:954:G:H1' | 2.28 | 0.67 |
| 1:AA:1533:C:H3' | 1:AA:1534:A:H5'' | 1.77 | 0.67 |
| 4:AD:99:ASN:O | 4:AD:103:ARG:HB2 | 1.95 | 0.67 |
| 8:AH:81:GLY:O | 17:AQ:35:LYS:HE2 | 1.95 | 0.67 |
| 22:BA:811:U:O2' | 22:BA:1250:G:H2' | 1.95 | 0.67 |
| 22:BA:1082:U:H5' | 30:BI:117:THR:O | 1.95 | 0.67 |
| 22:BA:1799:G:H4' | 22:BA:1800:C:O5' | 1.94 | 0.67 |
| 22:BA:2134:A:O2' | 22:BA:2135:A:H8 | 1.78 | 0.67 |
| 32:BK:5:GLN:O | 32:BK:6:THR:HB | 1.93 | 0.67 |
| 53:CA:92:U:H2' | 53:CA:93:U:C5 | 2.30 | 0.67 |
| 53:CA:239:U:H5' | 53:CA:239:U:C6 | 2.30 | 0.67 |
| 53:CA:1102:A:H2' | 53:CA:1103:C:H6 | 1.58 | 0.67 |
| 57:DA:481:G:O2' | 57:DA:507:A:N6 | 2.27 | 0.67 |
| 57:DA:704:G:H1' | 57:DA:727:A:N6 | 2.09 | 0.67 |
| 57:DA:705:A:N6 | 57:DA:726:G:H1' | 2.10 | 0.67 |
| 57:DA:1345:C:H3' | 57:DA:1345:C:OP2 | 1.94 | 0.67 |
| 29:DH:31:VAL:HB | 29:DH:32:PRO:HD3 | 1.77 | 0.67 |
| 32:DK:59:LYS:HG2 | 32:DK:89:ASN:HA | 1.75 | 0.67 |
| 32:DK:118:LEU:C | 32:DK:120:PRO:HD2 | 2.15 | 0.67 |
| 35:DN:22:ARG:HG2 | 35:DN:22:ARG:O | 1.95 | 0.67 |
| 1:AA:382:A:H2' | 1:AA:383:A:C8 | 2.28 | 0.66 |
| 1:AA:1025:U:H5'' | 1:AA:1026:G:H5' | 1.78 | 0.66 |
| 1:AA:1068:G:O2' | 1:AA:1069:C:H5' | 1.95 | 0.66 |
| 4:AD:167:PRO:HB2 | 4:AD:170:LEU:HD11 | 1.77 | 0.66 |
| 7:AG:52:ARG:HH12 | 7:AG:121:ASN:HD21 | 1.42 | 0.66 |
| 22:BA:1305:C:O2 | 22:BA:1305:C:H2' | 1.95 | 0.66 |
| 22:BA:1820:U:OP1 | 24:BC:176:ARG:HG2 | 1.96 | 0.66 |
| 31:BJ:44:TYR:C | 31:BJ:44:TYR:CD1 | 2.66 | 0.66 |
| 53:CA:245:U:H6 | 53:CA:245:U:H5'' | 1.60 | 0.66 |
| 53:CA:313:A:H2' | 53:CA:314:C:H6 | 1.60 | 0.66 |
| 4:CD:167:PRO:HB3 | 4:CD:169:TRP:CH2 | 2.30 | 0.66 |
| 54:CG:92:PRO:HA | 54:CG:95:ARG:HB2 | 1.77 | 0.66 |
| 57:DA:492:A:H2' | 57:DA:493:G:C8 | 2.29 | 0.66 |
| 57:DA:511:U:H4' | 57:DA:1235:G:H4' | 1.76 | 0.66 |
| 57:DA:1038:G:N1 | 57:DA:1039:A:C5 | 2.63 | 0.66 |
| 57:DA:1300:G:H5'' | 57:DA:1301:A:H5' | 1.77 | 0.66 |
| 1:AA:1316:G:H5'' | 1:AA:1317:C:OP2 | 1.95 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1452:C:H4' | 1:AA:1453:G:C4 | 2.31 | 0.66 |
| 4:AD:68:GLU:O | 4:AD:72:ARG:HG2 | 1.95 | 0.66 |
| 20:AT:29:THR:HA | 20:AT:32:LYS:HG2 | 1.76 | 0.66 |
| 22:BA:277:G:H4' | 22:BA:278:A:N7 | 2.10 | 0.66 |
| 22:BA:301:G:OP2 | 42:BU:81:ARG:NH1 | 2.29 | 0.66 |
| 22:BA:1695:G:C8 | 24:BC:7:PRO:HG2 | 2.30 | 0.66 |
| 28:BG:137:LYS:HA | 28:BG:140:ILE:HD11 | 1.76 | 0.66 |
| 54:CG:142:ARG:O | 54:CG:146:ALA:HB3 | 1.94 | 0.66 |
| 57:DA:571:U:C5 | 57:DA:575:A:C6 | 2.84 | 0.66 |
| 57:DA:602:A:H1' | 57:DA:656:G:N2 | 2.09 | 0.66 |
| 57:DA:1324:G:H1' | 57:DA:1616:A:H62 | 1.59 | 0.66 |
| 57:DA:1565:C:O2' | 57:DA:1566:A:O5' | 2.13 | 0.66 |
| 24:DC:166:ARG:CB | 24:DC:171:VAL:HG22 | 2.25 | 0.66 |
| 1:AA:1281:C:O2' | 1:AA:1282:C:H5' | 1.95 | 0.66 |
| 22:BA:65:U:H2' | 22:BA:66:C:C6 | 2.30 | 0.66 |
| 22:BA:918:A:H4' | 23:BB:97:C:O2 | 1.95 | 0.66 |
| 22:BA:1378:A:O2' | 22:BA:1379:U:O5' | 2.13 | 0.66 |
| 22:BA:2207:C:H2' | 22:BA:2208:C:H6 | 1.59 | 0.66 |
| 22:BA:2275:C:O2' | 34:BM:84:LYS:HA | 1.95 | 0.66 |
| 24:BC:131:MET:HA | 24:BC:134:ILE:HD12 | 1.75 | 0.66 |
| 31:BJ:77:HIS:HD2 | 31:BJ:79:GLY:N | 1.92 | 0.66 |
| 33:BL:77:ILE:HD11 | 33:BL:108:ALA:HB1 | 1.76 | 0.66 |
| 53:CA:143:A:H2' | 53:CA:143:A:N3 | 2.11 | 0.66 |
| 53:CA:245:U:H6 | 53:CA:245:U:C5' | 2.09 | 0.66 |
| 53:CA:807:A:H2' | 53:CA:808:C:C6 | 2.31 | 0.66 |
| 53:CA:1225:A:H4' | 19:CS:77:ARG:NH1 | 2.10 | 0.66 |
| 3:CC:190:THR:HG22 | 3:CC:191:THR:H | 1.59 | 0.66 |
| 5:CE:35:LEU:HD11 | 5:CE:136:VAL:HG11 | 1.77 | 0.66 |
| 19:CS:35:ARG:HH21 | 19:CS:51:HIS:CD2 | 2.14 | 0.66 |
| 57:DA:553:G:H2' | 57:DA:554:U:O4' | 1.95 | 0.66 |
| 57:DA:1311:G:H1' | 57:DA:1313:U:O4 | 1.95 | 0.66 |
| 57:DA:2331:G:H1' | 44:DW:40:ARG:HB3 | 1.76 | 0.66 |
| 28:DG:88:LEU:HD13 | 28:DG:93:TYR:HB3 | 1.77 | 0.66 |
| 41:DT:60:THR:HG22 | 41:DT:83:ALA:HA | 1.76 | 0.66 |
| 43:DV:80:HIS:HD2 | 43:DV:82:TYR:H | 1.41 | 0.66 |
| 51:D3:15:LYS:HZ1 | 51:D3:19:GLY:HA2 | 1.61 | 0.66 |
| 4:AD:55:ARG:HH12 | 4:AD:58:GLN:HG2 | 1.60 | 0.66 |
| 22:BA:503:A:H5' | 22:BA:505:A:OP1 | 1.94 | 0.66 |
| 22:BA:1110:G:HO2' | 22:BA:1111:A:H8 | 1.44 | 0.66 |
| 22:BA:1414:C:C4 | 22:BA:1415:U:H5 | 2.14 | 0.66 |
| 22:BA:1746:A:H2' | 22:BA:1747:U:C6 | 2.30 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 32:BK:61:VAL:HG22 | 32:BK:87:LEU:HD11 | 1.77 | 0.66 |
| 37:BP:21:PRO:HA | 37:BP:46:VAL:CG1 | 2.25 | 0.66 |
| 53:CA:173:U:OP1 | 53:CA:198:G:H4' | 1.96 | 0.66 |
| 53:CA:1450:U:H4' | 53:CA:1451:U:C5 | 2.31 | 0.66 |
| 4:CD:32:LYS:HB3 | 4:CD:35:GLN:OE1 | 1.95 | 0.66 |
| 4:CD:137:SER:HB2 | 4:CD:138:PRO:HD2 | 1.77 | 0.66 |
| 57:DA:568:U:H2' | 57:DA:570:G:OP2 | 1.95 | 0.66 |
| 57:DA:642:U:H2' | 57:DA:644:A:OP2 | 1.94 | 0.66 |
| 57:DA:1676:A:H2' | 57:DA:1677:A:O4' | 1.96 | 0.66 |
| 57:DA:2707:U:H2' | 57:DA:2708:G:H8 | 1.59 | 0.66 |
| 32:DK:24:VAL:HG13 | 32:DK:33:ALA:HB2 | 1.77 | 0.66 |
| 35:DN:90:ARG:NH2 | 35:DN:116:VAL:HG11 | 2.09 | 0.66 |
| 40:DS:24:ILE:HG21 | 40:DS:36:LEU:HD21 | 1.78 | 0.66 |
| 4:AD:145:ARG:HD2 | 4:AD:147:LYS:HE2 | 1.77 | 0.66 |
| 22:BA:346:A:C2 | 22:BA:347:A:H1' | 2.29 | 0.66 |
| 22:BA:826:U:O2' | 33:BL:53:GLY:HA3 | 1.95 | 0.66 |
| 22:BA:1694:C:H4' | 22:BA:1695:G:O5' | 1.95 | 0.66 |
| 22:BA:1809:A:H2' | 22:BA:1810:A:C8 | 2.30 | 0.66 |
| 22:BA:1859:U:H2' | 22:BA:1860:G:C8 | 2.30 | 0.66 |
| 22:BA:2772:C:H2' | 22:BA:2773:C:C6 | 2.30 | 0.66 |
| 26:BE:189:THR:OG1 | 26:BE:191:ASP:HB3 | 1.95 | 0.66 |
| 35:BN:31:HIS:O | 35:BN:33:ILE:HD12 | 1.95 | 0.66 |
| 35:BN:96:ARG:HH22 | 35:BN:116:VAL:HG23 | 1.59 | 0.66 |
| 38:BQ:26:ALA:HB1 | 38:BQ:30:VAL:CG2 | 2.26 | 0.66 |
| 42:BU:86:PHE:CE1 | 42:BU:101:THR:HG21 | 2.30 | 0.66 |
| 53:CA:878:A:OP1 | 8:CH:79:ARG:HB2 | 1.94 | 0.66 |
| 9:CI:71:ILE:CD1 | 9:CI:72:SER:H | 2.09 | 0.66 |
| 11:CK:27:ASN:HA | 11:CK:57:SER:HB3 | 1.77 | 0.66 |
| 12:CL:80:LEU:HD23 | 12:CL:97:VAL:HG21 | 1.78 | 0.66 |
| 57:DA:243:U:HO2' | 57:DA:244:A:H8 | 1.41 | 0.66 |
| 57:DA:1808:A:O3' | 57:DA:1809:A:H8 | 1.77 | 0.66 |
| 57:DA:2214:C:O2' | 57:DA:2215:C:C5' | 2.43 | 0.66 |
| 57:DA:2271:G:H2' | 57:DA:2272:U:C6 | 2.31 | 0.66 |
| 24:DC:93:VAL:HG13 | 24:DC:94:LEU:N | 2.11 | 0.66 |
| 25:DD:8:LYS:HB2 | 25:DD:201:LEU:CD1 | 2.24 | 0.66 |
| 36:DO:62:LEU:HD11 | 36:DO:65:THR:HG23 | 1.78 | 0.66 |
| 2:AB:71:THR:O | 2:AB:72:LYS:HG2 | 1.95 | 0.66 |
| 3:AC:134:LYS:HE3 | 3:AC:138:GLN:NE2 | 2.11 | 0.66 |
| 22:BA:1475:G:O2' | 22:BA:1476:U:P | 2.54 | 0.66 |
| 42:BU:82:VAL:O | 42:BU:94:PHE:O | 2.13 | 0.66 |
| 46:BY:9:LYS:HB3 | 46:BY:12:GLU:HG3 | 1.76 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 52:B4:10:LEU:CD1 | 52:B4:33:HIS:HD2 | 2.04 | 0.66 |
| 53:CA:344:A:H5'' | 53:CA:345:C:H5 | 1.60 | 0.66 |
| 57:DA:624:C:O2' | 57:DA:657:U:H5'' | 1.95 | 0.66 |
| 57:DA:878:A:H4' | 57:DA:898:C:H42 | 1.60 | 0.66 |
| 57:DA:1274:A:O2' | 57:DA:1275:A:H5'' | 1.95 | 0.66 |
| 57:DA:1440:U:O2' | 57:DA:1441:G:H5' | 1.95 | 0.66 |
| 25:DD:48:ILE:HG22 | 25:DD:84:LEU:HD23 | 1.77 | 0.66 |
| 40:DS:51:LEU:O | 40:DS:55:ILE:HD13 | 1.96 | 0.66 |
| 49:D1:25:ASN:HB3 | 49:D1:28:THR:OG1 | 1.96 | 0.66 |
| 1:AA:475:C:H2' | 1:AA:476:U:C6 | 2.31 | 0.66 |
| 1:AA:666:G:H5' | 1:AA:726:C:H1' | 1.78 | 0.66 |
| 1:AA:1520:C:H2' | 1:AA:1521:C:H6 | 1.61 | 0.66 |
| 4:AD:94:GLU:HG2 | 4:AD:185:PRO:HG3 | 1.78 | 0.66 |
| 5:AE:103:GLY:HA2 | 5:AE:121:ASN:HA | 1.78 | 0.66 |
| 6:AF:6:ILE:CG1 | 6:AF:89:VAL:HG23 | 2.20 | 0.66 |
| 22:BA:142:A:H2' | 22:BA:143:C:C6 | 2.31 | 0.66 |
| 22:BA:990:A:H8 | 22:BA:990:A:H5' | 1.59 | 0.66 |
| 22:BA:2352:A:H5'' | 22:BA:2353:G:OP2 | 1.96 | 0.66 |
| 25:BD:149:ASN:CG | 25:BD:150:GLN:H | 1.98 | 0.66 |
| 31:BJ:95:ARG:O | 31:BJ:95:ARG:HG3 | 1.96 | 0.66 |
| 35:BN:8:ARG:HB3 | 35:BN:10:LEU:HD22 | 1.75 | 0.66 |
| 43:BV:19:ARG:O | 43:BV:22:ALA:HB3 | 1.95 | 0.66 |
| 44:BW:18:LYS:CA | 44:BW:36:ILE:HG13 | 2.14 | 0.66 |
| 49:B1:7:LYS:HA | 49:B1:23:THR:HG22 | 1.77 | 0.66 |
| 49:B1:10:LEU:O | 49:B1:19:PHE:HB2 | 1.96 | 0.66 |
| 53:CA:373:A:C8 | 53:CA:373:A:H5' | 2.30 | 0.66 |
| 53:CA:734:G:N2 | 18:CR:63:TYR:CE2 | 2.64 | 0.66 |
| 57:DA:492:A:O2' | 57:DA:493:G:H5' | 1.95 | 0.66 |
| 57:DA:675:A:OP1 | 26:DE:60:TRP:CZ2 | 2.47 | 0.66 |
| 57:DA:1008:A:H4' | 57:DA:1009:A:OP1 | 1.95 | 0.66 |
| 57:DA:2015:A:C6 | 48:D0:2:VAL:HG11 | 2.31 | 0.66 |
| 57:DA:2283:C:O2' | 57:DA:2284:A:H5' | 1.95 | 0.66 |
| 25:DD:106:LYS:O | 25:DD:107:VAL:HB | 1.95 | 0.66 |
| 30:DI:51:GLY:O | 30:DI:52:LEU:HB2 | 1.94 | 0.66 |
| 35:DN:98:LEU:O | 35:DN:112:TYR:HB2 | 1.95 | 0.66 |
| 40:DS:66:ILE:HD13 | 40:DS:66:ILE:H | 1.61 | 0.66 |
| 1:AA:272:C:H2' | 1:AA:273:U:H6 | 1.60 | 0.66 |
| 1:AA:922:G:H2' | 1:AA:923:A:C8 | 2.30 | 0.66 |
| 22:BA:1693:U:O2' | 24:BC:13:ARG:NH2 | 2.29 | 0.66 |
| 22:BA:2249:U:O4 | 63:BA:3509:HOH:O | 2.13 | 0.66 |
| 25:BD:4:LEU:HD22 | 25:BD:101:PHE:HE1 | 1.57 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:BD:133:THR:HG23 | 25:BD:134:HIS:CD2 | 2.31 | 0.66 |
| 26:BE:5:LEU:HD12 | 26:BE:10:SER:HB3 | 1.78 | 0.66 |
| 26:BE:161:ALA:HA | 26:BE:164:LEU:HB2 | 1.78 | 0.66 |
| 31:BJ:17:VAL:CG2 | 31:BJ:137:PRO:HB2 | 2.25 | 0.66 |
| 44:BW:31:LEU:N | 44:BW:31:LEU:HD23 | 2.09 | 0.66 |
| 45:BX:76:LYS:HG3 | 45:BX:77:TYR:H | 1.60 | 0.66 |
| 53:CA:858:G:O6 | 53:CA:869:G:H3' | 1.95 | 0.66 |
| 12:CL:97:VAL:O | 12:CL:97:VAL:HG23 | 1.94 | 0.66 |
| 57:DA:140:C:H5' | 57:DA:141:G:N2 | 2.10 | 0.66 |
| 57:DA:391:A:C6 | 57:DA:411:G:C2 | 2.84 | 0.66 |
| 57:DA:2307:G:H1' | 57:DA:2308:G:C5 | 2.30 | 0.66 |
| 57:DA:2750:A:O2' | 57:DA:2752:C:N4 | 2.29 | 0.66 |
| 58:DB:90:C:H6 | 58:DB:90:C:H5'' | 1.60 | 0.66 |
| 32:DK:40:LYS:NZ | 32:DK:89:ASN:HD21 | 1.93 | 0.66 |
| 33:DL:9:ALA:HB3 | 33:DL:12:SER:HB3 | 1.78 | 0.66 |
| 2:AB:76:SER:HB2 | 2:AB:92:ASN:HB2 | 1.77 | 0.66 |
| 7:AG:24:LYS:O | 7:AG:28:ILE:HG12 | 1.96 | 0.66 |
| 22:BA:1461:C:O2' | 22:BA:1462:C:H5' | 1.96 | 0.66 |
| 22:BA:2336:A:N6 | 44:BW:40:ARG:HD2 | 2.10 | 0.66 |
| 22:BA:2571:U:O2' | 25:BD:151:THR:HG21 | 1.96 | 0.66 |
| 23:BB:15:A:O2' | 23:BB:16:G:H5' | 1.96 | 0.66 |
| 25:BD:107:VAL:H | 25:BD:206:ALA:N | 1.92 | 0.66 |
| 35:BN:65:LEU:HD11 | 35:BN:69:ARG:NH2 | 2.11 | 0.66 |
| 44:BW:39:GLN:HE21 | 44:BW:43:LYS:H | 1.42 | 0.66 |
| 53:CA:277:C:OP1 | 17:CQ:44:HIS:HE1 | 1.78 | 0.66 |
| 53:CA:1323:G:H2' | 53:CA:1324:A:C8 | 2.31 | 0.66 |
| 9:CI:78:ILE:O | 9:CI:82:ILE:HG13 | 1.96 | 0.66 |
| 10:CJ:15:HIS:HA | 10:CJ:18:ILE:CG2 | 2.23 | 0.66 |
| 15:CO:81:ILE:HG22 | 15:CO:86:LEU:HB2 | 1.76 | 0.66 |
| 57:DA:574:A:C2 | 57:DA:2032:G:O2' | 2.49 | 0.66 |
| 57:DA:1079:C:H41 | 57:DA:1088:A:C5' | 2.06 | 0.66 |
| 57:DA:1393:A:N6 | 41:DT:19:LYS:HB2 | 2.11 | 0.66 |
| 57:DA:2800:A:C4 | 57:DA:2801:G:H1' | 2.30 | 0.66 |
| 57:DA:2887:A:H1' | 48:D0:39:ARG:HH22 | 1.60 | 0.66 |
| 58:DB:57:A:O2' | 58:DB:58:A:C8 | 2.41 | 0.66 |
| 24:DC:29:PHE:CE2 | 24:DC:31:PRO:HG2 | 2.30 | 0.66 |
| 33:DL:93:ASN:CG | 33:DL:94:THR:H | 1.98 | 0.66 |
| 43:DV:70:ILE:N | 43:DV:70:ILE:HD13 | 2.10 | 0.66 |
| 51:D3:15:LYS:HG2 | 51:D3:16:THR:H | 1.61 | 0.66 |
| 1:AA:536:C:H2' | 1:AA:537:G:C8 | 2.31 | 0.66 |
| 22:BA:1159:U:C2' | 22:BA:1160:G:H5' | 2.26 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:1984:G:C6 | 22:BA:1985:C:C5 | 2.83 | 0.66 |
| 22:BA:2466:C:OP1 | 52:B4:4:ARG:HB2 | 1.96 | 0.66 |
| 26:BE:148:ILE:HA | 26:BE:187:VAL:HB | 1.78 | 0.66 |
| 30:BI:42:ASN:HA | 30:BI:45:THR:HB | 1.78 | 0.66 |
| 40:BS:24:ILE:HD12 | 40:BS:32:ALA:HA | 1.78 | 0.66 |
| 43:BV:80:HIS:ND1 | 43:BV:81:PRO:HD2 | 2.11 | 0.66 |
| 53:CA:960:U:O2' | 53:CA:1223:C:H4' | 1.96 | 0.66 |
| 53:CA:1169:A:H2' | 53:CA:1170:A:H8 | 1.61 | 0.66 |
| 53:CA:1533:C:H2' | 53:CA:1534:A:H5'' | 1.77 | 0.66 |
| 55:CM:12:LYS:HB3 | 55:CM:17:ALA:HB2 | 1.78 | 0.66 |
| 57:DA:573:U:H4' | 57:DA:574:A:OP1 | 1.96 | 0.66 |
| 57:DA:1313:U:O2' | 57:DA:1314:C:H5' | 1.95 | 0.66 |
| 57:DA:2038:G:H2' | 57:DA:2039:U:O4' | 1.96 | 0.66 |
| 57:DA:2217:G:H2' | 57:DA:2218:G:H8 | 1.61 | 0.66 |
| 24:DC:93:VAL:CG1 | 24:DC:101:ARG:H | 2.09 | 0.66 |
| 25:DD:14:ILE:HG13 | 37:DP:11:GLN:HE22 | 1.58 | 0.66 |
| 25:DD:118:PHE:CD1 | 25:DD:119:ALA:N | 2.63 | 0.66 |
| 31:DJ:25:LEU:HD12 | 31:DJ:64:VAL:HA | 1.78 | 0.66 |
| 36:DO:13:ARG:O | 36:DO:17:LYS:HB2 | 1.95 | 0.66 |
| 51:D3:41:ARG:HH21 | 51:D3:41:ARG:CG | 2.09 | 0.66 |
| 4:AD:117:VAL:HG12 | 4:AD:130:ASN:O | 1.96 | 0.65 |
| 6:AF:97:THR:O | 6:AF:98:GLU:HG2 | 1.96 | 0.65 |
| 13:AM:89:ARG:HH11 | 13:AM:94:LEU:HB3 | 1.61 | 0.65 |
| 20:AT:43:LYS:CB | 20:AT:86:ALA:HB1 | 2.19 | 0.65 |
| 22:BA:409:G:O2' | 22:BA:410:G:H5' | 1.96 | 0.65 |
| 22:BA:1438:U:O2' | 22:BA:1439:A:H5' | 1.95 | 0.65 |
| 22:BA:1738:G:O2' | 22:BA:1739:A:H8 | 1.78 | 0.65 |
| 27:BF:125:GLY:HA3 | 27:BF:159:ALA:HB3 | 1.78 | 0.65 |
| 50:B2:27:GLY:O | 50:B2:30:VAL:HB | 1.96 | 0.65 |
| 53:CA:961:U:OP1 | 53:CA:961:U:H3' | 1.97 | 0.65 |
| 2:CB:160:LEU:HD22 | 2:CB:175:ALA:HB2 | 1.79 | 0.65 |
| 3:CC:161:ILE:HD13 | 3:CC:161:ILE:H | 1.62 | 0.65 |
| 57:DA:158:U:H1' | 57:DA:169:G:N2 | 2.11 | 0.65 |
| 57:DA:207:A:H2' | 57:DA:208:C:H6 | 1.58 | 0.65 |
| 57:DA:1038:G:C2 | 57:DA:1039:A:N7 | 2.64 | 0.65 |
| 57:DA:1060:U:H1' | 57:DA:1062:G:OP2 | 1.95 | 0.65 |
| 57:DA:1309:G:H4' | 50:D2:7:PRO:HB2 | 1.78 | 0.65 |
| 57:DA:1714:U:H3' | 57:DA:1715:G:C5' | 2.26 | 0.65 |
| 57:DA:1796:U:H2' | 57:DA:1797:G:C8 | 2.30 | 0.65 |
| 57:DA:2311:A:H4' | 57:DA:2312:U:OP2 | 1.94 | 0.65 |
| 57:DA:2896:C:O2' | 57:DA:2897:U:H5' | 1.97 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:DL:77:ILE:HG12 | 33:DL:101:ILE:HD11 | 1.78 | 0.65 |
| 37:DP:48:ALA:HB3 | 37:DP:59:THR:OG1 | 1.97 | 0.65 |
| 1:AA:204:G:H1' | 1:AA:465:A:C2 | 2.31 | 0.65 |
| 11:AK:52:ARG:HD2 | 11:AK:56:LYS:HD3 | 1.79 | 0.65 |
| 16:AP:59:HIS:CE1 | 16:AP:63:GLN:HE22 | 2.13 | 0.65 |
| 17:AQ:29:LYS:HB2 | 17:AQ:36:PHE:CZ | 2.31 | 0.65 |
| 22:BA:1450:G:C6 | 22:BA:1451:C:N4 | 2.64 | 0.65 |
| 22:BA:1885:A:H2' | 22:BA:1886:U:H6 | 1.61 | 0.65 |
| 22:BA:2134:A:HO2' | 22:BA:2135:A:H8 | 1.44 | 0.65 |
| 22:BA:2492:U:H2' | 22:BA:2493:U:H6 | 1.61 | 0.65 |
| 24:BC:109:LEU:HD23 | 24:BC:110:LYS:H | 1.60 | 0.65 |
| 28:BG:104:LEU:HB2 | 28:BG:112:VAL:HG22 | 1.78 | 0.65 |
| 41:BT:9:LYS:O | 41:BT:9:LYS:HG3 | 1.96 | 0.65 |
| 44:BW:37:VAL:HG22 | 44:BW:55:ASP:O | 1.97 | 0.65 |
| 44:BW:39:GLN:HE21 | 44:BW:43:LYS:N | 1.94 | 0.65 |
| 52:B4:3:VAL:O | 52:B4:4:ARG:O | 2.14 | 0.65 |
| 53:CA:1031:C:H5' | 53:CA:1032:G:H5'' | 1.77 | 0.65 |
| 3:CC:26:LYS:HA | 3:CC:26:LYS:HE3 | 1.77 | 0.65 |
| 57:DA:1011:G:H4' | 57:DA:1012:U:OP1 | 1.96 | 0.65 |
| 57:DA:2635:A:H5' | 25:DD:79:LEU:HB2 | 1.76 | 0.65 |
| 58:DB:52:A:N6 | 36:DO:33:ARG:HE | 1.93 | 0.65 |
| 24:DC:171:VAL:N | 24:DC:185:ALA:HB2 | 2.10 | 0.65 |
| 37:DP:88:ARG:NE | 37:DP:112:ARG:HH21 | 1.92 | 0.65 |
| 1:AA:373:A:H2' | 1:AA:374:A:H8 | 1.61 | 0.65 |
| 3:AC:6:PRO:HG2 | 3:AC:183:TYR:CD2 | 2.31 | 0.65 |
| 7:AG:4:ARG:HA | 7:AG:4:ARG:NE | 2.12 | 0.65 |
| 7:AG:86:VAL:HG22 | 7:AG:150:PHE:HB3 | 1.78 | 0.65 |
| 22:BA:1131:G:C4 | 31:BJ:77:HIS:ND1 | 2.65 | 0.65 |
| 27:BF:72:SER:HB2 | 27:BF:80:GLN:N | 2.11 | 0.65 |
| 27:BF:98:PHE:O | 27:BF:102:LEU:HB2 | 1.96 | 0.65 |
| 29:BH:94:ILE:HG21 | 29:BH:99:ILE:HG12 | 1.76 | 0.65 |
| 35:BN:55:ALA:HA | 35:BN:80:PHE:CE1 | 2.32 | 0.65 |
| 35:BN:73:ASN:HA | 35:BN:76:VAL:HG12 | 1.78 | 0.65 |
| 40:BS:73:LYS:HB2 | 40:BS:106:VAL:HB | 1.79 | 0.65 |
| 50:B2:19:ARG:O | 50:B2:23:ALA:HB2 | 1.97 | 0.65 |
| 53:CA:174:A:O2' | 53:CA:175:C:H5' | 1.96 | 0.65 |
| 53:CA:631:C:H3' | 53:CA:632:U:H5' | 1.77 | 0.65 |
| 53:CA:1102:A:H8 | 53:CA:1102:A:H5'' | 1.60 | 0.65 |
| 53:CA:1146:A:O2' | 53:CA:1147:C:H5' | 1.96 | 0.65 |
| 14:CN:52:ARG:HA | 14:CN:52:ARG:NE | 2.12 | 0.65 |
| 20:CT:67:HIS:HB3 | 20:CT:68:LYS:HD2 | 1.78 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 21:CU:35:GLU:CG | 21:CU:36:PHE:H | 2.08 | 0.65 |
| 57:DA:309:A:H1' | 57:DA:329:G:C4 | 2.32 | 0.65 |
| 57:DA:1125:G:H4' | 52:D4:37:GLN:NE2 | 2.11 | 0.65 |
| 57:DA:1275:A:N3 | 57:DA:1275:A:C2' | 2.59 | 0.65 |
| 57:DA:1413:A:H2' | 57:DA:1414:C:C6 | 2.31 | 0.65 |
| 57:DA:1739:A:H2' | 57:DA:1740:G:H8 | 1.59 | 0.65 |
| 29:DH:68:ARG:CD | 29:DH:71:LYS:HD3 | 2.26 | 0.65 |
| 31:DJ:127:GLY:O | 31:DJ:129:GLU:HG3 | 1.95 | 0.65 |
| 1:AA:76:G:H2' | 1:AA:76:G:N3 | 2.11 | 0.65 |
| 1:AA:275:G:H2' | 1:AA:276:G:H8 | 1.62 | 0.65 |
| 1:AA:761:G:H2' | 1:AA:762:U:H6 | 1.62 | 0.65 |
| 1:AA:1270:G:H2' | 1:AA:1271:A:H8 | 1.62 | 0.65 |
| 38:BQ:100:PHE:HD1 | 39:BR:13:ARG:HH22 | 1.44 | 0.65 |
| 53:CA:109:A:C8 | 53:CA:327:A:O4' | 2.50 | 0.65 |
| 53:CA:122:G:O2' | 53:CA:123:U:H5' | 1.97 | 0.65 |
| 53:CA:456:A:H2' | 53:CA:457:G:C8 | 2.32 | 0.65 |
| 53:CA:745:G:H2' | 53:CA:746:A:C8 | 2.32 | 0.65 |
| 53:CA:1301:U:O2' | 53:CA:1302:C:C5 | 2.49 | 0.65 |
| 20:CT:24:ARG:HD3 | 20:CT:28:ARG:HH21 | 1.62 | 0.65 |
| 57:DA:2:G:C6 | 57:DA:3:U:C4 | 2.84 | 0.65 |
| 57:DA:2616:C:H2' | 57:DA:2617:U:H6 | 1.60 | 0.65 |
| 24:DC:130:PRO:HG2 | 24:DC:133:ASN:ND2 | 2.11 | 0.65 |
| 59:DF:91:ARG:HB3 | 59:DF:91:ARG:NH2 | 2.11 | 0.65 |
| 28:DG:53:PRO:HB3 | 28:DG:61:TRP:H | 1.60 | 0.65 |
| 37:DP:20:ARG:HD2 | 37:DP:21:PRO:HD2 | 1.77 | 0.65 |
| 1:AA:269:C:H2' | 1:AA:270:A:C8 | 2.32 | 0.65 |
| 1:AA:596:A:N6 | 1:AA:645:G:C6 | 2.65 | 0.65 |
| 4:AD:106:PHE:CG | 4:AD:144:ILE:HD11 | 2.32 | 0.65 |
| 5:AE:110:MET:O | 5:AE:114:LEU:HB2 | 1.96 | 0.65 |
| 22:BA:1248:G:OP2 | 26:BE:44:ARG:NH1 | 2.29 | 0.65 |
| 22:BA:1392:A:H61 | 41:BT:18:GLU:CD | 1.99 | 0.65 |
| 22:BA:2207:C:H2' | 22:BA:2208:C:C6 | 2.31 | 0.65 |
| 22:BA:2654:A:H4' | 22:BA:2655:G:OP1 | 1.96 | 0.65 |
| 53:CA:1299:A:O2' | 53:CA:1300:G:H4' | 1.95 | 0.65 |
| 53:CA:1525:G:OP1 | 21:CU:37:TYR:HD1 | 1.80 | 0.65 |
| 3:CC:118:SER:O | 3:CC:122:GLN:HG2 | 1.97 | 0.65 |
| 10:CJ:5:ARG:HG2 | 10:CJ:79:PRO:HG3 | 1.78 | 0.65 |
| 17:CQ:75:VAL:O | 17:CQ:76:ARG:HB3 | 1.97 | 0.65 |
| 21:CU:37:TYR:O | 21:CU:38:GLU:HG2 | 1.96 | 0.65 |
| 57:DA:275:C:H2' | 57:DA:276:U:O4' | 1.97 | 0.65 |
| 57:DA:1268:A:H2' | 57:DA:1269:A:C8 | 2.32 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:2379:G:H2' | 57:DA:2380:C:C6 | 2.31 | 0.65 |
| 57:DA:2408:U:O2' | 57:DA:2409:G:C8 | 2.43 | 0.65 |
| 57:DA:2426:A:H3' | 57:DA:2427:C:C5' | 2.25 | 0.65 |
| 58:DB:57:A:C6 | 59:DF:25:MET:CG | 2.79 | 0.65 |
| 26:DE:47:LYS:HB3 | 26:DE:51:GLU:HB2 | 1.77 | 0.65 |
| 31:DJ:74:TYR:CE2 | 31:DJ:103:ILE:HD11 | 2.31 | 0.65 |
| 36:DO:11:ALA:HB2 | 36:DO:96:GLY:N | 2.11 | 0.65 |
| 38:DQ:40:LYS:CD | 38:DQ:44:TYR:HE2 | 2.06 | 0.65 |
| 41:DT:19:LYS:HE2 | 41:DT:23:ALA:HB3 | 1.79 | 0.65 |
| 44:DW:43:LYS:HD2 | 44:DW:79:ILE:HD11 | 1.77 | 0.65 |
| 1:AA:408:A:P | 4:AD:109:THR:HG21 | 2.37 | 0.65 |
| 1:AA:896:C:H2' | 1:AA:897:C:H6 | 1.62 | 0.65 |
| 5:AE:133:ILE:H | 5:AE:133:ILE:HD12 | 1.61 | 0.65 |
| 15:AO:18:ALA:O | 15:AO:19:ASN:HB2 | 1.97 | 0.65 |
| 22:BA:1416:G:O2' | 22:BA:1417:C:H6 | 1.78 | 0.65 |
| 22:BA:2188:U:H2' | 22:BA:2189:U:H6 | 1.60 | 0.65 |
| 24:BC:16:VAL:N | 24:BC:203:VAL:HG12 | 2.09 | 0.65 |
| 37:BP:57:ALA:HB1 | 37:BP:73:PHE:O | 1.97 | 0.65 |
| 38:BQ:63:ARG:HH12 | 38:BQ:96:ASP:CB | 2.10 | 0.65 |
| 44:BW:45:HIS:ND1 | 44:BW:45:HIS:N | 2.43 | 0.65 |
| 46:BY:47:ARG:HH21 | 46:BY:47:ARG:CG | 2.08 | 0.65 |
| 57:DA:1255:U:O2' | 57:DA:1256:G:OP1 | 2.15 | 0.65 |
| 57:DA:1613:G:C6 | 57:DA:1619:G:O6 | 2.50 | 0.65 |
| 57:DA:2756:U:H4' | 57:DA:2757:A:O5' | 1.97 | 0.65 |
| 34:DM:27:SER:H | 34:DM:66:ARG:HH22 | 1.38 | 0.65 |
| 11:AK:22:ILE:HG22 | 11:AK:31:VAL:HG13 | 1.77 | 0.65 |
| 11:AK:60:PHE:O | 11:AK:63:GLN:HB3 | 1.96 | 0.65 |
| 17:AQ:22:VAL:HG21 | 17:AQ:60:ILE:HD11 | 1.79 | 0.65 |
| 20:AT:6:ALA:HB1 | 20:AT:9:ARG:HB2 | 1.78 | 0.65 |
| 22:BA:638:G:H2' | 22:BA:639:U:C6 | 2.32 | 0.65 |
| 22:BA:932:U:C4' | 22:BA:933:A:H5'' | 2.24 | 0.65 |
| 22:BA:1059:G:H5'' | 22:BA:1060:U:H3' | 1.79 | 0.65 |
| 22:BA:1266:G:H5'' | 40:BS:15:GLN:HE22 | 1.62 | 0.65 |
| 22:BA:2752:C:H2' | 22:BA:2753:A:C8 | 2.32 | 0.65 |
| 53:CA:471:U:H2' | 53:CA:472:U:C6 | 2.30 | 0.65 |
| 3:CC:119:ILE:O | 3:CC:123:LEU:HB2 | 1.97 | 0.65 |
| 4:CD:187:ARG:C | 4:CD:189:ASP:H | 2.00 | 0.65 |
| 5:CE:131:ASN:HD22 | 5:CE:132:PRO:CD | 2.09 | 0.65 |
| 57:DA:164:C:O2' | 57:DA:165:A:H5' | 1.97 | 0.65 |
| 57:DA:312:G:H5' | 57:DA:331:C:O2' | 1.96 | 0.65 |
| 57:DA:532:A:H4' | 57:DA:533:G:C8 | 2.32 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 26:DE:60:TRP:CZ2 | 26:DE:71:GLY:HA2 | 2.32 | 0.65 |
| 29:DH:54:LEU:HA | 29:DH:57:LYS:CG | 2.27 | 0.65 |
| 1:AA:210:C:H4' | 1:AA:211:G:N2 | 2.12 | 0.65 |
| 22:BA:675:A:OP1 | 26:BE:58:LYS:HE2 | 1.97 | 0.65 |
| 22:BA:1936:A:C2 | 22:BA:1943:U:C5 | 2.84 | 0.65 |
| 25:BD:97:SER:HB3 | 25:BD:99:GLU:OE1 | 1.96 | 0.65 |
| 27:BF:7:TYR:O | 27:BF:12:VAL:HG12 | 1.96 | 0.65 |
| 31:BJ:44:TYR:HD1 | 31:BJ:44:TYR:O | 1.79 | 0.65 |
| 38:BQ:91:ARG:CZ | 39:BR:11:GLN:H | 2.08 | 0.65 |
| 41:BT:64:LYS:HA | 41:BT:79:ASP:OD1 | 1.97 | 0.65 |
| 48:B0:39:ARG:HB2 | 48:B0:39:ARG:HH11 | 1.62 | 0.65 |
| 49:B1:8:ILE:HG22 | 49:B1:9:LYS:N | 2.10 | 0.65 |
| 53:CA:519:C:O2' | 53:CA:520:A:C5' | 2.44 | 0.65 |
| 53:CA:1024:G:H2' | 53:CA:1025:U:O4' | 1.96 | 0.65 |
| 53:CA:1064:G:O2' | 53:CA:1190:G:N2 | 2.28 | 0.65 |
| 8:CH:76:ARG:HD3 | 8:CH:77:VAL:H | 1.62 | 0.65 |
| 9:CI:19:PHE:O | 9:CI:63:TYR:HB3 | 1.96 | 0.65 |
| 11:CK:27:ASN:ND2 | 11:CK:27:ASN:H | 1.94 | 0.65 |
| 57:DA:246:C:H2' | 57:DA:247:G:H5' | 1.79 | 0.65 |
| 57:DA:1252:G:H5'' | 63:DA:3286:HOH:O | 1.97 | 0.65 |
| 57:DA:2212:A:C8 | 57:DA:2214:C:N4 | 2.65 | 0.65 |
| 57:DA:2408:U:C2 | 57:DA:2409:G:N7 | 2.65 | 0.65 |
| 1:AA:82:G:N2 | 1:AA:84:U:N3 | 2.44 | 0.65 |
| 1:AA:511:C:HO2' | 1:AA:512:U:H5'' | 1.60 | 0.65 |
| 22:BA:540:C:O2' | 22:BA:541:A:H5' | 1.97 | 0.65 |
| 22:BA:684:G:OP1 | 50:B2:16:HIS:CD2 | 2.48 | 0.65 |
| 22:BA:2507:C:O2 | 22:BA:2507:C:H2' | 1.97 | 0.65 |
| 22:BA:2663:G:H2' | 22:BA:2664:G:H8 | 1.61 | 0.65 |
| 22:BA:2703:C:H2' | 22:BA:2704:C:H6 | 1.62 | 0.65 |
| 22:BA:2726:A:O2' | 22:BA:2727:A:H5' | 1.95 | 0.65 |
| 32:BK:2:ILE:HG21 | 32:BK:39:ILE:HD12 | 1.79 | 0.65 |
| 40:BS:24:ILE:HG23 | 40:BS:71:VAL:HG11 | 1.78 | 0.65 |
| 6:CF:43:GLY:HA2 | 6:CF:58:HIS:CE1 | 2.32 | 0.65 |
| 57:DA:7:G:H2' | 57:DA:8:C:O4' | 1.97 | 0.65 |
| 57:DA:251:A:H4' | 33:DL:47:ARG:NH2 | 2.11 | 0.65 |
| 57:DA:1439:A:H1' | 57:DA:1553:A:N6 | 2.12 | 0.65 |
| 58:DB:81:G:C5 | 58:DB:82:U:C5 | 2.85 | 0.65 |
| 59:DF:33:ILE:HB | 59:DF:90:LEU:HB2 | 1.79 | 0.65 |
| 32:DK:80:ASP:HB2 | 37:DP:67:GLU:OE1 | 1.97 | 0.65 |
| 1:AA:701:U:O2' | 1:AA:702:A:OP2 | 2.15 | 0.65 |
| 1:AA:1162:C:H2' | 1:AA:1163:A:C8 | 2.31 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:AD:31:CYS:O | 4:AD:32:LYS:HB2 | 1.95 | 0.65 |
| 10:AJ:14:ASP:CB | 10:AJ:17:LEU:HB3 | 2.27 | 0.65 |
| 18:AR:19:GLU:HG3 | 18:AR:54:LEU:HD22 | 1.79 | 0.65 |
| 22:BA:733:G:C8 | 22:BA:761:A:N6 | 2.65 | 0.65 |
| 22:BA:2485:G:H5'' | 34:BM:45:GLN:NE2 | 2.12 | 0.65 |
| 25:BD:99:GLU:CG | 25:BD:100:LEU:H | 2.09 | 0.65 |
| 40:BS:51:LEU:O | 40:BS:55:ILE:HG13 | 1.97 | 0.65 |
| 53:CA:748:G:H2' | 53:CA:749:A:C8 | 2.32 | 0.65 |
| 3:CC:117:ASP:HA | 3:CC:120:THR:HB | 1.79 | 0.65 |
| 56:CP:35:ARG:HH12 | 56:CP:38:PHE:HB3 | 1.61 | 0.65 |
| 57:DA:859:G:N2 | 57:DA:916:G:H2' | 2.11 | 0.65 |
| 57:DA:1521:G:C6 | 57:DA:1522:A:N6 | 2.65 | 0.65 |
| 37:DP:86:LYS:HA | 37:DP:86:LYS:HZ2 | 1.61 | 0.65 |
| 40:DS:52:GLU:O | 40:DS:55:ILE:HB | 1.97 | 0.65 |
| 41:DT:20:ALA:HB1 | 41:DT:31:VAL:HG21 | 1.77 | 0.65 |
| 41:DT:87:LEU:HD23 | 41:DT:88:LYS:N | 2.12 | 0.65 |
| 46:DY:4:LYS:HD3 | 46:DY:4:LYS:H | 1.62 | 0.65 |
| 5:AE:83:PRO:HB3 | 5:AE:96:GLN:HE21 | 1.62 | 0.64 |
| 11:AK:42:GLY:HA3 | 11:AK:73:VAL:CG1 | 2.27 | 0.64 |
| 18:AR:22:TYR:CZ | 18:AR:23:LYS:HE3 | 2.32 | 0.64 |
| 22:BA:1026:G:O2' | 22:BA:1027:A:H5' | 1.97 | 0.64 |
| 22:BA:1186:G:OP1 | 63:BA:3581:HOH:O | 2.15 | 0.64 |
| 22:BA:1641:A:H5'' | 22:BA:1642:G:OP2 | 1.96 | 0.64 |
| 22:BA:1671:U:O2 | 22:BA:1673:G:C8 | 2.49 | 0.64 |
| 22:BA:1945:G:H2' | 22:BA:1946:U:H6 | 1.61 | 0.64 |
| 24:BC:29:PHE:CE2 | 24:BC:31:PRO:HG2 | 2.32 | 0.64 |
| 29:BH:78:VAL:HG11 | 29:BH:145:ASN:HB3 | 1.78 | 0.64 |
| 31:BJ:55:ILE:HD11 | 31:BJ:57:LEU:HD22 | 1.79 | 0.64 |
| 33:BL:47:ARG:HG3 | 33:BL:50:PHE:HB2 | 1.79 | 0.64 |
| 34:BM:43:ALA:O | 34:BM:46:ILE:HG13 | 1.97 | 0.64 |
| 37:BP:63:ILE:HA | 37:BP:68:GLY:HA2 | 1.78 | 0.64 |
| 38:BQ:65:ASN:ND2 | 38:BQ:69:ARG:NH2 | 2.42 | 0.64 |
| 44:BW:44:PHE:O | 44:BW:78:PHE:HA | 1.97 | 0.64 |
| 46:BY:17:GLU:HB2 | 46:BY:53:VAL:HG11 | 1.78 | 0.64 |
| 53:CA:160:A:H2' | 53:CA:161:A:O4' | 1.97 | 0.64 |
| 53:CA:579:A:H2' | 53:CA:580:C:C6 | 2.32 | 0.64 |
| 2:CB:66:ILE:H | 2:CB:88:GLN:HB3 | 1.62 | 0.64 |
| 57:DA:401:A:H2' | 57:DA:402:A:C8 | 2.32 | 0.64 |
| 57:DA:1742:U:H2' | 57:DA:1743:G:C8 | 2.33 | 0.64 |
| 57:DA:1754:A:OP1 | 37:DP:93:LYS:HE3 | 1.97 | 0.64 |
| 57:DA:1843:C:O2' | 24:DC:253:GLY:HA3 | 1.97 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:2264:C:C2 | 57:DA:2277:G:N2 | 2.65 | 0.64 |
| 57:DA:2298:A:H2' | 57:DA:2299:U:C6 | 2.32 | 0.64 |
| 28:DG:83:THR:C | 28:DG:84:LYS:HD3 | 2.17 | 0.64 |
| 32:DK:61:VAL:HG13 | 32:DK:87:LEU:HD21 | 1.79 | 0.64 |
| 33:DL:96:LYS:HD3 | 33:DL:103:ILE:HA | 1.79 | 0.64 |
| 41:DT:67:VAL:HB | 41:DT:76:ARG:HG3 | 1.79 | 0.64 |
| 42:DU:81:ARG:HD2 | 42:DU:81:ARG:H | 1.60 | 0.64 |
| 1:AA:183:C:O2' | 1:AA:184:G:H5' | 1.97 | 0.64 |
| 2:AB:13:VAL:CG2 | 2:AB:207:ARG:HH22 | 2.11 | 0.64 |
| 2:AB:119:GLN:HA | 2:AB:122:ASP:HB2 | 1.80 | 0.64 |
| 3:AC:21:TRP:CG | 3:AC:58:ARG:HG2 | 2.32 | 0.64 |
| 4:AD:29:THR:C | 4:AD:30:LYS:HD3 | 2.16 | 0.64 |
| 21:AU:39:LYS:N | 21:AU:40:PRO:HD2 | 2.12 | 0.64 |
| 22:BA:228:C:H4' | 22:BA:229:C:H5'' | 1.78 | 0.64 |
| 22:BA:303:G:H2' | 22:BA:304:U:H6 | 1.62 | 0.64 |
| 22:BA:1654:A:H1' | 25:BD:118:PHE:CD1 | 2.31 | 0.64 |
| 22:BA:2722:G:H2' | 22:BA:2723:C:C6 | 2.32 | 0.64 |
| 28:BG:86:LEU:HD11 | 28:BG:132:LEU:HD21 | 1.78 | 0.64 |
| 28:BG:112:VAL:HG23 | 28:BG:113:ASP:N | 2.12 | 0.64 |
| 31:BJ:38:GLY:O | 31:BJ:43:GLU:HB2 | 1.97 | 0.64 |
| 33:BL:101:ILE:CG2 | 33:BL:102:GLY:N | 2.60 | 0.64 |
| 35:BN:73:ASN:HD22 | 35:BN:76:VAL:HG11 | 1.62 | 0.64 |
| 36:BO:31:THR:CG2 | 36:BO:34:HIS:H | 2.09 | 0.64 |
| 44:BW:17:ALA:O | 44:BW:18:LYS:HB3 | 1.97 | 0.64 |
| 45:BX:34:SER:HA | 45:BX:49:ARG:HA | 1.79 | 0.64 |
| 47:BZ:9:THR:HG22 | 47:BZ:10:ARG:N | 2.12 | 0.64 |
| 53:CA:369:G:OP2 | 53:CA:388:G:N2 | 2.29 | 0.64 |
| 53:CA:1183:U:C3' | 53:CA:1184:G:H5'' | 2.24 | 0.64 |
| 2:CB:59:ILE:HA | 2:CB:62:ARG:HD3 | 1.78 | 0.64 |
| 6:CF:90:MET:HE1 | 18:CR:60:ARG:HD3 | 1.79 | 0.64 |
| 54:CG:2:ARG:HG2 | 54:CG:3:ARG:N | 2.11 | 0.64 |
| 57:DA:75:G:H4' | 46:DY:48:ARG:NH2 | 2.12 | 0.64 |
| 57:DA:184:C:H2' | 57:DA:185:G:H8 | 1.60 | 0.64 |
| 57:DA:589:U:HO2' | 57:DA:590:A:H5' | 1.62 | 0.64 |
| 57:DA:607:U:H5 | 57:DA:619:G:C4 | 2.16 | 0.64 |
| 57:DA:822:G:H5'' | 63:DA:3357:HOH:O | 1.96 | 0.64 |
| 57:DA:1616:A:OP1 | 57:DA:1616:A:H8 | 1.79 | 0.64 |
| 58:DB:55:U:H1' | 59:DF:25:MET:CE | 2.27 | 0.64 |
| 32:DK:87:LEU:HD12 | 32:DK:92:GLU:HA | 1.78 | 0.64 |
| 40:DS:9:HIS:H | 40:DS:102:HIS:CE1 | 2.16 | 0.64 |
| 1:AA:61:G:O2' | 1:AA:62:U:H5' | 1.98 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:64:G:H4' | 1:AA:65:A:H5'' | 1.80 | 0.64 |
| 2:AB:71:THR:HG22 | 2:AB:72:LYS:H | 1.61 | 0.64 |
| 2:AB:119:GLN:C | 2:AB:119:GLN:HE21 | 2.01 | 0.64 |
| 13:AM:113:LYS:H | 13:AM:114:PRO:CD | 2.10 | 0.64 |
| 22:BA:646:U:H3' | 22:BA:647:G:H5'' | 1.79 | 0.64 |
| 22:BA:988:A:P | 47:BZ:11:SER:HB3 | 2.37 | 0.64 |
| 22:BA:1794:A:H2' | 22:BA:1795:C:C6 | 2.32 | 0.64 |
| 34:BM:35:ALA:O | 34:BM:36:VAL:CB | 2.43 | 0.64 |
| 53:CA:663:A:O2' | 53:CA:664:G:H5' | 1.98 | 0.64 |
| 2:CB:56:LEU:HD22 | 2:CB:59:ILE:HD11 | 1.79 | 0.64 |
| 4:CD:195:ASN:HB3 | 4:CD:197:HIS:CD2 | 2.32 | 0.64 |
| 9:CI:6:TYR:HE2 | 9:CI:17:ARG:HA | 1.62 | 0.64 |
| 18:CR:72:ARG:H | 18:CR:72:ARG:NE | 1.92 | 0.64 |
| 57:DA:354:A:H2' | 57:DA:355:U:O4' | 1.96 | 0.64 |
| 57:DA:391:A:O2' | 57:DA:392:U:H5' | 1.98 | 0.64 |
| 57:DA:1262:A:H2 | 48:D0:6:LYS:HD2 | 1.63 | 0.64 |
| 57:DA:1387:A:C5' | 57:DA:1469:A:H1' | 2.27 | 0.64 |
| 57:DA:1965:C:H3' | 57:DA:1966:A:H5'' | 1.78 | 0.64 |
| 57:DA:2285:C:OP2 | 49:D1:5:ARG:HD3 | 1.97 | 0.64 |
| 57:DA:2653:U:C4 | 57:DA:2654:A:C6 | 2.84 | 0.64 |
| 58:DB:50:A:C2 | 58:DB:51:G:H1' | 2.32 | 0.64 |
| 58:DB:81:G:H2' | 58:DB:82:U:H6 | 1.63 | 0.64 |
| 25:DD:122:VAL:HA | 25:DD:127:PHE:H | 1.62 | 0.64 |
| 26:DE:110:SER:O | 26:DE:113:VAL:HG12 | 1.97 | 0.64 |
| 31:DJ:106:LYS:HB2 | 31:DJ:119:PHE:HE2 | 1.63 | 0.64 |
| 41:DT:29:THR:HB | 41:DT:87:LEU:N | 2.10 | 0.64 |
| 50:D2:22:MET:HG2 | 50:D2:22:MET:O | 1.97 | 0.64 |
| 1:AA:920:U:H2' | 1:AA:921:U:C6 | 2.32 | 0.64 |
| 6:AF:3:HIS:N | 6:AF:92:THR:HG23 | 2.07 | 0.64 |
| 22:BA:39:G:H2' | 22:BA:40:U:C6 | 2.32 | 0.64 |
| 22:BA:1071:G:H1' | 22:BA:1089:A:N7 | 2.11 | 0.64 |
| 22:BA:1963:U:O5' | 22:BA:1963:U:H6 | 1.80 | 0.64 |
| 22:BA:2092:U:H4' | 22:BA:2093:G:O5' | 1.97 | 0.64 |
| 22:BA:2485:G:C5' | 34:BM:45:GLN:HE21 | 2.11 | 0.64 |
| 25:BD:111:GLY:O | 25:BD:169:ARG:O | 2.16 | 0.64 |
| 28:BG:115:GLN:CD | 28:BG:115:GLN:N | 2.50 | 0.64 |
| 29:BH:29:PHE:O | 29:BH:33:GLN:HB3 | 1.98 | 0.64 |
| 53:CA:1218:C:H2' | 53:CA:1219:A:H8 | 1.63 | 0.64 |
| 57:DA:27:G:N2 | 57:DA:512:G:H2' | 2.12 | 0.64 |
| 57:DA:197:A:H62 | 57:DA:2430:A:C2' | 2.01 | 0.64 |
| 57:DA:249:C:C5' | 57:DA:2394:C:O2' | 2.44 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:810:U:O4 | 33:DL:30:THR:HG22 | 1.96 | 0.64 |
| 57:DA:1275:A:O2' | 57:DA:1276:A:C1' | 2.45 | 0.64 |
| 57:DA:1399:C:H2' | 57:DA:1400:U:C5 | 2.33 | 0.64 |
| 57:DA:1905:C:O2' | 57:DA:1929:G:H1' | 1.97 | 0.64 |
| 24:DC:8:THR:O | 24:DC:9:SER:HB3 | 1.97 | 0.64 |
| 26:DE:112:LEU:HD11 | 26:DE:186:VAL:HG11 | 1.79 | 0.64 |
| 26:DE:130:LYS:CB | 26:DE:133:LEU:HB3 | 2.27 | 0.64 |
| 42:DU:35:VAL:HG12 | 42:DU:36:GLU:H | 1.63 | 0.64 |
| 1:AA:274:A:O2' | 1:AA:275:G:H8 | 1.79 | 0.64 |
| 1:AA:1094:G:O2' | 1:AA:1095:U:OP2 | 2.15 | 0.64 |
| 1:AA:1127:G:O2' | 1:AA:1128:C:H5' | 1.97 | 0.64 |
| 22:BA:819:A:OP2 | 22:BA:1187:G:N2 | 2.27 | 0.64 |
| 22:BA:1378:A:O2' | 22:BA:1379:U:H3' | 1.96 | 0.64 |
| 22:BA:2264:C:H41 | 44:BW:11:ASN:ND2 | 1.95 | 0.64 |
| 54:CG:16:LYS:HE2 | 9:CI:45:MET:SD | 2.38 | 0.64 |
| 54:CG:128:GLU:HG3 | 54:CG:130:LYS:H | 1.61 | 0.64 |
| 21:CU:15:LEU:O | 21:CU:15:LEU:HD12 | 1.96 | 0.64 |
| 57:DA:720:U:H2' | 57:DA:721:A:C8 | 2.33 | 0.64 |
| 57:DA:2408:U:O2' | 57:DA:2409:G:O5' | 2.14 | 0.64 |
| 24:DC:70:LYS:HD3 | 24:DC:101:ARG:HH12 | 1.62 | 0.64 |
| 25:DD:36:GLN:HG3 | 25:DD:38:LYS:HZ1 | 1.62 | 0.64 |
| 26:DE:133:LEU:O | 26:DE:137:LYS:HB2 | 1.98 | 0.64 |
| 29:DH:132:PHE:CZ | 29:DH:134:VAL:HB | 2.33 | 0.64 |
| 38:DQ:27:ARG:HA | 38:DQ:33:VAL:CG1 | 2.27 | 0.64 |
| 47:DZ:18:LYS:O | 47:DZ:22:THR:HG23 | 1.98 | 0.64 |
| 1:AA:1433:A:OP2 | 63:AA:1837:HOH:O | 2.15 | 0.64 |
| 16:AP:59:HIS:HE1 | 16:AP:63:GLN:HE22 | 1.45 | 0.64 |
| 22:BA:137:U:H5'' | 22:BA:140:C:C5 | 2.31 | 0.64 |
| 22:BA:1469:A:H2' | 22:BA:1470:A:C8 | 2.33 | 0.64 |
| 22:BA:1556:C:O2' | 22:BA:1557:C:H5' | 1.97 | 0.64 |
| 22:BA:2267:A:H2' | 22:BA:2267:A:N3 | 2.13 | 0.64 |
| 23:BB:24:G:N7 | 23:BB:56:G:H2' | 2.13 | 0.64 |
| 24:BC:108:GLY:O | 24:BC:109:LEU:HD22 | 1.98 | 0.64 |
| 26:BE:23:PHE:CD1 | 26:BE:111:GLU:HG3 | 2.32 | 0.64 |
| 32:BK:116:ILE:HD12 | 32:BK:117:SER:N | 2.13 | 0.64 |
| 33:BL:93:ASN:O | 33:BL:95:LEU:N | 2.30 | 0.64 |
| 45:BX:30:PRO:O | 45:BX:32:LEU:HD12 | 1.97 | 0.64 |
| 53:CA:1298:U:C5 | 54:CG:113:LYS:HA | 2.32 | 0.64 |
| 3:CC:80:GLY:O | 3:CC:83:VAL:HG22 | 1.97 | 0.64 |
| 57:DA:1901:A:O2' | 57:DA:1902:C:H5' | 1.98 | 0.64 |
| 57:DA:2615:U:C2 | 48:D0:3:GLN:HA | 2.33 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:2825:G:H3' | 57:DA:2826:A:H8 | 1.62 | 0.64 |
| 25:DD:94:GLN:HG2 | 25:DD:94:GLN:O | 1.98 | 0.64 |
| 28:DG:164:ALA:O | 28:DG:165:ASP:HB2 | 1.96 | 0.64 |
| 40:DS:24:ILE:HG22 | 40:DS:35:ILE:HD11 | 1.80 | 0.64 |
| 1:AA:946:A:H2' | 1:AA:947:G:C8 | 2.31 | 0.64 |
| 5:AE:87:VAL:HG12 | 5:AE:92:ARG:HA | 1.79 | 0.64 |
| 11:AK:19:VAL:HG22 | 11:AK:82:GLU:HG2 | 1.79 | 0.64 |
| 17:AQ:12:VAL:HG13 | 17:AQ:13:SER:H | 1.62 | 0.64 |
| 22:BA:28:A:C2 | 22:BA:513:A:C8 | 2.85 | 0.64 |
| 22:BA:1510:G:H2' | 22:BA:1511:G:H8 | 1.62 | 0.64 |
| 22:BA:1842:G:H2' | 22:BA:1843:C:C6 | 2.32 | 0.64 |
| 28:BG:86:LEU:HD12 | 28:BG:86:LEU:N | 2.12 | 0.64 |
| 44:BW:18:LYS:HG3 | 44:BW:19:ARG:N | 2.13 | 0.64 |
| 53:CA:413:G:N2 | 53:CA:428:G:O2' | 2.31 | 0.64 |
| 53:CA:1160:G:C6 | 53:CA:1181:G:O6 | 2.50 | 0.64 |
| 53:CA:1170:A:H2' | 53:CA:1171:A:O4' | 1.97 | 0.64 |
| 53:CA:1326:U:H2' | 53:CA:1327:C:C6 | 2.33 | 0.64 |
| 57:DA:176:A:H3' | 57:DA:177:G:N2 | 2.13 | 0.64 |
| 57:DA:2808:G:HO2' | 57:DA:2809:A:H8 | 1.45 | 0.64 |
| 57:DA:2815:C:H2' | 57:DA:2816:G:H8 | 1.62 | 0.64 |
| 58:DB:5:U:H2' | 58:DB:6:G:H8 | 1.59 | 0.64 |
| 36:DO:30:ARG:HH12 | 36:DO:102:ARG:HB2 | 1.62 | 0.64 |
| 44:DW:20:LEU:HD11 | 44:DW:35:ILE:HG13 | 1.78 | 0.64 |
| 22:BA:568:U:OP1 | 33:BL:36:LYS:HE3 | 1.97 | 0.64 |
| 37:BP:104:GLY:O | 37:BP:106:ALA:N | 2.31 | 0.64 |
| 43:BV:42:LEU:HD13 | 43:BV:47:VAL:HG21 | 1.79 | 0.64 |
| 48:B0:33:SER:OG | 48:B0:35:GLU:HG3 | 1.97 | 0.64 |
| 53:CA:97:G:C6 | 53:CA:98:A:H1' | 2.33 | 0.64 |
| 53:CA:429:U:H1' | 53:CA:430:A:H5'' | 1.80 | 0.64 |
| 53:CA:888:G:O3' | 53:CA:1488:G:H4' | 1.97 | 0.64 |
| 4:CD:104:MET:SD | 4:CD:142:VAL:HG13 | 2.38 | 0.64 |
| 18:CR:19:GLU:CD | 18:CR:20:ILE:H | 2.01 | 0.64 |
| 57:DA:481:G:O2' | 57:DA:482:A:OP2 | 2.16 | 0.64 |
| 57:DA:729:G:C6 | 24:DC:206:LYS:HB2 | 2.33 | 0.64 |
| 57:DA:832:U:OP1 | 33:DL:39:LYS:N | 2.29 | 0.64 |
| 57:DA:2683:C:H2' | 57:DA:2684:U:H6 | 1.61 | 0.64 |
| 58:DB:17:C:O2' | 58:DB:18:G:H8 | 1.81 | 0.64 |
| 24:DC:224:MET:SD | 24:DC:229:HIS:HB2 | 2.37 | 0.64 |
| 25:DD:107:VAL:CG1 | 25:DD:109:VAL:HG23 | 2.28 | 0.64 |
| 25:DD:149:ASN:O | 25:DD:152:PRO:HD2 | 1.97 | 0.64 |
| 59:DF:103:ILE:HA | 59:DF:107:VAL:HG21 | 1.78 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:DK:21:CYS:HA | 32:DK:41:ILE:HD12 | 1.80 | 0.64 |
| 46:DY:1:MET:HE2 | 46:DY:1:MET:H3 | 1.63 | 0.64 |
| 1:AA:830:G:H2' | 1:AA:831:A:H8 | 1.63 | 0.64 |
| 1:AA:922:G:H4' | 5:AE:24:VAL:HA | 1.80 | 0.64 |
| 6:AF:2:ARG:HH21 | 6:AF:68:GLN:NE2 | 1.95 | 0.64 |
| 22:BA:78:U:H2' | 22:BA:79:C:H6 | 1.62 | 0.64 |
| 22:BA:656:G:H2' | 22:BA:657:U:C6 | 2.32 | 0.64 |
| 22:BA:996:A:O2' | 22:BA:997:G:H5' | 1.98 | 0.64 |
| 22:BA:1078:U:H4' | 22:BA:1079:C:H6 | 1.63 | 0.64 |
| 29:BH:130:VAL:HG23 | 29:BH:131:SER:H | 1.63 | 0.64 |
| 35:BN:72:ASP:OD1 | 35:BN:75:ILE:HG23 | 1.97 | 0.64 |
| 37:BP:50:ARG:CD | 37:BP:51:ASN:N | 2.61 | 0.64 |
| 37:BP:112:ARG:C | 37:BP:113:LEU:HD23 | 2.18 | 0.64 |
| 53:CA:268:U:H2' | 53:CA:269:C:H6 | 1.62 | 0.64 |
| 57:DA:29:U:H5 | 63:DA:3207:HOH:O | 1.78 | 0.64 |
| 57:DA:118:A:OP2 | 57:DA:119:A:H3' | 1.98 | 0.64 |
| 57:DA:128:C:H2' | 57:DA:129:C:C6 | 2.33 | 0.64 |
| 33:DL:100:ILE:O | 33:DL:101:ILE:HB | 1.96 | 0.64 |
| 1:AA:690:G:H2' | 1:AA:691:G:C8 | 2.33 | 0.64 |
| 15:AO:80:LEU:O | 15:AO:80:LEU:HD12 | 1.96 | 0.64 |
| 22:BA:357:C:H2' | 22:BA:358:U:H6 | 1.60 | 0.64 |
| 23:BB:90:C:H5'' | 23:BB:90:C:C6 | 2.23 | 0.64 |
| 38:BQ:94:LEU:O | 38:BQ:96:ASP:N | 2.31 | 0.64 |
| 53:CA:1154:G:H2' | 53:CA:1155:A:H8 | 1.62 | 0.64 |
| 4:CD:191:SER:O | 4:CD:192:ALA:HB2 | 1.98 | 0.64 |
| 5:CE:155:LYS:HB3 | 8:CH:70:VAL:HG23 | 1.80 | 0.64 |
| 55:CM:13:HIS:HB3 | 55:CM:16:ILE:HD13 | 1.80 | 0.64 |
| 57:DA:590:A:H2' | 57:DA:591:U:H6 | 1.64 | 0.64 |
| 57:DA:1489:C:H4' | 57:DA:1490:A:OP1 | 1.97 | 0.64 |
| 57:DA:1810:A:H2' | 57:DA:1811:G:O4' | 1.97 | 0.64 |
| 25:DD:149:ASN:O | 25:DD:151:THR:N | 2.31 | 0.64 |
| 34:DM:42:THR:HG22 | 34:DM:44:ARG:N | 2.12 | 0.64 |
| 42:DU:26:ASN:O | 42:DU:34:ILE:HB | 1.98 | 0.64 |
| 44:DW:37:VAL:CG1 | 44:DW:55:ASP:HB2 | 2.22 | 0.64 |
| 45:DX:11:PRO:CB | 45:DX:27:ARG:HH21 | 2.11 | 0.64 |
| 1:AA:197:A:O2' | 1:AA:198:G:C8 | 2.50 | 0.63 |
| 6:AF:36:ILE:HG22 | 6:AF:64:VAL:HG22 | 1.80 | 0.63 |
| 6:AF:52:ASN:O | 6:AF:53:LYS:HB3 | 1.98 | 0.63 |
| 13:AM:18:LEU:O | 13:AM:24:VAL:HG21 | 1.98 | 0.63 |
| 22:BA:708:G:N2 | 22:BA:724:U:H1' | 2.13 | 0.63 |
| 22:BA:876:C:H2' | 22:BA:877:A:O4' | 1.98 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:1009:A:H8 | 22:BA:1009:A:O5' | 1.81 | 0.63 |
| 22:BA:2198:A:OP2 | 22:BA:2198:A:C3' | 2.46 | 0.63 |
| 22:BA:2198:A:HO2' | 22:BA:2224:G:H22 | 1.44 | 0.63 |
| 22:BA:2291:U:H2' | 22:BA:2292:U:C6 | 2.32 | 0.63 |
| 22:BA:2636:C:H2' | 22:BA:2637:U:H6 | 1.60 | 0.63 |
| 24:BC:181:ARG:NH2 | 24:BC:265:PHE:HB3 | 2.13 | 0.63 |
| 28:BG:23:ILE:H | 28:BG:23:ILE:HD12 | 1.63 | 0.63 |
| 40:BS:43:ALA:HA | 40:BS:46:LEU:HD12 | 1.78 | 0.63 |
| 42:BU:38:ILE:HG22 | 42:BU:39:ASN:N | 2.13 | 0.63 |
| 48:B0:39:ARG:HG2 | 48:B0:40:HIS:ND1 | 2.13 | 0.63 |
| 53:CA:484:G:H4' | 53:CA:485:U:O5' | 1.95 | 0.63 |
| 53:CA:652:U:O4 | 53:CA:752:G:H2' | 1.99 | 0.63 |
| 5:CE:107:GLY:O | 5:CE:111:ARG:HB2 | 1.98 | 0.63 |
| 6:CF:80:PHE:CE2 | 24:DC:123:ILE:HG21 | 2.32 | 0.63 |
| 10:CJ:44:THR:HG22 | 10:CJ:45:ARG:H | 1.63 | 0.63 |
| 57:DA:1071:G:N7 | 57:DA:1089:A:C5 | 2.66 | 0.63 |
| 57:DA:1081:U:H4' | 30:DI:123:ALA:HA | 1.80 | 0.63 |
| 57:DA:1783:A:H5' | 57:DA:2608:G:H4' | 1.79 | 0.63 |
| 57:DA:2508:G:C2 | 57:DA:2582:G:C6 | 2.86 | 0.63 |
| 57:DA:2597:G:OP1 | 24:DC:240:GLY:HA3 | 1.98 | 0.63 |
| 59:DF:47:LYS:HA | 59:DF:50:ASP:HB3 | 1.78 | 0.63 |
| 59:DF:147:ARG:HG2 | 59:DF:149:ARG:HH12 | 1.63 | 0.63 |
| 33:DL:29:LYS:HG2 | 33:DL:30:THR:HG23 | 1.80 | 0.63 |
| 35:DN:19:ALA:HA | 35:DN:22:ARG:HB3 | 1.80 | 0.63 |
| 37:DP:86:LYS:HA | 37:DP:86:LYS:NZ | 2.13 | 0.63 |
| 46:DY:19:LEU:HA | 46:DY:22:LEU:HB2 | 1.79 | 0.63 |
| 1:AA:98:A:H2' | 1:AA:99:C:H6 | 1.63 | 0.63 |
| 1:AA:413:G:N2 | 1:AA:428:G:O2' | 2.31 | 0.63 |
| 1:AA:1038:C:H2' | 1:AA:1039:G:C8 | 2.33 | 0.63 |
| 5:AE:153:ALA:HA | 5:AE:156:ARG:CB | 2.28 | 0.63 |
| 22:BA:532:A:N7 | 22:BA:2021:C:H2' | 2.13 | 0.63 |
| 22:BA:665:U:O2' | 22:BA:666:A:H5' | 1.98 | 0.63 |
| 37:BP:50:ARG:HB2 | 37:BP:56:SER:HA | 1.81 | 0.63 |
| 40:BS:4:ILE:HB | 40:BS:106:VAL:HA | 1.79 | 0.63 |
| 53:CA:219:U:H2' | 53:CA:220:G:H8 | 1.64 | 0.63 |
| 3:CC:150:VAL:HG12 | 3:CC:199:VAL:HG12 | 1.79 | 0.63 |
| 57:DA:477:A:C2' | 57:DA:478:A:H8 | 2.11 | 0.63 |
| 57:DA:686:U:C6 | 57:DA:788:A:N1 | 2.67 | 0.63 |
| 57:DA:1178:C:H2' | 57:DA:1179:G:O4' | 1.99 | 0.63 |
| 57:DA:2458:G:O2' | 57:DA:2460:U:C5 | 2.51 | 0.63 |
| 57:DA:2753:A:H2' | 57:DA:2754:U:C6 | 2.33 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 58:DB:83:G:OP1 | 47:DZ:16:LEU:HD21 | 1.98 | 0.63 |
| 32:DK:28:SER:O | 32:DK:29:HIS:CB | 2.45 | 0.63 |
| 41:DT:28:ASN:HB2 | 41:DT:87:LEU:HB3 | 1.80 | 0.63 |
| 1:AA:1143:G:H2' | 1:AA:1144:G:H8 | 1.64 | 0.63 |
| 3:AC:10:ARG:O | 3:AC:13:ILE:O | 2.16 | 0.63 |
| 5:AE:113:VAL:HG21 | 5:AE:140:ILE:HD12 | 1.80 | 0.63 |
| 7:AG:146:ALA:C | 7:AG:148:LYS:H | 2.00 | 0.63 |
| 16:AP:79:ASN:O | 16:AP:80:LYS:HB2 | 1.98 | 0.63 |
| 22:BA:580:U:H2' | 22:BA:581:C:H6 | 1.63 | 0.63 |
| 22:BA:1057:A:N7 | 22:BA:1086:A:H2' | 2.13 | 0.63 |
| 22:BA:1187:G:H5'' | 39:BR:83:TYR:CE2 | 2.33 | 0.63 |
| 22:BA:1696:G:H5'' | 22:BA:1696:G:H8 | 1.64 | 0.63 |
| 22:BA:2449:U:H4' | 22:BA:2450:A:OP1 | 1.97 | 0.63 |
| 23:BB:112:G:H2' | 23:BB:113:C:C6 | 2.33 | 0.63 |
| 25:BD:38:LYS:O | 25:BD:46:ARG:HA | 1.99 | 0.63 |
| 35:BN:58:ASP:O | 35:BN:59:SER:HB3 | 1.96 | 0.63 |
| 40:BS:18:ARG:O | 40:BS:19:LEU:HB2 | 1.96 | 0.63 |
| 44:BW:40:ARG:H | 44:BW:56:HIS:HB3 | 1.63 | 0.63 |
| 49:B1:3:GLY:O | 49:B1:4:ILE:HG12 | 1.98 | 0.63 |
| 53:CA:84:U:N3 | 53:CA:87:C:H1' | 2.13 | 0.63 |
| 53:CA:529:G:O6 | 12:CL:45:ASN:HA | 1.99 | 0.63 |
| 53:CA:1067:A:H4' | 53:CA:1068:G:O5' | 1.96 | 0.63 |
| 8:CH:78:SER:HB2 | 8:CH:124:ILE:O | 1.99 | 0.63 |
| 8:CH:85:TYR:CD2 | 8:CH:123:GLU:HB2 | 2.33 | 0.63 |
| 57:DA:49:A:H4' | 57:DA:50:U:O5' | 1.97 | 0.63 |
| 57:DA:477:A:H2' | 57:DA:478:A:C8 | 2.33 | 0.63 |
| 57:DA:999:U:O2' | 57:DA:1000:A:H5' | 1.98 | 0.63 |
| 57:DA:1328:A:H2' | 57:DA:1330:C:N4 | 2.13 | 0.63 |
| 57:DA:1349:C:H2' | 57:DA:1350:C:C5 | 2.32 | 0.63 |
| 57:DA:1417:C:O2' | 57:DA:1418:G:H5' | 1.99 | 0.63 |
| 26:DE:105:LEU:HD12 | 26:DE:200:LEU:HD11 | 1.80 | 0.63 |
| 59:DF:147:ARG:O | 59:DF:148:VAL:HG22 | 1.99 | 0.63 |
| 41:DT:4:GLU:HG3 | 41:DT:6:ARG:NH2 | 2.13 | 0.63 |
| 4:AD:88:ASN:HA | 4:AD:91:ALA:HB3 | 1.79 | 0.63 |
| 7:AG:61:PHE:HE1 | 7:AG:65:LEU:HD22 | 1.63 | 0.63 |
| 11:AK:87:GLY:H | 11:AK:113:THR:HG22 | 1.63 | 0.63 |
| 13:AM:19:THR:HA | 13:AM:24:VAL:HG23 | 1.79 | 0.63 |
| 20:AT:53:MET:O | 20:AT:56:ILE:HG22 | 1.98 | 0.63 |
| 22:BA:1483:G:C2 | 22:BA:1484:U:C2 | 2.87 | 0.63 |
| 22:BA:1682:G:C8 | 22:BA:1757:A:C2 | 2.86 | 0.63 |
| 22:BA:1919:A:O2' | 22:BA:1920:C:H5' | 1.98 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:1992:G:N2 | 22:BA:1996:C:O2' | 2.32 | 0.63 |
| 53:CA:82:G:C2' | 53:CA:83:C:H4' | 2.29 | 0.63 |
| 53:CA:243:A:H4' | 53:CA:244:U:H5' | 1.80 | 0.63 |
| 57:DA:86:G:C2 | 57:DA:87:U:C4 | 2.86 | 0.63 |
| 57:DA:185:G:C6 | 57:DA:212:G:C2 | 2.86 | 0.63 |
| 57:DA:1196:C:H1' | 57:DA:1226:A:C4 | 2.33 | 0.63 |
| 57:DA:1555:G:O2' | 57:DA:1556:C:H5' | 1.98 | 0.63 |
| 57:DA:1574:C:H2' | 57:DA:1575:C:O4' | 1.97 | 0.63 |
| 57:DA:2006:C:H2' | 57:DA:2007:U:C6 | 2.34 | 0.63 |
| 57:DA:2714:G:H2' | 57:DA:2715:C:C6 | 2.32 | 0.63 |
| 31:DJ:117:ALA:HA | 31:DJ:120:ARG:HD2 | 1.79 | 0.63 |
| 38:DQ:77:LYS:HE2 | 38:DQ:116:LEU:HD21 | 1.80 | 0.63 |
| 1:AA:596:A:H2' | 1:AA:597:G:C8 | 2.32 | 0.63 |
| 1:AA:1054:C:O2' | 1:AA:1055:A:H5'' | 1.99 | 0.63 |
| 8:AH:74:ILE:HD13 | 8:AH:128:VAL:HG13 | 1.79 | 0.63 |
| 17:AQ:10:ARG:O | 17:AQ:22:VAL:HG13 | 1.97 | 0.63 |
| 17:AQ:18:LYS:HA | 17:AQ:47:ASP:CB | 2.21 | 0.63 |
| 17:AQ:37:ILE:H | 17:AQ:37:ILE:HD12 | 1.63 | 0.63 |
| 22:BA:704:G:O2' | 22:BA:726:G:N2 | 2.20 | 0.63 |
| 22:BA:947:A:O2' | 22:BA:984:A:H2 | 1.81 | 0.63 |
| 22:BA:1646:C:H5'' | 22:BA:1647:U:O5' | 1.98 | 0.63 |
| 22:BA:1738:G:HO2' | 22:BA:1739:A:H8 | 1.47 | 0.63 |
| 22:BA:1970:A:H4' | 22:BA:1971:U:O5' | 1.98 | 0.63 |
| 22:BA:2150:C:H2' | 22:BA:2151:U:C6 | 2.33 | 0.63 |
| 22:BA:2742:G:OP1 | 52:B4:36:ARG:HD3 | 1.99 | 0.63 |
| 31:BJ:43:GLU:O | 31:BJ:45:THR:CG2 | 2.47 | 0.63 |
| 37:BP:50:ARG:O | 37:BP:51:ASN:HB2 | 1.99 | 0.63 |
| 37:BP:50:ARG:CG | 37:BP:57:ALA:N | 2.61 | 0.63 |
| 41:BT:26:LYS:O | 41:BT:27:SER:HB2 | 1.99 | 0.63 |
| 53:CA:1380:U:H4' | 53:CA:1381:U:OP1 | 1.98 | 0.63 |
| 6:CF:88:MET:HG2 | 6:CF:90:MET:SD | 2.38 | 0.63 |
| 9:CI:118:ARG:HH21 | 9:CI:122:ARG:HE | 1.47 | 0.63 |
| 57:DA:69:C:H2' | 57:DA:70:G:C8 | 2.34 | 0.63 |
| 57:DA:666:A:H5'' | 33:DL:48:ARG:HG2 | 1.79 | 0.63 |
| 57:DA:1417:C:H4' | 57:DA:1587:G:H21 | 1.64 | 0.63 |
| 57:DA:1779:U:H5 | 57:DA:1784:A:N7 | 1.96 | 0.63 |
| 57:DA:2069:G:N2 | 57:DA:2443:C:C2 | 2.66 | 0.63 |
| 24:DC:144:GLU:HG3 | 24:DC:151:GLY:CA | 2.28 | 0.63 |
| 38:DQ:4:LYS:HE3 | 38:DQ:7:VAL:HG13 | 1.81 | 0.63 |
| 1:AA:923:A:H2' | 1:AA:924:C:H6 | 1.63 | 0.63 |
| 1:AA:1314:C:C5 | 19:AS:5:LYS:HD3 | 2.33 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:AL:85:ARG:CZ | 12:AL:87:LYS:HB3 | 2.28 | 0.63 |
| 22:BA:494:G:N2 | 40:BS:57:ASN:HD21 | 1.95 | 0.63 |
| 22:BA:994:C:H3' | 38:BQ:53:LYS:HE2 | 1.81 | 0.63 |
| 22:BA:2793:C:H2' | 22:BA:2794:C:H6 | 1.63 | 0.63 |
| 33:BL:23:ILE:HG12 | 39:BR:82:HIS:CE1 | 2.34 | 0.63 |
| 36:BO:68:LYS:O | 36:BO:71:ALA:HB3 | 1.98 | 0.63 |
| 37:BP:59:THR:HG23 | 37:BP:72:VAL:HG13 | 1.81 | 0.63 |
| 51:B3:29:ARG:O | 51:B3:30:HIS:HB2 | 1.98 | 0.63 |
| 51:B3:53:ASP:HA | 51:B3:56:LEU:HD23 | 1.80 | 0.63 |
| 53:CA:154:U:H2' | 53:CA:155:A:H5' | 1.79 | 0.63 |
| 53:CA:295:C:H2' | 53:CA:296:U:H6 | 1.62 | 0.63 |
| 53:CA:1026:G:H1 | 53:CA:1036:A:N6 | 1.96 | 0.63 |
| 53:CA:1513:A:H2' | 53:CA:1514:G:C8 | 2.34 | 0.63 |
| 4:CD:106:PHE:HD1 | 4:CD:158:LEU:HD21 | 1.62 | 0.63 |
| 4:CD:195:ASN:HB3 | 4:CD:197:HIS:NE2 | 2.14 | 0.63 |
| 5:CE:157:GLY:HA3 | 8:CH:63:LYS:HZ2 | 1.62 | 0.63 |
| 54:CG:9:ARG:HD3 | 54:CG:24:LYS:HZ1 | 1.64 | 0.63 |
| 57:DA:156:A:H2' | 57:DA:157:C:H6 | 1.63 | 0.63 |
| 57:DA:225:C:H2' | 57:DA:226:A:O4' | 1.98 | 0.63 |
| 57:DA:491:G:O2' | 57:DA:492:A:H5' | 1.98 | 0.63 |
| 57:DA:2093:G:C6 | 57:DA:2225:A:C2' | 2.78 | 0.63 |
| 57:DA:2345:G:H4' | 57:DA:2346:A:C5' | 2.27 | 0.63 |
| 24:DC:31:PRO:O | 24:DC:32:LEU:HD23 | 1.99 | 0.63 |
| 25:DD:28:GLU:HA | 25:DD:185:ASN:O | 1.99 | 0.63 |
| 25:DD:184:ARG:NH2 | 37:DP:6:GLN:HE21 | 1.97 | 0.63 |
| 29:DH:27:ARG:HB2 | 29:DH:27:ARG:HH21 | 1.63 | 0.63 |
| 30:DI:104:GLN:HA | 30:DI:107:GLU:CB | 2.27 | 0.63 |
| 31:DJ:13:ARG:HG2 | 31:DJ:51:GLY:O | 1.98 | 0.63 |
| 37:DP:109:ILE:O | 37:DP:110:LYS:HG3 | 1.99 | 0.63 |
| 39:DR:87:GLN:HG2 | 39:DR:88:GLY:N | 2.13 | 0.63 |
| 1:AA:785:G:C2' | 1:AA:786:G:H5' | 2.29 | 0.63 |
| 22:BA:1789:A:OP1 | 24:BC:220:ARG:HD3 | 1.97 | 0.63 |
| 22:BA:1813:G:N3 | 24:BC:49:THR:HG21 | 2.14 | 0.63 |
| 23:BB:13:G:O2' | 23:BB:15:A:OP2 | 2.16 | 0.63 |
| 25:BD:107:VAL:O | 25:BD:174:SER:O | 2.16 | 0.63 |
| 26:BE:76:PRO:HA | 26:BE:82:GLY:HA3 | 1.81 | 0.63 |
| 30:BI:71:LYS:HG2 | 30:BI:72:THR:H | 1.63 | 0.63 |
| 37:BP:19:PHE:O | 37:BP:20:ARG:HB3 | 1.99 | 0.63 |
| 45:BX:10:ARG:HB2 | 45:BX:11:PRO:CD | 2.29 | 0.63 |
| 53:CA:754:C:H2' | 53:CA:754:C:O2 | 1.98 | 0.63 |
| 3:CC:134:LYS:HD3 | 3:CC:138:GLN:OE1 | 1.98 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 6:CF:59:TYR:HE2 | 18:CR:66:LEU:HD21 | 1.64 | 0.63 |
| 6:CF:90:MET:CE | 18:CR:60:ARG:HD3 | 2.28 | 0.63 |
| 8:CH:1:SER:C | 8:CH:3:GLN:H | 2.00 | 0.63 |
| 57:DA:226:A:C2 | 57:DA:230:G:O6 | 2.51 | 0.63 |
| 57:DA:1607:C:H4' | 57:DA:1608:A:C8 | 2.34 | 0.63 |
| 57:DA:1814:G:N1 | 57:DA:1815:A:N6 | 2.46 | 0.63 |
| 57:DA:2515:C:OP1 | 31:DJ:81:ILE:HG22 | 1.99 | 0.63 |
| 57:DA:2902:C:H2' | 57:DA:2903:U:O4' | 1.98 | 0.63 |
| 31:DJ:73:VAL:HG23 | 31:DJ:74:TYR:H | 1.62 | 0.63 |
| 31:DJ:74:TYR:OH | 31:DJ:100:VAL:HG13 | 1.99 | 0.63 |
| 43:DV:75:GLN:HB2 | 43:DV:90:ASP:O | 1.97 | 0.63 |
| 1:AA:1007:U:C2' | 1:AA:1008:U:H5'' | 2.29 | 0.63 |
| 3:AC:156:LEU:HD13 | 3:AC:163:ARG:HB2 | 1.81 | 0.63 |
| 7:AG:3:ARG:HG3 | 7:AG:4:ARG:H | 1.64 | 0.63 |
| 15:AO:72:LYS:HE2 | 15:AO:72:LYS:HA | 1.80 | 0.63 |
| 21:AU:8:ASN:N | 21:AU:8:ASN:HD22 | 1.96 | 0.63 |
| 22:BA:914:G:H5'' | 22:BA:914:G:C8 | 2.32 | 0.63 |
| 22:BA:1947:C:C2 | 22:BA:1960:A:C2 | 2.87 | 0.63 |
| 22:BA:2378:A:N7 | 22:BA:2379:G:H1' | 2.14 | 0.63 |
| 27:BF:24:VAL:O | 27:BF:27:VAL:HG12 | 1.98 | 0.63 |
| 29:BH:131:SER:HB2 | 29:BH:139:PHE:HD2 | 1.64 | 0.63 |
| 31:BJ:88:THR:HG22 | 31:BJ:91:GLU:HB2 | 1.81 | 0.63 |
| 49:B1:47:ILE:HD12 | 49:B1:47:ILE:H | 1.64 | 0.63 |
| 53:CA:1279:G:C5' | 10:CJ:9:ARG:HH22 | 2.11 | 0.63 |
| 5:CE:39:GLY:HA2 | 5:CE:45:VAL:HA | 1.80 | 0.63 |
| 14:CN:33:VAL:HG22 | 14:CN:40:ARG:HH21 | 1.62 | 0.63 |
| 57:DA:64:A:O2' | 41:DT:69:ARG:HG2 | 1.99 | 0.63 |
| 57:DA:172:A:H2' | 57:DA:173:A:H8 | 1.64 | 0.63 |
| 57:DA:764:A:N3 | 57:DA:781:A:C6 | 2.67 | 0.63 |
| 57:DA:1635:A:H2' | 57:DA:1636:U:C6 | 2.34 | 0.63 |
| 57:DA:2619:C:OP1 | 25:DD:157:LYS:HE2 | 1.98 | 0.63 |
| 57:DA:2886:A:H62 | 48:D0:39:ARG:HD3 | 1.63 | 0.63 |
| 1:AA:502:A:H2' | 1:AA:503:C:O4' | 1.98 | 0.63 |
| 1:AA:697:U:O2 | 1:AA:798:U:H1' | 1.98 | 0.63 |
| 4:AD:34:GLU:O | 4:AD:37:PRO:HD3 | 1.99 | 0.63 |
| 20:AT:14:GLU:HA | 20:AT:17:ARG:HB2 | 1.80 | 0.63 |
| 21:AU:18:PHE:O | 21:AU:21:SER:HB3 | 1.99 | 0.63 |
| 24:BC:106:PRO:HA | 24:BC:141:HIS:CE1 | 2.34 | 0.63 |
| 34:BM:66:ARG:HG3 | 34:BM:101:VAL:HG13 | 1.81 | 0.63 |
| 43:BV:25:LYS:HD3 | 43:BV:43:ASP:HA | 1.79 | 0.63 |
| 53:CA:286:C:H2' | 53:CA:287:U:O4' | 1.98 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:CF:27:ALA:O | 6:CF:31:GLY:HA3 | 1.99 | 0.63 |
| 9:CI:118:ARG:HG3 | 9:CI:124:PRO:HG3 | 1.80 | 0.63 |
| 57:DA:105:C:H2' | 57:DA:106:C:C6 | 2.34 | 0.63 |
| 57:DA:370:G:N1 | 57:DA:424:G:C5 | 2.67 | 0.63 |
| 57:DA:685:A:H5' | 57:DA:686:U:OP1 | 1.99 | 0.63 |
| 57:DA:1078:U:H4' | 57:DA:1079:C:C5' | 2.29 | 0.63 |
| 57:DA:1176:U:H2' | 57:DA:1177:G:C8 | 2.34 | 0.63 |
| 57:DA:1207:C:O2' | 57:DA:1208:C:H6 | 1.75 | 0.63 |
| 57:DA:1744:A:H3' | 57:DA:1745:A:H8 | 1.63 | 0.63 |
| 57:DA:2339:C:O2' | 57:DA:2340:A:O4' | 2.17 | 0.63 |
| 57:DA:2746:U:H1' | 28:DG:138:GLN:HE21 | 1.62 | 0.63 |
| 34:DM:42:THR:CG2 | 34:DM:44:ARG:H | 2.11 | 0.63 |
| 39:DR:4:VAL:HG22 | 39:DR:40:MET:HB3 | 1.80 | 0.63 |
| 42:DU:43:LYS:HG2 | 42:DU:45:GLN:HG2 | 1.80 | 0.63 |
| 1:AA:872:A:C4 | 1:AA:874:G:N7 | 2.66 | 0.62 |
| 4:AD:169:TRP:CE3 | 4:AD:185:PRO:HB3 | 2.34 | 0.62 |
| 22:BA:509:C:H5'' | 22:BA:509:C:C6 | 2.24 | 0.62 |
| 22:BA:1607:C:N4 | 22:BA:1622:G:N7 | 2.47 | 0.62 |
| 22:BA:1735:A:C2 | 22:BA:1736:U:C2 | 2.87 | 0.62 |
| 22:BA:1853:A:N1 | 22:BA:2087:G:H1' | 2.14 | 0.62 |
| 22:BA:2051:A:H8 | 22:BA:2051:A:OP2 | 1.82 | 0.62 |
| 23:BB:104:A:H2' | 23:BB:105:G:O4' | 1.98 | 0.62 |
| 24:BC:16:VAL:N | 24:BC:203:VAL:CG1 | 2.62 | 0.62 |
| 26:BE:146:VAL:HG23 | 26:BE:167:VAL:HG23 | 1.81 | 0.62 |
| 28:BG:61:TRP:O | 28:BG:62:ALA:C | 2.36 | 0.62 |
| 33:BL:99:ASN:OD1 | 63:BL:301:HOH:O | 2.16 | 0.62 |
| 41:BT:38:ALA:HB1 | 41:BT:43:ILE:CG2 | 2.29 | 0.62 |
| 44:BW:9:THR:CG2 | 44:BW:10:ARG:HH11 | 2.11 | 0.62 |
| 53:CA:1014:A:H2 | 53:CA:1219:A:H1' | 1.63 | 0.62 |
| 53:CA:1365:G:H2' | 53:CA:1366:C:C6 | 2.34 | 0.62 |
| 9:CI:51:LEU:HG | 9:CI:86:LEU:CD2 | 2.25 | 0.62 |
| 57:DA:1264:A:H2' | 57:DA:2014:A:N6 | 2.14 | 0.62 |
| 57:DA:2197:U:O2' | 57:DA:2224:G:N1 | 2.30 | 0.62 |
| 43:DV:55:GLU:O | 43:DV:57:TYR:N | 2.32 | 0.62 |
| 50:D2:46:LYS:HD2 | 50:D2:46:LYS:N | 2.14 | 0.62 |
| 1:AA:279:A:H5'' | 1:AA:281:G:O4' | 1.99 | 0.62 |
| 1:AA:761:G:H2' | 1:AA:762:U:C6 | 2.34 | 0.62 |
| 1:AA:1247:U:O2' | 1:AA:1248:A:H5' | 1.99 | 0.62 |
| 3:AC:46:LEU:HB3 | 3:AC:49:ALA:HB3 | 1.80 | 0.62 |
| 22:BA:2092:U:O2' | 22:BA:2093:G:P | 2.57 | 0.62 |
| 22:BA:2146:C:H4' | 22:BA:2147:A:O5' | 1.98 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:2199:A:H5' | 22:BA:2200:C:H5 | 1.64 | 0.62 |
| 31:BJ:54:ILE:C | 31:BJ:54:ILE:HD12 | 2.19 | 0.62 |
| 31:BJ:124:VAL:HG23 | 31:BJ:125:TYR:H | 1.64 | 0.62 |
| 33:BL:81:ASP:O | 33:BL:82:LEU:HB3 | 2.00 | 0.62 |
| 35:BN:33:ILE:HD11 | 35:BN:118:ARG:NH2 | 2.14 | 0.62 |
| 38:BQ:43:GLN:NE2 | 39:BR:77:PHE:HD1 | 1.96 | 0.62 |
| 41:BT:73:ARG:HB3 | 41:BT:73:ARG:CZ | 2.28 | 0.62 |
| 53:CA:438:U:H2' | 53:CA:494:G:O6 | 1.98 | 0.62 |
| 53:CA:515:G:N7 | 63:CA:1855:HOH:O | 2.31 | 0.62 |
| 53:CA:718:A:C5 | 11:CK:117:HIS:CD2 | 2.88 | 0.62 |
| 53:CA:1062:U:H2' | 53:CA:1063:C:C6 | 2.34 | 0.62 |
| 17:CQ:13:SER:HB3 | 17:CQ:21:VAL:HB | 1.81 | 0.62 |
| 57:DA:455:C:N3 | 57:DA:473:G:H5' | 2.14 | 0.62 |
| 57:DA:1495:A:H2' | 57:DA:1496:A:C8 | 2.34 | 0.62 |
| 57:DA:2225:A:H5' | 57:DA:2226:C:H5' | 1.80 | 0.62 |
| 57:DA:2576:G:C8 | 57:DA:2580:U:O4 | 2.52 | 0.62 |
| 57:DA:2712:C:C2 | 57:DA:2715:C:OP1 | 2.52 | 0.62 |
| 24:DC:38:LYS:HE2 | 24:DC:55:GLY:H | 1.64 | 0.62 |
| 28:DG:126:THR:HG22 | 28:DG:127:GLN:H | 1.62 | 0.62 |
| 31:DJ:89:PHE:CE2 | 31:DJ:100:VAL:HG11 | 2.33 | 0.62 |
| 35:DN:73:ASN:HA | 35:DN:76:VAL:HG13 | 1.81 | 0.62 |
| 1:AA:518:C:H2' | 1:AA:530:G:C8 | 2.34 | 0.62 |
| 1:AA:1398:A:H5'' | 1:AA:1398:A:C8 | 2.27 | 0.62 |
| 5:AE:153:ALA:CA | 5:AE:156:ARG:HB2 | 2.30 | 0.62 |
| 22:BA:143:C:O2' | 22:BA:144:A:H8 | 1.83 | 0.62 |
| 22:BA:924:G:H4' | 44:BW:24:ARG:HH21 | 1.65 | 0.62 |
| 22:BA:1340:U:H3' | 41:BT:61:LEU:HD22 | 1.82 | 0.62 |
| 22:BA:1539:U:H2' | 22:BA:1540:G:H8 | 1.64 | 0.62 |
| 22:BA:2091:C:O2 | 45:BX:33:HIS:CE1 | 2.52 | 0.62 |
| 22:BA:2103:C:H2' | 22:BA:2104:C:H5' | 1.81 | 0.62 |
| 22:BA:2842:G:C2' | 22:BA:2843:G:H5' | 2.29 | 0.62 |
| 28:BG:72:ASN:O | 28:BG:76:ILE:HG22 | 1.98 | 0.62 |
| 32:BK:8:LEU:HD23 | 32:BK:8:LEU:N | 2.14 | 0.62 |
| 36:BO:31:THR:HG23 | 36:BO:33:ARG:H | 1.61 | 0.62 |
| 37:BP:77:SER:OG | 37:BP:79:VAL:HG13 | 2.00 | 0.62 |
| 38:BQ:94:LEU:O | 38:BQ:94:LEU:HD13 | 1.99 | 0.62 |
| 43:BV:26:PHE:HD1 | 43:BV:27:PRO:O | 1.83 | 0.62 |
| 46:BY:17:GLU:HG3 | 46:BY:18:LEU:N | 2.13 | 0.62 |
| 53:CA:93:U:H2' | 53:CA:95:C:C5 | 2.34 | 0.62 |
| 53:CA:533:A:C2 | 53:CA:536:C:C5 | 2.87 | 0.62 |
| 5:CE:48:GLY:HA3 | 5:CE:66:ALA:HB2 | 1.81 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CH:63:LYS:O | 8:CH:70:VAL:HG12 | 2.00 | 0.62 |
| 57:DA:126:A:O5' | 50:D2:19:ARG:HG3 | 1.99 | 0.62 |
| 57:DA:1060:U:C4' | 57:DA:1061:U:H2' | 2.29 | 0.62 |
| 58:DB:44:G:H5'' | 59:DF:91:ARG:NE | 2.15 | 0.62 |
| 43:DV:9:ARG:HG2 | 43:DV:39:ALA:O | 2.00 | 0.62 |
| 1:AA:508:U:O2' | 1:AA:509:A:C8 | 2.52 | 0.62 |
| 1:AA:817:C:H4' | 1:AA:818:G:OP1 | 1.97 | 0.62 |
| 6:AF:42:TRP:HZ2 | 6:AF:61:LEU:HD22 | 1.64 | 0.62 |
| 7:AG:4:ARG:HA | 7:AG:4:ARG:HE | 1.64 | 0.62 |
| 11:AK:96:ILE:HG13 | 11:AK:97:ARG:N | 2.14 | 0.62 |
| 12:AL:23:LEU:CB | 12:AL:58:ASN:HD22 | 2.13 | 0.62 |
| 22:BA:21:A:O2' | 22:BA:22:C:H5' | 2.00 | 0.62 |
| 22:BA:763:G:O2' | 22:BA:764:A:H3' | 2.00 | 0.62 |
| 22:BA:854:C:O2 | 22:BA:924:G:C2 | 2.52 | 0.62 |
| 22:BA:1079:C:C4 | 22:BA:1088:A:H2 | 2.17 | 0.62 |
| 22:BA:1376:C:O2' | 22:BA:1377:G:H5' | 1.98 | 0.62 |
| 22:BA:1818:U:O2' | 22:BA:1819:A:OP2 | 2.16 | 0.62 |
| 22:BA:1936:A:C2 | 22:BA:1943:U:H5 | 2.17 | 0.62 |
| 22:BA:2321:U:H6 | 22:BA:2321:U:H5'' | 1.64 | 0.62 |
| 22:BA:2555:U:C5 | 22:BA:2556:C:C2 | 2.88 | 0.62 |
| 24:BC:109:LEU:HD23 | 24:BC:110:LYS:N | 2.14 | 0.62 |
| 25:BD:98:VAL:O | 25:BD:100:LEU:N | 2.31 | 0.62 |
| 27:BF:134:GLN:HG2 | 27:BF:135:ILE:H | 1.63 | 0.62 |
| 32:BK:112:PHE:O | 32:BK:115:ILE:HG22 | 1.99 | 0.62 |
| 38:BQ:111:LYS:NZ | 39:BR:48:LYS:HD3 | 2.14 | 0.62 |
| 40:BS:39:THR:HG22 | 40:BS:44:ALA:HB2 | 1.80 | 0.62 |
| 52:B4:25:VAL:HG11 | 52:B4:35:GLN:HE21 | 1.65 | 0.62 |
| 53:CA:51:A:H4' | 53:CA:52:C:H5' | 1.81 | 0.62 |
| 53:CA:1201:A:H1' | 53:CA:1202:U:OP2 | 2.00 | 0.62 |
| 53:CA:1322:C:H2' | 53:CA:1322:C:O2 | 1.99 | 0.62 |
| 9:CI:30:ASN:O | 9:CI:32:ARG:HG2 | 1.99 | 0.62 |
| 20:CT:34:VAL:HG21 | 20:CT:53:MET:HG2 | 1.81 | 0.62 |
| 57:DA:477:A:H2' | 57:DA:478:A:H8 | 1.64 | 0.62 |
| 57:DA:726:G:H8 | 57:DA:726:G:OP2 | 1.83 | 0.62 |
| 57:DA:1758:U:O4 | 57:DA:2695:U:H4' | 2.00 | 0.62 |
| 57:DA:2303:G:H5' | 59:DF:121:PHE:CE1 | 2.35 | 0.62 |
| 58:DB:17:C:HO2' | 58:DB:18:G:H8 | 1.47 | 0.62 |
| 26:DE:29:HIS:HA | 26:DE:32:VAL:HG22 | 1.82 | 0.62 |
| 26:DE:73:ILE:O | 26:DE:73:ILE:HG13 | 1.99 | 0.62 |
| 31:DJ:44:TYR:O | 31:DJ:45:THR:HB | 1.98 | 0.62 |
| 40:DS:6:LYS:NZ | 40:DS:104:THR:HG23 | 2.14 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 40:DS:17:VAL:HG11 | 40:DS:103:ILE:HG13 | 1.81 | 0.62 |
| 1:AA:1021:A:C2' | 1:AA:1022:A:H5'' | 2.26 | 0.62 |
| 11:AK:13:LYS:O | 11:AK:14:GLN:HB3 | 1.99 | 0.62 |
| 12:AL:23:LEU:O | 12:AL:25:ALA:N | 2.32 | 0.62 |
| 22:BA:269:C:H2' | 22:BA:270:A:H5' | 1.81 | 0.62 |
| 22:BA:491:G:H2' | 22:BA:492:A:C8 | 2.34 | 0.62 |
| 22:BA:1076:C:H2' | 22:BA:1077:A:C8 | 2.33 | 0.62 |
| 22:BA:1821:A:H2' | 22:BA:1822:C:C6 | 2.34 | 0.62 |
| 22:BA:2134:A:N6 | 22:BA:2157:G:C5 | 2.68 | 0.62 |
| 25:BD:106:LYS:HB3 | 25:BD:206:ALA:CB | 2.26 | 0.62 |
| 28:BG:7:PRO:O | 28:BG:8:VAL:HB | 1.99 | 0.62 |
| 39:BR:48:LYS:H | 39:BR:48:LYS:HD2 | 1.65 | 0.62 |
| 53:CA:330:C:O2' | 53:CA:331:G:C8 | 2.45 | 0.62 |
| 53:CA:1361:G:H2' | 53:CA:1362:A:H5' | 1.80 | 0.62 |
| 53:CA:1514:G:H2' | 53:CA:1515:G:C8 | 2.34 | 0.62 |
| 10:CJ:52:LEU:HD21 | 10:CJ:59:LYS:HA | 1.82 | 0.62 |
| 17:CQ:27:PHE:CD1 | 17:CQ:36:PHE:HB3 | 2.34 | 0.62 |
| 57:DA:27:G:H22 | 57:DA:512:G:H2' | 1.65 | 0.62 |
| 57:DA:64:A:OP1 | 41:DT:77:ARG:HG2 | 1.98 | 0.62 |
| 57:DA:138:U:H2' | 57:DA:140:C:H1' | 1.82 | 0.62 |
| 57:DA:627:A:O2' | 57:DA:628:G:C8 | 2.50 | 0.62 |
| 57:DA:1347:A:O2' | 57:DA:1348:C:H5' | 1.99 | 0.62 |
| 25:DD:105:LYS:HA | 25:DD:177:VAL:CG2 | 2.29 | 0.62 |
| 37:DP:50:ARG:CB | 37:DP:57:ALA:H | 2.13 | 0.62 |
| 1:AA:877:G:N2 | 8:AH:1:SER:HB2 | 2.12 | 0.62 |
| 5:AE:79:THR:OG1 | 5:AE:80:LEU:N | 2.32 | 0.62 |
| 12:AL:73:LEU:HD11 | 12:AL:79:ILE:HG21 | 1.81 | 0.62 |
| 16:AP:22:ALA:HB2 | 16:AP:32:PHE:HA | 1.80 | 0.62 |
| 17:AQ:12:VAL:CG1 | 17:AQ:13:SER:N | 2.63 | 0.62 |
| 22:BA:2663:G:H2' | 22:BA:2664:G:C8 | 2.34 | 0.62 |
| 23:BB:116:G:H4' | 36:BO:54:VAL:O | 1.99 | 0.62 |
| 25:BD:53:GLY:HA3 | 25:BD:77:ARG:HB2 | 1.82 | 0.62 |
| 31:BJ:74:TYR:HB2 | 31:BJ:87:ALA:O | 1.99 | 0.62 |
| 31:BJ:88:THR:HG22 | 31:BJ:91:GLU:CG | 2.30 | 0.62 |
| 32:BK:38:ILE:HD11 | 32:BK:112:PHE:HZ | 1.64 | 0.62 |
| 53:CA:166:U:H2' | 53:CA:167:A:H5' | 1.82 | 0.62 |
| 53:CA:277:C:H2' | 53:CA:278:G:H8 | 1.64 | 0.62 |
| 53:CA:1323:G:H2' | 53:CA:1324:A:H8 | 1.63 | 0.62 |
| 3:CC:5:HIS:NE2 | 3:CC:183:TYR:HE2 | 1.98 | 0.62 |
| 3:CC:84:GLU:HA | 3:CC:87:ARG:HB2 | 1.81 | 0.62 |
| 5:CE:59:ILE:O | 5:CE:59:ILE:HG13 | 2.00 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:CK:117:HIS:O | 11:CK:118:ASN:HB2 | 1.99 | 0.62 |
| 57:DA:374:A:N6 | 57:DA:401:A:C8 | 2.67 | 0.62 |
| 57:DA:616:A:H2' | 57:DA:617:G:H8 | 1.59 | 0.62 |
| 57:DA:677:A:O2' | 57:DA:2071:A:H5' | 2.00 | 0.62 |
| 57:DA:743:A:OP1 | 25:DD:135:GLY:HA2 | 1.99 | 0.62 |
| 57:DA:1071:G:N7 | 57:DA:1089:A:C6 | 2.67 | 0.62 |
| 57:DA:1416:G:O2' | 57:DA:1417:C:O5' | 2.16 | 0.62 |
| 57:DA:1565:C:H3' | 24:DC:17:LYS:HE2 | 1.82 | 0.62 |
| 57:DA:1912:A:N6 | 57:DA:1917:U:N3 | 2.46 | 0.62 |
| 57:DA:2403:C:H2' | 57:DA:2404:U:H6 | 1.63 | 0.62 |
| 57:DA:2461:A:H1' | 57:DA:2492:U:H3 | 1.63 | 0.62 |
| 57:DA:2623:G:H4' | 57:DA:2825:G:C8 | 2.34 | 0.62 |
| 26:DE:136:GLN:HA | 26:DE:139:LYS:HG2 | 1.81 | 0.62 |
| 59:DF:48:LEU:HG | 59:DF:49:LEU:HD22 | 1.82 | 0.62 |
| 42:DU:34:ILE:HG12 | 42:DU:62:ALA:O | 2.00 | 0.62 |
| 44:DW:77:LYS:N | 44:DW:77:LYS:HZ2 | 1.97 | 0.62 |
| 52:D4:36:ARG:HG2 | 52:D4:37:GLN:N | 2.14 | 0.62 |
| 1:AA:35:G:H2' | 1:AA:36:C:H6 | 1.64 | 0.62 |
| 1:AA:372:C:H4' | 1:AA:373:A:OP1 | 1.99 | 0.62 |
| 1:AA:1306:A:N6 | 1:AA:1331:G:H1' | 2.14 | 0.62 |
| 3:AC:154:GLY:O | 3:AC:195:ILE:HG12 | 2.00 | 0.62 |
| 22:BA:161:A:OP2 | 22:BA:162:U:H3' | 2.00 | 0.62 |
| 22:BA:390:U:O2' | 22:BA:391:A:OP2 | 2.18 | 0.62 |
| 22:BA:1681:G:O2' | 22:BA:1762:A:H1' | 1.99 | 0.62 |
| 22:BA:2772:C:H2' | 22:BA:2773:C:H6 | 1.65 | 0.62 |
| 32:BK:95:ILE:HD12 | 32:BK:95:ILE:O | 1.99 | 0.62 |
| 41:BT:15:HIS:HB3 | 41:BT:31:VAL:HG22 | 1.80 | 0.62 |
| 42:BU:52:ASN:C | 42:BU:54:PRO:HD2 | 2.20 | 0.62 |
| 53:CA:205:A:C6 | 53:CA:206:C:N4 | 2.67 | 0.62 |
| 53:CA:328:C:H2' | 53:CA:328:C:O2 | 1.97 | 0.62 |
| 53:CA:664:G:N2 | 53:CA:741:G:H1 | 1.90 | 0.62 |
| 53:CA:1176:A:H2' | 53:CA:1177:G:O4' | 1.99 | 0.62 |
| 53:CA:1206:G:H4' | 3:CC:191:THR:O | 1.99 | 0.62 |
| 2:CB:114:LYS:CE | 2:CB:151:LYS:HB2 | 2.22 | 0.62 |
| 4:CD:61:ARG:HH21 | 4:CD:67:LEU:CA | 2.11 | 0.62 |
| 57:DA:232:G:O2' | 57:DA:233:A:H5'' | 1.98 | 0.62 |
| 57:DA:729:G:H3' | 57:DA:730:A:C5' | 2.30 | 0.62 |
| 57:DA:1635:A:H5' | 57:DA:1635:A:C8 | 2.34 | 0.62 |
| 57:DA:1941:C:H2' | 57:DA:1942:C:C6 | 2.34 | 0.62 |
| 57:DA:2271:G:H2' | 57:DA:2272:U:H6 | 1.63 | 0.62 |
| 57:DA:2574:G:O2' | 25:DD:148:GLN:HB2 | 1.99 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:DN:28:LEU:O | 35:DN:32:GLU:N | 2.31 | 0.62 |
| 38:DQ:27:ARG:HA | 38:DQ:33:VAL:HG12 | 1.82 | 0.62 |
| 38:DQ:57:ARG:O | 38:DQ:61:ILE:HD13 | 2.00 | 0.62 |
| 1:AA:86:G:C2 | 1:AA:87:C:N4 | 2.66 | 0.62 |
| 1:AA:1202:U:O4' | 14:AN:68:ARG:HD2 | 1.99 | 0.62 |
| 8:AH:10:LEU:HD11 | 8:AH:126:CYS:CB | 2.30 | 0.62 |
| 11:AK:35:ASP:OD2 | 11:AK:39:ASN:HB2 | 1.99 | 0.62 |
| 11:AK:87:GLY:N | 11:AK:113:THR:HG22 | 2.15 | 0.62 |
| 22:BA:1417:C:H2' | 22:BA:1418:G:C8 | 2.35 | 0.62 |
| 22:BA:1931:U:H5' | 22:BA:1931:U:C6 | 2.34 | 0.62 |
| 33:BL:92:LEU:HD23 | 33:BL:125:LEU:HD23 | 1.81 | 0.62 |
| 38:BQ:57:ARG:HA | 38:BQ:60:TRP:CE3 | 2.35 | 0.62 |
| 48:B0:47:TYR:CE2 | 48:B0:52:LYS:HB2 | 2.35 | 0.62 |
| 53:CA:279:A:C5' | 53:CA:280:C:H3' | 2.22 | 0.62 |
| 53:CA:802:A:H2' | 53:CA:803:G:H5' | 1.82 | 0.62 |
| 53:CA:1102:A:H2' | 53:CA:1103:C:C6 | 2.34 | 0.62 |
| 2:CB:93:HIS:ND1 | 2:CB:145:ASN:O | 2.33 | 0.62 |
| 9:CI:59:LYS:HE3 | 9:CI:60:LEU:HG | 1.82 | 0.62 |
| 19:CS:46:LEU:HD23 | 19:CS:46:LEU:H | 1.63 | 0.62 |
| 57:DA:754:U:H2' | 57:DA:755:U:C6 | 2.35 | 0.62 |
| 57:DA:1071:G:O2' | 57:DA:1072:C:H5' | 1.99 | 0.62 |
| 57:DA:1268:A:C6 | 57:DA:2013:A:C8 | 2.87 | 0.62 |
| 57:DA:2798:U:H5' | 57:DA:2800:A:C5 | 2.35 | 0.62 |
| 57:DA:2889:C:N4 | 57:DA:2890:G:C6 | 2.68 | 0.62 |
| 28:DG:44:HIS:HA | 28:DG:49:LEU:HA | 1.80 | 0.62 |
| 49:D1:5:ARG:HD2 | 49:D1:25:ASN:HB2 | 1.81 | 0.62 |
| 2:AB:20:ARG:HA | 2:AB:20:ARG:NH1 | 2.15 | 0.62 |
| 3:AC:156:LEU:HD12 | 3:AC:156:LEU:N | 2.13 | 0.62 |
| 4:AD:145:ARG:NH1 | 4:AD:147:LYS:HE3 | 2.09 | 0.62 |
| 10:AJ:19:ASP:HA | 10:AJ:22:THR:HB | 1.81 | 0.62 |
| 11:AK:91:GLY:HA2 | 11:AK:94:SER:HB3 | 1.82 | 0.62 |
| 12:AL:72:ASN:OD1 | 12:AL:104:SER:HB3 | 1.99 | 0.62 |
| 20:AT:27:MET:CE | 20:AT:57:VAL:HG22 | 2.28 | 0.62 |
| 22:BA:669:G:H2' | 22:BA:669:G:N3 | 2.15 | 0.62 |
| 22:BA:790:U:H2' | 63:BA:3756:HOH:O | 1.98 | 0.62 |
| 22:BA:1730:C:H1' | 22:BA:1731:G:C2 | 2.35 | 0.62 |
| 22:BA:1819:A:OP1 | 24:BC:154:ALA:HA | 1.99 | 0.62 |
| 27:BF:40:GLY:HA2 | 27:BF:84:ILE:HD11 | 1.81 | 0.62 |
| 27:BF:114:ARG:HD2 | 27:BF:114:ARG:H | 1.64 | 0.62 |
| 28:BG:29:ASN:CG | 28:BG:30:GLY:N | 2.52 | 0.62 |
| 39:BR:1:MET:HA | 39:BR:42:ALA:O | 2.00 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:BT:29:THR:HA | 41:BT:86:THR:HA | 1.82 | 0.62 |
| 45:BX:4:CYS:HB2 | 45:BX:51:SER:HB3 | 1.81 | 0.62 |
| 53:CA:119:A:H4' | 53:CA:120:A:C8 | 2.34 | 0.62 |
| 53:CA:796:C:OP1 | 11:CK:127:ARG:HB3 | 2.00 | 0.62 |
| 53:CA:1366:C:O2' | 53:CA:1367:C:C6 | 2.52 | 0.62 |
| 17:CQ:59:GLU:HG2 | 17:CQ:76:ARG:HG2 | 1.82 | 0.62 |
| 57:DA:781:A:N1 | 57:DA:1776:G:O2' | 2.29 | 0.62 |
| 57:DA:1512:C:O2' | 57:DA:1513:U:H5' | 1.99 | 0.62 |
| 57:DA:1826:G:P | 24:DC:220:ARG:HB3 | 2.39 | 0.62 |
| 57:DA:2665:A:H2' | 57:DA:2666:C:O2 | 1.99 | 0.62 |
| 24:DC:1:ALA:O | 24:DC:18:VAL:HG23 | 2.00 | 0.62 |
| 28:DG:86:LEU:HD12 | 28:DG:132:LEU:HD11 | 1.82 | 0.62 |
| 33:DL:47:ARG:HG2 | 33:DL:47:ARG:NH2 | 2.10 | 0.62 |
| 1:AA:819:A:H4' | 1:AA:820:U:OP2 | 1.99 | 0.62 |
| 1:AA:1320:C:H41 | 19:AS:36:ARG:HG2 | 1.65 | 0.62 |
| 1:AA:1323:G:H2' | 1:AA:1324:A:C8 | 2.34 | 0.62 |
| 2:AB:86:CYS:HB2 | 2:AB:88:GLN:HG3 | 1.81 | 0.62 |
| 4:AD:117:VAL:CA | 4:AD:122:ILE:HD11 | 2.30 | 0.62 |
| 16:AP:57:ILE:O | 16:AP:61:VAL:HG23 | 2.00 | 0.62 |
| 17:AQ:18:LYS:C | 17:AQ:47:ASP:OD2 | 2.38 | 0.62 |
| 22:BA:475:C:C4 | 22:BA:481:G:O6 | 2.52 | 0.62 |
| 22:BA:1056:G:O2' | 22:BA:1086:A:H1' | 2.00 | 0.62 |
| 22:BA:1278:C:H2' | 22:BA:1279:G:H8 | 1.64 | 0.62 |
| 22:BA:2134:A:O2' | 22:BA:2135:A:H5'' | 2.00 | 0.62 |
| 22:BA:2243:U:H2' | 22:BA:2244:U:C6 | 2.35 | 0.62 |
| 22:BA:2243:U:O2' | 22:BA:2244:U:H5' | 2.00 | 0.62 |
| 22:BA:2383:G:H2' | 22:BA:2384:U:C6 | 2.35 | 0.62 |
| 31:BJ:43:GLU:O | 31:BJ:45:THR:HG22 | 2.00 | 0.62 |
| 33:BL:82:LEU:C | 33:BL:82:LEU:HD23 | 2.20 | 0.62 |
| 34:BM:46:ILE:HD12 | 34:BM:47:GLU:N | 2.15 | 0.62 |
| 53:CA:453:G:H2' | 53:CA:454:G:C8 | 2.35 | 0.62 |
| 53:CA:1219:A:OP1 | 14:CN:52:ARG:HG3 | 2.00 | 0.62 |
| 3:CC:176:THR:HG22 | 3:CC:178:ARG:HG3 | 1.82 | 0.62 |
| 14:CN:9:GLU:HA | 14:CN:12:ARG:HD2 | 1.81 | 0.62 |
| 14:CN:60:ARG:HG2 | 14:CN:61:ASN:H | 1.65 | 0.62 |
| 57:DA:704:G:C2' | 57:DA:726:G:H22 | 2.11 | 0.62 |
| 57:DA:1300:G:H4' | 57:DA:1301:A:O5' | 2.00 | 0.62 |
| 57:DA:1525:A:H2' | 57:DA:1526:C:O4' | 2.00 | 0.62 |
| 57:DA:1746:A:H2' | 57:DA:1747:U:H6 | 1.65 | 0.62 |
| 57:DA:2147:A:OP1 | 57:DA:2147:A:H4' | 2.00 | 0.62 |
| 24:DC:53:ILE:HA | 24:DC:214:GLY:O | 2.00 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:DP:52:ARG:HH11 | 37:DP:52:ARG:HG2 | 1.65 | 0.62 |
| 41:DT:38:ALA:HB1 | 41:DT:81:LYS:NZ | 2.15 | 0.62 |
| 4:AD:151:GLN:H | 4:AD:154:VAL:HG13 | 1.65 | 0.61 |
| 5:AE:100:GLU:HB3 | 5:AE:121:ASN:HA | 1.80 | 0.61 |
| 6:AF:42:TRP:CZ2 | 6:AF:61:LEU:HD22 | 2.35 | 0.61 |
| 14:AN:46:LYS:HD2 | 19:AS:12:LEU:HD21 | 1.83 | 0.61 |
| 21:AU:36:PHE:HA | 21:AU:39:LYS:HE2 | 1.82 | 0.61 |
| 22:BA:875:G:C2' | 22:BA:876:C:H5' | 2.30 | 0.61 |
| 22:BA:1667:G:O2' | 22:BA:1991:U:O4 | 2.17 | 0.61 |
| 22:BA:2104:C:H2' | 22:BA:2105:U:O4' | 2.00 | 0.61 |
| 22:BA:2259:U:O4' | 22:BA:2427:C:H2' | 2.00 | 0.61 |
| 29:BH:27:ARG:NH1 | 29:BH:38:PRO:HG3 | 2.14 | 0.61 |
| 35:BN:73:ASN:O | 35:BN:76:VAL:HG12 | 1.99 | 0.61 |
| 37:BP:24:THR:HG22 | 37:BP:87:ARG:H | 1.65 | 0.61 |
| 45:BX:40:GLU:O | 45:BX:43:LYS:HD2 | 2.00 | 0.61 |
| 53:CA:372:C:O2' | 53:CA:373:A:P | 2.58 | 0.61 |
| 53:CA:1217:C:O2' | 53:CA:1218:C:O4' | 2.13 | 0.61 |
| 2:CB:162:VAL:HG13 | 2:CB:184:ALA:HB2 | 1.82 | 0.61 |
| 5:CE:157:GLY:HA3 | 8:CH:63:LYS:NZ | 2.14 | 0.61 |
| 56:CP:75:ILE:HG22 | 56:CP:80:LYS:HD2 | 1.81 | 0.61 |
| 20:CT:23:ARG:HB3 | 20:CT:60:GLN:HE22 | 1.61 | 0.61 |
| 57:DA:329:G:O6 | 42:DU:16:LYS:HB2 | 2.00 | 0.61 |
| 57:DA:372:G:P | 45:DX:61:LYS:HZ1 | 2.23 | 0.61 |
| 57:DA:476:G:O2' | 57:DA:477:A:O5' | 2.17 | 0.61 |
| 57:DA:1338:G:H4' | 41:DT:18:GLU:CD | 2.20 | 0.61 |
| 57:DA:1439:A:C2 | 57:DA:1553:A:N7 | 2.68 | 0.61 |
| 57:DA:2508:G:N2 | 57:DA:2582:G:C6 | 2.68 | 0.61 |
| 57:DA:2699:C:H2' | 57:DA:2700:A:H8 | 1.62 | 0.61 |
| 25:DD:137:SER:C | 25:DD:138:LEU:HD22 | 2.21 | 0.61 |
| 26:DE:149:ILE:HG23 | 26:DE:188:MET:CA | 2.30 | 0.61 |
| 26:DE:166:LYS:HE2 | 26:DE:166:LYS:HA | 1.82 | 0.61 |
| 30:DI:74:PRO:O | 30:DI:78:LEU:HG | 2.00 | 0.61 |
| 36:DO:30:ARG:HA | 36:DO:35:ILE:HD13 | 1.82 | 0.61 |
| 47:DZ:30:ARG:HH21 | 47:DZ:33:HIS:HB2 | 1.63 | 0.61 |
| 1:AA:935:A:H61 | 7:AG:2:ARG:HB2 | 1.65 | 0.61 |
| 1:AA:1242:G:O2' | 1:AA:1243:C:H5' | 2.00 | 0.61 |
| 1:AA:1370:G:O5' | 9:AI:110:VAL:HG21 | 1.99 | 0.61 |
| 20:AT:68:LYS:HB2 | 20:AT:68:LYS:HZ2 | 1.65 | 0.61 |
| 22:BA:1090:A:O2' | 22:BA:1091:G:H5' | 2.00 | 0.61 |
| 22:BA:2180:U:H2' | 22:BA:2181:U:C5 | 2.35 | 0.61 |
| 22:BA:2438:U:O2' | 22:BA:2439:A:H5'' | 2.00 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:2672:U:C2' | 22:BA:2673:G:O5' | 2.48 | 0.61 |
| 22:BA:2752:C:H2' | 22:BA:2753:A:H8 | 1.65 | 0.61 |
| 27:BF:104:THR:HG22 | 27:BF:105:ILE:HG23 | 1.80 | 0.61 |
| 36:BO:51:ALA:HB3 | 36:BO:78:VAL:HG13 | 1.81 | 0.61 |
| 46:BY:9:LYS:HA | 46:BY:9:LYS:NZ | 2.15 | 0.61 |
| 53:CA:1147:C:O2' | 53:CA:1148:U:H6 | 1.82 | 0.61 |
| 4:CD:33:ILE:O | 4:CD:35:GLN:HG2 | 1.99 | 0.61 |
| 9:CI:58:GLU:HG3 | 9:CI:59:LYS:H | 1.64 | 0.61 |
| 12:CL:5:GLN:HG3 | 12:CL:9:LYS:NZ | 2.15 | 0.61 |
| 12:CL:42:LYS:HG2 | 12:CL:43:LYS:N | 2.15 | 0.61 |
| 17:CQ:25:GLU:HA | 17:CQ:39:ARG:O | 1.99 | 0.61 |
| 19:CS:45:GLY:H | 19:CS:61:VAL:HB | 1.65 | 0.61 |
| 57:DA:816:C:H2' | 57:DA:817:C:H6 | 1.65 | 0.61 |
| 57:DA:1338:G:H5'' | 41:DT:17:SER:HB3 | 1.80 | 0.61 |
| 57:DA:1565:C:C3' | 24:DC:17:LYS:HE2 | 2.30 | 0.61 |
| 57:DA:2305:U:H4' | 59:DF:132:ARG:HG2 | 1.81 | 0.61 |
| 57:DA:2310:C:H42 | 59:DF:76:PHE:HE1 | 1.48 | 0.61 |
| 57:DA:2520:C:H2' | 57:DA:2521:C:H6 | 1.65 | 0.61 |
| 57:DA:2716:C:O2' | 57:DA:2717:C:H5' | 2.00 | 0.61 |
| 57:DA:2756:U:H1' | 57:DA:2757:A:H5'' | 1.83 | 0.61 |
| 26:DE:148:ILE:HA | 26:DE:187:VAL:HB | 1.82 | 0.61 |
| 1:AA:579:A:O2' | 15:AO:53:ARG:NH1 | 2.34 | 0.61 |
| 1:AA:1425:U:O2' | 1:AA:1426:G:H5' | 2.00 | 0.61 |
| 20:AT:5:SER:OG | 20:AT:6:ALA:N | 2.33 | 0.61 |
| 21:AU:3:ILE:HA | 21:AU:19:LYS:NZ | 2.14 | 0.61 |
| 22:BA:894:U:H2' | 22:BA:895:U:C6 | 2.35 | 0.61 |
| 22:BA:1023:U:H5' | 22:BA:1023:U:H6 | 1.66 | 0.61 |
| 22:BA:1833:C:C4 | 22:BA:1834:U:C5 | 2.88 | 0.61 |
| 22:BA:2383:G:H2' | 22:BA:2384:U:H6 | 1.65 | 0.61 |
| 22:BA:2742:G:O2' | 22:BA:2743:U:H5' | 2.00 | 0.61 |
| 45:BX:5:GLN:HE21 | 45:BX:49:ARG:H | 1.45 | 0.61 |
| 53:CA:198:G:C4 | 53:CA:199:A:C8 | 2.88 | 0.61 |
| 53:CA:587:G:H4' | 8:CH:3:GLN:HA | 1.83 | 0.61 |
| 53:CA:642:A:O2' | 53:CA:643:C:C6 | 2.54 | 0.61 |
| 4:CD:176:LYS:CG | 4:CD:178:GLU:HB2 | 2.29 | 0.61 |
| 54:CG:59:GLU:HG3 | 54:CG:60:ALA:N | 2.15 | 0.61 |
| 57:DA:1033:U:H4' | 57:DA:1034:G:OP1 | 2.00 | 0.61 |
| 57:DA:1417:C:H2' | 57:DA:1418:G:C8 | 2.35 | 0.61 |
| 57:DA:1645:G:H4' | 57:DA:1646:C:C5 | 2.35 | 0.61 |
| 57:DA:2036:C:O2' | 57:DA:2037:A:C8 | 2.52 | 0.61 |
| 57:DA:2631:G:C6 | 57:DA:2632:A:N7 | 2.68 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 26:DE:122:GLU:HA | 26:DE:190:ALA:HB2 | 1.81 | 0.61 |
| 29:DH:72:ILE:HD11 | 29:DH:141:LYS:N | 2.13 | 0.61 |
| 29:DH:116:ARG:O | 29:DH:117:LEU:HG | 2.00 | 0.61 |
| 33:DL:9:ALA:HB3 | 33:DL:12:SER:CB | 2.30 | 0.61 |
| 33:DL:48:ARG:HG3 | 33:DL:48:ARG:HH11 | 1.64 | 0.61 |
| 1:AA:536:C:H2' | 1:AA:537:G:H8 | 1.63 | 0.61 |
| 1:AA:688:G:H2' | 1:AA:689:C:H6 | 1.65 | 0.61 |
| 6:AF:18:VAL:HG11 | 6:AF:58:HIS:CD2 | 2.35 | 0.61 |
| 12:AL:78:VAL:HG12 | 12:AL:101:LEU:HD23 | 1.82 | 0.61 |
| 13:AM:79:LEU:HD22 | 13:AM:86:ARG:HB2 | 1.83 | 0.61 |
| 14:AN:40:ARG:HH22 | 14:AN:44:VAL:HG21 | 1.65 | 0.61 |
| 17:AQ:45:VAL:HG13 | 17:AQ:72:TRP:O | 2.01 | 0.61 |
| 22:BA:42:A:H3' | 22:BA:43:G:H5'' | 1.82 | 0.61 |
| 22:BA:893:C:H2' | 22:BA:894:U:O4' | 2.00 | 0.61 |
| 22:BA:2033:A:H3' | 63:BA:3476:HOH:O | 2.00 | 0.61 |
| 33:BL:57:LEU:HD22 | 51:B3:53:ASP:HB3 | 1.82 | 0.61 |
| 38:BQ:38:VAL:O | 38:BQ:41:ALA:HB3 | 2.00 | 0.61 |
| 39:BR:27:ILE:HG13 | 39:BR:33:VAL:CG1 | 2.30 | 0.61 |
| 39:BR:41:ILE:O | 39:BR:46:GLU:HB2 | 1.99 | 0.61 |
| 40:BS:73:LYS:HE3 | 40:BS:74:ILE:H | 1.65 | 0.61 |
| 44:BW:9:THR:OG1 | 44:BW:10:ARG:N | 2.28 | 0.61 |
| 44:BW:19:ARG:HH12 | 44:BW:22:VAL:HG11 | 1.65 | 0.61 |
| 45:BX:29:LEU:HD23 | 45:BX:29:LEU:N | 2.15 | 0.61 |
| 53:CA:1447:A:O2' | 53:CA:1448:C:OP1 | 2.18 | 0.61 |
| 2:CB:100:LEU:O | 2:CB:103:TRP:HE3 | 1.83 | 0.61 |
| 57:DA:152:A:C2 | 57:DA:175:G:C2 | 2.88 | 0.61 |
| 57:DA:222:A:N6 | 57:DA:232:G:H1' | 2.15 | 0.61 |
| 57:DA:586:A:H8 | 57:DA:586:A:O5' | 1.83 | 0.61 |
| 57:DA:852:U:H2' | 57:DA:853:C:C6 | 2.34 | 0.61 |
| 57:DA:1127:A:O2' | 57:DA:1128:G:H5' | 2.01 | 0.61 |
| 57:DA:1594:U:H2' | 57:DA:1595:C:C6 | 2.36 | 0.61 |
| 57:DA:1905:C:N4 | 57:DA:1930:G:N1 | 2.49 | 0.61 |
| 57:DA:2261:C:C2 | 57:DA:2280:G:N2 | 2.68 | 0.61 |
| 58:DB:55:U:H1' | 59:DF:25:MET:SD | 2.39 | 0.61 |
| 30:DI:76:ALA:HB2 | 30:DI:131:THR:HB | 1.82 | 0.61 |
| 33:DL:73:ILE:O | 33:DL:105:ILE:HG23 | 2.00 | 0.61 |
| 45:DX:2:ARG:HH21 | 45:DX:32:LEU:HD23 | 1.64 | 0.61 |
| 1:AA:242:G:C2 | 1:AA:245:U:C4 | 2.88 | 0.61 |
| 22:BA:455:C:N3 | 22:BA:472:A:H2' | 2.16 | 0.61 |
| 22:BA:588:U:H2' | 22:BA:589:U:C6 | 2.35 | 0.61 |
| 22:BA:740:C:H5' | 22:BA:1784:A:H3' | 1.82 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:871:U:OP1 | 34:BM:5:LYS:HG3 | 2.01 | 0.61 |
| 22:BA:1735:A:H2' | 22:BA:1736:U:C6 | 2.35 | 0.61 |
| 22:BA:1945:G:H2' | 22:BA:1946:U:C6 | 2.35 | 0.61 |
| 22:BA:2327:A:H2' | 22:BA:2328:A:C8 | 2.35 | 0.61 |
| 26:BE:147:LEU:HD23 | 26:BE:183:PHE:CD1 | 2.36 | 0.61 |
| 53:CA:157:U:O2' | 53:CA:158:G:H5' | 2.01 | 0.61 |
| 53:CA:238:A:H2' | 53:CA:239:U:C5' | 2.31 | 0.61 |
| 53:CA:451:A:H61 | 53:CA:481:G:H5' | 1.66 | 0.61 |
| 53:CA:613:C:H2' | 53:CA:614:C:C6 | 2.35 | 0.61 |
| 53:CA:695:A:H2' | 53:CA:696:A:C8 | 2.36 | 0.61 |
| 53:CA:702:A:H5' | 53:CA:703:G:N7 | 2.15 | 0.61 |
| 5:CE:151:MET:O | 5:CE:154:ALA:HB3 | 2.01 | 0.61 |
| 54:CG:110:ARG:HG3 | 54:CG:111:GLY:N | 2.13 | 0.61 |
| 9:CI:38:PHE:CE2 | 9:CI:71:ILE:HG22 | 2.35 | 0.61 |
| 11:CK:64:VAL:O | 11:CK:68:ARG:HB2 | 2.00 | 0.61 |
| 57:DA:182:A:H2' | 57:DA:183:C:C6 | 2.35 | 0.61 |
| 57:DA:1438:U:C5 | 57:DA:1552:A:N1 | 2.68 | 0.61 |
| 57:DA:1447:C:H2' | 57:DA:1448:G:H8 | 1.66 | 0.61 |
| 24:DC:106:PRO:HB3 | 24:DC:141:HIS:CE1 | 2.33 | 0.61 |
| 25:DD:4:LEU:HD12 | 25:DD:32:ASN:OD1 | 2.00 | 0.61 |
| 26:DE:5:LEU:HA | 26:DE:120:VAL:HG13 | 1.83 | 0.61 |
| 33:DL:55:MET:SD | 33:DL:59:ARG:NE | 2.74 | 0.61 |
| 35:DN:35:LYS:HD3 | 35:DN:112:TYR:OH | 2.01 | 0.61 |
| 10:AJ:65:TYR:HB3 | 14:AN:95:LEU:HD11 | 1.81 | 0.61 |
| 22:BA:319:G:C4 | 22:BA:333:G:N2 | 2.69 | 0.61 |
| 22:BA:435:C:O2' | 22:BA:436:C:H5' | 2.00 | 0.61 |
| 22:BA:623:C:H2' | 22:BA:624:C:H6 | 1.65 | 0.61 |
| 22:BA:1085:A:H2' | 22:BA:1086:A:N3 | 2.15 | 0.61 |
| 22:BA:1179:G:H3' | 22:BA:1180:U:C4' | 2.26 | 0.61 |
| 22:BA:2180:U:H2' | 22:BA:2181:U:H5 | 1.65 | 0.61 |
| 24:BC:158:GLY:H | 24:BC:194:VAL:HG13 | 1.66 | 0.61 |
| 44:BW:23:LYS:HD2 | 44:BW:24:ARG:H | 1.65 | 0.61 |
| 44:BW:41:GLY:O | 44:BW:42:THR:C | 2.39 | 0.61 |
| 53:CA:51:A:H4' | 53:CA:52:C:C5' | 2.31 | 0.61 |
| 53:CA:202:G:HO2' | 53:CA:468:A:H8 | 1.41 | 0.61 |
| 53:CA:676:A:H2' | 53:CA:677:U:H6 | 1.65 | 0.61 |
| 53:CA:1478:U:H2' | 53:CA:1479:C:C6 | 2.36 | 0.61 |
| 2:CB:127:LYS:HE2 | 2:CB:136:ARG:HH21 | 1.65 | 0.61 |
| 6:CF:75:GLU:OE2 | 6:CF:89:VAL:HG11 | 2.01 | 0.61 |
| 11:CK:106:ILE:HG12 | 11:CK:106:ILE:O | 2.01 | 0.61 |
| 21:CU:36:PHE:CD1 | 21:CU:40:PRO:HB3 | 2.33 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:244:A:H2' | 57:DA:245:G:O4' | 2.00 | 0.61 |
| 57:DA:674:G:H5'' | 26:DE:71:GLY:H | 1.65 | 0.61 |
| 57:DA:1759:A:H2' | 57:DA:1760:C:C6 | 2.36 | 0.61 |
| 57:DA:1965:C:H2' | 57:DA:1966:A:C8 | 2.35 | 0.61 |
| 57:DA:2232:C:OP1 | 45:DX:26:ARG:NH1 | 2.34 | 0.61 |
| 57:DA:2358:A:H61 | 33:DL:54:GLN:HE22 | 1.46 | 0.61 |
| 57:DA:2448:A:HO2' | 57:DA:2449:U:H5 | 1.45 | 0.61 |
| 57:DA:2619:C:H4' | 25:DD:156:PHE:O | 2.01 | 0.61 |
| 24:DC:147:PRO:HD3 | 24:DC:184:GLU:HG3 | 1.82 | 0.61 |
| 25:DD:110:THR:HA | 25:DD:171:THR:HA | 1.83 | 0.61 |
| 33:DL:18:ARG:HB3 | 33:DL:21:ARG:HD2 | 1.83 | 0.61 |
| 38:DQ:91:ARG:CZ | 39:DR:11:GLN:H | 2.13 | 0.61 |
| 1:AA:250:A:H4' | 1:AA:251:G:O5' | 2.00 | 0.61 |
| 1:AA:390:U:H2' | 1:AA:391:G:C8 | 2.35 | 0.61 |
| 1:AA:820:U:H4' | 1:AA:821:G:OP2 | 1.99 | 0.61 |
| 1:AA:1066:C:H5'' | 1:AA:1066:C:H6 | 1.65 | 0.61 |
| 1:AA:1201:A:H1' | 1:AA:1202:U:OP2 | 2.01 | 0.61 |
| 4:AD:63:ILE:HG23 | 4:AD:64:TYR:CD1 | 2.35 | 0.61 |
| 5:AE:44:ARG:HA | 5:AE:71:ILE:O | 2.00 | 0.61 |
| 5:AE:105:ILE:HG13 | 5:AE:123:LEU:HA | 1.83 | 0.61 |
| 13:AM:86:ARG:HH21 | 13:AM:96:VAL:HG12 | 1.66 | 0.61 |
| 22:BA:1110:G:O2' | 22:BA:1111:A:O5' | 2.18 | 0.61 |
| 22:BA:2886:A:N3 | 22:BA:2887:A:H1' | 2.16 | 0.61 |
| 25:BD:1:MET:SD | 25:BD:100:LEU:HD11 | 2.41 | 0.61 |
| 31:BJ:111:LYS:CD | 31:BJ:112:GLY:H | 2.12 | 0.61 |
| 38:BQ:91:ARG:HD3 | 39:BR:11:GLN:CG | 2.30 | 0.61 |
| 44:BW:47:GLY:C | 44:BW:49:ASN:H | 2.04 | 0.61 |
| 53:CA:267:C:OP2 | 17:CQ:68:LYS:HD2 | 2.00 | 0.61 |
| 53:CA:818:G:C3' | 53:CA:819:A:H5'' | 2.30 | 0.61 |
| 53:CA:961:U:H5 | 53:CA:1223:C:H1' | 1.66 | 0.61 |
| 53:CA:1069:C:H4' | 53:CA:1192:C:O2 | 2.00 | 0.61 |
| 2:CB:81:ASP:CG | 2:CB:82:ALA:H | 2.04 | 0.61 |
| 3:CC:9:ILE:HD12 | 14:CN:97:LYS:HD3 | 1.82 | 0.61 |
| 5:CE:68:ARG:O | 5:CE:70:MET:HG2 | 2.01 | 0.61 |
| 10:CJ:37:ARG:HG2 | 10:CJ:75:ASP:HB3 | 1.82 | 0.61 |
| 15:CO:69:LEU:HD22 | 15:CO:69:LEU:O | 2.01 | 0.61 |
| 57:DA:151:C:H2' | 57:DA:152:A:C8 | 2.36 | 0.61 |
| 57:DA:594:U:H2' | 57:DA:595:C:C6 | 2.35 | 0.61 |
| 57:DA:686:U:H6 | 57:DA:788:A:N1 | 1.98 | 0.61 |
| 57:DA:1183:U:H2' | 57:DA:1184:U:H6 | 1.65 | 0.61 |
| 57:DA:1809:A:O2' | 57:DA:1810:A:H8 | 1.81 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:2348:U:O2' | 57:DA:2349:G:O4' | 2.18 | 0.61 |
| 28:DG:148:ARG:HB2 | 28:DG:152:ARG:NH2 | 2.16 | 0.61 |
| 34:DM:40:ARG:HB2 | 34:DM:93:VAL:HG21 | 1.82 | 0.61 |
| 1:AA:843:U:H2' | 1:AA:844:G:H5' | 1.83 | 0.61 |
| 1:AA:1329:A:H5'' | 13:AM:25:GLY:H | 1.66 | 0.61 |
| 1:AA:1432:G:O2' | 1:AA:1433:A:OP2 | 2.17 | 0.61 |
| 3:AC:13:ILE:O | 3:AC:15:LYS:N | 2.34 | 0.61 |
| 11:AK:126:ARG:C | 21:AU:33:ARG:HH12 | 2.04 | 0.61 |
| 13:AM:106:ARG:HA | 13:AM:106:ARG:HH11 | 1.66 | 0.61 |
| 16:AP:37:GLY:HA2 | 16:AP:51:ARG:NH1 | 2.16 | 0.61 |
| 22:BA:1590:A:H2' | 22:BA:1591:A:C8 | 2.35 | 0.61 |
| 25:BD:70:LYS:O | 25:BD:71:ALA:HB3 | 2.01 | 0.61 |
| 28:BG:84:LYS:HB3 | 28:BG:132:LEU:O | 2.01 | 0.61 |
| 38:BQ:94:LEU:C | 38:BQ:96:ASP:H | 2.03 | 0.61 |
| 44:BW:17:ALA:O | 44:BW:18:LYS:CB | 2.48 | 0.61 |
| 44:BW:37:VAL:C | 44:BW:38:ARG:HG2 | 2.21 | 0.61 |
| 44:BW:39:GLN:C | 44:BW:41:GLY:N | 2.50 | 0.61 |
| 53:CA:72:A:N6 | 53:CA:99:C:H1' | 2.16 | 0.61 |
| 53:CA:1288:A:H2' | 53:CA:1289:A:H8 | 1.65 | 0.61 |
| 3:CC:46:LEU:HD22 | 3:CC:75:VAL:HG22 | 1.81 | 0.61 |
| 9:CI:48:ARG:HH21 | 9:CI:57:VAL:HG21 | 1.65 | 0.61 |
| 11:CK:96:ILE:HD13 | 11:CK:109:ILE:HD13 | 1.82 | 0.61 |
| 12:CL:42:LYS:HG2 | 12:CL:43:LYS:H | 1.66 | 0.61 |
| 20:CT:73:ARG:CG | 20:CT:73:ARG:NH1 | 2.59 | 0.61 |
| 57:DA:36:G:O2' | 57:DA:37:C:H5' | 2.00 | 0.61 |
| 57:DA:379:G:C6 | 57:DA:396:G:C6 | 2.89 | 0.61 |
| 57:DA:870:U:H2' | 57:DA:871:U:H5' | 1.82 | 0.61 |
| 57:DA:1197:G:H5' | 57:DA:1227:G:O2' | 2.01 | 0.61 |
| 57:DA:1754:A:C6 | 57:DA:1755:A:C6 | 2.88 | 0.61 |
| 57:DA:2324:U:C5' | 57:DA:2325:G:H5'' | 2.29 | 0.61 |
| 24:DC:62:ARG:HD3 | 24:DC:83:ASP:CG | 2.20 | 0.61 |
| 25:DD:133:THR:HG23 | 25:DD:134:HIS:N | 2.14 | 0.61 |
| 28:DG:163:TYR:N | 28:DG:163:TYR:CD2 | 2.69 | 0.61 |
| 29:DH:24:GLY:O | 29:DH:28:ASN:HB2 | 2.01 | 0.61 |
| 29:DH:78:VAL:HB | 29:DH:144:VAL:HA | 1.83 | 0.61 |
| 39:DR:27:ILE:HG22 | 39:DR:28:ALA:N | 2.10 | 0.61 |
| 39:DR:62:GLU:HB3 | 39:DR:97:LYS:HB3 | 1.82 | 0.61 |
| 1:AA:795:C:H5'' | 1:AA:796:C:OP2 | 2.01 | 0.61 |
| 1:AA:914:A:O2' | 1:AA:915:A:H5' | 2.00 | 0.61 |
| 11:AK:86:LYS:HA | 11:AK:113:THR:HG22 | 1.81 | 0.61 |
| 12:AL:87:LYS:O | 12:AL:88:ASP:HB2 | 2.01 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 16:AP:67:ILE:CG2 | 16:AP:72:ALA:HB2 | 2.31 | 0.61 |
| 22:BA:1:G:H2' | 22:BA:1:G:N3 | 2.15 | 0.61 |
| 22:BA:2135:A:O2' | 22:BA:2136:G:H8 | 1.84 | 0.61 |
| 22:BA:2500:U:H5'' | 22:BA:2501:C:OP2 | 2.01 | 0.61 |
| 23:BB:45:A:O2' | 23:BB:46:A:H5' | 2.01 | 0.61 |
| 25:BD:158:GLY:O | 25:BD:159:LYS:C | 2.38 | 0.61 |
| 28:BG:73:SER:HA | 28:BG:76:ILE:HG22 | 1.82 | 0.61 |
| 41:BT:59:ASN:O | 41:BT:83:ALA:O | 2.18 | 0.61 |
| 53:CA:32:A:C2' | 53:CA:33:A:H8 | 2.12 | 0.61 |
| 53:CA:113:G:N2 | 53:CA:353:A:H8 | 1.97 | 0.61 |
| 53:CA:269:C:H2' | 53:CA:270:A:H8 | 1.66 | 0.61 |
| 53:CA:570:G:H1' | 53:CA:820:U:C4 | 2.36 | 0.61 |
| 53:CA:630:A:C2 | 63:CA:1858:HOH:O | 2.52 | 0.61 |
| 53:CA:802:A:C2' | 53:CA:803:G:H5' | 2.31 | 0.61 |
| 54:CG:78:ARG:HA | 54:CG:84:TYR:HB2 | 1.82 | 0.61 |
| 10:CJ:80:THR:O | 10:CJ:84:VAL:HG22 | 2.01 | 0.61 |
| 57:DA:27:G:HO2' | 57:DA:28:A:H8 | 1.49 | 0.61 |
| 57:DA:1062:G:H22 | 57:DA:1077:A:H2 | 1.49 | 0.61 |
| 57:DA:1535:A:H2' | 57:DA:1535:A:N3 | 2.16 | 0.61 |
| 28:DG:43:LYS:O | 28:DG:49:LEU:HD12 | 2.01 | 0.61 |
| 29:DH:62:LEU:HD12 | 29:DH:63:ALA:N | 2.16 | 0.61 |
| 36:DO:24:THR:HG22 | 36:DO:41:ALA:HA | 1.83 | 0.61 |
| 37:DP:25:VAL:HA | 37:DP:85:VAL:HA | 1.81 | 0.61 |
| 41:DT:29:THR:CB | 41:DT:86:THR:H | 2.14 | 0.61 |
| 51:D3:32:LEU:HA | 51:D3:35:LYS:HG3 | 1.82 | 0.61 |
| 1:AA:80:A:C2 | 1:AA:81:A:H1' | 2.36 | 0.61 |
| 1:AA:96:U:O2' | 1:AA:97:G:H8 | 1.82 | 0.61 |
| 1:AA:539:A:H2' | 1:AA:540:G:H8 | 1.60 | 0.61 |
| 1:AA:1142:G:C2 | 1:AA:1143:G:H1' | 2.36 | 0.61 |
| 2:AB:32:GLY:HA3 | 2:AB:39:ILE:HG12 | 1.82 | 0.61 |
| 8:AH:9:MET:HE1 | 8:AH:32:LYS:HA | 1.82 | 0.61 |
| 14:AN:40:ARG:HH12 | 14:AN:44:VAL:CG1 | 2.11 | 0.61 |
| 22:BA:636:G:H3' | 33:BL:128:THR:HG21 | 1.81 | 0.61 |
| 22:BA:2391:G:O6 | 22:BA:2425:A:H8 | 1.84 | 0.61 |
| 22:BA:2585:U:O2' | 22:BA:2586:U:C5' | 2.49 | 0.61 |
| 22:BA:2602:A:H4' | 22:BA:2603:G:H5' | 1.82 | 0.61 |
| 22:BA:2804:U:H2' | 22:BA:2805:C:C6 | 2.35 | 0.61 |
| 24:BC:156:SER:O | 24:BC:194:VAL:HG11 | 2.01 | 0.61 |
| 25:BD:92:VAL:O | 25:BD:93:GLY:C | 2.37 | 0.61 |
| 32:BK:47:ILE:CG1 | 32:BK:48:PRO:HD2 | 2.23 | 0.61 |
| 38:BQ:40:LYS:HD3 | 38:BQ:44:TYR:CZ | 2.36 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 38:BQ:63:ARG:NH1 | 38:BQ:96:ASP:CA | 2.33 | 0.61 |
| 53:CA:108:G:H5' | 53:CA:109:A:H5'' | 1.82 | 0.61 |
| 53:CA:348:G:O2' | 53:CA:349:A:H5' | 2.01 | 0.61 |
| 53:CA:464:U:C4 | 53:CA:466:A:H4' | 2.36 | 0.61 |
| 53:CA:642:A:N7 | 8:CH:106:SER:HA | 2.16 | 0.61 |
| 53:CA:1145:A:O2' | 53:CA:1146:A:H5'' | 2.01 | 0.61 |
| 53:CA:1160:G:HO2' | 53:CA:1161:C:C5' | 2.14 | 0.61 |
| 53:CA:1285:A:O2' | 53:CA:1286:U:H5' | 2.01 | 0.61 |
| 10:CJ:30:LYS:CG | 10:CJ:36:VAL:HG22 | 2.31 | 0.61 |
| 57:DA:57:C:O2' | 41:DT:36:LYS:HE2 | 2.01 | 0.61 |
| 57:DA:370:G:C6 | 57:DA:424:G:N7 | 2.69 | 0.61 |
| 57:DA:620:G:O2' | 57:DA:622:G:N7 | 2.33 | 0.61 |
| 57:DA:663:G:OP1 | 33:DL:17:LYS:HG2 | 2.00 | 0.61 |
| 57:DA:674:G:H4' | 26:DE:69:ARG:HB3 | 1.83 | 0.61 |
| 57:DA:2230:G:H2' | 57:DA:2231:U:C6 | 2.36 | 0.61 |
| 57:DA:2440:C:H2' | 57:DA:2441:U:O4' | 2.01 | 0.61 |
| 25:DD:137:SER:HB3 | 25:DD:138:LEU:CD2 | 2.30 | 0.61 |
| 59:DF:65:LEU:HD23 | 59:DF:65:LEU:H | 1.65 | 0.61 |
| 30:DI:50:LYS:HA | 30:DI:50:LYS:HE2 | 1.83 | 0.61 |
| 1:AA:1058:G:C5 | 1:AA:1059:C:C5 | 2.89 | 0.60 |
| 1:AA:1530:G:O2' | 1:AA:1531:A:C8 | 2.54 | 0.60 |
| 10:AJ:41:PRO:O | 10:AJ:42:LEU:HB2 | 2.00 | 0.60 |
| 13:AM:45:SER:O | 13:AM:46:GLU:HB2 | 2.00 | 0.60 |
| 22:BA:90:U:H2' | 22:BA:91:A:C8 | 2.35 | 0.60 |
| 22:BA:2393:U:H5' | 33:BL:60:ARG:O | 2.01 | 0.60 |
| 22:BA:2804:U:H2' | 22:BA:2805:C:H6 | 1.64 | 0.60 |
| 22:BA:2886:A:C2 | 22:BA:2887:A:H1' | 2.36 | 0.60 |
| 28:BG:8:VAL:HG12 | 28:BG:49:LEU:H | 1.65 | 0.60 |
| 47:BZ:8:GLN:O | 47:BZ:10:ARG:N | 2.33 | 0.60 |
| 53:CA:1172:C:O2' | 53:CA:1173:U:H5' | 2.01 | 0.60 |
| 53:CA:1356:G:H2' | 53:CA:1357:A:C8 | 2.36 | 0.60 |
| 12:CL:79:ILE:HD12 | 12:CL:96:THR:CG2 | 2.31 | 0.60 |
| 17:CQ:29:LYS:HE2 | 17:CQ:36:PHE:CZ | 2.36 | 0.60 |
| 19:CS:79:TYR:O | 19:CS:80:ARG:HB2 | 2.00 | 0.60 |
| 57:DA:457:A:N1 | 57:DA:470:A:H5'' | 2.15 | 0.60 |
| 57:DA:1394:U:H4' | 57:DA:1603:A:H4' | 1.83 | 0.60 |
| 57:DA:1510:G:N2 | 57:DA:1511:G:C4 | 2.69 | 0.60 |
| 57:DA:1597:A:O3' | 57:DA:1598:A:H8 | 1.84 | 0.60 |
| 57:DA:1665:A:N7 | 63:DA:3436:HOH:O | 2.31 | 0.60 |
| 57:DA:1737:G:C6 | 57:DA:1738:G:N1 | 2.69 | 0.60 |
| 57:DA:1738:G:O2' | 57:DA:1739:A:H8 | 1.83 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:DA:1998:A:O3' | 57:DA:2724:U:H4' | 2.01 | 0.60 |
| 57:DA:2061:G:N7 | 57:DA:2501:C:H4' | 2.15 | 0.60 |
| 57:DA:2259:U:O4' | 57:DA:2427:C:H2' | 2.01 | 0.60 |
| 57:DA:2839:G:N2 | 57:DA:2880:C:C4 | 2.69 | 0.60 |
| 57:DA:2846:G:OP1 | 37:DP:51:ASN:HB2 | 2.01 | 0.60 |
| 24:DC:52:HIS:HD2 | 24:DC:217:PRO:O | 1.83 | 0.60 |
| 26:DE:48:THR:O | 26:DE:52:VAL:HG23 | 2.01 | 0.60 |
| 26:DE:98:LYS:O | 26:DE:99:LYS:HB2 | 2.00 | 0.60 |
| 29:DH:84:ALA:HA | 29:DH:89:LYS:O | 2.01 | 0.60 |
| 38:DQ:111:LYS:HE3 | 39:DR:48:LYS:HD3 | 1.83 | 0.60 |
| 43:DV:4:ILE:HB | 43:DV:63:ILE:HG13 | 1.83 | 0.60 |
| 45:DX:19:HIS:C | 45:DX:21:LEU:H | 2.03 | 0.60 |
| 49:D1:46:VAL:HG22 | 49:D1:47:ILE:H | 1.66 | 0.60 |
| 1:AA:186:C:O4' | 20:AT:75:LYS:HD2 | 2.00 | 0.60 |
| 1:AA:215:C:H2' | 1:AA:216:U:C6 | 2.36 | 0.60 |
| 1:AA:500:G:H2' | 1:AA:501:C:C6 | 2.36 | 0.60 |
| 1:AA:1496:C:H2' | 1:AA:1497:G:O4' | 2.01 | 0.60 |
| 13:AM:86:ARG:NH2 | 13:AM:96:VAL:HG12 | 2.16 | 0.60 |
| 22:BA:459:U:H2' | 22:BA:460:A:H8 | 1.65 | 0.60 |
| 22:BA:1110:G:O2' | 22:BA:1111:A:H8 | 1.84 | 0.60 |
| 26:BE:108:ILE:HB | 33:BL:2:ARG:HH22 | 1.66 | 0.60 |
| 29:BH:147:VAL:HG12 | 29:BH:149:GLU:HG3 | 1.82 | 0.60 |
| 35:BN:58:ASP:OD2 | 35:BN:63:ARG:NH2 | 2.33 | 0.60 |
| 40:BS:59:GLU:HA | 40:BS:64:ALA:HB2 | 1.83 | 0.60 |
| 53:CA:936:C:O2' | 53:CA:937:A:C8 | 2.49 | 0.60 |
| 53:CA:968:A:N3 | 53:CA:1062:U:H4' | 2.15 | 0.60 |
| 3:CC:120:THR:HG22 | 3:CC:120:THR:O | 2.00 | 0.60 |
| 8:CH:91:LEU:HD12 | 8:CH:116:ARG:HG3 | 1.83 | 0.60 |
| 10:CJ:41:PRO:O | 10:CJ:42:LEU:HB2 | 2.01 | 0.60 |
| 12:CL:26:CYS:HB2 | 12:CL:29:LYS:HE2 | 1.81 | 0.60 |
| 56:CP:75:ILE:HA | 56:CP:78:VAL:HG23 | 1.83 | 0.60 |
| 57:DA:585:G:H2' | 57:DA:1254:A:H61 | 1.66 | 0.60 |
| 57:DA:604:G:C2 | 57:DA:605:G:C5 | 2.88 | 0.60 |
| 57:DA:609:A:H2' | 57:DA:610:C:O4' | 2.01 | 0.60 |
| 57:DA:616:A:C2' | 57:DA:617:G:C8 | 2.80 | 0.60 |
| 57:DA:1809:A:H2' | 57:DA:1810:A:C8 | 2.36 | 0.60 |
| 57:DA:1819:A:H4' | 57:DA:1820:U:H5' | 1.83 | 0.60 |
| 57:DA:1962:C:H4' | 57:DA:1963:U:OP1 | 2.01 | 0.60 |
| 57:DA:1974:C:H2' | 57:DA:1975:G:H8 | 1.66 | 0.60 |
| 57:DA:2529:G:H4' | 28:DG:174:LYS:CD | 2.31 | 0.60 |
| 57:DA:2881:U:O2' | 57:DA:2882:A:H5' | 2.02 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:2882:A:C5' | 35:DN:96:ARG:HD3 | 2.31 | 0.60 |
| 58:DB:13:G:H8 | 58:DB:13:G:H5'' | 1.66 | 0.60 |
| 25:DD:29:VAL:HB | 25:DD:98:VAL:HG12 | 1.81 | 0.60 |
| 37:DP:28:LYS:NZ | 37:DP:82:SER:HB2 | 2.16 | 0.60 |
| 42:DU:14:THR:HB | 42:DU:68:ASN:CB | 2.30 | 0.60 |
| 43:DV:14:LYS:CG | 43:DV:18:ARG:HD2 | 2.31 | 0.60 |
| 1:AA:107:G:H2' | 1:AA:108:G:H5' | 1.83 | 0.60 |
| 4:AD:10:LEU:CD2 | 4:AD:62:ARG:HG3 | 2.31 | 0.60 |
| 6:AF:93:LYS:O | 6:AF:94:HIS:HB2 | 2.01 | 0.60 |
| 19:AS:17:LYS:HB3 | 19:AS:30:LEU:HD23 | 1.83 | 0.60 |
| 22:BA:216:A:H2' | 22:BA:217:A:C8 | 2.35 | 0.60 |
| 22:BA:1064:C:H5' | 30:BI:88:GLY:HA3 | 1.84 | 0.60 |
| 22:BA:1568:G:OP1 | 24:BC:62:ARG:NH1 | 2.34 | 0.60 |
| 34:BM:31:PHE:CE2 | 34:BM:110:GLU:HG2 | 2.37 | 0.60 |
| 39:BR:15:SER:O | 39:BR:18:GLN:HB3 | 2.00 | 0.60 |
| 41:BT:39:THR:HB | 41:BT:42:GLU:H | 1.66 | 0.60 |
| 43:BV:26:PHE:CZ | 43:BV:42:LEU:HD12 | 2.37 | 0.60 |
| 53:CA:73:C:O2' | 53:CA:74:A:H8 | 1.84 | 0.60 |
| 53:CA:464:U:O4 | 53:CA:466:A:H4' | 2.01 | 0.60 |
| 53:CA:486:U:H2' | 53:CA:486:U:O2 | 1.98 | 0.60 |
| 53:CA:1147:C:H4' | 9:CI:6:TYR:CE1 | 2.37 | 0.60 |
| 53:CA:1304:G:H1' | 53:CA:1333:A:N6 | 2.16 | 0.60 |
| 17:CQ:29:LYS:HE2 | 17:CQ:36:PHE:CE1 | 2.36 | 0.60 |
| 18:CR:39:VAL:HG12 | 18:CR:40:PRO:HD2 | 1.83 | 0.60 |
| 57:DA:226:A:H2' | 57:DA:227:A:C8 | 2.36 | 0.60 |
| 57:DA:513:A:H2' | 57:DA:514:A:H8 | 1.65 | 0.60 |
| 57:DA:1666:G:O3' | 32:DK:6:THR:HG23 | 2.01 | 0.60 |
| 28:DG:8:VAL:HB | 28:DG:49:LEU:HB3 | 1.84 | 0.60 |
| 32:DK:60:ALA:HA | 32:DK:87:LEU:CD2 | 2.29 | 0.60 |
| 37:DP:50:ARG:HB3 | 37:DP:56:SER:HB3 | 1.83 | 0.60 |
| 1:AA:174:A:O2' | 1:AA:175:C:H5' | 2.01 | 0.60 |
| 1:AA:548:G:O2' | 1:AA:549:C:H5' | 2.02 | 0.60 |
| 1:AA:686:U:O2' | 1:AA:687:A:H8 | 1.79 | 0.60 |
| 2:AB:66:ILE:HB | 2:AB:88:GLN:CB | 2.30 | 0.60 |
| 4:AD:190:LEU:O | 4:AD:191:SER:HB2 | 2.01 | 0.60 |
| 12:AL:7:VAL:HG13 | 17:AQ:30:HIS:CD2 | 2.35 | 0.60 |
| 12:AL:43:LYS:HB2 | 12:AL:44:PRO:HD3 | 1.83 | 0.60 |
| 22:BA:39:G:H2' | 22:BA:40:U:H6 | 1.65 | 0.60 |
| 22:BA:332:A:C2 | 22:BA:335:C:C5 | 2.89 | 0.60 |
| 22:BA:571:U:C5 | 22:BA:575:A:C6 | 2.88 | 0.60 |
| 22:BA:1310:G:C2' | 22:BA:1311:G:H5' | 2.31 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 24:BC:225:ASN:HB3 | 24:BC:226:PRO:HD2 | 1.83 | 0.60 |
| 25:BD:45:TYR:N | 25:BD:45:TYR:CD1 | 2.68 | 0.60 |
| 29:BH:67:ALA:C | 29:BH:69:ALA:H | 2.04 | 0.60 |
| 30:BI:15:GLY:CA | 30:BI:50:LYS:HB3 | 2.28 | 0.60 |
| 31:BJ:75:TYR:CD1 | 31:BJ:86:GLN:HB3 | 2.36 | 0.60 |
| 39:BR:21:ARG:NH2 | 39:BR:93:PHE:CD1 | 2.70 | 0.60 |
| 45:BX:46:VAL:HG21 | 45:BX:67:LEU:HD11 | 1.84 | 0.60 |
| 46:BY:43:LEU:O | 46:BY:47:ARG:HB2 | 2.02 | 0.60 |
| 53:CA:103:U:C2 | 53:CA:104:G:C8 | 2.90 | 0.60 |
| 53:CA:397:A:N7 | 53:CA:547:A:O2' | 2.34 | 0.60 |
| 53:CA:496:A:O2' | 53:CA:497:G:C8 | 2.54 | 0.60 |
| 53:CA:1079:G:H2' | 53:CA:1080:A:C8 | 2.37 | 0.60 |
| 5:CE:55:VAL:N | 5:CE:56:PRO:HD2 | 2.17 | 0.60 |
| 10:CJ:5:ARG:HH21 | 10:CJ:77:VAL:HG13 | 1.66 | 0.60 |
| 57:DA:91:A:O2' | 57:DA:92:U:H6 | 1.84 | 0.60 |
| 57:DA:389:G:C8 | 57:DA:2413:G:H4' | 2.36 | 0.60 |
| 57:DA:447:A:C8 | 57:DA:473:G:C6 | 2.89 | 0.60 |
| 29:DH:62:LEU:C | 29:DH:64:ALA:H | 2.04 | 0.60 |
| 34:DM:17:ASN:OD1 | 34:DM:95:LEU:HB3 | 2.01 | 0.60 |
| 1:AA:1303:C:O2' | 1:AA:1304:G:H5' | 2.00 | 0.60 |
| 2:AB:139:GLU:O | 2:AB:143:LEU:HD23 | 2.00 | 0.60 |
| 12:AL:33:CYS:HA | 12:AL:53:ARG:O | 2.00 | 0.60 |
| 17:AQ:13:SER:O | 17:AQ:16:MET:SD | 2.59 | 0.60 |
| 17:AQ:67:SER:OG | 17:AQ:70:LYS:HB3 | 2.02 | 0.60 |
| 19:AS:52:ASN:O | 19:AS:76:THR:HG22 | 2.01 | 0.60 |
| 22:BA:1313:U:H4' | 22:BA:1332:G:H4' | 1.82 | 0.60 |
| 22:BA:1935:G:H1' | 22:BA:1964:G:N2 | 2.16 | 0.60 |
| 25:BD:61:THR:OG1 | 25:BD:63:PRO:HD2 | 2.00 | 0.60 |
| 28:BG:23:ILE:HG21 | 28:BG:71:LEU:HD11 | 1.83 | 0.60 |
| 31:BJ:26:GLY:HA2 | 31:BJ:29:ALA:HB3 | 1.84 | 0.60 |
| 37:BP:33:GLU:HB2 | 37:BP:38:ARG:HH11 | 1.67 | 0.60 |
| 41:BT:28:ASN:C | 41:BT:91:GLN:HE22 | 2.05 | 0.60 |
| 41:BT:39:THR:O | 41:BT:40:LYS:HB2 | 2.01 | 0.60 |
| 47:BZ:40:THR:HG23 | 47:BZ:43:ILE:HG23 | 1.84 | 0.60 |
| 53:CA:86:G:H1' | 53:CA:87:C:O5' | 2.01 | 0.60 |
| 53:CA:410:G:OP1 | 4:CD:25:ARG:HD2 | 2.02 | 0.60 |
| 53:CA:821:G:H2' | 53:CA:822:U:C6 | 2.36 | 0.60 |
| 53:CA:960:U:C5' | 53:CA:961:U:H5'' | 2.31 | 0.60 |
| 5:CE:129:SER:HA | 63:CE:202:HOH:O | 2.01 | 0.60 |
| 12:CL:42:LYS:HD3 | 12:CL:43:LYS:HZ2 | 1.65 | 0.60 |
| 56:CP:36:VAL:O | 56:CP:36:VAL:HG13 | 2.00 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:CQ:3:LYS:HZ2 | 17:CQ:6:THR:HG21 | 1.64 | 0.60 |
| 19:CS:50:VAL:HG11 | 19:CS:70:LEU:HB3 | 1.83 | 0.60 |
| 20:CT:3:ILE:O | 20:CT:4:LYS:HG2 | 2.01 | 0.60 |
| 57:DA:1846:G:H5'' | 57:DA:1847:A:OP2 | 2.01 | 0.60 |
| 57:DA:2184:A:H2' | 57:DA:2185:U:O4' | 2.01 | 0.60 |
| 57:DA:2563:U:H1' | 57:DA:2566:A:N6 | 2.17 | 0.60 |
| 24:DC:120:ASP:CG | 24:DC:121:ALA:H | 2.04 | 0.60 |
| 24:DC:144:GLU:HG3 | 24:DC:151:GLY:N | 2.16 | 0.60 |
| 39:DR:48:LYS:HD2 | 39:DR:48:LYS:H | 1.65 | 0.60 |
| 42:DU:90:LYS:HE2 | 42:DU:92:VAL:HG12 | 1.83 | 0.60 |
| 1:AA:487:A:H2' | 1:AA:488:C:O4' | 2.01 | 0.60 |
| 1:AA:1003:G:N2 | 1:AA:1005:A:H5' | 2.17 | 0.60 |
| 1:AA:1241:G:C2 | 1:AA:1242:G:C5 | 2.90 | 0.60 |
| 1:AA:1442:G:H2' | 1:AA:1443:C:H6 | 1.66 | 0.60 |
| 5:AE:121:ASN:N | 5:AE:121:ASN:HD22 | 2.00 | 0.60 |
| 10:AJ:8:ILE:HG12 | 10:AJ:100:ILE:HG22 | 1.83 | 0.60 |
| 11:AK:108:ASN:HB3 | 21:AU:6:ARG:HG2 | 1.83 | 0.60 |
| 22:BA:1385:A:H1' | 22:BA:1386:C:C6 | 2.37 | 0.60 |
| 22:BA:1873:G:O2' | 22:BA:1874:C:H5' | 2.02 | 0.60 |
| 22:BA:2328:A:H2' | 22:BA:2329:U:H6 | 1.62 | 0.60 |
| 26:BE:175:ILE:HG23 | 26:BE:175:ILE:O | 2.00 | 0.60 |
| 29:BH:3:VAL:HA | 29:BH:37:VAL:O | 2.02 | 0.60 |
| 33:BL:96:LYS:HA | 33:BL:101:ILE:HG22 | 1.84 | 0.60 |
| 37:BP:17:PRO:HG3 | 37:BP:83:ILE:O | 2.00 | 0.60 |
| 39:BR:21:ARG:HG3 | 39:BR:95:ASP:OD1 | 2.01 | 0.60 |
| 40:BS:48:LYS:O | 40:BS:52:GLU:HG3 | 2.01 | 0.60 |
| 42:BU:71:ILE:HD12 | 42:BU:95:PHE:CD2 | 2.36 | 0.60 |
| 48:B0:35:GLU:OE1 | 48:B0:45:ASP:HB2 | 2.00 | 0.60 |
| 53:CA:67:C:OP1 | 53:CA:199:A:H5'' | 2.01 | 0.60 |
| 53:CA:958:A:H62 | 19:CS:54:ARG:NH1 | 2.00 | 0.60 |
| 3:CC:13:ILE:HG22 | 3:CC:14:VAL:HG23 | 1.84 | 0.60 |
| 3:CC:122:GLN:HB2 | 3:CC:127:VAL:HG21 | 1.83 | 0.60 |
| 54:CG:75:LYS:HG3 | 54:CG:76:SER:N | 2.17 | 0.60 |
| 57:DA:83:A:N6 | 57:DA:101:A:H5' | 2.16 | 0.60 |
| 57:DA:1078:U:H4' | 57:DA:1079:C:H5'' | 1.81 | 0.60 |
| 57:DA:1386:C:O2' | 57:DA:1387:A:H8 | 1.85 | 0.60 |
| 57:DA:1663:G:C2 | 57:DA:1998:A:C5 | 2.90 | 0.60 |
| 57:DA:2332:C:H4' | 44:DW:40:ARG:CZ | 2.32 | 0.60 |
| 24:DC:257:ARG:NH2 | 24:DC:266:ILE:HD11 | 2.16 | 0.60 |
| 59:DF:42:ALA:CB | 59:DF:49:LEU:HD21 | 2.31 | 0.60 |
| 28:DG:72:ASN:O | 28:DG:76:ILE:HG12 | 2.01 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 32:DK:7:MET:HG3 | 32:DK:17:ARG:HH12 | 1.65 | 0.60 |
| 32:DK:39:ILE:HB | 32:DK:41:ILE:HD13 | 1.82 | 0.60 |
| 37:DP:102:ARG:HD2 | 37:DP:106:ALA:O | 2.02 | 0.60 |
| 38:DQ:71:ASN:HD21 | 38:DQ:106:THR:HG23 | 1.66 | 0.60 |
| 43:DV:44:HIS:CD2 | 43:DV:85:LYS:HB2 | 2.37 | 0.60 |
| 45:DX:29:LEU:HB2 | 45:DX:30:PRO:CD | 2.31 | 0.60 |
| 46:DY:28:LEU:HD23 | 46:DY:42:LEU:HD13 | 1.82 | 0.60 |
| 1:AA:267:C:O2' | 1:AA:268:U:H5' | 2.01 | 0.60 |
| 14:AN:51:PRO:O | 14:AN:52:ARG:HB2 | 2.01 | 0.60 |
| 21:AU:36:PHE:HB3 | 21:AU:40:PRO:HD3 | 1.84 | 0.60 |
| 22:BA:28:A:O2' | 22:BA:29:U:H5' | 2.02 | 0.60 |
| 22:BA:794:A:H2' | 22:BA:795:C:C6 | 2.36 | 0.60 |
| 22:BA:1731:G:C4 | 22:BA:1733:G:N7 | 2.69 | 0.60 |
| 22:BA:2728:U:O2' | 22:BA:2729:G:C5' | 2.47 | 0.60 |
| 23:BB:28:C:OP1 | 36:BO:31:THR:HG21 | 2.02 | 0.60 |
| 25:BD:8:LYS:HB2 | 25:BD:201:LEU:HD22 | 1.84 | 0.60 |
| 28:BG:60:GLY:O | 28:BG:61:TRP:HB2 | 2.02 | 0.60 |
| 33:BL:77:ILE:O | 33:BL:110:VAL:O | 2.20 | 0.60 |
| 40:BS:18:ARG:CG | 40:BS:76:VAL:HG13 | 2.32 | 0.60 |
| 44:BW:18:LYS:HE3 | 44:BW:19:ARG:CG | 2.30 | 0.60 |
| 51:B3:32:LEU:HA | 51:B3:35:LYS:HD2 | 1.82 | 0.60 |
| 53:CA:960:U:O2' | 53:CA:1223:C:H5'' | 2.01 | 0.60 |
| 3:CC:120:THR:HG23 | 3:CC:187:GLU:O | 2.01 | 0.60 |
| 57:DA:279:A:C2 | 57:DA:362:A:H4' | 2.36 | 0.60 |
| 57:DA:516:C:H2' | 57:DA:517:C:H6 | 1.67 | 0.60 |
| 57:DA:976:G:H2' | 57:DA:977:G:C8 | 2.34 | 0.60 |
| 57:DA:1038:G:N3 | 57:DA:1039:A:C8 | 2.69 | 0.60 |
| 57:DA:1341:G:H3' | 57:DA:1397:U:O2 | 2.01 | 0.60 |
| 57:DA:1605:C:H4' | 57:DA:1610:A:C6 | 2.36 | 0.60 |
| 57:DA:2361:G:OP1 | 51:D3:25:HIS:HA | 2.02 | 0.60 |
| 25:DD:119:ALA:HB3 | 25:DD:163:GLY:N | 2.11 | 0.60 |
| 28:DG:95:ALA:HB3 | 28:DG:127:GLN:HA | 1.83 | 0.60 |
| 31:DJ:6:ALA:HB3 | 31:DJ:45:THR:HB | 1.82 | 0.60 |
| 1:AA:374:A:OP1 | 1:AA:452:A:N1 | 2.35 | 0.60 |
| 8:AH:104:SER:O | 8:AH:122:GLY:HA3 | 2.02 | 0.60 |
| 10:AJ:53:ILE:CG2 | 10:AJ:61:ALA:HB1 | 2.31 | 0.60 |
| 10:AJ:57:VAL:HG22 | 10:AJ:58:ASN:N | 2.14 | 0.60 |
| 13:AM:40:GLU:HG3 | 13:AM:41:ASP:N | 2.17 | 0.60 |
| 14:AN:15:LEU:HD23 | 14:AN:18:LYS:HD2 | 1.82 | 0.60 |
| 15:AO:15:GLY:C | 15:AO:17:ASP:H | 2.05 | 0.60 |
| 19:AS:3:SER:O | 19:AS:5:LYS:HG3 | 2.01 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 22:BA:875:G:H2' | 22:BA:876:C:H5' | 1.83 | 0.60 |
| 22:BA:987:C:H2' | 22:BA:988:A:H5' | 1.84 | 0.60 |
| 22:BA:1673:G:C2' | 22:BA:1674:G:H5' | 2.31 | 0.60 |
| 22:BA:1941:C:H6 | 22:BA:1941:C:C5' | 2.10 | 0.60 |
| 22:BA:2021:C:P | 48:B0:8:THR:HG21 | 2.42 | 0.60 |
| 22:BA:2094:A:P | 29:BH:22:LYS:HD2 | 2.42 | 0.60 |
| 22:BA:2810:A:H2' | 22:BA:2811:G:O4' | 2.01 | 0.60 |
| 26:BE:193:VAL:O | 26:BE:197:GLU:HB2 | 2.02 | 0.60 |
| 30:BI:10:LEU:HD13 | 30:BI:27:LEU:HA | 1.84 | 0.60 |
| 31:BJ:3:THR:HG21 | 38:BQ:60:TRP:NE1 | 2.17 | 0.60 |
| 31:BJ:44:TYR:HD2 | 38:BQ:63:ARG:HD3 | 1.67 | 0.60 |
| 39:BR:39:LEU:HA | 39:BR:49:ILE:CG2 | 2.32 | 0.60 |
| 40:BS:13:SER:O | 40:BS:14:ALA:HB2 | 2.00 | 0.60 |
| 45:BX:52:ALA:O | 45:BX:53:LYS:CB | 2.49 | 0.60 |
| 53:CA:1159:U:H5 | 53:CA:1182:G:O2' | 1.81 | 0.60 |
| 53:CA:1514:G:H2' | 53:CA:1515:G:H8 | 1.67 | 0.60 |
| 3:CC:41:TYR:HE1 | 3:CC:89:VAL:HG12 | 1.67 | 0.60 |
| 4:CD:138:PRO:O | 4:CD:139:ASN:HB2 | 2.02 | 0.60 |
| 6:CF:9:MET:HE1 | 18:CR:64:LEU:O | 2.02 | 0.60 |
| 17:CQ:27:PHE:HD1 | 17:CQ:36:PHE:HB3 | 1.66 | 0.60 |
| 57:DA:1275:A:N7 | 35:DN:16:HIS:HB2 | 2.17 | 0.60 |
| 57:DA:1387:A:O2' | 57:DA:1388:G:H8 | 1.77 | 0.60 |
| 57:DA:1713:A:H4' | 57:DA:1714:U:OP1 | 2.01 | 0.60 |
| 57:DA:1797:G:O3' | 24:DC:255:LYS:O | 2.20 | 0.60 |
| 57:DA:2056:G:N2 | 48:D0:1:ALA:H1 | 1.99 | 0.60 |
| 57:DA:2336:A:N7 | 44:DW:40:ARG:NH2 | 2.50 | 0.60 |
| 57:DA:2834:G:H1' | 57:DA:2879:A:H61 | 1.65 | 0.60 |
| 24:DC:211:ARG:HD2 | 24:DC:215:VAL:O | 2.01 | 0.60 |
| 26:DE:44:ARG:H | 26:DE:89:PRO:HA | 1.66 | 0.60 |
| 26:DE:131:THR:HG22 | 26:DE:161:ALA:H | 1.66 | 0.60 |
| 41:DT:48:GLN:HA | 41:DT:48:GLN:HE21 | 1.67 | 0.60 |
| 47:DZ:16:LEU:HD23 | 47:DZ:19:HIS:CD2 | 2.37 | 0.60 |
| 1:AA:582:C:C2 | 1:AA:583:A:C8 | 2.90 | 0.60 |
| 1:AA:826:C:H5' | 8:AH:12:ARG:NH2 | 2.13 | 0.60 |
| 1:AA:1314:C:O2' | 1:AA:1315:U:H5' | 2.02 | 0.60 |
| 14:AN:30:ILE:HG23 | 14:AN:44:VAL:HG12 | 1.83 | 0.60 |
| 16:AP:20:VAL:CG2 | 16:AP:32:PHE:HB2 | 2.32 | 0.60 |
| 22:BA:572:A:C2 | 22:BA:2033:A:C2 | 2.89 | 0.60 |
| 22:BA:1078:U:H4' | 22:BA:1079:C:C6 | 2.37 | 0.60 |
| 22:BA:1515:A:H2' | 22:BA:1516:G:O4' | 2.02 | 0.60 |
| 22:BA:2491:U:H5'' | 22:BA:2570:G:H5'' | 1.84 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:2547:A:H2' | 22:BA:2548:U:C6 | 2.37 | 0.60 |
| 24:BC:93:VAL:O | 24:BC:94:LEU:HB3 | 1.99 | 0.60 |
| 27:BF:133:GLU:H | 27:BF:150:GLY:HA3 | 1.65 | 0.60 |
| 34:BM:6:ARG:HD2 | 34:BM:8:LYS:NZ | 2.16 | 0.60 |
| 37:BP:95:LYS:HG2 | 37:BP:97:TYR:CE1 | 2.36 | 0.60 |
| 40:BS:59:GLU:HA | 40:BS:64:ALA:CB | 2.32 | 0.60 |
| 46:BY:47:ARG:HG3 | 46:BY:47:ARG:NH2 | 2.07 | 0.60 |
| 53:CA:47:C:H4' | 53:CA:48:C:O5' | 2.00 | 0.60 |
| 53:CA:158:G:C5 | 53:CA:164:G:C6 | 2.90 | 0.60 |
| 53:CA:675:A:H1' | 11:CK:117:HIS:ND1 | 2.17 | 0.60 |
| 53:CA:1422:G:H5'' | 32:DK:48:PRO:HB3 | 1.83 | 0.60 |
| 2:CB:80:LYS:O | 2:CB:84:LEU:N | 2.34 | 0.60 |
| 2:CB:103:TRP:HB2 | 2:CB:106:VAL:HB | 1.84 | 0.60 |
| 4:CD:94:GLU:OE1 | 4:CD:103:ARG:NE | 2.33 | 0.60 |
| 8:CH:93:LYS:HD3 | 8:CH:93:LYS:N | 2.17 | 0.60 |
| 56:CP:16:PHE:CE2 | 56:CP:40:ASN:HB2 | 2.36 | 0.60 |
| 21:CU:35:GLU:O | 21:CU:36:PHE:CD2 | 2.54 | 0.60 |
| 57:DA:1439:A:H3' | 57:DA:1439:A:H8 | 1.65 | 0.60 |
| 57:DA:1557:C:H2' | 57:DA:1558:C:C6 | 2.37 | 0.60 |
| 24:DC:68:ARG:NH1 | 24:DC:115:ILE:HD12 | 2.14 | 0.60 |
| 25:DD:45:TYR:HE2 | 25:DD:47:ALA:HB3 | 1.67 | 0.60 |
| 29:DH:90:LEU:HB3 | 29:DH:123:ARG:HD2 | 1.84 | 0.60 |
| 35:DN:67:PHE:HE2 | 35:DN:73:ASN:HD21 | 1.49 | 0.60 |
| 48:D0:30:ASP:OD1 | 48:D0:47:TYR:HB3 | 2.02 | 0.60 |
| 1:AA:261:U:OP2 | 20:AT:73:ARG:NH2 | 2.35 | 0.60 |
| 1:AA:547:A:H4' | 1:AA:548:G:O5' | 2.02 | 0.60 |
| 1:AA:1046:A:O2' | 1:AA:1047:G:H5' | 2.01 | 0.60 |
| 1:AA:1381:U:O2' | 1:AA:1382:C:C5' | 2.49 | 0.60 |
| 2:AB:19:THR:HG23 | 2:AB:20:ARG:H | 1.66 | 0.60 |
| 5:AE:55:VAL:N | 5:AE:56:PRO:HD2 | 2.16 | 0.60 |
| 22:BA:705:A:N6 | 22:BA:726:G:H1' | 2.17 | 0.60 |
| 22:BA:749:A:C6 | 22:BA:1618:A:C2 | 2.89 | 0.60 |
| 22:BA:950:G:C6 | 22:BA:951:C:C4 | 2.90 | 0.60 |
| 22:BA:1011:G:H5'' | 38:BQ:76:SER:OG | 2.02 | 0.60 |
| 22:BA:2443:C:O2' | 22:BA:2444:G:H5' | 2.02 | 0.60 |
| 29:BH:125:THR:HG23 | 29:BH:126:GLY:H | 1.67 | 0.60 |
| 31:BJ:21:THR:HG22 | 31:BJ:22:GLY:H | 1.66 | 0.60 |
| 44:BW:39:GLN:NE2 | 44:BW:43:LYS:N | 2.50 | 0.60 |
| 44:BW:67:LYS:O | 44:BW:68:PHE:HB2 | 2.01 | 0.60 |
| 53:CA:93:U:C2 | 53:CA:95:C:N4 | 2.70 | 0.60 |
| 53:CA:1101:A:H1' | 53:CA:1102:A:O4' | 2.02 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:1181:G:O2' | 53:CA:1182:G:O4' | 2.17 | 0.60 |
| 2:CB:125:PHE:CD1 | 2:CB:137:THR:HG22 | 2.37 | 0.60 |
| 17:CQ:59:GLU:HB3 | 17:CQ:76:ARG:O | 2.01 | 0.60 |
| 57:DA:1054:A:C4 | 57:DA:1055:G:H1' | 2.36 | 0.60 |
| 57:DA:1063:G:O2' | 57:DA:1064:C:C6 | 2.54 | 0.60 |
| 57:DA:1352:U:H5 | 57:DA:1377:G:C5 | 2.19 | 0.60 |
| 57:DA:1379:U:O2 | 57:DA:1379:U:H2' | 2.01 | 0.60 |
| 57:DA:2094:A:O2' | 57:DA:2095:A:O4' | 2.20 | 0.60 |
| 57:DA:2582:G:H2' | 57:DA:2582:G:N3 | 2.16 | 0.60 |
| 24:DC:93:VAL:HG11 | 24:DC:101:ARG:H | 1.67 | 0.60 |
| 31:DJ:25:LEU:HD22 | 31:DJ:26:GLY:N | 2.17 | 0.60 |
| 35:DN:37:THR:HG22 | 35:DN:39:PRO:CD | 2.29 | 0.60 |
| 37:DP:67:GLU:CD | 37:DP:68:GLY:H | 2.05 | 0.60 |
| 45:DX:39:VAL:O | 45:DX:40:GLU:HB2 | 2.00 | 0.60 |
| 1:AA:466:A:O2' | 1:AA:467:U:H5 | 1.85 | 0.59 |
| 1:AA:788:U:H2' | 1:AA:789:U:H6 | 1.65 | 0.59 |
| 22:BA:946:C:H2' | 22:BA:947:A:H8 | 1.66 | 0.59 |
| 22:BA:1131:G:OP1 | 31:BJ:82:GLY:HA2 | 2.02 | 0.59 |
| 22:BA:1415:U:O2 | 22:BA:1415:U:H2' | 2.01 | 0.59 |
| 22:BA:1465:G:C6 | 22:BA:1466:U:N3 | 2.70 | 0.59 |
| 22:BA:2571:U:O2' | 25:BD:151:THR:CG2 | 2.50 | 0.59 |
| 24:BC:185:ALA:C | 24:BC:187:CYS:H | 2.06 | 0.59 |
| 31:BJ:43:GLU:O | 31:BJ:44:TYR:C | 2.40 | 0.59 |
| 35:BN:79:LEU:O | 35:BN:80:PHE:CB | 2.49 | 0.59 |
| 38:BQ:27:ARG:HG3 | 38:BQ:27:ARG:NH1 | 2.17 | 0.59 |
| 40:BS:59:GLU:HA | 40:BS:64:ALA:HA | 1.84 | 0.59 |
| 41:BT:44:LYS:O | 41:BT:48:GLN:HG2 | 2.02 | 0.59 |
| 53:CA:338:A:N6 | 53:CA:351:G:H1 | 1.98 | 0.59 |
| 53:CA:608:A:OP2 | 63:CA:1859:HOH:O | 2.16 | 0.59 |
| 53:CA:808:C:OP1 | 15:CO:47:LYS:HE2 | 2.02 | 0.59 |
| 55:CM:12:LYS:H | 55:CM:44:ILE:HG13 | 1.66 | 0.59 |
| 17:CQ:25:GLU:HG2 | 17:CQ:40:THR:HG22 | 1.83 | 0.59 |
| 57:DA:181:A:C2 | 57:DA:434:U:H1' | 2.37 | 0.59 |
| 57:DA:226:A:H2' | 57:DA:227:A:H8 | 1.66 | 0.59 |
| 57:DA:238:C:H4' | 57:DA:608:A:O2' | 2.02 | 0.59 |
| 57:DA:833:A:H2' | 57:DA:834:G:C8 | 2.36 | 0.59 |
| 57:DA:2142:A:H2' | 57:DA:2143:C:H4' | 1.83 | 0.59 |
| 57:DA:2635:A:C5' | 25:DD:79:LEU:HB2 | 2.32 | 0.59 |
| 58:DB:86:G:C2' | 58:DB:87:U:H5'' | 2.30 | 0.59 |
| 25:DD:125:TRP:HB3 | 25:DD:160:LYS:HD3 | 1.84 | 0.59 |
| 29:DH:49:ALA:O | 29:DH:53:GLU:HB2 | 2.01 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:DH:83:LYS:HE2 | 29:DH:149:GLU:HB3 | 1.84 | 0.59 |
| 1:AA:903:G:H2' | 1:AA:904:U:H6 | 1.67 | 0.59 |
| 1:AA:1084:G:C5 | 1:AA:1085:U:C4 | 2.91 | 0.59 |
| 2:AB:133:ALA:O | 2:AB:137:THR:HG23 | 2.01 | 0.59 |
| 9:AI:9:GLY:HA2 | 9:AI:80:HIS:HD2 | 1.66 | 0.59 |
| 15:AO:85:GLY:O | 15:AO:86:LEU:HB3 | 2.01 | 0.59 |
| 22:BA:945:A:H5' | 22:BA:946:C:OP2 | 2.02 | 0.59 |
| 22:BA:1784:A:H4' | 22:BA:1785:A:C5' | 2.32 | 0.59 |
| 22:BA:2250:G:H8 | 22:BA:2250:G:O5' | 1.86 | 0.59 |
| 32:BK:51:LYS:HE3 | 32:BK:52:VAL:HG12 | 1.83 | 0.59 |
| 33:BL:14:LYS:HG3 | 33:BL:15:ALA:N | 2.17 | 0.59 |
| 41:BT:40:LYS:O | 41:BT:44:LYS:N | 2.34 | 0.59 |
| 53:CA:265:G:O3' | 17:CQ:67:SER:HA | 2.01 | 0.59 |
| 53:CA:404:G:O6 | 4:CD:1:ALA:HB2 | 2.01 | 0.59 |
| 53:CA:564:C:H5' | 53:CA:564:C:C6 | 2.36 | 0.59 |
| 53:CA:637:C:H2' | 53:CA:638:U:C6 | 2.37 | 0.59 |
| 53:CA:1239:A:H62 | 53:CA:1299:A:N6 | 2.00 | 0.59 |
| 54:CG:63:VAL:HG11 | 54:CG:127:ALA:HB2 | 1.84 | 0.59 |
| 11:CK:126:ARG:O | 21:CU:33:ARG:CZ | 2.50 | 0.59 |
| 57:DA:203:A:H8 | 57:DA:203:A:O5' | 1.85 | 0.59 |
| 57:DA:585:G:C2' | 57:DA:1254:A:H61 | 2.14 | 0.59 |
| 57:DA:615:U:O4 | 26:DE:39:ALA:HB2 | 2.02 | 0.59 |
| 57:DA:784:G:C6 | 24:DC:227:VAL:HG11 | 2.38 | 0.59 |
| 57:DA:1126:A:OP1 | 57:DA:1126:A:H8 | 1.84 | 0.59 |
| 57:DA:1438:U:H2' | 57:DA:1439:A:O4' | 2.02 | 0.59 |
| 59:DF:91:ARG:HA | 59:DF:95:MET:SD | 2.42 | 0.59 |
| 32:DK:76:VAL:O | 37:DP:71:ARG:HG3 | 2.02 | 0.59 |
| 36:DO:15:ARG:HG2 | 36:DO:93:ASP:OD1 | 2.02 | 0.59 |
| 42:DU:73:ASN:HB3 | 42:DU:95:PHE:HE2 | 1.67 | 0.59 |
| 2:AB:117:GLU:HA | 2:AB:120:SER:HB2 | 1.83 | 0.59 |
| 11:AK:39:ASN:O | 11:AK:40:ALA:HB3 | 2.02 | 0.59 |
| 22:BA:646:U:H3' | 22:BA:647:G:C5' | 2.33 | 0.59 |
| 22:BA:1669:A:H2' | 22:BA:1669:A:N3 | 2.16 | 0.59 |
| 22:BA:1813:G:N3 | 24:BC:49:THR:CG2 | 2.65 | 0.59 |
| 22:BA:2233:U:H2' | 22:BA:2234:G:C8 | 2.37 | 0.59 |
| 25:BD:122:VAL:HG12 | 25:BD:123:LYS:N | 2.17 | 0.59 |
| 42:BU:28:LEU:HB2 | 42:BU:32:LYS:O | 2.01 | 0.59 |
| 53:CA:951:G:H2' | 53:CA:952:U:C6 | 2.36 | 0.59 |
| 53:CA:1226:C:C5 | 55:CM:102:LYS:HA | 2.37 | 0.59 |
| 53:CA:1440:U:OP2 | 53:CA:1440:U:H6 | 1.84 | 0.59 |
| 53:CA:1493:A:H3' | 57:DA:1913:A:N6 | 2.17 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:395:U:O2' | 57:DA:396:G:H8 | 1.84 | 0.59 |
| 57:DA:1716:U:O2' | 57:DA:1717:A:H5' | 2.03 | 0.59 |
| 57:DA:2533:U:H4' | 57:DA:2664:G:H4' | 1.84 | 0.59 |
| 57:DA:2849:U:OP1 | 37:DP:92:ARG:NH1 | 2.36 | 0.59 |
| 58:DB:42:C:N4 | 59:DF:87:LYS:NZ | 2.50 | 0.59 |
| 36:DO:94:ARG:HD2 | 36:DO:97:PHE:O | 2.03 | 0.59 |
| 1:AA:345:C:OP1 | 37:BP:36:LYS:HE2 | 2.01 | 0.59 |
| 1:AA:1228:C:H2' | 1:AA:1229:A:C8 | 2.37 | 0.59 |
| 1:AA:1386:G:H2' | 1:AA:1387:G:C8 | 2.36 | 0.59 |
| 2:AB:99:MET:HA | 2:AB:106:VAL:HG21 | 1.84 | 0.59 |
| 14:AN:9:GLU:OE1 | 14:AN:60:ARG:HB3 | 2.01 | 0.59 |
| 22:BA:226:A:N6 | 22:BA:227:A:C6 | 2.70 | 0.59 |
| 22:BA:790:U:O2' | 22:BA:791:C:O5' | 2.20 | 0.59 |
| 22:BA:1062:G:C2' | 22:BA:1063:G:C8 | 2.86 | 0.59 |
| 41:BT:28:ASN:HA | 41:BT:91:GLN:NE2 | 2.17 | 0.59 |
| 43:BV:80:HIS:CD2 | 43:BV:83:LYS:CB | 2.85 | 0.59 |
| 44:BW:14:ASP:O | 44:BW:15:SER:HB2 | 2.02 | 0.59 |
| 53:CA:1142:G:H2' | 53:CA:1143:G:C8 | 2.37 | 0.59 |
| 53:CA:1148:U:H2' | 53:CA:1149:C:O4' | 2.02 | 0.59 |
| 18:CR:33:THR:HG23 | 18:CR:39:VAL:HG22 | 1.84 | 0.59 |
| 57:DA:45:G:H5' | 57:DA:46:G:OP1 | 2.03 | 0.59 |
| 57:DA:388:G:N7 | 57:DA:390:U:H2' | 2.18 | 0.59 |
| 57:DA:574:A:H4' | 57:DA:575:A:H5' | 1.84 | 0.59 |
| 57:DA:782:A:H5' | 57:DA:783:A:C2 | 2.37 | 0.59 |
| 57:DA:1338:G:H4' | 41:DT:18:GLU:OE2 | 2.02 | 0.59 |
| 57:DA:1534:U:C6 | 57:DA:1538:G:N1 | 2.70 | 0.59 |
| 57:DA:1609:A:N6 | 57:DA:1616:A:C2 | 2.71 | 0.59 |
| 57:DA:2386:A:H2 | 44:DW:38:ARG:HG2 | 1.68 | 0.59 |
| 57:DA:2756:U:C1' | 57:DA:2757:A:H5'' | 2.32 | 0.59 |
| 58:DB:31:C:H5'' | 59:DF:29:ARG:HH12 | 1.67 | 0.59 |
| 39:DR:24:LYS:HA | 39:DR:94:THR:HG23 | 1.83 | 0.59 |
| 44:DW:45:HIS:HB3 | 44:DW:58:LEU:HD11 | 1.84 | 0.59 |
| 1:AA:672:U:H2' | 1:AA:673:A:C8 | 2.38 | 0.59 |
| 1:AA:714:G:H2' | 1:AA:715:A:C8 | 2.37 | 0.59 |
| 1:AA:994:A:C5 | 1:AA:1216:A:H4' | 2.37 | 0.59 |
| 11:AK:125:LYS:O | 11:AK:126:ARG:HB2 | 2.01 | 0.59 |
| 13:AM:68:LEU:O | 13:AM:72:ILE:HG13 | 2.02 | 0.59 |
| 22:BA:196:A:H2' | 22:BA:805:G:O6 | 2.02 | 0.59 |
| 23:BB:112:G:H2' | 23:BB:113:C:H6 | 1.67 | 0.59 |
| 26:BE:169:VAL:O | 26:BE:170:ARG:HD2 | 2.02 | 0.59 |
| 27:BF:128:SER:HA | 27:BF:154:THR:HA | 1.83 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 31:BJ:64:VAL:HG22 | 31:BJ:68:LYS:HD2 | 1.84 | 0.59 |
| 41:BT:2:ILE:HG13 | 41:BT:3:ARG:NH2 | 2.18 | 0.59 |
| 41:BT:29:THR:HB | 41:BT:86:THR:HG22 | 1.84 | 0.59 |
| 43:BV:10:LYS:HZ3 | 43:BV:10:LYS:HB2 | 1.67 | 0.59 |
| 53:CA:388:G:O2' | 53:CA:389:A:P | 2.61 | 0.59 |
| 53:CA:460:A:O2' | 53:CA:462:G:H5' | 2.02 | 0.59 |
| 53:CA:596:A:C2 | 53:CA:597:G:C5 | 2.91 | 0.59 |
| 53:CA:885:G:HO2' | 53:CA:914:A:H2 | 1.51 | 0.59 |
| 53:CA:951:G:H2' | 53:CA:952:U:H6 | 1.67 | 0.59 |
| 53:CA:1084:G:C5 | 53:CA:1085:U:C4 | 2.91 | 0.59 |
| 53:CA:1336:C:H1' | 53:CA:1337:G:C2 | 2.36 | 0.59 |
| 4:CD:29:THR:C | 4:CD:30:LYS:HD3 | 2.22 | 0.59 |
| 5:CE:14:LEU:HD13 | 5:CE:36:THR:HG22 | 1.85 | 0.59 |
| 11:CK:85:VAL:HG11 | 11:CK:92:ARG:NH1 | 2.17 | 0.59 |
| 11:CK:124:LYS:HG3 | 21:CU:34:ARG:HD2 | 1.85 | 0.59 |
| 55:CM:78:ARG:NH2 | 55:CM:79:LEU:HD23 | 2.16 | 0.59 |
| 55:CM:86:ARG:NH1 | 55:CM:90:HIS:HD2 | 2.00 | 0.59 |
| 21:CU:35:GLU:OE2 | 21:CU:35:GLU:HA | 2.01 | 0.59 |
| 57:DA:532:A:H5' | 57:DA:533:G:O4' | 2.03 | 0.59 |
| 57:DA:538:A:O2' | 31:DJ:8:PRO:HG3 | 2.02 | 0.59 |
| 57:DA:590:A:C6 | 57:DA:591:U:C4 | 2.90 | 0.59 |
| 57:DA:2333:A:C2 | 57:DA:2335:A:N6 | 2.69 | 0.59 |
| 57:DA:2351:G:O6 | 51:D3:42:HIS:HE1 | 1.85 | 0.59 |
| 57:DA:2552:U:C2 | 57:DA:2554:U:H5' | 2.38 | 0.59 |
| 32:DK:76:VAL:HB | 37:DP:72:VAL:HG22 | 1.84 | 0.59 |
| 39:DR:27:ILE:HG13 | 39:DR:33:VAL:HG11 | 1.85 | 0.59 |
| 46:DY:20:ASN:ND2 | 46:DY:50:VAL:HG22 | 2.16 | 0.59 |
| 1:AA:545:C:H5' | 4:AD:68:GLU:CG | 2.32 | 0.59 |
| 1:AA:569:C:H5'' | 1:AA:570:G:OP1 | 2.02 | 0.59 |
| 1:AA:865:A:O2' | 1:AA:866:C:H5' | 2.03 | 0.59 |
| 2:AB:65:LYS:HG2 | 2:AB:153:MET:HG3 | 1.84 | 0.59 |
| 2:AB:116:LEU:HD12 | 2:AB:140:LEU:HD11 | 1.84 | 0.59 |
| 3:AC:6:PRO:O | 3:AC:10:ARG:HG2 | 2.03 | 0.59 |
| 7:AG:29:LEU:O | 7:AG:29:LEU:HD23 | 2.02 | 0.59 |
| 7:AG:106:ALA:HB1 | 7:AG:132:THR:HB | 1.82 | 0.59 |
| 22:BA:614:A:O2' | 22:BA:615:U:OP2 | 2.19 | 0.59 |
| 22:BA:783:A:C8 | 22:BA:784:G:H4' | 2.37 | 0.59 |
| 22:BA:2503:A:H4' | 22:BA:2504:U:OP1 | 2.02 | 0.59 |
| 23:BB:109:A:H2' | 23:BB:110:C:C6 | 2.38 | 0.59 |
| 26:BE:7:ASP:O | 26:BE:9:GLN:N | 2.36 | 0.59 |
| 39:BR:97:LYS:O | 39:BR:98:ILE:HB | 2.03 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 44:BW:67:LYS:HB3 | 44:BW:80:SER:H | 1.66 | 0.59 |
| 53:CA:296:U:C2 | 53:CA:297:G:C8 | 2.90 | 0.59 |
| 53:CA:1478:U:H2' | 53:CA:1479:C:H6 | 1.65 | 0.59 |
| 2:CB:80:LYS:HD3 | 2:CB:90:PHE:CZ | 2.37 | 0.59 |
| 11:CK:74:LYS:HG3 | 11:CK:78:ILE:HG12 | 1.85 | 0.59 |
| 57:DA:836:G:C6 | 57:DA:837:C:C4 | 2.91 | 0.59 |
| 57:DA:1013:C:O2' | 57:DA:1014:A:H5' | 2.03 | 0.59 |
| 57:DA:1439:A:N7 | 57:DA:1440:U:H1' | 2.16 | 0.59 |
| 57:DA:2255:G:H2' | 57:DA:2256:G:O4' | 2.01 | 0.59 |
| 57:DA:2446:G:H5'' | 57:DA:2447:G:OP2 | 2.03 | 0.59 |
| 57:DA:2720:U:H5'' | 37:DP:52:ARG:HH21 | 1.68 | 0.59 |
| 33:DL:33:ARG:HD3 | 33:DL:40:SER:HA | 1.82 | 0.59 |
| 39:DR:62:GLU:OE1 | 39:DR:97:LYS:HD2 | 2.02 | 0.59 |
| 1:AA:674:G:H4' | 18:AR:69:TYR:CD1 | 2.37 | 0.59 |
| 2:AB:53:LEU:HA | 2:AB:56:LEU:HB3 | 1.84 | 0.59 |
| 6:AF:92:THR:O | 6:AF:93:LYS:HG2 | 2.01 | 0.59 |
| 8:AH:6:ILE:HB | 8:AH:76:ARG:NH1 | 2.16 | 0.59 |
| 8:AH:45:ILE:HA | 8:AH:63:LYS:HG3 | 1.84 | 0.59 |
| 12:AL:6:LEU:HD23 | 17:AQ:33:TYR:CE2 | 2.37 | 0.59 |
| 12:AL:29:LYS:O | 12:AL:81:ILE:HG22 | 2.02 | 0.59 |
| 22:BA:26:G:H1' | 22:BA:514:A:H61 | 1.66 | 0.59 |
| 22:BA:632:A:O2' | 22:BA:633:A:H5' | 2.02 | 0.59 |
| 22:BA:1105:U:H2' | 22:BA:1106:G:H8 | 1.67 | 0.59 |
| 22:BA:1115:G:O2' | 22:BA:1116:G:O5' | 2.21 | 0.59 |
| 22:BA:2492:U:H2' | 22:BA:2493:U:C6 | 2.37 | 0.59 |
| 25:BD:110:THR:CG2 | 25:BD:171:THR:HG22 | 2.31 | 0.59 |
| 25:BD:114:LYS:NZ | 25:BD:116:LYS:HE2 | 2.18 | 0.59 |
| 30:BI:105:LEU:HA | 30:BI:108:ILE:HB | 1.84 | 0.59 |
| 33:BL:28:GLY:O | 33:BL:29:LYS:O | 2.21 | 0.59 |
| 37:BP:50:ARG:CG | 37:BP:57:ALA:H | 2.16 | 0.59 |
| 47:BZ:3:THR:HA | 47:BZ:37:ARG:O | 2.03 | 0.59 |
| 48:B0:43:THR:HG23 | 48:B0:47:TYR:O | 2.02 | 0.59 |
| 51:B3:56:LEU:HD22 | 51:B3:56:LEU:H | 1.67 | 0.59 |
| 53:CA:497:G:O2' | 53:CA:498:A:C8 | 2.53 | 0.59 |
| 53:CA:1452:C:H5' | 53:CA:1453:G:C5 | 2.37 | 0.59 |
| 53:CA:1493:A:H3' | 57:DA:1913:A:H62 | 1.67 | 0.59 |
| 4:CD:197:HIS:O | 4:CD:201:GLU:HG3 | 2.03 | 0.59 |
| 11:CK:126:ARG:O | 21:CU:33:ARG:NH2 | 2.34 | 0.59 |
| 12:CL:34:THR:HG22 | 12:CL:35:ARG:HE | 1.67 | 0.59 |
| 57:DA:128:C:H6 | 57:DA:128:C:H5'' | 1.67 | 0.59 |
| 57:DA:188:G:H2' | 57:DA:189:G:H5' | 1.85 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:323:C:H6 | 26:DE:165:HIS:CE1 | 2.20 | 0.59 |
| 57:DA:589:U:C2' | 57:DA:590:A:H8 | 2.15 | 0.59 |
| 57:DA:685:A:H1' | 57:DA:688:U:O4 | 2.02 | 0.59 |
| 57:DA:726:G:OP2 | 57:DA:726:G:C8 | 2.55 | 0.59 |
| 57:DA:851:C:H4' | 47:DZ:46:MET:HG2 | 1.84 | 0.59 |
| 57:DA:901:C:H2' | 57:DA:902:C:H6 | 1.66 | 0.59 |
| 57:DA:1183:U:H2' | 57:DA:1184:U:C6 | 2.37 | 0.59 |
| 57:DA:1274:A:C6 | 57:DA:1302:A:C2 | 2.91 | 0.59 |
| 58:DB:38:C:H4' | 36:DO:100:HIS:NE2 | 2.17 | 0.59 |
| 58:DB:111:U:O2' | 58:DB:112:G:C8 | 2.53 | 0.59 |
| 24:DC:78:GLU:OE2 | 24:DC:94:LEU:HD22 | 2.03 | 0.59 |
| 25:DD:117:GLY:HA2 | 25:DD:164:GLN:OE1 | 2.02 | 0.59 |
| 31:DJ:43:GLU:O | 31:DJ:45:THR:N | 2.35 | 0.59 |
| 34:DM:42:THR:HB | 34:DM:45:GLN:CG | 2.31 | 0.59 |
| 1:AA:158:G:H2' | 1:AA:159:G:H5'' | 1.84 | 0.59 |
| 12:AL:79:ILE:HD12 | 12:AL:96:THR:HG21 | 1.85 | 0.59 |
| 14:AN:48:GLN:HA | 14:AN:48:GLN:NE2 | 2.18 | 0.59 |
| 22:BA:141:G:N1 | 41:BT:2:ILE:HG23 | 2.17 | 0.59 |
| 22:BA:444:C:H4' | 26:BE:44:ARG:HD3 | 1.85 | 0.59 |
| 22:BA:533:G:H2' | 22:BA:534:U:C6 | 2.38 | 0.59 |
| 22:BA:540:C:C2' | 22:BA:541:A:H5' | 2.33 | 0.59 |
| 22:BA:558:U:H5'' | 31:BJ:111:LYS:HE3 | 1.84 | 0.59 |
| 22:BA:1252:G:N3 | 38:BQ:32:ARG:HG2 | 2.18 | 0.59 |
| 29:BH:6:LEU:O | 29:BH:15:LEU:HA | 2.02 | 0.59 |
| 33:BL:56:PRO:HD2 | 33:BL:59:ARG:HG3 | 1.83 | 0.59 |
| 34:BM:78:LEU:HD23 | 34:BM:79:ALA:N | 2.17 | 0.59 |
| 37:BP:50:ARG:CD | 37:BP:56:SER:HB3 | 2.13 | 0.59 |
| 43:BV:44:HIS:CE1 | 43:BV:85:LYS:HB2 | 2.37 | 0.59 |
| 44:BW:9:THR:HG22 | 44:BW:10:ARG:NH1 | 2.17 | 0.59 |
| 44:BW:39:GLN:HG3 | 44:BW:42:THR:H | 1.66 | 0.59 |
| 53:CA:113:G:H1' | 53:CA:354:G:H5' | 1.83 | 0.59 |
| 53:CA:795:C:H5'' | 11:CK:127:ARG:HH21 | 1.68 | 0.59 |
| 53:CA:960:U:H4' | 53:CA:961:U:H5'' | 1.84 | 0.59 |
| 53:CA:1305:G:H22 | 53:CA:1331:G:H2' | 1.67 | 0.59 |
| 53:CA:1331:G:HO2' | 53:CA:1332:A:H8 | 1.51 | 0.59 |
| 11:CK:104:PHE:HD1 | 11:CK:104:PHE:H | 1.50 | 0.59 |
| 12:CL:27:PRO:HB2 | 12:CL:28:GLN:OE1 | 2.03 | 0.59 |
| 57:DA:638:G:H2' | 57:DA:639:U:C6 | 2.38 | 0.59 |
| 57:DA:960:A:C2' | 57:DA:962:G:H5' | 2.31 | 0.59 |
| 57:DA:1078:U:H4' | 57:DA:1079:C:O5' | 2.01 | 0.59 |
| 57:DA:1662:U:C2' | 57:DA:1663:G:H5'' | 2.29 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:1833:C:C4 | 57:DA:1834:U:C4 | 2.91 | 0.59 |
| 57:DA:2447:G:N7 | 57:DA:2500:U:H2' | 2.17 | 0.59 |
| 25:DD:117:GLY:O | 25:DD:119:ALA:N | 2.36 | 0.59 |
| 28:DG:8:VAL:HG11 | 28:DG:49:LEU:HD23 | 1.85 | 0.59 |
| 35:DN:51:LEU:HA | 35:DN:54:LEU:CD2 | 2.33 | 0.59 |
| 41:DT:67:VAL:O | 41:DT:68:LYS:HG3 | 2.02 | 0.59 |
| 42:DU:11:ILE:HG21 | 42:DU:79:ALA:HB2 | 1.84 | 0.59 |
| 48:D0:28:SER:HB3 | 48:D0:39:ARG:NE | 2.17 | 0.59 |
| 1:AA:185:U:H2' | 1:AA:186:C:H6 | 1.67 | 0.59 |
| 1:AA:409:U:OP1 | 4:AD:23:GLY:HA3 | 2.02 | 0.59 |
| 1:AA:429:U:H1' | 1:AA:430:A:H5'' | 1.84 | 0.59 |
| 1:AA:762:U:C2 | 1:AA:763:G:C8 | 2.90 | 0.59 |
| 1:AA:1006:G:H2' | 1:AA:1007:U:C6 | 2.38 | 0.59 |
| 1:AA:1111:A:O2' | 1:AA:1112:C:H5' | 2.02 | 0.59 |
| 1:AA:1222:G:OP1 | 1:AA:1321:U:O2' | 2.18 | 0.59 |
| 1:AA:1508:A:H2' | 1:AA:1509:C:O4' | 2.03 | 0.59 |
| 2:AB:163:ILE:HG23 | 2:AB:164:ASP:N | 2.15 | 0.59 |
| 8:AH:85:TYR:CD2 | 8:AH:123:GLU:HB2 | 2.38 | 0.59 |
| 10:AJ:51:VAL:CB | 14:AN:80:ARG:HB2 | 2.31 | 0.59 |
| 11:AK:22:ILE:HD11 | 11:AK:85:VAL:HG13 | 1.83 | 0.59 |
| 22:BA:142:A:H2' | 22:BA:143:C:C5 | 2.37 | 0.59 |
| 22:BA:547:A:C8 | 22:BA:548:G:N3 | 2.71 | 0.59 |
| 22:BA:752:A:C8 | 22:BA:1781:U:O4' | 2.56 | 0.59 |
| 22:BA:1799:G:N2 | 22:BA:1818:U:O2' | 2.34 | 0.59 |
| 22:BA:2345:G:C5 | 22:BA:2381:A:C2 | 2.91 | 0.59 |
| 22:BA:2514:U:H2' | 22:BA:2515:C:C6 | 2.37 | 0.59 |
| 22:BA:2637:U:OP1 | 25:BD:83:ARG:NH2 | 2.36 | 0.59 |
| 31:BJ:110:PRO:HB2 | 31:BJ:111:LYS:HG3 | 1.84 | 0.59 |
| 31:BJ:111:LYS:CD | 31:BJ:112:GLY:N | 2.63 | 0.59 |
| 33:BL:114:GLY:C | 33:BL:115:GLU:HG3 | 2.23 | 0.59 |
| 40:BS:42:LYS:O | 40:BS:42:LYS:HD3 | 2.03 | 0.59 |
| 45:BX:6:VAL:HG12 | 45:BX:50:VAL:HG22 | 1.85 | 0.59 |
| 45:BX:58:ILE:HD11 | 45:BX:66:VAL:HG11 | 1.85 | 0.59 |
| 53:CA:654:G:H2' | 53:CA:655:A:C8 | 2.38 | 0.59 |
| 53:CA:734:G:H2' | 53:CA:735:C:C6 | 2.38 | 0.59 |
| 53:CA:1144:G:H21 | 53:CA:1146:A:N6 | 2.00 | 0.59 |
| 3:CC:180:ASP:OD2 | 3:CC:203:LYS:HB2 | 2.03 | 0.59 |
| 6:CF:68:GLN:HG2 | 6:CF:69:GLU:H | 1.67 | 0.59 |
| 57:DA:70:G:O2' | 57:DA:71:A:H5'' | 2.03 | 0.59 |
| 57:DA:507:A:H2' | 57:DA:507:A:OP2 | 2.02 | 0.59 |
| 57:DA:1461:C:H2' | 57:DA:1462:C:C6 | 2.37 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:2196:C:O2' | 57:DA:2197:U:H5' | 2.03 | 0.59 |
| 57:DA:2260:C:H2' | 57:DA:2261:C:H6 | 1.67 | 0.59 |
| 59:DF:92:GLY:O | 59:DF:95:MET:HB3 | 2.03 | 0.59 |
| 31:DJ:2:LYS:HB2 | 31:DJ:2:LYS:NZ | 2.17 | 0.59 |
| 33:DL:81:ASP:O | 33:DL:83:ALA:N | 2.35 | 0.59 |
| 35:DN:73:ASN:HA | 35:DN:76:VAL:HG22 | 1.85 | 0.59 |
| 1:AA:1469:C:H6 | 1:AA:1469:C:H5' | 1.67 | 0.59 |
| 1:AA:1520:C:C2 | 1:AA:1521:C:C5 | 2.91 | 0.59 |
| 5:AE:136:VAL:HG22 | 5:AE:136:VAL:O | 2.02 | 0.59 |
| 12:AL:3:VAL:O | 12:AL:7:VAL:HG23 | 2.03 | 0.59 |
| 22:BA:187:G:C2 | 22:BA:210:C:O2 | 2.56 | 0.59 |
| 22:BA:686:U:H2' | 22:BA:788:A:N1 | 2.18 | 0.59 |
| 22:BA:946:C:H5' | 63:BA:3339:HOH:O | 2.02 | 0.59 |
| 22:BA:987:C:C2' | 22:BA:988:A:H5' | 2.33 | 0.59 |
| 22:BA:1414:C:C4 | 22:BA:1415:U:C5 | 2.90 | 0.59 |
| 22:BA:1478:G:H1 | 22:BA:1513:U:H3 | 1.51 | 0.59 |
| 24:BC:141:HIS:O | 24:BC:143:VAL:HG23 | 2.03 | 0.59 |
| 26:BE:121:VAL:O | 26:BE:189:THR:HA | 2.03 | 0.59 |
| 28:BG:88:LEU:HD11 | 28:BG:95:ALA:CB | 2.32 | 0.59 |
| 30:BI:120:ASP:HB3 | 30:BI:123:ALA:HB3 | 1.83 | 0.59 |
| 33:BL:95:LEU:HB3 | 33:BL:100:ILE:HD11 | 1.84 | 0.59 |
| 34:BM:41:LEU:O | 34:BM:93:VAL:HG23 | 2.02 | 0.59 |
| 37:BP:67:GLU:HG3 | 37:BP:68:GLY:H | 1.68 | 0.59 |
| 53:CA:439:U:H4' | 4:CD:120:LYS:HD2 | 1.85 | 0.59 |
| 53:CA:1072:G:C6 | 53:CA:1073:U:C4 | 2.91 | 0.59 |
| 53:CA:1240:U:H5'' | 54:CG:108:ARG:HH21 | 1.68 | 0.59 |
| 2:CB:10:LYS:HA | 2:CB:10:LYS:HE3 | 1.84 | 0.59 |
| 3:CC:149:LYS:HG3 | 3:CC:168:ARG:HB2 | 1.84 | 0.59 |
| 5:CE:37:VAL:HG12 | 5:CE:38:VAL:N | 2.18 | 0.59 |
| 8:CH:28:SER:HB2 | 8:CH:57:GLU:O | 2.02 | 0.59 |
| 56:CP:20:VAL:HG21 | 56:CP:32:PHE:HB2 | 1.85 | 0.59 |
| 20:CT:60:GLN:HB3 | 20:CT:65:LEU:HD12 | 1.85 | 0.59 |
| 57:DA:17:G:H4' | 38:DQ:24:TYR:HE1 | 1.68 | 0.59 |
| 57:DA:67:U:H2' | 57:DA:68:G:C8 | 2.36 | 0.59 |
| 57:DA:273:G:H2' | 57:DA:274:C:C6 | 2.38 | 0.59 |
| 57:DA:602:A:H1' | 57:DA:656:G:H22 | 1.66 | 0.59 |
| 57:DA:705:A:H2' | 57:DA:706:A:C8 | 2.38 | 0.59 |
| 57:DA:794:A:H2' | 57:DA:795:C:H6 | 1.66 | 0.59 |
| 57:DA:1494:A:H2' | 57:DA:1495:A:H8 | 1.67 | 0.59 |
| 57:DA:2023:C:O2' | 57:DA:2024:G:H5' | 2.02 | 0.59 |
| 57:DA:2214:C:H2' | 57:DA:2215:C:H6 | 1.67 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:2421:G:N7 | 51:D3:30:HIS:HD2 | 2.01 | 0.59 |
| 24:DC:159:THR:O | 24:DC:194:VAL:HG12 | 2.03 | 0.59 |
| 25:DD:32:ASN:HB3 | 25:DD:52:THR:OG1 | 2.02 | 0.59 |
| 25:DD:99:GLU:HG3 | 25:DD:100:LEU:N | 2.18 | 0.59 |
| 1:AA:450:G:N7 | 1:AA:481:G:O6 | 2.36 | 0.58 |
| 1:AA:570:G:H2' | 1:AA:571:U:C6 | 2.38 | 0.58 |
| 3:AC:52:SER:HB2 | 3:AC:111:ASP:OD2 | 2.03 | 0.58 |
| 3:AC:156:LEU:H | 3:AC:156:LEU:CD1 | 2.13 | 0.58 |
| 5:AE:12:GLU:HB2 | 5:AE:38:VAL:HG12 | 1.84 | 0.58 |
| 21:AU:24:LYS:HG2 | 21:AU:25:ALA:H | 1.67 | 0.58 |
| 22:BA:269:C:C2' | 22:BA:270:A:H5' | 2.32 | 0.58 |
| 22:BA:962:G:H21 | 22:BA:2250:G:H1 | 1.49 | 0.58 |
| 22:BA:1744:A:C2 | 22:BA:1745:A:H1' | 2.39 | 0.58 |
| 22:BA:2344:U:H4' | 22:BA:2345:G:OP1 | 2.01 | 0.58 |
| 25:BD:101:PHE:HE2 | 25:BD:203:VAL:CG2 | 2.15 | 0.58 |
| 27:BF:40:GLY:C | 27:BF:84:ILE:HD11 | 2.24 | 0.58 |
| 28:BG:33:THR:C | 28:BG:34:ARG:HD3 | 2.22 | 0.58 |
| 32:BK:91:SER:O | 32:BK:92:GLU:C | 2.41 | 0.58 |
| 35:BN:38:LEU:HB3 | 35:BN:39:PRO:HD3 | 1.85 | 0.58 |
| 38:BQ:100:PHE:HD1 | 39:BR:13:ARG:NH2 | 1.99 | 0.58 |
| 41:BT:29:THR:HB | 41:BT:86:THR:CG2 | 2.33 | 0.58 |
| 41:BT:40:LYS:CA | 41:BT:43:ILE:HG23 | 2.33 | 0.58 |
| 42:BU:42:LYS:HB3 | 42:BU:57:ILE:HG23 | 1.85 | 0.58 |
| 53:CA:66:A:N6 | 53:CA:67:C:N4 | 2.50 | 0.58 |
| 53:CA:256:U:H2' | 53:CA:257:G:O4' | 2.03 | 0.58 |
| 53:CA:412:A:H4' | 53:CA:413:G:OP1 | 2.01 | 0.58 |
| 53:CA:624:C:H4' | 56:CP:10:GLY:C | 2.23 | 0.58 |
| 53:CA:696:A:H8 | 53:CA:696:A:O5' | 1.86 | 0.58 |
| 53:CA:861:G:H2' | 53:CA:862:C:H6 | 1.67 | 0.58 |
| 53:CA:1130:A:C5 | 53:CA:1146:A:C6 | 2.90 | 0.58 |
| 2:CB:95:TRP:CH2 | 2:CB:171:ALA:HA | 2.38 | 0.58 |
| 6:CF:66:ALA:HB3 | 6:CF:71:ILE:HD13 | 1.85 | 0.58 |
| 8:CH:82:LEU:HD12 | 12:CL:3:VAL:HG11 | 1.84 | 0.58 |
| 12:CL:72:ASN:HD22 | 12:CL:72:ASN:H | 1.50 | 0.58 |
| 56:CP:52:LEU:O | 56:CP:53:ASP:HB2 | 2.03 | 0.58 |
| 20:CT:30:PHE:CE2 | 20:CT:52:GLU:HG2 | 2.37 | 0.58 |
| 57:DA:574:A:H4' | 57:DA:575:A:C5' | 2.33 | 0.58 |
| 57:DA:740:C:H5'' | 57:DA:1784:A:H3' | 1.83 | 0.58 |
| 57:DA:984:A:O2' | 57:DA:985:C:OP1 | 2.21 | 0.58 |
| 57:DA:1204:A:H4' | 57:DA:1205:A:C5' | 2.33 | 0.58 |
| 57:DA:1411:U:H2' | 57:DA:1412:U:C6 | 2.37 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:DO:74:VAL:HB | 36:DO:106:LEU:HD11 | 1.84 | 0.58 |
| 1:AA:966:G:H2' | 1:AA:967:C:C6 | 2.37 | 0.58 |
| 3:AC:143:LEU:HD22 | 3:AC:143:LEU:N | 2.16 | 0.58 |
| 8:AH:45:ILE:HG22 | 8:AH:62:LEU:HD13 | 1.85 | 0.58 |
| 10:AJ:88:MET:HB3 | 10:AJ:89:ARG:HH12 | 1.68 | 0.58 |
| 22:BA:60:G:O2' | 22:BA:61:C:P | 2.62 | 0.58 |
| 22:BA:564:C:C2' | 22:BA:565:C:H5' | 2.32 | 0.58 |
| 22:BA:639:U:H2' | 22:BA:640:C:C6 | 2.38 | 0.58 |
| 22:BA:726:G:O2' | 22:BA:727:A:P | 2.60 | 0.58 |
| 22:BA:2210:U:H4' | 22:BA:2211:A:C5' | 2.32 | 0.58 |
| 22:BA:2813:A:C2 | 22:BA:2887:A:N6 | 2.63 | 0.58 |
| 28:BG:9:VAL:O | 28:BG:11:PRO:HD3 | 2.03 | 0.58 |
| 34:BM:76:LYS:O | 34:BM:77:PRO:O | 2.20 | 0.58 |
| 34:BM:76:LYS:HG3 | 34:BM:77:PRO:HD2 | 1.85 | 0.58 |
| 35:BN:66:ALA:O | 35:BN:69:ARG:O | 2.21 | 0.58 |
| 36:BO:31:THR:HG22 | 36:BO:34:HIS:N | 2.15 | 0.58 |
| 37:BP:52:ARG:HG2 | 37:BP:52:ARG:HH11 | 1.68 | 0.58 |
| 39:BR:49:ILE:HB | 39:BR:51:VAL:O | 2.03 | 0.58 |
| 41:BT:32:LEU:O | 41:BT:34:VAL:HG13 | 2.04 | 0.58 |
| 41:BT:38:ALA:HB3 | 41:BT:81:LYS:HE2 | 1.85 | 0.58 |
| 41:BT:54:GLU:O | 41:BT:55:VAL:HB | 2.03 | 0.58 |
| 53:CA:251:G:H4' | 53:CA:252:U:H5' | 1.85 | 0.58 |
| 53:CA:642:A:C8 | 8:CH:106:SER:HA | 2.38 | 0.58 |
| 53:CA:855:U:H5 | 53:CA:871:U:O4 | 1.86 | 0.58 |
| 53:CA:892:A:O2' | 53:CA:1415:G:H4' | 2.03 | 0.58 |
| 53:CA:1124:G:O2' | 53:CA:1125:U:C5 | 2.56 | 0.58 |
| 4:CD:49:ASP:O | 4:CD:53:GLN:HG3 | 2.02 | 0.58 |
| 5:CE:38:VAL:HG12 | 5:CE:39:GLY:H | 1.67 | 0.58 |
| 5:CE:84:VAL:HG22 | 5:CE:85:LYS:N | 2.18 | 0.58 |
| 5:CE:104:ILE:HA | 5:CE:122:VAL:HB | 1.85 | 0.58 |
| 54:CG:135:LYS:O | 54:CG:139:ASP:HB2 | 2.03 | 0.58 |
| 57:DA:404:A:H5' | 57:DA:405:U:OP1 | 2.02 | 0.58 |
| 57:DA:634:C:H2' | 57:DA:635:C:C6 | 2.38 | 0.58 |
| 57:DA:639:U:O2' | 57:DA:640:C:O4' | 2.22 | 0.58 |
| 57:DA:1286:A:C4 | 57:DA:1289:C:N4 | 2.71 | 0.58 |
| 57:DA:1325:U:H4' | 57:DA:1326:U:OP1 | 2.03 | 0.58 |
| 57:DA:1809:A:C2' | 57:DA:1810:A:C8 | 2.86 | 0.58 |
| 57:DA:2015:A:C5 | 48:D0:2:VAL:HG11 | 2.37 | 0.58 |
| 25:DD:148:GLN:HG2 | 25:DD:152:PRO:HG2 | 1.84 | 0.58 |
| 28:DG:163:TYR:N | 28:DG:163:TYR:HD2 | 2.00 | 0.58 |
| 33:DL:79:LEU:HD22 | 33:DL:115:GLU:O | 2.02 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 34:DM:34:LYS:HB2 | 34:DM:131:VAL:CG2 | 2.33 | 0.58 |
| 48:D0:37:HIS:CG | 48:D0:43:THR:HG22 | 2.38 | 0.58 |
| 1:AA:184:G:H2' | 1:AA:185:U:C5 | 2.37 | 0.58 |
| 10:AJ:29:ALA:HB1 | 10:AJ:36:VAL:HG21 | 1.84 | 0.58 |
| 12:AL:64:SER:OG | 12:AL:96:THR:HG23 | 2.02 | 0.58 |
| 12:AL:82:ARG:NH1 | 12:AL:83:GLY:O | 2.36 | 0.58 |
| 13:AM:40:GLU:HG3 | 13:AM:41:ASP:H | 1.68 | 0.58 |
| 16:AP:77:GLU:C | 16:AP:79:ASN:H | 2.06 | 0.58 |
| 17:AQ:60:ILE:HG22 | 17:AQ:72:TRP:HE3 | 1.68 | 0.58 |
| 22:BA:511:U:O4 | 22:BA:512:G:C2 | 2.55 | 0.58 |
| 22:BA:930:G:H1' | 47:BZ:24:LEU:HD21 | 1.85 | 0.58 |
| 22:BA:1794:A:H2' | 22:BA:1795:C:H6 | 1.67 | 0.58 |
| 22:BA:1931:U:O2' | 22:BA:1932:A:H5' | 2.03 | 0.58 |
| 22:BA:1945:G:C4 | 22:BA:1946:U:C5 | 2.90 | 0.58 |
| 22:BA:2685:G:OP1 | 32:BK:78:ARG:NH2 | 2.35 | 0.58 |
| 22:BA:2821:A:H4' | 25:BD:167:ASN:ND2 | 2.18 | 0.58 |
| 24:BC:170:TYR:CE2 | 24:BC:184:GLU:HA | 2.38 | 0.58 |
| 28:BG:8:VAL:O | 28:BG:9:VAL:HG12 | 2.03 | 0.58 |
| 28:BG:83:THR:HA | 28:BG:84:LYS:CE | 2.34 | 0.58 |
| 33:BL:30:THR:O | 33:BL:33:ARG:HG2 | 2.04 | 0.58 |
| 38:BQ:86:SER:O | 38:BQ:87:VAL:C | 2.42 | 0.58 |
| 40:BS:63:GLY:O | 40:BS:64:ALA:CB | 2.51 | 0.58 |
| 41:BT:11:LEU:HG | 41:BT:46:ALA:HB1 | 1.85 | 0.58 |
| 53:CA:170:U:O2' | 53:CA:171:A:H5' | 2.04 | 0.58 |
| 53:CA:252:U:H2' | 53:CA:253:A:H8 | 1.67 | 0.58 |
| 53:CA:599:C:O3' | 8:CH:121:GLY:HA3 | 2.03 | 0.58 |
| 53:CA:615:G:H2' | 53:CA:616:G:H8 | 1.68 | 0.58 |
| 53:CA:722:G:O3' | 53:CA:723:U:C5 | 2.56 | 0.58 |
| 4:CD:25:ARG:NH1 | 4:CD:25:ARG:HG2 | 2.18 | 0.58 |
| 54:CG:112:ASP:HB3 | 54:CG:117:LEU:HB3 | 1.85 | 0.58 |
| 12:CL:34:THR:HG22 | 12:CL:35:ARG:HG2 | 1.85 | 0.58 |
| 14:CN:8:ARG:HD2 | 14:CN:12:ARG:CZ | 2.34 | 0.58 |
| 57:DA:233:A:O2' | 57:DA:234:U:O5' | 2.21 | 0.58 |
| 57:DA:593:U:H2' | 57:DA:594:U:H6 | 1.67 | 0.58 |
| 57:DA:1231:U:H2' | 57:DA:1232:G:C8 | 2.38 | 0.58 |
| 57:DA:1283:G:H22 | 57:DA:1286:A:H5' | 1.66 | 0.58 |
| 57:DA:1439:A:H3' | 57:DA:1439:A:C8 | 2.39 | 0.58 |
| 57:DA:1441:G:H2' | 57:DA:1442:U:C6 | 2.38 | 0.58 |
| 57:DA:1519:G:H5' | 57:DA:1520:U:OP2 | 2.03 | 0.58 |
| 57:DA:2030:A:N3 | 57:DA:2499:C:H5'' | 2.18 | 0.58 |
| 58:DB:11:C:H2' | 58:DB:15:A:N6 | 2.19 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 31:DJ:41:LYS:C | 31:DJ:43:GLU:N | 2.56 | 0.58 |
| 32:DK:88:ASN:HB2 | 32:DK:91:SER:HB2 | 1.85 | 0.58 |
| 34:DM:108:VAL:HG11 | 34:DM:112:LEU:HD12 | 1.85 | 0.58 |
| 38:DQ:108:LEU:O | 38:DQ:108:LEU:HD23 | 2.03 | 0.58 |
| 1:AA:144:G:C4 | 1:AA:179:A:C2 | 2.92 | 0.58 |
| 1:AA:330:C:H6 | 1:AA:330:C:H5'' | 1.69 | 0.58 |
| 1:AA:996:A:C2 | 1:AA:1046:A:H5' | 2.38 | 0.58 |
| 1:AA:1055:A:H1' | 3:AC:155:ARG:NH2 | 2.16 | 0.58 |
| 1:AA:1094:G:O2' | 1:AA:1095:U:P | 2.61 | 0.58 |
| 1:AA:1108:G:H5'' | 3:AC:175:HIS:ND1 | 2.17 | 0.58 |
| 1:AA:1223:C:OP1 | 1:AA:1224:U:H3' | 2.03 | 0.58 |
| 2:AB:40:ILE:HG21 | 2:AB:201:GLY:N | 2.18 | 0.58 |
| 4:AD:61:ARG:HG2 | 4:AD:71:PHE:CD2 | 2.38 | 0.58 |
| 20:AT:27:MET:O | 20:AT:31:ILE:HG13 | 2.03 | 0.58 |
| 22:BA:119:A:H4' | 22:BA:120:U:O5' | 2.04 | 0.58 |
| 22:BA:527:C:H4' | 22:BA:528:A:O5' | 2.03 | 0.58 |
| 22:BA:616:A:H4' | 26:BE:101:TYR:CE2 | 2.38 | 0.58 |
| 22:BA:1130:U:O2' | 22:BA:1131:G:H8 | 1.87 | 0.58 |
| 22:BA:1962:C:O2' | 22:BA:1964:G:OP2 | 2.22 | 0.58 |
| 22:BA:2244:U:O2' | 22:BA:2245:U:H5' | 2.03 | 0.58 |
| 22:BA:2646:C:OP2 | 22:BA:2732:G:O2' | 2.22 | 0.58 |
| 22:BA:2786:U:H2' | 22:BA:2787:C:H6 | 1.68 | 0.58 |
| 28:BG:10:VAL:O | 28:BG:10:VAL:CG2 | 2.51 | 0.58 |
| 28:BG:112:VAL:HG23 | 28:BG:113:ASP:H | 1.68 | 0.58 |
| 41:BT:87:LEU:HB2 | 41:BT:91:GLN:HE21 | 1.67 | 0.58 |
| 53:CA:818:G:H3' | 53:CA:819:A:C5' | 2.33 | 0.58 |
| 53:CA:1258:G:O2' | 53:CA:1259:C:H5' | 2.04 | 0.58 |
| 3:CC:133:MET:HB2 | 3:CC:150:VAL:HG21 | 1.84 | 0.58 |
| 4:CD:137:SER:O | 4:CD:140:ASP:HB2 | 2.02 | 0.58 |
| 18:CR:22:TYR:HA | 18:CR:57:ALA:HB1 | 1.86 | 0.58 |
| 57:DA:91:A:HO2' | 57:DA:92:U:H6 | 1.51 | 0.58 |
| 57:DA:391:A:H2' | 57:DA:392:U:C6 | 2.38 | 0.58 |
| 57:DA:422:A:H2' | 57:DA:423:A:C8 | 2.39 | 0.58 |
| 57:DA:534:U:H1' | 38:DQ:44:TYR:HB3 | 1.85 | 0.58 |
| 57:DA:754:U:H2' | 57:DA:755:U:H6 | 1.68 | 0.58 |
| 57:DA:1130:U:O2' | 57:DA:1131:G:C8 | 2.57 | 0.58 |
| 57:DA:1420:A:C8 | 57:DA:2211:A:N6 | 2.68 | 0.58 |
| 57:DA:1918:A:H4' | 57:DA:1919:A:OP1 | 2.02 | 0.58 |
| 57:DA:2360:G:H5'' | 57:DA:2361:G:OP2 | 2.04 | 0.58 |
| 57:DA:2507:C:H1' | 57:DA:2583:G:N2 | 2.17 | 0.58 |
| 57:DA:2677:G:H2' | 57:DA:2678:C:C6 | 2.38 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 24:DC:62:ARG:HH21 | 24:DC:62:ARG:CG | 2.13 | 0.58 |
| 25:DD:208:LYS:O | 25:DD:209:ALA:CB | 2.51 | 0.58 |
| 26:DE:105:LEU:HB3 | 26:DE:200:LEU:HD11 | 1.85 | 0.58 |
| 28:DG:93:TYR:CD2 | 28:DG:93:TYR:N | 2.69 | 0.58 |
| 40:DS:47:VAL:O | 40:DS:50:VAL:HB | 2.04 | 0.58 |
| 52:D4:3:VAL:O | 52:D4:4:ARG:HB2 | 2.03 | 0.58 |
| 2:AB:36:LYS:HA | 2:AB:36:LYS:HE3 | 1.85 | 0.58 |
| 2:AB:86:CYS:SG | 2:AB:221:ARG:HB2 | 2.43 | 0.58 |
| 2:AB:103:TRP:CH2 | 2:AB:107:ARG:HD3 | 2.38 | 0.58 |
| 5:AE:59:ILE:O | 5:AE:62:ALA:HB3 | 2.04 | 0.58 |
| 5:AE:108:GLY:O | 5:AE:109:ALA:HB3 | 2.04 | 0.58 |
| 9:AI:6:TYR:CG | 9:AI:7:GLY:N | 2.69 | 0.58 |
| 12:AL:81:ILE:HD11 | 12:AL:94:TYR:CG | 2.39 | 0.58 |
| 20:AT:34:VAL:HG11 | 20:AT:78:LEU:HD22 | 1.86 | 0.58 |
| 22:BA:7:G:H2' | 22:BA:8:C:C6 | 2.39 | 0.58 |
| 22:BA:923:G:H21 | 44:BW:23:LYS:HZ3 | 1.52 | 0.58 |
| 22:BA:1180:U:O2' | 22:BA:1181:U:H5' | 2.04 | 0.58 |
| 22:BA:2020:A:O3' | 48:B0:8:THR:HG21 | 2.03 | 0.58 |
| 22:BA:2214:C:H5' | 22:BA:2214:C:C6 | 2.29 | 0.58 |
| 22:BA:2783:U:H2' | 22:BA:2784:U:C6 | 2.38 | 0.58 |
| 40:BS:73:LYS:HA | 40:BS:73:LYS:HE3 | 1.85 | 0.58 |
| 43:BV:10:LYS:HZ1 | 43:BV:11:GLU:HG3 | 1.68 | 0.58 |
| 50:B2:43:THR:O | 50:B2:44:VAL:CG2 | 2.51 | 0.58 |
| 53:CA:93:U:O5' | 53:CA:93:U:H6 | 1.86 | 0.58 |
| 53:CA:745:G:H2' | 53:CA:746:A:H8 | 1.69 | 0.58 |
| 53:CA:1533:C:C2' | 53:CA:1534:A:H5'' | 2.32 | 0.58 |
| 2:CB:20:ARG:HH21 | 2:CB:38:HIS:CD2 | 2.22 | 0.58 |
| 4:CD:109:THR:HG22 | 4:CD:111:ALA:N | 2.15 | 0.58 |
| 11:CK:14:GLN:HA | 11:CK:76:TYR:O | 2.03 | 0.58 |
| 12:CL:80:LEU:O | 12:CL:97:VAL:HG22 | 2.04 | 0.58 |
| 55:CM:18:LEU:HD22 | 55:CM:32:ILE:HG21 | 1.86 | 0.58 |
| 14:CN:66:THR:CG2 | 14:CN:82:LYS:HE3 | 2.33 | 0.58 |
| 21:CU:33:ARG:NH1 | 21:CU:34:ARG:HD3 | 2.19 | 0.58 |
| 57:DA:154:U:H2' | 57:DA:155:A:O4' | 2.03 | 0.58 |
| 57:DA:633:A:O5' | 57:DA:633:A:H8 | 1.85 | 0.58 |
| 57:DA:708:G:N2 | 57:DA:724:U:H1' | 2.19 | 0.58 |
| 57:DA:740:C:C5 | 57:DA:1981:A:C2 | 2.92 | 0.58 |
| 57:DA:740:C:O2' | 57:DA:741:U:H5' | 2.04 | 0.58 |
| 57:DA:802:A:H2' | 57:DA:803:U:H6 | 1.63 | 0.58 |
| 57:DA:1255:U:HO2' | 57:DA:1256:G:P | 2.26 | 0.58 |
| 57:DA:1286:A:C6 | 57:DA:1289:C:N3 | 2.72 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:1964:G:H4' | 57:DA:1965:C:OP2 | 2.03 | 0.58 |
| 57:DA:2060:A:H62 | 26:DE:69:ARG:HH12 | 1.50 | 0.58 |
| 57:DA:2296:U:H5 | 36:DO:9:ARG:HH22 | 1.49 | 0.58 |
| 38:DQ:60:TRP:O | 38:DQ:64:ILE:HG12 | 2.03 | 0.58 |
| 42:DU:47:PRO:HB3 | 42:DU:54:PRO:CG | 2.33 | 0.58 |
| 1:AA:243:A:C2 | 1:AA:245:U:H2' | 2.39 | 0.58 |
| 1:AA:484:G:H4' | 1:AA:485:U:O5' | 2.02 | 0.58 |
| 1:AA:695:A:H2' | 1:AA:696:A:C8 | 2.38 | 0.58 |
| 1:AA:1162:C:H2' | 1:AA:1163:A:H8 | 1.68 | 0.58 |
| 1:AA:1466:C:H2' | 1:AA:1467:C:O4' | 2.04 | 0.58 |
| 3:AC:5:HIS:HD2 | 3:AC:7:ASN:H | 1.52 | 0.58 |
| 7:AG:12:LEU:H | 7:AG:12:LEU:CD2 | 2.10 | 0.58 |
| 11:AK:22:ILE:O | 11:AK:22:ILE:HG13 | 2.02 | 0.58 |
| 16:AP:19:VAL:HG13 | 16:AP:37:GLY:C | 2.24 | 0.58 |
| 22:BA:243:U:O2' | 22:BA:244:A:H5' | 2.04 | 0.58 |
| 22:BA:482:A:N6 | 22:BA:506:G:O2' | 2.33 | 0.58 |
| 22:BA:1062:G:O2' | 22:BA:1063:G:O4' | 2.20 | 0.58 |
| 22:BA:1286:A:O2' | 22:BA:1288:G:OP2 | 2.19 | 0.58 |
| 22:BA:2373:G:H2' | 22:BA:2374:C:C6 | 2.39 | 0.58 |
| 22:BA:2498:C:O2' | 22:BA:2499:C:H5' | 2.04 | 0.58 |
| 34:BM:114:ARG:HA | 34:BM:130:PHE:CE1 | 2.39 | 0.58 |
| 42:BU:51:LEU:O | 42:BU:52:ASN:HB2 | 2.04 | 0.58 |
| 52:B4:9:LYS:CD | 52:B4:9:LYS:N | 2.66 | 0.58 |
| 53:CA:78:A:H2' | 53:CA:79:G:H8 | 1.68 | 0.58 |
| 53:CA:375:U:OP1 | 56:CP:70:ARG:HD3 | 2.02 | 0.58 |
| 53:CA:559:A:H4' | 53:CA:560:A:C5' | 2.33 | 0.58 |
| 53:CA:719:C:H3' | 53:CA:720:C:C6 | 2.38 | 0.58 |
| 53:CA:992:U:O2' | 53:CA:993:G:OP2 | 2.17 | 0.58 |
| 53:CA:1183:U:O2' | 53:CA:1184:G:OP1 | 2.20 | 0.58 |
| 53:CA:1239:A:H62 | 53:CA:1299:A:H61 | 1.51 | 0.58 |
| 53:CA:1381:U:C4 | 54:CG:77:ARG:NH1 | 2.72 | 0.58 |
| 4:CD:112:GLU:O | 4:CD:116:LEU:HD23 | 2.03 | 0.58 |
| 4:CD:115:GLN:HE21 | 4:CD:153:ARG:NH2 | 2.02 | 0.58 |
| 9:CI:59:LYS:HG2 | 9:CI:60:LEU:HG | 1.85 | 0.58 |
| 12:CL:19:ASN:HD22 | 12:CL:19:ASN:N | 1.98 | 0.58 |
| 12:CL:33:CYS:HB3 | 12:CL:77:SER:O | 2.03 | 0.58 |
| 55:CM:78:ARG:HH21 | 55:CM:79:LEU:CD2 | 2.16 | 0.58 |
| 57:DA:82:U:H2' | 57:DA:83:A:H5'' | 1.86 | 0.58 |
| 57:DA:815:C:P | 39:DR:85:LYS:HE2 | 2.44 | 0.58 |
| 57:DA:1303:G:HO2' | 57:DA:1304:A:H8 | 1.50 | 0.58 |
| 57:DA:1387:A:N3 | 57:DA:1388:G:C8 | 2.72 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1552:A:H2' | 57:DA:1552:A:N3 | 2.18 | 0.58 |
| 57:DA:2313:C:O2' | 57:DA:2314:A:H8 | 1.76 | 0.58 |
| 57:DA:2572:A:C8 | 25:DD:149:ASN:ND2 | 2.69 | 0.58 |
| 57:DA:2807:U:H3' | 57:DA:2808:G:H5'' | 1.85 | 0.58 |
| 25:DD:21:SER:O | 25:DD:23:PRO:HD3 | 2.02 | 0.58 |
| 59:DF:39:VAL:HG22 | 59:DF:49:LEU:HG | 1.84 | 0.58 |
| 28:DG:112:VAL:CG1 | 28:DG:114:HIS:HB3 | 2.33 | 0.58 |
| 39:DR:70:GLU:CD | 39:DR:70:GLU:H | 2.06 | 0.58 |
| 44:DW:51:GLY:HA2 | 44:DW:59:PHE:HD2 | 1.67 | 0.58 |
| 49:D1:10:LEU:HD23 | 49:D1:20:TYR:HB3 | 1.86 | 0.58 |
| 1:AA:1087:G:O2' | 1:AA:1088:G:H5' | 2.03 | 0.58 |
| 8:AH:88:LYS:HG3 | 8:AH:89:ASP:N | 2.18 | 0.58 |
| 18:AR:59:LYS:HA | 18:AR:62:ARG:HD2 | 1.85 | 0.58 |
| 20:AT:26:MET:CE | 20:AT:56:ILE:HD11 | 2.34 | 0.58 |
| 22:BA:553:G:H2' | 22:BA:554:U:O4' | 2.04 | 0.58 |
| 22:BA:1140:C:P | 31:BJ:68:LYS:HZ3 | 2.26 | 0.58 |
| 22:BA:1791:A:N6 | 22:BA:1828:G:O2' | 2.26 | 0.58 |
| 22:BA:1984:G:C5 | 22:BA:1985:C:C5 | 2.91 | 0.58 |
| 25:BD:126:ASN:N | 25:BD:126:ASN:HD22 | 2.00 | 0.58 |
| 27:BF:175:PRO:O | 27:BF:176:PHE:HB2 | 2.03 | 0.58 |
| 28:BG:59:ASP:O | 28:BG:62:ALA:HB3 | 2.03 | 0.58 |
| 43:BV:42:LEU:CD1 | 43:BV:47:VAL:HG21 | 2.34 | 0.58 |
| 51:B3:44:ARG:N | 51:B3:45:PRO:HD2 | 2.19 | 0.58 |
| 53:CA:16:A:C2' | 53:CA:17:U:H5' | 2.34 | 0.58 |
| 53:CA:344:A:H5'' | 53:CA:345:C:C5 | 2.38 | 0.58 |
| 53:CA:415:A:H3' | 53:CA:416:G:H8 | 1.67 | 0.58 |
| 53:CA:985:C:O2' | 53:CA:986:U:H5' | 2.03 | 0.58 |
| 53:CA:995:C:N4 | 53:CA:1046:A:H1' | 2.18 | 0.58 |
| 53:CA:1009:U:H2' | 53:CA:1010:U:C6 | 2.37 | 0.58 |
| 53:CA:1217:C:OP1 | 14:CN:8:ARG:HB2 | 2.02 | 0.58 |
| 53:CA:1288:A:H2' | 53:CA:1289:A:C8 | 2.39 | 0.58 |
| 53:CA:1318:A:O2' | 19:CS:36:ARG:HD3 | 2.03 | 0.58 |
| 10:CJ:39:PRO:HA | 10:CJ:74:VAL:H | 1.68 | 0.58 |
| 14:CN:87:ALA:HB2 | 14:CN:92:ILE:HD12 | 1.86 | 0.58 |
| 57:DA:1821:A:OP1 | 24:DC:199:HIS:NE2 | 2.29 | 0.58 |
| 57:DA:1843:C:H6 | 57:DA:1843:C:O5' | 1.87 | 0.58 |
| 57:DA:2141:G:H2' | 57:DA:2142:A:C8 | 2.39 | 0.58 |
| 57:DA:2602:A:OP1 | 57:DA:2602:A:H3' | 2.02 | 0.58 |
| 57:DA:2629:U:H5'' | 57:DA:2630:G:OP1 | 2.03 | 0.58 |
| 58:DB:13:G:N2 | 58:DB:16:G:C4 | 2.72 | 0.58 |
| 58:DB:116:G:H2' | 58:DB:117:G:H8 | 1.68 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:DN:47:VAL:C | 35:DN:50:PRO:HD2 | 2.23 | 0.58 |
| 36:DO:30:ARG:HG2 | 36:DO:31:THR:N | 2.18 | 0.58 |
| 44:DW:18:LYS:HD3 | 44:DW:19:ARG:H | 1.66 | 0.58 |
| 1:AA:345:C:H3' | 37:BP:33:GLU:OE1 | 2.04 | 0.58 |
| 1:AA:411:A:H62 | 1:AA:413:G:N2 | 2.02 | 0.58 |
| 1:AA:428:G:O4' | 1:AA:430:A:C8 | 2.57 | 0.58 |
| 1:AA:918:A:H2' | 1:AA:919:A:C8 | 2.39 | 0.58 |
| 1:AA:968:A:H4' | 1:AA:969:A:OP2 | 2.02 | 0.58 |
| 1:AA:1167:A:C8 | 1:AA:1169:A:C6 | 2.92 | 0.58 |
| 1:AA:1506:U:H2' | 63:AA:1800:HOH:O | 2.02 | 0.58 |
| 5:AE:152:VAL:HG12 | 5:AE:155:LYS:HZ1 | 1.68 | 0.58 |
| 8:AH:33:VAL:HG12 | 8:AH:34:ALA:N | 2.19 | 0.58 |
| 11:AK:110:THR:HG22 | 21:AU:4:LYS:CB | 2.33 | 0.58 |
| 13:AM:81:ASP:OD2 | 27:BF:111:ARG:HD2 | 2.03 | 0.58 |
| 18:AR:54:LEU:HD12 | 18:AR:58:ILE:HD11 | 1.84 | 0.58 |
| 19:AS:46:LEU:H | 19:AS:61:VAL:HG23 | 1.69 | 0.58 |
| 22:BA:1165:A:H2' | 22:BA:1166:G:H8 | 1.68 | 0.58 |
| 24:BC:33:LEU:HA | 24:BC:61:TYR:O | 2.04 | 0.58 |
| 25:BD:114:LYS:HE3 | 25:BD:114:LYS:O | 2.03 | 0.58 |
| 28:BG:59:ASP:HB2 | 28:BG:63:GLN:CG | 2.33 | 0.58 |
| 38:BQ:60:TRP:CZ2 | 38:BQ:93:ILE:HB | 2.39 | 0.58 |
| 41:BT:57:VAL:O | 41:BT:85:VAL:O | 2.21 | 0.58 |
| 45:BX:39:VAL:HG21 | 45:BX:42:GLU:HB2 | 1.85 | 0.58 |
| 48:B0:27:LEU:HD23 | 48:B0:27:LEU:H | 1.69 | 0.58 |
| 53:CA:198:G:O6 | 53:CA:220:G:C5 | 2.57 | 0.58 |
| 53:CA:252:U:H5' | 53:CA:252:U:H6 | 1.69 | 0.58 |
| 53:CA:523:A:N6 | 12:CL:49:ARG:HH12 | 2.00 | 0.58 |
| 4:CD:137:SER:O | 4:CD:181:PHE:HD2 | 1.86 | 0.58 |
| 12:CL:3:VAL:HG23 | 12:CL:4:ASN:N | 2.16 | 0.58 |
| 12:CL:41:PRO:HD2 | 12:CL:47:ALA:O | 2.04 | 0.58 |
| 57:DA:117:G:N1 | 57:DA:119:A:N6 | 2.51 | 0.58 |
| 57:DA:271:G:O2' | 57:DA:272:A:H5'' | 2.04 | 0.58 |
| 57:DA:1275:A:HO2' | 57:DA:1276:A:C1' | 2.14 | 0.58 |
| 26:DE:61:ARG:HE | 26:DE:65:THR:HB | 1.69 | 0.58 |
| 28:DG:19:ASN:N | 28:DG:19:ASN:HD22 | 2.02 | 0.58 |
| 29:DH:54:LEU:HA | 29:DH:57:LYS:HG2 | 1.86 | 0.58 |
| 31:DJ:41:LYS:C | 31:DJ:43:GLU:H | 2.07 | 0.58 |
| 32:DK:104:THR:C | 32:DK:106:GLU:H | 2.07 | 0.58 |
| 43:DV:59:GLU:HG2 | 43:DV:60:VAL:H | 1.68 | 0.58 |
| 4:AD:129:VAL:HG13 | 4:AD:131:ILE:CD1 | 2.32 | 0.58 |
| 11:AK:107:THR:HG22 | 11:AK:108:ASN:ND2 | 2.17 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:AN:63:CYS:HG | 14:AN:66:THR:HG1 | 1.47 | 0.58 |
| 16:AP:5:ARG:HA | 16:AP:68:SER:OG | 2.04 | 0.58 |
| 22:BA:623:C:H2' | 22:BA:624:C:C6 | 2.39 | 0.58 |
| 22:BA:1150:C:H2' | 22:BA:1151:A:O5' | 2.04 | 0.58 |
| 22:BA:1330:C:O2' | 22:BA:1331:G:H5' | 2.04 | 0.58 |
| 22:BA:1865:U:O2' | 22:BA:1866:A:H5'' | 2.03 | 0.58 |
| 22:BA:1943:U:H4' | 22:BA:1944:U:O5' | 2.04 | 0.58 |
| 22:BA:1964:G:H4' | 22:BA:1965:C:OP2 | 2.02 | 0.58 |
| 22:BA:2060:A:O2' | 22:BA:2061:G:OP2 | 2.17 | 0.58 |
| 22:BA:2862:G:H2' | 22:BA:2863:C:H6 | 1.69 | 0.58 |
| 31:BJ:75:TYR:HD1 | 31:BJ:86:GLN:HB3 | 1.69 | 0.58 |
| 32:BK:18:ARG:H | 32:BK:45:GLU:CB | 2.15 | 0.58 |
| 49:B1:13:SER:HB3 | 49:B1:47:ILE:O | 2.04 | 0.58 |
| 53:CA:249:U:C2 | 53:CA:276:G:N1 | 2.72 | 0.58 |
| 53:CA:280:C:H4' | 53:CA:281:G:OP2 | 2.03 | 0.58 |
| 53:CA:404:G:N7 | 4:CD:1:ALA:HA | 2.18 | 0.58 |
| 53:CA:631:C:H5'' | 53:CA:632:U:O4' | 2.04 | 0.58 |
| 53:CA:1129:C:HO2' | 53:CA:1130:A:H8 | 1.45 | 0.58 |
| 53:CA:1272:G:H5' | 14:CN:33:VAL:HB | 1.86 | 0.58 |
| 53:CA:1297:G:C8 | 53:CA:1297:G:OP2 | 2.57 | 0.58 |
| 6:CF:42:TRP:HB2 | 6:CF:59:TYR:HB2 | 1.85 | 0.58 |
| 54:CG:42:VAL:O | 54:CG:43:TYR:HB2 | 2.03 | 0.58 |
| 8:CH:94:VAL:HG21 | 8:CH:127:TYR:HB3 | 1.86 | 0.58 |
| 10:CJ:42:LEU:HD22 | 10:CJ:71:LEU:HD23 | 1.85 | 0.58 |
| 18:CR:19:GLU:CD | 18:CR:20:ILE:N | 2.57 | 0.58 |
| 57:DA:484:C:N4 | 57:DA:497:A:C2 | 2.72 | 0.58 |
| 57:DA:503:A:C6 | 57:DA:506:G:C6 | 2.91 | 0.58 |
| 57:DA:524:G:H2' | 57:DA:525:U:H6 | 1.68 | 0.58 |
| 57:DA:1327:A:O2' | 57:DA:1328:A:O4' | 2.11 | 0.58 |
| 57:DA:2312:U:H2' | 57:DA:2313:C:C6 | 2.39 | 0.58 |
| 57:DA:2461:A:N1 | 57:DA:2490:G:N2 | 2.52 | 0.58 |
| 25:DD:107:VAL:HG13 | 25:DD:109:VAL:HG23 | 1.86 | 0.58 |
| 26:DE:147:LEU:O | 26:DE:148:ILE:HB | 2.03 | 0.58 |
| 59:DF:48:LEU:HD23 | 59:DF:48:LEU:H | 1.68 | 0.58 |
| 59:DF:66:ILE:HG13 | 59:DF:83:PRO:HB3 | 1.86 | 0.58 |
| 40:DS:27:LYS:O | 40:DS:71:VAL:HG12 | 2.03 | 0.58 |
| 43:DV:29:ILE:HG22 | 43:DV:39:ALA:HA | 1.86 | 0.58 |
| 1:AA:51:A:H4' | 1:AA:52:C:O5' | 2.03 | 0.58 |
| 1:AA:619:U:H3 | 4:AD:130:ASN:CB | 2.17 | 0.58 |
| 1:AA:754:C:H5'' | 1:AA:754:C:O2 | 2.03 | 0.58 |
| 1:AA:1319:A:H2' | 1:AA:1323:G:N7 | 2.19 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1365:G:H2' | 1:AA:1366:C:C6 | 2.39 | 0.58 |
| 2:AB:157:PRO:O | 2:AB:180:ILE:HD12 | 2.03 | 0.58 |
| 5:AE:143:LEU:O | 5:AE:146:MET:HB3 | 2.04 | 0.58 |
| 14:AN:11:LYS:HB2 | 14:AN:11:LYS:NZ | 2.19 | 0.58 |
| 22:BA:278:A:C2 | 22:BA:362:A:C8 | 2.92 | 0.58 |
| 22:BA:1106:G:C2 | 22:BA:1107:G:C8 | 2.92 | 0.58 |
| 22:BA:1459:G:O2' | 22:BA:1460:U:H3' | 2.04 | 0.58 |
| 22:BA:1735:A:H2' | 22:BA:1736:U:H6 | 1.69 | 0.58 |
| 22:BA:2358:A:H61 | 33:BL:54:GLN:HE22 | 1.51 | 0.58 |
| 22:BA:2645:G:H3' | 22:BA:2646:C:H5' | 1.86 | 0.58 |
| 22:BA:2672:U:H2' | 22:BA:2673:G:O5' | 2.04 | 0.58 |
| 24:BC:173:LEU:HD22 | 24:BC:183:VAL:CG2 | 2.34 | 0.58 |
| 25:BD:101:PHE:N | 25:BD:101:PHE:CD1 | 2.72 | 0.58 |
| 32:BK:34:GLY:O | 32:BK:35:VAL:C | 2.42 | 0.58 |
| 33:BL:77:ILE:HG12 | 33:BL:95:LEU:HD13 | 1.86 | 0.58 |
| 36:BO:79:ALA:HB2 | 36:BO:110:ALA:HA | 1.86 | 0.58 |
| 40:BS:84:ARG:O | 40:BS:95:ARG:O | 2.22 | 0.58 |
| 41:BT:25:GLU:HA | 41:BT:28:ASN:O | 2.04 | 0.58 |
| 53:CA:321:A:O2' | 53:CA:1436:U:H5' | 2.03 | 0.58 |
| 53:CA:623:C:H6 | 53:CA:623:C:O5' | 1.87 | 0.58 |
| 53:CA:934:C:H4' | 53:CA:935:A:OP1 | 2.03 | 0.58 |
| 53:CA:1014:A:C2 | 53:CA:1219:A:H1' | 2.39 | 0.58 |
| 53:CA:1190:G:O2' | 53:CA:1191:A:P | 2.61 | 0.58 |
| 5:CE:52:ALA:HB2 | 5:CE:61:LYS:HE3 | 1.86 | 0.58 |
| 19:CS:52:ASN:HD21 | 19:CS:55:GLN:N | 2.02 | 0.58 |
| 57:DA:104:A:H2' | 57:DA:105:C:C6 | 2.39 | 0.58 |
| 57:DA:858:G:C4 | 57:DA:2268:A:C2 | 2.91 | 0.58 |
| 57:DA:1056:G:C1' | 57:DA:1103:A:H61 | 2.16 | 0.58 |
| 57:DA:1068:G:C8 | 57:DA:1069:A:N7 | 2.72 | 0.58 |
| 57:DA:1359:A:N1 | 57:DA:1360:G:H1' | 2.17 | 0.58 |
| 57:DA:2093:G:O6 | 57:DA:2225:A:C2' | 2.52 | 0.58 |
| 58:DB:27:C:H2' | 58:DB:28:C:H6 | 1.67 | 0.58 |
| 25:DD:178:VAL:HG12 | 25:DD:179:ARG:HG3 | 1.86 | 0.58 |
| 29:DH:102:ALA:C | 29:DH:104:THR:H | 2.07 | 0.58 |
| 33:DL:141:LYS:HD2 | 33:DL:142:ILE:N | 2.19 | 0.58 |
| 37:DP:50:ARG:CA | 37:DP:57:ALA:O | 2.52 | 0.58 |
| 48:D0:26:SER:O | 48:D0:27:LEU:HD13 | 2.03 | 0.58 |
| 48:D0:38:LEU:HB2 | 48:D0:41:HIS:NE2 | 2.18 | 0.58 |
| 1:AA:415:A:H2' | 1:AA:416:G:H8 | 1.67 | 0.57 |
| 1:AA:426:U:O2' | 1:AA:427:U:H5' | 2.04 | 0.57 |
| 1:AA:480:U:H5'' | 1:AA:481:G:OP2 | 2.04 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1261:A:N1 | 1:AA:1274:A:C2 | 2.72 | 0.57 |
| 1:AA:1322:C:HO2' | 1:AA:1323:G:P | 2.26 | 0.57 |
| 2:AB:74:ALA:O | 2:AB:75:ALA:HB2 | 2.03 | 0.57 |
| 4:AD:151:GLN:H | 4:AD:154:VAL:CG1 | 2.17 | 0.57 |
| 15:AO:63:ARG:HG2 | 15:AO:87:ARG:NH1 | 2.11 | 0.57 |
| 16:AP:59:HIS:CE1 | 16:AP:63:GLN:NE2 | 2.71 | 0.57 |
| 19:AS:43:MET:O | 19:AS:61:VAL:HG21 | 2.04 | 0.57 |
| 22:BA:49:A:H61 | 22:BA:177:G:H2' | 1.69 | 0.57 |
| 22:BA:568:U:O2 | 22:BA:570:G:C8 | 2.56 | 0.57 |
| 22:BA:1063:G:H2' | 22:BA:1064:C:O4' | 2.04 | 0.57 |
| 22:BA:2428:G:OP1 | 22:BA:2429:G:OP1 | 2.22 | 0.57 |
| 36:BO:59:ALA:HA | 36:BO:62:LEU:HD12 | 1.86 | 0.57 |
| 44:BW:8:SER:O | 44:BW:9:THR:CG2 | 2.52 | 0.57 |
| 53:CA:31:G:H5' | 53:CA:306:A:N1 | 2.19 | 0.57 |
| 53:CA:109:A:H8 | 53:CA:327:A:O4' | 1.86 | 0.57 |
| 53:CA:264:C:O2' | 17:CQ:64:ARG:HG3 | 2.03 | 0.57 |
| 53:CA:577:G:C4 | 53:CA:816:A:C2 | 2.93 | 0.57 |
| 53:CA:1417:G:C6 | 53:CA:1482:G:C6 | 2.92 | 0.57 |
| 54:CG:100:MET:H | 54:CG:100:MET:HE3 | 1.69 | 0.57 |
| 54:CG:136:LYS:O | 54:CG:140:VAL:HG23 | 2.04 | 0.57 |
| 10:CJ:7:ARG:NH1 | 10:CJ:102:LEU:HG | 2.19 | 0.57 |
| 10:CJ:52:LEU:HD23 | 10:CJ:62:ARG:HG2 | 1.85 | 0.57 |
| 55:CM:82:LEU:HD21 | 19:CS:60:PHE:HB3 | 1.85 | 0.57 |
| 18:CR:58:ILE:O | 18:CR:62:ARG:HG3 | 2.04 | 0.57 |
| 57:DA:28:A:C6 | 57:DA:513:A:C8 | 2.91 | 0.57 |
| 57:DA:636:G:H3' | 33:DL:128:THR:HG21 | 1.86 | 0.57 |
| 57:DA:749:A:C6 | 57:DA:1618:A:C2 | 2.92 | 0.57 |
| 57:DA:1153:C:H2' | 57:DA:1154:G:C8 | 2.39 | 0.57 |
| 57:DA:1274:A:O2' | 57:DA:1275:A:C5' | 2.52 | 0.57 |
| 57:DA:1737:G:N7 | 57:DA:1738:G:C6 | 2.72 | 0.57 |
| 57:DA:2571:U:C4 | 57:DA:2574:G:C8 | 2.92 | 0.57 |
| 57:DA:2718:G:O3' | 37:DP:95:LYS:HG3 | 2.03 | 0.57 |
| 57:DA:2744:G:N2 | 57:DA:2745:C:C2 | 2.72 | 0.57 |
| 59:DF:107:VAL:N | 59:DF:108:PRO:CD | 2.67 | 0.57 |
| 28:DG:112:VAL:HG12 | 28:DG:114:HIS:N | 2.15 | 0.57 |
| 33:DL:110:VAL:HB | 33:DL:127:VAL:HA | 1.84 | 0.57 |
| 38:DQ:91:ARG:HG3 | 39:DR:11:GLN:NE2 | 2.18 | 0.57 |
| 44:DW:28:GLU:HG3 | 44:DW:29:SER:H | 1.68 | 0.57 |
| 1:AA:497:G:N2 | 1:AA:498:A:C6 | 2.72 | 0.57 |
| 1:AA:545:C:C5' | 4:AD:68:GLU:HG3 | 2.34 | 0.57 |
| 1:AA:633:G:O2' | 1:AA:634:C:H5' | 2.05 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1160:G:C6 | 1:AA:1181:G:O6 | 2.57 | 0.57 |
| 3:AC:33:ASP:O | 3:AC:37:LYS:HB2 | 2.04 | 0.57 |
| 16:AP:10:GLY:O | 16:AP:11:ALA:HB2 | 2.04 | 0.57 |
| 19:AS:4:LEU:H | 19:AS:4:LEU:HD12 | 1.68 | 0.57 |
| 22:BA:364:C:H2' | 22:BA:365:U:C6 | 2.38 | 0.57 |
| 22:BA:1313:U:H2' | 22:BA:1313:U:O2 | 2.04 | 0.57 |
| 22:BA:1534:U:H5' | 22:BA:1535:A:OP1 | 2.05 | 0.57 |
| 22:BA:2007:U:H2' | 22:BA:2008:C:H6 | 1.69 | 0.57 |
| 22:BA:2648:G:O2' | 22:BA:2649:C:H5' | 2.04 | 0.57 |
| 27:BF:147:ARG:HG3 | 27:BF:148:VAL:H | 1.68 | 0.57 |
| 30:BI:48:ILE:HG13 | 30:BI:49:GLU:H | 1.68 | 0.57 |
| 33:BL:94:THR:HG22 | 33:BL:95:LEU:H | 1.67 | 0.57 |
| 34:BM:96:ILE:C | 34:BM:96:ILE:HD12 | 2.25 | 0.57 |
| 37:BP:33:GLU:HB3 | 37:BP:36:LYS:H | 1.68 | 0.57 |
| 39:BR:46:GLU:OE1 | 39:BR:46:GLU:O | 2.21 | 0.57 |
| 39:BR:58:VAL:CG1 | 39:BR:102:SER:HB2 | 2.34 | 0.57 |
| 46:BY:26:PHE:HD1 | 46:BY:27:ASN:HD22 | 1.51 | 0.57 |
| 53:CA:960:U:C5 | 53:CA:1225:A:H1' | 2.40 | 0.57 |
| 53:CA:1089:G:H2' | 53:CA:1090:U:O4' | 2.04 | 0.57 |
| 53:CA:1226:C:H5'' | 55:CM:94:LEU:HD21 | 1.85 | 0.57 |
| 53:CA:1296:C:O2' | 53:CA:1302:C:C4 | 2.56 | 0.57 |
| 53:CA:1299:A:C8 | 53:CA:1301:U:H1' | 2.38 | 0.57 |
| 53:CA:1504:G:H3' | 53:CA:1505:G:H5' | 1.86 | 0.57 |
| 2:CB:105:THR:O | 2:CB:108:GLN:HG2 | 2.04 | 0.57 |
| 4:CD:31:CYS:O | 4:CD:32:LYS:HB2 | 2.05 | 0.57 |
| 54:CG:4:ARG:HG3 | 54:CG:5:VAL:N | 2.18 | 0.57 |
| 10:CJ:84:VAL:CG2 | 10:CJ:85:ASP:H | 2.06 | 0.57 |
| 55:CM:28:ARG:O | 55:CM:28:ARG:HD2 | 2.03 | 0.57 |
| 55:CM:36:ALA:HB2 | 55:CM:55:LEU:HD21 | 1.85 | 0.57 |
| 14:CN:62:ARG:HE | 14:CN:69:PRO:HA | 1.68 | 0.57 |
| 17:CQ:61:ARG:HG2 | 17:CQ:75:VAL:CG1 | 2.34 | 0.57 |
| 57:DA:36:G:N1 | 57:DA:445:C:C4 | 2.73 | 0.57 |
| 57:DA:287:G:O2' | 57:DA:288:U:H5' | 2.05 | 0.57 |
| 57:DA:308:G:C6 | 57:DA:309:A:C6 | 2.93 | 0.57 |
| 57:DA:632:A:H5'' | 33:DL:68:SER:OG | 2.04 | 0.57 |
| 57:DA:1006:C:C2 | 57:DA:1138:G:N2 | 2.72 | 0.57 |
| 57:DA:2874:C:H2' | 57:DA:2875:C:C5 | 2.39 | 0.57 |
| 58:DB:6:G:H4' | 58:DB:28:C:H4' | 1.86 | 0.57 |
| 25:DD:38:LYS:HB3 | 25:DD:38:LYS:HZ3 | 1.67 | 0.57 |
| 31:DJ:84:ILE:O | 31:DJ:84:ILE:HG23 | 2.05 | 0.57 |
| 41:DT:29:THR:N | 41:DT:87:LEU:HB2 | 2.19 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:842:U:H2' | 1:AA:844:G:P | 2.43 | 0.57 |
| 5:AE:120:HIS:C | 5:AE:121:ASN:HD22 | 2.08 | 0.57 |
| 9:AI:28:VAL:HB | 9:AI:63:TYR:CD2 | 2.34 | 0.57 |
| 11:AK:100:ASN:HB2 | 11:AK:106:ILE:HG21 | 1.85 | 0.57 |
| 14:AN:60:ARG:O | 14:AN:61:ASN:CB | 2.50 | 0.57 |
| 22:BA:381:G:OP1 | 45:BX:17:ARG:HD3 | 2.04 | 0.57 |
| 22:BA:699:A:H1' | 22:BA:1634:A:H2' | 1.85 | 0.57 |
| 22:BA:988:A:OP2 | 47:BZ:11:SER:HB3 | 2.03 | 0.57 |
| 22:BA:1028:A:N6 | 22:BA:1125:G:H2' | 2.19 | 0.57 |
| 22:BA:1045:C:C3' | 22:BA:1046:A:H5' | 2.34 | 0.57 |
| 22:BA:1269:A:H8 | 22:BA:1269:A:O5' | 1.87 | 0.57 |
| 22:BA:1998:A:H2' | 22:BA:1999:C:H6 | 1.68 | 0.57 |
| 23:BB:90:C:H6 | 23:BB:90:C:C5' | 2.11 | 0.57 |
| 25:BD:136:ASN:ND2 | 25:BD:139:SER:O | 2.36 | 0.57 |
| 31:BJ:118:MET:HA | 31:BJ:121:LYS:HE2 | 1.87 | 0.57 |
| 32:BK:43:ILE:HG12 | 32:BK:56:ASP:HB2 | 1.86 | 0.57 |
| 37:BP:37:LYS:HG2 | 37:BP:37:LYS:O | 2.04 | 0.57 |
| 53:CA:1213:A:O2' | 53:CA:1214:C:C5' | 2.42 | 0.57 |
| 10:CJ:37:ARG:HB3 | 10:CJ:74:VAL:O | 2.04 | 0.57 |
| 57:DA:12:U:O2 | 57:DA:12:U:H2' | 2.03 | 0.57 |
| 57:DA:17:G:H4' | 38:DQ:24:TYR:CE1 | 2.40 | 0.57 |
| 57:DA:118:A:O5' | 57:DA:119:A:H5'' | 2.04 | 0.57 |
| 57:DA:482:A:N6 | 57:DA:506:G:C4 | 2.71 | 0.57 |
| 57:DA:851:C:C4' | 47:DZ:46:MET:HG2 | 2.34 | 0.57 |
| 57:DA:1693:U:H4' | 57:DA:1694:C:OP2 | 2.04 | 0.57 |
| 57:DA:2267:A:N6 | 57:DA:2272:U:H3 | 2.03 | 0.57 |
| 57:DA:2298:A:H5' | 57:DA:2322:A:O2' | 2.04 | 0.57 |
| 57:DA:2313:C:O2' | 57:DA:2314:A:H5' | 2.03 | 0.57 |
| 57:DA:2623:G:H21 | 48:D0:18:HIS:CE1 | 2.22 | 0.57 |
| 57:DA:2642:G:H5' | 31:DJ:80:HIS:CE1 | 2.39 | 0.57 |
| 57:DA:2668:G:O2' | 57:DA:2669:G:H8 | 1.87 | 0.57 |
| 57:DA:2726:A:O2' | 57:DA:2727:A:H5' | 2.04 | 0.57 |
| 24:DC:177:SER:O | 24:DC:270:ARG:HG3 | 2.03 | 0.57 |
| 37:DP:7:LEU:O | 37:DP:7:LEU:HD12 | 2.05 | 0.57 |
| 37:DP:90:ALA:HB3 | 37:DP:110:LYS:HB2 | 1.87 | 0.57 |
| 41:DT:38:ALA:HB1 | 41:DT:81:LYS:HZ3 | 1.67 | 0.57 |
| 43:DV:27:PRO:O | 43:DV:88:HIS:HA | 2.02 | 0.57 |
| 1:AA:35:G:H2' | 1:AA:36:C:C6 | 2.40 | 0.57 |
| 1:AA:306:A:H2' | 1:AA:307:C:C6 | 2.39 | 0.57 |
| 1:AA:575:G:H2' | 1:AA:821:G:OP2 | 2.04 | 0.57 |
| 1:AA:826:C:C5' | 8:AH:12:ARG:HH21 | 2.12 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1064:G:N2 | 1:AA:1190:G:O2' | 2.36 | 0.57 |
| 1:AA:1324:A:H2' | 1:AA:1325:C:C6 | 2.39 | 0.57 |
| 8:AH:87:ARG:O | 8:AH:121:GLY:HA3 | 2.04 | 0.57 |
| 11:AK:126:ARG:CB | 21:AU:33:ARG:NH1 | 2.67 | 0.57 |
| 22:BA:42:A:C3' | 22:BA:43:G:H5'' | 2.34 | 0.57 |
| 22:BA:619:G:H5'' | 22:BA:620:G:OP2 | 2.04 | 0.57 |
| 22:BA:1179:G:OP2 | 22:BA:1180:U:H5'' | 2.05 | 0.57 |
| 22:BA:1983:G:O2' | 22:BA:1984:G:H5' | 2.03 | 0.57 |
| 22:BA:2203:U:H5'' | 22:BA:2204:G:OP1 | 2.04 | 0.57 |
| 24:BC:12:ARG:CG | 24:BC:12:ARG:NH1 | 2.59 | 0.57 |
| 24:BC:85:ASN:OD1 | 24:BC:85:ASN:N | 2.36 | 0.57 |
| 27:BF:131:VAL:HG22 | 27:BF:151:LEU:H | 1.69 | 0.57 |
| 37:BP:77:SER:HG | 37:BP:79:VAL:HG13 | 1.69 | 0.57 |
| 38:BQ:43:GLN:NE2 | 39:BR:77:PHE:HB3 | 2.12 | 0.57 |
| 39:BR:42:ALA:HA | 39:BR:46:GLU:CB | 2.30 | 0.57 |
| 40:BS:72:THR:HG21 | 40:BS:108:SER:OG | 2.05 | 0.57 |
| 53:CA:738:C:C6 | 53:CA:739:C:H5 | 2.21 | 0.57 |
| 53:CA:960:U:H5' | 53:CA:961:U:H5'' | 1.86 | 0.57 |
| 53:CA:1048:G:H21 | 53:CA:1214:C:H5 | 1.53 | 0.57 |
| 11:CK:63:GLN:HB2 | 11:CK:98:ALA:HB2 | 1.85 | 0.57 |
| 57:DA:206:U:O2' | 57:DA:207:A:H5' | 2.03 | 0.57 |
| 57:DA:414:C:H5'' | 57:DA:1879:C:O2' | 2.04 | 0.57 |
| 57:DA:579:G:C8 | 57:DA:2017:U:C4 | 2.93 | 0.57 |
| 57:DA:973:A:H5' | 57:DA:974:G:OP2 | 2.03 | 0.57 |
| 57:DA:1738:G:HO2' | 57:DA:1739:A:H8 | 1.49 | 0.57 |
| 57:DA:2353:G:H2' | 57:DA:2354:C:O4' | 2.03 | 0.57 |
| 57:DA:2408:U:O2' | 57:DA:2409:G:C5' | 2.53 | 0.57 |
| 57:DA:2542:A:H4' | 57:DA:2543:G:H5' | 1.84 | 0.57 |
| 24:DC:15:VAL:HG22 | 24:DC:204:LEU:O | 2.03 | 0.57 |
| 30:DI:109:ALA:HB1 | 30:DI:125:THR:HA | 1.85 | 0.57 |
| 35:DN:82:GLU:O | 35:DN:86:ARG:HG3 | 2.04 | 0.57 |
| 35:DN:96:ARG:HH11 | 35:DN:116:VAL:HG22 | 1.69 | 0.57 |
| 46:DY:39:GLN:O | 46:DY:42:LEU:HB2 | 2.04 | 0.57 |
| 1:AA:181:A:H5'' | 1:AA:182:A:OP1 | 2.04 | 0.57 |
| 1:AA:397:A:N7 | 1:AA:547:A:O2' | 2.36 | 0.57 |
| 1:AA:512:U:O2' | 1:AA:513:C:O4' | 2.22 | 0.57 |
| 1:AA:688:G:H5'' | 1:AA:688:G:C8 | 2.37 | 0.57 |
| 1:AA:1517:G:N3 | 22:BA:1919:A:O2' | 2.37 | 0.57 |
| 3:AC:34:SER:OG | 3:AC:94:ALA:HA | 2.03 | 0.57 |
| 4:AD:62:ARG:NE | 4:AD:62:ARG:HA | 2.19 | 0.57 |
| 4:AD:64:TYR:CE1 | 4:AD:93:LEU:HD13 | 2.39 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:AQ:51:GLU:HG2 | 17:AQ:52:CYS:SG | 2.45 | 0.57 |
| 22:BA:26:G:C6 | 22:BA:27:G:N1 | 2.72 | 0.57 |
| 22:BA:1348:C:H2' | 22:BA:1349:C:H5' | 1.86 | 0.57 |
| 22:BA:2641:G:OP1 | 31:BJ:76:HIS:HE1 | 1.87 | 0.57 |
| 23:BB:98:G:H1 | 43:BV:14:LYS:HB3 | 1.69 | 0.57 |
| 25:BD:29:VAL:HB | 25:BD:98:VAL:HG22 | 1.86 | 0.57 |
| 25:BD:142:VAL:HB | 25:BD:143:PRO:CD | 2.34 | 0.57 |
| 30:BI:53:PRO:O | 30:BI:74:PRO:HD2 | 2.04 | 0.57 |
| 34:BM:23:GLY:O | 34:BM:101:VAL:HG12 | 2.04 | 0.57 |
| 39:BR:62:GLU:O | 39:BR:64:VAL:HG23 | 2.03 | 0.57 |
| 44:BW:9:THR:HG23 | 44:BW:10:ARG:CD | 2.19 | 0.57 |
| 44:BW:28:GLU:O | 44:BW:30:VAL:N | 2.38 | 0.57 |
| 45:BX:39:VAL:HG22 | 45:BX:44:ARG:O | 2.04 | 0.57 |
| 52:B4:24:ARG:HG2 | 52:B4:24:ARG:HH21 | 1.70 | 0.57 |
| 52:B4:37:GLN:O | 52:B4:37:GLN:HG2 | 2.04 | 0.57 |
| 53:CA:373:A:C2' | 53:CA:374:A:H5' | 2.34 | 0.57 |
| 53:CA:461:A:N3 | 53:CA:461:A:H2' | 2.19 | 0.57 |
| 53:CA:1386:G:O2' | 53:CA:1387:G:H5' | 2.05 | 0.57 |
| 2:CB:90:PHE:CE2 | 2:CB:149:GLY:HA3 | 2.39 | 0.57 |
| 6:CF:42:TRP:HB2 | 6:CF:59:TYR:CB | 2.34 | 0.57 |
| 8:CH:24:VAL:HG12 | 8:CH:62:LEU:HD21 | 1.86 | 0.57 |
| 20:CT:2:ASN:N | 20:CT:7:LYS:NZ | 2.49 | 0.57 |
| 21:CU:33:ARG:CZ | 21:CU:34:ARG:HD3 | 2.34 | 0.57 |
| 57:DA:251:A:H8 | 57:DA:251:A:O5' | 1.87 | 0.57 |
| 57:DA:828:U:H2' | 57:DA:828:U:O2 | 2.02 | 0.57 |
| 57:DA:1055:G:C3' | 57:DA:1056:G:H5' | 2.35 | 0.57 |
| 57:DA:1142:A:C8 | 57:DA:1144:A:N7 | 2.73 | 0.57 |
| 57:DA:1476:U:H1' | 57:DA:1732:C:C2 | 2.40 | 0.57 |
| 57:DA:1553:A:C8 | 57:DA:1555:G:C6 | 2.93 | 0.57 |
| 57:DA:1555:G:H2' | 57:DA:1556:C:C6 | 2.39 | 0.57 |
| 58:DB:45:A:H2' | 58:DB:46:A:H8 | 1.67 | 0.57 |
| 25:DD:137:SER:CB | 25:DD:138:LEU:HD22 | 2.33 | 0.57 |
| 26:DE:128:ALA:HB1 | 26:DE:129:PRO:CD | 2.32 | 0.57 |
| 28:DG:115:GLN:HG2 | 28:DG:116:LEU:H | 1.68 | 0.57 |
| 32:DK:10:VAL:HG13 | 32:DK:12:ASP:OD1 | 2.04 | 0.57 |
| 35:DN:1:MET:O | 35:DN:2:ARG:HB2 | 2.04 | 0.57 |
| 35:DN:103:ARG:HB2 | 35:DN:110:MET:CG | 2.34 | 0.57 |
| 1:AA:122:G:H2' | 1:AA:123:U:H6 | 1.70 | 0.57 |
| 1:AA:508:U:H4' | 1:AA:509:A:OP1 | 2.04 | 0.57 |
| 1:AA:1016:A:C8 | 1:AA:1017:U:H1' | 2.40 | 0.57 |
| 1:AA:1151:A:H5' | 10:AJ:42:LEU:O | 2.04 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:AC:49:ALA:HB1 | 3:AC:75:VAL:HG22 | 1.86 | 0.57 |
| 17:AQ:20:ILE:N | 17:AQ:47:ASP:OD1 | 2.37 | 0.57 |
| 17:AQ:80:LYS:HB2 | 17:AQ:80:LYS:NZ | 2.19 | 0.57 |
| 20:AT:60:GLN:NE2 | 20:AT:65:LEU:HD21 | 2.20 | 0.57 |
| 22:BA:94:A:H2' | 22:BA:95:A:C8 | 2.40 | 0.57 |
| 22:BA:1247:A:C4 | 22:BA:1249:U:C5 | 2.91 | 0.57 |
| 22:BA:1539:U:C2 | 22:BA:1540:G:C8 | 2.93 | 0.57 |
| 22:BA:2134:A:N6 | 22:BA:2135:A:N6 | 2.53 | 0.57 |
| 22:BA:2391:G:O2' | 22:BA:2424:C:N4 | 2.33 | 0.57 |
| 22:BA:2531:A:P | 28:BG:174:LYS:HG3 | 2.43 | 0.57 |
| 29:BH:2:GLN:HA | 29:BH:20:ASN:HA | 1.86 | 0.57 |
| 31:BJ:4:PHE:O | 31:BJ:44:TYR:HE1 | 1.88 | 0.57 |
| 32:BK:59:LYS:HG3 | 32:BK:89:ASN:HD22 | 1.70 | 0.57 |
| 38:BQ:39:ILE:O | 38:BQ:43:GLN:HG3 | 2.04 | 0.57 |
| 41:BT:24:MET:O | 41:BT:24:MET:HG3 | 2.04 | 0.57 |
| 41:BT:68:LYS:HE2 | 41:BT:77:ARG:NE | 2.20 | 0.57 |
| 53:CA:106:C:O2 | 53:CA:379:C:H4' | 2.04 | 0.57 |
| 53:CA:134:G:H2' | 53:CA:135:C:O4' | 2.05 | 0.57 |
| 53:CA:246:A:C4 | 53:CA:282:A:N6 | 2.73 | 0.57 |
| 53:CA:740:U:O2' | 53:CA:741:G:H5' | 2.04 | 0.57 |
| 53:CA:1151:A:H2' | 53:CA:1152:A:C8 | 2.40 | 0.57 |
| 53:CA:1206:G:C6 | 53:CA:1207:G:C5 | 2.93 | 0.57 |
| 53:CA:1409:C:H6 | 53:CA:1409:C:O5' | 1.88 | 0.57 |
| 5:CE:98:ALA:O | 5:CE:121:ASN:HB2 | 2.03 | 0.57 |
| 57:DA:60:G:HO2' | 57:DA:61:C:P | 2.27 | 0.57 |
| 57:DA:303:G:C2 | 57:DA:304:U:C2 | 2.93 | 0.57 |
| 57:DA:799:G:P | 57:DA:800:A:H3' | 2.43 | 0.57 |
| 57:DA:1126:A:H4' | 57:DA:1127:A:C5' | 2.34 | 0.57 |
| 57:DA:1461:C:H2' | 57:DA:1462:C:H6 | 1.68 | 0.57 |
| 57:DA:1545:A:H2' | 57:DA:1546:G:O4' | 2.05 | 0.57 |
| 57:DA:1998:A:H4' | 57:DA:2724:U:O2' | 2.03 | 0.57 |
| 57:DA:2849:U:O4 | 57:DA:2867:G:C8 | 2.58 | 0.57 |
| 25:DD:101:PHE:HE2 | 25:DD:205:PRO:HD3 | 1.69 | 0.57 |
| 25:DD:114:LYS:HB2 | 25:DD:116:LYS:HE3 | 1.85 | 0.57 |
| 30:DI:106:GLN:HA | 30:DI:109:ALA:HB3 | 1.86 | 0.57 |
| 44:DW:25:PHE:O | 44:DW:27:GLY:N | 2.37 | 0.57 |
| 46:DY:1:MET:HE2 | 46:DY:1:MET:N | 2.19 | 0.57 |
| 1:AA:75:G:C5 | 1:AA:76:G:C8 | 2.91 | 0.57 |
| 1:AA:1520:C:H2' | 1:AA:1521:C:C6 | 2.40 | 0.57 |
| 8:AH:46:GLU:HB3 | 8:AH:61:THR:HB | 1.86 | 0.57 |
| 17:AQ:51:GLU:O | 17:AQ:52:CYS:O | 2.22 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:544:C:N3 | 22:BA:548:G:OP1 | 2.37 | 0.57 |
| 22:BA:830:G:H4' | 22:BA:831:G:OP2 | 2.04 | 0.57 |
| 22:BA:869:G:H2' | 22:BA:870:U:O4' | 2.03 | 0.57 |
| 22:BA:923:G:H21 | 44:BW:23:LYS:NZ | 2.03 | 0.57 |
| 22:BA:1016:G:H2' | 22:BA:1017:G:O5' | 2.03 | 0.57 |
| 22:BA:2134:A:C6 | 22:BA:2135:A:C6 | 2.93 | 0.57 |
| 22:BA:2531:A:H5' | 28:BG:156:TYR:CE2 | 2.40 | 0.57 |
| 28:BG:26:LYS:HB3 | 28:BG:32:LEU:HA | 1.86 | 0.57 |
| 35:BN:82:GLU:O | 35:BN:85:PRO:HG2 | 2.05 | 0.57 |
| 38:BQ:91:ARG:CB | 38:BQ:94:LEU:HB2 | 2.34 | 0.57 |
| 41:BT:61:LEU:HD12 | 41:BT:61:LEU:O | 2.04 | 0.57 |
| 43:BV:51:GLN:HE22 | 43:BV:79:ARG:HH12 | 1.53 | 0.57 |
| 53:CA:476:U:C6 | 53:CA:476:U:OP2 | 2.57 | 0.57 |
| 53:CA:679:C:O2 | 53:CA:712:A:C2 | 2.58 | 0.57 |
| 2:CB:48:MET:O | 2:CB:199:ILE:HG22 | 2.05 | 0.57 |
| 6:CF:98:GLU:O | 6:CF:99:ALA:HB3 | 2.05 | 0.57 |
| 14:CN:52:ARG:HA | 14:CN:52:ARG:CZ | 2.35 | 0.57 |
| 14:CN:76:PHE:CE2 | 14:CN:92:ILE:HG21 | 2.32 | 0.57 |
| 57:DA:263:G:H4' | 57:DA:430:A:O4' | 2.05 | 0.57 |
| 57:DA:304:U:H2' | 57:DA:305:C:C6 | 2.39 | 0.57 |
| 57:DA:532:A:N1 | 57:DA:2020:A:O2' | 2.35 | 0.57 |
| 57:DA:840:C:H4' | 57:DA:1192:G:O2' | 2.05 | 0.57 |
| 57:DA:991:C:OP2 | 57:DA:1186:G:OP2 | 2.22 | 0.57 |
| 57:DA:1055:G:H2' | 57:DA:1055:G:N3 | 2.20 | 0.57 |
| 57:DA:1476:U:H2' | 57:DA:1477:A:H8 | 1.69 | 0.57 |
| 57:DA:2440:C:O2' | 57:DA:2441:U:H4' | 2.04 | 0.57 |
| 57:DA:2808:G:O2' | 57:DA:2809:A:H8 | 1.88 | 0.57 |
| 26:DE:61:ARG:O | 26:DE:61:ARG:HD2 | 2.05 | 0.57 |
| 26:DE:150:THR:O | 26:DE:192:ALA:HB2 | 2.05 | 0.57 |
| 29:DH:32:PRO:HA | 45:DX:38:TRP:CD1 | 2.40 | 0.57 |
| 35:DN:97:ILE:HD11 | 35:DN:99:LYS:NZ | 2.20 | 0.57 |
| 41:DT:45:ALA:HA | 41:DT:48:GLN:CG | 2.34 | 0.57 |
| 41:DT:58:VAL:HG23 | 41:DT:85:VAL:HA | 1.87 | 0.57 |
| 44:DW:18:LYS:H | 44:DW:36:ILE:CG1 | 2.18 | 0.57 |
| 1:AA:258:G:C4 | 1:AA:259:G:C8 | 2.92 | 0.57 |
| 2:AB:9:LEU:HD23 | 2:AB:11:ALA:H | 1.69 | 0.57 |
| 2:AB:187:ASP:HB2 | 2:AB:203:ASP:HB3 | 1.86 | 0.57 |
| 4:AD:133:SER:O | 4:AD:134:TYR:C | 2.43 | 0.57 |
| 22:BA:469:G:O6 | 50:B2:37:LYS:HE3 | 2.04 | 0.57 |
| 22:BA:784:G:O2' | 22:BA:785:G:H5'' | 2.04 | 0.57 |
| 22:BA:1024:G:N2 | 22:BA:1142:A:H2 | 2.02 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:1247:A:C2 | 22:BA:1249:U:C6 | 2.93 | 0.57 |
| 22:BA:2564:A:C2 | 22:BA:2647:U:H4' | 2.40 | 0.57 |
| 22:BA:2727:A:O2' | 22:BA:2728:U:H5' | 2.04 | 0.57 |
| 27:BF:147:ARG:HG3 | 27:BF:148:VAL:N | 2.20 | 0.57 |
| 28:BG:95:ALA:CB | 28:BG:104:LEU:HD23 | 2.34 | 0.57 |
| 31:BJ:88:THR:HG22 | 31:BJ:91:GLU:CB | 2.35 | 0.57 |
| 35:BN:108:ALA:O | 35:BN:110:MET:HG2 | 2.05 | 0.57 |
| 37:BP:19:PHE:O | 37:BP:23:ASP:OD1 | 2.23 | 0.57 |
| 53:CA:369:G:O2' | 53:CA:370:C:H5' | 2.05 | 0.57 |
| 53:CA:613:C:H2' | 53:CA:614:C:H6 | 1.68 | 0.57 |
| 53:CA:802:A:O2' | 53:CA:803:G:H5' | 2.05 | 0.57 |
| 53:CA:919:A:O2' | 53:CA:920:U:H5' | 2.04 | 0.57 |
| 53:CA:976:G:H5' | 53:CA:977:A:OP2 | 2.05 | 0.57 |
| 53:CA:1084:G:OP1 | 53:CA:1086:U:C5 | 2.57 | 0.57 |
| 53:CA:1342:C:H2' | 53:CA:1343:G:C8 | 2.40 | 0.57 |
| 5:CE:25:LYS:HB2 | 5:CE:25:LYS:NZ | 2.20 | 0.57 |
| 54:CG:76:SER:HA | 54:CG:85:GLN:HA | 1.87 | 0.57 |
| 20:CT:9:ARG:HD3 | 20:CT:12:GLN:NE2 | 2.20 | 0.57 |
| 57:DA:74:A:H4' | 57:DA:75:G:O5' | 2.04 | 0.57 |
| 57:DA:243:U:O2' | 57:DA:244:A:H8 | 1.88 | 0.57 |
| 57:DA:310:A:O2' | 57:DA:311:A:C8 | 2.46 | 0.57 |
| 57:DA:528:A:C2 | 57:DA:2042:A:H2' | 2.39 | 0.57 |
| 57:DA:600:G:H5'' | 26:DE:27:LEU:HD22 | 1.87 | 0.57 |
| 57:DA:1655:A:H5' | 25:DD:118:PHE:CE1 | 2.40 | 0.57 |
| 57:DA:2241:A:H2' | 57:DA:2242:G:C8 | 2.40 | 0.57 |
| 34:DM:36:VAL:HG13 | 43:DV:82:TYR:CD1 | 2.39 | 0.57 |
| 42:DU:95:PHE:CD1 | 42:DU:95:PHE:N | 2.71 | 0.57 |
| 43:DV:28:ALA:HA | 43:DV:88:HIS:ND1 | 2.19 | 0.57 |
| 44:DW:8:SER:O | 44:DW:9:THR:HB | 2.05 | 0.57 |
| 44:DW:22:VAL:O | 44:DW:23:LYS:HG3 | 2.05 | 0.57 |
| 1:AA:208:U:H3 | 1:AA:212:G:N2 | 2.03 | 0.57 |
| 1:AA:574:A:H5'' | 1:AA:575:G:OP2 | 2.04 | 0.57 |
| 1:AA:1124:G:H2' | 1:AA:1145:A:H61 | 1.69 | 0.57 |
| 2:AB:103:TRP:CZ3 | 2:AB:107:ARG:HD3 | 2.40 | 0.57 |
| 6:AF:38:ARG:HB3 | 6:AF:63:ASN:HB2 | 1.87 | 0.57 |
| 10:AJ:10:LEU:O | 10:AJ:71:LEU:HD13 | 2.05 | 0.57 |
| 22:BA:141:G:H5' | 22:BA:142:A:C8 | 2.39 | 0.57 |
| 22:BA:752:A:N7 | 22:BA:1781:U:O4' | 2.38 | 0.57 |
| 22:BA:1045:C:C4' | 22:BA:1046:A:H5' | 2.35 | 0.57 |
| 22:BA:1450:G:N2 | 22:BA:1452:G:O6 | 2.35 | 0.57 |
| 22:BA:1901:A:O2' | 22:BA:1902:C:H5' | 2.05 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:1998:A:H2' | 22:BA:1999:C:C6 | 2.40 | 0.57 |
| 22:BA:2013:A:C2 | 40:BS:88:ARG:NH1 | 2.73 | 0.57 |
| 31:BJ:13:ARG:O | 31:BJ:14:ASP:CB | 2.53 | 0.57 |
| 31:BJ:21:THR:C | 31:BJ:23:LYS:H | 2.08 | 0.57 |
| 32:BK:88:ASN:ND2 | 32:BK:90:ASN:H | 2.03 | 0.57 |
| 32:BK:99:ILE:HG23 | 32:BK:100:PHE:N | 2.20 | 0.57 |
| 41:BT:14:PRO:HB2 | 41:BT:16:VAL:HG23 | 1.87 | 0.57 |
| 43:BV:49:ASN:O | 43:BV:52:ALA:HB3 | 2.05 | 0.57 |
| 44:BW:22:VAL:O | 44:BW:23:LYS:O | 2.23 | 0.57 |
| 53:CA:374:A:O2' | 53:CA:375:U:H5' | 2.03 | 0.57 |
| 53:CA:940:C:H5' | 54:CG:101:ARG:HH22 | 1.67 | 0.57 |
| 53:CA:982:U:H1' | 53:CA:983:A:C8 | 2.39 | 0.57 |
| 53:CA:1168:U:O2 | 53:CA:1168:U:C2' | 2.46 | 0.57 |
| 53:CA:1458:G:H4' | 20:CT:22:SER:HB2 | 1.85 | 0.57 |
| 19:CS:62:THR:HG22 | 19:CS:63:ASP:H | 1.69 | 0.57 |
| 57:DA:1071:G:O6 | 57:DA:1091:G:N7 | 2.38 | 0.57 |
| 57:DA:2230:G:C1' | 45:DX:31:ASN:HB3 | 2.34 | 0.57 |
| 24:DC:72:GLY:O | 24:DC:73:ILE:HD13 | 2.05 | 0.57 |
| 26:DE:53:THR:OG1 | 26:DE:54:GLY:N | 2.38 | 0.57 |
| 59:DF:34:THR:O | 59:DF:35:LEU:HB2 | 2.04 | 0.57 |
| 28:DG:139:VAL:HA | 28:DG:142:GLN:HB3 | 1.86 | 0.57 |
| 32:DK:103:VAL:HG23 | 32:DK:122:VAL:O | 2.05 | 0.57 |
| 38:DQ:42:GLY:O | 38:DQ:45:ALA:HB3 | 2.03 | 0.57 |
| 1:AA:198:G:C4 | 1:AA:199:A:N7 | 2.72 | 0.57 |
| 1:AA:243:A:H4' | 1:AA:244:U:H5' | 1.86 | 0.57 |
| 1:AA:375:U:H4' | 16:AP:17:TYR:CE2 | 2.40 | 0.57 |
| 1:AA:1270:G:H2' | 1:AA:1271:A:C8 | 2.40 | 0.57 |
| 2:AB:148:GLY:C | 2:AB:150:ILE:H | 2.07 | 0.57 |
| 9:AI:100:ALA:HB1 | 9:AI:102:PHE:CE2 | 2.40 | 0.57 |
| 10:AJ:52:LEU:HD23 | 10:AJ:62:ARG:CG | 2.35 | 0.57 |
| 22:BA:745:G:H2' | 22:BA:746:U:H5' | 1.87 | 0.57 |
| 22:BA:1071:G:C8 | 22:BA:1089:A:N6 | 2.73 | 0.57 |
| 22:BA:1142:A:C4 | 22:BA:1144:A:C8 | 2.93 | 0.57 |
| 22:BA:2013:A:OP1 | 40:BS:96:ILE:HA | 2.04 | 0.57 |
| 28:BG:132:LEU:N | 28:BG:132:LEU:HD23 | 2.20 | 0.57 |
| 32:BK:78:ARG:NH1 | 37:BP:70:GLU:OE2 | 2.38 | 0.57 |
| 33:BL:132:ARG:HG3 | 33:BL:142:ILE:HD12 | 1.87 | 0.57 |
| 36:BO:2:ASP:O | 36:BO:3:LYS:HB3 | 2.05 | 0.57 |
| 37:BP:105:LYS:CA | 37:BP:108:ARG:HH21 | 2.18 | 0.57 |
| 38:BQ:97:ILE:HD13 | 38:BQ:104:ALA:HB3 | 1.86 | 0.57 |
| 39:BR:4:VAL:HA | 39:BR:12:HIS:O | 2.04 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 51:B3:60:CYS:O | 51:B3:61:LEU:HD23 | 2.05 | 0.57 |
| 53:CA:98:A:C2 | 53:CA:99:C:C2 | 2.93 | 0.57 |
| 53:CA:707:U:H4' | 11:CK:21:HIS:CD2 | 2.40 | 0.57 |
| 19:CS:52:ASN:HD22 | 19:CS:52:ASN:C | 2.07 | 0.57 |
| 21:CU:35:GLU:OE1 | 21:CU:37:TYR:CD1 | 2.58 | 0.57 |
| 57:DA:7:G:O2' | 31:DJ:15:TRP:HZ2 | 1.87 | 0.57 |
| 57:DA:117:G:C6 | 57:DA:119:A:C6 | 2.93 | 0.57 |
| 57:DA:477:A:O2' | 57:DA:478:A:H8 | 1.87 | 0.57 |
| 57:DA:871:U:OP1 | 34:DM:4:PRO:HA | 2.05 | 0.57 |
| 57:DA:1682:G:H2' | 57:DA:1683:U:C5 | 2.40 | 0.57 |
| 57:DA:1734:G:C2' | 57:DA:1735:A:H8 | 2.17 | 0.57 |
| 57:DA:1912:A:H62 | 57:DA:1917:U:H3 | 1.46 | 0.57 |
| 57:DA:2037:A:H2' | 57:DA:2038:G:C8 | 2.40 | 0.57 |
| 57:DA:2286:G:H4' | 57:DA:2287:A:C1' | 2.35 | 0.57 |
| 24:DC:196:ASN:O | 24:DC:197:ALA:HB3 | 2.04 | 0.57 |
| 25:DD:39:ASP:CG | 25:DD:40:LEU:H | 2.08 | 0.57 |
| 26:DE:126:VAL:HG22 | 26:DE:127:GLU:OE2 | 2.05 | 0.57 |
| 59:DF:110:ILE:HD13 | 59:DF:110:ILE:H | 1.70 | 0.57 |
| 28:DG:162:ARG:HG3 | 28:DG:166:GLU:HG3 | 1.86 | 0.57 |
| 32:DK:57:VAL:O | 32:DK:57:VAL:HG13 | 2.05 | 0.57 |
| 32:DK:63:VAL:HG12 | 32:DK:64:ARG:HD3 | 1.87 | 0.57 |
| 34:DM:19:GLY:N | 34:DM:38:ARG:NH2 | 2.41 | 0.57 |
| 34:DM:136:MET:HE2 | 43:DV:57:TYR:HD2 | 1.70 | 0.57 |
| 1:AA:853:C:C2' | 1:AA:854:U:H5' | 2.34 | 0.56 |
| 1:AA:1091:U:H1' | 1:AA:1095:U:O2 | 2.05 | 0.56 |
| 1:AA:1314:C:OP2 | 19:AS:5:LYS:HD2 | 2.05 | 0.56 |
| 1:AA:1447:A:H5'' | 1:AA:1448:C:C5 | 2.38 | 0.56 |
| 4:AD:84:ASN:HD22 | 4:AD:87:GLU:HG2 | 1.70 | 0.56 |
| 9:AI:6:TYR:CE2 | 9:AI:17:ARG:HB2 | 2.37 | 0.56 |
| 15:AO:9:LYS:HB3 | 15:AO:9:LYS:NZ | 2.19 | 0.56 |
| 22:BA:335:C:H5'' | 42:BU:81:ARG:HD3 | 1.86 | 0.56 |
| 22:BA:544:C:H3' | 22:BA:545:U:O2 | 2.03 | 0.56 |
| 22:BA:789:A:OP1 | 22:BA:790:U:H5 | 1.88 | 0.56 |
| 22:BA:1085:A:H3' | 22:BA:1086:A:H2 | 1.67 | 0.56 |
| 22:BA:1113:U:C2 | 22:BA:1114:C:C5 | 2.92 | 0.56 |
| 22:BA:1559:U:H4' | 22:BA:1560:G:OP2 | 2.04 | 0.56 |
| 22:BA:1993:U:C4' | 25:BD:133:THR:HG21 | 2.29 | 0.56 |
| 24:BC:64:VAL:O | 24:BC:64:VAL:HG12 | 2.04 | 0.56 |
| 26:BE:127:GLU:CD | 26:BE:127:GLU:H | 2.07 | 0.56 |
| 26:BE:134:LEU:HD12 | 26:BE:134:LEU:O | 2.05 | 0.56 |
| 28:BG:126:THR:HG22 | 28:BG:127:GLN:N | 2.20 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 31:BJ:56:VAL:O | 31:BJ:124:VAL:O | 2.23 | 0.56 |
| 34:BM:77:PRO:HD2 | 34:BM:80:VAL:HG11 | 1.87 | 0.56 |
| 37:BP:91:VAL:HG11 | 37:BP:96:LEU:HD21 | 1.86 | 0.56 |
| 44:BW:24:ARG:HD3 | 44:BW:65:LYS:CD | 2.35 | 0.56 |
| 53:CA:367:U:OP1 | 53:CA:395:C:H1' | 2.05 | 0.56 |
| 53:CA:666:G:C4 | 53:CA:741:G:C2 | 2.93 | 0.56 |
| 53:CA:735:C:H5' | 18:CR:59:LYS:HD3 | 1.87 | 0.56 |
| 53:CA:764:C:N4 | 53:CA:812:G:N1 | 2.52 | 0.56 |
| 53:CA:1151:A:C6 | 53:CA:1152:A:N6 | 2.73 | 0.56 |
| 53:CA:1448:C:O2' | 53:CA:1449:C:C6 | 2.58 | 0.56 |
| 5:CE:157:GLY:HA3 | 8:CH:63:LYS:HE3 | 1.86 | 0.56 |
| 9:CI:61:ASP:O | 9:CI:62:LEU:HD22 | 2.05 | 0.56 |
| 57:DA:224:U:H5 | 57:DA:420:C:H4' | 1.70 | 0.56 |
| 57:DA:477:A:C2' | 57:DA:478:A:C8 | 2.88 | 0.56 |
| 57:DA:571:U:O2' | 57:DA:573:U:H5'' | 2.05 | 0.56 |
| 57:DA:739:A:HO2' | 57:DA:740:C:H5 | 1.48 | 0.56 |
| 57:DA:777:G:N7 | 57:DA:793:A:C2 | 2.65 | 0.56 |
| 57:DA:919:U:H2' | 57:DA:920:A:H8 | 1.64 | 0.56 |
| 57:DA:950:G:C6 | 57:DA:951:C:N3 | 2.73 | 0.56 |
| 57:DA:1249:U:H4' | 38:DQ:3:VAL:HB | 1.85 | 0.56 |
| 57:DA:2091:C:C4 | 57:DA:2092:U:O4 | 2.58 | 0.56 |
| 57:DA:2304:G:N2 | 57:DA:2312:U:H3 | 1.97 | 0.56 |
| 57:DA:2849:U:O4 | 57:DA:2867:G:H8 | 1.86 | 0.56 |
| 24:DC:8:THR:O | 24:DC:9:SER:CB | 2.53 | 0.56 |
| 25:DD:12:THR:HG22 | 25:DD:13:ARG:O | 2.05 | 0.56 |
| 30:DI:83:ALA:HB2 | 30:DI:99:LYS:O | 2.05 | 0.56 |
| 37:DP:22:GLY:HA3 | 37:DP:91:VAL:CG2 | 2.35 | 0.56 |
| 40:DS:80:PRO:HD2 | 40:DS:100:THR:OG1 | 2.05 | 0.56 |
| 42:DU:95:PHE:O | 42:DU:97:SER:N | 2.38 | 0.56 |
| 47:DZ:37:ARG:NE | 47:DZ:37:ARG:HA | 2.19 | 0.56 |
| 1:AA:872:A:C8 | 1:AA:874:G:C8 | 2.93 | 0.56 |
| 1:AA:1071:C:H2' | 1:AA:1072:G:C8 | 2.40 | 0.56 |
| 5:AE:134:ASN:O | 5:AE:137:ARG:HB3 | 2.05 | 0.56 |
| 22:BA:2307:G:N2 | 22:BA:2311:A:C8 | 2.73 | 0.56 |
| 24:BC:39:SER:C | 24:BC:41:GLY:H | 2.07 | 0.56 |
| 25:BD:13:ARG:HH12 | 37:BP:74:GLN:HE21 | 1.51 | 0.56 |
| 30:BI:3:LYS:CD | 30:BI:4:VAL:HG23 | 2.35 | 0.56 |
| 31:BJ:55:ILE:HD12 | 31:BJ:56:VAL:O | 2.04 | 0.56 |
| 33:BL:78:ARG:HB3 | 33:BL:113:ALA:CB | 2.34 | 0.56 |
| 44:BW:40:ARG:HB2 | 44:BW:56:HIS:CE1 | 2.40 | 0.56 |
| 53:CA:149:A:C2 | 53:CA:150:U:C2 | 2.93 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:CA:197:A:C6 | 53:CA:221:C:H4' | 2.40 | 0.56 |
| 53:CA:501:C:H1' | 53:CA:549:C:O2' | 2.04 | 0.56 |
| 53:CA:658:C:H1' | 15:CO:21:THR:HG21 | 1.86 | 0.56 |
| 53:CA:764:C:N4 | 53:CA:812:G:C6 | 2.73 | 0.56 |
| 2:CB:103:TRP:HA | 2:CB:106:VAL:H | 1.70 | 0.56 |
| 4:CD:25:ARG:HG2 | 4:CD:25:ARG:HH11 | 1.69 | 0.56 |
| 4:CD:190:LEU:O | 4:CD:191:SER:O | 2.23 | 0.56 |
| 6:CF:43:GLY:O | 6:CF:44:ARG:C | 2.44 | 0.56 |
| 9:CI:35:GLU:HA | 9:CI:39:GLY:CA | 2.35 | 0.56 |
| 55:CM:32:ILE:HD13 | 55:CM:32:ILE:O | 2.05 | 0.56 |
| 56:CP:54:LEU:HD23 | 56:CP:54:LEU:H | 1.70 | 0.56 |
| 20:CT:57:VAL:HG12 | 20:CT:71:ALA:HB2 | 1.87 | 0.56 |
| 57:DA:185:G:H2' | 57:DA:186:G:H8 | 1.70 | 0.56 |
| 57:DA:770:G:H1' | 57:DA:1379:U:C4 | 2.40 | 0.56 |
| 57:DA:1751:U:H2' | 57:DA:1752:C:H6 | 1.69 | 0.56 |
| 57:DA:1826:G:C6 | 57:DA:1827:U:C4 | 2.93 | 0.56 |
| 57:DA:1957:C:O2' | 57:DA:1985:C:H1' | 2.05 | 0.56 |
| 58:DB:26:C:H1' | 58:DB:117:G:H1' | 1.87 | 0.56 |
| 59:DF:134:GLN:HB2 | 59:DF:137:PHE:HE2 | 1.70 | 0.56 |
| 30:DI:96:LYS:HE2 | 30:DI:138:VAL:HG11 | 1.87 | 0.56 |
| 33:DL:117:THR:HG22 | 33:DL:118:THR:H | 1.70 | 0.56 |
| 1:AA:8:A:N6 | 4:AD:204:SER:HB2 | 2.20 | 0.56 |
| 1:AA:98:A:H2' | 1:AA:99:C:C6 | 2.41 | 0.56 |
| 1:AA:135:C:H2' | 1:AA:136:C:H5' | 1.87 | 0.56 |
| 1:AA:303:A:H2' | 1:AA:304:U:O4' | 2.05 | 0.56 |
| 1:AA:466:A:O2' | 1:AA:467:U:C5 | 2.58 | 0.56 |
| 1:AA:525:C:H2' | 1:AA:526:C:C6 | 2.40 | 0.56 |
| 1:AA:901:A:N7 | 1:AA:902:G:H1' | 2.20 | 0.56 |
| 1:AA:914:A:N3 | 1:AA:915:A:C8 | 2.73 | 0.56 |
| 1:AA:1141:C:O2' | 1:AA:1142:G:O5' | 2.11 | 0.56 |
| 4:AD:80:ARG:HH21 | 4:AD:81:LEU:HD21 | 1.71 | 0.56 |
| 4:AD:86:GLY:O | 4:AD:89:LEU:HB3 | 2.06 | 0.56 |
| 4:AD:100:VAL:HG12 | 4:AD:100:VAL:O | 2.05 | 0.56 |
| 7:AG:145:GLU:HA | 7:AG:148:LYS:HB2 | 1.87 | 0.56 |
| 11:AK:14:GLN:HA | 11:AK:76:TYR:O | 2.05 | 0.56 |
| 12:AL:71:HIS:ND1 | 12:AL:73:LEU:HB2 | 2.20 | 0.56 |
| 17:AQ:12:VAL:CG1 | 17:AQ:13:SER:H | 2.18 | 0.56 |
| 20:AT:2:ASN:O | 20:AT:3:ILE:C | 2.43 | 0.56 |
| 22:BA:1056:G:H21 | 22:BA:1103:A:H62 | 1.51 | 0.56 |
| 22:BA:1071:G:H1' | 22:BA:1089:A:C8 | 2.40 | 0.56 |
| 22:BA:1107:G:N2 | 22:BA:1108:U:C2 | 2.72 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:1501:G:O2' | 22:BA:1502:A:H5' | 2.05 | 0.56 |
| 22:BA:1668:A:H4' | 22:BA:1669:A:O5' | 2.05 | 0.56 |
| 22:BA:1670:C:O2 | 25:BD:134:HIS:NE2 | 2.37 | 0.56 |
| 22:BA:2249:U:N3 | 22:BA:2253:G:OP2 | 2.38 | 0.56 |
| 22:BA:2292:U:H2' | 22:BA:2293:G:C8 | 2.41 | 0.56 |
| 22:BA:2462:C:H2' | 22:BA:2463:C:C6 | 2.40 | 0.56 |
| 22:BA:2773:C:OP1 | 25:BD:171:THR:HG23 | 2.04 | 0.56 |
| 24:BC:140:VAL:HG13 | 24:BC:189:ALA:HB1 | 1.87 | 0.56 |
| 24:BC:141:HIS:CD2 | 24:BC:192:GLY:O | 2.58 | 0.56 |
| 25:BD:9:VAL:CG2 | 25:BD:26:VAL:HB | 2.33 | 0.56 |
| 26:BE:48:THR:H | 26:BE:51:GLU:HG3 | 1.69 | 0.56 |
| 26:BE:95:LYS:O | 26:BE:96:VAL:HB | 2.06 | 0.56 |
| 26:BE:132:LYS:NZ | 26:BE:132:LYS:HB3 | 2.19 | 0.56 |
| 29:BH:75:LEU:HD22 | 29:BH:143:ILE:HG12 | 1.88 | 0.56 |
| 31:BJ:97:PRO:C | 31:BJ:99:ARG:N | 2.58 | 0.56 |
| 32:BK:6:THR:HG22 | 32:BK:6:THR:O | 2.05 | 0.56 |
| 33:BL:7:SER:HB2 | 33:BL:8:PRO:HD2 | 1.87 | 0.56 |
| 34:BM:31:PHE:CZ | 34:BM:110:GLU:HG2 | 2.40 | 0.56 |
| 35:BN:85:PRO:HA | 35:BN:88:ALA:HB2 | 1.86 | 0.56 |
| 37:BP:61:ARG:HG2 | 37:BP:70:GLU:CG | 2.35 | 0.56 |
| 43:BV:21:ARG:HA | 43:BV:25:LYS:O | 2.05 | 0.56 |
| 44:BW:28:GLU:OE2 | 44:BW:28:GLU:CA | 2.54 | 0.56 |
| 45:BX:65:THR:O | 45:BX:68:ALA:HB3 | 2.06 | 0.56 |
| 52:B4:9:LYS:O | 52:B4:10:LEU:HD23 | 2.05 | 0.56 |
| 53:CA:238:A:C2' | 53:CA:239:U:H5'' | 2.34 | 0.56 |
| 53:CA:542:G:H2' | 53:CA:543:U:H6 | 1.71 | 0.56 |
| 53:CA:652:U:HO2' | 53:CA:653:U:P | 2.29 | 0.56 |
| 53:CA:676:A:H2' | 53:CA:677:U:C6 | 2.40 | 0.56 |
| 53:CA:748:G:H2' | 53:CA:749:A:H8 | 1.67 | 0.56 |
| 53:CA:953:G:C6 | 53:CA:1229:A:N6 | 2.73 | 0.56 |
| 53:CA:972:C:O2' | 10:CJ:57:VAL:HG23 | 2.06 | 0.56 |
| 53:CA:984:C:O2' | 53:CA:985:C:C6 | 2.51 | 0.56 |
| 53:CA:1455:G:H2' | 53:CA:1456:A:C8 | 2.40 | 0.56 |
| 2:CB:130:LYS:HD3 | 2:CB:133:ALA:HB3 | 1.87 | 0.56 |
| 54:CG:30:MET:HE1 | 54:CG:33:GLY:HA2 | 1.87 | 0.56 |
| 11:CK:124:LYS:O | 21:CU:34:ARG:HB2 | 2.06 | 0.56 |
| 55:CM:21:ILE:HB | 55:CM:24:VAL:HG23 | 1.87 | 0.56 |
| 18:CR:71:ASP:OD1 | 21:CU:3:ILE:HD11 | 2.05 | 0.56 |
| 57:DA:53:A:H2' | 57:DA:54:G:C8 | 2.41 | 0.56 |
| 57:DA:108:G:H2' | 57:DA:109:C:C6 | 2.41 | 0.56 |
| 57:DA:176:A:H3' | 57:DA:177:G:H21 | 1.69 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:DA:424:G:O2' | 57:DA:425:G:H5' | 2.06 | 0.56 |
| 57:DA:589:U:H2' | 57:DA:590:A:C8 | 2.38 | 0.56 |
| 57:DA:994:C:OP2 | 38:DQ:49:ARG:HG3 | 2.04 | 0.56 |
| 57:DA:1006:C:H6 | 57:DA:1006:C:O5' | 1.87 | 0.56 |
| 57:DA:1049:C:O2 | 57:DA:1113:U:H4' | 2.05 | 0.56 |
| 57:DA:1076:C:O2' | 57:DA:1077:A:C8 | 2.58 | 0.56 |
| 57:DA:2025:C:H2' | 57:DA:2026:U:C6 | 2.41 | 0.56 |
| 57:DA:2195:U:H2' | 57:DA:2196:C:H6 | 1.69 | 0.56 |
| 57:DA:2244:U:H2' | 57:DA:2245:U:O4' | 2.04 | 0.56 |
| 57:DA:2282:G:H1' | 57:DA:2390:U:H5 | 1.69 | 0.56 |
| 57:DA:2448:A:O2' | 57:DA:2449:U:H5 | 1.88 | 0.56 |
| 57:DA:2497:A:O2' | 57:DA:2498:C:OP2 | 2.24 | 0.56 |
| 57:DA:2651:C:O2' | 57:DA:2652:C:H5' | 2.06 | 0.56 |
| 57:DA:2669:G:H2' | 57:DA:2670:A:C8 | 2.39 | 0.56 |
| 57:DA:2714:G:H8 | 57:DA:2714:G:O5' | 1.88 | 0.56 |
| 57:DA:2714:G:O2' | 57:DA:2715:C:H5' | 2.06 | 0.56 |
| 24:DC:171:VAL:HG23 | 24:DC:185:ALA:HB1 | 1.87 | 0.56 |
| 25:DD:175:LEU:O | 25:DD:176:ASP:HB2 | 2.05 | 0.56 |
| 26:DE:117:ARG:NH2 | 33:DL:2:ARG:HB3 | 2.21 | 0.56 |
| 31:DJ:111:LYS:HB2 | 31:DJ:115:GLY:H | 1.71 | 0.56 |
| 35:DN:47:VAL:O | 35:DN:50:PRO:HD2 | 2.06 | 0.56 |
| 37:DP:112:ARG:O | 37:DP:113:LEU:HB3 | 2.05 | 0.56 |
| 42:DU:32:LYS:HE2 | 42:DU:65:GLN:CD | 2.26 | 0.56 |
| 45:DX:58:ILE:HA | 45:DX:66:VAL:HG21 | 1.87 | 0.56 |
| 45:DX:76:LYS:HG3 | 45:DX:77:TYR:N | 2.21 | 0.56 |
| 49:D1:7:LYS:O | 49:D1:8:ILE:HD13 | 2.05 | 0.56 |
| 1:AA:234:C:O2' | 1:AA:235:C:H5' | 2.06 | 0.56 |
| 1:AA:827:U:C4 | 1:AA:870:U:C2 | 2.94 | 0.56 |
| 1:AA:1143:G:H2' | 1:AA:1144:G:C8 | 2.40 | 0.56 |
| 5:AE:121:ASN:HD21 | 5:AE:122:VAL:HG13 | 1.71 | 0.56 |
| 15:AO:42:PHE:CE1 | 15:AO:55:LEU:HD22 | 2.40 | 0.56 |
| 22:BA:1154:G:OP1 | 38:BQ:57:ARG:HD3 | 2.05 | 0.56 |
| 22:BA:1169:A:C2 | 22:BA:1181:U:O2 | 2.59 | 0.56 |
| 22:BA:1171:G:C6 | 22:BA:1172:C:C4 | 2.93 | 0.56 |
| 26:BE:119:ILE:HD13 | 26:BE:187:VAL:HA | 1.87 | 0.56 |
| 26:BE:145:ASP:HA | 26:BE:166:LYS:O | 2.05 | 0.56 |
| 28:BG:117:PRO:O | 28:BG:118:ALA:O | 2.24 | 0.56 |
| 34:BM:64:TRP:CH2 | 34:BM:106:ASP:HB2 | 2.41 | 0.56 |
| 41:BT:50:LEU:HD12 | 41:BT:50:LEU:N | 2.19 | 0.56 |
| 52:B4:9:LYS:C | 52:B4:10:LEU:HD23 | 2.26 | 0.56 |
| 53:CA:204:G:H2' | 53:CA:205:A:O4' | 2.05 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:322:C:O2' | 20:CT:17:ARG:HG3 | 2.05 | 0.56 |
| 53:CA:352:C:H6 | 53:CA:352:C:H5'' | 1.69 | 0.56 |
| 53:CA:536:C:H2' | 53:CA:537:G:C8 | 2.40 | 0.56 |
| 53:CA:846:G:O2' | 53:CA:847:G:H5' | 2.05 | 0.56 |
| 5:CE:103:GLY:HA3 | 5:CE:121:ASN:CA | 2.34 | 0.56 |
| 6:CF:45:ARG:HG2 | 6:CF:46:GLN:H | 1.69 | 0.56 |
| 8:CH:17:GLN:NE2 | 8:CH:69:ALA:HB1 | 2.19 | 0.56 |
| 12:CL:43:LYS:CB | 12:CL:44:PRO:CD | 2.73 | 0.56 |
| 55:CM:57:ASP:O | 55:CM:61:LYS:HG3 | 2.06 | 0.56 |
| 15:CO:73:ASP:OD2 | 15:CO:76:ARG:HD3 | 2.05 | 0.56 |
| 18:CR:21:ASP:HB3 | 18:CR:23:LYS:CG | 2.36 | 0.56 |
| 57:DA:491:G:C4 | 57:DA:492:A:C8 | 2.94 | 0.56 |
| 57:DA:503:A:N3 | 57:DA:505:A:H2' | 2.20 | 0.56 |
| 57:DA:700:G:C6 | 57:DA:701:G:C5 | 2.93 | 0.56 |
| 57:DA:992:C:H4' | 39:DR:74:ILE:HD13 | 1.87 | 0.56 |
| 57:DA:1062:G:H2' | 57:DA:1070:A:OP1 | 2.05 | 0.56 |
| 57:DA:1722:A:C6 | 57:DA:1739:A:C8 | 2.93 | 0.56 |
| 57:DA:1823:G:H5'' | 63:DA:3766:HOH:O | 2.05 | 0.56 |
| 57:DA:2366:A:H2' | 57:DA:2367:G:O4' | 2.05 | 0.56 |
| 57:DA:2394:C:H41 | 51:D3:30:HIS:CE1 | 2.23 | 0.56 |
| 57:DA:2461:A:H1' | 57:DA:2492:U:N3 | 2.20 | 0.56 |
| 57:DA:2513:A:C5 | 57:DA:2514:U:C4 | 2.93 | 0.56 |
| 57:DA:2742:G:OP1 | 52:D4:36:ARG:HD3 | 2.04 | 0.56 |
| 58:DB:18:G:C2 | 58:DB:67:G:O6 | 2.59 | 0.56 |
| 29:DH:9:VAL:CG1 | 29:DH:10:ALA:N | 2.69 | 0.56 |
| 29:DH:38:PRO:O | 29:DH:40:THR:HG23 | 2.06 | 0.56 |
| 32:DK:71:ARG:CB | 32:DK:72:PRO:HD3 | 2.26 | 0.56 |
| 39:DR:89:HIS:NE2 | 39:DR:91:GLN:HB2 | 2.21 | 0.56 |
| 45:DX:4:CYS:HB3 | 45:DX:9:LYS:H | 1.71 | 0.56 |
| 1:AA:322:C:O2' | 20:AT:17:ARG:HG2 | 2.06 | 0.56 |
| 3:AC:110:LEU:HD21 | 3:AC:143:LEU:HD23 | 1.87 | 0.56 |
| 6:AF:4:TYR:CD2 | 6:AF:71:ILE:HD13 | 2.41 | 0.56 |
| 7:AG:49:LEU:CD1 | 7:AG:60:ALA:HB1 | 2.35 | 0.56 |
| 13:AM:15:VAL:HA | 13:AM:33:LEU:CD1 | 2.36 | 0.56 |
| 22:BA:464:U:O2' | 50:B2:16:HIS:CE1 | 2.58 | 0.56 |
| 22:BA:1413:A:H2' | 22:BA:1414:C:O4' | 2.06 | 0.56 |
| 22:BA:1427:A:H4' | 22:BA:1428:C:O5' | 2.06 | 0.56 |
| 24:BC:12:ARG:HG2 | 24:BC:12:ARG:NH1 | 2.11 | 0.56 |
| 24:BC:255:LYS:O | 24:BC:257:ARG:N | 2.31 | 0.56 |
| 25:BD:169:ARG:O | 25:BD:170:VAL:CG1 | 2.51 | 0.56 |
| 27:BF:16:MET:O | 27:BF:20:ASN:HA | 2.05 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 32:BK:77:ILE:HD12 | 32:BK:77:ILE:N | 2.21 | 0.56 |
| 36:BO:102:ARG:O | 36:BO:105:ALA:HB3 | 2.05 | 0.56 |
| 41:BT:39:THR:CB | 41:BT:42:GLU:HB2 | 2.31 | 0.56 |
| 42:BU:35:VAL:HB | 42:BU:38:ILE:HG13 | 1.86 | 0.56 |
| 42:BU:85:ARG:HA | 42:BU:91:LYS:O | 2.05 | 0.56 |
| 53:CA:962:C:N4 | 53:CA:974:A:H61 | 2.04 | 0.56 |
| 53:CA:1000:A:H1' | 53:CA:1041:G:N2 | 2.21 | 0.56 |
| 53:CA:1057:G:H4' | 3:CC:196:GLY:H | 1.70 | 0.56 |
| 2:CB:99:MET:O | 2:CB:103:TRP:HB3 | 2.05 | 0.56 |
| 8:CH:11:THR:HG23 | 8:CH:14:ARG:HH22 | 1.69 | 0.56 |
| 55:CM:69:ARG:HA | 55:CM:72:ILE:HG22 | 1.88 | 0.56 |
| 57:DA:764:A:C2 | 57:DA:781:A:C2 | 2.93 | 0.56 |
| 57:DA:960:A:C8 | 57:DA:962:G:C8 | 2.93 | 0.56 |
| 57:DA:1373:A:H2' | 57:DA:1374:G:O4' | 2.05 | 0.56 |
| 57:DA:1568:G:H21 | 24:DC:57:HIS:CE1 | 2.23 | 0.56 |
| 57:DA:1943:U:O4' | 57:DA:1943:U:O2 | 2.20 | 0.56 |
| 57:DA:2310:C:H2' | 57:DA:2311:A:H5'' | 1.88 | 0.56 |
| 57:DA:2654:A:H4' | 57:DA:2655:G:OP1 | 2.04 | 0.56 |
| 25:DD:184:ARG:HH22 | 37:DP:6:GLN:NE2 | 2.00 | 0.56 |
| 59:DF:7:TYR:O | 59:DF:8:LYS:HG3 | 2.06 | 0.56 |
| 59:DF:147:ARG:HD2 | 59:DF:147:ARG:H | 1.71 | 0.56 |
| 29:DH:32:PRO:HA | 45:DX:38:TRP:HD1 | 1.68 | 0.56 |
| 31:DJ:48:VAL:HG12 | 31:DJ:49:ASP:N | 2.20 | 0.56 |
| 35:DN:2:ARG:HG2 | 35:DN:5:LYS:HD3 | 1.86 | 0.56 |
| 36:DO:58:ILE:O | 36:DO:62:LEU:HB2 | 2.05 | 0.56 |
| 1:AA:143:A:H5' | 1:AA:144:G:H5' | 1.87 | 0.56 |
| 1:AA:175:C:O2' | 1:AA:176:C:H5' | 2.05 | 0.56 |
| 1:AA:499:A:H1' | 1:AA:500:G:C8 | 2.41 | 0.56 |
| 1:AA:683:G:H21 | 11:AK:39:ASN:HA | 1.71 | 0.56 |
| 1:AA:707:U:OP1 | 11:AK:86:LYS:HE3 | 2.05 | 0.56 |
| 1:AA:792:A:H4' | 1:AA:793:U:O5' | 2.06 | 0.56 |
| 5:AE:113:VAL:HG21 | 5:AE:140:ILE:CD1 | 2.36 | 0.56 |
| 16:AP:10:GLY:HA3 | 16:AP:15:PRO:HA | 1.88 | 0.56 |
| 17:AQ:31:PRO:HB2 | 17:AQ:32:ILE:HD12 | 1.87 | 0.56 |
| 20:AT:54:GLN:N | 20:AT:55:PRO:HD2 | 2.21 | 0.56 |
| 20:AT:66:ILE:HG23 | 20:AT:66:ILE:O | 2.05 | 0.56 |
| 22:BA:813:U:H2' | 22:BA:814:C:C6 | 2.40 | 0.56 |
| 22:BA:1032:A:H1' | 52:B4:23:ILE:CD1 | 2.35 | 0.56 |
| 22:BA:1161:C:H1' | 39:BR:8:GLY:O | 2.06 | 0.56 |
| 22:BA:1707:G:H2' | 22:BA:1708:C:H6 | 1.68 | 0.56 |
| 22:BA:2199:A:H5'' | 22:BA:2199:A:H8 | 1.67 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:2473:U:O2 | 22:BA:2473:U:H2' | 2.05 | 0.56 |
| 22:BA:2678:C:H2' | 22:BA:2679:A:O4' | 2.06 | 0.56 |
| 25:BD:70:LYS:O | 25:BD:71:ALA:CB | 2.53 | 0.56 |
| 26:BE:151:GLY:HA2 | 26:BE:192:ALA:HB2 | 1.87 | 0.56 |
| 37:BP:105:LYS:O | 37:BP:108:ARG:HD3 | 2.06 | 0.56 |
| 48:B0:42:ILE:HD12 | 48:B0:48:TYR:HB2 | 1.87 | 0.56 |
| 53:CA:205:A:C5 | 53:CA:206:C:N4 | 2.73 | 0.56 |
| 53:CA:346:G:H2' | 53:CA:346:G:N3 | 2.19 | 0.56 |
| 53:CA:536:C:H2' | 53:CA:537:G:H8 | 1.69 | 0.56 |
| 53:CA:694:A:C3' | 53:CA:695:A:H5'' | 2.31 | 0.56 |
| 53:CA:1062:U:H2' | 53:CA:1063:C:C5 | 2.41 | 0.56 |
| 53:CA:1366:C:HO2' | 53:CA:1367:C:H6 | 1.49 | 0.56 |
| 2:CB:133:ALA:HA | 2:CB:137:THR:HG21 | 1.87 | 0.56 |
| 5:CE:84:VAL:HG22 | 5:CE:85:LYS:H | 1.71 | 0.56 |
| 15:CO:38:LEU:HG | 15:CO:42:PHE:CE1 | 2.40 | 0.56 |
| 15:CO:83:ARG:HG2 | 15:CO:83:ARG:O | 2.06 | 0.56 |
| 57:DA:52:A:O2' | 57:DA:53:A:H5' | 2.05 | 0.56 |
| 57:DA:340:A:H2' | 57:DA:341:C:O4' | 2.05 | 0.56 |
| 57:DA:628:G:C6 | 57:DA:636:G:C2 | 2.93 | 0.56 |
| 57:DA:848:C:H2' | 57:DA:849:A:H8 | 1.70 | 0.56 |
| 57:DA:962:G:H3' | 57:DA:962:G:OP1 | 2.06 | 0.56 |
| 57:DA:1248:G:O2' | 38:DQ:2:ARG:HA | 2.04 | 0.56 |
| 57:DA:1439:A:N7 | 57:DA:1440:U:N1 | 2.54 | 0.56 |
| 57:DA:1997:C:OP2 | 25:DD:129:THR:OG1 | 2.22 | 0.56 |
| 28:DG:10:VAL:HB | 28:DG:14:VAL:HG21 | 1.87 | 0.56 |
| 40:DS:24:ILE:HG22 | 40:DS:35:ILE:CD1 | 2.35 | 0.56 |
| 45:DX:52:ALA:O | 45:DX:53:LYS:HB3 | 2.04 | 0.56 |
| 1:AA:109:A:C6 | 1:AA:326:G:C6 | 2.93 | 0.56 |
| 1:AA:367:U:C6 | 1:AA:394:G:N2 | 2.74 | 0.56 |
| 1:AA:1129:C:H2' | 1:AA:1139:G:N7 | 2.20 | 0.56 |
| 1:AA:1253:G:H2' | 1:AA:1254:A:C8 | 2.35 | 0.56 |
| 3:AC:119:ILE:HD11 | 3:AC:133:MET:HA | 1.88 | 0.56 |
| 4:AD:166:LYS:HB3 | 4:AD:166:LYS:NZ | 2.20 | 0.56 |
| 7:AG:39:GLU:HB2 | 7:AG:43:TYR:CE2 | 2.40 | 0.56 |
| 22:BA:962:G:OP1 | 63:BA:3353:HOH:O | 2.18 | 0.56 |
| 22:BA:976:G:C2 | 22:BA:977:G:C8 | 2.93 | 0.56 |
| 22:BA:2062:A:O2' | 22:BA:2063:C:C5' | 2.48 | 0.56 |
| 24:BC:24:HIS:CG | 24:BC:25:LYS:H | 2.24 | 0.56 |
| 30:BI:23:VAL:HG23 | 30:BI:24:GLY:H | 1.71 | 0.56 |
| 38:BQ:20:ALA:HA | 38:BQ:23:TYR:CD1 | 2.40 | 0.56 |
| 41:BT:39:THR:HG22 | 41:BT:41:ALA:HB3 | 1.87 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 50:B2:18:PHE:O | 50:B2:22:MET:HB2 | 2.06 | 0.56 |
| 53:CA:263:A:P | 20:CT:73:ARG:HH12 | 2.29 | 0.56 |
| 53:CA:487:A:H2' | 53:CA:488:C:O4' | 2.05 | 0.56 |
| 53:CA:537:G:H5'' | 12:CL:109:ARG:HH12 | 1.70 | 0.56 |
| 53:CA:1264:U:H2' | 53:CA:1265:C:H6 | 1.71 | 0.56 |
| 53:CA:1348:U:O2' | 53:CA:1349:A:H8 | 1.87 | 0.56 |
| 56:CP:29:ASN:OD1 | 56:CP:29:ASN:N | 2.37 | 0.56 |
| 57:DA:30:G:C6 | 57:DA:31:C:N3 | 2.74 | 0.56 |
| 57:DA:724:U:H2' | 57:DA:725:G:O4' | 2.05 | 0.56 |
| 57:DA:855:G:N3 | 44:DW:23:LYS:HE3 | 2.21 | 0.56 |
| 57:DA:1060:U:O4' | 57:DA:1061:U:H2' | 2.05 | 0.56 |
| 57:DA:1290:C:O2' | 57:DA:1291:C:C6 | 2.43 | 0.56 |
| 57:DA:1343:G:C5 | 57:DA:1597:A:N6 | 2.74 | 0.56 |
| 57:DA:2093:G:N7 | 57:DA:2225:A:H2' | 2.20 | 0.56 |
| 58:DB:27:C:H2' | 58:DB:28:C:C6 | 2.39 | 0.56 |
| 58:DB:28:C:OP1 | 36:DO:31:THR:HG21 | 2.06 | 0.56 |
| 58:DB:110:C:O2' | 58:DB:111:U:C5' | 2.46 | 0.56 |
| 24:DC:122:ALA:HB3 | 24:DC:127:ASN:ND2 | 2.21 | 0.56 |
| 24:DC:145:MET:HE2 | 24:DC:181:ARG:NH2 | 2.21 | 0.56 |
| 29:DH:5:LEU:O | 29:DH:6:LEU:HD12 | 2.06 | 0.56 |
| 29:DH:12:LEU:HD12 | 29:DH:12:LEU:O | 2.05 | 0.56 |
| 34:DM:62:LYS:HG2 | 34:DM:64:TRP:CZ2 | 2.41 | 0.56 |
| 36:DO:115:LEU:H | 36:DO:115:LEU:CD1 | 2.17 | 0.56 |
| 1:AA:86:G:N2 | 1:AA:87:C:N4 | 2.53 | 0.56 |
| 1:AA:1002:G:H2' | 1:AA:1003:G:O4' | 2.06 | 0.56 |
| 2:AB:20:ARG:HH12 | 2:AB:38:HIS:CE1 | 2.24 | 0.56 |
| 2:AB:221:ARG:CZ | 2:AB:221:ARG:HB3 | 2.36 | 0.56 |
| 22:BA:1103:A:H2' | 22:BA:1104:C:H5' | 1.87 | 0.56 |
| 22:BA:1238:G:O2' | 22:BA:1239:G:H5' | 2.06 | 0.56 |
| 22:BA:1695:G:H2' | 22:BA:1696:G:O4' | 2.06 | 0.56 |
| 22:BA:1698:A:H4' | 22:BA:1699:G:O5' | 2.05 | 0.56 |
| 22:BA:1832:C:N4 | 22:BA:1833:C:C4 | 2.73 | 0.56 |
| 22:BA:1867:G:HO2' | 22:BA:1868:C:H5' | 1.69 | 0.56 |
| 22:BA:1947:C:N3 | 22:BA:1960:A:C2 | 2.74 | 0.56 |
| 22:BA:2275:C:HO2' | 34:BM:84:LYS:HA | 1.69 | 0.56 |
| 22:BA:2561:U:O3' | 32:BK:40:LYS:HE2 | 2.06 | 0.56 |
| 24:BC:77:VAL:HG13 | 24:BC:113:ASP:O | 2.06 | 0.56 |
| 34:BM:33:LEU:CD2 | 34:BM:128:THR:HB | 2.36 | 0.56 |
| 39:BR:25:LEU:H | 39:BR:94:THR:CG2 | 2.18 | 0.56 |
| 45:BX:32:LEU:HA | 45:BX:51:SER:HA | 1.88 | 0.56 |
| 49:B1:29:LYS:NZ | 49:B1:29:LYS:HB3 | 2.20 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 51:B3:31:ILE:O | 51:B3:31:ILE:HG13 | 2.05 | 0.56 |
| 52:B4:9:LYS:HD3 | 52:B4:9:LYS:N | 2.09 | 0.56 |
| 53:CA:35:G:H21 | 12:CL:114:SER:HB3 | 1.70 | 0.56 |
| 53:CA:174:A:H2' | 53:CA:175:C:H6 | 1.71 | 0.56 |
| 53:CA:437:U:H2' | 53:CA:438:U:O5' | 2.06 | 0.56 |
| 53:CA:449:G:N1 | 53:CA:450:G:C6 | 2.74 | 0.56 |
| 53:CA:517:G:H5' | 53:CA:519:C:C2 | 2.41 | 0.56 |
| 54:CG:12:LEU:HD22 | 54:CG:13:PRO:O | 2.05 | 0.56 |
| 15:CO:38:LEU:HG | 15:CO:42:PHE:HE1 | 1.70 | 0.56 |
| 19:CS:52:ASN:ND2 | 19:CS:54:ARG:HG2 | 2.21 | 0.56 |
| 21:CU:19:LYS:N | 21:CU:19:LYS:NZ | 2.53 | 0.56 |
| 21:CU:31:VAL:O | 21:CU:33:ARG:N | 2.39 | 0.56 |
| 57:DA:77:G:O2' | 57:DA:78:U:O4' | 2.18 | 0.56 |
| 57:DA:374:A:C6 | 57:DA:401:A:C8 | 2.94 | 0.56 |
| 57:DA:455:C:H3' | 57:DA:456:C:C5' | 2.35 | 0.56 |
| 57:DA:962:G:O2' | 57:DA:963:U:C6 | 2.59 | 0.56 |
| 57:DA:1008:A:OP1 | 57:DA:1008:A:H8 | 1.89 | 0.56 |
| 57:DA:1090:A:H3' | 57:DA:1091:G:H5'' | 1.88 | 0.56 |
| 57:DA:1337:G:H8 | 57:DA:1337:G:OP2 | 1.88 | 0.56 |
| 57:DA:1735:A:H2' | 57:DA:1736:U:C6 | 2.41 | 0.56 |
| 57:DA:1814:G:C2 | 57:DA:1815:A:N6 | 2.74 | 0.56 |
| 57:DA:2387:U:H1' | 44:DW:38:ARG:HH12 | 1.70 | 0.56 |
| 57:DA:2519:U:C6 | 57:DA:2542:A:N6 | 2.73 | 0.56 |
| 57:DA:2650:U:C2 | 57:DA:2671:G:N2 | 2.74 | 0.56 |
| 57:DA:2732:G:H5'' | 57:DA:2733:A:O4' | 2.05 | 0.56 |
| 58:DB:100:G:H2' | 58:DB:101:A:O4' | 2.06 | 0.56 |
| 31:DJ:64:VAL:HG11 | 31:DJ:69:ARG:HA | 1.87 | 0.56 |
| 46:DY:31:GLN:C | 46:DY:33:ALA:H | 2.09 | 0.56 |
| 1:AA:922:G:H1' | 5:AE:23:THR:HG22 | 1.87 | 0.56 |
| 1:AA:1269:A:H2 | 1:AA:1312:G:N3 | 2.02 | 0.56 |
| 1:AA:1499:A:O2' | 1:AA:1500:A:H5' | 2.05 | 0.56 |
| 2:AB:9:LEU:HD23 | 2:AB:11:ALA:N | 2.21 | 0.56 |
| 2:AB:14:HIS:HB2 | 2:AB:208:ALA:HB2 | 1.87 | 0.56 |
| 14:AN:82:LYS:HE2 | 14:AN:85:GLU:HG3 | 1.87 | 0.56 |
| 16:AP:51:ARG:O | 16:AP:52:LEU:HD12 | 2.06 | 0.56 |
| 20:AT:57:VAL:HG12 | 20:AT:58:ASP:N | 2.20 | 0.56 |
| 22:BA:581:C:H2' | 22:BA:582:A:C8 | 2.41 | 0.56 |
| 22:BA:616:A:O2' | 22:BA:617:G:H5' | 2.06 | 0.56 |
| 22:BA:1510:G:H2' | 22:BA:1511:G:C8 | 2.41 | 0.56 |
| 22:BA:1563:U:H2' | 22:BA:1564:C:C6 | 2.41 | 0.56 |
| 24:BC:165:ALA:HB3 | 24:BC:172:THR:CG2 | 2.32 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:BD:151:THR:CG2 | 25:BD:152:PRO:CD | 2.78 | 0.56 |
| 28:BG:85:LYS:HA | 28:BG:130:ILE:O | 2.06 | 0.56 |
| 28:BG:174:LYS:HE2 | 28:BG:176:LYS:OXT | 2.05 | 0.56 |
| 45:BX:11:PRO:HB3 | 45:BX:29:LEU:HB3 | 1.86 | 0.56 |
| 45:BX:34:SER:HA | 45:BX:48:LEU:O | 2.06 | 0.56 |
| 53:CA:858:G:O6 | 53:CA:869:G:C8 | 2.59 | 0.56 |
| 53:CA:1253:G:N1 | 53:CA:1285:A:N6 | 2.54 | 0.56 |
| 4:CD:25:ARG:HH11 | 4:CD:25:ARG:CG | 2.19 | 0.56 |
| 4:CD:137:SER:CB | 4:CD:138:PRO:HD2 | 2.36 | 0.56 |
| 9:CI:56:MET:HG3 | 9:CI:57:VAL:HG23 | 1.88 | 0.56 |
| 17:CQ:59:GLU:HG3 | 17:CQ:75:VAL:HG22 | 1.88 | 0.56 |
| 21:CU:36:PHE:CD2 | 21:CU:39:LYS:HE2 | 2.41 | 0.56 |
| 57:DA:247:G:C5 | 57:DA:249:C:H1' | 2.41 | 0.56 |
| 57:DA:301:G:C6 | 57:DA:302:C:N4 | 2.74 | 0.56 |
| 57:DA:503:A:C4 | 57:DA:506:G:N7 | 2.74 | 0.56 |
| 57:DA:1011:G:O2' | 57:DA:1013:C:H5'' | 2.05 | 0.56 |
| 57:DA:1062:G:OP1 | 57:DA:1070:A:H4' | 2.06 | 0.56 |
| 57:DA:1259:G:H2' | 57:DA:1260:A:H8 | 1.71 | 0.56 |
| 57:DA:1264:A:H5' | 48:D0:7:PRO:HG2 | 1.87 | 0.56 |
| 57:DA:1273:U:H4' | 57:DA:1275:A:OP2 | 2.06 | 0.56 |
| 57:DA:1326:U:O2' | 57:DA:1327:A:O5' | 2.24 | 0.56 |
| 57:DA:1491:G:C6 | 57:DA:1500:G:C2 | 2.93 | 0.56 |
| 57:DA:1655:A:H2' | 57:DA:1656:C:H6 | 1.66 | 0.56 |
| 57:DA:2336:A:N7 | 44:DW:40:ARG:CZ | 2.69 | 0.56 |
| 58:DB:112:G:N2 | 36:DO:45:SER:HA | 2.05 | 0.56 |
| 59:DF:41:GLU:O | 59:DF:43:ILE:N | 2.39 | 0.56 |
| 29:DH:33:GLN:O | 29:DH:35:LYS:HG2 | 2.06 | 0.56 |
| 42:DU:44:HIS:CD2 | 42:DU:57:ILE:HG21 | 2.40 | 0.56 |
| 1:AA:92:U:H2' | 1:AA:93:U:C5 | 2.41 | 0.56 |
| 1:AA:258:G:N2 | 1:AA:259:G:H1' | 2.21 | 0.56 |
| 1:AA:864:A:H3' | 1:AA:865:A:C8 | 2.41 | 0.56 |
| 2:AB:127:LYS:HG3 | 2:AB:128:LEU:N | 2.21 | 0.56 |
| 2:AB:174:GLU:O | 2:AB:178:LEU:HB2 | 2.06 | 0.56 |
| 4:AD:191:SER:O | 4:AD:192:ALA:HB2 | 2.06 | 0.56 |
| 9:AI:38:PHE:HA | 9:AI:41:GLU:OE1 | 2.06 | 0.56 |
| 22:BA:622:G:H2' | 22:BA:623:C:H6 | 1.71 | 0.56 |
| 22:BA:1092:C:H2' | 22:BA:1093:G:O4' | 2.05 | 0.56 |
| 22:BA:2389:G:C5' | 22:BA:2390:U:H5' | 2.32 | 0.56 |
| 24:BC:247:TRP:C | 24:BC:249:VAL:H | 2.10 | 0.56 |
| 25:BD:33:ARG:NH2 | 25:BD:74:GLU:O | 2.38 | 0.56 |
| 26:BE:47:LYS:HD3 | 26:BE:51:GLU:O | 2.05 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 27:BF:131:VAL:CG2 | 27:BF:151:LEU:HG | 2.36 | 0.56 |
| 27:BF:134:GLN:NE2 | 27:BF:148:VAL:O | 2.39 | 0.56 |
| 29:BH:12:LEU:HD12 | 29:BH:19:VAL:HG11 | 1.87 | 0.56 |
| 31:BJ:43:GLU:O | 31:BJ:45:THR:N | 2.39 | 0.56 |
| 37:BP:61:ARG:HG2 | 37:BP:70:GLU:HG2 | 1.88 | 0.56 |
| 49:B1:8:ILE:CG2 | 49:B1:9:LYS:N | 2.68 | 0.56 |
| 53:CA:120:A:H3' | 53:CA:121:U:C5' | 2.35 | 0.56 |
| 53:CA:548:G:H2' | 53:CA:549:C:C6 | 2.41 | 0.56 |
| 53:CA:811:C:H4' | 53:CA:900:A:N6 | 2.20 | 0.56 |
| 2:CB:44:LYS:O | 2:CB:48:MET:HG3 | 2.05 | 0.56 |
| 2:CB:74:ALA:CB | 2:CB:206:ILE:HD11 | 2.35 | 0.56 |
| 2:CB:95:TRP:CZ3 | 2:CB:171:ALA:HA | 2.41 | 0.56 |
| 5:CE:148:SER:H | 5:CE:151:MET:HE3 | 1.71 | 0.56 |
| 8:CH:12:ARG:HH12 | 8:CH:27:PRO:HD2 | 1.70 | 0.56 |
| 11:CK:94:SER:O | 11:CK:97:ARG:HB2 | 2.06 | 0.56 |
| 11:CK:121:ARG:NH2 | 21:CU:35:GLU:HB2 | 2.20 | 0.56 |
| 57:DA:140:C:H5' | 57:DA:141:G:H21 | 1.70 | 0.56 |
| 57:DA:279:A:N6 | 57:DA:361:G:O2' | 2.39 | 0.56 |
| 57:DA:852:U:H2' | 57:DA:853:C:H6 | 1.71 | 0.56 |
| 57:DA:947:A:O2' | 57:DA:948:C:O4' | 2.24 | 0.56 |
| 57:DA:1272:A:C5 | 57:DA:1618:A:H1' | 2.40 | 0.56 |
| 57:DA:1343:G:H2' | 57:DA:1344:U:H5 | 1.70 | 0.56 |
| 57:DA:1815:A:C2 | 57:DA:1817:G:O6 | 2.59 | 0.56 |
| 57:DA:1971:U:O2' | 57:DA:1972:G:OP1 | 2.22 | 0.56 |
| 57:DA:2020:A:H5' | 48:D0:8:THR:HG22 | 1.88 | 0.56 |
| 57:DA:2800:A:C2' | 57:DA:2801:G:H4' | 2.36 | 0.56 |
| 25:DD:187:LEU:HD12 | 25:DD:188:LEU:H | 1.71 | 0.56 |
| 28:DG:84:LYS:O | 28:DG:85:LYS:HB3 | 2.06 | 0.56 |
| 31:DJ:4:PHE:O | 31:DJ:44:TYR:CZ | 2.58 | 0.56 |
| 31:DJ:86:GLN:O | 31:DJ:87:ALA:HB2 | 2.06 | 0.56 |
| 32:DK:13:ASN:H | 32:DK:13:ASN:HD22 | 1.53 | 0.56 |
| 36:DO:70:ALA:O | 36:DO:74:VAL:HG23 | 2.06 | 0.56 |
| 36:DO:88:LYS:O | 36:DO:89:ASP:HB3 | 2.06 | 0.56 |
| 36:DO:108:ASP:C | 36:DO:110:ALA:H | 2.09 | 0.56 |
| 40:DS:44:ALA:O | 40:DS:48:LYS:HB2 | 2.04 | 0.56 |
| 46:DY:25:GLN:HB2 | 46:DY:46:VAL:HG11 | 1.87 | 0.56 |
| 51:D3:33:THR:HG23 | 51:D3:34:LYS:N | 2.21 | 0.56 |
| 1:AA:596:A:N6 | 1:AA:645:G:N1 | 2.54 | 0.55 |
| 4:AD:196:GLU:C | 4:AD:198:LEU:H | 2.08 | 0.55 |
| 7:AG:92:PRO:O | 7:AG:93:VAL:HG13 | 2.06 | 0.55 |
| 11:AK:109:ILE:HB | 21:AU:5:VAL:CG2 | 2.35 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 13:AM:10:ASP:OD1 | 13:AM:44:ILE:HD13 | 2.06 | 0.55 |
| 15:AO:16:ARG:O | 15:AO:17:ASP:HB3 | 2.05 | 0.55 |
| 22:BA:194:G:C8 | 63:BA:3759:HOH:O | 2.59 | 0.55 |
| 22:BA:396:G:H1' | 45:BX:28:PHE:HB3 | 1.86 | 0.55 |
| 22:BA:1684:G:H2' | 22:BA:1685:C:C6 | 2.41 | 0.55 |
| 26:BE:151:GLY:CA | 26:BE:192:ALA:HB2 | 2.36 | 0.55 |
| 27:BF:38:GLY:HA2 | 27:BF:85:GLY:HA3 | 1.87 | 0.55 |
| 27:BF:56:LEU:HA | 27:BF:59:ILE:HD12 | 1.87 | 0.55 |
| 37:BP:80:VAL:O | 37:BP:81:ASP:HB3 | 2.06 | 0.55 |
| 38:BQ:63:ARG:NH2 | 38:BQ:95:ALA:C | 2.60 | 0.55 |
| 41:BT:50:LEU:O | 41:BT:51:PHE:HB2 | 2.06 | 0.55 |
| 53:CA:183:C:HO2' | 53:CA:184:G:C5' | 2.19 | 0.55 |
| 53:CA:330:C:O2' | 53:CA:331:G:O5' | 2.24 | 0.55 |
| 53:CA:861:G:C5 | 53:CA:862:C:C5 | 2.94 | 0.55 |
| 3:CC:84:GLU:C | 3:CC:86:LEU:H | 2.08 | 0.55 |
| 4:CD:81:LEU:O | 4:CD:83:GLY:N | 2.39 | 0.55 |
| 9:CI:51:LEU:C | 9:CI:53:LEU:H | 2.09 | 0.55 |
| 12:CL:33:CYS:HA | 12:CL:54:VAL:HA | 1.88 | 0.55 |
| 57:DA:92:U:O2' | 57:DA:93:G:H5' | 2.07 | 0.55 |
| 57:DA:204:A:OP1 | 57:DA:206:U:H1' | 2.06 | 0.55 |
| 57:DA:246:C:C2' | 57:DA:247:G:H5' | 2.35 | 0.55 |
| 57:DA:674:G:O3' | 26:DE:60:TRP:CH2 | 2.59 | 0.55 |
| 57:DA:729:G:C2' | 57:DA:729:G:N3 | 2.68 | 0.55 |
| 57:DA:826:U:O2' | 33:DL:53:GLY:HA3 | 2.05 | 0.55 |
| 57:DA:1416:G:C6 | 57:DA:1417:C:N4 | 2.74 | 0.55 |
| 57:DA:1611:C:O2' | 57:DA:1612:C:H6 | 1.88 | 0.55 |
| 57:DA:1716:U:C4 | 57:DA:1745:A:N6 | 2.74 | 0.55 |
| 57:DA:2060:A:C2' | 26:DE:63:LYS:HZ2 | 2.08 | 0.55 |
| 57:DA:2591:C:OP1 | 24:DC:237:ARG:HD2 | 2.05 | 0.55 |
| 59:DF:31:GLU:C | 59:DF:95:MET:HE1 | 2.27 | 0.55 |
| 30:DI:132:ALA:HA | 30:DI:137:LEU:HD12 | 1.88 | 0.55 |
| 32:DK:17:ARG:HG2 | 32:DK:18:ARG:H | 1.70 | 0.55 |
| 34:DM:72:PRO:HA | 34:DM:92:TRP:CE3 | 2.41 | 0.55 |
| 46:DY:19:LEU:HG | 46:DY:22:LEU:HD22 | 1.89 | 0.55 |
| 47:DZ:4:ILE:CG2 | 47:DZ:56:VAL:HG13 | 2.36 | 0.55 |
| 1:AA:903:G:C5 | 1:AA:904:U:C5 | 2.94 | 0.55 |
| 1:AA:922:G:H2' | 1:AA:923:A:H8 | 1.71 | 0.55 |
| 1:AA:1136:C:H5'' | 1:AA:1137:C:OP2 | 2.05 | 0.55 |
| 1:AA:1526:G:P | 21:AU:38:GLU:HB2 | 2.47 | 0.55 |
| 2:AB:95:TRP:HH2 | 2:AB:100:LEU:HB2 | 1.70 | 0.55 |
| 9:AI:128:LYS:HD2 | 9:AI:129:ARG:H | 1.71 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 11:AK:124:LYS:CE | 21:AU:33:ARG:HH21 | 2.18 | 0.55 |
| 21:AU:52:VAL:HG13 | 21:AU:53:LYS:N | 2.13 | 0.55 |
| 22:BA:545:U:O2 | 22:BA:545:U:O4' | 2.22 | 0.55 |
| 22:BA:1188:U:C2' | 22:BA:1189:A:H5' | 2.36 | 0.55 |
| 22:BA:1405:U:H2' | 22:BA:1406:U:C6 | 2.41 | 0.55 |
| 22:BA:1842:G:O4' | 24:BC:242:HIS:CE1 | 2.59 | 0.55 |
| 22:BA:2868:A:H2' | 22:BA:2869:G:C8 | 2.42 | 0.55 |
| 24:BC:20:ASN:C | 24:BC:20:ASN:ND2 | 2.59 | 0.55 |
| 24:BC:20:ASN:HD21 | 24:BC:22:GLU:HG2 | 1.70 | 0.55 |
| 31:BJ:5:THR:HG22 | 31:BJ:6:ALA:O | 2.06 | 0.55 |
| 44:BW:77:LYS:O | 44:BW:78:PHE:HB2 | 2.05 | 0.55 |
| 51:B3:21:PHE:HB2 | 51:B3:49:VAL:HG13 | 1.89 | 0.55 |
| 53:CA:263:A:OP1 | 20:CT:73:ARG:NH1 | 2.39 | 0.55 |
| 53:CA:1167:A:N7 | 53:CA:1169:A:N6 | 2.54 | 0.55 |
| 2:CB:147:LEU:HD12 | 2:CB:147:LEU:H | 1.71 | 0.55 |
| 54:CG:32:ASP:HB2 | 54:CG:34:LYS:HD3 | 1.88 | 0.55 |
| 8:CH:80:PRO:HA | 8:CH:83:ARG:HE | 1.71 | 0.55 |
| 9:CI:44:ARG:HH21 | 9:CI:48:ARG:NH1 | 2.04 | 0.55 |
| 56:CP:17:TYR:CD1 | 56:CP:39:PHE:HD2 | 2.24 | 0.55 |
| 56:CP:71:VAL:O | 56:CP:74:LEU:HB2 | 2.07 | 0.55 |
| 57:DA:187:G:C2 | 57:DA:210:C:C2 | 2.94 | 0.55 |
| 57:DA:452:G:OP1 | 26:DE:53:THR:HG23 | 2.06 | 0.55 |
| 57:DA:729:G:O2' | 57:DA:1775:U:H1' | 2.06 | 0.55 |
| 57:DA:866:A:O2' | 57:DA:867:C:H6 | 1.88 | 0.55 |
| 57:DA:1053:C:N4 | 57:DA:1054:A:H62 | 2.04 | 0.55 |
| 57:DA:1237:A:O2' | 57:DA:1238:G:H4' | 2.07 | 0.55 |
| 57:DA:1338:G:O2' | 41:DT:18:GLU:HG3 | 2.06 | 0.55 |
| 57:DA:1534:U:H2' | 57:DA:1536:C:O2 | 2.07 | 0.55 |
| 57:DA:2023:C:H4' | 57:DA:2617:U:O3' | 2.07 | 0.55 |
| 57:DA:2876:G:H4' | 37:DP:2:ASN:HD21 | 1.72 | 0.55 |
| 58:DB:12:C:H5'' | 58:DB:15:A:H62 | 1.70 | 0.55 |
| 25:DD:112:THR:HG22 | 25:DD:113:SER:N | 2.21 | 0.55 |
| 26:DE:108:ILE:O | 26:DE:112:LEU:HB2 | 2.06 | 0.55 |
| 59:DF:36:ASN:O | 59:DF:37:MET:HB3 | 2.06 | 0.55 |
| 59:DF:57:ALA:HB2 | 59:DF:64:PRO:HG2 | 1.88 | 0.55 |
| 31:DJ:111:LYS:HB2 | 31:DJ:115:GLY:N | 2.22 | 0.55 |
| 35:DN:12:ARG:HG3 | 35:DN:13:ASN:H | 1.70 | 0.55 |
| 40:DS:32:ALA:O | 40:DS:33:LEU:HB2 | 2.06 | 0.55 |
| 40:DS:79:GLY:HA3 | 40:DS:100:THR:OG1 | 2.06 | 0.55 |
| 45:DX:51:SER:OG | 45:DX:54:GLY:HA3 | 2.05 | 0.55 |
| 47:DZ:6:ILE:HD12 | 47:DZ:47:ILE:HD11 | 1.88 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 51:D3:61:LEU:HB2 | 51:D3:64:ALA:HB3 | 1.87 | 0.55 |
| 1:AA:868:C:N4 | 1:AA:869:G:C2 | 2.73 | 0.55 |
| 2:AB:165:ALA:HB2 | 2:AB:186:VAL:HG12 | 1.88 | 0.55 |
| 3:AC:115:VAL:HG11 | 3:AC:199:VAL:HG21 | 1.88 | 0.55 |
| 4:AD:71:PHE:CE1 | 4:AD:199:ILE:HD11 | 2.41 | 0.55 |
| 8:AH:83:ARG:O | 8:AH:84:ILE:HD13 | 2.06 | 0.55 |
| 10:AJ:48:ARG:NH2 | 14:AN:100:TRP:CD2 | 2.74 | 0.55 |
| 14:AN:15:LEU:N | 14:AN:18:LYS:HE2 | 2.22 | 0.55 |
| 22:BA:907:G:C2' | 22:BA:908:C:H5' | 2.36 | 0.55 |
| 22:BA:996:A:C4' | 38:BQ:91:ARG:HG2 | 2.33 | 0.55 |
| 22:BA:1653:G:H1 | 35:BN:11:ASN:ND2 | 2.04 | 0.55 |
| 22:BA:2052:A:H4' | 25:BD:148:GLN:O | 2.07 | 0.55 |
| 22:BA:2347:C:OP1 | 22:BA:2347:C:H4' | 2.06 | 0.55 |
| 22:BA:2503:A:O2' | 22:BA:2505:G:OP2 | 2.24 | 0.55 |
| 24:BC:77:VAL:HG22 | 24:BC:77:VAL:O | 2.07 | 0.55 |
| 24:BC:91:ALA:HB3 | 24:BC:103:ILE:HG22 | 1.88 | 0.55 |
| 30:BI:104:GLN:O | 30:BI:105:LEU:CB | 2.54 | 0.55 |
| 40:BS:59:GLU:HA | 40:BS:64:ALA:CA | 2.37 | 0.55 |
| 45:BX:7:THR:OG1 | 45:BX:9:LYS:HD2 | 2.06 | 0.55 |
| 53:CA:65:A:H4' | 53:CA:66:A:O5' | 2.05 | 0.55 |
| 53:CA:570:G:H2' | 53:CA:571:U:C6 | 2.41 | 0.55 |
| 53:CA:909:A:H2 | 53:CA:1413:A:N3 | 2.04 | 0.55 |
| 53:CA:922:G:H2' | 53:CA:923:A:C8 | 2.41 | 0.55 |
| 53:CA:1003:G:N2 | 53:CA:1005:A:H5'' | 2.21 | 0.55 |
| 2:CB:147:LEU:HD12 | 2:CB:147:LEU:N | 2.21 | 0.55 |
| 5:CE:44:ARG:NH2 | 5:CE:70:MET:HB2 | 2.20 | 0.55 |
| 5:CE:132:PRO:O | 5:CE:136:VAL:HG12 | 2.06 | 0.55 |
| 10:CJ:6:ILE:HG23 | 10:CJ:100:ILE:HG23 | 1.87 | 0.55 |
| 12:CL:2:THR:CB | 12:CL:5:GLN:HB2 | 2.35 | 0.55 |
| 56:CP:5:ARG:O | 56:CP:19:VAL:HA | 2.06 | 0.55 |
| 56:CP:46:LYS:HE2 | 56:CP:47:GLU:N | 2.21 | 0.55 |
| 57:DA:303:G:O2' | 57:DA:304:U:C6 | 2.55 | 0.55 |
| 57:DA:1117:C:O5' | 57:DA:1117:C:H6 | 1.89 | 0.55 |
| 57:DA:1555:G:N2 | 57:DA:1556:C:C2 | 2.74 | 0.55 |
| 57:DA:2296:U:C4' | 57:DA:2297:A:OP1 | 2.30 | 0.55 |
| 25:DD:4:LEU:HD23 | 25:DD:101:PHE:CE1 | 2.41 | 0.55 |
| 35:DN:83:LEU:HD11 | 35:DN:86:ARG:HH21 | 1.72 | 0.55 |
| 37:DP:48:ALA:HB3 | 37:DP:59:THR:CB | 2.35 | 0.55 |
| 42:DU:58:VAL:HG12 | 42:DU:60:LYS:H | 1.71 | 0.55 |
| 46:DY:17:GLU:OE1 | 46:DY:53:VAL:HB | 2.06 | 0.55 |
| 47:DZ:6:ILE:O | 47:DZ:34:THR:HA | 2.07 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 49:D1:18:HIS:HD1 | 49:D1:48:TYR:HH | 1.55 | 0.55 |
| 1:AA:721:G:H4' | 1:AA:722:G:C5' | 2.36 | 0.55 |
| 1:AA:937:A:N6 | 1:AA:1345:U:O4 | 2.39 | 0.55 |
| 6:AF:6:ILE:HG12 | 6:AF:89:VAL:CG2 | 2.22 | 0.55 |
| 6:AF:47:LEU:HD13 | 6:AF:51:ILE:HG22 | 1.88 | 0.55 |
| 10:AJ:7:ARG:O | 10:AJ:100:ILE:HA | 2.05 | 0.55 |
| 21:AU:19:LYS:HE2 | 21:AU:19:LYS:N | 2.21 | 0.55 |
| 22:BA:1059:G:C6 | 22:BA:1060:U:N3 | 2.74 | 0.55 |
| 22:BA:1138:G:H5'' | 22:BA:1139:G:OP2 | 2.06 | 0.55 |
| 22:BA:2805:C:C4 | 22:BA:2806:C:C4 | 2.94 | 0.55 |
| 25:BD:121:THR:O | 25:BD:122:VAL:HB | 2.05 | 0.55 |
| 27:BF:129:MET:SD | 27:BF:153:ILE:HD11 | 2.47 | 0.55 |
| 29:BH:62:LEU:HD12 | 29:BH:63:ALA:N | 2.21 | 0.55 |
| 31:BJ:65:THR:CG2 | 31:BJ:66:GLY:N | 2.69 | 0.55 |
| 39:BR:49:ILE:HD12 | 39:BR:52:PRO:CA | 2.12 | 0.55 |
| 49:B1:16:THR:HB | 49:B1:41:VAL:HG21 | 1.88 | 0.55 |
| 53:CA:162:A:H2' | 53:CA:163:C:O4' | 2.05 | 0.55 |
| 53:CA:254:G:H5'' | 17:CQ:70:LYS:HD3 | 1.86 | 0.55 |
| 53:CA:309:A:H1' | 53:CA:608:A:C2 | 2.41 | 0.55 |
| 53:CA:643:C:O2' | 53:CA:644:U:C5' | 2.54 | 0.55 |
| 53:CA:678:U:H1' | 53:CA:777:A:O3' | 2.05 | 0.55 |
| 53:CA:1215:G:HO2' | 53:CA:1216:A:H8 | 1.53 | 0.55 |
| 2:CB:137:THR:O | 2:CB:140:LEU:HB3 | 2.06 | 0.55 |
| 9:CI:49:GLN:N | 9:CI:50:PRO:CD | 2.70 | 0.55 |
| 10:CJ:57:VAL:HG22 | 10:CJ:58:ASN:N | 2.16 | 0.55 |
| 14:CN:20:PHE:HE1 | 14:CN:54:SER:HB2 | 1.71 | 0.55 |
| 57:DA:64:A:P | 41:DT:77:ARG:HG2 | 2.45 | 0.55 |
| 57:DA:70:G:H8 | 57:DA:70:G:OP2 | 1.89 | 0.55 |
| 57:DA:296:U:C2 | 57:DA:297:G:C8 | 2.94 | 0.55 |
| 57:DA:357:C:H2' | 57:DA:358:U:H6 | 1.72 | 0.55 |
| 57:DA:467:G:H4' | 57:DA:796:C:O2' | 2.06 | 0.55 |
| 57:DA:1125:G:C6 | 57:DA:1126:A:N6 | 2.74 | 0.55 |
| 57:DA:1527:G:H1' | 57:DA:1546:G:N2 | 2.20 | 0.55 |
| 57:DA:1714:U:H3' | 57:DA:1715:G:H5' | 1.88 | 0.55 |
| 57:DA:2092:U:HO2' | 57:DA:2093:G:H8 | 1.05 | 0.55 |
| 57:DA:2285:C:C5 | 49:D1:5:ARG:NH2 | 2.72 | 0.55 |
| 57:DA:2297:A:N3 | 57:DA:2298:A:C8 | 2.74 | 0.55 |
| 57:DA:2591:C:P | 24:DC:237:ARG:HD2 | 2.46 | 0.55 |
| 57:DA:2677:G:H2' | 57:DA:2678:C:H6 | 1.71 | 0.55 |
| 32:DK:13:ASN:HD21 | 32:DK:97:THR:N | 1.99 | 0.55 |
| 34:DM:27:SER:N | 34:DM:66:ARG:NH2 | 2.45 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:270:A:H2' | 1:AA:271:C:H6 | 1.66 | 0.55 |
| 1:AA:961:U:O5' | 1:AA:961:U:H6 | 1.90 | 0.55 |
| 1:AA:1319:A:C8 | 1:AA:1323:G:C6 | 2.94 | 0.55 |
| 1:AA:1435:G:H2' | 1:AA:1436:U:C6 | 2.41 | 0.55 |
| 2:AB:71:THR:HG22 | 2:AB:72:LYS:N | 2.21 | 0.55 |
| 3:AC:96:VAL:HB | 3:AC:97:PRO:HD2 | 1.88 | 0.55 |
| 6:AF:77:THR:O | 6:AF:81:ASN:HB2 | 2.06 | 0.55 |
| 10:AJ:21:ALA:HA | 10:AJ:24:GLU:HG3 | 1.88 | 0.55 |
| 15:AO:80:LEU:HD12 | 15:AO:80:LEU:C | 2.27 | 0.55 |
| 22:BA:181:A:H1' | 22:BA:435:C:H5' | 1.87 | 0.55 |
| 22:BA:1414:C:C5 | 22:BA:1415:U:H5 | 2.25 | 0.55 |
| 22:BA:2134:A:O2' | 22:BA:2135:A:C8 | 2.56 | 0.55 |
| 23:BB:73:A:C4 | 23:BB:104:A:C2 | 2.95 | 0.55 |
| 33:BL:65:GLY:O | 33:BL:66:PHE:CB | 2.53 | 0.55 |
| 33:BL:91:ASP:H | 33:BL:94:THR:CG2 | 2.19 | 0.55 |
| 37:BP:4:ILE:O | 37:BP:6:GLN:N | 2.40 | 0.55 |
| 44:BW:14:ASP:OD2 | 44:BW:16:GLU:OE1 | 2.25 | 0.55 |
| 45:BX:63:ILE:O | 45:BX:67:LEU:HG | 2.06 | 0.55 |
| 53:CA:502:A:H2' | 53:CA:503:C:O4' | 2.07 | 0.55 |
| 53:CA:562:U:H1' | 12:CL:11:ARG:HD2 | 1.87 | 0.55 |
| 53:CA:1181:G:H2' | 53:CA:1182:G:N7 | 2.21 | 0.55 |
| 53:CA:1278:G:O2' | 53:CA:1279:G:C2 | 2.57 | 0.55 |
| 15:CO:63:ARG:HH12 | 57:DA:715:A:P | 2.29 | 0.55 |
| 19:CS:40:PHE:HB3 | 19:CS:41:PRO:CD | 2.32 | 0.55 |
| 57:DA:239:C:HO2' | 57:DA:621:A:H2 | 1.55 | 0.55 |
| 57:DA:447:A:H5' | 57:DA:449:A:C5 | 2.42 | 0.55 |
| 57:DA:587:C:H1' | 57:DA:671:C:H5' | 1.89 | 0.55 |
| 57:DA:867:C:O2' | 57:DA:868:U:C5' | 2.55 | 0.55 |
| 57:DA:1079:C:N3 | 57:DA:1088:A:H2 | 2.03 | 0.55 |
| 57:DA:1312:U:C2 | 57:DA:1603:A:C6 | 2.94 | 0.55 |
| 57:DA:1491:G:C2 | 57:DA:1492:G:N7 | 2.75 | 0.55 |
| 57:DA:1491:G:O6 | 57:DA:1500:G:C2 | 2.59 | 0.55 |
| 57:DA:1904:G:H1' | 57:DA:1927:A:N1 | 2.21 | 0.55 |
| 57:DA:2093:G:O6 | 57:DA:2225:A:H2' | 2.05 | 0.55 |
| 57:DA:2226:C:H2' | 57:DA:2227:A:C8 | 2.42 | 0.55 |
| 57:DA:2286:G:O6 | 49:D1:22:THR:HG21 | 2.06 | 0.55 |
| 57:DA:2315:G:C2 | 57:DA:2316:G:C4 | 2.95 | 0.55 |
| 57:DA:2800:A:H2' | 57:DA:2801:G:O4' | 2.06 | 0.55 |
| 57:DA:2889:C:C4 | 57:DA:2890:G:C6 | 2.94 | 0.55 |
| 24:DC:196:ASN:OD1 | 24:DC:199:HIS:HB2 | 2.06 | 0.55 |
| 26:DE:119:ILE:O | 26:DE:119:ILE:HG13 | 2.06 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 59:DF:52:ALA:HA | 59:DF:55:ASP:HB2 | 1.88 | 0.55 |
| 28:DG:85:LYS:O | 28:DG:86:LEU:HG | 2.05 | 0.55 |
| 31:DJ:51:GLY:C | 31:DJ:121:LYS:HE3 | 2.26 | 0.55 |
| 35:DN:1:MET:O | 35:DN:2:ARG:CB | 2.55 | 0.55 |
| 35:DN:98:LEU:HD21 | 48:D0:53:VAL:HG11 | 1.87 | 0.55 |
| 37:DP:62:LYS:O | 37:DP:63:ILE:HB | 2.07 | 0.55 |
| 52:D4:9:LYS:O | 52:D4:9:LYS:HD3 | 2.06 | 0.55 |
| 1:AA:328:C:O2 | 1:AA:328:C:H2' | 2.06 | 0.55 |
| 1:AA:428:G:C1' | 1:AA:430:A:C8 | 2.89 | 0.55 |
| 1:AA:924:C:O2' | 1:AA:925:G:H5' | 2.06 | 0.55 |
| 1:AA:1124:G:H2' | 1:AA:1145:A:N6 | 2.21 | 0.55 |
| 1:AA:1533:C:O5' | 1:AA:1533:C:H6 | 1.89 | 0.55 |
| 4:AD:196:GLU:HA | 4:AD:199:ILE:CG2 | 2.37 | 0.55 |
| 10:AJ:8:ILE:HA | 10:AJ:99:GLN:O | 2.05 | 0.55 |
| 12:AL:74:GLN:O | 12:AL:75:GLU:C | 2.45 | 0.55 |
| 22:BA:303:G:H2' | 22:BA:304:U:C6 | 2.41 | 0.55 |
| 22:BA:839:U:H1' | 22:BA:1191:G:H1' | 1.89 | 0.55 |
| 22:BA:1872:A:H2' | 22:BA:1873:G:O4' | 2.07 | 0.55 |
| 25:BD:143:PRO:HD2 | 25:BD:144:GLY:H | 1.71 | 0.55 |
| 34:BM:80:VAL:HG22 | 34:BM:81:ARG:O | 2.06 | 0.55 |
| 39:BR:45:GLU:OE2 | 39:BR:45:GLU:HA | 2.05 | 0.55 |
| 43:BV:5:ASN:ND2 | 43:BV:5:ASN:H | 2.04 | 0.55 |
| 45:BX:70:LEU:HB3 | 45:BX:75:GLU:HB2 | 1.89 | 0.55 |
| 53:CA:179:A:H2' | 53:CA:180:U:C6 | 2.41 | 0.55 |
| 53:CA:604:G:C6 | 53:CA:605:U:N3 | 2.75 | 0.55 |
| 53:CA:1091:U:O2 | 53:CA:1093:A:H8 | 1.89 | 0.55 |
| 53:CA:1298:U:H4' | 53:CA:1299:A:O5' | 2.07 | 0.55 |
| 3:CC:113:LYS:HG3 | 3:CC:184:ASN:ND2 | 2.22 | 0.55 |
| 5:CE:79:THR:HG23 | 5:CE:81:GLN:H | 1.70 | 0.55 |
| 54:CG:88:VAL:HG22 | 54:CG:89:GLU:N | 2.18 | 0.55 |
| 17:CQ:45:VAL:HG11 | 17:CQ:60:ILE:CG2 | 2.36 | 0.55 |
| 21:CU:53:LYS:HB2 | 21:CU:53:LYS:NZ | 2.21 | 0.55 |
| 57:DA:202:U:H3' | 57:DA:203:A:C8 | 2.41 | 0.55 |
| 57:DA:606:U:O2' | 57:DA:607:U:H4' | 2.07 | 0.55 |
| 57:DA:927:A:C6 | 57:DA:928:A:C6 | 2.95 | 0.55 |
| 57:DA:1114:C:O2' | 57:DA:1115:G:O4' | 2.24 | 0.55 |
| 57:DA:1155:A:H5' | 38:DQ:54:ARG:NE | 2.22 | 0.55 |
| 57:DA:1746:A:H2' | 57:DA:1747:U:C6 | 2.42 | 0.55 |
| 57:DA:1808:A:C3' | 57:DA:1809:A:H8 | 2.20 | 0.55 |
| 58:DB:45:A:OP1 | 59:DF:91:ARG:HD2 | 2.07 | 0.55 |
| 24:DC:124:LYS:NZ | 24:DC:124:LYS:HB3 | 2.21 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:DD:149:ASN:OD1 | 25:DD:150:GLN:N | 2.40 | 0.55 |
| 26:DE:90:GLN:OE1 | 26:DE:90:GLN:HA | 2.06 | 0.55 |
| 28:DG:18:ILE:HD12 | 28:DG:42:VAL:HG13 | 1.87 | 0.55 |
| 37:DP:95:LYS:HA | 37:DP:95:LYS:HE3 | 1.88 | 0.55 |
| 47:DZ:40:THR:N | 47:DZ:43:ILE:HD11 | 2.20 | 0.55 |
| 1:AA:68:G:H5' | 1:AA:171:A:O2' | 2.07 | 0.55 |
| 1:AA:74:A:C6 | 1:AA:97:G:O6 | 2.60 | 0.55 |
| 1:AA:1123:U:O3' | 10:AJ:38:GLY:HA3 | 2.06 | 0.55 |
| 1:AA:1203:C:H2' | 1:AA:1204:A:O4' | 2.06 | 0.55 |
| 1:AA:1361:G:C2' | 1:AA:1362:A:H5' | 2.34 | 0.55 |
| 1:AA:1442:G:H2' | 1:AA:1443:C:C6 | 2.41 | 0.55 |
| 5:AE:120:HIS:O | 5:AE:121:ASN:CB | 2.53 | 0.55 |
| 6:AF:10:VAL:HG12 | 6:AF:11:HIS:N | 2.21 | 0.55 |
| 7:AG:68:VAL:HG12 | 7:AG:102:TRP:HE3 | 1.72 | 0.55 |
| 14:AN:63:CYS:HB2 | 14:AN:79:SER:OG | 2.06 | 0.55 |
| 22:BA:572:A:OP1 | 22:BA:573:U:H5 | 1.89 | 0.55 |
| 22:BA:627:A:C6 | 22:BA:637:A:C8 | 2.95 | 0.55 |
| 22:BA:996:A:H4' | 38:BQ:91:ARG:CG | 2.32 | 0.55 |
| 22:BA:1733:G:C2 | 22:BA:1734:G:C5 | 2.95 | 0.55 |
| 22:BA:1962:C:H4' | 22:BA:1963:U:OP1 | 2.06 | 0.55 |
| 22:BA:2325:G:C6 | 22:BA:2326:C:N4 | 2.75 | 0.55 |
| 22:BA:2366:A:C2 | 22:BA:2367:G:H1' | 2.41 | 0.55 |
| 22:BA:2421:G:N7 | 51:B3:30:HIS:CD2 | 2.74 | 0.55 |
| 22:BA:2492:U:HO2' | 22:BA:2493:U:H5' | 1.70 | 0.55 |
| 25:BD:104:VAL:HA | 25:BD:106:LYS:HZ3 | 1.70 | 0.55 |
| 27:BF:60:SER:O | 27:BF:61:GLY:C | 2.45 | 0.55 |
| 27:BF:134:GLN:O | 27:BF:136:ILE:N | 2.34 | 0.55 |
| 28:BG:163:TYR:O | 28:BG:164:ALA:CB | 2.55 | 0.55 |
| 44:BW:40:ARG:HB2 | 44:BW:56:HIS:ND1 | 2.21 | 0.55 |
| 49:B1:7:LYS:HG3 | 49:B1:23:THR:HG22 | 1.89 | 0.55 |
| 53:CA:80:A:H3' | 53:CA:81:A:H4' | 1.88 | 0.55 |
| 53:CA:157:U:C2' | 53:CA:158:G:H5' | 2.37 | 0.55 |
| 53:CA:1087:G:H2' | 53:CA:1088:G:H8 | 1.70 | 0.55 |
| 53:CA:1098:C:H2' | 53:CA:1099:G:O4' | 2.06 | 0.55 |
| 53:CA:1239:A:O2' | 53:CA:1241:G:C5 | 2.58 | 0.55 |
| 53:CA:1316:G:N2 | 53:CA:1318:A:H3' | 2.21 | 0.55 |
| 9:CI:5:TYR:N | 9:CI:5:TYR:HD2 | 2.04 | 0.55 |
| 57:DA:55:G:N2 | 57:DA:116:C:C2 | 2.75 | 0.55 |
| 57:DA:75:G:H4' | 46:DY:48:ARG:HH21 | 1.72 | 0.55 |
| 57:DA:477:A:O2' | 57:DA:478:A:O4' | 2.24 | 0.55 |
| 57:DA:492:A:O2' | 57:DA:493:G:C5' | 2.54 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:1053:C:N4 | 57:DA:1054:A:N6 | 2.55 | 0.55 |
| 57:DA:1062:G:H8 | 57:DA:1070:A:OP2 | 1.90 | 0.55 |
| 57:DA:1335:C:OP1 | 41:DT:68:LYS:HD2 | 2.05 | 0.55 |
| 57:DA:2136:G:C2' | 57:DA:2137:U:C6 | 2.89 | 0.55 |
| 57:DA:2269:G:H2' | 57:DA:2270:A:C8 | 2.38 | 0.55 |
| 57:DA:2285:C:H2' | 57:DA:2286:G:H5'' | 1.89 | 0.55 |
| 24:DC:66:PHE:HB3 | 24:DC:150:GLY:O | 2.06 | 0.55 |
| 26:DE:88:ARG:HB3 | 26:DE:89:PRO:HD2 | 1.87 | 0.55 |
| 29:DH:38:PRO:O | 29:DH:40:THR:N | 2.40 | 0.55 |
| 38:DQ:48:ASP:HA | 38:DQ:51:GLN:HB2 | 1.89 | 0.55 |
| 39:DR:98:ILE:HG22 | 39:DR:98:ILE:O | 2.07 | 0.55 |
| 41:DT:39:THR:HG21 | 41:DT:42:GLU:CB | 2.33 | 0.55 |
| 41:DT:43:ILE:HG21 | 41:DT:58:VAL:HG11 | 1.88 | 0.55 |
| 42:DU:39:ASN:OD1 | 42:DU:64:ILE:HB | 2.06 | 0.55 |
| 43:DV:30:ILE:HD12 | 43:DV:38:LEU:HD23 | 1.89 | 0.55 |
| 44:DW:33:GLY:O | 44:DW:34:SER:CB | 2.53 | 0.55 |
| 1:AA:141:G:N2 | 1:AA:142:G:H1' | 2.21 | 0.55 |
| 1:AA:269:C:N4 | 1:AA:270:A:N6 | 2.55 | 0.55 |
| 1:AA:600:A:H2' | 1:AA:601:G:H8 | 1.71 | 0.55 |
| 1:AA:1225:A:H2' | 1:AA:1226:C:C6 | 2.42 | 0.55 |
| 1:AA:1343:G:H2' | 1:AA:1344:C:C6 | 2.42 | 0.55 |
| 4:AD:173:ASP:O | 4:AD:174:ALA:CB | 2.54 | 0.55 |
| 22:BA:45:G:H5'' | 22:BA:46:G:H5' | 1.88 | 0.55 |
| 22:BA:1016:G:C2' | 22:BA:1017:G:O5' | 2.54 | 0.55 |
| 22:BA:1303:G:O2' | 22:BA:1304:A:H5' | 2.07 | 0.55 |
| 22:BA:1381:G:H1' | 22:BA:1571:A:N1 | 2.22 | 0.55 |
| 22:BA:1737:G:N1 | 22:BA:1738:G:N2 | 2.55 | 0.55 |
| 22:BA:1967:C:H2' | 22:BA:1968:G:C8 | 2.42 | 0.55 |
| 24:BC:169:ALA:O | 24:BC:185:ALA:HB3 | 2.06 | 0.55 |
| 27:BF:45:ASP:HB3 | 27:BF:48:LEU:HB2 | 1.89 | 0.55 |
| 29:BH:31:VAL:O | 29:BH:32:PRO:C | 2.45 | 0.55 |
| 30:BI:58:ILE:O | 30:BI:60:VAL:HG23 | 2.06 | 0.55 |
| 32:BK:107:LEU:O | 32:BK:109:SER:N | 2.39 | 0.55 |
| 36:BO:34:HIS:HD2 | 36:BO:53:THR:OG1 | 1.90 | 0.55 |
| 44:BW:24:ARG:HD2 | 44:BW:24:ARG:C | 2.25 | 0.55 |
| 46:BY:18:LEU:O | 46:BY:22:LEU:HB2 | 2.07 | 0.55 |
| 53:CA:517:G:H2' | 53:CA:531:U:C5 | 2.41 | 0.55 |
| 53:CA:600:A:OP1 | 8:CH:88:LYS:HG2 | 2.06 | 0.55 |
| 53:CA:1191:A:OP1 | 3:CC:2:GLN:NE2 | 2.40 | 0.55 |
| 3:CC:24:ASN:O | 3:CC:28:PHE:HB2 | 2.06 | 0.55 |
| 5:CE:157:GLY:HA3 | 8:CH:63:LYS:CE | 2.37 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:123:G:O3' | 57:DA:1376:C:H4' | 2.06 | 0.55 |
| 57:DA:170:U:H2' | 57:DA:171:U:H6 | 1.72 | 0.55 |
| 57:DA:1024:G:H21 | 57:DA:1144:A:C4' | 2.20 | 0.55 |
| 57:DA:1038:G:N1 | 57:DA:1039:A:N7 | 2.55 | 0.55 |
| 57:DA:1156:A:P | 38:DQ:54:ARG:HE | 2.29 | 0.55 |
| 57:DA:1205:A:N7 | 26:DE:165:HIS:CG | 2.75 | 0.55 |
| 57:DA:1310:G:N2 | 57:DA:1605:C:C2 | 2.75 | 0.55 |
| 57:DA:1565:C:HO2' | 57:DA:1566:A:P | 2.29 | 0.55 |
| 57:DA:2066:C:H5'' | 63:DA:3530:HOH:O | 2.06 | 0.55 |
| 57:DA:2822:G:H2' | 57:DA:2823:A:H5'' | 1.88 | 0.55 |
| 57:DA:2834:G:H1' | 57:DA:2879:A:N6 | 2.21 | 0.55 |
| 58:DB:69:G:H2' | 58:DB:70:C:O4' | 2.07 | 0.55 |
| 25:DD:122:VAL:HG22 | 25:DD:127:PHE:O | 2.07 | 0.55 |
| 59:DF:147:ARG:HD3 | 59:DF:149:ARG:HH22 | 1.72 | 0.55 |
| 35:DN:37:THR:HB | 35:DN:40:LYS:CB | 2.37 | 0.55 |
| 40:DS:80:PRO:HG2 | 40:DS:100:THR:HG21 | 1.89 | 0.55 |
| 44:DW:39:GLN:HG2 | 44:DW:42:THR:HB | 1.87 | 0.55 |
| 1:AA:21:G:H2' | 1:AA:22:G:H8 | 1.71 | 0.55 |
| 1:AA:439:U:C6 | 4:AD:119:HIS:HD2 | 2.25 | 0.55 |
| 1:AA:550:G:H2' | 1:AA:551:U:H6 | 1.72 | 0.55 |
| 1:AA:923:A:O4' | 1:AA:1398:A:C2 | 2.60 | 0.55 |
| 1:AA:1384:C:H2' | 1:AA:1385:G:H8 | 1.72 | 0.55 |
| 5:AE:17:VAL:HG22 | 5:AE:18:ASN:N | 2.22 | 0.55 |
| 7:AG:52:ARG:HH12 | 7:AG:121:ASN:ND2 | 2.04 | 0.55 |
| 22:BA:990:A:H8 | 22:BA:990:A:C5' | 2.20 | 0.55 |
| 22:BA:1063:G:H2' | 22:BA:1064:C:C6 | 2.41 | 0.55 |
| 22:BA:1104:C:H2' | 22:BA:1105:U:H6 | 1.72 | 0.55 |
| 22:BA:1313:U:O3' | 22:BA:1332:G:H5'' | 2.07 | 0.55 |
| 22:BA:1509:A:N3 | 22:BA:1510:G:C8 | 2.75 | 0.55 |
| 22:BA:1858:A:H2' | 22:BA:1859:U:C6 | 2.41 | 0.55 |
| 22:BA:2151:U:N3 | 22:BA:2152:G:C5 | 2.75 | 0.55 |
| 22:BA:2394:C:OP2 | 51:B3:29:ARG:HD3 | 2.07 | 0.55 |
| 22:BA:2724:U:P | 25:BD:116:LYS:HZ2 | 2.30 | 0.55 |
| 25:BD:90:PHE:HB2 | 25:BD:92:VAL:HG23 | 1.88 | 0.55 |
| 28:BG:74:MET:O | 28:BG:78:VAL:HG22 | 2.07 | 0.55 |
| 32:BK:63:VAL:HG12 | 32:BK:64:ARG:HG3 | 1.89 | 0.55 |
| 33:BL:94:THR:CG2 | 33:BL:95:LEU:N | 2.70 | 0.55 |
| 35:BN:9:GLN:O | 35:BN:17:ARG:HD3 | 2.06 | 0.55 |
| 38:BQ:69:ARG:HH21 | 38:BQ:69:ARG:CG | 2.19 | 0.55 |
| 44:BW:19:ARG:NH2 | 44:BW:22:VAL:CG2 | 2.67 | 0.55 |
| 53:CA:373:A:H5' | 53:CA:373:A:H8 | 1.72 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:429:U:O2 | 53:CA:430:A:H5'' | 2.07 | 0.55 |
| 53:CA:604:G:H2' | 53:CA:605:U:O4' | 2.07 | 0.55 |
| 53:CA:644:U:C2 | 53:CA:645:G:C8 | 2.95 | 0.55 |
| 53:CA:979:C:H2' | 53:CA:980:C:O4' | 2.07 | 0.55 |
| 53:CA:1343:G:H1' | 9:CI:122:ARG:NH1 | 2.22 | 0.55 |
| 4:CD:176:LYS:HE2 | 4:CD:178:GLU:OE1 | 2.07 | 0.55 |
| 54:CG:8:GLN:CD | 54:CG:9:ARG:H | 2.09 | 0.55 |
| 8:CH:75:GLN:O | 8:CH:126:CYS:CB | 2.55 | 0.55 |
| 9:CI:90:ASP:HB3 | 9:CI:93:LEU:HD23 | 1.88 | 0.55 |
| 19:CS:54:ARG:CG | 19:CS:55:GLN:H | 2.19 | 0.55 |
| 20:CT:62:ALA:HA | 20:CT:67:HIS:CE1 | 2.41 | 0.55 |
| 21:CU:35:GLU:HG3 | 21:CU:36:PHE:N | 2.21 | 0.55 |
| 57:DA:230:G:O2' | 57:DA:231:A:H8 | 1.90 | 0.55 |
| 57:DA:674:G:O3' | 26:DE:60:TRP:HH2 | 1.89 | 0.55 |
| 57:DA:1062:G:C4 | 57:DA:1063:G:C8 | 2.94 | 0.55 |
| 57:DA:1744:A:H3' | 57:DA:1745:A:C8 | 2.41 | 0.55 |
| 57:DA:1954:G:O2' | 57:DA:1955:U:P | 2.64 | 0.55 |
| 57:DA:2092:U:H1' | 57:DA:2093:G:N7 | 2.11 | 0.55 |
| 57:DA:2543:G:C6 | 57:DA:2765:A:C5 | 2.95 | 0.55 |
| 57:DA:2577:A:H2 | 48:D0:1:ALA:N | 2.05 | 0.55 |
| 57:DA:2834:G:C1' | 57:DA:2879:A:H61 | 2.20 | 0.55 |
| 58:DB:54:G:H21 | 59:DF:25:MET:HE2 | 1.70 | 0.55 |
| 26:DE:153:LEU:HB2 | 26:DE:171:ASP:HB3 | 1.88 | 0.55 |
| 30:DI:21:PRO:N | 30:DI:22:PRO:HD2 | 2.22 | 0.55 |
| 36:DO:79:ALA:HB1 | 36:DO:114:GLY:HA3 | 1.89 | 0.55 |
| 41:DT:50:LEU:HD23 | 41:DT:51:PHE:N | 2.17 | 0.55 |
| 46:DY:17:GLU:HG2 | 46:DY:50:VAL:HG13 | 1.89 | 0.55 |
| 46:DY:60:LYS:HG2 | 46:DY:60:LYS:O | 2.07 | 0.55 |
| 1:AA:172:A:C5 | 1:AA:174:A:N7 | 2.75 | 0.55 |
| 1:AA:263:A:H2' | 1:AA:264:C:C5 | 2.41 | 0.55 |
| 1:AA:718:A:C8 | 11:AK:117:HIS:HB3 | 2.42 | 0.55 |
| 1:AA:1500:A:OP2 | 63:AA:1872:HOH:O | 2.18 | 0.55 |
| 13:AM:13:HIS:HB3 | 13:AM:41:ASP:HA | 1.88 | 0.55 |
| 20:AT:33:LYS:HE2 | 20:AT:33:LYS:N | 2.22 | 0.55 |
| 22:BA:77:G:N2 | 22:BA:110:G:H1' | 2.22 | 0.55 |
| 22:BA:2269:G:O2' | 44:BW:18:LYS:HG2 | 2.07 | 0.55 |
| 22:BA:2298:A:H61 | 22:BA:2318:G:H1' | 1.71 | 0.55 |
| 22:BA:2331:G:O2' | 44:BW:39:GLN:O | 2.25 | 0.55 |
| 22:BA:2794:C:H2' | 22:BA:2795:C:C6 | 2.42 | 0.55 |
| 25:BD:11:MET:HA | 25:BD:24:VAL:O | 2.06 | 0.55 |
| 31:BJ:40:HIS:CD2 | 31:BJ:41:LYS:HG2 | 2.42 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:BR:2:TYR:CE1 | 39:BR:42:ALA:HB3 | 2.42 | 0.55 |
| 41:BT:40:LYS:HG2 | 41:BT:58:VAL:HG22 | 1.88 | 0.55 |
| 47:BZ:13:ILE:HG22 | 47:BZ:14:GLY:N | 2.22 | 0.55 |
| 51:B3:41:ARG:HG3 | 51:B3:44:ARG:NH2 | 2.22 | 0.55 |
| 53:CA:202:G:O2' | 53:CA:468:A:H8 | 1.89 | 0.55 |
| 53:CA:327:A:C2 | 53:CA:329:A:N3 | 2.75 | 0.55 |
| 53:CA:560:A:C6 | 5:CE:127:TYR:CE2 | 2.94 | 0.55 |
| 53:CA:1084:G:OP1 | 53:CA:1086:U:C6 | 2.60 | 0.55 |
| 2:CB:89:PHE:CE2 | 2:CB:152:ASP:HB2 | 2.41 | 0.55 |
| 2:CB:221:ARG:HA | 2:CB:224:ARG:CZ | 2.37 | 0.55 |
| 4:CD:106:PHE:CD1 | 4:CD:106:PHE:N | 2.66 | 0.55 |
| 9:CI:9:GLY:HA3 | 9:CI:16:ALA:HB3 | 1.88 | 0.55 |
| 12:CL:109:ARG:CB | 12:CL:118:VAL:HG21 | 2.36 | 0.55 |
| 57:DA:60:G:O2' | 57:DA:61:C:OP1 | 2.24 | 0.55 |
| 57:DA:204:A:C4 | 57:DA:206:U:O4 | 2.60 | 0.55 |
| 57:DA:242:G:H8 | 51:D3:3:ILE:O | 1.90 | 0.55 |
| 57:DA:273:G:O2' | 57:DA:274:C:O4' | 2.25 | 0.55 |
| 57:DA:422:A:H2' | 57:DA:423:A:H8 | 1.71 | 0.55 |
| 57:DA:648:G:H2' | 57:DA:649:G:H8 | 1.73 | 0.55 |
| 57:DA:742:A:H2' | 57:DA:743:A:C8 | 2.41 | 0.55 |
| 57:DA:901:C:H2' | 57:DA:902:C:C6 | 2.41 | 0.55 |
| 57:DA:1342:A:C5 | 57:DA:1345:C:N4 | 2.75 | 0.55 |
| 57:DA:1432:G:O2' | 57:DA:1433:A:H5' | 2.06 | 0.55 |
| 57:DA:2296:U:C5 | 36:DO:9:ARG:NH2 | 2.74 | 0.55 |
| 57:DA:2396:G:C2 | 57:DA:2421:G:C2 | 2.95 | 0.55 |
| 57:DA:2557:G:H2' | 57:DA:2558:C:C6 | 2.42 | 0.55 |
| 57:DA:2876:G:C2 | 57:DA:2877:G:H1' | 2.42 | 0.55 |
| 26:DE:47:LYS:O | 26:DE:83:VAL:HB | 2.07 | 0.55 |
| 31:DJ:44:TYR:HB2 | 38:DQ:63:ARG:NH2 | 2.23 | 0.55 |
| 37:DP:9:GLN:HB3 | 37:DP:12:MET:CE | 2.36 | 0.55 |
| 50:D2:35:ARG:HG3 | 50:D2:42:LEU:HD21 | 1.88 | 0.55 |
| 1:AA:1062:U:H2' | 1:AA:1063:C:C6 | 2.41 | 0.54 |
| 3:AC:153:SER:HB2 | 3:AC:164:THR:HG22 | 1.87 | 0.54 |
| 4:AD:60:VAL:O | 4:AD:63:ILE:HG22 | 2.06 | 0.54 |
| 4:AD:117:VAL:HA | 4:AD:122:ILE:HD11 | 1.88 | 0.54 |
| 5:AE:81:GLN:HG2 | 5:AE:149:PRO:CG | 2.36 | 0.54 |
| 11:AK:124:LYS:NZ | 21:AU:33:ARG:HH21 | 2.05 | 0.54 |
| 22:BA:225:C:H2' | 22:BA:226:A:O4' | 2.07 | 0.54 |
| 22:BA:324:A:C2 | 22:BA:325:G:H1' | 2.42 | 0.54 |
| 22:BA:545:U:H2' | 22:BA:546:U:C4' | 2.33 | 0.54 |
| 22:BA:580:U:H2' | 22:BA:581:C:C6 | 2.42 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:587:C:OP2 | 33:BL:21:ARG:NH1 | 2.39 | 0.54 |
| 22:BA:1005:C:O2' | 31:BJ:30:THR:HG21 | 2.07 | 0.54 |
| 22:BA:1184:U:H2' | 22:BA:1185:G:O5' | 2.06 | 0.54 |
| 22:BA:1501:G:C2' | 22:BA:1502:A:H5' | 2.36 | 0.54 |
| 22:BA:1912:A:C2 | 22:BA:1919:A:C6 | 2.95 | 0.54 |
| 22:BA:2879:A:H4' | 22:BA:2880:C:OP1 | 2.07 | 0.54 |
| 23:BB:28:C:C2' | 23:BB:29:A:H5' | 2.37 | 0.54 |
| 24:BC:56:GLY:O | 24:BC:57:HIS:O | 2.25 | 0.54 |
| 26:BE:151:GLY:N | 26:BE:192:ALA:HB2 | 2.22 | 0.54 |
| 30:BI:19:PRO:HG2 | 30:BI:23:VAL:CG2 | 2.37 | 0.54 |
| 32:BK:76:VAL:HB | 37:BP:72:VAL:HG21 | 1.87 | 0.54 |
| 53:CA:220:G:C2 | 53:CA:221:C:C6 | 2.95 | 0.54 |
| 53:CA:1126:U:O4 | 10:CJ:73:LEU:HD11 | 2.06 | 0.54 |
| 2:CB:9:LEU:HG | 2:CB:10:LYS:H | 1.72 | 0.54 |
| 3:CC:126:ARG:HE | 3:CC:126:ARG:CA | 2.20 | 0.54 |
| 3:CC:148:ILE:HD13 | 3:CC:201:ILE:HG12 | 1.87 | 0.54 |
| 4:CD:106:PHE:HB3 | 4:CD:154:VAL:CG2 | 2.37 | 0.54 |
| 54:CG:59:GLU:HB2 | 54:CG:62:GLU:HB2 | 1.88 | 0.54 |
| 9:CI:125:GLN:H | 9:CI:125:GLN:HE21 | 1.54 | 0.54 |
| 17:CQ:13:SER:O | 17:CQ:20:ILE:HB | 2.07 | 0.54 |
| 57:DA:637:A:N6 | 57:DA:652:U:H4' | 2.22 | 0.54 |
| 57:DA:784:G:C2 | 24:DC:227:VAL:HG21 | 2.42 | 0.54 |
| 57:DA:865:C:H5'' | 57:DA:866:A:OP1 | 2.07 | 0.54 |
| 57:DA:1079:C:N4 | 57:DA:1088:A:N3 | 2.55 | 0.54 |
| 57:DA:1263:U:HO2' | 48:D0:7:PRO:HD2 | 1.72 | 0.54 |
| 57:DA:1381:G:H2' | 57:DA:1382:G:H5'' | 1.89 | 0.54 |
| 57:DA:1993:U:O2' | 57:DA:1994:C:H5' | 2.07 | 0.54 |
| 57:DA:2308:G:O6 | 57:DA:2311:A:N7 | 2.40 | 0.54 |
| 57:DA:2636:C:H2' | 57:DA:2637:U:H6 | 1.71 | 0.54 |
| 57:DA:2823:A:C5 | 57:DA:2824:C:C5 | 2.94 | 0.54 |
| 58:DB:12:C:H5'' | 58:DB:15:A:N6 | 2.22 | 0.54 |
| 59:DF:16:MET:HA | 59:DF:21:TYR:HB2 | 1.88 | 0.54 |
| 35:DN:103:ARG:HD3 | 35:DN:110:MET:SD | 2.46 | 0.54 |
| 35:DN:103:ARG:HG3 | 35:DN:104:ALA:N | 2.22 | 0.54 |
| 38:DQ:50:ARG:HD2 | 38:DQ:50:ARG:N | 2.22 | 0.54 |
| 44:DW:77:LYS:O | 44:DW:78:PHE:HB2 | 2.07 | 0.54 |
| 46:DY:17:GLU:HG3 | 46:DY:53:VAL:HG11 | 1.89 | 0.54 |
| 1:AA:702:A:C4 | 22:BA:1847:A:H2 | 2.25 | 0.54 |
| 1:AA:1250:A:N3 | 1:AA:1370:G:O2' | 2.37 | 0.54 |
| 1:AA:1503:A:C8 | 1:AA:1531:A:H1' | 2.42 | 0.54 |
| 3:AC:118:SER:O | 3:AC:122:GLN:HG2 | 2.06 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:AC:166:TRP:HE3 | 3:AC:166:TRP:N | 1.94 | 0.54 |
| 5:AE:132:PRO:HA | 5:AE:135:VAL:HG13 | 1.88 | 0.54 |
| 9:AI:83:THR:HG21 | 9:AI:102:PHE:CB | 2.35 | 0.54 |
| 20:AT:66:ILE:CD1 | 20:AT:70:LYS:HE3 | 2.35 | 0.54 |
| 22:BA:580:U:O3' | 38:BQ:30:VAL:CG1 | 2.56 | 0.54 |
| 22:BA:1063:G:H2' | 22:BA:1064:C:H6 | 1.72 | 0.54 |
| 22:BA:1073:A:C3' | 22:BA:1074:G:C5' | 2.78 | 0.54 |
| 22:BA:1199:U:H2' | 22:BA:1200:C:H6 | 1.71 | 0.54 |
| 22:BA:1322:A:H2' | 22:BA:1323:C:H5' | 1.89 | 0.54 |
| 22:BA:2188:U:H2' | 22:BA:2189:U:C6 | 2.42 | 0.54 |
| 22:BA:2354:C:C4' | 44:BW:31:LEU:HD22 | 2.37 | 0.54 |
| 24:BC:106:PRO:CA | 24:BC:141:HIS:CE1 | 2.91 | 0.54 |
| 24:BC:144:GLU:HA | 24:BC:151:GLY:HA2 | 1.88 | 0.54 |
| 25:BD:57:ALA:O | 25:BD:60:VAL:HG12 | 2.08 | 0.54 |
| 28:BG:163:TYR:O | 28:BG:164:ALA:HB2 | 2.06 | 0.54 |
| 30:BI:126:ARG:HA | 30:BI:129:GLU:CB | 2.36 | 0.54 |
| 34:BM:64:TRP:HZ3 | 34:BM:106:ASP:HB2 | 1.72 | 0.54 |
| 44:BW:40:ARG:HG2 | 44:BW:52:CYS:SG | 2.48 | 0.54 |
| 46:BY:9:LYS:HB3 | 46:BY:12:GLU:HB2 | 1.88 | 0.54 |
| 53:CA:632:U:H3' | 53:CA:633:G:H5' | 1.88 | 0.54 |
| 53:CA:642:A:O2' | 53:CA:643:C:H6 | 1.89 | 0.54 |
| 53:CA:818:G:C3' | 53:CA:819:A:C5' | 2.85 | 0.54 |
| 53:CA:1050:G:O2' | 53:CA:1051:C:C6 | 2.59 | 0.54 |
| 53:CA:1068:G:O2' | 53:CA:1069:C:H5' | 2.07 | 0.54 |
| 53:CA:1250:A:N3 | 53:CA:1287:A:N6 | 2.55 | 0.54 |
| 53:CA:1520:C:H2' | 53:CA:1521:C:C6 | 2.42 | 0.54 |
| 2:CB:128:LEU:HD22 | 2:CB:132:GLU:HG2 | 1.89 | 0.54 |
| 4:CD:19:PHE:O | 4:CD:22:SER:HB2 | 2.07 | 0.54 |
| 54:CG:91:ARG:HG2 | 54:CG:92:PRO:CD | 2.30 | 0.54 |
| 15:CO:63:ARG:NH2 | 57:DA:715:A:H5' | 2.20 | 0.54 |
| 56:CP:5:ARG:HA | 56:CP:71:VAL:HG11 | 1.89 | 0.54 |
| 57:DA:834:G:H2' | 57:DA:835:C:O4' | 2.07 | 0.54 |
| 57:DA:860:U:HO2' | 57:DA:861:A:C5' | 2.20 | 0.54 |
| 57:DA:1038:G:C2 | 57:DA:1039:A:C5 | 2.95 | 0.54 |
| 57:DA:1079:C:H2' | 57:DA:1080:A:C8 | 2.42 | 0.54 |
| 57:DA:1248:G:H2' | 38:DQ:1:ALA:O | 2.08 | 0.54 |
| 57:DA:1773:A:H2' | 57:DA:1774:C:O4' | 2.08 | 0.54 |
| 28:DG:28:LYS:HG3 | 28:DG:79:THR:HG22 | 1.90 | 0.54 |
| 29:DH:96:THR:HG22 | 29:DH:113:SER:OG | 2.07 | 0.54 |
| 31:DJ:43:GLU:O | 31:DJ:45:THR:HG22 | 2.07 | 0.54 |
| 31:DJ:44:TYR:HB2 | 38:DQ:63:ARG:NH1 | 2.21 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 32:DK:19:VAL:HG12 | 32:DK:41:ILE:HG12 | 1.88 | 0.54 |
| 35:DN:35:LYS:NZ | 35:DN:112:TYR:HE1 | 1.93 | 0.54 |
| 36:DO:26:LEU:HD23 | 36:DO:92:PHE:CE1 | 2.42 | 0.54 |
| 42:DU:32:LYS:HE2 | 42:DU:65:GLN:OE1 | 2.07 | 0.54 |
| 1:AA:340:U:H2' | 1:AA:341:C:H6 | 1.73 | 0.54 |
| 1:AA:465:A:H2' | 1:AA:466:A:O4' | 2.07 | 0.54 |
| 1:AA:577:G:O4' | 1:AA:816:A:H2' | 2.06 | 0.54 |
| 1:AA:1118:U:H2' | 1:AA:1119:C:C6 | 2.41 | 0.54 |
| 2:AB:67:LEU:HB3 | 2:AB:160:LEU:CD1 | 2.37 | 0.54 |
| 2:AB:168:GLU:HB3 | 2:AB:171:ALA:HB3 | 1.90 | 0.54 |
| 4:AD:173:ASP:O | 4:AD:174:ALA:HB2 | 2.07 | 0.54 |
| 5:AE:67:ARG:HB2 | 5:AE:68:ARG:HE | 1.72 | 0.54 |
| 6:AF:49:TYR:HE2 | 6:AF:51:ILE:HB | 1.72 | 0.54 |
| 14:AN:12:ARG:HG2 | 14:AN:53:ASP:HB3 | 1.88 | 0.54 |
| 15:AO:78:THR:O | 15:AO:82:GLU:OE1 | 2.24 | 0.54 |
| 21:AU:24:LYS:CG | 21:AU:25:ALA:H | 2.21 | 0.54 |
| 22:BA:445:C:H5'' | 38:BQ:2:ARG:HB2 | 1.89 | 0.54 |
| 22:BA:531:C:C5 | 22:BA:2035:G:C2 | 2.96 | 0.54 |
| 22:BA:1403:A:C2 | 22:BA:1404:C:C2 | 2.95 | 0.54 |
| 22:BA:1906:G:H2' | 22:BA:1907:G:O5' | 2.06 | 0.54 |
| 28:BG:84:LYS:CB | 28:BG:132:LEU:H | 2.20 | 0.54 |
| 30:BI:24:GLY:O | 30:BI:27:LEU:HG | 2.07 | 0.54 |
| 30:BI:64:ARG:HG3 | 30:BI:65:SER:N | 2.22 | 0.54 |
| 35:BN:23:ASN:HD22 | 35:BN:23:ASN:N | 1.95 | 0.54 |
| 35:BN:33:ILE:HG23 | 35:BN:114:GLU:HB3 | 1.89 | 0.54 |
| 38:BQ:91:ARG:NE | 39:BR:11:GLN:HB2 | 2.22 | 0.54 |
| 42:BU:44:HIS:O | 42:BU:45:GLN:C | 2.46 | 0.54 |
| 53:CA:9:G:O2' | 53:CA:10:A:H5' | 2.08 | 0.54 |
| 53:CA:350:G:C6 | 53:CA:351:G:C6 | 2.95 | 0.54 |
| 53:CA:502:A:H4' | 53:CA:550:G:H4' | 1.89 | 0.54 |
| 53:CA:920:U:C2 | 53:CA:921:U:C5 | 2.95 | 0.54 |
| 3:CC:129:PHE:CE1 | 3:CC:156:LEU:HB3 | 2.42 | 0.54 |
| 4:CD:39:GLN:C | 4:CD:41:GLY:H | 2.10 | 0.54 |
| 9:CI:29:ILE:HA | 9:CI:64:ILE:O | 2.06 | 0.54 |
| 12:CL:19:ASN:ND2 | 12:CL:19:ASN:N | 2.56 | 0.54 |
| 17:CQ:12:VAL:HG22 | 17:CQ:12:VAL:O | 2.08 | 0.54 |
| 57:DA:98:G:O2' | 57:DA:103:A:C8 | 2.61 | 0.54 |
| 57:DA:118:A:OP1 | 50:D2:22:MET:SD | 2.66 | 0.54 |
| 57:DA:612:G:C2 | 57:DA:617:G:O6 | 2.60 | 0.54 |
| 57:DA:1399:C:H2' | 57:DA:1400:U:C6 | 2.42 | 0.54 |
| 57:DA:1437:C:N4 | 57:DA:1552:A:H2 | 2.04 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1787:A:H2' | 57:DA:1788:C:C6 | 2.42 | 0.54 |
| 57:DA:1825:U:C4 | 57:DA:1826:G:N7 | 2.75 | 0.54 |
| 57:DA:2006:C:H2' | 57:DA:2007:U:H6 | 1.71 | 0.54 |
| 57:DA:2151:U:H2' | 57:DA:2152:G:H8 | 1.71 | 0.54 |
| 57:DA:2849:U:OP2 | 37:DP:92:ARG:HG3 | 2.07 | 0.54 |
| 58:DB:42:C:H4' | 59:DF:63:LYS:HB3 | 1.88 | 0.54 |
| 34:DM:1:MET:O | 34:DM:2:LEU:O | 2.25 | 0.54 |
| 35:DN:16:HIS:C | 35:DN:18:GLN:H | 2.11 | 0.54 |
| 35:DN:96:ARG:NH1 | 35:DN:116:VAL:HG22 | 2.21 | 0.54 |
| 37:DP:61:ARG:NH1 | 37:DP:63:ILE:HD11 | 2.21 | 0.54 |
| 38:DQ:91:ARG:HH11 | 39:DR:10:LYS:HB3 | 1.69 | 0.54 |
| 42:DU:3:LYS:HG2 | 42:DU:84:PHE:HZ | 1.72 | 0.54 |
| 43:DV:30:ILE:HG12 | 43:DV:91:PHE:HB2 | 1.89 | 0.54 |
| 48:D0:38:LEU:N | 48:D0:41:HIS:CE1 | 2.75 | 0.54 |
| 1:AA:77:A:H2' | 1:AA:78:A:N7 | 2.22 | 0.54 |
| 1:AA:736:C:H2' | 1:AA:737:C:H6 | 1.69 | 0.54 |
| 1:AA:1101:A:H4' | 1:AA:1102:A:O5' | 2.07 | 0.54 |
| 1:AA:1332:A:H5'' | 1:AA:1332:A:N3 | 2.23 | 0.54 |
| 1:AA:1348:U:HO2' | 1:AA:1349:A:H8 | 1.53 | 0.54 |
| 7:AG:69:ARG:HG3 | 7:AG:95:ARG:CG | 2.38 | 0.54 |
| 11:AK:15:VAL:HG13 | 11:AK:78:ILE:CG2 | 2.37 | 0.54 |
| 11:AK:24:ALA:HA | 11:AK:29:THR:HG23 | 1.90 | 0.54 |
| 17:AQ:20:ILE:H | 17:AQ:47:ASP:CG | 2.10 | 0.54 |
| 22:BA:50:U:H4' | 22:BA:51:G:OP2 | 2.08 | 0.54 |
| 22:BA:163:C:O2' | 22:BA:164:C:O5' | 2.22 | 0.54 |
| 22:BA:358:U:H2' | 22:BA:359:G:O4' | 2.07 | 0.54 |
| 22:BA:404:A:C8 | 22:BA:406:G:C6 | 2.96 | 0.54 |
| 22:BA:622:G:H2' | 22:BA:623:C:C6 | 2.43 | 0.54 |
| 22:BA:747:U:O2 | 22:BA:2014:A:H1' | 2.08 | 0.54 |
| 22:BA:979:A:H2' | 22:BA:982:C:N4 | 2.22 | 0.54 |
| 22:BA:988:A:C2' | 22:BA:989:G:O5' | 2.56 | 0.54 |
| 22:BA:1159:U:H2' | 22:BA:1160:G:H5' | 1.90 | 0.54 |
| 22:BA:1411:U:C4 | 22:BA:1412:U:C4 | 2.95 | 0.54 |
| 22:BA:1512:C:OP2 | 22:BA:1512:C:H6 | 1.91 | 0.54 |
| 22:BA:1754:A:C6 | 22:BA:1755:A:C6 | 2.95 | 0.54 |
| 22:BA:1857:G:O2' | 22:BA:1858:A:P | 2.66 | 0.54 |
| 22:BA:2225:A:H4' | 22:BA:2226:C:H6 | 1.72 | 0.54 |
| 22:BA:2282:G:H4' | 22:BA:2389:G:O2' | 2.07 | 0.54 |
| 22:BA:2478:A:H5' | 52:B4:32:LYS:HD3 | 1.88 | 0.54 |
| 23:BB:93:C:H2' | 23:BB:94:A:H8 | 1.73 | 0.54 |
| 24:BC:252:LYS:HZ3 | 24:BC:252:LYS:HB2 | 1.73 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 32:BK:21:CYS:CB | 32:BK:39:ILE:HD11 | 2.35 | 0.54 |
| 34:BM:42:THR:OG1 | 34:BM:45:GLN:HG3 | 2.07 | 0.54 |
| 38:BQ:43:GLN:HE22 | 39:BR:77:PHE:HD1 | 1.55 | 0.54 |
| 39:BR:48:LYS:HD2 | 39:BR:48:LYS:N | 2.22 | 0.54 |
| 39:BR:58:VAL:HG13 | 39:BR:102:SER:HB2 | 1.89 | 0.54 |
| 43:BV:10:LYS:HD3 | 43:BV:10:LYS:N | 2.16 | 0.54 |
| 46:BY:5:GLU:O | 46:BY:8:GLU:HB2 | 2.06 | 0.54 |
| 53:CA:1052:U:H3' | 53:CA:1053:G:H5'' | 1.89 | 0.54 |
| 53:CA:1081:A:H2' | 53:CA:1082:A:O4' | 2.06 | 0.54 |
| 53:CA:1504:G:C3' | 53:CA:1505:G:H5' | 2.37 | 0.54 |
| 2:CB:60:ALA:C | 2:CB:62:ARG:H | 2.11 | 0.54 |
| 3:CC:34:SER:O | 3:CC:38:VAL:HG13 | 2.08 | 0.54 |
| 4:CD:57:LYS:HG3 | 4:CD:58:GLN:N | 2.22 | 0.54 |
| 4:CD:115:GLN:NE2 | 4:CD:153:ARG:HH22 | 2.06 | 0.54 |
| 57:DA:776:G:H1' | 57:DA:793:A:N1 | 2.23 | 0.54 |
| 57:DA:846:U:O2' | 57:DA:847:U:H5'' | 2.08 | 0.54 |
| 57:DA:1429:G:C2 | 57:DA:1430:G:C5 | 2.96 | 0.54 |
| 57:DA:1698:A:H4' | 57:DA:1699:G:OP1 | 2.04 | 0.54 |
| 57:DA:1901:A:OP2 | 24:DC:252:LYS:HE3 | 2.07 | 0.54 |
| 57:DA:2188:U:H2' | 57:DA:2189:U:C6 | 2.43 | 0.54 |
| 57:DA:2714:G:O5' | 57:DA:2714:G:C8 | 2.60 | 0.54 |
| 57:DA:2785:C:O3' | 25:DD:70:LYS:HD3 | 2.07 | 0.54 |
| 57:DA:2800:A:H2' | 57:DA:2801:G:C4' | 2.37 | 0.54 |
| 59:DF:5:ASP:C | 59:DF:7:TYR:H | 2.11 | 0.54 |
| 59:DF:177:ARG:NH1 | 59:DF:178:LYS:HB3 | 2.21 | 0.54 |
| 28:DG:162:ARG:HB2 | 28:DG:166:GLU:HB3 | 1.88 | 0.54 |
| 29:DH:41:LYS:H | 29:DH:44:ILE:HG23 | 1.73 | 0.54 |
| 29:DH:90:LEU:CB | 29:DH:123:ARG:HB3 | 2.33 | 0.54 |
| 39:DR:49:ILE:HB | 39:DR:51:VAL:O | 2.07 | 0.54 |
| 1:AA:230:G:H5'' | 16:AP:31:ARG:HH21 | 1.72 | 0.54 |
| 1:AA:1355:G:O2' | 1:AA:1356:G:H5' | 2.07 | 0.54 |
| 2:AB:49:PHE:HB2 | 2:AB:53:LEU:HD23 | 1.90 | 0.54 |
| 6:AF:11:HIS:HD2 | 6:AF:12:PRO:CD | 2.21 | 0.54 |
| 6:AF:38:ARG:HH11 | 6:AF:38:ARG:HG2 | 1.72 | 0.54 |
| 7:AG:20:GLU:O | 7:AG:24:LYS:HG3 | 2.08 | 0.54 |
| 9:AI:24:ASN:H | 9:AI:61:ASP:HB2 | 1.73 | 0.54 |
| 14:AN:87:ALA:HB2 | 14:AN:92:ILE:HD12 | 1.88 | 0.54 |
| 20:AT:19:HIS:O | 20:AT:23:ARG:HG2 | 2.07 | 0.54 |
| 20:AT:27:MET:HG3 | 20:AT:28:ARG:N | 2.21 | 0.54 |
| 22:BA:595:C:H2' | 22:BA:596:U:C6 | 2.42 | 0.54 |
| 22:BA:752:A:N7 | 22:BA:1781:U:H1' | 2.22 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:1159:U:O2' | 22:BA:1160:G:H5' | 2.08 | 0.54 |
| 22:BA:1486:U:H2' | 22:BA:1487:U:C6 | 2.42 | 0.54 |
| 22:BA:2722:G:H4' | 35:BN:3:HIS:O | 2.07 | 0.54 |
| 25:BD:106:LYS:HD2 | 25:BD:106:LYS:N | 2.22 | 0.54 |
| 30:BI:60:VAL:HG22 | 30:BI:66:PHE:HB2 | 1.90 | 0.54 |
| 31:BJ:88:THR:HG23 | 31:BJ:91:GLU:H | 1.73 | 0.54 |
| 32:BK:3:GLN:O | 32:BK:6:THR:HB | 2.07 | 0.54 |
| 41:BT:7:LEU:O | 41:BT:10:VAL:HG13 | 2.08 | 0.54 |
| 41:BT:87:LEU:HB2 | 41:BT:91:GLN:HG2 | 1.89 | 0.54 |
| 53:CA:429:U:C1' | 53:CA:430:A:H5'' | 2.37 | 0.54 |
| 53:CA:914:A:O2' | 53:CA:915:A:O4' | 2.26 | 0.54 |
| 53:CA:1243:C:H2' | 53:CA:1244:G:C8 | 2.43 | 0.54 |
| 53:CA:1480:A:H2' | 53:CA:1481:U:O4' | 2.07 | 0.54 |
| 2:CB:127:LYS:HE2 | 2:CB:136:ARG:NH2 | 2.22 | 0.54 |
| 6:CF:67:PRO:O | 6:CF:69:GLU:N | 2.41 | 0.54 |
| 55:CM:68:LEU:HD22 | 55:CM:69:ARG:HH11 | 1.72 | 0.54 |
| 14:CN:96:LYS:HD2 | 14:CN:96:LYS:H | 1.72 | 0.54 |
| 20:CT:54:GLN:N | 20:CT:55:PRO:HD2 | 2.23 | 0.54 |
| 57:DA:826:U:C5 | 57:DA:828:U:H6 | 2.26 | 0.54 |
| 57:DA:878:A:H4' | 57:DA:898:C:N4 | 2.20 | 0.54 |
| 57:DA:1010:A:O2' | 57:DA:1011:G:C5' | 2.55 | 0.54 |
| 57:DA:1157:G:O2' | 57:DA:1158:C:H5' | 2.07 | 0.54 |
| 57:DA:1205:A:H5'' | 57:DA:1206:G:N7 | 2.22 | 0.54 |
| 57:DA:1417:C:O2' | 57:DA:1418:G:C5' | 2.55 | 0.54 |
| 57:DA:1628:G:H2' | 57:DA:1629:U:H6 | 1.72 | 0.54 |
| 57:DA:1827:U:O4' | 57:DA:1970:A:O2' | 2.26 | 0.54 |
| 57:DA:1997:C:O2' | 57:DA:1998:A:C5' | 2.55 | 0.54 |
| 57:DA:2004:G:C5 | 57:DA:2005:A:C8 | 2.95 | 0.54 |
| 57:DA:2403:C:H2' | 57:DA:2404:U:C6 | 2.42 | 0.54 |
| 57:DA:2526:G:C5 | 57:DA:2527:C:C5 | 2.96 | 0.54 |
| 57:DA:2881:U:H2' | 57:DA:2882:A:C8 | 2.38 | 0.54 |
| 24:DC:77:VAL:HG23 | 24:DC:112:GLY:H | 1.72 | 0.54 |
| 24:DC:257:ARG:CZ | 24:DC:266:ILE:HD11 | 2.38 | 0.54 |
| 59:DF:113:PHE:O | 59:DF:114:ARG:CB | 2.55 | 0.54 |
| 30:DI:48:ILE:HG13 | 30:DI:49:GLU:N | 2.23 | 0.54 |
| 31:DJ:25:LEU:HB2 | 31:DJ:62:VAL:CG2 | 2.38 | 0.54 |
| 35:DN:33:ILE:HG23 | 35:DN:114:GLU:HB2 | 1.89 | 0.54 |
| 37:DP:87:ARG:HG2 | 37:DP:88:ARG:H | 1.72 | 0.54 |
| 39:DR:66:HIS:CD2 | 39:DR:94:THR:HG22 | 2.43 | 0.54 |
| 48:D0:28:SER:HB3 | 48:D0:39:ARG:HE | 1.71 | 0.54 |
| 49:D1:24:LYS:HE2 | 49:D1:52:LYS:NZ | 2.22 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:32:A:H2' | 1:AA:33:A:H8 | 1.68 | 0.54 |
| 1:AA:247:G:C6 | 1:AA:278:G:C2 | 2.96 | 0.54 |
| 1:AA:613:C:H2' | 1:AA:614:C:H6 | 1.71 | 0.54 |
| 1:AA:706:A:O2' | 11:AK:30:ILE:HD11 | 2.07 | 0.54 |
| 1:AA:914:A:C4 | 1:AA:915:A:C8 | 2.96 | 0.54 |
| 1:AA:1158:C:O2 | 1:AA:1158:C:H2' | 2.06 | 0.54 |
| 1:AA:1343:G:O3' | 9:AI:123:ARG:HB3 | 2.08 | 0.54 |
| 4:AD:130:ASN:O | 4:AD:131:ILE:C | 2.45 | 0.54 |
| 4:AD:151:GLN:O | 4:AD:152:SER:C | 2.46 | 0.54 |
| 5:AE:64:GLU:HG2 | 5:AE:68:ARG:NH2 | 2.23 | 0.54 |
| 5:AE:155:LYS:HD2 | 5:AE:156:ARG:N | 2.21 | 0.54 |
| 6:AF:17:GLN:HG2 | 4:CD:188:SER:HB2 | 1.89 | 0.54 |
| 10:AJ:80:THR:HG22 | 10:AJ:82:LYS:H | 1.73 | 0.54 |
| 14:AN:83:VAL:HG12 | 14:AN:84:ARG:N | 2.22 | 0.54 |
| 16:AP:67:ILE:HG21 | 16:AP:72:ALA:HB2 | 1.89 | 0.54 |
| 22:BA:309:A:N3 | 22:BA:329:G:O2' | 2.40 | 0.54 |
| 22:BA:659:G:H4' | 26:BE:95:LYS:HD3 | 1.89 | 0.54 |
| 22:BA:868:U:C4 | 22:BA:869:G:N7 | 2.76 | 0.54 |
| 22:BA:2225:A:H4' | 22:BA:2226:C:O5' | 2.08 | 0.54 |
| 22:BA:2331:G:O2' | 22:BA:2336:A:N1 | 2.30 | 0.54 |
| 24:BC:106:PRO:CA | 24:BC:141:HIS:HE1 | 2.20 | 0.54 |
| 26:BE:187:VAL:O | 26:BE:188:MET:HB3 | 2.08 | 0.54 |
| 28:BG:85:LYS:HG2 | 28:BG:131:VAL:HG12 | 1.88 | 0.54 |
| 28:BG:120:ILE:HD13 | 28:BG:121:THR:N | 2.22 | 0.54 |
| 29:BH:43:ASN:N | 29:BH:43:ASN:HD22 | 2.05 | 0.54 |
| 45:BX:29:LEU:N | 45:BX:29:LEU:CD2 | 2.71 | 0.54 |
| 46:BY:32:ALA:CB | 46:BY:37:LEU:HD12 | 2.30 | 0.54 |
| 53:CA:264:C:H2' | 53:CA:265:G:O4' | 2.06 | 0.54 |
| 53:CA:304:U:H2' | 53:CA:305:G:C8 | 2.41 | 0.54 |
| 53:CA:891:U:C5 | 53:CA:906:A:C2 | 2.96 | 0.54 |
| 53:CA:1139:G:H4' | 53:CA:1140:C:C5' | 2.38 | 0.54 |
| 53:CA:1144:G:N2 | 53:CA:1146:A:H62 | 2.04 | 0.54 |
| 4:CD:68:GLU:O | 4:CD:69:ARG:C | 2.46 | 0.54 |
| 54:CG:129:ASN:OD1 | 54:CG:134:VAL:HG11 | 2.08 | 0.54 |
| 8:CH:5:PRO:O | 8:CH:8:ASP:HB3 | 2.07 | 0.54 |
| 12:CL:24:GLU:O | 12:CL:25:ALA:HB3 | 2.08 | 0.54 |
| 14:CN:55:SER:C | 14:CN:57:SER:H | 2.10 | 0.54 |
| 15:CO:27:GLN:O | 15:CO:30:LEU:HB2 | 2.07 | 0.54 |
| 17:CQ:14:ASP:OD2 | 17:CQ:52:CYS:HB2 | 2.07 | 0.54 |
| 19:CS:35:ARG:NH1 | 19:CS:76:THR:HG22 | 2.23 | 0.54 |
| 57:DA:95:A:H2' | 57:DA:96:C:C5' | 2.37 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:224:U:O4 | 57:DA:420:C:H5' | 2.08 | 0.54 |
| 57:DA:284:U:H2' | 57:DA:285:G:H8 | 1.72 | 0.54 |
| 57:DA:364:C:H2' | 57:DA:365:U:C6 | 2.42 | 0.54 |
| 57:DA:1304:A:O2' | 57:DA:1305:C:O5' | 2.23 | 0.54 |
| 57:DA:1312:U:H4' | 57:DA:1313:U:O5' | 2.07 | 0.54 |
| 57:DA:1342:A:C4 | 57:DA:1345:C:N4 | 2.76 | 0.54 |
| 57:DA:1572:A:O5' | 57:DA:1572:A:H8 | 1.90 | 0.54 |
| 57:DA:1915:U:C2' | 57:DA:1916:A:H8 | 2.11 | 0.54 |
| 57:DA:2408:U:H5 | 63:DA:3596:HOH:O | 1.89 | 0.54 |
| 57:DA:2620:C:O4' | 25:DD:161:MET:HG3 | 2.07 | 0.54 |
| 24:DC:260:LYS:HA | 24:DC:263:ASP:OD1 | 2.08 | 0.54 |
| 26:DE:170:ARG:NH2 | 26:DE:176:ASP:HB2 | 2.21 | 0.54 |
| 28:DG:1:SER:C | 28:DG:3:VAL:H | 2.10 | 0.54 |
| 29:DH:66:ASN:HD22 | 29:DH:137:GLU:HB3 | 1.73 | 0.54 |
| 31:DJ:92:MET:HE2 | 31:DJ:95:ARG:HD2 | 1.90 | 0.54 |
| 33:DL:65:GLY:O | 33:DL:66:PHE:HB2 | 2.08 | 0.54 |
| 34:DM:81:ARG:NH2 | 34:DM:84:LYS:HE2 | 2.22 | 0.54 |
| 41:DT:30:ILE:O | 41:DT:85:VAL:HG23 | 2.08 | 0.54 |
| 42:DU:9:GLU:OE1 | 42:DU:23:LYS:HA | 2.07 | 0.54 |
| 44:DW:67:LYS:HB3 | 44:DW:80:SER:HB2 | 1.90 | 0.54 |
| 1:AA:204:G:C1' | 1:AA:465:A:C2 | 2.90 | 0.54 |
| 1:AA:279:A:H5'' | 1:AA:281:G:H5' | 1.88 | 0.54 |
| 1:AA:430:A:H2' | 1:AA:431:A:H8 | 1.73 | 0.54 |
| 1:AA:516:U:O2' | 1:AA:517:G:H5' | 2.08 | 0.54 |
| 1:AA:874:G:O2' | 1:AA:875:U:H5' | 2.07 | 0.54 |
| 1:AA:1143:G:O2' | 1:AA:1144:G:H5' | 2.07 | 0.54 |
| 1:AA:1343:G:H1' | 9:AI:122:ARG:NH1 | 2.23 | 0.54 |
| 1:AA:1356:G:H2' | 1:AA:1357:A:H8 | 1.68 | 0.54 |
| 3:AC:136:ALA:O | 3:AC:140:ALA:HB2 | 2.07 | 0.54 |
| 22:BA:31:C:O2' | 22:BA:1238:G:H5' | 2.06 | 0.54 |
| 22:BA:74:A:H5' | 22:BA:75:G:O4' | 2.06 | 0.54 |
| 22:BA:459:U:H2' | 22:BA:460:A:C8 | 2.42 | 0.54 |
| 22:BA:528:A:C2 | 22:BA:2042:A:H2' | 2.42 | 0.54 |
| 22:BA:1269:A:OP2 | 63:BA:3379:HOH:O | 2.19 | 0.54 |
| 22:BA:1385:A:O2' | 22:BA:1396:U:O2 | 2.23 | 0.54 |
| 22:BA:1842:G:O4' | 24:BC:242:HIS:HE1 | 1.90 | 0.54 |
| 22:BA:2484:G:OP1 | 34:BM:44:ARG:HD3 | 2.07 | 0.54 |
| 23:BB:27:C:OP1 | 36:BO:34:HIS:HE1 | 1.91 | 0.54 |
| 23:BB:89:U:H3' | 23:BB:90:C:C5' | 2.37 | 0.54 |
| 24:BC:80:LEU:HA | 24:BC:90:ILE:O | 2.07 | 0.54 |
| 26:BE:41:GLN:OE1 | 26:BE:43:THR:HG21 | 2.08 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 26:BE:170:ARG:HG2 | 26:BE:170:ARG:HH21 | 1.71 | 0.54 |
| 39:BR:1:MET:O | 39:BR:1:MET:HG3 | 2.08 | 0.54 |
| 40:BS:18:ARG:HG2 | 40:BS:76:VAL:HG13 | 1.88 | 0.54 |
| 50:B2:35:ARG:CG | 50:B2:42:LEU:HD11 | 2.37 | 0.54 |
| 53:CA:106:C:O2' | 53:CA:107:G:H5' | 2.08 | 0.54 |
| 53:CA:441:A:C2 | 53:CA:497:G:C6 | 2.95 | 0.54 |
| 53:CA:483:C:H2' | 53:CA:484:G:C8 | 2.43 | 0.54 |
| 53:CA:520:A:OP1 | 12:CL:48:LEU:HG | 2.07 | 0.54 |
| 53:CA:577:G:N9 | 53:CA:816:A:C2 | 2.76 | 0.54 |
| 53:CA:644:U:H2' | 53:CA:645:G:H8 | 1.72 | 0.54 |
| 53:CA:1261:A:N7 | 53:CA:1274:A:H2 | 2.06 | 0.54 |
| 5:CE:14:LEU:HD12 | 5:CE:15:ILE:N | 2.23 | 0.54 |
| 5:CE:79:THR:HA | 5:CE:121:ASN:CG | 2.28 | 0.54 |
| 55:CM:81:ASP:HB3 | 55:CM:82:LEU:HD12 | 1.90 | 0.54 |
| 20:CT:50:PHE:O | 20:CT:53:MET:HG3 | 2.07 | 0.54 |
| 57:DA:156:A:H3' | 57:DA:156:A:OP2 | 2.07 | 0.54 |
| 57:DA:381:G:H5'' | 45:DX:15:ASN:HD22 | 1.73 | 0.54 |
| 57:DA:492:A:H2' | 57:DA:493:G:H8 | 1.68 | 0.54 |
| 57:DA:590:A:H2' | 57:DA:591:U:C6 | 2.42 | 0.54 |
| 57:DA:637:A:OP2 | 33:DL:112:LEU:HD22 | 2.07 | 0.54 |
| 57:DA:1062:G:C8 | 57:DA:1088:A:C8 | 2.96 | 0.54 |
| 57:DA:1064:C:OP1 | 30:DI:88:GLY:HA3 | 2.07 | 0.54 |
| 57:DA:1327:A:C2 | 57:DA:1328:A:H1' | 2.42 | 0.54 |
| 57:DA:1327:A:N3 | 57:DA:1328:A:H1' | 2.23 | 0.54 |
| 57:DA:1721:G:H1' | 57:DA:1739:A:N6 | 2.22 | 0.54 |
| 57:DA:1982:U:H6 | 57:DA:1982:U:O5' | 1.90 | 0.54 |
| 57:DA:2142:A:C3' | 57:DA:2143:C:H4' | 2.37 | 0.54 |
| 57:DA:2269:G:O3' | 44:DW:18:LYS:HE2 | 2.08 | 0.54 |
| 57:DA:2337:G:H2' | 57:DA:2337:G:N3 | 2.23 | 0.54 |
| 57:DA:2682:A:H61 | 57:DA:2728:U:H1' | 1.72 | 0.54 |
| 57:DA:2714:G:H2' | 57:DA:2715:C:H6 | 1.71 | 0.54 |
| 58:DB:85:G:N2 | 58:DB:92:C:C2 | 2.76 | 0.54 |
| 24:DC:180:MET:CE | 24:DC:268:ARG:HE | 2.21 | 0.54 |
| 26:DE:130:LYS:HG3 | 26:DE:133:LEU:HD13 | 1.89 | 0.54 |
| 29:DH:99:ILE:HG22 | 29:DH:100:ALA:N | 2.22 | 0.54 |
| 30:DI:112:LYS:HZ3 | 30:DI:128:ILE:HD12 | 1.73 | 0.54 |
| 38:DQ:101:ASP:HB2 | 39:DR:2:TYR:OH | 2.08 | 0.54 |
| 40:DS:29:VAL:O | 40:DS:33:LEU:HB2 | 2.07 | 0.54 |
| 42:DU:39:ASN:HD21 | 42:DU:64:ILE:HG22 | 1.73 | 0.54 |
| 42:DU:58:VAL:CG1 | 42:DU:60:LYS:HG2 | 2.37 | 0.54 |
| 1:AA:57:G:C6 | 1:AA:356:A:N1 | 2.76 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1053:G:O6 | 1:AA:1199:U:H2' | 2.08 | 0.54 |
| 2:AB:49:PHE:CG | 2:AB:212:TYR:OH | 2.60 | 0.54 |
| 2:AB:212:TYR:O | 2:AB:216:VAL:HG23 | 2.08 | 0.54 |
| 4:AD:16:THR:CG2 | 4:AD:17:ASP:H | 2.17 | 0.54 |
| 8:AH:88:LYS:HA | 8:AH:91:LEU:CD1 | 2.36 | 0.54 |
| 14:AN:42:ASN:C | 14:AN:44:VAL:H | 2.10 | 0.54 |
| 22:BA:247:G:H4' | 22:BA:386:G:C5 | 2.42 | 0.54 |
| 22:BA:1252:G:N1 | 38:BQ:36:GLN:OE1 | 2.38 | 0.54 |
| 22:BA:1289:C:H2' | 22:BA:1290:C:C6 | 2.42 | 0.54 |
| 22:BA:1829:A:N3 | 24:BC:14:HIS:HE1 | 2.06 | 0.54 |
| 22:BA:1857:G:N2 | 22:BA:1884:G:O2' | 2.41 | 0.54 |
| 22:BA:2352:A:H8 | 22:BA:2352:A:O5' | 1.91 | 0.54 |
| 24:BC:16:VAL:HB | 24:BC:203:VAL:HB | 1.90 | 0.54 |
| 24:BC:24:HIS:CG | 24:BC:25:LYS:N | 2.76 | 0.54 |
| 24:BC:77:VAL:O | 24:BC:77:VAL:CG2 | 2.56 | 0.54 |
| 34:BM:17:ASN:O | 34:BM:38:ARG:HD3 | 2.08 | 0.54 |
| 35:BN:71:ARG:HG3 | 35:BN:71:ARG:NH2 | 2.21 | 0.54 |
| 36:BO:31:THR:HG22 | 36:BO:34:HIS:O | 2.08 | 0.54 |
| 41:BT:32:LEU:N | 41:BT:32:LEU:HD23 | 2.23 | 0.54 |
| 43:BV:40:ILE:CG2 | 43:BV:41:GLU:N | 2.71 | 0.54 |
| 44:BW:22:VAL:O | 44:BW:25:PHE:HD2 | 1.89 | 0.54 |
| 44:BW:37:VAL:CG1 | 44:BW:38:ARG:N | 2.70 | 0.54 |
| 52:B4:4:ARG:HG3 | 52:B4:6:SER:O | 2.08 | 0.54 |
| 53:CA:15:G:H8 | 53:CA:15:G:H5' | 1.73 | 0.54 |
| 53:CA:405:U:O4 | 4:CD:1:ALA:HB1 | 2.07 | 0.54 |
| 53:CA:643:C:O2' | 53:CA:644:U:H5' | 2.07 | 0.54 |
| 53:CA:714:G:H2' | 53:CA:715:A:C8 | 2.43 | 0.54 |
| 53:CA:737:C:OP1 | 6:CF:91:ARG:HD2 | 2.08 | 0.54 |
| 53:CA:769:G:H4' | 53:CA:1513:A:H4' | 1.89 | 0.54 |
| 53:CA:1391:U:H2' | 53:CA:1392:G:H8 | 1.70 | 0.54 |
| 10:CJ:25:ILE:HG22 | 10:CJ:25:ILE:O | 2.08 | 0.54 |
| 56:CP:77:GLU:C | 56:CP:79:ASN:H | 2.10 | 0.54 |
| 57:DA:100:U:C6 | 57:DA:100:U:OP1 | 2.61 | 0.54 |
| 57:DA:740:C:O2' | 57:DA:741:U:C5' | 2.56 | 0.54 |
| 57:DA:740:C:C5' | 57:DA:1784:A:H3' | 2.38 | 0.54 |
| 57:DA:974:G:H1' | 57:DA:975:A:C8 | 2.41 | 0.54 |
| 57:DA:1830:C:H5' | 24:DC:14:HIS:CE1 | 2.42 | 0.54 |
| 57:DA:1914:C:O2' | 57:DA:1915:U:O4' | 2.26 | 0.54 |
| 57:DA:2140:G:C6 | 57:DA:2152:G:C6 | 2.96 | 0.54 |
| 57:DA:2185:U:H2' | 57:DA:2186:G:C8 | 2.42 | 0.54 |
| 57:DA:2813:A:H2' | 57:DA:2814:A:H8 | 1.72 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 24:DC:169:ALA:O | 24:DC:185:ALA:HB3 | 2.08 | 0.54 |
| 25:DD:79:LEU:N | 25:DD:79:LEU:HD22 | 2.22 | 0.54 |
| 28:DG:132:LEU:HD12 | 28:DG:132:LEU:N | 2.22 | 0.54 |
| 30:DI:52:LEU:O | 30:DI:54:ILE:HD12 | 2.08 | 0.54 |
| 32:DK:39:ILE:HD11 | 32:DK:62:VAL:HG23 | 1.88 | 0.54 |
| 34:DM:42:THR:HG22 | 34:DM:45:GLN:H | 1.72 | 0.54 |
| 1:AA:49:U:C4 | 1:AA:364:A:C6 | 2.96 | 0.54 |
| 1:AA:70:U:O2' | 1:AA:71:A:C8 | 2.61 | 0.54 |
| 1:AA:176:C:H2' | 1:AA:177:G:N3 | 2.22 | 0.54 |
| 1:AA:182:A:C2 | 1:AA:184:G:C8 | 2.96 | 0.54 |
| 1:AA:652:U:O2' | 1:AA:653:U:O5' | 2.26 | 0.54 |
| 1:AA:919:A:O2' | 1:AA:920:U:H5' | 2.07 | 0.54 |
| 1:AA:1101:A:N7 | 2:AB:170:ILE:HG22 | 2.23 | 0.54 |
| 1:AA:1468:A:H2' | 1:AA:1469:C:C5' | 2.37 | 0.54 |
| 6:AF:9:MET:HE3 | 18:AR:64:LEU:HD22 | 1.89 | 0.54 |
| 7:AG:37:THR:O | 7:AG:41:ILE:HG13 | 2.07 | 0.54 |
| 8:AH:105:THR:HG21 | 8:AH:120:LEU:CD1 | 2.31 | 0.54 |
| 12:AL:88:ASP:HB3 | 12:AL:89:LEU:HD22 | 1.90 | 0.54 |
| 22:BA:478:A:C6 | 22:BA:480:A:C6 | 2.96 | 0.54 |
| 22:BA:511:U:H5 | 22:BA:512:G:C5 | 2.26 | 0.54 |
| 22:BA:780:G:N2 | 22:BA:783:A:H62 | 1.99 | 0.54 |
| 22:BA:1062:G:C8 | 22:BA:1088:A:C8 | 2.96 | 0.54 |
| 22:BA:1657:U:O3' | 25:BD:138:LEU:HD23 | 2.08 | 0.54 |
| 22:BA:2505:G:O4' | 61:BA:3136:CLM:CL2 | 2.63 | 0.54 |
| 23:BB:78:A:C2 | 23:BB:99:A:C4 | 2.96 | 0.54 |
| 23:BB:78:A:H2' | 23:BB:79:G:O4' | 2.08 | 0.54 |
| 28:BG:155:PRO:O | 28:BG:170:THR:HA | 2.08 | 0.54 |
| 32:BK:63:VAL:HG22 | 32:BK:107:LEU:HD21 | 1.89 | 0.54 |
| 36:BO:31:THR:O | 36:BO:102:ARG:NH1 | 2.39 | 0.54 |
| 37:BP:85:VAL:O | 37:BP:86:LYS:HB2 | 2.08 | 0.54 |
| 41:BT:39:THR:O | 41:BT:41:ALA:N | 2.40 | 0.54 |
| 41:BT:86:THR:O | 41:BT:87:LEU:HD23 | 2.07 | 0.54 |
| 53:CA:110:C:H2' | 53:CA:111:G:C8 | 2.43 | 0.54 |
| 53:CA:962:C:O2' | 53:CA:963:G:H8 | 1.89 | 0.54 |
| 53:CA:985:C:O2' | 53:CA:986:U:C5' | 2.56 | 0.54 |
| 53:CA:1461:G:C5 | 53:CA:1462:C:C4 | 2.96 | 0.54 |
| 53:CA:1493:A:H8 | 57:DA:1913:A:N6 | 2.04 | 0.54 |
| 3:CC:12:GLY:O | 3:CC:13:ILE:HD13 | 2.08 | 0.54 |
| 12:CL:36:VAL:HG23 | 12:CL:36:VAL:O | 2.08 | 0.54 |
| 15:CO:16:ARG:HB2 | 15:CO:23:SER:HB2 | 1.88 | 0.54 |
| 19:CS:28:LYS:O | 19:CS:30:LEU:HD12 | 2.08 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:524:G:H2' | 57:DA:525:U:C6 | 2.43 | 0.54 |
| 57:DA:604:G:C6 | 57:DA:625:G:C6 | 2.96 | 0.54 |
| 57:DA:1038:G:C6 | 57:DA:1039:A:N7 | 2.76 | 0.54 |
| 57:DA:1048:A:C5 | 57:DA:1049:C:N4 | 2.76 | 0.54 |
| 57:DA:1231:U:H2' | 57:DA:1232:G:H8 | 1.72 | 0.54 |
| 57:DA:1238:G:O2' | 57:DA:1239:G:H5' | 2.07 | 0.54 |
| 57:DA:2143:C:H5'' | 57:DA:2144:G:N7 | 2.22 | 0.54 |
| 57:DA:2516:A:C4 | 57:DA:2569:G:N2 | 2.76 | 0.54 |
| 57:DA:2766:A:H2' | 57:DA:2766:A:N3 | 2.22 | 0.54 |
| 58:DB:81:G:C4 | 58:DB:82:U:C5 | 2.96 | 0.54 |
| 31:DJ:94:ALA:O | 31:DJ:95:ARG:CB | 2.56 | 0.54 |
| 40:DS:55:ILE:O | 40:DS:59:GLU:HG2 | 2.08 | 0.54 |
| 41:DT:63:VAL:HG21 | 41:DT:80:TRP:CE2 | 2.43 | 0.54 |
| 44:DW:23:LYS:HD2 | 44:DW:24:ARG:H | 1.71 | 0.54 |
| 47:DZ:37:ARG:HA | 47:DZ:37:ARG:HE | 1.73 | 0.54 |
| 48:D0:38:LEU:HB2 | 48:D0:41:HIS:CE1 | 2.43 | 0.54 |
| 1:AA:11:G:C5 | 1:AA:12:U:C5 | 2.96 | 0.54 |
| 1:AA:237:G:H5'' | 17:AQ:26:ARG:NH2 | 2.23 | 0.54 |
| 1:AA:340:U:H2' | 1:AA:341:C:C6 | 2.43 | 0.54 |
| 1:AA:428:G:H1' | 1:AA:430:A:N7 | 2.22 | 0.54 |
| 1:AA:507:C:H3' | 1:AA:508:U:H5'' | 1.89 | 0.54 |
| 1:AA:1210:C:H2' | 1:AA:1211:U:H5' | 1.89 | 0.54 |
| 1:AA:1323:G:H2' | 1:AA:1324:A:H8 | 1.73 | 0.54 |
| 2:AB:14:HIS:O | 2:AB:14:HIS:CG | 2.61 | 0.54 |
| 2:AB:32:GLY:HA3 | 2:AB:39:ILE:H | 1.73 | 0.54 |
| 5:AE:17:VAL:HG22 | 5:AE:18:ASN:H | 1.73 | 0.54 |
| 5:AE:37:VAL:HG11 | 5:AE:113:VAL:HA | 1.90 | 0.54 |
| 22:BA:85:G:OP1 | 42:BU:27:VAL:HG11 | 2.08 | 0.54 |
| 22:BA:958:U:H5' | 34:BM:14:LYS:NZ | 2.22 | 0.54 |
| 22:BA:1006:C:C2' | 22:BA:1007:C:H5' | 2.38 | 0.54 |
| 22:BA:1179:G:C2 | 22:BA:1180:U:O2' | 2.61 | 0.54 |
| 22:BA:1537:G:H2' | 22:BA:1538:G:O4' | 2.09 | 0.54 |
| 22:BA:1835:G:C4 | 22:BA:1931:U:C4 | 2.96 | 0.54 |
| 22:BA:2001:C:H4' | 22:BA:2689:U:H2' | 1.89 | 0.54 |
| 22:BA:2266:A:H4' | 22:BA:2267:A:O5' | 2.08 | 0.54 |
| 22:BA:2405:G:O2' | 22:BA:2411:A:N6 | 2.41 | 0.54 |
| 22:BA:2555:U:H5 | 22:BA:2556:C:C2 | 2.26 | 0.54 |
| 22:BA:2793:C:H2' | 22:BA:2794:C:C6 | 2.41 | 0.54 |
| 27:BF:72:SER:HB2 | 27:BF:80:GLN:HB2 | 1.90 | 0.54 |
| 27:BF:133:GLU:H | 27:BF:150:GLY:HA2 | 1.71 | 0.54 |
| 29:BH:32:PRO:O | 29:BH:33:GLN:HB2 | 2.07 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:BH:68:ARG:HH22 | 29:BH:72:ILE:HG21 | 1.70 | 0.54 |
| 33:BL:55:MET:HE3 | 33:BL:55:MET:HA | 1.89 | 0.54 |
| 33:BL:85:VAL:CG2 | 33:BL:94:THR:HG23 | 2.38 | 0.54 |
| 38:BQ:86:SER:O | 38:BQ:88:GLU:N | 2.41 | 0.54 |
| 44:BW:29:SER:HA | 44:BW:63:ASP:HB3 | 1.90 | 0.54 |
| 44:BW:40:ARG:HG3 | 44:BW:56:HIS:ND1 | 2.23 | 0.54 |
| 53:CA:8:A:C5 | 4:CD:205:LYS:HG3 | 2.43 | 0.54 |
| 53:CA:90:C:O2' | 53:CA:91:U:C6 | 2.53 | 0.54 |
| 53:CA:989:U:C2' | 53:CA:990:C:H5' | 2.38 | 0.54 |
| 53:CA:1382:C:O2' | 53:CA:1383:C:C5' | 2.55 | 0.54 |
| 53:CA:1406:U:H2' | 53:CA:1407:C:H5' | 1.90 | 0.54 |
| 4:CD:29:THR:HG22 | 4:CD:30:LYS:HD3 | 1.89 | 0.54 |
| 55:CM:111:PRO:HG2 | 55:CM:113:LYS:HG3 | 1.89 | 0.54 |
| 14:CN:68:ARG:NH1 | 14:CN:80:ARG:HH12 | 2.06 | 0.54 |
| 19:CS:10:ILE:HG22 | 19:CS:14:LEU:HD21 | 1.90 | 0.54 |
| 57:DA:238:C:H2' | 57:DA:239:C:O4' | 2.07 | 0.54 |
| 57:DA:373:U:HO2' | 57:DA:374:A:H8 | 1.51 | 0.54 |
| 57:DA:1232:G:H2' | 57:DA:1233:C:C6 | 2.43 | 0.54 |
| 57:DA:1612:C:C2' | 57:DA:1613:G:O5' | 2.56 | 0.54 |
| 57:DA:1706:C:O2' | 57:DA:1707:G:OP1 | 2.26 | 0.54 |
| 57:DA:1967:C:O2' | 57:DA:1968:G:H5' | 2.08 | 0.54 |
| 57:DA:2384:U:H6 | 57:DA:2384:U:OP2 | 1.90 | 0.54 |
| 57:DA:2666:C:H2' | 57:DA:2667:C:C5' | 2.38 | 0.54 |
| 57:DA:2748:A:H1' | 28:DG:66:THR:CG2 | 2.34 | 0.54 |
| 57:DA:2758:A:H2' | 57:DA:2759:G:H5' | 1.89 | 0.54 |
| 57:DA:2869:G:H2' | 57:DA:2870:C:O4' | 2.08 | 0.54 |
| 58:DB:50:A:OP1 | 36:DO:68:LYS:HB2 | 2.07 | 0.54 |
| 24:DC:179:GLU:HA | 24:DC:269:ARG:O | 2.08 | 0.54 |
| 25:DD:33:ARG:HD2 | 25:DD:33:ARG:H | 1.72 | 0.54 |
| 26:DE:196:VAL:HG13 | 26:DE:200:LEU:HD23 | 1.89 | 0.54 |
| 59:DF:103:ILE:HG22 | 59:DF:103:ILE:O | 2.08 | 0.54 |
| 33:DL:48:ARG:HG3 | 33:DL:48:ARG:NH1 | 2.18 | 0.54 |
| 34:DM:26:VAL:HG21 | 34:DM:132:THR:O | 2.08 | 0.54 |
| 38:DQ:15:LYS:O | 38:DQ:19:GLN:HG3 | 2.09 | 0.54 |
| 38:DQ:42:GLY:HA3 | 39:DR:75:VAL:HG21 | 1.90 | 0.54 |
| 49:D1:34:GLU:HG3 | 49:D1:49:LYS:HB2 | 1.90 | 0.54 |
| 51:D3:44:ARG:H | 51:D3:45:PRO:HD2 | 1.73 | 0.54 |
| 3:AC:21:TRP:CD1 | 3:AC:58:ARG:HG2 | 2.44 | 0.53 |
| 4:AD:61:ARG:NH1 | 4:AD:68:GLU:HG2 | 2.22 | 0.53 |
| 8:AH:17:GLN:HE21 | 8:AH:71:VAL:CG2 | 2.15 | 0.53 |
| 13:AM:106:ARG:HH21 | 13:AM:112:ARG:CB | 2.19 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 14:AN:5:MET:HA | 14:AN:8:ARG:HD2 | 1.90 | 0.53 |
| 22:BA:1153:C:H2' | 22:BA:1154:G:O4' | 2.08 | 0.53 |
| 22:BA:1250:G:OP2 | 33:BL:21:ARG:NH2 | 2.40 | 0.53 |
| 22:BA:1494:A:H2' | 22:BA:1495:A:H8 | 1.69 | 0.53 |
| 22:BA:1956:U:O2' | 22:BA:1957:C:H5' | 2.07 | 0.53 |
| 22:BA:2140:G:H2' | 22:BA:2141:G:C8 | 2.42 | 0.53 |
| 22:BA:2385:C:O2' | 22:BA:2386:A:O4' | 2.25 | 0.53 |
| 22:BA:2449:U:H6 | 22:BA:2449:U:O5' | 1.91 | 0.53 |
| 22:BA:2846:G:H2' | 22:BA:2847:U:O4' | 2.08 | 0.53 |
| 24:BC:257:ARG:HE | 24:BC:269:ARG:NH2 | 2.06 | 0.53 |
| 30:BI:123:ALA:C | 30:BI:125:THR:H | 2.10 | 0.53 |
| 39:BR:25:LEU:H | 39:BR:94:THR:HG21 | 1.73 | 0.53 |
| 40:BS:68:ASP:O | 40:BS:109:ASP:HB3 | 2.09 | 0.53 |
| 53:CA:338:A:N1 | 53:CA:351:G:N2 | 2.55 | 0.53 |
| 53:CA:373:A:N3 | 53:CA:374:A:C8 | 2.77 | 0.53 |
| 53:CA:457:G:N3 | 53:CA:457:G:H2' | 2.24 | 0.53 |
| 53:CA:496:A:N3 | 53:CA:496:A:C2' | 2.70 | 0.53 |
| 53:CA:598:U:H2' | 53:CA:599:C:O4' | 2.08 | 0.53 |
| 53:CA:725:G:C5 | 53:CA:726:C:C5 | 2.97 | 0.53 |
| 53:CA:844:G:O2' | 53:CA:845:A:H5'' | 2.08 | 0.53 |
| 53:CA:1202:U:H2' | 53:CA:1203:C:H6 | 1.73 | 0.53 |
| 53:CA:1450:U:H4' | 53:CA:1451:U:H5 | 1.73 | 0.53 |
| 53:CA:1494:G:N2 | 53:CA:1495:U:C2 | 2.76 | 0.53 |
| 4:CD:84:ASN:HD22 | 4:CD:84:ASN:C | 2.10 | 0.53 |
| 9:CI:114:LYS:HD2 | 9:CI:120:ALA:O | 2.08 | 0.53 |
| 55:CM:2:ARG:HA | 55:CM:7:ASN:O | 2.07 | 0.53 |
| 14:CN:20:PHE:CA | 14:CN:24:ALA:HB2 | 2.38 | 0.53 |
| 57:DA:585:G:H1' | 57:DA:1256:G:N2 | 2.23 | 0.53 |
| 57:DA:751:A:O5' | 40:DS:90:LYS:HA | 2.08 | 0.53 |
| 57:DA:973:A:H1' | 57:DA:1188:U:C6 | 2.42 | 0.53 |
| 57:DA:1117:C:H2' | 57:DA:1118:C:C6 | 2.43 | 0.53 |
| 57:DA:1666:G:H4' | 32:DK:6:THR:HG23 | 1.88 | 0.53 |
| 57:DA:1740:G:H2' | 57:DA:1741:C:H6 | 1.73 | 0.53 |
| 57:DA:1790:C:H2' | 57:DA:1791:A:C8 | 2.43 | 0.53 |
| 57:DA:1865:U:C4 | 57:DA:1875:G:C2 | 2.96 | 0.53 |
| 57:DA:2046:G:C2 | 57:DA:2047:C:C2 | 2.96 | 0.53 |
| 57:DA:2345:G:C6 | 57:DA:2347:C:N4 | 2.75 | 0.53 |
| 57:DA:2616:C:H2' | 57:DA:2617:U:C6 | 2.40 | 0.53 |
| 25:DD:36:GLN:HE21 | 25:DD:38:LYS:HZ1 | 1.55 | 0.53 |
| 26:DE:111:GLU:HA | 26:DE:114:ARG:HE | 1.73 | 0.53 |
| 26:DE:129:PRO:HD3 | 26:DE:156:ASN:OD1 | 2.08 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 59:DF:35:LEU:HA | 59:DF:152:ASP:O | 2.08 | 0.53 |
| 36:DO:7:ARG:NH2 | 36:DO:29:HIS:HD2 | 2.05 | 0.53 |
| 38:DQ:10:ARG:CZ | 38:DQ:10:ARG:HB2 | 2.37 | 0.53 |
| 48:D0:32:THR:HG21 | 48:D0:47:TYR:CE2 | 2.43 | 0.53 |
| 1:AA:49:U:O4 | 1:AA:365:U:C5 | 2.57 | 0.53 |
| 1:AA:337:G:H2' | 1:AA:338:A:C8 | 2.42 | 0.53 |
| 1:AA:802:A:H5'' | 1:AA:803:G:OP2 | 2.08 | 0.53 |
| 1:AA:1161:C:O2' | 1:AA:1162:C:H5' | 2.09 | 0.53 |
| 1:AA:1234:C:O2' | 1:AA:1235:U:H5' | 2.09 | 0.53 |
| 2:AB:113:LEU:O | 2:AB:117:GLU:HG3 | 2.07 | 0.53 |
| 2:AB:130:LYS:NZ | 2:AB:133:ALA:HB2 | 2.23 | 0.53 |
| 7:AG:113:LYS:HB2 | 7:AG:117:LEU:HD12 | 1.90 | 0.53 |
| 22:BA:672:C:OP2 | 33:BL:42:SER:OG | 2.20 | 0.53 |
| 22:BA:783:A:H8 | 22:BA:784:G:H4' | 1.71 | 0.53 |
| 22:BA:1190:G:OP1 | 33:BL:32:GLY:CA | 2.53 | 0.53 |
| 22:BA:1430:G:H2' | 22:BA:1431:A:H8 | 1.72 | 0.53 |
| 22:BA:1731:G:O2' | 22:BA:1732:C:H3' | 2.08 | 0.53 |
| 22:BA:1936:A:H2 | 22:BA:1943:U:C4 | 2.25 | 0.53 |
| 22:BA:2585:U:HO2' | 22:BA:2586:U:C5' | 2.21 | 0.53 |
| 23:BB:116:G:H4' | 36:BO:54:VAL:HG22 | 1.90 | 0.53 |
| 24:BC:71:ASP:HA | 24:BC:117:SER:O | 2.08 | 0.53 |
| 24:BC:251:THR:CG2 | 24:BC:252:LYS:H | 2.00 | 0.53 |
| 25:BD:119:ALA:HB2 | 25:BD:165:MET:CB | 2.38 | 0.53 |
| 25:BD:191:GLY:O | 25:BD:192:ALA:HB3 | 2.08 | 0.53 |
| 35:BN:74:GLU:O | 35:BN:77:ALA:HB3 | 2.08 | 0.53 |
| 37:BP:83:ILE:C | 37:BP:83:ILE:HD13 | 2.29 | 0.53 |
| 42:BU:100:GLU:O | 42:BU:101:THR:HB | 2.08 | 0.53 |
| 53:CA:321:A:N7 | 53:CA:328:C:C2 | 2.76 | 0.53 |
| 53:CA:424:G:H2' | 53:CA:425:G:H8 | 1.73 | 0.53 |
| 53:CA:429:U:H3' | 4:CD:8:LEU:HD23 | 1.90 | 0.53 |
| 53:CA:560:A:C4 | 5:CE:127:TYR:CD2 | 2.97 | 0.53 |
| 53:CA:629:A:H2' | 53:CA:630:A:O4' | 2.08 | 0.53 |
| 53:CA:802:A:H2' | 53:CA:803:G:C5' | 2.38 | 0.53 |
| 53:CA:1337:G:H5'' | 53:CA:1338:G:OP1 | 2.08 | 0.53 |
| 15:CO:70:LYS:HA | 15:CO:77:TYR:HB2 | 1.90 | 0.53 |
| 57:DA:195:A:C6 | 57:DA:198:C:C5 | 2.96 | 0.53 |
| 57:DA:471:A:H8 | 57:DA:471:A:O5' | 1.91 | 0.53 |
| 57:DA:857:G:O2' | 44:DW:19:ARG:CZ | 2.57 | 0.53 |
| 57:DA:1507:C:H5' | 57:DA:1508:A:OP2 | 2.08 | 0.53 |
| 57:DA:2022:U:O2' | 57:DA:2616:C:O2' | 2.24 | 0.53 |
| 57:DA:2332:C:O2' | 44:DW:40:ARG:NH2 | 2.41 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:2478:A:N7 | 57:DA:2529:G:C6 | 2.76 | 0.53 |
| 24:DC:166:ARG:HA | 24:DC:171:VAL:HA | 1.89 | 0.53 |
| 25:DD:98:VAL:HG23 | 25:DD:180:VAL:HG12 | 1.90 | 0.53 |
| 59:DF:60:SER:C | 59:DF:62:GLN:H | 2.11 | 0.53 |
| 31:DJ:58:ASN:OD1 | 31:DJ:127:GLY:HA2 | 2.08 | 0.53 |
| 33:DL:3:LEU:C | 33:DL:3:LEU:HD12 | 2.27 | 0.53 |
| 39:DR:21:ARG:HB2 | 39:DR:93:PHE:HD1 | 1.72 | 0.53 |
| 51:D3:9:ALA:HB1 | 51:D3:13:PHE:HD2 | 1.73 | 0.53 |
| 52:D4:19:ARG:O | 52:D4:20:ASP:CB | 2.55 | 0.53 |
| 1:AA:92:U:O2' | 1:AA:93:U:O4' | 2.21 | 0.53 |
| 1:AA:414:A:O2' | 1:AA:415:A:O4' | 2.24 | 0.53 |
| 1:AA:958:A:C5 | 1:AA:959:A:C6 | 2.96 | 0.53 |
| 1:AA:1326:U:H2' | 1:AA:1327:C:C6 | 2.43 | 0.53 |
| 5:AE:94:PHE:HZ | 5:AE:96:GLN:CD | 2.11 | 0.53 |
| 22:BA:285:G:N3 | 22:BA:285:G:H2' | 2.21 | 0.53 |
| 22:BA:1440:U:H2' | 22:BA:1441:G:O4' | 2.09 | 0.53 |
| 22:BA:2086:U:H2' | 22:BA:2087:G:C8 | 2.43 | 0.53 |
| 22:BA:2862:G:H2' | 22:BA:2863:C:C6 | 2.43 | 0.53 |
| 23:BB:20:G:H2' | 23:BB:21:G:O4' | 2.09 | 0.53 |
| 24:BC:90:ILE:CG2 | 24:BC:102:TYR:CD1 | 2.92 | 0.53 |
| 24:BC:159:THR:O | 24:BC:194:VAL:HG12 | 2.07 | 0.53 |
| 24:BC:173:LEU:O | 24:BC:180:MET:HA | 2.07 | 0.53 |
| 24:BC:255:LYS:C | 24:BC:257:ARG:H | 2.11 | 0.53 |
| 25:BD:35:THR:OG1 | 25:BD:49:GLN:HG2 | 2.08 | 0.53 |
| 25:BD:121:THR:O | 25:BD:122:VAL:CB | 2.57 | 0.53 |
| 26:BE:143:LEU:HD13 | 26:BE:146:VAL:HG11 | 1.89 | 0.53 |
| 27:BF:21:TYR:HE2 | 27:BF:28:PRO:HD3 | 1.73 | 0.53 |
| 34:BM:68:PHE:C | 34:BM:68:PHE:CD2 | 2.82 | 0.53 |
| 37:BP:64:SER:O | 37:BP:65:ASN:C | 2.46 | 0.53 |
| 38:BQ:6:GLY:HA2 | 38:BQ:9:ALA:HB3 | 1.91 | 0.53 |
| 43:BV:51:GLN:HB2 | 43:BV:57:TYR:OH | 2.08 | 0.53 |
| 53:CA:1175:G:H2' | 53:CA:1176:A:C8 | 2.42 | 0.53 |
| 53:CA:1477:U:H2' | 53:CA:1478:U:C6 | 2.43 | 0.53 |
| 2:CB:89:PHE:HB3 | 2:CB:149:GLY:O | 2.08 | 0.53 |
| 4:CD:34:GLU:O | 4:CD:37:PRO:HD3 | 2.08 | 0.53 |
| 9:CI:27:ILE:HD13 | 9:CI:62:LEU:HB3 | 1.90 | 0.53 |
| 12:CL:78:VAL:HG23 | 12:CL:101:LEU:HD12 | 1.90 | 0.53 |
| 19:CS:52:ASN:HD21 | 19:CS:54:ARG:HG2 | 1.73 | 0.53 |
| 57:DA:347:A:H2' | 57:DA:348:A:H8 | 1.72 | 0.53 |
| 57:DA:454:A:H4' | 57:DA:455:C:OP2 | 2.08 | 0.53 |
| 57:DA:486:C:H2' | 57:DA:487:C:C6 | 2.43 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:963:U:O2' | 57:DA:964:C:H6 | 1.90 | 0.53 |
| 57:DA:1210:G:H5'' | 57:DA:1211:C:H3' | 1.91 | 0.53 |
| 57:DA:2352:A:H8 | 57:DA:2352:A:O5' | 1.91 | 0.53 |
| 57:DA:2461:A:H1' | 57:DA:2492:U:C2 | 2.42 | 0.53 |
| 57:DA:2590:A:H5'' | 24:DC:237:ARG:NE | 2.22 | 0.53 |
| 57:DA:2674:G:O3' | 32:DK:30:ARG:HG2 | 2.07 | 0.53 |
| 58:DB:15:A:OP1 | 58:DB:108:A:H5' | 2.08 | 0.53 |
| 25:DD:29:VAL:HB | 25:DD:98:VAL:CG1 | 2.39 | 0.53 |
| 26:DE:108:ILE:O | 26:DE:108:ILE:HD13 | 2.08 | 0.53 |
| 59:DF:28:PRO:CB | 59:DF:168:LEU:HD21 | 2.37 | 0.53 |
| 28:DG:120:ILE:O | 28:DG:120:ILE:HG23 | 2.07 | 0.53 |
| 29:DH:84:ALA:N | 29:DH:148:ALA:HA | 2.23 | 0.53 |
| 30:DI:57:VAL:O | 30:DI:58:ILE:HG13 | 2.08 | 0.53 |
| 31:DJ:48:VAL:HG12 | 31:DJ:49:ASP:H | 1.73 | 0.53 |
| 31:DJ:65:THR:O | 31:DJ:68:LYS:NZ | 2.38 | 0.53 |
| 36:DO:24:THR:OG1 | 36:DO:90:VAL:HG11 | 2.09 | 0.53 |
| 37:DP:65:ASN:HD22 | 37:DP:65:ASN:N | 2.05 | 0.53 |
| 37:DP:91:VAL:HG11 | 37:DP:96:LEU:HD21 | 1.91 | 0.53 |
| 47:DZ:15:ARG:HD2 | 47:DZ:15:ARG:N | 2.24 | 0.53 |
| 47:DZ:28:LEU:HD23 | 47:DZ:28:LEU:N | 2.24 | 0.53 |
| 51:D3:9:ALA:HB1 | 51:D3:13:PHE:CD2 | 2.43 | 0.53 |
| 52:D4:27:CYS:SG | 52:D4:33:HIS:HB2 | 2.48 | 0.53 |
| 1:AA:628:G:H2' | 1:AA:629:A:C8 | 2.43 | 0.53 |
| 1:AA:830:G:H2' | 1:AA:831:A:C8 | 2.42 | 0.53 |
| 1:AA:853:C:O2' | 1:AA:854:U:H5' | 2.09 | 0.53 |
| 1:AA:923:A:H2' | 1:AA:924:C:C6 | 2.42 | 0.53 |
| 1:AA:1081:A:H5' | 5:AE:22:LYS:HG3 | 1.89 | 0.53 |
| 4:AD:71:PHE:HE1 | 4:AD:199:ILE:HD11 | 1.73 | 0.53 |
| 7:AG:145:GLU:CA | 7:AG:148:LYS:HB2 | 2.39 | 0.53 |
| 9:AI:9:GLY:HA2 | 9:AI:80:HIS:CD2 | 2.44 | 0.53 |
| 22:BA:544:C:C4 | 22:BA:550:C:N4 | 2.77 | 0.53 |
| 22:BA:1422:G:C4 | 22:BA:1423:G:C8 | 2.96 | 0.53 |
| 22:BA:1871:A:C8 | 22:BA:1872:A:C6 | 2.96 | 0.53 |
| 22:BA:2520:C:O2' | 22:BA:2521:C:H5' | 2.09 | 0.53 |
| 32:BK:121:GLU:O | 32:BK:122:VAL:C | 2.46 | 0.53 |
| 44:BW:51:GLY:HA3 | 44:BW:59:PHE:CZ | 2.42 | 0.53 |
| 53:CA:140:U:O2 | 53:CA:183:C:N4 | 2.42 | 0.53 |
| 53:CA:1053:G:O6 | 53:CA:1199:U:H2' | 2.09 | 0.53 |
| 4:CD:148:ALA:O | 4:CD:151:GLN:HB2 | 2.07 | 0.53 |
| 9:CI:5:TYR:N | 9:CI:5:TYR:CD2 | 2.75 | 0.53 |
| 11:CK:17:ASP:OD2 | 11:CK:80:ASN:HB2 | 2.09 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 15:CO:57:ARG:O | 15:CO:61:GLN:HG2 | 2.09 | 0.53 |
| 57:DA:55:G:C2 | 57:DA:116:C:C2 | 2.96 | 0.53 |
| 57:DA:260:G:C6 | 57:DA:261:G:C5 | 2.95 | 0.53 |
| 57:DA:415:A:C2 | 57:DA:2409:G:C6 | 2.96 | 0.53 |
| 57:DA:600:G:H5' | 26:DE:27:LEU:HD13 | 1.90 | 0.53 |
| 57:DA:922:C:H2' | 57:DA:923:G:H8 | 1.72 | 0.53 |
| 57:DA:975:A:C2' | 57:DA:976:G:H8 | 2.22 | 0.53 |
| 57:DA:994:C:O2 | 39:DR:10:LYS:HE2 | 2.08 | 0.53 |
| 57:DA:1188:U:O2' | 57:DA:1189:A:H5' | 2.08 | 0.53 |
| 57:DA:1282:U:O4 | 57:DA:1283:G:C6 | 2.61 | 0.53 |
| 57:DA:1737:G:H5' | 57:DA:1738:G:OP2 | 2.08 | 0.53 |
| 57:DA:2064:C:H2' | 57:DA:2065:C:C6 | 2.43 | 0.53 |
| 57:DA:2088:A:H2' | 57:DA:2089:C:C6 | 2.43 | 0.53 |
| 58:DB:57:A:C5 | 59:DF:25:MET:CB | 2.91 | 0.53 |
| 25:DD:107:VAL:HG13 | 25:DD:203:VAL:HG23 | 1.90 | 0.53 |
| 25:DD:113:SER:OG | 25:DD:114:LYS:N | 2.41 | 0.53 |
| 25:DD:185:ASN:O | 25:DD:186:LEU:HD12 | 2.08 | 0.53 |
| 26:DE:147:LEU:HB3 | 26:DE:186:VAL:HG23 | 1.90 | 0.53 |
| 59:DF:32:LYS:HB3 | 59:DF:156:THR:HB | 1.89 | 0.53 |
| 44:DW:20:LEU:HD11 | 44:DW:35:ILE:CG1 | 2.38 | 0.53 |
| 1:AA:206:C:C2 | 1:AA:207:C:H1' | 2.44 | 0.53 |
| 1:AA:439:U:C2' | 1:AA:440:C:H5' | 2.39 | 0.53 |
| 1:AA:684:U:H3 | 1:AA:706:A:H61 | 1.56 | 0.53 |
| 1:AA:792:A:C4 | 1:AA:794:A:N6 | 2.77 | 0.53 |
| 9:AI:107:ALA:O | 9:AI:109:GLN:HG2 | 2.08 | 0.53 |
| 11:AK:91:GLY:O | 11:AK:95:THR:HB | 2.07 | 0.53 |
| 17:AQ:18:LYS:CA | 17:AQ:47:ASP:HB2 | 2.26 | 0.53 |
| 22:BA:27:G:N2 | 22:BA:512:G:O2' | 2.40 | 0.53 |
| 22:BA:514:A:H1' | 22:BA:581:C:O2' | 2.08 | 0.53 |
| 24:BC:106:PRO:CG | 24:BC:141:HIS:CE1 | 2.92 | 0.53 |
| 25:BD:85:ALA:O | 25:BD:86:GLU:HB2 | 2.08 | 0.53 |
| 26:BE:21:ARG:HG3 | 26:BE:22:ASP:N | 2.22 | 0.53 |
| 27:BF:114:ARG:HD2 | 27:BF:114:ARG:N | 2.23 | 0.53 |
| 27:BF:120:SER:HB2 | 27:BF:127:TYR:CE1 | 2.44 | 0.53 |
| 36:BO:64:TYR:O | 36:BO:67:ASN:OD1 | 2.27 | 0.53 |
| 42:BU:97:SER:O | 42:BU:98:ASN:CB | 2.56 | 0.53 |
| 44:BW:43:LYS:HE2 | 44:BW:68:PHE:HE1 | 1.73 | 0.53 |
| 53:CA:277:C:H2' | 53:CA:278:G:C8 | 2.43 | 0.53 |
| 53:CA:367:U:C6 | 53:CA:394:G:N2 | 2.77 | 0.53 |
| 53:CA:449:G:C2 | 53:CA:450:G:C5 | 2.96 | 0.53 |
| 53:CA:640:A:O2' | 8:CH:106:SER:HB2 | 2.09 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:781:A:H2' | 53:CA:782:A:H5' | 1.89 | 0.53 |
| 53:CA:1013:G:N2 | 53:CA:1015:G:H3' | 2.24 | 0.53 |
| 53:CA:1320:C:O2' | 19:CS:72:GLU:HA | 2.09 | 0.53 |
| 53:CA:1350:A:H2 | 54:CG:33:GLY:HA3 | 1.74 | 0.53 |
| 15:CO:38:LEU:HD12 | 15:CO:41:HIS:HB3 | 1.90 | 0.53 |
| 17:CQ:29:LYS:HB2 | 17:CQ:36:PHE:CE1 | 2.44 | 0.53 |
| 57:DA:196:A:H61 | 57:DA:831:G:H21 | 1.55 | 0.53 |
| 57:DA:311:A:O2' | 57:DA:332:A:H5' | 2.08 | 0.53 |
| 57:DA:320:A:H5'' | 57:DA:321:U:OP1 | 2.09 | 0.53 |
| 57:DA:381:G:C5' | 45:DX:15:ASN:HD22 | 2.21 | 0.53 |
| 57:DA:443:A:H2' | 26:DE:40:ARG:NE | 2.23 | 0.53 |
| 57:DA:510:C:H2' | 57:DA:511:U:C5 | 2.43 | 0.53 |
| 57:DA:656:G:O2' | 57:DA:657:U:O4' | 2.18 | 0.53 |
| 57:DA:1071:G:O4' | 57:DA:1088:A:O2' | 2.26 | 0.53 |
| 57:DA:1078:U:H5'' | 57:DA:1079:C:OP1 | 2.08 | 0.53 |
| 57:DA:1281:G:O2' | 57:DA:1282:U:H5' | 2.08 | 0.53 |
| 57:DA:1717:A:H2' | 57:DA:1718:G:O4' | 2.09 | 0.53 |
| 57:DA:2638:G:H1' | 57:DA:2778:A:N6 | 2.23 | 0.53 |
| 24:DC:132:ARG:O | 24:DC:132:ARG:HG3 | 2.08 | 0.53 |
| 26:DE:109:LEU:O | 26:DE:112:LEU:HB3 | 2.09 | 0.53 |
| 29:DH:54:LEU:HA | 29:DH:57:LYS:HG3 | 1.90 | 0.53 |
| 29:DH:94:ILE:HG13 | 29:DH:98:ASP:CB | 2.37 | 0.53 |
| 30:DI:5:GLN:OE1 | 30:DI:59:THR:HG21 | 2.09 | 0.53 |
| 33:DL:17:LYS:NZ | 33:DL:19:LEU:HD22 | 2.23 | 0.53 |
| 38:DQ:63:ARG:O | 38:DQ:66:ALA:N | 2.41 | 0.53 |
| 40:DS:84:ARG:HB3 | 40:DS:96:ILE:HG23 | 1.89 | 0.53 |
| 1:AA:66:A:N6 | 1:AA:104:G:C2 | 2.77 | 0.53 |
| 1:AA:212:G:H2' | 1:AA:213:G:H8 | 1.73 | 0.53 |
| 1:AA:269:C:H2' | 1:AA:270:A:H8 | 1.74 | 0.53 |
| 1:AA:275:G:HO2' | 1:AA:276:G:H5' | 1.72 | 0.53 |
| 1:AA:536:C:O2' | 1:AA:537:G:H5' | 2.08 | 0.53 |
| 1:AA:673:A:H2' | 1:AA:674:G:C8 | 2.44 | 0.53 |
| 1:AA:1015:G:H1' | 1:AA:1218:C:O2' | 2.08 | 0.53 |
| 1:AA:1052:U:C5' | 1:AA:1053:G:OP2 | 2.56 | 0.53 |
| 4:AD:16:THR:CG2 | 4:AD:17:ASP:N | 2.69 | 0.53 |
| 4:AD:64:TYR:CD1 | 4:AD:93:LEU:HD13 | 2.44 | 0.53 |
| 5:AE:132:PRO:O | 5:AE:136:VAL:HG13 | 2.09 | 0.53 |
| 13:AM:7:ASN:O | 13:AM:9:PRO:HD3 | 2.09 | 0.53 |
| 13:AM:23:GLY:HA3 | 13:AM:64:VAL:HG12 | 1.91 | 0.53 |
| 22:BA:243:U:OP1 | 51:B3:5:THR:CG2 | 2.49 | 0.53 |
| 22:BA:346:A:H2' | 22:BA:347:A:H8 | 1.73 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:1288:G:C4 | 22:BA:1327:A:C2 | 2.96 | 0.53 |
| 22:BA:1505:A:C6 | 22:BA:1506:U:N3 | 2.76 | 0.53 |
| 22:BA:1839:G:H2' | 22:BA:1840:G:H8 | 1.72 | 0.53 |
| 22:BA:2352:A:C6 | 44:BW:30:VAL:HG11 | 2.43 | 0.53 |
| 22:BA:2567:G:H2' | 22:BA:2568:U:C6 | 2.43 | 0.53 |
| 26:BE:58:LYS:HZ1 | 26:BE:62:GLN:HA | 1.74 | 0.53 |
| 29:BH:31:VAL:CB | 29:BH:32:PRO:HD2 | 2.21 | 0.53 |
| 31:BJ:37:ARG:HA | 31:BJ:118:MET:HE2 | 1.90 | 0.53 |
| 31:BJ:38:GLY:C | 31:BJ:40:HIS:H | 2.12 | 0.53 |
| 32:BK:7:MET:SD | 32:BK:20:MET:HB2 | 2.48 | 0.53 |
| 33:BL:57:LEU:HG | 33:BL:61:LEU:HD22 | 1.90 | 0.53 |
| 34:BM:132:THR:HG22 | 34:BM:133:LYS:N | 2.20 | 0.53 |
| 53:CA:119:A:H4' | 53:CA:120:A:O5' | 2.08 | 0.53 |
| 53:CA:1086:U:O2' | 53:CA:1087:G:H5' | 2.08 | 0.53 |
| 53:CA:1190:G:O3' | 3:CC:2:GLN:HB3 | 2.08 | 0.53 |
| 53:CA:1339:A:H2' | 53:CA:1340:A:O4' | 2.08 | 0.53 |
| 4:CD:106:PHE:HB3 | 4:CD:154:VAL:HG23 | 1.91 | 0.53 |
| 5:CE:68:ARG:O | 5:CE:69:ASN:C | 2.47 | 0.53 |
| 5:CE:89:THR:OG1 | 5:CE:90:GLY:N | 2.39 | 0.53 |
| 10:CJ:45:ARG:O | 10:CJ:46:LYS:C | 2.46 | 0.53 |
| 11:CK:92:ARG:HH22 | 21:CU:19:LYS:HD2 | 1.73 | 0.53 |
| 11:CK:111:ASP:N | 21:CU:3:ILE:N | 2.55 | 0.53 |
| 19:CS:13:HIS:O | 19:CS:17:LYS:HG2 | 2.08 | 0.53 |
| 19:CS:38:THR:HA | 19:CS:69:LYS:HA | 1.90 | 0.53 |
| 57:DA:36:G:N1 | 57:DA:445:C:N4 | 2.55 | 0.53 |
| 57:DA:227:A:O2' | 57:DA:228:C:O5' | 2.25 | 0.53 |
| 57:DA:574:A:C8 | 57:DA:2055:C:H5'' | 2.44 | 0.53 |
| 57:DA:575:A:H2' | 57:DA:576:U:C5 | 2.44 | 0.53 |
| 57:DA:586:A:O2' | 57:DA:671:C:O2 | 2.25 | 0.53 |
| 57:DA:674:G:H2' | 57:DA:804:A:H61 | 1.72 | 0.53 |
| 57:DA:747:U:C2' | 57:DA:2613:U:O4 | 2.55 | 0.53 |
| 57:DA:1073:A:OP2 | 57:DA:1073:A:H4' | 2.08 | 0.53 |
| 57:DA:1187:G:H5'' | 39:DR:83:TYR:CE1 | 2.44 | 0.53 |
| 57:DA:1544:A:C6 | 57:DA:1545:A:C6 | 2.97 | 0.53 |
| 57:DA:1808:A:H3' | 57:DA:1809:A:C8 | 2.42 | 0.53 |
| 57:DA:2577:A:C2 | 48:D0:1:ALA:N | 2.77 | 0.53 |
| 58:DB:8:C:H5'' | 36:DO:15:ARG:NH1 | 2.24 | 0.53 |
| 24:DC:131:MET:HA | 24:DC:134:ILE:CG1 | 2.37 | 0.53 |
| 24:DC:144:GLU:HG3 | 24:DC:151:GLY:HA2 | 1.89 | 0.53 |
| 31:DJ:8:PRO:HG2 | 31:DJ:9:GLU:H | 1.73 | 0.53 |
| 33:DL:103:ILE:H | 33:DL:103:ILE:HD12 | 1.73 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:DR:33:VAL:HG23 | 39:DR:61:ALA:HB3 | 1.90 | 0.53 |
| 40:DS:6:LYS:HZ2 | 40:DS:104:THR:HG23 | 1.73 | 0.53 |
| 44:DW:19:ARG:HA | 44:DW:34:SER:HA | 1.90 | 0.53 |
| 1:AA:430:A:C4 | 1:AA:431:A:C8 | 2.96 | 0.53 |
| 1:AA:563:A:N6 | 63:AA:1818:HOH:O | 2.41 | 0.53 |
| 1:AA:1152:A:H2' | 1:AA:1153:G:H8 | 1.73 | 0.53 |
| 1:AA:1387:G:C6 | 1:AA:1388:C:N4 | 2.77 | 0.53 |
| 8:AH:12:ARG:HH11 | 8:AH:26:MET:HB2 | 1.74 | 0.53 |
| 11:AK:57:SER:O | 11:AK:90:PRO:HG3 | 2.08 | 0.53 |
| 13:AM:4:ALA:H | 13:AM:56:ARG:HG3 | 1.74 | 0.53 |
| 22:BA:636:G:O5' | 33:BL:128:THR:HG22 | 2.09 | 0.53 |
| 22:BA:960:A:H2' | 22:BA:962:G:H5' | 1.88 | 0.53 |
| 22:BA:2198:A:H4' | 22:BA:2199:A:OP1 | 2.07 | 0.53 |
| 22:BA:2383:G:H5'' | 22:BA:2383:G:C8 | 2.39 | 0.53 |
| 22:BA:2562:U:H2' | 22:BA:2563:U:H5' | 1.90 | 0.53 |
| 23:BB:57:A:C4 | 27:BF:25:MET:HB3 | 2.43 | 0.53 |
| 25:BD:97:SER:C | 25:BD:99:GLU:HG2 | 2.29 | 0.53 |
| 26:BE:152:GLU:O | 26:BE:153:LEU:HG | 2.09 | 0.53 |
| 27:BF:34:THR:CG2 | 27:BF:89:THR:HG23 | 2.35 | 0.53 |
| 27:BF:82:TYR:HD2 | 27:BF:83:PRO:HD2 | 1.74 | 0.53 |
| 28:BG:139:VAL:C | 28:BG:141:GLY:N | 2.61 | 0.53 |
| 37:BP:111:GLU:CD | 37:BP:111:GLU:N | 2.61 | 0.53 |
| 42:BU:73:ASN:HD21 | 42:BU:76:THR:HG23 | 1.73 | 0.53 |
| 53:CA:567:G:H1' | 63:CA:1820:HOH:O | 2.07 | 0.53 |
| 53:CA:1138:G:N2 | 53:CA:1140:C:C4 | 2.76 | 0.53 |
| 53:CA:1279:G:H2' | 10:CJ:45:ARG:NH2 | 2.23 | 0.53 |
| 2:CB:19:THR:OG1 | 2:CB:20:ARG:N | 2.41 | 0.53 |
| 2:CB:46:VAL:HG13 | 2:CB:47:PRO:CD | 2.38 | 0.53 |
| 2:CB:122:ASP:HB3 | 2:CB:124:THR:HG22 | 1.91 | 0.53 |
| 19:CS:52:ASN:HD22 | 19:CS:54:ARG:H | 1.57 | 0.53 |
| 57:DA:90:U:H3' | 57:DA:91:A:H5'' | 1.91 | 0.53 |
| 57:DA:183:C:H2' | 57:DA:184:C:H5' | 1.89 | 0.53 |
| 57:DA:271:G:O2' | 57:DA:272:A:C5' | 2.56 | 0.53 |
| 57:DA:739:A:O2' | 57:DA:740:C:H5 | 1.85 | 0.53 |
| 57:DA:927:A:H2' | 57:DA:928:A:C8 | 2.44 | 0.53 |
| 57:DA:1032:A:H1' | 52:D4:23:ILE:CD1 | 2.27 | 0.53 |
| 57:DA:1258:U:H2' | 57:DA:1259:G:H8 | 1.72 | 0.53 |
| 57:DA:1259:G:H2' | 57:DA:1260:A:O4' | 2.09 | 0.53 |
| 57:DA:1281:G:H2' | 57:DA:1282:U:O4' | 2.09 | 0.53 |
| 57:DA:1469:A:H2' | 57:DA:1470:A:H8 | 1.67 | 0.53 |
| 57:DA:1982:U:H6 | 57:DA:1982:U:C5' | 2.22 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:2144:G:O2' | 57:DA:2147:A:OP2 | 2.16 | 0.53 |
| 57:DA:2721:A:C2 | 57:DA:2873:A:C5 | 2.97 | 0.53 |
| 57:DA:2734:A:C8 | 57:DA:2735:G:C8 | 2.96 | 0.53 |
| 58:DB:57:A:C5 | 59:DF:25:MET:SD | 3.02 | 0.53 |
| 59:DF:56:LEU:O | 59:DF:60:SER:HB3 | 2.08 | 0.53 |
| 31:DJ:82:GLY:O | 31:DJ:84:ILE:N | 2.42 | 0.53 |
| 35:DN:56:LYS:HA | 35:DN:84:GLY:CA | 2.35 | 0.53 |
| 41:DT:34:VAL:HG12 | 41:DT:34:VAL:O | 2.09 | 0.53 |
| 42:DU:54:PRO:HG2 | 42:DU:55:GLY:N | 2.20 | 0.53 |
| 1:AA:139:A:C2' | 1:AA:140:U:H5' | 2.39 | 0.53 |
| 1:AA:620:C:H2' | 1:AA:621:A:O4' | 2.08 | 0.53 |
| 1:AA:991:U:H4' | 1:AA:992:U:OP1 | 2.09 | 0.53 |
| 1:AA:1039:G:O2' | 1:AA:1040:U:H5' | 2.07 | 0.53 |
| 4:AD:147:LYS:O | 4:AD:149:LYS:N | 2.42 | 0.53 |
| 5:AE:136:VAL:O | 5:AE:137:ARG:HB2 | 2.09 | 0.53 |
| 15:AO:60:SER:O | 15:AO:64:LYS:HG3 | 2.08 | 0.53 |
| 17:AQ:46:HIS:HA | 17:AQ:70:LYS:HE3 | 1.91 | 0.53 |
| 22:BA:483:A:C8 | 22:BA:484:C:C5 | 2.97 | 0.53 |
| 22:BA:634:C:H2' | 22:BA:635:C:C6 | 2.43 | 0.53 |
| 22:BA:1115:G:HO2' | 22:BA:1116:G:P | 2.30 | 0.53 |
| 22:BA:1132:U:H3' | 22:BA:1133:A:H5'' | 1.90 | 0.53 |
| 22:BA:1385:A:C4 | 22:BA:1386:C:C5 | 2.97 | 0.53 |
| 22:BA:1688:U:H1' | 22:BA:1701:A:C6 | 2.43 | 0.53 |
| 22:BA:1817:G:OP1 | 24:BC:86:ARG:NH2 | 2.42 | 0.53 |
| 22:BA:1869:G:N2 | 22:BA:1873:G:C6 | 2.77 | 0.53 |
| 22:BA:2800:A:H8 | 22:BA:2800:A:H5'' | 1.73 | 0.53 |
| 23:BB:56:G:H5'' | 23:BB:57:A:OP1 | 2.09 | 0.53 |
| 24:BC:210:ALA:O | 24:BC:215:VAL:HG23 | 2.09 | 0.53 |
| 24:BC:246:PRO:HG2 | 24:BC:247:TRP:CH2 | 2.44 | 0.53 |
| 36:BO:88:LYS:O | 36:BO:89:ASP:HB2 | 2.09 | 0.53 |
| 37:BP:22:GLY:O | 37:BP:109:ILE:HD11 | 2.09 | 0.53 |
| 39:BR:64:VAL:O | 39:BR:65:ALA:HB3 | 2.09 | 0.53 |
| 41:BT:48:GLN:HE21 | 41:BT:48:GLN:HA | 1.72 | 0.53 |
| 41:BT:69:ARG:CZ | 41:BT:70:HIS:HA | 2.39 | 0.53 |
| 44:BW:58:LEU:HD23 | 44:BW:79:ILE:HD12 | 1.91 | 0.53 |
| 53:CA:391:G:H5'' | 56:CP:8:ARG:CD | 2.38 | 0.53 |
| 53:CA:424:G:H2' | 53:CA:425:G:C8 | 2.43 | 0.53 |
| 53:CA:458:U:H2' | 53:CA:459:A:C8 | 2.43 | 0.53 |
| 53:CA:1150:A:H1' | 53:CA:1280:A:N6 | 2.24 | 0.53 |
| 53:CA:1245:C:H2' | 53:CA:1246:A:C8 | 2.37 | 0.53 |
| 53:CA:1446:A:H2' | 53:CA:1447:A:C5' | 2.38 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:CF:92:THR:HG22 | 6:CF:93:LYS:N | 2.24 | 0.53 |
| 8:CH:114:ALA:O | 8:CH:117:GLN:HB3 | 2.09 | 0.53 |
| 21:CU:33:ARG:NH2 | 21:CU:34:ARG:HD3 | 2.24 | 0.53 |
| 57:DA:109:C:H4' | 57:DA:348:A:H4' | 1.91 | 0.53 |
| 57:DA:622:G:O2' | 57:DA:623:C:H5' | 2.09 | 0.53 |
| 57:DA:799:G:C6 | 57:DA:800:A:C5 | 2.97 | 0.53 |
| 57:DA:972:A:N1 | 57:DA:973:A:N6 | 2.57 | 0.53 |
| 57:DA:1210:G:C6 | 57:DA:1237:A:N7 | 2.77 | 0.53 |
| 57:DA:1320:C:HO2' | 57:DA:1321:A:H8 | 1.56 | 0.53 |
| 58:DB:19:C:H2' | 58:DB:20:G:H8 | 1.72 | 0.53 |
| 58:DB:68:C:O2' | 58:DB:69:G:O5' | 2.26 | 0.53 |
| 25:DD:56:LYS:NZ | 25:DD:56:LYS:HB3 | 2.24 | 0.53 |
| 59:DF:101:ARG:HH11 | 59:DF:138:PRO:HB3 | 1.74 | 0.53 |
| 32:DK:17:ARG:CG | 32:DK:18:ARG:H | 2.21 | 0.53 |
| 33:DL:3:LEU:O | 33:DL:4:ASN:C | 2.47 | 0.53 |
| 38:DQ:89:ILE:HG22 | 38:DQ:91:ARG:H | 1.74 | 0.53 |
| 45:DX:36:ARG:HA | 45:DX:47:THR:HA | 1.90 | 0.53 |
| 1:AA:108:G:H2' | 1:AA:109:A:OP1 | 2.08 | 0.53 |
| 1:AA:427:U:C4 | 1:AA:428:G:C6 | 2.96 | 0.53 |
| 1:AA:662:U:H2' | 1:AA:663:A:C8 | 2.44 | 0.53 |
| 1:AA:1333:A:H2' | 1:AA:1334:G:O4' | 2.09 | 0.53 |
| 3:AC:24:ASN:HD22 | 3:AC:25:THR:H | 1.55 | 0.53 |
| 14:AN:14:ALA:HB1 | 14:AN:18:LYS:NZ | 2.24 | 0.53 |
| 15:AO:23:SER:HB3 | 15:AO:26:VAL:HG23 | 1.89 | 0.53 |
| 19:AS:28:LYS:HB3 | 19:AS:29:PRO:CD | 2.38 | 0.53 |
| 20:AT:79:THR:O | 20:AT:82:ILE:HG13 | 2.08 | 0.53 |
| 21:AU:4:LYS:O | 21:AU:4:LYS:HD2 | 2.08 | 0.53 |
| 22:BA:2520:C:C6 | 22:BA:2567:G:H1' | 2.43 | 0.53 |
| 25:BD:119:ALA:HB2 | 25:BD:165:MET:HB3 | 1.90 | 0.53 |
| 26:BE:119:ILE:O | 26:BE:187:VAL:O | 2.25 | 0.53 |
| 29:BH:80:ILE:HG23 | 29:BH:147:VAL:HG21 | 1.90 | 0.53 |
| 30:BI:126:ARG:HA | 30:BI:129:GLU:CG | 2.39 | 0.53 |
| 31:BJ:56:VAL:HG12 | 31:BJ:57:LEU:N | 2.24 | 0.53 |
| 37:BP:80:VAL:HG12 | 37:BP:81:ASP:N | 2.24 | 0.53 |
| 47:BZ:2:LYS:O | 47:BZ:2:LYS:HE2 | 2.09 | 0.53 |
| 47:BZ:29:ARG:C | 47:BZ:30:ARG:HG3 | 2.29 | 0.53 |
| 50:B2:12:ARG:CZ | 50:B2:12:ARG:HB2 | 2.38 | 0.53 |
| 53:CA:166:U:OP2 | 53:CA:166:U:H6 | 1.92 | 0.53 |
| 53:CA:177:G:O2' | 53:CA:1448:C:H4' | 2.09 | 0.53 |
| 53:CA:384:G:H2' | 53:CA:385:C:C6 | 2.44 | 0.53 |
| 53:CA:537:G:H2' | 53:CA:538:G:C8 | 2.44 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:CA:1242:G:C2 | 53:CA:1243:C:HI' | 2.44 | 0.53 |
| 53:CA:1346:A:C8 | 53:CA:1348:U:N3 | 2.77 | 0.53 |
| 53:CA:1493:A:C8 | 53:CA:1493:A:OP1 | 2.62 | 0.53 |
| 53:CA:1523:G:P | 11:CK:124:LYS:HZ3 | 2.32 | 0.53 |
| 2:CB:115:ASP:O | 2:CB:119:GLN:HB2 | 2.08 | 0.53 |
| 4:CD:159:GLU:OE2 | 4:CD:160:LEU:HD22 | 2.08 | 0.53 |
| 21:CU:16:ARG:HD2 | 21:CU:19:LYS:NZ | 2.24 | 0.53 |
| 57:DA:370:G:C6 | 57:DA:424:G:C5 | 2.97 | 0.53 |
| 57:DA:1008:A:H5'' | 31:DJ:37:ARG:HH22 | 1.74 | 0.53 |
| 57:DA:1189:A:H2' | 57:DA:1190:G:O4' | 2.09 | 0.53 |
| 57:DA:1255:U:H2' | 26:DE:68:ALA:HB2 | 1.91 | 0.53 |
| 57:DA:1607:C:H4' | 57:DA:1608:A:O5' | 2.09 | 0.53 |
| 57:DA:1614:A:N6 | 40:DS:91:GLY:HA2 | 2.24 | 0.53 |
| 57:DA:1638:C:H4' | 57:DA:2710:C:O2 | 2.09 | 0.53 |
| 57:DA:2331:G:C1' | 44:DW:40:ARG:HB3 | 2.38 | 0.53 |
| 26:DE:23:PHE:HB2 | 26:DE:114:ARG:HH22 | 1.74 | 0.53 |
| 28:DG:106:LEU:HB2 | 28:DG:108:PHE:CE1 | 2.38 | 0.53 |
| 32:DK:70:ARG:HH11 | 32:DK:76:VAL:CG2 | 2.21 | 0.53 |
| 34:DM:23:GLY:O | 34:DM:101:VAL:HG12 | 2.09 | 0.53 |
| 34:DM:38:ARG:O | 34:DM:126:ILE:HG21 | 2.08 | 0.53 |
| 35:DN:96:ARG:HG2 | 35:DN:98:LEU:HD13 | 1.91 | 0.53 |
| 38:DQ:9:ALA:O | 38:DQ:12:ARG:HG2 | 2.08 | 0.53 |
| 38:DQ:91:ARG:NE | 39:DR:11:GLN:HB2 | 2.24 | 0.53 |
| 39:DR:14:VAL:HG22 | 39:DR:15:SER:O | 2.09 | 0.53 |
| 42:DU:39:ASN:HB3 | 42:DU:62:ALA:HB3 | 1.91 | 0.53 |
| 43:DV:30:ILE:HB | 43:DV:38:LEU:HB3 | 1.91 | 0.53 |
| 52:D4:7:VAL:CG1 | 52:D4:8:LYS:N | 2.71 | 0.53 |
| 1:AA:66:A:O4' | 1:AA:173:U:C4 | 2.62 | 0.53 |
| 1:AA:107:G:C2' | 1:AA:108:G:H5' | 2.39 | 0.53 |
| 1:AA:374:A:H5'' | 1:AA:452:A:N1 | 2.24 | 0.53 |
| 1:AA:600:A:H2' | 1:AA:601:G:C8 | 2.44 | 0.53 |
| 1:AA:1034:G:H2' | 1:AA:1035:A:C8 | 2.43 | 0.53 |
| 1:AA:1352:C:H2' | 1:AA:1353:G:C8 | 2.44 | 0.53 |
| 1:AA:1453:G:H2' | 1:AA:1454:G:O4' | 2.09 | 0.53 |
| 12:AL:87:LYS:HB2 | 12:AL:87:LYS:NZ | 2.24 | 0.53 |
| 12:AL:111:GLN:O | 12:AL:112:ALA:HB3 | 2.09 | 0.53 |
| 22:BA:933:A:N3 | 22:BA:933:A:C2' | 2.72 | 0.53 |
| 22:BA:1298:C:C2 | 22:BA:1643:G:N2 | 2.77 | 0.53 |
| 22:BA:2068:U:H6 | 22:BA:2068:U:H5'' | 1.74 | 0.53 |
| 22:BA:2193:G:H2' | 22:BA:2194:U:C6 | 2.44 | 0.53 |
| 22:BA:2319:G:HO2' | 22:BA:2320:U:H5 | 1.57 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 22:BA:2681:C:C2 | 22:BA:2724:U:O4 | 2.61 | 0.53 |
| 22:BA:2729:G:H5'' | 22:BA:2729:G:H8 | 1.74 | 0.53 |
| 23:BB:46:A:C5 | 23:BB:47:C:C5 | 2.97 | 0.53 |
| 24:BC:134:ILE:O | 24:BC:166:ARG:NH1 | 2.41 | 0.53 |
| 26:BE:160:ALA:O | 26:BE:161:ALA:HB3 | 2.09 | 0.53 |
| 27:BF:105:ILE:O | 27:BF:109:ARG:HD3 | 2.08 | 0.53 |
| 38:BQ:78:PHE:CZ | 38:BQ:82:LEU:HD11 | 2.44 | 0.53 |
| 38:BQ:86:SER:HB2 | 39:BR:50:GLY:C | 2.29 | 0.53 |
| 39:BR:49:ILE:HG22 | 39:BR:54:VAL:HG12 | 1.90 | 0.53 |
| 44:BW:9:THR:O | 44:BW:10:ARG:O | 2.27 | 0.53 |
| 49:B1:8:ILE:HD11 | 49:B1:24:LYS:HG2 | 1.90 | 0.53 |
| 53:CA:85:U:O4' | 53:CA:85:U:O2 | 2.27 | 0.53 |
| 53:CA:198:G:N3 | 53:CA:199:A:C8 | 2.77 | 0.53 |
| 53:CA:295:C:C5 | 53:CA:296:U:C5 | 2.97 | 0.53 |
| 53:CA:552:U:C2 | 53:CA:553:A:C8 | 2.97 | 0.53 |
| 53:CA:967:C:N3 | 53:CA:968:A:N6 | 2.56 | 0.53 |
| 53:CA:994:A:O2' | 53:CA:995:C:H6 | 1.92 | 0.53 |
| 2:CB:114:LYS:HA | 2:CB:117:GLU:CG | 2.30 | 0.53 |
| 2:CB:128:LEU:HB3 | 2:CB:131:LYS:HB3 | 1.89 | 0.53 |
| 3:CC:15:LYS:HG3 | 3:CC:16:PRO:HD2 | 1.91 | 0.53 |
| 4:CD:8:LEU:HD22 | 4:CD:21:LYS:HD2 | 1.91 | 0.53 |
| 6:CF:6:ILE:H | 6:CF:6:ILE:HD12 | 1.72 | 0.53 |
| 57:DA:234:U:O2' | 57:DA:235:U:C5' | 2.52 | 0.53 |
| 57:DA:298:G:HO2' | 57:DA:322:A:H2 | 1.57 | 0.53 |
| 57:DA:716:A:C3' | 57:DA:717:C:H5'' | 2.39 | 0.53 |
| 57:DA:718:A:C3' | 57:DA:719:C:H5' | 2.39 | 0.53 |
| 57:DA:804:A:H2' | 57:DA:806:C:C4 | 2.44 | 0.53 |
| 57:DA:1049:C:H2' | 57:DA:1050:A:H8 | 1.74 | 0.53 |
| 57:DA:1329:U:HO2' | 57:DA:1330:C:P | 2.32 | 0.53 |
| 57:DA:1341:G:C2 | 41:DT:84:TYR:CE2 | 2.97 | 0.53 |
| 57:DA:1388:G:H2' | 57:DA:1389:G:H8 | 1.73 | 0.53 |
| 57:DA:1735:A:H2' | 57:DA:1736:U:H6 | 1.74 | 0.53 |
| 57:DA:2287:A:HO2' | 57:DA:2288:A:H3' | 1.73 | 0.53 |
| 24:DC:28:PRO:HG3 | 24:DC:62:ARG:NH1 | 2.23 | 0.53 |
| 25:DD:24:VAL:HG23 | 25:DD:190:LYS:HA | 1.90 | 0.53 |
| 28:DG:167:VAL:HG23 | 28:DG:168:VAL:N | 2.21 | 0.53 |
| 31:DJ:77:HIS:CE1 | 31:DJ:83:GLY:HA3 | 2.44 | 0.53 |
| 31:DJ:94:ALA:O | 31:DJ:95:ARG:HB3 | 2.09 | 0.53 |
| 34:DM:97:GLN:HB2 | 34:DM:98:PRO:HD2 | 1.91 | 0.53 |
| 41:DT:69:ARG:HD2 | 41:DT:70:HIS:H | 1.74 | 0.53 |
| 46:DY:28:LEU:O | 46:DY:28:LEU:HD22 | 2.09 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:197:A:H4' | 1:AA:198:G:O5' | 2.07 | 0.52 |
| 1:AA:299:G:C6 | 1:AA:300:A:C6 | 2.96 | 0.52 |
| 1:AA:508:U:O2' | 1:AA:509:A:H8 | 1.91 | 0.52 |
| 1:AA:978:A:OP2 | 1:AA:1362:A:N6 | 2.42 | 0.52 |
| 1:AA:1102:A:O2' | 1:AA:1103:C:H5' | 2.09 | 0.52 |
| 1:AA:1257:A:H4' | 1:AA:1258:G:OP2 | 2.08 | 0.52 |
| 3:AC:119:ILE:CG2 | 3:AC:197:VAL:HG11 | 2.38 | 0.52 |
| 4:AD:113:ALA:O | 4:AD:116:LEU:HB2 | 2.08 | 0.52 |
| 12:AL:82:ARG:HB2 | 12:AL:97:VAL:HG23 | 1.91 | 0.52 |
| 22:BA:88:G:C2 | 22:BA:89:A:C8 | 2.97 | 0.52 |
| 22:BA:403:U:O2' | 22:BA:404:A:OP2 | 2.18 | 0.52 |
| 22:BA:936:A:H2' | 22:BA:937:C:C6 | 2.44 | 0.52 |
| 22:BA:946:C:O2' | 22:BA:947:A:C5' | 2.57 | 0.52 |
| 22:BA:1538:G:H2' | 22:BA:1539:U:C6 | 2.44 | 0.52 |
| 22:BA:1639:C:C2' | 22:BA:1640:A:H5' | 2.40 | 0.52 |
| 22:BA:1955:U:H5 | 22:BA:2557:G:N2 | 2.08 | 0.52 |
| 22:BA:2334:U:H4' | 22:BA:2335:A:OP2 | 2.09 | 0.52 |
| 22:BA:2525:G:C2 | 22:BA:2539:C:C2 | 2.97 | 0.52 |
| 22:BA:2728:U:HO2' | 22:BA:2729:G:H8 | 1.53 | 0.52 |
| 24:BC:69:ASN:O | 24:BC:70:LYS:C | 2.46 | 0.52 |
| 26:BE:131:THR:HG23 | 26:BE:160:ALA:HA | 1.89 | 0.52 |
| 27:BF:123:GLY:HA2 | 27:BF:162:ASP:OD2 | 2.09 | 0.52 |
| 27:BF:127:TYR:O | 27:BF:128:SER:HB2 | 2.08 | 0.52 |
| 32:BK:14:SER:OG | 32:BK:86:LEU:HD12 | 2.10 | 0.52 |
| 32:BK:99:ILE:CG2 | 32:BK:100:PHE:N | 2.72 | 0.52 |
| 36:BO:52:SER:OG | 36:BO:54:VAL:HG12 | 2.09 | 0.52 |
| 53:CA:17:U:H2' | 53:CA:18:C:C6 | 2.43 | 0.52 |
| 53:CA:192:A:H8 | 53:CA:192:A:O5' | 1.92 | 0.52 |
| 53:CA:284:C:H2' | 53:CA:285:C:H6 | 1.73 | 0.52 |
| 53:CA:560:A:C8 | 53:CA:566:G:C4 | 2.98 | 0.52 |
| 53:CA:614:C:N3 | 53:CA:615:G:C8 | 2.77 | 0.52 |
| 53:CA:738:C:C5 | 53:CA:739:C:H5 | 2.27 | 0.52 |
| 53:CA:1134:G:C5 | 53:CA:1135:U:H1' | 2.44 | 0.52 |
| 53:CA:1190:G:H5' | 3:CC:175:HIS:NE2 | 2.24 | 0.52 |
| 53:CA:1301:U:O2' | 53:CA:1302:C:C6 | 2.60 | 0.52 |
| 4:CD:93:LEU:O | 4:CD:96:ARG:HG3 | 2.09 | 0.52 |
| 4:CD:100:VAL:HG21 | 4:CD:136:VAL:HG21 | 1.91 | 0.52 |
| 5:CE:104:ILE:N | 5:CE:122:VAL:H | 2.00 | 0.52 |
| 55:CM:64:VAL:HG12 | 55:CM:65:GLU:N | 2.20 | 0.52 |
| 14:CN:33:VAL:HG22 | 14:CN:40:ARG:NH2 | 2.23 | 0.52 |
| 14:CN:100:TRP:C | 14:CN:100:TRP:CD1 | 2.83 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 15:CO:7:THR:O | 15:CO:11:VAL:HG23 | 2.09 | 0.52 |
| 21:CU:34:ARG:O | 21:CU:35:GLU:O | 2.26 | 0.52 |
| 57:DA:322:A:H3' | 26:DE:163:ASN:HD21 | 1.74 | 0.52 |
| 57:DA:508:A:N6 | 40:DS:9:HIS:NE2 | 2.56 | 0.52 |
| 57:DA:727:A:C2' | 57:DA:728:G:C8 | 2.92 | 0.52 |
| 57:DA:1010:A:O2' | 57:DA:1011:G:H5'' | 2.09 | 0.52 |
| 57:DA:1213:A:H2' | 57:DA:1214:A:C8 | 2.43 | 0.52 |
| 57:DA:1277:G:O2' | 35:DN:24:MET:HB2 | 2.09 | 0.52 |
| 57:DA:1364:G:N2 | 57:DA:1367:A:OP2 | 2.42 | 0.52 |
| 57:DA:1441:G:C2 | 57:DA:1442:U:C2 | 2.97 | 0.52 |
| 57:DA:1567:G:H5'' | 24:DC:84:PRO:HG3 | 1.90 | 0.52 |
| 57:DA:2266:A:O2' | 57:DA:2267:A:OP2 | 2.25 | 0.52 |
| 57:DA:2700:A:C2 | 57:DA:2708:G:C2 | 2.97 | 0.52 |
| 57:DA:2886:A:N7 | 48:D0:39:ARG:NE | 2.57 | 0.52 |
| 58:DB:57:A:C2' | 58:DB:58:A:H8 | 2.22 | 0.52 |
| 24:DC:32:LEU:O | 24:DC:33:LEU:HD23 | 2.09 | 0.52 |
| 59:DF:45:ASP:C | 59:DF:47:LYS:H | 2.12 | 0.52 |
| 30:DI:49:GLU:HG3 | 30:DI:54:ILE:HD11 | 1.90 | 0.52 |
| 32:DK:59:LYS:HE3 | 32:DK:89:ASN:CG | 2.29 | 0.52 |
| 35:DN:2:ARG:O | 35:DN:2:ARG:HD2 | 2.09 | 0.52 |
| 38:DQ:90:ASP:O | 38:DQ:94:LEU:HB2 | 2.09 | 0.52 |
| 45:DX:36:ARG:HG2 | 45:DX:47:THR:HB | 1.90 | 0.52 |
| 50:D2:45:SER:C | 50:D2:46:LYS:HD2 | 2.30 | 0.52 |
| 1:AA:809:G:C6 | 1:AA:810:C:C5 | 2.97 | 0.52 |
| 1:AA:1399:C:H4' | 1:AA:1400:C:O5' | 2.08 | 0.52 |
| 3:AC:6:PRO:HG2 | 3:AC:183:TYR:CG | 2.44 | 0.52 |
| 5:AE:149:PRO:HG2 | 5:AE:150:GLU:HG2 | 1.92 | 0.52 |
| 13:AM:113:LYS:H | 13:AM:114:PRO:HD2 | 1.75 | 0.52 |
| 14:AN:60:ARG:HA | 63:AN:302:HOH:O | 2.09 | 0.52 |
| 15:AO:16:ARG:HD3 | 15:AO:20:ASP:OD2 | 2.08 | 0.52 |
| 17:AQ:40:THR:HG22 | 17:AQ:41:THR:N | 2.25 | 0.52 |
| 22:BA:323:C:N4 | 22:BA:333:G:C5 | 2.77 | 0.52 |
| 22:BA:364:C:O2' | 22:BA:365:U:H5' | 2.08 | 0.52 |
| 22:BA:745:G:C2' | 22:BA:746:U:H5' | 2.40 | 0.52 |
| 22:BA:963:U:H2' | 22:BA:964:C:C6 | 2.45 | 0.52 |
| 22:BA:1833:C:C5 | 22:BA:1834:U:C5 | 2.98 | 0.52 |
| 22:BA:2333:A:H4' | 22:BA:2334:U:O5' | 2.09 | 0.52 |
| 22:BA:2403:C:C4 | 22:BA:2415:G:C2 | 2.98 | 0.52 |
| 22:BA:2572:A:N7 | 25:BD:150:GLN:HB3 | 2.23 | 0.52 |
| 22:BA:2673:G:C2 | 22:BA:2674:G:C8 | 2.97 | 0.52 |
| 22:BA:2725:A:O2' | 22:BA:2726:A:H2' | 2.10 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:2856:A:N6 | 22:BA:2857:G:C6 | 2.78 | 0.52 |
| 26:BE:75:SER:HB3 | 26:BE:78:TRP:HB2 | 1.91 | 0.52 |
| 27:BF:105:ILE:C | 27:BF:108:PRO:HD2 | 2.30 | 0.52 |
| 41:BT:15:HIS:O | 41:BT:17:SER:N | 2.43 | 0.52 |
| 48:B0:27:LEU:H | 48:B0:27:LEU:CD2 | 2.22 | 0.52 |
| 50:B2:12:ARG:HB2 | 50:B2:12:ARG:NH2 | 2.25 | 0.52 |
| 53:CA:320:A:C2 | 53:CA:334:C:N3 | 2.78 | 0.52 |
| 53:CA:345:C:H4' | 53:CA:346:G:C5' | 2.38 | 0.52 |
| 53:CA:577:G:H4' | 53:CA:816:A:H2' | 1.92 | 0.52 |
| 53:CA:765:G:O6 | 53:CA:811:C:C5 | 2.63 | 0.52 |
| 53:CA:1202:U:H2' | 53:CA:1203:C:C6 | 2.45 | 0.52 |
| 53:CA:1279:G:H5' | 10:CJ:9:ARG:HH12 | 1.74 | 0.52 |
| 3:CC:116:ALA:HB2 | 3:CC:199:VAL:HG21 | 1.91 | 0.52 |
| 6:CF:5:GLU:OE2 | 18:CR:23:LYS:HE2 | 2.09 | 0.52 |
| 55:CM:68:LEU:O | 55:CM:72:ILE:HG22 | 2.09 | 0.52 |
| 57:DA:53:A:C2 | 57:DA:179:C:H4' | 2.44 | 0.52 |
| 57:DA:632:A:H4' | 33:DL:68:SER:HA | 1.91 | 0.52 |
| 57:DA:748:G:O5' | 40:DS:89:ALA:HB2 | 2.08 | 0.52 |
| 57:DA:806:C:H2' | 57:DA:807:U:H6 | 1.74 | 0.52 |
| 57:DA:836:G:C5 | 57:DA:837:C:C4 | 2.96 | 0.52 |
| 57:DA:929:U:O2' | 57:DA:930:G:H5' | 2.09 | 0.52 |
| 57:DA:1264:A:C6 | 57:DA:1265:A:N6 | 2.77 | 0.52 |
| 57:DA:1649:G:C6 | 57:DA:2009:A:C6 | 2.97 | 0.52 |
| 57:DA:1794:A:H1' | 57:DA:1900:A:C2 | 2.44 | 0.52 |
| 57:DA:1838:C:C2 | 57:DA:1899:A:C2 | 2.98 | 0.52 |
| 57:DA:1945:G:H2' | 57:DA:1946:U:C6 | 2.44 | 0.52 |
| 57:DA:2400:G:H2' | 57:DA:2401:U:O4' | 2.09 | 0.52 |
| 57:DA:2623:G:H4' | 57:DA:2825:G:H8 | 1.74 | 0.52 |
| 29:DH:84:ALA:HB3 | 29:DH:148:ALA:HB2 | 1.91 | 0.52 |
| 31:DJ:45:THR:H | 31:DJ:46:PRO:HD3 | 1.73 | 0.52 |
| 34:DM:13:HIS:O | 34:DM:14:LYS:HB2 | 2.09 | 0.52 |
| 34:DM:27:SER:N | 34:DM:66:ARG:HH22 | 2.07 | 0.52 |
| 34:DM:119:LEU:O | 34:DM:119:LEU:HD23 | 2.09 | 0.52 |
| 37:DP:32:VAL:HA | 37:DP:37:LYS:HA | 1.91 | 0.52 |
| 40:DS:39:THR:O | 40:DS:40:ASN:HB3 | 2.09 | 0.52 |
| 41:DT:20:ALA:HB1 | 41:DT:31:VAL:HG11 | 1.90 | 0.52 |
| 44:DW:24:ARG:HA | 44:DW:66:VAL:H | 1.74 | 0.52 |
| 46:DY:57:LEU:HD13 | 46:DY:57:LEU:O | 2.09 | 0.52 |
| 48:D0:29:VAL:HG21 | 48:D0:34:GLY:HA2 | 1.89 | 0.52 |
| 48:D0:37:HIS:HB2 | 48:D0:41:HIS:HE1 | 1.74 | 0.52 |
| 1:AA:76:G:C2 | 1:AA:95:C:N3 | 2.77 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1072:G:H2' | 1:AA:1073:U:C6 | 2.45 | 0.52 |
| 1:AA:1118:U:H2' | 1:AA:1119:C:H6 | 1.74 | 0.52 |
| 1:AA:1384:C:H2' | 1:AA:1385:G:C8 | 2.44 | 0.52 |
| 2:AB:100:LEU:HB3 | 2:AB:174:GLU:HG2 | 1.90 | 0.52 |
| 3:AC:55:VAL:O | 3:AC:65:VAL:HA | 2.09 | 0.52 |
| 4:AD:57:LYS:HG2 | 4:AD:202:LEU:CD2 | 2.38 | 0.52 |
| 5:AE:121:ASN:ND2 | 5:AE:122:VAL:HG13 | 2.24 | 0.52 |
| 9:AI:12:LYS:H | 9:AI:105:ARG:HH12 | 1.55 | 0.52 |
| 12:AL:86:VAL:CG1 | 12:AL:89:LEU:HD23 | 2.39 | 0.52 |
| 22:BA:324:A:N6 | 22:BA:339:U:O4' | 2.42 | 0.52 |
| 22:BA:674:G:H5'' | 26:BE:71:GLY:HA3 | 1.91 | 0.52 |
| 22:BA:907:G:H2' | 22:BA:908:C:H5' | 1.91 | 0.52 |
| 22:BA:1060:U:H5'' | 22:BA:1061:U:OP1 | 2.09 | 0.52 |
| 22:BA:1639:C:O2' | 22:BA:1640:A:H5' | 2.09 | 0.52 |
| 22:BA:2019:A:H4' | 38:BQ:33:VAL:HG21 | 1.91 | 0.52 |
| 22:BA:2109:U:O4 | 22:BA:2110:G:C5 | 2.62 | 0.52 |
| 22:BA:2415:G:H4' | 33:BL:66:PHE:HB2 | 1.91 | 0.52 |
| 22:BA:2748:A:O3' | 28:BG:3:VAL:HG11 | 2.09 | 0.52 |
| 22:BA:2841:C:H2' | 22:BA:2842:G:C8 | 2.44 | 0.52 |
| 24:BC:20:ASN:CG | 24:BC:23:LEU:HD23 | 2.30 | 0.52 |
| 24:BC:80:LEU:HD13 | 24:BC:109:LEU:HG | 1.91 | 0.52 |
| 29:BH:8:LYS:O | 29:BH:9:VAL:CB | 2.54 | 0.52 |
| 29:BH:27:ARG:HH12 | 29:BH:38:PRO:HG3 | 1.74 | 0.52 |
| 31:BJ:27:ARG:HH11 | 31:BJ:27:ARG:HG2 | 1.74 | 0.52 |
| 32:BK:111:LYS:HE2 | 32:BK:111:LYS:H | 1.72 | 0.52 |
| 37:BP:92:ARG:O | 37:BP:92:ARG:HG3 | 2.10 | 0.52 |
| 38:BQ:85:ALA:O | 38:BQ:86:SER:O | 2.27 | 0.52 |
| 53:CA:587:G:H4' | 8:CH:3:GLN:CA | 2.37 | 0.52 |
| 53:CA:1239:A:H3' | 54:CG:118:ARG:NH2 | 2.24 | 0.52 |
| 54:CG:99:ALA:O | 54:CG:103:ILE:HG13 | 2.08 | 0.52 |
| 10:CJ:40:ILE:HG22 | 10:CJ:42:LEU:CD1 | 2.39 | 0.52 |
| 12:CL:97:VAL:HG23 | 12:CL:100:ALA:HB3 | 1.91 | 0.52 |
| 55:CM:18:LEU:H | 55:CM:18:LEU:HD12 | 1.74 | 0.52 |
| 57:DA:58:G:N2 | 57:DA:59:U:H1' | 2.24 | 0.52 |
| 57:DA:231:A:O2' | 57:DA:232:G:H5' | 2.10 | 0.52 |
| 57:DA:247:G:H4' | 57:DA:386:G:C4 | 2.44 | 0.52 |
| 57:DA:379:G:C5 | 57:DA:396:G:C6 | 2.97 | 0.52 |
| 57:DA:1161:C:H2' | 57:DA:1162:G:H8 | 1.74 | 0.52 |
| 57:DA:1204:A:O4' | 57:DA:1206:G:C5 | 2.63 | 0.52 |
| 57:DA:1337:G:OP2 | 57:DA:1337:G:C8 | 2.62 | 0.52 |
| 57:DA:1388:G:O2' | 57:DA:1389:G:C5' | 2.54 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:1491:G:C2 | 57:DA:1492:G:C8 | 2.98 | 0.52 |
| 57:DA:2011:U:H2' | 57:DA:2012:G:O4' | 2.09 | 0.52 |
| 57:DA:2021:C:O2 | 57:DA:2021:C:H2' | 2.09 | 0.52 |
| 57:DA:2185:U:H2' | 57:DA:2186:G:H8 | 1.75 | 0.52 |
| 57:DA:2812:G:C6 | 57:DA:2813:A:C6 | 2.97 | 0.52 |
| 24:DC:9:SER:OG | 24:DC:12:ARG:HB2 | 2.08 | 0.52 |
| 25:DD:51:THR:HG21 | 25:DD:75:ALA:O | 2.09 | 0.52 |
| 26:DE:59:PRO:HB2 | 26:DE:67:ARG:NH2 | 2.24 | 0.52 |
| 26:DE:65:THR:HG23 | 26:DE:67:ARG:HG3 | 1.92 | 0.52 |
| 59:DF:177:ARG:CZ | 59:DF:178:LYS:H | 2.22 | 0.52 |
| 37:DP:13:LYS:HD2 | 37:DP:13:LYS:H | 1.74 | 0.52 |
| 39:DR:49:ILE:HD13 | 39:DR:53:PHE:H | 1.75 | 0.52 |
| 43:DV:77:VAL:HG23 | 43:DV:89:ILE:CG2 | 2.40 | 0.52 |
| 1:AA:373:A:C2 | 1:AA:374:A:C8 | 2.97 | 0.52 |
| 1:AA:374:A:H2' | 1:AA:375:U:C6 | 2.44 | 0.52 |
| 1:AA:511:C:H2' | 1:AA:534:U:O2 | 2.09 | 0.52 |
| 1:AA:994:A:C2 | 14:AN:4:SER:HB2 | 2.44 | 0.52 |
| 1:AA:1098:C:C2 | 1:AA:1099:G:C8 | 2.97 | 0.52 |
| 1:AA:1411:C:C2' | 1:AA:1412:C:H5' | 2.39 | 0.52 |
| 2:AB:105:THR:HG22 | 2:AB:105:THR:O | 2.10 | 0.52 |
| 10:AJ:35:GLN:HG2 | 10:AJ:77:VAL:CB | 2.37 | 0.52 |
| 21:AU:7:GLU:HB2 | 21:AU:11:PHE:CE1 | 2.45 | 0.52 |
| 22:BA:26:G:H1' | 22:BA:514:A:N6 | 2.24 | 0.52 |
| 22:BA:581:C:O2' | 22:BA:582:A:H5' | 2.10 | 0.52 |
| 22:BA:915:C:H5'' | 22:BA:915:C:C6 | 2.42 | 0.52 |
| 22:BA:2699:C:H2' | 22:BA:2700:A:O4' | 2.09 | 0.52 |
| 27:BF:12:VAL:HG13 | 27:BF:13:LYS:H | 1.74 | 0.52 |
| 27:BF:33:ILE:HG12 | 27:BF:155:ILE:HG12 | 1.91 | 0.52 |
| 27:BF:134:GLN:CG | 27:BF:135:ILE:H | 2.19 | 0.52 |
| 28:BG:22:VAL:HG22 | 28:BG:36:LEU:CD1 | 2.35 | 0.52 |
| 30:BI:75:ALA:HB3 | 30:BI:131:THR:HG21 | 1.91 | 0.52 |
| 30:BI:78:LEU:HD23 | 30:BI:81:LYS:HE3 | 1.90 | 0.52 |
| 30:BI:86:LYS:HD2 | 30:BI:86:LYS:H | 1.74 | 0.52 |
| 30:BI:105:LEU:HD23 | 30:BI:108:ILE:HG21 | 1.91 | 0.52 |
| 30:BI:107:GLU:O | 30:BI:111:THR:HG23 | 2.10 | 0.52 |
| 31:BJ:124:VAL:O | 31:BJ:125:TYR:HB2 | 2.09 | 0.52 |
| 36:BO:67:ASN:O | 36:BO:69:ASP:N | 2.42 | 0.52 |
| 36:BO:106:LEU:C | 36:BO:106:LEU:HD12 | 2.29 | 0.52 |
| 46:BY:53:VAL:O | 46:BY:57:LEU:HD23 | 2.09 | 0.52 |
| 53:CA:183:C:H2' | 53:CA:183:C:O2 | 2.08 | 0.52 |
| 53:CA:733:G:O2' | 53:CA:734:G:H5'' | 2.09 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:1093:A:C5 | 53:CA:1095:U:O4' | 2.62 | 0.52 |
| 53:CA:1129:C:O2' | 53:CA:1130:A:H8 | 1.88 | 0.52 |
| 53:CA:1249:C:H4' | 9:CI:74:GLN:HE22 | 1.74 | 0.52 |
| 53:CA:1458:G:O3' | 20:CT:22:SER:CA | 2.53 | 0.52 |
| 2:CB:47:PRO:HA | 2:CB:50:ASN:HB2 | 1.91 | 0.52 |
| 2:CB:170:ILE:O | 2:CB:174:GLU:HG3 | 2.09 | 0.52 |
| 3:CC:33:ASP:O | 3:CC:37:LYS:HG2 | 2.10 | 0.52 |
| 10:CJ:33:GLY:O | 10:CJ:35:GLN:N | 2.42 | 0.52 |
| 12:CL:70:GLY:C | 12:CL:98:ARG:HH22 | 2.13 | 0.52 |
| 14:CN:6:LYS:O | 14:CN:10:VAL:HG23 | 2.08 | 0.52 |
| 20:CT:4:LYS:HE3 | 20:CT:5:SER:N | 2.15 | 0.52 |
| 57:DA:40:U:C4 | 57:DA:41:C:C4 | 2.97 | 0.52 |
| 57:DA:64:A:H8 | 57:DA:64:A:O5' | 1.93 | 0.52 |
| 57:DA:416:U:C4 | 57:DA:417:C:C4 | 2.97 | 0.52 |
| 57:DA:430:A:OP2 | 57:DA:431:U:H5 | 1.92 | 0.52 |
| 57:DA:736:C:O5' | 57:DA:736:C:H6 | 1.92 | 0.52 |
| 57:DA:749:A:H1' | 57:DA:1618:A:OP1 | 2.08 | 0.52 |
| 57:DA:845:A:N1 | 57:DA:932:U:O2 | 2.42 | 0.52 |
| 57:DA:858:G:H2' | 57:DA:2268:A:N3 | 2.25 | 0.52 |
| 57:DA:1087:G:C5 | 57:DA:1089:A:C2 | 2.97 | 0.52 |
| 57:DA:1866:A:H2' | 57:DA:1867:G:O4' | 2.10 | 0.52 |
| 57:DA:1944:U:O4' | 57:DA:1955:U:H1' | 2.09 | 0.52 |
| 57:DA:2077:A:OP1 | 57:DA:2238:G:N1 | 2.41 | 0.52 |
| 57:DA:2248:C:H3' | 57:DA:2249:U:C6 | 2.45 | 0.52 |
| 57:DA:2290:G:C5 | 57:DA:2291:U:C4 | 2.98 | 0.52 |
| 57:DA:2738:A:H2 | 57:DA:2766:A:H61 | 1.57 | 0.52 |
| 57:DA:2748:A:C4 | 57:DA:2757:A:N6 | 2.77 | 0.52 |
| 57:DA:2812:G:H2' | 57:DA:2813:A:C8 | 2.45 | 0.52 |
| 25:DD:88:GLU:O | 25:DD:89:GLU:HG3 | 2.08 | 0.52 |
| 25:DD:111:GLY:HA3 | 25:DD:194:PRO:HG2 | 1.89 | 0.52 |
| 37:DP:77:SER:OG | 37:DP:79:VAL:HG22 | 2.09 | 0.52 |
| 40:DS:66:ILE:HD13 | 40:DS:66:ILE:N | 2.23 | 0.52 |
| 41:DT:29:THR:H | 41:DT:87:LEU:CB | 2.19 | 0.52 |
| 51:D3:50:SER:O | 51:D3:52:GLY:N | 2.42 | 0.52 |
| 1:AA:188:C:O2 | 1:AA:188:C:H2' | 2.08 | 0.52 |
| 1:AA:975:A:H8 | 1:AA:1357:A:HO2' | 1.56 | 0.52 |
| 1:AA:1253:G:O2' | 1:AA:1254:A:H5' | 2.10 | 0.52 |
| 1:AA:1320:C:N4 | 19:AS:35:ARG:HB2 | 2.25 | 0.52 |
| 2:AB:75:ALA:O | 2:AB:79:VAL:HG23 | 2.09 | 0.52 |
| 4:AD:189:ASP:O | 4:AD:190:LEU:HB3 | 2.10 | 0.52 |
| 5:AE:86:GLY:O | 5:AE:93:VAL:HB | 2.10 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:AH:93:LYS:CE | 8:AH:116:ARG:HH12 | 2.23 | 0.52 |
| 8:AH:105:THR:CG2 | 8:AH:120:LEU:HD13 | 2.32 | 0.52 |
| 13:AM:3:ILE:HA | 13:AM:56:ARG:NH1 | 2.24 | 0.52 |
| 22:BA:49:A:N6 | 22:BA:177:G:C4 | 2.78 | 0.52 |
| 22:BA:301:G:H1' | 22:BA:302:C:C6 | 2.44 | 0.52 |
| 22:BA:484:C:H2' | 22:BA:485:C:H6 | 1.74 | 0.52 |
| 22:BA:777:G:O2' | 22:BA:778:G:H5' | 2.08 | 0.52 |
| 22:BA:1524:G:O2' | 22:BA:1525:A:H5' | 2.10 | 0.52 |
| 22:BA:2345:G:C4 | 22:BA:2381:A:C2 | 2.97 | 0.52 |
| 24:BC:141:HIS:CB | 24:BC:190:THR:HB | 2.36 | 0.52 |
| 25:BD:100:LEU:HB3 | 25:BD:101:PHE:CD1 | 2.45 | 0.52 |
| 27:BF:39:VAL:CG1 | 27:BF:49:LEU:HD13 | 2.39 | 0.52 |
| 28:BG:84:LYS:O | 28:BG:85:LYS:HB2 | 2.08 | 0.52 |
| 29:BH:96:THR:O | 29:BH:96:THR:HG23 | 2.10 | 0.52 |
| 33:BL:7:SER:HB2 | 33:BL:8:PRO:CD | 2.40 | 0.52 |
| 39:BR:67:GLY:C | 39:BR:93:PHE:CE2 | 2.83 | 0.52 |
| 48:B0:45:ASP:O | 48:B0:52:LYS:HE3 | 2.09 | 0.52 |
| 53:CA:115:G:C2 | 53:CA:289:G:N7 | 2.77 | 0.52 |
| 53:CA:1029:U:H4' | 53:CA:1032:G:H1 | 1.73 | 0.52 |
| 53:CA:1073:U:C2 | 53:CA:1074:G:C8 | 2.97 | 0.52 |
| 53:CA:1102:A:H5'' | 53:CA:1102:A:C8 | 2.41 | 0.52 |
| 5:CE:137:ARG:HA | 5:CE:140:ILE:HG13 | 1.91 | 0.52 |
| 6:CF:91:ARG:O | 6:CF:93:LYS:HE3 | 2.10 | 0.52 |
| 8:CH:1:SER:C | 8:CH:3:GLN:N | 2.63 | 0.52 |
| 10:CJ:80:THR:HB | 10:CJ:82:LYS:NZ | 2.24 | 0.52 |
| 57:DA:7:G:H4' | 31:DJ:15:TRP:CH2 | 2.45 | 0.52 |
| 57:DA:223:A:C5 | 57:DA:422:A:N7 | 2.77 | 0.52 |
| 57:DA:480:A:H3' | 57:DA:481:G:H5' | 1.89 | 0.52 |
| 57:DA:648:G:H2' | 57:DA:649:G:C8 | 2.44 | 0.52 |
| 57:DA:929:U:H1' | 47:DZ:25:GLY:O | 2.09 | 0.52 |
| 57:DA:1079:C:O2' | 57:DA:1080:A:O4' | 2.28 | 0.52 |
| 57:DA:1130:U:O2' | 57:DA:1131:G:H8 | 1.93 | 0.52 |
| 57:DA:1157:G:H2' | 57:DA:1158:C:C6 | 2.44 | 0.52 |
| 57:DA:1649:G:H2' | 57:DA:1650:A:H8 | 1.75 | 0.52 |
| 57:DA:1775:U:H2' | 57:DA:1776:G:O5' | 2.08 | 0.52 |
| 57:DA:2049:G:N2 | 57:DA:2620:C:C2 | 2.77 | 0.52 |
| 57:DA:2191:A:H3' | 57:DA:2192:U:H6 | 1.73 | 0.52 |
| 57:DA:2372:U:H1' | 49:D1:45:HIS:CE1 | 2.45 | 0.52 |
| 57:DA:2748:A:C2 | 57:DA:2757:A:C5 | 2.97 | 0.52 |
| 58:DB:94:A:OP1 | 43:DV:19:ARG:CD | 2.56 | 0.52 |
| 24:DC:170:TYR:HD2 | 24:DC:183:VAL:O | 1.92 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:DN:84:GLY:O | 35:DN:88:ALA:HB2 | 2.09 | 0.52 |
| 41:DT:9:LYS:HG2 | 41:DT:9:LYS:O | 2.09 | 0.52 |
| 44:DW:70:VAL:HG22 | 44:DW:70:VAL:O | 2.10 | 0.52 |
| 46:DY:4:LYS:HB2 | 46:DY:4:LYS:NZ | 2.24 | 0.52 |
| 1:AA:122:G:H2' | 1:AA:123:U:C6 | 2.44 | 0.52 |
| 1:AA:194:C:O2' | 1:AA:195:A:H5' | 2.09 | 0.52 |
| 1:AA:1053:G:C6 | 1:AA:1199:U:C2 | 2.98 | 0.52 |
| 1:AA:1073:U:O2' | 2:AB:102:ASN:ND2 | 2.43 | 0.52 |
| 1:AA:1084:G:C6 | 1:AA:1085:U:O4 | 2.62 | 0.52 |
| 2:AB:141:GLU:HA | 2:AB:144:GLU:HB2 | 1.91 | 0.52 |
| 2:AB:165:ALA:HA | 2:AB:172:ILE:HD11 | 1.92 | 0.52 |
| 3:AC:22:PHE:CD1 | 10:AJ:12:ALA:HA | 2.45 | 0.52 |
| 4:AD:121:ALA:C | 4:AD:122:ILE:HD13 | 2.30 | 0.52 |
| 9:AI:88:GLU:HG3 | 9:AI:89:TYR:H | 1.74 | 0.52 |
| 12:AL:29:LYS:O | 12:AL:80:LEU:HD12 | 2.10 | 0.52 |
| 16:AP:20:VAL:HG21 | 16:AP:32:PHE:HB2 | 1.90 | 0.52 |
| 22:BA:215:G:C4' | 22:BA:216:A:H4' | 2.40 | 0.52 |
| 22:BA:341:C:H2' | 22:BA:342:A:O4' | 2.10 | 0.52 |
| 22:BA:843:G:O2' | 22:BA:844:A:H5' | 2.10 | 0.52 |
| 22:BA:959:A:H62 | 34:BM:82:MET:HE3 | 1.75 | 0.52 |
| 22:BA:976:G:C2 | 22:BA:977:G:N7 | 2.77 | 0.52 |
| 22:BA:2199:A:H3' | 22:BA:2200:C:H6 | 1.74 | 0.52 |
| 22:BA:2319:G:O2' | 22:BA:2320:U:H5 | 1.92 | 0.52 |
| 22:BA:2320:U:H4' | 22:BA:2321:U:H5'' | 1.91 | 0.52 |
| 22:BA:2352:A:C2 | 44:BW:30:VAL:CG1 | 2.84 | 0.52 |
| 22:BA:2773:C:OP1 | 25:BD:171:THR:CG2 | 2.57 | 0.52 |
| 24:BC:139:THR:O | 24:BC:161:VAL:O | 2.27 | 0.52 |
| 25:BD:149:ASN:OD1 | 25:BD:150:GLN:N | 2.42 | 0.52 |
| 31:BJ:20:ALA:O | 31:BJ:21:THR:O | 2.28 | 0.52 |
| 32:BK:20:MET:O | 32:BK:41:ILE:HG13 | 2.09 | 0.52 |
| 38:BQ:75:TYR:CZ | 38:BQ:79:ILE:HG13 | 2.43 | 0.52 |
| 43:BV:80:HIS:HD2 | 43:BV:83:LYS:CB | 2.22 | 0.52 |
| 48:B0:53:VAL:O | 48:B0:54:ILE:O | 2.26 | 0.52 |
| 49:B1:9:LYS:O | 49:B1:50:GLU:HG3 | 2.09 | 0.52 |
| 51:B3:21:PHE:HB2 | 51:B3:49:VAL:HG11 | 1.90 | 0.52 |
| 53:CA:82:G:C5 | 53:CA:89:U:C5 | 2.98 | 0.52 |
| 53:CA:91:U:C4 | 53:CA:92:U:C4 | 2.98 | 0.52 |
| 2:CB:25:LYS:HD2 | 2:CB:25:LYS:H | 1.75 | 0.52 |
| 3:CC:61:LYS:O | 3:CC:96:VAL:HB | 2.09 | 0.52 |
| 10:CJ:52:LEU:HB2 | 14:CN:80:ARG:HE | 1.75 | 0.52 |
| 15:CO:54:GLY:O | 15:CO:58:MET:HG3 | 2.09 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 21:CU:24:LYS:CG | 21:CU:25:ALA:N | 2.55 | 0.52 |
| 57:DA:30:G:C5 | 57:DA:31:C:C4 | 2.98 | 0.52 |
| 57:DA:68:G:C6 | 57:DA:69:C:C4 | 2.97 | 0.52 |
| 57:DA:659:G:H4' | 26:DE:95:LYS:HD3 | 1.91 | 0.52 |
| 57:DA:720:U:H2' | 57:DA:721:A:H8 | 1.74 | 0.52 |
| 57:DA:1993:U:O2' | 57:DA:1994:C:C5' | 2.57 | 0.52 |
| 57:DA:2218:G:H2' | 57:DA:2219:U:H6 | 1.75 | 0.52 |
| 57:DA:2668:G:O2' | 57:DA:2669:G:O5' | 2.27 | 0.52 |
| 57:DA:2851:A:C2' | 57:DA:2852:G:C8 | 2.92 | 0.52 |
| 24:DC:19:VAL:HG12 | 24:DC:19:VAL:O | 2.09 | 0.52 |
| 25:DD:60:VAL:O | 25:DD:60:VAL:HG13 | 2.10 | 0.52 |
| 59:DF:103:ILE:HG21 | 59:DF:173:ASP:O | 2.09 | 0.52 |
| 29:DH:120:GLY:O | 29:DH:121:VAL:HB | 2.09 | 0.52 |
| 31:DJ:106:LYS:HE2 | 31:DJ:109:LEU:HB2 | 1.91 | 0.52 |
| 1:AA:215:C:O2' | 1:AA:216:U:H5' | 2.09 | 0.52 |
| 1:AA:373:A:HO2' | 1:AA:374:A:H5' | 1.73 | 0.52 |
| 1:AA:563:A:N3 | 1:AA:563:A:C2' | 2.67 | 0.52 |
| 1:AA:1279:G:N3 | 1:AA:1279:G:C2' | 2.71 | 0.52 |
| 7:AG:110:ARG:HB2 | 7:AG:110:ARG:HH11 | 1.75 | 0.52 |
| 8:AH:1:SER:C | 8:AH:3:GLN:N | 2.62 | 0.52 |
| 9:AI:128:LYS:CD | 9:AI:129:ARG:H | 2.23 | 0.52 |
| 17:AQ:45:VAL:HG21 | 17:AQ:60:ILE:CD1 | 2.27 | 0.52 |
| 22:BA:581:C:H2' | 22:BA:582:A:H8 | 1.75 | 0.52 |
| 22:BA:747:U:C4 | 22:BA:2613:U:C4 | 2.98 | 0.52 |
| 22:BA:869:G:H4' | 34:BM:8:LYS:HE2 | 1.91 | 0.52 |
| 22:BA:947:A:O2' | 22:BA:984:A:C2 | 2.58 | 0.52 |
| 22:BA:983:A:C6 | 22:BA:984:A:C2 | 2.98 | 0.52 |
| 22:BA:1062:G:O2' | 22:BA:1063:G:C8 | 2.63 | 0.52 |
| 22:BA:1452:G:H2' | 22:BA:1457:U:O4 | 2.09 | 0.52 |
| 22:BA:1590:A:H2' | 22:BA:1591:A:H8 | 1.75 | 0.52 |
| 22:BA:2148:G:HO2' | 22:BA:2149:U:P | 2.33 | 0.52 |
| 22:BA:2228:G:H2' | 22:BA:2229:U:C6 | 2.45 | 0.52 |
| 22:BA:2341:G:H2' | 22:BA:2342:C:C6 | 2.45 | 0.52 |
| 25:BD:120:GLY:HA2 | 25:BD:162:ALA:HB2 | 1.88 | 0.52 |
| 28:BG:84:LYS:HB2 | 28:BG:132:LEU:HG | 1.91 | 0.52 |
| 41:BT:5:GLU:OE1 | 46:BY:18:LEU:HD11 | 2.10 | 0.52 |
| 43:BV:10:LYS:HZ2 | 43:BV:11:GLU:N | 2.07 | 0.52 |
| 44:BW:37:VAL:CG1 | 44:BW:38:ARG:H | 2.21 | 0.52 |
| 45:BX:52:ALA:O | 45:BX:53:LYS:HB3 | 2.10 | 0.52 |
| 48:B0:33:SER:O | 48:B0:34:GLY:O | 2.28 | 0.52 |
| 53:CA:36:C:H4' | 12:CL:118:VAL:O | 2.10 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:725:G:H2' | 53:CA:726:C:H6 | 1.75 | 0.52 |
| 53:CA:1301:U:O2' | 53:CA:1302:C:H5 | 1.90 | 0.52 |
| 2:CB:9:LEU:HD23 | 2:CB:9:LEU:H | 1.74 | 0.52 |
| 4:CD:72:ARG:HA | 4:CD:203:TYR:HE1 | 1.74 | 0.52 |
| 5:CE:80:LEU:O | 5:CE:81:GLN:CB | 2.57 | 0.52 |
| 54:CG:4:ARG:HD2 | 54:CG:5:VAL:H | 1.74 | 0.52 |
| 55:CM:36:ALA:HB3 | 55:CM:55:LEU:HD11 | 1.92 | 0.52 |
| 55:CM:91:ARG:HD3 | 55:CM:91:ARG:O | 2.09 | 0.52 |
| 56:CP:48:GLU:CD | 56:CP:51:ARG:HB2 | 2.30 | 0.52 |
| 57:DA:54:G:H2' | 57:DA:55:G:O4' | 2.08 | 0.52 |
| 57:DA:797:G:OP1 | 26:DE:57:LYS:HG2 | 2.10 | 0.52 |
| 57:DA:857:G:H1' | 44:DW:19:ARG:HE | 1.71 | 0.52 |
| 57:DA:1206:G:H2' | 57:DA:1207:C:C6 | 2.45 | 0.52 |
| 57:DA:1255:U:H5' | 57:DA:2502:G:H22 | 1.74 | 0.52 |
| 57:DA:1291:C:O2' | 57:DA:1292:G:O4' | 2.27 | 0.52 |
| 57:DA:1681:G:O2' | 57:DA:1762:A:O2' | 2.27 | 0.52 |
| 57:DA:1734:G:HO2' | 57:DA:1735:A:H8 | 1.55 | 0.52 |
| 57:DA:2314:A:C2 | 57:DA:2315:G:C5 | 2.97 | 0.52 |
| 26:DE:28:VAL:O | 26:DE:32:VAL:HG13 | 2.10 | 0.52 |
| 26:DE:105:LEU:O | 26:DE:109:LEU:HB2 | 2.09 | 0.52 |
| 59:DF:122:ASP:HB2 | 59:DF:126:ASN:HB2 | 1.92 | 0.52 |
| 28:DG:149:ALA:O | 28:DG:151:ARG:N | 2.43 | 0.52 |
| 29:DH:89:LYS:HD2 | 29:DH:124:THR:HA | 1.92 | 0.52 |
| 32:DK:17:ARG:O | 32:DK:45:GLU:HB3 | 2.10 | 0.52 |
| 33:DL:93:ASN:CG | 33:DL:94:THR:N | 2.62 | 0.52 |
| 33:DL:123:ARG:HA | 33:DL:143:GLU:HB3 | 1.92 | 0.52 |
| 36:DO:29:HIS:HB3 | 36:DO:36:TYR:HB2 | 1.92 | 0.52 |
| 41:DT:10:VAL:HG23 | 41:DT:11:LEU:H | 1.73 | 0.52 |
| 43:DV:15:GLY:O | 43:DV:19:ARG:HG3 | 2.10 | 0.52 |
| 1:AA:89:U:O2' | 1:AA:90:C:C5' | 2.57 | 0.52 |
| 1:AA:901:A:C5 | 1:AA:902:G:H1' | 2.45 | 0.52 |
| 1:AA:945:G:C6 | 1:AA:1337:G:C5 | 2.98 | 0.52 |
| 1:AA:1158:C:O2 | 1:AA:1158:C:C2' | 2.58 | 0.52 |
| 1:AA:1221:G:H2' | 1:AA:1222:G:H8 | 1.74 | 0.52 |
| 8:AH:48:PHE:O | 8:AH:49:LYS:HB2 | 2.09 | 0.52 |
| 10:AJ:21:ALA:HA | 10:AJ:24:GLU:OE2 | 2.10 | 0.52 |
| 12:AL:106:VAL:CG2 | 12:AL:116:TYR:HB3 | 2.40 | 0.52 |
| 22:BA:136:G:H2' | 22:BA:137:U:C5 | 2.45 | 0.52 |
| 22:BA:163:C:HO2' | 22:BA:164:C:C5' | 2.22 | 0.52 |
| 22:BA:309:A:O3' | 42:BU:15:GLY:HA2 | 2.10 | 0.52 |
| 22:BA:386:G:H4' | 22:BA:387:U:OP2 | 2.09 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:408:G:O2' | 22:BA:409:G:H5' | 2.10 | 0.52 |
| 22:BA:574:A:H4' | 22:BA:575:A:O5' | 2.10 | 0.52 |
| 22:BA:1079:C:C4 | 22:BA:1080:A:N7 | 2.78 | 0.52 |
| 24:BC:159:THR:HG1 | 24:BC:194:VAL:HG11 | 1.74 | 0.52 |
| 32:BK:57:VAL:C | 32:BK:58:LEU:HD23 | 2.30 | 0.52 |
| 32:BK:76:VAL:HB | 37:BP:72:VAL:HG23 | 1.91 | 0.52 |
| 34:BM:42:THR:O | 34:BM:44:ARG:N | 2.42 | 0.52 |
| 44:BW:23:LYS:NZ | 44:BW:24:ARG:HG3 | 2.25 | 0.52 |
| 45:BX:29:LEU:HD23 | 45:BX:29:LEU:H | 1.74 | 0.52 |
| 49:B1:34:GLU:O | 49:B1:35:LEU:HB3 | 2.09 | 0.52 |
| 50:B2:29:GLN:O | 50:B2:33:ARG:HG3 | 2.09 | 0.52 |
| 53:CA:569:C:H5'' | 53:CA:570:G:OP1 | 2.09 | 0.52 |
| 53:CA:1017:U:OP2 | 53:CA:1017:U:H6 | 1.92 | 0.52 |
| 53:CA:1262:C:H2' | 53:CA:1263:C:H5' | 1.91 | 0.52 |
| 53:CA:1269:A:H2 | 53:CA:1312:G:H21 | 1.58 | 0.52 |
| 4:CD:61:ARG:HG3 | 4:CD:71:PHE:CD2 | 2.44 | 0.52 |
| 10:CJ:44:THR:OG1 | 10:CJ:70:HIS:CE1 | 2.63 | 0.52 |
| 55:CM:106:ARG:HA | 55:CM:110:GLY:O | 2.10 | 0.52 |
| 17:CQ:37:ILE:HG13 | 17:CQ:38:LYS:O | 2.10 | 0.52 |
| 21:CU:14:ALA:O | 21:CU:15:LEU:O | 2.28 | 0.52 |
| 57:DA:125:A:H5'' | 50:D2:19:ARG:HB2 | 1.92 | 0.52 |
| 57:DA:308:G:N1 | 57:DA:309:A:C2 | 2.78 | 0.52 |
| 57:DA:329:G:OP1 | 57:DA:329:G:H3' | 2.10 | 0.52 |
| 57:DA:372:G:C8 | 45:DX:56:ARG:HG2 | 2.45 | 0.52 |
| 57:DA:412:A:N7 | 57:DA:2412:A:H1' | 2.24 | 0.52 |
| 57:DA:855:G:H21 | 44:DW:23:LYS:HZ2 | 1.57 | 0.52 |
| 57:DA:1512:C:H2' | 57:DA:1513:U:C6 | 2.45 | 0.52 |
| 57:DA:1625:C:H5'' | 57:DA:1626:A:OP2 | 2.09 | 0.52 |
| 57:DA:1910:G:C2 | 57:DA:1921:G:C2 | 2.98 | 0.52 |
| 57:DA:2239:G:H2' | 57:DA:2240:U:H6 | 1.74 | 0.52 |
| 24:DC:16:VAL:H | 24:DC:203:VAL:HG12 | 1.75 | 0.52 |
| 26:DE:70:SER:HG | 26:DE:78:TRP:HH2 | 1.57 | 0.52 |
| 30:DI:32:VAL:HG22 | 30:DI:58:ILE:HG21 | 1.92 | 0.52 |
| 37:DP:52:ARG:HG2 | 37:DP:52:ARG:NH1 | 2.24 | 0.52 |
| 38:DQ:65:ASN:HA | 38:DQ:75:TYR:HB2 | 1.91 | 0.52 |
| 50:D2:38:GLY:O | 50:D2:42:LEU:HD13 | 2.10 | 0.52 |
| 1:AA:66:A:H2' | 1:AA:66:A:N3 | 2.25 | 0.52 |
| 1:AA:439:U:HO2' | 1:AA:440:C:H5' | 1.75 | 0.52 |
| 1:AA:811:C:H4' | 1:AA:900:A:N6 | 2.24 | 0.52 |
| 2:AB:100:LEU:HD12 | 2:AB:178:LEU:CD2 | 2.37 | 0.52 |
| 4:AD:84:ASN:HD22 | 4:AD:87:GLU:H | 1.57 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:725:G:C6 | 22:BA:726:G:N1 | 2.78 | 0.52 |
| 22:BA:898:C:H2' | 22:BA:899:A:H5' | 1.92 | 0.52 |
| 22:BA:1179:G:N1 | 22:BA:1180:U:O2' | 2.43 | 0.52 |
| 22:BA:1203:U:H1' | 33:BL:4:ASN:HB3 | 1.91 | 0.52 |
| 22:BA:1653:G:H4' | 22:BA:1654:A:O5' | 2.09 | 0.52 |
| 22:BA:1786:A:H1' | 22:BA:1938:A:N6 | 2.25 | 0.52 |
| 22:BA:1871:A:H8 | 22:BA:1872:A:C6 | 2.28 | 0.52 |
| 22:BA:2689:U:H5'' | 22:BA:2690:U:OP2 | 2.09 | 0.52 |
| 25:BD:101:PHE:N | 25:BD:101:PHE:HD1 | 2.08 | 0.52 |
| 31:BJ:25:LEU:HD22 | 31:BJ:26:GLY:N | 2.25 | 0.52 |
| 38:BQ:4:LYS:NZ | 38:BQ:7:VAL:HG13 | 2.25 | 0.52 |
| 44:BW:29:SER:N | 44:BW:63:ASP:HB3 | 2.24 | 0.52 |
| 45:BX:29:LEU:HB2 | 45:BX:30:PRO:CD | 2.40 | 0.52 |
| 46:BY:26:PHE:HD1 | 46:BY:27:ASN:ND2 | 2.08 | 0.52 |
| 50:B2:3:ARG:NH2 | 50:B2:3:ARG:CG | 2.64 | 0.52 |
| 53:CA:119:A:H5' | 53:CA:120:A:C5' | 2.40 | 0.52 |
| 53:CA:197:A:N6 | 53:CA:221:C:H4' | 2.25 | 0.52 |
| 53:CA:204:G:H2' | 53:CA:205:A:C8 | 2.45 | 0.52 |
| 53:CA:389:A:H2' | 53:CA:390:U:O4' | 2.10 | 0.52 |
| 53:CA:495:A:C6 | 53:CA:496:A:N6 | 2.78 | 0.52 |
| 53:CA:555:U:H2' | 53:CA:556:C:C6 | 2.45 | 0.52 |
| 53:CA:677:U:H3 | 53:CA:713:G:H22 | 1.58 | 0.52 |
| 53:CA:722:G:O3' | 53:CA:723:U:C6 | 2.63 | 0.52 |
| 5:CE:104:ILE:H | 5:CE:122:VAL:N | 1.98 | 0.52 |
| 19:CS:28:LYS:HB3 | 19:CS:29:PRO:HD2 | 1.92 | 0.52 |
| 57:DA:82:U:H2' | 57:DA:83:A:O4' | 2.10 | 0.52 |
| 57:DA:126:A:H2' | 50:D2:46:LYS:CE | 2.40 | 0.52 |
| 57:DA:511:U:H5'' | 57:DA:512:G:OP2 | 2.09 | 0.52 |
| 57:DA:1645:G:H4' | 57:DA:1646:C:H5 | 1.75 | 0.52 |
| 57:DA:1681:G:O2' | 57:DA:1762:A:C2' | 2.58 | 0.52 |
| 57:DA:1760:C:OP1 | 57:DA:2712:C:H5 | 1.93 | 0.52 |
| 57:DA:1809:A:C2 | 57:DA:1810:A:C4 | 2.98 | 0.52 |
| 57:DA:1820:U:OP1 | 24:DC:176:ARG:NE | 2.43 | 0.52 |
| 57:DA:1906:G:C8 | 57:DA:1929:G:C4 | 2.98 | 0.52 |
| 57:DA:2136:G:O6 | 57:DA:2156:G:C2 | 2.63 | 0.52 |
| 24:DC:76:VAL:O | 24:DC:93:VAL:O | 2.28 | 0.52 |
| 59:DF:58:ALA:HB1 | 59:DF:139:GLU:HG2 | 1.91 | 0.52 |
| 59:DF:74:ALA:HB1 | 59:DF:76:PHE:CD2 | 2.45 | 0.52 |
| 28:DG:175:LYS:HD3 | 28:DG:175:LYS:C | 2.31 | 0.52 |
| 32:DK:99:ILE:HD12 | 32:DK:118:LEU:HB2 | 1.91 | 0.52 |
| 38:DQ:4:LYS:O | 38:DQ:5:ARG:HB2 | 2.10 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 45:DX:6:VAL:HG12 | 45:DX:50:VAL:HG12 | 1.92 | 0.52 |
| 45:DX:6:VAL:CG1 | 45:DX:50:VAL:HG12 | 2.40 | 0.52 |
| 1:AA:329:A:H2' | 1:AA:332:G:N7 | 2.24 | 0.52 |
| 1:AA:524:G:C6 | 1:AA:525:C:N4 | 2.78 | 0.52 |
| 1:AA:740:U:O2' | 1:AA:741:G:H5' | 2.09 | 0.52 |
| 1:AA:1111:A:C2 | 3:AC:176:THR:HG23 | 2.46 | 0.52 |
| 1:AA:1112:C:H1' | 3:AC:178:ARG:HD3 | 1.91 | 0.52 |
| 1:AA:1151:A:O2' | 1:AA:1152:A:C5' | 2.53 | 0.52 |
| 1:AA:1170:A:H2' | 1:AA:1171:A:O4' | 2.10 | 0.52 |
| 3:AC:38:VAL:O | 3:AC:42:LEU:HB2 | 2.10 | 0.52 |
| 4:AD:194:ILE:O | 4:AD:194:ILE:HG13 | 2.09 | 0.52 |
| 5:AE:158:LYS:HE2 | 8:AH:63:LYS:NZ | 2.25 | 0.52 |
| 17:AQ:60:ILE:HG22 | 17:AQ:61:ARG:N | 2.25 | 0.52 |
| 22:BA:460:A:OP1 | 50:B2:41:ARG:NH1 | 2.38 | 0.52 |
| 22:BA:1031:G:H4' | 52:B4:6:SER:HB2 | 1.92 | 0.52 |
| 22:BA:1416:G:O2' | 22:BA:1417:C:C6 | 2.56 | 0.52 |
| 22:BA:1538:G:H2' | 22:BA:1539:U:C5 | 2.45 | 0.52 |
| 22:BA:1753:G:OP1 | 37:BP:92:ARG:HD3 | 2.10 | 0.52 |
| 22:BA:1789:A:OP2 | 24:BC:220:ARG:NH1 | 2.39 | 0.52 |
| 22:BA:1815:A:H1' | 22:BA:1817:G:C8 | 2.45 | 0.52 |
| 22:BA:1853:A:H2' | 22:BA:1854:A:C8 | 2.44 | 0.52 |
| 22:BA:2318:G:C6 | 22:BA:2319:G:N1 | 2.77 | 0.52 |
| 23:BB:12:C:C5 | 44:BW:72:GLY:HA3 | 2.44 | 0.52 |
| 27:BF:39:VAL:HG13 | 27:BF:84:ILE:HD12 | 1.90 | 0.52 |
| 29:BH:137:GLU:HG3 | 29:BH:138:VAL:N | 2.25 | 0.52 |
| 31:BJ:4:PHE:O | 31:BJ:44:TYR:CE1 | 2.62 | 0.52 |
| 31:BJ:123:LYS:CD | 31:BJ:123:LYS:N | 2.73 | 0.52 |
| 34:BM:66:ARG:NH1 | 34:BM:104:GLU:OE1 | 2.41 | 0.52 |
| 37:BP:113:LEU:O | 37:BP:113:LEU:HG | 2.10 | 0.52 |
| 38:BQ:13:HIS:CD2 | 38:BQ:31:TYR:CD2 | 2.98 | 0.52 |
| 41:BT:33:LYS:HG3 | 41:BT:80:TRP:CE3 | 2.44 | 0.52 |
| 41:BT:39:THR:O | 41:BT:39:THR:CG2 | 2.57 | 0.52 |
| 41:BT:57:VAL:HG22 | 41:BT:58:VAL:N | 2.25 | 0.52 |
| 53:CA:94:G:O2' | 53:CA:95:C:H5' | 2.09 | 0.52 |
| 53:CA:672:U:H2' | 53:CA:673:A:H8 | 1.75 | 0.52 |
| 53:CA:728:A:H2' | 53:CA:729:A:C8 | 2.45 | 0.52 |
| 53:CA:926:G:C6 | 53:CA:1505:G:C6 | 2.98 | 0.52 |
| 53:CA:989:U:H2' | 53:CA:990:C:H5' | 1.92 | 0.52 |
| 53:CA:1077:G:C2 | 53:CA:1081:A:C2 | 2.98 | 0.52 |
| 6:CF:38:ARG:HG3 | 6:CF:63:ASN:HB2 | 1.91 | 0.52 |
| 6:CF:41:ASP:OD2 | 6:CF:58:HIS:HE1 | 1.93 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 54:CG:35:LYS:O | 9:CI:42:THR:HG21 | 2.10 | 0.52 |
| 57:DA:547:A:H8 | 57:DA:548:G:H5' | 1.74 | 0.52 |
| 57:DA:786:C:H4' | 57:DA:1780:A:N7 | 2.25 | 0.52 |
| 57:DA:1059:G:N3 | 30:DI:131:THR:HG22 | 2.25 | 0.52 |
| 57:DA:1363:C:C2 | 57:DA:1364:G:C8 | 2.98 | 0.52 |
| 57:DA:1374:G:H2' | 57:DA:1375:U:O4' | 2.10 | 0.52 |
| 57:DA:1688:U:C4 | 57:DA:1698:A:C2 | 2.98 | 0.52 |
| 57:DA:2039:U:H2' | 57:DA:2040:G:C8 | 2.45 | 0.52 |
| 57:DA:2210:U:H4' | 57:DA:2211:A:H5' | 1.89 | 0.52 |
| 57:DA:2504:U:H5' | 57:DA:2504:U:H6 | 1.74 | 0.52 |
| 57:DA:2514:U:H2' | 57:DA:2515:C:C6 | 2.45 | 0.52 |
| 57:DA:2834:G:C1' | 57:DA:2879:A:N6 | 2.73 | 0.52 |
| 58:DB:11:C:C5 | 58:DB:12:C:H5 | 2.28 | 0.52 |
| 24:DC:93:VAL:HG12 | 24:DC:101:ARG:N | 2.24 | 0.52 |
| 26:DE:65:THR:CG2 | 26:DE:67:ARG:HG3 | 2.40 | 0.52 |
| 26:DE:131:THR:HG22 | 26:DE:161:ALA:N | 2.25 | 0.52 |
| 28:DG:154:GLU:O | 28:DG:156:TYR:N | 2.43 | 0.52 |
| 31:DJ:35:ARG:NH1 | 31:DJ:140:LEU:HD11 | 2.25 | 0.52 |
| 33:DL:64:PHE:HD2 | 51:D3:24:LYS:HG2 | 1.74 | 0.52 |
| 34:DM:26:VAL:HA | 34:DM:66:ARG:NH2 | 2.25 | 0.52 |
| 36:DO:111:ARG:HA | 36:DO:115:LEU:O | 2.10 | 0.52 |
| 46:DY:18:LEU:HD13 | 46:DY:22:LEU:HD13 | 1.92 | 0.52 |
| 51:D3:23:HIS:O | 51:D3:46:LYS:HB2 | 2.09 | 0.52 |
| 1:AA:17:U:H2' | 1:AA:18:C:C6 | 2.45 | 0.51 |
| 1:AA:672:U:H2' | 1:AA:673:A:H8 | 1.74 | 0.51 |
| 1:AA:1530:G:O2' | 1:AA:1531:A:H8 | 1.92 | 0.51 |
| 2:AB:40:ILE:HD13 | 2:AB:201:GLY:CA | 2.27 | 0.51 |
| 3:AC:179:ALA:HB1 | 3:AC:202:PHE:HE1 | 1.74 | 0.51 |
| 4:AD:169:TRP:CD1 | 4:AD:170:LEU:HG | 2.46 | 0.51 |
| 5:AE:45:VAL:HG22 | 5:AE:117:ALA:HA | 1.92 | 0.51 |
| 5:AE:135:VAL:O | 5:AE:139:THR:HG23 | 2.09 | 0.51 |
| 14:AN:63:CYS:SG | 14:AN:66:THR:OG1 | 2.61 | 0.51 |
| 19:AS:4:LEU:HD22 | 19:AS:8:PRO:HA | 1.91 | 0.51 |
| 21:AU:45:LYS:HA | 21:AU:45:LYS:HE3 | 1.92 | 0.51 |
| 22:BA:137:U:O2' | 22:BA:138:U:P | 2.68 | 0.51 |
| 22:BA:247:G:H4' | 22:BA:386:G:C6 | 2.44 | 0.51 |
| 22:BA:271:G:O2' | 22:BA:272:A:H5'' | 2.09 | 0.51 |
| 22:BA:580:U:C2 | 22:BA:581:C:C5 | 2.98 | 0.51 |
| 22:BA:1061:U:H3' | 22:BA:1062:G:H5'' | 1.92 | 0.51 |
| 22:BA:1338:G:O2' | 22:BA:1339:G:H5' | 2.10 | 0.51 |
| 22:BA:1371:G:O2' | 22:BA:1372:U:H5' | 2.11 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:1476:U:HO2' | 22:BA:1477:A:C5' | 2.23 | 0.51 |
| 22:BA:1833:C:C5 | 22:BA:1834:U:H5 | 2.28 | 0.51 |
| 22:BA:2136:G:C2 | 22:BA:2137:U:C4 | 2.98 | 0.51 |
| 22:BA:2403:C:C4 | 22:BA:2415:G:N1 | 2.78 | 0.51 |
| 22:BA:2429:G:P | 63:BA:3702:HOH:O | 2.67 | 0.51 |
| 22:BA:2430:A:H5' | 22:BA:2431:U:OP2 | 2.10 | 0.51 |
| 22:BA:2637:U:C2' | 22:BA:2638:G:H5' | 2.40 | 0.51 |
| 22:BA:2838:G:H1' | 35:BN:45:ARG:NH1 | 2.24 | 0.51 |
| 24:BC:254:LYS:O | 24:BC:256:THR:N | 2.41 | 0.51 |
| 25:BD:62:LYS:HB2 | 25:BD:63:PRO:HD3 | 1.91 | 0.51 |
| 26:BE:124:PHE:CD1 | 26:BE:124:PHE:C | 2.82 | 0.51 |
| 31:BJ:56:VAL:CG1 | 31:BJ:57:LEU:N | 2.73 | 0.51 |
| 36:BO:79:ALA:HA | 36:BO:115:LEU:HD13 | 1.93 | 0.51 |
| 40:BS:73:LYS:HB3 | 40:BS:106:VAL:HB | 1.91 | 0.51 |
| 40:BS:95:ARG:O | 40:BS:96:ILE:CG1 | 2.58 | 0.51 |
| 47:BZ:38:GLU:O | 47:BZ:43:ILE:HG12 | 2.10 | 0.51 |
| 51:B3:56:LEU:H | 51:B3:56:LEU:CD2 | 2.22 | 0.51 |
| 53:CA:82:G:N7 | 53:CA:89:U:C4 | 2.78 | 0.51 |
| 53:CA:1195:C:H2' | 53:CA:1197:A:O4' | 2.10 | 0.51 |
| 2:CB:9:LEU:HD12 | 2:CB:11:ALA:C | 2.31 | 0.51 |
| 3:CC:142:ARG:HG2 | 3:CC:143:LEU:HD12 | 1.91 | 0.51 |
| 4:CD:117:VAL:HG11 | 4:CD:132:ALA:HA | 1.91 | 0.51 |
| 4:CD:196:GLU:O | 4:CD:200:VAL:HG23 | 2.09 | 0.51 |
| 55:CM:106:ARG:HH21 | 55:CM:112:ARG:CZ | 2.23 | 0.51 |
| 17:CQ:61:ARG:CG | 17:CQ:75:VAL:HG11 | 2.40 | 0.51 |
| 57:DA:74:A:H5' | 46:DY:48:ARG:HH22 | 1.74 | 0.51 |
| 57:DA:183:C:O5' | 57:DA:183:C:H6 | 1.91 | 0.51 |
| 57:DA:322:A:H3' | 26:DE:163:ASN:ND2 | 2.25 | 0.51 |
| 57:DA:571:U:C4 | 57:DA:575:A:C5 | 2.98 | 0.51 |
| 57:DA:617:G:O2' | 57:DA:618:G:O4' | 2.27 | 0.51 |
| 57:DA:1055:G:H3' | 57:DA:1056:G:H5' | 1.91 | 0.51 |
| 57:DA:1355:G:O2' | 57:DA:1356:G:H5' | 2.11 | 0.51 |
| 57:DA:1904:G:C2' | 57:DA:1905:C:H5' | 2.38 | 0.51 |
| 57:DA:2016:U:C4 | 57:DA:2017:U:C4 | 2.97 | 0.51 |
| 57:DA:2346:A:H3' | 57:DA:2347:C:C5' | 2.35 | 0.51 |
| 57:DA:2550:G:C2 | 57:DA:2559:C:O2 | 2.62 | 0.51 |
| 24:DC:115:ILE:HB | 24:DC:126:GLY:O | 2.10 | 0.51 |
| 25:DD:110:THR:OG1 | 25:DD:171:THR:HG22 | 2.10 | 0.51 |
| 59:DF:28:PRO:HB2 | 59:DF:168:LEU:CD2 | 2.40 | 0.51 |
| 29:DH:109:GLU:HA | 29:DH:109:GLU:OE2 | 2.10 | 0.51 |
| 31:DJ:45:THR:HG21 | 31:DJ:50:THR:HG23 | 1.91 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:DL:63:LYS:C | 33:DL:65:GLY:H | 2.14 | 0.51 |
| 35:DN:15:SER:HA | 35:DN:18:GLN:HB3 | 1.93 | 0.51 |
| 38:DQ:64:ILE:HD12 | 38:DQ:95:ALA:CB | 2.39 | 0.51 |
| 40:DS:68:ASP:OD1 | 40:DS:68:ASP:N | 2.43 | 0.51 |
| 51:D3:41:ARG:O | 51:D3:41:ARG:HD2 | 2.10 | 0.51 |
| 1:AA:138:G:O2' | 1:AA:139:A:H5' | 2.10 | 0.51 |
| 1:AA:263:A:H2' | 1:AA:264:C:C6 | 2.46 | 0.51 |
| 1:AA:414:A:H2' | 1:AA:415:A:H8 | 1.75 | 0.51 |
| 1:AA:1458:G:OP1 | 20:AT:26:MET:HA | 2.09 | 0.51 |
| 10:AJ:67:ILE:CG1 | 14:AN:95:LEU:HD13 | 2.40 | 0.51 |
| 16:AP:2:VAL:HG23 | 16:AP:65:ALA:HA | 1.91 | 0.51 |
| 16:AP:20:VAL:HG23 | 16:AP:34:GLU:O | 2.10 | 0.51 |
| 22:BA:511:U:C5 | 22:BA:512:G:C5 | 2.98 | 0.51 |
| 22:BA:580:U:O2' | 38:BQ:30:VAL:HG13 | 2.10 | 0.51 |
| 22:BA:919:U:C3' | 22:BA:919:U:C6 | 2.94 | 0.51 |
| 22:BA:954:G:OP2 | 34:BM:16:ARG:NH2 | 2.41 | 0.51 |
| 22:BA:996:A:O3' | 38:BQ:91:ARG:HG2 | 2.10 | 0.51 |
| 22:BA:1073:A:P | 22:BA:1073:A:H8 | 2.34 | 0.51 |
| 22:BA:1682:G:H2' | 22:BA:1683:U:C6 | 2.45 | 0.51 |
| 22:BA:2094:A:OP1 | 29:BH:22:LYS:HD2 | 2.10 | 0.51 |
| 22:BA:2238:G:N7 | 63:BA:3501:HOH:O | 2.34 | 0.51 |
| 22:BA:2418:A:C5 | 22:BA:2419:U:C5 | 2.98 | 0.51 |
| 22:BA:2897:U:H2' | 22:BA:2898:U:C6 | 2.46 | 0.51 |
| 25:BD:140:HIS:CE1 | 63:BD:301:HOH:O | 2.62 | 0.51 |
| 28:BG:85:LYS:HG2 | 28:BG:131:VAL:CG1 | 2.40 | 0.51 |
| 30:BI:33:ASN:HB3 | 30:BI:36:GLU:CB | 2.38 | 0.51 |
| 38:BQ:63:ARG:HH22 | 38:BQ:96:ASP:CA | 2.23 | 0.51 |
| 39:BR:1:MET:HB2 | 39:BR:43:ASN:ND2 | 2.24 | 0.51 |
| 43:BV:44:HIS:CE1 | 43:BV:86:LEU:H | 2.13 | 0.51 |
| 46:BY:23:ARG:O | 46:BY:24:GLU:C | 2.48 | 0.51 |
| 53:CA:142:G:C5 | 53:CA:143:A:C8 | 2.98 | 0.51 |
| 53:CA:418:C:H1' | 53:CA:540:G:O2' | 2.10 | 0.51 |
| 53:CA:1140:C:H2' | 53:CA:1141:C:C5 | 2.45 | 0.51 |
| 53:CA:1215:G:O2' | 53:CA:1216:A:H8 | 1.93 | 0.51 |
| 2:CB:95:TRP:HZ2 | 2:CB:100:LEU:HD13 | 1.74 | 0.51 |
| 2:CB:128:LEU:O | 2:CB:129:THR:C | 2.49 | 0.51 |
| 3:CC:53:ARG:HH11 | 3:CC:53:ARG:HB2 | 1.75 | 0.51 |
| 15:CO:16:ARG:HB2 | 15:CO:23:SER:CB | 2.40 | 0.51 |
| 56:CP:66:THR:HG22 | 56:CP:67:ILE:N | 2.25 | 0.51 |
| 21:CU:33:ARG:HH22 | 21:CU:34:ARG:HH11 | 1.58 | 0.51 |
| 57:DA:417:C:H2' | 57:DA:418:C:H6 | 1.76 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:466:A:P | 50:D2:34:ARG:HH21 | 2.33 | 0.51 |
| 57:DA:612:G:C2 | 57:DA:614:A:H1' | 2.44 | 0.51 |
| 57:DA:638:G:O2' | 57:DA:639:U:O4' | 2.25 | 0.51 |
| 57:DA:674:G:H5'' | 26:DE:71:GLY:N | 2.24 | 0.51 |
| 57:DA:828:U:C5 | 57:DA:829:A:N6 | 2.78 | 0.51 |
| 57:DA:867:C:O2' | 57:DA:868:U:H5' | 2.11 | 0.51 |
| 57:DA:1229:C:H2' | 57:DA:1230:A:C8 | 2.45 | 0.51 |
| 57:DA:1262:A:C2 | 48:D0:6:LYS:HD2 | 2.43 | 0.51 |
| 57:DA:1608:A:C8 | 57:DA:1611:C:N4 | 2.78 | 0.51 |
| 57:DA:2324:U:HO2' | 57:DA:2385:C:H5 | 1.57 | 0.51 |
| 57:DA:2894:G:HO2' | 57:DA:2895:G:P | 2.33 | 0.51 |
| 24:DC:70:LYS:HB2 | 24:DC:101:ARG:HH22 | 1.74 | 0.51 |
| 59:DF:59:ILE:HG23 | 59:DF:137:PHE:HE1 | 1.75 | 0.51 |
| 29:DH:80:ILE:HB | 29:DH:101:ASP:OD2 | 2.10 | 0.51 |
| 32:DK:64:ARG:HD2 | 32:DK:102:PRO:O | 2.10 | 0.51 |
| 32:DK:87:LEU:HD12 | 32:DK:92:GLU:CA | 2.40 | 0.51 |
| 37:DP:9:GLN:HB3 | 37:DP:12:MET:HE2 | 1.93 | 0.51 |
| 41:DT:10:VAL:HG23 | 41:DT:11:LEU:CD1 | 2.40 | 0.51 |
| 41:DT:62:VAL:HG12 | 41:DT:63:VAL:N | 2.24 | 0.51 |
| 49:D1:32:LYS:HE3 | 49:D1:52:LYS:OXT | 2.09 | 0.51 |
| 52:D4:19:ARG:HH12 | 52:D4:26:ILE:HG13 | 1.76 | 0.51 |
| 1:AA:57:G:H2' | 1:AA:58:C:H6 | 1.73 | 0.51 |
| 1:AA:198:G:C2' | 1:AA:199:A:H8 | 2.24 | 0.51 |
| 1:AA:414:A:N3 | 1:AA:415:A:C8 | 2.78 | 0.51 |
| 1:AA:560:A:H5' | 1:AA:566:G:H21 | 1.73 | 0.51 |
| 1:AA:626:G:C4 | 1:AA:627:G:C8 | 2.99 | 0.51 |
| 1:AA:914:A:O2' | 1:AA:915:A:C5' | 2.58 | 0.51 |
| 1:AA:1005:A:C2 | 1:AA:1006:G:H1' | 2.46 | 0.51 |
| 1:AA:1240:U:H3' | 1:AA:1241:G:H5' | 1.93 | 0.51 |
| 7:AG:136:LYS:O | 7:AG:140:VAL:HG23 | 2.10 | 0.51 |
| 9:AI:93:LEU:HD12 | 9:AI:94:ARG:N | 2.25 | 0.51 |
| 10:AJ:29:ALA:CB | 10:AJ:36:VAL:HG21 | 2.40 | 0.51 |
| 12:AL:7:VAL:HG13 | 17:AQ:30:HIS:HD2 | 1.75 | 0.51 |
| 14:AN:40:ARG:HH12 | 14:AN:44:VAL:HG21 | 1.73 | 0.51 |
| 21:AU:10:PRO:HG2 | 3:CC:71:ARG:CZ | 2.40 | 0.51 |
| 22:BA:69:C:H2' | 22:BA:70:G:C8 | 2.46 | 0.51 |
| 22:BA:511:U:C5 | 22:BA:512:G:C4 | 2.97 | 0.51 |
| 22:BA:947:A:H2' | 22:BA:948:C:C6 | 2.45 | 0.51 |
| 22:BA:1057:A:C2 | 22:BA:1082:U:C2 | 2.98 | 0.51 |
| 22:BA:1360:G:P | 63:BA:3618:HOH:O | 2.69 | 0.51 |
| 22:BA:1444:G:H2' | 22:BA:1445:G:C8 | 2.46 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:1626:A:O2' | 22:BA:1627:G:OP2 | 2.28 | 0.51 |
| 22:BA:1744:A:H3' | 22:BA:1745:A:H8 | 1.74 | 0.51 |
| 22:BA:1747:U:H2' | 22:BA:1748:C:H6 | 1.70 | 0.51 |
| 22:BA:2783:U:H2' | 22:BA:2784:U:H6 | 1.75 | 0.51 |
| 23:BB:89:U:OP2 | 23:BB:89:U:H4' | 2.11 | 0.51 |
| 27:BF:118:ALA:HB2 | 27:BF:176:PHE:CD2 | 2.45 | 0.51 |
| 27:BF:122:ASP:OD1 | 27:BF:126:ASN:HB2 | 2.10 | 0.51 |
| 30:BI:100:ILE:HG22 | 30:BI:101:SER:N | 2.23 | 0.51 |
| 45:BX:30:PRO:HD2 | 45:BX:32:LEU:HD11 | 1.92 | 0.51 |
| 53:CA:554:A:H2' | 53:CA:555:U:C6 | 2.46 | 0.51 |
| 53:CA:968:A:C4 | 53:CA:1062:U:H4' | 2.45 | 0.51 |
| 53:CA:998:C:H2' | 53:CA:999:C:C6 | 2.40 | 0.51 |
| 2:CB:112:ARG:O | 2:CB:112:ARG:HG3 | 2.09 | 0.51 |
| 4:CD:2:ARG:NH2 | 4:CD:114:ARG:NH1 | 2.58 | 0.51 |
| 4:CD:61:ARG:NH2 | 4:CD:67:LEU:HA | 2.21 | 0.51 |
| 6:CF:41:ASP:OD2 | 6:CF:58:HIS:CE1 | 2.63 | 0.51 |
| 54:CG:124:SER:O | 54:CG:128:GLU:HG2 | 2.10 | 0.51 |
| 8:CH:34:ALA:O | 8:CH:38:VAL:HG23 | 2.09 | 0.51 |
| 9:CI:125:GLN:H | 9:CI:125:GLN:NE2 | 2.09 | 0.51 |
| 10:CJ:8:ILE:HG22 | 10:CJ:100:ILE:HG12 | 1.92 | 0.51 |
| 10:CJ:15:HIS:CA | 10:CJ:18:ILE:HG22 | 2.30 | 0.51 |
| 19:CS:36:ARG:O | 19:CS:69:LYS:HD2 | 2.10 | 0.51 |
| 57:DA:28:A:O2' | 57:DA:29:U:H5' | 2.09 | 0.51 |
| 57:DA:53:A:O2' | 57:DA:54:G:H5' | 2.10 | 0.51 |
| 57:DA:415:A:N1 | 57:DA:2409:G:C6 | 2.78 | 0.51 |
| 57:DA:502:A:C5 | 57:DA:505:A:N7 | 2.79 | 0.51 |
| 57:DA:811:U:H5'' | 57:DA:812:C:OP2 | 2.10 | 0.51 |
| 57:DA:1431:A:H2' | 57:DA:1432:G:O4' | 2.10 | 0.51 |
| 57:DA:1673:G:O2' | 57:DA:1674:G:H5' | 2.10 | 0.51 |
| 57:DA:1916:A:H2' | 57:DA:1917:U:C6 | 2.46 | 0.51 |
| 57:DA:2151:U:H2' | 57:DA:2152:G:C8 | 2.45 | 0.51 |
| 57:DA:2331:G:H4' | 44:DW:41:GLY:N | 2.25 | 0.51 |
| 57:DA:2348:U:HO2' | 57:DA:2349:G:H8 | 1.57 | 0.51 |
| 57:DA:2413:G:H2' | 57:DA:2414:G:H8 | 1.75 | 0.51 |
| 24:DC:144:GLU:HG2 | 24:DC:146:LYS:O | 2.11 | 0.51 |
| 25:DD:16:THR:HG23 | 25:DD:18:ASP:H | 1.75 | 0.51 |
| 25:DD:106:LYS:CB | 25:DD:206:ALA:H | 2.23 | 0.51 |
| 25:DD:107:VAL:H | 25:DD:206:ALA:N | 2.05 | 0.51 |
| 26:DE:72:SER:O | 26:DE:74:LYS:N | 2.43 | 0.51 |
| 26:DE:79:ARG:O | 26:DE:80:SER:C | 2.49 | 0.51 |
| 28:DG:120:ILE:CG1 | 28:DG:140:ILE:HG22 | 2.37 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:DH:41:LYS:HA | 29:DH:44:ILE:CG1 | 2.39 | 0.51 |
| 29:DH:80:ILE:HB | 29:DH:101:ASP:HB2 | 1.91 | 0.51 |
| 31:DJ:106:LYS:HD2 | 31:DJ:119:PHE:CD2 | 2.45 | 0.51 |
| 34:DM:34:LYS:HB3 | 34:DM:129:THR:HG22 | 1.92 | 0.51 |
| 36:DO:31:THR:HG23 | 36:DO:34:HIS:C | 2.30 | 0.51 |
| 38:DQ:74:SER:O | 38:DQ:78:PHE:HB2 | 2.09 | 0.51 |
| 47:DZ:7:THR:O | 47:DZ:54:VAL:HA | 2.10 | 0.51 |
| 1:AA:15:G:C4' | 5:AE:28:ARG:NH1 | 2.73 | 0.51 |
| 1:AA:264:C:H2' | 1:AA:265:G:O4' | 2.10 | 0.51 |
| 1:AA:275:G:H8 | 1:AA:275:G:H5'' | 1.75 | 0.51 |
| 1:AA:687:A:C8 | 1:AA:701:U:H5 | 2.29 | 0.51 |
| 1:AA:721:G:H1' | 1:AA:722:G:C2 | 2.45 | 0.51 |
| 1:AA:751:U:H4' | 15:AO:23:SER:HA | 1.91 | 0.51 |
| 1:AA:791:G:C6 | 1:AA:792:A:N7 | 2.78 | 0.51 |
| 1:AA:1124:G:OP1 | 10:AJ:37:ARG:C | 2.49 | 0.51 |
| 1:AA:1303:C:O2' | 1:AA:1304:G:C5' | 2.58 | 0.51 |
| 1:AA:1305:G:HO2' | 1:AA:1306:A:H8 | 1.58 | 0.51 |
| 1:AA:1533:C:H3' | 1:AA:1534:A:C5' | 2.40 | 0.51 |
| 6:AF:71:ILE:HG23 | 6:AF:72:ASP:N | 2.25 | 0.51 |
| 6:AF:85:ILE:O | 6:AF:86:ARG:C | 2.48 | 0.51 |
| 9:AI:11:ARG:HA | 9:AI:105:ARG:NH1 | 2.26 | 0.51 |
| 16:AP:6:LEU:HG | 16:AP:17:TYR:CB | 2.40 | 0.51 |
| 22:BA:31:C:H4' | 22:BA:1238:G:H4' | 1.92 | 0.51 |
| 22:BA:244:A:H2' | 22:BA:245:G:O4' | 2.11 | 0.51 |
| 22:BA:747:U:H2' | 22:BA:2613:U:O4 | 2.10 | 0.51 |
| 22:BA:869:G:C5 | 22:BA:870:U:C5 | 2.98 | 0.51 |
| 22:BA:1444:G:H2' | 22:BA:1445:G:H8 | 1.75 | 0.51 |
| 22:BA:1733:G:N3 | 22:BA:1734:G:C8 | 2.79 | 0.51 |
| 22:BA:2064:C:H2' | 22:BA:2065:C:C6 | 2.44 | 0.51 |
| 22:BA:2730:C:O3' | 25:BD:174:SER:HB3 | 2.11 | 0.51 |
| 23:BB:28:C:O2' | 23:BB:29:A:H5' | 2.10 | 0.51 |
| 25:BD:9:VAL:HG22 | 25:BD:10:GLY:H | 1.76 | 0.51 |
| 28:BG:16:VAL:HG11 | 28:BG:49:LEU:HD21 | 1.92 | 0.51 |
| 29:BH:4:ILE:HG12 | 29:BH:18:GLN:NE2 | 2.24 | 0.51 |
| 29:BH:12:LEU:HB2 | 29:BH:19:VAL:HG11 | 1.93 | 0.51 |
| 31:BJ:44:TYR:CD1 | 38:BQ:59:LEU:HD11 | 2.45 | 0.51 |
| 32:BK:36:GLY:HA2 | 32:BK:62:VAL:O | 2.10 | 0.51 |
| 36:BO:51:ALA:HB3 | 36:BO:78:VAL:CG1 | 2.41 | 0.51 |
| 37:BP:33:GLU:CB | 37:BP:38:ARG:HH11 | 2.24 | 0.51 |
| 47:BZ:7:THR:HG22 | 47:BZ:32:GLY:HA2 | 1.92 | 0.51 |
| 53:CA:129:A:O2' | 53:CA:130:A:C8 | 2.63 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:CA:198:G:O2' | 53:CA:199:A:C8 | 2.55 | 0.51 |
| 53:CA:301:G:H2' | 53:CA:302:G:C8 | 2.45 | 0.51 |
| 53:CA:382:A:N7 | 53:CA:383:A:C6 | 2.78 | 0.51 |
| 53:CA:636:U:H2' | 53:CA:637:C:C6 | 2.45 | 0.51 |
| 53:CA:740:U:H4' | 15:CO:38:LEU:HD11 | 1.92 | 0.51 |
| 53:CA:865:A:C2 | 53:CA:918:A:H4' | 2.46 | 0.51 |
| 53:CA:892:A:C5 | 53:CA:893:C:C5 | 2.98 | 0.51 |
| 53:CA:1248:A:O2' | 9:CI:37:TYR:HD1 | 1.94 | 0.51 |
| 2:CB:127:LYS:HE3 | 2:CB:132:GLU:HG3 | 1.91 | 0.51 |
| 3:CC:185:THR:HG22 | 3:CC:186:SER:H | 1.73 | 0.51 |
| 54:CG:4:ARG:NH2 | 54:CG:6:ILE:HB | 2.26 | 0.51 |
| 11:CK:70:ALA:HA | 11:CK:73:VAL:HG22 | 1.93 | 0.51 |
| 14:CN:53:ASP:HA | 14:CN:58:ARG:HD3 | 1.93 | 0.51 |
| 57:DA:63:A:N6 | 57:DA:91:A:N6 | 2.57 | 0.51 |
| 57:DA:442:G:C6 | 57:DA:444:C:N4 | 2.78 | 0.51 |
| 57:DA:483:A:H2' | 57:DA:484:C:H6 | 1.74 | 0.51 |
| 57:DA:526:A:N6 | 57:DA:2626:C:H4' | 2.26 | 0.51 |
| 57:DA:571:U:HO2' | 57:DA:573:U:H6 | 1.54 | 0.51 |
| 57:DA:778:G:C6 | 57:DA:779:U:N3 | 2.78 | 0.51 |
| 57:DA:834:G:H1' | 57:DA:2358:A:C2 | 2.45 | 0.51 |
| 57:DA:862:G:H2' | 57:DA:863:A:O4' | 2.11 | 0.51 |
| 57:DA:2234:G:C6 | 57:DA:2235:G:N7 | 2.79 | 0.51 |
| 57:DA:2287:A:N7 | 57:DA:2289:G:C8 | 2.78 | 0.51 |
| 57:DA:2323:G:N2 | 57:DA:2335:A:H2 | 2.08 | 0.51 |
| 57:DA:2812:G:N2 | 57:DA:2889:C:C2 | 2.78 | 0.51 |
| 57:DA:2852:G:H2' | 57:DA:2853:C:O4' | 2.09 | 0.51 |
| 24:DC:94:LEU:HD13 | 24:DC:100:ARG:HD3 | 1.90 | 0.51 |
| 25:DD:200:ASP:O | 25:DD:201:LEU:HD23 | 2.10 | 0.51 |
| 59:DF:111:ARG:HG3 | 59:DF:135:ILE:HG12 | 1.93 | 0.51 |
| 29:DH:61:VAL:HG13 | 29:DH:62:LEU:HG | 1.93 | 0.51 |
| 37:DP:57:ALA:HB1 | 37:DP:73:PHE:O | 2.11 | 0.51 |
| 41:DT:9:LYS:HG3 | 46:DY:21:LEU:HD13 | 1.91 | 0.51 |
| 1:AA:782:A:H2' | 1:AA:783:C:O4' | 2.10 | 0.51 |
| 1:AA:1151:A:C4 | 1:AA:1152:A:N7 | 2.79 | 0.51 |
| 1:AA:1250:A:O3' | 9:AI:68:GLY:HA2 | 2.10 | 0.51 |
| 1:AA:1293:C:H2' | 1:AA:1294:G:C8 | 2.46 | 0.51 |
| 2:AB:202:ASN:ND2 | 2:AB:205:ALA:HB2 | 2.26 | 0.51 |
| 3:AC:89:VAL:O | 3:AC:93:ILE:HG13 | 2.10 | 0.51 |
| 10:AJ:88:MET:HB3 | 10:AJ:89:ARG:NH1 | 2.25 | 0.51 |
| 16:AP:28:ARG:HE | 16:AP:29:ASN:ND2 | 2.01 | 0.51 |
| 20:AT:77:ASN:HD22 | 20:AT:78:LEU:H | 1.56 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:277:G:H4' | 22:BA:278:A:C8 | 2.46 | 0.51 |
| 22:BA:645:C:O2' | 22:BA:646:U:H5'' | 2.09 | 0.51 |
| 22:BA:693:A:H2' | 22:BA:694:U:O4' | 2.11 | 0.51 |
| 22:BA:765:C:H2' | 22:BA:766:U:C6 | 2.46 | 0.51 |
| 22:BA:792:A:H5'' | 22:BA:793:A:H5' | 1.92 | 0.51 |
| 22:BA:1131:G:O2' | 22:BA:2026:U:H5' | 2.11 | 0.51 |
| 22:BA:1734:G:N3 | 22:BA:1735:A:C8 | 2.78 | 0.51 |
| 22:BA:1838:C:C4 | 22:BA:1899:A:C4 | 2.99 | 0.51 |
| 22:BA:2082:A:H8 | 22:BA:2082:A:O5' | 1.93 | 0.51 |
| 22:BA:2276:G:P | 34:BM:83:GLY:O | 2.69 | 0.51 |
| 22:BA:2563:U:O2 | 22:BA:2565:A:H8 | 1.93 | 0.51 |
| 23:BB:49:C:OP1 | 36:BO:101:GLY:HA3 | 2.10 | 0.51 |
| 24:BC:257:ARG:HE | 24:BC:269:ARG:HH22 | 1.58 | 0.51 |
| 30:BI:89:SER:OG | 30:BI:135:MET:HA | 2.10 | 0.51 |
| 31:BJ:130:HIS:CD2 | 31:BJ:132:HIS:H | 2.13 | 0.51 |
| 33:BL:27:LEU:N | 33:BL:27:LEU:CD1 | 2.60 | 0.51 |
| 33:BL:79:LEU:HB2 | 33:BL:114:GLY:O | 2.10 | 0.51 |
| 33:BL:87:GLY:O | 33:BL:89:VAL:N | 2.44 | 0.51 |
| 33:BL:101:ILE:HG23 | 33:BL:102:GLY:N | 2.25 | 0.51 |
| 36:BO:36:TYR:CD2 | 36:BO:36:TYR:N | 2.78 | 0.51 |
| 39:BR:9:GLY:C | 39:BR:10:LYS:HD2 | 2.30 | 0.51 |
| 39:BR:54:VAL:HG22 | 39:BR:57:GLY:HA3 | 1.93 | 0.51 |
| 45:BX:36:ARG:HG3 | 45:BX:47:THR:HB | 1.92 | 0.51 |
| 47:BZ:40:THR:OG1 | 47:BZ:41:PRO:HD2 | 2.11 | 0.51 |
| 53:CA:560:A:N7 | 53:CA:566:G:C4 | 2.78 | 0.51 |
| 53:CA:562:U:H4' | 53:CA:563:A:O5' | 2.10 | 0.51 |
| 53:CA:568:G:N2 | 53:CA:883:C:C2 | 2.79 | 0.51 |
| 53:CA:597:G:N7 | 53:CA:598:U:C5 | 2.79 | 0.51 |
| 53:CA:654:G:H2' | 53:CA:655:A:H8 | 1.74 | 0.51 |
| 53:CA:952:U:H5 | 55:CM:102:LYS:HZ1 | 1.58 | 0.51 |
| 53:CA:1453:G:H2' | 53:CA:1453:G:N3 | 2.23 | 0.51 |
| 12:CL:6:LEU:HA | 12:CL:9:LYS:O | 2.11 | 0.51 |
| 14:CN:76:PHE:CE2 | 14:CN:95:LEU:HD22 | 2.45 | 0.51 |
| 17:CQ:47:ASP:HB3 | 17:CQ:74:LEU:CB | 2.40 | 0.51 |
| 21:CU:39:LYS:H | 21:CU:40:PRO:CD | 2.19 | 0.51 |
| 57:DA:86:G:C2 | 57:DA:87:U:C5 | 2.99 | 0.51 |
| 57:DA:118:A:C8 | 57:DA:119:A:C8 | 2.99 | 0.51 |
| 57:DA:223:A:C5 | 57:DA:422:A:C8 | 2.99 | 0.51 |
| 57:DA:301:G:C6 | 57:DA:317:G:C6 | 2.99 | 0.51 |
| 57:DA:655:A:H4' | 57:DA:656:G:O5' | 2.09 | 0.51 |
| 57:DA:799:G:C6 | 57:DA:800:A:C6 | 2.99 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1087:G:N2 | 57:DA:1103:A:H1' | 2.25 | 0.51 |
| 57:DA:1956:U:O2' | 57:DA:1957:C:H5' | 2.10 | 0.51 |
| 57:DA:2157:G:OP2 | 57:DA:2157:G:N2 | 2.44 | 0.51 |
| 57:DA:2283:C:H6 | 57:DA:2283:C:H5'' | 1.76 | 0.51 |
| 57:DA:2425:A:H4' | 57:DA:2426:A:O5' | 2.11 | 0.51 |
| 57:DA:2440:C:N3 | 57:DA:2441:U:H1' | 2.25 | 0.51 |
| 58:DB:54:G:N2 | 59:DF:25:MET:HE1 | 2.26 | 0.51 |
| 58:DB:58:A:C2' | 58:DB:59:A:C8 | 2.77 | 0.51 |
| 59:DF:129:MET:HG3 | 59:DF:153:ILE:HD12 | 1.91 | 0.51 |
| 59:DF:131:VAL:C | 59:DF:133:GLU:H | 2.13 | 0.51 |
| 37:DP:48:ALA:HB3 | 37:DP:59:THR:HB | 1.93 | 0.51 |
| 38:DQ:35:PHE:O | 38:DQ:39:ILE:HG12 | 2.11 | 0.51 |
| 49:D1:16:THR:CG2 | 49:D1:41:VAL:HB | 2.41 | 0.51 |
| 1:AA:197:A:H1' | 1:AA:198:G:O4' | 2.11 | 0.51 |
| 1:AA:366:A:H4' | 1:AA:367:U:OP1 | 2.09 | 0.51 |
| 1:AA:468:A:O2' | 1:AA:469:C:H5' | 2.10 | 0.51 |
| 1:AA:769:G:H4' | 1:AA:1513:A:H4' | 1.92 | 0.51 |
| 1:AA:771:G:H2' | 1:AA:772:U:C6 | 2.45 | 0.51 |
| 1:AA:792:A:N3 | 1:AA:794:A:C5 | 2.79 | 0.51 |
| 1:AA:957:U:O2 | 1:AA:959:A:H8 | 1.94 | 0.51 |
| 1:AA:1320:C:N3 | 19:AS:35:ARG:NH1 | 2.58 | 0.51 |
| 10:AJ:11:LYS:CG | 10:AJ:97:ASP:HB3 | 2.38 | 0.51 |
| 14:AN:20:PHE:HA | 14:AN:24:ALA:HB3 | 1.92 | 0.51 |
| 17:AQ:20:ILE:HB | 17:AQ:47:ASP:OD1 | 2.11 | 0.51 |
| 22:BA:28:A:C5 | 22:BA:513:A:N7 | 2.79 | 0.51 |
| 22:BA:534:U:H2' | 22:BA:535:G:H8 | 1.76 | 0.51 |
| 22:BA:562:U:H2' | 22:BA:572:A:O4' | 2.11 | 0.51 |
| 22:BA:845:A:C6 | 22:BA:847:U:C6 | 2.99 | 0.51 |
| 22:BA:971:G:H2' | 22:BA:972:A:H5' | 1.93 | 0.51 |
| 22:BA:1104:C:H2' | 22:BA:1105:U:C6 | 2.46 | 0.51 |
| 22:BA:2820:A:OP1 | 35:BN:2:ARG:NH2 | 2.44 | 0.51 |
| 22:BA:2838:G:H2' | 22:BA:2839:G:O4' | 2.11 | 0.51 |
| 22:BA:2847:U:H2' | 22:BA:2848:G:O4' | 2.10 | 0.51 |
| 29:BH:4:ILE:HG23 | 29:BH:17:ASP:O | 2.10 | 0.51 |
| 32:BK:2:ILE:O | 32:BK:6:THR:HG21 | 2.09 | 0.51 |
| 32:BK:18:ARG:N | 32:BK:45:GLU:HB2 | 2.21 | 0.51 |
| 32:BK:92:GLU:O | 32:BK:93:GLN:O | 2.28 | 0.51 |
| 35:BN:38:LEU:HD12 | 35:BN:38:LEU:C | 2.31 | 0.51 |
| 39:BR:48:LYS:H | 39:BR:48:LYS:CD | 2.23 | 0.51 |
| 48:B0:54:ILE:O | 48:B0:54:ILE:HG22 | 2.11 | 0.51 |
| 53:CA:66:A:H5' | 53:CA:67:C:OP2 | 2.11 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:CA:247:G:C6 | 53:CA:278:G:N1 | 2.79 | 0.51 |
| 53:CA:704:A:C2' | 53:CA:705:G:H8 | 2.23 | 0.51 |
| 53:CA:814:A:H2' | 53:CA:816:A:O5' | 2.11 | 0.51 |
| 53:CA:1042:A:H2' | 53:CA:1043:G:O4' | 2.10 | 0.51 |
| 53:CA:1066:C:H2' | 53:CA:1067:A:C8 | 2.45 | 0.51 |
| 53:CA:1202:U:O2' | 53:CA:1203:C:H5' | 2.10 | 0.51 |
| 2:CB:76:SER:O | 2:CB:79:VAL:HG12 | 2.11 | 0.51 |
| 2:CB:103:TRP:HD1 | 2:CB:107:ARG:HB3 | 1.75 | 0.51 |
| 2:CB:103:TRP:O | 2:CB:107:ARG:HG2 | 2.10 | 0.51 |
| 2:CB:150:ILE:HD11 | 2:CB:153:MET:HE2 | 1.91 | 0.51 |
| 6:CF:2:ARG:HD2 | 6:CF:92:THR:OG1 | 2.10 | 0.51 |
| 54:CG:59:GLU:HG3 | 54:CG:60:ALA:H | 1.75 | 0.51 |
| 9:CI:40:ARG:H | 9:CI:44:ARG:HD3 | 1.76 | 0.51 |
| 56:CP:67:ILE:HG12 | 56:CP:72:ALA:HB2 | 1.92 | 0.51 |
| 57:DA:230:G:C2 | 57:DA:231:A:N7 | 2.78 | 0.51 |
| 57:DA:301:G:O2' | 57:DA:302:C:O5' | 2.29 | 0.51 |
| 57:DA:397:U:OP1 | 45:DX:30:PRO:CA | 2.55 | 0.51 |
| 57:DA:1062:G:O2' | 57:DA:1063:G:H8 | 1.93 | 0.51 |
| 57:DA:1187:G:H8 | 57:DA:1187:G:OP2 | 1.93 | 0.51 |
| 57:DA:1439:A:C8 | 57:DA:1439:A:C3' | 2.93 | 0.51 |
| 57:DA:1475:G:N3 | 57:DA:1475:G:H2' | 2.25 | 0.51 |
| 57:DA:1799:G:C5 | 24:DC:175:LEU:HD13 | 2.45 | 0.51 |
| 57:DA:2513:A:C2 | 25:DD:148:GLN:NE2 | 2.77 | 0.51 |
| 57:DA:2713:U:H3' | 57:DA:2714:G:H5'' | 1.93 | 0.51 |
| 26:DE:55:SER:OG | 26:DE:56:GLY:N | 2.44 | 0.51 |
| 35:DN:34:ILE:HD12 | 35:DN:44:LEU:HD21 | 1.91 | 0.51 |
| 36:DO:7:ARG:HA | 36:DO:10:ARG:NH2 | 2.26 | 0.51 |
| 46:DY:6:LEU:HD21 | 46:DY:56:LEU:HD12 | 1.92 | 0.51 |
| 52:D4:22:VAL:O | 52:D4:24:ARG:HG3 | 2.11 | 0.51 |
| 1:AA:55:A:C4 | 1:AA:56:U:C6 | 2.99 | 0.51 |
| 1:AA:1161:C:O2' | 1:AA:1162:C:C5' | 2.58 | 0.51 |
| 3:AC:164:THR:O | 3:AC:165:GLU:C | 2.49 | 0.51 |
| 4:AD:147:LYS:O | 4:AD:149:LYS:HB2 | 2.10 | 0.51 |
| 5:AE:23:THR:HA | 5:AE:28:ARG:HA | 1.91 | 0.51 |
| 5:AE:152:VAL:CB | 5:AE:155:LYS:NZ | 2.74 | 0.51 |
| 8:AH:88:LYS:HG3 | 8:AH:89:ASP:H | 1.76 | 0.51 |
| 10:AJ:15:HIS:CG | 10:AJ:16:ARG:N | 2.78 | 0.51 |
| 16:AP:12:LYS:O | 16:AP:13:LYS:HB2 | 2.10 | 0.51 |
| 16:AP:22:ALA:CB | 16:AP:32:PHE:HA | 2.40 | 0.51 |
| 22:BA:313:G:C2' | 22:BA:314:C:H5' | 2.40 | 0.51 |
| 22:BA:532:A:O2' | 22:BA:2021:C:H5 | 1.93 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:1122:G:N3 | 22:BA:1122:G:H2' | 2.26 | 0.51 |
| 22:BA:1224:U:H4' | 39:BR:88:GLY:O | 2.10 | 0.51 |
| 22:BA:1324:G:C4 | 22:BA:1328:A:N6 | 2.78 | 0.51 |
| 22:BA:1452:G:H3' | 63:BA:3413:HOH:O | 2.09 | 0.51 |
| 22:BA:1614:A:H61 | 40:BS:88:ARG:H | 1.59 | 0.51 |
| 22:BA:2311:A:H1' | 27:BF:78:ILE:CD1 | 2.40 | 0.51 |
| 22:BA:2311:A:O3' | 22:BA:2312:U:C6 | 2.64 | 0.51 |
| 22:BA:2820:A:H3' | 22:BA:2820:A:H8 | 1.76 | 0.51 |
| 22:BA:2884:U:O2 | 22:BA:2884:U:O4' | 2.28 | 0.51 |
| 23:BB:93:C:H2' | 23:BB:94:A:C8 | 2.46 | 0.51 |
| 25:BD:68:PHE:HB3 | 25:BD:73:VAL:HA | 1.93 | 0.51 |
| 25:BD:92:VAL:O | 25:BD:92:VAL:HG12 | 2.10 | 0.51 |
| 28:BG:9:VAL:HA | 28:BG:48:THR:HA | 1.92 | 0.51 |
| 30:BI:135:MET:HG2 | 30:BI:137:LEU:HG | 1.92 | 0.51 |
| 35:BN:73:ASN:HD22 | 35:BN:76:VAL:CG1 | 2.23 | 0.51 |
| 37:BP:87:ARG:NH2 | 37:BP:111:GLU:HG3 | 2.25 | 0.51 |
| 41:BT:61:LEU:C | 41:BT:61:LEU:CD1 | 2.79 | 0.51 |
| 42:BU:42:LYS:N | 42:BU:42:LYS:HD3 | 2.25 | 0.51 |
| 44:BW:35:ILE:HG12 | 44:BW:35:ILE:O | 2.10 | 0.51 |
| 45:BX:32:LEU:HD12 | 45:BX:32:LEU:H | 1.75 | 0.51 |
| 48:B0:53:VAL:O | 48:B0:54:ILE:C | 2.49 | 0.51 |
| 53:CA:50:A:H1' | 53:CA:52:C:C6 | 2.46 | 0.51 |
| 53:CA:577:G:C6 | 53:CA:812:G:N2 | 2.79 | 0.51 |
| 53:CA:702:A:H5' | 53:CA:703:G:C8 | 2.46 | 0.51 |
| 53:CA:705:G:H2' | 53:CA:706:A:C8 | 2.46 | 0.51 |
| 53:CA:926:G:H3' | 53:CA:1505:G:H21 | 1.76 | 0.51 |
| 53:CA:996:A:H2' | 53:CA:997:U:C6 | 2.46 | 0.51 |
| 53:CA:1499:A:O2' | 53:CA:1500:A:H5' | 2.11 | 0.51 |
| 6:CF:3:HIS:HB2 | 6:CF:92:THR:HG23 | 1.93 | 0.51 |
| 9:CI:38:PHE:HE2 | 9:CI:71:ILE:HG22 | 1.76 | 0.51 |
| 20:CT:74:HIS:O | 20:CT:78:LEU:HB2 | 2.11 | 0.51 |
| 57:DA:132:G:N2 | 57:DA:148:U:C2 | 2.79 | 0.51 |
| 57:DA:223:A:N6 | 57:DA:422:A:C6 | 2.78 | 0.51 |
| 57:DA:672:C:H5' | 57:DA:672:C:H6 | 1.74 | 0.51 |
| 57:DA:716:A:H3' | 57:DA:717:C:H5'' | 1.92 | 0.51 |
| 57:DA:1220:G:C2 | 57:DA:1230:A:C2 | 2.99 | 0.51 |
| 57:DA:1263:U:O2' | 48:D0:6:LYS:HG3 | 2.11 | 0.51 |
| 57:DA:1285:A:N6 | 57:DA:1329:U:C5 | 2.79 | 0.51 |
| 57:DA:1286:A:C4 | 57:DA:1289:C:C4 | 2.99 | 0.51 |
| 57:DA:1342:A:C6 | 57:DA:1397:U:C6 | 2.98 | 0.51 |
| 57:DA:1608:A:O3' | 57:DA:1609:A:H3' | 2.11 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1923:U:H2' | 57:DA:1924:C:H6 | 1.76 | 0.51 |
| 57:DA:1999:C:H5'' | 57:DA:2723:C:O2' | 2.11 | 0.51 |
| 57:DA:2264:C:H41 | 44:DW:11:ASN:ND2 | 2.08 | 0.51 |
| 57:DA:2683:C:H2' | 57:DA:2684:U:C6 | 2.42 | 0.51 |
| 58:DB:40:U:O2' | 58:DB:45:A:N6 | 2.43 | 0.51 |
| 24:DC:2:VAL:O | 24:DC:3:VAL:HB | 2.11 | 0.51 |
| 24:DC:127:ASN:O | 24:DC:191:LEU:HD22 | 2.10 | 0.51 |
| 26:DE:85:PHE:O | 26:DE:86:ALA:C | 2.49 | 0.51 |
| 28:DG:70:LEU:O | 28:DG:74:MET:HB2 | 2.10 | 0.51 |
| 35:DN:83:LEU:CD1 | 35:DN:86:ARG:HH21 | 2.24 | 0.51 |
| 36:DO:25:ARG:HB3 | 36:DO:93:ASP:HB2 | 1.91 | 0.51 |
| 36:DO:49:VAL:HG11 | 36:DO:81:ARG:HB3 | 1.92 | 0.51 |
| 52:D4:19:ARG:HD2 | 52:D4:24:ARG:HD2 | 1.91 | 0.51 |
| 1:AA:570:G:C4 | 1:AA:571:U:C5 | 2.99 | 0.51 |
| 1:AA:958:A:C6 | 1:AA:959:A:C6 | 2.99 | 0.51 |
| 1:AA:1152:A:O2' | 1:AA:1153:G:H5' | 2.11 | 0.51 |
| 1:AA:1157:A:C5 | 1:AA:1180:A:C6 | 2.98 | 0.51 |
| 1:AA:1239:A:H4' | 1:AA:1240:U:H5' | 1.93 | 0.51 |
| 1:AA:1288:A:H2' | 1:AA:1289:A:H8 | 1.76 | 0.51 |
| 1:AA:1348:U:H2' | 1:AA:1349:A:H8 | 1.74 | 0.51 |
| 1:AA:1414:U:H2' | 1:AA:1415:G:H8 | 1.76 | 0.51 |
| 6:AF:40:GLU:HB2 | 6:AF:42:TRP:HE1 | 1.75 | 0.51 |
| 22:BA:976:G:H2' | 22:BA:976:G:N3 | 2.25 | 0.51 |
| 22:BA:1155:A:C4 | 22:BA:1157:G:N7 | 2.79 | 0.51 |
| 22:BA:1278:C:H2' | 22:BA:1279:G:C8 | 2.44 | 0.51 |
| 22:BA:1843:C:O2' | 22:BA:1844:C:H5' | 2.10 | 0.51 |
| 22:BA:2109:U:C4 | 22:BA:2181:U:O4 | 2.63 | 0.51 |
| 22:BA:2495:G:O2' | 22:BA:2496:C:H5' | 2.10 | 0.51 |
| 22:BA:2707:U:O2 | 35:BN:71:ARG:NH1 | 2.44 | 0.51 |
| 23:BB:49:C:OP1 | 36:BO:102:ARG:HG3 | 2.09 | 0.51 |
| 25:BD:53:GLY:HA3 | 25:BD:77:ARG:CB | 2.41 | 0.51 |
| 33:BL:89:VAL:HA | 33:BL:121:THR:HG23 | 1.92 | 0.51 |
| 34:BM:54:THR:O | 34:BM:56:ALA:N | 2.44 | 0.51 |
| 37:BP:33:GLU:OE1 | 37:BP:33:GLU:C | 2.49 | 0.51 |
| 38:BQ:106:THR:O | 38:BQ:107:ALA:C | 2.48 | 0.51 |
| 42:BU:87:GLU:O | 42:BU:88:ASP:O | 2.28 | 0.51 |
| 45:BX:29:LEU:HB2 | 45:BX:30:PRO:HD3 | 1.91 | 0.51 |
| 52:B4:24:ARG:HG2 | 52:B4:24:ARG:NH2 | 2.26 | 0.51 |
| 53:CA:68:G:N2 | 53:CA:152:A:H1' | 2.26 | 0.51 |
| 53:CA:750:C:H4' | 15:CO:20:ASP:HB2 | 1.92 | 0.51 |
| 53:CA:889:A:HO2' | 53:CA:890:G:P | 2.34 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:CA:1416:G:C2' | 53:CA:1417:G:H5' | 2.40 | 0.51 |
| 53:CA:1507:A:H2' | 53:CA:1508:A:C8 | 2.46 | 0.51 |
| 2:CB:23:ASN:HB2 | 2:CB:189:ASN:O | 2.11 | 0.51 |
| 4:CD:186:GLU:O | 4:CD:187:ARG:HB2 | 2.10 | 0.51 |
| 6:CF:99:ALA:O | 6:CF:100:SER:HB2 | 2.11 | 0.51 |
| 8:CH:38:VAL:HA | 8:CH:41:GLU:CG | 2.41 | 0.51 |
| 10:CJ:10:LEU:O | 10:CJ:18:ILE:HD11 | 2.11 | 0.51 |
| 11:CK:74:LYS:HD2 | 11:CK:104:PHE:HE1 | 1.76 | 0.51 |
| 55:CM:103:THR:HG22 | 55:CM:104:ASN:N | 2.26 | 0.51 |
| 57:DA:78:U:C2' | 57:DA:79:C:H5' | 2.41 | 0.51 |
| 57:DA:111:A:C2 | 57:DA:112:U:C2 | 2.98 | 0.51 |
| 57:DA:156:A:H2' | 57:DA:157:C:C6 | 2.43 | 0.51 |
| 57:DA:329:G:H4' | 57:DA:330:A:OP1 | 2.07 | 0.51 |
| 57:DA:476:G:O2' | 57:DA:477:A:H3' | 2.10 | 0.51 |
| 57:DA:570:G:C5 | 57:DA:2030:A:N7 | 2.79 | 0.51 |
| 57:DA:576:U:H2' | 57:DA:577:G:C8 | 2.45 | 0.51 |
| 57:DA:628:G:H2' | 57:DA:629:G:C8 | 2.46 | 0.51 |
| 57:DA:696:G:C2 | 57:DA:767:U:O2 | 2.63 | 0.51 |
| 57:DA:704:G:H2' | 57:DA:726:G:N2 | 2.19 | 0.51 |
| 57:DA:708:G:H2' | 57:DA:709:U:H6 | 1.76 | 0.51 |
| 57:DA:1237:A:H2 | 57:DA:1238:G:H1' | 1.70 | 0.51 |
| 57:DA:1525:A:C6 | 57:DA:1526:C:C2 | 2.99 | 0.51 |
| 57:DA:1789:A:OP1 | 24:DC:220:ARG:HD3 | 2.11 | 0.51 |
| 57:DA:1827:U:C4' | 57:DA:1970:A:HO2' | 2.19 | 0.51 |
| 57:DA:1973:G:C6 | 57:DA:1974:C:N4 | 2.79 | 0.51 |
| 57:DA:2143:C:H3' | 57:DA:2144:G:C8 | 2.46 | 0.51 |
| 57:DA:2267:A:N6 | 57:DA:2272:U:N3 | 2.52 | 0.51 |
| 57:DA:2603:G:OP2 | 57:DA:2603:G:H4' | 2.11 | 0.51 |
| 57:DA:2636:C:H2' | 57:DA:2637:U:C6 | 2.45 | 0.51 |
| 58:DB:24:G:H1' | 58:DB:27:C:H41 | 1.73 | 0.51 |
| 24:DC:231:HIS:O | 24:DC:232:GLY:C | 2.48 | 0.51 |
| 25:DD:12:THR:HG22 | 25:DD:13:ARG:N | 2.25 | 0.51 |
| 25:DD:108:ASP:OD1 | 25:DD:207:VAL:HG23 | 2.11 | 0.51 |
| 25:DD:118:PHE:CG | 25:DD:119:ALA:N | 2.78 | 0.51 |
| 35:DN:94:TYR:N | 35:DN:94:TYR:CD1 | 2.76 | 0.51 |
| 35:DN:114:GLU:HG2 | 35:DN:115:LEU:N | 2.24 | 0.51 |
| 37:DP:56:SER:O | 37:DP:75:THR:HG22 | 2.10 | 0.51 |
| 39:DR:62:GLU:CD | 39:DR:97:LYS:HD2 | 2.32 | 0.51 |
| 41:DT:43:ILE:CG2 | 41:DT:58:VAL:HG11 | 2.41 | 0.51 |
| 43:DV:73:LYS:O | 43:DV:92:VAL:HG22 | 2.10 | 0.51 |
| 51:D3:57:VAL:O | 51:D3:60:CYS:HB2 | 2.10 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:16:A:C2' | 1:AA:17:U:H5' | 2.41 | 0.51 |
| 1:AA:61:G:H2' | 1:AA:62:U:H6 | 1.74 | 0.51 |
| 1:AA:342:C:C2' | 1:AA:343:U:H5' | 2.41 | 0.51 |
| 1:AA:550:G:O2' | 1:AA:551:U:H5' | 2.11 | 0.51 |
| 1:AA:641:U:H4' | 8:AH:106:SER:O | 2.10 | 0.51 |
| 1:AA:669:G:O2' | 1:AA:670:G:H5' | 2.11 | 0.51 |
| 1:AA:1380:U:H5' | 1:AA:1381:U:OP1 | 2.11 | 0.51 |
| 2:AB:17:HIS:CD2 | 2:AB:202:ASN:ND2 | 2.78 | 0.51 |
| 2:AB:110:ILE:HD12 | 2:AB:147:LEU:CD1 | 2.37 | 0.51 |
| 7:AG:78:ARG:HH22 | 7:AG:81:GLY:HA2 | 1.75 | 0.51 |
| 8:AH:45:ILE:C | 8:AH:63:LYS:HD2 | 2.31 | 0.51 |
| 10:AJ:65:TYR:CB | 14:AN:95:LEU:HD11 | 2.40 | 0.51 |
| 11:AK:22:ILE:HD13 | 11:AK:95:THR:CG2 | 2.32 | 0.51 |
| 13:AM:24:VAL:HG23 | 13:AM:24:VAL:O | 2.10 | 0.51 |
| 22:BA:38:A:O2' | 26:BE:43:THR:HA | 2.10 | 0.51 |
| 22:BA:395:U:O2' | 22:BA:396:G:N7 | 2.41 | 0.51 |
| 22:BA:588:U:H1' | 26:BE:85:PHE:CD1 | 2.46 | 0.51 |
| 22:BA:657:U:O2' | 22:BA:658:U:H5' | 2.11 | 0.51 |
| 22:BA:799:G:C6 | 22:BA:800:A:C6 | 2.99 | 0.51 |
| 22:BA:946:C:H2' | 22:BA:947:A:C8 | 2.45 | 0.51 |
| 22:BA:1157:G:H2' | 22:BA:1158:C:C6 | 2.45 | 0.51 |
| 22:BA:1309:G:H4' | 50:B2:7:PRO:HB2 | 1.93 | 0.51 |
| 22:BA:1421:G:C2 | 22:BA:1422:G:C8 | 2.99 | 0.51 |
| 22:BA:2581:G:H4' | 22:BA:2582:G:N7 | 2.26 | 0.51 |
| 22:BA:2773:C:H2' | 22:BA:2774:C:H6 | 1.76 | 0.51 |
| 26:BE:58:LYS:HE3 | 26:BE:62:GLN:HE21 | 1.74 | 0.51 |
| 29:BH:14:SER:O | 29:BH:16:GLY:N | 2.44 | 0.51 |
| 32:BK:99:ILE:HG22 | 32:BK:119:ALA:HA | 1.92 | 0.51 |
| 35:BN:103:ARG:HD3 | 35:BN:110:MET:CE | 2.41 | 0.51 |
| 38:BQ:63:ARG:NH2 | 38:BQ:96:ASP:N | 2.57 | 0.51 |
| 46:BY:59:GLU:O | 46:BY:63:ALA:HB3 | 2.11 | 0.51 |
| 53:CA:243:A:C2 | 53:CA:246:A:C8 | 2.99 | 0.51 |
| 53:CA:465:A:H8 | 53:CA:467:U:OP1 | 1.94 | 0.51 |
| 53:CA:673:A:H1' | 18:CR:63:TYR:CE2 | 2.46 | 0.51 |
| 53:CA:765:G:H1' | 53:CA:812:G:N2 | 2.26 | 0.51 |
| 53:CA:1134:G:N1 | 53:CA:1141:C:C4 | 2.78 | 0.51 |
| 2:CB:164:ASP:HB3 | 2:CB:167:HIS:HB3 | 1.93 | 0.51 |
| 6:CF:3:HIS:HB2 | 6:CF:92:THR:HA | 1.93 | 0.51 |
| 12:CL:88:ASP:HB3 | 12:CL:89:LEU:HD22 | 1.92 | 0.51 |
| 57:DA:70:G:H5' | 57:DA:112:U:O2 | 2.11 | 0.51 |
| 57:DA:94:A:C6 | 57:DA:95:A:C6 | 2.99 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:120:U:O4 | 57:DA:177:G:C8 | 2.64 | 0.51 |
| 57:DA:185:G:C5 | 57:DA:212:G:N2 | 2.78 | 0.51 |
| 57:DA:193:U:H4' | 57:DA:802:A:HO2' | 1.76 | 0.51 |
| 57:DA:379:G:C6 | 57:DA:380:G:C5 | 2.99 | 0.51 |
| 57:DA:616:A:H4' | 26:DE:101:TYR:CZ | 2.45 | 0.51 |
| 57:DA:1395:A:H4' | 57:DA:1397:U:C5 | 2.45 | 0.51 |
| 57:DA:1420:A:N3 | 57:DA:2211:A:N7 | 2.59 | 0.51 |
| 57:DA:1651:G:N2 | 57:DA:2007:U:C2 | 2.79 | 0.51 |
| 57:DA:1936:A:H2 | 57:DA:1943:U:O4 | 1.94 | 0.51 |
| 57:DA:2069:G:C2 | 57:DA:2443:C:C2 | 2.98 | 0.51 |
| 57:DA:2135:A:C2' | 57:DA:2136:G:O4' | 2.56 | 0.51 |
| 57:DA:2138:G:H8 | 57:DA:2138:G:OP2 | 1.94 | 0.51 |
| 57:DA:2216:G:O2' | 57:DA:2217:G:C8 | 2.23 | 0.51 |
| 57:DA:2550:G:O6 | 57:DA:2551:C:N4 | 2.44 | 0.51 |
| 57:DA:2663:G:H2' | 57:DA:2664:G:H8 | 1.76 | 0.51 |
| 57:DA:2672:U:H6 | 57:DA:2672:U:O5' | 1.94 | 0.51 |
| 57:DA:2757:A:OP1 | 52:D4:20:ASP:N | 2.44 | 0.51 |
| 58:DB:19:C:H2' | 58:DB:20:G:C8 | 2.46 | 0.51 |
| 24:DC:94:LEU:HA | 24:DC:100:ARG:HG2 | 1.93 | 0.51 |
| 26:DE:139:LYS:HB2 | 26:DE:139:LYS:NZ | 2.25 | 0.51 |
| 59:DF:67:THR:O | 59:DF:84:ILE:HG22 | 2.11 | 0.51 |
| 28:DG:34:ARG:O | 28:DG:35:THR:HG23 | 2.11 | 0.51 |
| 37:DP:37:LYS:O | 37:DP:38:ARG:HB3 | 2.11 | 0.51 |
| 38:DQ:40:LYS:O | 38:DQ:44:TYR:HD2 | 1.93 | 0.51 |
| 49:D1:8:ILE:HD11 | 49:D1:52:LYS:HE3 | 1.93 | 0.51 |
| 52:D4:36:ARG:HG2 | 52:D4:37:GLN:H | 1.76 | 0.51 |
| 1:AA:257:G:H2' | 1:AA:258:G:H8 | 1.76 | 0.51 |
| 2:AB:9:LEU:HB2 | 2:AB:42:LEU:HD13 | 1.92 | 0.51 |
| 6:AF:4:TYR:HA | 6:AF:91:ARG:O | 2.11 | 0.51 |
| 9:AI:119:LYS:HG3 | 9:AI:122:ARG:HB3 | 1.93 | 0.51 |
| 16:AP:20:VAL:HG21 | 16:AP:32:PHE:CB | 2.41 | 0.51 |
| 17:AQ:79:GLU:C | 17:AQ:80:LYS:HD3 | 2.32 | 0.51 |
| 22:BA:811:U:HO2' | 22:BA:1250:G:H2' | 1.76 | 0.51 |
| 22:BA:923:G:N3 | 44:BW:23:LYS:CE | 2.69 | 0.51 |
| 22:BA:999:U:OP2 | 63:BA:3356:HOH:O | 2.20 | 0.51 |
| 22:BA:1097:U:H3' | 22:BA:1098:A:H4' | 1.93 | 0.51 |
| 22:BA:1107:G:C2 | 22:BA:1108:U:C2 | 2.99 | 0.51 |
| 22:BA:1607:C:N4 | 22:BA:1622:G:C5 | 2.78 | 0.51 |
| 22:BA:2232:C:H2' | 22:BA:2233:U:H6 | 1.75 | 0.51 |
| 22:BA:2272:U:H5'' | 22:BA:2273:A:OP1 | 2.11 | 0.51 |
| 22:BA:2543:G:H2' | 22:BA:2544:G:C8 | 2.46 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:2714:G:P | 63:BA:3549:HOH:O | 2.68 | 0.51 |
| 22:BA:2865:U:C4 | 22:BA:2866:U:C4 | 3.00 | 0.51 |
| 23:BB:2:G:C6 | 23:BB:119:A:C2 | 2.98 | 0.51 |
| 27:BF:68:LYS:HD2 | 27:BF:68:LYS:N | 2.23 | 0.51 |
| 27:BF:128:SER:OG | 27:BF:154:THR:HB | 2.10 | 0.51 |
| 28:BG:124:CYS:HB3 | 28:BG:126:THR:O | 2.10 | 0.51 |
| 29:BH:53:GLU:HG2 | 29:BH:53:GLU:O | 2.11 | 0.51 |
| 30:BI:32:VAL:HG13 | 30:BI:66:PHE:CE2 | 2.46 | 0.51 |
| 36:BO:31:THR:HG23 | 36:BO:33:ARG:N | 2.26 | 0.51 |
| 38:BQ:13:HIS:CD2 | 38:BQ:31:TYR:CG | 2.99 | 0.51 |
| 42:BU:94:PHE:O | 42:BU:94:PHE:CD1 | 2.64 | 0.51 |
| 53:CA:39:G:H2' | 53:CA:40:C:H6 | 1.76 | 0.51 |
| 53:CA:64:G:C8 | 53:CA:99:C:N4 | 2.78 | 0.51 |
| 53:CA:449:G:C2 | 53:CA:450:G:C4 | 2.99 | 0.51 |
| 53:CA:595:A:H4' | 53:CA:596:A:OP1 | 2.11 | 0.51 |
| 53:CA:985:C:O2' | 53:CA:986:U:O5' | 2.29 | 0.51 |
| 55:CM:3:ILE:O | 55:CM:4:ALA:HB2 | 2.11 | 0.51 |
| 56:CP:52:LEU:HD21 | 56:CP:75:ILE:HG12 | 1.92 | 0.51 |
| 57:DA:223:A:C6 | 57:DA:422:A:N7 | 2.79 | 0.51 |
| 57:DA:298:G:H8 | 57:DA:298:G:O5' | 1.94 | 0.51 |
| 57:DA:333:G:O2' | 57:DA:334:C:H5' | 2.11 | 0.51 |
| 57:DA:338:G:H2' | 57:DA:339:U:H5' | 1.93 | 0.51 |
| 57:DA:511:U:C5' | 57:DA:1235:G:H4' | 2.40 | 0.51 |
| 57:DA:527:C:O2' | 57:DA:528:A:P | 2.69 | 0.51 |
| 57:DA:528:A:C2 | 57:DA:2043:C:H4' | 2.46 | 0.51 |
| 57:DA:627:A:O2' | 57:DA:628:G:O4' | 2.29 | 0.51 |
| 57:DA:942:G:H2' | 57:DA:943:A:H5' | 1.92 | 0.51 |
| 57:DA:1281:G:C6 | 57:DA:1290:C:N4 | 2.79 | 0.51 |
| 57:DA:1582:C:H2' | 57:DA:1585:C:H42 | 1.75 | 0.51 |
| 57:DA:1655:A:C8 | 57:DA:1656:C:C5 | 2.99 | 0.51 |
| 57:DA:1968:G:H5' | 63:DA:3480:HOH:O | 2.11 | 0.51 |
| 57:DA:2039:U:H2' | 57:DA:2040:G:H8 | 1.75 | 0.51 |
| 57:DA:2049:G:C5 | 57:DA:2050:C:C5 | 2.99 | 0.51 |
| 57:DA:2100:G:C6 | 57:DA:2101:A:C6 | 2.99 | 0.51 |
| 57:DA:2226:C:H2' | 57:DA:2227:A:H8 | 1.74 | 0.51 |
| 57:DA:2425:A:H1' | 57:DA:2427:C:C5 | 2.45 | 0.51 |
| 24:DC:93:VAL:CG1 | 24:DC:94:LEU:N | 2.74 | 0.51 |
| 59:DF:43:ILE:HD13 | 59:DF:82:TYR:HE2 | 1.75 | 0.51 |
| 30:DI:86:LYS:O | 30:DI:87:SER:HB2 | 2.11 | 0.51 |
| 31:DJ:64:VAL:HG22 | 31:DJ:68:LYS:HE2 | 1.93 | 0.51 |
| 36:DO:8:ILE:H | 36:DO:8:ILE:HD12 | 1.75 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 36:DO:24:THR:H | 36:DO:90:VAL:CG1 | 2.23 | 0.51 |
| 40:DS:49:LYS:HB3 | 40:DS:49:LYS:HZ3 | 1.76 | 0.51 |
| 43:DV:56:PHE:C | 43:DV:58:SER:H | 2.14 | 0.51 |
| 43:DV:72:VAL:HA | 43:DV:92:VAL:O | 2.10 | 0.51 |
| 44:DW:31:LEU:C | 44:DW:33:GLY:H | 2.13 | 0.51 |
| 44:DW:46:ALA:HA | 44:DW:50:VAL:HG12 | 1.91 | 0.51 |
| 1:AA:374:A:H2' | 1:AA:375:U:H6 | 1.75 | 0.50 |
| 1:AA:587:G:H4' | 8:AH:3:GLN:CA | 2.39 | 0.50 |
| 1:AA:633:G:H2' | 1:AA:634:C:H6 | 1.75 | 0.50 |
| 1:AA:687:A:N7 | 1:AA:701:U:H5 | 2.10 | 0.50 |
| 1:AA:878:A:H5'' | 8:AH:80:PRO:HG2 | 1.94 | 0.50 |
| 1:AA:932:C:OP1 | 7:AG:3:ARG:HB3 | 2.12 | 0.50 |
| 1:AA:1196:A:O2' | 1:AA:1197:A:OP2 | 2.29 | 0.50 |
| 1:AA:1226:C:H4' | 1:AA:1227:A:OP1 | 2.10 | 0.50 |
| 5:AE:114:LEU:HD21 | 5:AE:122:VAL:HG23 | 1.92 | 0.50 |
| 9:AI:117:LEU:HD23 | 9:AI:123:ARG:HD3 | 1.93 | 0.50 |
| 13:AM:4:ALA:HB2 | 13:AM:59:VAL:HG13 | 1.92 | 0.50 |
| 13:AM:10:ASP:OD1 | 13:AM:44:ILE:HB | 2.12 | 0.50 |
| 13:AM:86:ARG:HH22 | 13:AM:97:ARG:HA | 1.76 | 0.50 |
| 14:AN:47:LEU:O | 14:AN:47:LEU:HD23 | 2.11 | 0.50 |
| 14:AN:51:PRO:O | 14:AN:52:ARG:CB | 2.59 | 0.50 |
| 22:BA:747:U:OP2 | 40:BS:90:LYS:NZ | 2.42 | 0.50 |
| 22:BA:1374:G:O2' | 22:BA:1375:U:H5' | 2.11 | 0.50 |
| 22:BA:1434:A:OP1 | 22:BA:1434:A:H4' | 2.11 | 0.50 |
| 22:BA:1802:A:N1 | 22:BA:1822:C:H1' | 2.27 | 0.50 |
| 22:BA:2405:G:H1' | 22:BA:2412:A:N6 | 2.26 | 0.50 |
| 22:BA:2820:A:O2' | 22:BA:2821:A:P | 2.70 | 0.50 |
| 25:BD:114:LYS:HZ3 | 25:BD:116:LYS:HE2 | 1.76 | 0.50 |
| 25:BD:151:THR:C | 25:BD:153:GLY:N | 2.62 | 0.50 |
| 28:BG:8:VAL:CG1 | 28:BG:9:VAL:N | 2.74 | 0.50 |
| 29:BH:66:ASN:C | 29:BH:68:ARG:H | 2.13 | 0.50 |
| 29:BH:76:GLU:HG2 | 29:BH:106:ALA:HB2 | 1.92 | 0.50 |
| 32:BK:2:ILE:HG21 | 32:BK:39:ILE:CD1 | 2.40 | 0.50 |
| 32:BK:39:ILE:HG22 | 32:BK:60:ALA:O | 2.11 | 0.50 |
| 32:BK:65:THR:HG1 | 32:BK:68:GLY:H | 1.58 | 0.50 |
| 34:BM:13:HIS:O | 34:BM:14:LYS:HB2 | 2.12 | 0.50 |
| 44:BW:30:VAL:HG23 | 44:BW:59:PHE:HD1 | 1.75 | 0.50 |
| 53:CA:140:U:H2' | 53:CA:141:G:O4' | 2.11 | 0.50 |
| 53:CA:148:G:N1 | 53:CA:149:A:C5 | 2.78 | 0.50 |
| 53:CA:295:C:C4 | 53:CA:296:U:C4 | 2.99 | 0.50 |
| 53:CA:643:C:H5'' | 8:CH:31:LEU:HD13 | 1.93 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:1157:A:C2 | 53:CA:1181:G:C8 | 2.99 | 0.50 |
| 53:CA:1452:C:H5' | 53:CA:1453:G:C4 | 2.46 | 0.50 |
| 3:CC:76:ILE:HG12 | 3:CC:83:VAL:HG11 | 1.93 | 0.50 |
| 54:CG:49:LEU:HG | 54:CG:123:LEU:HB3 | 1.93 | 0.50 |
| 10:CJ:79:PRO:HA | 10:CJ:84:VAL:HG11 | 1.92 | 0.50 |
| 56:CP:4:ILE:HD12 | 56:CP:4:ILE:N | 2.26 | 0.50 |
| 21:CU:24:LYS:CD | 21:CU:25:ALA:H | 2.24 | 0.50 |
| 57:DA:595:C:O2 | 57:DA:663:G:C2 | 2.65 | 0.50 |
| 57:DA:705:A:H62 | 57:DA:726:G:H1' | 1.76 | 0.50 |
| 57:DA:746:U:H5' | 57:DA:748:G:O4' | 2.11 | 0.50 |
| 57:DA:750:A:H5'' | 57:DA:751:A:OP2 | 2.10 | 0.50 |
| 57:DA:1213:A:O2' | 57:DA:1214:A:H5' | 2.11 | 0.50 |
| 57:DA:1328:A:H2' | 57:DA:1330:C:C5 | 2.45 | 0.50 |
| 57:DA:1380:G:H1' | 57:DA:1569:A:N6 | 2.26 | 0.50 |
| 57:DA:1476:U:O2' | 57:DA:1477:A:H5' | 2.11 | 0.50 |
| 57:DA:1520:U:O4 | 57:DA:1521:G:C6 | 2.64 | 0.50 |
| 57:DA:1991:U:H5'' | 57:DA:1991:U:H6 | 1.74 | 0.50 |
| 57:DA:2060:A:H62 | 26:DE:69:ARG:NH1 | 2.07 | 0.50 |
| 57:DA:2422:C:H2' | 57:DA:2423:U:H5'' | 1.93 | 0.50 |
| 57:DA:2581:G:H5'' | 57:DA:2582:G:OP1 | 2.11 | 0.50 |
| 57:DA:2788:C:H2' | 57:DA:2789:C:C6 | 2.45 | 0.50 |
| 24:DC:62:ARG:N | 24:DC:62:ARG:HD2 | 2.26 | 0.50 |
| 29:DH:75:LEU:O | 29:DH:76:GLU:HB2 | 2.10 | 0.50 |
| 32:DK:19:VAL:HG12 | 32:DK:41:ILE:CG1 | 2.40 | 0.50 |
| 37:DP:107:ALA:O | 37:DP:108:ARG:C | 2.50 | 0.50 |
| 38:DQ:93:ILE:O | 38:DQ:96:ASP:HB3 | 2.11 | 0.50 |
| 42:DU:73:ASN:HB3 | 42:DU:95:PHE:CE2 | 2.46 | 0.50 |
| 45:DX:4:CYS:HB3 | 45:DX:9:LYS:N | 2.26 | 0.50 |
| 45:DX:62:GLY:O | 45:DX:66:VAL:HG23 | 2.10 | 0.50 |
| 45:DX:67:LEU:O | 45:DX:77:TYR:OH | 2.27 | 0.50 |
| 46:DY:50:VAL:HA | 46:DY:53:VAL:HG23 | 1.92 | 0.50 |
| 1:AA:1066:C:H5'' | 1:AA:1066:C:C6 | 2.45 | 0.50 |
| 2:AB:49:PHE:HB2 | 2:AB:53:LEU:CD2 | 2.42 | 0.50 |
| 4:AD:61:ARG:HH21 | 4:AD:67:LEU:HD23 | 1.76 | 0.50 |
| 7:AG:96:ASN:N | 7:AG:96:ASN:OD1 | 2.44 | 0.50 |
| 13:AM:28:ARG:NH2 | 13:AM:62:PHE:HB2 | 2.26 | 0.50 |
| 17:AQ:11:VAL:HG12 | 17:AQ:12:VAL:H | 1.76 | 0.50 |
| 17:AQ:33:TYR:O | 17:AQ:35:LYS:N | 2.44 | 0.50 |
| 22:BA:415:A:C5 | 22:BA:416:U:C5 | 2.98 | 0.50 |
| 22:BA:758:C:O2 | 22:BA:1981:A:H2 | 1.94 | 0.50 |
| 22:BA:856:G:C1' | 44:BW:23:LYS:HB3 | 2.36 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:919:U:C6 | 22:BA:919:U:H3' | 2.46 | 0.50 |
| 22:BA:1079:C:N4 | 22:BA:1088:A:C2 | 2.72 | 0.50 |
| 22:BA:1509:A:H1' | 22:BA:1510:G:C5' | 2.31 | 0.50 |
| 22:BA:2264:C:N4 | 44:BW:11:ASN:ND2 | 2.59 | 0.50 |
| 22:BA:2354:C:H4' | 44:BW:31:LEU:HD22 | 1.94 | 0.50 |
| 63:BA:3241:HOH:O | 26:BE:81:GLY:HA2 | 2.12 | 0.50 |
| 31:BJ:31:GLU:OE2 | 31:BJ:35:ARG:HD2 | 2.11 | 0.50 |
| 31:BJ:44:TYR:CD2 | 38:BQ:63:ARG:HD3 | 2.46 | 0.50 |
| 33:BL:40:SER:O | 33:BL:41:ARG:HB2 | 2.12 | 0.50 |
| 37:BP:3:ILE:HD13 | 37:BP:3:ILE:C | 2.31 | 0.50 |
| 40:BS:13:SER:O | 40:BS:14:ALA:CB | 2.59 | 0.50 |
| 43:BV:1:MET:HG3 | 43:BV:2:PHE:N | 2.26 | 0.50 |
| 43:BV:65:VAL:CG2 | 43:BV:65:VAL:O | 2.59 | 0.50 |
| 53:CA:688:G:H8 | 53:CA:688:G:H5'' | 1.76 | 0.50 |
| 53:CA:961:U:O4 | 53:CA:983:A:N6 | 2.44 | 0.50 |
| 53:CA:1072:G:H2' | 53:CA:1073:U:C6 | 2.46 | 0.50 |
| 53:CA:1434:A:N6 | 53:CA:1435:G:N1 | 2.59 | 0.50 |
| 5:CE:105:ILE:HG22 | 5:CE:105:ILE:O | 2.10 | 0.50 |
| 54:CG:37:THR:HA | 54:CG:40:SER:OG | 2.11 | 0.50 |
| 11:CK:19:VAL:HG22 | 11:CK:82:GLU:HG2 | 1.92 | 0.50 |
| 14:CN:27:LYS:HD2 | 14:CN:27:LYS:C | 2.31 | 0.50 |
| 56:CP:32:PHE:C | 56:CP:32:PHE:CD1 | 2.85 | 0.50 |
| 57:DA:21:A:H2' | 57:DA:22:C:C6 | 2.46 | 0.50 |
| 57:DA:163:C:O2' | 57:DA:164:C:O4' | 2.23 | 0.50 |
| 57:DA:247:G:C8 | 57:DA:249:C:C6 | 2.99 | 0.50 |
| 57:DA:333:G:O2' | 57:DA:334:C:H6 | 1.93 | 0.50 |
| 57:DA:416:U:H2' | 57:DA:417:C:O4' | 2.11 | 0.50 |
| 57:DA:463:G:N2 | 57:DA:466:A:OP2 | 2.37 | 0.50 |
| 57:DA:527:C:N3 | 57:DA:2779:U:H2' | 2.26 | 0.50 |
| 57:DA:656:G:O2' | 57:DA:657:U:H5' | 2.10 | 0.50 |
| 57:DA:1014:A:C2 | 57:DA:1149:G:C2 | 2.99 | 0.50 |
| 57:DA:1021:A:C2' | 57:DA:1022:G:H4' | 2.40 | 0.50 |
| 57:DA:1179:G:N2 | 57:DA:1180:U:C2 | 2.80 | 0.50 |
| 57:DA:1311:G:H21 | 57:DA:1603:A:H62 | 1.58 | 0.50 |
| 57:DA:1611:C:HO2' | 57:DA:1612:C:H6 | 1.51 | 0.50 |
| 57:DA:1722:A:N6 | 57:DA:1739:A:C8 | 2.79 | 0.50 |
| 57:DA:2428:G:N2 | 33:DL:60:ARG:CZ | 2.75 | 0.50 |
| 57:DA:2447:G:C8 | 57:DA:2500:U:H2' | 2.47 | 0.50 |
| 57:DA:2537:U:H2' | 57:DA:2538:C:C6 | 2.46 | 0.50 |
| 57:DA:2626:C:C2' | 57:DA:2627:G:H5' | 2.42 | 0.50 |
| 58:DB:84:G:N2 | 58:DB:93:C:C2 | 2.78 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 30:DI:89:SER:HB3 | 30:DI:97:VAL:HG11 | 1.93 | 0.50 |
| 31:DJ:73:VAL:HG23 | 31:DJ:74:TYR:N | 2.27 | 0.50 |
| 1:AA:179:A:C2' | 1:AA:180:U:H5' | 2.42 | 0.50 |
| 1:AA:189:A:O2' | 1:AA:190:A:H5' | 2.11 | 0.50 |
| 1:AA:351:G:H4' | 1:AA:352:C:OP1 | 2.10 | 0.50 |
| 1:AA:443:C:O2' | 1:AA:444:G:H5' | 2.12 | 0.50 |
| 1:AA:785:G:H2' | 1:AA:786:G:H5' | 1.94 | 0.50 |
| 1:AA:858:G:C2' | 1:AA:859:G:H5' | 2.41 | 0.50 |
| 1:AA:1074:G:C6 | 1:AA:1075:U:C4 | 2.99 | 0.50 |
| 2:AB:20:ARG:O | 2:AB:22:TRP:N | 2.44 | 0.50 |
| 2:AB:42:LEU:HG | 2:AB:43:GLU:N | 2.25 | 0.50 |
| 14:AN:50:LEU:HB3 | 14:AN:51:PRO:HD2 | 1.92 | 0.50 |
| 22:BA:412:A:O2' | 22:BA:413:C:H5' | 2.11 | 0.50 |
| 22:BA:1026:G:H2' | 22:BA:1027:A:C8 | 2.47 | 0.50 |
| 22:BA:1537:G:H5'' | 22:BA:1537:G:N3 | 2.27 | 0.50 |
| 26:BE:61:ARG:NH1 | 26:BE:64:GLY:HA3 | 2.26 | 0.50 |
| 30:BI:6:ALA:HB3 | 30:BI:60:VAL:H | 1.77 | 0.50 |
| 30:BI:56:VAL:HG23 | 30:BI:69:VAL:O | 2.10 | 0.50 |
| 31:BJ:37:ARG:HG2 | 31:BJ:37:ARG:O | 2.12 | 0.50 |
| 33:BL:132:ARG:HA | 33:BL:142:ILE:CD1 | 2.42 | 0.50 |
| 43:BV:65:VAL:O | 43:BV:66:ASP:OD1 | 2.29 | 0.50 |
| 48:B0:9:ARG:HH21 | 48:B0:9:ARG:HG3 | 1.76 | 0.50 |
| 49:B1:29:LYS:HD2 | 49:B1:31:GLU:OE1 | 2.11 | 0.50 |
| 53:CA:599:C:H4' | 8:CH:121:GLY:C | 2.31 | 0.50 |
| 53:CA:900:A:H8 | 53:CA:900:A:O5' | 1.94 | 0.50 |
| 53:CA:926:G:H3' | 53:CA:1505:G:N2 | 2.26 | 0.50 |
| 53:CA:1446:A:H2' | 53:CA:1447:A:H5' | 1.93 | 0.50 |
| 3:CC:6:PRO:HG2 | 3:CC:183:TYR:CD2 | 2.47 | 0.50 |
| 5:CE:118:GLY:O | 5:CE:119:VAL:HG13 | 2.12 | 0.50 |
| 6:CF:6:ILE:HG22 | 6:CF:7:VAL:N | 2.27 | 0.50 |
| 12:CL:65:TYR:HE1 | 12:CL:67:GLY:HA2 | 1.77 | 0.50 |
| 57:DA:45:G:C5' | 57:DA:46:G:H5' | 2.42 | 0.50 |
| 57:DA:191:A:C2 | 57:DA:192:C:C2 | 2.99 | 0.50 |
| 57:DA:432:A:H8 | 57:DA:432:A:O5' | 1.93 | 0.50 |
| 57:DA:443:A:N6 | 26:DE:36:ALA:HB1 | 2.20 | 0.50 |
| 57:DA:661:A:H2' | 57:DA:662:G:O4' | 2.10 | 0.50 |
| 57:DA:800:A:H4' | 57:DA:801:G:O5' | 2.10 | 0.50 |
| 57:DA:972:A:C2 | 57:DA:973:A:N6 | 2.79 | 0.50 |
| 57:DA:989:G:C4' | 57:DA:990:A:OP1 | 2.57 | 0.50 |
| 57:DA:1178:C:C2 | 57:DA:1179:G:C8 | 3.00 | 0.50 |
| 57:DA:1249:U:H4' | 38:DQ:3:VAL:CB | 2.40 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1416:G:HO2' | 57:DA:1417:C:P | 2.33 | 0.50 |
| 57:DA:2059:A:O3' | 26:DE:64:GLY:HA2 | 2.11 | 0.50 |
| 57:DA:2075:U:N3 | 57:DA:2435:A:C2 | 2.80 | 0.50 |
| 57:DA:2477:U:O4 | 52:D4:10:LEU:HD22 | 2.10 | 0.50 |
| 57:DA:2631:G:N2 | 57:DA:2788:C:C2 | 2.79 | 0.50 |
| 57:DA:2648:G:H2' | 57:DA:2649:C:O4' | 2.10 | 0.50 |
| 24:DC:71:ASP:O | 24:DC:73:ILE:HG12 | 2.12 | 0.50 |
| 26:DE:16:GLU:HG3 | 26:DE:16:GLU:O | 2.12 | 0.50 |
| 32:DK:21:CYS:SG | 32:DK:39:ILE:CG2 | 2.99 | 0.50 |
| 37:DP:87:ARG:HG2 | 37:DP:88:ARG:N | 2.26 | 0.50 |
| 38:DQ:4:LYS:CE | 38:DQ:7:VAL:H | 2.24 | 0.50 |
| 41:DT:10:VAL:HG23 | 41:DT:11:LEU:HD12 | 1.92 | 0.50 |
| 51:D3:44:ARG:N | 51:D3:45:PRO:HD2 | 2.27 | 0.50 |
| 1:AA:119:A:C2 | 1:AA:240:G:C8 | 3.00 | 0.50 |
| 1:AA:128:G:O2' | 1:AA:129:A:H5' | 2.10 | 0.50 |
| 1:AA:593:U:H2' | 1:AA:594:U:H6 | 1.75 | 0.50 |
| 1:AA:844:G:H2' | 1:AA:844:G:N3 | 2.26 | 0.50 |
| 1:AA:1053:G:O2' | 1:AA:1054:C:OP2 | 2.21 | 0.50 |
| 1:AA:1159:U:N3 | 1:AA:1182:G:C5 | 2.80 | 0.50 |
| 1:AA:1239:A:H62 | 1:AA:1299:A:H61 | 1.53 | 0.50 |
| 6:AF:29:ILE:HG22 | 6:AF:30:THR:N | 2.26 | 0.50 |
| 11:AK:100:ASN:HB2 | 11:AK:106:ILE:CG2 | 2.42 | 0.50 |
| 13:AM:2:ARG:HG3 | 13:AM:56:ARG:HH12 | 1.77 | 0.50 |
| 15:AO:24:THR:HG22 | 15:AO:69:LEU:HD12 | 1.94 | 0.50 |
| 20:AT:55:PRO:HG2 | 20:AT:56:ILE:H | 1.77 | 0.50 |
| 21:AU:3:ILE:HA | 21:AU:19:LYS:HZ1 | 1.75 | 0.50 |
| 22:BA:1068:G:H2' | 22:BA:1069:A:H5' | 1.93 | 0.50 |
| 22:BA:1561:C:H2' | 22:BA:1562:U:H6 | 1.75 | 0.50 |
| 22:BA:2512:C:H2' | 22:BA:2513:A:O4' | 2.11 | 0.50 |
| 23:BB:94:A:C2' | 23:BB:95:U:H5' | 2.40 | 0.50 |
| 25:BD:140:HIS:HE1 | 63:BD:302:HOH:O | 1.93 | 0.50 |
| 31:BJ:21:THR:CG2 | 31:BJ:22:GLY:N | 2.72 | 0.50 |
| 32:BK:77:ILE:CD1 | 32:BK:105:ARG:HH12 | 2.25 | 0.50 |
| 33:BL:95:LEU:HB3 | 33:BL:100:ILE:CG1 | 2.42 | 0.50 |
| 36:BO:47:VAL:HG23 | 36:BO:47:VAL:O | 2.12 | 0.50 |
| 36:BO:75:GLY:HA3 | 36:BO:106:LEU:HA | 1.92 | 0.50 |
| 38:BQ:85:ALA:O | 38:BQ:87:VAL:O | 2.29 | 0.50 |
| 50:B2:43:THR:O | 50:B2:44:VAL:CB | 2.59 | 0.50 |
| 53:CA:130:A:O2' | 53:CA:131:A:O5' | 2.23 | 0.50 |
| 53:CA:151:A:H2' | 53:CA:152:A:O4' | 2.10 | 0.50 |
| 53:CA:643:C:H5'' | 8:CH:31:LEU:HD22 | 1.92 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:1004:A:H2' | 53:CA:1005:A:C8 | 2.46 | 0.50 |
| 53:CA:1272:G:H2' | 53:CA:1273:C:H5' | 1.93 | 0.50 |
| 53:CA:1386:G:C2 | 53:CA:1387:G:C8 | 2.99 | 0.50 |
| 53:CA:1447:A:P | 53:CA:1448:C:H5 | 2.35 | 0.50 |
| 2:CB:96:LEU:H | 2:CB:99:MET:HE3 | 1.77 | 0.50 |
| 3:CC:110:LEU:O | 3:CC:110:LEU:HD23 | 2.11 | 0.50 |
| 4:CD:29:THR:C | 4:CD:31:CYS:H | 2.15 | 0.50 |
| 6:CF:62:MET:O | 6:CF:63:ASN:HB2 | 2.11 | 0.50 |
| 54:CG:32:ASP:CB | 54:CG:34:LYS:HD3 | 2.42 | 0.50 |
| 15:CO:28:VAL:HG13 | 15:CO:62:ARG:HG3 | 1.92 | 0.50 |
| 56:CP:54:LEU:HG | 56:CP:55:ASP:H | 1.76 | 0.50 |
| 17:CQ:46:HIS:HB2 | 17:CQ:70:LYS:CE | 2.41 | 0.50 |
| 20:CT:14:GLU:HA | 20:CT:17:ARG:HB2 | 1.93 | 0.50 |
| 57:DA:14:A:C6 | 57:DA:526:A:C2 | 3.00 | 0.50 |
| 57:DA:639:U:HO2' | 57:DA:640:C:H6 | 1.58 | 0.50 |
| 57:DA:664:G:H4' | 57:DA:941:A:OP1 | 2.11 | 0.50 |
| 57:DA:1259:G:H2' | 57:DA:1260:A:C8 | 2.47 | 0.50 |
| 57:DA:1474:U:C2' | 57:DA:1475:G:H5' | 2.37 | 0.50 |
| 57:DA:1905:C:N4 | 57:DA:1930:G:C2 | 2.80 | 0.50 |
| 57:DA:2211:A:OP2 | 57:DA:2211:A:H4' | 2.11 | 0.50 |
| 24:DC:120:ASP:CG | 24:DC:121:ALA:N | 2.65 | 0.50 |
| 59:DF:90:LEU:HB3 | 59:DF:95:MET:HG3 | 1.92 | 0.50 |
| 30:DI:61:TYR:HE2 | 30:DI:67:THR:H | 1.58 | 0.50 |
| 31:DJ:38:GLY:C | 31:DJ:40:HIS:H | 2.15 | 0.50 |
| 31:DJ:44:TYR:CD2 | 31:DJ:44:TYR:C | 2.84 | 0.50 |
| 38:DQ:71:ASN:ND2 | 38:DQ:106:THR:HA | 2.25 | 0.50 |
| 44:DW:65:LYS:HE2 | 44:DW:84:GLU:HA | 1.92 | 0.50 |
| 51:D3:18:LYS:HG3 | 51:D3:19:GLY:N | 2.26 | 0.50 |
| 1:AA:184:G:H4' | 1:AA:224:U:O3' | 2.11 | 0.50 |
| 1:AA:373:A:N3 | 1:AA:374:A:C8 | 2.79 | 0.50 |
| 1:AA:628:G:C2 | 1:AA:629:A:C4 | 3.00 | 0.50 |
| 1:AA:675:A:OP1 | 18:AR:70:THR:HG21 | 2.10 | 0.50 |
| 1:AA:794:A:H2' | 1:AA:795:C:C6 | 2.47 | 0.50 |
| 1:AA:1417:G:C6 | 1:AA:1482:G:C6 | 3.00 | 0.50 |
| 1:AA:1421:G:C6 | 1:AA:1422:G:N7 | 2.79 | 0.50 |
| 2:AB:66:ILE:HG13 | 2:AB:220:VAL:HG11 | 1.93 | 0.50 |
| 2:AB:153:MET:HE2 | 2:AB:157:PRO:HG3 | 1.93 | 0.50 |
| 7:AG:38:ALA:O | 7:AG:42:VAL:HG23 | 2.11 | 0.50 |
| 7:AG:90:VAL:HG23 | 7:AG:94:ARG:HD3 | 1.93 | 0.50 |
| 15:AO:9:LYS:O | 15:AO:13:GLU:HG3 | 2.11 | 0.50 |
| 16:AP:20:VAL:HG21 | 16:AP:32:PHE:CG | 2.47 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:AQ:29:LYS:HB2 | 17:AQ:36:PHE:CE1 | 2.46 | 0.50 |
| 22:BA:603:A:C8 | 22:BA:655:A:C6 | 2.99 | 0.50 |
| 22:BA:1385:A:H4' | 22:BA:1386:C:OP1 | 2.11 | 0.50 |
| 22:BA:1485:U:C2 | 22:BA:1505:A:C2 | 3.00 | 0.50 |
| 26:BE:12:LEU:HD13 | 26:BE:12:LEU:O | 2.12 | 0.50 |
| 31:BJ:123:LYS:N | 31:BJ:123:LYS:HD2 | 2.25 | 0.50 |
| 34:BM:31:PHE:CZ | 34:BM:110:GLU:HA | 2.47 | 0.50 |
| 34:BM:62:LYS:HB3 | 34:BM:106:ASP:HB3 | 1.93 | 0.50 |
| 44:BW:30:VAL:O | 44:BW:30:VAL:CG2 | 2.56 | 0.50 |
| 53:CA:284:C:H2' | 53:CA:285:C:C6 | 2.47 | 0.50 |
| 53:CA:425:G:H2' | 53:CA:426:U:O4' | 2.11 | 0.50 |
| 53:CA:501:C:H1' | 53:CA:549:C:H1' | 1.93 | 0.50 |
| 53:CA:733:G:O2' | 53:CA:734:G:C5' | 2.59 | 0.50 |
| 53:CA:840:C:N3 | 53:CA:842:U:H4' | 2.26 | 0.50 |
| 53:CA:1186:G:H4' | 9:CI:111:GLU:CD | 2.31 | 0.50 |
| 2:CB:26:MET:HE2 | 2:CB:29:PHE:HD2 | 1.77 | 0.50 |
| 4:CD:187:ARG:HG3 | 4:CD:191:SER:OG | 2.12 | 0.50 |
| 54:CG:9:ARG:HD3 | 54:CG:24:LYS:NZ | 2.26 | 0.50 |
| 54:CG:74:VAL:CG1 | 54:CG:143:MET:HB2 | 2.42 | 0.50 |
| 14:CN:20:PHE:HA | 14:CN:24:ALA:HB2 | 1.92 | 0.50 |
| 57:DA:117:G:C2 | 57:DA:119:A:N6 | 2.79 | 0.50 |
| 57:DA:222:A:H3' | 57:DA:421:C:H5' | 1.94 | 0.50 |
| 57:DA:236:C:H2' | 57:DA:237:C:H6 | 1.76 | 0.50 |
| 57:DA:345:A:O2' | 57:DA:346:A:C2 | 2.61 | 0.50 |
| 57:DA:382:A:H2' | 57:DA:383:C:H5'' | 1.94 | 0.50 |
| 57:DA:433:C:O2' | 57:DA:434:U:H5' | 2.11 | 0.50 |
| 57:DA:449:A:O2' | 57:DA:450:G:C5' | 2.58 | 0.50 |
| 57:DA:533:G:OP1 | 38:DQ:27:ARG:HD3 | 2.11 | 0.50 |
| 57:DA:811:U:H1' | 57:DA:1251:C:C2 | 2.46 | 0.50 |
| 57:DA:1342:A:N6 | 57:DA:1397:U:C5 | 2.80 | 0.50 |
| 57:DA:1361:G:C2' | 57:DA:1362:C:H5' | 2.41 | 0.50 |
| 57:DA:2520:C:H2' | 57:DA:2521:C:C6 | 2.46 | 0.50 |
| 57:DA:2842:G:H2' | 57:DA:2843:G:O4' | 2.11 | 0.50 |
| 24:DC:79:ARG:C | 24:DC:80:LEU:HD12 | 2.31 | 0.50 |
| 24:DC:91:ALA:HB3 | 24:DC:103:ILE:HG23 | 1.92 | 0.50 |
| 28:DG:53:PRO:HB3 | 28:DG:61:TRP:N | 2.26 | 0.50 |
| 30:DI:12:VAL:HG12 | 30:DI:13:ALA:N | 2.26 | 0.50 |
| 30:DI:20:SER:OG | 30:DI:25:PRO:HG2 | 2.11 | 0.50 |
| 33:DL:90:VAL:HB | 33:DL:122:VAL:HA | 1.93 | 0.50 |
| 35:DN:28:LEU:HD23 | 35:DN:29:VAL:N | 2.26 | 0.50 |
| 40:DS:27:LYS:O | 40:DS:28:LYS:O | 2.30 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 42:DU:52:ASN:CG | 42:DU:54:PRO:HD3 | 2.31 | 0.50 |
| 43:DV:80:HIS:CD2 | 43:DV:83:LYS:N | 2.79 | 0.50 |
| 45:DX:39:VAL:HG22 | 45:DX:44:ARG:O | 2.10 | 0.50 |
| 48:D0:27:LEU:HB3 | 48:D0:37:HIS:O | 2.11 | 0.50 |
| 48:D0:38:LEU:O | 48:D0:41:HIS:ND1 | 2.45 | 0.50 |
| 1:AA:66:A:O2' | 1:AA:67:C:H5' | 2.12 | 0.50 |
| 1:AA:92:U:O2' | 1:AA:93:U:H5' | 2.12 | 0.50 |
| 1:AA:765:G:N1 | 1:AA:812:G:O2' | 2.40 | 0.50 |
| 1:AA:903:G:C4 | 1:AA:904:U:C5 | 3.00 | 0.50 |
| 1:AA:1038:C:H2' | 1:AA:1039:G:H8 | 1.73 | 0.50 |
| 1:AA:1160:G:O6 | 1:AA:1181:G:C5 | 2.64 | 0.50 |
| 3:AC:35:ASP:OD1 | 3:AC:56:ILE:HG21 | 2.11 | 0.50 |
| 11:AK:76:TYR:CD1 | 11:AK:76:TYR:N | 2.80 | 0.50 |
| 21:AU:8:ASN:O | 21:AU:11:PHE:HE2 | 1.95 | 0.50 |
| 21:AU:24:LYS:HG2 | 21:AU:25:ALA:N | 2.27 | 0.50 |
| 22:BA:1110:G:O2' | 22:BA:1111:A:P | 2.70 | 0.50 |
| 22:BA:1381:G:H2' | 22:BA:1382:G:H5' | 1.94 | 0.50 |
| 22:BA:1392:A:C6 | 22:BA:1393:A:C6 | 2.99 | 0.50 |
| 22:BA:1459:G:C5 | 22:BA:1461:C:C4 | 3.00 | 0.50 |
| 22:BA:1853:A:C5 | 22:BA:1889:A:C6 | 3.00 | 0.50 |
| 22:BA:2052:A:O4' | 25:BD:147:GLY:HA3 | 2.11 | 0.50 |
| 22:BA:2061:G:H5'' | 22:BA:2503:A:C2 | 2.46 | 0.50 |
| 22:BA:2407:A:H2' | 22:BA:2408:U:C6 | 2.46 | 0.50 |
| 24:BC:211:ARG:NE | 24:BC:211:ARG:HA | 2.27 | 0.50 |
| 24:BC:229:HIS:CD2 | 24:BC:246:PRO:HB3 | 2.46 | 0.50 |
| 31:BJ:76:HIS:O | 31:BJ:84:ILE:HD12 | 2.10 | 0.50 |
| 34:BM:6:ARG:CZ | 34:BM:6:ARG:HB2 | 2.42 | 0.50 |
| 40:BS:3:THR:HB | 40:BS:62:ASP:OD2 | 2.12 | 0.50 |
| 42:BU:71:ILE:HD12 | 42:BU:95:PHE:CE2 | 2.47 | 0.50 |
| 44:BW:71:LYS:N | 44:BW:71:LYS:HD2 | 2.25 | 0.50 |
| 52:B4:30:GLU:HB3 | 52:B4:33:HIS:ND1 | 2.26 | 0.50 |
| 53:CA:5:U:H4' | 53:CA:6:G:H5'' | 1.93 | 0.50 |
| 53:CA:113:G:C1' | 53:CA:354:G:H5' | 2.40 | 0.50 |
| 53:CA:268:U:C2 | 53:CA:269:C:C5 | 3.00 | 0.50 |
| 53:CA:672:U:O2' | 53:CA:673:A:H5' | 2.11 | 0.50 |
| 53:CA:1013:G:H22 | 53:CA:1015:G:H3' | 1.76 | 0.50 |
| 53:CA:1501:C:N4 | 53:CA:1504:G:C2 | 2.79 | 0.50 |
| 4:CD:60:VAL:HG22 | 4:CD:194:ILE:HG21 | 1.93 | 0.50 |
| 4:CD:115:GLN:NE2 | 4:CD:153:ARG:NH2 | 2.59 | 0.50 |
| 8:CH:24:VAL:HG22 | 8:CH:25:THR:N | 2.27 | 0.50 |
| 10:CJ:30:LYS:HG2 | 10:CJ:36:VAL:HG22 | 1.93 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:CJ:52:LEU:CD2 | 10:CJ:59:LYS:HA | 2.42 | 0.50 |
| 11:CK:15:VAL:O | 11:CK:16:SER:HB2 | 2.11 | 0.50 |
| 11:CK:124:LYS:O | 21:CU:33:ARG:NE | 2.44 | 0.50 |
| 56:CP:67:ILE:O | 56:CP:67:ILE:HG23 | 2.12 | 0.50 |
| 57:DA:486:C:H2' | 57:DA:487:C:H6 | 1.76 | 0.50 |
| 57:DA:533:G:H21 | 38:DQ:44:TYR:HD1 | 1.58 | 0.50 |
| 57:DA:867:C:O2' | 57:DA:868:U:O5' | 2.30 | 0.50 |
| 57:DA:942:G:C2' | 57:DA:943:A:H5' | 2.42 | 0.50 |
| 57:DA:991:C:H6 | 57:DA:991:C:O5' | 1.93 | 0.50 |
| 57:DA:1301:A:C8 | 57:DA:1303:G:C8 | 2.99 | 0.50 |
| 57:DA:1722:A:H61 | 57:DA:1738:G:H1' | 1.77 | 0.50 |
| 57:DA:2299:U:O2' | 57:DA:2300:C:O4' | 2.27 | 0.50 |
| 58:DB:57:A:C4 | 59:DF:25:MET:CB | 2.93 | 0.50 |
| 25:DD:12:THR:CG2 | 25:DD:13:ARG:N | 2.74 | 0.50 |
| 26:DE:112:LEU:HD12 | 26:DE:118:LEU:HD13 | 1.94 | 0.50 |
| 26:DE:149:ILE:HG23 | 26:DE:188:MET:N | 2.25 | 0.50 |
| 35:DN:54:LEU:HB2 | 35:DN:62:ASN:ND2 | 2.27 | 0.50 |
| 36:DO:49:VAL:CG1 | 36:DO:81:ARG:HB3 | 2.41 | 0.50 |
| 39:DR:6:GLN:HA | 39:DR:6:GLN:HE21 | 1.76 | 0.50 |
| 42:DU:35:VAL:HG12 | 42:DU:36:GLU:N | 2.26 | 0.50 |
| 46:DY:31:GLN:OE1 | 46:DY:37:LEU:HB2 | 2.11 | 0.50 |
| 51:D3:22:LYS:H | 51:D3:48:MET:CB | 2.23 | 0.50 |
| 1:AA:15:G:H2' | 1:AA:16:A:H8 | 1.76 | 0.50 |
| 1:AA:43:C:H2' | 1:AA:44:A:O4' | 2.11 | 0.50 |
| 1:AA:259:G:C4 | 1:AA:260:G:C8 | 3.00 | 0.50 |
| 1:AA:570:G:H2' | 1:AA:571:U:H6 | 1.76 | 0.50 |
| 1:AA:626:G:H2' | 1:AA:627:G:C8 | 2.47 | 0.50 |
| 1:AA:652:U:O4 | 1:AA:752:G:H2' | 2.12 | 0.50 |
| 1:AA:1091:U:C2 | 1:AA:1095:U:N3 | 2.80 | 0.50 |
| 1:AA:1358:U:H6 | 1:AA:1359:C:C5 | 2.30 | 0.50 |
| 1:AA:1373:G:H5'' | 7:AG:35:LYS:HD2 | 1.94 | 0.50 |
| 5:AE:63:MET:O | 5:AE:67:ARG:HG2 | 2.12 | 0.50 |
| 5:AE:80:LEU:HD12 | 5:AE:146:MET:CE | 2.42 | 0.50 |
| 5:AE:152:VAL:HB | 5:AE:155:LYS:NZ | 2.26 | 0.50 |
| 8:AH:4:ASP:HB2 | 8:AH:80:PRO:HG3 | 1.92 | 0.50 |
| 8:AH:48:PHE:O | 8:AH:49:LYS:CB | 2.59 | 0.50 |
| 9:AI:57:VAL:HG12 | 9:AI:58:GLU:HG2 | 1.93 | 0.50 |
| 10:AJ:53:ILE:HG22 | 10:AJ:61:ALA:CB | 2.39 | 0.50 |
| 22:BA:7:G:H2' | 22:BA:8:C:H6 | 1.75 | 0.50 |
| 22:BA:88:G:C6 | 22:BA:89:A:N7 | 2.80 | 0.50 |
| 22:BA:95:A:O2' | 46:BY:41:HIS:HD2 | 1.95 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 22:BA:142:A:O2' | 22:BA:143:C:O4' | 2.30 | 0.50 |
| 22:BA:242:G:H5' | 51:B3:63:TYR:CE2 | 2.47 | 0.50 |
| 22:BA:994:C:O3' | 22:BA:995:C:H3' | 2.11 | 0.50 |
| 22:BA:1060:U:O4' | 22:BA:1062:G:C5' | 2.57 | 0.50 |
| 22:BA:1416:G:O2' | 22:BA:1417:C:O5' | 2.30 | 0.50 |
| 22:BA:1548:A:H2' | 22:BA:1549:A:C8 | 2.47 | 0.50 |
| 22:BA:1716:U:O2' | 22:BA:1717:A:H5' | 2.12 | 0.50 |
| 22:BA:1912:A:C2 | 22:BA:1919:A:C5 | 2.99 | 0.50 |
| 22:BA:2107:G:O6 | 22:BA:2183:A:C6 | 2.65 | 0.50 |
| 22:BA:2262:U:H4' | 22:BA:2328:A:H2 | 1.77 | 0.50 |
| 22:BA:2545:G:O2' | 22:BA:2546:U:H5' | 2.12 | 0.50 |
| 29:BH:58:LEU:HA | 29:BH:61:VAL:HB | 1.93 | 0.50 |
| 30:BI:72:THR:HB | 30:BI:112:LYS:NZ | 2.26 | 0.50 |
| 39:BR:49:ILE:HG21 | 39:BR:53:PHE:N | 2.27 | 0.50 |
| 39:BR:101:ILE:HG22 | 39:BR:101:ILE:O | 2.12 | 0.50 |
| 44:BW:40:ARG:NH1 | 44:BW:45:HIS:NE2 | 2.58 | 0.50 |
| 47:BZ:3:THR:C | 47:BZ:4:ILE:HG22 | 2.32 | 0.50 |
| 47:BZ:40:THR:CG2 | 47:BZ:43:ILE:HG23 | 2.41 | 0.50 |
| 53:CA:71:A:C2 | 53:CA:72:A:C8 | 3.00 | 0.50 |
| 53:CA:123:U:OP1 | 53:CA:311:C:O2' | 2.28 | 0.50 |
| 53:CA:309:A:O2' | 53:CA:607:A:N1 | 2.33 | 0.50 |
| 53:CA:377:G:H2' | 53:CA:378:G:H8 | 1.76 | 0.50 |
| 53:CA:437:U:C2' | 53:CA:438:U:O5' | 2.59 | 0.50 |
| 53:CA:642:A:O2' | 53:CA:643:C:O5' | 2.30 | 0.50 |
| 53:CA:861:G:H2' | 53:CA:862:C:C6 | 2.45 | 0.50 |
| 53:CA:936:C:O2' | 53:CA:937:A:O5' | 2.30 | 0.50 |
| 53:CA:1287:A:O2' | 53:CA:1288:A:C8 | 2.60 | 0.50 |
| 3:CC:172:VAL:O | 3:CC:174:LEU:HD23 | 2.11 | 0.50 |
| 3:CC:185:THR:O | 3:CC:186:SER:HB2 | 2.11 | 0.50 |
| 5:CE:132:PRO:O | 5:CE:134:ASN:N | 2.45 | 0.50 |
| 9:CI:48:ARG:C | 9:CI:50:PRO:HD2 | 2.32 | 0.50 |
| 11:CK:74:LYS:O | 11:CK:74:LYS:HG2 | 2.11 | 0.50 |
| 57:DA:146:A:C2 | 57:DA:147:C:C2 | 2.99 | 0.50 |
| 57:DA:188:G:C2' | 57:DA:189:G:H5' | 2.41 | 0.50 |
| 57:DA:311:A:C2 | 57:DA:328:U:O4 | 2.64 | 0.50 |
| 57:DA:596:U:C2 | 57:DA:662:G:N2 | 2.79 | 0.50 |
| 57:DA:726:G:O2' | 57:DA:727:A:OP2 | 2.27 | 0.50 |
| 57:DA:1179:G:C2 | 57:DA:1180:U:C2 | 2.99 | 0.50 |
| 57:DA:1322:A:C5 | 57:DA:1323:C:C5 | 2.99 | 0.50 |
| 57:DA:1991:U:H2' | 57:DA:1992:G:H5' | 1.93 | 0.50 |
| 57:DA:2321:U:OP2 | 57:DA:2322:A:OP2 | 2.30 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:2667:C:H2' | 57:DA:2668:G:C8 | 2.46 | 0.50 |
| 24:DC:62:ARG:HG2 | 24:DC:62:ARG:NH2 | 2.21 | 0.50 |
| 24:DC:67:LYS:CB | 24:DC:150:GLY:HA2 | 2.39 | 0.50 |
| 25:DD:159:LYS:HE2 | 25:DD:159:LYS:HA | 1.93 | 0.50 |
| 26:DE:34:ALA:HB1 | 26:DE:94:GLN:HB2 | 1.92 | 0.50 |
| 26:DE:72:SER:C | 26:DE:74:LYS:H | 2.14 | 0.50 |
| 59:DF:113:PHE:CE2 | 59:DF:116:LEU:HD22 | 2.47 | 0.50 |
| 31:DJ:60:ASP:OD1 | 31:DJ:60:ASP:N | 2.45 | 0.50 |
| 32:DK:104:THR:OG1 | 32:DK:106:GLU:HB2 | 2.11 | 0.50 |
| 39:DR:68:ARG:NH1 | 39:DR:90:ARG:HG2 | 2.26 | 0.50 |
| 39:DR:78:ARG:HB3 | 39:DR:83:TYR:CD1 | 2.46 | 0.50 |
| 40:DS:82:MET:HB2 | 40:DS:98:LYS:HB2 | 1.93 | 0.50 |
| 1:AA:91:U:H2' | 1:AA:92:U:C1' | 2.42 | 0.50 |
| 1:AA:716:A:C6 | 1:AA:717:U:N3 | 2.79 | 0.50 |
| 1:AA:1161:C:O2' | 1:AA:1162:C:C6 | 2.59 | 0.50 |
| 4:AD:147:LYS:HD3 | 4:AD:147:LYS:N | 2.25 | 0.50 |
| 6:AF:52:ASN:O | 6:AF:53:LYS:CB | 2.60 | 0.50 |
| 7:AG:49:LEU:HD12 | 7:AG:60:ALA:HB1 | 1.94 | 0.50 |
| 7:AG:53:SER:C | 7:AG:55:LYS:H | 2.15 | 0.50 |
| 7:AG:99:ALA:O | 7:AG:103:ILE:HG13 | 2.12 | 0.50 |
| 15:AO:77:TYR:OH | 15:AO:87:ARG:HG2 | 2.11 | 0.50 |
| 20:AT:3:ILE:O | 20:AT:4:LYS:HB2 | 2.10 | 0.50 |
| 22:BA:522:A:C6 | 22:BA:523:C:C4 | 2.99 | 0.50 |
| 22:BA:729:G:N3 | 22:BA:729:G:C2' | 2.72 | 0.50 |
| 22:BA:764:A:H3' | 22:BA:765:C:H5' | 1.94 | 0.50 |
| 22:BA:1184:U:C2' | 22:BA:1185:G:O5' | 2.59 | 0.50 |
| 22:BA:1210:G:P | 22:BA:1212:G:H5' | 2.52 | 0.50 |
| 22:BA:1498:C:HO2' | 22:BA:1499:C:H6 | 1.53 | 0.50 |
| 22:BA:1799:G:H22 | 22:BA:1818:U:HO2' | 1.57 | 0.50 |
| 22:BA:1857:G:O2' | 22:BA:1858:A:OP2 | 2.27 | 0.50 |
| 22:BA:1996:C:OP1 | 32:BK:31:ARG:NE | 2.44 | 0.50 |
| 22:BA:2336:A:N6 | 44:BW:40:ARG:HB3 | 2.26 | 0.50 |
| 22:BA:2516:A:C2 | 22:BA:2569:G:C4 | 3.00 | 0.50 |
| 23:BB:54:G:H2' | 23:BB:55:U:H6 | 1.77 | 0.50 |
| 25:BD:112:THR:O | 25:BD:195:GLY:HA2 | 2.11 | 0.50 |
| 25:BD:151:THR:O | 25:BD:152:PRO:C | 2.48 | 0.50 |
| 27:BF:21:TYR:CE2 | 27:BF:28:PRO:HD3 | 2.47 | 0.50 |
| 30:BI:58:ILE:HG22 | 30:BI:60:VAL:HG23 | 1.92 | 0.50 |
| 31:BJ:97:PRO:C | 31:BJ:99:ARG:H | 2.14 | 0.50 |
| 44:BW:41:GLY:O | 44:BW:43:LYS:N | 2.44 | 0.50 |
| 47:BZ:6:ILE:HD11 | 47:BZ:47:ILE:HD11 | 1.94 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:CA:512:U:O2' | 53:CA:513:C:H5' | 2.12 | 0.50 |
| 53:CA:747:A:H2' | 53:CA:748:G:O4' | 2.12 | 0.50 |
| 53:CA:1092:A:C6 | 53:CA:1183:U:O2 | 2.64 | 0.50 |
| 53:CA:1114:C:O2' | 14:CN:99:SER:HB2 | 2.12 | 0.50 |
| 53:CA:1416:G:N2 | 53:CA:1485:U:H1' | 2.27 | 0.50 |
| 6:CF:81:ASN:O | 6:CF:83:ALA:N | 2.45 | 0.50 |
| 11:CK:90:PRO:O | 11:CK:91:GLY:C | 2.50 | 0.50 |
| 11:CK:96:ILE:HG21 | 11:CK:109:ILE:HD11 | 1.93 | 0.50 |
| 55:CM:13:HIS:NE2 | 55:CM:41:ASP:HA | 2.25 | 0.50 |
| 57:DA:49:A:C8 | 57:DA:51:G:C2 | 2.99 | 0.50 |
| 57:DA:108:G:H2' | 57:DA:109:C:H6 | 1.77 | 0.50 |
| 57:DA:120:U:C2 | 57:DA:149:A:C6 | 2.99 | 0.50 |
| 57:DA:612:G:N2 | 57:DA:614:A:HO2' | 2.09 | 0.50 |
| 57:DA:614:A:H4' | 57:DA:616:A:H62 | 1.77 | 0.50 |
| 57:DA:663:G:H5'' | 57:DA:664:G:OP2 | 2.12 | 0.50 |
| 57:DA:721:A:C2 | 57:DA:722:A:C4 | 2.99 | 0.50 |
| 57:DA:818:G:N7 | 57:DA:1187:G:C6 | 2.80 | 0.50 |
| 57:DA:975:A:H2' | 57:DA:976:G:C8 | 2.47 | 0.50 |
| 57:DA:1286:A:C6 | 57:DA:1329:U:C2 | 3.00 | 0.50 |
| 57:DA:1441:G:C4 | 57:DA:1551:A:C2 | 3.00 | 0.50 |
| 57:DA:1737:G:C5 | 57:DA:1738:G:C6 | 2.99 | 0.50 |
| 57:DA:1739:A:C2 | 57:DA:1740:G:C4 | 3.00 | 0.50 |
| 57:DA:1817:G:H4' | 24:DC:85:ASN:O | 2.12 | 0.50 |
| 57:DA:2135:A:H2' | 57:DA:2136:G:H8 | 1.76 | 0.50 |
| 57:DA:2314:A:H2' | 57:DA:2315:G:H8 | 1.76 | 0.50 |
| 57:DA:2552:U:C2 | 57:DA:2554:U:C5' | 2.95 | 0.50 |
| 57:DA:2585:U:O2' | 57:DA:2586:U:H5' | 2.11 | 0.50 |
| 57:DA:2829:A:H2' | 57:DA:2830:C:H5' | 1.94 | 0.50 |
| 58:DB:57:A:N6 | 59:DF:25:MET:SD | 2.85 | 0.50 |
| 58:DB:108:A:HO2' | 58:DB:109:A:P | 2.35 | 0.50 |
| 24:DC:127:ASN:O | 24:DC:190:THR:HA | 2.12 | 0.50 |
| 59:DF:41:GLU:CG | 59:DF:42:ALA:H | 2.24 | 0.50 |
| 31:DJ:23:LYS:CB | 31:DJ:28:LEU:HD13 | 2.42 | 0.50 |
| 35:DN:75:ILE:O | 35:DN:75:ILE:HD12 | 2.11 | 0.50 |
| 47:DZ:4:ILE:CD1 | 47:DZ:58:GLU:HA | 2.38 | 0.50 |
| 51:D3:28:LEU:O | 51:D3:29:ARG:HB3 | 2.12 | 0.50 |
| 1:AA:40:C:H2' | 1:AA:40:C:O2 | 2.12 | 0.50 |
| 1:AA:244:U:O4 | 1:AA:906:A:H1' | 2.12 | 0.50 |
| 1:AA:562:U:H1' | 12:AL:11:ARG:HB3 | 1.93 | 0.50 |
| 1:AA:922:G:C6 | 1:AA:923:A:C6 | 2.99 | 0.50 |
| 1:AA:1086:U:O2' | 1:AA:1087:G:H5' | 2.12 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1097:C:H2' | 1:AA:1098:C:H6 | 1.77 | 0.50 |
| 1:AA:1409:C:H2' | 1:AA:1410:A:H8 | 1.77 | 0.50 |
| 3:AC:54:ILE:C | 3:AC:54:ILE:HD12 | 2.31 | 0.50 |
| 4:AD:47:LEU:CD2 | 4:AD:52:VAL:HG12 | 2.40 | 0.50 |
| 7:AG:23:ALA:O | 7:AG:26:VAL:HG22 | 2.12 | 0.50 |
| 8:AH:17:GLN:NE2 | 8:AH:69:ALA:HB1 | 2.26 | 0.50 |
| 14:AN:90:GLY:O | 14:AN:92:ILE:N | 2.44 | 0.50 |
| 16:AP:12:LYS:HG2 | 16:AP:13:LYS:HG2 | 1.94 | 0.50 |
| 21:AU:32:ARG:HG2 | 21:AU:32:ARG:O | 2.12 | 0.50 |
| 22:BA:49:A:C6 | 22:BA:177:G:C4 | 3.00 | 0.50 |
| 22:BA:117:G:C6 | 22:BA:119:A:N6 | 2.80 | 0.50 |
| 22:BA:300:A:H2' | 22:BA:334:C:H1' | 1.93 | 0.50 |
| 22:BA:304:U:H2' | 22:BA:305:C:C6 | 2.47 | 0.50 |
| 22:BA:1257:C:H5' | 26:BE:78:TRP:CH2 | 2.46 | 0.50 |
| 22:BA:1429:G:H2' | 22:BA:1430:G:H8 | 1.76 | 0.50 |
| 22:BA:1499:C:H2' | 22:BA:1500:G:C8 | 2.30 | 0.50 |
| 22:BA:1579:A:O2' | 22:BA:1580:A:H5' | 2.12 | 0.50 |
| 22:BA:2017:U:H5'' | 22:BA:2018:G:OP1 | 2.12 | 0.50 |
| 22:BA:2154:A:H2' | 22:BA:2155:U:O4' | 2.12 | 0.50 |
| 22:BA:2517:C:C6 | 22:BA:2542:A:N7 | 2.79 | 0.50 |
| 22:BA:2581:G:H4' | 22:BA:2582:G:C8 | 2.46 | 0.50 |
| 23:BB:35:C:H2' | 23:BB:36:C:O4' | 2.10 | 0.50 |
| 27:BF:110:ILE:O | 27:BF:111:ARG:C | 2.49 | 0.50 |
| 28:BG:30:GLY:O | 28:BG:32:LEU:N | 2.45 | 0.50 |
| 29:BH:9:VAL:O | 29:BH:13:GLY:N | 2.45 | 0.50 |
| 37:BP:43:GLU:H | 37:BP:62:LYS:NZ | 2.09 | 0.50 |
| 40:BS:18:ARG:HG3 | 40:BS:76:VAL:HG13 | 1.94 | 0.50 |
| 41:BT:29:THR:CA | 41:BT:86:THR:HA | 2.42 | 0.50 |
| 43:BV:4:ILE:O | 43:BV:63:ILE:HA | 2.11 | 0.50 |
| 44:BW:24:ARG:HD3 | 44:BW:65:LYS:HE2 | 1.93 | 0.50 |
| 51:B3:31:ILE:CD1 | 51:B3:34:LYS:HD2 | 2.36 | 0.50 |
| 53:CA:1363:A:C5 | 53:CA:1365:G:C6 | 2.99 | 0.50 |
| 53:CA:1378:C:H3' | 53:CA:1379:G:C5' | 2.42 | 0.50 |
| 53:CA:1387:G:C4 | 53:CA:1388:C:C5 | 3.00 | 0.50 |
| 53:CA:1517:G:C8 | 57:DA:1920:C:OP1 | 2.64 | 0.50 |
| 4:CD:2:ARG:HE | 4:CD:114:ARG:HD2 | 1.77 | 0.50 |
| 8:CH:89:ASP:OD1 | 8:CH:89:ASP:N | 2.45 | 0.50 |
| 10:CJ:50:THR:HB | 10:CJ:64:GLN:OE1 | 2.12 | 0.50 |
| 12:CL:120:ARG:HG2 | 12:CL:121:PRO:N | 2.25 | 0.50 |
| 57:DA:380:G:O3' | 45:DX:15:ASN:HB2 | 2.12 | 0.50 |
| 57:DA:389:G:O2' | 57:DA:390:U:H5' | 2.12 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:404:A:C2 | 57:DA:406:G:N1 | 2.80 | 0.50 |
| 57:DA:612:G:N2 | 57:DA:614:A:O2' | 2.45 | 0.50 |
| 57:DA:740:C:C5 | 57:DA:1981:A:N1 | 2.80 | 0.50 |
| 57:DA:1429:G:N3 | 57:DA:1430:G:N7 | 2.59 | 0.50 |
| 57:DA:1815:A:H1' | 57:DA:1817:G:N7 | 2.27 | 0.50 |
| 57:DA:1844:C:O3' | 24:DC:255:LYS:NZ | 2.43 | 0.50 |
| 57:DA:1910:G:C6 | 57:DA:1911:U:C4 | 3.00 | 0.50 |
| 57:DA:2200:C:N4 | 57:DA:2224:G:N2 | 2.60 | 0.50 |
| 57:DA:2296:U:O2' | 57:DA:2297:A:O5' | 2.30 | 0.50 |
| 57:DA:2691:C:O2' | 57:DA:2692:G:H5' | 2.10 | 0.50 |
| 57:DA:2847:U:H2' | 57:DA:2848:G:C5' | 2.33 | 0.50 |
| 58:DB:41:G:H3' | 58:DB:42:C:C5' | 2.40 | 0.50 |
| 58:DB:54:G:H21 | 59:DF:25:MET:CE | 2.25 | 0.50 |
| 26:DE:42:GLY:HA2 | 26:DE:92:HIS:HE1 | 1.77 | 0.50 |
| 26:DE:54:GLY:O | 26:DE:55:SER:HB3 | 2.12 | 0.50 |
| 59:DF:11:VAL:HG12 | 59:DF:12:VAL:N | 2.26 | 0.50 |
| 29:DH:8:LYS:C | 29:DH:8:LYS:HD2 | 2.32 | 0.50 |
| 33:DL:88:GLY:O | 33:DL:89:VAL:HG12 | 2.12 | 0.50 |
| 37:DP:5:LYS:HE2 | 37:DP:9:GLN:NE2 | 2.27 | 0.50 |
| 43:DV:41:GLU:HG2 | 43:DV:42:LEU:N | 2.26 | 0.50 |
| 46:DY:25:GLN:HA | 46:DY:28:LEU:HB3 | 1.93 | 0.50 |
| 1:AA:36:C:OP1 | 12:AL:119:LYS:HE3 | 2.12 | 0.49 |
| 1:AA:345:C:C3' | 37:BP:33:GLU:OE1 | 2.60 | 0.49 |
| 1:AA:550:G:H2' | 1:AA:551:U:C6 | 2.47 | 0.49 |
| 1:AA:739:C:C4 | 1:AA:740:U:C5 | 3.00 | 0.49 |
| 1:AA:1195:C:H2' | 1:AA:1197:A:H5' | 1.94 | 0.49 |
| 4:AD:56:GLU:O | 4:AD:59:LYS:HB3 | 2.12 | 0.49 |
| 5:AE:149:PRO:O | 5:AE:152:VAL:HG22 | 2.12 | 0.49 |
| 5:AE:152:VAL:CB | 5:AE:155:LYS:HZ2 | 2.25 | 0.49 |
| 6:AF:46:GLN:NE2 | 6:AF:55:HIS:HB2 | 2.27 | 0.49 |
| 11:AK:30:ILE:HB | 11:AK:45:THR:HG22 | 1.94 | 0.49 |
| 16:AP:61:VAL:HA | 16:AP:65:ALA:H | 1.76 | 0.49 |
| 17:AQ:29:LYS:HG2 | 17:AQ:34:GLY:HA2 | 1.92 | 0.49 |
| 19:AS:80:ARG:O | 19:AS:80:ARG:HG3 | 2.12 | 0.49 |
| 22:BA:272:A:O2' | 22:BA:273:G:O5' | 2.29 | 0.49 |
| 22:BA:1340:U:H4' | 22:BA:1341:G:OP2 | 2.11 | 0.49 |
| 22:BA:1654:A:H4' | 25:BD:118:PHE:CZ | 2.47 | 0.49 |
| 22:BA:1909:C:C2 | 22:BA:1922:G:N2 | 2.80 | 0.49 |
| 22:BA:2006:C:O5' | 22:BA:2006:C:H6 | 1.95 | 0.49 |
| 22:BA:2084:C:O5' | 22:BA:2084:C:H6 | 1.94 | 0.49 |
| 22:BA:2742:G:C2' | 22:BA:2743:U:H5' | 2.42 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:BD:40:LEU:H | 25:BD:40:LEU:HD12 | 1.77 | 0.49 |
| 26:BE:115:GLN:O | 26:BE:116:ASP:C | 2.51 | 0.49 |
| 27:BF:72:SER:HB2 | 27:BF:80:GLN:H | 1.77 | 0.49 |
| 28:BG:38:ASP:OD1 | 28:BG:38:ASP:N | 2.44 | 0.49 |
| 29:BH:2:GLN:C | 29:BH:3:VAL:HG13 | 2.32 | 0.49 |
| 30:BI:21:PRO:HB2 | 30:BI:22:PRO:HD3 | 1.94 | 0.49 |
| 34:BM:46:ILE:HD12 | 34:BM:46:ILE:C | 2.32 | 0.49 |
| 34:BM:50:ARG:O | 34:BM:53:MET:HB3 | 2.12 | 0.49 |
| 34:BM:108:VAL:HG13 | 34:BM:109:PRO:HD2 | 1.94 | 0.49 |
| 36:BO:78:VAL:HG23 | 36:BO:79:ALA:N | 2.27 | 0.49 |
| 38:BQ:8:ILE:HD12 | 38:BQ:9:ALA:N | 2.27 | 0.49 |
| 52:B4:15:LYS:O | 52:B4:16:ILE:O | 2.30 | 0.49 |
| 53:CA:14:U:O2 | 53:CA:16:A:C8 | 2.65 | 0.49 |
| 53:CA:121:U:OP1 | 53:CA:121:U:H3' | 2.11 | 0.49 |
| 53:CA:160:A:O2' | 53:CA:344:A:N6 | 2.44 | 0.49 |
| 53:CA:380:G:N2 | 53:CA:383:A:OP2 | 2.43 | 0.49 |
| 53:CA:398:U:H2' | 53:CA:399:G:H8 | 1.77 | 0.49 |
| 53:CA:986:U:C2' | 53:CA:987:G:O5' | 2.60 | 0.49 |
| 53:CA:1004:A:H2' | 53:CA:1005:A:O4' | 2.12 | 0.49 |
| 53:CA:1124:G:O2' | 53:CA:1125:U:C6 | 2.64 | 0.49 |
| 53:CA:1293:C:H2' | 53:CA:1294:G:H8 | 1.73 | 0.49 |
| 4:CD:191:SER:O | 4:CD:192:ALA:CB | 2.60 | 0.49 |
| 54:CG:4:ARG:HH11 | 54:CG:4:ARG:HG2 | 1.76 | 0.49 |
| 8:CH:65:PHE:CD2 | 8:CH:66:GLN:HG2 | 2.47 | 0.49 |
| 56:CP:20:VAL:CG2 | 56:CP:32:PHE:HB2 | 2.41 | 0.49 |
| 18:CR:44:THR:OG1 | 18:CR:46:THR:HG22 | 2.12 | 0.49 |
| 18:CR:59:LYS:O | 18:CR:63:TYR:CD1 | 2.65 | 0.49 |
| 21:CU:25:ALA:O | 21:CU:29:ALA:N | 2.40 | 0.49 |
| 57:DA:95:A:HO2' | 46:DY:39:GLN:HA | 1.77 | 0.49 |
| 57:DA:100:U:H1' | 57:DA:101:A:N7 | 2.27 | 0.49 |
| 57:DA:391:A:O2' | 57:DA:392:U:C5' | 2.60 | 0.49 |
| 57:DA:432:A:O2' | 57:DA:433:C:H5' | 2.12 | 0.49 |
| 57:DA:453:A:N3 | 57:DA:457:A:O2' | 2.45 | 0.49 |
| 57:DA:477:A:O2' | 57:DA:478:A:O5' | 2.30 | 0.49 |
| 57:DA:709:U:H2' | 57:DA:710:U:H6 | 1.77 | 0.49 |
| 57:DA:730:A:O2' | 57:DA:731:C:H5' | 2.12 | 0.49 |
| 57:DA:845:A:N6 | 57:DA:932:U:N3 | 2.59 | 0.49 |
| 57:DA:855:G:O2' | 44:DW:23:LYS:HD3 | 2.12 | 0.49 |
| 57:DA:1206:G:H2' | 57:DA:1207:C:C5 | 2.47 | 0.49 |
| 57:DA:1343:G:O2' | 57:DA:1344:U:C6 | 2.59 | 0.49 |
| 57:DA:1519:G:C6 | 57:DA:1520:U:N3 | 2.80 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1989:G:H2' | 57:DA:1990:C:H5' | 1.92 | 0.49 |
| 57:DA:2353:G:H21 | 44:DW:30:VAL:HG21 | 1.77 | 0.49 |
| 57:DA:2708:G:O2' | 57:DA:2709:G:H5' | 2.12 | 0.49 |
| 57:DA:2718:G:OP1 | 37:DP:97:TYR:HD1 | 1.95 | 0.49 |
| 58:DB:17:C:O2' | 58:DB:18:G:C5' | 2.60 | 0.49 |
| 26:DE:130:LYS:O | 26:DE:134:LEU:HB3 | 2.12 | 0.49 |
| 59:DF:137:PHE:CB | 59:DF:138:PRO:HD2 | 2.34 | 0.49 |
| 28:DG:7:PRO:O | 28:DG:8:VAL:HB | 2.12 | 0.49 |
| 36:DO:62:LEU:CD1 | 36:DO:65:THR:HG23 | 2.41 | 0.49 |
| 1:AA:389:A:C6 | 1:AA:390:U:H1' | 2.48 | 0.49 |
| 1:AA:464:U:N3 | 1:AA:466:A:H5' | 2.27 | 0.49 |
| 1:AA:481:G:H3' | 1:AA:481:G:H8 | 1.76 | 0.49 |
| 1:AA:715:A:H2' | 1:AA:716:A:C8 | 2.47 | 0.49 |
| 1:AA:832:G:C6 | 1:AA:833:G:N7 | 2.80 | 0.49 |
| 1:AA:1299:A:O2' | 1:AA:1300:G:H4' | 2.12 | 0.49 |
| 2:AB:40:ILE:HG21 | 2:AB:201:GLY:CA | 2.42 | 0.49 |
| 4:AD:11:SER:HA | 4:AD:18:LEU:HD12 | 1.94 | 0.49 |
| 7:AG:13:PRO:HB2 | 7:AG:18:GLY:HA2 | 1.94 | 0.49 |
| 8:AH:17:GLN:CD | 8:AH:69:ALA:HB1 | 2.32 | 0.49 |
| 12:AL:107:LYS:O | 12:AL:108:ASP:HB2 | 2.12 | 0.49 |
| 13:AM:89:ARG:NH1 | 13:AM:94:LEU:HB3 | 2.25 | 0.49 |
| 17:AQ:21:VAL:HA | 17:AQ:43:LEU:O | 2.12 | 0.49 |
| 22:BA:286:U:H2' | 22:BA:287:G:O4' | 2.12 | 0.49 |
| 22:BA:1014:A:H2' | 22:BA:1015:U:C6 | 2.48 | 0.49 |
| 22:BA:1277:G:H4' | 35:BN:20:MET:HE2 | 1.92 | 0.49 |
| 22:BA:1567:G:H2' | 24:BC:84:PRO:HG3 | 1.93 | 0.49 |
| 22:BA:1680:U:H2' | 22:BA:1681:G:O4' | 2.11 | 0.49 |
| 22:BA:1911:U:C2 | 22:BA:1918:A:C2 | 3.00 | 0.49 |
| 22:BA:2313:C:H5'' | 27:BF:87:LYS:HD3 | 1.93 | 0.49 |
| 22:BA:2423:U:O2' | 22:BA:2424:C:P | 2.70 | 0.49 |
| 22:BA:2603:G:H2' | 22:BA:2604:U:C6 | 2.46 | 0.49 |
| 22:BA:2691:C:O3' | 22:BA:2871:U:H4' | 2.11 | 0.49 |
| 22:BA:2721:A:H1' | 22:BA:2873:A:H2' | 1.93 | 0.49 |
| 22:BA:2869:G:H2' | 22:BA:2870:C:O4' | 2.12 | 0.49 |
| 23:BB:37:C:C5 | 23:BB:38:C:C4 | 3.00 | 0.49 |
| 24:BC:210:ALA:HB1 | 24:BC:215:VAL:HG23 | 1.94 | 0.49 |
| 27:BF:37:MET:CE | 27:BF:151:LEU:HB3 | 2.43 | 0.49 |
| 29:BH:99:ILE:HG22 | 29:BH:99:ILE:O | 2.12 | 0.49 |
| 31:BJ:21:THR:O | 31:BJ:23:LYS:N | 2.44 | 0.49 |
| 31:BJ:54:ILE:HD11 | 31:BJ:56:VAL:HG23 | 1.94 | 0.49 |
| 36:BO:110:ALA:O | 36:BO:113:ALA:HB3 | 2.12 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 42:BU:53:GLN:N | 42:BU:54:PRO:CD | 2.75 | 0.49 |
| 44:BW:28:GLU:CD | 44:BW:29:SER:H | 2.15 | 0.49 |
| 53:CA:371:A:C2' | 53:CA:372:C:H5' | 2.41 | 0.49 |
| 53:CA:461:A:P | 53:CA:462:G:OP2 | 2.70 | 0.49 |
| 53:CA:598:U:H4' | 8:CH:85:TYR:CD1 | 2.47 | 0.49 |
| 53:CA:734:G:H2' | 53:CA:735:C:H6 | 1.77 | 0.49 |
| 53:CA:828:U:H2' | 53:CA:829:G:O5' | 2.12 | 0.49 |
| 53:CA:996:A:O2' | 53:CA:997:U:O4' | 2.29 | 0.49 |
| 53:CA:1004:A:C4 | 53:CA:1026:G:N7 | 2.80 | 0.49 |
| 53:CA:1319:A:N6 | 53:CA:1323:G:C2 | 2.80 | 0.49 |
| 53:CA:1441:A:C2 | 53:CA:1442:G:H1' | 2.47 | 0.49 |
| 2:CB:131:LYS:O | 2:CB:131:LYS:HE3 | 2.11 | 0.49 |
| 4:CD:25:ARG:O | 4:CD:26:ALA:C | 2.50 | 0.49 |
| 54:CG:148:LYS:NZ | 54:CG:148:LYS:HB2 | 2.27 | 0.49 |
| 9:CI:15:ALA:O | 9:CI:66:VAL:HG23 | 2.12 | 0.49 |
| 57:DA:81:G:H2' | 57:DA:82:U:O4' | 2.12 | 0.49 |
| 57:DA:228:C:H5' | 57:DA:229:C:H5 | 1.77 | 0.49 |
| 57:DA:478:A:C6 | 57:DA:480:A:C6 | 3.00 | 0.49 |
| 57:DA:1328:A:H3' | 57:DA:1330:C:H41 | 1.77 | 0.49 |
| 57:DA:1353:A:O4' | 57:DA:1569:A:H2 | 1.95 | 0.49 |
| 57:DA:1412:U:H2' | 57:DA:1413:A:O4' | 2.11 | 0.49 |
| 57:DA:1774:C:O2 | 24:DC:10:PRO:HB2 | 2.12 | 0.49 |
| 57:DA:1931:U:O2' | 57:DA:1932:A:H5' | 2.12 | 0.49 |
| 57:DA:2142:A:C2' | 57:DA:2143:C:H4' | 2.41 | 0.49 |
| 57:DA:2232:C:H6 | 57:DA:2232:C:O5' | 1.94 | 0.49 |
| 57:DA:2316:G:H2' | 57:DA:2317:A:H8 | 1.77 | 0.49 |
| 57:DA:2773:C:H2' | 57:DA:2774:C:H6 | 1.76 | 0.49 |
| 25:DD:48:ILE:CG2 | 25:DD:84:LEU:HD23 | 2.42 | 0.49 |
| 29:DH:47:PHE:O | 29:DH:51:ARG:HG3 | 2.12 | 0.49 |
| 29:DH:61:VAL:HG13 | 29:DH:62:LEU:N | 2.26 | 0.49 |
| 29:DH:62:LEU:C | 29:DH:64:ALA:N | 2.65 | 0.49 |
| 32:DK:87:LEU:HD23 | 32:DK:87:LEU:H | 1.77 | 0.49 |
| 35:DN:103:ARG:HG3 | 35:DN:104:ALA:H | 1.77 | 0.49 |
| 38:DQ:6:GLY:C | 38:DQ:8:ILE:H | 2.14 | 0.49 |
| 38:DQ:29:ARG:HD2 | 48:D0:9:ARG:NH1 | 2.27 | 0.49 |
| 39:DR:90:ARG:O | 39:DR:91:GLN:HB3 | 2.12 | 0.49 |
| 44:DW:37:VAL:C | 44:DW:39:GLN:H | 2.15 | 0.49 |
| 1:AA:56:U:H2' | 1:AA:57:G:C8 | 2.47 | 0.49 |
| 1:AA:186:C:H4' | 20:AT:75:LYS:HG3 | 1.94 | 0.49 |
| 1:AA:1270:G:H8 | 1:AA:1270:G:OP2 | 1.94 | 0.49 |
| 8:AH:63:LYS:O | 8:AH:70:VAL:HG23 | 2.12 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:AL:23:LEU:HG | 12:AL:24:GLU:H | 1.76 | 0.49 |
| 13:AM:88:LEU:O | 13:AM:92:ARG:HG3 | 2.12 | 0.49 |
| 16:AP:78:VAL:HG22 | 16:AP:78:VAL:O | 2.11 | 0.49 |
| 18:AR:66:LEU:O | 18:AR:67:LEU:HD23 | 2.12 | 0.49 |
| 21:AU:34:ARG:HD3 | 21:AU:39:LYS:NZ | 2.27 | 0.49 |
| 22:BA:49:A:H61 | 22:BA:177:G:C2' | 2.24 | 0.49 |
| 22:BA:417:C:H2' | 22:BA:418:C:H6 | 1.77 | 0.49 |
| 22:BA:503:A:H4' | 22:BA:504:A:O5' | 2.12 | 0.49 |
| 22:BA:573:U:O3' | 22:BA:574:A:H3' | 2.11 | 0.49 |
| 22:BA:655:A:O2' | 22:BA:656:G:H8 | 1.92 | 0.49 |
| 22:BA:751:A:H8 | 22:BA:751:A:O5' | 1.95 | 0.49 |
| 22:BA:1223:G:P | 39:BR:68:ARG:HH12 | 2.34 | 0.49 |
| 22:BA:1244:A:O5' | 33:BL:7:SER:HB3 | 2.12 | 0.49 |
| 22:BA:1430:G:H2' | 22:BA:1431:A:C8 | 2.47 | 0.49 |
| 22:BA:1486:U:H2' | 22:BA:1487:U:H6 | 1.77 | 0.49 |
| 22:BA:1654:A:H2' | 22:BA:1655:A:H8 | 1.76 | 0.49 |
| 22:BA:1798:U:OP1 | 24:BC:257:ARG:HB2 | 2.12 | 0.49 |
| 22:BA:1847:A:N3 | 22:BA:1847:A:H2' | 2.26 | 0.49 |
| 22:BA:2322:A:N6 | 22:BA:2333:A:H62 | 2.10 | 0.49 |
| 22:BA:2365:G:O2' | 22:BA:2366:A:C8 | 2.58 | 0.49 |
| 22:BA:2512:C:O2' | 25:BD:159:LYS:HE3 | 2.12 | 0.49 |
| 22:BA:2765:A:H2' | 22:BA:2765:A:N3 | 2.27 | 0.49 |
| 24:BC:237:ARG:O | 24:BC:238:ASN:HB2 | 2.12 | 0.49 |
| 25:BD:114:LYS:HE3 | 25:BD:114:LYS:CA | 2.43 | 0.49 |
| 26:BE:1:MET:HG3 | 26:BE:14:VAL:HG23 | 1.94 | 0.49 |
| 27:BF:146:ASP:O | 27:BF:147:ARG:HB2 | 2.12 | 0.49 |
| 28:BG:33:THR:HA | 28:BG:34:ARG:HH11 | 1.76 | 0.49 |
| 30:BI:27:LEU:C | 30:BI:27:LEU:HD12 | 2.33 | 0.49 |
| 31:BJ:54:ILE:HD12 | 31:BJ:55:ILE:N | 2.28 | 0.49 |
| 31:BJ:130:HIS:HD2 | 31:BJ:132:HIS:N | 2.01 | 0.49 |
| 32:BK:4:GLU:O | 32:BK:5:GLN:HB2 | 2.12 | 0.49 |
| 32:BK:12:ASP:HB3 | 32:BK:85:VAL:HG13 | 1.93 | 0.49 |
| 41:BT:51:PHE:O | 41:BT:53:VAL:HG13 | 2.12 | 0.49 |
| 53:CA:54:C:H2' | 53:CA:352:C:N4 | 2.27 | 0.49 |
| 53:CA:82:G:C6 | 53:CA:89:U:C5 | 3.00 | 0.49 |
| 53:CA:131:A:C2 | 53:CA:132:C:N3 | 2.81 | 0.49 |
| 53:CA:147:G:H2' | 53:CA:148:G:C8 | 2.47 | 0.49 |
| 53:CA:373:A:C2 | 53:CA:374:A:C8 | 3.00 | 0.49 |
| 53:CA:429:U:H1' | 53:CA:430:A:C5' | 2.42 | 0.49 |
| 53:CA:495:A:N1 | 53:CA:496:A:N6 | 2.61 | 0.49 |
| 53:CA:937:A:C2 | 53:CA:1379:G:C6 | 3.00 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 53:CA:1240:U:O2' | 54:CG:37:THR:HB | 2.12 | 0.49 |
| 53:CA:1244:G:O2' | 53:CA:1245:C:O4' | 2.24 | 0.49 |
| 2:CB:27:LYS:N | 2:CB:28:PRO:CD | 2.74 | 0.49 |
| 2:CB:75:ALA:HB2 | 2:CB:209:VAL:HG21 | 1.94 | 0.49 |
| 5:CE:18:ASN:OD1 | 5:CE:18:ASN:N | 2.46 | 0.49 |
| 14:CN:60:ARG:NH2 | 14:CN:70:HIS:HB3 | 2.27 | 0.49 |
| 57:DA:2:G:C5 | 57:DA:3:U:C4 | 3.00 | 0.49 |
| 57:DA:228:C:H5' | 57:DA:229:C:C5 | 2.47 | 0.49 |
| 57:DA:590:A:C5 | 57:DA:591:U:C5 | 3.00 | 0.49 |
| 57:DA:1049:C:O2' | 57:DA:1050:A:C5' | 2.59 | 0.49 |
| 57:DA:1203:U:N3 | 57:DA:1204:A:N6 | 2.60 | 0.49 |
| 57:DA:1281:G:C2' | 57:DA:1282:U:H5' | 2.42 | 0.49 |
| 57:DA:1745:A:H2' | 57:DA:1746:A:H8 | 1.78 | 0.49 |
| 57:DA:1808:A:H5'' | 57:DA:1809:A:N7 | 2.27 | 0.49 |
| 57:DA:1965:C:H6 | 57:DA:1965:C:H5'' | 1.76 | 0.49 |
| 57:DA:2013:A:N6 | 57:DA:2014:A:C2 | 2.80 | 0.49 |
| 57:DA:2234:G:C5 | 57:DA:2235:G:C8 | 3.00 | 0.49 |
| 57:DA:2401:U:H3' | 57:DA:2402:U:C5' | 2.35 | 0.49 |
| 57:DA:2566:A:O2' | 57:DA:2567:G:OP2 | 2.28 | 0.49 |
| 57:DA:2622:U:O2' | 57:DA:2825:G:N7 | 2.43 | 0.49 |
| 57:DA:2880:C:H1' | 35:DN:93:GLY:N | 2.09 | 0.49 |
| 25:DD:106:LYS:HB3 | 25:DD:206:ALA:N | 2.23 | 0.49 |
| 59:DF:64:PRO:HA | 59:DF:88:VAL:CG2 | 2.41 | 0.49 |
| 28:DG:103:ASN:HD22 | 28:DG:111:PRO:HB2 | 1.77 | 0.49 |
| 31:DJ:45:THR:O | 31:DJ:45:THR:HG23 | 2.12 | 0.49 |
| 32:DK:107:LEU:C | 32:DK:109:SER:H | 2.16 | 0.49 |
| 35:DN:56:LYS:HE2 | 35:DN:87:PHE:O | 2.12 | 0.49 |
| 35:DN:82:GLU:C | 35:DN:85:PRO:HD2 | 2.33 | 0.49 |
| 37:DP:56:SER:O | 37:DP:57:ALA:HB2 | 2.11 | 0.49 |
| 1:AA:274:A:H4' | 1:AA:275:G:O5' | 2.11 | 0.49 |
| 1:AA:484:G:HO2' | 1:AA:485:U:P | 2.34 | 0.49 |
| 1:AA:626:G:H2' | 1:AA:627:G:H8 | 1.76 | 0.49 |
| 1:AA:897:C:H2' | 1:AA:897:C:O2 | 2.13 | 0.49 |
| 1:AA:1183:U:H3' | 1:AA:1184:G:H5'' | 1.95 | 0.49 |
| 1:AA:1326:U:H2' | 1:AA:1327:C:H6 | 1.77 | 0.49 |
| 1:AA:1504:G:H3' | 63:AA:1801:HOH:O | 2.11 | 0.49 |
| 2:AB:184:ALA:HB3 | 2:AB:195:VAL:HG21 | 1.94 | 0.49 |
| 7:AG:146:ALA:C | 7:AG:148:LYS:N | 2.65 | 0.49 |
| 13:AM:39:ALA:HB3 | 13:AM:42:VAL:HG13 | 1.95 | 0.49 |
| 22:BA:1313:U:O2 | 22:BA:1313:U:C2' | 2.60 | 0.49 |
| 22:BA:2832:U:HO2' | 22:BA:2833:U:P | 2.34 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 26:BE:149:ILE:O | 26:BE:188:MET:HA | 2.13 | 0.49 |
| 32:BK:11:ALA:O | 32:BK:99:ILE:HG13 | 2.13 | 0.49 |
| 35:BN:71:ARG:HH21 | 35:BN:71:ARG:HG2 | 1.74 | 0.49 |
| 37:BP:92:ARG:HH11 | 37:BP:92:ARG:HB2 | 1.78 | 0.49 |
| 39:BR:10:LYS:HD2 | 39:BR:10:LYS:N | 2.27 | 0.49 |
| 41:BT:31:VAL:HA | 41:BT:84:TYR:H | 1.77 | 0.49 |
| 53:CA:173:U:H5'' | 53:CA:174:A:OP2 | 2.13 | 0.49 |
| 53:CA:212:G:O2' | 53:CA:213:G:O5' | 2.30 | 0.49 |
| 53:CA:238:A:H2' | 53:CA:239:U:C4' | 2.43 | 0.49 |
| 53:CA:261:U:OP1 | 20:CT:70:LYS:HE2 | 2.13 | 0.49 |
| 53:CA:491:G:C2' | 53:CA:492:C:H5' | 2.43 | 0.49 |
| 53:CA:762:U:H6 | 53:CA:762:U:O5' | 1.95 | 0.49 |
| 53:CA:770:C:O2' | 53:CA:899:C:N3 | 2.42 | 0.49 |
| 53:CA:821:G:O2' | 53:CA:822:U:H5' | 2.12 | 0.49 |
| 53:CA:1097:C:H2' | 53:CA:1098:C:H6 | 1.78 | 0.49 |
| 53:CA:1159:U:O4' | 53:CA:1182:G:N2 | 2.44 | 0.49 |
| 4:CD:28:ASP:O | 4:CD:29:THR:O | 2.29 | 0.49 |
| 10:CJ:5:ARG:C | 10:CJ:6:ILE:HD12 | 2.33 | 0.49 |
| 11:CK:33:ILE:O | 11:CK:41:LEU:HB2 | 2.12 | 0.49 |
| 14:CN:13:VAL:HA | 14:CN:59:GLN:NE2 | 2.28 | 0.49 |
| 17:CQ:25:GLU:CG | 17:CQ:40:THR:HG22 | 2.42 | 0.49 |
| 19:CS:54:ARG:HG2 | 19:CS:55:GLN:N | 2.27 | 0.49 |
| 57:DA:37:C:H2' | 57:DA:38:A:O4' | 2.13 | 0.49 |
| 57:DA:420:C:H2' | 57:DA:421:C:H6 | 1.77 | 0.49 |
| 57:DA:604:G:C6 | 57:DA:625:G:N1 | 2.81 | 0.49 |
| 57:DA:651:G:C6 | 57:DA:652:U:C4 | 3.01 | 0.49 |
| 57:DA:785:G:O2' | 57:DA:1779:U:C5' | 2.60 | 0.49 |
| 57:DA:1070:A:H61 | 30:DI:8:VAL:HB | 1.77 | 0.49 |
| 57:DA:1084:A:H2' | 57:DA:1085:A:H5' | 1.95 | 0.49 |
| 57:DA:1364:G:H1' | 57:DA:1368:G:N2 | 2.28 | 0.49 |
| 57:DA:1373:A:H4' | 57:DA:2212:A:H1' | 1.94 | 0.49 |
| 57:DA:1716:U:HO2' | 57:DA:1717:A:H8 | 0.65 | 0.49 |
| 57:DA:2056:G:N3 | 57:DA:2056:G:H2' | 2.28 | 0.49 |
| 57:DA:2223:G:H2' | 57:DA:2224:G:H5' | 1.93 | 0.49 |
| 57:DA:2669:G:H2' | 57:DA:2670:A:H8 | 1.76 | 0.49 |
| 57:DA:2882:A:H5'' | 35:DN:96:ARG:HD3 | 1.94 | 0.49 |
| 58:DB:11:C:H5' | 44:DW:71:LYS:HD3 | 1.95 | 0.49 |
| 58:DB:42:C:H2' | 58:DB:43:C:C5 | 2.46 | 0.49 |
| 58:DB:44:G:OP1 | 59:DF:91:ARG:NH1 | 2.45 | 0.49 |
| 25:DD:179:ARG:NH1 | 37:DP:7:LEU:HD11 | 2.27 | 0.49 |
| 26:DE:149:ILE:O | 26:DE:149:ILE:HG12 | 2.10 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 28:DG:60:GLY:O | 28:DG:62:ALA:N | 2.42 | 0.49 |
| 32:DK:2:ILE:O | 32:DK:3:GLN:HG2 | 2.12 | 0.49 |
| 33:DL:7:SER:HB2 | 33:DL:8:PRO:HD2 | 1.93 | 0.49 |
| 33:DL:23:ILE:HG13 | 39:DR:82:HIS:CE1 | 2.48 | 0.49 |
| 35:DN:9:GLN:C | 35:DN:10:LEU:O | 2.50 | 0.49 |
| 38:DQ:39:ILE:O | 38:DQ:42:GLY:N | 2.45 | 0.49 |
| 39:DR:2:TYR:CE1 | 39:DR:13:ARG:HD2 | 2.47 | 0.49 |
| 39:DR:3:ALA:HB2 | 39:DR:101:ILE:HD13 | 1.93 | 0.49 |
| 41:DT:76:ARG:HG2 | 41:DT:77:ARG:N | 2.27 | 0.49 |
| 1:AA:57:G:N1 | 1:AA:356:A:C2 | 2.81 | 0.49 |
| 1:AA:198:G:N2 | 1:AA:220:G:H1' | 2.27 | 0.49 |
| 1:AA:464:U:H2' | 1:AA:466:A:OP2 | 2.13 | 0.49 |
| 1:AA:520:A:C2 | 1:AA:536:C:O2 | 2.65 | 0.49 |
| 1:AA:588:G:C2 | 1:AA:589:U:C2 | 3.00 | 0.49 |
| 1:AA:596:A:C6 | 1:AA:645:G:C2 | 3.00 | 0.49 |
| 1:AA:729:A:H2' | 1:AA:730:G:O4' | 2.13 | 0.49 |
| 1:AA:1190:G:OP2 | 3:AC:4:VAL:HB | 2.13 | 0.49 |
| 3:AC:22:PHE:CD2 | 3:AC:22:PHE:C | 2.85 | 0.49 |
| 10:AJ:80:THR:HB | 10:AJ:83:THR:HG22 | 1.93 | 0.49 |
| 11:AK:22:ILE:HG21 | 11:AK:95:THR:HG21 | 1.94 | 0.49 |
| 15:AO:20:ASP:OD1 | 15:AO:23:SER:HB2 | 2.13 | 0.49 |
| 22:BA:93:G:O2' | 22:BA:94:A:H5' | 2.12 | 0.49 |
| 22:BA:221:A:C8 | 22:BA:266:G:O6 | 2.66 | 0.49 |
| 22:BA:300:A:N1 | 22:BA:333:G:O2' | 2.42 | 0.49 |
| 22:BA:320:A:H4' | 22:BA:322:A:N7 | 2.28 | 0.49 |
| 22:BA:571:U:C4 | 22:BA:575:A:C5 | 3.01 | 0.49 |
| 22:BA:735:A:H3' | 22:BA:736:C:C6 | 2.48 | 0.49 |
| 22:BA:936:A:H2' | 22:BA:937:C:H6 | 1.78 | 0.49 |
| 22:BA:966:G:C6 | 22:BA:967:U:C4 | 3.00 | 0.49 |
| 22:BA:988:A:H2' | 22:BA:989:G:O5' | 2.12 | 0.49 |
| 22:BA:1019:U:H2' | 22:BA:1020:A:C8 | 2.48 | 0.49 |
| 22:BA:1022:G:O6 | 31:BJ:68:LYS:HE2 | 2.13 | 0.49 |
| 22:BA:1256:G:O2' | 26:BE:77:ILE:HD11 | 2.12 | 0.49 |
| 22:BA:1409:U:O2' | 22:BA:1410:G:H5' | 2.13 | 0.49 |
| 22:BA:2611:C:O5' | 22:BA:2611:C:H6 | 1.95 | 0.49 |
| 22:BA:2853:C:H2' | 22:BA:2854:G:H8 | 1.77 | 0.49 |
| 23:BB:45:A:C4 | 23:BB:46:A:C8 | 3.01 | 0.49 |
| 26:BE:145:ASP:OD1 | 26:BE:183:PHE:HD2 | 1.96 | 0.49 |
| 31:BJ:40:HIS:NE2 | 31:BJ:41:LYS:HE3 | 2.27 | 0.49 |
| 35:BN:23:ASN:ND2 | 35:BN:23:ASN:N | 2.57 | 0.49 |
| 35:BN:73:ASN:ND2 | 35:BN:76:VAL:HG11 | 2.27 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 37:BP:111:GLU:CD | 37:BP:111:GLU:H | 2.16 | 0.49 |
| 38:BQ:65:ASN:O | 38:BQ:69:ARG:HB3 | 2.12 | 0.49 |
| 39:BR:27:ILE:HG13 | 39:BR:33:VAL:HG12 | 1.94 | 0.49 |
| 53:CA:59:A:H2' | 53:CA:59:A:N3 | 2.27 | 0.49 |
| 53:CA:119:A:H5' | 53:CA:120:A:H5' | 1.93 | 0.49 |
| 53:CA:142:G:C6 | 53:CA:143:A:C8 | 3.00 | 0.49 |
| 53:CA:204:G:H2' | 53:CA:205:A:H8 | 1.77 | 0.49 |
| 53:CA:209:U:O2 | 53:CA:209:U:H2' | 2.11 | 0.49 |
| 53:CA:210:C:O2 | 53:CA:210:C:H2' | 2.13 | 0.49 |
| 53:CA:1067:A:O3' | 53:CA:1094:G:H5' | 2.11 | 0.49 |
| 53:CA:1365:G:C2 | 53:CA:1366:C:C2 | 3.01 | 0.49 |
| 3:CC:59:PRO:O | 3:CC:61:LYS:N | 2.45 | 0.49 |
| 55:CM:87:GLY:O | 55:CM:91:ARG:HD2 | 2.12 | 0.49 |
| 20:CT:79:THR:O | 20:CT:82:ILE:HG13 | 2.13 | 0.49 |
| 57:DA:71:A:OP2 | 57:DA:71:A:H3' | 2.12 | 0.49 |
| 57:DA:300:A:OP2 | 42:DU:96:LYS:HD3 | 2.12 | 0.49 |
| 57:DA:571:U:O3' | 57:DA:573:U:C5 | 2.65 | 0.49 |
| 57:DA:605:G:H1' | 57:DA:657:U:O2' | 2.13 | 0.49 |
| 57:DA:1015:U:H2' | 57:DA:1016:G:O4' | 2.13 | 0.49 |
| 57:DA:1320:C:O2' | 57:DA:1321:A:H5'' | 2.13 | 0.49 |
| 57:DA:1430:G:O2' | 57:DA:1431:A:H5' | 2.12 | 0.49 |
| 57:DA:1439:A:C8 | 57:DA:1440:U:O4' | 2.65 | 0.49 |
| 57:DA:1611:C:O2' | 57:DA:1612:C:C6 | 2.60 | 0.49 |
| 57:DA:1819:A:O4' | 57:DA:1821:A:C5 | 2.66 | 0.49 |
| 57:DA:1936:A:H2 | 57:DA:1943:U:C4 | 2.30 | 0.49 |
| 57:DA:2058:A:N6 | 57:DA:2059:A:N6 | 2.60 | 0.49 |
| 57:DA:2152:G:N3 | 57:DA:2152:G:H2' | 2.27 | 0.49 |
| 57:DA:2571:U:O4 | 57:DA:2574:G:C8 | 2.65 | 0.49 |
| 57:DA:2734:A:N7 | 57:DA:2735:G:C8 | 2.81 | 0.49 |
| 58:DB:88:C:O2' | 58:DB:89:U:OP2 | 2.23 | 0.49 |
| 24:DC:29:PHE:C | 24:DC:31:PRO:HD2 | 2.32 | 0.49 |
| 24:DC:166:ARG:O | 24:DC:166:ARG:HG3 | 2.11 | 0.49 |
| 25:DD:181:ASP:C | 25:DD:183:GLU:H | 2.16 | 0.49 |
| 59:DF:43:ILE:HD13 | 59:DF:82:TYR:CE2 | 2.46 | 0.49 |
| 29:DH:48:GLU:HG2 | 29:DH:51:ARG:NH2 | 2.13 | 0.49 |
| 32:DK:113:MET:O | 32:DK:116:ILE:HG12 | 2.12 | 0.49 |
| 34:DM:29:GLY:CA | 34:DM:64:TRP:HZ3 | 2.26 | 0.49 |
| 36:DO:7:ARG:HH22 | 36:DO:29:HIS:HD2 | 1.61 | 0.49 |
| 39:DR:2:TYR:HE1 | 39:DR:13:ARG:HD2 | 1.77 | 0.49 |
| 43:DV:30:ILE:HG13 | 43:DV:40:ILE:HD11 | 1.93 | 0.49 |
| 43:DV:44:HIS:CE1 | 43:DV:85:LYS:HD3 | 2.47 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:518:C:H4' | 1:AA:519:C:H5'' | 1.94 | 0.49 |
| 1:AA:642:A:C5 | 8:AH:106:SER:HA | 2.47 | 0.49 |
| 1:AA:1322:C:O2' | 1:AA:1323:G:P | 2.70 | 0.49 |
| 1:AA:1370:G:C5' | 9:AI:110:VAL:HG21 | 2.43 | 0.49 |
| 1:AA:1453:G:H2' | 1:AA:1453:G:N3 | 2.27 | 0.49 |
| 4:AD:2:ARG:NH2 | 4:AD:114:ARG:HD3 | 2.28 | 0.49 |
| 4:AD:3:TYR:O | 4:AD:4:LEU:HB2 | 2.11 | 0.49 |
| 4:AD:28:ASP:C | 4:AD:29:THR:O | 2.49 | 0.49 |
| 5:AE:152:VAL:O | 5:AE:156:ARG:HB2 | 2.13 | 0.49 |
| 6:AF:16:GLU:CB | 4:CD:191:SER:HB2 | 2.40 | 0.49 |
| 7:AG:30:MET:HG2 | 7:AG:31:VAL:N | 2.28 | 0.49 |
| 7:AG:72:VAL:HG12 | 7:AG:89:GLU:HA | 1.94 | 0.49 |
| 7:AG:108:ARG:NH2 | 7:AG:118:ARG:HH22 | 2.11 | 0.49 |
| 8:AH:91:LEU:HD23 | 8:AH:92:PRO:HD2 | 1.93 | 0.49 |
| 11:AK:13:LYS:O | 11:AK:14:GLN:CB | 2.61 | 0.49 |
| 12:AL:33:CYS:HB3 | 12:AL:54:VAL:HG22 | 1.94 | 0.49 |
| 14:AN:22:LYS:CG | 14:AN:23:ARG:N | 2.74 | 0.49 |
| 18:AR:22:TYR:HA | 18:AR:57:ALA:HB1 | 1.95 | 0.49 |
| 22:BA:276:U:O2' | 22:BA:277:G:O5' | 2.30 | 0.49 |
| 22:BA:301:G:O2' | 22:BA:302:C:O5' | 2.31 | 0.49 |
| 22:BA:1000:A:C2 | 22:BA:1155:A:C4 | 3.01 | 0.49 |
| 22:BA:1061:U:H1' | 22:BA:1070:A:O4' | 2.12 | 0.49 |
| 22:BA:1534:U:H5' | 22:BA:1535:A:P | 2.52 | 0.49 |
| 22:BA:1560:G:H2' | 22:BA:1561:C:C6 | 2.48 | 0.49 |
| 22:BA:1734:G:C2' | 22:BA:1735:A:H8 | 2.25 | 0.49 |
| 22:BA:1744:A:H2' | 22:BA:1744:A:N3 | 2.27 | 0.49 |
| 22:BA:2188:U:O2' | 22:BA:2189:U:H5' | 2.11 | 0.49 |
| 22:BA:2562:U:C2' | 22:BA:2563:U:H5' | 2.42 | 0.49 |
| 25:BD:94:GLN:O | 25:BD:95:SER:HB2 | 2.12 | 0.49 |
| 25:BD:176:ASP:OD2 | 25:BD:176:ASP:N | 2.42 | 0.49 |
| 28:BG:85:LYS:HG2 | 28:BG:131:VAL:HB | 1.95 | 0.49 |
| 30:BI:90:GLY:O | 30:BI:92:PRO:HD3 | 2.12 | 0.49 |
| 32:BK:77:ILE:HD13 | 32:BK:105:ARG:HH12 | 1.76 | 0.49 |
| 34:BM:49:ALA:O | 34:BM:50:ARG:C | 2.50 | 0.49 |
| 44:BW:72:GLY:N | 44:BW:73:PRO:CD | 2.75 | 0.49 |
| 49:B1:50:GLU:O | 49:B1:51:ALA:HB2 | 2.13 | 0.49 |
| 53:CA:38:G:C2 | 53:CA:397:A:C2 | 3.00 | 0.49 |
| 53:CA:487:A:H3' | 53:CA:488:C:C6 | 2.47 | 0.49 |
| 53:CA:559:A:H1' | 53:CA:561:U:H2' | 1.94 | 0.49 |
| 53:CA:680:C:C2 | 53:CA:711:G:N2 | 2.80 | 0.49 |
| 53:CA:765:G:O6 | 53:CA:811:C:C4 | 2.65 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:CA:900:A:H2' | 53:CA:901:A:C8 | 2.48 | 0.49 |
| 53:CA:1513:A:O2' | 53:CA:1514:G:H5' | 2.12 | 0.49 |
| 2:CB:90:PHE:HE1 | 2:CB:92:ASN:HD22 | 1.60 | 0.49 |
| 2:CB:164:ASP:CG | 2:CB:203:ASP:HB2 | 2.32 | 0.49 |
| 4:CD:54:LEU:O | 4:CD:58:GLN:HB2 | 2.12 | 0.49 |
| 17:CQ:29:LYS:HD2 | 17:CQ:34:GLY:HA2 | 1.95 | 0.49 |
| 57:DA:304:U:H2' | 57:DA:305:C:C5 | 2.48 | 0.49 |
| 57:DA:395:U:O2' | 57:DA:396:G:O5' | 2.30 | 0.49 |
| 57:DA:412:A:N6 | 57:DA:2412:A:O4' | 2.46 | 0.49 |
| 57:DA:538:A:N6 | 57:DA:555:G:O2' | 2.45 | 0.49 |
| 57:DA:771:G:O2' | 57:DA:772:C:H5' | 2.12 | 0.49 |
| 57:DA:799:G:O6 | 57:DA:800:A:C6 | 2.66 | 0.49 |
| 57:DA:1277:G:N3 | 35:DN:23:ASN:HB3 | 2.28 | 0.49 |
| 57:DA:1436:G:H2' | 57:DA:1437:C:O4' | 2.12 | 0.49 |
| 57:DA:1649:G:H2' | 57:DA:1650:A:C8 | 2.47 | 0.49 |
| 57:DA:1738:G:O2' | 57:DA:1739:A:C8 | 2.59 | 0.49 |
| 57:DA:2011:U:C2' | 57:DA:2012:G:H5' | 2.43 | 0.49 |
| 57:DA:2052:A:N7 | 25:DD:146:ILE:HD11 | 2.26 | 0.49 |
| 57:DA:2092:U:O2 | 57:DA:2092:U:O4' | 2.30 | 0.49 |
| 57:DA:2148:G:N2 | 57:DA:2149:U:O4 | 2.41 | 0.49 |
| 57:DA:2250:G:O5' | 57:DA:2250:G:C8 | 2.65 | 0.49 |
| 57:DA:2461:A:H1' | 57:DA:2492:U:O2 | 2.12 | 0.49 |
| 57:DA:2899:A:O2' | 57:DA:2900:A:H5' | 2.11 | 0.49 |
| 29:DH:96:THR:HA | 29:DH:113:SER:OG | 2.12 | 0.49 |
| 32:DK:108:ARG:HA | 32:DK:116:ILE:HG21 | 1.95 | 0.49 |
| 35:DN:90:ARG:HH21 | 35:DN:116:VAL:HG11 | 1.75 | 0.49 |
| 38:DQ:25:GLY:C | 38:DQ:27:ARG:H | 2.15 | 0.49 |
| 45:DX:1:SER:O | 45:DX:3:VAL:N | 2.45 | 0.49 |
| 46:DY:18:LEU:O | 46:DY:18:LEU:HD13 | 2.12 | 0.49 |
| 1:AA:150:U:H2' | 1:AA:151:A:H8 | 1.78 | 0.49 |
| 1:AA:198:G:C6 | 1:AA:220:G:C2 | 3.01 | 0.49 |
| 1:AA:577:G:C4' | 1:AA:816:A:H2' | 2.42 | 0.49 |
| 1:AA:594:U:H2' | 1:AA:595:A:O4' | 2.12 | 0.49 |
| 1:AA:657:U:H2' | 1:AA:658:C:H6 | 1.78 | 0.49 |
| 1:AA:999:C:H2' | 1:AA:1000:A:H8 | 1.77 | 0.49 |
| 1:AA:1006:G:H2' | 1:AA:1007:U:H6 | 1.76 | 0.49 |
| 1:AA:1131:G:H2' | 1:AA:1132:C:O5' | 2.12 | 0.49 |
| 1:AA:1277:C:H2' | 1:AA:1278:G:H5'' | 1.95 | 0.49 |
| 4:AD:7:LYS:O | 4:AD:10:LEU:HB2 | 2.12 | 0.49 |
| 4:AD:25:ARG:O | 4:AD:26:ALA:HB2 | 2.13 | 0.49 |
| 9:AI:62:LEU:N | 9:AI:62:LEU:HD23 | 2.28 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:AM:68:LEU:HG | 13:AM:72:ILE:HD11 | 1.95 | 0.49 |
| 17:AQ:66:LEU:O | 17:AQ:67:SER:HB3 | 2.13 | 0.49 |
| 20:AT:43:LYS:NZ | 20:AT:86:ALA:HA | 2.27 | 0.49 |
| 22:BA:350:G:H2' | 22:BA:351:C:C6 | 2.47 | 0.49 |
| 22:BA:727:A:OP1 | 22:BA:1431:A:O2' | 2.28 | 0.49 |
| 22:BA:842:U:O4 | 63:BA:3587:HOH:O | 2.19 | 0.49 |
| 22:BA:1901:A:H2' | 22:BA:1902:C:C6 | 2.48 | 0.49 |
| 22:BA:2649:C:O2' | 22:BA:2650:U:H5' | 2.12 | 0.49 |
| 25:BD:66:GLY:O | 25:BD:69:ALA:HB3 | 2.12 | 0.49 |
| 27:BF:99:PHE:O | 27:BF:102:LEU:HB3 | 2.11 | 0.49 |
| 30:BI:32:VAL:HG22 | 30:BI:66:PHE:CG | 2.47 | 0.49 |
| 31:BJ:44:TYR:HA | 38:BQ:59:LEU:HD21 | 1.94 | 0.49 |
| 31:BJ:49:ASP:C | 31:BJ:49:ASP:OD2 | 2.50 | 0.49 |
| 35:BN:24:MET:HE3 | 35:BN:44:LEU:HB2 | 1.92 | 0.49 |
| 38:BQ:43:GLN:NE2 | 39:BR:77:PHE:CD1 | 2.80 | 0.49 |
| 44:BW:40:ARG:HH11 | 44:BW:45:HIS:CE1 | 2.30 | 0.49 |
| 53:CA:382:A:C8 | 53:CA:383:A:C5 | 3.00 | 0.49 |
| 53:CA:754:C:O2 | 53:CA:754:C:C2' | 2.61 | 0.49 |
| 2:CB:19:THR:HG22 | 2:CB:37:VAL:CG2 | 2.40 | 0.49 |
| 2:CB:95:TRP:CZ2 | 2:CB:100:LEU:HD13 | 2.47 | 0.49 |
| 4:CD:2:ARG:HE | 4:CD:114:ARG:CD | 2.25 | 0.49 |
| 9:CI:14:SER:HA | 9:CI:68:GLY:O | 2.13 | 0.49 |
| 57:DA:116:C:H5'' | 57:DA:128:C:H41 | 1.78 | 0.49 |
| 57:DA:605:G:H2' | 57:DA:606:U:C6 | 2.48 | 0.49 |
| 57:DA:676:A:H2 | 57:DA:2069:G:N3 | 2.11 | 0.49 |
| 57:DA:1387:A:C4 | 57:DA:1388:G:C8 | 3.01 | 0.49 |
| 57:DA:1521:G:C6 | 57:DA:1522:A:C6 | 3.00 | 0.49 |
| 57:DA:1552:A:C2' | 57:DA:1553:A:H5' | 2.41 | 0.49 |
| 57:DA:1587:G:N2 | 57:DA:1588:G:H1' | 2.28 | 0.49 |
| 57:DA:1802:A:O2' | 57:DA:1803:A:H5' | 2.12 | 0.49 |
| 57:DA:1845:G:C6 | 57:DA:1846:G:C5 | 3.01 | 0.49 |
| 57:DA:2147:A:H5'' | 57:DA:2147:A:N3 | 2.27 | 0.49 |
| 57:DA:2209:G:C6 | 57:DA:2216:G:C6 | 3.01 | 0.49 |
| 57:DA:2332:C:H4' | 44:DW:40:ARG:NH1 | 2.28 | 0.49 |
| 57:DA:2407:A:C2 | 57:DA:2408:U:N3 | 2.81 | 0.49 |
| 57:DA:2599:G:OP2 | 24:DC:234:GLY:HA2 | 2.13 | 0.49 |
| 57:DA:2625:G:H5' | 57:DA:2626:C:OP2 | 2.13 | 0.49 |
| 57:DA:2657:A:O3' | 28:DG:159:LYS:NZ | 2.45 | 0.49 |
| 58:DB:55:U:H4' | 59:DF:24:VAL:HG23 | 1.94 | 0.49 |
| 28:DG:22:VAL:HG12 | 28:DG:23:ILE:H | 1.78 | 0.49 |
| 29:DH:84:ALA:HB3 | 29:DH:148:ALA:CB | 2.43 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 31:DJ:69:ARG:CZ | 31:DJ:89:PHE:HE1 | 2.25 | 0.49 |
| 32:DK:76:VAL:HB | 37:DP:72:VAL:CG2 | 2.42 | 0.49 |
| 34:DM:26:VAL:HA | 34:DM:66:ARG:HH22 | 1.77 | 0.49 |
| 34:DM:40:ARG:HB2 | 34:DM:93:VAL:CG2 | 2.43 | 0.49 |
| 35:DN:31:HIS:O | 35:DN:33:ILE:N | 2.39 | 0.49 |
| 35:DN:42:LYS:HA | 35:DN:45:ARG:HD3 | 1.92 | 0.49 |
| 35:DN:93:GLY:O | 35:DN:116:VAL:HG21 | 2.13 | 0.49 |
| 37:DP:28:LYS:HZ2 | 37:DP:82:SER:HB2 | 1.76 | 0.49 |
| 37:DP:88:ARG:HH11 | 37:DP:112:ARG:CZ | 2.25 | 0.49 |
| 42:DU:94:PHE:O | 42:DU:95:PHE:C | 2.50 | 0.49 |
| 47:DZ:10:ARG:HD2 | 47:DZ:52:PHE:O | 2.13 | 0.49 |
| 50:D2:15:SER:O | 50:D2:16:HIS:ND1 | 2.45 | 0.49 |
| 1:AA:143:A:N3 | 1:AA:143:A:H2' | 2.26 | 0.49 |
| 1:AA:148:G:N3 | 1:AA:1446:A:H2 | 2.11 | 0.49 |
| 1:AA:433:G:C2' | 1:AA:434:U:H5' | 2.43 | 0.49 |
| 1:AA:1340:A:H2' | 1:AA:1341:U:O4' | 2.13 | 0.49 |
| 2:AB:138:ARG:HB2 | 2:AB:138:ARG:NH1 | 2.27 | 0.49 |
| 2:AB:222:GLU:OE1 | 2:AB:225:SER:HA | 2.12 | 0.49 |
| 3:AC:151:GLU:HG2 | 3:AC:151:GLU:O | 2.13 | 0.49 |
| 7:AG:29:LEU:HD23 | 7:AG:29:LEU:C | 2.33 | 0.49 |
| 8:AH:8:ASP:O | 8:AH:11:THR:HG22 | 2.11 | 0.49 |
| 8:AH:44:PHE:HE2 | 8:AH:100:ILE:HG12 | 1.77 | 0.49 |
| 8:AH:75:GLN:O | 8:AH:126:CYS:HB2 | 2.12 | 0.49 |
| 8:AH:104:SER:HB2 | 8:AH:125:ILE:HD11 | 1.95 | 0.49 |
| 11:AK:34:THR:HG1 | 11:AK:39:ASN:H | 1.61 | 0.49 |
| 12:AL:4:ASN:ND2 | 12:AL:8:ARG:HH12 | 2.11 | 0.49 |
| 22:BA:161:A:H3' | 22:BA:162:U:H5'' | 1.94 | 0.49 |
| 22:BA:244:A:C2 | 22:BA:255:A:C4 | 3.01 | 0.49 |
| 22:BA:646:U:H5' | 22:BA:647:G:H5'' | 1.95 | 0.49 |
| 22:BA:747:U:C5 | 22:BA:2613:U:C5 | 3.00 | 0.49 |
| 22:BA:1494:A:C2 | 22:BA:1495:A:C4 | 3.01 | 0.49 |
| 22:BA:1541:C:C2' | 22:BA:1542:U:H5' | 2.43 | 0.49 |
| 22:BA:1562:U:H2' | 22:BA:1563:U:O4' | 2.13 | 0.49 |
| 22:BA:2135:A:O2' | 22:BA:2136:G:C8 | 2.57 | 0.49 |
| 22:BA:2557:G:H2' | 22:BA:2558:C:C6 | 2.47 | 0.49 |
| 22:BA:2825:G:H5'' | 22:BA:2826:A:OP2 | 2.12 | 0.49 |
| 28:BG:118:ALA:O | 28:BG:120:ILE:N | 2.45 | 0.49 |
| 35:BN:36:THR:HG23 | 35:BN:37:THR:O | 2.12 | 0.49 |
| 35:BN:37:THR:HG22 | 35:BN:110:MET:HE1 | 1.94 | 0.49 |
| 38:BQ:49:ARG:HH11 | 38:BQ:49:ARG:HG3 | 1.78 | 0.49 |
| 41:BT:27:SER:O | 41:BT:28:ASN:OD1 | 2.31 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 44:BW:39:GLN:HG3 | 44:BW:42:THR:HB | 1.94 | 0.49 |
| 45:BX:38:TRP:HB2 | 45:BX:45:PHE:HE2 | 1.76 | 0.49 |
| 53:CA:163:C:H2' | 53:CA:164:G:O5' | 2.13 | 0.49 |
| 53:CA:247:G:C6 | 53:CA:278:G:C2 | 3.01 | 0.49 |
| 53:CA:423:G:H2' | 53:CA:424:G:O4' | 2.13 | 0.49 |
| 53:CA:926:G:C6 | 53:CA:1505:G:C5 | 3.01 | 0.49 |
| 53:CA:975:A:O2' | 53:CA:976:G:OP2 | 2.30 | 0.49 |
| 53:CA:1073:U:C4 | 53:CA:1074:G:N7 | 2.81 | 0.49 |
| 53:CA:1108:G:H5'' | 3:CC:175:HIS:CE1 | 2.47 | 0.49 |
| 53:CA:1117:A:C6 | 53:CA:1184:G:O6 | 2.65 | 0.49 |
| 53:CA:1190:G:OP1 | 3:CC:3:LYS:HA | 2.13 | 0.49 |
| 53:CA:1239:A:N6 | 53:CA:1299:A:N6 | 2.60 | 0.49 |
| 53:CA:1422:G:C5' | 32:DK:48:PRO:HB3 | 2.42 | 0.49 |
| 2:CB:80:LYS:O | 2:CB:81:ASP:C | 2.51 | 0.49 |
| 4:CD:60:VAL:CG2 | 4:CD:194:ILE:HG21 | 2.42 | 0.49 |
| 4:CD:97:LEU:HB2 | 4:CD:134:TYR:HB3 | 1.95 | 0.49 |
| 5:CE:113:VAL:CG2 | 5:CE:136:VAL:HG23 | 2.43 | 0.49 |
| 10:CJ:37:ARG:CG | 10:CJ:75:ASP:HB3 | 2.42 | 0.49 |
| 12:CL:42:LYS:HD3 | 12:CL:43:LYS:NZ | 2.27 | 0.49 |
| 57:DA:91:A:O2' | 57:DA:92:U:C6 | 2.63 | 0.49 |
| 57:DA:274:C:H2' | 57:DA:275:C:O4' | 2.13 | 0.49 |
| 57:DA:301:G:O3' | 42:DU:81:ARG:NH1 | 2.45 | 0.49 |
| 57:DA:478:A:C6 | 57:DA:480:A:C5 | 3.01 | 0.49 |
| 57:DA:545:U:C2 | 57:DA:547:A:H5'' | 2.47 | 0.49 |
| 57:DA:589:U:C2 | 57:DA:590:A:N7 | 2.81 | 0.49 |
| 57:DA:598:U:O5' | 57:DA:598:U:H6 | 1.96 | 0.49 |
| 57:DA:627:A:C2 | 57:DA:637:A:C4 | 3.00 | 0.49 |
| 57:DA:672:C:O2' | 57:DA:673:C:H5' | 2.13 | 0.49 |
| 57:DA:740:C:C6 | 57:DA:1981:A:C2 | 3.01 | 0.49 |
| 57:DA:800:A:N1 | 57:DA:802:A:C8 | 2.80 | 0.49 |
| 57:DA:830:G:H8 | 57:DA:830:G:OP2 | 1.96 | 0.49 |
| 57:DA:1241:A:N3 | 57:DA:1241:A:H5' | 2.27 | 0.49 |
| 57:DA:1273:U:H4' | 57:DA:1275:A:P | 2.53 | 0.49 |
| 57:DA:1467:U:H2' | 57:DA:1468:U:H5' | 1.95 | 0.49 |
| 57:DA:1507:C:H3' | 57:DA:1508:A:O4' | 2.11 | 0.49 |
| 57:DA:1628:G:O2' | 57:DA:1629:U:H5' | 2.13 | 0.49 |
| 57:DA:1820:U:OP1 | 24:DC:176:ARG:HB3 | 2.13 | 0.49 |
| 57:DA:1885:A:C6 | 57:DA:1886:U:C2 | 3.00 | 0.49 |
| 57:DA:2024:G:N2 | 57:DA:2040:G:H1' | 2.27 | 0.49 |
| 57:DA:2096:C:O2' | 57:DA:2097:A:H5' | 2.12 | 0.49 |
| 57:DA:2197:U:C6 | 57:DA:2224:G:C6 | 3.01 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 58:DB:62:C:H2' | 58:DB:63:C:O4' | 2.13 | 0.49 |
| 25:DD:146:ILE:HG13 | 25:DD:155:VAL:HG22 | 1.94 | 0.49 |
| 32:DK:108:ARG:CA | 32:DK:116:ILE:HD13 | 2.43 | 0.49 |
| 33:DL:105:ILE:HG22 | 33:DL:106:GLU:N | 2.27 | 0.49 |
| 37:DP:22:GLY:HA3 | 37:DP:91:VAL:HG21 | 1.94 | 0.49 |
| 38:DQ:79:ILE:HD13 | 38:DQ:79:ILE:C | 2.32 | 0.49 |
| 1:AA:532:A:N7 | 3:AC:192:TYR:HB3 | 2.28 | 0.49 |
| 1:AA:663:A:N1 | 1:AA:743:A:C2 | 2.81 | 0.49 |
| 1:AA:934:C:H4' | 1:AA:935:A:OP1 | 2.11 | 0.49 |
| 1:AA:977:A:H3' | 1:AA:1362:A:H62 | 1.77 | 0.49 |
| 1:AA:1006:G:H2' | 1:AA:1007:U:O4' | 2.13 | 0.49 |
| 1:AA:1108:G:H5'' | 3:AC:175:HIS:CE1 | 2.48 | 0.49 |
| 1:AA:1273:C:H2' | 1:AA:1274:A:O4' | 2.12 | 0.49 |
| 1:AA:1348:U:H4' | 9:AI:121:ARG:CG | 2.42 | 0.49 |
| 10:AJ:11:LYS:HB3 | 10:AJ:71:LEU:CD1 | 2.42 | 0.49 |
| 12:AL:49:ARG:HH11 | 12:AL:49:ARG:CG | 1.95 | 0.49 |
| 22:BA:534:U:H2' | 22:BA:535:G:C8 | 2.48 | 0.49 |
| 22:BA:697:G:H2' | 22:BA:698:C:C6 | 2.48 | 0.49 |
| 22:BA:739:A:H1' | 22:BA:740:C:H5 | 1.78 | 0.49 |
| 22:BA:2286:G:O6 | 49:B1:22:THR:HG21 | 2.13 | 0.49 |
| 31:BJ:73:VAL:CG2 | 31:BJ:74:TYR:N | 2.75 | 0.49 |
| 40:BS:2:GLU:O | 40:BS:3:THR:O | 2.30 | 0.49 |
| 40:BS:43:ALA:O | 40:BS:46:LEU:HB2 | 2.13 | 0.49 |
| 41:BT:73:ARG:NH2 | 41:BT:74:ILE:H | 2.10 | 0.49 |
| 44:BW:14:ASP:O | 44:BW:15:SER:CB | 2.61 | 0.49 |
| 44:BW:35:ILE:O | 44:BW:37:VAL:N | 2.41 | 0.49 |
| 53:CA:330:C:H5' | 53:CA:330:C:H6 | 1.78 | 0.49 |
| 53:CA:833:G:O2' | 53:CA:834:U:H5' | 2.12 | 0.49 |
| 53:CA:922:G:O2' | 53:CA:1398:A:N1 | 2.44 | 0.49 |
| 53:CA:979:C:OP2 | 53:CA:981:U:O4 | 2.31 | 0.49 |
| 53:CA:988:G:H2' | 53:CA:989:U:O4' | 2.13 | 0.49 |
| 53:CA:1058:G:OP1 | 3:CC:198:LYS:HE2 | 2.13 | 0.49 |
| 53:CA:1125:U:C6 | 10:CJ:40:ILE:HG12 | 2.47 | 0.49 |
| 53:CA:1160:G:O6 | 53:CA:1181:G:O6 | 2.30 | 0.49 |
| 53:CA:1417:G:N2 | 53:CA:1484:C:C4 | 2.81 | 0.49 |
| 2:CB:9:LEU:HB2 | 2:CB:11:ALA:H | 1.77 | 0.49 |
| 2:CB:31:PHE:HB2 | 2:CB:41:ASN:HB2 | 1.95 | 0.49 |
| 2:CB:103:TRP:HZ2 | 2:CB:155:GLY:HA2 | 1.77 | 0.49 |
| 3:CC:10:ARG:HH21 | 3:CC:181:ILE:HB | 1.78 | 0.49 |
| 4:CD:21:LYS:HG2 | 4:CD:21:LYS:O | 2.13 | 0.49 |
| 5:CE:33:THR:OG1 | 5:CE:49:TYR:CZ | 2.66 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 54:CG:14:ASP:HB3 | 54:CG:18:GLY:N | 2.23 | 0.49 |
| 12:CL:5:GLN:HG3 | 12:CL:9:LYS:HZ3 | 1.78 | 0.49 |
| 12:CL:89:LEU:HB3 | 12:CL:92:VAL:HG21 | 1.95 | 0.49 |
| 14:CN:89:ARG:HG3 | 14:CN:91:GLU:HG3 | 1.95 | 0.49 |
| 21:CU:19:LYS:HB3 | 21:CU:24:LYS:HB2 | 1.94 | 0.49 |
| 21:CU:35:GLU:CG | 21:CU:36:PHE:N | 2.75 | 0.49 |
| 57:DA:3:U:C4 | 57:DA:4:U:C5 | 3.01 | 0.49 |
| 57:DA:262:A:C2 | 57:DA:430:A:H1' | 2.48 | 0.49 |
| 57:DA:377:G:C6 | 57:DA:378:C:C4 | 3.01 | 0.49 |
| 57:DA:417:C:H2' | 57:DA:418:C:C6 | 2.48 | 0.49 |
| 57:DA:426:C:O2' | 57:DA:427:U:H5' | 2.12 | 0.49 |
| 57:DA:465:G:H4' | 50:D2:16:HIS:HD2 | 1.77 | 0.49 |
| 57:DA:858:G:C6 | 57:DA:2268:A:C6 | 3.01 | 0.49 |
| 57:DA:1080:A:H2' | 57:DA:1081:U:C6 | 2.48 | 0.49 |
| 57:DA:1103:A:H8 | 57:DA:1103:A:O5' | 1.96 | 0.49 |
| 57:DA:1204:A:N1 | 57:DA:1241:A:N1 | 2.60 | 0.49 |
| 57:DA:1807:G:N2 | 57:DA:1809:A:H3' | 2.28 | 0.49 |
| 57:DA:2014:A:H5' | 40:DS:94:ASP:OD2 | 2.13 | 0.49 |
| 57:DA:2352:A:C6 | 44:DW:30:VAL:HG11 | 2.47 | 0.49 |
| 30:DI:57:VAL:HG12 | 30:DI:58:ILE:N | 2.24 | 0.49 |
| 31:DJ:45:THR:OG1 | 31:DJ:48:VAL:HB | 2.13 | 0.49 |
| 32:DK:27:GLY:HA3 | 32:DK:30:ARG:HG3 | 1.95 | 0.49 |
| 33:DL:85:VAL:HG22 | 33:DL:85:VAL:O | 2.13 | 0.49 |
| 38:DQ:111:LYS:CE | 39:DR:48:LYS:HD3 | 2.43 | 0.49 |
| 40:DS:47:VAL:HG12 | 40:DS:103:ILE:HG12 | 1.95 | 0.49 |
| 43:DV:29:ILE:HG13 | 43:DV:88:HIS:CE1 | 2.48 | 0.49 |
| 1:AA:71:A:HO2' | 1:AA:72:A:P | 2.36 | 0.49 |
| 1:AA:74:A:C2 | 1:AA:75:G:C4 | 3.01 | 0.49 |
| 1:AA:113:G:H2' | 1:AA:114:U:H6 | 1.78 | 0.49 |
| 1:AA:191:G:C4 | 1:AA:192:A:C8 | 3.00 | 0.49 |
| 1:AA:201:G:H2' | 1:AA:202:G:O4' | 2.13 | 0.49 |
| 1:AA:520:A:H2 | 1:AA:536:C:O2 | 1.96 | 0.49 |
| 1:AA:667:G:H4' | 15:AO:50:HIS:ND1 | 2.28 | 0.49 |
| 1:AA:819:A:N7 | 1:AA:1529:G:C2 | 2.80 | 0.49 |
| 1:AA:860:A:H2' | 1:AA:861:G:O4' | 2.13 | 0.49 |
| 1:AA:1004:A:C2 | 1:AA:1005:A:H1' | 2.47 | 0.49 |
| 1:AA:1293:C:H2' | 1:AA:1294:G:H8 | 1.77 | 0.49 |
| 1:AA:1320:C:H42 | 19:AS:35:ARG:HB2 | 1.78 | 0.49 |
| 1:AA:1451:U:O5' | 1:AA:1452:C:H5 | 1.96 | 0.49 |
| 3:AC:137:VAL:HG11 | 3:AC:169:GLU:HB3 | 1.95 | 0.49 |
| 4:AD:9:LYS:O | 4:AD:12:ARG:HB2 | 2.12 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:AD:196:GLU:HA | 4:AD:199:ILE:HG22 | 1.95 | 0.49 |
| 5:AE:76:ASN:CB | 5:AE:81:GLN:HG3 | 2.43 | 0.49 |
| 6:AF:9:MET:HG2 | 6:AF:86:ARG:O | 2.12 | 0.49 |
| 12:AL:82:ARG:NH1 | 12:AL:82:ARG:CG | 2.70 | 0.49 |
| 13:AM:89:ARG:HB3 | 13:AM:96:VAL:HG22 | 1.95 | 0.49 |
| 14:AN:91:GLU:O | 14:AN:93:PRO:HD3 | 2.13 | 0.49 |
| 15:AO:54:GLY:O | 15:AO:58:MET:HG3 | 2.13 | 0.49 |
| 16:AP:6:LEU:HG | 16:AP:17:TYR:HB3 | 1.94 | 0.49 |
| 17:AQ:45:VAL:O | 17:AQ:47:ASP:OD1 | 2.31 | 0.49 |
| 22:BA:186:G:O2' | 22:BA:187:G:H5' | 2.13 | 0.49 |
| 22:BA:273:G:O2' | 22:BA:274:C:O4' | 2.31 | 0.49 |
| 22:BA:480:A:H2 | 22:BA:499:U:O2 | 1.96 | 0.49 |
| 22:BA:619:G:O6 | 63:BA:3288:HOH:O | 2.20 | 0.49 |
| 22:BA:1249:U:C6 | 22:BA:1249:U:H5' | 2.48 | 0.49 |
| 22:BA:1470:A:H2' | 22:BA:1471:G:O4' | 2.13 | 0.49 |
| 22:BA:1509:A:C2 | 22:BA:1510:G:C8 | 3.00 | 0.49 |
| 22:BA:1760:C:C2' | 22:BA:1761:C:H5' | 2.43 | 0.49 |
| 22:BA:2210:U:C2 | 22:BA:2212:A:N7 | 2.81 | 0.49 |
| 22:BA:2524:G:H2' | 22:BA:2525:G:O5' | 2.13 | 0.49 |
| 22:BA:2648:G:H2' | 22:BA:2649:C:C6 | 2.48 | 0.49 |
| 22:BA:2842:G:H2' | 22:BA:2843:G:H5' | 1.95 | 0.49 |
| 24:BC:229:HIS:HD2 | 24:BC:246:PRO:HB3 | 1.77 | 0.49 |
| 26:BE:134:LEU:O | 26:BE:138:LEU:HG | 2.13 | 0.49 |
| 28:BG:15:ASP:CG | 28:BG:16:VAL:N | 2.66 | 0.49 |
| 28:BG:37:ASN:OD1 | 28:BG:37:ASN:N | 2.46 | 0.49 |
| 32:BK:88:ASN:HD22 | 32:BK:91:SER:H | 1.60 | 0.49 |
| 35:BN:70:THR:HG21 | 35:BN:75:ILE:HD11 | 1.95 | 0.49 |
| 45:BX:15:ASN:HA | 45:BX:24:THR:O | 2.13 | 0.49 |
| 53:CA:116:A:H2' | 53:CA:117:G:H8 | 1.78 | 0.49 |
| 53:CA:239:U:C5' | 53:CA:239:U:C6 | 2.85 | 0.49 |
| 53:CA:577:G:C4' | 53:CA:816:A:H2' | 2.43 | 0.49 |
| 53:CA:611:C:H2' | 53:CA:612:C:H6 | 1.76 | 0.49 |
| 53:CA:994:A:N3 | 53:CA:995:C:C6 | 2.81 | 0.49 |
| 3:CC:41:TYR:CE1 | 3:CC:89:VAL:HG12 | 2.47 | 0.49 |
| 8:CH:104:SER:OG | 8:CH:109:VAL:HG22 | 2.13 | 0.49 |
| 14:CN:16:ALA:HA | 14:CN:20:PHE:HD1 | 1.78 | 0.49 |
| 15:CO:69:LEU:CD1 | 15:CO:77:TYR:HA | 2.43 | 0.49 |
| 56:CP:16:PHE:CZ | 56:CP:38:PHE:HD1 | 2.31 | 0.49 |
| 56:CP:52:LEU:O | 56:CP:53:ASP:CB | 2.61 | 0.49 |
| 19:CS:57:VAL:HG21 | 19:CS:75:PRO:HD2 | 1.95 | 0.49 |
| 57:DA:14:A:N6 | 57:DA:526:A:C4 | 2.80 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:30:G:OP1 | 38:DQ:4:LYS:HG3 | 2.12 | 0.49 |
| 57:DA:143:C:C2' | 57:DA:144:A:C8 | 2.91 | 0.49 |
| 57:DA:227:A:HO2' | 57:DA:228:C:P | 2.35 | 0.49 |
| 57:DA:279:A:C6 | 57:DA:280:U:N3 | 2.81 | 0.49 |
| 57:DA:295:G:N3 | 57:DA:295:G:H2' | 2.27 | 0.49 |
| 57:DA:303:G:C6 | 57:DA:315:G:C6 | 3.01 | 0.49 |
| 57:DA:740:C:C4 | 57:DA:1981:A:C2 | 3.01 | 0.49 |
| 57:DA:1139:G:O2' | 57:DA:1140:C:H5' | 2.13 | 0.49 |
| 57:DA:1204:A:H4' | 57:DA:1205:A:H5'' | 1.95 | 0.49 |
| 57:DA:1342:A:OP1 | 41:DT:59:ASN:HB3 | 2.12 | 0.49 |
| 57:DA:1613:G:C6 | 57:DA:1619:G:C6 | 3.00 | 0.49 |
| 57:DA:1656:C:OP1 | 25:DD:141:ARG:NH1 | 2.46 | 0.49 |
| 57:DA:1901:A:OP2 | 57:DA:1901:A:H4' | 2.13 | 0.49 |
| 57:DA:2013:A:OP1 | 40:DS:96:ILE:HA | 2.13 | 0.49 |
| 57:DA:2150:C:H2' | 57:DA:2151:U:C6 | 2.48 | 0.49 |
| 57:DA:2346:A:C3' | 57:DA:2347:C:H5'' | 2.35 | 0.49 |
| 57:DA:2415:G:H4' | 33:DL:65:GLY:O | 2.13 | 0.49 |
| 57:DA:2638:G:O2' | 57:DA:2639:A:C8 | 2.66 | 0.49 |
| 57:DA:2721:A:H2' | 57:DA:2722:G:O4' | 2.12 | 0.49 |
| 58:DB:28:C:C2 | 58:DB:29:A:C8 | 3.01 | 0.49 |
| 25:DD:131:ASP:N | 25:DD:131:ASP:OD2 | 2.46 | 0.49 |
| 32:DK:87:LEU:HD23 | 32:DK:87:LEU:N | 2.27 | 0.49 |
| 34:DM:15:GLY:O | 34:DM:16:ARG:HB3 | 2.13 | 0.49 |
| 36:DO:51:ALA:HB3 | 36:DO:78:VAL:HG22 | 1.94 | 0.49 |
| 38:DQ:46:TYR:CZ | 38:DQ:50:ARG:NH1 | 2.81 | 0.49 |
| 44:DW:16:GLU:OE2 | 44:DW:16:GLU:HA | 2.13 | 0.49 |
| 44:DW:17:ALA:HB1 | 44:DW:36:ILE:HA | 1.94 | 0.49 |
| 1:AA:198:G:O2' | 1:AA:199:A:C5' | 2.61 | 0.48 |
| 1:AA:282:A:H5'' | 1:AA:283:U:OP2 | 2.12 | 0.48 |
| 1:AA:302:G:N3 | 1:AA:556:C:H4' | 2.28 | 0.48 |
| 1:AA:486:U:H2' | 1:AA:487:A:C8 | 2.48 | 0.48 |
| 1:AA:999:C:H2' | 1:AA:1000:A:C8 | 2.48 | 0.48 |
| 1:AA:1151:A:H5'' | 10:AJ:44:THR:OG1 | 2.13 | 0.48 |
| 1:AA:1184:G:O2' | 1:AA:1185:G:H5' | 2.12 | 0.48 |
| 1:AA:1233:G:H2' | 1:AA:1234:C:C6 | 2.48 | 0.48 |
| 1:AA:1240:U:H3' | 1:AA:1241:G:C5' | 2.41 | 0.48 |
| 1:AA:1306:A:C2' | 1:AA:1307:U:H5' | 2.43 | 0.48 |
| 1:AA:1441:A:N7 | 1:AA:1442:G:N7 | 2.61 | 0.48 |
| 1:AA:1481:U:O2' | 1:AA:1482:G:H5' | 2.13 | 0.48 |
| 2:AB:22:TRP:CZ3 | 2:AB:24:PRO:HA | 2.48 | 0.48 |
| 7:AG:94:ARG:O | 7:AG:95:ARG:C | 2.52 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:AI:119:LYS:O | 9:AI:120:ALA:HB3 | 2.12 | 0.48 |
| 14:AN:20:PHE:C | 14:AN:22:LYS:H | 2.16 | 0.48 |
| 15:AO:2:LEU:O | 15:AO:3:SER:C | 2.51 | 0.48 |
| 19:AS:30:LEU:O | 19:AS:49:ALA:HB3 | 2.13 | 0.48 |
| 22:BA:823:C:C4 | 22:BA:824:U:C4 | 3.00 | 0.48 |
| 22:BA:1565:C:HO2' | 22:BA:1566:A:P | 2.36 | 0.48 |
| 22:BA:1941:C:C6 | 22:BA:1941:C:C5' | 2.90 | 0.48 |
| 22:BA:2548:U:C2' | 22:BA:2549:G:O5' | 2.61 | 0.48 |
| 22:BA:2580:U:C5 | 22:BA:2581:G:C6 | 3.00 | 0.48 |
| 24:BC:93:VAL:CG1 | 24:BC:94:LEU:N | 2.75 | 0.48 |
| 24:BC:129:LEU:O | 24:BC:134:ILE:HD11 | 2.13 | 0.48 |
| 26:BE:146:VAL:HA | 26:BE:185:LYS:O | 2.13 | 0.48 |
| 27:BF:120:SER:O | 27:BF:127:TYR:CD1 | 2.66 | 0.48 |
| 31:BJ:44:TYR:CE1 | 38:BQ:59:LEU:HD11 | 2.48 | 0.48 |
| 41:BT:18:GLU:HA | 41:BT:18:GLU:OE2 | 2.13 | 0.48 |
| 41:BT:29:THR:CG2 | 41:BT:86:THR:HG22 | 2.42 | 0.48 |
| 44:BW:49:ASN:HA | 44:BW:61:LYS:H | 1.78 | 0.48 |
| 46:BY:45:GLN:O | 46:BY:46:VAL:CB | 2.55 | 0.48 |
| 49:B1:49:LYS:O | 49:B1:50:GLU:HB3 | 2.13 | 0.48 |
| 50:B2:26:ASN:HD22 | 50:B2:26:ASN:N | 2.11 | 0.48 |
| 53:CA:92:U:HO2' | 53:CA:93:U:H6 | 1.60 | 0.48 |
| 53:CA:223:A:C6 | 53:CA:224:U:C4 | 3.01 | 0.48 |
| 53:CA:542:G:N3 | 53:CA:543:U:C6 | 2.81 | 0.48 |
| 53:CA:653:U:P | 8:CH:55:LYS:HZ2 | 2.36 | 0.48 |
| 53:CA:1004:A:H2' | 53:CA:1005:A:H8 | 1.78 | 0.48 |
| 53:CA:1049:U:H4' | 53:CA:1050:G:OP2 | 2.12 | 0.48 |
| 53:CA:1138:G:H2' | 53:CA:1139:G:OP1 | 2.13 | 0.48 |
| 53:CA:1406:U:C2' | 53:CA:1407:C:H5' | 2.43 | 0.48 |
| 53:CA:1525:G:H5'' | 21:CU:37:TYR:CD1 | 2.48 | 0.48 |
| 4:CD:190:LEU:O | 4:CD:190:LEU:HD23 | 2.12 | 0.48 |
| 5:CE:112:ALA:O | 5:CE:113:VAL:C | 2.52 | 0.48 |
| 54:CG:134:VAL:HB | 54:CG:137:ARG:NH2 | 2.18 | 0.48 |
| 55:CM:68:LEU:HD22 | 55:CM:69:ARG:NH1 | 2.27 | 0.48 |
| 21:CU:9:GLU:HB3 | 21:CU:10:PRO:CD | 2.42 | 0.48 |
| 57:DA:155:A:C2 | 57:DA:172:A:C6 | 3.01 | 0.48 |
| 57:DA:230:G:HO2' | 57:DA:231:A:H8 | 1.59 | 0.48 |
| 57:DA:315:G:H2' | 57:DA:316:C:O4' | 2.13 | 0.48 |
| 57:DA:647:G:C5 | 57:DA:648:G:N7 | 2.81 | 0.48 |
| 57:DA:956:G:H1' | 34:DM:82:MET:HE1 | 1.95 | 0.48 |
| 57:DA:1188:U:C2' | 57:DA:1189:A:H5' | 2.43 | 0.48 |
| 57:DA:1223:G:O6 | 39:DR:71:LYS:NZ | 2.46 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:1390:U:O2' | 57:DA:1391:U:H5' | 2.12 | 0.48 |
| 57:DA:1552:A:N3 | 57:DA:1552:A:C2' | 2.76 | 0.48 |
| 57:DA:1635:A:C2' | 57:DA:1636:U:H5' | 2.43 | 0.48 |
| 57:DA:2321:U:O2 | 57:DA:2321:U:O5' | 2.30 | 0.48 |
| 57:DA:2681:C:H4' | 57:DA:2682:A:O5' | 2.13 | 0.48 |
| 57:DA:2818:U:H2' | 57:DA:2819:G:C8 | 2.47 | 0.48 |
| 58:DB:57:A:N7 | 59:DF:25:MET:SD | 2.86 | 0.48 |
| 24:DC:13:ARG:HG2 | 24:DC:14:HIS:CD2 | 2.48 | 0.48 |
| 24:DC:28:PRO:HB3 | 24:DC:62:ARG:HH22 | 1.77 | 0.48 |
| 24:DC:95:TYR:C | 24:DC:97:ASP:H | 2.14 | 0.48 |
| 25:DD:112:THR:O | 25:DD:113:SER:HB2 | 2.13 | 0.48 |
| 59:DF:65:LEU:HD11 | 59:DF:87:LYS:HZ1 | 1.78 | 0.48 |
| 29:DH:147:VAL:O | 29:DH:148:ALA:HB3 | 2.13 | 0.48 |
| 42:DU:81:ARG:HB2 | 42:DU:96:LYS:HD2 | 1.94 | 0.48 |
| 44:DW:42:THR:O | 44:DW:43:LYS:HG2 | 2.13 | 0.48 |
| 1:AA:255:G:H2' | 1:AA:256:U:C6 | 2.48 | 0.48 |
| 1:AA:734:G:H2' | 1:AA:735:C:H6 | 1.78 | 0.48 |
| 1:AA:1016:A:H3' | 1:AA:1017:U:O4' | 2.13 | 0.48 |
| 1:AA:1202:U:O2' | 1:AA:1203:C:H5' | 2.13 | 0.48 |
| 1:AA:1421:G:C2 | 1:AA:1422:G:C8 | 3.01 | 0.48 |
| 22:BA:151:C:H5' | 22:BA:1360:G:OP1 | 2.13 | 0.48 |
| 22:BA:263:G:H1' | 22:BA:430:A:N3 | 2.27 | 0.48 |
| 22:BA:416:U:C4 | 22:BA:417:C:C4 | 3.02 | 0.48 |
| 22:BA:475:C:C5 | 22:BA:481:G:O6 | 2.66 | 0.48 |
| 22:BA:962:G:H21 | 22:BA:2250:G:H22 | 1.60 | 0.48 |
| 22:BA:992:C:H2' | 22:BA:993:G:H8 | 1.78 | 0.48 |
| 22:BA:1006:C:H2' | 22:BA:1007:C:H5' | 1.94 | 0.48 |
| 22:BA:1179:G:C6 | 22:BA:1180:U:O2' | 2.65 | 0.48 |
| 22:BA:1255:U:C5 | 26:BE:68:ALA:HA | 2.48 | 0.48 |
| 22:BA:1340:U:C5 | 22:BA:1603:A:C8 | 3.01 | 0.48 |
| 22:BA:1945:G:C6 | 22:BA:1946:U:C4 | 3.01 | 0.48 |
| 22:BA:2092:U:C4' | 22:BA:2093:G:O5' | 2.61 | 0.48 |
| 22:BA:2209:G:C2 | 22:BA:2216:G:C2 | 3.01 | 0.48 |
| 22:BA:2446:G:H3' | 22:BA:2447:G:H5'' | 1.95 | 0.48 |
| 22:BA:2823:A:OP2 | 25:BD:118:PHE:CD1 | 2.66 | 0.48 |
| 22:BA:2898:U:O2 | 31:BJ:134:ALA:HB1 | 2.12 | 0.48 |
| 25:BD:34:VAL:CG2 | 25:BD:91:THR:HA | 2.43 | 0.48 |
| 26:BE:44:ARG:HH21 | 26:BE:44:ARG:CB | 2.26 | 0.48 |
| 30:BI:16:MET:O | 30:BI:19:PRO:HD3 | 2.12 | 0.48 |
| 33:BL:109:LYS:HA | 33:BL:126:ARG:O | 2.13 | 0.48 |
| 38:BQ:23:TYR:O | 38:BQ:28:SER:HB3 | 2.13 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 42:BU:12:VAL:O | 42:BU:18:LYS:O | 2.30 | 0.48 |
| 53:CA:147:G:H2' | 53:CA:148:G:H8 | 1.77 | 0.48 |
| 53:CA:224:U:H2' | 53:CA:225:C:C6 | 2.48 | 0.48 |
| 53:CA:946:A:H2' | 53:CA:947:G:C8 | 2.48 | 0.48 |
| 2:CB:53:LEU:O | 2:CB:57:ASN:HB2 | 2.13 | 0.48 |
| 2:CB:156:LEU:HD23 | 2:CB:156:LEU:H | 1.77 | 0.48 |
| 2:CB:164:ASP:OD2 | 2:CB:203:ASP:HB2 | 2.13 | 0.48 |
| 5:CE:148:SER:O | 5:CE:151:MET:N | 2.42 | 0.48 |
| 8:CH:17:GLN:HE21 | 8:CH:71:VAL:HG23 | 1.78 | 0.48 |
| 14:CN:16:ALA:HA | 14:CN:20:PHE:CD1 | 2.48 | 0.48 |
| 57:DA:49:A:C8 | 57:DA:51:G:N2 | 2.81 | 0.48 |
| 57:DA:117:G:OP1 | 57:DA:124:G:O6 | 2.31 | 0.48 |
| 57:DA:167:A:C2 | 57:DA:168:G:H1' | 2.48 | 0.48 |
| 57:DA:187:G:N2 | 57:DA:210:C:H1' | 2.28 | 0.48 |
| 57:DA:273:G:H2' | 57:DA:274:C:H6 | 1.78 | 0.48 |
| 57:DA:335:C:O2' | 57:DA:336:C:C5' | 2.61 | 0.48 |
| 57:DA:447:A:C8 | 57:DA:473:G:C5 | 3.01 | 0.48 |
| 57:DA:480:A:H5' | 42:DU:43:LYS:NZ | 2.28 | 0.48 |
| 57:DA:607:U:H5 | 57:DA:619:G:C5 | 2.31 | 0.48 |
| 57:DA:822:G:O6 | 57:DA:943:A:C2 | 2.54 | 0.48 |
| 57:DA:1083:U:H1' | 57:DA:1086:A:C2 | 2.49 | 0.48 |
| 57:DA:1286:A:C5 | 57:DA:1289:C:N3 | 2.81 | 0.48 |
| 57:DA:1427:A:H4' | 57:DA:1428:C:O5' | 2.12 | 0.48 |
| 57:DA:1435:G:C2 | 57:DA:1558:C:N4 | 2.80 | 0.48 |
| 57:DA:1573:G:H2' | 57:DA:1574:C:H5' | 1.95 | 0.48 |
| 57:DA:1808:A:N6 | 45:DX:27:ARG:HD2 | 2.28 | 0.48 |
| 57:DA:1906:G:N2 | 57:DA:1907:G:C4 | 2.81 | 0.48 |
| 57:DA:2033:A:H8 | 57:DA:2033:A:OP2 | 1.96 | 0.48 |
| 57:DA:2095:A:H5' | 57:DA:2096:C:OP2 | 2.13 | 0.48 |
| 57:DA:2216:G:O2' | 57:DA:2217:G:O5' | 2.32 | 0.48 |
| 57:DA:2351:G:N7 | 51:D3:42:HIS:CE1 | 2.81 | 0.48 |
| 57:DA:2386:A:C2 | 44:DW:38:ARG:HG2 | 2.47 | 0.48 |
| 57:DA:2612:C:O2 | 48:D0:1:ALA:HB2 | 2.12 | 0.48 |
| 57:DA:2657:A:O2' | 57:DA:2658:C:C5' | 2.60 | 0.48 |
| 57:DA:2755:C:HO2' | 57:DA:2756:U:H6 | 1.59 | 0.48 |
| 57:DA:2810:A:H2' | 57:DA:2811:G:O4' | 2.13 | 0.48 |
| 24:DC:51:ARG:O | 24:DC:53:ILE:HG22 | 2.13 | 0.48 |
| 24:DC:105:ALA:HA | 24:DC:106:PRO:HD3 | 1.71 | 0.48 |
| 31:DJ:105:VAL:HG22 | 31:DJ:105:VAL:O | 2.13 | 0.48 |
| 1:AA:80:A:C2 | 1:AA:90:C:N3 | 2.80 | 0.48 |
| 1:AA:725:G:O2' | 1:AA:726:C:H5' | 2.13 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:AA:953:G:H2' | 1:AA:954:G:O4' | 2.14 | 0.48 |
| 1:AA:972:C:H4' | 10:AJ:59:LYS:CG | 2.43 | 0.48 |
| 1:AA:1001:C:H2' | 1:AA:1002:G:H8 | 1.78 | 0.48 |
| 1:AA:1093:A:C2 | 1:AA:1095:U:H5' | 2.48 | 0.48 |
| 1:AA:1160:G:O6 | 1:AA:1181:G:O6 | 2.31 | 0.48 |
| 2:AB:89:PHE:CE2 | 2:AB:153:MET:HB2 | 2.49 | 0.48 |
| 3:AC:18:ASN:HB3 | 3:AC:39:ARG:HH12 | 1.78 | 0.48 |
| 3:AC:39:ARG:CD | 3:AC:54:ILE:HD11 | 2.43 | 0.48 |
| 5:AE:59:ILE:HG13 | 5:AE:60:GLN:N | 2.29 | 0.48 |
| 6:AF:38:ARG:HG2 | 6:AF:38:ARG:NH1 | 2.27 | 0.48 |
| 6:AF:91:ARG:CG | 6:AF:92:THR:H | 2.23 | 0.48 |
| 12:AL:58:ASN:OD1 | 12:AL:58:ASN:C | 2.51 | 0.48 |
| 19:AS:50:VAL:CG2 | 19:AS:70:LEU:HB3 | 2.43 | 0.48 |
| 22:BA:95:A:O2' | 46:BY:41:HIS:CD2 | 2.66 | 0.48 |
| 22:BA:1028:A:H61 | 22:BA:1125:G:H2' | 1.77 | 0.48 |
| 22:BA:1039:A:H2' | 22:BA:1040:A:O4' | 2.13 | 0.48 |
| 22:BA:1356:G:C6 | 22:BA:1357:C:C4 | 3.02 | 0.48 |
| 22:BA:1731:G:C4 | 22:BA:1733:G:C8 | 3.01 | 0.48 |
| 22:BA:1998:A:OP2 | 25:BD:141:ARG:NH2 | 2.46 | 0.48 |
| 22:BA:2103:C:C2' | 22:BA:2104:C:H5' | 2.42 | 0.48 |
| 22:BA:2136:G:C2' | 22:BA:2137:U:C5 | 2.97 | 0.48 |
| 22:BA:2444:G:OP2 | 26:BE:63:LYS:HD2 | 2.13 | 0.48 |
| 22:BA:2553:G:C2 | 22:BA:2554:U:O2 | 2.67 | 0.48 |
| 22:BA:2711:A:P | 63:BA:3548:HOH:O | 2.71 | 0.48 |
| 22:BA:2880:C:H1' | 35:BN:92:GLY:H | 1.78 | 0.48 |
| 22:BA:2886:A:H2' | 22:BA:2887:A:O4' | 2.13 | 0.48 |
| 25:BD:9:VAL:CG2 | 25:BD:10:GLY:N | 2.76 | 0.48 |
| 32:BK:107:LEU:C | 32:BK:109:SER:H | 2.17 | 0.48 |
| 34:BM:1:MET:O | 34:BM:2:LEU:CB | 2.61 | 0.48 |
| 34:BM:66:ARG:HD3 | 34:BM:104:GLU:OE1 | 2.13 | 0.48 |
| 47:BZ:22:THR:O | 47:BZ:23:LEU:C | 2.52 | 0.48 |
| 51:B3:7:ARG:O | 51:B3:11:LYS:HG3 | 2.13 | 0.48 |
| 51:B3:61:LEU:HB3 | 51:B3:64:ALA:HB2 | 1.95 | 0.48 |
| 53:CA:66:A:C6 | 53:CA:67:C:C4 | 3.01 | 0.48 |
| 53:CA:91:U:O2' | 53:CA:92:U:H5'' | 2.13 | 0.48 |
| 53:CA:443:C:O5' | 53:CA:443:C:H6 | 1.96 | 0.48 |
| 53:CA:998:C:C6 | 53:CA:999:C:H5 | 2.31 | 0.48 |
| 53:CA:1394:A:H2' | 53:CA:1501:C:O2' | 2.13 | 0.48 |
| 53:CA:1504:G:OP1 | 53:CA:1507:A:H4' | 2.13 | 0.48 |
| 3:CC:29:ALA:CB | 14:CN:64:ARG:HH12 | 2.26 | 0.48 |
| 3:CC:124:GLU:CD | 3:CC:124:GLU:N | 2.67 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 54:CG:4:ARG:HG2 | 54:CG:4:ARG:NH1 | 2.28 | 0.48 |
| 9:CI:115:VAL:HG21 | 10:CJ:61:ALA:O | 2.12 | 0.48 |
| 11:CK:74:LYS:HE3 | 11:CK:78:ILE:O | 2.13 | 0.48 |
| 11:CK:84:MET:HG2 | 11:CK:110:THR:OG1 | 2.13 | 0.48 |
| 17:CQ:17:GLU:O | 17:CQ:18:LYS:HB2 | 2.13 | 0.48 |
| 18:CR:39:VAL:CG1 | 18:CR:40:PRO:HD2 | 2.43 | 0.48 |
| 57:DA:481:G:HO2' | 57:DA:507:A:H61 | 1.58 | 0.48 |
| 57:DA:492:A:N1 | 40:DS:49:LYS:CE | 2.76 | 0.48 |
| 57:DA:538:A:O2' | 31:DJ:8:PRO:CG | 2.61 | 0.48 |
| 57:DA:563:A:C4 | 57:DA:2018:G:C2 | 3.01 | 0.48 |
| 57:DA:623:C:O2' | 57:DA:624:C:O4' | 2.21 | 0.48 |
| 57:DA:815:C:OP1 | 39:DR:85:LYS:HE2 | 2.14 | 0.48 |
| 57:DA:945:A:C8 | 57:DA:2448:A:C2 | 3.01 | 0.48 |
| 57:DA:1152:C:H5'' | 38:DQ:79:ILE:HD12 | 1.94 | 0.48 |
| 57:DA:1190:G:H5'' | 33:DL:32:GLY:HA2 | 1.95 | 0.48 |
| 57:DA:1388:G:N1 | 57:DA:1400:U:N3 | 2.62 | 0.48 |
| 57:DA:1829:A:C8 | 57:DA:1830:C:C6 | 3.02 | 0.48 |
| 57:DA:2093:G:OP1 | 57:DA:2093:G:O4' | 2.30 | 0.48 |
| 57:DA:2269:G:C4 | 57:DA:2270:A:C8 | 3.01 | 0.48 |
| 57:DA:2292:U:H2' | 57:DA:2293:G:C8 | 2.48 | 0.48 |
| 57:DA:2305:U:O2' | 59:DF:132:ARG:HA | 2.14 | 0.48 |
| 26:DE:24:ASN:HB3 | 26:DE:27:LEU:HB3 | 1.95 | 0.48 |
| 26:DE:149:ILE:HG23 | 26:DE:188:MET:HA | 1.96 | 0.48 |
| 34:DM:41:LEU:HD13 | 34:DM:96:ILE:HG12 | 1.94 | 0.48 |
| 35:DN:16:HIS:O | 35:DN:20:MET:N | 2.34 | 0.48 |
| 41:DT:12:ARG:HG3 | 46:DY:29:ARG:NH1 | 2.29 | 0.48 |
| 45:DX:4:CYS:HA | 45:DX:32:LEU:HD11 | 1.95 | 0.48 |
| 45:DX:52:ALA:C | 45:DX:54:GLY:H | 2.16 | 0.48 |
| 1:AA:254:G:O2' | 1:AA:255:G:H5' | 2.14 | 0.48 |
| 1:AA:352:C:H6 | 1:AA:352:C:H5'' | 1.77 | 0.48 |
| 1:AA:558:G:C4 | 1:AA:559:A:C2 | 3.02 | 0.48 |
| 1:AA:692:U:H1' | 1:AA:695:A:N7 | 2.28 | 0.48 |
| 1:AA:1055:A:N6 | 1:AA:1206:G:C6 | 2.81 | 0.48 |
| 1:AA:1118:U:P | 9:AI:105:ARG:HE | 2.37 | 0.48 |
| 1:AA:1152:A:H2' | 1:AA:1153:G:C8 | 2.48 | 0.48 |
| 1:AA:1248:A:H2 | 9:AI:71:ILE:HD11 | 1.79 | 0.48 |
| 1:AA:1483:A:H2' | 1:AA:1484:C:O4' | 2.14 | 0.48 |
| 3:AC:116:ALA:HB1 | 3:AC:186:SER:HB2 | 1.94 | 0.48 |
| 22:BA:18:U:HO2' | 22:BA:19:A:H5' | 1.77 | 0.48 |
| 22:BA:632:A:H2' | 22:BA:633:A:C8 | 2.48 | 0.48 |
| 22:BA:1204:A:C2 | 22:BA:1240:U:N3 | 2.81 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:2594:C:N4 | 63:BA:3787:HOH:O | 2.45 | 0.48 |
| 22:BA:2673:G:H2' | 22:BA:2674:G:H8 | 1.78 | 0.48 |
| 24:BC:257:ARG:NE | 24:BC:269:ARG:NH2 | 2.62 | 0.48 |
| 25:BD:61:THR:CB | 25:BD:63:PRO:HD2 | 2.44 | 0.48 |
| 27:BF:151:LEU:C | 27:BF:151:LEU:HD12 | 2.34 | 0.48 |
| 34:BM:43:ALA:CA | 34:BM:46:ILE:HG13 | 2.38 | 0.48 |
| 36:BO:24:THR:HG22 | 36:BO:42:PRO:HD3 | 1.96 | 0.48 |
| 36:BO:67:ASN:O | 36:BO:68:LYS:C | 2.51 | 0.48 |
| 38:BQ:63:ARG:HH22 | 38:BQ:95:ALA:C | 2.17 | 0.48 |
| 38:BQ:96:ASP:C | 38:BQ:98:ALA:N | 2.64 | 0.48 |
| 40:BS:71:VAL:HG22 | 40:BS:71:VAL:O | 2.13 | 0.48 |
| 44:BW:8:SER:O | 44:BW:9:THR:CB | 2.61 | 0.48 |
| 44:BW:18:LYS:HE3 | 44:BW:19:ARG:HG2 | 1.95 | 0.48 |
| 46:BY:40:SER:O | 46:BY:42:LEU:N | 2.46 | 0.48 |
| 52:B4:13:ASN:N | 52:B4:13:ASN:ND2 | 2.62 | 0.48 |
| 53:CA:366:A:H1' | 53:CA:395:C:O2 | 2.13 | 0.48 |
| 53:CA:486:U:O2 | 53:CA:486:U:C2' | 2.62 | 0.48 |
| 53:CA:784:A:H2' | 53:CA:785:G:C8 | 2.48 | 0.48 |
| 53:CA:1097:C:H2' | 53:CA:1098:C:C6 | 2.48 | 0.48 |
| 53:CA:1160:G:O2' | 53:CA:1161:C:C5' | 2.62 | 0.48 |
| 53:CA:1181:G:C2' | 53:CA:1182:G:C8 | 2.95 | 0.48 |
| 3:CC:120:THR:O | 3:CC:120:THR:CG2 | 2.60 | 0.48 |
| 4:CD:187:ARG:HH21 | 4:CD:191:SER:HA | 1.78 | 0.48 |
| 8:CH:17:GLN:NE2 | 8:CH:71:VAL:HG23 | 2.29 | 0.48 |
| 10:CJ:63:ASP:OD2 | 14:CN:84:ARG:NH1 | 2.45 | 0.48 |
| 12:CL:56:LEU:HB2 | 12:CL:58:ASN:OD1 | 2.13 | 0.48 |
| 15:CO:66:LEU:HB3 | 15:CO:77:TYR:HE1 | 1.78 | 0.48 |
| 17:CQ:59:GLU:HG3 | 17:CQ:59:GLU:O | 2.12 | 0.48 |
| 20:CT:34:VAL:HG12 | 20:CT:78:LEU:HD21 | 1.93 | 0.48 |
| 57:DA:200:U:O4 | 57:DA:248:G:C2 | 2.66 | 0.48 |
| 57:DA:300:A:H2' | 57:DA:301:G:H5' | 1.95 | 0.48 |
| 57:DA:303:G:C6 | 57:DA:315:G:O6 | 2.66 | 0.48 |
| 57:DA:347:A:H2' | 57:DA:348:A:C8 | 2.47 | 0.48 |
| 57:DA:616:A:O2' | 57:DA:617:G:O5' | 2.32 | 0.48 |
| 57:DA:700:G:C5 | 57:DA:701:G:C8 | 3.01 | 0.48 |
| 57:DA:704:G:C2' | 57:DA:726:G:N2 | 2.76 | 0.48 |
| 57:DA:709:U:O2' | 57:DA:710:U:H5' | 2.13 | 0.48 |
| 57:DA:1278:C:O2' | 35:DN:27:SER:HB3 | 2.13 | 0.48 |
| 57:DA:1773:A:N7 | 57:DA:1829:A:H1' | 2.29 | 0.48 |
| 57:DA:2331:G:O2' | 44:DW:40:ARG:HB3 | 2.12 | 0.48 |
| 57:DA:2429:G:C8 | 33:DL:55:MET:HE3 | 2.48 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:2597:G:H2' | 57:DA:2598:A:C8 | 2.48 | 0.48 |
| 57:DA:2898:U:H2' | 57:DA:2899:A:C8 | 2.48 | 0.48 |
| 58:DB:30:C:H2' | 58:DB:31:C:H5' | 1.94 | 0.48 |
| 24:DC:35:LYS:NZ | 24:DC:35:LYS:HB3 | 2.28 | 0.48 |
| 24:DC:62:ARG:CG | 24:DC:62:ARG:NH2 | 2.76 | 0.48 |
| 24:DC:141:HIS:HB3 | 24:DC:190:THR:HB | 1.95 | 0.48 |
| 24:DC:221:GLY:O | 24:DC:224:MET:HG2 | 2.13 | 0.48 |
| 26:DE:6:LYS:HE3 | 26:DE:7:ASP:OD2 | 2.14 | 0.48 |
| 26:DE:115:GLN:O | 26:DE:117:ARG:N | 2.46 | 0.48 |
| 30:DI:109:ALA:HB1 | 30:DI:125:THR:HG22 | 1.93 | 0.48 |
| 32:DK:23:LYS:O | 32:DK:25:LEU:HD23 | 2.12 | 0.48 |
| 34:DM:71:LYS:HB3 | 34:DM:93:VAL:O | 2.14 | 0.48 |
| 35:DN:12:ARG:HB3 | 35:DN:16:HIS:ND1 | 2.27 | 0.48 |
| 39:DR:2:TYR:H | 39:DR:42:ALA:CB | 2.26 | 0.48 |
| 47:DZ:23:LEU:HD21 | 47:DZ:53:MET:HE1 | 1.95 | 0.48 |
| 50:D2:10:LEU:O | 50:D2:14:ARG:HB2 | 2.12 | 0.48 |
| 1:AA:57:G:C5 | 1:AA:58:C:C4 | 3.02 | 0.48 |
| 1:AA:71:A:O2' | 1:AA:72:A:O5' | 2.28 | 0.48 |
| 1:AA:251:G:N1 | 1:AA:266:G:O6 | 2.46 | 0.48 |
| 1:AA:429:U:H3' | 4:AD:8:LEU:HD23 | 1.95 | 0.48 |
| 1:AA:511:C:O2' | 1:AA:512:U:C5' | 2.55 | 0.48 |
| 1:AA:896:C:H2' | 1:AA:897:C:C6 | 2.47 | 0.48 |
| 1:AA:919:A:H8 | 1:AA:919:A:O5' | 1.96 | 0.48 |
| 1:AA:1477:U:H2' | 1:AA:1478:U:C6 | 2.48 | 0.48 |
| 2:AB:115:ASP:O | 2:AB:119:GLN:HB3 | 2.12 | 0.48 |
| 5:AE:29:ILE:HD12 | 5:AE:30:PHE:N | 2.28 | 0.48 |
| 7:AG:25:PHE:CE1 | 7:AG:104:VAL:HG23 | 2.48 | 0.48 |
| 8:AH:17:GLN:NE2 | 8:AH:71:VAL:H | 2.12 | 0.48 |
| 10:AJ:66:GLU:HG2 | 14:AN:98:ALA:HB2 | 1.95 | 0.48 |
| 10:AJ:91:ASP:O | 10:AJ:92:LEU:O | 2.31 | 0.48 |
| 17:AQ:80:LYS:HB2 | 17:AQ:80:LYS:HZ3 | 1.78 | 0.48 |
| 22:BA:571:U:C5 | 22:BA:575:A:C5 | 3.02 | 0.48 |
| 22:BA:1062:G:C8 | 22:BA:1088:A:H8 | 2.30 | 0.48 |
| 22:BA:1152:C:O2' | 22:BA:1153:C:H5' | 2.14 | 0.48 |
| 22:BA:1179:G:N7 | 22:BA:1180:U:H1' | 2.27 | 0.48 |
| 22:BA:1291:C:O2' | 22:BA:1292:G:H5' | 2.14 | 0.48 |
| 22:BA:1429:G:O2' | 22:BA:1430:G:C5' | 2.58 | 0.48 |
| 22:BA:2077:A:H2' | 22:BA:2078:C:H6 | 1.79 | 0.48 |
| 22:BA:2134:A:C6 | 22:BA:2135:A:N6 | 2.82 | 0.48 |
| 22:BA:2403:C:N3 | 22:BA:2415:G:C2 | 2.81 | 0.48 |
| 24:BC:250:GLN:NE2 | 24:BC:250:GLN:N | 2.61 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:BF:129:MET:CE | 27:BF:153:ILE:HD11 | 2.43 | 0.48 |
| 28:BG:61:TRP:O | 28:BG:64:ALA:N | 2.46 | 0.48 |
| 29:BH:49:ALA:HB3 | 29:BH:50:ARG:HH22 | 1.75 | 0.48 |
| 30:BI:19:PRO:HG2 | 30:BI:23:VAL:HG22 | 1.95 | 0.48 |
| 30:BI:61:TYR:N | 30:BI:61:TYR:CD2 | 2.81 | 0.48 |
| 33:BL:62:PRO:HG2 | 51:B3:24:LYS:HB3 | 1.94 | 0.48 |
| 34:BM:49:ALA:HB1 | 34:BM:120:ALA:HB1 | 1.96 | 0.48 |
| 34:BM:55:ARG:O | 34:BM:56:ALA:HB2 | 2.13 | 0.48 |
| 35:BN:95:THR:HG21 | 35:BN:113:ILE:HD11 | 1.94 | 0.48 |
| 36:BO:35:ILE:HD11 | 36:BO:106:LEU:HD23 | 1.94 | 0.48 |
| 44:BW:25:PHE:O | 44:BW:27:GLY:N | 2.46 | 0.48 |
| 44:BW:30:VAL:HA | 44:BW:60:ALA:O | 2.12 | 0.48 |
| 45:BX:44:ARG:CG | 45:BX:45:PHE:N | 2.77 | 0.48 |
| 48:B0:3:GLN:NE2 | 48:B0:7:PRO:HD3 | 2.29 | 0.48 |
| 53:CA:185:U:H2' | 53:CA:186:C:H6 | 1.79 | 0.48 |
| 53:CA:223:A:H2' | 53:CA:224:U:C6 | 2.48 | 0.48 |
| 53:CA:381:C:O2 | 53:CA:381:C:H2' | 2.13 | 0.48 |
| 53:CA:961:U:C4 | 53:CA:983:A:C6 | 3.02 | 0.48 |
| 53:CA:1370:G:H5'' | 9:CI:110:VAL:HG21 | 1.94 | 0.48 |
| 3:CC:155:ARG:NE | 3:CC:159:ALA:O | 2.45 | 0.48 |
| 9:CI:74:GLN:O | 9:CI:78:ILE:HG13 | 2.14 | 0.48 |
| 12:CL:46:SER:O | 12:CL:47:ALA:HB2 | 2.13 | 0.48 |
| 55:CM:69:ARG:HA | 55:CM:72:ILE:CG2 | 2.44 | 0.48 |
| 56:CP:1:MET:O | 56:CP:1:MET:HG3 | 2.14 | 0.48 |
| 18:CR:32:ILE:O | 18:CR:32:ILE:HD12 | 2.13 | 0.48 |
| 57:DA:82:U:H5'' | 57:DA:296:U:H5'' | 1.96 | 0.48 |
| 57:DA:303:G:H2' | 57:DA:304:U:C5 | 2.48 | 0.48 |
| 57:DA:479:A:H1' | 57:DA:480:A:H5'' | 1.96 | 0.48 |
| 57:DA:602:A:H4' | 57:DA:604:G:O3' | 2.14 | 0.48 |
| 57:DA:1153:C:H2' | 57:DA:1154:G:H8 | 1.76 | 0.48 |
| 57:DA:1354:A:OP1 | 24:DC:35:LYS:HE3 | 2.13 | 0.48 |
| 57:DA:1430:G:O2' | 57:DA:1431:A:O4' | 2.25 | 0.48 |
| 57:DA:1555:G:C2 | 57:DA:1556:C:C2 | 3.01 | 0.48 |
| 57:DA:2094:A:O2' | 57:DA:2095:A:C5' | 2.61 | 0.48 |
| 57:DA:2264:C:H2' | 57:DA:2265:U:O4' | 2.14 | 0.48 |
| 57:DA:2310:C:H2' | 57:DA:2311:A:C5' | 2.43 | 0.48 |
| 57:DA:2345:G:N2 | 57:DA:2382:G:C8 | 2.81 | 0.48 |
| 57:DA:2746:U:H2' | 57:DA:2747:G:H5' | 1.94 | 0.48 |
| 25:DD:35:THR:HG21 | 25:DD:67:HIS:CD2 | 2.49 | 0.48 |
| 25:DD:99:GLU:HG3 | 25:DD:100:LEU:H | 1.79 | 0.48 |
| 26:DE:134:LEU:O | 26:DE:138:LEU:HG | 2.13 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 31:DJ:5:THR:HA | 31:DJ:44:TYR:CE2 | 2.48 | 0.48 |
| 41:DT:15:HIS:CE1 | 41:DT:80:TRP:CH2 | 3.01 | 0.48 |
| 45:DX:70:LEU:HB2 | 45:DX:77:TYR:HE2 | 1.78 | 0.48 |
| 46:DY:49:ASP:O | 46:DY:52:ARG:HB2 | 2.13 | 0.48 |
| 49:D1:16:THR:HG21 | 49:D1:42:VAL:HG23 | 1.95 | 0.48 |
| 1:AA:246:A:C4 | 1:AA:282:A:N6 | 2.82 | 0.48 |
| 1:AA:1057:G:H4' | 3:AC:196:GLY:H | 1.79 | 0.48 |
| 2:AB:134:LEU:HA | 2:AB:137:THR:OG1 | 2.13 | 0.48 |
| 2:AB:138:ARG:HA | 2:AB:141:GLU:OE2 | 2.13 | 0.48 |
| 3:AC:153:SER:CB | 3:AC:164:THR:HA | 2.44 | 0.48 |
| 5:AE:155:LYS:CD | 5:AE:155:LYS:H | 2.27 | 0.48 |
| 8:AH:13:ILE:HG22 | 8:AH:14:ARG:N | 2.28 | 0.48 |
| 8:AH:63:LYS:C | 8:AH:64:TYR:HD1 | 2.17 | 0.48 |
| 8:AH:98:LEU:HD23 | 8:AH:98:LEU:N | 2.29 | 0.48 |
| 10:AJ:11:LYS:HB3 | 10:AJ:71:LEU:HD13 | 1.95 | 0.48 |
| 11:AK:22:ILE:HD11 | 11:AK:85:VAL:HG22 | 1.95 | 0.48 |
| 12:AL:49:ARG:NH1 | 12:AL:49:ARG:CG | 2.61 | 0.48 |
| 18:AR:25:ILE:HG21 | 18:AR:66:LEU:HB3 | 1.95 | 0.48 |
| 22:BA:194:G:N7 | 63:BA:3759:HOH:O | 2.35 | 0.48 |
| 22:BA:686:U:H4' | 22:BA:687:C:OP2 | 2.13 | 0.48 |
| 22:BA:990:A:H5' | 22:BA:990:A:C8 | 2.45 | 0.48 |
| 22:BA:1224:U:C4 | 22:BA:1225:G:C6 | 3.02 | 0.48 |
| 22:BA:1378:A:H2' | 22:BA:1380:G:N7 | 2.29 | 0.48 |
| 22:BA:2674:G:H2' | 22:BA:2675:A:C8 | 2.48 | 0.48 |
| 24:BC:106:PRO:CG | 24:BC:141:HIS:HE1 | 2.26 | 0.48 |
| 25:BD:104:VAL:HA | 25:BD:106:LYS:HZ2 | 1.77 | 0.48 |
| 26:BE:170:ARG:HG2 | 26:BE:170:ARG:NH2 | 2.28 | 0.48 |
| 28:BG:68:ARG:HD2 | 28:BG:68:ARG:C | 2.34 | 0.48 |
| 37:BP:67:GLU:OE1 | 37:BP:67:GLU:HA | 2.13 | 0.48 |
| 38:BQ:13:HIS:HD2 | 38:BQ:31:TYR:CD1 | 2.31 | 0.48 |
| 40:BS:14:ALA:O | 40:BS:15:GLN:C | 2.51 | 0.48 |
| 52:B4:36:ARG:HG2 | 52:B4:37:GLN:N | 2.20 | 0.48 |
| 53:CA:522:C:H41 | 12:CL:49:ARG:NH2 | 1.93 | 0.48 |
| 53:CA:914:A:O2' | 53:CA:915:A:O5' | 2.31 | 0.48 |
| 53:CA:972:C:H4' | 10:CJ:59:LYS:HG2 | 1.95 | 0.48 |
| 53:CA:994:A:HO2' | 53:CA:995:C:H6 | 1.55 | 0.48 |
| 53:CA:1431:A:C6 | 53:CA:1432:G:N1 | 2.82 | 0.48 |
| 2:CB:9:LEU:O | 2:CB:10:LYS:CB | 2.62 | 0.48 |
| 2:CB:35:ASN:O | 2:CB:37:VAL:HG12 | 2.14 | 0.48 |
| 2:CB:163:ILE:HA | 2:CB:185:ILE:HG12 | 1.96 | 0.48 |
| 3:CC:153:SER:HB3 | 3:CC:164:THR:HB | 1.94 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:CE:95:MET:HB3 | 5:CE:124:ALA:CB | 2.39 | 0.48 |
| 11:CK:21:HIS:O | 11:CK:22:ILE:HD12 | 2.13 | 0.48 |
| 12:CL:33:CYS:HA | 12:CL:54:VAL:HG13 | 1.96 | 0.48 |
| 12:CL:83:GLY:HA2 | 12:CL:94:TYR:HA | 1.95 | 0.48 |
| 14:CN:80:ARG:HG2 | 14:CN:81:ILE:N | 2.29 | 0.48 |
| 17:CQ:22:VAL:HG21 | 17:CQ:58:VAL:HG21 | 1.96 | 0.48 |
| 18:CR:72:ARG:HA | 21:CU:4:LYS:HE3 | 1.96 | 0.48 |
| 57:DA:251:A:H4' | 33:DL:47:ARG:HH22 | 1.77 | 0.48 |
| 57:DA:260:G:C6 | 57:DA:261:G:N7 | 2.81 | 0.48 |
| 57:DA:297:G:C2 | 57:DA:342:A:C2 | 3.01 | 0.48 |
| 57:DA:323:C:C4 | 57:DA:333:G:N7 | 2.82 | 0.48 |
| 57:DA:453:A:H4' | 57:DA:472:A:H62 | 1.78 | 0.48 |
| 57:DA:457:A:C2 | 57:DA:459:U:O4 | 2.67 | 0.48 |
| 57:DA:726:G:O2' | 57:DA:727:A:P | 2.71 | 0.48 |
| 57:DA:870:U:C2' | 57:DA:871:U:H5' | 2.43 | 0.48 |
| 57:DA:980:A:C4 | 57:DA:1136:G:O4' | 2.67 | 0.48 |
| 57:DA:1153:C:H2' | 57:DA:1154:G:O4' | 2.14 | 0.48 |
| 57:DA:1421:G:H8 | 57:DA:1421:G:OP2 | 1.95 | 0.48 |
| 57:DA:1669:A:O3' | 57:DA:2549:G:H5' | 2.13 | 0.48 |
| 57:DA:1803:A:O2' | 57:DA:1804:C:C5' | 2.62 | 0.48 |
| 57:DA:2043:C:C2 | 57:DA:2044:C:C5 | 3.01 | 0.48 |
| 57:DA:2217:G:C4 | 57:DA:2218:G:C8 | 3.01 | 0.48 |
| 57:DA:2873:A:H5'' | 57:DA:2874:C:OP2 | 2.14 | 0.48 |
| 25:DD:118:PHE:O | 25:DD:119:ALA:HB3 | 2.13 | 0.48 |
| 28:DG:88:LEU:HG | 28:DG:128:THR:O | 2.13 | 0.48 |
| 34:DM:28:PHE:HB2 | 34:DM:104:GLU:OE1 | 2.13 | 0.48 |
| 34:DM:31:PHE:CE2 | 34:DM:110:GLU:HB3 | 2.48 | 0.48 |
| 34:DM:73:ILE:HG21 | 34:DM:91:TYR:CZ | 2.49 | 0.48 |
| 35:DN:103:ARG:HB2 | 35:DN:110:MET:HG3 | 1.94 | 0.48 |
| 37:DP:74:GLN:O | 37:DP:77:SER:HB3 | 2.14 | 0.48 |
| 40:DS:35:ILE:HA | 48:D0:24:VAL:HG21 | 1.95 | 0.48 |
| 42:DU:94:PHE:O | 42:DU:94:PHE:HD2 | 1.95 | 0.48 |
| 1:AA:466:A:H4' | 1:AA:467:U:OP2 | 2.13 | 0.48 |
| 1:AA:585:G:C6 | 1:AA:586:C:C4 | 3.01 | 0.48 |
| 1:AA:1371:G:C6 | 1:AA:1372:U:C4 | 3.02 | 0.48 |
| 2:AB:56:LEU:HB2 | 2:AB:183:PHE:CE1 | 2.48 | 0.48 |
| 2:AB:61:SER:C | 2:AB:63:LYS:H | 2.16 | 0.48 |
| 2:AB:77:GLU:HB2 | 2:AB:80:LYS:HE2 | 1.94 | 0.48 |
| 2:AB:186:VAL:N | 2:AB:199:ILE:O | 2.46 | 0.48 |
| 4:AD:29:THR:HG22 | 4:AD:30:LYS:N | 2.28 | 0.48 |
| 4:AD:145:ARG:HD2 | 4:AD:147:LYS:CE | 2.41 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:AF:47:LEU:CD1 | 6:AF:51:ILE:HG22 | 2.43 | 0.48 |
| 11:AK:87:GLY:H | 11:AK:113:THR:CG2 | 2.25 | 0.48 |
| 12:AL:24:GLU:O | 12:AL:25:ALA:C | 2.51 | 0.48 |
| 12:AL:98:ARG:NH1 | 12:AL:106:VAL:HG22 | 2.29 | 0.48 |
| 16:AP:11:ALA:O | 16:AP:12:LYS:C | 2.52 | 0.48 |
| 17:AQ:7:LEU:HD22 | 17:AQ:72:TRP:CZ3 | 2.48 | 0.48 |
| 17:AQ:7:LEU:HD23 | 17:AQ:24:ILE:CD1 | 2.43 | 0.48 |
| 20:AT:47:GLN:HE21 | 20:AT:82:ILE:CD1 | 2.25 | 0.48 |
| 22:BA:792:A:C5' | 22:BA:793:A:H5' | 2.43 | 0.48 |
| 22:BA:1184:U:OP1 | 47:BZ:29:ARG:HD3 | 2.14 | 0.48 |
| 22:BA:1826:G:H2' | 22:BA:1827:U:O5' | 2.14 | 0.48 |
| 22:BA:2148:G:C2' | 22:BA:2149:U:O4' | 2.59 | 0.48 |
| 22:BA:2215:C:H2' | 22:BA:2216:G:C8 | 2.49 | 0.48 |
| 22:BA:2354:C:O5' | 44:BW:31:LEU:HD22 | 2.14 | 0.48 |
| 22:BA:2555:U:C5 | 22:BA:2556:C:N1 | 2.81 | 0.48 |
| 22:BA:2569:G:C2 | 22:BA:2570:G:C8 | 3.01 | 0.48 |
| 25:BD:34:VAL:CG2 | 25:BD:94:GLN:H | 2.25 | 0.48 |
| 25:BD:106:LYS:HB2 | 25:BD:206:ALA:H | 1.77 | 0.48 |
| 26:BE:5:LEU:HD23 | 26:BE:120:VAL:O | 2.14 | 0.48 |
| 26:BE:131:THR:HG22 | 26:BE:161:ALA:H | 1.78 | 0.48 |
| 27:BF:134:GLN:O | 27:BF:135:ILE:HB | 2.13 | 0.48 |
| 32:BK:99:ILE:HG21 | 32:BK:119:ALA:HB2 | 1.96 | 0.48 |
| 38:BQ:60:TRP:CH2 | 38:BQ:93:ILE:HB | 2.48 | 0.48 |
| 53:CA:702:A:OP1 | 53:CA:702:A:C8 | 2.54 | 0.48 |
| 53:CA:818:G:H3' | 53:CA:819:A:H5' | 1.95 | 0.48 |
| 53:CA:868:C:H2' | 53:CA:869:G:O4' | 2.13 | 0.48 |
| 53:CA:922:G:C2 | 53:CA:923:A:C4 | 3.02 | 0.48 |
| 53:CA:1146:A:O2' | 53:CA:1147:C:C5' | 2.61 | 0.48 |
| 53:CA:1160:G:O2' | 53:CA:1161:C:H5' | 2.13 | 0.48 |
| 53:CA:1296:C:C4 | 53:CA:1297:G:N2 | 2.82 | 0.48 |
| 2:CB:9:LEU:C | 2:CB:11:ALA:H | 2.16 | 0.48 |
| 3:CC:172:VAL:O | 3:CC:174:LEU:N | 2.47 | 0.48 |
| 5:CE:37:VAL:HG12 | 5:CE:38:VAL:H | 1.78 | 0.48 |
| 5:CE:132:PRO:HA | 5:CE:135:VAL:HB | 1.96 | 0.48 |
| 12:CL:56:LEU:CB | 12:CL:58:ASN:OD1 | 2.62 | 0.48 |
| 12:CL:82:ARG:HB2 | 12:CL:97:VAL:CG1 | 2.44 | 0.48 |
| 20:CT:72:ALA:C | 20:CT:74:HIS:H | 2.17 | 0.48 |
| 57:DA:90:U:H3' | 57:DA:91:A:C5' | 2.43 | 0.48 |
| 57:DA:95:A:H2' | 57:DA:96:C:H5'' | 1.96 | 0.48 |
| 57:DA:481:G:P | 42:DU:43:LYS:HG3 | 2.54 | 0.48 |
| 57:DA:502:A:N6 | 57:DA:505:A:C6 | 2.82 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:595:C:O5' | 57:DA:595:C:H6 | 1.96 | 0.48 |
| 57:DA:828:U:H4' | 57:DA:831:G:N1 | 2.29 | 0.48 |
| 57:DA:1036:G:C6 | 57:DA:1120:G:C6 | 3.02 | 0.48 |
| 57:DA:1112:G:O2' | 57:DA:1113:U:C5' | 2.62 | 0.48 |
| 57:DA:1380:G:H1' | 57:DA:1569:A:H61 | 1.79 | 0.48 |
| 57:DA:1425:G:H2' | 57:DA:1426:G:C8 | 2.49 | 0.48 |
| 57:DA:1426:G:H5'' | 57:DA:1427:A:H3' | 1.96 | 0.48 |
| 57:DA:1428:C:HO2' | 57:DA:1568:G:HO2' | 1.61 | 0.48 |
| 57:DA:1527:G:H1' | 57:DA:1546:G:H22 | 1.79 | 0.48 |
| 57:DA:1586:A:C4 | 57:DA:1587:G:C8 | 3.02 | 0.48 |
| 57:DA:1706:C:C2 | 57:DA:1757:A:H5' | 2.48 | 0.48 |
| 57:DA:1829:A:C8 | 57:DA:1830:C:C5 | 3.02 | 0.48 |
| 57:DA:2235:G:H2' | 57:DA:2236:U:H6 | 1.78 | 0.48 |
| 57:DA:2461:A:C5 | 57:DA:2462:C:C4 | 3.02 | 0.48 |
| 57:DA:2769:U:H2' | 57:DA:2770:G:H5' | 1.96 | 0.48 |
| 57:DA:2774:C:N4 | 57:DA:2775:G:C6 | 2.82 | 0.48 |
| 24:DC:239:PHE:HD1 | 24:DC:240:GLY:H | 1.62 | 0.48 |
| 25:DD:32:ASN:HA | 25:DD:51:THR:O | 2.13 | 0.48 |
| 26:DE:146:VAL:O | 26:DE:167:VAL:HA | 2.13 | 0.48 |
| 59:DF:1:ALA:HB2 | 59:DF:93:GLU:O | 2.14 | 0.48 |
| 59:DF:76:PHE:CD2 | 59:DF:76:PHE:N | 2.75 | 0.48 |
| 59:DF:94:ARG:HA | 59:DF:97:GLU:OE2 | 2.13 | 0.48 |
| 32:DK:1:MET:HB2 | 32:DK:32:TYR:HB3 | 1.95 | 0.48 |
| 32:DK:47:ILE:CG2 | 32:DK:49:ARG:HG3 | 2.43 | 0.48 |
| 33:DL:119:PRO:HB3 | 33:DL:139:GLY:O | 2.13 | 0.48 |
| 34:DM:57:VAL:HA | 34:DM:112:LEU:HD11 | 1.95 | 0.48 |
| 36:DO:74:VAL:HB | 36:DO:106:LEU:CD1 | 2.44 | 0.48 |
| 40:DS:96:ILE:HG12 | 40:DS:96:ILE:O | 2.14 | 0.48 |
| 42:DU:14:THR:HG23 | 42:DU:15:GLY:N | 2.27 | 0.48 |
| 44:DW:39:GLN:O | 44:DW:56:HIS:HB3 | 2.13 | 0.48 |
| 47:DZ:43:ILE:HD12 | 47:DZ:44:ARG:N | 2.29 | 0.48 |
| 1:AA:181:A:H1' | 1:AA:182:A:N7 | 2.29 | 0.48 |
| 1:AA:390:U:H2' | 1:AA:391:G:H8 | 1.77 | 0.48 |
| 1:AA:595:A:C5 | 1:AA:641:U:C5 | 3.01 | 0.48 |
| 1:AA:944:G:N1 | 1:AA:1338:G:OP2 | 2.47 | 0.48 |
| 1:AA:972:C:H4' | 10:AJ:59:LYS:HG2 | 1.96 | 0.48 |
| 2:AB:19:THR:HB | 2:AB:37:VAL:HB | 1.95 | 0.48 |
| 2:AB:27:LYS:HB3 | 2:AB:28:PRO:HD3 | 1.94 | 0.48 |
| 3:AC:134:LYS:HE3 | 3:AC:138:GLN:HE22 | 1.77 | 0.48 |
| 5:AE:121:ASN:ND2 | 5:AE:122:VAL:N | 2.62 | 0.48 |
| 11:AK:80:ASN:HB3 | 11:AK:105:ARG:HB3 | 1.96 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AQ:30:HIS:N | 17:AQ:35:LYS:O | 2.42 | 0.48 |
| 22:BA:1106:G:C4 | 22:BA:1107:G:C8 | 3.02 | 0.48 |
| 22:BA:1248:G:O2' | 38:BQ:2:ARG:HA | 2.14 | 0.48 |
| 22:BA:1714:U:O2 | 22:BA:1714:U:C2' | 2.62 | 0.48 |
| 22:BA:1833:C:H2' | 22:BA:1834:U:H6 | 1.77 | 0.48 |
| 22:BA:2264:C:N4 | 44:BW:11:ASN:HD21 | 2.07 | 0.48 |
| 22:BA:2400:G:C2' | 22:BA:2401:U:H5' | 2.44 | 0.48 |
| 22:BA:2532:G:C6 | 22:BA:2533:U:C4 | 3.01 | 0.48 |
| 22:BA:2553:G:N1 | 22:BA:2554:U:O2 | 2.47 | 0.48 |
| 22:BA:2801:G:H2' | 22:BA:2802:G:C8 | 2.49 | 0.48 |
| 22:BA:2801:G:H2' | 22:BA:2802:G:H8 | 1.79 | 0.48 |
| 25:BD:133:THR:HG23 | 25:BD:134:HIS:HD2 | 1.78 | 0.48 |
| 26:BE:175:ILE:HD11 | 26:BE:180:LEU:HD11 | 1.95 | 0.48 |
| 29:BH:54:LEU:N | 29:BH:57:LYS:HB3 | 2.28 | 0.48 |
| 30:BI:85:ILE:HD13 | 30:BI:88:GLY:HA2 | 1.96 | 0.48 |
| 33:BL:95:LEU:CD1 | 33:BL:100:ILE:HD11 | 2.38 | 0.48 |
| 38:BQ:86:SER:HB3 | 39:BR:51:VAL:HG13 | 1.95 | 0.48 |
| 41:BT:32:LEU:H | 41:BT:83:ALA:CB | 2.18 | 0.48 |
| 42:BU:93:ARG:O | 42:BU:94:PHE:HB3 | 2.14 | 0.48 |
| 49:B1:33:LEU:N | 49:B1:51:ALA:HB3 | 2.29 | 0.48 |
| 53:CA:70:U:H2' | 53:CA:94:G:N7 | 2.29 | 0.48 |
| 53:CA:190:A:O5' | 53:CA:190:A:H8 | 1.97 | 0.48 |
| 53:CA:327:A:N1 | 53:CA:329:A:C2 | 2.82 | 0.48 |
| 53:CA:364:A:C2 | 53:CA:365:U:O4 | 2.67 | 0.48 |
| 53:CA:542:G:C4 | 53:CA:543:U:C5 | 3.02 | 0.48 |
| 53:CA:583:A:H3' | 53:CA:584:G:H8 | 1.79 | 0.48 |
| 53:CA:770:C:H1' | 53:CA:899:C:H42 | 1.78 | 0.48 |
| 53:CA:977:A:HO2' | 53:CA:978:A:H5'' | 1.79 | 0.48 |
| 53:CA:1003:G:N2 | 53:CA:1038:C:C2 | 2.81 | 0.48 |
| 53:CA:1265:C:C4 | 53:CA:1266:G:N7 | 2.82 | 0.48 |
| 2:CB:163:ILE:CG2 | 2:CB:203:ASP:HA | 2.44 | 0.48 |
| 8:CH:59:GLU:C | 8:CH:60:LEU:HD12 | 2.34 | 0.48 |
| 10:CJ:32:THR:HG23 | 10:CJ:83:THR:OG1 | 2.13 | 0.48 |
| 17:CQ:23:ALA:C | 17:CQ:24:ILE:HD12 | 2.33 | 0.48 |
| 57:DA:321:U:O4' | 26:DE:159:LEU:HG | 2.14 | 0.48 |
| 57:DA:435:C:C5 | 57:DA:436:C:C5 | 3.01 | 0.48 |
| 57:DA:514:A:N3 | 57:DA:581:C:O2' | 2.41 | 0.48 |
| 57:DA:532:A:N1 | 57:DA:2020:A:H1' | 2.29 | 0.48 |
| 57:DA:575:A:H2' | 57:DA:576:U:H5 | 1.79 | 0.48 |
| 57:DA:703:U:H2' | 57:DA:704:G:O4' | 2.13 | 0.48 |
| 57:DA:849:A:H2' | 57:DA:850:U:C6 | 2.49 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:1280:G:H2' | 57:DA:1281:G:H5' | 1.96 | 0.48 |
| 57:DA:1299:G:N2 | 57:DA:1640:A:H5' | 2.27 | 0.48 |
| 57:DA:1810:A:H3' | 57:DA:1811:G:C8 | 2.41 | 0.48 |
| 57:DA:2533:U:C4 | 57:DA:2534:A:C4 | 3.02 | 0.48 |
| 57:DA:2582:G:O2' | 57:DA:2583:G:H5' | 2.12 | 0.48 |
| 57:DA:2862:G:C2 | 57:DA:2863:C:C2 | 3.01 | 0.48 |
| 58:DB:42:C:C5 | 59:DF:65:LEU:HD13 | 2.48 | 0.48 |
| 24:DC:63:ILE:O | 24:DC:64:VAL:HB | 2.14 | 0.48 |
| 25:DD:61:THR:HB | 25:DD:63:PRO:HD2 | 1.96 | 0.48 |
| 28:DG:120:ILE:O | 28:DG:120:ILE:HD13 | 2.14 | 0.48 |
| 32:DK:21:CYS:HB2 | 32:DK:39:ILE:HG21 | 1.94 | 0.48 |
| 33:DL:127:VAL:HG13 | 33:DL:132:ARG:HB2 | 1.96 | 0.48 |
| 35:DN:9:GLN:O | 35:DN:10:LEU:O | 2.31 | 0.48 |
| 42:DU:3:LYS:HG2 | 42:DU:84:PHE:CZ | 2.49 | 0.48 |
| 43:DV:28:ALA:HA | 43:DV:88:HIS:CE1 | 2.49 | 0.48 |
| 49:D1:7:LYS:HD3 | 51:D3:33:THR:CG2 | 2.38 | 0.48 |
| 50:D2:31:LEU:CA | 50:D2:34:ARG:HB2 | 2.42 | 0.48 |
| 51:D3:18:LYS:CD | 51:D3:19:GLY:H | 2.25 | 0.48 |
| 52:D4:2:LYS:HZ3 | 52:D4:2:LYS:HA | 1.79 | 0.48 |
| 1:AA:109:A:H4' | 1:AA:110:C:OP2 | 2.13 | 0.48 |
| 1:AA:683:G:N2 | 11:AK:39:ASN:HA | 2.29 | 0.48 |
| 1:AA:972:C:HO2' | 1:AA:973:G:C5' | 2.27 | 0.48 |
| 1:AA:1241:G:O2' | 1:AA:1242:G:C8 | 2.56 | 0.48 |
| 2:AB:112:ARG:O | 2:AB:116:LEU:HD23 | 2.13 | 0.48 |
| 3:AC:6:PRO:CG | 3:AC:183:TYR:CG | 2.97 | 0.48 |
| 5:AE:56:PRO:HG2 | 5:AE:57:ALA:H | 1.79 | 0.48 |
| 11:AK:106:ILE:HD13 | 11:AK:106:ILE:O | 2.13 | 0.48 |
| 22:BA:178:G:O2' | 22:BA:179:C:H5' | 2.13 | 0.48 |
| 22:BA:264:C:O2' | 22:BA:265:A:H3' | 2.14 | 0.48 |
| 22:BA:311:A:C6 | 22:BA:328:U:C4 | 3.02 | 0.48 |
| 22:BA:866:A:C8 | 22:BA:914:G:C6 | 3.02 | 0.48 |
| 22:BA:1249:U:H5' | 22:BA:1249:U:H6 | 1.78 | 0.48 |
| 22:BA:1336:A:H2' | 22:BA:1337:G:O4' | 2.14 | 0.48 |
| 22:BA:1419:A:C3' | 22:BA:1420:A:H5'' | 2.44 | 0.48 |
| 22:BA:2007:U:H2' | 22:BA:2008:C:C6 | 2.48 | 0.48 |
| 22:BA:2239:G:H5' | 24:BC:248:GLY:HA3 | 1.96 | 0.48 |
| 22:BA:2520:C:H2' | 22:BA:2521:C:H6 | 1.79 | 0.48 |
| 22:BA:2545:G:C2' | 22:BA:2546:U:H5' | 2.44 | 0.48 |
| 23:BB:40:U:O2' | 23:BB:43:C:C5 | 2.66 | 0.48 |
| 25:BD:190:LYS:O | 25:BD:191:GLY:O | 2.32 | 0.48 |
| 26:BE:187:VAL:O | 26:BE:188:MET:CB | 2.60 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:BF:3:LEU:HD23 | 27:BF:100:GLU:HB2 | 1.95 | 0.48 |
| 30:BI:12:VAL:HG23 | 30:BI:13:ALA:H | 1.78 | 0.48 |
| 33:BL:77:ILE:HG12 | 33:BL:95:LEU:CD1 | 2.43 | 0.48 |
| 35:BN:33:ILE:HG12 | 35:BN:118:ARG:CZ | 2.44 | 0.48 |
| 40:BS:45:VAL:CG2 | 40:BS:46:LEU:N | 2.76 | 0.48 |
| 47:BZ:9:THR:CG2 | 47:BZ:10:ARG:N | 2.69 | 0.48 |
| 53:CA:148:G:C2 | 53:CA:149:A:C4 | 3.01 | 0.48 |
| 53:CA:183:C:O2' | 53:CA:184:G:C5' | 2.59 | 0.48 |
| 53:CA:211:G:H2' | 53:CA:211:G:N3 | 2.29 | 0.48 |
| 53:CA:270:A:H2' | 53:CA:271:C:C6 | 2.49 | 0.48 |
| 53:CA:355:C:C4 | 53:CA:356:A:N7 | 2.82 | 0.48 |
| 53:CA:502:A:C1' | 53:CA:550:G:H5' | 2.43 | 0.48 |
| 53:CA:687:A:C2 | 53:CA:704:A:C5 | 3.02 | 0.48 |
| 53:CA:722:G:H2' | 53:CA:722:G:N3 | 2.28 | 0.48 |
| 53:CA:865:A:H2 | 53:CA:918:A:H4' | 1.78 | 0.48 |
| 53:CA:935:A:O2' | 53:CA:936:C:C6 | 2.66 | 0.48 |
| 2:CB:146:SER:HB2 | 2:CB:147:LEU:HD12 | 1.96 | 0.48 |
| 8:CH:12:ARG:NH1 | 8:CH:27:PRO:HD2 | 2.29 | 0.48 |
| 8:CH:39:LEU:HD23 | 8:CH:44:PHE:HD2 | 1.78 | 0.48 |
| 10:CJ:11:LYS:HB3 | 10:CJ:71:LEU:CD1 | 2.41 | 0.48 |
| 12:CL:75:GLU:C | 12:CL:77:SER:H | 2.18 | 0.48 |
| 57:DA:85:G:HO2' | 57:DA:86:G:H8 | 1.62 | 0.48 |
| 57:DA:377:G:C6 | 57:DA:378:C:N3 | 2.82 | 0.48 |
| 57:DA:489:G:H4' | 57:DA:490:C:OP1 | 2.14 | 0.48 |
| 57:DA:641:U:C5 | 57:DA:642:U:C4 | 3.01 | 0.48 |
| 57:DA:845:A:C2 | 57:DA:847:U:C6 | 3.01 | 0.48 |
| 57:DA:957:C:OP2 | 34:DM:75:GLU:HA | 2.14 | 0.48 |
| 57:DA:982:C:H5'' | 57:DA:983:A:OP1 | 2.14 | 0.48 |
| 57:DA:1203:U:C4 | 57:DA:1204:A:N7 | 2.81 | 0.48 |
| 57:DA:2195:U:O2' | 57:DA:2196:C:H5' | 2.14 | 0.48 |
| 57:DA:2290:G:H2' | 57:DA:2291:U:C6 | 2.49 | 0.48 |
| 57:DA:2448:A:O2' | 57:DA:2449:U:C5 | 2.65 | 0.48 |
| 58:DB:26:C:H1' | 58:DB:117:G:C1' | 2.43 | 0.48 |
| 58:DB:75:G:H1' | 43:DV:29:ILE:HG12 | 1.96 | 0.48 |
| 25:DD:61:THR:CB | 25:DD:63:PRO:HD2 | 2.44 | 0.48 |
| 25:DD:107:VAL:HG11 | 25:DD:189:VAL:HG11 | 1.96 | 0.48 |
| 59:DF:8:LYS:HB2 | 59:DF:8:LYS:NZ | 2.29 | 0.48 |
| 59:DF:11:VAL:O | 59:DF:12:VAL:HB | 2.14 | 0.48 |
| 30:DI:36:GLU:HB2 | 30:DI:40:ALA:HB3 | 1.94 | 0.48 |
| 37:DP:113:LEU:HD23 | 37:DP:113:LEU:C | 2.34 | 0.48 |
| 41:DT:7:LEU:O | 41:DT:10:VAL:HG13 | 2.13 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 44:DW:23:LYS:HD2 | 44:DW:24:ARG:HB2 | 1.96 | 0.48 |
| 1:AA:161:A:N1 | 1:AA:347:G:O2' | 2.46 | 0.48 |
| 1:AA:829:G:C6 | 1:AA:858:G:C2 | 3.01 | 0.48 |
| 1:AA:1087:G:N2 | 1:AA:1088:G:C4 | 2.82 | 0.48 |
| 1:AA:1202:U:H2' | 1:AA:1203:C:C6 | 2.49 | 0.48 |
| 1:AA:1319:A:C8 | 1:AA:1323:G:C5 | 3.02 | 0.48 |
| 3:AC:59:PRO:O | 3:AC:62:SER:HB3 | 2.14 | 0.48 |
| 3:AC:153:SER:CB | 3:AC:164:THR:HG22 | 2.44 | 0.48 |
| 4:AD:52:VAL:CG2 | 4:AD:53:GLN:N | 2.77 | 0.48 |
| 4:AD:103:ARG:NH1 | 4:AD:110:ARG:HH22 | 2.12 | 0.48 |
| 9:AI:49:GLN:N | 9:AI:50:PRO:HD2 | 2.28 | 0.48 |
| 17:AQ:50:ASN:OD1 | 17:AQ:50:ASN:N | 2.47 | 0.48 |
| 22:BA:303:G:C6 | 22:BA:315:G:C6 | 3.02 | 0.48 |
| 22:BA:508:A:H4' | 22:BA:509:C:OP2 | 2.13 | 0.48 |
| 22:BA:960:A:H5'' | 22:BA:961:C:OP2 | 2.13 | 0.48 |
| 22:BA:995:C:O2' | 22:BA:996:A:P | 2.72 | 0.48 |
| 22:BA:1026:G:C8 | 22:BA:1134:A:C4 | 3.02 | 0.48 |
| 22:BA:1106:G:N2 | 22:BA:1107:G:HI1' | 2.27 | 0.48 |
| 22:BA:1513:U:C2' | 22:BA:1514:G:H5' | 2.44 | 0.48 |
| 22:BA:2052:A:C2 | 22:BA:2053:G:C8 | 3.02 | 0.48 |
| 22:BA:2714:G:H2' | 22:BA:2715:C:H6 | 1.78 | 0.48 |
| 22:BA:2722:G:H2' | 22:BA:2723:C:H6 | 1.78 | 0.48 |
| 26:BE:119:ILE:CD1 | 26:BE:187:VAL:HA | 2.43 | 0.48 |
| 32:BK:18:ARG:HB2 | 32:BK:45:GLU:CG | 2.44 | 0.48 |
| 33:BL:74:THR:HA | 33:BL:107:PHE:O | 2.14 | 0.48 |
| 37:BP:33:GLU:HG3 | 37:BP:34:GLY:H | 1.78 | 0.48 |
| 41:BT:26:LYS:O | 41:BT:27:SER:CB | 2.60 | 0.48 |
| 45:BX:40:GLU:HG3 | 45:BX:43:LYS:NZ | 2.28 | 0.48 |
| 53:CA:160:A:H4' | 53:CA:344:A:N1 | 2.29 | 0.48 |
| 53:CA:223:A:C5 | 53:CA:224:U:C5 | 3.02 | 0.48 |
| 53:CA:279:A:H4' | 53:CA:280:C:O5' | 2.14 | 0.48 |
| 53:CA:320:A:C2 | 53:CA:334:C:C2 | 3.01 | 0.48 |
| 53:CA:672:U:H2' | 53:CA:673:A:C8 | 2.48 | 0.48 |
| 53:CA:739:C:O2 | 53:CA:739:C:H2' | 2.14 | 0.48 |
| 53:CA:767:A:H2' | 53:CA:768:A:C8 | 2.48 | 0.48 |
| 53:CA:888:G:H4' | 53:CA:1488:G:O2' | 2.14 | 0.48 |
| 53:CA:1008:U:C4 | 53:CA:1022:A:C2 | 3.02 | 0.48 |
| 53:CA:1071:C:C5' | 5:CE:53:ARG:HH11 | 2.27 | 0.48 |
| 53:CA:1130:A:N7 | 53:CA:1146:A:C6 | 2.82 | 0.48 |
| 53:CA:1278:G:H8 | 53:CA:1278:G:OP2 | 1.97 | 0.48 |
| 53:CA:1409:C:H2' | 53:CA:1410:A:C8 | 2.48 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:CB:176:ASN:C | 2:CB:178:LEU:H | 2.17 | 0.48 |
| 3:CC:136:ALA:HA | 3:CC:139:ASN:HD21 | 1.78 | 0.48 |
| 5:CE:130:THR:HA | 5:CE:135:VAL:CG2 | 2.44 | 0.48 |
| 5:CE:157:GLY:CA | 8:CH:63:LYS:HZ2 | 2.26 | 0.48 |
| 54:CG:74:VAL:HG11 | 54:CG:143:MET:HB2 | 1.95 | 0.48 |
| 9:CI:58:GLU:HG3 | 9:CI:59:LYS:N | 2.29 | 0.48 |
| 20:CT:60:GLN:HA | 20:CT:60:GLN:OE1 | 2.13 | 0.48 |
| 57:DA:28:A:C2 | 57:DA:29:U:H1' | 2.49 | 0.48 |
| 57:DA:135:U:H2' | 57:DA:136:G:C8 | 2.49 | 0.48 |
| 57:DA:642:U:H4' | 57:DA:2349:G:O2' | 2.13 | 0.48 |
| 57:DA:1069:A:O2' | 57:DA:1071:G:H5'' | 2.14 | 0.48 |
| 57:DA:1071:G:O2' | 57:DA:1072:C:C5' | 2.62 | 0.48 |
| 57:DA:1527:G:C2 | 57:DA:1546:G:N1 | 2.82 | 0.48 |
| 57:DA:1553:A:N7 | 57:DA:1555:G:C6 | 2.82 | 0.48 |
| 57:DA:1663:G:C6 | 57:DA:1998:A:N6 | 2.82 | 0.48 |
| 57:DA:1807:G:H21 | 57:DA:1809:A:H2' | 1.78 | 0.48 |
| 57:DA:2351:G:N7 | 51:D3:42:HIS:NE2 | 2.62 | 0.48 |
| 57:DA:2365:G:OP1 | 44:DW:54:ARG:HG3 | 2.14 | 0.48 |
| 57:DA:2525:G:C2 | 57:DA:2539:C:C2 | 3.02 | 0.48 |
| 57:DA:2876:G:N2 | 57:DA:2877:G:H1' | 2.29 | 0.48 |
| 58:DB:54:G:N2 | 59:DF:25:MET:CE | 2.77 | 0.48 |
| 25:DD:12:THR:OG1 | 37:DP:4:ILE:HG23 | 2.14 | 0.48 |
| 25:DD:169:ARG:O | 25:DD:170:VAL:O | 2.32 | 0.48 |
| 59:DF:103:ILE:H | 59:DF:107:VAL:CG1 | 2.27 | 0.48 |
| 29:DH:42:LYS:NZ | 29:DH:42:LYS:HB3 | 2.29 | 0.48 |
| 29:DH:66:ASN:HA | 29:DH:137:GLU:CD | 2.34 | 0.48 |
| 30:DI:16:MET:SD | 30:DI:19:PRO:HG2 | 2.53 | 0.48 |
| 33:DL:79:LEU:HD12 | 33:DL:112:LEU:HB2 | 1.96 | 0.48 |
| 35:DN:35:LYS:HD3 | 35:DN:112:TYR:CZ | 2.49 | 0.48 |
| 43:DV:75:GLN:HG3 | 43:DV:92:VAL:CG1 | 2.44 | 0.48 |
| 44:DW:18:LYS:HZ3 | 44:DW:18:LYS:HB2 | 1.79 | 0.48 |
| 1:AA:501:C:H1' | 1:AA:549:C:H1' | 1.96 | 0.47 |
| 1:AA:506:G:C6 | 1:AA:507:C:C4 | 3.02 | 0.47 |
| 1:AA:595:A:C6 | 1:AA:641:U:C6 | 3.01 | 0.47 |
| 1:AA:738:C:H2' | 1:AA:739:C:H6 | 1.78 | 0.47 |
| 1:AA:1160:G:O2' | 1:AA:1161:C:O5' | 2.31 | 0.47 |
| 1:AA:1173:U:H2' | 1:AA:1174:G:C8 | 2.49 | 0.47 |
| 7:AG:112:ASP:HB2 | 7:AG:118:ARG:CG | 2.44 | 0.47 |
| 8:AH:82:LEU:HD22 | 8:AH:84:ILE:HD11 | 1.95 | 0.47 |
| 17:AQ:6:THR:O | 17:AQ:7:LEU:HD12 | 2.13 | 0.47 |
| 22:BA:251:A:H8 | 22:BA:251:A:O5' | 1.97 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 22:BA:563:A:C2 | 22:BA:564:C:C2 | 3.02 | 0.47 |
| 22:BA:1006:C:O2' | 22:BA:1007:C:H5' | 2.14 | 0.47 |
| 22:BA:1206:G:C6 | 22:BA:1207:C:C4 | 3.02 | 0.47 |
| 22:BA:1561:C:H2' | 22:BA:1562:U:C6 | 2.49 | 0.47 |
| 22:BA:2322:A:N6 | 22:BA:2333:A:N6 | 2.62 | 0.47 |
| 22:BA:2531:A:H5' | 28:BG:156:TYR:CZ | 2.49 | 0.47 |
| 24:BC:259:ASN:C | 24:BC:261:ARG:H | 2.17 | 0.47 |
| 25:BD:121:THR:HG22 | 25:BD:125:TRP:HD1 | 1.79 | 0.47 |
| 26:BE:127:GLU:CD | 26:BE:127:GLU:N | 2.68 | 0.47 |
| 27:BF:39:VAL:H | 27:BF:85:GLY:HA2 | 1.79 | 0.47 |
| 27:BF:45:ASP:CB | 27:BF:48:LEU:HB2 | 2.42 | 0.47 |
| 28:BG:96:ALA:O | 28:BG:97:VAL:HB | 2.13 | 0.47 |
| 35:BN:13:ASN:O | 35:BN:14:SER:C | 2.53 | 0.47 |
| 37:BP:4:ILE:HA | 37:BP:7:LEU:HB2 | 1.95 | 0.47 |
| 38:BQ:13:HIS:HD2 | 38:BQ:31:TYR:CE1 | 2.32 | 0.47 |
| 38:BQ:82:LEU:CD2 | 38:BQ:112:ALA:HB2 | 2.44 | 0.47 |
| 39:BR:49:ILE:CG2 | 39:BR:54:VAL:HG12 | 2.43 | 0.47 |
| 53:CA:15:G:H5' | 53:CA:15:G:C8 | 2.48 | 0.47 |
| 53:CA:729:A:H2' | 53:CA:730:G:O4' | 2.14 | 0.47 |
| 53:CA:1449:C:O2' | 53:CA:1450:U:C5' | 2.62 | 0.47 |
| 8:CH:85:TYR:CE2 | 8:CH:123:GLU:HB2 | 2.49 | 0.47 |
| 10:CJ:102:LEU:HD13 | 10:CJ:102:LEU:OXT | 2.14 | 0.47 |
| 12:CL:2:THR:HG22 | 12:CL:4:ASN:H | 1.77 | 0.47 |
| 17:CQ:4:ILE:HG22 | 17:CQ:5:ARG:N | 2.27 | 0.47 |
| 19:CS:38:THR:HG1 | 19:CS:40:PHE:HD1 | 1.61 | 0.47 |
| 57:DA:181:A:H2 | 57:DA:434:U:C1' | 2.25 | 0.47 |
| 57:DA:255:A:H2' | 57:DA:256:A:O4' | 2.14 | 0.47 |
| 57:DA:468:G:H4' | 26:DE:57:LYS:CG | 2.44 | 0.47 |
| 57:DA:565:C:H4' | 57:DA:1253:A:N6 | 2.29 | 0.47 |
| 57:DA:629:G:O2' | 57:DA:630:G:H5' | 2.14 | 0.47 |
| 57:DA:861:A:O2' | 57:DA:862:G:O4' | 2.23 | 0.47 |
| 57:DA:1416:G:C4 | 57:DA:1417:C:C5 | 3.02 | 0.47 |
| 57:DA:1497:U:C5 | 57:DA:1578:U:O5' | 2.66 | 0.47 |
| 57:DA:1553:A:N7 | 57:DA:1555:G:C5 | 2.82 | 0.47 |
| 57:DA:1648:U:O2' | 57:DA:1649:G:O4' | 2.26 | 0.47 |
| 57:DA:2025:C:OP1 | 25:DD:154:LYS:HE2 | 2.13 | 0.47 |
| 57:DA:2473:U:P | 57:DA:2473:U:H6 | 2.37 | 0.47 |
| 57:DA:2838:G:H1' | 35:DN:45:ARG:NH2 | 2.27 | 0.47 |
| 58:DB:55:U:H1' | 59:DF:25:MET:HE1 | 1.95 | 0.47 |
| 58:DB:57:A:C6 | 59:DF:25:MET:SD | 3.07 | 0.47 |
| 24:DC:74:PRO:HA | 24:DC:116:GLN:HG3 | 1.96 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:DH:80:ILE:HB | 29:DH:101:ASP:HB3 | 1.95 | 0.47 |
| 30:DI:52:LEU:HD12 | 30:DI:53:PRO:HD2 | 1.96 | 0.47 |
| 39:DR:51:VAL:HB | 39:DR:52:PRO:HD2 | 1.95 | 0.47 |
| 41:DT:19:LYS:O | 41:DT:20:ALA:HB2 | 2.13 | 0.47 |
| 43:DV:21:ARG:HE | 43:DV:87:GLN:CB | 2.27 | 0.47 |
| 43:DV:61:LEU:O | 43:DV:72:VAL:HG22 | 2.14 | 0.47 |
| 51:D3:46:LYS:O | 51:D3:46:LYS:HD3 | 2.14 | 0.47 |
| 1:AA:502:A:H2' | 1:AA:503:C:C6 | 2.49 | 0.47 |
| 1:AA:1003:G:C6 | 1:AA:1036:A:N6 | 2.82 | 0.47 |
| 1:AA:1004:A:H2' | 1:AA:1005:A:O4' | 2.13 | 0.47 |
| 1:AA:1506:U:H3' | 63:AA:1802:HOH:O | 2.14 | 0.47 |
| 3:AC:154:GLY:H | 3:AC:156:LEU:HD11 | 1.78 | 0.47 |
| 3:AC:185:THR:HG22 | 3:AC:186:SER:N | 2.29 | 0.47 |
| 4:AD:75:TYR:CD1 | 4:AD:75:TYR:C | 2.87 | 0.47 |
| 5:AE:71:ILE:HG12 | 5:AE:72:ASN:H | 1.79 | 0.47 |
| 16:AP:42:ILE:HG22 | 16:AP:43:ALA:N | 2.28 | 0.47 |
| 20:AT:4:LYS:O | 20:AT:5:SER:C | 2.52 | 0.47 |
| 22:BA:45:G:H5'' | 22:BA:46:G:OP1 | 2.14 | 0.47 |
| 22:BA:269:C:H2' | 22:BA:270:A:C5' | 2.43 | 0.47 |
| 22:BA:806:C:O5' | 22:BA:806:C:H6 | 1.97 | 0.47 |
| 22:BA:814:C:H2' | 22:BA:815:C:C6 | 2.49 | 0.47 |
| 22:BA:1059:G:O2' | 30:BI:128:ILE:HD13 | 2.14 | 0.47 |
| 22:BA:1135:C:N4 | 22:BA:1139:G:C6 | 2.82 | 0.47 |
| 22:BA:1189:A:H2' | 22:BA:1190:G:O4' | 2.14 | 0.47 |
| 22:BA:1256:G:C2' | 26:BE:77:ILE:HD11 | 2.44 | 0.47 |
| 22:BA:1806:C:O2 | 24:BC:43:ASN:OD1 | 2.32 | 0.47 |
| 22:BA:1820:U:H4' | 22:BA:1821:A:OP2 | 2.13 | 0.47 |
| 22:BA:2023:C:H5' | 22:BA:2034:U:H1' | 1.95 | 0.47 |
| 22:BA:2720:U:OP1 | 37:BP:52:ARG:NH2 | 2.47 | 0.47 |
| 22:BA:2780:G:OP2 | 31:BJ:120:ARG:HD3 | 2.15 | 0.47 |
| 24:BC:170:TYR:HD2 | 24:BC:184:GLU:HA | 1.75 | 0.47 |
| 24:BC:252:LYS:HB2 | 24:BC:252:LYS:NZ | 2.27 | 0.47 |
| 25:BD:114:LYS:HD3 | 25:BD:116:LYS:HZ1 | 1.78 | 0.47 |
| 29:BH:89:LYS:HG2 | 29:BH:90:LEU:N | 2.19 | 0.47 |
| 30:BI:91:LYS:O | 30:BI:97:VAL:HG21 | 2.14 | 0.47 |
| 30:BI:126:ARG:HA | 30:BI:129:GLU:CD | 2.35 | 0.47 |
| 36:BO:105:ALA:O | 36:BO:106:LEU:HB3 | 2.14 | 0.47 |
| 37:BP:56:SER:O | 37:BP:75:THR:HG23 | 2.14 | 0.47 |
| 53:CA:295:C:C6 | 53:CA:296:U:C5 | 3.02 | 0.47 |
| 53:CA:1314:C:H2' | 53:CA:1315:U:O4' | 2.15 | 0.47 |
| 2:CB:101:THR:O | 2:CB:102:ASN:HB2 | 2.14 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 2:CB:102:ASN:O | 2:CB:102:ASN:CG | 2.52 | 0.47 |
| 54:CG:21:LEU:O | 54:CG:25:PHE:N | 2.47 | 0.47 |
| 9:CI:59:LYS:HE3 | 9:CI:60:LEU:CG | 2.44 | 0.47 |
| 9:CI:128:LYS:O | 9:CI:129:ARG:HB2 | 2.13 | 0.47 |
| 55:CM:92:ARG:HD2 | 19:CS:79:TYR:OH | 2.14 | 0.47 |
| 57:DA:85:G:O2' | 57:DA:86:G:H8 | 1.97 | 0.47 |
| 57:DA:99:U:H5' | 57:DA:100:U:OP1 | 2.14 | 0.47 |
| 57:DA:486:C:O5' | 57:DA:486:C:H6 | 1.96 | 0.47 |
| 57:DA:672:C:H5' | 57:DA:672:C:C6 | 2.49 | 0.47 |
| 57:DA:699:A:H2' | 57:DA:700:G:O4' | 2.15 | 0.47 |
| 57:DA:833:A:H2' | 57:DA:834:G:H8 | 1.79 | 0.47 |
| 57:DA:915:C:HO2' | 57:DA:916:G:H5' | 1.80 | 0.47 |
| 57:DA:948:C:H2' | 57:DA:949:G:O4' | 2.14 | 0.47 |
| 57:DA:1108:U:H2' | 57:DA:1109:C:O4' | 2.14 | 0.47 |
| 57:DA:1139:G:N3 | 57:DA:1143:A:H2 | 2.11 | 0.47 |
| 57:DA:1145:C:O2' | 57:DA:1146:C:H5' | 2.14 | 0.47 |
| 57:DA:1213:A:H2' | 57:DA:1214:A:H8 | 1.78 | 0.47 |
| 57:DA:1418:G:H1' | 57:DA:1580:A:H61 | 1.78 | 0.47 |
| 57:DA:1483:G:H2' | 57:DA:1484:U:C6 | 2.48 | 0.47 |
| 57:DA:1721:G:H1' | 57:DA:1739:A:H61 | 1.79 | 0.47 |
| 57:DA:1878:G:H2' | 57:DA:1879:C:O4' | 2.15 | 0.47 |
| 57:DA:2431:U:N3 | 57:DA:2434:A:OP2 | 2.41 | 0.47 |
| 57:DA:2760:C:H2' | 57:DA:2760:C:O2 | 2.14 | 0.47 |
| 25:DD:161:MET:O | 25:DD:162:ALA:O | 2.32 | 0.47 |
| 59:DF:19:PHE:HB3 | 59:DF:21:TYR:CE2 | 2.49 | 0.47 |
| 59:DF:27:VAL:O | 59:DF:27:VAL:HG23 | 2.15 | 0.47 |
| 28:DG:85:LYS:HG3 | 28:DG:163:TYR:HB2 | 1.96 | 0.47 |
| 28:DG:152:ARG:HD2 | 28:DG:153:PRO:HD2 | 1.96 | 0.47 |
| 33:DL:103:ILE:HD12 | 33:DL:103:ILE:N | 2.29 | 0.47 |
| 37:DP:83:ILE:HD13 | 37:DP:83:ILE:O | 2.13 | 0.47 |
| 43:DV:64:VAL:HG13 | 43:DV:68:LYS:O | 2.14 | 0.47 |
| 45:DX:26:ARG:HG3 | 45:DX:27:ARG:N | 2.28 | 0.47 |
| 46:DY:48:ARG:O | 46:DY:51:ALA:HB3 | 2.14 | 0.47 |
| 1:AA:1202:U:O2' | 1:AA:1203:C:C5' | 2.62 | 0.47 |
| 1:AA:1260:G:H4' | 1:AA:1284:C:H5' | 1.96 | 0.47 |
| 2:AB:95:TRP:CH2 | 2:AB:100:LEU:HB2 | 2.48 | 0.47 |
| 12:AL:115:LYS:O | 12:AL:116:TYR:HB2 | 2.15 | 0.47 |
| 13:AM:22:TYR:CE2 | 13:AM:69:ARG:HG2 | 2.49 | 0.47 |
| 13:AM:36:ALA:HB3 | 13:AM:38:ILE:HG12 | 1.95 | 0.47 |
| 13:AM:92:ARG:CZ | 13:AM:92:ARG:HB3 | 2.44 | 0.47 |
| 14:AN:42:ASN:O | 14:AN:44:VAL:N | 2.47 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 15:AO:69:LEU:HD22 | 15:AO:77:TYR:HB2 | 1.96 | 0.47 |
| 19:AS:62:THR:HB | 19:AS:65:MET:HG3 | 1.96 | 0.47 |
| 22:BA:81:G:C6 | 22:BA:82:U:C2 | 3.02 | 0.47 |
| 22:BA:96:C:O2' | 22:BA:97:C:H5' | 2.13 | 0.47 |
| 22:BA:273:G:O2' | 22:BA:274:C:O5' | 2.32 | 0.47 |
| 22:BA:748:G:OP2 | 40:BS:88:ARG:HG3 | 2.14 | 0.47 |
| 22:BA:820:A:H2' | 22:BA:821:A:O4' | 2.15 | 0.47 |
| 22:BA:919:U:H2' | 22:BA:920:A:O4' | 2.14 | 0.47 |
| 22:BA:962:G:O2' | 22:BA:963:U:H5' | 2.13 | 0.47 |
| 22:BA:1021:A:H2' | 22:BA:1021:A:N3 | 2.29 | 0.47 |
| 22:BA:1835:G:N3 | 22:BA:1931:U:C5 | 2.82 | 0.47 |
| 22:BA:2140:G:C2 | 22:BA:2141:G:C4 | 3.02 | 0.47 |
| 22:BA:2403:C:H2' | 22:BA:2404:U:H6 | 1.78 | 0.47 |
| 22:BA:2469:A:C6 | 22:BA:2482:A:C8 | 3.03 | 0.47 |
| 22:BA:2592:G:C6 | 22:BA:2593:U:C4 | 3.02 | 0.47 |
| 24:BC:73:ILE:H | 24:BC:73:ILE:HG12 | 1.47 | 0.47 |
| 25:BD:4:LEU:HD23 | 25:BD:29:VAL:HG11 | 1.96 | 0.47 |
| 26:BE:124:PHE:CZ | 26:BE:148:ILE:HD12 | 2.50 | 0.47 |
| 27:BF:67:THR:N | 27:BF:85:GLY:O | 2.38 | 0.47 |
| 28:BG:159:LYS:HB3 | 28:BG:159:LYS:HE2 | 1.70 | 0.47 |
| 30:BI:56:VAL:HG22 | 30:BI:57:VAL:N | 2.29 | 0.47 |
| 35:BN:3:HIS:O | 35:BN:4:ARG:HB2 | 2.14 | 0.47 |
| 42:BU:27:VAL:HG22 | 42:BU:28:LEU:N | 2.29 | 0.47 |
| 45:BX:19:HIS:C | 45:BX:21:LEU:H | 2.17 | 0.47 |
| 53:CA:106:C:C2' | 53:CA:107:G:H5' | 2.44 | 0.47 |
| 53:CA:255:G:O3' | 17:CQ:18:LYS:HD2 | 2.14 | 0.47 |
| 53:CA:974:A:O2' | 53:CA:975:A:P | 2.72 | 0.47 |
| 53:CA:1254:A:H2' | 53:CA:1255:G:H8 | 1.72 | 0.47 |
| 53:CA:1271:A:H5' | 53:CA:1314:C:H5'' | 1.96 | 0.47 |
| 3:CC:8:GLY:HA3 | 14:CN:88:MET:SD | 2.54 | 0.47 |
| 4:CD:24:VAL:HG23 | 4:CD:25:ARG:N | 2.29 | 0.47 |
| 54:CG:4:ARG:CZ | 54:CG:6:ILE:HG22 | 2.45 | 0.47 |
| 55:CM:11:HIS:N | 55:CM:44:ILE:HD12 | 2.29 | 0.47 |
| 55:CM:106:ARG:CZ | 55:CM:112:ARG:HB3 | 2.44 | 0.47 |
| 14:CN:12:ARG:HB3 | 14:CN:59:GLN:HG2 | 1.95 | 0.47 |
| 57:DA:265:A:C6 | 57:DA:428:A:O4' | 2.68 | 0.47 |
| 57:DA:438:G:C6 | 57:DA:439:A:C6 | 3.02 | 0.47 |
| 57:DA:481:G:OP2 | 42:DU:43:LYS:HG3 | 2.14 | 0.47 |
| 57:DA:527:C:H2' | 57:DA:527:C:O2 | 2.13 | 0.47 |
| 57:DA:599:A:N3 | 57:DA:659:G:C2 | 2.83 | 0.47 |
| 57:DA:603:A:H4' | 57:DA:604:G:C4' | 2.44 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:732:C:N4 | 57:DA:733:G:C6 | 2.83 | 0.47 |
| 57:DA:784:G:OP1 | 57:DA:2588:G:H5'' | 2.14 | 0.47 |
| 57:DA:1072:C:O2' | 57:DA:1093:G:O6 | 2.25 | 0.47 |
| 57:DA:1199:U:H2' | 57:DA:1200:C:C6 | 2.48 | 0.47 |
| 57:DA:1221:C:C4 | 57:DA:1222:U:C5 | 3.02 | 0.47 |
| 57:DA:1245:G:OP1 | 33:DL:8:PRO:HG3 | 2.14 | 0.47 |
| 57:DA:1282:U:C4 | 57:DA:1283:G:C5 | 3.02 | 0.47 |
| 57:DA:2045:C:O2 | 48:D0:18:HIS:NE2 | 2.42 | 0.47 |
| 57:DA:2214:C:HO2' | 57:DA:2215:C:H5' | 1.73 | 0.47 |
| 57:DA:2487:G:H2' | 57:DA:2488:G:C8 | 2.49 | 0.47 |
| 57:DA:2667:C:H2' | 57:DA:2668:G:H8 | 1.78 | 0.47 |
| 57:DA:2860:A:O5' | 57:DA:2860:A:C8 | 2.63 | 0.47 |
| 58:DB:42:C:C4 | 58:DB:43:C:N4 | 2.83 | 0.47 |
| 58:DB:43:C:O3' | 59:DF:91:ARG:NH2 | 2.47 | 0.47 |
| 25:DD:49:GLN:NE2 | 25:DD:79:LEU:HB3 | 2.29 | 0.47 |
| 26:DE:145:ASP:OD1 | 26:DE:166:LYS:HG3 | 2.14 | 0.47 |
| 59:DF:58:ALA:HB1 | 59:DF:139:GLU:CG | 2.44 | 0.47 |
| 28:DG:103:ASN:HA | 28:DG:112:VAL:HB | 1.95 | 0.47 |
| 31:DJ:8:PRO:HG2 | 31:DJ:9:GLU:N | 2.29 | 0.47 |
| 31:DJ:44:TYR:O | 31:DJ:45:THR:CB | 2.63 | 0.47 |
| 32:DK:7:MET:CG | 32:DK:17:ARG:HH12 | 2.27 | 0.47 |
| 32:DK:121:GLU:O | 32:DK:122:VAL:C | 2.53 | 0.47 |
| 33:DL:62:PRO:O | 51:D3:12:ARG:HB3 | 2.15 | 0.47 |
| 35:DN:120:GLU:HA | 35:DN:120:GLU:OE1 | 2.14 | 0.47 |
| 36:DO:56:LYS:HD3 | 36:DO:56:LYS:O | 2.15 | 0.47 |
| 37:DP:16:VAL:HG13 | 37:DP:19:PHE:HE2 | 1.79 | 0.47 |
| 39:DR:48:LYS:H | 39:DR:48:LYS:CD | 2.24 | 0.47 |
| 1:AA:307:C:H5'' | 1:AA:308:C:OP2 | 2.14 | 0.47 |
| 1:AA:510:A:N3 | 1:AA:543:U:H1' | 2.28 | 0.47 |
| 1:AA:538:G:OP1 | 12:AL:109:ARG:HD3 | 2.14 | 0.47 |
| 1:AA:701:U:H5'' | 1:AA:703:G:O4' | 2.14 | 0.47 |
| 1:AA:979:C:OP2 | 1:AA:980:C:H5 | 1.96 | 0.47 |
| 1:AA:1049:U:H1' | 1:AA:1201:A:N7 | 2.29 | 0.47 |
| 1:AA:1055:A:C6 | 1:AA:1206:G:C5 | 3.02 | 0.47 |
| 2:AB:49:PHE:C | 2:AB:49:PHE:CD1 | 2.88 | 0.47 |
| 2:AB:59:ILE:C | 2:AB:59:ILE:HD12 | 2.35 | 0.47 |
| 3:AC:81:GLU:O | 3:AC:84:GLU:HB3 | 2.14 | 0.47 |
| 11:AK:100:ASN:HD22 | 11:AK:106:ILE:HG22 | 1.79 | 0.47 |
| 22:BA:96:C:H4' | 46:BY:41:HIS:ND1 | 2.29 | 0.47 |
| 22:BA:250:G:C6 | 22:BA:251:A:C6 | 3.03 | 0.47 |
| 22:BA:271:G:O2' | 22:BA:272:A:C5' | 2.62 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:455:C:N3 | 22:BA:473:G:H5' | 2.30 | 0.47 |
| 22:BA:558:U:P | 31:BJ:113:PRO:HB2 | 2.54 | 0.47 |
| 22:BA:754:U:H2' | 22:BA:755:U:C6 | 2.50 | 0.47 |
| 22:BA:1059:G:C8 | 22:BA:1060:U:H2' | 2.49 | 0.47 |
| 22:BA:1296:G:O2' | 22:BA:1297:C:H5' | 2.14 | 0.47 |
| 22:BA:1429:G:H2' | 22:BA:1430:G:C8 | 2.50 | 0.47 |
| 22:BA:1445:G:C6 | 22:BA:1446:C:C4 | 3.02 | 0.47 |
| 22:BA:1509:A:O2' | 22:BA:1510:G:P | 2.72 | 0.47 |
| 22:BA:1585:C:C2' | 22:BA:1586:A:H5' | 2.45 | 0.47 |
| 22:BA:1626:A:HO2' | 22:BA:1627:G:P | 2.37 | 0.47 |
| 22:BA:1912:A:N1 | 22:BA:1919:A:C5 | 2.82 | 0.47 |
| 22:BA:2262:U:H4' | 22:BA:2328:A:C2 | 2.49 | 0.47 |
| 23:BB:51:G:N2 | 23:BB:53:A:N6 | 2.63 | 0.47 |
| 23:BB:94:A:O2' | 23:BB:95:U:H5' | 2.15 | 0.47 |
| 25:BD:62:LYS:N | 25:BD:63:PRO:CD | 2.76 | 0.47 |
| 25:BD:107:VAL:N | 25:BD:206:ALA:H | 1.98 | 0.47 |
| 25:BD:126:ASN:N | 25:BD:126:ASN:ND2 | 2.63 | 0.47 |
| 26:BE:48:THR:OG1 | 26:BE:50:ALA:HB3 | 2.15 | 0.47 |
| 27:BF:37:MET:HE3 | 27:BF:151:LEU:HB3 | 1.96 | 0.47 |
| 28:BG:8:VAL:HG11 | 28:BG:49:LEU:HB2 | 1.96 | 0.47 |
| 28:BG:148:ARG:HA | 28:BG:161:VAL:CG1 | 2.45 | 0.47 |
| 28:BG:162:ARG:NH1 | 28:BG:168:VAL:HG21 | 2.29 | 0.47 |
| 29:BH:78:VAL:CG1 | 29:BH:145:ASN:HB3 | 2.42 | 0.47 |
| 32:BK:72:PRO:O | 32:BK:74:GLY:N | 2.43 | 0.47 |
| 33:BL:19:LEU:HA | 33:BL:27:LEU:O | 2.13 | 0.47 |
| 35:BN:47:VAL:O | 35:BN:50:PRO:HD2 | 2.13 | 0.47 |
| 38:BQ:85:ALA:HA | 38:BQ:115:ALA:CB | 2.44 | 0.47 |
| 45:BX:34:SER:CA | 45:BX:49:ARG:HA | 2.44 | 0.47 |
| 53:CA:89:U:O2' | 53:CA:90:C:O4' | 2.23 | 0.47 |
| 53:CA:166:U:C2' | 53:CA:167:A:H5' | 2.44 | 0.47 |
| 53:CA:375:U:C4 | 53:CA:376:G:N7 | 2.83 | 0.47 |
| 53:CA:690:G:H2' | 53:CA:691:G:O4' | 2.15 | 0.47 |
| 53:CA:815:A:C2 | 53:CA:1529:G:C4 | 3.03 | 0.47 |
| 53:CA:1350:A:C2 | 54:CG:33:GLY:HA3 | 2.49 | 0.47 |
| 53:CA:1508:A:H2' | 53:CA:1509:C:O4' | 2.15 | 0.47 |
| 2:CB:80:LYS:HB3 | 2:CB:90:PHE:CE2 | 2.49 | 0.47 |
| 5:CE:54:GLU:HG3 | 5:CE:56:PRO:HG2 | 1.95 | 0.47 |
| 54:CG:4:ARG:CG | 54:CG:5:VAL:N | 2.77 | 0.47 |
| 8:CH:111:THR:HG22 | 8:CH:113:ARG:H | 1.79 | 0.47 |
| 12:CL:26:CYS:CB | 12:CL:29:LYS:HE2 | 2.45 | 0.47 |
| 15:CO:65:LEU:O | 15:CO:68:TYR:HB3 | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:CQ:9:GLY:O | 17:CQ:57:VAL:HG13 | 2.14 | 0.47 |
| 57:DA:118:A:H1' | 57:DA:178:G:O4' | 2.13 | 0.47 |
| 57:DA:165:A:H2' | 57:DA:166:U:H6 | 1.80 | 0.47 |
| 57:DA:478:A:N6 | 57:DA:480:A:C6 | 2.83 | 0.47 |
| 57:DA:558:U:OP1 | 31:DJ:113:PRO:HD2 | 2.13 | 0.47 |
| 57:DA:671:C:O2' | 57:DA:672:C:H5' | 2.14 | 0.47 |
| 57:DA:819:A:OP2 | 57:DA:1187:G:N2 | 2.48 | 0.47 |
| 57:DA:1031:G:O2' | 52:D4:7:VAL:HG12 | 2.14 | 0.47 |
| 57:DA:1213:A:N6 | 57:DA:1236:G:H1' | 2.30 | 0.47 |
| 57:DA:1232:G:H2' | 57:DA:1233:C:H6 | 1.80 | 0.47 |
| 57:DA:1275:A:O2' | 57:DA:1276:A:H1' | 2.14 | 0.47 |
| 57:DA:1345:C:H5'' | 57:DA:1396:U:O4 | 2.13 | 0.47 |
| 57:DA:1413:A:C6 | 57:DA:1414:C:N4 | 2.82 | 0.47 |
| 57:DA:1536:C:H4' | 57:DA:1537:G:C5' | 2.44 | 0.47 |
| 57:DA:1567:G:H5'' | 24:DC:84:PRO:HB3 | 1.96 | 0.47 |
| 57:DA:1973:G:C6 | 57:DA:1974:C:C4 | 3.03 | 0.47 |
| 57:DA:2214:C:H2' | 57:DA:2215:C:C5 | 2.48 | 0.47 |
| 57:DA:2628:C:H1' | 57:DA:2781:A:C4 | 2.50 | 0.47 |
| 57:DA:2668:G:C2 | 57:DA:2669:G:C4 | 3.03 | 0.47 |
| 58:DB:27:C:O2' | 58:DB:28:C:H5' | 2.15 | 0.47 |
| 58:DB:42:C:N4 | 59:DF:87:LYS:HZ2 | 2.11 | 0.47 |
| 58:DB:42:C:H5 | 59:DF:65:LEU:HD13 | 1.79 | 0.47 |
| 24:DC:183:VAL:HG13 | 24:DC:185:ALA:N | 2.22 | 0.47 |
| 24:DC:225:ASN:HB3 | 24:DC:226:PRO:HD2 | 1.96 | 0.47 |
| 26:DE:158:PHE:HA | 26:DE:169:VAL:HG11 | 1.96 | 0.47 |
| 59:DF:1:ALA:HA | 59:DF:97:GLU:HB3 | 1.96 | 0.47 |
| 29:DH:6:LEU:HD13 | 29:DH:36:ALA:HA | 1.95 | 0.47 |
| 32:DK:35:VAL:HA | 32:DK:62:VAL:HG12 | 1.96 | 0.47 |
| 37:DP:9:GLN:HA | 37:DP:12:MET:HG3 | 1.95 | 0.47 |
| 43:DV:42:LEU:HD13 | 43:DV:47:VAL:HG21 | 1.97 | 0.47 |
| 51:D3:41:ARG:CG | 51:D3:41:ARG:NH2 | 2.72 | 0.47 |
| 1:AA:491:G:C6 | 1:AA:492:C:C4 | 3.03 | 0.47 |
| 1:AA:828:U:H2' | 1:AA:829:G:O5' | 2.14 | 0.47 |
| 1:AA:1103:C:H2' | 1:AA:1104:G:O4' | 2.15 | 0.47 |
| 1:AA:1108:G:C5 | 1:AA:1109:C:C5 | 3.02 | 0.47 |
| 1:AA:1288:A:H2' | 1:AA:1289:A:C8 | 2.49 | 0.47 |
| 3:AC:39:ARG:CZ | 3:AC:54:ILE:HD11 | 2.44 | 0.47 |
| 4:AD:60:VAL:HA | 4:AD:63:ILE:HG22 | 1.95 | 0.47 |
| 5:AE:114:LEU:HD21 | 5:AE:122:VAL:CG2 | 2.45 | 0.47 |
| 10:AJ:42:LEU:HB3 | 10:AJ:43:PRO:CD | 2.43 | 0.47 |
| 14:AN:40:ARG:NH2 | 14:AN:44:VAL:HG21 | 2.27 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 15:AO:27:GLN:O | 15:AO:30:LEU:HB2 | 2.14 | 0.47 |
| 18:AR:33:THR:HG22 | 18:AR:37:LYS:O | 2.15 | 0.47 |
| 22:BA:570:G:OP1 | 22:BA:972:A:O2' | 2.30 | 0.47 |
| 22:BA:1508:A:O2' | 22:BA:1509:A:O5' | 2.32 | 0.47 |
| 22:BA:1728:C:O2' | 22:BA:1729:U:C6 | 2.68 | 0.47 |
| 22:BA:1734:G:O2' | 22:BA:1735:A:O4' | 2.32 | 0.47 |
| 22:BA:2425:A:H4' | 22:BA:2426:A:O5' | 2.15 | 0.47 |
| 22:BA:2728:U:O2' | 22:BA:2729:G:H8 | 1.97 | 0.47 |
| 23:BB:77:U:C2' | 23:BB:78:A:H5' | 2.45 | 0.47 |
| 24:BC:185:ALA:C | 24:BC:187:CYS:N | 2.67 | 0.47 |
| 24:BC:259:ASN:O | 24:BC:260:LYS:HB2 | 2.13 | 0.47 |
| 25:BD:151:THR:C | 25:BD:153:GLY:H | 2.17 | 0.47 |
| 27:BF:134:GLN:CG | 27:BF:135:ILE:N | 2.74 | 0.47 |
| 39:BR:67:GLY:HA3 | 39:BR:93:PHE:CZ | 2.50 | 0.47 |
| 44:BW:23:LYS:CD | 44:BW:24:ARG:N | 2.76 | 0.47 |
| 44:BW:39:GLN:O | 44:BW:41:GLY:N | 2.47 | 0.47 |
| 44:BW:50:VAL:HB | 44:BW:51:GLY:H | 1.46 | 0.47 |
| 46:BY:39:GLN:HB2 | 46:BY:41:HIS:NE2 | 2.29 | 0.47 |
| 49:B1:22:THR:OG1 | 49:B1:23:THR:N | 2.47 | 0.47 |
| 53:CA:37:U:O2 | 53:CA:548:G:C2 | 2.67 | 0.47 |
| 53:CA:60:A:N3 | 53:CA:61:G:H1' | 2.29 | 0.47 |
| 53:CA:69:G:H2' | 53:CA:70:U:C6 | 2.50 | 0.47 |
| 53:CA:564:C:H2' | 53:CA:565:U:C6 | 2.50 | 0.47 |
| 53:CA:579:A:C2 | 53:CA:763:G:C4 | 3.03 | 0.47 |
| 53:CA:947:G:P | 55:CM:106:ARG:HG3 | 2.54 | 0.47 |
| 53:CA:1036:A:C2' | 53:CA:1037:C:H5' | 2.45 | 0.47 |
| 53:CA:1151:A:N6 | 53:CA:1152:A:N6 | 2.63 | 0.47 |
| 53:CA:1154:G:H2' | 53:CA:1155:A:C8 | 2.46 | 0.47 |
| 53:CA:1221:G:C2 | 53:CA:1222:G:H1' | 2.49 | 0.47 |
| 53:CA:1258:G:H2' | 53:CA:1259:C:C6 | 2.50 | 0.47 |
| 53:CA:1328:C:OP1 | 55:CM:27:THR:HG21 | 2.15 | 0.47 |
| 4:CD:71:PHE:O | 4:CD:74:TYR:HB2 | 2.14 | 0.47 |
| 4:CD:187:ARG:NH1 | 4:CD:196:GLU:OE2 | 2.47 | 0.47 |
| 6:CF:2:ARG:NH2 | 6:CF:91:ARG:HB2 | 2.29 | 0.47 |
| 9:CI:53:LEU:O | 9:CI:54:VAL:HG13 | 2.14 | 0.47 |
| 55:CM:82:LEU:HB2 | 19:CS:73:PHE:CE2 | 2.50 | 0.47 |
| 21:CU:39:LYS:O | 21:CU:43:GLU:HB2 | 2.15 | 0.47 |
| 57:DA:9:G:H1 | 57:DA:2629:U:H2' | 1.80 | 0.47 |
| 57:DA:14:A:C5 | 57:DA:526:A:C2 | 3.02 | 0.47 |
| 57:DA:103:A:H2' | 57:DA:104:A:C8 | 2.49 | 0.47 |
| 57:DA:187:G:H2' | 57:DA:1365:A:C2 | 2.49 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:307:G:N2 | 57:DA:310:A:C8 | 2.83 | 0.47 |
| 57:DA:524:G:C5 | 57:DA:525:U:C5 | 3.02 | 0.47 |
| 57:DA:534:U:C1' | 38:DQ:44:TYR:HB3 | 2.45 | 0.47 |
| 57:DA:620:G:H4' | 57:DA:621:A:O5' | 2.14 | 0.47 |
| 57:DA:708:G:H2' | 57:DA:709:U:C6 | 2.50 | 0.47 |
| 57:DA:1008:A:C5' | 31:DJ:37:ARG:HH22 | 2.27 | 0.47 |
| 57:DA:1062:G:HO2' | 57:DA:1063:G:H8 | 1.58 | 0.47 |
| 57:DA:1206:G:C6 | 57:DA:1207:C:N4 | 2.83 | 0.47 |
| 57:DA:1469:A:C2 | 57:DA:1470:A:C5 | 3.02 | 0.47 |
| 57:DA:1670:C:C5 | 57:DA:1671:U:C4 | 3.02 | 0.47 |
| 57:DA:1671:U:O2 | 57:DA:1673:G:C8 | 2.67 | 0.47 |
| 57:DA:1969:A:H2' | 57:DA:1972:G:H21 | 1.80 | 0.47 |
| 57:DA:2150:C:O2' | 57:DA:2151:U:O4' | 2.18 | 0.47 |
| 57:DA:2418:A:C6 | 57:DA:2419:U:C4 | 3.03 | 0.47 |
| 57:DA:2819:G:H5'' | 63:DA:3799:HOH:O | 2.13 | 0.47 |
| 57:DA:2847:U:H3' | 37:DP:94:ALA:HB2 | 1.95 | 0.47 |
| 24:DC:93:VAL:HG13 | 24:DC:94:LEU:H | 1.80 | 0.47 |
| 25:DD:174:SER:O | 25:DD:175:LEU:O | 2.32 | 0.47 |
| 59:DF:139:GLU:HB3 | 59:DF:142:TYR:HB3 | 1.97 | 0.47 |
| 30:DI:20:SER:N | 30:DI:21:PRO:CD | 2.77 | 0.47 |
| 32:DK:118:LEU:O | 32:DK:120:PRO:HD2 | 2.13 | 0.47 |
| 34:DM:71:LYS:HG3 | 34:DM:72:PRO:HD2 | 1.95 | 0.47 |
| 35:DN:55:ALA:CB | 35:DN:79:LEU:HD22 | 2.45 | 0.47 |
| 41:DT:64:LYS:HD2 | 41:DT:64:LYS:N | 2.30 | 0.47 |
| 43:DV:4:ILE:HD11 | 43:DV:50:MET:CE | 2.45 | 0.47 |
| 45:DX:19:HIS:C | 45:DX:21:LEU:N | 2.66 | 0.47 |
| 47:DZ:4:ILE:HG21 | 47:DZ:56:VAL:HG13 | 1.96 | 0.47 |
| 1:AA:486:U:H2' | 1:AA:487:A:H8 | 1.80 | 0.47 |
| 1:AA:642:A:N7 | 8:AH:106:SER:HA | 2.30 | 0.47 |
| 1:AA:1060:U:H4' | 10:AJ:54:SER:HB2 | 1.96 | 0.47 |
| 2:AB:20:ARG:O | 2:AB:22:TRP:HB3 | 2.15 | 0.47 |
| 2:AB:58:LYS:HZ1 | 2:AB:62:ARG:HG3 | 1.78 | 0.47 |
| 5:AE:121:ASN:ND2 | 5:AE:122:VAL:H | 2.12 | 0.47 |
| 9:AI:9:GLY:CA | 9:AI:80:HIS:HD2 | 2.26 | 0.47 |
| 13:AM:68:LEU:HG | 13:AM:72:ILE:CD1 | 2.45 | 0.47 |
| 13:AM:90:HIS:HA | 13:AM:108:ARG:NH2 | 2.30 | 0.47 |
| 19:AS:47:THR:O | 19:AS:48:ILE:C | 2.53 | 0.47 |
| 22:BA:519:U:O2' | 40:BS:73:LYS:HE2 | 2.15 | 0.47 |
| 22:BA:1287:A:H3' | 22:BA:1288:G:N2 | 2.29 | 0.47 |
| 22:BA:1588:G:H2' | 22:BA:1589:U:H6 | 1.80 | 0.47 |
| 22:BA:1664:A:C2 | 22:BA:2726:A:C8 | 3.02 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:1716:U:H2' | 22:BA:1717:A:C8 | 2.49 | 0.47 |
| 22:BA:2364:C:C2' | 22:BA:2365:G:H5' | 2.45 | 0.47 |
| 22:BA:2842:G:C2 | 22:BA:2876:G:C2 | 3.03 | 0.47 |
| 22:BA:2887:A:H3' | 22:BA:2888:C:H6 | 1.79 | 0.47 |
| 23:BB:66:A:H61 | 23:BB:107:G:H2' | 1.80 | 0.47 |
| 24:BC:203:VAL:O | 24:BC:204:LEU:HB2 | 2.14 | 0.47 |
| 25:BD:53:GLY:HA3 | 25:BD:77:ARG:H | 1.80 | 0.47 |
| 29:BH:8:LYS:O | 29:BH:13:GLY:HA3 | 2.14 | 0.47 |
| 30:BI:40:ALA:HB3 | 30:BI:68:PHE:CE1 | 2.50 | 0.47 |
| 35:BN:83:LEU:O | 35:BN:84:GLY:C | 2.52 | 0.47 |
| 43:BV:29:ILE:O | 43:BV:91:PHE:HB2 | 2.14 | 0.47 |
| 44:BW:28:GLU:HB3 | 44:BW:31:LEU:HD11 | 1.97 | 0.47 |
| 44:BW:46:ALA:HB3 | 44:BW:79:ILE:C | 2.35 | 0.47 |
| 53:CA:17:U:C2 | 53:CA:18:C:C5 | 3.03 | 0.47 |
| 53:CA:25:C:H2' | 53:CA:26:A:C8 | 2.49 | 0.47 |
| 53:CA:277:C:O2' | 53:CA:278:G:H5' | 2.15 | 0.47 |
| 53:CA:436:C:O2 | 53:CA:436:C:H2' | 2.14 | 0.47 |
| 53:CA:513:C:HO2' | 53:CA:514:C:H6 | 1.59 | 0.47 |
| 53:CA:647:C:H2' | 53:CA:648:A:H8 | 1.80 | 0.47 |
| 53:CA:1151:A:C4 | 53:CA:1152:A:N7 | 2.82 | 0.47 |
| 2:CB:209:VAL:HG23 | 2:CB:210:THR:N | 2.30 | 0.47 |
| 4:CD:144:ILE:HD12 | 4:CD:177:MET:SD | 2.55 | 0.47 |
| 6:CF:81:ASN:O | 6:CF:82:ASP:C | 2.53 | 0.47 |
| 11:CK:51:PHE:O | 11:CK:52:ARG:HD2 | 2.14 | 0.47 |
| 56:CP:78:VAL:C | 56:CP:80:LYS:H | 2.18 | 0.47 |
| 57:DA:223:A:H2 | 57:DA:407:G:N3 | 2.13 | 0.47 |
| 57:DA:467:G:N1 | 57:DA:468:G:C5 | 2.83 | 0.47 |
| 57:DA:511:U:H5'' | 57:DA:1235:G:H4' | 1.97 | 0.47 |
| 57:DA:618:G:O2' | 57:DA:619:G:H5' | 2.14 | 0.47 |
| 57:DA:784:G:C2 | 24:DC:227:VAL:CG2 | 2.97 | 0.47 |
| 57:DA:935:C:H2' | 57:DA:936:A:H8 | 1.78 | 0.47 |
| 57:DA:992:C:C5' | 39:DR:87:GLN:HE22 | 2.24 | 0.47 |
| 57:DA:1062:G:N2 | 57:DA:1077:A:H2 | 2.12 | 0.47 |
| 57:DA:1353:A:O2' | 57:DA:1354:A:H5' | 2.15 | 0.47 |
| 57:DA:1623:G:C5 | 57:DA:1624:U:C5 | 3.02 | 0.47 |
| 57:DA:2025:C:N4 | 57:DA:2037:A:H61 | 2.13 | 0.47 |
| 57:DA:2210:U:C4' | 57:DA:2211:A:H5' | 2.45 | 0.47 |
| 57:DA:2283:C:N4 | 57:DA:2389:G:C5 | 2.82 | 0.47 |
| 57:DA:2356:U:C4' | 44:DW:16:GLU:HG3 | 2.39 | 0.47 |
| 57:DA:2839:G:C2 | 57:DA:2880:C:C4 | 3.02 | 0.47 |
| 58:DB:58:A:O2' | 58:DB:59:A:C5' | 2.62 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 58:DB:110:C:H2' | 58:DB:111:U:H6 | 1.79 | 0.47 |
| 24:DC:79:ARG:HG3 | 24:DC:92:LEU:HB2 | 1.97 | 0.47 |
| 25:DD:9:VAL:HG22 | 37:DP:4:ILE:HD11 | 1.95 | 0.47 |
| 59:DF:36:ASN:HA | 59:DF:86:CYS:O | 2.15 | 0.47 |
| 28:DG:139:VAL:HA | 28:DG:142:GLN:CB | 2.44 | 0.47 |
| 32:DK:94:PRO:HG3 | 32:DK:115:ILE:HD12 | 1.97 | 0.47 |
| 32:DK:119:ALA:N | 32:DK:120:PRO:HD2 | 2.30 | 0.47 |
| 33:DL:83:ALA:CB | 33:DL:117:THR:HB | 2.43 | 0.47 |
| 36:DO:17:LYS:O | 36:DO:21:LEU:HG | 2.15 | 0.47 |
| 36:DO:51:ALA:HB3 | 36:DO:78:VAL:CG2 | 2.44 | 0.47 |
| 38:DQ:4:LYS:HE3 | 38:DQ:7:VAL:HG22 | 1.97 | 0.47 |
| 39:DR:39:LEU:HB2 | 39:DR:49:ILE:CD1 | 2.44 | 0.47 |
| 42:DU:86:PHE:CG | 42:DU:87:GLU:N | 2.82 | 0.47 |
| 45:DX:6:VAL:HG22 | 45:DX:7:THR:HG23 | 1.97 | 0.47 |
| 48:D0:54:ILE:O | 48:D0:55:ALA:HB2 | 2.14 | 0.47 |
| 49:D1:10:LEU:HD22 | 49:D1:10:LEU:H | 1.79 | 0.47 |
| 51:D3:31:ILE:HG21 | 51:D3:34:LYS:HZ3 | 1.77 | 0.47 |
| 1:AA:7:A:N6 | 5:AE:96:GLN:OE1 | 2.48 | 0.47 |
| 1:AA:68:G:C6 | 1:AA:69:G:H1' | 2.49 | 0.47 |
| 1:AA:374:A:O2' | 1:AA:375:U:H5' | 2.13 | 0.47 |
| 1:AA:515:G:N1 | 1:AA:537:G:C6 | 2.83 | 0.47 |
| 1:AA:605:U:O2' | 1:AA:606:G:H5' | 2.15 | 0.47 |
| 1:AA:666:G:C2 | 1:AA:741:G:C4 | 3.02 | 0.47 |
| 1:AA:829:G:O2' | 1:AA:830:G:H5' | 2.15 | 0.47 |
| 1:AA:972:C:O2' | 1:AA:973:G:H5' | 2.15 | 0.47 |
| 1:AA:1014:A:H4' | 19:AS:13:HIS:CD2 | 2.49 | 0.47 |
| 1:AA:1158:C:O2' | 1:AA:1160:G:OP1 | 2.33 | 0.47 |
| 1:AA:1169:A:H2' | 1:AA:1170:A:C8 | 2.49 | 0.47 |
| 1:AA:1314:C:C6 | 19:AS:5:LYS:HD3 | 2.50 | 0.47 |
| 2:AB:95:TRP:HZ3 | 2:AB:98:GLY:H | 1.61 | 0.47 |
| 4:AD:34:GLU:O | 4:AD:36:ALA:N | 2.46 | 0.47 |
| 4:AD:114:ARG:O | 4:AD:115:GLN:C | 2.53 | 0.47 |
| 4:AD:123:MET:HA | 4:AD:128:VAL:HA | 1.96 | 0.47 |
| 5:AE:56:PRO:O | 5:AE:59:ILE:HG13 | 2.15 | 0.47 |
| 6:AF:45:ARG:O | 6:AF:56:LYS:HA | 2.15 | 0.47 |
| 6:AF:46:GLN:HE22 | 6:AF:55:HIS:HB2 | 1.80 | 0.47 |
| 7:AG:119:LEU:CD2 | 7:AG:123:LEU:HD23 | 2.45 | 0.47 |
| 8:AH:21:LYS:HE2 | 8:AH:21:LYS:HA | 1.96 | 0.47 |
| 9:AI:3:ASN:ND2 | 9:AI:4:GLN:H | 2.12 | 0.47 |
| 9:AI:56:MET:CE | 9:AI:57:VAL:H | 2.28 | 0.47 |
| 11:AK:116:PRO:C | 11:AK:118:ASN:H | 2.17 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:AK:124:LYS:O | 21:AU:33:ARG:HG2 | 2.14 | 0.47 |
| 12:AL:52:CYS:O | 12:AL:54:VAL:HG23 | 2.15 | 0.47 |
| 14:AN:42:ASN:HD21 | 14:AN:46:LYS:NZ | 2.11 | 0.47 |
| 15:AO:50:HIS:O | 15:AO:53:ARG:HB3 | 2.15 | 0.47 |
| 17:AQ:16:MET:HG3 | 17:AQ:19:SER:C | 2.35 | 0.47 |
| 19:AS:62:THR:HG22 | 19:AS:63:ASP:N | 2.30 | 0.47 |
| 19:AS:79:TYR:CG | 19:AS:80:ARG:N | 2.81 | 0.47 |
| 20:AT:4:LYS:O | 20:AT:6:ALA:N | 2.48 | 0.47 |
| 22:BA:118:A:C8 | 22:BA:119:A:C8 | 3.02 | 0.47 |
| 22:BA:163:C:OP1 | 22:BA:163:C:C6 | 2.61 | 0.47 |
| 22:BA:1040:A:H2 | 22:BA:1115:G:H22 | 1.63 | 0.47 |
| 22:BA:1063:G:C2' | 22:BA:1064:C:O4' | 2.62 | 0.47 |
| 22:BA:1113:U:H2' | 22:BA:1114:C:C6 | 2.46 | 0.47 |
| 22:BA:1268:A:C2 | 22:BA:2013:A:C4 | 3.03 | 0.47 |
| 22:BA:1322:A:C2' | 22:BA:1323:C:H5' | 2.45 | 0.47 |
| 22:BA:1734:G:C4 | 22:BA:1735:A:C8 | 3.03 | 0.47 |
| 22:BA:1739:A:H2' | 22:BA:1740:G:O4' | 2.14 | 0.47 |
| 22:BA:1812:U:H2' | 22:BA:1813:G:C8 | 2.49 | 0.47 |
| 22:BA:1954:G:O2' | 22:BA:1956:U:O4 | 2.28 | 0.47 |
| 22:BA:2013:A:H2 | 40:BS:88:ARG:HH12 | 1.61 | 0.47 |
| 22:BA:2092:U:N3 | 22:BA:2225:A:O2' | 2.48 | 0.47 |
| 22:BA:2231:U:OP1 | 45:BX:29:LEU:HD23 | 2.14 | 0.47 |
| 22:BA:2316:G:C4 | 22:BA:2317:A:C8 | 3.03 | 0.47 |
| 22:BA:2353:G:O2' | 44:BW:31:LEU:CD2 | 2.63 | 0.47 |
| 22:BA:2418:A:C6 | 22:BA:2419:U:C4 | 3.02 | 0.47 |
| 22:BA:2469:A:H2' | 22:BA:2470:G:H5' | 1.95 | 0.47 |
| 22:BA:2544:G:O2' | 22:BA:2545:G:H5' | 2.15 | 0.47 |
| 24:BC:15:VAL:HA | 24:BC:203:VAL:CG1 | 2.45 | 0.47 |
| 24:BC:171:VAL:O | 24:BC:182:LYS:HA | 2.15 | 0.47 |
| 25:BD:34:VAL:HG21 | 25:BD:91:THR:HA | 1.97 | 0.47 |
| 25:BD:91:THR:C | 25:BD:93:GLY:N | 2.67 | 0.47 |
| 25:BD:101:PHE:O | 25:BD:102:ALA:C | 2.53 | 0.47 |
| 25:BD:186:LEU:CD1 | 37:BP:3:ILE:HD11 | 2.37 | 0.47 |
| 26:BE:32:VAL:HG23 | 26:BE:33:VAL:N | 2.29 | 0.47 |
| 26:BE:154:ASP:C | 26:BE:154:ASP:OD2 | 2.52 | 0.47 |
| 27:BF:82:TYR:HA | 27:BF:83:PRO:HD2 | 1.73 | 0.47 |
| 27:BF:131:VAL:C | 27:BF:132:ARG:HG3 | 2.34 | 0.47 |
| 27:BF:173:ASP:O | 27:BF:174:PHE:C | 2.53 | 0.47 |
| 28:BG:33:THR:CA | 28:BG:34:ARG:HH11 | 2.27 | 0.47 |
| 30:BI:60:VAL:HG22 | 30:BI:66:PHE:CB | 2.45 | 0.47 |
| 31:BJ:30:THR:HG22 | 31:BJ:31:GLU:N | 2.29 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:BL:95:LEU:HB3 | 33:BL:100:ILE:CD1 | 2.44 | 0.47 |
| 33:BL:127:VAL:HG23 | 33:BL:131:ALA:HB3 | 1.96 | 0.47 |
| 35:BN:65:LEU:O | 35:BN:65:LEU:HD12 | 2.14 | 0.47 |
| 37:BP:50:ARG:HD3 | 37:BP:51:ASN:H | 1.76 | 0.47 |
| 37:BP:79:VAL:HG23 | 37:BP:79:VAL:O | 2.14 | 0.47 |
| 38:BQ:86:SER:HB3 | 39:BR:51:VAL:CG1 | 2.45 | 0.47 |
| 39:BR:49:ILE:HG21 | 39:BR:53:PHE:H | 1.80 | 0.47 |
| 39:BR:49:ILE:HG22 | 39:BR:54:VAL:N | 2.29 | 0.47 |
| 40:BS:56:ALA:O | 40:BS:57:ASN:C | 2.51 | 0.47 |
| 42:BU:80:ASP:O | 42:BU:81:ARG:HB2 | 2.14 | 0.47 |
| 44:BW:19:ARG:HA | 44:BW:34:SER:HA | 1.96 | 0.47 |
| 44:BW:30:VAL:CA | 44:BW:60:ALA:HB3 | 2.39 | 0.47 |
| 51:B3:51:LYS:N | 51:B3:51:LYS:HD2 | 2.30 | 0.47 |
| 53:CA:32:A:C2 | 53:CA:33:A:C5 | 3.03 | 0.47 |
| 53:CA:34:C:H2' | 53:CA:35:G:C8 | 2.50 | 0.47 |
| 53:CA:55:A:OP2 | 53:CA:352:C:N4 | 2.47 | 0.47 |
| 53:CA:89:U:O2' | 53:CA:90:C:O5' | 2.32 | 0.47 |
| 53:CA:90:C:O2' | 53:CA:91:U:H5' | 2.15 | 0.47 |
| 53:CA:184:G:N2 | 53:CA:185:U:C2 | 2.83 | 0.47 |
| 53:CA:386:C:C4 | 53:CA:387:U:C5 | 3.03 | 0.47 |
| 53:CA:567:G:N2 | 63:CA:1819:HOH:O | 2.43 | 0.47 |
| 53:CA:775:G:C2' | 53:CA:776:G:H5' | 2.45 | 0.47 |
| 53:CA:981:U:O4 | 53:CA:1222:G:O6 | 2.33 | 0.47 |
| 53:CA:995:C:N3 | 53:CA:1046:A:O2' | 2.43 | 0.47 |
| 53:CA:1050:G:O2' | 53:CA:1051:C:H6 | 1.97 | 0.47 |
| 53:CA:1052:U:O2' | 53:CA:1055:A:OP2 | 2.30 | 0.47 |
| 53:CA:1090:U:C2 | 53:CA:1091:U:C5 | 3.03 | 0.47 |
| 53:CA:1146:A:H2' | 53:CA:1147:C:C6 | 2.49 | 0.47 |
| 53:CA:1480:A:C5 | 53:CA:1481:U:C5 | 3.03 | 0.47 |
| 2:CB:116:LEU:HD13 | 2:CB:140:LEU:HB2 | 1.96 | 0.47 |
| 2:CB:214:GLY:HA2 | 2:CB:217:ALA:HB3 | 1.95 | 0.47 |
| 3:CC:7:ASN:HD22 | 14:CN:89:ARG:HA | 1.80 | 0.47 |
| 3:CC:84:GLU:C | 3:CC:86:LEU:N | 2.68 | 0.47 |
| 4:CD:25:ARG:O | 4:CD:26:ALA:O | 2.33 | 0.47 |
| 4:CD:196:GLU:O | 4:CD:199:ILE:HG12 | 2.14 | 0.47 |
| 8:CH:91:LEU:HB3 | 8:CH:112:ASP:OD2 | 2.15 | 0.47 |
| 10:CJ:5:ARG:CG | 10:CJ:79:PRO:HG3 | 2.44 | 0.47 |
| 10:CJ:77:VAL:O | 10:CJ:79:PRO:HD3 | 2.15 | 0.47 |
| 55:CM:16:ILE:HD12 | 55:CM:16:ILE:N | 2.30 | 0.47 |
| 14:CN:30:ILE:O | 14:CN:40:ARG:HA | 2.14 | 0.47 |
| 56:CP:20:VAL:HG22 | 56:CP:21:VAL:N | 2.30 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 56:CP:69:ASP:O | 56:CP:70:ARG:C | 2.53 | 0.47 |
| 56:CP:71:VAL:HA | 56:CP:74:LEU:HB2 | 1.96 | 0.47 |
| 56:CP:78:VAL:HG12 | 56:CP:78:VAL:O | 2.15 | 0.47 |
| 17:CQ:46:HIS:NE2 | 17:CQ:48:GLU:HG2 | 2.28 | 0.47 |
| 18:CR:25:ILE:O | 18:CR:25:ILE:HG13 | 2.14 | 0.47 |
| 18:CR:27:THR:O | 18:CR:30:ASN:HB3 | 2.15 | 0.47 |
| 18:CR:28:LEU:C | 18:CR:30:ASN:H | 2.17 | 0.47 |
| 57:DA:17:G:C6 | 57:DA:524:G:C6 | 3.03 | 0.47 |
| 57:DA:33:C:H2' | 57:DA:446:G:N2 | 2.30 | 0.47 |
| 57:DA:64:A:H2' | 57:DA:65:U:O4' | 2.14 | 0.47 |
| 57:DA:72:U:O2 | 46:DY:51:ALA:HB1 | 2.15 | 0.47 |
| 57:DA:192:C:C4 | 57:DA:193:U:C2 | 3.03 | 0.47 |
| 57:DA:240:C:H3' | 57:DA:241:A:H5'' | 1.96 | 0.47 |
| 57:DA:298:G:OP1 | 42:DU:83:GLY:HA2 | 2.15 | 0.47 |
| 57:DA:467:G:O2' | 57:DA:796:C:O3' | 2.33 | 0.47 |
| 57:DA:475:C:H4' | 57:DA:509:C:O2' | 2.14 | 0.47 |
| 57:DA:812:C:O2' | 57:DA:813:U:H5' | 2.15 | 0.47 |
| 57:DA:858:G:C5 | 57:DA:2268:A:N1 | 2.83 | 0.47 |
| 57:DA:874:G:C2 | 57:DA:904:G:C2 | 3.03 | 0.47 |
| 57:DA:1021:A:HO2' | 57:DA:1022:G:P | 2.36 | 0.47 |
| 57:DA:1090:A:C3' | 57:DA:1091:G:H5'' | 2.45 | 0.47 |
| 57:DA:1171:G:N2 | 57:DA:1179:G:H1' | 2.30 | 0.47 |
| 57:DA:1203:U:C2 | 57:DA:1204:A:C6 | 3.03 | 0.47 |
| 57:DA:1238:G:H2' | 57:DA:1239:G:H8 | 1.78 | 0.47 |
| 57:DA:1342:A:C6 | 57:DA:1397:U:C5 | 3.02 | 0.47 |
| 57:DA:1380:G:N2 | 57:DA:1381:G:H1' | 2.30 | 0.47 |
| 57:DA:1663:G:N2 | 57:DA:1998:A:C8 | 2.83 | 0.47 |
| 57:DA:1754:A:N6 | 57:DA:1755:A:C6 | 2.83 | 0.47 |
| 57:DA:1775:U:C2' | 57:DA:1776:G:O5' | 2.63 | 0.47 |
| 57:DA:1890:A:H2 | 57:DA:2235:G:O4' | 1.98 | 0.47 |
| 57:DA:2151:U:C2 | 57:DA:2152:G:C8 | 3.02 | 0.47 |
| 57:DA:2262:U:H1' | 57:DA:2328:A:H1' | 1.96 | 0.47 |
| 57:DA:2313:C:O2' | 57:DA:2314:A:C5' | 2.62 | 0.47 |
| 57:DA:2392:A:OP1 | 51:D3:30:HIS:ND1 | 2.46 | 0.47 |
| 57:DA:2508:G:H2' | 57:DA:2509:G:O4' | 2.15 | 0.47 |
| 57:DA:2623:G:C4' | 57:DA:2825:G:H8 | 2.28 | 0.47 |
| 57:DA:2757:A:O2' | 57:DA:2758:A:H5' | 2.14 | 0.47 |
| 57:DA:2816:G:C2 | 57:DA:2831:G:C2 | 3.03 | 0.47 |
| 57:DA:2854:G:C2 | 57:DA:2864:G:C2 | 3.03 | 0.47 |
| 58:DB:16:G:O6 | 58:DB:69:G:C5 | 2.68 | 0.47 |
| 24:DC:16:VAL:N | 24:DC:203:VAL:HG12 | 2.30 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 24:DC:17:LYS:HD3 | 24:DC:18:VAL:N | 2.29 | 0.47 |
| 24:DC:62:ARG:HB2 | 24:DC:83:ASP:OD2 | 2.15 | 0.47 |
| 24:DC:171:VAL:H | 24:DC:185:ALA:HB2 | 1.80 | 0.47 |
| 25:DD:109:VAL:HG12 | 25:DD:109:VAL:O | 2.13 | 0.47 |
| 59:DF:3:LEU:HG | 59:DF:100:GLU:CD | 2.35 | 0.47 |
| 28:DG:116:LEU:HA | 28:DG:117:PRO:HD3 | 1.70 | 0.47 |
| 28:DG:138:GLN:HG2 | 28:DG:138:GLN:O | 2.14 | 0.47 |
| 29:DH:6:LEU:HD13 | 29:DH:36:ALA:CA | 2.44 | 0.47 |
| 29:DH:143:ILE:O | 29:DH:144:VAL:HG13 | 2.14 | 0.47 |
| 31:DJ:51:GLY:CA | 31:DJ:121:LYS:HE3 | 2.45 | 0.47 |
| 32:DK:77:ILE:HG23 | 37:DP:71:ARG:HD2 | 1.96 | 0.47 |
| 33:DL:66:PHE:CG | 33:DL:67:THR:N | 2.83 | 0.47 |
| 33:DL:111:ILE:N | 33:DL:111:ILE:HD13 | 2.30 | 0.47 |
| 33:DL:112:LEU:O | 33:DL:112:LEU:HD23 | 2.15 | 0.47 |
| 34:DM:133:LYS:NZ | 34:DM:133:LYS:HB3 | 2.30 | 0.47 |
| 37:DP:91:VAL:HG22 | 37:DP:109:ILE:HD13 | 1.96 | 0.47 |
| 40:DS:2:GLU:HA | 40:DS:2:GLU:OE2 | 2.15 | 0.47 |
| 42:DU:54:PRO:CG | 42:DU:55:GLY:H | 2.23 | 0.47 |
| 42:DU:85:ARG:HA | 42:DU:85:ARG:HE | 1.79 | 0.47 |
| 43:DV:26:PHE:HA | 43:DV:27:PRO:HD2 | 1.75 | 0.47 |
| 47:DZ:29:ARG:O | 47:DZ:30:ARG:O | 2.33 | 0.47 |
| 47:DZ:32:GLY:C | 47:DZ:34:THR:H | 2.18 | 0.47 |
| 51:D3:18:LYS:CG | 51:D3:19:GLY:N | 2.78 | 0.47 |
| 1:AA:967:C:C1' | 9:AI:129:ARG:HH22 | 2.26 | 0.47 |
| 1:AA:1095:U:O2' | 1:AA:1096:C:C5' | 2.63 | 0.47 |
| 1:AA:1348:U:H4' | 9:AI:121:ARG:HG2 | 1.96 | 0.47 |
| 2:AB:138:ARG:HG3 | 2:AB:139:GLU:N | 2.29 | 0.47 |
| 2:AB:179:GLY:O | 2:AB:180:ILE:HD13 | 2.15 | 0.47 |
| 3:AC:35:ASP:O | 3:AC:38:VAL:HG22 | 2.15 | 0.47 |
| 8:AH:63:LYS:CB | 8:AH:70:VAL:HG21 | 2.45 | 0.47 |
| 15:AO:3:SER:OG | 15:AO:5:GLU:HG2 | 2.14 | 0.47 |
| 15:AO:68:TYR:O | 15:AO:71:ARG:HG2 | 2.15 | 0.47 |
| 16:AP:48:GLU:CD | 16:AP:49:GLY:H | 2.17 | 0.47 |
| 21:AU:18:PHE:C | 21:AU:19:LYS:HE2 | 2.34 | 0.47 |
| 22:BA:399:U:C2' | 22:BA:400:G:H5' | 2.45 | 0.47 |
| 22:BA:780:G:H2' | 22:BA:782:A:N7 | 2.30 | 0.47 |
| 22:BA:1083:U:H2' | 22:BA:1084:A:O5' | 2.15 | 0.47 |
| 22:BA:1164:C:H2' | 22:BA:1165:A:C8 | 2.50 | 0.47 |
| 22:BA:1275:A:H4' | 22:BA:1276:A:OP1 | 2.09 | 0.47 |
| 22:BA:1385:A:C2 | 22:BA:1386:C:C4 | 3.03 | 0.47 |
| 22:BA:1385:A:N3 | 22:BA:1386:C:C5 | 2.83 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:1725:U:H2' | 22:BA:1726:C:H6 | 1.80 | 0.47 |
| 22:BA:2019:A:H2' | 22:BA:2020:A:O5' | 2.15 | 0.47 |
| 22:BA:2071:A:H2' | 22:BA:2072:C:C6 | 2.50 | 0.47 |
| 22:BA:2630:G:H2' | 22:BA:2631:G:H8 | 1.79 | 0.47 |
| 23:BB:77:U:H2' | 23:BB:78:A:H5' | 1.96 | 0.47 |
| 29:BH:100:ALA:O | 29:BH:102:ALA:N | 2.48 | 0.47 |
| 31:BJ:73:VAL:CG2 | 31:BJ:74:TYR:H | 2.22 | 0.47 |
| 32:BK:24:VAL:HG21 | 32:BK:31:ARG:O | 2.15 | 0.47 |
| 34:BM:41:LEU:O | 34:BM:93:VAL:CG2 | 2.63 | 0.47 |
| 38:BQ:91:ARG:HD3 | 39:BR:11:GLN:HG3 | 1.95 | 0.47 |
| 38:BQ:97:ILE:HD11 | 38:BQ:105:PHE:HA | 1.95 | 0.47 |
| 53:CA:14:U:H2' | 53:CA:16:A:OP2 | 2.15 | 0.47 |
| 53:CA:171:A:C6 | 53:CA:172:A:N1 | 2.83 | 0.47 |
| 53:CA:575:G:C6 | 53:CA:821:G:C5 | 3.02 | 0.47 |
| 53:CA:598:U:H4' | 8:CH:85:TYR:CG | 2.49 | 0.47 |
| 53:CA:1150:A:N6 | 53:CA:1151:A:N6 | 2.62 | 0.47 |
| 53:CA:1303:C:N4 | 53:CA:1304:G:C2 | 2.83 | 0.47 |
| 53:CA:1342:C:H2' | 53:CA:1343:G:H8 | 1.78 | 0.47 |
| 53:CA:1348:U:C2' | 53:CA:1349:A:H8 | 2.27 | 0.47 |
| 53:CA:1513:A:C6 | 53:CA:1514:G:C6 | 3.03 | 0.47 |
| 2:CB:206:ILE:C | 2:CB:208:ALA:H | 2.18 | 0.47 |
| 3:CC:14:VAL:HG12 | 3:CC:14:VAL:O | 2.15 | 0.47 |
| 6:CF:6:ILE:HD12 | 6:CF:6:ILE:N | 2.29 | 0.47 |
| 9:CI:106:ASP:OD1 | 9:CI:106:ASP:N | 2.48 | 0.47 |
| 19:CS:50:VAL:CG1 | 19:CS:70:LEU:HB3 | 2.45 | 0.47 |
| 57:DA:752:A:C6 | 57:DA:1781:U:H1' | 2.50 | 0.47 |
| 57:DA:959:A:OP2 | 57:DA:959:A:H4' | 2.14 | 0.47 |
| 57:DA:975:A:H2' | 57:DA:976:G:H8 | 1.80 | 0.47 |
| 57:DA:1075:C:O2' | 57:DA:1076:C:H6 | 1.98 | 0.47 |
| 57:DA:1690:A:H2' | 57:DA:1691:C:O4' | 2.14 | 0.47 |
| 57:DA:2201:G:C5 | 57:DA:2223:G:C2 | 3.03 | 0.47 |
| 57:DA:2563:U:H1' | 57:DA:2566:A:C6 | 2.49 | 0.47 |
| 57:DA:2728:U:O2' | 57:DA:2729:G:C8 | 2.48 | 0.47 |
| 57:DA:2748:A:C2 | 57:DA:2749:A:C4 | 3.03 | 0.47 |
| 24:DC:143:VAL:HB | 24:DC:153:LEU:HB3 | 1.95 | 0.47 |
| 26:DE:130:LYS:H | 26:DE:160:ALA:HB2 | 1.80 | 0.47 |
| 26:DE:153:LEU:HD22 | 26:DE:158:PHE:HD2 | 1.79 | 0.47 |
| 28:DG:162:ARG:HB2 | 28:DG:166:GLU:CB | 2.45 | 0.47 |
| 32:DK:76:VAL:HG12 | 32:DK:77:ILE:N | 2.29 | 0.47 |
| 33:DL:79:LEU:CA | 33:DL:82:LEU:HD11 | 2.38 | 0.47 |
| 37:DP:112:ARG:HD2 | 37:DP:114:ASN:HD21 | 1.80 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 38:DQ:46:TYR:CD2 | 38:DQ:46:TYR:C | 2.87 | 0.47 |
| 38:DQ:59:LEU:O | 38:DQ:63:ARG:HD3 | 2.15 | 0.47 |
| 39:DR:21:ARG:HB2 | 39:DR:93:PHE:CD1 | 2.50 | 0.47 |
| 42:DU:33:VAL:O | 42:DU:34:ILE:CG1 | 2.59 | 0.47 |
| 49:D1:29:LYS:HE2 | 49:D1:31:GLU:OE2 | 2.15 | 0.47 |
| 1:AA:252:U:H6 | 1:AA:252:U:H5'' | 1.79 | 0.47 |
| 1:AA:557:G:C6 | 1:AA:558:G:N1 | 2.82 | 0.47 |
| 1:AA:1040:U:H2' | 1:AA:1041:G:C8 | 2.50 | 0.47 |
| 1:AA:1428:A:H2' | 1:AA:1429:A:O4' | 2.15 | 0.47 |
| 3:AC:147:GLY:HA3 | 3:AC:171:ARG:O | 2.14 | 0.47 |
| 8:AH:78:SER:HB2 | 8:AH:84:ILE:HB | 1.97 | 0.47 |
| 9:AI:3:ASN:O | 9:AI:4:GLN:HG2 | 2.15 | 0.47 |
| 9:AI:25:GLY:N | 9:AI:58:GLU:HA | 2.30 | 0.47 |
| 9:AI:49:GLN:C | 9:AI:51:LEU:H | 2.17 | 0.47 |
| 10:AJ:57:VAL:CG2 | 10:AJ:58:ASN:H | 2.18 | 0.47 |
| 11:AK:126:ARG:CA | 21:AU:33:ARG:HH12 | 2.28 | 0.47 |
| 17:AQ:11:VAL:HB | 17:AQ:55:GLY:H | 1.80 | 0.47 |
| 22:BA:579:G:H2' | 22:BA:580:U:C6 | 2.50 | 0.47 |
| 22:BA:1321:A:H5'' | 22:BA:1321:A:H8 | 1.80 | 0.47 |
| 22:BA:1381:G:C2' | 22:BA:1382:G:H5' | 2.44 | 0.47 |
| 22:BA:1507:C:C4 | 22:BA:1508:A:C2 | 3.03 | 0.47 |
| 22:BA:2311:A:H5' | 22:BA:2312:U:OP2 | 2.15 | 0.47 |
| 22:BA:2639:A:H2' | 22:BA:2640:G:O4' | 2.14 | 0.47 |
| 22:BA:2696:U:C2 | 22:BA:2697:G:C8 | 3.03 | 0.47 |
| 22:BA:2716:C:O2' | 22:BA:2717:C:H5' | 2.15 | 0.47 |
| 23:BB:49:C:O3' | 36:BO:68:LYS:HE2 | 2.14 | 0.47 |
| 23:BB:66:A:N6 | 23:BB:107:G:H2' | 2.29 | 0.47 |
| 24:BC:20:ASN:HA | 24:BC:21:PRO:HD2 | 1.71 | 0.47 |
| 25:BD:67:HIS:HD1 | 25:BD:67:HIS:C | 2.18 | 0.47 |
| 26:BE:48:THR:H | 26:BE:51:GLU:CG | 2.28 | 0.47 |
| 27:BF:84:ILE:HG23 | 27:BF:84:ILE:O | 2.15 | 0.47 |
| 28:BG:8:VAL:HG12 | 28:BG:9:VAL:N | 2.30 | 0.47 |
| 28:BG:86:LEU:HD12 | 28:BG:86:LEU:H | 1.79 | 0.47 |
| 28:BG:136:ASP:O | 28:BG:140:ILE:HG13 | 2.15 | 0.47 |
| 29:BH:147:VAL:CG1 | 29:BH:149:GLU:HG3 | 2.44 | 0.47 |
| 36:BO:55:GLU:O | 36:BO:56:LYS:C | 2.52 | 0.47 |
| 37:BP:19:PHE:N | 37:BP:19:PHE:CD2 | 2.82 | 0.47 |
| 37:BP:88:ARG:HG2 | 37:BP:112:ARG:NH1 | 2.30 | 0.47 |
| 38:BQ:82:LEU:O | 38:BQ:85:ALA:HB3 | 2.14 | 0.47 |
| 47:BZ:35:VAL:HG21 | 47:BZ:37:ARG:CZ | 2.45 | 0.47 |
| 51:B3:21:PHE:O | 51:B3:22:LYS:HG2 | 2.14 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:248:C:O2' | 53:CA:249:U:O5' | 2.32 | 0.47 |
| 53:CA:249:U:H5' | 53:CA:250:A:OP2 | 2.15 | 0.47 |
| 53:CA:254:G:O2' | 53:CA:255:G:H5' | 2.14 | 0.47 |
| 53:CA:295:C:C4 | 53:CA:296:U:C5 | 3.03 | 0.47 |
| 53:CA:309:A:O2' | 53:CA:607:A:C2 | 2.68 | 0.47 |
| 53:CA:375:U:C2 | 53:CA:376:G:C8 | 3.03 | 0.47 |
| 53:CA:382:A:N7 | 53:CA:383:A:N6 | 2.63 | 0.47 |
| 53:CA:580:C:H2' | 53:CA:581:G:O4' | 2.15 | 0.47 |
| 53:CA:701:U:H4' | 53:CA:702:A:C5' | 2.42 | 0.47 |
| 53:CA:973:G:O2' | 14:CN:68:ARG:NH2 | 2.46 | 0.47 |
| 53:CA:977:A:H8 | 53:CA:1223:C:N3 | 2.13 | 0.47 |
| 53:CA:1190:G:H5' | 3:CC:175:HIS:CE1 | 2.50 | 0.47 |
| 3:CC:148:ILE:HD12 | 3:CC:149:LYS:H | 1.80 | 0.47 |
| 4:CD:7:LYS:O | 4:CD:10:LEU:HB2 | 2.15 | 0.47 |
| 6:CF:67:PRO:O | 6:CF:68:GLN:C | 2.52 | 0.47 |
| 15:CO:10:ILE:HA | 15:CO:13:GLU:HB2 | 1.97 | 0.47 |
| 56:CP:32:PHE:C | 56:CP:32:PHE:HD1 | 2.17 | 0.47 |
| 18:CR:59:LYS:O | 18:CR:63:TYR:HD1 | 1.98 | 0.47 |
| 20:CT:58:ASP:O | 20:CT:61:ALA:HB3 | 2.15 | 0.47 |
| 57:DA:475:C:C2' | 57:DA:476:G:C8 | 2.97 | 0.47 |
| 57:DA:515:A:H2' | 57:DA:516:C:H5' | 1.95 | 0.47 |
| 57:DA:623:C:H2' | 57:DA:624:C:C6 | 2.50 | 0.47 |
| 57:DA:635:C:OP2 | 33:DL:126:ARG:NH1 | 2.48 | 0.47 |
| 57:DA:830:G:H8 | 57:DA:830:G:P | 2.38 | 0.47 |
| 57:DA:1064:C:O2' | 57:DA:1065:U:H5' | 2.15 | 0.47 |
| 57:DA:1075:C:O2' | 57:DA:1076:C:C6 | 2.67 | 0.47 |
| 57:DA:1075:C:HO2' | 57:DA:1076:C:H6 | 1.57 | 0.47 |
| 57:DA:1186:G:H2' | 57:DA:1187:G:O4' | 2.15 | 0.47 |
| 57:DA:1312:U:O2 | 57:DA:1603:A:C2 | 2.67 | 0.47 |
| 57:DA:1323:C:C4 | 57:DA:1324:G:N7 | 2.83 | 0.47 |
| 57:DA:1529:G:H2' | 57:DA:1530:G:O4' | 2.15 | 0.47 |
| 57:DA:1566:A:C2 | 24:DC:212:TRP:HB2 | 2.49 | 0.47 |
| 57:DA:1700:A:H2' | 57:DA:1701:A:O4' | 2.14 | 0.47 |
| 57:DA:2072:C:OP2 | 57:DA:2072:C:H6 | 1.97 | 0.47 |
| 57:DA:2091:C:N4 | 57:DA:2092:U:C5 | 2.83 | 0.47 |
| 57:DA:2107:G:H2' | 57:DA:2108:A:C8 | 2.50 | 0.47 |
| 57:DA:2666:C:O2 | 57:DA:2666:C:O4' | 2.33 | 0.47 |
| 57:DA:2837:A:N6 | 57:DA:2882:A:N6 | 2.63 | 0.47 |
| 57:DA:2857:G:N2 | 57:DA:2860:A:OP2 | 2.48 | 0.47 |
| 58:DB:59:A:H2' | 58:DB:60:C:O4' | 2.15 | 0.47 |
| 24:DC:147:PRO:CD | 24:DC:184:GLU:HG3 | 2.45 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:DK:99:ILE:HG13 | 32:DK:118:LEU:HD12 | 1.97 | 0.47 |
| 33:DL:90:VAL:HG13 | 33:DL:95:LEU:HD21 | 1.95 | 0.47 |
| 41:DT:18:GLU:HB2 | 41:DT:19:LYS:H | 1.50 | 0.47 |
| 45:DX:65:THR:O | 45:DX:68:ALA:HB3 | 2.15 | 0.47 |
| 49:D1:24:LYS:HE2 | 49:D1:52:LYS:HZ2 | 1.80 | 0.47 |
| 1:AA:469:C:H2' | 1:AA:470:C:C6 | 2.50 | 0.47 |
| 1:AA:488:C:O2' | 1:AA:489:C:H5' | 2.15 | 0.47 |
| 1:AA:1005:A:H2' | 1:AA:1006:G:O4' | 2.14 | 0.47 |
| 2:AB:130:LYS:NZ | 2:AB:130:LYS:HA | 2.29 | 0.47 |
| 5:AE:76:ASN:HB3 | 5:AE:81:GLN:HG3 | 1.97 | 0.47 |
| 5:AE:100:GLU:HB2 | 5:AE:103:GLY:CA | 2.45 | 0.47 |
| 8:AH:63:LYS:C | 8:AH:64:TYR:CD1 | 2.88 | 0.47 |
| 15:AO:16:ARG:O | 15:AO:17:ASP:CB | 2.62 | 0.47 |
| 22:BA:226:A:C6 | 22:BA:227:A:C6 | 3.03 | 0.47 |
| 22:BA:558:U:OP1 | 31:BJ:113:PRO:HB2 | 2.15 | 0.47 |
| 22:BA:646:U:C3' | 22:BA:647:G:H5'' | 2.44 | 0.47 |
| 22:BA:962:G:H2' | 22:BA:963:U:C6 | 2.50 | 0.47 |
| 22:BA:1334:G:C6 | 22:BA:1335:C:C4 | 3.04 | 0.47 |
| 22:BA:1419:A:H2' | 22:BA:1421:G:C8 | 2.50 | 0.47 |
| 22:BA:1858:A:OP2 | 22:BA:1858:A:H8 | 1.97 | 0.47 |
| 22:BA:2023:C:O2 | 22:BA:2023:C:H2' | 2.09 | 0.47 |
| 22:BA:2109:U:N3 | 22:BA:2181:U:C4 | 2.83 | 0.47 |
| 22:BA:2292:U:H2' | 22:BA:2293:G:H8 | 1.79 | 0.47 |
| 22:BA:2615:U:H2' | 22:BA:2616:C:H6 | 1.80 | 0.47 |
| 22:BA:2788:C:H2' | 22:BA:2789:C:C6 | 2.50 | 0.47 |
| 63:BA:3796:HOH:O | 33:BL:37:GLY:HA3 | 2.14 | 0.47 |
| 24:BC:20:ASN:O | 24:BC:23:LEU:HB2 | 2.15 | 0.47 |
| 27:BF:53:ALA:O | 27:BF:55:ASP:N | 2.48 | 0.47 |
| 32:BK:29:HIS:O | 32:BK:30:ARG:C | 2.53 | 0.47 |
| 33:BL:19:LEU:HB2 | 33:BL:27:LEU:HB2 | 1.97 | 0.47 |
| 33:BL:94:THR:CG2 | 33:BL:95:LEU:H | 2.28 | 0.47 |
| 33:BL:101:ILE:HG22 | 33:BL:102:GLY:H | 1.80 | 0.47 |
| 34:BM:52:ALA:O | 34:BM:53:MET:C | 2.52 | 0.47 |
| 35:BN:2:ARG:HA | 35:BN:5:LYS:HD2 | 1.96 | 0.47 |
| 37:BP:32:VAL:O | 37:BP:33:GLU:O | 2.32 | 0.47 |
| 41:BT:29:THR:HA | 41:BT:86:THR:H | 1.80 | 0.47 |
| 44:BW:24:ARG:O | 44:BW:25:PHE:HB2 | 2.15 | 0.47 |
| 45:BX:70:LEU:O | 45:BX:71:ARG:C | 2.53 | 0.47 |
| 50:B2:25:LYS:HA | 50:B2:28:ARG:NH2 | 2.30 | 0.47 |
| 53:CA:652:U:O2' | 53:CA:653:U:H6 | 1.97 | 0.47 |
| 53:CA:666:G:C5 | 53:CA:741:G:N1 | 2.83 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:CA:671:G:N1 | 53:CA:672:U:C2 | 2.83 | 0.47 |
| 53:CA:836:G:C6 | 53:CA:851:G:C5 | 3.03 | 0.47 |
| 53:CA:1397:C:P | 53:CA:1397:C:H6 | 2.38 | 0.47 |
| 5:CE:14:LEU:HD22 | 5:CE:59:ILE:CD1 | 2.43 | 0.47 |
| 9:CI:83:THR:HG21 | 9:CI:102:PHE:HB3 | 1.96 | 0.47 |
| 9:CI:119:LYS:O | 9:CI:119:LYS:HG3 | 2.14 | 0.47 |
| 11:CK:78:ILE:H | 11:CK:78:ILE:HD13 | 1.79 | 0.47 |
| 12:CL:120:ARG:HG2 | 12:CL:121:PRO:O | 2.15 | 0.47 |
| 15:CO:23:SER:HB3 | 15:CO:26:VAL:CG2 | 2.45 | 0.47 |
| 57:DA:173:A:H2' | 57:DA:174:U:C6 | 2.42 | 0.47 |
| 57:DA:365:U:H2' | 57:DA:366:C:O4' | 2.14 | 0.47 |
| 57:DA:425:G:H2' | 57:DA:426:C:H6 | 1.80 | 0.47 |
| 57:DA:528:A:H8 | 57:DA:528:A:H2' | 1.55 | 0.47 |
| 57:DA:574:A:H2 | 57:DA:2032:G:O2' | 1.96 | 0.47 |
| 57:DA:587:C:N3 | 33:DL:33:ARG:NH2 | 2.62 | 0.47 |
| 57:DA:756:A:H2' | 57:DA:757:G:O4' | 2.15 | 0.47 |
| 57:DA:763:G:H8 | 57:DA:763:G:H2' | 1.48 | 0.47 |
| 57:DA:973:A:H1' | 57:DA:1188:U:C5 | 2.50 | 0.47 |
| 57:DA:1006:C:C2 | 57:DA:1138:G:C2 | 3.03 | 0.47 |
| 57:DA:1282:U:H2' | 57:DA:1283:G:O4' | 2.15 | 0.47 |
| 57:DA:1378:A:H2' | 57:DA:1380:G:N7 | 2.30 | 0.47 |
| 57:DA:1427:A:C2 | 57:DA:1570:A:OP2 | 2.68 | 0.47 |
| 57:DA:1518:C:H2' | 57:DA:1519:G:O4' | 2.15 | 0.47 |
| 57:DA:1832:C:H2' | 57:DA:1833:C:O4' | 2.15 | 0.47 |
| 57:DA:2135:A:H2' | 57:DA:2136:G:C8 | 2.49 | 0.47 |
| 57:DA:2263:C:H4' | 57:DA:2329:U:H4' | 1.97 | 0.47 |
| 58:DB:18:G:C2 | 58:DB:67:G:C6 | 3.03 | 0.47 |
| 25:DD:146:ILE:O | 25:DD:155:VAL:HG13 | 2.15 | 0.47 |
| 59:DF:39:VAL:HG13 | 59:DF:49:LEU:CD2 | 2.45 | 0.47 |
| 28:DG:87:GLN:HA | 28:DG:129:GLU:HA | 1.96 | 0.47 |
| 29:DH:24:GLY:O | 29:DH:26:ALA:O | 2.33 | 0.47 |
| 32:DK:92:GLU:O | 32:DK:93:GLN:O | 2.33 | 0.47 |
| 38:DQ:8:ILE:HG12 | 38:DQ:8:ILE:O | 2.13 | 0.47 |
| 38:DQ:57:ARG:C | 38:DQ:59:LEU:H | 2.17 | 0.47 |
| 45:DX:24:THR:O | 45:DX:25:LYS:C | 2.53 | 0.47 |
| 1:AA:11:G:H2' | 1:AA:12:U:H6 | 1.80 | 0.46 |
| 1:AA:238:A:C2' | 1:AA:239:U:H5' | 2.45 | 0.46 |
| 1:AA:242:G:C2 | 1:AA:245:U:C5 | 3.04 | 0.46 |
| 1:AA:437:U:H4' | 4:AD:153:ARG:NH2 | 2.30 | 0.46 |
| 1:AA:994:A:N7 | 1:AA:1216:A:H4' | 2.30 | 0.46 |
| 1:AA:1226:C:N4 | 13:AM:102:LYS:HG3 | 2.29 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1373:G:C5' | 7:AG:35:LYS:HB2 | 2.44 | 0.46 |
| 1:AA:1468:A:C3' | 1:AA:1469:C:C5' | 2.90 | 0.46 |
| 2:AB:138:ARG:HA | 2:AB:141:GLU:CD | 2.35 | 0.46 |
| 3:AC:107:LYS:NZ | 3:AC:107:LYS:HB2 | 2.30 | 0.46 |
| 9:AI:90:ASP:OD2 | 9:AI:93:LEU:HG | 2.15 | 0.46 |
| 10:AJ:26:VAL:O | 10:AJ:30:LYS:HG2 | 2.16 | 0.46 |
| 10:AJ:35:GLN:CG | 10:AJ:77:VAL:HB | 2.41 | 0.46 |
| 13:AM:45:SER:O | 13:AM:46:GLU:CB | 2.62 | 0.46 |
| 19:AS:4:LEU:HD12 | 19:AS:4:LEU:N | 2.28 | 0.46 |
| 22:BA:287:G:C2 | 22:BA:354:A:C2 | 3.03 | 0.46 |
| 22:BA:323:C:C4 | 22:BA:333:G:C8 | 3.04 | 0.46 |
| 22:BA:458:G:O2' | 50:B2:39:ARG:HD2 | 2.15 | 0.46 |
| 22:BA:569:U:H1' | 22:BA:947:A:O4' | 2.15 | 0.46 |
| 22:BA:575:A:OP2 | 22:BA:2055:C:H5 | 1.98 | 0.46 |
| 22:BA:709:U:H2' | 22:BA:710:U:C6 | 2.51 | 0.46 |
| 22:BA:974:G:C8 | 22:BA:989:G:C2 | 3.03 | 0.46 |
| 22:BA:1653:G:H3' | 35:BN:2:ARG:HG3 | 1.98 | 0.46 |
| 22:BA:1688:U:H5'' | 22:BA:1689:A:OP1 | 2.15 | 0.46 |
| 22:BA:1824:G:C6 | 22:BA:1825:U:C4 | 3.03 | 0.46 |
| 22:BA:1952:A:C6 | 22:BA:1953:A:N1 | 2.83 | 0.46 |
| 22:BA:2282:G:H5'' | 22:BA:2283:C:O4' | 2.15 | 0.46 |
| 22:BA:2680:U:OP2 | 25:BD:114:LYS:CE | 2.50 | 0.46 |
| 24:BC:104:LEU:O | 24:BC:105:ALA:CB | 2.56 | 0.46 |
| 26:BE:188:MET:HG2 | 26:BE:193:VAL:HG22 | 1.97 | 0.46 |
| 27:BF:37:MET:SD | 27:BF:56:LEU:HG | 2.55 | 0.46 |
| 29:BH:96:THR:C | 29:BH:97:ARG:HG3 | 2.35 | 0.46 |
| 29:BH:97:ARG:HG2 | 29:BH:111:ALA:HB1 | 1.97 | 0.46 |
| 30:BI:18:ASN:ND2 | 30:BI:38:CYS:HB3 | 2.29 | 0.46 |
| 31:BJ:122:LEU:C | 31:BJ:123:LYS:HD2 | 2.36 | 0.46 |
| 39:BR:28:ALA:O | 39:BR:63:VAL:CG2 | 2.56 | 0.46 |
| 42:BU:25:LYS:HG2 | 42:BU:36:GLU:HB3 | 1.97 | 0.46 |
| 44:BW:22:VAL:O | 44:BW:25:PHE:HB2 | 2.15 | 0.46 |
| 44:BW:39:GLN:O | 44:BW:40:ARG:C | 2.53 | 0.46 |
| 51:B3:14:LYS:O | 51:B3:21:PHE:O | 2.32 | 0.46 |
| 53:CA:177:G:O2' | 53:CA:1448:C:C5' | 2.62 | 0.46 |
| 53:CA:764:C:N4 | 53:CA:812:G:H1 | 2.12 | 0.46 |
| 53:CA:909:A:H2' | 53:CA:910:C:O4' | 2.15 | 0.46 |
| 53:CA:1057:G:H2' | 53:CA:1058:G:O4' | 2.15 | 0.46 |
| 53:CA:1146:A:C6 | 53:CA:1147:C:C4 | 3.03 | 0.46 |
| 53:CA:1279:G:H2' | 10:CJ:45:ARG:HH21 | 1.79 | 0.46 |
| 2:CB:52:ALA:O | 2:CB:56:LEU:HB2 | 2.14 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:CC:137:VAL:O | 3:CC:138:GLN:C | 2.53 | 0.46 |
| 54:CG:75:LYS:CE | 54:CG:76:SER:H | 2.29 | 0.46 |
| 55:CM:75:SER:C | 55:CM:77:LYS:H | 2.18 | 0.46 |
| 19:CS:35:ARG:NH2 | 19:CS:53:GLY:H | 2.12 | 0.46 |
| 21:CU:13:VAL:HG22 | 21:CU:15:LEU:HD23 | 1.97 | 0.46 |
| 57:DA:95:A:O2' | 46:DY:40:SER:N | 2.48 | 0.46 |
| 57:DA:121:G:N3 | 57:DA:131:A:C2 | 2.83 | 0.46 |
| 57:DA:126:A:OP2 | 50:D2:19:ARG:HB2 | 2.15 | 0.46 |
| 57:DA:189:G:P | 45:DX:13:THR:HG21 | 2.56 | 0.46 |
| 57:DA:513:A:C2 | 57:DA:514:A:C5 | 3.03 | 0.46 |
| 57:DA:849:A:H2' | 57:DA:850:U:H6 | 1.81 | 0.46 |
| 57:DA:1161:C:H2' | 57:DA:1162:G:C8 | 2.51 | 0.46 |
| 57:DA:1205:A:H5'' | 57:DA:1206:G:C8 | 2.50 | 0.46 |
| 57:DA:1349:C:H2' | 57:DA:1350:C:C6 | 2.50 | 0.46 |
| 57:DA:1441:G:C6 | 57:DA:1442:U:C4 | 3.03 | 0.46 |
| 57:DA:1519:G:N1 | 57:DA:1520:U:C2 | 2.83 | 0.46 |
| 57:DA:1742:U:H2' | 57:DA:1743:G:H8 | 1.77 | 0.46 |
| 57:DA:1796:U:H2' | 57:DA:1797:G:H8 | 1.78 | 0.46 |
| 57:DA:2074:U:N3 | 57:DA:2075:U:C4 | 2.83 | 0.46 |
| 57:DA:2267:A:H8 | 57:DA:2267:A:H2' | 1.37 | 0.46 |
| 57:DA:2311:A:H1' | 59:DF:78:ILE:HD11 | 1.96 | 0.46 |
| 57:DA:2324:U:O2 | 57:DA:2385:C:C5 | 2.68 | 0.46 |
| 57:DA:2356:U:C5' | 44:DW:16:GLU:HG3 | 2.46 | 0.46 |
| 57:DA:2415:G:C6 | 57:DA:2416:C:C4 | 3.03 | 0.46 |
| 57:DA:2437:G:O4' | 57:DA:2598:A:C2 | 2.68 | 0.46 |
| 57:DA:2566:A:O2' | 57:DA:2567:G:P | 2.73 | 0.46 |
| 57:DA:2626:C:H2' | 57:DA:2627:G:O4' | 2.15 | 0.46 |
| 57:DA:2846:G:C6 | 57:DA:2847:U:N3 | 2.83 | 0.46 |
| 24:DC:94:LEU:HB2 | 24:DC:100:ARG:HD2 | 1.95 | 0.46 |
| 24:DC:173:LEU:HD11 | 24:DC:183:VAL:HB | 1.97 | 0.46 |
| 28:DG:92:GLY:O | 28:DG:93:TYR:C | 2.52 | 0.46 |
| 29:DH:90:LEU:CD2 | 29:DH:91:PHE:H | 2.28 | 0.46 |
| 29:DH:104:THR:O | 29:DH:104:THR:HG23 | 2.15 | 0.46 |
| 30:DI:118:GLY:O | 30:DI:123:ALA:HB3 | 2.15 | 0.46 |
| 31:DJ:105:VAL:O | 31:DJ:109:LEU:HG | 2.15 | 0.46 |
| 32:DK:22:ILE:HD11 | 32:DK:40:LYS:HG3 | 1.96 | 0.46 |
| 35:DN:31:HIS:C | 35:DN:33:ILE:H | 2.17 | 0.46 |
| 40:DS:5:ALA:HB3 | 40:DS:54:ALA:HB2 | 1.97 | 0.46 |
| 43:DV:61:LEU:HD23 | 43:DV:61:LEU:N | 2.28 | 0.46 |
| 44:DW:25:PHE:O | 44:DW:65:LYS:HA | 2.15 | 0.46 |
| 48:D0:37:HIS:CB | 48:D0:43:THR:HG22 | 2.45 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:119:A:C4 | 1:AA:240:G:N7 | 2.83 | 0.46 |
| 1:AA:212:G:H2' | 1:AA:213:G:C8 | 2.50 | 0.46 |
| 1:AA:428:G:C1' | 1:AA:430:A:N7 | 2.79 | 0.46 |
| 1:AA:967:C:O5' | 1:AA:967:C:H6 | 1.98 | 0.46 |
| 1:AA:1071:C:H2' | 1:AA:1072:G:H8 | 1.79 | 0.46 |
| 3:AC:21:TRP:CB | 3:AC:58:ARG:HG2 | 2.44 | 0.46 |
| 3:AC:61:LYS:HA | 3:AC:61:LYS:HD2 | 1.73 | 0.46 |
| 3:AC:71:ARG:O | 3:AC:74:ILE:HG22 | 2.15 | 0.46 |
| 5:AE:100:GLU:HB2 | 5:AE:103:GLY:HA2 | 1.98 | 0.46 |
| 6:AF:49:TYR:HA | 18:AR:73:HIS:HB3 | 1.98 | 0.46 |
| 7:AG:144:ALA:C | 7:AG:146:ALA:H | 2.17 | 0.46 |
| 8:AH:62:LEU:HD13 | 8:AH:62:LEU:HA | 1.77 | 0.46 |
| 9:AI:53:LEU:HD12 | 9:AI:53:LEU:N | 2.30 | 0.46 |
| 10:AJ:57:VAL:O | 10:AJ:58:ASN:HB2 | 2.15 | 0.46 |
| 18:AR:33:THR:CG2 | 18:AR:37:LYS:HB2 | 2.46 | 0.46 |
| 18:AR:44:THR:OG1 | 18:AR:46:THR:HG22 | 2.16 | 0.46 |
| 22:BA:784:G:O6 | 24:BC:227:VAL:HG11 | 2.11 | 0.46 |
| 22:BA:817:C:H2' | 22:BA:818:G:O4' | 2.15 | 0.46 |
| 22:BA:859:G:N2 | 22:BA:916:G:C4 | 2.82 | 0.46 |
| 22:BA:1095:A:H2' | 22:BA:1096:A:C8 | 2.50 | 0.46 |
| 22:BA:1416:G:O2' | 22:BA:1417:C:P | 2.74 | 0.46 |
| 22:BA:1450:G:O6 | 22:BA:1451:C:N4 | 2.48 | 0.46 |
| 22:BA:1725:U:H2' | 22:BA:1726:C:C6 | 2.50 | 0.46 |
| 22:BA:1737:G:C2 | 22:BA:1738:G:N2 | 2.83 | 0.46 |
| 22:BA:2532:G:C5 | 22:BA:2533:U:C5 | 3.04 | 0.46 |
| 22:BA:2581:G:C2 | 22:BA:2610:C:C6 | 3.03 | 0.46 |
| 24:BC:257:ARG:HG3 | 24:BC:269:ARG:HH22 | 1.79 | 0.46 |
| 27:BF:107:VAL:HG13 | 27:BF:113:PHE:CZ | 2.50 | 0.46 |
| 27:BF:107:VAL:N | 27:BF:108:PRO:CD | 2.78 | 0.46 |
| 30:BI:79:LEU:HD11 | 30:BI:132:ALA:HA | 1.96 | 0.46 |
| 31:BJ:40:HIS:C | 31:BJ:41:LYS:CG | 2.83 | 0.46 |
| 32:BK:58:LEU:HD23 | 32:BK:58:LEU:N | 2.31 | 0.46 |
| 37:BP:29:VAL:HG12 | 37:BP:30:TRP:O | 2.15 | 0.46 |
| 43:BV:10:LYS:H | 43:BV:10:LYS:CD | 2.09 | 0.46 |
| 43:BV:78:GLN:HB2 | 43:BV:88:HIS:HB3 | 1.96 | 0.46 |
| 49:B1:24:LYS:NZ | 49:B1:51:ALA:O | 2.40 | 0.46 |
| 53:CA:471:U:H2' | 53:CA:472:U:H6 | 1.77 | 0.46 |
| 53:CA:974:A:OP1 | 14:CN:68:ARG:NH2 | 2.48 | 0.46 |
| 53:CA:1090:U:H2' | 53:CA:1091:U:C6 | 2.45 | 0.46 |
| 53:CA:1215:G:C4 | 53:CA:1216:A:N7 | 2.83 | 0.46 |
| 9:CI:76:GLY:O | 9:CI:79:ARG:HB3 | 2.15 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:CP:48:GLU:CD | 56:CP:51:ARG:HE | 2.18 | 0.46 |
| 57:DA:83:A:P | 42:DU:91:LYS:HZ2 | 2.39 | 0.46 |
| 57:DA:92:U:C6 | 57:DA:93:G:C8 | 3.03 | 0.46 |
| 57:DA:116:C:O2' | 57:DA:117:G:H5' | 2.15 | 0.46 |
| 57:DA:312:G:C2 | 57:DA:313:G:C8 | 3.04 | 0.46 |
| 57:DA:373:U:O2' | 57:DA:374:A:H8 | 1.97 | 0.46 |
| 57:DA:460:A:H2' | 57:DA:461:C:O4' | 2.14 | 0.46 |
| 57:DA:702:U:C2 | 57:DA:703:U:C6 | 3.03 | 0.46 |
| 57:DA:729:G:N3 | 57:DA:729:G:H2' | 2.30 | 0.46 |
| 57:DA:764:A:C2 | 57:DA:781:A:C4 | 3.02 | 0.46 |
| 57:DA:1387:A:C4 | 57:DA:1388:G:N7 | 2.83 | 0.46 |
| 57:DA:1553:A:C8 | 57:DA:1555:G:C5 | 3.02 | 0.46 |
| 57:DA:1683:U:H2' | 57:DA:1684:G:H8 | 1.80 | 0.46 |
| 57:DA:2082:A:H2' | 57:DA:2083:G:O4' | 2.15 | 0.46 |
| 57:DA:2428:G:C2 | 33:DL:54:GLN:NE2 | 2.84 | 0.46 |
| 57:DA:2489:U:C4 | 57:DA:2490:G:C6 | 3.03 | 0.46 |
| 57:DA:2652:C:C4 | 57:DA:2653:U:C4 | 3.02 | 0.46 |
| 57:DA:2729:G:H5'' | 25:DD:190:LYS:NZ | 2.29 | 0.46 |
| 57:DA:2887:A:H1' | 48:D0:39:ARG:NH2 | 2.30 | 0.46 |
| 24:DC:52:HIS:HB3 | 24:DC:216:ARG:O | 2.15 | 0.46 |
| 24:DC:175:LEU:HD12 | 24:DC:179:GLU:HB3 | 1.97 | 0.46 |
| 59:DF:35:LEU:HD11 | 59:DF:153:ILE:HG23 | 1.97 | 0.46 |
| 59:DF:45:ASP:HB3 | 59:DF:48:LEU:CD2 | 2.46 | 0.46 |
| 41:DT:19:LYS:HD3 | 41:DT:19:LYS:HA | 1.67 | 0.46 |
| 44:DW:11:ASN:OD1 | 44:DW:11:ASN:O | 2.33 | 0.46 |
| 1:AA:258:G:H4' | 20:AT:81:GLN:HE22 | 1.80 | 0.46 |
| 1:AA:585:G:N3 | 1:AA:879:C:H4' | 2.30 | 0.46 |
| 2:AB:20:ARG:HA | 2:AB:20:ARG:HH11 | 1.80 | 0.46 |
| 2:AB:32:GLY:HA3 | 2:AB:39:ILE:CG1 | 2.45 | 0.46 |
| 2:AB:132:GLU:O | 2:AB:132:GLU:HG3 | 2.14 | 0.46 |
| 2:AB:153:MET:CE | 2:AB:157:PRO:HG3 | 2.46 | 0.46 |
| 2:AB:185:ILE:CG1 | 2:AB:185:ILE:O | 2.63 | 0.46 |
| 4:AD:19:PHE:N | 4:AD:19:PHE:CD1 | 2.84 | 0.46 |
| 9:AI:52:GLU:HB3 | 9:AI:53:LEU:HD12 | 1.97 | 0.46 |
| 16:AP:75:ILE:C | 16:AP:77:GLU:H | 2.18 | 0.46 |
| 18:AR:35:SER:HB3 | 21:AU:3:ILE:HG13 | 1.97 | 0.46 |
| 18:AR:70:THR:OG1 | 18:AR:72:ARG:HG2 | 2.15 | 0.46 |
| 19:AS:69:LYS:HB2 | 19:AS:72:GLU:HG3 | 1.97 | 0.46 |
| 19:AS:79:TYR:CZ | 19:AS:80:ARG:HB2 | 2.50 | 0.46 |
| 22:BA:1150:C:C2' | 22:BA:1151:A:O5' | 2.63 | 0.46 |
| 22:BA:1398:C:H2' | 22:BA:1399:C:C6 | 2.50 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 22:BA:1537:G:HO2' | 22:BA:1538:G:P | 2.38 | 0.46 |
| 22:BA:1548:A:H2' | 22:BA:1549:A:H8 | 1.81 | 0.46 |
| 22:BA:2617:U:C4 | 22:BA:2618:G:N7 | 2.83 | 0.46 |
| 24:BC:49:THR:HG22 | 24:BC:50:THR:N | 2.31 | 0.46 |
| 25:BD:33:ARG:NH2 | 25:BD:74:GLU:HB3 | 2.31 | 0.46 |
| 25:BD:152:PRO:O | 25:BD:154:LYS:HG2 | 2.15 | 0.46 |
| 26:BE:48:THR:N | 26:BE:51:GLU:HG3 | 2.31 | 0.46 |
| 27:BF:134:GLN:HE22 | 27:BF:149:ARG:HB3 | 1.80 | 0.46 |
| 31:BJ:40:HIS:CD2 | 31:BJ:40:HIS:H | 2.34 | 0.46 |
| 33:BL:14:LYS:O | 33:BL:15:ALA:O | 2.33 | 0.46 |
| 40:BS:36:LEU:HD12 | 40:BS:36:LEU:HA | 1.66 | 0.46 |
| 53:CA:347:G:H2' | 53:CA:348:G:H8 | 1.80 | 0.46 |
| 53:CA:688:G:H5'' | 53:CA:688:G:C8 | 2.50 | 0.46 |
| 53:CA:986:U:C2' | 53:CA:987:G:C8 | 2.78 | 0.46 |
| 53:CA:1018:G:H2' | 53:CA:1019:A:O4' | 2.14 | 0.46 |
| 53:CA:1161:C:O2 | 53:CA:1176:A:C2 | 2.68 | 0.46 |
| 53:CA:1213:A:HO2' | 53:CA:1214:C:H5' | 1.76 | 0.46 |
| 53:CA:1270:G:H2' | 53:CA:1271:A:C8 | 2.50 | 0.46 |
| 4:CD:187:ARG:C | 4:CD:189:ASP:N | 2.67 | 0.46 |
| 8:CH:29:SER:OG | 8:CH:32:LYS:HB3 | 2.15 | 0.46 |
| 14:CN:63:CYS:HB3 | 14:CN:67:GLY:H | 1.81 | 0.46 |
| 18:CR:63:TYR:CE2 | 18:CR:69:TYR:OH | 2.69 | 0.46 |
| 19:CS:39:ILE:HG12 | 19:CS:68:HIS:O | 2.15 | 0.46 |
| 20:CT:3:ILE:HD12 | 20:CT:3:ILE:H | 1.79 | 0.46 |
| 21:CU:36:PHE:CB | 21:CU:40:PRO:HD3 | 2.40 | 0.46 |
| 57:DA:911:A:H8 | 57:DA:911:A:O5' | 1.98 | 0.46 |
| 57:DA:975:A:O2' | 57:DA:976:G:C5' | 2.63 | 0.46 |
| 57:DA:1003:G:N3 | 57:DA:1010:A:H2 | 2.14 | 0.46 |
| 57:DA:1037:G:C6 | 57:DA:1119:U:O2 | 2.68 | 0.46 |
| 57:DA:1087:G:H1' | 57:DA:1089:A:H1' | 1.98 | 0.46 |
| 57:DA:1308:A:H2' | 57:DA:1309:G:O4' | 2.15 | 0.46 |
| 57:DA:1346:G:O2' | 57:DA:1347:A:O5' | 2.34 | 0.46 |
| 57:DA:1383:A:C2 | 57:DA:1384:A:C4 | 3.03 | 0.46 |
| 57:DA:1388:G:HO2' | 57:DA:1389:G:H5' | 1.78 | 0.46 |
| 57:DA:1416:G:O2' | 57:DA:1417:C:P | 2.74 | 0.46 |
| 57:DA:1532:A:H2' | 57:DA:1533:C:C6 | 2.51 | 0.46 |
| 57:DA:1650:A:O2' | 35:DN:108:ALA:HB1 | 2.16 | 0.46 |
| 57:DA:1740:G:H2' | 57:DA:1741:C:C6 | 2.51 | 0.46 |
| 57:DA:1799:G:N1 | 57:DA:1819:A:OP2 | 2.42 | 0.46 |
| 57:DA:2516:A:C2 | 57:DA:2569:G:C2 | 3.03 | 0.46 |
| 57:DA:2581:G:H2' | 57:DA:2610:C:N4 | 2.30 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:2624:G:C2 | 57:DA:2625:G:H1' | 2.51 | 0.46 |
| 57:DA:2729:G:H2' | 57:DA:2730:C:C6 | 2.50 | 0.46 |
| 57:DA:2889:C:C4 | 57:DA:2890:G:C5 | 3.03 | 0.46 |
| 58:DB:60:C:H2' | 58:DB:61:G:C8 | 2.51 | 0.46 |
| 24:DC:42:ARG:CZ | 24:DC:48:ILE:HD11 | 2.46 | 0.46 |
| 25:DD:17:GLU:CD | 25:DD:17:GLU:H | 2.19 | 0.46 |
| 25:DD:98:VAL:HG23 | 25:DD:180:VAL:CG1 | 2.45 | 0.46 |
| 25:DD:208:LYS:O | 25:DD:209:ALA:HB3 | 2.15 | 0.46 |
| 59:DF:36:ASN:O | 59:DF:37:MET:CB | 2.64 | 0.46 |
| 59:DF:73:VAL:O | 59:DF:73:VAL:HG12 | 2.15 | 0.46 |
| 29:DH:57:LYS:O | 29:DH:57:LYS:HD2 | 2.15 | 0.46 |
| 38:DQ:16:ILE:HG23 | 38:DQ:38:VAL:HG21 | 1.97 | 0.46 |
| 38:DQ:96:ASP:OD1 | 38:DQ:96:ASP:C | 2.54 | 0.46 |
| 39:DR:79:ARG:O | 39:DR:80:ARG:CB | 2.63 | 0.46 |
| 41:DT:8:LEU:HD22 | 41:DT:46:ALA:HA | 1.95 | 0.46 |
| 42:DU:40:LEU:HA | 42:DU:61:GLU:HA | 1.97 | 0.46 |
| 46:DY:57:LEU:O | 46:DY:60:LYS:HB3 | 2.15 | 0.46 |
| 52:D4:2:LYS:HA | 52:D4:2:LYS:NZ | 2.30 | 0.46 |
| 1:AA:173:U:H1' | 1:AA:197:A:C5 | 2.50 | 0.46 |
| 1:AA:209:U:C5' | 1:AA:210:C:OP2 | 2.63 | 0.46 |
| 1:AA:439:U:H4' | 4:AD:120:LYS:HG3 | 1.97 | 0.46 |
| 1:AA:449:G:O2' | 1:AA:450:G:H5' | 2.16 | 0.46 |
| 1:AA:597:G:C2 | 1:AA:644:U:C2 | 3.04 | 0.46 |
| 1:AA:668:G:O2' | 1:AA:669:G:H5' | 2.15 | 0.46 |
| 1:AA:933:G:OP2 | 7:AG:2:ARG:HB3 | 2.14 | 0.46 |
| 1:AA:1152:A:O2' | 1:AA:1153:G:C5' | 2.64 | 0.46 |
| 1:AA:1261:A:C2 | 1:AA:1274:A:C2 | 3.02 | 0.46 |
| 2:AB:161:PHE:HA | 2:AB:183:PHE:O | 2.15 | 0.46 |
| 2:AB:187:ASP:HB2 | 2:AB:203:ASP:CG | 2.36 | 0.46 |
| 12:AL:43:LYS:HB2 | 12:AL:43:LYS:NZ | 2.30 | 0.46 |
| 13:AM:78:ARG:O | 13:AM:82:LEU:HG | 2.16 | 0.46 |
| 18:AR:37:LYS:HB3 | 18:AR:37:LYS:HE2 | 1.78 | 0.46 |
| 19:AS:50:VAL:HG22 | 19:AS:70:LEU:HD13 | 1.97 | 0.46 |
| 22:BA:64:A:O2' | 41:BT:70:HIS:HE1 | 1.97 | 0.46 |
| 22:BA:581:C:OP1 | 38:BQ:32:ARG:HB2 | 2.15 | 0.46 |
| 22:BA:603:A:H4' | 22:BA:604:G:O5' | 2.16 | 0.46 |
| 22:BA:729:G:C6 | 24:BC:206:LYS:HB2 | 2.51 | 0.46 |
| 22:BA:754:U:H2' | 22:BA:755:U:H6 | 1.80 | 0.46 |
| 22:BA:1000:A:H62 | 22:BA:1154:G:H2' | 1.80 | 0.46 |
| 22:BA:1243:C:H1' | 33:BL:4:ASN:O | 2.15 | 0.46 |
| 22:BA:1411:U:H2' | 22:BA:1412:U:O4' | 2.15 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:1871:A:H8 | 22:BA:1872:A:C5 | 2.33 | 0.46 |
| 22:BA:2332:C:OP1 | 44:BW:44:PHE:HZ | 1.98 | 0.46 |
| 22:BA:2591:C:H2' | 22:BA:2592:G:C8 | 2.50 | 0.46 |
| 22:BA:2746:U:H2' | 22:BA:2747:G:H5' | 1.97 | 0.46 |
| 22:BA:2870:C:N4 | 22:BA:2871:U:C4 | 2.84 | 0.46 |
| 23:BB:48:U:O2' | 36:BO:100:HIS:HE1 | 1.97 | 0.46 |
| 23:BB:53:A:C2 | 23:BB:54:G:C8 | 3.03 | 0.46 |
| 23:BB:109:A:O2' | 23:BB:110:C:H5' | 2.15 | 0.46 |
| 28:BG:23:ILE:HG21 | 28:BG:71:LEU:CD1 | 2.44 | 0.46 |
| 28:BG:33:THR:H | 28:BG:34:ARG:HD3 | 1.80 | 0.46 |
| 28:BG:51:PHE:N | 28:BG:51:PHE:CD2 | 2.83 | 0.46 |
| 30:BI:126:ARG:CA | 30:BI:129:GLU:HB2 | 2.43 | 0.46 |
| 32:BK:118:LEU:N | 32:BK:118:LEU:CD1 | 2.78 | 0.46 |
| 34:BM:66:ARG:NH1 | 34:BM:101:VAL:CG1 | 2.76 | 0.46 |
| 34:BM:71:LYS:HA | 34:BM:72:PRO:HD3 | 1.71 | 0.46 |
| 37:BP:51:ASN:C | 37:BP:52:ARG:HG2 | 2.35 | 0.46 |
| 43:BV:30:ILE:HA | 43:BV:91:PHE:O | 2.14 | 0.46 |
| 43:BV:30:ILE:HG12 | 43:BV:91:PHE:HB2 | 1.98 | 0.46 |
| 43:BV:80:HIS:HD2 | 43:BV:83:LYS:CA | 2.26 | 0.46 |
| 48:B0:3:GLN:O | 48:B0:3:GLN:HG3 | 2.15 | 0.46 |
| 53:CA:6:G:H1 | 5:CE:102:THR:HG21 | 1.80 | 0.46 |
| 53:CA:250:A:H1' | 53:CA:252:U:C4 | 2.50 | 0.46 |
| 53:CA:511:C:HO2' | 53:CA:512:U:H6 | 1.61 | 0.46 |
| 53:CA:632:U:H2' | 53:CA:632:U:O2 | 2.13 | 0.46 |
| 53:CA:649:A:H2' | 53:CA:650:G:O4' | 2.16 | 0.46 |
| 53:CA:701:U:O2' | 53:CA:702:A:P | 2.73 | 0.46 |
| 53:CA:880:C:C2' | 53:CA:881:G:H5' | 2.46 | 0.46 |
| 53:CA:1178:G:OP2 | 9:CI:98:ARG:NH2 | 2.49 | 0.46 |
| 53:CA:1409:C:H2' | 53:CA:1410:A:H8 | 1.79 | 0.46 |
| 3:CC:10:ARG:O | 3:CC:13:ILE:O | 2.32 | 0.46 |
| 3:CC:39:ARG:CG | 3:CC:54:ILE:HD13 | 2.41 | 0.46 |
| 4:CD:144:ILE:HD12 | 4:CD:177:MET:CB | 2.44 | 0.46 |
| 4:CD:170:LEU:HA | 4:CD:182:LYS:HB2 | 1.96 | 0.46 |
| 54:CG:68:VAL:O | 54:CG:70:PRO:HD3 | 2.15 | 0.46 |
| 8:CH:11:THR:CG2 | 8:CH:14:ARG:HH12 | 2.06 | 0.46 |
| 11:CK:111:ASP:HB3 | 21:CU:3:ILE:N | 2.31 | 0.46 |
| 55:CM:85:TYR:HE2 | 55:CM:96:VAL:HG13 | 1.80 | 0.46 |
| 55:CM:86:ARG:HH11 | 55:CM:90:HIS:HD2 | 1.64 | 0.46 |
| 18:CR:41:SER:HA | 18:CR:46:THR:HG22 | 1.97 | 0.46 |
| 20:CT:81:GLN:O | 20:CT:82:ILE:HG23 | 2.16 | 0.46 |
| 57:DA:39:G:N2 | 57:DA:441:U:C2 | 2.84 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:DA:53:A:C2 | 50:D2:35:ARG:NH1 | 2.83 | 0.46 |
| 57:DA:303:G:O2' | 57:DA:304:U:O5' | 2.33 | 0.46 |
| 57:DA:333:G:O2' | 57:DA:334:C:C5' | 2.64 | 0.46 |
| 57:DA:375:G:H8 | 57:DA:375:G:H5'' | 1.74 | 0.46 |
| 57:DA:410:G:C6 | 57:DA:2407:A:N6 | 2.83 | 0.46 |
| 57:DA:575:A:N3 | 57:DA:576:U:C5 | 2.84 | 0.46 |
| 57:DA:859:G:N2 | 57:DA:916:G:C2' | 2.78 | 0.46 |
| 57:DA:973:A:OP1 | 57:DA:973:A:C8 | 2.62 | 0.46 |
| 57:DA:1062:G:C4 | 57:DA:1063:G:N7 | 2.83 | 0.46 |
| 57:DA:1420:A:C4 | 57:DA:2211:A:N7 | 2.84 | 0.46 |
| 57:DA:1429:G:O2' | 57:DA:1430:G:O5' | 2.33 | 0.46 |
| 57:DA:1605:C:O2' | 57:DA:1610:A:H2' | 2.14 | 0.46 |
| 57:DA:2200:C:O2 | 57:DA:2226:C:N4 | 2.48 | 0.46 |
| 57:DA:2233:U:H2' | 57:DA:2234:G:C8 | 2.51 | 0.46 |
| 57:DA:2250:G:OP1 | 57:DA:2275:C:H2' | 2.15 | 0.46 |
| 57:DA:2331:G:N1 | 57:DA:2385:C:C4 | 2.84 | 0.46 |
| 57:DA:2459:A:N3 | 57:DA:2459:A:H2' | 2.30 | 0.46 |
| 57:DA:2657:A:O2' | 57:DA:2658:C:H5' | 2.14 | 0.46 |
| 57:DA:2693:G:H2' | 57:DA:2694:G:H8 | 1.79 | 0.46 |
| 57:DA:2774:C:N4 | 57:DA:2775:G:C5 | 2.83 | 0.46 |
| 57:DA:2813:A:C2 | 57:DA:2888:C:O2 | 2.68 | 0.46 |
| 58:DB:7:G:N2 | 36:DO:47:VAL:HG21 | 2.30 | 0.46 |
| 24:DC:244:VAL:HG12 | 24:DC:250:GLN:HA | 1.97 | 0.46 |
| 28:DG:120:ILE:HG12 | 28:DG:134:GLY:HA3 | 1.98 | 0.46 |
| 34:DM:41:LEU:C | 34:DM:93:VAL:HG23 | 2.35 | 0.46 |
| 34:DM:76:LYS:NZ | 34:DM:84:LYS:H | 2.13 | 0.46 |
| 34:DM:136:MET:HE1 | 43:DV:75:GLN:O | 2.15 | 0.46 |
| 37:DP:102:ARG:O | 37:DP:103:THR:CB | 2.64 | 0.46 |
| 38:DQ:87:VAL:HG11 | 39:DR:52:PRO:CG | 2.41 | 0.46 |
| 41:DT:53:VAL:HG21 | 41:DT:92:ASN:HD22 | 1.79 | 0.46 |
| 49:D1:47:ILE:HD12 | 49:D1:47:ILE:N | 2.31 | 0.46 |
| 51:D3:23:HIS:ND1 | 51:D3:24:LYS:O | 2.44 | 0.46 |
| 52:D4:7:VAL:HG22 | 52:D4:25:VAL:CG2 | 2.45 | 0.46 |
| 1:AA:157:U:O2' | 1:AA:158:G:H5' | 2.16 | 0.46 |
| 1:AA:275:G:C8 | 1:AA:275:G:H5'' | 2.51 | 0.46 |
| 1:AA:704:A:O2' | 1:AA:705:G:H5' | 2.16 | 0.46 |
| 1:AA:815:A:H4' | 1:AA:817:C:C4 | 2.50 | 0.46 |
| 1:AA:1181:G:C2 | 1:AA:1182:G:N2 | 2.83 | 0.46 |
| 1:AA:1312:G:N7 | 19:AS:2:ARG:HA | 2.31 | 0.46 |
| 1:AA:1478:U:H2' | 1:AA:1479:C:C6 | 2.51 | 0.46 |
| 2:AB:59:ILE:HD12 | 2:AB:60:ALA:N | 2.30 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:AE:77:ASN:CG | 5:AE:78:GLY:N | 2.67 | 0.46 |
| 7:AG:96:ASN:O | 7:AG:100:MET:HG3 | 2.15 | 0.46 |
| 11:AK:109:ILE:HG22 | 11:AK:110:THR:N | 2.30 | 0.46 |
| 11:AK:126:ARG:CB | 21:AU:33:ARG:HH12 | 2.28 | 0.46 |
| 15:AO:67:ASP:OD1 | 15:AO:87:ARG:NH2 | 2.48 | 0.46 |
| 15:AO:69:LEU:HD21 | 15:AO:76:ARG:HB2 | 1.96 | 0.46 |
| 19:AS:10:ILE:HD11 | 19:AS:15:LEU:HD22 | 1.97 | 0.46 |
| 22:BA:589:U:H2' | 22:BA:590:A:C8 | 2.50 | 0.46 |
| 22:BA:634:C:H6 | 22:BA:634:C:O5' | 1.99 | 0.46 |
| 22:BA:638:G:C5 | 22:BA:651:G:C2 | 3.04 | 0.46 |
| 22:BA:656:G:H2' | 22:BA:657:U:H6 | 1.77 | 0.46 |
| 22:BA:763:G:O2' | 22:BA:765:C:H5' | 2.15 | 0.46 |
| 22:BA:777:G:H2' | 22:BA:778:G:H8 | 1.80 | 0.46 |
| 22:BA:913:U:H4' | 22:BA:914:G:OP1 | 2.16 | 0.46 |
| 22:BA:998:C:OP2 | 38:BQ:57:ARG:NH2 | 2.48 | 0.46 |
| 22:BA:2294:G:H5'' | 36:BO:10:ARG:HD3 | 1.97 | 0.46 |
| 22:BA:2340:A:H2' | 22:BA:2341:G:H8 | 1.81 | 0.46 |
| 22:BA:2457:U:O2 | 22:BA:2495:G:C2 | 2.68 | 0.46 |
| 22:BA:2458:G:O2' | 22:BA:2460:U:O4 | 2.26 | 0.46 |
| 22:BA:2607:G:C6 | 22:BA:2608:G:C6 | 3.03 | 0.46 |
| 22:BA:2796:U:H3 | 22:BA:2799:A:H61 | 1.62 | 0.46 |
| 22:BA:2860:A:H8 | 22:BA:2860:A:O5' | 1.98 | 0.46 |
| 24:BC:61:TYR:HD2 | 24:BC:85:ASN:ND2 | 2.14 | 0.46 |
| 25:BD:12:THR:HG22 | 25:BD:13:ARG:O | 2.16 | 0.46 |
| 25:BD:169:ARG:C | 25:BD:170:VAL:CG1 | 2.83 | 0.46 |
| 27:BF:134:GLN:HE22 | 27:BF:150:GLY:H | 1.63 | 0.46 |
| 28:BG:1:SER:HB3 | 28:BG:5:LYS:NZ | 2.30 | 0.46 |
| 30:BI:56:VAL:HG11 | 30:BI:68:PHE:HD2 | 1.79 | 0.46 |
| 30:BI:105:LEU:HA | 30:BI:108:ILE:HD12 | 1.97 | 0.46 |
| 34:BM:62:LYS:O | 34:BM:105:MET:HA | 2.16 | 0.46 |
| 37:BP:37:LYS:N | 37:BP:37:LYS:HD3 | 2.30 | 0.46 |
| 38:BQ:111:LYS:HZ3 | 39:BR:48:LYS:HD3 | 1.81 | 0.46 |
| 41:BT:4:GLU:HG3 | 41:BT:6:ARG:HE | 1.80 | 0.46 |
| 41:BT:50:LEU:H | 41:BT:50:LEU:CD1 | 2.23 | 0.46 |
| 53:CA:38:G:N1 | 53:CA:397:A:OP1 | 2.42 | 0.46 |
| 53:CA:216:U:H4' | 53:CA:464:U:H4' | 1.97 | 0.46 |
| 53:CA:254:G:OP1 | 17:CQ:69:THR:OG1 | 2.33 | 0.46 |
| 53:CA:535:A:H4' | 53:CA:536:C:OP1 | 2.12 | 0.46 |
| 53:CA:575:G:HO2' | 53:CA:576:C:P | 2.39 | 0.46 |
| 53:CA:669:G:C2 | 53:CA:670:G:C4 | 3.03 | 0.46 |
| 53:CA:761:G:C2 | 53:CA:762:U:C2 | 3.04 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:CC:67:ILE:H | 3:CC:102:ILE:HA | 1.81 | 0.46 |
| 5:CE:80:LEU:HB3 | 5:CE:97:PRO:HB3 | 1.98 | 0.46 |
| 5:CE:114:LEU:O | 5:CE:119:VAL:HG23 | 2.16 | 0.46 |
| 54:CG:49:LEU:O | 54:CG:49:LEU:HD13 | 2.16 | 0.46 |
| 54:CG:59:GLU:C | 54:CG:61:PHE:H | 2.17 | 0.46 |
| 9:CI:39:GLY:O | 9:CI:40:ARG:HB2 | 2.15 | 0.46 |
| 10:CJ:30:LYS:HG3 | 10:CJ:36:VAL:HG22 | 1.97 | 0.46 |
| 10:CJ:48:ARG:HB3 | 14:CN:100:TRP:HZ2 | 1.79 | 0.46 |
| 56:CP:38:PHE:CE2 | 56:CP:51:ARG:HB3 | 2.50 | 0.46 |
| 17:CQ:68:LYS:HG2 | 17:CQ:69:THR:HG23 | 1.96 | 0.46 |
| 21:CU:28:LEU:HD23 | 21:CU:28:LEU:C | 2.35 | 0.46 |
| 57:DA:301:G:O2' | 57:DA:302:C:P | 2.73 | 0.46 |
| 57:DA:622:G:O2' | 57:DA:623:C:C5' | 2.64 | 0.46 |
| 57:DA:633:A:C5 | 57:DA:634:C:H1' | 2.50 | 0.46 |
| 57:DA:732:C:C4 | 57:DA:733:G:C5 | 3.04 | 0.46 |
| 57:DA:745:G:H5'' | 57:DA:746:U:OP2 | 2.16 | 0.46 |
| 57:DA:784:G:O6 | 24:DC:227:VAL:HG11 | 2.16 | 0.46 |
| 57:DA:800:A:C2 | 57:DA:802:A:C8 | 3.03 | 0.46 |
| 57:DA:1441:G:H2' | 57:DA:1442:U:H6 | 1.78 | 0.46 |
| 57:DA:1441:G:C4 | 57:DA:1551:A:H2 | 2.34 | 0.46 |
| 57:DA:1455:G:HO2' | 57:DA:1456:G:H8 | 1.59 | 0.46 |
| 57:DA:1533:C:C2' | 57:DA:1534:U:H5' | 2.45 | 0.46 |
| 57:DA:1655:A:N7 | 57:DA:1656:C:C4 | 2.83 | 0.46 |
| 57:DA:1738:G:O2' | 57:DA:1739:A:P | 2.74 | 0.46 |
| 57:DA:1755:A:C2 | 57:DA:1758:U:H5 | 2.33 | 0.46 |
| 57:DA:2344:U:H4' | 57:DA:2345:G:OP1 | 2.15 | 0.46 |
| 57:DA:2503:A:N3 | 57:DA:2503:A:H5' | 2.30 | 0.46 |
| 57:DA:2603:G:C6 | 57:DA:2604:U:C4 | 3.04 | 0.46 |
| 57:DA:2658:C:H5'' | 28:DG:157:LYS:CD | 2.46 | 0.46 |
| 59:DF:103:ILE:HG12 | 59:DF:175:PRO:HD3 | 1.97 | 0.46 |
| 59:DF:118:ALA:HB2 | 59:DF:176:PHE:HB3 | 1.98 | 0.46 |
| 30:DI:69:VAL:O | 30:DI:69:VAL:HG13 | 2.16 | 0.46 |
| 34:DM:95:LEU:H | 34:DM:95:LEU:HD13 | 1.80 | 0.46 |
| 35:DN:7:GLY:O | 35:DN:8:ARG:HB2 | 2.15 | 0.46 |
| 36:DO:57:ALA:C | 36:DO:58:ILE:HD12 | 2.36 | 0.46 |
| 37:DP:44:GLY:HA3 | 37:DP:60:VAL:HG12 | 1.98 | 0.46 |
| 41:DT:45:ALA:HA | 41:DT:48:GLN:HG2 | 1.95 | 0.46 |
| 42:DU:12:VAL:HG21 | 42:DU:38:ILE:HG12 | 1.97 | 0.46 |
| 42:DU:92:VAL:CB | 42:DU:101:THR:HG21 | 2.45 | 0.46 |
| 1:AA:33:A:H2' | 1:AA:34:C:C6 | 2.51 | 0.46 |
| 1:AA:407:U:H2' | 1:AA:408:A:O4' | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:977:A:O2' | 1:AA:978:A:H5'' | 2.15 | 0.46 |
| 1:AA:1049:U:O2' | 1:AA:1050:G:P | 2.74 | 0.46 |
| 1:AA:1052:U:H5'' | 1:AA:1053:G:OP2 | 2.16 | 0.46 |
| 1:AA:1055:A:H8 | 1:AA:1055:A:O5' | 1.99 | 0.46 |
| 1:AA:1154:G:C2 | 1:AA:1155:A:C8 | 3.04 | 0.46 |
| 1:AA:1159:U:H4' | 1:AA:1160:G:OP1 | 2.15 | 0.46 |
| 1:AA:1521:C:C2 | 1:AA:1522:U:C6 | 3.04 | 0.46 |
| 3:AC:25:THR:HG23 | 14:AN:75:LYS:HD3 | 1.96 | 0.46 |
| 3:AC:181:ILE:HD13 | 3:AC:202:PHE:HA | 1.98 | 0.46 |
| 5:AE:60:GLN:C | 5:AE:62:ALA:N | 2.68 | 0.46 |
| 10:AJ:52:LEU:H | 14:AN:80:ARG:HD2 | 1.80 | 0.46 |
| 11:AK:51:PHE:HE1 | 11:AK:60:PHE:HE2 | 1.63 | 0.46 |
| 12:AL:120:ARG:C | 12:AL:122:LYS:H | 2.19 | 0.46 |
| 22:BA:286:U:H2' | 22:BA:287:G:H8 | 1.80 | 0.46 |
| 22:BA:573:U:H4' | 22:BA:574:A:OP1 | 2.16 | 0.46 |
| 22:BA:704:G:HO2' | 22:BA:705:A:P | 2.38 | 0.46 |
| 22:BA:848:C:H1' | 22:BA:934:U:O4' | 2.15 | 0.46 |
| 22:BA:897:C:H5'' | 22:BA:898:C:OP2 | 2.16 | 0.46 |
| 22:BA:969:G:C6 | 22:BA:970:U:C4 | 3.04 | 0.46 |
| 22:BA:1746:A:C2 | 22:BA:1747:U:C4 | 3.04 | 0.46 |
| 22:BA:1760:C:H2' | 22:BA:1761:C:H5' | 1.96 | 0.46 |
| 22:BA:2420:C:O2' | 22:BA:2421:G:H5' | 2.15 | 0.46 |
| 22:BA:2638:G:C2' | 22:BA:2775:G:H22 | 2.29 | 0.46 |
| 22:BA:2832:U:O2' | 22:BA:2833:U:P | 2.74 | 0.46 |
| 23:BB:34:A:N6 | 23:BB:44:G:O2' | 2.49 | 0.46 |
| 25:BD:42:ASN:O | 25:BD:42:ASN:ND2 | 2.49 | 0.46 |
| 25:BD:99:GLU:HG2 | 25:BD:100:LEU:H | 1.78 | 0.46 |
| 25:BD:100:LEU:HB3 | 25:BD:101:PHE:HD1 | 1.78 | 0.46 |
| 26:BE:31:VAL:HG21 | 26:BE:104:ALA:HB2 | 1.98 | 0.46 |
| 26:BE:97:ASN:N | 26:BE:97:ASN:HD22 | 2.13 | 0.46 |
| 29:BH:66:ASN:C | 29:BH:68:ARG:N | 2.69 | 0.46 |
| 29:BH:81:ALA:HB2 | 29:BH:147:VAL:HG23 | 1.96 | 0.46 |
| 31:BJ:21:THR:C | 31:BJ:23:LYS:N | 2.69 | 0.46 |
| 31:BJ:64:VAL:O | 31:BJ:65:THR:CB | 2.54 | 0.46 |
| 31:BJ:64:VAL:CG1 | 31:BJ:65:THR:N | 2.78 | 0.46 |
| 32:BK:108:ARG:HH21 | 37:BP:34:GLY:CA | 2.28 | 0.46 |
| 38:BQ:93:ILE:HG23 | 38:BQ:94:LEU:N | 2.31 | 0.46 |
| 41:BT:34:VAL:O | 41:BT:34:VAL:HG23 | 2.15 | 0.46 |
| 43:BV:55:GLU:H | 43:BV:55:GLU:HG3 | 1.47 | 0.46 |
| 46:BY:40:SER:C | 46:BY:42:LEU:N | 2.69 | 0.46 |
| 51:B3:41:ARG:HG3 | 51:B3:44:ARG:HH22 | 1.79 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:CA:80:A:C6 | 53:CA:81:A:O2' | 2.65 | 0.46 |
| 53:CA:198:G:O2' | 53:CA:199:A:P | 2.74 | 0.46 |
| 53:CA:879:C:H2' | 53:CA:880:C:O5' | 2.15 | 0.46 |
| 53:CA:1086:U:H6 | 53:CA:1086:U:C5' | 2.29 | 0.46 |
| 53:CA:1184:G:C2 | 53:CA:1185:G:C8 | 3.04 | 0.46 |
| 3:CC:137:VAL:O | 3:CC:140:ALA:HB3 | 2.15 | 0.46 |
| 11:CK:127:ARG:HG2 | 11:CK:127:ARG:O | 2.15 | 0.46 |
| 12:CL:22:ALA:O | 12:CL:58:ASN:ND2 | 2.48 | 0.46 |
| 55:CM:11:HIS:CE1 | 55:CM:43:LYS:HD2 | 2.49 | 0.46 |
| 14:CN:50:LEU:HB2 | 14:CN:51:PRO:HD3 | 1.96 | 0.46 |
| 14:CN:79:SER:O | 14:CN:83:VAL:HG23 | 2.16 | 0.46 |
| 19:CS:38:THR:OG1 | 19:CS:67:GLY:HA2 | 2.16 | 0.46 |
| 20:CT:57:VAL:HG12 | 20:CT:71:ALA:CB | 2.46 | 0.46 |
| 57:DA:137:U:C4 | 57:DA:138:U:C2 | 3.03 | 0.46 |
| 57:DA:455:C:N3 | 57:DA:473:G:C4' | 2.79 | 0.46 |
| 57:DA:665:U:O2' | 57:DA:666:A:H5' | 2.16 | 0.46 |
| 57:DA:749:A:C4 | 57:DA:750:A:C8 | 3.04 | 0.46 |
| 57:DA:1129:A:C4 | 57:DA:2570:G:H1' | 2.51 | 0.46 |
| 57:DA:1204:A:O4' | 57:DA:1206:G:N7 | 2.49 | 0.46 |
| 57:DA:1385:A:H4' | 57:DA:1386:C:OP1 | 2.16 | 0.46 |
| 57:DA:1830:C:H5' | 24:DC:14:HIS:HE1 | 1.80 | 0.46 |
| 57:DA:2061:G:C2 | 57:DA:2063:C:C4 | 3.03 | 0.46 |
| 57:DA:2305:U:H4' | 59:DF:132:ARG:CG | 2.45 | 0.46 |
| 57:DA:2348:U:O2' | 57:DA:2349:G:H8 | 1.97 | 0.46 |
| 57:DA:2544:G:H5' | 57:DA:2645:G:N7 | 2.30 | 0.46 |
| 57:DA:2798:U:H5'' | 57:DA:2799:A:OP1 | 2.16 | 0.46 |
| 24:DC:255:LYS:C | 24:DC:256:THR:HG23 | 2.35 | 0.46 |
| 59:DF:131:VAL:O | 59:DF:132:ARG:HB2 | 2.16 | 0.46 |
| 28:DG:84:LYS:O | 28:DG:85:LYS:CB | 2.63 | 0.46 |
| 29:DH:68:ARG:CG | 29:DH:71:LYS:HD3 | 2.45 | 0.46 |
| 30:DI:49:GLU:OE2 | 30:DI:54:ILE:HG13 | 2.16 | 0.46 |
| 32:DK:28:SER:O | 32:DK:29:HIS:HB2 | 2.16 | 0.46 |
| 35:DN:73:ASN:CA | 35:DN:76:VAL:HG22 | 2.45 | 0.46 |
| 37:DP:16:VAL:HA | 37:DP:17:PRO:HD3 | 1.51 | 0.46 |
| 40:DS:66:ILE:H | 40:DS:66:ILE:CD1 | 2.27 | 0.46 |
| 44:DW:14:ASP:O | 44:DW:15:SER:HB2 | 2.16 | 0.46 |
| 46:DY:58:ASN:C | 46:DY:60:LYS:N | 2.69 | 0.46 |
| 51:D3:35:LYS:HB2 | 51:D3:40:LYS:CD | 2.44 | 0.46 |
| 52:D4:7:VAL:HG22 | 52:D4:25:VAL:HG23 | 1.98 | 0.46 |
| 1:AA:211:G:C2 | 1:AA:212:G:H1' | 2.51 | 0.46 |
| 1:AA:258:G:H5'' | 63:AA:1701:HOH:O | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:369:G:C4 | 1:AA:393:A:C2 | 3.03 | 0.46 |
| 1:AA:570:G:C6 | 1:AA:873:A:C2 | 3.04 | 0.46 |
| 1:AA:1126:U:O2' | 1:AA:1127:G:H5' | 2.15 | 0.46 |
| 1:AA:1380:U:C5 | 7:AG:2:ARG:HA | 2.51 | 0.46 |
| 5:AE:81:GLN:NE2 | 5:AE:81:GLN:H | 2.14 | 0.46 |
| 5:AE:149:PRO:HA | 5:AE:152:VAL:HG13 | 1.98 | 0.46 |
| 12:AL:3:VAL:HG23 | 12:AL:4:ASN:H | 1.81 | 0.46 |
| 20:AT:53:MET:CE | 20:AT:57:VAL:HG21 | 2.46 | 0.46 |
| 20:AT:78:LEU:O | 20:AT:82:ILE:HG23 | 2.16 | 0.46 |
| 21:AU:18:PHE:HB3 | 21:AU:19:LYS:HE2 | 1.96 | 0.46 |
| 22:BA:14:A:H8 | 22:BA:14:A:O5' | 1.99 | 0.46 |
| 22:BA:286:U:H2' | 22:BA:287:G:C8 | 2.51 | 0.46 |
| 22:BA:350:G:H2' | 22:BA:351:C:H6 | 1.80 | 0.46 |
| 22:BA:726:G:O2' | 22:BA:727:A:OP2 | 2.33 | 0.46 |
| 22:BA:1256:G:H2' | 26:BE:77:ILE:HD11 | 1.97 | 0.46 |
| 22:BA:1999:C:O2 | 22:BA:2687:U:O2' | 2.30 | 0.46 |
| 22:BA:2836:U:C4 | 22:BA:2883:A:N6 | 2.84 | 0.46 |
| 26:BE:43:THR:O | 26:BE:43:THR:OG1 | 2.33 | 0.46 |
| 26:BE:97:ASN:N | 26:BE:97:ASN:ND2 | 2.62 | 0.46 |
| 27:BF:87:LYS:O | 27:BF:88:VAL:HG23 | 2.15 | 0.46 |
| 30:BI:79:LEU:HD22 | 30:BI:137:LEU:CD1 | 2.46 | 0.46 |
| 31:BJ:15:TRP:HA | 31:BJ:53:TYR:O | 2.16 | 0.46 |
| 32:BK:69:VAL:O | 32:BK:76:VAL:HA | 2.16 | 0.46 |
| 32:BK:70:ARG:CD | 32:BK:76:VAL:HG22 | 2.39 | 0.46 |
| 33:BL:78:ARG:CZ | 33:BL:113:ALA:HB1 | 2.45 | 0.46 |
| 34:BM:109:PRO:O | 34:BM:110:GLU:C | 2.53 | 0.46 |
| 35:BN:33:ILE:HD11 | 35:BN:118:ARG:HH21 | 1.80 | 0.46 |
| 40:BS:69:LEU:HD12 | 40:BS:108:SER:O | 2.14 | 0.46 |
| 41:BT:68:LYS:O | 41:BT:69:ARG:O | 2.34 | 0.46 |
| 44:BW:40:ARG:HD3 | 44:BW:45:HIS:CE1 | 2.50 | 0.46 |
| 47:BZ:6:ILE:CD1 | 47:BZ:47:ILE:HD11 | 2.46 | 0.46 |
| 52:B4:25:VAL:O | 52:B4:26:ILE:HD13 | 2.15 | 0.46 |
| 53:CA:35:G:H21 | 12:CL:114:SER:CB | 2.28 | 0.46 |
| 53:CA:212:G:HO2' | 53:CA:213:G:P | 2.39 | 0.46 |
| 53:CA:252:U:O4 | 53:CA:253:A:N6 | 2.49 | 0.46 |
| 53:CA:821:G:H4' | 63:CA:1740:HOH:O | 2.16 | 0.46 |
| 53:CA:1001:C:H2' | 53:CA:1002:G:O4' | 2.16 | 0.46 |
| 53:CA:1095:U:H2' | 53:CA:1096:C:C6 | 2.50 | 0.46 |
| 2:CB:78:ALA:O | 2:CB:213:LEU:HD23 | 2.16 | 0.46 |
| 2:CB:92:ASN:OD1 | 2:CB:93:HIS:ND1 | 2.49 | 0.46 |
| 2:CB:185:ILE:HA | 2:CB:199:ILE:HG13 | 1.98 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:CD:11:SER:O | 4:CD:12:ARG:C | 2.53 | 0.46 |
| 11:CK:22:ILE:O | 11:CK:22:ILE:HG22 | 2.15 | 0.46 |
| 14:CN:63:CYS:SG | 14:CN:82:LYS:HG3 | 2.56 | 0.46 |
| 21:CU:35:GLU:OE2 | 21:CU:35:GLU:CA | 2.64 | 0.46 |
| 57:DA:139:U:H3 | 41:DT:1:MET:HA | 1.81 | 0.46 |
| 57:DA:533:G:C2 | 57:DA:534:U:C2 | 3.04 | 0.46 |
| 57:DA:990:A:H61 | 39:DR:78:ARG:NH1 | 2.14 | 0.46 |
| 57:DA:998:C:OP2 | 38:DQ:57:ARG:NH2 | 2.49 | 0.46 |
| 57:DA:1036:G:N1 | 57:DA:1037:G:N7 | 2.64 | 0.46 |
| 57:DA:1300:G:H8 | 57:DA:1300:G:OP2 | 1.99 | 0.46 |
| 57:DA:1713:A:O2' | 57:DA:1715:G:H5' | 2.16 | 0.46 |
| 57:DA:1807:G:H1' | 57:DA:1810:A:H62 | 1.79 | 0.46 |
| 57:DA:1848:A:C2 | 57:DA:1849:G:C4 | 3.04 | 0.46 |
| 57:DA:2074:U:H2' | 57:DA:2075:U:C6 | 2.50 | 0.46 |
| 57:DA:2187:U:N3 | 57:DA:2188:U:C5 | 2.84 | 0.46 |
| 57:DA:2237:G:H5'' | 57:DA:2238:G:OP1 | 2.16 | 0.46 |
| 57:DA:2386:A:O2' | 57:DA:2387:U:C6 | 2.66 | 0.46 |
| 57:DA:2392:A:C2 | 33:DL:55:MET:HG2 | 2.51 | 0.46 |
| 57:DA:2461:A:C2 | 57:DA:2490:G:N2 | 2.83 | 0.46 |
| 57:DA:2550:G:C6 | 57:DA:2551:C:C4 | 3.03 | 0.46 |
| 25:DD:51:THR:HG21 | 25:DD:76:GLY:HA3 | 1.95 | 0.46 |
| 26:DE:9:GLN:O | 26:DE:9:GLN:HG3 | 2.16 | 0.46 |
| 28:DG:112:VAL:HG13 | 28:DG:150:TYR:CE1 | 2.42 | 0.46 |
| 29:DH:1:MET:HE3 | 29:DH:23:ALA:HB2 | 1.97 | 0.46 |
| 31:DJ:54:ILE:O | 31:DJ:122:LEU:HD12 | 2.15 | 0.46 |
| 32:DK:35:VAL:HG23 | 32:DK:36:GLY:N | 2.23 | 0.46 |
| 32:DK:119:ALA:O | 32:DK:120:PRO:C | 2.54 | 0.46 |
| 33:DL:120:VAL:HG12 | 33:DL:121:THR:N | 2.31 | 0.46 |
| 35:DN:96:ARG:CG | 35:DN:98:LEU:HD13 | 2.45 | 0.46 |
| 36:DO:31:THR:HG23 | 36:DO:34:HIS:O | 2.15 | 0.46 |
| 37:DP:20:ARG:HG2 | 37:DP:112:ARG:NH1 | 2.03 | 0.46 |
| 38:DQ:84:LYS:C | 38:DQ:86:SER:H | 2.18 | 0.46 |
| 41:DT:74:ILE:HG23 | 41:DT:75:GLY:N | 2.30 | 0.46 |
| 42:DU:22:GLY:HA3 | 42:DU:36:GLU:HB3 | 1.97 | 0.46 |
| 42:DU:96:LYS:O | 42:DU:97:SER:HB3 | 2.15 | 0.46 |
| 49:D1:34:GLU:HG3 | 49:D1:49:LYS:CB | 2.46 | 0.46 |
| 1:AA:67:C:H4' | 1:AA:172:A:O4' | 2.16 | 0.46 |
| 1:AA:131:A:O2' | 1:AA:132:C:O4' | 2.33 | 0.46 |
| 1:AA:563:A:C1' | 1:AA:566:G:O2' | 2.61 | 0.46 |
| 1:AA:785:G:O2' | 1:AA:786:G:H5' | 2.16 | 0.46 |
| 1:AA:829:G:C2 | 1:AA:830:G:C8 | 3.03 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:920:U:O4' | 1:AA:1080:A:C2 | 2.69 | 0.46 |
| 1:AA:986:U:H2' | 1:AA:987:G:O4' | 2.16 | 0.46 |
| 2:AB:30:ILE:HD11 | 2:AB:38:HIS:CG | 2.51 | 0.46 |
| 2:AB:53:LEU:HD21 | 2:AB:212:TYR:OH | 2.15 | 0.46 |
| 3:AC:76:ILE:C | 3:AC:82:ASP:HB2 | 2.36 | 0.46 |
| 4:AD:88:ASN:HA | 4:AD:91:ALA:CB | 2.46 | 0.46 |
| 12:AL:86:VAL:O | 12:AL:86:VAL:CG1 | 2.62 | 0.46 |
| 16:AP:67:ILE:HG13 | 16:AP:71:VAL:HG12 | 1.97 | 0.46 |
| 20:AT:60:GLN:HE21 | 20:AT:65:LEU:HD21 | 1.79 | 0.46 |
| 22:BA:25:U:C5 | 22:BA:26:G:C5 | 3.03 | 0.46 |
| 22:BA:892:A:H2' | 22:BA:893:C:C6 | 2.51 | 0.46 |
| 22:BA:1001:A:P | 63:BA:3737:HOH:O | 2.72 | 0.46 |
| 22:BA:1744:A:H5'' | 22:BA:1745:A:OP2 | 2.15 | 0.46 |
| 22:BA:1911:U:C4 | 22:BA:1918:A:C5 | 3.04 | 0.46 |
| 22:BA:2417:C:C2 | 22:BA:2418:A:C8 | 3.03 | 0.46 |
| 22:BA:2548:U:H2' | 22:BA:2549:G:O5' | 2.16 | 0.46 |
| 22:BA:2643:G:H2' | 22:BA:2644:G:O4' | 2.15 | 0.46 |
| 63:BA:3286:HOH:O | 26:BE:98:LYS:HE2 | 2.15 | 0.46 |
| 23:BB:74:U:O2 | 43:BV:29:ILE:CD1 | 2.64 | 0.46 |
| 25:BD:39:ASP:OD1 | 25:BD:40:LEU:HD12 | 2.16 | 0.46 |
| 25:BD:104:VAL:O | 25:BD:104:VAL:HG12 | 2.16 | 0.46 |
| 26:BE:5:LEU:CD1 | 26:BE:10:SER:HB3 | 2.45 | 0.46 |
| 26:BE:158:PHE:O | 26:BE:160:ALA:O | 2.33 | 0.46 |
| 28:BG:162:ARG:CZ | 28:BG:168:VAL:HG21 | 2.46 | 0.46 |
| 31:BJ:44:TYR:CD2 | 38:BQ:63:ARG:HG2 | 2.51 | 0.46 |
| 33:BL:93:ASN:ND2 | 33:BL:94:THR:H | 2.14 | 0.46 |
| 37:BP:33:GLU:N | 37:BP:36:LYS:O | 2.49 | 0.46 |
| 37:BP:37:LYS:HD3 | 37:BP:37:LYS:H | 1.80 | 0.46 |
| 38:BQ:104:ALA:O | 38:BQ:107:ALA:HB3 | 2.14 | 0.46 |
| 40:BS:70:LYS:N | 40:BS:70:LYS:HD2 | 2.31 | 0.46 |
| 53:CA:259:G:H2' | 53:CA:260:G:H8 | 1.81 | 0.46 |
| 53:CA:557:G:C6 | 53:CA:558:G:N1 | 2.84 | 0.46 |
| 53:CA:577:G:O2' | 53:CA:578:C:C5' | 2.64 | 0.46 |
| 53:CA:666:G:C6 | 53:CA:741:G:C6 | 3.04 | 0.46 |
| 53:CA:1072:G:C2 | 53:CA:1073:U:C2 | 3.04 | 0.46 |
| 53:CA:1105:A:H2' | 53:CA:1106:G:H8 | 1.80 | 0.46 |
| 53:CA:1202:U:O2' | 53:CA:1203:C:C5' | 2.64 | 0.46 |
| 53:CA:1343:G:H4' | 9:CI:123:ARG:HB3 | 1.98 | 0.46 |
| 53:CA:1406:U:H1' | 53:CA:1518:A:H4' | 1.97 | 0.46 |
| 8:CH:37:ASN:O | 8:CH:41:GLU:HG2 | 2.16 | 0.46 |
| 57:DA:35:G:O4' | 57:DA:454:A:H1' | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:40:U:C4 | 57:DA:41:C:N4 | 2.84 | 0.46 |
| 57:DA:65:U:H5' | 41:DT:75:GLY:HA3 | 1.96 | 0.46 |
| 57:DA:91:A:O2' | 57:DA:92:U:C5' | 2.57 | 0.46 |
| 57:DA:172:A:O2' | 57:DA:173:A:H5' | 2.16 | 0.46 |
| 57:DA:191:A:O2' | 57:DA:192:C:H5' | 2.15 | 0.46 |
| 57:DA:229:C:HO2' | 57:DA:230:G:C4' | 2.28 | 0.46 |
| 57:DA:265:A:N7 | 57:DA:427:U:O2' | 2.48 | 0.46 |
| 57:DA:740:C:H6 | 57:DA:740:C:O5' | 1.98 | 0.46 |
| 57:DA:788:A:H5'' | 57:DA:789:A:OP1 | 2.16 | 0.46 |
| 57:DA:1034:G:H2' | 57:DA:1035:U:C6 | 2.51 | 0.46 |
| 57:DA:1128:G:O6 | 57:DA:2491:U:C5 | 2.69 | 0.46 |
| 57:DA:1270:C:C2' | 57:DA:1648:U:H5'' | 2.43 | 0.46 |
| 57:DA:1341:G:C2 | 41:DT:84:TYR:HE2 | 2.34 | 0.46 |
| 57:DA:1654:A:N3 | 57:DA:1655:A:C8 | 2.84 | 0.46 |
| 57:DA:1905:C:O4' | 57:DA:1928:A:H2 | 1.95 | 0.46 |
| 57:DA:2006:C:O5' | 57:DA:2006:C:H6 | 1.98 | 0.46 |
| 57:DA:2054:A:C2 | 57:DA:2616:C:N3 | 2.84 | 0.46 |
| 57:DA:2487:G:H2' | 57:DA:2488:G:H8 | 1.81 | 0.46 |
| 57:DA:2808:G:O2' | 57:DA:2809:A:C8 | 2.64 | 0.46 |
| 57:DA:2815:C:C2 | 57:DA:2816:G:C8 | 3.04 | 0.46 |
| 57:DA:2882:A:H5' | 35:DN:96:ARG:HD3 | 1.97 | 0.46 |
| 57:DA:2896:C:O2' | 57:DA:2897:U:C5' | 2.62 | 0.46 |
| 24:DC:35:LYS:O | 24:DC:36:ASN:CB | 2.64 | 0.46 |
| 59:DF:65:LEU:HG | 59:DF:67:THR:HG23 | 1.98 | 0.46 |
| 59:DF:107:VAL:N | 59:DF:108:PRO:HD2 | 2.31 | 0.46 |
| 28:DG:51:PHE:HE2 | 28:DG:68:ARG:HA | 1.80 | 0.46 |
| 30:DI:28:GLY:O | 30:DI:29:GLN:C | 2.54 | 0.46 |
| 30:DI:58:ILE:HG23 | 30:DI:66:PHE:CD2 | 2.51 | 0.46 |
| 38:DQ:78:PHE:CE1 | 38:DQ:82:LEU:HD11 | 2.51 | 0.46 |
| 43:DV:3:THR:HA | 43:DV:62:THR:O | 2.16 | 0.46 |
| 43:DV:80:HIS:HD2 | 43:DV:82:TYR:N | 2.13 | 0.46 |
| 44:DW:65:LYS:N | 44:DW:65:LYS:HD2 | 2.31 | 0.46 |
| 1:AA:27:G:H2' | 1:AA:28:A:C8 | 2.50 | 0.46 |
| 1:AA:185:U:H2' | 1:AA:186:C:C6 | 2.48 | 0.46 |
| 1:AA:198:G:O2' | 1:AA:199:A:O5' | 2.33 | 0.46 |
| 1:AA:565:U:C4 | 1:AA:566:G:C5 | 3.04 | 0.46 |
| 1:AA:656:G:N2 | 15:AO:22:GLY:HA3 | 2.31 | 0.46 |
| 1:AA:865:A:H2' | 1:AA:866:C:C6 | 2.51 | 0.46 |
| 1:AA:872:A:C5 | 1:AA:874:G:C8 | 3.04 | 0.46 |
| 1:AA:1407:C:O2' | 22:BA:1912:A:N1 | 2.40 | 0.46 |
| 1:AA:1452:C:H5' | 1:AA:1453:G:C5 | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:AC:35:ASP:C | 3:AC:37:LYS:H | 2.18 | 0.46 |
| 4:AD:67:LEU:HD23 | 4:AD:67:LEU:HA | 1.81 | 0.46 |
| 6:AF:6:ILE:HD13 | 6:AF:74:LEU:CD2 | 2.46 | 0.46 |
| 10:AJ:14:ASP:HB2 | 10:AJ:17:LEU:HB3 | 1.98 | 0.46 |
| 19:AS:10:ILE:O | 19:AS:10:ILE:HG13 | 2.15 | 0.46 |
| 22:BA:548:G:H3' | 22:BA:548:G:C8 | 2.51 | 0.46 |
| 22:BA:637:A:N1 | 22:BA:651:G:O2' | 2.43 | 0.46 |
| 22:BA:988:A:P | 47:BZ:11:SER:CB | 3.04 | 0.46 |
| 22:BA:993:G:C6 | 22:BA:1162:G:C6 | 3.04 | 0.46 |
| 22:BA:1215:G:C4 | 22:BA:1216:G:C8 | 3.04 | 0.46 |
| 22:BA:1279:G:O2' | 22:BA:1280:G:H5' | 2.15 | 0.46 |
| 22:BA:1462:C:H2' | 22:BA:1463:C:H6 | 1.81 | 0.46 |
| 22:BA:1482:G:H1' | 22:BA:1509:A:H61 | 1.80 | 0.46 |
| 22:BA:2053:G:H5'' | 25:BD:150:GLN:HA | 1.98 | 0.46 |
| 22:BA:2243:U:O2 | 22:BA:2434:A:C2 | 2.69 | 0.46 |
| 22:BA:2284:A:O2' | 22:BA:2285:C:H5' | 2.16 | 0.46 |
| 22:BA:2394:C:P | 51:B3:29:ARG:HH21 | 2.39 | 0.46 |
| 22:BA:2880:C:O2' | 22:BA:2881:U:H5' | 2.16 | 0.46 |
| 23:BB:75:G:O2' | 43:BV:88:HIS:HE1 | 1.99 | 0.46 |
| 24:BC:190:THR:HG22 | 24:BC:191:LEU:N | 2.30 | 0.46 |
| 25:BD:74:GLU:O | 25:BD:75:ALA:C | 2.53 | 0.46 |
| 26:BE:23:PHE:CZ | 26:BE:28:VAL:HG11 | 2.50 | 0.46 |
| 26:BE:113:VAL:CG1 | 26:BE:114:ARG:N | 2.78 | 0.46 |
| 26:BE:113:VAL:HG12 | 26:BE:114:ARG:N | 2.30 | 0.46 |
| 26:BE:153:LEU:C | 26:BE:153:LEU:HD12 | 2.37 | 0.46 |
| 28:BG:23:ILE:HD12 | 28:BG:23:ILE:N | 2.31 | 0.46 |
| 28:BG:122:ALA:HB2 | 28:BG:132:LEU:HB3 | 1.98 | 0.46 |
| 32:BK:74:GLY:HA3 | 37:BP:74:GLN:HE21 | 1.79 | 0.46 |
| 37:BP:28:LYS:HE3 | 37:BP:28:LYS:N | 2.29 | 0.46 |
| 37:BP:95:LYS:HG2 | 37:BP:97:TYR:OH | 2.15 | 0.46 |
| 40:BS:55:ILE:O | 40:BS:58:ALA:HB3 | 2.16 | 0.46 |
| 48:B0:10:SER:O | 48:B0:14:MET:HG3 | 2.15 | 0.46 |
| 53:CA:266:G:O2' | 53:CA:267:C:H3' | 2.15 | 0.46 |
| 53:CA:505:G:C6 | 53:CA:535:A:C2 | 3.04 | 0.46 |
| 53:CA:560:A:N7 | 53:CA:566:G:C5 | 2.84 | 0.46 |
| 53:CA:754:C:H3' | 53:CA:755:G:H8 | 1.80 | 0.46 |
| 53:CA:885:G:H1' | 53:CA:914:A:N1 | 2.31 | 0.46 |
| 53:CA:1123:U:O3' | 10:CJ:38:GLY:HA3 | 2.16 | 0.46 |
| 53:CA:1236:A:H2' | 53:CA:1237:C:C6 | 2.51 | 0.46 |
| 53:CA:1297:G:H5' | 53:CA:1299:A:N7 | 2.31 | 0.46 |
| 5:CE:22:LYS:H | 5:CE:29:ILE:HG22 | 1.80 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:CH:30:LYS:O | 8:CH:33:VAL:N | 2.49 | 0.46 |
| 8:CH:111:THR:HG22 | 8:CH:112:ASP:N | 2.31 | 0.46 |
| 55:CM:106:ARG:HH21 | 55:CM:112:ARG:NE | 2.13 | 0.46 |
| 57:DA:247:G:C4 | 57:DA:249:C:H1' | 2.50 | 0.46 |
| 57:DA:270:A:N1 | 57:DA:369:U:H1' | 2.30 | 0.46 |
| 57:DA:272:A:C2 | 57:DA:273:G:C5 | 3.03 | 0.46 |
| 57:DA:299:A:C2 | 57:DA:319:G:N3 | 2.84 | 0.46 |
| 57:DA:319:G:C6 | 57:DA:333:G:N1 | 2.84 | 0.46 |
| 57:DA:510:C:H6 | 57:DA:510:C:O5' | 1.99 | 0.46 |
| 57:DA:672:C:H6 | 57:DA:672:C:C5' | 2.29 | 0.46 |
| 57:DA:734:A:C2 | 57:DA:735:A:H1' | 2.51 | 0.46 |
| 57:DA:763:G:C4 | 57:DA:765:C:C6 | 3.03 | 0.46 |
| 57:DA:944:C:H2' | 63:DA:3352:HOH:O | 2.16 | 0.46 |
| 57:DA:1142:A:C8 | 57:DA:1144:A:C5 | 3.04 | 0.46 |
| 57:DA:1265:A:H4' | 57:DA:1266:G:H4' | 1.98 | 0.46 |
| 57:DA:1754:A:C2 | 57:DA:1755:A:C4 | 3.03 | 0.46 |
| 57:DA:1838:C:N4 | 57:DA:1899:A:O4' | 2.49 | 0.46 |
| 57:DA:1850:G:C2 | 57:DA:1893:C:O2 | 2.69 | 0.46 |
| 57:DA:1914:C:H2' | 57:DA:1915:U:C6 | 2.51 | 0.46 |
| 57:DA:2028:U:H2' | 57:DA:2029:G:C8 | 2.50 | 0.46 |
| 57:DA:2480:C:N4 | 57:DA:2481:G:C6 | 2.84 | 0.46 |
| 57:DA:2638:G:H2' | 57:DA:2775:G:H22 | 1.80 | 0.46 |
| 57:DA:2722:G:C2 | 57:DA:2723:C:C2 | 3.04 | 0.46 |
| 58:DB:15:A:C8 | 58:DB:109:A:N6 | 2.83 | 0.46 |
| 24:DC:209:ALA:HA | 24:DC:212:TRP:CE2 | 2.50 | 0.46 |
| 25:DD:10:GLY:HA3 | 25:DD:26:VAL:HB | 1.98 | 0.46 |
| 28:DG:91:VAL:O | 28:DG:93:TYR:N | 2.48 | 0.46 |
| 29:DH:28:ASN:HD22 | 29:DH:28:ASN:HA | 1.58 | 0.46 |
| 29:DH:127:GLU:HA | 29:DH:144:VAL:HG23 | 1.98 | 0.46 |
| 32:DK:2:ILE:CG2 | 32:DK:3:GLN:N | 2.76 | 0.46 |
| 33:DL:122:VAL:O | 33:DL:122:VAL:HG23 | 2.15 | 0.46 |
| 39:DR:5:PHE:HA | 39:DR:39:LEU:HD23 | 1.98 | 0.46 |
| 1:AA:66:A:C2' | 1:AA:67:C:H5' | 2.47 | 0.46 |
| 1:AA:91:U:C2' | 1:AA:92:U:O4' | 2.64 | 0.46 |
| 1:AA:184:G:O4' | 1:AA:224:U:H4' | 2.16 | 0.46 |
| 1:AA:257:G:C2 | 1:AA:258:G:C5 | 3.04 | 0.46 |
| 1:AA:753:A:H4' | 1:AA:754:C:H5'' | 1.97 | 0.46 |
| 1:AA:821:G:H2' | 1:AA:822:U:C6 | 2.51 | 0.46 |
| 1:AA:1131:G:C2' | 1:AA:1132:C:O5' | 2.63 | 0.46 |
| 1:AA:1387:G:H2' | 1:AA:1388:C:C6 | 2.52 | 0.46 |
| 3:AC:41:TYR:OH | 3:AC:89:VAL:HG21 | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 3:AC:150:VAL:HG12 | 3:AC:199:VAL:HB | 1.98 | 0.46 |
| 5:AE:123:LEU:H | 5:AE:123:LEU:HD12 | 1.81 | 0.46 |
| 5:AE:152:VAL:HG11 | 8:AH:98:LEU:HB3 | 1.98 | 0.46 |
| 10:AJ:22:THR:HG22 | 10:AJ:23:ALA:N | 2.30 | 0.46 |
| 15:AO:23:SER:O | 15:AO:24:THR:C | 2.54 | 0.46 |
| 22:BA:28:A:C4 | 22:BA:513:A:N7 | 2.84 | 0.46 |
| 22:BA:221:A:H4' | 22:BA:222:A:O5' | 2.15 | 0.46 |
| 22:BA:548:G:H3' | 22:BA:548:G:H8 | 1.81 | 0.46 |
| 22:BA:1131:G:C8 | 31:BJ:77:HIS:CE1 | 3.03 | 0.46 |
| 22:BA:1812:U:H2' | 22:BA:1813:G:H8 | 1.81 | 0.46 |
| 22:BA:2231:U:OP1 | 45:BX:29:LEU:CD2 | 2.64 | 0.46 |
| 22:BA:2638:G:O2' | 22:BA:2775:G:N2 | 2.49 | 0.46 |
| 22:BA:2813:A:H2 | 22:BA:2887:A:H62 | 1.59 | 0.46 |
| 22:BA:2815:C:H1' | 48:B0:39:ARG:HD3 | 1.98 | 0.46 |
| 28:BG:29:ASN:CG | 28:BG:30:GLY:H | 2.19 | 0.46 |
| 29:BH:40:THR:O | 29:BH:42:LYS:N | 2.45 | 0.46 |
| 29:BH:48:GLU:HA | 29:BH:51:ARG:HG3 | 1.98 | 0.46 |
| 29:BH:89:LYS:O | 29:BH:90:LEU:HD12 | 2.16 | 0.46 |
| 29:BH:95:GLY:C | 29:BH:97:ARG:H | 2.19 | 0.46 |
| 29:BH:119:ASN:C | 29:BH:121:VAL:H | 2.18 | 0.46 |
| 30:BI:24:GLY:O | 30:BI:34:ILE:HD12 | 2.17 | 0.46 |
| 31:BJ:13:ARG:HD3 | 31:BJ:51:GLY:O | 2.15 | 0.46 |
| 31:BJ:84:ILE:O | 31:BJ:84:ILE:HG13 | 2.16 | 0.46 |
| 31:BJ:120:ARG:O | 31:BJ:123:LYS:HE2 | 2.16 | 0.46 |
| 31:BJ:140:LEU:HD13 | 31:BJ:140:LEU:C | 2.36 | 0.46 |
| 34:BM:70:ASP:OD1 | 34:BM:70:ASP:C | 2.54 | 0.46 |
| 39:BR:49:ILE:CB | 39:BR:51:VAL:O | 2.63 | 0.46 |
| 40:BS:39:THR:HG22 | 40:BS:39:THR:O | 2.16 | 0.46 |
| 40:BS:73:LYS:HE3 | 40:BS:74:ILE:N | 2.29 | 0.46 |
| 44:BW:16:GLU:O | 44:BW:17:ALA:HB3 | 2.16 | 0.46 |
| 44:BW:22:VAL:O | 44:BW:25:PHE:CD2 | 2.69 | 0.46 |
| 44:BW:70:VAL:O | 44:BW:70:VAL:HG13 | 2.16 | 0.46 |
| 45:BX:48:LEU:HD11 | 45:BX:67:LEU:CD2 | 2.45 | 0.46 |
| 53:CA:655:A:N6 | 53:CA:752:G:N2 | 2.63 | 0.46 |
| 53:CA:704:A:C2' | 53:CA:705:G:C8 | 2.97 | 0.46 |
| 53:CA:765:G:C8 | 53:CA:812:G:N3 | 2.84 | 0.46 |
| 53:CA:1064:G:N2 | 53:CA:1190:G:O2' | 2.49 | 0.46 |
| 53:CA:1097:C:O2' | 53:CA:1098:C:H5' | 2.16 | 0.46 |
| 53:CA:1167:A:O2' | 53:CA:1168:U:OP1 | 2.25 | 0.46 |
| 53:CA:1243:C:C2 | 53:CA:1244:G:N7 | 2.84 | 0.46 |
| 53:CA:1346:A:N6 | 54:CG:9:ARG:HH22 | 2.14 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 53:CA:1375:A:O2' | 54:CG:101:ARG:NH2 | 2.48 | 0.46 |
| 53:CA:1463:U:H2' | 53:CA:1464:U:C6 | 2.50 | 0.46 |
| 53:CA:1480:A:C4 | 53:CA:1481:U:C6 | 3.04 | 0.46 |
| 54:CG:17:PHE:HB2 | 54:CG:43:TYR:OH | 2.16 | 0.46 |
| 8:CH:41:GLU:C | 8:CH:43:GLY:H | 2.20 | 0.46 |
| 15:CO:2:LEU:HD13 | 15:CO:34:GLN:HE21 | 1.81 | 0.46 |
| 20:CT:2:ASN:O | 20:CT:3:ILE:C | 2.54 | 0.46 |
| 20:CT:11:ILE:C | 20:CT:13:SER:H | 2.18 | 0.46 |
| 21:CU:35:GLU:O | 21:CU:36:PHE:HD2 | 1.96 | 0.46 |
| 57:DA:37:C:O2' | 26:DE:45:ALA:CB | 2.64 | 0.46 |
| 57:DA:103:A:O2' | 57:DA:104:A:H5' | 2.16 | 0.46 |
| 57:DA:201:C:C5 | 57:DA:202:U:C5 | 3.03 | 0.46 |
| 57:DA:329:G:H5' | 57:DA:477:A:H4' | 1.97 | 0.46 |
| 57:DA:372:G:P | 45:DX:61:LYS:NZ | 2.88 | 0.46 |
| 57:DA:492:A:N1 | 40:DS:49:LYS:HE2 | 2.31 | 0.46 |
| 57:DA:975:A:N3 | 57:DA:976:G:C8 | 2.84 | 0.46 |
| 57:DA:1114:C:HO2' | 57:DA:1115:G:C1' | 2.29 | 0.46 |
| 57:DA:1179:G:H2' | 57:DA:1180:U:C6 | 2.50 | 0.46 |
| 57:DA:1198:U:O4' | 38:DQ:8:ILE:HD12 | 2.16 | 0.46 |
| 57:DA:1317:G:H2' | 57:DA:1318:U:O4' | 2.16 | 0.46 |
| 57:DA:1593:A:C5 | 57:DA:1594:U:C4 | 3.04 | 0.46 |
| 57:DA:1799:G:C4' | 57:DA:1800:C:O5' | 2.61 | 0.46 |
| 57:DA:1808:A:C5 | 45:DX:27:ARG:NH1 | 2.82 | 0.46 |
| 57:DA:1845:G:C4 | 57:DA:1846:G:C8 | 3.04 | 0.46 |
| 57:DA:1964:G:O2' | 57:DA:1967:C:OP1 | 2.34 | 0.46 |
| 57:DA:2353:G:H1' | 44:DW:30:VAL:CG1 | 2.41 | 0.46 |
| 57:DA:2461:A:C6 | 57:DA:2462:C:C4 | 3.04 | 0.46 |
| 57:DA:2506:U:H3' | 57:DA:2506:U:H6 | 1.81 | 0.46 |
| 57:DA:2654:A:N6 | 57:DA:2667:C:N4 | 2.63 | 0.46 |
| 24:DC:239:PHE:HD1 | 24:DC:241:LYS:H | 1.64 | 0.46 |
| 29:DH:8:LYS:HD2 | 29:DH:9:VAL:N | 2.31 | 0.46 |
| 30:DI:105:LEU:HD23 | 30:DI:105:LEU:O | 2.16 | 0.46 |
| 32:DK:40:LYS:HZ2 | 32:DK:89:ASN:HD21 | 1.64 | 0.46 |
| 38:DQ:82:LEU:HB3 | 38:DQ:88:GLU:OE2 | 2.15 | 0.46 |
| 47:DZ:51:SER:C | 47:DZ:53:MET:H | 2.19 | 0.46 |
| 1:AA:821:G:H4' | 63:AA:1740:HOH:O | 2.16 | 0.45 |
| 1:AA:842:U:HO2' | 1:AA:846:G:H1 | 1.61 | 0.45 |
| 1:AA:1053:G:N2 | 1:AA:1056:U:C4 | 2.84 | 0.45 |
| 1:AA:1216:A:OP1 | 14:AN:2:LYS:HE2 | 2.15 | 0.45 |
| 1:AA:1253:G:N3 | 1:AA:1254:A:C8 | 2.85 | 0.45 |
| 1:AA:1258:G:C4 | 1:AA:1259:C:C5 | 3.04 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1310:G:H2' | 1:AA:1311:A:O4' | 2.15 | 0.45 |
| 1:AA:1323:G:H4' | 1:AA:1362:A:C2 | 2.51 | 0.45 |
| 2:AB:22:TRP:HA | 2:AB:188:THR:O | 2.16 | 0.45 |
| 2:AB:70:GLY:HA2 | 2:AB:163:ILE:HG22 | 1.98 | 0.45 |
| 3:AC:13:ILE:H | 3:AC:13:ILE:HD13 | 1.81 | 0.45 |
| 8:AH:10:LEU:HD22 | 8:AH:74:ILE:CG1 | 2.46 | 0.45 |
| 9:AI:27:ILE:N | 9:AI:27:ILE:HD12 | 2.31 | 0.45 |
| 11:AK:51:PHE:HB2 | 11:AK:55:ARG:HB3 | 1.97 | 0.45 |
| 11:AK:52:ARG:HA | 11:AK:56:LYS:HB3 | 1.97 | 0.45 |
| 12:AL:21:PRO:O | 12:AL:23:LEU:N | 2.50 | 0.45 |
| 12:AL:42:LYS:O | 12:AL:43:LYS:C | 2.55 | 0.45 |
| 12:AL:73:LEU:HD11 | 12:AL:79:ILE:CG2 | 2.44 | 0.45 |
| 13:AM:10:ASP:CG | 13:AM:44:ILE:HB | 2.37 | 0.45 |
| 14:AN:53:ASP:HA | 14:AN:58:ARG:HH11 | 1.81 | 0.45 |
| 15:AO:25:GLU:HG3 | 15:AO:69:LEU:HD11 | 1.98 | 0.45 |
| 16:AP:42:ILE:O | 16:AP:43:ALA:HB3 | 2.16 | 0.45 |
| 17:AQ:45:VAL:CG2 | 17:AQ:60:ILE:HD13 | 2.31 | 0.45 |
| 22:BA:81:G:C2 | 22:BA:106:C:C2 | 3.05 | 0.45 |
| 22:BA:608:A:N1 | 22:BA:609:A:C2 | 2.84 | 0.45 |
| 22:BA:749:A:N7 | 22:BA:1618:A:C6 | 2.85 | 0.45 |
| 22:BA:923:G:H4' | 44:BW:25:PHE:CZ | 2.51 | 0.45 |
| 22:BA:960:A:C5' | 22:BA:961:C:OP2 | 2.64 | 0.45 |
| 22:BA:1459:G:H8 | 22:BA:1459:G:H2' | 1.58 | 0.45 |
| 22:BA:2076:U:O2 | 22:BA:2076:U:O4' | 2.34 | 0.45 |
| 22:BA:2243:U:H2' | 22:BA:2244:U:H6 | 1.78 | 0.45 |
| 22:BA:2298:A:H2' | 22:BA:2299:U:O4' | 2.16 | 0.45 |
| 22:BA:2757:A:N1 | 28:BG:66:THR:CG2 | 2.76 | 0.45 |
| 23:BB:17:C:H2' | 23:BB:18:G:O4' | 2.17 | 0.45 |
| 23:BB:54:G:H2' | 23:BB:55:U:C6 | 2.51 | 0.45 |
| 24:BC:251:THR:CG2 | 24:BC:252:LYS:N | 2.70 | 0.45 |
| 25:BD:119:ALA:HB1 | 25:BD:124:ARG:HB2 | 1.97 | 0.45 |
| 26:BE:119:ILE:HD11 | 26:BE:187:VAL:CG2 | 2.42 | 0.45 |
| 26:BE:159:LEU:HD12 | 26:BE:159:LEU:HA | 1.56 | 0.45 |
| 29:BH:32:PRO:HB3 | 45:BX:38:TRP:CD1 | 2.51 | 0.45 |
| 33:BL:57:LEU:C | 33:BL:59:ARG:H | 2.19 | 0.45 |
| 33:BL:87:GLY:O | 33:BL:88:GLY:C | 2.55 | 0.45 |
| 33:BL:93:ASN:HD22 | 33:BL:93:ASN:C | 2.17 | 0.45 |
| 40:BS:85:ILE:HG22 | 40:BS:86:MET:N | 2.31 | 0.45 |
| 41:BT:65:GLY:N | 41:BT:79:ASP:OD1 | 2.41 | 0.45 |
| 42:BU:13:LEU:HD11 | 42:BU:70:ALA:HB2 | 1.97 | 0.45 |
| 44:BW:53:GLY:O | 44:BW:56:HIS:N | 2.49 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 45:BX:5:GLN:HE21 | 45:BX:49:ARG:CB | 2.30 | 0.45 |
| 51:B3:30:HIS:ND1 | 51:B3:31:ILE:HG22 | 2.32 | 0.45 |
| 53:CA:191:G:H2' | 53:CA:192:A:C8 | 2.50 | 0.45 |
| 53:CA:328:C:O2 | 53:CA:328:C:C2' | 2.63 | 0.45 |
| 53:CA:580:C:H2' | 53:CA:581:G:C8 | 2.51 | 0.45 |
| 53:CA:769:G:O2' | 53:CA:770:C:H5' | 2.16 | 0.45 |
| 53:CA:879:C:C2' | 53:CA:880:C:O5' | 2.64 | 0.45 |
| 53:CA:1278:G:H1' | 53:CA:1279:G:C5 | 2.52 | 0.45 |
| 2:CB:73:ARG:HG3 | 2:CB:74:ALA:N | 2.31 | 0.45 |
| 3:CC:22:PHE:CD2 | 10:CJ:97:ASP:HB2 | 2.51 | 0.45 |
| 5:CE:13:LYS:HA | 5:CE:13:LYS:CE | 2.43 | 0.45 |
| 6:CF:25:TYR:HA | 6:CF:28:ALA:HB3 | 1.98 | 0.45 |
| 9:CI:44:ARG:O | 9:CI:48:ARG:HG2 | 2.17 | 0.45 |
| 11:CK:121:ARG:HH21 | 21:CU:35:GLU:HB2 | 1.81 | 0.45 |
| 14:CN:92:ILE:HA | 14:CN:93:PRO:HD3 | 1.83 | 0.45 |
| 57:DA:86:G:N2 | 57:DA:87:U:C4 | 2.84 | 0.45 |
| 57:DA:155:A:H2' | 57:DA:156:A:C8 | 2.52 | 0.45 |
| 57:DA:221:A:H5'' | 57:DA:222:A:OP1 | 2.16 | 0.45 |
| 57:DA:465:G:C4' | 50:D2:16:HIS:HD2 | 2.30 | 0.45 |
| 57:DA:505:A:O2' | 57:DA:506:G:H5' | 2.16 | 0.45 |
| 57:DA:673:C:H4' | 26:DE:77:ILE:HG13 | 1.98 | 0.45 |
| 57:DA:687:C:H2' | 57:DA:688:U:H6 | 1.80 | 0.45 |
| 57:DA:709:U:H2' | 57:DA:710:U:C6 | 2.51 | 0.45 |
| 57:DA:804:A:H5'' | 57:DA:805:G:OP1 | 2.16 | 0.45 |
| 57:DA:848:C:H2' | 57:DA:849:A:C8 | 2.51 | 0.45 |
| 57:DA:910:A:C2 | 34:DM:13:HIS:CE1 | 3.04 | 0.45 |
| 57:DA:949:G:C2 | 57:DA:969:G:C2 | 3.04 | 0.45 |
| 57:DA:1014:A:O2' | 57:DA:1015:U:H5' | 2.17 | 0.45 |
| 57:DA:1168:G:C6 | 57:DA:1182:G:C6 | 3.04 | 0.45 |
| 57:DA:1441:G:N2 | 57:DA:1442:U:C2 | 2.84 | 0.45 |
| 57:DA:1485:U:C2 | 57:DA:1505:A:C2 | 3.04 | 0.45 |
| 57:DA:1510:G:C2 | 57:DA:1511:G:C5 | 3.04 | 0.45 |
| 57:DA:1511:G:O2' | 57:DA:1512:C:C6 | 2.49 | 0.45 |
| 57:DA:1750:G:C6 | 57:DA:1751:U:C4 | 3.04 | 0.45 |
| 57:DA:1776:G:C2 | 57:DA:1789:A:N3 | 2.84 | 0.45 |
| 57:DA:1783:A:C2 | 57:DA:2588:G:O4' | 2.69 | 0.45 |
| 57:DA:1838:C:C4 | 57:DA:1899:A:C4 | 3.04 | 0.45 |
| 57:DA:2269:G:O2' | 44:DW:18:LYS:HG2 | 2.16 | 0.45 |
| 57:DA:2635:A:H2' | 57:DA:2636:C:O4' | 2.15 | 0.45 |
| 57:DA:2851:A:O2' | 57:DA:2852:G:O4' | 2.33 | 0.45 |
| 58:DB:109:A:O2' | 58:DB:110:C:O5' | 2.34 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 58:DB:110:C:H2' | 58:DB:111:U:C6 | 2.51 | 0.45 |
| 24:DC:180:MET:HE1 | 24:DC:268:ARG:HE | 1.80 | 0.45 |
| 25:DD:196:ALA:O | 25:DD:197:THR:C | 2.55 | 0.45 |
| 59:DF:101:ARG:HH11 | 59:DF:138:PRO:CB | 2.29 | 0.45 |
| 28:DG:116:LEU:HD13 | 28:DG:121:THR:HA | 1.98 | 0.45 |
| 32:DK:121:GLU:HB3 | 32:DK:122:VAL:H | 1.44 | 0.45 |
| 42:DU:16:LYS:HB3 | 42:DU:17:ASP:H | 1.54 | 0.45 |
| 45:DX:42:GLU:HG2 | 45:DX:44:ARG:HE | 1.80 | 0.45 |
| 1:AA:518:C:H4' | 1:AA:519:C:C5' | 2.46 | 0.45 |
| 1:AA:613:C:H2' | 1:AA:614:C:C6 | 2.50 | 0.45 |
| 1:AA:724:G:O2' | 1:AA:725:G:H5' | 2.16 | 0.45 |
| 1:AA:885:G:H1' | 1:AA:914:A:N1 | 2.32 | 0.45 |
| 1:AA:1210:C:C2' | 1:AA:1211:U:H5' | 2.46 | 0.45 |
| 2:AB:66:ILE:CG1 | 2:AB:220:VAL:HG11 | 2.47 | 0.45 |
| 2:AB:74:ALA:O | 2:AB:75:ALA:CB | 2.64 | 0.45 |
| 5:AE:55:VAL:O | 5:AE:59:ILE:HG23 | 2.16 | 0.45 |
| 5:AE:104:ILE:HD11 | 5:AE:114:LEU:HB3 | 1.99 | 0.45 |
| 5:AE:117:ALA:HB3 | 5:AE:119:VAL:HG13 | 1.98 | 0.45 |
| 7:AG:112:ASP:HB2 | 7:AG:118:ARG:HG3 | 1.99 | 0.45 |
| 9:AI:88:GLU:HG3 | 9:AI:89:TYR:N | 2.31 | 0.45 |
| 15:AO:24:THR:CG2 | 15:AO:69:LEU:HD12 | 2.45 | 0.45 |
| 22:BA:117:G:C6 | 22:BA:119:A:C6 | 3.04 | 0.45 |
| 22:BA:348:A:H2' | 22:BA:349:U:O4' | 2.16 | 0.45 |
| 22:BA:569:U:H4' | 22:BA:946:C:O2 | 2.16 | 0.45 |
| 22:BA:580:U:H4' | 38:BQ:30:VAL:HG11 | 1.97 | 0.45 |
| 22:BA:597:G:C2 | 22:BA:661:A:C2 | 3.04 | 0.45 |
| 22:BA:769:U:C2 | 22:BA:770:G:C8 | 3.04 | 0.45 |
| 22:BA:994:C:H1' | 39:BR:10:LYS:HZ3 | 1.81 | 0.45 |
| 22:BA:1046:A:H3' | 22:BA:1047:G:H5' | 1.96 | 0.45 |
| 22:BA:1063:G:O2' | 22:BA:1064:C:O4' | 2.33 | 0.45 |
| 22:BA:1079:C:C4 | 22:BA:1088:A:C2 | 3.01 | 0.45 |
| 22:BA:1229:C:H2' | 22:BA:1230:A:C8 | 2.52 | 0.45 |
| 22:BA:1260:A:H2' | 22:BA:1261:C:H6 | 1.81 | 0.45 |
| 22:BA:1945:G:C5 | 22:BA:1946:U:C5 | 3.04 | 0.45 |
| 22:BA:1984:G:O2' | 22:BA:1985:C:H5' | 2.16 | 0.45 |
| 22:BA:2046:G:OP1 | 48:B0:11:LYS:HE3 | 2.16 | 0.45 |
| 22:BA:2714:G:H2' | 22:BA:2715:C:C6 | 2.51 | 0.45 |
| 22:BA:2808:G:N2 | 22:BA:2891:U:C6 | 2.83 | 0.45 |
| 24:BC:43:ASN:C | 24:BC:45:ASN:N | 2.70 | 0.45 |
| 24:BC:63:ILE:O | 24:BC:64:VAL:HB | 2.15 | 0.45 |
| 24:BC:80:LEU:CD1 | 24:BC:109:LEU:HG | 2.47 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:BD:186:LEU:HD21 | 37:BP:3:ILE:HD11 | 1.99 | 0.45 |
| 30:BI:123:ALA:HA | 30:BI:126:ARG:CZ | 2.46 | 0.45 |
| 34:BM:45:GLN:O | 34:BM:46:ILE:C | 2.54 | 0.45 |
| 38:BQ:90:ASP:O | 38:BQ:91:ARG:O | 2.33 | 0.45 |
| 43:BV:68:LYS:O | 43:BV:69:GLU:C | 2.54 | 0.45 |
| 43:BV:80:HIS:CE1 | 43:BV:81:PRO:HD2 | 2.51 | 0.45 |
| 44:BW:23:LYS:HZ1 | 44:BW:24:ARG:HG3 | 1.81 | 0.45 |
| 45:BX:32:LEU:O | 45:BX:33:HIS:CD2 | 2.69 | 0.45 |
| 46:BY:12:GLU:O | 46:BY:15:ASN:HB2 | 2.15 | 0.45 |
| 46:BY:39:GLN:HG3 | 46:BY:42:LEU:HD22 | 1.98 | 0.45 |
| 53:CA:21:G:H2' | 53:CA:22:G:C8 | 2.52 | 0.45 |
| 53:CA:90:C:H2' | 53:CA:91:U:C5 | 2.51 | 0.45 |
| 53:CA:120:A:C3' | 53:CA:121:U:C5' | 2.88 | 0.45 |
| 53:CA:181:A:N6 | 53:CA:195:A:OP2 | 2.50 | 0.45 |
| 53:CA:822:U:C2 | 53:CA:823:C:C5 | 3.05 | 0.45 |
| 53:CA:969:A:O2' | 53:CA:970:C:C5' | 2.62 | 0.45 |
| 2:CB:9:LEU:HD12 | 2:CB:12:GLY:N | 2.31 | 0.45 |
| 2:CB:27:LYS:O | 2:CB:27:LYS:HD3 | 2.16 | 0.45 |
| 11:CK:70:ALA:HB1 | 11:CK:104:PHE:CZ | 2.51 | 0.45 |
| 12:CL:98:ARG:CZ | 12:CL:106:VAL:HG22 | 2.46 | 0.45 |
| 15:CO:81:ILE:O | 15:CO:85:GLY:N | 2.49 | 0.45 |
| 19:CS:4:LEU:HB3 | 19:CS:5:LYS:H | 1.53 | 0.45 |
| 21:CU:9:GLU:HB3 | 21:CU:10:PRO:HD2 | 1.98 | 0.45 |
| 57:DA:85:G:OP1 | 42:DU:5:ARG:HA | 2.16 | 0.45 |
| 57:DA:85:G:OP2 | 42:DU:6:ARG:HB2 | 2.16 | 0.45 |
| 57:DA:174:U:H2' | 57:DA:174:U:O2 | 2.16 | 0.45 |
| 57:DA:468:G:H4' | 26:DE:57:LYS:HG2 | 1.98 | 0.45 |
| 57:DA:529:A:OP2 | 31:DJ:113:PRO:HG3 | 2.15 | 0.45 |
| 57:DA:682:G:N2 | 57:DA:796:C:C2 | 2.85 | 0.45 |
| 57:DA:849:A:C6 | 57:DA:850:U:C4 | 3.04 | 0.45 |
| 57:DA:1139:G:N2 | 57:DA:1140:C:C2 | 2.84 | 0.45 |
| 57:DA:1276:A:C2 | 57:DA:1277:G:C5 | 3.04 | 0.45 |
| 57:DA:1398:C:O2' | 57:DA:1399:C:C6 | 2.70 | 0.45 |
| 57:DA:1723:G:C4 | 57:DA:1724:G:C8 | 3.04 | 0.45 |
| 57:DA:1797:G:H4' | 24:DC:254:LYS:O | 2.16 | 0.45 |
| 57:DA:2259:U:C6 | 57:DA:2427:C:C4 | 3.04 | 0.45 |
| 57:DA:2581:G:C6 | 57:DA:2610:C:C2 | 3.04 | 0.45 |
| 57:DA:2667:C:O2' | 57:DA:2668:G:O4' | 2.34 | 0.45 |
| 57:DA:2689:U:H5'' | 57:DA:2690:U:O5' | 2.15 | 0.45 |
| 57:DA:2798:U:O4' | 57:DA:2800:A:N6 | 2.48 | 0.45 |
| 24:DC:68:ARG:HH12 | 24:DC:115:ILE:CD1 | 2.22 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:DD:46:ARG:HB3 | 25:DD:84:LEU:HD12 | 1.99 | 0.45 |
| 25:DD:73:VAL:O | 25:DD:74:GLU:HB2 | 2.15 | 0.45 |
| 25:DD:187:LEU:O | 25:DD:188:LEU:HD23 | 2.16 | 0.45 |
| 59:DF:35:LEU:O | 59:DF:87:LYS:HA | 2.15 | 0.45 |
| 59:DF:105:ILE:C | 59:DF:108:PRO:HD2 | 2.37 | 0.45 |
| 28:DG:154:GLU:C | 28:DG:156:TYR:H | 2.19 | 0.45 |
| 28:DG:154:GLU:HA | 28:DG:155:PRO:HD2 | 1.82 | 0.45 |
| 30:DI:28:GLY:O | 30:DI:30:GLN:HG3 | 2.16 | 0.45 |
| 33:DL:100:ILE:O | 33:DL:101:ILE:CB | 2.64 | 0.45 |
| 34:DM:126:ILE:O | 34:DM:128:THR:HG23 | 2.17 | 0.45 |
| 37:DP:52:ARG:HD3 | 37:DP:52:ARG:HA | 1.77 | 0.45 |
| 37:DP:88:ARG:HH11 | 37:DP:112:ARG:NH2 | 2.14 | 0.45 |
| 41:DT:7:LEU:O | 41:DT:7:LEU:HD23 | 2.16 | 0.45 |
| 45:DX:63:ILE:O | 45:DX:67:LEU:HD12 | 2.16 | 0.45 |
| 48:D0:39:ARG:O | 48:D0:40:HIS:HB2 | 2.16 | 0.45 |
| 49:D1:16:THR:CG2 | 49:D1:42:VAL:HG23 | 2.46 | 0.45 |
| 1:AA:112:G:C6 | 1:AA:330:C:N4 | 2.85 | 0.45 |
| 1:AA:275:G:C4 | 1:AA:276:G:C8 | 3.04 | 0.45 |
| 1:AA:502:A:C2 | 1:AA:544:G:C2 | 3.05 | 0.45 |
| 1:AA:579:A:H2' | 1:AA:580:C:H6 | 1.81 | 0.45 |
| 1:AA:957:U:O2 | 1:AA:959:A:C8 | 2.68 | 0.45 |
| 1:AA:1160:G:N2 | 1:AA:1161:C:C2 | 2.85 | 0.45 |
| 1:AA:1306:A:H2' | 1:AA:1307:U:H5' | 1.97 | 0.45 |
| 1:AA:1329:A:H5'' | 13:AM:25:GLY:N | 2.30 | 0.45 |
| 1:AA:1416:G:H2' | 1:AA:1417:G:H5' | 1.98 | 0.45 |
| 3:AC:63:ILE:O | 3:AC:98:ALA:HA | 2.16 | 0.45 |
| 4:AD:22:SER:O | 4:AD:23:GLY:C | 2.55 | 0.45 |
| 6:AF:6:ILE:HB | 6:AF:62:MET:HB3 | 1.98 | 0.45 |
| 9:AI:56:MET:SD | 9:AI:57:VAL:N | 2.90 | 0.45 |
| 11:AK:64:VAL:O | 11:AK:67:GLU:HB2 | 2.16 | 0.45 |
| 12:AL:87:LYS:O | 12:AL:88:ASP:CB | 2.65 | 0.45 |
| 16:AP:10:GLY:O | 16:AP:11:ALA:CB | 2.64 | 0.45 |
| 17:AQ:12:VAL:HG12 | 17:AQ:21:VAL:O | 2.16 | 0.45 |
| 18:AR:63:TYR:CD1 | 18:AR:69:TYR:OH | 2.70 | 0.45 |
| 20:AT:16:ALA:O | 20:AT:17:ARG:C | 2.55 | 0.45 |
| 22:BA:12:U:O2 | 22:BA:12:U:H2' | 2.16 | 0.45 |
| 22:BA:142:A:C5 | 22:BA:143:C:C4 | 3.04 | 0.45 |
| 22:BA:592:A:O2' | 51:B3:2:LYS:HA | 2.16 | 0.45 |
| 22:BA:651:G:C6 | 22:BA:652:U:C4 | 3.03 | 0.45 |
| 22:BA:752:A:C5 | 22:BA:1781:U:O4' | 2.69 | 0.45 |
| 22:BA:1487:U:C2 | 22:BA:1503:A:C2 | 3.04 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 22:BA:1498:C:O2' | 22:BA:1499:C:C6 | 2.67 | 0.45 |
| 22:BA:1612:C:H4' | 50:B2:5:PHE:O | 2.16 | 0.45 |
| 22:BA:1816:C:C5 | 24:BC:61:TYR:CE1 | 3.05 | 0.45 |
| 22:BA:1818:U:OP2 | 24:BC:155:ARG:NH1 | 2.49 | 0.45 |
| 22:BA:1989:G:H8 | 22:BA:1989:G:O5' | 2.00 | 0.45 |
| 22:BA:2136:G:O2' | 22:BA:2137:U:C6 | 2.67 | 0.45 |
| 22:BA:2727:A:H2' | 22:BA:2728:U:C6 | 2.52 | 0.45 |
| 24:BC:39:SER:C | 24:BC:41:GLY:N | 2.69 | 0.45 |
| 25:BD:13:ARG:NE | 25:BD:15:PHE:CZ | 2.84 | 0.45 |
| 25:BD:105:LYS:HA | 25:BD:177:VAL:CG2 | 2.46 | 0.45 |
| 26:BE:83:VAL:O | 26:BE:83:VAL:HG12 | 2.16 | 0.45 |
| 26:BE:112:LEU:HD13 | 26:BE:186:VAL:CG1 | 2.40 | 0.45 |
| 28:BG:83:THR:C | 28:BG:84:LYS:HD3 | 2.37 | 0.45 |
| 36:BO:105:ALA:O | 36:BO:107:ALA:N | 2.49 | 0.45 |
| 38:BQ:8:ILE:C | 38:BQ:8:ILE:CD1 | 2.79 | 0.45 |
| 49:B1:35:LEU:O | 49:B1:35:LEU:HD23 | 2.17 | 0.45 |
| 53:CA:86:G:HO2' | 53:CA:87:C:P | 2.38 | 0.45 |
| 53:CA:91:U:O2' | 53:CA:92:U:C6 | 2.52 | 0.45 |
| 53:CA:149:A:H2' | 53:CA:150:U:C6 | 2.52 | 0.45 |
| 53:CA:168:G:C2' | 53:CA:169:C:H5' | 2.45 | 0.45 |
| 53:CA:577:G:C8 | 53:CA:816:A:N1 | 2.85 | 0.45 |
| 53:CA:604:G:C2 | 53:CA:635:A:C2 | 3.05 | 0.45 |
| 53:CA:954:G:H1 | 53:CA:1228:C:N4 | 2.13 | 0.45 |
| 53:CA:1004:A:N3 | 53:CA:1026:G:C5 | 2.84 | 0.45 |
| 53:CA:1046:A:H2' | 53:CA:1047:G:O4' | 2.17 | 0.45 |
| 53:CA:1102:A:O2' | 53:CA:1103:C:H5' | 2.16 | 0.45 |
| 53:CA:1104:G:H2' | 53:CA:1105:A:O4' | 2.16 | 0.45 |
| 53:CA:1113:C:H4' | 3:CC:13:ILE:HD12 | 1.99 | 0.45 |
| 53:CA:1231:G:C5 | 53:CA:1232:U:C5 | 3.05 | 0.45 |
| 53:CA:1336:C:H1' | 53:CA:1337:G:N1 | 2.31 | 0.45 |
| 53:CA:1461:G:C6 | 53:CA:1462:C:C4 | 3.04 | 0.45 |
| 54:CG:10:LYS:HE3 | 54:CG:10:LYS:N | 2.31 | 0.45 |
| 54:CG:105:GLU:O | 54:CG:109:LYS:HD3 | 2.17 | 0.45 |
| 8:CH:82:LEU:CD1 | 12:CL:3:VAL:HG11 | 2.46 | 0.45 |
| 55:CM:53:ASP:HA | 55:CM:56:ARG:CZ | 2.47 | 0.45 |
| 56:CP:75:ILE:HA | 56:CP:78:VAL:CG2 | 2.45 | 0.45 |
| 57:DA:24:G:C5 | 57:DA:25:U:C5 | 3.05 | 0.45 |
| 57:DA:28:A:H2' | 57:DA:29:U:C6 | 2.51 | 0.45 |
| 57:DA:223:A:C4 | 57:DA:408:G:H1' | 2.51 | 0.45 |
| 57:DA:467:G:O3' | 57:DA:797:G:H5' | 2.16 | 0.45 |
| 57:DA:728:G:C2 | 57:DA:730:A:C4 | 3.05 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:810:U:O2' | 57:DA:811:U:H5 | 1.99 | 0.45 |
| 57:DA:830:G:C2 | 57:DA:2448:A:N7 | 2.84 | 0.45 |
| 57:DA:974:G:H8 | 57:DA:975:A:N7 | 2.14 | 0.45 |
| 57:DA:1206:G:C6 | 57:DA:1207:C:C4 | 3.05 | 0.45 |
| 57:DA:1355:G:C2 | 57:DA:1356:G:C8 | 3.04 | 0.45 |
| 57:DA:1398:C:C2 | 57:DA:1399:C:C5 | 3.04 | 0.45 |
| 57:DA:1522:A:H1' | 57:DA:1524:G:C4 | 2.51 | 0.45 |
| 57:DA:1555:G:HO2' | 57:DA:1556:C:H5' | 1.81 | 0.45 |
| 57:DA:2020:A:H5' | 48:D0:8:THR:CG2 | 2.46 | 0.45 |
| 57:DA:2214:C:HO2' | 57:DA:2215:C:C5' | 2.28 | 0.45 |
| 57:DA:2858:C:H2' | 57:DA:2859:G:O4' | 2.15 | 0.45 |
| 58:DB:55:U:H5' | 59:DF:24:VAL:HG21 | 1.98 | 0.45 |
| 59:DF:160:LYS:HD3 | 59:DF:161:SER:N | 2.31 | 0.45 |
| 28:DG:15:ASP:HB3 | 28:DG:26:LYS:H | 1.81 | 0.45 |
| 28:DG:28:LYS:H | 28:DG:79:THR:HG22 | 1.80 | 0.45 |
| 31:DJ:20:ALA:HA | 31:DJ:23:LYS:CG | 2.39 | 0.45 |
| 32:DK:16:ALA:HB3 | 32:DK:46:ALA:N | 2.32 | 0.45 |
| 34:DM:95:LEU:H | 34:DM:95:LEU:CD1 | 2.28 | 0.45 |
| 39:DR:49:ILE:HG22 | 39:DR:54:VAL:N | 2.32 | 0.45 |
| 41:DT:58:VAL:HG22 | 41:DT:59:ASN:N | 2.30 | 0.45 |
| 41:DT:69:ARG:HG3 | 41:DT:70:HIS:N | 2.30 | 0.45 |
| 1:AA:126:G:H2' | 1:AA:127:G:O5' | 2.17 | 0.45 |
| 1:AA:557:G:C6 | 1:AA:558:G:C2 | 3.05 | 0.45 |
| 1:AA:707:U:H2' | 1:AA:708:C:C6 | 2.51 | 0.45 |
| 1:AA:748:G:C6 | 1:AA:749:A:C6 | 3.04 | 0.45 |
| 1:AA:903:G:H2' | 1:AA:904:U:C6 | 2.48 | 0.45 |
| 1:AA:982:U:H4' | 1:AA:983:A:C5' | 2.47 | 0.45 |
| 1:AA:1157:A:H1' | 1:AA:1181:G:N1 | 2.32 | 0.45 |
| 1:AA:1343:G:H4' | 9:AI:123:ARG:HB3 | 1.98 | 0.45 |
| 4:AD:2:ARG:HB2 | 4:AD:4:LEU:CD1 | 2.47 | 0.45 |
| 14:AN:25:GLU:HG2 | 14:AN:26:LEU:HD12 | 1.98 | 0.45 |
| 14:AN:25:GLU:CG | 14:AN:26:LEU:HD12 | 2.47 | 0.45 |
| 18:AR:35:SER:HA | 18:AR:71:ASP:HB3 | 1.98 | 0.45 |
| 20:AT:26:MET:HE1 | 20:AT:56:ILE:HD11 | 1.98 | 0.45 |
| 20:AT:60:GLN:HE21 | 20:AT:65:LEU:CD2 | 2.30 | 0.45 |
| 22:BA:271:G:C4 | 22:BA:272:A:N7 | 2.85 | 0.45 |
| 22:BA:669:G:C5 | 22:BA:801:G:C6 | 3.04 | 0.45 |
| 22:BA:812:C:H4' | 38:BQ:12:ARG:HH22 | 1.82 | 0.45 |
| 22:BA:1499:C:O2' | 22:BA:1500:G:C5' | 2.59 | 0.45 |
| 22:BA:1627:G:C2 | 22:BA:1628:G:C8 | 3.05 | 0.45 |
| 22:BA:1753:G:H5'' | 37:BP:92:ARG:HE | 1.80 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:1872:A:C2' | 22:BA:1873:G:O4' | 2.64 | 0.45 |
| 22:BA:2020:A:H5' | 48:B0:8:THR:HG22 | 1.98 | 0.45 |
| 22:BA:2210:U:H4' | 22:BA:2211:A:H5' | 1.97 | 0.45 |
| 24:BC:20:ASN:HD21 | 24:BC:22:GLU:CG | 2.30 | 0.45 |
| 24:BC:79:ARG:NH2 | 24:BC:81:GLU:OE2 | 2.50 | 0.45 |
| 24:BC:151:GLY:O | 24:BC:152:GLN:HG3 | 2.16 | 0.45 |
| 25:BD:12:THR:CG2 | 25:BD:13:ARG:N | 2.49 | 0.45 |
| 29:BH:67:ALA:C | 29:BH:69:ALA:N | 2.69 | 0.45 |
| 29:BH:86:ASP:HB3 | 29:BH:89:LYS:HB3 | 1.98 | 0.45 |
| 31:BJ:65:THR:O | 31:BJ:68:LYS:HG3 | 2.16 | 0.45 |
| 38:BQ:40:LYS:HB2 | 38:BQ:40:LYS:NZ | 2.31 | 0.45 |
| 41:BT:40:LYS:N | 41:BT:43:ILE:HG23 | 2.31 | 0.45 |
| 44:BW:51:GLY:O | 44:BW:52:CYS:C | 2.55 | 0.45 |
| 45:BX:31:ASN:O | 45:BX:51:SER:HA | 2.17 | 0.45 |
| 47:BZ:30:ARG:O | 47:BZ:31:ILE:C | 2.55 | 0.45 |
| 49:B1:8:ILE:N | 49:B1:22:THR:O | 2.49 | 0.45 |
| 53:CA:198:G:O2' | 53:CA:199:A:O5' | 2.35 | 0.45 |
| 53:CA:276:G:OP1 | 17:CQ:13:SER:OG | 2.24 | 0.45 |
| 53:CA:282:A:H2' | 53:CA:283:U:C6 | 2.51 | 0.45 |
| 53:CA:552:U:C4 | 53:CA:553:A:N7 | 2.85 | 0.45 |
| 4:CD:3:TYR:CZ | 4:CD:5:GLY:HA3 | 2.52 | 0.45 |
| 4:CD:186:GLU:O | 4:CD:187:ARG:CB | 2.65 | 0.45 |
| 54:CG:19:SER:HB3 | 54:CG:22:LEU:HB3 | 1.99 | 0.45 |
| 18:CR:28:LEU:C | 18:CR:30:ASN:N | 2.69 | 0.45 |
| 20:CT:42:ASP:O | 20:CT:43:LYS:C | 2.55 | 0.45 |
| 57:DA:15:G:O2' | 57:DA:16:C:H5' | 2.16 | 0.45 |
| 57:DA:458:G:N2 | 57:DA:469:G:H2' | 2.31 | 0.45 |
| 57:DA:531:C:O5' | 57:DA:532:A:H8 | 1.99 | 0.45 |
| 57:DA:1187:G:OP2 | 57:DA:1187:G:C8 | 2.70 | 0.45 |
| 57:DA:1608:A:O2' | 57:DA:1610:A:OP1 | 2.34 | 0.45 |
| 57:DA:1767:G:N2 | 57:DA:1986:C:C2 | 2.84 | 0.45 |
| 57:DA:1817:G:H3' | 24:DC:155:ARG:HH21 | 1.81 | 0.45 |
| 57:DA:1982:U:O5' | 57:DA:1982:U:C6 | 2.69 | 0.45 |
| 57:DA:2235:G:H2' | 57:DA:2236:U:C6 | 2.52 | 0.45 |
| 57:DA:2283:C:C5 | 57:DA:2389:G:C4 | 3.04 | 0.45 |
| 57:DA:2418:A:C6 | 57:DA:2419:U:N3 | 2.85 | 0.45 |
| 57:DA:2443:C:H2' | 57:DA:2444:G:O4' | 2.17 | 0.45 |
| 57:DA:2686:G:H2' | 57:DA:2687:U:C6 | 2.52 | 0.45 |
| 57:DA:2874:C:O2' | 57:DA:2875:C:C6 | 2.67 | 0.45 |
| 58:DB:11:C:C5 | 58:DB:12:C:C5 | 3.05 | 0.45 |
| 58:DB:16:G:H2' | 58:DB:17:C:C6 | 2.51 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 58:DB:48:U:O2' | 36:DO:100:HIS:CE1 | 2.70 | 0.45 |
| 59:DF:71:LYS:HG3 | 59:DF:73:VAL:H | 1.79 | 0.45 |
| 59:DF:135:ILE:O | 59:DF:137:PHE:N | 2.49 | 0.45 |
| 31:DJ:55:ILE:O | 31:DJ:55:ILE:HG13 | 2.15 | 0.45 |
| 33:DL:94:THR:O | 33:DL:98:ALA:N | 2.48 | 0.45 |
| 33:DL:132:ARG:HA | 33:DL:135:ILE:HG22 | 1.97 | 0.45 |
| 37:DP:90:ALA:HB3 | 37:DP:110:LYS:CB | 2.46 | 0.45 |
| 38:DQ:96:ASP:C | 38:DQ:98:ALA:H | 2.20 | 0.45 |
| 39:DR:81:LYS:O | 39:DR:82:HIS:C | 2.55 | 0.45 |
| 42:DU:10:VAL:HG12 | 42:DU:71:ILE:HG22 | 1.98 | 0.45 |
| 43:DV:13:GLY:O | 43:DV:17:SER:HB2 | 2.15 | 0.45 |
| 45:DX:37:PHE:O | 45:DX:45:PHE:HD2 | 1.98 | 0.45 |
| 1:AA:74:A:C6 | 1:AA:97:G:C6 | 3.05 | 0.45 |
| 1:AA:162:A:C8 | 1:AA:163:C:H1' | 2.51 | 0.45 |
| 1:AA:345:C:O2 | 32:BK:117:SER:HA | 2.16 | 0.45 |
| 1:AA:363:A:O2' | 1:AA:364:A:H5' | 2.16 | 0.45 |
| 1:AA:577:G:O2' | 1:AA:578:C:C5' | 2.64 | 0.45 |
| 1:AA:665:A:N3 | 1:AA:732:C:H2' | 2.32 | 0.45 |
| 1:AA:750:C:O2' | 15:AO:20:ASP:OD1 | 2.34 | 0.45 |
| 1:AA:894:G:O2' | 1:AA:895:G:H5' | 2.17 | 0.45 |
| 1:AA:1112:C:N4 | 3:AC:177:LEU:HD22 | 2.32 | 0.45 |
| 1:AA:1154:G:C2 | 1:AA:1155:A:C5 | 3.05 | 0.45 |
| 1:AA:1216:A:OP1 | 14:AN:4:SER:HB3 | 2.16 | 0.45 |
| 1:AA:1371:G:OP1 | 9:AI:69:GLY:HA2 | 2.17 | 0.45 |
| 10:AJ:53:ILE:HG13 | 14:AN:84:ARG:CZ | 2.46 | 0.45 |
| 12:AL:2:THR:HG22 | 12:AL:4:ASN:H | 1.81 | 0.45 |
| 13:AM:7:ASN:HD22 | 13:AM:8:ILE:N | 2.15 | 0.45 |
| 17:AQ:56:ASP:OD2 | 17:AQ:80:LYS:HA | 2.17 | 0.45 |
| 22:BA:871:U:H2' | 22:BA:872:U:C6 | 2.51 | 0.45 |
| 22:BA:1050:A:N1 | 22:BA:2751:G:C5 | 2.84 | 0.45 |
| 22:BA:1074:G:N3 | 22:BA:1074:G:H2' | 2.32 | 0.45 |
| 22:BA:1164:C:H2' | 22:BA:1165:A:H8 | 1.80 | 0.45 |
| 22:BA:1416:G:O2' | 22:BA:1417:C:C5' | 2.64 | 0.45 |
| 22:BA:1476:U:OP2 | 22:BA:1476:U:C6 | 2.69 | 0.45 |
| 22:BA:1624:U:H2' | 22:BA:1625:C:H6 | 1.81 | 0.45 |
| 22:BA:1911:U:C4 | 22:BA:1918:A:C4 | 3.05 | 0.45 |
| 22:BA:2019:A:C2' | 22:BA:2020:A:O5' | 2.65 | 0.45 |
| 22:BA:2197:U:C6 | 22:BA:2224:G:C6 | 3.04 | 0.45 |
| 22:BA:2680:U:OP1 | 25:BD:113:SER:HA | 2.17 | 0.45 |
| 23:BB:52:A:H4' | 23:BB:53:A:OP1 | 2.16 | 0.45 |
| 24:BC:124:LYS:O | 24:BC:125:PRO:C | 2.53 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 24:BC:245:THR:OG1 | 24:BC:249:VAL:HB | 2.17 | 0.45 |
| 25:BD:140:HIS:CD2 | 25:BD:140:HIS:N | 2.84 | 0.45 |
| 26:BE:29:HIS:O | 26:BE:33:VAL:HG23 | 2.16 | 0.45 |
| 29:BH:25:TYR:O | 29:BH:29:PHE:HB3 | 2.16 | 0.45 |
| 31:BJ:12:LYS:O | 31:BJ:13:ARG:HB2 | 2.16 | 0.45 |
| 31:BJ:44:TYR:C | 31:BJ:45:THR:HG22 | 2.36 | 0.45 |
| 36:BO:85:LYS:HB3 | 36:BO:85:LYS:HE3 | 1.80 | 0.45 |
| 38:BQ:96:ASP:C | 38:BQ:96:ASP:OD2 | 2.55 | 0.45 |
| 42:BU:73:ASN:HD22 | 42:BU:76:THR:N | 2.10 | 0.45 |
| 43:BV:63:ILE:HD12 | 43:BV:72:VAL:HG21 | 1.99 | 0.45 |
| 44:BW:8:SER:C | 44:BW:9:THR:HG22 | 2.35 | 0.45 |
| 45:BX:32:LEU:O | 45:BX:33:HIS:CG | 2.69 | 0.45 |
| 49:B1:33:LEU:C | 49:B1:33:LEU:HD12 | 2.37 | 0.45 |
| 53:CA:289:G:C6 | 53:CA:290:C:N4 | 2.85 | 0.45 |
| 53:CA:295:C:H2' | 53:CA:296:U:C6 | 2.47 | 0.45 |
| 53:CA:559:A:H4' | 53:CA:560:A:H5'' | 1.98 | 0.45 |
| 53:CA:859:G:H2' | 53:CA:860:A:C8 | 2.52 | 0.45 |
| 53:CA:1381:U:O2' | 53:CA:1382:C:O5' | 2.30 | 0.45 |
| 3:CC:63:ILE:O | 3:CC:63:ILE:HG23 | 2.15 | 0.45 |
| 4:CD:80:ARG:HE | 4:CD:80:ARG:HB2 | 1.43 | 0.45 |
| 5:CE:83:PRO:HB3 | 5:CE:96:GLN:HG2 | 1.98 | 0.45 |
| 5:CE:103:GLY:O | 5:CE:104:ILE:CG2 | 2.52 | 0.45 |
| 54:CG:70:PRO:HD2 | 54:CG:95:ARG:O | 2.17 | 0.45 |
| 54:CG:148:LYS:HD3 | 54:CG:148:LYS:O | 2.17 | 0.45 |
| 10:CJ:48:ARG:CZ | 10:CJ:48:ARG:HB2 | 2.46 | 0.45 |
| 12:CL:31:GLY:HA3 | 12:CL:54:VAL:HG12 | 1.98 | 0.45 |
| 55:CM:64:VAL:O | 55:CM:65:GLU:C | 2.55 | 0.45 |
| 56:CP:75:ILE:CG2 | 56:CP:80:LYS:HD2 | 2.46 | 0.45 |
| 17:CQ:30:HIS:CG | 17:CQ:31:PRO:HD2 | 2.51 | 0.45 |
| 18:CR:57:ALA:O | 18:CR:60:ARG:HB2 | 2.16 | 0.45 |
| 57:DA:69:C:H2' | 57:DA:70:G:H8 | 1.80 | 0.45 |
| 57:DA:223:A:C6 | 57:DA:422:A:C5 | 3.04 | 0.45 |
| 57:DA:511:U:C4' | 57:DA:1235:G:H4' | 2.46 | 0.45 |
| 57:DA:600:G:C5' | 26:DE:27:LEU:HD22 | 2.45 | 0.45 |
| 57:DA:616:A:N3 | 57:DA:617:G:C8 | 2.85 | 0.45 |
| 57:DA:712:G:C2 | 57:DA:720:U:O2 | 2.69 | 0.45 |
| 57:DA:845:A:H2 | 57:DA:934:U:O2 | 2.00 | 0.45 |
| 57:DA:915:C:O2 | 58:DB:100:G:H4' | 2.17 | 0.45 |
| 57:DA:1060:U:H4' | 57:DA:1061:U:C5' | 2.46 | 0.45 |
| 57:DA:1142:A:H4' | 31:DJ:27:ARG:HH22 | 1.82 | 0.45 |
| 57:DA:1206:G:C2 | 57:DA:1207:C:C2 | 3.04 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:1588:G:H2' | 57:DA:1589:U:C6 | 2.52 | 0.45 |
| 57:DA:1802:A:N6 | 57:DA:1817:G:N2 | 2.65 | 0.45 |
| 57:DA:2011:U:H2' | 57:DA:2012:G:H5' | 1.98 | 0.45 |
| 57:DA:2654:A:N6 | 57:DA:2667:C:H41 | 2.15 | 0.45 |
| 57:DA:2843:G:N2 | 57:DA:2875:C:N3 | 2.65 | 0.45 |
| 24:DC:125:PRO:HA | 24:DC:191:LEU:HB2 | 1.98 | 0.45 |
| 25:DD:159:LYS:HE2 | 25:DD:160:LYS:N | 2.27 | 0.45 |
| 25:DD:179:ARG:H | 25:DD:188:LEU:HB2 | 1.82 | 0.45 |
| 59:DF:32:LYS:HD2 | 59:DF:156:THR:HG21 | 1.99 | 0.45 |
| 30:DI:102:ARG:HH11 | 30:DI:105:LEU:HD13 | 1.82 | 0.45 |
| 32:DK:104:THR:C | 32:DK:106:GLU:N | 2.69 | 0.45 |
| 33:DL:79:LEU:CB | 33:DL:113:ALA:H | 2.22 | 0.45 |
| 35:DN:56:LYS:CD | 35:DN:88:ALA:HA | 2.44 | 0.45 |
| 37:DP:91:VAL:HG11 | 37:DP:96:LEU:CD1 | 2.41 | 0.45 |
| 44:DW:9:THR:OG1 | 44:DW:10:ARG:N | 2.49 | 0.45 |
| 45:DX:29:LEU:HB2 | 45:DX:30:PRO:HD2 | 1.97 | 0.45 |
| 1:AA:332:G:H2' | 1:AA:333:U:H6 | 1.81 | 0.45 |
| 1:AA:414:A:N6 | 1:AA:431:A:C4 | 2.84 | 0.45 |
| 1:AA:550:G:C2' | 1:AA:551:U:H5' | 2.46 | 0.45 |
| 1:AA:577:G:H2' | 1:AA:578:C:C6 | 2.52 | 0.45 |
| 1:AA:807:A:H2' | 1:AA:808:C:C6 | 2.51 | 0.45 |
| 1:AA:1138:G:N3 | 1:AA:1138:G:C2' | 2.71 | 0.45 |
| 1:AA:1248:A:C2 | 9:AI:71:ILE:HD11 | 2.51 | 0.45 |
| 2:AB:110:ILE:HD11 | 2:AB:147:LEU:HD13 | 1.91 | 0.45 |
| 2:AB:132:GLU:O | 2:AB:136:ARG:CB | 2.65 | 0.45 |
| 6:AF:53:LYS:HG3 | 6:AF:54:LEU:N | 2.32 | 0.45 |
| 11:AK:124:LYS:HE2 | 21:AU:33:ARG:HH21 | 1.80 | 0.45 |
| 17:AQ:12:VAL:CB | 17:AQ:21:VAL:HG22 | 2.46 | 0.45 |
| 20:AT:74:HIS:O | 20:AT:78:LEU:HB2 | 2.16 | 0.45 |
| 22:BA:60:G:HO2' | 22:BA:61:C:P | 2.39 | 0.45 |
| 22:BA:718:A:H2' | 22:BA:719:C:H5' | 1.98 | 0.45 |
| 22:BA:855:G:N3 | 44:BW:23:LYS:CD | 2.76 | 0.45 |
| 22:BA:1045:C:H5'' | 22:BA:1046:A:C5' | 2.43 | 0.45 |
| 22:BA:1513:U:O2' | 22:BA:1514:G:H5' | 2.17 | 0.45 |
| 22:BA:2186:G:C6 | 22:BA:2187:U:C2 | 3.04 | 0.45 |
| 22:BA:2428:G:H5'' | 22:BA:2429:G:OP1 | 2.17 | 0.45 |
| 22:BA:2619:C:H5' | 25:BD:155:VAL:O | 2.16 | 0.45 |
| 22:BA:2715:C:C4 | 22:BA:2716:C:C5 | 3.05 | 0.45 |
| 22:BA:2853:C:H2' | 22:BA:2854:G:C8 | 2.52 | 0.45 |
| 24:BC:67:LYS:HG2 | 24:BC:150:GLY:HA2 | 1.98 | 0.45 |
| 26:BE:131:THR:HG22 | 26:BE:164:LEU:HD13 | 1.98 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 29:BH:21:VAL:HG22 | 29:BH:22:LYS:N | 2.32 | 0.45 |
| 31:BJ:81:ILE:CG2 | 31:BJ:82:GLY:H | 2.03 | 0.45 |
| 31:BJ:88:THR:CG2 | 31:BJ:91:GLU:H | 2.30 | 0.45 |
| 32:BK:71:ARG:HD2 | 32:BK:106:GLU:HG3 | 1.98 | 0.45 |
| 34:BM:42:THR:O | 34:BM:43:ALA:HB3 | 2.15 | 0.45 |
| 35:BN:30:ARG:HG2 | 35:BN:31:HIS:ND1 | 2.32 | 0.45 |
| 45:BX:70:LEU:HD23 | 45:BX:73:ARG:HH11 | 1.82 | 0.45 |
| 53:CA:579:A:C6 | 53:CA:763:G:C6 | 3.04 | 0.45 |
| 53:CA:666:G:H1' | 53:CA:741:G:N2 | 2.31 | 0.45 |
| 53:CA:1067:A:C4' | 53:CA:1068:G:O5' | 2.63 | 0.45 |
| 53:CA:1084:G:C6 | 53:CA:1085:U:O4 | 2.70 | 0.45 |
| 53:CA:1372:U:C5' | 9:CI:71:ILE:HD11 | 2.47 | 0.45 |
| 53:CA:1394:A:N6 | 53:CA:1501:C:H5' | 2.32 | 0.45 |
| 2:CB:71:THR:O | 2:CB:72:LYS:C | 2.55 | 0.45 |
| 2:CB:103:TRP:CA | 2:CB:106:VAL:HB | 2.43 | 0.45 |
| 2:CB:115:ASP:O | 2:CB:119:GLN:CB | 2.65 | 0.45 |
| 4:CD:141:VAL:HG12 | 4:CD:142:VAL:N | 2.31 | 0.45 |
| 5:CE:136:VAL:O | 5:CE:140:ILE:HG13 | 2.17 | 0.45 |
| 6:CF:56:LYS:O | 6:CF:57:ALA:HB2 | 2.16 | 0.45 |
| 8:CH:20:ASN:ND2 | 8:CH:20:ASN:O | 2.49 | 0.45 |
| 55:CM:22:TYR:HB2 | 55:CM:65:GLU:HG2 | 1.99 | 0.45 |
| 21:CU:41:THR:O | 21:CU:45:LYS:HB2 | 2.16 | 0.45 |
| 57:DA:335:C:O2' | 57:DA:336:C:O5' | 2.35 | 0.45 |
| 57:DA:413:C:H4' | 57:DA:1880:U:H4' | 1.98 | 0.45 |
| 57:DA:495:G:H4' | 40:DS:4:ILE:O | 2.16 | 0.45 |
| 57:DA:524:G:C4 | 57:DA:525:U:C5 | 3.05 | 0.45 |
| 57:DA:1238:G:H2' | 57:DA:1239:G:C8 | 2.51 | 0.45 |
| 57:DA:1281:G:C2 | 57:DA:1290:C:N3 | 2.85 | 0.45 |
| 57:DA:1361:G:C5 | 57:DA:1362:C:C5 | 3.05 | 0.45 |
| 57:DA:1408:G:H22 | 57:DA:1595:C:H1' | 1.82 | 0.45 |
| 57:DA:1417:C:H4' | 57:DA:1587:G:N2 | 2.30 | 0.45 |
| 57:DA:1709:U:O2' | 57:DA:1710:G:H5' | 2.17 | 0.45 |
| 57:DA:1760:C:H2' | 57:DA:1761:C:O4' | 2.17 | 0.45 |
| 57:DA:2249:U:H1' | 57:DA:2275:C:N4 | 2.32 | 0.45 |
| 57:DA:2391:G:O2' | 57:DA:2392:A:P | 2.75 | 0.45 |
| 57:DA:2415:G:C2 | 57:DA:2416:C:C2 | 3.05 | 0.45 |
| 57:DA:2814:A:C5 | 57:DA:2815:C:C5 | 3.05 | 0.45 |
| 57:DA:2839:G:C2 | 57:DA:2880:C:N3 | 2.85 | 0.45 |
| 58:DB:48:U:O2' | 36:DO:100:HIS:HE1 | 2.00 | 0.45 |
| 58:DB:68:C:HO2' | 58:DB:69:G:P | 2.40 | 0.45 |
| 58:DB:90:C:H4' | 34:DM:38:ARG:NH1 | 2.32 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 28:DG:8:VAL:HA | 28:DG:68:ARG:HH21 | 1.82 | 0.45 |
| 28:DG:25:ILE:CG2 | 28:DG:78:VAL:HG21 | 2.47 | 0.45 |
| 31:DJ:95:ARG:O | 31:DJ:96:ARG:C | 2.54 | 0.45 |
| 32:DK:13:ASN:H | 32:DK:13:ASN:ND2 | 2.14 | 0.45 |
| 34:DM:17:ASN:O | 34:DM:18:ARG:HG2 | 2.17 | 0.45 |
| 37:DP:16:VAL:CG1 | 37:DP:19:PHE:HE2 | 2.30 | 0.45 |
| 39:DR:68:ARG:CZ | 39:DR:90:ARG:HG2 | 2.47 | 0.45 |
| 47:DZ:40:THR:C | 47:DZ:42:ALA:N | 2.68 | 0.45 |
| 49:D1:46:VAL:HG22 | 49:D1:47:ILE:N | 2.29 | 0.45 |
| 1:AA:199:A:O2' | 1:AA:200:G:O4' | 2.22 | 0.45 |
| 1:AA:322:C:H41 | 1:AA:328:C:H6 | 1.64 | 0.45 |
| 1:AA:917:G:H2' | 1:AA:918:A:C8 | 2.52 | 0.45 |
| 1:AA:1124:G:H3' | 1:AA:1145:A:N6 | 2.31 | 0.45 |
| 1:AA:1125:U:O2' | 1:AA:1126:U:H2' | 2.17 | 0.45 |
| 1:AA:1258:G:O2' | 1:AA:1259:C:H5' | 2.16 | 0.45 |
| 1:AA:1322:C:O4' | 1:AA:1322:C:O2 | 2.32 | 0.45 |
| 1:AA:1371:G:C5 | 1:AA:1372:U:C4 | 3.05 | 0.45 |
| 2:AB:64:GLY:HA3 | 2:AB:158:ASP:OD2 | 2.17 | 0.45 |
| 3:AC:131:ARG:O | 3:AC:135:ARG:HG2 | 2.16 | 0.45 |
| 6:AF:98:GLU:HG3 | 6:AF:99:ALA:N | 2.31 | 0.45 |
| 9:AI:10:ARG:HB2 | 9:AI:14:SER:O | 2.16 | 0.45 |
| 16:AP:37:GLY:HA2 | 16:AP:51:ARG:HH11 | 1.82 | 0.45 |
| 17:AQ:16:MET:O | 17:AQ:17:GLU:C | 2.54 | 0.45 |
| 17:AQ:47:ASP:C | 17:AQ:51:GLU:OE2 | 2.55 | 0.45 |
| 18:AR:24:ASP:O | 18:AR:27:THR:N | 2.40 | 0.45 |
| 20:AT:8:LYS:HA | 20:AT:11:ILE:CG2 | 2.44 | 0.45 |
| 22:BA:327:G:N2 | 22:BA:336:C:C2 | 2.85 | 0.45 |
| 22:BA:384:A:H2' | 22:BA:385:C:H5' | 1.99 | 0.45 |
| 22:BA:642:U:H4' | 22:BA:2349:G:O2' | 2.17 | 0.45 |
| 22:BA:885:C:H6 | 22:BA:885:C:O5' | 1.99 | 0.45 |
| 22:BA:1660:G:N2 | 22:BA:2001:C:C2 | 2.85 | 0.45 |
| 22:BA:1731:G:C2 | 22:BA:1733:G:C5 | 3.04 | 0.45 |
| 22:BA:1766:G:N2 | 22:BA:1986:C:O2 | 2.45 | 0.45 |
| 22:BA:2526:G:C2 | 22:BA:2538:C:O2 | 2.69 | 0.45 |
| 25:BD:36:GLN:HB3 | 25:BD:49:GLN:HB3 | 1.99 | 0.45 |
| 27:BF:43:ILE:HG22 | 27:BF:82:TYR:CD1 | 2.52 | 0.45 |
| 29:BH:46:PHE:O | 29:BH:50:ARG:NH2 | 2.44 | 0.45 |
| 31:BJ:80:HIS:HB3 | 31:BJ:81:ILE:HG22 | 1.98 | 0.45 |
| 32:BK:4:GLU:O | 32:BK:5:GLN:CB | 2.64 | 0.45 |
| 33:BL:56:PRO:HB2 | 33:BL:58:TYR:CE2 | 2.52 | 0.45 |
| 35:BN:19:ALA:O | 35:BN:22:ARG:HB2 | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BN:69:ARG:H | 35:BN:69:ARG:HG2 | 1.41 | 0.45 |
| 36:BO:7:ARG:HG3 | 36:BO:96:GLY:HA3 | 1.98 | 0.45 |
| 37:BP:53:GLY:O | 37:BP:56:SER:OG | 2.28 | 0.45 |
| 39:BR:49:ILE:O | 39:BR:51:VAL:O | 2.35 | 0.45 |
| 40:BS:37:THR:HG22 | 40:BS:38:TYR:CD1 | 2.52 | 0.45 |
| 41:BT:28:ASN:HA | 41:BT:91:GLN:CD | 2.37 | 0.45 |
| 45:BX:5:GLN:HE21 | 45:BX:49:ARG:HB3 | 1.81 | 0.45 |
| 53:CA:41:G:H2' | 53:CA:42:G:C8 | 2.51 | 0.45 |
| 53:CA:76:G:N2 | 53:CA:95:C:C2 | 2.85 | 0.45 |
| 53:CA:274:A:O2' | 53:CA:275:G:C8 | 2.59 | 0.45 |
| 53:CA:335:C:O2 | 53:CA:1433:A:H2 | 2.00 | 0.45 |
| 53:CA:386:C:C5 | 53:CA:387:U:C5 | 3.05 | 0.45 |
| 53:CA:449:G:N1 | 53:CA:450:G:C5 | 2.85 | 0.45 |
| 53:CA:502:A:P | 12:CL:114:SER:HG | 2.39 | 0.45 |
| 53:CA:1060:U:O2' | 10:CJ:54:SER:HB2 | 2.17 | 0.45 |
| 53:CA:1078:U:C5 | 53:CA:1079:G:C5 | 3.04 | 0.45 |
| 53:CA:1191:A:H8 | 53:CA:1191:A:OP2 | 2.00 | 0.45 |
| 53:CA:1285:A:C4' | 53:CA:1286:U:OP1 | 2.60 | 0.45 |
| 53:CA:1319:A:H5'' | 19:CS:4:LEU:CD1 | 2.47 | 0.45 |
| 3:CC:149:LYS:CG | 3:CC:168:ARG:HB2 | 2.46 | 0.45 |
| 54:CG:25:PHE:CZ | 54:CG:61:PHE:HZ | 2.34 | 0.45 |
| 54:CG:41:ILE:O | 54:CG:45:ALA:HB3 | 2.17 | 0.45 |
| 9:CI:126:PHE:O | 9:CI:126:PHE:CG | 2.69 | 0.45 |
| 11:CK:51:PHE:CE2 | 11:CK:64:VAL:HG21 | 2.51 | 0.45 |
| 55:CM:5:GLY:C | 55:CM:6:ILE:HG13 | 2.37 | 0.45 |
| 17:CQ:49:ASN:HB3 | 17:CQ:51:GLU:HG2 | 1.99 | 0.45 |
| 57:DA:2:G:H2' | 57:DA:3:U:O4' | 2.17 | 0.45 |
| 57:DA:46:G:C2 | 57:DA:47:C:C5 | 3.05 | 0.45 |
| 57:DA:90:U:C4 | 57:DA:91:A:C5 | 3.05 | 0.45 |
| 57:DA:133:U:H2' | 57:DA:134:G:O4' | 2.16 | 0.45 |
| 57:DA:300:A:C5 | 57:DA:334:C:H4' | 2.51 | 0.45 |
| 57:DA:364:C:H2' | 57:DA:365:U:O4' | 2.16 | 0.45 |
| 57:DA:783:A:H2 | 57:DA:1778:U:H4' | 1.82 | 0.45 |
| 57:DA:970:U:H1' | 57:DA:985:C:OP1 | 2.16 | 0.45 |
| 57:DA:1080:A:HO2' | 57:DA:1081:U:H6 | 1.62 | 0.45 |
| 57:DA:1536:C:OP2 | 57:DA:1536:C:C2 | 2.69 | 0.45 |
| 57:DA:1717:A:N6 | 57:DA:1744:A:C8 | 2.85 | 0.45 |
| 57:DA:1734:G:C2' | 57:DA:1735:A:C8 | 2.96 | 0.45 |
| 57:DA:1774:C:H4' | 57:DA:1979:U:O2 | 2.17 | 0.45 |
| 57:DA:1785:A:H2' | 57:DA:1787:A:N7 | 2.31 | 0.45 |
| 57:DA:2093:G:OP1 | 57:DA:2093:G:C4' | 2.64 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:2758:A:C2' | 57:DA:2759:G:H5' | 2.46 | 0.45 |
| 57:DA:2834:G:C4 | 57:DA:2879:A:N6 | 2.84 | 0.45 |
| 57:DA:2894:G:O2' | 57:DA:2895:G:P | 2.75 | 0.45 |
| 58:DB:55:U:H5' | 59:DF:24:VAL:CG2 | 2.47 | 0.45 |
| 24:DC:156:SER:HB3 | 24:DC:159:THR:CG2 | 2.47 | 0.45 |
| 24:DC:226:PRO:O | 24:DC:227:VAL:C | 2.55 | 0.45 |
| 26:DE:5:LEU:CD1 | 26:DE:10:SER:HB2 | 2.47 | 0.45 |
| 59:DF:146:ASP:HB3 | 59:DF:147:ARG:H | 1.61 | 0.45 |
| 29:DH:96:THR:O | 29:DH:97:ARG:HG3 | 2.17 | 0.45 |
| 34:DM:19:GLY:N | 34:DM:38:ARG:HH21 | 1.96 | 0.45 |
| 34:DM:81:ARG:HH21 | 34:DM:84:LYS:NZ | 2.15 | 0.45 |
| 37:DP:88:ARG:HE | 37:DP:112:ARG:NH2 | 1.99 | 0.45 |
| 38:DQ:57:ARG:CZ | 38:DQ:92:LYS:HE2 | 2.46 | 0.45 |
| 40:DS:53:SER:O | 40:DS:56:ALA:HB3 | 2.16 | 0.45 |
| 1:AA:260:G:H2' | 1:AA:261:U:C6 | 2.51 | 0.45 |
| 1:AA:293:G:H2' | 1:AA:294:U:H6 | 1.82 | 0.45 |
| 1:AA:500:G:C6 | 1:AA:546:A:C2 | 3.04 | 0.45 |
| 1:AA:751:U:H2' | 1:AA:752:G:O4' | 2.15 | 0.45 |
| 1:AA:791:G:C5 | 1:AA:792:A:N7 | 2.84 | 0.45 |
| 1:AA:1077:G:N1 | 1:AA:1081:A:C6 | 2.85 | 0.45 |
| 1:AA:1126:U:O4' | 1:AA:1281:C:O2 | 2.34 | 0.45 |
| 1:AA:1157:A:C6 | 1:AA:1180:A:C5 | 3.05 | 0.45 |
| 1:AA:1241:G:N2 | 1:AA:1242:G:C5 | 2.84 | 0.45 |
| 1:AA:1320:C:O2' | 1:AA:1321:U:O4' | 2.35 | 0.45 |
| 2:AB:49:PHE:CB | 2:AB:212:TYR:OH | 2.65 | 0.45 |
| 3:AC:76:ILE:HA | 3:AC:83:VAL:CG2 | 2.38 | 0.45 |
| 9:AI:129:ARG:NH1 | 9:AI:129:ARG:HA | 2.32 | 0.45 |
| 11:AK:113:THR:HB | 21:AU:28:LEU:HD11 | 1.98 | 0.45 |
| 16:AP:67:ILE:HG23 | 16:AP:72:ALA:HB2 | 1.99 | 0.45 |
| 17:AQ:24:ILE:HG22 | 17:AQ:24:ILE:O | 2.17 | 0.45 |
| 22:BA:923:G:N2 | 44:BW:23:LYS:HZ3 | 2.13 | 0.45 |
| 22:BA:957:C:O2' | 22:BA:959:A:O5' | 2.35 | 0.45 |
| 22:BA:1405:U:C2 | 22:BA:1406:U:C5 | 3.05 | 0.45 |
| 22:BA:1535:A:O2' | 22:BA:1536:C:OP1 | 2.34 | 0.45 |
| 22:BA:1551:A:H2' | 22:BA:1552:A:O4' | 2.17 | 0.45 |
| 22:BA:1577:C:H2' | 22:BA:1578:U:O4' | 2.16 | 0.45 |
| 22:BA:1654:A:O2' | 25:BD:118:PHE:CD2 | 2.64 | 0.45 |
| 22:BA:1818:U:HO2' | 22:BA:1819:A:P | 2.39 | 0.45 |
| 22:BA:1957:C:O2' | 22:BA:1958:C:H5' | 2.17 | 0.45 |
| 22:BA:2365:G:OP1 | 44:BW:53:GLY:HA2 | 2.17 | 0.45 |
| 22:BA:2603:G:H2' | 22:BA:2604:U:H6 | 1.82 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:2727:A:H2' | 22:BA:2728:U:H6 | 1.82 | 0.45 |
| 22:BA:2823:A:C2' | 22:BA:2824:C:H5' | 2.47 | 0.45 |
| 30:BI:52:LEU:HD12 | 30:BI:52:LEU:N | 2.32 | 0.45 |
| 31:BJ:128:ASN:O | 31:BJ:128:ASN:ND2 | 2.50 | 0.45 |
| 33:BL:81:ASP:O | 33:BL:82:LEU:CB | 2.64 | 0.45 |
| 33:BL:89:VAL:HA | 33:BL:121:THR:O | 2.17 | 0.45 |
| 37:BP:33:GLU:CG | 37:BP:34:GLY:N | 2.76 | 0.45 |
| 38:BQ:91:ARG:HD3 | 39:BR:11:GLN:CB | 2.47 | 0.45 |
| 41:BT:19:LYS:O | 41:BT:20:ALA:C | 2.54 | 0.45 |
| 45:BX:70:LEU:O | 45:BX:74:GLY:N | 2.49 | 0.45 |
| 45:BX:71:ARG:HE | 45:BX:77:TYR:HE2 | 1.64 | 0.45 |
| 46:BY:56:LEU:O | 46:BY:57:LEU:CB | 2.55 | 0.45 |
| 53:CA:293:G:C2 | 53:CA:305:G:N3 | 2.85 | 0.45 |
| 53:CA:374:A:C5' | 53:CA:452:A:N1 | 2.75 | 0.45 |
| 53:CA:435:A:C5 | 53:CA:436:C:C5 | 3.05 | 0.45 |
| 53:CA:482:A:N3 | 53:CA:482:A:H2' | 2.31 | 0.45 |
| 53:CA:533:A:O2' | 53:CA:535:A:OP2 | 2.25 | 0.45 |
| 53:CA:986:U:O2' | 53:CA:987:G:O5' | 2.35 | 0.45 |
| 53:CA:1484:C:H2' | 53:CA:1485:U:H6 | 1.81 | 0.45 |
| 2:CB:192:PRO:HB2 | 2:CB:198:VAL:HG11 | 1.98 | 0.45 |
| 4:CD:154:VAL:O | 4:CD:157:ALA:HB3 | 2.16 | 0.45 |
| 54:CG:124:SER:C | 54:CG:126:ALA:H | 2.19 | 0.45 |
| 8:CH:1:SER:O | 8:CH:3:GLN:N | 2.49 | 0.45 |
| 9:CI:5:TYR:O | 9:CI:19:PHE:HA | 2.16 | 0.45 |
| 9:CI:45:MET:CE | 9:CI:48:ARG:HG3 | 2.47 | 0.45 |
| 9:CI:46:VAL:O | 9:CI:79:ARG:HG3 | 2.16 | 0.45 |
| 12:CL:89:LEU:HA | 12:CL:90:PRO:HD2 | 1.60 | 0.45 |
| 55:CM:28:ARG:HA | 55:CM:31:ALA:HB3 | 1.98 | 0.45 |
| 56:CP:40:ASN:HA | 56:CP:41:PRO:HD3 | 1.77 | 0.45 |
| 18:CR:31:TYR:CG | 18:CR:54:LEU:HD21 | 2.51 | 0.45 |
| 18:CR:70:THR:OG1 | 18:CR:71:ASP:N | 2.48 | 0.45 |
| 57:DA:18:U:O2 | 57:DA:554:U:H5'' | 2.17 | 0.45 |
| 57:DA:45:G:N2 | 57:DA:434:U:C2 | 2.85 | 0.45 |
| 57:DA:271:G:C6 | 57:DA:272:A:N6 | 2.85 | 0.45 |
| 57:DA:300:A:H1' | 57:DA:333:G:N2 | 2.31 | 0.45 |
| 57:DA:362:A:C5 | 57:DA:363:G:C8 | 3.04 | 0.45 |
| 57:DA:623:C:O2' | 57:DA:624:C:H5' | 2.17 | 0.45 |
| 57:DA:706:A:H2' | 57:DA:707:G:O4' | 2.17 | 0.45 |
| 57:DA:727:A:H2' | 57:DA:728:G:H8 | 1.81 | 0.45 |
| 57:DA:996:A:C6 | 57:DA:1160:G:C2 | 3.05 | 0.45 |
| 57:DA:1312:U:O2' | 57:DA:1313:U:OP2 | 2.35 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1439:A:H5'' | 57:DA:1440:U:OP2 | 2.17 | 0.45 |
| 57:DA:1526:C:N4 | 57:DA:1527:G:C6 | 2.85 | 0.45 |
| 57:DA:1601:G:H2' | 57:DA:1602:U:O4' | 2.17 | 0.45 |
| 57:DA:1654:A:O2' | 57:DA:1655:A:C8 | 2.48 | 0.45 |
| 57:DA:1828:G:O2' | 57:DA:1829:A:H5' | 2.17 | 0.45 |
| 57:DA:1984:G:C6 | 57:DA:1985:C:C4 | 3.04 | 0.45 |
| 57:DA:2595:G:N1 | 57:DA:2599:G:C6 | 2.85 | 0.45 |
| 57:DA:2620:C:H2' | 57:DA:2621:G:O4' | 2.17 | 0.45 |
| 57:DA:2816:G:O3' | 35:DN:99:LYS:HE3 | 2.16 | 0.45 |
| 25:DD:36:GLN:HE21 | 25:DD:38:LYS:NZ | 2.14 | 0.45 |
| 25:DD:118:PHE:CE1 | 25:DD:119:ALA:O | 2.70 | 0.45 |
| 26:DE:29:HIS:HA | 26:DE:32:VAL:CG2 | 2.45 | 0.45 |
| 59:DF:46:LYS:HE2 | 59:DF:83:PRO:HG3 | 1.97 | 0.45 |
| 29:DH:31:VAL:CB | 29:DH:32:PRO:HD3 | 2.46 | 0.45 |
| 30:DI:52:LEU:HD11 | 30:DI:78:LEU:CD2 | 2.47 | 0.45 |
| 31:DJ:30:THR:HG23 | 31:DJ:31:GLU:N | 2.31 | 0.45 |
| 32:DK:76:VAL:CG1 | 32:DK:77:ILE:N | 2.80 | 0.45 |
| 33:DL:110:VAL:O | 33:DL:111:ILE:HG12 | 2.17 | 0.45 |
| 40:DS:59:GLU:OE2 | 40:DS:66:ILE:HD12 | 2.17 | 0.45 |
| 40:DS:74:ILE:O | 40:DS:74:ILE:HG12 | 2.17 | 0.45 |
| 46:DY:37:LEU:HD13 | 46:DY:42:LEU:CD1 | 2.47 | 0.45 |
| 48:D0:4:GLN:HG2 | 48:D0:4:GLN:O | 2.16 | 0.45 |
| 1:AA:1001:C:H2' | 1:AA:1002:G:C8 | 2.51 | 0.45 |
| 1:AA:1215:G:O2' | 1:AA:1216:A:H5' | 2.17 | 0.45 |
| 1:AA:1322:C:O2' | 1:AA:1323:G:H5' | 2.17 | 0.45 |
| 2:AB:143:LEU:HA | 2:AB:146:SER:OG | 2.16 | 0.45 |
| 2:AB:202:ASN:HB3 | 2:AB:208:ALA:CB | 2.47 | 0.45 |
| 3:AC:107:LYS:HA | 3:AC:108:PRO:HD2 | 1.79 | 0.45 |
| 4:AD:28:ASP:OD1 | 4:AD:33:ILE:HG12 | 2.17 | 0.45 |
| 4:AD:57:LYS:NZ | 4:AD:61:ARG:HD3 | 2.32 | 0.45 |
| 4:AD:97:LEU:HD22 | 4:AD:117:VAL:HG11 | 1.98 | 0.45 |
| 4:AD:98:ASP:HB3 | 4:AD:114:ARG:HG2 | 1.99 | 0.45 |
| 7:AG:128:GLU:O | 7:AG:129:ASN:C | 2.56 | 0.45 |
| 8:AH:9:MET:HG3 | 8:AH:26:MET:SD | 2.57 | 0.45 |
| 14:AN:44:VAL:HG23 | 14:AN:45:LEU:N | 2.26 | 0.45 |
| 15:AO:29:ALA:CA | 15:AO:84:LEU:HD21 | 2.42 | 0.45 |
| 20:AT:72:ALA:O | 20:AT:73:ARG:C | 2.55 | 0.45 |
| 22:BA:568:U:O5' | 22:BA:945:A:N6 | 2.50 | 0.45 |
| 22:BA:669:G:N3 | 22:BA:669:G:C2' | 2.80 | 0.45 |
| 22:BA:749:A:H2 | 22:BA:753:A:HO2' | 1.64 | 0.45 |
| 22:BA:880:G:C6 | 22:BA:881:G:N7 | 2.85 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:1059:G:C6 | 22:BA:1080:A:C6 | 3.05 | 0.45 |
| 22:BA:1231:U:O5' | 22:BA:1231:U:H6 | 1.99 | 0.45 |
| 22:BA:1450:G:C6 | 22:BA:1451:C:C4 | 3.04 | 0.45 |
| 22:BA:2515:C:O2' | 22:BA:2516:A:H5' | 2.17 | 0.45 |
| 22:BA:2822:G:H2' | 22:BA:2823:A:H5'' | 1.98 | 0.45 |
| 22:BA:2836:U:H2' | 22:BA:2837:A:C8 | 2.52 | 0.45 |
| 23:BB:30:C:C5 | 23:BB:31:C:C6 | 3.05 | 0.45 |
| 24:BC:71:ASP:OD1 | 24:BC:188:ARG:NH1 | 2.47 | 0.45 |
| 24:BC:242:HIS:O | 24:BC:244:VAL:HG13 | 2.16 | 0.45 |
| 25:BD:98:VAL:O | 25:BD:99:GLU:C | 2.54 | 0.45 |
| 29:BH:78:VAL:CG2 | 29:BH:145:ASN:HD22 | 2.29 | 0.45 |
| 34:BM:47:GLU:O | 34:BM:48:ALA:C | 2.54 | 0.45 |
| 35:BN:75:ILE:HD12 | 35:BN:79:LEU:HD12 | 1.99 | 0.45 |
| 38:BQ:67:ALA:HB1 | 38:BQ:105:PHE:CE1 | 2.52 | 0.45 |
| 38:BQ:88:GLU:OE1 | 38:BQ:88:GLU:C | 2.54 | 0.45 |
| 40:BS:20:VAL:HG11 | 40:BS:44:ALA:HA | 1.98 | 0.45 |
| 41:BT:31:VAL:C | 41:BT:32:LEU:HD23 | 2.37 | 0.45 |
| 42:BU:3:LYS:O | 42:BU:82:VAL:HG21 | 2.16 | 0.45 |
| 44:BW:36:ILE:C | 44:BW:37:VAL:O | 2.53 | 0.45 |
| 48:B0:48:TYR:O | 48:B0:49:ARG:HB2 | 2.17 | 0.45 |
| 51:B3:35:LYS:O | 51:B3:40:LYS:HE2 | 2.17 | 0.45 |
| 51:B3:54:LEU:HD12 | 51:B3:54:LEU:HA | 1.69 | 0.45 |
| 53:CA:46:G:O2' | 53:CA:365:U:H1' | 2.17 | 0.45 |
| 53:CA:397:A:H3' | 53:CA:397:A:N3 | 2.32 | 0.45 |
| 53:CA:522:C:N4 | 12:CL:49:ARG:HH22 | 1.95 | 0.45 |
| 53:CA:913:A:OP1 | 12:CL:43:LYS:HE3 | 2.17 | 0.45 |
| 53:CA:1133:G:C6 | 53:CA:1134:G:N7 | 2.85 | 0.45 |
| 53:CA:1292:G:C6 | 53:CA:1293:C:C4 | 3.05 | 0.45 |
| 53:CA:1346:A:N1 | 54:CG:9:ARG:NH2 | 2.65 | 0.45 |
| 53:CA:1434:A:H2' | 53:CA:1435:G:O4' | 2.17 | 0.45 |
| 4:CD:150:LYS:HA | 4:CD:150:LYS:HD3 | 1.82 | 0.45 |
| 6:CF:92:THR:C | 6:CF:93:LYS:HG2 | 2.36 | 0.45 |
| 54:CG:61:PHE:O | 54:CG:63:VAL:N | 2.48 | 0.45 |
| 56:CP:44:SER:HB2 | 56:CP:46:LYS:CG | 2.46 | 0.45 |
| 57:DA:21:A:H2' | 57:DA:22:C:H6 | 1.82 | 0.45 |
| 57:DA:60:G:O2' | 57:DA:61:C:P | 2.75 | 0.45 |
| 57:DA:116:C:H2' | 57:DA:117:G:O4' | 2.17 | 0.45 |
| 57:DA:365:U:H2' | 57:DA:366:C:C6 | 2.52 | 0.45 |
| 57:DA:396:G:O2' | 57:DA:397:U:C5' | 2.65 | 0.45 |
| 57:DA:464:U:C1' | 57:DA:686:U:C5 | 2.98 | 0.45 |
| 57:DA:600:G:N2 | 57:DA:605:G:O3' | 2.49 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:685:A:C2 | 57:DA:689:A:C6 | 3.05 | 0.45 |
| 57:DA:749:A:H2' | 57:DA:750:A:H8 | 1.82 | 0.45 |
| 57:DA:1087:G:C4 | 57:DA:1089:A:C2 | 3.05 | 0.45 |
| 57:DA:1303:G:O2' | 57:DA:1304:A:C5' | 2.65 | 0.45 |
| 57:DA:1320:C:O2' | 57:DA:1321:A:H8 | 2.00 | 0.45 |
| 57:DA:1338:G:O2' | 57:DA:1393:A:N1 | 2.45 | 0.45 |
| 57:DA:1441:G:C2 | 57:DA:1551:A:C2 | 3.05 | 0.45 |
| 57:DA:1607:C:C4' | 57:DA:1608:A:C8 | 3.00 | 0.45 |
| 57:DA:1666:G:O3' | 32:DK:6:THR:HA | 2.17 | 0.45 |
| 57:DA:1671:U:O2 | 57:DA:1673:G:H8 | 1.99 | 0.45 |
| 57:DA:1673:G:C2' | 57:DA:1674:G:H5' | 2.47 | 0.45 |
| 57:DA:1716:U:O2' | 57:DA:1717:A:C5' | 2.65 | 0.45 |
| 57:DA:1992:G:N2 | 57:DA:1995:U:C5 | 2.84 | 0.45 |
| 57:DA:2218:G:H2' | 57:DA:2219:U:C6 | 2.52 | 0.45 |
| 57:DA:2266:A:H4' | 57:DA:2267:A:O5' | 2.17 | 0.45 |
| 57:DA:2314:A:H5'' | 59:DF:34:THR:OG1 | 2.17 | 0.45 |
| 57:DA:2432:A:N1 | 45:DX:20:ALA:HA | 2.32 | 0.45 |
| 57:DA:2511:U:O4 | 57:DA:2575:C:N3 | 2.49 | 0.45 |
| 57:DA:2744:G:C4 | 57:DA:2761:A:C2 | 3.04 | 0.45 |
| 57:DA:2836:U:HO2' | 57:DA:2837:A:P | 2.39 | 0.45 |
| 57:DA:2885:G:N2 | 48:D0:31:LYS:HG2 | 2.31 | 0.45 |
| 59:DF:45:ASP:OD2 | 59:DF:47:LYS:HB2 | 2.17 | 0.45 |
| 28:DG:43:LYS:HB2 | 28:DG:50:THR:O | 2.17 | 0.45 |
| 35:DN:2:ARG:HD2 | 35:DN:5:LYS:HB3 | 1.99 | 0.45 |
| 35:DN:45:ARG:HG2 | 35:DN:95:THR:HG21 | 1.99 | 0.45 |
| 37:DP:64:SER:O | 37:DP:66:GLY:N | 2.50 | 0.45 |
| 43:DV:36:ALA:HB1 | 43:DV:37:PRO:HD2 | 1.98 | 0.45 |
| 51:D3:18:LYS:HD2 | 51:D3:19:GLY:H | 1.82 | 0.45 |
| 1:AA:69:G:H2' | 1:AA:69:G:N3 | 2.30 | 0.45 |
| 1:AA:106:C:H2' | 1:AA:107:G:O4' | 2.17 | 0.45 |
| 1:AA:161:A:N6 | 1:AA:162:A:C6 | 2.85 | 0.45 |
| 1:AA:367:U:O2' | 1:AA:368:U:H4' | 2.17 | 0.45 |
| 1:AA:603:U:H2' | 1:AA:604:G:H8 | 1.81 | 0.45 |
| 1:AA:1176:A:H2' | 1:AA:1177:G:C8 | 2.52 | 0.45 |
| 1:AA:1196:A:O2' | 1:AA:1197:A:P | 2.75 | 0.45 |
| 1:AA:1258:G:C2 | 1:AA:1259:C:C5 | 3.05 | 0.45 |
| 1:AA:1374:A:H2' | 1:AA:1375:A:H8 | 1.82 | 0.45 |
| 3:AC:13:ILE:HD13 | 3:AC:13:ILE:N | 2.32 | 0.45 |
| 10:AJ:49:PHE:CE1 | 10:AJ:67:ILE:HG13 | 2.38 | 0.45 |
| 12:AL:82:ARG:HH11 | 12:AL:82:ARG:CG | 2.06 | 0.45 |
| 16:AP:16:PHE:O | 16:AP:16:PHE:CD1 | 2.70 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:6:A:C2' | 22:BA:7:G:H5' | 2.47 | 0.45 |
| 22:BA:191:A:H2' | 22:BA:192:C:C6 | 2.52 | 0.45 |
| 22:BA:249:C:HO2' | 22:BA:250:G:P | 2.40 | 0.45 |
| 22:BA:441:U:H2' | 22:BA:442:G:C8 | 2.52 | 0.45 |
| 22:BA:480:A:H3' | 22:BA:481:G:H5'' | 1.99 | 0.45 |
| 22:BA:564:C:O2' | 22:BA:565:C:H5' | 2.17 | 0.45 |
| 22:BA:642:U:O2 | 22:BA:644:A:C8 | 2.70 | 0.45 |
| 22:BA:703:U:H2' | 22:BA:704:G:H5' | 1.98 | 0.45 |
| 22:BA:770:G:H5'' | 50:B2:10:LEU:HD23 | 1.99 | 0.45 |
| 22:BA:801:G:C8 | 26:BE:50:ALA:HB2 | 2.52 | 0.45 |
| 22:BA:1019:U:C4 | 22:BA:1020:A:N6 | 2.85 | 0.45 |
| 22:BA:1380:G:H2' | 22:BA:1380:G:N3 | 2.31 | 0.45 |
| 22:BA:1432:G:C2' | 22:BA:1433:A:H5' | 2.46 | 0.45 |
| 22:BA:1615:C:H2' | 22:BA:1617:C:C6 | 2.52 | 0.45 |
| 22:BA:1842:G:H2' | 22:BA:1843:C:H6 | 1.78 | 0.45 |
| 22:BA:2026:U:H2' | 22:BA:2027:G:O4' | 2.17 | 0.45 |
| 22:BA:2223:G:H2' | 22:BA:2224:G:H5' | 1.98 | 0.45 |
| 22:BA:2819:G:H5'' | 63:BA:3807:HOH:O | 2.17 | 0.45 |
| 22:BA:2849:U:C6 | 22:BA:2867:G:N2 | 2.85 | 0.45 |
| 24:BC:261:ARG:O | 24:BC:261:ARG:HG2 | 2.17 | 0.45 |
| 25:BD:152:PRO:O | 25:BD:154:LYS:N | 2.50 | 0.45 |
| 25:BD:159:LYS:HZ2 | 25:BD:160:LYS:N | 2.15 | 0.45 |
| 27:BF:103:ILE:H | 27:BF:103:ILE:HG12 | 1.55 | 0.45 |
| 28:BG:9:VAL:HA | 28:BG:47:ASN:O | 2.17 | 0.45 |
| 28:BG:168:VAL:O | 28:BG:170:THR:HG23 | 2.17 | 0.45 |
| 31:BJ:18:VAL:HG22 | 31:BJ:140:LEU:CD1 | 2.47 | 0.45 |
| 31:BJ:37:ARG:HA | 31:BJ:118:MET:CE | 2.46 | 0.45 |
| 32:BK:18:ARG:HA | 32:BK:18:ARG:HD2 | 1.72 | 0.45 |
| 35:BN:71:ARG:CG | 35:BN:71:ARG:NH2 | 2.62 | 0.45 |
| 45:BX:73:ARG:HG2 | 45:BX:75:GLU:HG3 | 1.98 | 0.45 |
| 51:B3:56:LEU:HD22 | 51:B3:56:LEU:N | 2.31 | 0.45 |
| 53:CA:71:A:C2 | 53:CA:72:A:C5 | 3.05 | 0.45 |
| 53:CA:71:A:O2' | 53:CA:72:A:O4' | 2.23 | 0.45 |
| 53:CA:234:C:O2' | 53:CA:235:C:H5' | 2.16 | 0.45 |
| 53:CA:518:C:H2' | 53:CA:530:G:C8 | 2.52 | 0.45 |
| 53:CA:554:A:H2' | 53:CA:555:U:H6 | 1.82 | 0.45 |
| 53:CA:919:A:C2 | 53:CA:920:U:C5 | 3.05 | 0.45 |
| 53:CA:980:C:O3' | 14:CN:12:ARG:NH2 | 2.50 | 0.45 |
| 53:CA:1071:C:C5' | 5:CE:53:ARG:NH1 | 2.80 | 0.45 |
| 53:CA:1215:G:N3 | 53:CA:1216:A:C8 | 2.85 | 0.45 |
| 53:CA:1319:A:OP2 | 19:CS:4:LEU:HD21 | 2.17 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:CA:1526:G:OP2 | 21:CU:38:GLU:HB2 | 2.17 | 0.45 |
| 2:CB:17:HIS:CG | 2:CB:18:GLN:N | 2.84 | 0.45 |
| 2:CB:116:LEU:HD23 | 2:CB:119:GLN:OE1 | 2.17 | 0.45 |
| 2:CB:119:GLN:HE22 | 2:CB:136:ARG:HH12 | 1.65 | 0.45 |
| 3:CC:183:TYR:HE1 | 3:CC:198:LYS:HB3 | 1.82 | 0.45 |
| 4:CD:8:LEU:HD13 | 4:CD:8:LEU:HA | 1.75 | 0.45 |
| 4:CD:29:THR:C | 4:CD:31:CYS:N | 2.71 | 0.45 |
| 5:CE:74:ALA:O | 5:CE:75:LEU:HB2 | 2.16 | 0.45 |
| 54:CG:100:MET:H | 54:CG:100:MET:HE2 | 1.81 | 0.45 |
| 10:CJ:80:THR:C | 10:CJ:84:VAL:HG22 | 2.37 | 0.45 |
| 14:CN:72:PHE:HB2 | 14:CN:78:LEU:O | 2.16 | 0.45 |
| 17:CQ:47:ASP:HB3 | 17:CQ:74:LEU:HB3 | 1.99 | 0.45 |
| 17:CQ:47:ASP:OD1 | 17:CQ:74:LEU:HD23 | 2.17 | 0.45 |
| 57:DA:145:C:O5' | 57:DA:145:C:H6 | 2.00 | 0.45 |
| 57:DA:195:A:C5 | 57:DA:198:C:C5 | 3.05 | 0.45 |
| 57:DA:263:G:H2' | 57:DA:264:C:O4' | 2.16 | 0.45 |
| 57:DA:445:C:H2' | 57:DA:446:G:C8 | 2.51 | 0.45 |
| 57:DA:843:G:C6 | 57:DA:844:A:N6 | 2.85 | 0.45 |
| 57:DA:1135:C:N4 | 57:DA:1139:G:O6 | 2.50 | 0.45 |
| 57:DA:1171:G:C2 | 57:DA:1179:G:N3 | 2.84 | 0.45 |
| 57:DA:1205:A:N7 | 26:DE:165:HIS:ND1 | 2.65 | 0.45 |
| 57:DA:1536:C:H5'' | 57:DA:1537:G:O5' | 2.17 | 0.45 |
| 57:DA:1594:U:H2' | 57:DA:1595:C:H6 | 1.82 | 0.45 |
| 57:DA:1607:C:N4 | 57:DA:1622:G:N7 | 2.65 | 0.45 |
| 57:DA:1817:G:H5'' | 24:DC:86:ARG:NH1 | 2.32 | 0.45 |
| 57:DA:1867:G:O6 | 57:DA:1875:G:N2 | 2.49 | 0.45 |
| 57:DA:1883:U:H3' | 57:DA:1884:G:H8 | 1.82 | 0.45 |
| 57:DA:2052:A:OP1 | 25:DD:146:ILE:HG12 | 2.17 | 0.45 |
| 57:DA:2107:G:C2 | 57:DA:2183:A:C2 | 3.05 | 0.45 |
| 57:DA:2283:C:N4 | 57:DA:2389:G:C6 | 2.85 | 0.45 |
| 57:DA:2353:G:H4' | 44:DW:28:GLU:HG2 | 1.98 | 0.45 |
| 24:DC:83:ASP:HA | 24:DC:84:PRO:HD2 | 1.79 | 0.45 |
| 24:DC:161:VAL:CG1 | 24:DC:173:LEU:HB2 | 2.47 | 0.45 |
| 25:DD:113:SER:HB2 | 25:DD:168:GLU:OE1 | 2.16 | 0.45 |
| 26:DE:5:LEU:HD13 | 26:DE:122:GLU:HB2 | 1.98 | 0.45 |
| 34:DM:112:LEU:HD13 | 34:DM:112:LEU:O | 2.17 | 0.45 |
| 42:DU:43:LYS:HE3 | 42:DU:45:GLN:CD | 2.38 | 0.45 |
| 43:DV:32:GLY:O | 43:DV:33:GLY:C | 2.55 | 0.45 |
| 43:DV:61:LEU:H | 43:DV:61:LEU:CD2 | 2.24 | 0.45 |
| 1:AA:206:C:H2' | 1:AA:207:C:C4' | 2.46 | 0.44 |
| 1:AA:258:G:H2' | 1:AA:259:G:O4' | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:531:U:C4' | 1:AA:532:A:O5' | 2.59 | 0.44 |
| 1:AA:738:C:O2' | 1:AA:739:C:H5' | 2.17 | 0.44 |
| 1:AA:773:G:C4 | 1:AA:774:G:C8 | 3.05 | 0.44 |
| 1:AA:1067:A:H1' | 1:AA:1068:G:C8 | 2.52 | 0.44 |
| 1:AA:1279:G:H1' | 1:AA:1282:C:H42 | 1.77 | 0.44 |
| 1:AA:1336:C:HO2' | 1:AA:1337:G:P | 2.35 | 0.44 |
| 1:AA:1435:G:H2' | 1:AA:1436:U:H6 | 1.82 | 0.44 |
| 5:AE:46:GLY:HA3 | 5:AE:70:MET:HA | 1.98 | 0.44 |
| 5:AE:149:PRO:C | 5:AE:151:MET:H | 2.19 | 0.44 |
| 8:AH:74:ILE:CD1 | 8:AH:128:VAL:HG22 | 2.47 | 0.44 |
| 8:AH:125:ILE:O | 8:AH:126:CYS:HB3 | 2.16 | 0.44 |
| 10:AJ:89:ARG:O | 10:AJ:90:LEU:HD23 | 2.17 | 0.44 |
| 12:AL:43:LYS:HZ2 | 12:AL:44:PRO:HD2 | 1.83 | 0.44 |
| 13:AM:86:ARG:NH2 | 13:AM:97:ARG:HA | 2.32 | 0.44 |
| 19:AS:54:ARG:H | 19:AS:54:ARG:HG3 | 1.62 | 0.44 |
| 20:AT:24:ARG:O | 20:AT:27:MET:HB3 | 2.18 | 0.44 |
| 21:AU:33:ARG:HE | 21:AU:34:ARG:HG3 | 1.83 | 0.44 |
| 22:BA:188:G:H2' | 22:BA:189:G:O4' | 2.17 | 0.44 |
| 22:BA:453:A:H5'' | 63:BA:3242:HOH:O | 2.17 | 0.44 |
| 22:BA:1062:G:C6 | 22:BA:1063:G:C6 | 3.05 | 0.44 |
| 22:BA:1165:A:H2' | 22:BA:1166:G:C8 | 2.50 | 0.44 |
| 22:BA:1419:A:C2 | 22:BA:1421:G:H1' | 2.53 | 0.44 |
| 22:BA:1442:U:H2' | 22:BA:1443:U:H6 | 1.82 | 0.44 |
| 22:BA:1798:U:P | 24:BC:255:LYS:HA | 2.56 | 0.44 |
| 22:BA:1866:A:H2' | 22:BA:1867:G:O4' | 2.17 | 0.44 |
| 22:BA:1943:U:O2 | 22:BA:1943:U:O4' | 2.33 | 0.44 |
| 22:BA:1964:G:C2 | 22:BA:1967:C:C5 | 3.05 | 0.44 |
| 22:BA:2378:A:C5 | 22:BA:2379:G:H1' | 2.52 | 0.44 |
| 22:BA:2778:A:H4' | 22:BA:2779:U:OP2 | 2.14 | 0.44 |
| 24:BC:75:ALA:HB2 | 24:BC:95:TYR:CD2 | 2.52 | 0.44 |
| 24:BC:106:PRO:O | 24:BC:109:LEU:HD13 | 2.17 | 0.44 |
| 25:BD:140:HIS:NE2 | 63:BD:301:HOH:O | 2.36 | 0.44 |
| 25:BD:151:THR:O | 25:BD:153:GLY:N | 2.50 | 0.44 |
| 26:BE:112:LEU:HD11 | 26:BE:180:LEU:O | 2.17 | 0.44 |
| 26:BE:172:ALA:C | 26:BE:174:GLY:H | 2.20 | 0.44 |
| 27:BF:1:ALA:O | 27:BF:2:LYS:HB3 | 2.17 | 0.44 |
| 28:BG:26:LYS:HA | 28:BG:78:VAL:HG11 | 1.98 | 0.44 |
| 29:BH:67:ALA:HA | 29:BH:138:VAL:CB | 2.44 | 0.44 |
| 36:BO:3:LYS:CG | 36:BO:4:LYS:H | 2.30 | 0.44 |
| 40:BS:8:ARG:O | 40:BS:9:HIS:HB2 | 2.17 | 0.44 |
| 43:BV:88:HIS:CG | 43:BV:89:ILE:N | 2.85 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:259:G:H2' | 53:CA:260:G:O4' | 2.17 | 0.44 |
| 53:CA:552:U:H2' | 53:CA:553:A:H8 | 1.82 | 0.44 |
| 53:CA:607:A:H2' | 53:CA:608:A:C8 | 2.52 | 0.44 |
| 53:CA:659:U:O5' | 53:CA:659:U:H6 | 1.99 | 0.44 |
| 53:CA:892:A:H2' | 53:CA:893:C:H6 | 1.82 | 0.44 |
| 53:CA:1106:G:O2' | 3:CC:168:ARG:NH1 | 2.50 | 0.44 |
| 53:CA:1229:A:O2' | 53:CA:1230:C:O4' | 2.35 | 0.44 |
| 2:CB:23:ASN:HB2 | 2:CB:189:ASN:C | 2.37 | 0.44 |
| 2:CB:103:TRP:HA | 2:CB:106:VAL:CB | 2.44 | 0.44 |
| 3:CC:11:LEU:HD23 | 3:CC:11:LEU:HA | 1.72 | 0.44 |
| 54:CG:48:THR:O | 54:CG:52:ARG:HD3 | 2.18 | 0.44 |
| 54:CG:116:ALA:O | 54:CG:120:ALA:HB3 | 2.18 | 0.44 |
| 8:CH:28:SER:HA | 8:CH:58:LEU:CD1 | 2.26 | 0.44 |
| 9:CI:51:LEU:HD11 | 9:CI:82:ILE:HG22 | 1.99 | 0.44 |
| 11:CK:125:LYS:C | 21:CU:33:ARG:HE | 2.21 | 0.44 |
| 12:CL:51:VAL:HG12 | 12:CL:52:CYS:N | 2.32 | 0.44 |
| 12:CL:72:ASN:HD21 | 12:CL:104:SER:H | 1.65 | 0.44 |
| 12:CL:97:VAL:O | 12:CL:98:ARG:C | 2.56 | 0.44 |
| 55:CM:11:HIS:HA | 55:CM:44:ILE:HB | 1.99 | 0.44 |
| 55:CM:18:LEU:HD12 | 55:CM:18:LEU:N | 2.32 | 0.44 |
| 15:CO:22:GLY:O | 15:CO:23:SER:C | 2.56 | 0.44 |
| 15:CO:38:LEU:HD12 | 15:CO:41:HIS:CB | 2.47 | 0.44 |
| 15:CO:44:GLU:O | 15:CO:45:HIS:C | 2.55 | 0.44 |
| 15:CO:58:MET:O | 15:CO:61:GLN:HB2 | 2.16 | 0.44 |
| 19:CS:33:TRP:H | 19:CS:33:TRP:HE3 | 1.62 | 0.44 |
| 21:CU:8:ASN:ND2 | 21:CU:9:GLU:H | 2.15 | 0.44 |
| 57:DA:128:C:H2' | 57:DA:129:C:C5 | 2.52 | 0.44 |
| 57:DA:374:A:C6 | 57:DA:401:A:N7 | 2.85 | 0.44 |
| 57:DA:438:G:O6 | 57:DA:439:A:N6 | 2.50 | 0.44 |
| 57:DA:455:C:N3 | 57:DA:473:G:C5' | 2.79 | 0.44 |
| 57:DA:476:G:HO2' | 57:DA:477:A:P | 2.39 | 0.44 |
| 57:DA:492:A:N6 | 40:DS:49:LYS:HD2 | 2.32 | 0.44 |
| 57:DA:503:A:C5 | 57:DA:506:G:C6 | 3.04 | 0.44 |
| 57:DA:584:C:H2' | 57:DA:585:G:H8 | 1.81 | 0.44 |
| 57:DA:586:A:H5' | 26:DE:84:THR:HG21 | 1.99 | 0.44 |
| 57:DA:1056:G:H1' | 57:DA:1103:A:C6 | 2.52 | 0.44 |
| 57:DA:1099:G:H5'' | 57:DA:1100:C:OP2 | 2.16 | 0.44 |
| 57:DA:1206:G:O2' | 57:DA:1207:C:C5' | 2.65 | 0.44 |
| 57:DA:1288:G:C8 | 57:DA:1327:A:N6 | 2.85 | 0.44 |
| 57:DA:1359:A:OP1 | 57:DA:1360:G:OP2 | 2.35 | 0.44 |
| 57:DA:1429:G:N3 | 57:DA:1430:G:C8 | 2.85 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1565:C:O3' | 24:DC:17:LYS:HE2 | 2.16 | 0.44 |
| 57:DA:1734:G:N3 | 57:DA:1735:A:C8 | 2.85 | 0.44 |
| 57:DA:1817:G:O2' | 57:DA:1818:U:C5' | 2.61 | 0.44 |
| 57:DA:2207:C:C4 | 57:DA:2218:G:N1 | 2.86 | 0.44 |
| 57:DA:2360:G:H1' | 33:DL:60:ARG:HD3 | 1.99 | 0.44 |
| 57:DA:2436:G:C2 | 57:DA:2437:G:C8 | 3.05 | 0.44 |
| 57:DA:2513:A:C6 | 57:DA:2514:U:C4 | 3.05 | 0.44 |
| 58:DB:54:G:C2 | 59:DF:25:MET:HE1 | 2.52 | 0.44 |
| 24:DC:66:PHE:HA | 24:DC:142:ASN:HD21 | 1.82 | 0.44 |
| 24:DC:147:PRO:HD3 | 24:DC:184:GLU:CG | 2.47 | 0.44 |
| 35:DN:38:LEU:HB3 | 35:DN:39:PRO:CD | 2.42 | 0.44 |
| 36:DO:67:ASN:H | 36:DO:70:ALA:HB3 | 1.80 | 0.44 |
| 40:DS:7:HIS:CE1 | 40:DS:10:ALA:HA | 2.53 | 0.44 |
| 41:DT:29:THR:OG1 | 41:DT:85:VAL:HB | 2.17 | 0.44 |
| 44:DW:43:LYS:HD3 | 44:DW:43:LYS:HA | 1.62 | 0.44 |
| 45:DX:63:ILE:HD13 | 45:DX:64:ASP:OD2 | 2.17 | 0.44 |
| 47:DZ:5:LYS:HB2 | 47:DZ:5:LYS:HE3 | 1.73 | 0.44 |
| 1:AA:244:U:C6 | 1:AA:894:G:N2 | 2.85 | 0.44 |
| 1:AA:450:G:N7 | 1:AA:481:G:C6 | 2.85 | 0.44 |
| 1:AA:473:U:H2' | 1:AA:474:G:C8 | 2.44 | 0.44 |
| 1:AA:482:A:H2' | 1:AA:483:C:O4' | 2.17 | 0.44 |
| 1:AA:554:A:O2' | 1:AA:555:U:H5' | 2.17 | 0.44 |
| 1:AA:555:U:H2' | 1:AA:556:C:C6 | 2.52 | 0.44 |
| 1:AA:596:A:N3 | 1:AA:597:G:C8 | 2.85 | 0.44 |
| 1:AA:1348:U:C2' | 1:AA:1349:A:H8 | 2.30 | 0.44 |
| 1:AA:1363:A:C8 | 1:AA:1365:G:C5 | 3.06 | 0.44 |
| 1:AA:1418:A:H2' | 1:AA:1419:G:O4' | 2.16 | 0.44 |
| 7:AG:3:ARG:HG3 | 7:AG:4:ARG:N | 2.31 | 0.44 |
| 7:AG:92:PRO:C | 7:AG:93:VAL:HG22 | 2.38 | 0.44 |
| 8:AH:66:GLN:HB3 | 8:AH:67:GLY:H | 1.52 | 0.44 |
| 10:AJ:63:ASP:OD2 | 14:AN:97:LYS:NZ | 2.50 | 0.44 |
| 20:AT:28:ARG:O | 20:AT:31:ILE:HB | 2.17 | 0.44 |
| 20:AT:29:THR:O | 20:AT:33:LYS:HE2 | 2.17 | 0.44 |
| 21:AU:10:PRO:O | 21:AU:11:PHE:CB | 2.63 | 0.44 |
| 21:AU:33:ARG:HE | 21:AU:34:ARG:CG | 2.30 | 0.44 |
| 22:BA:563:A:C6 | 22:BA:564:C:C4 | 3.05 | 0.44 |
| 22:BA:644:A:H2' | 22:BA:645:C:C4' | 2.47 | 0.44 |
| 22:BA:1229:C:H2' | 22:BA:1230:A:H8 | 1.82 | 0.44 |
| 22:BA:1333:G:C2 | 22:BA:1334:G:C8 | 3.05 | 0.44 |
| 22:BA:1421:G:O2' | 22:BA:1494:A:N6 | 2.50 | 0.44 |
| 22:BA:1507:C:H5'' | 22:BA:1508:A:OP2 | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 22:BA:1664:A:H1' | 22:BA:2726:A:N1 | 2.33 | 0.44 |
| 22:BA:2013:A:N3 | 40:BS:88:ARG:NH1 | 2.65 | 0.44 |
| 22:BA:2454:G:H1' | 63:BA:3531:HOH:O | 2.17 | 0.44 |
| 22:BA:2596:U:H6 | 22:BA:2596:U:O5' | 1.99 | 0.44 |
| 24:BC:90:ILE:HA | 24:BC:104:LEU:O | 2.18 | 0.44 |
| 25:BD:35:THR:CG2 | 25:BD:51:THR:HG22 | 2.47 | 0.44 |
| 26:BE:147:LEU:HD13 | 26:BE:147:LEU:O | 2.17 | 0.44 |
| 29:BH:57:LYS:O | 29:BH:61:VAL:HG23 | 2.17 | 0.44 |
| 29:BH:132:PHE:CG | 29:BH:133:GLN:N | 2.85 | 0.44 |
| 32:BK:69:VAL:O | 32:BK:76:VAL:HG13 | 2.17 | 0.44 |
| 33:BL:30:THR:O | 33:BL:32:GLY:N | 2.49 | 0.44 |
| 33:BL:39:LYS:C | 33:BL:40:SER:O | 2.55 | 0.44 |
| 34:BM:33:LEU:HD21 | 34:BM:128:THR:HB | 1.99 | 0.44 |
| 36:BO:7:ARG:CG | 36:BO:96:GLY:HA3 | 2.47 | 0.44 |
| 37:BP:52:ARG:O | 37:BP:53:GLY:C | 2.55 | 0.44 |
| 38:BQ:24:TYR:CG | 38:BQ:25:GLY:N | 2.85 | 0.44 |
| 38:BQ:25:GLY:O | 38:BQ:29:ARG:HG3 | 2.17 | 0.44 |
| 39:BR:24:LYS:HE2 | 39:BR:24:LYS:HB3 | 1.82 | 0.44 |
| 42:BU:91:LYS:O | 42:BU:92:VAL:HB | 2.18 | 0.44 |
| 44:BW:28:GLU:O | 44:BW:29:SER:C | 2.55 | 0.44 |
| 47:BZ:52:PHE:CD2 | 47:BZ:52:PHE:C | 2.89 | 0.44 |
| 53:CA:131:A:C6 | 53:CA:232:G:C6 | 3.06 | 0.44 |
| 53:CA:487:A:H3' | 53:CA:488:C:H6 | 1.81 | 0.44 |
| 53:CA:491:G:HO2' | 53:CA:492:C:H5' | 1.80 | 0.44 |
| 53:CA:647:C:H2' | 53:CA:648:A:C8 | 2.53 | 0.44 |
| 53:CA:1046:A:O2' | 53:CA:1047:G:H5' | 2.16 | 0.44 |
| 53:CA:1119:C:OP1 | 9:CI:10:ARG:NH2 | 2.51 | 0.44 |
| 53:CA:1217:C:H2' | 53:CA:1218:C:C6 | 2.52 | 0.44 |
| 2:CB:34:ARG:HD3 | 2:CB:35:ASN:N | 2.32 | 0.44 |
| 8:CH:36:ALA:O | 8:CH:45:ILE:HD11 | 2.18 | 0.44 |
| 9:CI:117:LEU:HD23 | 9:CI:123:ARG:HD3 | 1.99 | 0.44 |
| 57:DA:33:C:HO2' | 57:DA:34:U:H5' | 1.73 | 0.44 |
| 57:DA:139:U:N3 | 41:DT:1:MET:HA | 2.33 | 0.44 |
| 57:DA:188:G:C6 | 57:DA:189:G:C4 | 3.06 | 0.44 |
| 57:DA:563:A:N3 | 38:DQ:36:GLN:NE2 | 2.62 | 0.44 |
| 57:DA:627:A:O2' | 57:DA:628:G:O5' | 2.36 | 0.44 |
| 57:DA:638:G:H2' | 57:DA:639:U:C5 | 2.52 | 0.44 |
| 57:DA:776:G:H1' | 57:DA:793:A:C6 | 2.52 | 0.44 |
| 57:DA:783:A:O3' | 57:DA:2588:G:H4' | 2.17 | 0.44 |
| 57:DA:873:C:C4' | 34:DM:64:TRP:CD1 | 2.95 | 0.44 |
| 57:DA:960:A:O2' | 57:DA:962:G:H5' | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1022:G:C6 | 57:DA:1140:C:C5 | 3.04 | 0.44 |
| 57:DA:1034:G:O6 | 57:DA:1122:G:C6 | 2.71 | 0.44 |
| 57:DA:1062:G:C8 | 57:DA:1088:A:H8 | 2.34 | 0.44 |
| 57:DA:1400:U:O2' | 57:DA:1401:G:O4' | 2.18 | 0.44 |
| 57:DA:1967:C:H6 | 57:DA:1967:C:C5' | 2.24 | 0.44 |
| 57:DA:2060:A:C2' | 26:DE:63:LYS:NZ | 2.67 | 0.44 |
| 57:DA:2213:U:O2' | 57:DA:2214:C:H5' | 2.16 | 0.44 |
| 57:DA:2336:A:C8 | 44:DW:40:ARG:NH2 | 2.85 | 0.44 |
| 57:DA:2345:G:C5 | 57:DA:2381:A:C2 | 3.05 | 0.44 |
| 57:DA:2658:C:H5'' | 28:DG:157:LYS:HD3 | 1.99 | 0.44 |
| 57:DA:2845:U:C2 | 57:DA:2846:G:C8 | 3.05 | 0.44 |
| 24:DC:250:GLN:H | 24:DC:250:GLN:HG2 | 1.46 | 0.44 |
| 26:DE:52:VAL:O | 26:DE:74:LYS:NZ | 2.46 | 0.44 |
| 28:DG:83:THR:O | 28:DG:140:ILE:HD12 | 2.18 | 0.44 |
| 29:DH:21:VAL:HG22 | 29:DH:22:LYS:H | 1.81 | 0.44 |
| 33:DL:17:LYS:HE2 | 33:DL:19:LEU:HD13 | 2.00 | 0.44 |
| 35:DN:72:ASP:O | 35:DN:75:ILE:HG13 | 2.17 | 0.44 |
| 36:DO:26:LEU:HB3 | 36:DO:92:PHE:CD1 | 2.52 | 0.44 |
| 40:DS:41:LYS:C | 40:DS:43:ALA:N | 2.69 | 0.44 |
| 49:D1:7:LYS:C | 49:D1:8:ILE:HD13 | 2.38 | 0.44 |
| 1:AA:137:U:H1' | 1:AA:227:G:N2 | 2.31 | 0.44 |
| 1:AA:878:A:C5' | 8:AH:80:PRO:HG2 | 2.47 | 0.44 |
| 1:AA:976:G:OP1 | 14:AN:70:HIS:ND1 | 2.48 | 0.44 |
| 1:AA:1049:U:H4' | 1:AA:1050:G:OP2 | 2.16 | 0.44 |
| 1:AA:1136:C:H4' | 1:AA:1137:C:OP1 | 2.17 | 0.44 |
| 1:AA:1234:C:C2' | 1:AA:1235:U:H5' | 2.48 | 0.44 |
| 1:AA:1294:G:C6 | 1:AA:1295:U:C4 | 3.05 | 0.44 |
| 5:AE:153:ALA:O | 5:AE:154:ALA:C | 2.56 | 0.44 |
| 8:AH:77:VAL:O | 8:AH:78:SER:C | 2.56 | 0.44 |
| 11:AK:39:ASN:O | 11:AK:40:ALA:CB | 2.65 | 0.44 |
| 15:AO:40:GLY:O | 15:AO:43:ALA:HB3 | 2.18 | 0.44 |
| 21:AU:14:ALA:O | 21:AU:15:LEU:HD12 | 2.17 | 0.44 |
| 21:AU:38:GLU:OE2 | 21:AU:41:THR:HG21 | 2.17 | 0.44 |
| 21:AU:39:LYS:N | 21:AU:40:PRO:CD | 2.80 | 0.44 |
| 22:BA:282:A:H2' | 22:BA:283:G:C8 | 2.52 | 0.44 |
| 22:BA:395:U:O2' | 22:BA:396:G:C8 | 2.70 | 0.44 |
| 22:BA:396:G:H8 | 22:BA:396:G:O5' | 2.00 | 0.44 |
| 22:BA:686:U:O4 | 50:B2:12:ARG:NH2 | 2.50 | 0.44 |
| 22:BA:794:A:H2' | 22:BA:795:C:H6 | 1.79 | 0.44 |
| 22:BA:1193:G:O2' | 22:BA:1194:A:H5' | 2.17 | 0.44 |
| 22:BA:1215:G:C5 | 22:BA:1216:G:N7 | 2.85 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:1220:G:H2' | 22:BA:1221:C:O4' | 2.17 | 0.44 |
| 22:BA:1361:G:C5 | 22:BA:1371:G:N2 | 2.86 | 0.44 |
| 22:BA:1442:U:H2' | 22:BA:1443:U:C6 | 2.52 | 0.44 |
| 22:BA:1731:G:C5 | 22:BA:1733:G:N7 | 2.85 | 0.44 |
| 22:BA:2013:A:OP1 | 40:BS:97:LEU:N | 2.39 | 0.44 |
| 22:BA:2332:C:OP1 | 44:BW:44:PHE:CZ | 2.70 | 0.44 |
| 22:BA:2390:U:OP2 | 51:B3:34:LYS:HE2 | 2.17 | 0.44 |
| 22:BA:2841:C:H2' | 22:BA:2842:G:H8 | 1.82 | 0.44 |
| 24:BC:109:LEU:CD2 | 24:BC:110:LYS:N | 2.80 | 0.44 |
| 24:BC:250:GLN:N | 24:BC:250:GLN:HE21 | 2.15 | 0.44 |
| 25:BD:149:ASN:CG | 25:BD:150:GLN:N | 2.68 | 0.44 |
| 27:BF:8:LYS:O | 27:BF:12:VAL:CG1 | 2.64 | 0.44 |
| 27:BF:87:LYS:HG3 | 27:BF:88:VAL:N | 2.31 | 0.44 |
| 31:BJ:44:TYR:O | 31:BJ:45:THR:CG2 | 2.63 | 0.44 |
| 32:BK:108:ARG:O | 32:BK:108:ARG:HG3 | 2.18 | 0.44 |
| 34:BM:13:HIS:O | 34:BM:14:LYS:CB | 2.63 | 0.44 |
| 36:BO:53:THR:HB | 36:BO:65:THR:CG2 | 2.44 | 0.44 |
| 37:BP:33:GLU:CG | 37:BP:36:LYS:HD2 | 2.47 | 0.44 |
| 44:BW:21:GLY:O | 44:BW:22:VAL:HB | 2.17 | 0.44 |
| 47:BZ:35:VAL:CG2 | 47:BZ:37:ARG:NH1 | 2.79 | 0.44 |
| 53:CA:39:G:C4 | 53:CA:404:G:N2 | 2.86 | 0.44 |
| 53:CA:179:A:H2' | 53:CA:180:U:H6 | 1.81 | 0.44 |
| 53:CA:461:A:O5' | 53:CA:462:G:OP2 | 2.36 | 0.44 |
| 53:CA:983:A:O2' | 53:CA:984:C:C5' | 2.59 | 0.44 |
| 53:CA:995:C:O2' | 53:CA:996:A:O5' | 2.33 | 0.44 |
| 53:CA:1072:G:H2' | 53:CA:1073:U:O4' | 2.17 | 0.44 |
| 53:CA:1137:C:H4' | 53:CA:1138:G:C2 | 2.52 | 0.44 |
| 2:CB:83:ALA:O | 2:CB:85:SER:N | 2.51 | 0.44 |
| 3:CC:86:LEU:O | 3:CC:90:VAL:HG22 | 2.17 | 0.44 |
| 4:CD:2:ARG:HH21 | 4:CD:114:ARG:CD | 2.09 | 0.44 |
| 6:CF:45:ARG:HG2 | 6:CF:46:GLN:N | 2.32 | 0.44 |
| 10:CJ:44:THR:HG23 | 10:CJ:70:HIS:CG | 2.53 | 0.44 |
| 10:CJ:49:PHE:CE2 | 14:CN:73:LEU:HD13 | 2.52 | 0.44 |
| 12:CL:80:LEU:HB3 | 12:CL:97:VAL:HG22 | 1.99 | 0.44 |
| 56:CP:6:LEU:HD13 | 56:CP:17:TYR:CD2 | 2.53 | 0.44 |
| 57:DA:3:U:C5 | 57:DA:4:U:C5 | 3.04 | 0.44 |
| 57:DA:372:G:N2 | 57:DA:400:G:H2' | 2.32 | 0.44 |
| 57:DA:544:C:N4 | 57:DA:550:C:N4 | 2.65 | 0.44 |
| 57:DA:571:U:O2' | 57:DA:573:U:H6 | 1.99 | 0.44 |
| 57:DA:636:G:O5' | 33:DL:128:THR:HG23 | 2.16 | 0.44 |
| 57:DA:716:A:H2' | 57:DA:717:C:O4' | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:749:A:C2 | 57:DA:750:A:C8 | 3.06 | 0.44 |
| 57:DA:782:A:OP1 | 57:DA:782:A:H8 | 1.99 | 0.44 |
| 57:DA:1059:G:N1 | 57:DA:1088:A:C2 | 2.86 | 0.44 |
| 57:DA:1244:A:O2' | 26:DE:29:HIS:CE1 | 2.70 | 0.44 |
| 57:DA:1286:A:N9 | 57:DA:1289:C:N4 | 2.65 | 0.44 |
| 57:DA:1297:C:N3 | 57:DA:1298:C:C5 | 2.84 | 0.44 |
| 57:DA:1325:U:O2' | 57:DA:1326:U:H5' | 2.18 | 0.44 |
| 57:DA:1370:C:H2' | 57:DA:1371:G:C8 | 2.52 | 0.44 |
| 57:DA:1429:G:O2' | 57:DA:1430:G:P | 2.75 | 0.44 |
| 57:DA:1531:C:H2' | 57:DA:1532:A:O4' | 2.17 | 0.44 |
| 57:DA:1611:C:O2' | 57:DA:1612:C:O5' | 2.35 | 0.44 |
| 57:DA:2053:G:H2' | 57:DA:2054:A:O4' | 2.17 | 0.44 |
| 57:DA:2282:G:O2' | 57:DA:2283:C:OP2 | 2.28 | 0.44 |
| 57:DA:2473:U:H6 | 57:DA:2473:U:OP2 | 2.00 | 0.44 |
| 57:DA:2550:G:N2 | 57:DA:2559:C:H1' | 2.32 | 0.44 |
| 57:DA:2568:U:H2' | 57:DA:2569:G:O4' | 2.18 | 0.44 |
| 57:DA:2693:G:O2' | 57:DA:2694:G:H5' | 2.18 | 0.44 |
| 24:DC:16:VAL:O | 24:DC:202:ARG:HA | 2.18 | 0.44 |
| 24:DC:43:ASN:ND2 | 24:DC:44:ASN:H | 2.15 | 0.44 |
| 25:DD:106:LYS:CB | 25:DD:206:ALA:HB3 | 2.43 | 0.44 |
| 25:DD:141:ARG:NH1 | 25:DD:141:ARG:HB3 | 2.33 | 0.44 |
| 29:DH:21:VAL:HG22 | 29:DH:22:LYS:N | 2.33 | 0.44 |
| 29:DH:24:GLY:O | 29:DH:25:TYR:C | 2.55 | 0.44 |
| 29:DH:136:SER:C | 29:DH:137:GLU:HG3 | 2.38 | 0.44 |
| 33:DL:17:LYS:HZ1 | 33:DL:19:LEU:HD22 | 1.82 | 0.44 |
| 33:DL:84:LYS:O | 33:DL:85:VAL:HB | 2.17 | 0.44 |
| 41:DT:78:SER:OG | 41:DT:79:ASP:N | 2.51 | 0.44 |
| 43:DV:44:HIS:NE2 | 43:DV:85:LYS:HD3 | 2.32 | 0.44 |
| 44:DW:9:THR:HG23 | 44:DW:10:ARG:CG | 2.31 | 0.44 |
| 45:DX:4:CYS:CB | 45:DX:9:LYS:H | 2.28 | 0.44 |
| 46:DY:57:LEU:O | 46:DY:60:LYS:HE3 | 2.17 | 0.44 |
| 48:D0:16:ARG:O | 48:D0:19:ASP:N | 2.48 | 0.44 |
| 1:AA:198:G:N3 | 1:AA:199:A:C8 | 2.85 | 0.44 |
| 1:AA:363:A:C2 | 1:AA:364:A:C4 | 3.06 | 0.44 |
| 1:AA:452:A:H2' | 1:AA:453:G:O4' | 2.18 | 0.44 |
| 1:AA:1108:G:C5 | 1:AA:1109:C:C6 | 3.06 | 0.44 |
| 1:AA:1430:A:C2 | 1:AA:1471:U:C2 | 3.05 | 0.44 |
| 2:AB:209:VAL:O | 2:AB:211:LEU:N | 2.50 | 0.44 |
| 3:AC:155:ARG:HG2 | 3:AC:159:ALA:O | 2.16 | 0.44 |
| 4:AD:54:LEU:C | 4:AD:54:LEU:CD2 | 2.86 | 0.44 |
| 5:AE:31:SER:O | 5:AE:32:PHE:CD2 | 2.70 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:AM:21:ILE:H | 13:AM:21:ILE:HD12 | 1.82 | 0.44 |
| 15:AO:42:PHE:CD1 | 15:AO:55:LEU:HD22 | 2.53 | 0.44 |
| 22:BA:141:G:C5' | 22:BA:142:A:C8 | 3.01 | 0.44 |
| 22:BA:142:A:H5'' | 22:BA:142:A:H8 | 1.81 | 0.44 |
| 22:BA:163:C:O2' | 22:BA:164:C:P | 2.76 | 0.44 |
| 22:BA:575:A:OP2 | 22:BA:2055:C:C5 | 2.69 | 0.44 |
| 22:BA:898:C:C2' | 22:BA:899:A:H5' | 2.48 | 0.44 |
| 22:BA:948:C:H6 | 22:BA:948:C:O5' | 1.99 | 0.44 |
| 22:BA:1773:A:H2' | 22:BA:1774:C:H5' | 1.98 | 0.44 |
| 22:BA:1912:A:N1 | 22:BA:1919:A:N7 | 2.66 | 0.44 |
| 22:BA:2102:G:H2' | 22:BA:2103:C:C6 | 2.52 | 0.44 |
| 22:BA:2340:A:H2' | 22:BA:2341:G:C8 | 2.51 | 0.44 |
| 24:BC:29:PHE:CZ | 24:BC:31:PRO:HG2 | 2.52 | 0.44 |
| 25:BD:11:MET:H | 25:BD:26:VAL:H | 1.65 | 0.44 |
| 26:BE:154:ASP:OD2 | 26:BE:157:LEU:HB3 | 2.17 | 0.44 |
| 27:BF:127:TYR:O | 27:BF:128:SER:CB | 2.65 | 0.44 |
| 28:BG:116:LEU:HG | 28:BG:120:ILE:HD12 | 1.98 | 0.44 |
| 28:BG:168:VAL:O | 28:BG:168:VAL:HG23 | 2.17 | 0.44 |
| 29:BH:9:VAL:O | 29:BH:9:VAL:HG12 | 2.17 | 0.44 |
| 30:BI:30:GLN:NE2 | 30:BI:32:VAL:HB | 2.32 | 0.44 |
| 33:BL:56:PRO:HB2 | 33:BL:58:TYR:CD2 | 2.52 | 0.44 |
| 41:BT:24:MET:HE2 | 41:BT:27:SER:O | 2.17 | 0.44 |
| 43:BV:2:PHE:HD1 | 43:BV:50:MET:CE | 2.31 | 0.44 |
| 44:BW:30:VAL:HG23 | 44:BW:59:PHE:CD1 | 2.53 | 0.44 |
| 44:BW:37:VAL:C | 44:BW:38:ARG:CG | 2.82 | 0.44 |
| 52:B4:13:ASN:HD22 | 52:B4:13:ASN:H | 1.65 | 0.44 |
| 53:CA:219:U:H2' | 53:CA:220:G:C8 | 2.47 | 0.44 |
| 53:CA:398:U:H2' | 53:CA:399:G:C8 | 2.52 | 0.44 |
| 53:CA:502:A:C4' | 53:CA:550:G:H4' | 2.47 | 0.44 |
| 53:CA:522:C:O4' | 53:CA:536:C:H4' | 2.17 | 0.44 |
| 53:CA:976:G:O5' | 53:CA:1358:U:O2' | 2.34 | 0.44 |
| 53:CA:977:A:H4' | 53:CA:981:U:O2 | 2.17 | 0.44 |
| 53:CA:1009:U:H2' | 53:CA:1010:U:H6 | 1.80 | 0.44 |
| 53:CA:1153:G:C6 | 53:CA:1154:G:N7 | 2.85 | 0.44 |
| 2:CB:13:VAL:HG23 | 2:CB:211:LEU:HD22 | 2.00 | 0.44 |
| 2:CB:141:GLU:HG2 | 2:CB:145:ASN:HD21 | 1.82 | 0.44 |
| 3:CC:179:ALA:HB1 | 3:CC:202:PHE:CE1 | 2.52 | 0.44 |
| 5:CE:14:LEU:HD12 | 5:CE:15:ILE:H | 1.82 | 0.44 |
| 5:CE:100:GLU:CD | 5:CE:100:GLU:H | 2.21 | 0.44 |
| 11:CK:86:LYS:HA | 11:CK:113:THR:OG1 | 2.18 | 0.44 |
| 12:CL:82:ARG:HB2 | 12:CL:97:VAL:HG12 | 1.99 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 14:CN:8:ARG:HH11 | 14:CN:12:ARG:NH2 | 2.14 | 0.44 |
| 15:CO:60:SER:O | 15:CO:64:LYS:HG3 | 2.18 | 0.44 |
| 20:CT:64:GLY:O | 20:CT:67:HIS:HB2 | 2.17 | 0.44 |
| 57:DA:16:C:O3' | 48:D0:10:SER:OG | 2.36 | 0.44 |
| 57:DA:289:G:H2' | 57:DA:290:U:O4' | 2.18 | 0.44 |
| 57:DA:411:G:H4' | 57:DA:412:A:OP1 | 2.16 | 0.44 |
| 57:DA:443:A:C4 | 26:DE:40:ARG:HD3 | 2.52 | 0.44 |
| 57:DA:571:U:C6 | 57:DA:575:A:N6 | 2.86 | 0.44 |
| 57:DA:597:G:C2 | 57:DA:661:A:C2 | 3.05 | 0.44 |
| 57:DA:1331:G:C4 | 57:DA:1333:G:N7 | 2.85 | 0.44 |
| 57:DA:1465:G:C6 | 57:DA:1466:U:C4 | 3.05 | 0.44 |
| 57:DA:1526:C:H2' | 57:DA:1527:G:C8 | 2.53 | 0.44 |
| 57:DA:1528:A:N6 | 57:DA:1529:G:C2 | 2.85 | 0.44 |
| 57:DA:1710:G:H2' | 57:DA:1711:A:O4' | 2.17 | 0.44 |
| 57:DA:1865:U:O4 | 57:DA:1875:G:N3 | 2.50 | 0.44 |
| 57:DA:2056:G:C2 | 57:DA:2057:G:N7 | 2.85 | 0.44 |
| 57:DA:2061:G:C8 | 57:DA:2501:C:H4' | 2.53 | 0.44 |
| 57:DA:2653:U:C4 | 57:DA:2654:A:C5 | 3.05 | 0.44 |
| 58:DB:24:G:H4' | 58:DB:26:C:H5 | 1.81 | 0.44 |
| 24:DC:75:ALA:HB1 | 24:DC:93:VAL:HG22 | 1.99 | 0.44 |
| 25:DD:119:ALA:CB | 25:DD:163:GLY:C | 2.86 | 0.44 |
| 25:DD:124:ARG:NH1 | 25:DD:125:TRP:CZ2 | 2.85 | 0.44 |
| 59:DF:48:LEU:HG | 59:DF:49:LEU:CD2 | 2.47 | 0.44 |
| 28:DG:84:LYS:HB2 | 28:DG:132:LEU:H | 1.82 | 0.44 |
| 28:DG:91:VAL:N | 28:DG:93:TYR:CD2 | 2.85 | 0.44 |
| 28:DG:122:ALA:O | 28:DG:123:GLU:HB2 | 2.16 | 0.44 |
| 30:DI:11:GLN:OE1 | 30:DI:74:PRO:HG2 | 2.18 | 0.44 |
| 31:DJ:35:ARG:HH12 | 31:DJ:140:LEU:HD21 | 1.82 | 0.44 |
| 32:DK:100:PHE:N | 32:DK:100:PHE:CD1 | 2.84 | 0.44 |
| 37:DP:28:LYS:HB2 | 37:DP:28:LYS:NZ | 2.28 | 0.44 |
| 48:D0:16:ARG:O | 48:D0:17:SER:C | 2.56 | 0.44 |
| 51:D3:41:ARG:CZ | 51:D3:41:ARG:HB3 | 2.47 | 0.44 |
| 1:AA:4:U:O2 | 1:AA:4:U:H2' | 2.16 | 0.44 |
| 1:AA:376:G:H4' | 16:AP:5:ARG:HD2 | 1.99 | 0.44 |
| 1:AA:427:U:OP1 | 4:AD:12:ARG:NH2 | 2.50 | 0.44 |
| 1:AA:859:G:H2' | 1:AA:860:A:C8 | 2.53 | 0.44 |
| 1:AA:923:A:O2' | 1:AA:924:C:H5' | 2.17 | 0.44 |
| 1:AA:1180:A:H5'' | 1:AA:1181:G:OP2 | 2.17 | 0.44 |
| 1:AA:1363:A:O2' | 1:AA:1365:G:N7 | 2.41 | 0.44 |
| 2:AB:63:LYS:HD3 | 2:AB:63:LYS:C | 2.38 | 0.44 |
| 4:AD:57:LYS:HZ2 | 4:AD:61:ARG:HD3 | 1.81 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 7:AG:16:LYS:HB3 | 7:AG:43:TYR:CE1 | 2.52 | 0.44 |
| 8:AH:64:TYR:CD1 | 8:AH:64:TYR:N | 2.85 | 0.44 |
| 10:AJ:18:ILE:HG13 | 10:AJ:96:VAL:CG1 | 2.47 | 0.44 |
| 19:AS:42:ASN:ND2 | 19:AS:42:ASN:C | 2.70 | 0.44 |
| 22:BA:62:U:C4' | 22:BA:63:A:OP1 | 2.63 | 0.44 |
| 22:BA:1022:G:N2 | 22:BA:1142:A:H2 | 2.06 | 0.44 |
| 22:BA:1078:U:H5'' | 22:BA:1079:C:O5' | 2.17 | 0.44 |
| 22:BA:1287:A:OP2 | 35:BN:103:ARG:HG3 | 2.17 | 0.44 |
| 22:BA:1443:U:H2' | 22:BA:1444:G:C8 | 2.53 | 0.44 |
| 22:BA:1509:A:O2' | 22:BA:1510:G:OP2 | 2.35 | 0.44 |
| 22:BA:1654:A:O2' | 25:BD:118:PHE:CG | 2.57 | 0.44 |
| 22:BA:1733:G:N2 | 22:BA:1734:G:C4 | 2.86 | 0.44 |
| 22:BA:1739:A:C2 | 22:BA:1740:G:H1' | 2.53 | 0.44 |
| 22:BA:1984:G:C2 | 22:BA:1985:C:C6 | 3.05 | 0.44 |
| 22:BA:2276:G:OP2 | 22:BA:2276:G:H4' | 2.17 | 0.44 |
| 22:BA:2366:A:H2' | 22:BA:2367:G:O4' | 2.17 | 0.44 |
| 22:BA:2425:A:H1' | 22:BA:2427:C:C4 | 2.53 | 0.44 |
| 22:BA:2581:G:C4 | 22:BA:2610:C:C5 | 3.05 | 0.44 |
| 22:BA:2649:C:H2' | 22:BA:2650:U:C6 | 2.52 | 0.44 |
| 22:BA:2853:C:O2' | 22:BA:2854:G:H5' | 2.17 | 0.44 |
| 23:BB:5:U:H2' | 23:BB:6:G:H8 | 1.82 | 0.44 |
| 25:BD:121:THR:O | 25:BD:122:VAL:HG23 | 2.17 | 0.44 |
| 27:BF:21:TYR:HB3 | 27:BF:26:GLN:HB3 | 1.99 | 0.44 |
| 27:BF:131:VAL:CG2 | 27:BF:151:LEU:H | 2.31 | 0.44 |
| 29:BH:16:GLY:C | 29:BH:51:ARG:HH21 | 2.21 | 0.44 |
| 31:BJ:31:GLU:O | 31:BJ:32:LEU:C | 2.54 | 0.44 |
| 33:BL:93:ASN:HD22 | 33:BL:94:THR:HB | 1.82 | 0.44 |
| 36:BO:103:VAL:O | 36:BO:105:ALA:O | 2.36 | 0.44 |
| 37:BP:48:ALA:O | 37:BP:49:ILE:HG12 | 2.18 | 0.44 |
| 37:BP:50:ARG:HG2 | 37:BP:57:ALA:CA | 2.48 | 0.44 |
| 37:BP:92:ARG:O | 37:BP:93:LYS:HB2 | 2.17 | 0.44 |
| 39:BR:51:VAL:HB | 39:BR:52:PRO:HD3 | 1.90 | 0.44 |
| 41:BT:68:LYS:HG2 | 41:BT:69:ARG:H | 1.83 | 0.44 |
| 42:BU:25:LYS:HD2 | 42:BU:25:LYS:HA | 1.82 | 0.44 |
| 43:BV:29:ILE:HD13 | 43:BV:31:TYR:HD2 | 1.82 | 0.44 |
| 53:CA:117:G:H2' | 53:CA:118:U:O4' | 2.17 | 0.44 |
| 53:CA:406:G:N7 | 53:CA:495:A:H2' | 2.32 | 0.44 |
| 53:CA:729:A:H2' | 53:CA:730:G:H8 | 1.82 | 0.44 |
| 53:CA:959:A:N6 | 53:CA:1222:G:H4' | 2.32 | 0.44 |
| 53:CA:979:C:O2' | 53:CA:980:C:H5' | 2.16 | 0.44 |
| 3:CC:52:SER:HB3 | 3:CC:53:ARG:H | 1.64 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 3:CC:116:ALA:HB2 | 3:CC:199:VAL:CG2 | 2.46 | 0.44 |
| 3:CC:161:ILE:H | 3:CC:161:ILE:CD1 | 2.27 | 0.44 |
| 4:CD:89:LEU:HD23 | 4:CD:199:ILE:HD11 | 2.00 | 0.44 |
| 4:CD:154:VAL:O | 4:CD:158:LEU:HD12 | 2.18 | 0.44 |
| 54:CG:91:ARG:NH2 | 54:CG:92:PRO:HB2 | 2.31 | 0.44 |
| 54:CG:116:ALA:C | 54:CG:120:ALA:HB3 | 2.38 | 0.44 |
| 12:CL:80:LEU:HB3 | 12:CL:97:VAL:CG2 | 2.47 | 0.44 |
| 55:CM:16:ILE:HD12 | 55:CM:16:ILE:H | 1.83 | 0.44 |
| 18:CR:19:GLU:CG | 18:CR:20:ILE:N | 2.80 | 0.44 |
| 57:DA:61:C:O2' | 57:DA:62:U:C5' | 2.54 | 0.44 |
| 57:DA:265:A:N6 | 57:DA:428:A:O4' | 2.51 | 0.44 |
| 57:DA:422:A:C2 | 57:DA:423:A:C5 | 3.05 | 0.44 |
| 57:DA:481:G:HO2' | 57:DA:507:A:N6 | 2.15 | 0.44 |
| 57:DA:533:G:O2' | 57:DA:534:U:H5' | 2.18 | 0.44 |
| 57:DA:584:C:C2 | 57:DA:585:G:C8 | 3.05 | 0.44 |
| 57:DA:1059:G:C6 | 57:DA:1080:A:N1 | 2.86 | 0.44 |
| 57:DA:1338:G:H4' | 41:DT:18:GLU:CG | 2.48 | 0.44 |
| 57:DA:1440:U:C2 | 57:DA:1441:G:C8 | 3.05 | 0.44 |
| 57:DA:1451:C:H4' | 57:DA:1452:G:O5' | 2.17 | 0.44 |
| 57:DA:1596:A:C6 | 57:DA:1597:A:C6 | 3.05 | 0.44 |
| 57:DA:1731:G:C4' | 57:DA:1732:C:OP1 | 2.63 | 0.44 |
| 57:DA:1761:C:H2' | 57:DA:1762:A:O4' | 2.18 | 0.44 |
| 57:DA:1926:U:C2 | 57:DA:1929:G:C2 | 3.05 | 0.44 |
| 57:DA:1967:C:H2' | 57:DA:1968:G:C8 | 2.53 | 0.44 |
| 57:DA:1972:G:O2' | 57:DA:1973:G:H5' | 2.18 | 0.44 |
| 57:DA:1972:G:H2' | 57:DA:1973:G:C8 | 2.53 | 0.44 |
| 57:DA:2040:G:C6 | 57:DA:2041:U:C4 | 3.06 | 0.44 |
| 57:DA:2182:U:H2' | 57:DA:2183:A:C8 | 2.53 | 0.44 |
| 57:DA:2199:A:C6 | 57:DA:2225:A:C4 | 3.06 | 0.44 |
| 57:DA:2209:G:C6 | 57:DA:2216:G:N1 | 2.86 | 0.44 |
| 57:DA:2413:G:O2' | 57:DA:2414:G:H5' | 2.15 | 0.44 |
| 57:DA:2446:G:H3' | 57:DA:2447:G:H5'' | 1.98 | 0.44 |
| 57:DA:2464:G:H2' | 57:DA:2465:C:O4' | 2.17 | 0.44 |
| 58:DB:17:C:N3 | 58:DB:68:C:N3 | 2.65 | 0.44 |
| 25:DD:202:ILE:HD12 | 25:DD:202:ILE:N | 2.32 | 0.44 |
| 26:DE:135:ALA:C | 26:DE:137:LYS:H | 2.20 | 0.44 |
| 28:DG:90:GLY:HA3 | 28:DG:93:TYR:CZ | 2.52 | 0.44 |
| 28:DG:126:THR:HG22 | 28:DG:127:GLN:N | 2.32 | 0.44 |
| 31:DJ:81:ILE:HB | 31:DJ:82:GLY:H | 1.44 | 0.44 |
| 34:DM:72:PRO:O | 34:DM:73:ILE:CB | 2.61 | 0.44 |
| 35:DN:2:ARG:CD | 35:DN:5:LYS:HB3 | 2.48 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:DP:59:THR:OG1 | 37:DP:72:VAL:HG12 | 2.17 | 0.44 |
| 41:DT:55:VAL:HG22 | 41:DT:56:GLU:N | 2.32 | 0.44 |
| 1:AA:222:C:O2' | 1:AA:223:A:H5' | 2.18 | 0.44 |
| 1:AA:542:G:O2' | 1:AA:543:U:H5' | 2.17 | 0.44 |
| 1:AA:1097:C:H2' | 1:AA:1098:C:C6 | 2.51 | 0.44 |
| 2:AB:138:ARG:HB2 | 2:AB:138:ARG:HH11 | 1.83 | 0.44 |
| 4:AD:50:TYR:O | 4:AD:53:GLN:HB3 | 2.18 | 0.44 |
| 4:AD:97:LEU:C | 4:AD:97:LEU:HD23 | 2.37 | 0.44 |
| 4:AD:116:LEU:HB3 | 4:AD:122:ILE:CD1 | 2.47 | 0.44 |
| 8:AH:10:LEU:HD11 | 8:AH:126:CYS:HB2 | 1.98 | 0.44 |
| 8:AH:10:LEU:HD23 | 8:AH:10:LEU:HA | 1.71 | 0.44 |
| 9:AI:49:GLN:C | 9:AI:51:LEU:N | 2.70 | 0.44 |
| 9:AI:60:LEU:HD23 | 9:AI:60:LEU:H | 1.83 | 0.44 |
| 9:AI:111:GLU:HG2 | 9:AI:120:ALA:HB1 | 1.99 | 0.44 |
| 11:AK:24:ALA:CA | 11:AK:29:THR:HG23 | 2.46 | 0.44 |
| 15:AO:68:TYR:HA | 15:AO:71:ARG:CZ | 2.47 | 0.44 |
| 17:AQ:20:ILE:CB | 17:AQ:47:ASP:OD1 | 2.65 | 0.44 |
| 20:AT:73:ARG:O | 20:AT:76:ALA:HB3 | 2.18 | 0.44 |
| 21:AU:44:ARG:N | 21:AU:44:ARG:HD2 | 2.33 | 0.44 |
| 22:BA:38:A:N3 | 26:BE:43:THR:HB | 2.33 | 0.44 |
| 22:BA:136:G:C6 | 22:BA:142:A:N6 | 2.85 | 0.44 |
| 22:BA:303:G:C5 | 22:BA:304:U:C5 | 3.05 | 0.44 |
| 22:BA:522:A:C6 | 22:BA:523:C:N4 | 2.85 | 0.44 |
| 22:BA:1136:G:N2 | 22:BA:1137:G:C4 | 2.86 | 0.44 |
| 22:BA:1190:G:P | 33:BL:32:GLY:HA2 | 2.57 | 0.44 |
| 22:BA:1263:U:O2' | 48:B0:7:PRO:HD2 | 2.17 | 0.44 |
| 22:BA:1746:A:C2 | 22:BA:1747:U:N3 | 2.85 | 0.44 |
| 22:BA:1858:A:O2' | 22:BA:1859:U:O5' | 2.36 | 0.44 |
| 22:BA:2037:A:H2' | 22:BA:2038:G:O4' | 2.17 | 0.44 |
| 22:BA:2079:U:C2 | 22:BA:2080:A:C8 | 3.06 | 0.44 |
| 22:BA:2403:C:N4 | 22:BA:2415:G:C6 | 2.85 | 0.44 |
| 22:BA:2691:C:O5' | 22:BA:2691:C:H6 | 1.99 | 0.44 |
| 22:BA:2820:A:HO2' | 22:BA:2821:A:P | 2.41 | 0.44 |
| 23:BB:65:U:H3' | 23:BB:108:A:N6 | 2.33 | 0.44 |
| 24:BC:21:PRO:C | 24:BC:23:LEU:H | 2.20 | 0.44 |
| 24:BC:140:VAL:HG11 | 24:BC:189:ALA:HB1 | 1.97 | 0.44 |
| 24:BC:142:ASN:CG | 24:BC:142:ASN:O | 2.55 | 0.44 |
| 26:BE:147:LEU:O | 26:BE:148:ILE:C | 2.54 | 0.44 |
| 27:BF:174:PHE:CD1 | 27:BF:176:PHE:CE1 | 3.05 | 0.44 |
| 28:BG:85:LYS:HG2 | 28:BG:131:VAL:CB | 2.47 | 0.44 |
| 32:BK:2:ILE:O | 32:BK:3:GLN:HB3 | 2.18 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 32:BK:101:GLY:O | 32:BK:120:PRO:HD2 | 2.17 | 0.44 |
| 34:BM:21:ALA:CB | 34:BM:100:LYS:N | 2.81 | 0.44 |
| 37:BP:28:LYS:HB2 | 37:BP:82:SER:HB3 | 2.00 | 0.44 |
| 41:BT:52:GLU:O | 41:BT:52:GLU:HG3 | 2.17 | 0.44 |
| 43:BV:10:LYS:NZ | 43:BV:10:LYS:HB2 | 2.32 | 0.44 |
| 44:BW:50:VAL:HB | 44:BW:61:LYS:HZ2 | 1.82 | 0.44 |
| 48:B0:42:ILE:CD1 | 48:B0:48:TYR:HB2 | 2.48 | 0.44 |
| 52:B4:4:ARG:HH11 | 52:B4:4:ARG:CB | 2.29 | 0.44 |
| 53:CA:86:G:O2' | 53:CA:87:C:P | 2.76 | 0.44 |
| 53:CA:759:A:H2' | 53:CA:760:G:H5' | 2.00 | 0.44 |
| 53:CA:765:G:C5 | 53:CA:812:G:C5 | 3.06 | 0.44 |
| 53:CA:889:A:O2' | 53:CA:890:G:O5' | 2.35 | 0.44 |
| 53:CA:977:A:H8 | 53:CA:1223:C:C4 | 2.36 | 0.44 |
| 53:CA:1160:G:O6 | 53:CA:1181:G:C6 | 2.70 | 0.44 |
| 53:CA:1226:C:H5 | 55:CM:102:LYS:HA | 1.79 | 0.44 |
| 53:CA:1372:U:H5'' | 9:CI:71:ILE:CD1 | 2.48 | 0.44 |
| 53:CA:1372:U:H5'' | 9:CI:71:ILE:HD11 | 1.98 | 0.44 |
| 2:CB:164:ASP:HB3 | 2:CB:167:HIS:CB | 2.47 | 0.44 |
| 4:CD:24:VAL:HG23 | 4:CD:25:ARG:CB | 2.44 | 0.44 |
| 4:CD:57:LYS:HE3 | 4:CD:61:ARG:HD2 | 2.00 | 0.44 |
| 5:CE:14:LEU:CD1 | 5:CE:36:THR:HG22 | 2.48 | 0.44 |
| 11:CK:103:GLY:O | 11:CK:104:PHE:C | 2.56 | 0.44 |
| 12:CL:2:THR:HG22 | 12:CL:4:ASN:N | 2.33 | 0.44 |
| 18:CR:39:VAL:HG12 | 18:CR:40:PRO:CD | 2.47 | 0.44 |
| 20:CT:26:MET:CE | 20:CT:56:ILE:HD13 | 2.43 | 0.44 |
| 21:CU:25:ALA:O | 21:CU:26:GLY:C | 2.55 | 0.44 |
| 57:DA:78:U:H2' | 57:DA:79:C:C6 | 2.52 | 0.44 |
| 57:DA:227:A:H61 | 57:DA:410:G:H1' | 1.81 | 0.44 |
| 57:DA:324:A:N6 | 57:DA:338:G:O2' | 2.47 | 0.44 |
| 57:DA:325:G:H2' | 57:DA:326:G:H8 | 1.82 | 0.44 |
| 57:DA:370:G:H8 | 57:DA:370:G:OP2 | 2.01 | 0.44 |
| 57:DA:460:A:OP2 | 50:D2:41:ARG:NH1 | 2.50 | 0.44 |
| 57:DA:529:A:C8 | 57:DA:2042:A:N1 | 2.86 | 0.44 |
| 57:DA:657:U:O2' | 57:DA:658:U:H5' | 2.18 | 0.44 |
| 57:DA:732:C:H2' | 57:DA:733:G:O4' | 2.18 | 0.44 |
| 57:DA:1268:A:O2' | 57:DA:1269:A:O4' | 2.23 | 0.44 |
| 57:DA:1506:U:O5' | 57:DA:1506:U:H6 | 1.99 | 0.44 |
| 57:DA:1594:U:H2' | 57:DA:1595:C:O4' | 2.17 | 0.44 |
| 57:DA:1686:C:H2' | 57:DA:1687:G:O4' | 2.17 | 0.44 |
| 57:DA:2015:A:H5'' | 57:DA:2016:U:OP2 | 2.17 | 0.44 |
| 57:DA:2482:A:H2' | 57:DA:2483:C:H6 | 1.83 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:2533:U:H2' | 57:DA:2534:A:O4' | 2.17 | 0.44 |
| 57:DA:2654:A:N3 | 57:DA:2656:U:C4 | 2.86 | 0.44 |
| 57:DA:2663:G:H2' | 57:DA:2664:G:C8 | 2.52 | 0.44 |
| 57:DA:2674:G:H4' | 32:DK:30:ARG:HD2 | 1.99 | 0.44 |
| 57:DA:2800:A:N3 | 57:DA:2801:G:H1' | 2.32 | 0.44 |
| 24:DC:30:ALA:N | 24:DC:31:PRO:CD | 2.81 | 0.44 |
| 24:DC:106:PRO:CB | 24:DC:141:HIS:HE1 | 2.26 | 0.44 |
| 25:DD:140:HIS:N | 25:DD:140:HIS:CD2 | 2.85 | 0.44 |
| 29:DH:9:VAL:HG13 | 29:DH:10:ALA:H | 1.83 | 0.44 |
| 30:DI:18:ASN:HB3 | 30:DI:19:PRO:HD3 | 1.99 | 0.44 |
| 31:DJ:43:GLU:C | 31:DJ:45:THR:HG22 | 2.37 | 0.44 |
| 32:DK:59:LYS:CG | 32:DK:89:ASN:HA | 2.47 | 0.44 |
| 32:DK:61:VAL:HG13 | 32:DK:87:LEU:CD2 | 2.47 | 0.44 |
| 35:DN:33:ILE:HA | 35:DN:114:GLU:HB2 | 2.00 | 0.44 |
| 35:DN:72:ASP:O | 35:DN:76:VAL:HG13 | 2.17 | 0.44 |
| 36:DO:30:ARG:NH1 | 36:DO:102:ARG:HB2 | 2.31 | 0.44 |
| 38:DQ:64:ILE:HD12 | 38:DQ:95:ALA:HB1 | 1.98 | 0.44 |
| 39:DR:25:LEU:H | 39:DR:94:THR:HG21 | 1.82 | 0.44 |
| 44:DW:37:VAL:CG2 | 44:DW:38:ARG:NH1 | 2.81 | 0.44 |
| 1:AA:129:A:O2' | 1:AA:130:A:C5' | 2.63 | 0.44 |
| 1:AA:173:U:H1' | 1:AA:197:A:C6 | 2.53 | 0.44 |
| 1:AA:282:A:N3 | 1:AA:282:A:H2' | 2.33 | 0.44 |
| 1:AA:321:A:N7 | 1:AA:328:C:O2' | 2.43 | 0.44 |
| 1:AA:492:C:H2' | 1:AA:493:A:C8 | 2.52 | 0.44 |
| 1:AA:760:G:N7 | 1:AA:761:G:C8 | 2.85 | 0.44 |
| 1:AA:1093:A:N3 | 1:AA:1095:U:H5' | 2.32 | 0.44 |
| 1:AA:1216:A:C2 | 1:AA:1217:C:C4 | 3.06 | 0.44 |
| 1:AA:1307:U:H2' | 1:AA:1308:U:C6 | 2.51 | 0.44 |
| 1:AA:1322:C:O2' | 1:AA:1323:G:O5' | 2.36 | 0.44 |
| 1:AA:1505:G:P | 63:AA:1872:HOH:O | 2.76 | 0.44 |
| 2:AB:132:GLU:O | 2:AB:136:ARG:HB2 | 2.17 | 0.44 |
| 2:AB:187:ASP:HB2 | 2:AB:203:ASP:CB | 2.47 | 0.44 |
| 4:AD:21:LYS:O | 4:AD:23:GLY:N | 2.51 | 0.44 |
| 5:AE:45:VAL:CG2 | 5:AE:117:ALA:HA | 2.47 | 0.44 |
| 5:AE:100:GLU:HB3 | 5:AE:121:ASN:CB | 2.48 | 0.44 |
| 6:AF:3:HIS:CB | 6:AF:92:THR:HG23 | 2.48 | 0.44 |
| 8:AH:4:ASP:OD1 | 8:AH:76:ARG:NH1 | 2.51 | 0.44 |
| 9:AI:39:GLY:O | 9:AI:40:ARG:HB2 | 2.17 | 0.44 |
| 12:AL:1:ALA:HB3 | 12:AL:5:GLN:OE1 | 2.18 | 0.44 |
| 20:AT:27:MET:SD | 20:AT:66:ILE:HD13 | 2.57 | 0.44 |
| 22:BA:65:U:O2' | 22:BA:66:C:H5' | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:958:U:H5' | 34:BM:14:LYS:HZ2 | 1.82 | 0.44 |
| 22:BA:1008:A:N6 | 22:BA:1136:G:C6 | 2.86 | 0.44 |
| 22:BA:1082:U:C2 | 22:BA:1083:U:O2 | 2.71 | 0.44 |
| 22:BA:1163:G:C2 | 22:BA:1164:C:C5 | 3.05 | 0.44 |
| 22:BA:2059:A:N6 | 22:BA:2503:A:H2' | 2.33 | 0.44 |
| 22:BA:2140:G:H8 | 22:BA:2140:G:OP2 | 2.01 | 0.44 |
| 22:BA:2439:A:H4' | 22:BA:2440:C:O5' | 2.18 | 0.44 |
| 22:BA:2649:C:H2' | 22:BA:2650:U:H6 | 1.83 | 0.44 |
| 24:BC:159:THR:OG1 | 24:BC:194:VAL:HG11 | 2.16 | 0.44 |
| 25:BD:106:LYS:CB | 25:BD:206:ALA:H | 2.30 | 0.44 |
| 27:BF:64:PRO:HA | 27:BF:88:VAL:CG2 | 2.44 | 0.44 |
| 29:BH:41:LYS:O | 29:BH:44:ILE:HG12 | 2.18 | 0.44 |
| 29:BH:110:VAL:O | 29:BH:111:ALA:HB2 | 2.18 | 0.44 |
| 30:BI:107:GLU:HA | 30:BI:110:GLN:HB3 | 1.98 | 0.44 |
| 31:BJ:24:THR:HA | 31:BJ:63:ALA:HB3 | 1.99 | 0.44 |
| 31:BJ:40:HIS:C | 31:BJ:41:LYS:HG2 | 2.38 | 0.44 |
| 32:BK:116:ILE:O | 32:BK:118:LEU:O | 2.35 | 0.44 |
| 36:BO:3:LYS:HG3 | 36:BO:4:LYS:N | 2.33 | 0.44 |
| 39:BR:74:ILE:HB | 39:BR:87:GLN:HB3 | 1.99 | 0.44 |
| 40:BS:24:ILE:CG2 | 40:BS:71:VAL:HG11 | 2.47 | 0.44 |
| 44:BW:49:ASN:CA | 44:BW:61:LYS:HB2 | 2.39 | 0.44 |
| 45:BX:42:GLU:OE2 | 45:BX:44:ARG:NH2 | 2.50 | 0.44 |
| 52:B4:33:HIS:O | 52:B4:35:GLN:HG3 | 2.17 | 0.44 |
| 53:CA:71:A:N3 | 53:CA:72:A:C8 | 2.86 | 0.44 |
| 53:CA:356:A:H2' | 53:CA:357:G:O4' | 2.18 | 0.44 |
| 53:CA:1031:C:H5' | 53:CA:1032:G:C5' | 2.44 | 0.44 |
| 53:CA:1071:C:H5' | 5:CE:53:ARG:NH1 | 2.33 | 0.44 |
| 53:CA:1420:U:H2' | 53:CA:1421:G:O4' | 2.17 | 0.44 |
| 53:CA:1507:A:C6 | 53:CA:1530:G:C5 | 3.05 | 0.44 |
| 2:CB:148:GLY:O | 2:CB:150:ILE:N | 2.50 | 0.44 |
| 4:CD:116:LEU:HD21 | 4:CD:153:ARG:HD3 | 1.98 | 0.44 |
| 54:CG:20:GLU:O | 54:CG:23:ALA:HB3 | 2.18 | 0.44 |
| 9:CI:4:GLN:H | 9:CI:4:GLN:HG2 | 1.54 | 0.44 |
| 9:CI:6:TYR:CE2 | 9:CI:17:ARG:HA | 2.47 | 0.44 |
| 12:CL:9:LYS:HE2 | 12:CL:9:LYS:HB2 | 1.68 | 0.44 |
| 55:CM:12:LYS:HA | 55:CM:12:LYS:CE | 2.44 | 0.44 |
| 14:CN:8:ARG:NH1 | 14:CN:12:ARG:HH22 | 2.16 | 0.44 |
| 57:DA:192:C:OP1 | 57:DA:2243:U:OP1 | 2.35 | 0.44 |
| 57:DA:211:C:H2' | 57:DA:212:G:O4' | 2.18 | 0.44 |
| 57:DA:304:U:HO2' | 57:DA:305:C:H6 | 1.64 | 0.44 |
| 57:DA:466:A:H2 | 57:DA:795:C:O2 | 2.00 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:519:U:H5'' | 40:DS:25:ARG:NH2 | 2.32 | 0.44 |
| 57:DA:627:A:N6 | 33:DL:111:ILE:HB | 2.33 | 0.44 |
| 57:DA:669:G:N3 | 57:DA:669:G:H2' | 2.33 | 0.44 |
| 57:DA:801:G:H4' | 63:DA:3336:HOH:O | 2.18 | 0.44 |
| 57:DA:1048:A:C2 | 57:DA:1049:C:N3 | 2.85 | 0.44 |
| 57:DA:1117:C:C2' | 57:DA:1118:C:O5' | 2.66 | 0.44 |
| 57:DA:1476:U:C5 | 57:DA:1514:G:C2 | 3.05 | 0.44 |
| 57:DA:1560:G:H2' | 57:DA:1561:C:H6 | 1.83 | 0.44 |
| 57:DA:1712:U:C4 | 57:DA:1713:A:C6 | 3.06 | 0.44 |
| 57:DA:1721:G:HO2' | 57:DA:1722:A:P | 2.41 | 0.44 |
| 57:DA:1829:A:H2' | 57:DA:1830:C:O4' | 2.18 | 0.44 |
| 57:DA:1840:G:H2' | 57:DA:1841:U:H6 | 1.83 | 0.44 |
| 57:DA:1867:G:H2' | 57:DA:1868:C:C6 | 2.53 | 0.44 |
| 57:DA:2476:A:C2' | 57:DA:2477:U:H5' | 2.48 | 0.44 |
| 57:DA:2590:A:H5'' | 24:DC:237:ARG:HE | 1.82 | 0.44 |
| 24:DC:224:MET:O | 24:DC:232:GLY:HA2 | 2.17 | 0.44 |
| 26:DE:80:SER:O | 26:DE:81:GLY:O | 2.36 | 0.44 |
| 26:DE:153:LEU:HD12 | 26:DE:170:ARG:O | 2.18 | 0.44 |
| 59:DF:169:LEU:HB3 | 59:DF:174:PHE:HB2 | 2.00 | 0.44 |
| 32:DK:13:ASN:HD22 | 32:DK:13:ASN:N | 2.08 | 0.44 |
| 34:DM:32:GLY:HA2 | 34:DM:104:GLU:HA | 2.00 | 0.44 |
| 34:DM:76:LYS:HG2 | 34:DM:80:VAL:HG11 | 2.00 | 0.44 |
| 34:DM:96:ILE:CD1 | 34:DM:102:LEU:HD11 | 2.43 | 0.44 |
| 35:DN:20:MET:C | 35:DN:22:ARG:H | 2.21 | 0.44 |
| 38:DQ:78:PHE:CE2 | 38:DQ:109:VAL:HG22 | 2.53 | 0.44 |
| 41:DT:29:THR:HA | 41:DT:87:LEU:HB2 | 2.00 | 0.44 |
| 41:DT:74:ILE:HG13 | 41:DT:75:GLY:H | 1.82 | 0.44 |
| 44:DW:36:ILE:HG22 | 44:DW:37:VAL:O | 2.17 | 0.44 |
| 1:AA:45:G:H5'' | 1:AA:307:C:O2' | 2.17 | 0.44 |
| 1:AA:125:U:C2' | 1:AA:126:G:H5' | 2.47 | 0.44 |
| 1:AA:189:A:H2' | 1:AA:190:A:C8 | 2.53 | 0.44 |
| 1:AA:272:C:H2' | 1:AA:273:U:C6 | 2.47 | 0.44 |
| 1:AA:560:A:OP2 | 1:AA:566:G:N2 | 2.50 | 0.44 |
| 1:AA:886:G:H2' | 1:AA:887:G:O4' | 2.18 | 0.44 |
| 1:AA:924:C:H2' | 1:AA:925:G:H8 | 1.83 | 0.44 |
| 1:AA:1062:U:H2' | 1:AA:1063:C:C5 | 2.52 | 0.44 |
| 1:AA:1191:A:C8 | 1:AA:1191:A:H5' | 2.53 | 0.44 |
| 1:AA:1261:A:C2 | 1:AA:1275:A:C6 | 3.05 | 0.44 |
| 2:AB:103:TRP:NE1 | 2:AB:150:ILE:HD11 | 2.32 | 0.44 |
| 3:AC:138:GLN:C | 3:AC:140:ALA:H | 2.22 | 0.44 |
| 6:AF:10:VAL:CG1 | 6:AF:11:HIS:N | 2.80 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:AK:76:TYR:N | 11:AK:76:TYR:HD1 | 2.15 | 0.44 |
| 11:AK:124:LYS:HE3 | 21:AU:34:ARG:HG2 | 2.00 | 0.44 |
| 13:AM:10:ASP:O | 13:AM:11:HIS:HB2 | 2.18 | 0.44 |
| 14:AN:86:ALA:O | 14:AN:91:GLU:HB2 | 2.18 | 0.44 |
| 22:BA:55:G:H2' | 22:BA:56:A:H8 | 1.83 | 0.44 |
| 22:BA:89:A:O2' | 22:BA:90:U:H5' | 2.17 | 0.44 |
| 22:BA:359:G:C6 | 22:BA:360:U:C2 | 3.06 | 0.44 |
| 22:BA:360:U:C4 | 22:BA:361:G:C6 | 3.06 | 0.44 |
| 22:BA:571:U:C4 | 22:BA:575:A:C4 | 3.05 | 0.44 |
| 22:BA:734:A:C4 | 22:BA:735:A:C8 | 3.06 | 0.44 |
| 22:BA:1075:C:C4 | 22:BA:1076:C:N4 | 2.86 | 0.44 |
| 22:BA:1560:G:H2' | 22:BA:1561:C:H6 | 1.83 | 0.44 |
| 22:BA:2365:G:H2' | 22:BA:2366:A:C8 | 2.53 | 0.44 |
| 22:BA:2400:G:O2' | 22:BA:2401:U:H5' | 2.18 | 0.44 |
| 22:BA:2870:C:C4 | 22:BA:2871:U:C4 | 3.06 | 0.44 |
| 23:BB:28:C:OP1 | 36:BO:36:TYR:OH | 2.33 | 0.44 |
| 25:BD:125:TRP:CE3 | 25:BD:160:LYS:HD3 | 2.53 | 0.44 |
| 27:BF:19:PHE:HB2 | 27:BF:21:TYR:CE1 | 2.53 | 0.44 |
| 27:BF:41:GLU:HB2 | 27:BF:48:LEU:HD23 | 2.00 | 0.44 |
| 27:BF:142:TYR:HA | 27:BF:145:VAL:HG13 | 2.00 | 0.44 |
| 33:BL:95:LEU:HB3 | 33:BL:100:ILE:HG13 | 1.99 | 0.44 |
| 36:BO:54:VAL:O | 36:BO:54:VAL:HG22 | 2.17 | 0.44 |
| 37:BP:19:PHE:O | 37:BP:20:ARG:CB | 2.64 | 0.44 |
| 37:BP:25:VAL:HG11 | 37:BP:46:VAL:HG23 | 1.98 | 0.44 |
| 38:BQ:82:LEU:HD23 | 38:BQ:112:ALA:HB2 | 2.00 | 0.44 |
| 38:BQ:97:ILE:HD11 | 38:BQ:104:ALA:C | 2.38 | 0.44 |
| 39:BR:46:GLU:HG2 | 39:BR:47:VAL:N | 2.32 | 0.44 |
| 41:BT:83:ALA:O | 41:BT:84:TYR:HB2 | 2.18 | 0.44 |
| 42:BU:85:ARG:HG3 | 42:BU:86:PHE:O | 2.18 | 0.44 |
| 44:BW:25:PHE:C | 44:BW:27:GLY:H | 2.22 | 0.44 |
| 44:BW:71:LYS:HB3 | 44:BW:72:GLY:H | 1.66 | 0.44 |
| 45:BX:10:ARG:HB3 | 45:BX:10:ARG:CZ | 2.47 | 0.44 |
| 53:CA:110:C:H2' | 53:CA:111:G:O4' | 2.18 | 0.44 |
| 53:CA:327:A:C2 | 53:CA:329:A:C4 | 3.06 | 0.44 |
| 53:CA:577:G:HO2' | 53:CA:578:C:H6 | 1.66 | 0.44 |
| 53:CA:948:C:H5'' | 55:CM:104:ASN:CB | 2.41 | 0.44 |
| 53:CA:982:U:H4' | 53:CA:983:A:C5' | 2.47 | 0.44 |
| 53:CA:1125:U:C5 | 10:CJ:40:ILE:HG21 | 2.53 | 0.44 |
| 53:CA:1146:A:H2' | 53:CA:1147:C:C5 | 2.52 | 0.44 |
| 53:CA:1206:G:H2' | 53:CA:1207:G:O4' | 2.18 | 0.44 |
| 53:CA:1217:C:H2' | 53:CA:1218:C:H6 | 1.82 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:CB:26:MET:HG2 | 2:CB:188:THR:HA | 1.99 | 0.44 |
| 3:CC:76:ILE:HG12 | 3:CC:83:VAL:CG1 | 2.47 | 0.44 |
| 4:CD:198:LEU:HD23 | 4:CD:198:LEU:HA | 1.68 | 0.44 |
| 5:CE:15:ILE:HD11 | 5:CE:37:VAL:CG2 | 2.48 | 0.44 |
| 5:CE:81:GLN:OE1 | 5:CE:149:PRO:HD3 | 2.18 | 0.44 |
| 6:CF:38:ARG:HH11 | 6:CF:63:ASN:ND2 | 2.16 | 0.44 |
| 9:CI:16:ALA:HA | 9:CI:65:THR:O | 2.18 | 0.44 |
| 12:CL:36:VAL:HA | 12:CL:52:CYS:HA | 1.99 | 0.44 |
| 55:CM:14:ALA:HB1 | 55:CM:33:LEU:CD1 | 2.47 | 0.44 |
| 14:CN:78:LEU:HD12 | 14:CN:78:LEU:N | 2.33 | 0.44 |
| 57:DA:3:U:H2' | 57:DA:4:U:H6 | 1.82 | 0.44 |
| 57:DA:136:G:H8 | 57:DA:136:G:O5' | 2.00 | 0.44 |
| 57:DA:136:G:N2 | 57:DA:144:A:C2 | 2.86 | 0.44 |
| 57:DA:413:C:N4 | 63:DA:3593:HOH:O | 2.50 | 0.44 |
| 57:DA:455:C:C3' | 57:DA:456:C:H5' | 2.45 | 0.44 |
| 57:DA:468:G:H5'' | 26:DE:55:SER:CB | 2.48 | 0.44 |
| 57:DA:628:G:H2' | 57:DA:629:G:H8 | 1.82 | 0.44 |
| 57:DA:845:A:N3 | 57:DA:847:U:H1' | 2.32 | 0.44 |
| 57:DA:858:G:C5 | 57:DA:2268:A:C2 | 3.06 | 0.44 |
| 57:DA:969:G:H2' | 57:DA:970:U:C6 | 2.53 | 0.44 |
| 57:DA:975:A:O2' | 57:DA:976:G:H5' | 2.18 | 0.44 |
| 57:DA:1361:G:O2' | 57:DA:1362:C:H5' | 2.18 | 0.44 |
| 57:DA:1820:U:O2 | 24:DC:199:HIS:HD2 | 2.01 | 0.44 |
| 57:DA:2135:A:OP2 | 57:DA:2135:A:C8 | 2.57 | 0.44 |
| 57:DA:2199:A:N6 | 57:DA:2225:A:C8 | 2.86 | 0.44 |
| 57:DA:2209:G:C5 | 57:DA:2210:U:C4 | 3.06 | 0.44 |
| 57:DA:2221:G:C5 | 57:DA:2222:C:C5 | 3.06 | 0.44 |
| 57:DA:2353:G:N3 | 44:DW:30:VAL:HG13 | 2.33 | 0.44 |
| 57:DA:2408:U:O2' | 57:DA:2409:G:H5' | 2.17 | 0.44 |
| 57:DA:2482:A:H2' | 57:DA:2483:C:C6 | 2.52 | 0.44 |
| 57:DA:2500:U:O2 | 57:DA:2504:U:C4 | 2.71 | 0.44 |
| 57:DA:2788:C:H2' | 57:DA:2789:C:H6 | 1.83 | 0.44 |
| 57:DA:2788:C:H1' | 57:DA:2809:A:H2 | 1.83 | 0.44 |
| 57:DA:2848:G:O2' | 57:DA:2849:U:P | 2.76 | 0.44 |
| 24:DC:103:ILE:HD12 | 24:DC:104:LEU:H | 1.83 | 0.44 |
| 25:DD:110:THR:HG23 | 25:DD:171:THR:HG22 | 1.98 | 0.44 |
| 59:DF:12:VAL:HG12 | 59:DF:16:MET:HG3 | 2.00 | 0.44 |
| 29:DH:80:ILE:HB | 29:DH:101:ASP:CG | 2.39 | 0.44 |
| 35:DN:5:LYS:HG2 | 35:DN:6:SER:N | 2.23 | 0.44 |
| 38:DQ:13:HIS:O | 38:DQ:17:LEU:HB2 | 2.18 | 0.44 |
| 40:DS:103:ILE:HD12 | 40:DS:103:ILE:N | 2.32 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 41:DT:20:ALA:O | 41:DT:31:VAL:HG13 | 2.18 | 0.44 |
| 42:DU:3:LYS:O | 42:DU:4:ILE:C | 2.56 | 0.44 |
| 1:AA:92:U:O2' | 1:AA:93:U:C5' | 2.65 | 0.44 |
| 1:AA:127:G:N2 | 1:AA:235:C:C2 | 2.86 | 0.44 |
| 1:AA:210:C:H4' | 1:AA:211:G:C2 | 2.52 | 0.44 |
| 1:AA:247:G:C5 | 1:AA:278:G:N2 | 2.85 | 0.44 |
| 1:AA:258:G:C6 | 1:AA:259:G:C5 | 3.06 | 0.44 |
| 1:AA:486:U:H5'' | 1:AA:486:U:H6 | 1.76 | 0.44 |
| 1:AA:737:C:C2 | 1:AA:738:C:C5 | 3.06 | 0.44 |
| 1:AA:769:G:C2' | 1:AA:770:C:H5' | 2.48 | 0.44 |
| 1:AA:807:A:C5 | 1:AA:808:C:C5 | 3.06 | 0.44 |
| 1:AA:864:A:C3' | 1:AA:865:A:C8 | 3.00 | 0.44 |
| 1:AA:981:U:C2 | 1:AA:982:U:C5 | 3.06 | 0.44 |
| 1:AA:1084:G:C6 | 1:AA:1085:U:C4 | 3.06 | 0.44 |
| 1:AA:1117:A:C6 | 1:AA:1184:G:O6 | 2.71 | 0.44 |
| 1:AA:1124:G:O2' | 1:AA:1125:U:C6 | 2.71 | 0.44 |
| 1:AA:1180:A:H8 | 1:AA:1180:A:O5' | 2.01 | 0.44 |
| 3:AC:39:ARG:NE | 3:AC:54:ILE:HD11 | 2.33 | 0.44 |
| 3:AC:158:GLY:HA2 | 3:AC:192:TYR:CE1 | 2.53 | 0.44 |
| 5:AE:100:GLU:HB3 | 5:AE:121:ASN:CA | 2.46 | 0.44 |
| 6:AF:49:TYR:HB2 | 18:AR:73:HIS:CD2 | 2.52 | 0.44 |
| 7:AG:25:PHE:O | 7:AG:28:ILE:HB | 2.18 | 0.44 |
| 12:AL:2:THR:HB | 12:AL:5:GLN:HG3 | 2.00 | 0.44 |
| 12:AL:78:VAL:O | 12:AL:101:LEU:HB3 | 2.17 | 0.44 |
| 20:AT:67:HIS:HB3 | 20:AT:68:LYS:NZ | 2.32 | 0.44 |
| 22:BA:302:C:H2' | 22:BA:303:G:H8 | 1.83 | 0.44 |
| 22:BA:491:G:H2' | 22:BA:492:A:H8 | 1.83 | 0.44 |
| 22:BA:545:U:H2' | 22:BA:546:U:O3' | 2.17 | 0.44 |
| 22:BA:729:G:C4 | 22:BA:1775:U:C2 | 3.06 | 0.44 |
| 22:BA:784:G:P | 63:BA:3310:HOH:O | 2.76 | 0.44 |
| 22:BA:804:A:H5'' | 22:BA:805:G:OP1 | 2.18 | 0.44 |
| 22:BA:915:C:O2 | 23:BB:100:G:H4' | 2.18 | 0.44 |
| 22:BA:919:U:H6 | 22:BA:919:U:C5' | 2.31 | 0.44 |
| 22:BA:966:G:C5 | 22:BA:967:U:C4 | 3.05 | 0.44 |
| 22:BA:1287:A:H2' | 22:BA:1288:G:N3 | 2.33 | 0.44 |
| 22:BA:1290:C:H2' | 22:BA:1291:C:H6 | 1.82 | 0.44 |
| 22:BA:1507:C:N3 | 22:BA:1508:A:C2 | 2.86 | 0.44 |
| 22:BA:1673:G:C3' | 22:BA:1674:G:H5' | 2.47 | 0.44 |
| 22:BA:1733:G:C2 | 22:BA:1734:G:N7 | 2.86 | 0.44 |
| 22:BA:1837:C:C2 | 22:BA:1899:A:N6 | 2.86 | 0.44 |
| 22:BA:1838:C:N4 | 22:BA:1899:A:C4 | 2.86 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:2416:C:O5' | 22:BA:2416:C:H6 | 2.01 | 0.44 |
| 23:BB:33:G:O2' | 23:BB:34:A:H5' | 2.17 | 0.44 |
| 24:BC:129:LEU:HB3 | 24:BC:134:ILE:HD11 | 2.00 | 0.44 |
| 25:BD:85:ALA:O | 25:BD:86:GLU:CB | 2.65 | 0.44 |
| 26:BE:196:VAL:HG13 | 26:BE:200:LEU:HD23 | 2.00 | 0.44 |
| 27:BF:66:ILE:O | 27:BF:66:ILE:HG13 | 2.17 | 0.44 |
| 34:BM:54:THR:O | 34:BM:57:VAL:HG22 | 2.18 | 0.44 |
| 34:BM:66:ARG:HB2 | 34:BM:101:VAL:O | 2.17 | 0.44 |
| 35:BN:93:GLY:C | 35:BN:95:THR:H | 2.21 | 0.44 |
| 38:BQ:49:ARG:HG3 | 38:BQ:49:ARG:NH1 | 2.33 | 0.44 |
| 38:BQ:94:LEU:HD13 | 38:BQ:94:LEU:C | 2.38 | 0.44 |
| 39:BR:49:ILE:O | 39:BR:49:ILE:CG1 | 2.56 | 0.44 |
| 41:BT:69:ARG:NH2 | 41:BT:70:HIS:HA | 2.33 | 0.44 |
| 44:BW:16:GLU:OE2 | 44:BW:16:GLU:HA | 2.18 | 0.44 |
| 47:BZ:7:THR:OG1 | 47:BZ:34:THR:HG23 | 2.18 | 0.44 |
| 53:CA:245:U:H5'' | 53:CA:245:U:C6 | 2.46 | 0.44 |
| 53:CA:596:A:N3 | 53:CA:596:A:H2' | 2.32 | 0.44 |
| 53:CA:728:A:C8 | 15:CO:53:ARG:NH2 | 2.86 | 0.44 |
| 53:CA:768:A:C4 | 53:CA:769:G:C8 | 3.06 | 0.44 |
| 53:CA:812:G:O2' | 53:CA:813:U:C6 | 2.65 | 0.44 |
| 53:CA:867:G:C4 | 53:CA:868:C:C5 | 3.06 | 0.44 |
| 53:CA:996:A:C2 | 53:CA:1046:A:H5' | 2.53 | 0.44 |
| 53:CA:1087:G:H2' | 53:CA:1088:G:C8 | 2.50 | 0.44 |
| 53:CA:1098:C:C4 | 53:CA:1099:G:N7 | 2.86 | 0.44 |
| 53:CA:1130:A:C6 | 53:CA:1131:G:N7 | 2.86 | 0.44 |
| 53:CA:1226:C:H41 | 55:CM:102:LYS:CA | 2.19 | 0.44 |
| 53:CA:1346:A:C8 | 53:CA:1348:U:C2 | 3.06 | 0.44 |
| 3:CC:31:ASN:O | 3:CC:35:ASP:HB2 | 2.18 | 0.44 |
| 4:CD:11:SER:O | 4:CD:14:GLU:N | 2.51 | 0.44 |
| 9:CI:85:ALA:HA | 9:CI:88:GLU:OE1 | 2.18 | 0.44 |
| 11:CK:92:ARG:NH2 | 11:CK:111:ASP:OD1 | 2.51 | 0.44 |
| 12:CL:31:GLY:HA3 | 12:CL:54:VAL:CG1 | 2.47 | 0.44 |
| 15:CO:47:LYS:HD2 | 15:CO:47:LYS:N | 2.27 | 0.44 |
| 56:CP:44:SER:O | 56:CP:46:LYS:HG3 | 2.18 | 0.44 |
| 57:DA:76:C:H5'' | 46:DY:48:ARG:HB3 | 2.00 | 0.44 |
| 57:DA:229:C:O2' | 57:DA:230:G:O5' | 2.35 | 0.44 |
| 57:DA:250:G:H2' | 57:DA:251:A:C8 | 2.53 | 0.44 |
| 57:DA:379:G:C6 | 57:DA:380:G:N7 | 2.86 | 0.44 |
| 57:DA:388:G:C5 | 57:DA:390:U:H2' | 2.53 | 0.44 |
| 57:DA:663:G:O6 | 57:DA:664:G:C6 | 2.71 | 0.44 |
| 57:DA:669:G:N2 | 57:DA:670:A:C2 | 2.86 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:702:U:C4 | 57:DA:703:U:C5 | 3.05 | 0.44 |
| 57:DA:747:U:H3' | 57:DA:748:G:C5' | 2.48 | 0.44 |
| 57:DA:972:A:H3' | 57:DA:973:A:H5'' | 2.00 | 0.44 |
| 57:DA:995:C:O2' | 38:DQ:93:ILE:HD12 | 2.18 | 0.44 |
| 57:DA:1057:A:C8 | 57:DA:1086:A:H2' | 2.52 | 0.44 |
| 57:DA:1275:A:C4 | 35:DN:16:HIS:HD2 | 2.35 | 0.44 |
| 57:DA:1317:G:C2 | 57:DA:1336:A:C2 | 3.05 | 0.44 |
| 57:DA:1494:A:OP2 | 57:DA:1494:A:H3' | 2.17 | 0.44 |
| 57:DA:1649:G:C6 | 57:DA:2009:A:N1 | 2.86 | 0.44 |
| 57:DA:1672:A:C2' | 57:DA:1673:G:H5' | 2.48 | 0.44 |
| 57:DA:1881:C:H2' | 57:DA:1882:U:O4' | 2.18 | 0.44 |
| 57:DA:2199:A:N6 | 57:DA:2225:A:N9 | 2.66 | 0.44 |
| 57:DA:2216:G:C2' | 57:DA:2217:G:C8 | 2.99 | 0.44 |
| 57:DA:2262:U:H5'' | 44:DW:38:ARG:NH2 | 2.33 | 0.44 |
| 57:DA:2345:G:H4' | 57:DA:2346:A:O5' | 2.18 | 0.44 |
| 57:DA:2514:U:H2' | 57:DA:2515:C:H6 | 1.81 | 0.44 |
| 57:DA:2552:U:N3 | 57:DA:2554:U:H5' | 2.32 | 0.44 |
| 57:DA:2835:A:C6 | 57:DA:2879:A:C4 | 3.05 | 0.44 |
| 57:DA:2850:A:N7 | 57:DA:2868:A:O2' | 2.51 | 0.44 |
| 58:DB:57:A:C5 | 59:DF:25:MET:CG | 3.01 | 0.44 |
| 58:DB:81:G:H2' | 58:DB:82:U:C6 | 2.48 | 0.44 |
| 24:DC:93:VAL:CG1 | 24:DC:94:LEU:H | 2.31 | 0.44 |
| 25:DD:21:SER:HB2 | 32:DK:73:ASP:O | 2.18 | 0.44 |
| 25:DD:148:GLN:CD | 25:DD:148:GLN:N | 2.71 | 0.44 |
| 35:DN:57:THR:O | 35:DN:80:PHE:HD1 | 2.01 | 0.44 |
| 38:DQ:15:LYS:HD2 | 38:DQ:19:GLN:HE21 | 1.83 | 0.44 |
| 38:DQ:63:ARG:O | 38:DQ:64:ILE:C | 2.56 | 0.44 |
| 38:DQ:96:ASP:C | 38:DQ:98:ALA:N | 2.70 | 0.44 |
| 41:DT:39:THR:OG1 | 41:DT:42:GLU:HG3 | 2.18 | 0.44 |
| 42:DU:10:VAL:HB | 42:DU:70:ALA:O | 2.17 | 0.44 |
| 43:DV:57:TYR:N | 43:DV:57:TYR:CD1 | 2.86 | 0.44 |
| 44:DW:49:ASN:OD1 | 44:DW:80:SER:HA | 2.17 | 0.44 |
| 46:DY:23:ARG:HB3 | 46:DY:27:ASN:OD1 | 2.18 | 0.44 |
| 1:AA:57:G:C2 | 1:AA:356:A:C2 | 3.06 | 0.43 |
| 1:AA:192:A:C6 | 1:AA:193:C:C4 | 3.06 | 0.43 |
| 1:AA:199:A:N3 | 1:AA:200:G:C8 | 2.86 | 0.43 |
| 1:AA:477:C:H2' | 1:AA:478:A:C8 | 2.53 | 0.43 |
| 1:AA:1055:A:O5' | 1:AA:1055:A:C8 | 2.71 | 0.43 |
| 1:AA:1080:A:OP1 | 5:AE:51:LYS:HD2 | 2.18 | 0.43 |
| 1:AA:1227:A:HO2' | 1:AA:1228:C:P | 2.40 | 0.43 |
| 1:AA:1269:A:C2 | 1:AA:1312:G:N3 | 2.85 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1305:G:N2 | 1:AA:1331:G:H2' | 2.33 | 0.43 |
| 1:AA:1396:A:H4' | 1:AA:1397:C:O5' | 2.17 | 0.43 |
| 4:AD:196:GLU:C | 4:AD:198:LEU:N | 2.71 | 0.43 |
| 7:AG:83:THR:O | 7:AG:84:TYR:C | 2.55 | 0.43 |
| 8:AH:78:SER:OG | 8:AH:83:ARG:HA | 2.19 | 0.43 |
| 10:AJ:67:ILE:HG12 | 14:AN:95:LEU:HD13 | 1.99 | 0.43 |
| 11:AK:86:LYS:HG2 | 11:AK:114:PRO:HD3 | 2.00 | 0.43 |
| 16:AP:10:GLY:HA2 | 16:AP:16:PHE:HB3 | 2.00 | 0.43 |
| 22:BA:31:C:O3' | 22:BA:1238:G:H5'' | 2.18 | 0.43 |
| 22:BA:164:C:H2' | 22:BA:165:A:O4' | 2.17 | 0.43 |
| 22:BA:641:U:H5'' | 22:BA:642:U:OP2 | 2.17 | 0.43 |
| 22:BA:858:G:H3' | 22:BA:859:G:C8 | 2.53 | 0.43 |
| 22:BA:869:G:C6 | 22:BA:870:U:C4 | 3.06 | 0.43 |
| 22:BA:1014:A:O2' | 22:BA:1015:U:H5' | 2.17 | 0.43 |
| 22:BA:1015:U:O2' | 22:BA:1016:G:H5' | 2.16 | 0.43 |
| 22:BA:1098:A:H3' | 22:BA:1099:G:C8 | 2.53 | 0.43 |
| 22:BA:1130:U:HO2' | 22:BA:1131:G:H8 | 1.64 | 0.43 |
| 22:BA:1279:G:H5' | 35:BN:34:ILE:HG22 | 2.00 | 0.43 |
| 22:BA:1341:G:H3' | 22:BA:1397:U:O2 | 2.18 | 0.43 |
| 22:BA:1430:G:C4 | 22:BA:1431:A:C8 | 3.06 | 0.43 |
| 22:BA:1575:C:H2' | 22:BA:1576:U:O4' | 2.17 | 0.43 |
| 22:BA:2223:G:C2' | 22:BA:2224:G:H5' | 2.48 | 0.43 |
| 22:BA:2331:G:N2 | 22:BA:2385:C:C2 | 2.86 | 0.43 |
| 22:BA:2590:A:H2' | 22:BA:2591:C:C6 | 2.53 | 0.43 |
| 24:BC:68:ARG:NH2 | 24:BC:126:GLY:O | 2.51 | 0.43 |
| 24:BC:104:LEU:HD12 | 24:BC:104:LEU:HA | 1.69 | 0.43 |
| 26:BE:73:ILE:O | 26:BE:73:ILE:CG1 | 2.63 | 0.43 |
| 27:BF:135:ILE:C | 27:BF:137:PHE:N | 2.71 | 0.43 |
| 27:BF:153:ILE:H | 27:BF:153:ILE:HG13 | 1.68 | 0.43 |
| 29:BH:1:MET:HG2 | 29:BH:23:ALA:HA | 2.00 | 0.43 |
| 29:BH:18:GLN:HE21 | 29:BH:18:GLN:CA | 2.16 | 0.43 |
| 31:BJ:1:MET:O | 31:BJ:2:LYS:C | 2.56 | 0.43 |
| 33:BL:66:PHE:C | 33:BL:66:PHE:CD1 | 2.89 | 0.43 |
| 34:BM:4:PRO:CG | 34:BM:70:ASP:HA | 2.48 | 0.43 |
| 39:BR:21:ARG:NH2 | 39:BR:93:PHE:CZ | 2.86 | 0.43 |
| 50:B2:43:THR:C | 50:B2:44:VAL:HG23 | 2.37 | 0.43 |
| 53:CA:28:A:H2' | 53:CA:29:U:O4' | 2.18 | 0.43 |
| 53:CA:363:A:N6 | 53:CA:364:A:C6 | 2.86 | 0.43 |
| 53:CA:477:C:H5' | 53:CA:478:A:OP1 | 2.18 | 0.43 |
| 53:CA:664:G:P | 18:CR:52:ARG:HH21 | 2.41 | 0.43 |
| 53:CA:696:A:H2' | 53:CA:697:U:H6 | 1.82 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 53:CA:881:G:C6 | 53:CA:882:C:C4 | 3.06 | 0.43 |
| 53:CA:962:C:HO2' | 53:CA:963:G:H8 | 1.56 | 0.43 |
| 53:CA:1251:A:H2 | 53:CA:1369:C:O2 | 2.02 | 0.43 |
| 53:CA:1261:A:N7 | 53:CA:1274:A:C2 | 2.85 | 0.43 |
| 53:CA:1310:G:C6 | 53:CA:1311:A:C6 | 3.06 | 0.43 |
| 2:CB:151:LYS:HG3 | 2:CB:152:ASP:N | 2.33 | 0.43 |
| 4:CD:80:ARG:HB2 | 4:CD:81:LEU:H | 1.45 | 0.43 |
| 4:CD:176:LYS:O | 4:CD:177:MET:HB2 | 2.18 | 0.43 |
| 5:CE:17:VAL:HG22 | 5:CE:17:VAL:O | 2.17 | 0.43 |
| 6:CF:3:HIS:CG | 6:CF:92:THR:HG23 | 2.53 | 0.43 |
| 6:CF:24:ARG:O | 6:CF:28:ALA:HB2 | 2.17 | 0.43 |
| 54:CG:69:ARG:HH11 | 54:CG:95:ARG:NH1 | 2.16 | 0.43 |
| 54:CG:119:LEU:HD23 | 54:CG:120:ALA:N | 2.33 | 0.43 |
| 10:CJ:52:LEU:CD2 | 10:CJ:62:ARG:HG2 | 2.48 | 0.43 |
| 10:CJ:81:GLU:O | 10:CJ:86:ALA:HB3 | 2.17 | 0.43 |
| 14:CN:15:LEU:O | 14:CN:54:SER:HB2 | 2.18 | 0.43 |
| 57:DA:228:C:C5' | 57:DA:229:C:C5 | 3.01 | 0.43 |
| 57:DA:293:U:H5'' | 57:DA:294:A:OP2 | 2.18 | 0.43 |
| 57:DA:323:C:H2' | 26:DE:163:ASN:CG | 2.39 | 0.43 |
| 57:DA:628:G:HO2' | 57:DA:629:G:H8 | 1.65 | 0.43 |
| 57:DA:636:G:H3' | 33:DL:128:THR:CG2 | 2.48 | 0.43 |
| 57:DA:781:A:H2' | 57:DA:1777:U:C1' | 2.46 | 0.43 |
| 57:DA:806:C:H2' | 57:DA:807:U:C6 | 2.52 | 0.43 |
| 57:DA:995:C:H5'' | 38:DQ:53:LYS:HG2 | 2.00 | 0.43 |
| 57:DA:1351:C:O3' | 57:DA:1571:A:O2' | 2.35 | 0.43 |
| 57:DA:1465:G:H2' | 57:DA:1466:U:O4' | 2.18 | 0.43 |
| 57:DA:1471:G:C5 | 57:DA:1472:C:C5 | 3.06 | 0.43 |
| 57:DA:1549:A:C6 | 57:DA:1550:C:N3 | 2.86 | 0.43 |
| 57:DA:1568:G:H21 | 24:DC:57:HIS:HE1 | 1.64 | 0.43 |
| 57:DA:1791:A:N6 | 57:DA:1828:G:O2' | 2.51 | 0.43 |
| 57:DA:2184:A:H8 | 57:DA:2184:A:O5' | 2.00 | 0.43 |
| 57:DA:2515:C:O2' | 57:DA:2516:A:H5' | 2.18 | 0.43 |
| 57:DA:2560:A:C6 | 57:DA:2561:U:C4 | 3.05 | 0.43 |
| 57:DA:2741:A:C8 | 57:DA:2742:G:C8 | 3.06 | 0.43 |
| 57:DA:2788:C:H1' | 57:DA:2809:A:C2 | 2.53 | 0.43 |
| 58:DB:42:C:O2' | 58:DB:43:C:C5' | 2.64 | 0.43 |
| 25:DD:10:GLY:O | 25:DD:11:MET:CB | 2.61 | 0.43 |
| 26:DE:144:GLU:O | 26:DE:145:ASP:C | 2.56 | 0.43 |
| 29:DH:8:LYS:HD2 | 29:DH:9:VAL:O | 2.19 | 0.43 |
| 31:DJ:43:GLU:O | 31:DJ:43:GLU:CG | 2.66 | 0.43 |
| 31:DJ:43:GLU:O | 31:DJ:44:TYR:C | 2.57 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 31:DJ:110:PRO:CG | 31:DJ:111:LYS:HG2 | 2.46 | 0.43 |
| 33:DL:98:ALA:O | 33:DL:100:ILE:HG22 | 2.18 | 0.43 |
| 35:DN:51:LEU:HA | 35:DN:54:LEU:HD21 | 2.00 | 0.43 |
| 36:DO:20:GLU:HG3 | 44:DW:50:VAL:HG11 | 1.99 | 0.43 |
| 37:DP:92:ARG:HG2 | 37:DP:92:ARG:O | 2.17 | 0.43 |
| 39:DR:19:THR:HG22 | 39:DR:20:VAL:H | 1.82 | 0.43 |
| 39:DR:51:VAL:HB | 39:DR:52:PRO:CD | 2.49 | 0.43 |
| 40:DS:22:ASP:HA | 40:DS:25:ARG:HH12 | 1.83 | 0.43 |
| 41:DT:48:GLN:HA | 41:DT:48:GLN:NE2 | 2.31 | 0.43 |
| 41:DT:53:VAL:CG2 | 41:DT:92:ASN:HD22 | 2.30 | 0.43 |
| 48:D0:38:LEU:H | 48:D0:41:HIS:CE1 | 2.36 | 0.43 |
| 1:AA:32:A:C2 | 1:AA:33:A:C5 | 3.06 | 0.43 |
| 1:AA:77:A:N6 | 1:AA:90:C:C4 | 2.85 | 0.43 |
| 1:AA:251:G:O4' | 1:AA:252:U:H5'' | 2.18 | 0.43 |
| 1:AA:327:A:H4' | 1:AA:328:C:OP1 | 2.17 | 0.43 |
| 1:AA:626:G:H2' | 1:AA:627:G:O4' | 2.19 | 0.43 |
| 1:AA:674:G:OP1 | 6:AF:51:ILE:HG13 | 2.19 | 0.43 |
| 1:AA:715:A:H8 | 1:AA:715:A:O5' | 2.01 | 0.43 |
| 1:AA:782:A:C8 | 1:AA:783:C:C5 | 3.07 | 0.43 |
| 3:AC:41:TYR:CZ | 3:AC:89:VAL:HG21 | 2.53 | 0.43 |
| 4:AD:35:GLN:O | 4:AD:36:ALA:HB2 | 2.18 | 0.43 |
| 5:AE:38:VAL:HG22 | 5:AE:66:ALA:HB1 | 2.00 | 0.43 |
| 5:AE:155:LYS:HD2 | 5:AE:155:LYS:N | 2.33 | 0.43 |
| 6:AF:11:HIS:HA | 6:AF:12:PRO:HD2 | 1.83 | 0.43 |
| 6:AF:90:MET:HB3 | 6:AF:91:ARG:H | 1.49 | 0.43 |
| 9:AI:79:ARG:O | 9:AI:83:THR:HG23 | 2.17 | 0.43 |
| 10:AJ:28:THR:O | 10:AJ:28:THR:HG22 | 2.18 | 0.43 |
| 14:AN:61:ASN:HD22 | 14:AN:61:ASN:HA | 1.54 | 0.43 |
| 19:AS:39:ILE:HD11 | 19:AS:70:LEU:HD23 | 1.99 | 0.43 |
| 19:AS:62:THR:O | 19:AS:63:ASP:C | 2.56 | 0.43 |
| 21:AU:33:ARG:HD3 | 21:AU:34:ARG:HG3 | 2.00 | 0.43 |
| 22:BA:25:U:C5 | 22:BA:26:G:C6 | 3.06 | 0.43 |
| 22:BA:354:A:C5 | 22:BA:355:U:C5 | 3.06 | 0.43 |
| 22:BA:1059:G:C2 | 22:BA:1080:A:N3 | 2.86 | 0.43 |
| 22:BA:1061:U:H6 | 22:BA:1070:A:C1' | 2.31 | 0.43 |
| 22:BA:1446:C:H2' | 22:BA:1447:C:C6 | 2.53 | 0.43 |
| 22:BA:2356:U:H5'' | 44:BW:16:GLU:HG3 | 2.00 | 0.43 |
| 22:BA:2673:G:N3 | 22:BA:2674:G:C8 | 2.87 | 0.43 |
| 22:BA:2741:A:H2' | 22:BA:2742:G:O4' | 2.18 | 0.43 |
| 24:BC:35:LYS:HB3 | 24:BC:35:LYS:HE3 | 1.36 | 0.43 |
| 24:BC:257:ARG:HG3 | 24:BC:269:ARG:HH12 | 1.82 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 26:BE:174:GLY:O | 26:BE:175:ILE:O | 2.36 | 0.43 |
| 33:BL:101:ILE:HD12 | 33:BL:101:ILE:HA | 1.69 | 0.43 |
| 34:BM:45:GLN:NE2 | 34:BM:125:PRO:HD3 | 2.33 | 0.43 |
| 35:BN:10:LEU:HD13 | 35:BN:10:LEU:HA | 1.85 | 0.43 |
| 35:BN:60:VAL:O | 35:BN:61:ALA:C | 2.56 | 0.43 |
| 39:BR:18:GLN:O | 39:BR:97:LYS:O | 2.36 | 0.43 |
| 39:BR:54:VAL:O | 39:BR:55:ASP:C | 2.56 | 0.43 |
| 39:BR:89:HIS:NE2 | 39:BR:91:GLN:HB2 | 2.33 | 0.43 |
| 53:CA:32:A:C2' | 53:CA:33:A:C8 | 2.84 | 0.43 |
| 53:CA:160:A:H1' | 53:CA:344:A:C5 | 2.53 | 0.43 |
| 53:CA:375:U:N3 | 53:CA:376:G:N7 | 2.66 | 0.43 |
| 53:CA:465:A:C8 | 53:CA:467:U:OP1 | 2.71 | 0.43 |
| 53:CA:760:G:C6 | 53:CA:761:G:C4 | 3.06 | 0.43 |
| 53:CA:768:A:C5 | 53:CA:769:G:N7 | 2.86 | 0.43 |
| 53:CA:781:A:H2 | 53:CA:1514:G:H4' | 1.83 | 0.43 |
| 53:CA:821:G:H2' | 53:CA:822:U:H6 | 1.77 | 0.43 |
| 53:CA:949:A:H4' | 53:CA:1364:U:O4 | 2.18 | 0.43 |
| 53:CA:1051:C:O2' | 53:CA:1052:U:O4' | 2.36 | 0.43 |
| 53:CA:1255:G:H2' | 53:CA:1278:G:H21 | 1.82 | 0.43 |
| 53:CA:1303:C:H2' | 53:CA:1303:C:O2 | 2.18 | 0.43 |
| 53:CA:1366:C:O2' | 53:CA:1367:C:H6 | 1.96 | 0.43 |
| 53:CA:1381:U:N3 | 54:CG:77:ARG:CZ | 2.81 | 0.43 |
| 53:CA:1402:C:H2' | 53:CA:1403:C:O4' | 2.17 | 0.43 |
| 2:CB:116:LEU:HA | 2:CB:119:GLN:HB3 | 2.00 | 0.43 |
| 4:CD:57:LYS:HE3 | 4:CD:61:ARG:CD | 2.48 | 0.43 |
| 4:CD:123:MET:CE | 4:CD:126:GLY:O | 2.67 | 0.43 |
| 5:CE:82:HIS:HB2 | 8:CH:95:MET:O | 2.18 | 0.43 |
| 8:CH:54:THR:C | 8:CH:56:PRO:HD3 | 2.39 | 0.43 |
| 9:CI:79:ARG:O | 9:CI:83:THR:HG22 | 2.18 | 0.43 |
| 11:CK:74:LYS:HD2 | 11:CK:104:PHE:CE1 | 2.53 | 0.43 |
| 55:CM:19:THR:HA | 55:CM:25:GLY:O | 2.18 | 0.43 |
| 14:CN:20:PHE:HE1 | 14:CN:54:SER:CB | 2.31 | 0.43 |
| 14:CN:89:ARG:HG3 | 14:CN:91:GLU:CG | 2.48 | 0.43 |
| 18:CR:66:LEU:N | 18:CR:66:LEU:HD23 | 2.33 | 0.43 |
| 21:CU:24:LYS:CE | 21:CU:25:ALA:H | 2.32 | 0.43 |
| 57:DA:183:C:O2' | 57:DA:432:A:H1' | 2.17 | 0.43 |
| 57:DA:247:G:H4' | 57:DA:386:G:C6 | 2.53 | 0.43 |
| 57:DA:470:A:C2 | 57:DA:471:A:C4 | 3.07 | 0.43 |
| 57:DA:735:A:C6 | 57:DA:736:C:C2 | 3.06 | 0.43 |
| 57:DA:802:A:C2 | 57:DA:803:U:C2 | 3.06 | 0.43 |
| 57:DA:818:G:H4' | 57:DA:838:C:O3' | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:DA:919:U:C2 | 57:DA:920:A:N7 | 2.86 | 0.43 |
| 57:DA:956:G:C1' | 34:DM:82:MET:HE1 | 2.46 | 0.43 |
| 57:DA:1048:A:C4 | 57:DA:1049:C:N4 | 2.86 | 0.43 |
| 57:DA:1228:G:H2' | 57:DA:1229:C:C6 | 2.53 | 0.43 |
| 57:DA:1273:U:O3' | 57:DA:1274:A:H3' | 2.18 | 0.43 |
| 57:DA:1308:A:N6 | 57:DA:1309:G:C2 | 2.86 | 0.43 |
| 57:DA:1667:G:O2' | 57:DA:1668:A:P | 2.76 | 0.43 |
| 57:DA:1723:G:H2' | 57:DA:1724:G:C8 | 2.43 | 0.43 |
| 57:DA:1914:C:O2' | 57:DA:1915:U:C5' | 2.66 | 0.43 |
| 57:DA:2057:G:C6 | 57:DA:2612:C:N3 | 2.86 | 0.43 |
| 57:DA:2064:C:H2' | 57:DA:2065:C:H6 | 1.81 | 0.43 |
| 57:DA:2179:C:H5' | 57:DA:2179:C:H6 | 1.83 | 0.43 |
| 57:DA:2216:G:C2' | 57:DA:2217:G:H8 | 2.22 | 0.43 |
| 57:DA:2683:C:OP1 | 37:DP:55:HIS:HB3 | 2.18 | 0.43 |
| 58:DB:89:U:H3' | 58:DB:90:C:C6 | 2.53 | 0.43 |
| 24:DC:67:LYS:HB3 | 24:DC:150:GLY:CA | 2.45 | 0.43 |
| 24:DC:93:VAL:HG11 | 24:DC:95:TYR:CE2 | 2.53 | 0.43 |
| 24:DC:123:ILE:HD12 | 24:DC:123:ILE:HA | 1.93 | 0.43 |
| 24:DC:161:VAL:HG22 | 24:DC:175:LEU:HA | 2.00 | 0.43 |
| 24:DC:166:ARG:HB2 | 24:DC:171:VAL:CG2 | 2.39 | 0.43 |
| 25:DD:38:LYS:HB3 | 25:DD:38:LYS:NZ | 2.33 | 0.43 |
| 28:DG:58:ALA:O | 28:DG:59:ASP:C | 2.56 | 0.43 |
| 32:DK:105:ARG:HB2 | 32:DK:108:ARG:HD2 | 2.00 | 0.43 |
| 40:DS:36:LEU:HA | 40:DS:39:THR:OG1 | 2.18 | 0.43 |
| 40:DS:36:LEU:C | 40:DS:38:TYR:N | 2.71 | 0.43 |
| 41:DT:21:SER:C | 41:DT:25:GLU:HB3 | 2.38 | 0.43 |
| 43:DV:8:VAL:HG13 | 43:DV:66:ASP:OD2 | 2.19 | 0.43 |
| 50:D2:11:LYS:NZ | 63:D2:101:HOH:O | 2.52 | 0.43 |
| 1:AA:81:A:O2' | 1:AA:89:U:O2 | 2.31 | 0.43 |
| 1:AA:131:A:C2 | 1:AA:132:C:C4 | 3.07 | 0.43 |
| 1:AA:381:C:H2' | 1:AA:382:A:O4' | 2.18 | 0.43 |
| 1:AA:499:A:O2' | 1:AA:500:G:C8 | 2.62 | 0.43 |
| 1:AA:507:C:OP2 | 1:AA:508:U:H3' | 2.19 | 0.43 |
| 1:AA:556:C:H2' | 1:AA:557:G:O4' | 2.18 | 0.43 |
| 1:AA:766:A:OP2 | 1:AA:812:G:N2 | 2.50 | 0.43 |
| 1:AA:923:A:OP1 | 5:AE:25:LYS:CG | 2.66 | 0.43 |
| 1:AA:978:A:O2' | 1:AA:979:C:H5' | 2.18 | 0.43 |
| 1:AA:1233:G:H2' | 1:AA:1234:C:H6 | 1.82 | 0.43 |
| 1:AA:1461:G:H2' | 1:AA:1462:C:H6 | 1.83 | 0.43 |
| 3:AC:75:VAL:O | 3:AC:82:ASP:HB3 | 2.18 | 0.43 |
| 4:AD:57:LYS:HG2 | 4:AD:202:LEU:HD22 | 1.99 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 5:AE:81:GLN:NE2 | 5:AE:81:GLN:N | 2.66 | 0.43 |
| 8:AH:78:SER:CB | 8:AH:84:ILE:H | 2.30 | 0.43 |
| 12:AL:87:LYS:O | 12:AL:87:LYS:HG3 | 2.18 | 0.43 |
| 13:AM:10:ASP:OD1 | 13:AM:11:HIS:N | 2.34 | 0.43 |
| 14:AN:50:LEU:O | 14:AN:52:ARG:N | 2.51 | 0.43 |
| 22:BA:61:C:O5' | 22:BA:61:C:H6 | 2.00 | 0.43 |
| 22:BA:71:A:H3' | 22:BA:71:A:OP2 | 2.17 | 0.43 |
| 22:BA:278:A:N3 | 22:BA:278:A:H2' | 2.32 | 0.43 |
| 22:BA:636:G:H3' | 33:BL:128:THR:CG2 | 2.47 | 0.43 |
| 22:BA:976:G:N3 | 22:BA:977:G:C8 | 2.85 | 0.43 |
| 22:BA:1106:G:N3 | 22:BA:1107:G:C8 | 2.86 | 0.43 |
| 22:BA:1142:A:C4 | 22:BA:1144:A:N7 | 2.86 | 0.43 |
| 22:BA:1243:C:H2' | 22:BA:1244:A:O4' | 2.18 | 0.43 |
| 22:BA:1287:A:H3' | 22:BA:1288:G:H21 | 1.82 | 0.43 |
| 22:BA:1374:G:C2' | 22:BA:1375:U:H5' | 2.47 | 0.43 |
| 22:BA:1419:A:C5 | 22:BA:1421:G:C4 | 3.07 | 0.43 |
| 22:BA:1523:U:C3' | 22:BA:1524:G:H5' | 2.48 | 0.43 |
| 22:BA:1644:C:C2' | 22:BA:1645:G:H5' | 2.47 | 0.43 |
| 22:BA:1901:A:H2' | 22:BA:1902:C:H6 | 1.83 | 0.43 |
| 22:BA:2051:A:H4' | 22:BA:2052:A:OP1 | 2.17 | 0.43 |
| 22:BA:2462:C:H2' | 22:BA:2463:C:H6 | 1.81 | 0.43 |
| 22:BA:2531:A:OP1 | 28:BG:174:LYS:CG | 2.62 | 0.43 |
| 24:BC:12:ARG:HA | 24:BC:15:VAL:CG2 | 2.48 | 0.43 |
| 24:BC:103:ILE:HG23 | 24:BC:104:LEU:N | 2.33 | 0.43 |
| 25:BD:90:PHE:CD1 | 25:BD:90:PHE:N | 2.86 | 0.43 |
| 25:BD:149:ASN:C | 25:BD:151:THR:N | 2.70 | 0.43 |
| 29:BH:100:ALA:O | 29:BH:101:ASP:C | 2.57 | 0.43 |
| 35:BN:24:MET:HG2 | 35:BN:44:LEU:CD2 | 2.44 | 0.43 |
| 36:BO:26:LEU:C | 36:BO:26:LEU:HD12 | 2.39 | 0.43 |
| 38:BQ:84:LYS:O | 38:BQ:85:ALA:C | 2.56 | 0.43 |
| 44:BW:19:ARG:CZ | 44:BW:22:VAL:HB | 2.49 | 0.43 |
| 44:BW:26:GLY:O | 44:BW:27:GLY:O | 2.36 | 0.43 |
| 46:BY:9:LYS:CB | 46:BY:12:GLU:HG3 | 2.46 | 0.43 |
| 53:CA:82:G:H2' | 53:CA:83:C:H4' | 2.01 | 0.43 |
| 53:CA:119:A:H5' | 53:CA:120:A:O5' | 2.19 | 0.43 |
| 53:CA:255:G:O2' | 53:CA:256:U:H5' | 2.18 | 0.43 |
| 53:CA:614:C:C4 | 53:CA:615:G:N7 | 2.87 | 0.43 |
| 53:CA:814:A:H5' | 53:CA:1511:G:C4' | 2.42 | 0.43 |
| 53:CA:1302:C:H5'' | 55:CM:16:ILE:HG23 | 2.00 | 0.43 |
| 53:CA:1348:U:H2' | 53:CA:1349:A:H8 | 1.84 | 0.43 |
| 2:CB:96:LEU:H | 2:CB:99:MET:CE | 2.32 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:CC:10:ARG:O | 3:CC:15:LYS:HB2 | 2.18 | 0.43 |
| 5:CE:22:LYS:O | 5:CE:29:ILE:HB | 2.19 | 0.43 |
| 5:CE:52:ALA:HB2 | 5:CE:61:LYS:CE | 2.48 | 0.43 |
| 5:CE:93:VAL:O | 5:CE:93:VAL:HG23 | 2.18 | 0.43 |
| 6:CF:98:GLU:O | 6:CF:99:ALA:CB | 2.66 | 0.43 |
| 8:CH:38:VAL:HA | 8:CH:41:GLU:HG3 | 1.99 | 0.43 |
| 8:CH:57:GLU:HG3 | 8:CH:58:LEU:N | 2.21 | 0.43 |
| 8:CH:94:VAL:HG21 | 8:CH:127:TYR:CB | 2.49 | 0.43 |
| 9:CI:71:ILE:HD12 | 9:CI:72:SER:N | 2.20 | 0.43 |
| 15:CO:32:THR:O | 15:CO:33:ALA:C | 2.57 | 0.43 |
| 21:CU:14:ALA:O | 21:CU:15:LEU:C | 2.57 | 0.43 |
| 57:DA:27:G:H1' | 57:DA:513:A:N6 | 2.34 | 0.43 |
| 57:DA:84:A:H2 | 57:DA:98:G:N3 | 2.16 | 0.43 |
| 57:DA:457:A:C4 | 57:DA:459:U:C4 | 3.06 | 0.43 |
| 57:DA:492:A:O2' | 57:DA:493:G:O4' | 2.36 | 0.43 |
| 57:DA:1055:G:H2' | 57:DA:1056:G:H5' | 2.00 | 0.43 |
| 57:DA:1056:G:H1' | 57:DA:1103:A:N1 | 2.33 | 0.43 |
| 57:DA:1203:U:N3 | 57:DA:1204:A:C6 | 2.86 | 0.43 |
| 57:DA:1215:G:OP1 | 38:DQ:7:VAL:HG11 | 2.17 | 0.43 |
| 57:DA:1376:C:H5'' | 63:DA:3408:HOH:O | 2.18 | 0.43 |
| 57:DA:1493:C:H2' | 57:DA:1493:C:O2 | 2.17 | 0.43 |
| 57:DA:1586:A:H2' | 57:DA:1587:G:C8 | 2.38 | 0.43 |
| 57:DA:1609:A:O2' | 57:DA:1610:A:H5'' | 2.17 | 0.43 |
| 57:DA:1866:A:C4 | 57:DA:1876:A:N6 | 2.86 | 0.43 |
| 57:DA:1992:G:H4' | 57:DA:1993:U:OP1 | 2.17 | 0.43 |
| 57:DA:2069:G:O2' | 57:DA:2070:A:H5' | 2.18 | 0.43 |
| 57:DA:2103:C:H2' | 57:DA:2104:C:O4' | 2.18 | 0.43 |
| 57:DA:2216:G:O2' | 57:DA:2217:G:C5' | 2.65 | 0.43 |
| 57:DA:2229:U:H2' | 57:DA:2230:G:H8 | 1.83 | 0.43 |
| 57:DA:2525:G:N2 | 57:DA:2539:C:C2 | 2.86 | 0.43 |
| 57:DA:2597:G:H5' | 24:DC:240:GLY:O | 2.18 | 0.43 |
| 57:DA:2624:G:H2' | 57:DA:2625:G:O4' | 2.19 | 0.43 |
| 57:DA:2660:A:C2 | 57:DA:2661:G:C5 | 3.05 | 0.43 |
| 57:DA:2706:A:C2 | 57:DA:2707:U:C2 | 3.06 | 0.43 |
| 57:DA:2868:A:C2 | 57:DA:2869:G:C4 | 3.06 | 0.43 |
| 58:DB:13:G:H5'' | 58:DB:13:G:C8 | 2.51 | 0.43 |
| 25:DD:32:ASN:HB2 | 25:DD:50:VAL:HB | 2.00 | 0.43 |
| 25:DD:49:GLN:HE21 | 25:DD:79:LEU:HB3 | 1.83 | 0.43 |
| 28:DG:145:ALA:O | 28:DG:149:ALA:HB2 | 2.18 | 0.43 |
| 28:DG:157:LYS:HE2 | 28:DG:157:LYS:HB2 | 1.87 | 0.43 |
| 30:DI:106:GLN:O | 30:DI:106:GLN:HG3 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 32:DK:41:ILE:HG22 | 32:DK:58:LEU:O | 2.19 | 0.43 |
| 32:DK:64:ARG:HB2 | 32:DK:83:ALA:HB3 | 2.00 | 0.43 |
| 32:DK:93:GLN:HA | 32:DK:94:PRO:HD2 | 1.79 | 0.43 |
| 34:DM:61:GLY:CA | 34:DM:107:GLY:HA3 | 2.45 | 0.43 |
| 34:DM:108:VAL:HG21 | 34:DM:112:LEU:HB3 | 2.00 | 0.43 |
| 36:DO:4:LYS:HG3 | 36:DO:8:ILE:CD1 | 2.48 | 0.43 |
| 37:DP:62:LYS:HD3 | 37:DP:64:SER:HB2 | 1.99 | 0.43 |
| 39:DR:9:GLY:H | 39:DR:10:LYS:NZ | 2.16 | 0.43 |
| 1:AA:118:U:C4 | 1:AA:288:A:C2 | 3.06 | 0.43 |
| 1:AA:425:G:C6 | 1:AA:426:U:C2 | 3.07 | 0.43 |
| 1:AA:862:C:C2' | 1:AA:863:U:H5' | 2.48 | 0.43 |
| 1:AA:877:G:H21 | 8:AH:1:SER:CB | 2.19 | 0.43 |
| 1:AA:933:G:C5 | 1:AA:935:A:C8 | 3.06 | 0.43 |
| 1:AA:1054:C:O2 | 1:AA:1054:C:O4' | 2.33 | 0.43 |
| 1:AA:1090:U:H2' | 1:AA:1091:U:H6 | 1.83 | 0.43 |
| 1:AA:1272:G:O2' | 1:AA:1273:C:H5' | 2.18 | 0.43 |
| 3:AC:139:ASN:ND2 | 3:AC:139:ASN:C | 2.71 | 0.43 |
| 7:AG:68:VAL:HG21 | 7:AG:103:ILE:CG1 | 2.49 | 0.43 |
| 11:AK:125:LYS:O | 11:AK:126:ARG:CB | 2.64 | 0.43 |
| 15:AO:39:GLN:OE1 | 22:BA:716:A:H1' | 2.18 | 0.43 |
| 22:BA:9:G:C6 | 22:BA:2629:U:C6 | 3.07 | 0.43 |
| 22:BA:307:G:N2 | 22:BA:309:A:H3' | 2.33 | 0.43 |
| 22:BA:686:U:O4 | 50:B2:12:ARG:HB3 | 2.19 | 0.43 |
| 22:BA:1279:G:H4' | 35:BN:31:HIS:CD2 | 2.53 | 0.43 |
| 22:BA:1474:U:C2' | 22:BA:1475:G:H5' | 2.48 | 0.43 |
| 22:BA:1483:G:C6 | 22:BA:1484:U:C4 | 3.07 | 0.43 |
| 22:BA:1607:C:H4' | 22:BA:1608:A:O5' | 2.18 | 0.43 |
| 22:BA:1658:C:H5' | 25:BD:138:LEU:CD2 | 2.49 | 0.43 |
| 22:BA:1773:A:H2' | 22:BA:1774:C:C5' | 2.49 | 0.43 |
| 22:BA:1926:U:H2' | 22:BA:1928:A:N7 | 2.34 | 0.43 |
| 22:BA:2014:A:H2' | 22:BA:2015:A:C8 | 2.54 | 0.43 |
| 22:BA:2275:C:O3' | 34:BM:83:GLY:O | 2.36 | 0.43 |
| 22:BA:2516:A:O2' | 22:BA:2517:C:H5' | 2.18 | 0.43 |
| 22:BA:2572:A:O2' | 22:BA:2573:C:P | 2.77 | 0.43 |
| 22:BA:2638:G:H2' | 22:BA:2775:G:H22 | 1.83 | 0.43 |
| 24:BC:36:ASN:O | 24:BC:37:SER:HB3 | 2.18 | 0.43 |
| 26:BE:31:VAL:HG21 | 26:BE:104:ALA:CB | 2.48 | 0.43 |
| 27:BF:39:VAL:C | 27:BF:41:GLU:H | 2.21 | 0.43 |
| 28:BG:30:GLY:O | 28:BG:78:VAL:HG12 | 2.18 | 0.43 |
| 28:BG:66:THR:O | 28:BG:70:LEU:HG | 2.18 | 0.43 |
| 31:BJ:38:GLY:O | 31:BJ:40:HIS:N | 2.52 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 31:BJ:54:ILE:HD12 | 31:BJ:55:ILE:C | 2.39 | 0.43 |
| 32:BK:8:LEU:N | 32:BK:8:LEU:CD2 | 2.80 | 0.43 |
| 33:BL:130:GLY:O | 33:BL:133:ALA:HB3 | 2.18 | 0.43 |
| 41:BT:40:LYS:HA | 41:BT:43:ILE:HG23 | 2.00 | 0.43 |
| 53:CA:65:A:C4 | 53:CA:200:G:O2' | 2.72 | 0.43 |
| 53:CA:84:U:H3 | 53:CA:87:C:H1' | 1.80 | 0.43 |
| 53:CA:112:G:N2 | 53:CA:113:G:H1' | 2.33 | 0.43 |
| 53:CA:155:A:C6 | 53:CA:156:C:C4 | 3.06 | 0.43 |
| 53:CA:247:G:OP1 | 53:CA:247:G:H4' | 2.18 | 0.43 |
| 53:CA:640:A:C2' | 8:CH:106:SER:HB2 | 2.48 | 0.43 |
| 53:CA:705:G:H2' | 53:CA:706:A:H8 | 1.82 | 0.43 |
| 53:CA:951:G:H1' | 53:CA:970:C:O2' | 2.18 | 0.43 |
| 53:CA:992:U:H1' | 53:CA:993:G:N2 | 2.33 | 0.43 |
| 53:CA:1026:G:N2 | 53:CA:1036:A:H61 | 2.16 | 0.43 |
| 53:CA:1145:A:O2' | 53:CA:1146:A:C5' | 2.66 | 0.43 |
| 2:CB:67:LEU:HD23 | 2:CB:67:LEU:HA | 1.84 | 0.43 |
| 2:CB:187:ASP:O | 2:CB:189:ASN:N | 2.51 | 0.43 |
| 2:CB:212:TYR:HD2 | 2:CB:216:VAL:HG23 | 1.82 | 0.43 |
| 4:CD:2:ARG:NE | 4:CD:114:ARG:HD2 | 2.34 | 0.43 |
| 54:CG:63:VAL:HG11 | 54:CG:127:ALA:CB | 2.48 | 0.43 |
| 9:CI:51:LEU:C | 9:CI:53:LEU:N | 2.71 | 0.43 |
| 10:CJ:11:LYS:HA | 10:CJ:18:ILE:HD11 | 2.00 | 0.43 |
| 11:CK:85:VAL:HG11 | 11:CK:92:ARG:HH11 | 1.84 | 0.43 |
| 14:CN:1:ALA:HA | 14:CN:67:GLY:O | 2.18 | 0.43 |
| 14:CN:13:VAL:HG22 | 14:CN:59:GLN:OE1 | 2.19 | 0.43 |
| 18:CR:32:ILE:HA | 18:CR:39:VAL:HG23 | 2.00 | 0.43 |
| 57:DA:56:A:C2 | 57:DA:115:C:C2 | 3.07 | 0.43 |
| 57:DA:197:A:C5 | 57:DA:2430:A:C4 | 3.07 | 0.43 |
| 57:DA:502:A:C6 | 57:DA:505:A:C5 | 3.06 | 0.43 |
| 57:DA:506:G:H4' | 57:DA:507:A:H5' | 1.99 | 0.43 |
| 57:DA:510:C:O2' | 57:DA:511:U:H5' | 2.18 | 0.43 |
| 57:DA:591:U:H2' | 57:DA:592:A:C8 | 2.53 | 0.43 |
| 57:DA:699:A:C2 | 57:DA:734:A:H1' | 2.53 | 0.43 |
| 57:DA:826:U:H5' | 57:DA:2428:G:O2' | 2.18 | 0.43 |
| 57:DA:866:A:N7 | 57:DA:914:G:N7 | 2.66 | 0.43 |
| 57:DA:1267:U:HO2' | 57:DA:1268:A:C5' | 2.31 | 0.43 |
| 57:DA:1360:G:C6 | 57:DA:1372:U:C2 | 3.07 | 0.43 |
| 57:DA:1373:A:C5' | 57:DA:2212:A:H1' | 2.49 | 0.43 |
| 57:DA:1465:G:C5 | 57:DA:1466:U:C5 | 3.06 | 0.43 |
| 57:DA:1469:A:C2 | 57:DA:1470:A:C6 | 3.06 | 0.43 |
| 57:DA:1476:U:O2 | 57:DA:1516:G:C2 | 2.72 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1570:A:C6 | 57:DA:1571:A:N1 | 2.87 | 0.43 |
| 57:DA:1629:U:H2' | 57:DA:1630:A:O4' | 2.19 | 0.43 |
| 57:DA:1793:C:H2' | 57:DA:1794:A:O4' | 2.18 | 0.43 |
| 57:DA:1915:U:O2' | 57:DA:1916:A:C5' | 2.65 | 0.43 |
| 57:DA:2061:G:C4 | 57:DA:2063:C:N4 | 2.86 | 0.43 |
| 57:DA:2097:A:H2' | 57:DA:2098:U:C6 | 2.53 | 0.43 |
| 57:DA:2283:C:C4 | 57:DA:2389:G:C4 | 3.07 | 0.43 |
| 57:DA:2571:U:H6 | 57:DA:2571:U:O5' | 2.00 | 0.43 |
| 57:DA:2733:A:O2' | 57:DA:2734:A:H5' | 2.18 | 0.43 |
| 57:DA:2751:G:N3 | 57:DA:2751:G:H2' | 2.33 | 0.43 |
| 57:DA:2884:U:O2 | 48:D0:49:ARG:NE | 2.51 | 0.43 |
| 24:DC:128:THR:HA | 24:DC:190:THR:HA | 2.01 | 0.43 |
| 25:DD:28:GLU:OE2 | 25:DD:30:GLU:HG3 | 2.19 | 0.43 |
| 26:DE:128:ALA:O | 26:DE:130:LYS:HG2 | 2.19 | 0.43 |
| 59:DF:8:LYS:HG3 | 59:DF:12:VAL:HG21 | 1.99 | 0.43 |
| 59:DF:28:PRO:HB2 | 59:DF:168:LEU:HD11 | 2.01 | 0.43 |
| 59:DF:37:MET:HE3 | 59:DF:56:LEU:HB2 | 2.01 | 0.43 |
| 31:DJ:49:ASP:HB2 | 31:DJ:121:LYS:HZ2 | 1.83 | 0.43 |
| 34:DM:72:PRO:O | 34:DM:92:TRP:HA | 2.19 | 0.43 |
| 34:DM:74:THR:OG1 | 34:DM:86:LYS:NZ | 2.52 | 0.43 |
| 35:DN:31:HIS:O | 35:DN:33:ILE:HG13 | 2.17 | 0.43 |
| 37:DP:47:ILE:HD11 | 37:DP:70:GLU:HG2 | 1.98 | 0.43 |
| 37:DP:65:ASN:N | 37:DP:65:ASN:ND2 | 2.66 | 0.43 |
| 37:DP:67:GLU:OE1 | 37:DP:68:GLY:N | 2.52 | 0.43 |
| 41:DT:55:VAL:HG21 | 41:DT:85:VAL:O | 2.19 | 0.43 |
| 41:DT:59:ASN:O | 41:DT:84:TYR:HB2 | 2.17 | 0.43 |
| 44:DW:20:LEU:HD12 | 44:DW:20:LEU:N | 2.33 | 0.43 |
| 44:DW:40:ARG:NH1 | 44:DW:40:ARG:CG | 2.59 | 0.43 |
| 45:DX:33:HIS:O | 45:DX:34:SER:O | 2.36 | 0.43 |
| 48:D0:42:ILE:HD13 | 48:D0:42:ILE:HA | 1.73 | 0.43 |
| 1:AA:15:G:N7 | 1:AA:1396:A:C2 | 2.87 | 0.43 |
| 1:AA:418:C:N4 | 63:AA:1716:HOH:O | 2.51 | 0.43 |
| 1:AA:481:G:H3' | 1:AA:481:G:C8 | 2.53 | 0.43 |
| 1:AA:748:G:C6 | 1:AA:749:A:C5 | 3.07 | 0.43 |
| 1:AA:801:U:H2' | 1:AA:802:A:C8 | 2.54 | 0.43 |
| 1:AA:842:U:O2' | 1:AA:846:G:N1 | 2.50 | 0.43 |
| 1:AA:976:G:N1 | 1:AA:1363:A:C2 | 2.86 | 0.43 |
| 1:AA:1022:A:H2' | 1:AA:1023:U:O4' | 2.17 | 0.43 |
| 2:AB:22:TRP:HA | 2:AB:189:ASN:HA | 2.01 | 0.43 |
| 2:AB:88:GLN:HG3 | 2:AB:88:GLN:H | 1.62 | 0.43 |
| 2:AB:98:GLY:C | 2:AB:100:LEU:H | 2.21 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:AB:185:ILE:HA | 2:AB:199:ILE:O | 2.19 | 0.43 |
| 2:AB:191:ASP:HA | 2:AB:192:PRO:HD2 | 1.77 | 0.43 |
| 4:AD:48:SER:O | 4:AD:52:VAL:HG13 | 2.18 | 0.43 |
| 4:AD:110:ARG:O | 4:AD:113:ALA:HB3 | 2.17 | 0.43 |
| 16:AP:46:LYS:HB2 | 16:AP:47:GLU:H | 1.60 | 0.43 |
| 22:BA:41:C:H2' | 22:BA:42:A:O4' | 2.19 | 0.43 |
| 22:BA:64:A:H2' | 22:BA:65:U:C6 | 2.53 | 0.43 |
| 22:BA:373:U:H2' | 22:BA:374:A:C8 | 2.54 | 0.43 |
| 22:BA:434:U:C4' | 22:BA:435:C:OP1 | 2.65 | 0.43 |
| 22:BA:983:A:N6 | 22:BA:984:A:N1 | 2.67 | 0.43 |
| 22:BA:1069:A:N1 | 22:BA:1073:A:N6 | 2.66 | 0.43 |
| 22:BA:1072:C:H6 | 22:BA:1072:C:H2' | 1.35 | 0.43 |
| 22:BA:1187:G:HO2' | 22:BA:1188:U:H6 | 1.63 | 0.43 |
| 22:BA:1430:G:O2' | 22:BA:1431:A:H5' | 2.18 | 0.43 |
| 22:BA:1820:U:O2 | 24:BC:200:MET:N | 2.51 | 0.43 |
| 22:BA:1858:A:N6 | 22:BA:1884:G:H1' | 2.34 | 0.43 |
| 22:BA:2319:G:O2' | 22:BA:2320:U:C5 | 2.70 | 0.43 |
| 22:BA:2446:G:H5'' | 22:BA:2447:G:OP2 | 2.18 | 0.43 |
| 22:BA:2507:C:H5'' | 22:BA:2508:G:OP2 | 2.19 | 0.43 |
| 22:BA:2617:U:C2' | 22:BA:2618:G:H5' | 2.48 | 0.43 |
| 22:BA:2722:G:H8 | 22:BA:2722:G:O5' | 2.02 | 0.43 |
| 24:BC:196:ASN:OD1 | 24:BC:197:ALA:N | 2.51 | 0.43 |
| 24:BC:257:ARG:CG | 24:BC:269:ARG:HH22 | 2.32 | 0.43 |
| 25:BD:104:VAL:HG13 | 25:BD:106:LYS:HD2 | 2.00 | 0.43 |
| 25:BD:114:LYS:O | 25:BD:114:LYS:CE | 2.66 | 0.43 |
| 26:BE:142:ALA:O | 26:BE:143:LEU:HD23 | 2.19 | 0.43 |
| 28:BG:83:THR:O | 28:BG:84:LYS:HB3 | 2.19 | 0.43 |
| 31:BJ:25:LEU:HB2 | 31:BJ:62:VAL:CG2 | 2.48 | 0.43 |
| 32:BK:88:ASN:ND2 | 32:BK:90:ASN:N | 2.66 | 0.43 |
| 34:BM:53:MET:O | 34:BM:56:ALA:HB3 | 2.18 | 0.43 |
| 34:BM:78:LEU:O | 34:BM:80:VAL:N | 2.51 | 0.43 |
| 36:BO:2:ASP:O | 36:BO:3:LYS:CB | 2.66 | 0.43 |
| 37:BP:33:GLU:OE2 | 37:BP:38:ARG:NH1 | 2.51 | 0.43 |
| 37:BP:47:ILE:HA | 37:BP:96:LEU:HB2 | 1.99 | 0.43 |
| 41:BT:29:THR:N | 41:BT:91:GLN:HE22 | 2.16 | 0.43 |
| 41:BT:29:THR:CB | 41:BT:86:THR:HG22 | 2.47 | 0.43 |
| 42:BU:24:VAL:HG22 | 42:BU:35:VAL:HG22 | 2.01 | 0.43 |
| 43:BV:29:ILE:HG12 | 43:BV:30:ILE:N | 2.34 | 0.43 |
| 47:BZ:6:ILE:O | 47:BZ:34:THR:HA | 2.19 | 0.43 |
| 47:BZ:52:PHE:CE2 | 47:BZ:53:MET:SD | 3.11 | 0.43 |
| 50:B2:12:ARG:HG3 | 50:B2:13:ASN:ND2 | 2.34 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:36:C:OP1 | 12:CL:119:LYS:HE3 | 2.19 | 0.43 |
| 53:CA:182:A:C4 | 53:CA:184:G:N7 | 2.87 | 0.43 |
| 53:CA:355:C:H2' | 53:CA:356:A:O4' | 2.18 | 0.43 |
| 53:CA:428:G:H1' | 53:CA:430:A:C8 | 2.53 | 0.43 |
| 53:CA:642:A:HO2' | 53:CA:643:C:H6 | 1.49 | 0.43 |
| 53:CA:780:A:C2 | 53:CA:803:G:C6 | 3.07 | 0.43 |
| 53:CA:830:G:H5' | 2:CB:22:TRP:HE1 | 1.84 | 0.43 |
| 53:CA:1012:A:C5 | 53:CA:1013:G:N7 | 2.86 | 0.43 |
| 53:CA:1108:G:OP1 | 3:CC:175:HIS:ND1 | 2.44 | 0.43 |
| 53:CA:1281:C:H5' | 53:CA:1282:C:H5 | 1.83 | 0.43 |
| 53:CA:1319:A:C6 | 53:CA:1323:G:C4 | 3.06 | 0.43 |
| 53:CA:1410:A:H2' | 53:CA:1411:C:C6 | 2.53 | 0.43 |
| 2:CB:133:ALA:HA | 2:CB:137:THR:CG2 | 2.48 | 0.43 |
| 4:CD:190:LEU:HD23 | 4:CD:190:LEU:C | 2.38 | 0.43 |
| 5:CE:80:LEU:N | 5:CE:121:ASN:HD21 | 2.16 | 0.43 |
| 5:CE:114:LEU:HD13 | 5:CE:122:VAL:HG11 | 2.00 | 0.43 |
| 54:CG:77:ARG:HA | 54:CG:77:ARG:HD3 | 1.70 | 0.43 |
| 55:CM:47:LEU:HD23 | 55:CM:48:SER:N | 2.33 | 0.43 |
| 20:CT:61:ALA:O | 20:CT:67:HIS:HA | 2.18 | 0.43 |
| 57:DA:2:G:C2 | 57:DA:3:U:C2 | 3.06 | 0.43 |
| 57:DA:91:A:H1' | 57:DA:92:U:C6 | 2.53 | 0.43 |
| 57:DA:203:A:H3' | 57:DA:204:A:C8 | 2.53 | 0.43 |
| 57:DA:250:G:O6 | 57:DA:386:G:N2 | 2.44 | 0.43 |
| 57:DA:301:G:C8 | 57:DA:334:C:C2 | 3.05 | 0.43 |
| 57:DA:704:G:H1' | 57:DA:727:A:H61 | 1.82 | 0.43 |
| 57:DA:775:G:O6 | 57:DA:787:C:H2' | 2.19 | 0.43 |
| 57:DA:995:C:C2 | 31:DJ:3:THR:HG23 | 2.52 | 0.43 |
| 57:DA:1045:C:H4' | 57:DA:1047:G:C4 | 2.53 | 0.43 |
| 57:DA:1312:U:C2 | 57:DA:1603:A:N1 | 2.86 | 0.43 |
| 57:DA:1649:G:N1 | 57:DA:2009:A:C6 | 2.86 | 0.43 |
| 57:DA:1745:A:N3 | 57:DA:1746:A:C8 | 2.86 | 0.43 |
| 57:DA:1999:C:H4' | 57:DA:2723:C:O2 | 2.18 | 0.43 |
| 57:DA:2104:C:O2 | 57:DA:2105:U:C5 | 2.56 | 0.43 |
| 57:DA:2269:G:C5 | 57:DA:2270:A:N7 | 2.86 | 0.43 |
| 57:DA:2303:G:N1 | 57:DA:2314:A:C5 | 2.86 | 0.43 |
| 57:DA:2407:A:C6 | 57:DA:2408:U:O4 | 2.71 | 0.43 |
| 57:DA:2563:U:C1' | 57:DA:2566:A:N6 | 2.81 | 0.43 |
| 57:DA:2648:G:C4 | 57:DA:2673:G:N2 | 2.86 | 0.43 |
| 24:DC:79:ARG:HD3 | 24:DC:81:GLU:OE1 | 2.19 | 0.43 |
| 31:DJ:111:LYS:HB2 | 31:DJ:115:GLY:CA | 2.48 | 0.43 |
| 32:DK:63:VAL:HG12 | 32:DK:64:ARG:CD | 2.47 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 32:DK:87:LEU:HB3 | 32:DK:94:PRO:HA | 2.01 | 0.43 |
| 35:DN:97:ILE:HD11 | 35:DN:99:LYS:HZ2 | 1.84 | 0.43 |
| 36:DO:41:ALA:O | 36:DO:43:ASN:N | 2.45 | 0.43 |
| 37:DP:19:PHE:O | 37:DP:20:ARG:HB3 | 2.18 | 0.43 |
| 37:DP:51:ASN:O | 37:DP:52:ARG:HD3 | 2.19 | 0.43 |
| 39:DR:37:GLU:HB2 | 39:DR:53:PHE:CG | 2.53 | 0.43 |
| 43:DV:21:ARG:HD3 | 43:DV:87:GLN:HG2 | 2.01 | 0.43 |
| 48:D0:53:VAL:O | 48:D0:54:ILE:O | 2.37 | 0.43 |
| 1:AA:173:U:C2 | 1:AA:197:A:N1 | 2.86 | 0.43 |
| 1:AA:282:A:C2 | 1:AA:283:U:H1' | 2.54 | 0.43 |
| 1:AA:701:U:O2' | 1:AA:702:A:P | 2.76 | 0.43 |
| 1:AA:737:C:H2' | 1:AA:738:C:H6 | 1.83 | 0.43 |
| 1:AA:1123:U:H5'' | 1:AA:1124:G:OP2 | 2.19 | 0.43 |
| 1:AA:1371:G:OP2 | 9:AI:12:LYS:HD3 | 2.17 | 0.43 |
| 2:AB:67:LEU:HB3 | 2:AB:160:LEU:HD12 | 2.00 | 0.43 |
| 2:AB:84:LEU:O | 2:AB:84:LEU:HG | 2.18 | 0.43 |
| 8:AH:93:LYS:HE3 | 8:AH:116:ARG:NH1 | 2.32 | 0.43 |
| 16:AP:71:VAL:O | 16:AP:75:ILE:HG13 | 2.18 | 0.43 |
| 17:AQ:58:VAL:HG23 | 17:AQ:77:VAL:HG22 | 2.00 | 0.43 |
| 17:AQ:58:VAL:HG22 | 17:AQ:59:GLU:N | 2.33 | 0.43 |
| 22:BA:959:A:C6 | 22:BA:960:A:N1 | 2.87 | 0.43 |
| 22:BA:1055:G:H3' | 22:BA:1056:G:H8 | 1.83 | 0.43 |
| 22:BA:1343:G:C4 | 22:BA:1344:U:C5 | 3.06 | 0.43 |
| 22:BA:1392:A:N6 | 22:BA:1393:A:N6 | 2.67 | 0.43 |
| 22:BA:1498:C:O2' | 22:BA:1499:C:H6 | 2.00 | 0.43 |
| 22:BA:1696:G:H5'' | 22:BA:1696:G:C8 | 2.48 | 0.43 |
| 22:BA:2298:A:N6 | 22:BA:2318:G:H1' | 2.32 | 0.43 |
| 22:BA:2380:C:H2' | 22:BA:2381:A:H8 | 1.84 | 0.43 |
| 22:BA:2554:U:C4 | 22:BA:2555:U:O4 | 2.71 | 0.43 |
| 22:BA:2572:A:HO2' | 22:BA:2573:C:P | 2.41 | 0.43 |
| 22:BA:2592:G:C5 | 22:BA:2593:U:C4 | 3.07 | 0.43 |
| 24:BC:67:LYS:O | 24:BC:68:ARG:HB2 | 2.18 | 0.43 |
| 27:BF:39:VAL:HG13 | 27:BF:40:GLY:N | 2.34 | 0.43 |
| 28:BG:45:ALA:O | 28:BG:46:ASP:CB | 2.66 | 0.43 |
| 28:BG:175:LYS:HA | 28:BG:175:LYS:HD3 | 1.81 | 0.43 |
| 30:BI:3:LYS:HD2 | 30:BI:4:VAL:H | 1.82 | 0.43 |
| 30:BI:79:LEU:HD21 | 30:BI:132:ALA:HB1 | 2.00 | 0.43 |
| 32:BK:85:VAL:HG11 | 32:BK:115:ILE:HD11 | 1.99 | 0.43 |
| 38:BQ:13:HIS:HD2 | 38:BQ:31:TYR:CZ | 2.36 | 0.43 |
| 40:BS:45:VAL:HG22 | 40:BS:46:LEU:N | 2.33 | 0.43 |
| 44:BW:28:GLU:HB3 | 44:BW:31:LEU:CG | 2.48 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 48:B0:48:TYR:CD2 | 48:B0:49:ARG:HG3 | 2.52 | 0.43 |
| 53:CA:78:A:C6 | 53:CA:79:G:C6 | 3.07 | 0.43 |
| 53:CA:216:U:C5' | 53:CA:464:U:H4' | 2.48 | 0.43 |
| 53:CA:255:G:H4' | 17:CQ:18:LYS:HB2 | 1.99 | 0.43 |
| 53:CA:276:G:O2' | 53:CA:277:C:C5' | 2.67 | 0.43 |
| 53:CA:282:A:H2' | 53:CA:283:U:H6 | 1.83 | 0.43 |
| 53:CA:661:G:C2 | 53:CA:662:U:C6 | 3.07 | 0.43 |
| 53:CA:754:C:C2' | 53:CA:755:G:H5' | 2.48 | 0.43 |
| 53:CA:953:G:C6 | 53:CA:954:G:C6 | 3.06 | 0.43 |
| 53:CA:960:U:C4' | 53:CA:961:U:H5'' | 2.48 | 0.43 |
| 53:CA:1308:U:OP1 | 55:CM:95:PRO:HB3 | 2.18 | 0.43 |
| 53:CA:1370:G:H2' | 53:CA:1371:G:C8 | 2.53 | 0.43 |
| 4:CD:96:ARG:O | 4:CD:100:VAL:HG23 | 2.18 | 0.43 |
| 9:CI:117:LEU:CD2 | 9:CI:123:ARG:HD3 | 2.49 | 0.43 |
| 14:CN:64:ARG:HD3 | 14:CN:77:GLY:O | 2.18 | 0.43 |
| 56:CP:4:ILE:HA | 56:CP:20:VAL:O | 2.19 | 0.43 |
| 57:DA:116:C:H5'' | 57:DA:128:C:N4 | 2.33 | 0.43 |
| 57:DA:297:G:H5'' | 42:DU:84:PHE:CB | 2.36 | 0.43 |
| 57:DA:426:C:C2' | 57:DA:427:U:H5' | 2.48 | 0.43 |
| 57:DA:448:U:H4' | 57:DA:449:A:OP2 | 2.18 | 0.43 |
| 57:DA:455:C:N3 | 57:DA:473:G:H4' | 2.33 | 0.43 |
| 57:DA:590:A:C4 | 57:DA:591:U:C5 | 3.06 | 0.43 |
| 57:DA:753:A:O2' | 57:DA:754:U:H5' | 2.19 | 0.43 |
| 57:DA:824:U:C4 | 57:DA:825:A:N7 | 2.86 | 0.43 |
| 57:DA:828:U:P | 57:DA:2068:U:C5 | 3.12 | 0.43 |
| 57:DA:996:A:C5 | 57:DA:1160:G:C2 | 3.06 | 0.43 |
| 57:DA:1285:A:C6 | 57:DA:1329:U:C5 | 3.06 | 0.43 |
| 57:DA:1345:C:C5' | 57:DA:1396:U:O4 | 2.66 | 0.43 |
| 57:DA:1363:C:H2' | 57:DA:1364:G:O4' | 2.19 | 0.43 |
| 57:DA:1512:C:C4 | 57:DA:1513:U:C4 | 3.07 | 0.43 |
| 57:DA:1654:A:O2' | 57:DA:1655:A:O5' | 2.36 | 0.43 |
| 57:DA:1839:G:O2' | 57:DA:1840:G:H5' | 2.19 | 0.43 |
| 57:DA:2094:A:H2' | 57:DA:2095:A:H8 | 1.83 | 0.43 |
| 57:DA:2108:A:C8 | 57:DA:2108:A:OP2 | 2.72 | 0.43 |
| 57:DA:2303:G:C6 | 57:DA:2314:A:N6 | 2.86 | 0.43 |
| 57:DA:2314:A:H2' | 57:DA:2315:G:C8 | 2.53 | 0.43 |
| 57:DA:2342:C:O2' | 57:DA:2374:C:H5'' | 2.18 | 0.43 |
| 57:DA:2425:A:H1' | 57:DA:2427:C:C4 | 2.54 | 0.43 |
| 57:DA:2440:C:C2 | 57:DA:2441:U:H1' | 2.53 | 0.43 |
| 57:DA:2460:U:H2' | 57:DA:2461:A:O4' | 2.19 | 0.43 |
| 57:DA:2686:G:C5 | 57:DA:2687:U:C4 | 3.06 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 58:DB:42:C:O2 | 59:DF:89:THR:N | 2.52 | 0.43 |
| 24:DC:69:ASN:O | 24:DC:70:LYS:C | 2.57 | 0.43 |
| 24:DC:123:ILE:O | 24:DC:123:ILE:HG23 | 2.18 | 0.43 |
| 25:DD:193:VAL:O | 25:DD:194:PRO:O | 2.36 | 0.43 |
| 59:DF:43:ILE:HG23 | 59:DF:44:ALA:N | 2.25 | 0.43 |
| 28:DG:11:PRO:HD2 | 28:DG:14:VAL:HG11 | 2.01 | 0.43 |
| 29:DH:50:ARG:HG3 | 29:DH:54:LEU:HG | 2.01 | 0.43 |
| 32:DK:2:ILE:HB | 32:DK:33:ALA:HB3 | 2.00 | 0.43 |
| 34:DM:51:ARG:HE | 34:DM:51:ARG:HB2 | 1.65 | 0.43 |
| 35:DN:36:THR:HG23 | 35:DN:41:ALA:HB2 | 2.01 | 0.43 |
| 35:DN:52:ILE:O | 35:DN:56:LYS:HB2 | 2.17 | 0.43 |
| 38:DQ:43:GLN:O | 38:DQ:44:TYR:C | 2.57 | 0.43 |
| 39:DR:33:VAL:O | 39:DR:61:ALA:HB3 | 2.18 | 0.43 |
| 40:DS:28:LYS:O | 40:DS:29:VAL:HG23 | 2.19 | 0.43 |
| 40:DS:28:LYS:HA | 40:DS:70:LYS:HA | 1.99 | 0.43 |
| 40:DS:50:VAL:O | 40:DS:53:SER:HB3 | 2.19 | 0.43 |
| 43:DV:79:ARG:HB3 | 43:DV:79:ARG:CZ | 2.48 | 0.43 |
| 45:DX:10:ARG:HB3 | 45:DX:11:PRO:HD2 | 2.00 | 0.43 |
| 50:D2:1:MET:HG3 | 50:D2:2:LYS:N | 2.34 | 0.43 |
| 1:AA:517:G:O2' | 1:AA:530:G:H4' | 2.19 | 0.43 |
| 1:AA:558:G:C5 | 1:AA:559:A:C2 | 3.07 | 0.43 |
| 1:AA:787:A:C5 | 1:AA:788:U:C5 | 3.07 | 0.43 |
| 1:AA:792:A:C4 | 1:AA:794:A:C6 | 3.07 | 0.43 |
| 1:AA:1108:G:OP1 | 3:AC:175:HIS:HB2 | 2.18 | 0.43 |
| 2:AB:202:ASN:HB3 | 2:AB:208:ALA:HB2 | 2.00 | 0.43 |
| 2:AB:209:VAL:HG23 | 2:AB:210:THR:N | 2.31 | 0.43 |
| 6:AF:91:ARG:HG3 | 6:AF:92:THR:N | 2.26 | 0.43 |
| 7:AG:108:ARG:HH21 | 7:AG:118:ARG:HH22 | 1.67 | 0.43 |
| 12:AL:101:LEU:C | 12:AL:103:CYS:H | 2.22 | 0.43 |
| 13:AM:3:ILE:O | 13:AM:5:GLY:N | 2.52 | 0.43 |
| 14:AN:62:ARG:O | 14:AN:63:CYS:C | 2.55 | 0.43 |
| 16:AP:33:ILE:O | 16:AP:34:GLU:HB3 | 2.19 | 0.43 |
| 20:AT:15:LYS:HD3 | 20:AT:15:LYS:C | 2.38 | 0.43 |
| 22:BA:24:G:O2' | 40:BS:77:ASP:HB3 | 2.19 | 0.43 |
| 22:BA:28:A:C4 | 22:BA:513:A:C5 | 3.06 | 0.43 |
| 22:BA:417:C:H2' | 22:BA:418:C:C6 | 2.54 | 0.43 |
| 22:BA:666:A:H4' | 33:BL:48:ARG:HD2 | 2.01 | 0.43 |
| 22:BA:669:G:C4 | 22:BA:801:G:C6 | 3.07 | 0.43 |
| 22:BA:675:A:C4 | 22:BA:804:A:C2 | 3.07 | 0.43 |
| 22:BA:735:A:H3' | 22:BA:736:C:H6 | 1.83 | 0.43 |
| 22:BA:858:G:C4 | 22:BA:2268:A:C2 | 3.06 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:1079:C:C2 | 22:BA:1080:A:C8 | 3.07 | 0.43 |
| 22:BA:1851:U:C4 | 22:BA:1852:U:C4 | 3.07 | 0.43 |
| 22:BA:2149:U:C2' | 22:BA:2150:C:O5' | 2.67 | 0.43 |
| 22:BA:2438:U:O2' | 22:BA:2440:C:OP1 | 2.31 | 0.43 |
| 22:BA:2823:A:H2' | 22:BA:2824:C:H5' | 2.01 | 0.43 |
| 23:BB:22:U:H2' | 23:BB:23:G:C8 | 2.53 | 0.43 |
| 24:BC:18:VAL:O | 24:BC:18:VAL:HG13 | 2.18 | 0.43 |
| 27:BF:3:LEU:HA | 27:BF:3:LEU:HD13 | 1.53 | 0.43 |
| 28:BG:1:SER:HA | 28:BG:5:LYS:HG3 | 2.00 | 0.43 |
| 29:BH:33:GLN:HB2 | 29:BH:33:GLN:HE21 | 1.59 | 0.43 |
| 30:BI:56:VAL:CG2 | 30:BI:68:PHE:HB2 | 2.49 | 0.43 |
| 31:BJ:49:ASP:HB2 | 31:BJ:114:LEU:HD21 | 2.00 | 0.43 |
| 33:BL:55:MET:HE2 | 33:BL:56:PRO:HD3 | 1.99 | 0.43 |
| 35:BN:116:VAL:HG22 | 35:BN:116:VAL:O | 2.17 | 0.43 |
| 38:BQ:91:ARG:HD3 | 39:BR:11:GLN:HB2 | 2.00 | 0.43 |
| 39:BR:83:TYR:CD1 | 39:BR:83:TYR:C | 2.91 | 0.43 |
| 43:BV:68:LYS:O | 43:BV:69:GLU:O | 2.36 | 0.43 |
| 44:BW:28:GLU:CG | 44:BW:29:SER:N | 2.81 | 0.43 |
| 47:BZ:39:ASP:OD2 | 47:BZ:44:ARG:NH1 | 2.52 | 0.43 |
| 53:CA:80:A:H3' | 53:CA:81:A:C4' | 2.49 | 0.43 |
| 53:CA:168:G:C6 | 53:CA:169:C:C5 | 3.07 | 0.43 |
| 53:CA:257:G:C2 | 53:CA:270:A:N1 | 2.87 | 0.43 |
| 53:CA:295:C:C6 | 53:CA:296:U:H5 | 2.37 | 0.43 |
| 53:CA:547:A:OP2 | 4:CD:1:ALA:HB3 | 2.19 | 0.43 |
| 53:CA:673:A:H1' | 18:CR:63:TYR:HE2 | 1.82 | 0.43 |
| 53:CA:794:A:H5'' | 53:CA:794:A:C8 | 2.44 | 0.43 |
| 53:CA:825:A:H2' | 53:CA:826:C:C6 | 2.54 | 0.43 |
| 53:CA:825:A:H2' | 53:CA:826:C:H6 | 1.82 | 0.43 |
| 53:CA:854:U:H3' | 53:CA:871:U:H3 | 1.84 | 0.43 |
| 53:CA:861:G:C6 | 53:CA:862:C:C4 | 3.06 | 0.43 |
| 53:CA:1008:U:C4 | 53:CA:1009:U:C4 | 3.07 | 0.43 |
| 53:CA:1026:G:H22 | 53:CA:1036:A:H61 | 1.66 | 0.43 |
| 53:CA:1217:C:O2' | 53:CA:1218:C:C5' | 2.67 | 0.43 |
| 53:CA:1408:A:N1 | 53:CA:1494:G:C5 | 2.87 | 0.43 |
| 3:CC:113:LYS:HE3 | 3:CC:184:ASN:HD21 | 1.83 | 0.43 |
| 54:CG:85:GLN:HE21 | 54:CG:85:GLN:HB3 | 1.56 | 0.43 |
| 54:CG:113:LYS:HE2 | 54:CG:113:LYS:HB3 | 1.88 | 0.43 |
| 9:CI:17:ARG:NH1 | 9:CI:65:THR:HG21 | 2.33 | 0.43 |
| 10:CJ:59:LYS:H | 10:CJ:59:LYS:HG3 | 1.64 | 0.43 |
| 55:CM:41:ASP:O | 55:CM:42:VAL:HB | 2.18 | 0.43 |
| 14:CN:1:ALA:HA | 14:CN:67:GLY:C | 2.39 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:54:G:C6 | 57:DA:117:G:N2 | 2.87 | 0.43 |
| 57:DA:203:A:H3' | 57:DA:204:A:H8 | 1.84 | 0.43 |
| 57:DA:228:C:H4' | 57:DA:229:C:H6 | 1.83 | 0.43 |
| 57:DA:279:A:N6 | 57:DA:280:U:N3 | 2.67 | 0.43 |
| 57:DA:327:G:H2' | 57:DA:328:U:O4' | 2.18 | 0.43 |
| 57:DA:465:G:O4' | 50:D2:16:HIS:CD2 | 2.71 | 0.43 |
| 57:DA:627:A:O2' | 57:DA:628:G:P | 2.76 | 0.43 |
| 57:DA:629:G:N2 | 57:DA:639:U:O3' | 2.51 | 0.43 |
| 57:DA:779:U:OP1 | 24:DC:48:ILE:HG13 | 2.19 | 0.43 |
| 57:DA:1027:A:N6 | 57:DA:1126:A:H1' | 2.33 | 0.43 |
| 57:DA:1036:G:C5 | 57:DA:1120:G:C6 | 3.07 | 0.43 |
| 57:DA:1136:G:O2' | 57:DA:2038:G:O2' | 2.32 | 0.43 |
| 57:DA:1287:A:OP1 | 35:DN:103:ARG:HD2 | 2.17 | 0.43 |
| 57:DA:1409:U:O5' | 57:DA:1409:U:H6 | 2.02 | 0.43 |
| 57:DA:1737:G:N7 | 57:DA:1738:G:O6 | 2.52 | 0.43 |
| 57:DA:2217:G:H2' | 57:DA:2218:G:C8 | 2.47 | 0.43 |
| 57:DA:2638:G:H1' | 57:DA:2778:A:H62 | 1.83 | 0.43 |
| 57:DA:2843:G:C2 | 57:DA:2875:C:N3 | 2.87 | 0.43 |
| 25:DD:172:VAL:O | 25:DD:172:VAL:HG12 | 2.18 | 0.43 |
| 29:DH:68:ARG:HD3 | 29:DH:71:LYS:HB2 | 2.00 | 0.43 |
| 30:DI:102:ARG:HG2 | 30:DI:141:ASP:O | 2.17 | 0.43 |
| 35:DN:24:MET:HG2 | 35:DN:44:LEU:CD2 | 2.43 | 0.43 |
| 36:DO:2:ASP:O | 36:DO:4:LYS:N | 2.51 | 0.43 |
| 43:DV:56:PHE:CE1 | 43:DV:61:LEU:HD13 | 2.54 | 0.43 |
| 1:AA:115:G:H4' | 1:AA:116:A:O5' | 2.18 | 0.43 |
| 1:AA:184:G:H2' | 1:AA:185:U:C6 | 2.54 | 0.43 |
| 1:AA:335:C:H2' | 1:AA:336:A:C8 | 2.54 | 0.43 |
| 1:AA:342:C:H2' | 1:AA:343:U:H5' | 1.99 | 0.43 |
| 1:AA:429:U:C3' | 4:AD:8:LEU:HD23 | 2.49 | 0.43 |
| 1:AA:479:U:O2' | 1:AA:480:U:H5' | 2.19 | 0.43 |
| 1:AA:753:A:H4' | 1:AA:754:C:C5' | 2.49 | 0.43 |
| 1:AA:1093:A:N3 | 1:AA:1109:C:O2' | 2.49 | 0.43 |
| 2:AB:68:PHE:CD2 | 2:AB:83:ALA:HB1 | 2.53 | 0.43 |
| 2:AB:141:GLU:O | 2:AB:144:GLU:HB2 | 2.19 | 0.43 |
| 5:AE:60:GLN:C | 5:AE:62:ALA:H | 2.21 | 0.43 |
| 5:AE:148:SER:HA | 5:AE:149:PRO:HD2 | 1.83 | 0.43 |
| 7:AG:144:ALA:C | 7:AG:146:ALA:N | 2.72 | 0.43 |
| 8:AH:8:ASP:O | 8:AH:9:MET:C | 2.57 | 0.43 |
| 12:AL:43:LYS:CB | 12:AL:44:PRO:CD | 2.90 | 0.43 |
| 16:AP:17:TYR:CD1 | 16:AP:17:TYR:N | 2.86 | 0.43 |
| 16:AP:48:GLU:CG | 16:AP:49:GLY:N | 2.82 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 17:AQ:49:ASN:O | 17:AQ:50:ASN:C | 2.56 | 0.43 |
| 22:BA:544:C:O2 | 22:BA:544:C:H2' | 2.17 | 0.43 |
| 22:BA:749:A:C5 | 22:BA:1618:A:N1 | 2.86 | 0.43 |
| 22:BA:750:A:C3' | 22:BA:751:A:H5'' | 2.48 | 0.43 |
| 22:BA:783:A:H8 | 22:BA:783:A:H2' | 1.35 | 0.43 |
| 22:BA:847:U:H2' | 22:BA:848:C:H6 | 1.83 | 0.43 |
| 22:BA:1057:A:N3 | 22:BA:1082:U:C2 | 2.87 | 0.43 |
| 22:BA:1061:U:H6 | 22:BA:1070:A:N9 | 2.17 | 0.43 |
| 22:BA:1585:C:O5' | 22:BA:1585:C:H6 | 2.01 | 0.43 |
| 22:BA:1640:A:H2' | 22:BA:1641:A:C8 | 2.53 | 0.43 |
| 22:BA:1713:A:H4' | 22:BA:1714:U:OP1 | 2.18 | 0.43 |
| 22:BA:1728:C:O2' | 22:BA:1729:U:C5 | 2.71 | 0.43 |
| 22:BA:2702:G:C6 | 22:BA:2703:C:C4 | 3.07 | 0.43 |
| 22:BA:2778:A:HO2' | 22:BA:2779:U:P | 2.41 | 0.43 |
| 23:BB:24:G:C6 | 23:BB:56:G:C2 | 3.07 | 0.43 |
| 23:BB:90:C:OP1 | 34:BM:16:ARG:HB3 | 2.18 | 0.43 |
| 26:BE:28:VAL:O | 26:BE:32:VAL:HG13 | 2.19 | 0.43 |
| 27:BF:30:VAL:O | 27:BF:30:VAL:HG13 | 2.18 | 0.43 |
| 28:BG:31:GLU:O | 28:BG:32:LEU:C | 2.56 | 0.43 |
| 31:BJ:65:THR:HG22 | 31:BJ:68:LYS:CE | 2.30 | 0.43 |
| 32:BK:49:ARG:O | 32:BK:50:GLY:O | 2.36 | 0.43 |
| 32:BK:116:ILE:HD12 | 32:BK:116:ILE:C | 2.39 | 0.43 |
| 35:BN:28:LEU:HD23 | 35:BN:48:VAL:HG11 | 2.00 | 0.43 |
| 37:BP:24:THR:HG22 | 37:BP:87:ARG:N | 2.31 | 0.43 |
| 37:BP:99:LEU:HD12 | 37:BP:99:LEU:HA | 1.62 | 0.43 |
| 41:BT:48:GLN:NE2 | 41:BT:53:VAL:O | 2.52 | 0.43 |
| 43:BV:75:GLN:HA | 43:BV:75:GLN:OE1 | 2.19 | 0.43 |
| 43:BV:75:GLN:HB2 | 43:BV:92:VAL:HG23 | 2.00 | 0.43 |
| 49:B1:42:VAL:HG12 | 49:B1:44:GLN:HB2 | 2.01 | 0.43 |
| 51:B3:21:PHE:O | 51:B3:22:LYS:O | 2.36 | 0.43 |
| 53:CA:17:U:H4' | 53:CA:1080:A:O4' | 2.19 | 0.43 |
| 53:CA:64:G:N7 | 53:CA:99:C:C4 | 2.86 | 0.43 |
| 53:CA:71:A:C2 | 53:CA:72:A:N7 | 2.87 | 0.43 |
| 53:CA:86:G:O2' | 53:CA:87:C:OP2 | 2.30 | 0.43 |
| 53:CA:166:U:OP2 | 53:CA:166:U:C6 | 2.70 | 0.43 |
| 53:CA:247:G:C6 | 53:CA:278:G:C6 | 3.06 | 0.43 |
| 53:CA:604:G:C5 | 53:CA:605:U:C4 | 3.07 | 0.43 |
| 53:CA:1130:A:N7 | 53:CA:1146:A:N6 | 2.67 | 0.43 |
| 53:CA:1138:G:C2' | 53:CA:1139:G:OP1 | 2.66 | 0.43 |
| 53:CA:1255:G:H21 | 53:CA:1258:G:N2 | 2.16 | 0.43 |
| 53:CA:1345:U:H5'' | 53:CA:1346:A:OP1 | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:CA:1366:C:O2' | 53:CA:1367:C:C5' | 2.67 | 0.43 |
| 53:CA:1494:G:C6 | 53:CA:1495:U:C4 | 3.07 | 0.43 |
| 4:CD:149:LYS:HZ3 | 4:CD:176:LYS:HD2 | 1.84 | 0.43 |
| 54:CG:103:ILE:HG22 | 54:CG:103:ILE:O | 2.19 | 0.43 |
| 8:CH:54:THR:HG23 | 8:CH:55:LYS:N | 2.29 | 0.43 |
| 8:CH:85:TYR:HD2 | 8:CH:123:GLU:HB2 | 1.78 | 0.43 |
| 8:CH:104:SER:HA | 8:CH:109:VAL:HG13 | 2.00 | 0.43 |
| 9:CI:87:MET:SD | 9:CI:87:MET:N | 2.91 | 0.43 |
| 11:CK:104:PHE:N | 11:CK:104:PHE:CD1 | 2.84 | 0.43 |
| 14:CN:30:ILE:O | 14:CN:45:LEU:HD11 | 2.18 | 0.43 |
| 57:DA:77:G:N2 | 57:DA:110:G:H1' | 2.34 | 0.43 |
| 57:DA:77:G:H2' | 57:DA:78:U:C6 | 2.54 | 0.43 |
| 57:DA:156:A:H2' | 57:DA:157:C:O4' | 2.19 | 0.43 |
| 57:DA:300:A:H1' | 57:DA:333:G:H21 | 1.83 | 0.43 |
| 57:DA:375:G:N3 | 57:DA:375:G:H2' | 2.34 | 0.43 |
| 57:DA:387:U:O2 | 57:DA:388:G:N7 | 2.51 | 0.43 |
| 57:DA:634:C:OP2 | 33:DL:70:LYS:HD3 | 2.19 | 0.43 |
| 57:DA:854:C:H2' | 57:DA:855:G:C8 | 2.54 | 0.43 |
| 57:DA:1113:U:O2' | 57:DA:1114:C:C6 | 2.66 | 0.43 |
| 57:DA:1156:A:C8 | 38:DQ:50:ARG:HG2 | 2.54 | 0.43 |
| 57:DA:1383:A:C2 | 57:DA:1384:A:C5 | 3.07 | 0.43 |
| 57:DA:1389:G:O2' | 57:DA:1390:U:H5' | 2.19 | 0.43 |
| 57:DA:1782:U:O2' | 57:DA:1783:A:H5' | 2.18 | 0.43 |
| 57:DA:1792:G:N2 | 57:DA:1828:G:H1' | 2.33 | 0.43 |
| 57:DA:1965:C:H2' | 57:DA:1966:A:H8 | 1.79 | 0.43 |
| 57:DA:2049:G:C6 | 57:DA:2050:C:C4 | 3.06 | 0.43 |
| 57:DA:2316:G:H2' | 57:DA:2317:A:C8 | 2.54 | 0.43 |
| 57:DA:2344:U:HO2' | 57:DA:2345:G:C5' | 2.31 | 0.43 |
| 57:DA:2358:A:H8 | 57:DA:2358:A:P | 2.41 | 0.43 |
| 57:DA:2756:U:H1' | 57:DA:2757:A:C5' | 2.49 | 0.43 |
| 57:DA:2839:G:N1 | 57:DA:2880:C:N4 | 2.67 | 0.43 |
| 57:DA:2884:U:P | 48:D0:40:HIS:HE2 | 2.41 | 0.43 |
| 25:DD:36:GLN:NE2 | 25:DD:38:LYS:HZ1 | 2.17 | 0.43 |
| 25:DD:174:SER:O | 25:DD:175:LEU:C | 2.57 | 0.43 |
| 59:DF:102:LEU:HB3 | 59:DF:103:ILE:HD12 | 2.01 | 0.43 |
| 28:DG:48:THR:O | 28:DG:49:LEU:CB | 2.64 | 0.43 |
| 28:DG:143:VAL:HA | 28:DG:146:ASP:OD2 | 2.18 | 0.43 |
| 29:DH:2:GLN:O | 29:DH:3:VAL:O | 2.37 | 0.43 |
| 30:DI:98:GLY:HA3 | 30:DI:137:LEU:HA | 2.01 | 0.43 |
| 31:DJ:29:ALA:HA | 31:DJ:32:LEU:HD12 | 1.99 | 0.43 |
| 33:DL:76:GLU:O | 33:DL:76:GLU:HG3 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 34:DM:36:VAL:O | 34:DM:127:LYS:O | 2.37 | 0.43 |
| 34:DM:41:LEU:HD11 | 34:DM:126:ILE:HD11 | 2.00 | 0.43 |
| 38:DQ:91:ARG:NH2 | 39:DR:11:GLN:O | 2.51 | 0.43 |
| 39:DR:2:TYR:CD2 | 39:DR:42:ALA:HB2 | 2.54 | 0.43 |
| 42:DU:39:ASN:O | 42:DU:40:LEU:C | 2.57 | 0.43 |
| 43:DV:4:ILE:HD11 | 43:DV:50:MET:HE2 | 2.01 | 0.43 |
| 45:DX:32:LEU:N | 45:DX:32:LEU:HD22 | 2.33 | 0.43 |
| 46:DY:4:LYS:HB2 | 46:DY:4:LYS:HZ2 | 1.84 | 0.43 |
| 46:DY:58:ASN:C | 46:DY:60:LYS:H | 2.22 | 0.43 |
| 49:D1:42:VAL:O | 49:D1:42:VAL:HG12 | 2.18 | 0.43 |
| 1:AA:15:G:H2' | 1:AA:16:A:C8 | 2.54 | 0.43 |
| 1:AA:103:U:O2 | 1:AA:103:U:H2' | 2.18 | 0.43 |
| 1:AA:647:C:H2' | 1:AA:648:A:H8 | 1.84 | 0.43 |
| 1:AA:765:G:H2' | 1:AA:812:G:N2 | 2.34 | 0.43 |
| 1:AA:857:C:H2' | 1:AA:858:G:O4' | 2.18 | 0.43 |
| 1:AA:917:G:C6 | 1:AA:918:A:C6 | 3.06 | 0.43 |
| 1:AA:1134:G:N1 | 1:AA:1141:C:C4 | 2.87 | 0.43 |
| 1:AA:1154:G:N1 | 1:AA:1155:A:C5 | 2.87 | 0.43 |
| 1:AA:1239:A:H1' | 1:AA:1241:G:C4 | 2.54 | 0.43 |
| 1:AA:1285:A:H5' | 1:AA:1286:U:O4 | 2.19 | 0.43 |
| 2:AB:30:ILE:HD11 | 2:AB:38:HIS:CD2 | 2.53 | 0.43 |
| 3:AC:57:GLU:HG2 | 3:AC:64:ARG:HB3 | 2.00 | 0.43 |
| 4:AD:101:VAL:HG13 | 4:AD:106:PHE:HB2 | 2.00 | 0.43 |
| 4:AD:172:VAL:HG22 | 4:AD:173:ASP:N | 2.25 | 0.43 |
| 7:AG:105:GLU:HG2 | 7:AG:105:GLU:O | 2.18 | 0.43 |
| 7:AG:145:GLU:HA | 7:AG:148:LYS:HD2 | 2.00 | 0.43 |
| 9:AI:51:LEU:HA | 9:AI:54:VAL:HG23 | 2.01 | 0.43 |
| 10:AJ:36:VAL:HA | 10:AJ:76:ILE:HA | 2.00 | 0.43 |
| 10:AJ:52:LEU:HB2 | 14:AN:80:ARG:HD2 | 1.99 | 0.43 |
| 11:AK:124:LYS:HE3 | 21:AU:34:ARG:NE | 2.33 | 0.43 |
| 19:AS:19:GLU:HA | 19:AS:19:GLU:OE2 | 2.19 | 0.43 |
| 21:AU:37:TYR:HB3 | 21:AU:38:GLU:H | 1.63 | 0.43 |
| 22:BA:503:A:C6 | 22:BA:506:G:C6 | 3.07 | 0.43 |
| 22:BA:994:C:O2 | 39:BR:10:LYS:NZ | 2.51 | 0.43 |
| 22:BA:1042:G:O2' | 22:BA:1043:C:H5' | 2.19 | 0.43 |
| 22:BA:1332:G:N3 | 22:BA:1332:G:H2' | 2.34 | 0.43 |
| 22:BA:1405:U:N3 | 22:BA:1406:U:C4 | 2.87 | 0.43 |
| 22:BA:1450:G:C2 | 22:BA:1462:C:C2 | 3.07 | 0.43 |
| 22:BA:1906:G:C2' | 22:BA:1907:G:O5' | 2.67 | 0.43 |
| 22:BA:2244:U:C2' | 22:BA:2245:U:H5' | 2.49 | 0.43 |
| 22:BA:2393:U:H5'' | 33:BL:62:PRO:HB3 | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:2550:G:H2' | 22:BA:2551:C:C6 | 2.54 | 0.43 |
| 22:BA:2756:U:H4' | 22:BA:2757:A:O5' | 2.17 | 0.43 |
| 22:BA:2820:A:C3' | 22:BA:2820:A:C8 | 3.01 | 0.43 |
| 24:BC:154:ALA:HB2 | 24:BC:161:VAL:HG23 | 2.01 | 0.43 |
| 25:BD:39:ASP:CG | 25:BD:40:LEU:HD12 | 2.38 | 0.43 |
| 25:BD:56:LYS:O | 25:BD:57:ALA:C | 2.57 | 0.43 |
| 26:BE:79:ARG:O | 26:BE:80:SER:C | 2.56 | 0.43 |
| 28:BG:2:ARG:HH21 | 28:BG:2:ARG:HG3 | 1.83 | 0.43 |
| 28:BG:148:ARG:HA | 28:BG:161:VAL:HG11 | 2.00 | 0.43 |
| 30:BI:59:THR:HG22 | 30:BI:61:TYR:CE2 | 2.53 | 0.43 |
| 36:BO:34:HIS:CD2 | 36:BO:53:THR:OG1 | 2.69 | 0.43 |
| 37:BP:32:VAL:O | 37:BP:33:GLU:C | 2.57 | 0.43 |
| 45:BX:12:VAL:HG22 | 45:BX:28:PHE:HB2 | 2.00 | 0.43 |
| 53:CA:181:A:HO2' | 53:CA:182:A:H2 | 1.66 | 0.43 |
| 53:CA:259:G:O2' | 53:CA:260:G:H5' | 2.19 | 0.43 |
| 53:CA:374:A:H5'' | 53:CA:452:A:C6 | 2.51 | 0.43 |
| 53:CA:386:C:C4 | 53:CA:387:U:C4 | 3.07 | 0.43 |
| 53:CA:391:G:H5'' | 56:CP:8:ARG:NE | 2.34 | 0.43 |
| 53:CA:399:G:C6 | 53:CA:400:C:C4 | 3.06 | 0.43 |
| 53:CA:589:U:H5'' | 8:CH:29:SER:HB3 | 2.00 | 0.43 |
| 53:CA:675:A:H1' | 11:CK:117:HIS:CE1 | 2.54 | 0.43 |
| 53:CA:867:G:H2' | 53:CA:868:C:H6 | 1.84 | 0.43 |
| 53:CA:927:G:OP2 | 53:CA:927:G:H4' | 2.19 | 0.43 |
| 53:CA:960:U:O2' | 53:CA:1223:C:C5' | 2.65 | 0.43 |
| 53:CA:996:A:H2' | 53:CA:997:U:C5 | 2.54 | 0.43 |
| 53:CA:1276:G:H21 | 53:CA:1282:C:H1' | 1.84 | 0.43 |
| 53:CA:1333:A:N6 | 53:CA:1334:G:C2 | 2.87 | 0.43 |
| 2:CB:56:LEU:HD23 | 2:CB:183:PHE:CE1 | 2.54 | 0.43 |
| 2:CB:99:MET:O | 2:CB:103:TRP:CB | 2.67 | 0.43 |
| 3:CC:5:HIS:HA | 3:CC:6:PRO:HD2 | 1.83 | 0.43 |
| 5:CE:11:GLN:HB3 | 5:CE:116:VAL:HB | 2.01 | 0.43 |
| 6:CF:6:ILE:HD13 | 6:CF:62:MET:HG2 | 2.00 | 0.43 |
| 11:CK:86:LYS:HB3 | 11:CK:112:VAL:O | 2.18 | 0.43 |
| 12:CL:73:LEU:HD11 | 12:CL:79:ILE:HG21 | 2.01 | 0.43 |
| 14:CN:8:ARG:HD2 | 14:CN:12:ARG:NH2 | 2.34 | 0.43 |
| 14:CN:46:LYS:CE | 19:CS:10:ILE:HB | 2.47 | 0.43 |
| 19:CS:35:ARG:NH2 | 19:CS:51:HIS:CD2 | 2.84 | 0.43 |
| 57:DA:117:G:H4' | 57:DA:126:A:C2 | 2.54 | 0.43 |
| 57:DA:126:A:P | 50:D2:19:ARG:HG3 | 2.59 | 0.43 |
| 57:DA:233:A:O2' | 57:DA:234:U:C6 | 2.67 | 0.43 |
| 57:DA:248:G:H5' | 57:DA:250:G:N7 | 2.33 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:305:C:C2 | 57:DA:313:G:C2 | 3.06 | 0.43 |
| 57:DA:601:C:H2' | 57:DA:602:A:O4' | 2.18 | 0.43 |
| 57:DA:727:A:O2' | 57:DA:728:G:O5' | 2.37 | 0.43 |
| 57:DA:922:C:H2' | 57:DA:923:G:C8 | 2.52 | 0.43 |
| 57:DA:962:G:O2' | 57:DA:963:U:O5' | 2.37 | 0.43 |
| 57:DA:1388:G:HO2' | 57:DA:1389:G:C5' | 2.31 | 0.43 |
| 57:DA:1519:G:N3 | 57:DA:1519:G:H2' | 2.33 | 0.43 |
| 57:DA:1571:A:C8 | 57:DA:1571:A:H3' | 2.54 | 0.43 |
| 57:DA:1593:A:C6 | 57:DA:1594:U:C4 | 3.07 | 0.43 |
| 57:DA:1637:A:H5' | 57:DA:1760:C:O2' | 2.19 | 0.43 |
| 57:DA:1716:U:N3 | 57:DA:1745:A:N6 | 2.67 | 0.43 |
| 57:DA:1768:C:H2' | 57:DA:1769:U:O4' | 2.19 | 0.43 |
| 57:DA:1808:A:H3' | 57:DA:1809:A:H8 | 1.81 | 0.43 |
| 57:DA:2142:A:H2' | 57:DA:2144:G:P | 2.59 | 0.43 |
| 57:DA:2249:U:H4' | 57:DA:2275:C:C5 | 2.54 | 0.43 |
| 57:DA:2371:G:O3' | 49:D1:44:GLN:NE2 | 2.51 | 0.43 |
| 57:DA:2800:A:C2' | 57:DA:2801:G:C4' | 2.97 | 0.43 |
| 57:DA:2882:A:H4' | 35:DN:97:ILE:HG12 | 2.00 | 0.43 |
| 24:DC:44:ASN:C | 24:DC:46:GLY:N | 2.72 | 0.43 |
| 24:DC:52:HIS:CD2 | 24:DC:217:PRO:O | 2.68 | 0.43 |
| 59:DF:174:PHE:CG | 59:DF:175:PRO:HD2 | 2.54 | 0.43 |
| 29:DH:82:SER:O | 29:DH:83:LYS:HB3 | 2.19 | 0.43 |
| 30:DI:96:LYS:HD2 | 30:DI:96:LYS:HA | 1.95 | 0.43 |
| 30:DI:102:ARG:HD2 | 30:DI:105:LEU:HB3 | 2.01 | 0.43 |
| 31:DJ:38:GLY:O | 31:DJ:40:HIS:N | 2.52 | 0.43 |
| 33:DL:55:MET:HG3 | 33:DL:59:ARG:HB3 | 2.01 | 0.43 |
| 35:DN:51:LEU:HA | 35:DN:51:LEU:HD23 | 1.88 | 0.43 |
| 35:DN:55:ALA:O | 35:DN:80:PHE:HA | 2.19 | 0.43 |
| 45:DX:19:HIS:O | 45:DX:20:ALA:HB3 | 2.19 | 0.43 |
| 49:D1:10:LEU:CD2 | 49:D1:20:TYR:HB3 | 2.47 | 0.43 |
| 52:D4:3:VAL:O | 52:D4:4:ARG:CB | 2.65 | 0.43 |
| 52:D4:16:ILE:HA | 52:D4:24:ARG:O | 2.19 | 0.43 |
| 1:AA:263:A:P | 20:AT:73:ARG:HH11 | 2.42 | 0.43 |
| 1:AA:431:A:N3 | 1:AA:431:A:H2' | 2.34 | 0.43 |
| 1:AA:481:G:C8 | 1:AA:481:G:C3' | 3.01 | 0.43 |
| 1:AA:601:G:O2' | 1:AA:602:A:H5' | 2.18 | 0.43 |
| 1:AA:620:C:N3 | 4:AD:131:ILE:HG21 | 2.33 | 0.43 |
| 1:AA:675:A:H2' | 1:AA:676:A:O4' | 2.19 | 0.43 |
| 1:AA:1111:A:N1 | 3:AC:176:THR:HG23 | 2.34 | 0.43 |
| 1:AA:1302:C:H6 | 1:AA:1302:C:H2' | 1.29 | 0.43 |
| 1:AA:1451:U:HO2' | 1:AA:1452:C:P | 2.41 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:AB:89:PHE:CE1 | 2:AB:153:MET:HG3 | 2.54 | 0.43 |
| 2:AB:162:VAL:HG22 | 2:AB:184:ALA:HB2 | 2.01 | 0.43 |
| 2:AB:165:ALA:CB | 2:AB:186:VAL:HG12 | 2.48 | 0.43 |
| 7:AG:107:ALA:CA | 7:AG:122:GLU:HG3 | 2.49 | 0.43 |
| 14:AN:81:ILE:O | 14:AN:85:GLU:HG2 | 2.19 | 0.43 |
| 16:AP:56:ARG:HA | 16:AP:56:ARG:HD2 | 1.82 | 0.43 |
| 17:AQ:58:VAL:HG23 | 17:AQ:76:ARG:O | 2.19 | 0.43 |
| 21:AU:33:ARG:NE | 21:AU:34:ARG:HG3 | 2.34 | 0.43 |
| 22:BA:26:G:C5 | 22:BA:27:G:C6 | 3.06 | 0.43 |
| 22:BA:275:C:N4 | 22:BA:276:U:C6 | 2.87 | 0.43 |
| 22:BA:370:G:C6 | 22:BA:424:G:C8 | 3.07 | 0.43 |
| 22:BA:372:G:P | 45:BX:61:LYS:NZ | 2.91 | 0.43 |
| 22:BA:756:A:H2' | 22:BA:757:G:O4' | 2.19 | 0.43 |
| 22:BA:962:G:P | 63:BA:3353:HOH:O | 2.77 | 0.43 |
| 22:BA:985:C:O5' | 22:BA:985:C:H6 | 2.01 | 0.43 |
| 22:BA:1206:G:H2' | 22:BA:1207:C:C6 | 2.54 | 0.43 |
| 22:BA:1343:G:O2' | 22:BA:1384:A:N1 | 2.52 | 0.43 |
| 22:BA:1348:C:H2' | 22:BA:1349:C:C5' | 2.46 | 0.43 |
| 22:BA:1599:U:H2' | 22:BA:1600:C:C6 | 2.54 | 0.43 |
| 22:BA:1783:A:H5' | 22:BA:2608:G:H4' | 2.01 | 0.43 |
| 22:BA:1909:C:C2 | 22:BA:1922:G:C2 | 3.07 | 0.43 |
| 22:BA:2043:C:C4 | 22:BA:2777:G:C2 | 3.07 | 0.43 |
| 22:BA:2335:A:O2' | 22:BA:2336:A:C8 | 2.72 | 0.43 |
| 22:BA:2364:C:O2' | 22:BA:2365:G:H5' | 2.19 | 0.43 |
| 22:BA:2564:A:OP1 | 22:BA:2648:G:H4' | 2.19 | 0.43 |
| 22:BA:2786:U:H2' | 22:BA:2787:C:C6 | 2.52 | 0.43 |
| 22:BA:2822:G:P | 25:BD:115:GLY:HA3 | 2.58 | 0.43 |
| 22:BA:2823:A:OP2 | 25:BD:118:PHE:HD1 | 2.01 | 0.43 |
| 23:BB:77:U:P | 43:BV:21:ARG:HH22 | 2.42 | 0.43 |
| 25:BD:29:VAL:HB | 25:BD:98:VAL:CG2 | 2.49 | 0.43 |
| 25:BD:184:ARG:HH11 | 37:BP:6:GLN:CD | 2.23 | 0.43 |
| 25:BD:186:LEU:HA | 25:BD:186:LEU:HD12 | 1.74 | 0.43 |
| 26:BE:46:GLN:HG3 | 26:BE:86:ALA:HA | 2.01 | 0.43 |
| 27:BF:172:PHE:O | 27:BF:173:ASP:C | 2.57 | 0.43 |
| 29:BH:24:GLY:O | 29:BH:28:ASN:HB2 | 2.19 | 0.43 |
| 31:BJ:4:PHE:CG | 31:BJ:5:THR:N | 2.87 | 0.43 |
| 32:BK:63:VAL:HG13 | 32:BK:103:VAL:HG12 | 1.97 | 0.43 |
| 36:BO:116:GLN:O | 36:BO:117:PHE:HB3 | 2.18 | 0.43 |
| 38:BQ:75:TYR:CE2 | 38:BQ:79:ILE:HG13 | 2.54 | 0.43 |
| 41:BT:8:LEU:N | 41:BT:8:LEU:HD23 | 2.33 | 0.43 |
| 53:CA:71:A:C6 | 53:CA:100:G:C5 | 3.06 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:CA:223:A:H2' | 53:CA:224:U:H6 | 1.83 | 0.43 |
| 53:CA:293:G:H22 | 53:CA:305:G:H1' | 1.83 | 0.43 |
| 53:CA:560:A:H4' | 53:CA:561:U:C5' | 2.35 | 0.43 |
| 53:CA:570:G:H2' | 53:CA:570:G:N3 | 2.34 | 0.43 |
| 53:CA:600:A:OP2 | 8:CH:87:ARG:HG2 | 2.19 | 0.43 |
| 53:CA:666:G:C2 | 53:CA:667:G:C8 | 3.07 | 0.43 |
| 53:CA:774:G:N2 | 53:CA:775:G:H1' | 2.34 | 0.43 |
| 53:CA:981:U:OP2 | 53:CA:982:U:H3' | 2.18 | 0.43 |
| 53:CA:1105:A:H2' | 53:CA:1106:G:C8 | 2.54 | 0.43 |
| 53:CA:1230:C:H6 | 53:CA:1230:C:H5'' | 1.83 | 0.43 |
| 53:CA:1328:C:H2' | 53:CA:1329:A:H8 | 1.84 | 0.43 |
| 53:CA:1401:G:H2' | 53:CA:1402:C:H6 | 1.84 | 0.43 |
| 53:CA:1494:G:N1 | 53:CA:1495:U:C4 | 2.87 | 0.43 |
| 2:CB:17:HIS:HB2 | 2:CB:37:VAL:HG21 | 2.01 | 0.43 |
| 4:CD:125:ASN:N | 4:CD:141:VAL:O | 2.48 | 0.43 |
| 4:CD:141:VAL:CG1 | 4:CD:142:VAL:N | 2.82 | 0.43 |
| 6:CF:8:PHE:CZ | 6:CF:60:VAL:HB | 2.54 | 0.43 |
| 12:CL:66:ILE:HD13 | 12:CL:73:LEU:CD1 | 2.47 | 0.43 |
| 55:CM:11:HIS:O | 55:CM:12:LYS:HG2 | 2.19 | 0.43 |
| 57:DA:82:U:C2 | 57:DA:83:A:C8 | 3.07 | 0.43 |
| 57:DA:143:C:O2' | 57:DA:144:A:O4' | 2.32 | 0.43 |
| 57:DA:224:U:C5 | 57:DA:420:C:H4' | 2.50 | 0.43 |
| 57:DA:319:G:C6 | 57:DA:333:G:C6 | 3.07 | 0.43 |
| 57:DA:637:A:P | 33:DL:128:THR:HG21 | 2.59 | 0.43 |
| 57:DA:705:A:H2' | 57:DA:706:A:H8 | 1.82 | 0.43 |
| 57:DA:855:G:C2' | 44:DW:23:LYS:HD3 | 2.49 | 0.43 |
| 57:DA:946:C:O2' | 57:DA:947:A:H5' | 2.18 | 0.43 |
| 57:DA:956:G:C2 | 57:DA:962:G:O6 | 2.72 | 0.43 |
| 57:DA:994:C:OP1 | 38:DQ:52:ARG:NH2 | 2.52 | 0.43 |
| 57:DA:1060:U:H5'' | 57:DA:1061:U:OP1 | 2.19 | 0.43 |
| 57:DA:1279:G:OP1 | 35:DN:35:LYS:HG3 | 2.18 | 0.43 |
| 57:DA:1286:A:N6 | 57:DA:1329:U:C2 | 2.87 | 0.43 |
| 57:DA:1337:G:N2 | 57:DA:1338:G:H1' | 2.33 | 0.43 |
| 57:DA:1358:G:H1' | 57:DA:1374:G:N2 | 2.34 | 0.43 |
| 57:DA:1387:A:N6 | 57:DA:1401:G:N1 | 2.67 | 0.43 |
| 57:DA:1587:G:H21 | 57:DA:1588:G:H1' | 1.83 | 0.43 |
| 57:DA:1636:U:H2' | 57:DA:1637:A:C8 | 2.54 | 0.43 |
| 57:DA:1734:G:O2' | 57:DA:1735:A:H8 | 2.00 | 0.43 |
| 57:DA:1776:G:N2 | 57:DA:1789:A:H1' | 2.34 | 0.43 |
| 57:DA:2052:A:C8 | 25:DD:146:ILE:HD11 | 2.54 | 0.43 |
| 57:DA:2060:A:O4' | 57:DA:2502:G:H1' | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:DA:2188:U:C4 | 57:DA:2189:U:C4 | 3.07 | 0.43 |
| 57:DA:2592:G:C5 | 57:DA:2593:U:C5 | 3.07 | 0.43 |
| 58:DB:23:G:N2 | 58:DB:61:G:C2 | 2.87 | 0.43 |
| 58:DB:69:G:C3' | 58:DB:70:C:H6 | 2.14 | 0.43 |
| 24:DC:9:SER:HA | 24:DC:10:PRO:HD2 | 1.89 | 0.43 |
| 26:DE:170:ARG:CZ | 26:DE:176:ASP:OD2 | 2.66 | 0.43 |
| 59:DF:12:VAL:CG1 | 59:DF:16:MET:HG3 | 2.49 | 0.43 |
| 59:DF:48:LEU:O | 59:DF:52:ALA:HB2 | 2.19 | 0.43 |
| 59:DF:65:LEU:HD11 | 59:DF:87:LYS:NZ | 2.34 | 0.43 |
| 59:DF:141:ASP:C | 59:DF:143:ASP:H | 2.23 | 0.43 |
| 29:DH:116:ARG:HH21 | 29:DH:118:PRO:HA | 1.83 | 0.43 |
| 31:DJ:123:LYS:N | 31:DJ:123:LYS:HD2 | 2.34 | 0.43 |
| 31:DJ:132:HIS:O | 31:DJ:135:GLN:HB2 | 2.18 | 0.43 |
| 32:DK:30:ARG:HB3 | 32:DK:31:ARG:H | 1.65 | 0.43 |
| 34:DM:100:LYS:HD3 | 34:DM:100:LYS:HA | 1.88 | 0.43 |
| 37:DP:44:GLY:HA3 | 37:DP:60:VAL:CG1 | 2.49 | 0.43 |
| 37:DP:54:LEU:HD12 | 37:DP:76:HIS:CB | 2.48 | 0.43 |
| 38:DQ:64:ILE:HD12 | 38:DQ:95:ALA:HB3 | 2.01 | 0.43 |
| 41:DT:29:THR:HB | 41:DT:86:THR:CA | 2.49 | 0.43 |
| 45:DX:2:ARG:CD | 45:DX:32:LEU:HD23 | 2.49 | 0.43 |
| 45:DX:44:ARG:HB3 | 45:DX:44:ARG:NH1 | 2.34 | 0.43 |
| 47:DZ:29:ARG:HH22 | 47:DZ:30:ARG:NH2 | 2.16 | 0.43 |
| 1:AA:27:G:C5 | 1:AA:557:G:C2 | 3.07 | 0.42 |
| 1:AA:104:G:O2' | 1:AA:105:G:H5' | 2.19 | 0.42 |
| 1:AA:335:C:O2' | 1:AA:1433:A:N3 | 2.42 | 0.42 |
| 1:AA:407:U:H2' | 1:AA:408:A:H8 | 1.83 | 0.42 |
| 1:AA:591:U:H2' | 1:AA:592:G:H8 | 1.83 | 0.42 |
| 1:AA:723:U:H5'' | 21:AU:48:LYS:HG2 | 1.99 | 0.42 |
| 1:AA:1045:C:OP2 | 1:AA:1045:C:H6 | 2.01 | 0.42 |
| 1:AA:1055:A:N6 | 1:AA:1206:G:C5 | 2.87 | 0.42 |
| 1:AA:1160:G:O2' | 1:AA:1161:C:H6 | 2.02 | 0.42 |
| 2:AB:40:ILE:O | 2:AB:41:ASN:HB2 | 2.18 | 0.42 |
| 2:AB:69:VAL:HG23 | 2:AB:160:LEU:HD11 | 2.02 | 0.42 |
| 2:AB:77:GLU:HA | 2:AB:80:LYS:HB3 | 2.00 | 0.42 |
| 2:AB:103:TRP:HE1 | 2:AB:150:ILE:HD11 | 1.84 | 0.42 |
| 3:AC:33:ASP:O | 3:AC:37:LYS:CB | 2.67 | 0.42 |
| 4:AD:130:ASN:HB3 | 4:AD:131:ILE:H | 1.73 | 0.42 |
| 4:AD:191:SER:O | 4:AD:192:ALA:CB | 2.67 | 0.42 |
| 7:AG:14:ASP:C | 7:AG:14:ASP:OD2 | 2.58 | 0.42 |
| 7:AG:78:ARG:HA | 7:AG:82:SER:O | 2.18 | 0.42 |
| 8:AH:63:LYS:HB2 | 8:AH:70:VAL:HG21 | 2.01 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AH:85:TYR:CE2 | 8:AH:123:GLU:HB2 | 2.53 | 0.42 |
| 10:AJ:52:LEU:HD22 | 10:AJ:59:LYS:HA | 2.00 | 0.42 |
| 11:AK:24:ALA:HB2 | 11:AK:29:THR:HG23 | 2.01 | 0.42 |
| 12:AL:6:LEU:HB3 | 17:AQ:33:TYR:CZ | 2.54 | 0.42 |
| 14:AN:40:ARG:NH1 | 14:AN:44:VAL:HG21 | 2.33 | 0.42 |
| 18:AR:53:GLN:O | 18:AR:56:ARG:HB3 | 2.19 | 0.42 |
| 22:BA:18:U:C2' | 22:BA:19:A:H5' | 2.48 | 0.42 |
| 22:BA:26:G:C6 | 22:BA:27:G:C6 | 3.07 | 0.42 |
| 22:BA:541:A:H2' | 22:BA:542:C:O4' | 2.19 | 0.42 |
| 22:BA:974:G:H8 | 22:BA:990:A:H62 | 1.65 | 0.42 |
| 22:BA:1091:G:O2' | 22:BA:1092:C:O5' | 2.37 | 0.42 |
| 22:BA:1115:G:O2' | 22:BA:1116:G:P | 2.76 | 0.42 |
| 22:BA:1349:C:H6 | 22:BA:1349:C:O5' | 2.02 | 0.42 |
| 22:BA:1810:A:H2' | 22:BA:1811:G:O4' | 2.18 | 0.42 |
| 22:BA:1840:G:C2 | 22:BA:1841:U:C2 | 3.07 | 0.42 |
| 22:BA:2548:U:O2 | 32:BK:23:LYS:NZ | 2.50 | 0.42 |
| 22:BA:2839:G:C5 | 22:BA:2840:C:C5 | 3.07 | 0.42 |
| 22:BA:2847:U:C2' | 22:BA:2848:G:H5' | 2.49 | 0.42 |
| 23:BB:53:A:O2' | 23:BB:54:G:H5' | 2.19 | 0.42 |
| 24:BC:27:LYS:HA | 24:BC:28:PRO:HD2 | 1.88 | 0.42 |
| 25:BD:125:TRP:CG | 25:BD:160:LYS:HB3 | 2.53 | 0.42 |
| 25:BD:149:ASN:O | 25:BD:151:THR:N | 2.51 | 0.42 |
| 25:BD:151:THR:CG2 | 25:BD:152:PRO:N | 2.82 | 0.42 |
| 26:BE:48:THR:HG23 | 26:BE:51:GLU:CD | 2.39 | 0.42 |
| 26:BE:79:ARG:O | 26:BE:81:GLY:N | 2.52 | 0.42 |
| 26:BE:119:ILE:HD13 | 26:BE:119:ILE:H | 1.83 | 0.42 |
| 26:BE:180:LEU:HD23 | 26:BE:180:LEU:HA | 1.73 | 0.42 |
| 30:BI:19:PRO:HB2 | 30:BI:22:PRO:HD2 | 2.01 | 0.42 |
| 31:BJ:32:LEU:O | 31:BJ:36:LEU:HB2 | 2.19 | 0.42 |
| 32:BK:38:ILE:CD1 | 32:BK:112:PHE:HZ | 2.30 | 0.42 |
| 32:BK:43:ILE:N | 32:BK:43:ILE:HD13 | 2.33 | 0.42 |
| 33:BL:131:ALA:O | 33:BL:132:ARG:C | 2.55 | 0.42 |
| 34:BM:43:ALA:HA | 34:BM:46:ILE:HG12 | 2.00 | 0.42 |
| 34:BM:78:LEU:C | 34:BM:80:VAL:H | 2.22 | 0.42 |
| 36:BO:8:ILE:O | 36:BO:12:THR:N | 2.49 | 0.42 |
| 37:BP:9:GLN:C | 37:BP:11:GLN:H | 2.22 | 0.42 |
| 39:BR:61:ALA:HB2 | 39:BR:98:ILE:HA | 2.00 | 0.42 |
| 41:BT:88:LYS:O | 41:BT:89:GLU:HG2 | 2.19 | 0.42 |
| 44:BW:28:GLU:CB | 44:BW:31:LEU:HD11 | 2.48 | 0.42 |
| 53:CA:77:A:H2' | 53:CA:78:A:O4' | 2.19 | 0.42 |
| 53:CA:444:G:C2 | 53:CA:445:G:C8 | 3.07 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 53:CA:515:G:N2 | 53:CA:537:G:C4 | 2.87 | 0.42 |
| 53:CA:960:U:H4' | 53:CA:961:U:O5' | 2.18 | 0.42 |
| 53:CA:1150:A:O3' | 10:CJ:43:PRO:HA | 2.19 | 0.42 |
| 53:CA:1157:A:C6 | 53:CA:1180:A:C6 | 3.07 | 0.42 |
| 53:CA:1348:U:O2' | 53:CA:1349:A:H5' | 2.19 | 0.42 |
| 53:CA:1480:A:H2' | 53:CA:1481:U:H6 | 1.84 | 0.42 |
| 2:CB:8:MET:HB2 | 2:CB:9:LEU:HD23 | 2.00 | 0.42 |
| 3:CC:93:ILE:O | 3:CC:93:ILE:HG13 | 2.19 | 0.42 |
| 4:CD:8:LEU:O | 4:CD:12:ARG:HB2 | 2.19 | 0.42 |
| 5:CE:15:ILE:HD11 | 5:CE:37:VAL:HG21 | 2.00 | 0.42 |
| 5:CE:148:SER:H | 5:CE:151:MET:CE | 2.32 | 0.42 |
| 6:CF:2:ARG:HG2 | 6:CF:4:TYR:OH | 2.19 | 0.42 |
| 9:CI:49:GLN:HA | 9:CI:52:GLU:HG2 | 1.99 | 0.42 |
| 55:CM:80:MET:HB2 | 55:CM:80:MET:HE2 | 1.89 | 0.42 |
| 15:CO:69:LEU:HD11 | 15:CO:77:TYR:HA | 2.01 | 0.42 |
| 56:CP:38:PHE:HE2 | 56:CP:51:ARG:HB3 | 1.84 | 0.42 |
| 18:CR:33:THR:C | 18:CR:35:SER:H | 2.23 | 0.42 |
| 57:DA:48:G:H2' | 57:DA:48:G:N3 | 2.33 | 0.42 |
| 57:DA:63:A:C8 | 57:DA:64:A:N7 | 2.87 | 0.42 |
| 57:DA:355:U:H2' | 57:DA:356:G:H8 | 1.84 | 0.42 |
| 57:DA:621:A:C2' | 57:DA:622:G:O5' | 2.66 | 0.42 |
| 57:DA:864:G:C6 | 57:DA:865:C:C4 | 3.07 | 0.42 |
| 57:DA:962:G:O2' | 57:DA:963:U:C5' | 2.66 | 0.42 |
| 57:DA:1063:G:O2' | 57:DA:1064:C:H6 | 2.00 | 0.42 |
| 57:DA:1168:G:C2 | 57:DA:1182:G:C2 | 3.07 | 0.42 |
| 57:DA:1479:G:H2' | 57:DA:1480:C:O4' | 2.19 | 0.42 |
| 57:DA:1779:U:C5 | 57:DA:1784:A:N7 | 2.82 | 0.42 |
| 57:DA:1783:A:C5' | 57:DA:2608:G:H4' | 2.49 | 0.42 |
| 57:DA:1972:G:H2' | 57:DA:1973:G:H8 | 1.84 | 0.42 |
| 57:DA:2004:G:N7 | 57:DA:2005:A:N7 | 2.67 | 0.42 |
| 57:DA:2236:U:H2' | 57:DA:2237:G:O4' | 2.18 | 0.42 |
| 57:DA:2653:U:N3 | 57:DA:2654:A:N6 | 2.66 | 0.42 |
| 57:DA:2724:U:H5'' | 25:DD:123:LYS:NZ | 2.34 | 0.42 |
| 57:DA:2835:A:N6 | 57:DA:2879:A:C4 | 2.87 | 0.42 |
| 24:DC:75:ALA:HB2 | 24:DC:95:TYR:CG | 2.53 | 0.42 |
| 59:DF:177:ARG:CD | 59:DF:178:LYS:H | 2.30 | 0.42 |
| 28:DG:1:SER:C | 28:DG:3:VAL:N | 2.72 | 0.42 |
| 29:DH:109:GLU:HB3 | 29:DH:110:VAL:H | 1.59 | 0.42 |
| 30:DI:72:THR:HA | 30:DI:73:PRO:HD2 | 1.86 | 0.42 |
| 35:DN:80:PHE:O | 35:DN:85:PRO:HD3 | 2.19 | 0.42 |
| 36:DO:69:ASP:O | 36:DO:70:ALA:C | 2.57 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 37:DP:4:ILE:HG22 | 37:DP:4:ILE:O | 2.19 | 0.42 |
| 37:DP:30:TRP:HD1 | 37:DP:39:LEU:HD12 | 1.83 | 0.42 |
| 38:DQ:23:TYR:HB2 | 38:DQ:28:SER:HB3 | 2.01 | 0.42 |
| 39:DR:15:SER:OG | 39:DR:16:GLU:N | 2.52 | 0.42 |
| 40:DS:17:VAL:HG21 | 40:DS:103:ILE:HD11 | 2.00 | 0.42 |
| 43:DV:75:GLN:HG3 | 43:DV:92:VAL:HG11 | 2.01 | 0.42 |
| 1:AA:126:G:C2' | 1:AA:127:G:O5' | 2.67 | 0.42 |
| 1:AA:375:U:C4 | 1:AA:376:G:N7 | 2.87 | 0.42 |
| 1:AA:558:G:H8 | 1:AA:558:G:O5' | 2.02 | 0.42 |
| 1:AA:695:A:C6 | 1:AA:696:A:C6 | 3.08 | 0.42 |
| 1:AA:923:A:C4 | 1:AA:924:C:C5 | 3.08 | 0.42 |
| 1:AA:1009:U:O2' | 1:AA:1010:U:H5' | 2.19 | 0.42 |
| 1:AA:1026:G:C6 | 1:AA:1027:C:N4 | 2.87 | 0.42 |
| 4:AD:89:LEU:HD21 | 4:AD:199:ILE:CD1 | 2.49 | 0.42 |
| 8:AH:78:SER:HA | 8:AH:84:ILE:HG12 | 2.01 | 0.42 |
| 9:AI:121:ARG:O | 9:AI:122:ARG:C | 2.55 | 0.42 |
| 10:AJ:65:TYR:HB3 | 14:AN:95:LEU:CD1 | 2.48 | 0.42 |
| 12:AL:79:ILE:HD12 | 12:AL:96:THR:CG2 | 2.49 | 0.42 |
| 14:AN:11:LYS:HB2 | 14:AN:11:LYS:HZ3 | 1.84 | 0.42 |
| 22:BA:151:C:C5' | 22:BA:1360:G:OP1 | 2.67 | 0.42 |
| 22:BA:165:A:H2' | 22:BA:166:U:C6 | 2.54 | 0.42 |
| 22:BA:312:G:H2' | 22:BA:313:G:H8 | 1.84 | 0.42 |
| 22:BA:329:G:H4' | 22:BA:330:A:OP1 | 2.19 | 0.42 |
| 22:BA:341:C:C2 | 22:BA:342:A:C8 | 3.07 | 0.42 |
| 22:BA:478:A:N6 | 22:BA:480:A:N6 | 2.66 | 0.42 |
| 22:BA:792:A:C4' | 22:BA:793:A:H5' | 2.49 | 0.42 |
| 22:BA:1006:C:P | 63:BA:3781:HOH:O | 2.77 | 0.42 |
| 22:BA:1166:G:O2' | 22:BA:1167:C:H5' | 2.19 | 0.42 |
| 22:BA:1737:G:C6 | 22:BA:1738:G:N1 | 2.87 | 0.42 |
| 22:BA:1759:A:C8 | 22:BA:2696:U:H1' | 2.54 | 0.42 |
| 22:BA:2063:C:O2 | 22:BA:2451:A:C2 | 2.72 | 0.42 |
| 22:BA:2136:G:O6 | 22:BA:2156:G:C2 | 2.72 | 0.42 |
| 22:BA:2144:G:H3' | 22:BA:2144:G:N3 | 2.35 | 0.42 |
| 22:BA:2199:A:H3' | 22:BA:2200:C:C6 | 2.53 | 0.42 |
| 22:BA:2210:U:O2 | 22:BA:2212:A:C8 | 2.72 | 0.42 |
| 22:BA:2219:U:H2' | 22:BA:2220:U:O5' | 2.19 | 0.42 |
| 23:BB:40:U:O2' | 23:BB:43:C:H5 | 2.01 | 0.42 |
| 24:BC:245:THR:C | 24:BC:247:TRP:H | 2.22 | 0.42 |
| 26:BE:124:PHE:C | 26:BE:124:PHE:HD1 | 2.22 | 0.42 |
| 26:BE:145:ASP:HB3 | 26:BE:184:ASP:HB2 | 2.00 | 0.42 |
| 27:BF:84:ILE:O | 27:BF:84:ILE:HG13 | 2.20 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:BH:50:ARG:O | 29:BH:54:LEU:HB2 | 2.19 | 0.42 |
| 30:BI:53:PRO:HB2 | 30:BI:74:PRO:CG | 2.49 | 0.42 |
| 31:BJ:74:TYR:OH | 31:BJ:100:VAL:HG13 | 2.18 | 0.42 |
| 33:BL:55:MET:HE2 | 33:BL:56:PRO:CD | 2.49 | 0.42 |
| 33:BL:73:ILE:C | 33:BL:105:ILE:HD13 | 2.40 | 0.42 |
| 37:BP:15:ASP:OD1 | 37:BP:15:ASP:C | 2.57 | 0.42 |
| 39:BR:43:ASN:HD22 | 39:BR:43:ASN:HA | 1.57 | 0.42 |
| 39:BR:49:ILE:HG22 | 39:BR:53:PHE:C | 2.39 | 0.42 |
| 40:BS:73:LYS:HE3 | 40:BS:73:LYS:CA | 2.49 | 0.42 |
| 50:B2:34:ARG:NH1 | 50:B2:39:ARG:HG2 | 2.34 | 0.42 |
| 52:B4:1:MET:HE1 | 52:B4:24:ARG:NH2 | 2.34 | 0.42 |
| 53:CA:77:A:C2 | 53:CA:93:U:C2 | 3.07 | 0.42 |
| 53:CA:275:G:HO2' | 53:CA:276:G:H8 | 1.66 | 0.42 |
| 53:CA:490:C:OP1 | 4:CD:145:ARG:NH2 | 2.52 | 0.42 |
| 53:CA:493:A:H2' | 53:CA:494:G:O4' | 2.19 | 0.42 |
| 53:CA:575:G:C6 | 53:CA:821:G:N7 | 2.87 | 0.42 |
| 53:CA:664:G:N2 | 53:CA:666:G:C8 | 2.87 | 0.42 |
| 53:CA:683:G:C2 | 53:CA:684:U:C2 | 3.08 | 0.42 |
| 53:CA:781:A:O2' | 53:CA:1522:U:O2 | 2.35 | 0.42 |
| 53:CA:864:A:H5'' | 5:CE:89:THR:HB | 2.01 | 0.42 |
| 53:CA:978:A:O2' | 53:CA:979:C:H5' | 2.19 | 0.42 |
| 53:CA:1005:A:C4 | 53:CA:1006:G:H1' | 2.53 | 0.42 |
| 53:CA:1151:A:OP1 | 10:CJ:43:PRO:HA | 2.19 | 0.42 |
| 53:CA:1182:G:C3' | 53:CA:1183:U:H5' | 2.49 | 0.42 |
| 53:CA:1186:G:N2 | 53:CA:1187:G:H1' | 2.33 | 0.42 |
| 53:CA:1296:C:H1' | 53:CA:1302:C:C2 | 2.54 | 0.42 |
| 53:CA:1523:G:P | 11:CK:124:LYS:NZ | 2.92 | 0.42 |
| 3:CC:187:GLU:O | 3:CC:188:ALA:HB2 | 2.20 | 0.42 |
| 4:CD:20:LEU:N | 4:CD:20:LEU:HD23 | 2.33 | 0.42 |
| 4:CD:60:VAL:CG2 | 4:CD:194:ILE:CG2 | 2.97 | 0.42 |
| 5:CE:131:ASN:ND2 | 5:CE:132:PRO:HD2 | 2.27 | 0.42 |
| 6:CF:46:GLN:OE1 | 6:CF:55:HIS:O | 2.37 | 0.42 |
| 54:CG:60:ALA:O | 54:CG:61:PHE:HD2 | 2.01 | 0.42 |
| 9:CI:56:MET:O | 9:CI:58:GLU:HG2 | 2.19 | 0.42 |
| 11:CK:110:THR:HG22 | 21:CU:4:LYS:HA | 2.02 | 0.42 |
| 14:CN:30:ILE:C | 14:CN:40:ARG:HA | 2.39 | 0.42 |
| 15:CO:84:LEU:HD23 | 15:CO:84:LEU:HA | 1.92 | 0.42 |
| 17:CQ:46:HIS:CE1 | 17:CQ:48:GLU:HG2 | 2.54 | 0.42 |
| 17:CQ:47:ASP:HB3 | 17:CQ:74:LEU:HB2 | 2.01 | 0.42 |
| 20:CT:61:ALA:O | 20:CT:67:HIS:CG | 2.72 | 0.42 |
| 57:DA:46:G:N1 | 57:DA:47:C:C4 | 2.86 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:64:A:OP1 | 41:DT:77:ARG:HA | 2.18 | 0.42 |
| 57:DA:73:A:O5' | 57:DA:73:A:C8 | 2.62 | 0.42 |
| 57:DA:197:A:C8 | 57:DA:2430:A:C5 | 3.07 | 0.42 |
| 57:DA:197:A:N7 | 57:DA:2430:A:C4 | 2.87 | 0.42 |
| 57:DA:404:A:N3 | 57:DA:406:G:C6 | 2.88 | 0.42 |
| 57:DA:629:G:H21 | 57:DA:640:C:P | 2.42 | 0.42 |
| 57:DA:1130:U:HO2' | 57:DA:1131:G:H8 | 1.59 | 0.42 |
| 57:DA:1208:C:O2' | 57:DA:1209:U:H5' | 2.19 | 0.42 |
| 57:DA:1324:G:N2 | 57:DA:1328:A:N1 | 2.67 | 0.42 |
| 57:DA:1395:A:H4' | 57:DA:1397:U:C4 | 2.54 | 0.42 |
| 57:DA:1607:C:H4' | 57:DA:1608:A:H8 | 1.82 | 0.42 |
| 57:DA:1758:U:O2 | 57:DA:1758:U:O4' | 2.37 | 0.42 |
| 57:DA:1805:A:O2' | 24:DC:49:THR:HA | 2.20 | 0.42 |
| 57:DA:2029:G:C2 | 57:DA:2033:A:N7 | 2.87 | 0.42 |
| 57:DA:2092:U:O2 | 57:DA:2092:U:O5' | 2.37 | 0.42 |
| 57:DA:2145:C:H6 | 57:DA:2145:C:H2' | 1.65 | 0.42 |
| 57:DA:2274:A:C5 | 57:DA:2276:G:C8 | 3.07 | 0.42 |
| 57:DA:2360:G:O2' | 33:DL:60:ARG:HB3 | 2.20 | 0.42 |
| 57:DA:2385:C:O2' | 57:DA:2386:A:O5' | 2.37 | 0.42 |
| 57:DA:2478:A:C8 | 57:DA:2529:G:C6 | 3.08 | 0.42 |
| 57:DA:2877:G:N2 | 57:DA:2878:U:H1' | 2.35 | 0.42 |
| 57:DA:2881:U:O3' | 35:DN:96:ARG:NE | 2.52 | 0.42 |
| 58:DB:15:A:C4 | 58:DB:109:A:C6 | 3.06 | 0.42 |
| 58:DB:17:C:O2' | 58:DB:18:G:O4' | 2.37 | 0.42 |
| 24:DC:264:LYS:HG3 | 24:DC:265:PHE:CD2 | 2.54 | 0.42 |
| 29:DH:53:GLU:C | 29:DH:55:GLU:N | 2.72 | 0.42 |
| 30:DI:105:LEU:HD21 | 30:DI:129:GLU:CD | 2.39 | 0.42 |
| 31:DJ:56:VAL:CG2 | 31:DJ:124:VAL:HG23 | 2.49 | 0.42 |
| 32:DK:115:ILE:HG22 | 32:DK:116:ILE:N | 2.34 | 0.42 |
| 34:DM:7:THR:C | 34:DM:9:PHE:H | 2.22 | 0.42 |
| 35:DN:13:ASN:OD1 | 35:DN:14:SER:N | 2.52 | 0.42 |
| 35:DN:64:ARG:O | 35:DN:67:PHE:HB3 | 2.19 | 0.42 |
| 36:DO:31:THR:HG21 | 36:DO:36:TYR:HE2 | 1.83 | 0.42 |
| 39:DR:39:LEU:HA | 39:DR:49:ILE:CG2 | 2.34 | 0.42 |
| 39:DR:83:TYR:CD2 | 39:DR:83:TYR:C | 2.92 | 0.42 |
| 40:DS:59:GLU:CD | 40:DS:66:ILE:HG23 | 2.40 | 0.42 |
| 52:D4:9:LYS:HD3 | 52:D4:9:LYS:C | 2.40 | 0.42 |
| 1:AA:181:A:C6 | 1:AA:195:A:N7 | 2.88 | 0.42 |
| 1:AA:199:A:C2 | 1:AA:200:G:C4 | 3.07 | 0.42 |
| 1:AA:524:G:C6 | 1:AA:525:C:C4 | 3.08 | 0.42 |
| 1:AA:579:A:H2' | 1:AA:580:C:C6 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:604:G:C2 | 1:AA:635:A:C2 | 3.08 | 0.42 |
| 1:AA:652:U:O4 | 1:AA:752:G:C2' | 2.67 | 0.42 |
| 1:AA:723:U:O2 | 1:AA:855:U:O3' | 2.37 | 0.42 |
| 1:AA:844:G:H5'' | 1:AA:845:A:OP1 | 2.20 | 0.42 |
| 1:AA:1087:G:O2' | 1:AA:1088:G:C5' | 2.68 | 0.42 |
| 1:AA:1271:A:C2 | 1:AA:1272:G:C5 | 3.07 | 0.42 |
| 1:AA:1272:G:C5 | 1:AA:1273:C:C4 | 3.07 | 0.42 |
| 1:AA:1348:U:O2' | 1:AA:1349:A:H5' | 2.19 | 0.42 |
| 2:AB:10:LYS:H | 2:AB:10:LYS:HG3 | 1.68 | 0.42 |
| 2:AB:35:ASN:O | 2:AB:37:VAL:HG12 | 2.19 | 0.42 |
| 2:AB:123:GLY:O | 2:AB:125:PHE:CD2 | 2.72 | 0.42 |
| 5:AE:37:VAL:CG1 | 5:AE:116:VAL:HG21 | 2.49 | 0.42 |
| 8:AH:8:ASP:HA | 8:AH:11:THR:HG22 | 2.01 | 0.42 |
| 8:AH:85:TYR:C | 8:AH:86:LYS:HD2 | 2.39 | 0.42 |
| 9:AI:128:LYS:HD2 | 9:AI:129:ARG:N | 2.34 | 0.42 |
| 13:AM:9:PRO:O | 13:AM:10:ASP:HB2 | 2.20 | 0.42 |
| 13:AM:59:VAL:HG22 | 13:AM:59:VAL:O | 2.18 | 0.42 |
| 13:AM:89:ARG:CB | 13:AM:96:VAL:HG22 | 2.49 | 0.42 |
| 14:AN:20:PHE:C | 14:AN:22:LYS:N | 2.73 | 0.42 |
| 14:AN:63:CYS:HB2 | 14:AN:79:SER:CB | 2.49 | 0.42 |
| 15:AO:57:ARG:HH11 | 15:AO:57:ARG:HB3 | 1.85 | 0.42 |
| 22:BA:478:A:N6 | 22:BA:480:A:C6 | 2.87 | 0.42 |
| 22:BA:608:A:C6 | 22:BA:609:A:C6 | 3.07 | 0.42 |
| 22:BA:648:G:O2' | 22:BA:2351:G:OP1 | 2.34 | 0.42 |
| 22:BA:699:A:H4' | 22:BA:1634:A:N7 | 2.33 | 0.42 |
| 22:BA:950:G:C5 | 22:BA:951:C:C4 | 3.07 | 0.42 |
| 22:BA:1108:U:H2' | 22:BA:1109:C:O4' | 2.19 | 0.42 |
| 22:BA:1354:A:C8 | 22:BA:1355:G:C8 | 3.07 | 0.42 |
| 22:BA:1568:G:H4' | 24:BC:58:LYS:CG | 2.49 | 0.42 |
| 22:BA:1612:C:H5' | 50:B2:7:PRO:HG3 | 2.00 | 0.42 |
| 22:BA:2618:G:H2' | 22:BA:2619:C:C6 | 2.54 | 0.42 |
| 22:BA:2786:U:O2' | 22:BA:2787:C:H5' | 2.19 | 0.42 |
| 22:BA:2820:A:H3' | 22:BA:2820:A:C8 | 2.54 | 0.42 |
| 24:BC:158:GLY:N | 24:BC:194:VAL:HG13 | 2.32 | 0.42 |
| 24:BC:175:LEU:N | 24:BC:175:LEU:HD13 | 2.34 | 0.42 |
| 25:BD:34:VAL:HG22 | 25:BD:94:GLN:N | 2.27 | 0.42 |
| 25:BD:109:VAL:HG22 | 25:BD:203:VAL:HB | 1.99 | 0.42 |
| 26:BE:172:ALA:O | 26:BE:175:ILE:HG22 | 2.19 | 0.42 |
| 27:BF:4:HIS:O | 27:BF:7:TYR:HB3 | 2.19 | 0.42 |
| 27:BF:116:LEU:O | 27:BF:176:PHE:HA | 2.19 | 0.42 |
| 31:BJ:25:LEU:HB2 | 31:BJ:62:VAL:HG22 | 2.01 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 32:BK:89:ASN:HD22 | 32:BK:89:ASN:HA | 1.57 | 0.42 |
| 35:BN:116:VAL:O | 35:BN:117:ASP:CB | 2.66 | 0.42 |
| 37:BP:5:LYS:O | 37:BP:9:GLN:HG2 | 2.20 | 0.42 |
| 38:BQ:94:LEU:C | 38:BQ:96:ASP:N | 2.70 | 0.42 |
| 44:BW:19:ARG:NH1 | 44:BW:22:VAL:CG1 | 2.79 | 0.42 |
| 44:BW:49:ASN:ND2 | 44:BW:50:VAL:N | 2.67 | 0.42 |
| 46:BY:9:LYS:HB3 | 46:BY:12:GLU:CG | 2.45 | 0.42 |
| 49:B1:24:LYS:HE2 | 49:B1:52:LYS:CB | 2.42 | 0.42 |
| 53:CA:54:C:H2' | 53:CA:352:C:H41 | 1.84 | 0.42 |
| 53:CA:218:U:H2' | 53:CA:219:U:O4' | 2.19 | 0.42 |
| 53:CA:276:G:O2' | 53:CA:277:C:O5' | 2.37 | 0.42 |
| 53:CA:525:C:N4 | 53:CA:526:C:N4 | 2.68 | 0.42 |
| 53:CA:692:U:O2' | 53:CA:694:A:N7 | 2.42 | 0.42 |
| 53:CA:853:C:C4 | 53:CA:854:U:C5 | 3.08 | 0.42 |
| 53:CA:1006:G:N2 | 53:CA:1007:U:H1' | 2.35 | 0.42 |
| 53:CA:1157:A:C6 | 53:CA:1180:A:C5 | 3.07 | 0.42 |
| 53:CA:1157:A:C5 | 53:CA:1180:A:C6 | 3.07 | 0.42 |
| 53:CA:1162:C:C2 | 53:CA:1175:G:N2 | 2.88 | 0.42 |
| 53:CA:1367:C:O2' | 53:CA:1368:A:O4' | 2.29 | 0.42 |
| 4:CD:106:PHE:CE1 | 4:CD:158:LEU:HD21 | 2.54 | 0.42 |
| 5:CE:13:LYS:HD3 | 5:CE:14:LEU:N | 2.33 | 0.42 |
| 5:CE:155:LYS:HB3 | 8:CH:70:VAL:CG2 | 2.48 | 0.42 |
| 6:CF:2:ARG:HG2 | 6:CF:4:TYR:CZ | 2.55 | 0.42 |
| 54:CG:22:LEU:O | 54:CG:26:VAL:HG22 | 2.18 | 0.42 |
| 8:CH:37:ASN:HA | 8:CH:48:PHE:CE1 | 2.54 | 0.42 |
| 11:CK:18:GLY:O | 11:CK:81:LEU:HA | 2.19 | 0.42 |
| 14:CN:20:PHE:CE1 | 14:CN:54:SER:HB2 | 2.53 | 0.42 |
| 15:CO:42:PHE:HB3 | 15:CO:52:ARG:NH2 | 2.35 | 0.42 |
| 56:CP:32:PHE:HD1 | 56:CP:32:PHE:O | 2.03 | 0.42 |
| 57:DA:3:U:C4 | 57:DA:4:U:C4 | 3.07 | 0.42 |
| 57:DA:104:A:O2' | 57:DA:105:C:O4' | 2.30 | 0.42 |
| 57:DA:206:U:H2' | 57:DA:207:A:C8 | 2.55 | 0.42 |
| 57:DA:301:G:C2 | 57:DA:317:G:C4 | 3.07 | 0.42 |
| 57:DA:373:U:C2 | 57:DA:374:A:N7 | 2.87 | 0.42 |
| 57:DA:377:G:N1 | 57:DA:378:C:C2 | 2.87 | 0.42 |
| 57:DA:582:A:H2' | 57:DA:583:G:C8 | 2.54 | 0.42 |
| 57:DA:974:G:C8 | 57:DA:975:A:N7 | 2.87 | 0.42 |
| 57:DA:1091:G:H2' | 57:DA:1092:C:C6 | 2.53 | 0.42 |
| 57:DA:1275:A:C8 | 35:DN:16:HIS:CD2 | 3.08 | 0.42 |
| 57:DA:1303:G:O2' | 57:DA:1304:A:O5' | 2.37 | 0.42 |
| 57:DA:1330:C:O2' | 57:DA:1331:G:H8 | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:1365:A:H3' | 57:DA:1366:A:C8 | 2.54 | 0.42 |
| 57:DA:1655:A:C6 | 57:DA:1656:C:C2 | 3.07 | 0.42 |
| 57:DA:1682:G:C2 | 57:DA:1757:A:O4' | 2.73 | 0.42 |
| 57:DA:1862:G:C2 | 57:DA:1881:C:C2 | 3.06 | 0.42 |
| 57:DA:1971:U:H6 | 57:DA:1971:U:H2' | 1.34 | 0.42 |
| 57:DA:2030:A:C2 | 57:DA:2499:C:H5'' | 2.54 | 0.42 |
| 57:DA:2229:U:H2' | 57:DA:2230:G:C8 | 2.54 | 0.42 |
| 57:DA:2353:G:H21 | 44:DW:30:VAL:CG2 | 2.32 | 0.42 |
| 57:DA:2414:G:C2' | 57:DA:2415:G:H5' | 2.49 | 0.42 |
| 57:DA:2740:A:N6 | 57:DA:2764:A:C8 | 2.87 | 0.42 |
| 25:DD:108:ASP:O | 25:DD:109:VAL:HB | 2.20 | 0.42 |
| 25:DD:166:GLY:O | 25:DD:167:ASN:CB | 2.67 | 0.42 |
| 28:DG:151:ARG:HB3 | 28:DG:161:VAL:HG23 | 2.01 | 0.42 |
| 31:DJ:1:MET:SD | 31:DJ:2:LYS:HE3 | 2.59 | 0.42 |
| 33:DL:85:VAL:O | 33:DL:86:GLU:HB2 | 2.18 | 0.42 |
| 34:DM:34:LYS:HB2 | 34:DM:131:VAL:HG23 | 2.01 | 0.42 |
| 35:DN:97:ILE:HG13 | 35:DN:98:LEU:N | 2.34 | 0.42 |
| 37:DP:19:PHE:CD2 | 37:DP:19:PHE:N | 2.85 | 0.42 |
| 38:DQ:87:VAL:HG12 | 38:DQ:88:GLU:H | 1.84 | 0.42 |
| 43:DV:77:VAL:O | 43:DV:77:VAL:HG13 | 2.19 | 0.42 |
| 49:D1:51:ALA:O | 49:D1:52:LYS:CB | 2.63 | 0.42 |
| 1:AA:205:A:H3' | 1:AA:206:C:C6 | 2.54 | 0.42 |
| 1:AA:421:U:H5' | 1:AA:422:C:H6 | 1.84 | 0.42 |
| 1:AA:499:A:C6 | 1:AA:547:A:C8 | 3.08 | 0.42 |
| 1:AA:829:G:N3 | 1:AA:830:G:C8 | 2.88 | 0.42 |
| 1:AA:933:G:C4 | 1:AA:935:A:C8 | 3.07 | 0.42 |
| 1:AA:1221:G:H2' | 1:AA:1222:G:C8 | 2.53 | 0.42 |
| 1:AA:1348:U:O2' | 1:AA:1349:A:C5' | 2.67 | 0.42 |
| 1:AA:1372:U:H2' | 1:AA:1373:G:O4' | 2.19 | 0.42 |
| 1:AA:1516:G:N2 | 1:AA:1519:A:OP2 | 2.51 | 0.42 |
| 2:AB:186:VAL:HG23 | 2:AB:186:VAL:O | 2.18 | 0.42 |
| 5:AE:131:ASN:O | 5:AE:135:VAL:HG12 | 2.18 | 0.42 |
| 9:AI:90:ASP:CG | 9:AI:92:SER:HB3 | 2.39 | 0.42 |
| 15:AO:34:GLN:O | 15:AO:35:ILE:C | 2.58 | 0.42 |
| 22:BA:246:C:H2' | 22:BA:247:G:H5' | 2.02 | 0.42 |
| 22:BA:651:G:C5 | 22:BA:652:U:C5 | 3.07 | 0.42 |
| 22:BA:833:A:H2' | 22:BA:834:G:C8 | 2.55 | 0.42 |
| 22:BA:1073:A:H2' | 22:BA:1074:G:C5' | 2.41 | 0.42 |
| 22:BA:1127:A:N1 | 22:BA:2463:C:O2' | 2.46 | 0.42 |
| 22:BA:1142:A:C5 | 22:BA:1144:A:C5 | 3.07 | 0.42 |
| 22:BA:1259:G:C2' | 22:BA:1260:A:H5' | 2.49 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:1293:C:O5' | 22:BA:1293:C:H6 | 2.01 | 0.42 |
| 22:BA:1507:C:C2 | 22:BA:1508:A:C2 | 3.07 | 0.42 |
| 22:BA:1838:C:N3 | 22:BA:1899:A:C2 | 2.87 | 0.42 |
| 22:BA:2063:C:O2' | 22:BA:2064:C:H5' | 2.19 | 0.42 |
| 22:BA:2334:U:O4' | 36:BO:12:THR:HG22 | 2.19 | 0.42 |
| 22:BA:2440:C:H2' | 22:BA:2441:U:C4' | 2.49 | 0.42 |
| 22:BA:2791:G:H5'' | 22:BA:2791:G:H8 | 1.84 | 0.42 |
| 22:BA:2820:A:H2' | 25:BD:196:ALA:HB2 | 2.00 | 0.42 |
| 22:BA:2840:C:O2' | 22:BA:2841:C:H5' | 2.18 | 0.42 |
| 23:BB:49:C:OP1 | 36:BO:102:ARG:CG | 2.67 | 0.42 |
| 24:BC:30:ALA:HA | 24:BC:33:LEU:HD12 | 2.01 | 0.42 |
| 24:BC:257:ARG:NH1 | 24:BC:263:ASP:OD2 | 2.53 | 0.42 |
| 25:BD:93:GLY:O | 25:BD:94:GLN:C | 2.57 | 0.42 |
| 26:BE:168:ASP:OD1 | 26:BE:169:VAL:N | 2.52 | 0.42 |
| 29:BH:9:VAL:HG12 | 29:BH:12:LEU:HG | 2.01 | 0.42 |
| 31:BJ:62:VAL:HG22 | 31:BJ:63:ALA:N | 2.34 | 0.42 |
| 33:BL:112:LEU:CD1 | 33:BL:130:GLY:HA3 | 2.41 | 0.42 |
| 37:BP:27:VAL:HG22 | 37:BP:83:ILE:HG12 | 2.01 | 0.42 |
| 37:BP:105:LYS:HA | 37:BP:105:LYS:HD3 | 1.79 | 0.42 |
| 39:BR:70:GLU:O | 39:BR:71:LYS:C | 2.58 | 0.42 |
| 40:BS:17:VAL:CG1 | 40:BS:76:VAL:HG11 | 2.41 | 0.42 |
| 49:B1:49:LYS:HG2 | 49:B1:50:GLU:N | 2.24 | 0.42 |
| 53:CA:168:G:H2' | 53:CA:169:C:H5' | 2.01 | 0.42 |
| 53:CA:275:G:H2' | 53:CA:276:G:C8 | 2.54 | 0.42 |
| 53:CA:307:C:H5'' | 53:CA:308:C:OP2 | 2.19 | 0.42 |
| 53:CA:429:U:H4' | 53:CA:430:A:O5' | 2.18 | 0.42 |
| 53:CA:495:A:C2 | 53:CA:496:A:N6 | 2.88 | 0.42 |
| 53:CA:666:G:C5 | 53:CA:741:G:C6 | 3.07 | 0.42 |
| 53:CA:683:G:H2' | 53:CA:684:U:O4' | 2.19 | 0.42 |
| 53:CA:880:C:H2' | 53:CA:881:G:H5' | 2.00 | 0.42 |
| 53:CA:971:G:H5'' | 53:CA:972:C:H5'' | 2.01 | 0.42 |
| 53:CA:1118:U:H5' | 9:CI:10:ARG:HH21 | 1.84 | 0.42 |
| 53:CA:1184:G:HO2' | 53:CA:1185:G:C5' | 2.32 | 0.42 |
| 53:CA:1222:G:H5' | 19:CS:77:ARG:HH21 | 1.83 | 0.42 |
| 53:CA:1227:A:O5' | 55:CM:109:LYS:HE3 | 2.18 | 0.42 |
| 53:CA:1250:A:O3' | 9:CI:68:GLY:HA2 | 2.19 | 0.42 |
| 53:CA:1308:U:H5 | 55:CM:97:ARG:CZ | 2.32 | 0.42 |
| 2:CB:9:LEU:O | 2:CB:10:LYS:HB3 | 2.20 | 0.42 |
| 4:CD:20:LEU:O | 4:CD:21:LYS:C | 2.56 | 0.42 |
| 4:CD:165:GLU:O | 4:CD:166:LYS:HB3 | 2.19 | 0.42 |
| 54:CG:9:ARG:C | 54:CG:10:LYS:HG3 | 2.39 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 9:CI:112:ARG:O | 9:CI:112:ARG:HG3 | 2.18 | 0.42 |
| 14:CN:68:ARG:HG3 | 14:CN:69:PRO:HD2 | 2.01 | 0.42 |
| 57:DA:121:G:N3 | 57:DA:131:A:N1 | 2.67 | 0.42 |
| 57:DA:197:A:N3 | 57:DA:197:A:H2' | 2.33 | 0.42 |
| 57:DA:206:U:H2' | 57:DA:207:A:H8 | 1.84 | 0.42 |
| 57:DA:302:C:O2' | 57:DA:303:G:O5' | 2.37 | 0.42 |
| 57:DA:333:G:HO2' | 57:DA:334:C:C5' | 2.32 | 0.42 |
| 57:DA:452:G:C6 | 57:DA:453:A:C6 | 3.08 | 0.42 |
| 57:DA:484:C:O2' | 57:DA:485:C:C5' | 2.68 | 0.42 |
| 57:DA:547:A:C8 | 57:DA:549:G:N2 | 2.88 | 0.42 |
| 57:DA:562:U:H2' | 57:DA:572:A:O4' | 2.19 | 0.42 |
| 57:DA:585:G:H2' | 57:DA:1254:A:N6 | 2.34 | 0.42 |
| 57:DA:860:U:O4' | 57:DA:2268:A:H5' | 2.19 | 0.42 |
| 57:DA:966:G:H5' | 57:DA:2272:U:O2 | 2.19 | 0.42 |
| 57:DA:976:G:C2' | 57:DA:977:G:H8 | 2.24 | 0.42 |
| 57:DA:994:C:OP2 | 38:DQ:49:ARG:CG | 2.67 | 0.42 |
| 57:DA:1036:G:C2 | 57:DA:1037:G:N7 | 2.87 | 0.42 |
| 57:DA:1048:A:H2' | 57:DA:1049:C:C5 | 2.54 | 0.42 |
| 57:DA:1167:C:O2' | 57:DA:1168:G:H5' | 2.18 | 0.42 |
| 57:DA:1392:A:N6 | 57:DA:1393:A:N1 | 2.67 | 0.42 |
| 57:DA:1476:U:H1' | 57:DA:1732:C:O2 | 2.19 | 0.42 |
| 57:DA:1497:U:H5'' | 57:DA:1498:C:OP2 | 2.19 | 0.42 |
| 57:DA:1500:G:N1 | 57:DA:1501:G:C5 | 2.87 | 0.42 |
| 57:DA:1537:G:C3' | 57:DA:1538:G:H4' | 2.48 | 0.42 |
| 57:DA:1568:G:H8 | 57:DA:1568:G:H2' | 1.57 | 0.42 |
| 57:DA:1598:A:C2 | 57:DA:1599:U:C2 | 3.08 | 0.42 |
| 57:DA:1619:G:O2' | 57:DA:1620:G:H5' | 2.20 | 0.42 |
| 57:DA:1620:G:C6 | 57:DA:1621:U:C4 | 3.07 | 0.42 |
| 57:DA:1681:G:H3' | 57:DA:1757:A:N1 | 2.34 | 0.42 |
| 57:DA:1716:U:O2 | 57:DA:1717:A:C8 | 2.73 | 0.42 |
| 57:DA:1765:U:O2' | 57:DA:1766:G:H5' | 2.19 | 0.42 |
| 57:DA:2068:U:H5'' | 57:DA:2068:U:H6 | 1.84 | 0.42 |
| 57:DA:2076:U:H5'' | 57:DA:2238:G:N2 | 2.30 | 0.42 |
| 57:DA:2106:U:C4 | 57:DA:2107:G:N7 | 2.88 | 0.42 |
| 57:DA:2231:U:H2' | 57:DA:2232:C:C6 | 2.54 | 0.42 |
| 57:DA:2233:U:H2' | 57:DA:2234:G:H8 | 1.84 | 0.42 |
| 57:DA:2492:U:O5' | 57:DA:2492:U:H6 | 2.02 | 0.42 |
| 57:DA:2668:G:N3 | 57:DA:2669:G:C8 | 2.87 | 0.42 |
| 57:DA:2721:A:C8 | 57:DA:2722:G:C8 | 3.07 | 0.42 |
| 57:DA:2875:C:O2' | 57:DA:2876:G:O5' | 2.37 | 0.42 |
| 57:DA:2897:U:H2' | 57:DA:2898:U:O4' | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 24:DC:131:MET:CG | 24:DC:134:ILE:HD11 | 2.47 | 0.42 |
| 26:DE:126:VAL:HG13 | 26:DE:127:GLU:N | 2.33 | 0.42 |
| 59:DF:5:ASP:C | 59:DF:7:TYR:N | 2.72 | 0.42 |
| 59:DF:103:ILE:H | 59:DF:107:VAL:HG13 | 1.84 | 0.42 |
| 28:DG:164:ALA:O | 28:DG:165:ASP:CB | 2.67 | 0.42 |
| 31:DJ:37:ARG:HG3 | 31:DJ:118:MET:CE | 2.49 | 0.42 |
| 31:DJ:89:PHE:CZ | 31:DJ:93:ILE:HD11 | 2.54 | 0.42 |
| 31:DJ:97:PRO:C | 31:DJ:99:ARG:H | 2.23 | 0.42 |
| 32:DK:14:SER:OG | 32:DK:51:LYS:N | 2.50 | 0.42 |
| 37:DP:72:VAL:O | 37:DP:72:VAL:HG23 | 2.20 | 0.42 |
| 39:DR:41:ILE:HG22 | 39:DR:42:ALA:N | 2.34 | 0.42 |
| 42:DU:20:LYS:HD3 | 42:DU:21:ARG:O | 2.19 | 0.42 |
| 44:DW:33:GLY:O | 44:DW:34:SER:HB2 | 2.18 | 0.42 |
| 49:D1:16:THR:HG21 | 49:D1:41:VAL:HB | 2.02 | 0.42 |
| 1:AA:10:A:HO2' | 1:AA:507:C:HO2' | 1.66 | 0.42 |
| 1:AA:77:A:H8 | 1:AA:77:A:OP2 | 2.02 | 0.42 |
| 1:AA:109:A:N6 | 1:AA:324:G:H1' | 2.34 | 0.42 |
| 1:AA:266:G:O3' | 17:AQ:68:LYS:HB2 | 2.19 | 0.42 |
| 1:AA:281:G:O2' | 1:AA:282:A:OP2 | 2.38 | 0.42 |
| 1:AA:330:C:O2' | 1:AA:331:G:H5' | 2.19 | 0.42 |
| 1:AA:460:A:O3' | 1:AA:462:G:OP2 | 2.38 | 0.42 |
| 1:AA:810:C:O2' | 1:AA:811:C:H5' | 2.19 | 0.42 |
| 1:AA:841:C:H3' | 1:AA:843:U:OP2 | 2.19 | 0.42 |
| 1:AA:947:G:C6 | 1:AA:948:C:C4 | 3.08 | 0.42 |
| 1:AA:965:U:OP1 | 1:AA:1198:G:H5' | 2.19 | 0.42 |
| 1:AA:1055:A:C5 | 1:AA:1206:G:C2 | 3.07 | 0.42 |
| 1:AA:1064:G:H1' | 1:AA:1066:C:C5 | 2.54 | 0.42 |
| 1:AA:1250:A:H2' | 1:AA:1251:A:O4' | 2.19 | 0.42 |
| 1:AA:1258:G:N3 | 1:AA:1259:C:C5 | 2.88 | 0.42 |
| 2:AB:9:LEU:HD23 | 2:AB:9:LEU:C | 2.39 | 0.42 |
| 2:AB:176:ASN:HD21 | 2:AB:194:GLY:CA | 2.33 | 0.42 |
| 4:AD:69:ARG:HA | 4:AD:69:ARG:NE | 2.29 | 0.42 |
| 5:AE:155:LYS:CB | 8:AH:70:VAL:HG13 | 2.50 | 0.42 |
| 6:AF:12:PRO:HA | 6:AF:15:SER:HB2 | 2.02 | 0.42 |
| 10:AJ:26:VAL:O | 10:AJ:29:ALA:HB3 | 2.19 | 0.42 |
| 10:AJ:91:ASP:C | 10:AJ:92:LEU:HD23 | 2.39 | 0.42 |
| 12:AL:113:ARG:CB | 12:AL:118:VAL:HB | 2.41 | 0.42 |
| 13:AM:44:ILE:HD12 | 13:AM:44:ILE:N | 2.35 | 0.42 |
| 15:AO:88:ARG:NH1 | 22:BA:716:A:OP1 | 2.52 | 0.42 |
| 17:AQ:12:VAL:HB | 17:AQ:21:VAL:HG22 | 2.01 | 0.42 |
| 19:AS:10:ILE:HD11 | 19:AS:15:LEU:HB2 | 2.00 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:AT:8:LYS:CA | 20:AT:11:ILE:HG23 | 2.45 | 0.42 |
| 22:BA:41:C:H2' | 22:BA:42:A:O5' | 2.19 | 0.42 |
| 22:BA:182:A:H2' | 22:BA:183:C:C6 | 2.54 | 0.42 |
| 22:BA:627:A:C5 | 22:BA:637:A:C8 | 3.08 | 0.42 |
| 22:BA:941:A:H2' | 22:BA:942:G:C8 | 2.55 | 0.42 |
| 22:BA:1033:U:H4' | 22:BA:1034:G:OP1 | 2.18 | 0.42 |
| 22:BA:1091:G:O2' | 22:BA:1092:C:C5' | 2.68 | 0.42 |
| 22:BA:1327:A:N6 | 22:BA:1328:A:C2 | 2.87 | 0.42 |
| 22:BA:1872:A:O2' | 22:BA:1873:G:O4' | 2.35 | 0.42 |
| 22:BA:1916:A:H8 | 22:BA:1916:A:O5' | 2.03 | 0.42 |
| 22:BA:2023:C:O2 | 22:BA:2023:C:C2' | 2.63 | 0.42 |
| 22:BA:2078:C:C2 | 22:BA:2079:U:C5 | 3.08 | 0.42 |
| 22:BA:2270:A:H2' | 22:BA:2271:G:O4' | 2.18 | 0.42 |
| 22:BA:2365:G:C2' | 22:BA:2366:A:C8 | 3.03 | 0.42 |
| 22:BA:2470:G:N2 | 22:BA:2471:A:C4 | 2.87 | 0.42 |
| 22:BA:2470:G:O2' | 22:BA:2471:A:H5' | 2.19 | 0.42 |
| 25:BD:34:VAL:HG21 | 25:BD:90:PHE:O | 2.19 | 0.42 |
| 25:BD:86:GLU:HA | 25:BD:86:GLU:OE1 | 2.18 | 0.42 |
| 27:BF:53:ALA:C | 27:BF:55:ASP:N | 2.73 | 0.42 |
| 29:BH:129:GLU:HG2 | 29:BH:142:VAL:O | 2.19 | 0.42 |
| 30:BI:49:GLU:HG2 | 30:BI:50:LYS:H | 1.83 | 0.42 |
| 33:BL:30:THR:O | 33:BL:31:GLY:C | 2.58 | 0.42 |
| 39:BR:27:ILE:HG13 | 39:BR:33:VAL:HG11 | 2.01 | 0.42 |
| 42:BU:2:ALA:O | 42:BU:5:ARG:NH2 | 2.53 | 0.42 |
| 42:BU:33:VAL:O | 42:BU:64:ILE:HG22 | 2.20 | 0.42 |
| 43:BV:8:VAL:CG1 | 43:BV:38:LEU:HD11 | 2.49 | 0.42 |
| 53:CA:7:A:H5' | 53:CA:298:A:O4' | 2.20 | 0.42 |
| 53:CA:120:A:C8 | 53:CA:120:A:O5' | 2.72 | 0.42 |
| 53:CA:376:G:O3' | 56:CP:5:ARG:HD2 | 2.19 | 0.42 |
| 53:CA:386:C:N4 | 53:CA:387:U:O4 | 2.52 | 0.42 |
| 53:CA:449:G:O2' | 53:CA:450:G:H5' | 2.19 | 0.42 |
| 53:CA:579:A:N1 | 53:CA:763:G:C5 | 2.87 | 0.42 |
| 53:CA:650:G:H2' | 53:CA:650:G:N3 | 2.35 | 0.42 |
| 53:CA:987:G:H8 | 53:CA:987:G:O5' | 2.02 | 0.42 |
| 53:CA:1005:A:N7 | 53:CA:1006:G:H1' | 2.34 | 0.42 |
| 53:CA:1231:G:C4 | 53:CA:1232:U:C6 | 3.07 | 0.42 |
| 53:CA:1231:G:H2' | 53:CA:1232:U:O4' | 2.20 | 0.42 |
| 53:CA:1373:G:H5'' | 54:CG:35:LYS:HB3 | 2.01 | 0.42 |
| 53:CA:1524:C:OP2 | 11:CK:124:LYS:NZ | 2.47 | 0.42 |
| 2:CB:93:HIS:CG | 2:CB:145:ASN:O | 2.72 | 0.42 |
| 3:CC:20:THR:HG23 | 3:CC:57:GLU:HG2 | 2.00 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:CE:110:MET:HG2 | 5:CE:139:THR:HG21 | 2.00 | 0.42 |
| 6:CF:44:ARG:HA | 6:CF:58:HIS:HA | 2.01 | 0.42 |
| 54:CG:41:ILE:HD13 | 54:CG:115:MET:HB3 | 2.02 | 0.42 |
| 9:CI:17:ARG:HB3 | 9:CI:19:PHE:CE2 | 2.55 | 0.42 |
| 9:CI:29:ILE:HG13 | 9:CI:64:ILE:HG22 | 2.02 | 0.42 |
| 9:CI:129:ARG:CZ | 9:CI:129:ARG:HA | 2.50 | 0.42 |
| 15:CO:28:VAL:HG11 | 15:CO:66:LEU:HD21 | 2.00 | 0.42 |
| 56:CP:7:ALA:O | 56:CP:17:TYR:HA | 2.20 | 0.42 |
| 19:CS:40:PHE:CB | 19:CS:41:PRO:CD | 2.96 | 0.42 |
| 20:CT:9:ARG:HD2 | 20:CT:12:GLN:HB3 | 2.02 | 0.42 |
| 20:CT:78:LEU:O | 20:CT:82:ILE:HG12 | 2.20 | 0.42 |
| 57:DA:52:A:H2 | 57:DA:179:C:O4' | 2.02 | 0.42 |
| 57:DA:193:U:O3' | 57:DA:803:U:H4' | 2.20 | 0.42 |
| 57:DA:307:G:N1 | 57:DA:310:A:OP2 | 2.53 | 0.42 |
| 57:DA:475:C:H2' | 57:DA:476:G:N7 | 2.35 | 0.42 |
| 57:DA:582:A:H2' | 57:DA:583:G:H8 | 1.85 | 0.42 |
| 57:DA:943:A:C6 | 57:DA:944:C:C5 | 3.08 | 0.42 |
| 57:DA:1025:G:H1' | 57:DA:1135:C:O4' | 2.19 | 0.42 |
| 57:DA:1112:G:O2' | 57:DA:1113:U:H5' | 2.18 | 0.42 |
| 57:DA:1255:U:H6 | 26:DE:68:ALA:HB2 | 1.84 | 0.42 |
| 57:DA:1263:U:O4' | 48:D0:6:LYS:HE3 | 2.20 | 0.42 |
| 57:DA:1314:C:OP1 | 57:DA:1332:G:OP1 | 2.37 | 0.42 |
| 57:DA:1369:G:C6 | 57:DA:1370:C:C4 | 3.07 | 0.42 |
| 57:DA:1615:C:C5 | 57:DA:1617:C:C4 | 3.07 | 0.42 |
| 57:DA:1833:C:C4 | 57:DA:1834:U:C5 | 3.08 | 0.42 |
| 57:DA:1963:U:O2' | 57:DA:1964:G:H5' | 2.19 | 0.42 |
| 57:DA:2319:G:O2' | 57:DA:2320:U:O5' | 2.38 | 0.42 |
| 57:DA:2371:G:C2 | 57:DA:2372:U:C6 | 3.08 | 0.42 |
| 57:DA:2440:C:C4 | 57:DA:2441:U:H1' | 2.55 | 0.42 |
| 57:DA:2506:U:H5 | 57:DA:2576:G:O6 | 2.02 | 0.42 |
| 57:DA:2520:C:O2' | 57:DA:2521:C:C5' | 2.67 | 0.42 |
| 57:DA:2706:A:N6 | 63:DA:3667:HOH:O | 2.45 | 0.42 |
| 24:DC:124:LYS:HG3 | 24:DC:125:PRO:O | 2.20 | 0.42 |
| 24:DC:141:HIS:HB3 | 24:DC:142:ASN:H | 1.50 | 0.42 |
| 24:DC:165:ALA:O | 24:DC:171:VAL:HG13 | 2.19 | 0.42 |
| 24:DC:184:GLU:HB2 | 24:DC:187:CYS:SG | 2.59 | 0.42 |
| 25:DD:16:THR:HG23 | 25:DD:19:GLY:H | 1.85 | 0.42 |
| 25:DD:68:PHE:HB2 | 25:DD:73:VAL:HG23 | 2.01 | 0.42 |
| 26:DE:164:LEU:HD12 | 26:DE:167:VAL:HG12 | 2.02 | 0.42 |
| 28:DG:71:LEU:HD13 | 28:DG:71:LEU:O | 2.19 | 0.42 |
| 29:DH:3:VAL:O | 29:DH:3:VAL:HG23 | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:DH:62:LEU:HD12 | 29:DH:63:ALA:H | 1.83 | 0.42 |
| 29:DH:125:THR:HB | 29:DH:146:VAL:HG11 | 2.01 | 0.42 |
| 31:DJ:24:THR:O | 31:DJ:25:LEU:HB3 | 2.19 | 0.42 |
| 33:DL:93:ASN:O | 33:DL:95:LEU:N | 2.42 | 0.42 |
| 35:DN:12:ARG:HG2 | 35:DN:16:HIS:CG | 2.54 | 0.42 |
| 35:DN:34:ILE:HB | 35:DN:113:ILE:HG23 | 2.01 | 0.42 |
| 37:DP:20:ARG:HD2 | 37:DP:21:PRO:CD | 2.47 | 0.42 |
| 37:DP:22:GLY:H | 37:DP:46:VAL:HB | 1.84 | 0.42 |
| 41:DT:58:VAL:HG22 | 41:DT:59:ASN:H | 1.83 | 0.42 |
| 41:DT:68:LYS:NZ | 41:DT:68:LYS:HB2 | 2.34 | 0.42 |
| 43:DV:2:PHE:CD1 | 43:DV:50:MET:HE3 | 2.54 | 0.42 |
| 44:DW:18:LYS:N | 44:DW:36:ILE:HG12 | 2.27 | 0.42 |
| 48:D0:21:LEU:HD23 | 48:D0:21:LEU:HA | 1.89 | 0.42 |
| 1:AA:72:A:H2' | 1:AA:73:C:H6 | 1.83 | 0.42 |
| 1:AA:160:A:O2' | 1:AA:344:A:C6 | 2.71 | 0.42 |
| 1:AA:256:U:O5' | 1:AA:256:U:H6 | 2.02 | 0.42 |
| 1:AA:433:G:H2' | 1:AA:434:U:H5' | 2.02 | 0.42 |
| 1:AA:471:U:H2' | 1:AA:472:U:O4' | 2.20 | 0.42 |
| 1:AA:705:G:H2' | 1:AA:706:A:C5' | 2.49 | 0.42 |
| 1:AA:1057:G:H4' | 3:AC:196:GLY:N | 2.35 | 0.42 |
| 1:AA:1342:C:H2' | 1:AA:1343:G:H8 | 1.84 | 0.42 |
| 1:AA:1358:U:C6 | 1:AA:1359:C:C5 | 3.08 | 0.42 |
| 1:AA:1365:G:H2' | 1:AA:1366:C:H6 | 1.82 | 0.42 |
| 3:AC:42:LEU:HD12 | 3:AC:42:LEU:HA | 1.79 | 0.42 |
| 4:AD:55:ARG:HH12 | 4:AD:58:GLN:CG | 2.28 | 0.42 |
| 6:AF:86:ARG:HD2 | 18:AR:63:TYR:O | 2.20 | 0.42 |
| 7:AG:7:GLY:O | 7:AG:8:GLN:HB3 | 2.19 | 0.42 |
| 8:AH:1:SER:C | 8:AH:3:GLN:H | 2.22 | 0.42 |
| 8:AH:112:ASP:O | 8:AH:113:ARG:C | 2.57 | 0.42 |
| 15:AO:65:LEU:N | 15:AO:65:LEU:CD2 | 2.83 | 0.42 |
| 17:AQ:60:ILE:CG2 | 17:AQ:61:ARG:N | 2.81 | 0.42 |
| 19:AS:51:HIS:CD2 | 19:AS:53:GLY:N | 2.83 | 0.42 |
| 22:BA:572:A:N7 | 63:BA:3570:HOH:O | 2.50 | 0.42 |
| 22:BA:749:A:C5 | 22:BA:1618:A:C2 | 3.07 | 0.42 |
| 22:BA:857:G:H2' | 22:BA:858:G:O4' | 2.20 | 0.42 |
| 22:BA:919:U:H6 | 22:BA:919:U:C4' | 2.33 | 0.42 |
| 22:BA:1498:C:O2' | 22:BA:1499:C:C5' | 2.67 | 0.42 |
| 22:BA:1784:A:H4' | 22:BA:1785:A:H5'' | 2.02 | 0.42 |
| 22:BA:1934:C:O5' | 22:BA:1934:C:H6 | 2.02 | 0.42 |
| 22:BA:2243:U:C2 | 22:BA:2244:U:C5 | 3.08 | 0.42 |
| 22:BA:2727:A:C4 | 22:BA:2728:U:C5 | 3.08 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:2870:C:C4 | 22:BA:2871:U:C5 | 3.08 | 0.42 |
| 23:BB:5:U:H2' | 23:BB:6:G:C8 | 2.55 | 0.42 |
| 24:BC:90:ILE:HG21 | 24:BC:102:TYR:CD1 | 2.53 | 0.42 |
| 24:BC:195:GLY:O | 24:BC:196:ASN:HB3 | 2.20 | 0.42 |
| 24:BC:269:ARG:HD3 | 24:BC:269:ARG:HA | 1.70 | 0.42 |
| 25:BD:78:GLY:O | 25:BD:80:TRP:CZ3 | 2.72 | 0.42 |
| 26:BE:122:GLU:O | 26:BE:123:LYS:O | 2.38 | 0.42 |
| 27:BF:110:ILE:O | 27:BF:113:PHE:HB2 | 2.19 | 0.42 |
| 28:BG:70:LEU:O | 28:BG:74:MET:HG3 | 2.19 | 0.42 |
| 28:BG:174:LYS:HD2 | 28:BG:174:LYS:C | 2.40 | 0.42 |
| 41:BT:8:LEU:N | 41:BT:8:LEU:CD2 | 2.83 | 0.42 |
| 41:BT:87:LEU:O | 41:BT:89:GLU:N | 2.53 | 0.42 |
| 44:BW:18:LYS:HG3 | 44:BW:19:ARG:HG3 | 2.02 | 0.42 |
| 51:B3:7:ARG:HD2 | 51:B3:7:ARG:HA | 1.44 | 0.42 |
| 53:CA:72:A:H2' | 53:CA:73:C:C6 | 2.54 | 0.42 |
| 53:CA:512:U:O2' | 53:CA:513:C:C5' | 2.68 | 0.42 |
| 53:CA:519:C:C2' | 53:CA:520:A:C8 | 2.91 | 0.42 |
| 53:CA:544:G:C5 | 53:CA:545:C:C5 | 3.08 | 0.42 |
| 53:CA:765:G:O6 | 53:CA:811:C:N4 | 2.52 | 0.42 |
| 53:CA:785:G:N3 | 53:CA:785:G:H2' | 2.34 | 0.42 |
| 53:CA:858:G:N7 | 53:CA:869:G:C5 | 2.88 | 0.42 |
| 53:CA:878:A:C5 | 53:CA:879:C:C5 | 3.08 | 0.42 |
| 53:CA:940:C:H2' | 53:CA:941:G:O4' | 2.19 | 0.42 |
| 53:CA:951:G:OP2 | 55:CM:100:ARG:NH2 | 2.52 | 0.42 |
| 53:CA:1226:C:C4 | 55:CM:102:LYS:HA | 2.53 | 0.42 |
| 53:CA:1296:C:C5 | 53:CA:1297:G:N2 | 2.87 | 0.42 |
| 53:CA:1446:A:H2' | 53:CA:1447:A:H5'' | 2.01 | 0.42 |
| 2:CB:216:VAL:O | 2:CB:220:VAL:HG23 | 2.20 | 0.42 |
| 3:CC:190:THR:HG22 | 3:CC:191:THR:N | 2.29 | 0.42 |
| 4:CD:57:LYS:HE2 | 4:CD:58:GLN:OE1 | 2.19 | 0.42 |
| 4:CD:100:VAL:O | 4:CD:101:VAL:C | 2.57 | 0.42 |
| 5:CE:73:VAL:HG12 | 5:CE:74:ALA:O | 2.20 | 0.42 |
| 54:CG:112:ASP:HB3 | 54:CG:117:LEU:CB | 2.49 | 0.42 |
| 9:CI:51:LEU:O | 9:CI:53:LEU:N | 2.52 | 0.42 |
| 9:CI:80:HIS:O | 9:CI:83:THR:HG23 | 2.20 | 0.42 |
| 10:CJ:42:LEU:HB3 | 10:CJ:43:PRO:HD2 | 2.02 | 0.42 |
| 11:CK:92:ARG:NH2 | 21:CU:19:LYS:HD2 | 2.33 | 0.42 |
| 11:CK:123:PRO:O | 21:CU:34:ARG:N | 2.51 | 0.42 |
| 57:DA:137:U:O5' | 57:DA:137:U:H6 | 2.03 | 0.42 |
| 57:DA:1070:A:H61 | 30:DI:8:VAL:CG1 | 2.33 | 0.42 |
| 57:DA:1117:C:HO2' | 57:DA:1118:C:H5' | 1.73 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:1155:A:H5'' | 38:DQ:54:ARG:CZ | 2.49 | 0.42 |
| 57:DA:1218:G:C2 | 57:DA:1232:G:C5 | 3.07 | 0.42 |
| 57:DA:1255:U:H2' | 57:DA:1255:U:H6 | 1.34 | 0.42 |
| 57:DA:1317:G:C5 | 57:DA:1318:U:C4 | 3.08 | 0.42 |
| 57:DA:1428:C:C5 | 57:DA:1569:A:H5' | 2.54 | 0.42 |
| 57:DA:1480:C:H2' | 57:DA:1481:U:O4' | 2.18 | 0.42 |
| 57:DA:1801:A:C5 | 57:DA:2203:U:C5 | 3.07 | 0.42 |
| 57:DA:1820:U:O2 | 24:DC:199:HIS:CD2 | 2.72 | 0.42 |
| 57:DA:1845:G:C5 | 57:DA:1846:G:N7 | 2.88 | 0.42 |
| 57:DA:2048:G:C6 | 57:DA:2049:G:C5 | 3.07 | 0.42 |
| 57:DA:2358:A:H8 | 57:DA:2358:A:OP1 | 2.03 | 0.42 |
| 57:DA:2638:G:N1 | 57:DA:2775:G:H2' | 2.35 | 0.42 |
| 57:DA:2744:G:C6 | 57:DA:2761:A:C6 | 3.07 | 0.42 |
| 24:DC:61:TYR:CE2 | 24:DC:86:ARG:NH2 | 2.88 | 0.42 |
| 25:DD:113:SER:HB3 | 25:DD:168:GLU:H | 1.85 | 0.42 |
| 25:DD:146:ILE:HD12 | 25:DD:155:VAL:HG21 | 2.02 | 0.42 |
| 25:DD:179:ARG:HD2 | 25:DD:188:LEU:HD12 | 2.00 | 0.42 |
| 59:DF:14:LYS:HA | 59:DF:18:GLU:HB2 | 2.01 | 0.42 |
| 28:DG:78:VAL:HG23 | 28:DG:79:THR:HG23 | 2.02 | 0.42 |
| 31:DJ:4:PHE:CG | 31:DJ:5:THR:N | 2.88 | 0.42 |
| 31:DJ:92:MET:CE | 31:DJ:95:ARG:HD2 | 2.49 | 0.42 |
| 33:DL:79:LEU:HD23 | 33:DL:82:LEU:CD1 | 2.50 | 0.42 |
| 35:DN:96:ARG:HH12 | 35:DN:116:VAL:HG13 | 1.83 | 0.42 |
| 37:DP:25:VAL:O | 37:DP:25:VAL:HG23 | 2.19 | 0.42 |
| 38:DQ:39:ILE:O | 38:DQ:40:LYS:C | 2.58 | 0.42 |
| 1:AA:92:U:C2' | 1:AA:93:U:C6 | 2.88 | 0.42 |
| 1:AA:102:G:C4 | 1:AA:103:U:C5 | 3.08 | 0.42 |
| 1:AA:208:U:H3 | 1:AA:212:G:H21 | 1.67 | 0.42 |
| 1:AA:926:G:C6 | 1:AA:1505:G:C5 | 3.06 | 0.42 |
| 1:AA:1091:U:O2 | 1:AA:1093:A:C8 | 2.73 | 0.42 |
| 1:AA:1246:A:N1 | 1:AA:1292:G:C6 | 2.88 | 0.42 |
| 1:AA:1349:A:O2' | 1:AA:1350:A:H5' | 2.20 | 0.42 |
| 1:AA:1409:C:C2' | 1:AA:1410:A:H5' | 2.49 | 0.42 |
| 3:AC:11:LEU:HD23 | 3:AC:11:LEU:HA | 1.84 | 0.42 |
| 3:AC:108:PRO:C | 3:AC:110:LEU:H | 2.23 | 0.42 |
| 5:AE:152:VAL:O | 5:AE:155:LYS:HD2 | 2.19 | 0.42 |
| 7:AG:88:VAL:HG22 | 7:AG:89:GLU:N | 2.35 | 0.42 |
| 13:AM:32:ILE:HD13 | 13:AM:32:ILE:HA | 1.90 | 0.42 |
| 16:AP:20:VAL:HG22 | 16:AP:32:PHE:HB2 | 2.01 | 0.42 |
| 22:BA:605:G:H1' | 22:BA:657:U:H1' | 2.02 | 0.42 |
| 22:BA:751:A:C6 | 22:BA:789:A:C6 | 3.07 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:851:C:O2' | 47:BZ:45:GLY:HA3 | 2.20 | 0.42 |
| 22:BA:1060:U:C5' | 22:BA:1061:U:H5' | 2.49 | 0.42 |
| 22:BA:1235:G:H8 | 22:BA:1235:G:O5' | 2.03 | 0.42 |
| 22:BA:1528:A:H2' | 22:BA:1529:G:O4' | 2.19 | 0.42 |
| 22:BA:1780:A:H3' | 22:BA:1781:U:H2' | 2.02 | 0.42 |
| 22:BA:1827:U:H2' | 22:BA:1828:G:O4' | 2.20 | 0.42 |
| 22:BA:2109:U:H2' | 22:BA:2110:G:H5' | 2.02 | 0.42 |
| 22:BA:2345:G:N3 | 22:BA:2381:A:H2' | 2.35 | 0.42 |
| 22:BA:2425:A:H5' | 22:BA:2427:C:O4' | 2.20 | 0.42 |
| 22:BA:2524:G:C2' | 22:BA:2525:G:O5' | 2.66 | 0.42 |
| 22:BA:2742:G:P | 52:B4:24:ARG:HH12 | 2.42 | 0.42 |
| 22:BA:2816:G:C4 | 22:BA:2831:G:C2 | 3.08 | 0.42 |
| 24:BC:20:ASN:HD22 | 24:BC:21:PRO:N | 2.18 | 0.42 |
| 28:BG:84:LYS:N | 28:BG:84:LYS:HE2 | 2.35 | 0.42 |
| 28:BG:124:CYS:HA | 28:BG:125:PRO:HD2 | 1.78 | 0.42 |
| 29:BH:14:SER:C | 29:BH:16:GLY:H | 2.23 | 0.42 |
| 29:BH:101:ASP:C | 29:BH:104:THR:HB | 2.39 | 0.42 |
| 34:BM:40:ARG:HB2 | 34:BM:93:VAL:HG22 | 1.99 | 0.42 |
| 36:BO:59:ALA:HA | 36:BO:62:LEU:CD1 | 2.48 | 0.42 |
| 37:BP:24:THR:HG22 | 37:BP:86:LYS:HB2 | 2.01 | 0.42 |
| 37:BP:26:GLU:O | 37:BP:26:GLU:HG2 | 2.17 | 0.42 |
| 42:BU:3:LYS:HZ3 | 42:BU:82:VAL:H | 1.68 | 0.42 |
| 46:BY:57:LEU:HD12 | 46:BY:57:LEU:O | 2.19 | 0.42 |
| 49:B1:9:LYS:N | 49:B1:9:LYS:HD3 | 2.34 | 0.42 |
| 53:CA:193:C:H1' | 20:CT:54:GLN:HE21 | 1.84 | 0.42 |
| 53:CA:197:A:H4' | 53:CA:198:G:O5' | 2.17 | 0.42 |
| 53:CA:277:C:OP1 | 17:CQ:44:HIS:CE1 | 2.66 | 0.42 |
| 53:CA:372:C:HO2' | 53:CA:373:A:P | 2.41 | 0.42 |
| 53:CA:373:A:C8 | 53:CA:373:A:C5' | 3.01 | 0.42 |
| 53:CA:433:G:C2' | 53:CA:434:U:H5' | 2.49 | 0.42 |
| 53:CA:644:U:H2' | 53:CA:645:G:C8 | 2.52 | 0.42 |
| 53:CA:668:G:O2' | 53:CA:669:G:H5' | 2.19 | 0.42 |
| 53:CA:948:C:OP2 | 55:CM:104:ASN:HB3 | 2.20 | 0.42 |
| 53:CA:962:C:O2' | 53:CA:963:G:O4' | 2.37 | 0.42 |
| 53:CA:995:C:HO2' | 53:CA:996:A:P | 2.42 | 0.42 |
| 53:CA:1011:C:N3 | 53:CA:1019:A:C2 | 2.88 | 0.42 |
| 53:CA:1026:G:H22 | 53:CA:1036:A:N6 | 2.18 | 0.42 |
| 53:CA:1129:C:H1' | 53:CA:1146:A:N6 | 2.25 | 0.42 |
| 53:CA:1309:G:H2' | 53:CA:1310:G:H8 | 1.84 | 0.42 |
| 15:CO:62:ARG:NH2 | 15:CO:88:ARG:HH21 | 2.18 | 0.42 |
| 57:DA:216:A:N6 | 57:DA:432:A:H1' | 2.35 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 57:DA:223:A:N6 | 57:DA:408:G:H5' | 2.35 | 0.42 |
| 57:DA:233:A:HO2' | 57:DA:234:U:H6 | 1.58 | 0.42 |
| 57:DA:323:C:C6 | 26:DE:165:HIS:NE2 | 2.88 | 0.42 |
| 57:DA:370:G:OP2 | 57:DA:370:G:C8 | 2.73 | 0.42 |
| 57:DA:444:C:O2' | 57:DA:445:C:O5' | 2.37 | 0.42 |
| 57:DA:601:C:H4' | 26:DE:99:LYS:HE2 | 2.01 | 0.42 |
| 57:DA:762:U:O2' | 57:DA:763:G:H5'' | 2.20 | 0.42 |
| 57:DA:775:G:C2 | 57:DA:794:A:C8 | 3.07 | 0.42 |
| 57:DA:855:G:N3 | 44:DW:23:LYS:HG2 | 2.35 | 0.42 |
| 57:DA:957:C:N4 | 57:DA:2494:G:H21 | 2.18 | 0.42 |
| 57:DA:962:G:O2' | 57:DA:963:U:H6 | 1.99 | 0.42 |
| 57:DA:1387:A:O2' | 57:DA:1388:G:P | 2.78 | 0.42 |
| 57:DA:1435:G:N2 | 57:DA:1558:C:N4 | 2.67 | 0.42 |
| 57:DA:1455:G:O2' | 57:DA:1456:G:H8 | 2.01 | 0.42 |
| 57:DA:1525:A:C6 | 57:DA:1526:C:N3 | 2.88 | 0.42 |
| 57:DA:1652:A:H3' | 57:DA:1653:G:C8 | 2.55 | 0.42 |
| 57:DA:1853:A:H1' | 57:DA:2234:G:O4' | 2.19 | 0.42 |
| 57:DA:1936:A:H4' | 57:DA:1937:A:OP2 | 2.19 | 0.42 |
| 57:DA:1954:G:O2' | 57:DA:1955:U:OP2 | 2.37 | 0.42 |
| 57:DA:1981:A:O2' | 57:DA:1982:U:H5'' | 2.20 | 0.42 |
| 57:DA:2025:C:H42 | 57:DA:2037:A:H61 | 1.67 | 0.42 |
| 57:DA:2036:C:O2' | 57:DA:2037:A:H8 | 1.99 | 0.42 |
| 57:DA:2499:C:C4 | 57:DA:2500:U:O4 | 2.73 | 0.42 |
| 57:DA:2750:A:O2' | 57:DA:2751:G:OP1 | 2.34 | 0.42 |
| 57:DA:2759:G:H21 | 28:DG:138:GLN:CD | 2.23 | 0.42 |
| 57:DA:2774:C:C4 | 57:DA:2775:G:C5 | 3.07 | 0.42 |
| 57:DA:2838:G:H2' | 57:DA:2839:G:O4' | 2.19 | 0.42 |
| 57:DA:2845:U:H2' | 57:DA:2846:G:O4' | 2.20 | 0.42 |
| 57:DA:2846:G:P | 37:DP:51:ASN:HB2 | 2.60 | 0.42 |
| 24:DC:44:ASN:C | 24:DC:46:GLY:H | 2.23 | 0.42 |
| 26:DE:5:LEU:HD23 | 26:DE:120:VAL:HG13 | 2.00 | 0.42 |
| 59:DF:82:TYR:HA | 59:DF:83:PRO:HD2 | 1.84 | 0.42 |
| 28:DG:83:THR:HB | 28:DG:84:LYS:H | 1.72 | 0.42 |
| 32:DK:1:MET:HA | 32:DK:33:ALA:O | 2.20 | 0.42 |
| 32:DK:19:VAL:CG1 | 32:DK:41:ILE:HG12 | 2.50 | 0.42 |
| 34:DM:23:GLY:N | 34:DM:100:LYS:HZ3 | 2.18 | 0.42 |
| 34:DM:97:GLN:HB2 | 34:DM:98:PRO:CD | 2.48 | 0.42 |
| 35:DN:55:ALA:HA | 35:DN:80:PHE:CE1 | 2.54 | 0.42 |
| 37:DP:19:PHE:HE1 | 37:DP:58:PHE:CE1 | 2.37 | 0.42 |
| 38:DQ:61:ILE:HD12 | 38:DQ:61:ILE:N | 2.35 | 0.42 |
| 40:DS:87:PRO:HG2 | 40:DS:87:PRO:O | 2.20 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 42:DU:48:VAL:HA | 42:DU:49:PRO:HD3 | 1.88 | 0.42 |
| 46:DY:22:LEU:HG | 46:DY:23:ARG:NH1 | 2.34 | 0.42 |
| 1:AA:6:G:C6 | 5:AE:98:ALA:HB1 | 2.52 | 0.42 |
| 1:AA:198:G:C6 | 1:AA:220:G:C4 | 3.08 | 0.42 |
| 1:AA:222:C:H2' | 1:AA:223:A:H8 | 1.85 | 0.42 |
| 1:AA:243:A:C2 | 1:AA:246:A:C8 | 3.08 | 0.42 |
| 1:AA:444:G:C2 | 1:AA:491:G:C4 | 3.08 | 0.42 |
| 1:AA:762:U:O2 | 1:AA:763:G:C8 | 2.73 | 0.42 |
| 1:AA:930:C:H2' | 1:AA:931:C:O4' | 2.19 | 0.42 |
| 1:AA:965:U:OP1 | 1:AA:1198:G:C5' | 2.67 | 0.42 |
| 1:AA:1054:C:P | 1:AA:1197:A:OP2 | 2.78 | 0.42 |
| 1:AA:1350:A:H2 | 7:AG:33:GLY:HA3 | 1.84 | 0.42 |
| 4:AD:29:THR:O | 4:AD:30:LYS:HB2 | 2.20 | 0.42 |
| 4:AD:145:ARG:C | 4:AD:147:LYS:N | 2.70 | 0.42 |
| 6:AF:97:THR:HG22 | 6:AF:98:GLU:N | 2.34 | 0.42 |
| 9:AI:3:ASN:CG | 9:AI:4:GLN:H | 2.23 | 0.42 |
| 17:AQ:11:VAL:HG23 | 17:AQ:56:ASP:O | 2.19 | 0.42 |
| 22:BA:6:A:O2' | 22:BA:7:G:H5' | 2.20 | 0.42 |
| 22:BA:64:A:O2' | 41:BT:70:HIS:CE1 | 2.72 | 0.42 |
| 22:BA:184:C:O2' | 22:BA:217:A:N3 | 2.50 | 0.42 |
| 22:BA:340:A:H2' | 22:BA:341:C:O4' | 2.19 | 0.42 |
| 22:BA:400:G:H3' | 22:BA:400:G:C8 | 2.54 | 0.42 |
| 22:BA:409:G:C2' | 22:BA:410:G:H5' | 2.49 | 0.42 |
| 22:BA:522:A:C5 | 22:BA:523:C:C4 | 3.07 | 0.42 |
| 22:BA:1001:A:H2' | 22:BA:1002:G:C5' | 2.49 | 0.42 |
| 22:BA:1106:G:C2 | 22:BA:1107:G:N9 | 2.87 | 0.42 |
| 22:BA:1205:A:H3' | 22:BA:1206:G:H5' | 2.02 | 0.42 |
| 22:BA:1283:G:N1 | 22:BA:1286:A:OP2 | 2.53 | 0.42 |
| 22:BA:1418:G:H2' | 22:BA:1579:A:N6 | 2.35 | 0.42 |
| 22:BA:2027:G:H2' | 22:BA:2028:U:H6 | 1.84 | 0.42 |
| 22:BA:2058:A:H5'' | 22:BA:2059:A:P | 2.60 | 0.42 |
| 22:BA:2140:G:H2' | 22:BA:2141:G:H8 | 1.81 | 0.42 |
| 22:BA:2269:G:C4' | 44:BW:18:LYS:HE2 | 2.36 | 0.42 |
| 22:BA:2295:C:H2' | 22:BA:2296:U:C6 | 2.54 | 0.42 |
| 22:BA:2516:A:C5 | 22:BA:2517:C:C4 | 3.07 | 0.42 |
| 24:BC:6:LYS:HB3 | 24:BC:7:PRO:HD2 | 2.01 | 0.42 |
| 25:BD:180:VAL:HG12 | 25:BD:181:ASP:N | 2.35 | 0.42 |
| 26:BE:136:GLN:O | 26:BE:137:LYS:C | 2.58 | 0.42 |
| 27:BF:109:ARG:HH11 | 27:BF:138:PRO:N | 2.18 | 0.42 |
| 28:BG:59:ASP:O | 28:BG:60:GLY:C | 2.58 | 0.42 |
| 28:BG:82:PHE:CE2 | 28:BG:137:LYS:HB2 | 2.55 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 28:BG:93:TYR:O | 28:BG:94:ARG:O | 2.38 | 0.42 |
| 31:BJ:57:LEU:HD12 | 31:BJ:57:LEU:HA | 1.88 | 0.42 |
| 31:BJ:111:LYS:HE2 | 31:BJ:115:GLY:H | 1.83 | 0.42 |
| 32:BK:113:MET:O | 32:BK:114:LYS:C | 2.58 | 0.42 |
| 33:BL:40:SER:O | 33:BL:41:ARG:CB | 2.66 | 0.42 |
| 35:BN:54:LEU:HD11 | 35:BN:62:ASN:CG | 2.40 | 0.42 |
| 36:BO:8:ILE:O | 36:BO:11:ALA:HB3 | 2.20 | 0.42 |
| 39:BR:68:ARG:HH11 | 39:BR:90:ARG:HD3 | 1.84 | 0.42 |
| 41:BT:28:ASN:HA | 41:BT:91:GLN:HE22 | 1.81 | 0.42 |
| 45:BX:39:VAL:HG13 | 45:BX:46:VAL:HG22 | 2.02 | 0.42 |
| 48:B0:33:SER:OG | 48:B0:35:GLU:CG | 2.65 | 0.42 |
| 49:B1:35:LEU:HD23 | 49:B1:35:LEU:C | 2.40 | 0.42 |
| 53:CA:181:A:H1' | 53:CA:182:A:H2 | 1.80 | 0.42 |
| 53:CA:185:U:H2' | 53:CA:186:C:C6 | 2.54 | 0.42 |
| 53:CA:254:G:H5'' | 17:CQ:70:LYS:HD2 | 1.98 | 0.42 |
| 53:CA:374:A:H2' | 53:CA:375:U:C6 | 2.55 | 0.42 |
| 53:CA:1177:G:N7 | 53:CA:1178:G:C5 | 2.88 | 0.42 |
| 53:CA:1454:G:O2' | 53:CA:1455:G:C5' | 2.68 | 0.42 |
| 53:CA:1518:A:C2 | 53:CA:1519:A:C2 | 3.07 | 0.42 |
| 2:CB:69:VAL:HB | 2:CB:162:VAL:HB | 2.01 | 0.42 |
| 2:CB:119:GLN:HG2 | 2:CB:119:GLN:O | 2.20 | 0.42 |
| 2:CB:212:TYR:CD2 | 2:CB:216:VAL:HG23 | 2.54 | 0.42 |
| 6:CF:97:THR:O | 6:CF:98:GLU:HG3 | 2.20 | 0.42 |
| 8:CH:104:SER:O | 8:CH:122:GLY:HA3 | 2.20 | 0.42 |
| 12:CL:29:LYS:O | 12:CL:81:ILE:HG22 | 2.19 | 0.42 |
| 15:CO:27:GLN:O | 15:CO:31:LEU:HG | 2.20 | 0.42 |
| 56:CP:38:PHE:CE2 | 56:CP:51:ARG:CB | 3.03 | 0.42 |
| 19:CS:68:HIS:HB3 | 19:CS:72:GLU:HG3 | 2.01 | 0.42 |
| 20:CT:4:LYS:HE3 | 20:CT:4:LYS:HB3 | 1.72 | 0.42 |
| 57:DA:34:U:HO2' | 57:DA:35:G:P | 2.41 | 0.42 |
| 57:DA:121:G:O2' | 57:DA:122:G:H5' | 2.20 | 0.42 |
| 57:DA:446:G:H4' | 57:DA:447:A:OP1 | 2.20 | 0.42 |
| 57:DA:571:U:C4 | 57:DA:2030:A:C6 | 3.08 | 0.42 |
| 57:DA:665:U:C5 | 57:DA:666:A:N7 | 2.87 | 0.42 |
| 57:DA:741:U:O2' | 57:DA:1676:A:OP1 | 2.37 | 0.42 |
| 57:DA:1107:G:H2' | 57:DA:1108:U:H5' | 2.02 | 0.42 |
| 57:DA:1126:A:OP1 | 57:DA:1126:A:C8 | 2.70 | 0.42 |
| 57:DA:1171:G:C4 | 57:DA:1179:G:N2 | 2.87 | 0.42 |
| 57:DA:1232:G:C4 | 57:DA:1233:C:C5 | 3.07 | 0.42 |
| 57:DA:1290:C:C2 | 57:DA:1291:C:C5 | 3.08 | 0.42 |
| 57:DA:1312:U:O2' | 57:DA:1313:U:P | 2.77 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:DA:1532:A:N1 | 57:DA:1540:G:C6 | 2.88 | 0.42 |
| 57:DA:1787:A:O5' | 57:DA:1787:A:C8 | 2.72 | 0.42 |
| 57:DA:1902:C:H2' | 57:DA:1903:G:O4' | 2.19 | 0.42 |
| 57:DA:1910:G:N2 | 57:DA:1921:G:C4 | 2.87 | 0.42 |
| 57:DA:1940:U:H5' | 57:DA:1940:U:O2 | 2.19 | 0.42 |
| 57:DA:2046:G:OP1 | 48:D0:11:LYS:HE3 | 2.19 | 0.42 |
| 57:DA:2077:A:C2 | 57:DA:2244:U:O2 | 2.73 | 0.42 |
| 57:DA:2305:U:H5 | 57:DA:2312:U:C4 | 2.38 | 0.42 |
| 57:DA:2443:C:C4 | 57:DA:2444:G:N7 | 2.88 | 0.42 |
| 57:DA:2458:G:O2' | 57:DA:2459:A:N7 | 2.53 | 0.42 |
| 57:DA:2618:G:H2' | 57:DA:2619:C:H6 | 1.84 | 0.42 |
| 57:DA:2848:G:O2' | 57:DA:2849:U:C6 | 2.64 | 0.42 |
| 58:DB:18:G:C6 | 58:DB:19:C:C4 | 3.07 | 0.42 |
| 24:DC:213:ARG:HB3 | 24:DC:214:GLY:H | 1.66 | 0.42 |
| 26:DE:42:GLY:HA3 | 26:DE:90:GLN:O | 2.20 | 0.42 |
| 26:DE:165:HIS:O | 26:DE:167:VAL:N | 2.53 | 0.42 |
| 59:DF:12:VAL:O | 59:DF:16:MET:HB2 | 2.20 | 0.42 |
| 28:DG:22:VAL:HG12 | 28:DG:23:ILE:N | 2.34 | 0.42 |
| 30:DI:105:LEU:HD21 | 30:DI:129:GLU:OE2 | 2.20 | 0.42 |
| 31:DJ:19:ASP:HA | 31:DJ:57:LEU:HB3 | 2.01 | 0.42 |
| 32:DK:28:SER:O | 32:DK:29:HIS:HB3 | 2.19 | 0.42 |
| 37:DP:28:LYS:HA | 37:DP:40:GLN:O | 2.20 | 0.42 |
| 39:DR:83:TYR:CD2 | 39:DR:84:ARG:N | 2.87 | 0.42 |
| 40:DS:49:LYS:NZ | 40:DS:49:LYS:CB | 2.81 | 0.42 |
| 40:DS:70:LYS:O | 40:DS:72:THR:N | 2.53 | 0.42 |
| 43:DV:9:ARG:HD2 | 43:DV:40:ILE:O | 2.20 | 0.42 |
| 44:DW:13:ARG:HG3 | 44:DW:14:ASP:N | 2.27 | 0.42 |
| 48:D0:28:SER:HB3 | 48:D0:39:ARG:CZ | 2.49 | 0.42 |
| 1:AA:66:A:O5' | 1:AA:66:A:C8 | 2.73 | 0.42 |
| 1:AA:182:A:H1' | 1:AA:183:C:C6 | 2.55 | 0.42 |
| 1:AA:203:G:C2 | 1:AA:215:C:N3 | 2.88 | 0.42 |
| 1:AA:211:G:H2' | 1:AA:212:G:O5' | 2.20 | 0.42 |
| 1:AA:322:C:H5 | 1:AA:328:C:C5 | 2.38 | 0.42 |
| 1:AA:425:G:C6 | 1:AA:426:U:N3 | 2.88 | 0.42 |
| 1:AA:532:A:H4' | 1:AA:533:A:OP2 | 2.19 | 0.42 |
| 1:AA:832:G:C2 | 1:AA:833:G:C8 | 3.08 | 0.42 |
| 1:AA:872:A:C4 | 1:AA:874:G:C8 | 3.07 | 0.42 |
| 1:AA:873:A:H4' | 1:AA:874:G:OP2 | 2.18 | 0.42 |
| 1:AA:1157:A:C2 | 1:AA:1181:G:C4 | 3.07 | 0.42 |
| 1:AA:1323:G:C2' | 1:AA:1324:A:C8 | 3.02 | 0.42 |
| 1:AA:1381:U:H2' | 1:AA:1382:C:C6 | 2.55 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 2:AB:148:GLY:C | 2:AB:150:ILE:N | 2.73 | 0.42 |
| 2:AB:218:ALA:HA | 2:AB:221:ARG:NH2 | 2.29 | 0.42 |
| 3:AC:59:PRO:O | 3:AC:60:ALA:O | 2.37 | 0.42 |
| 3:AC:174:LEU:O | 3:AC:174:LEU:HD12 | 2.20 | 0.42 |
| 4:AD:34:GLU:C | 4:AD:36:ALA:H | 2.23 | 0.42 |
| 6:AF:40:GLU:HB2 | 6:AF:42:TRP:NE1 | 2.35 | 0.42 |
| 6:AF:49:TYR:CE2 | 6:AF:51:ILE:HB | 2.53 | 0.42 |
| 6:AF:51:ILE:HD13 | 6:AF:86:ARG:HG3 | 2.01 | 0.42 |
| 10:AJ:86:ALA:O | 10:AJ:90:LEU:HD12 | 2.20 | 0.42 |
| 11:AK:124:LYS:O | 21:AU:33:ARG:NE | 2.53 | 0.42 |
| 12:AL:82:ARG:CZ | 12:AL:95:HIS:HB2 | 2.50 | 0.42 |
| 12:AL:94:TYR:CD2 | 12:AL:94:TYR:N | 2.87 | 0.42 |
| 13:AM:95:PRO:CG | 13:AM:101:THR:HG22 | 2.49 | 0.42 |
| 14:AN:30:ILE:HG23 | 14:AN:44:VAL:CG1 | 2.48 | 0.42 |
| 17:AQ:12:VAL:CG1 | 17:AQ:21:VAL:O | 2.68 | 0.42 |
| 20:AT:34:VAL:O | 20:AT:38:ILE:HG12 | 2.19 | 0.42 |
| 21:AU:38:GLU:CD | 21:AU:41:THR:HG21 | 2.40 | 0.42 |
| 22:BA:244:A:OP2 | 51:B3:7:ARG:NH2 | 2.53 | 0.42 |
| 22:BA:323:C:N4 | 22:BA:333:G:N7 | 2.68 | 0.42 |
| 22:BA:332:A:C4 | 22:BA:335:C:N4 | 2.88 | 0.42 |
| 22:BA:359:G:H3' | 22:BA:360:U:H6 | 1.85 | 0.42 |
| 22:BA:415:A:H1' | 22:BA:1865:U:H5'' | 2.02 | 0.42 |
| 22:BA:570:G:C4 | 22:BA:2030:A:N7 | 2.87 | 0.42 |
| 22:BA:740:C:H5' | 22:BA:1784:A:C3' | 2.47 | 0.42 |
| 22:BA:866:A:N7 | 22:BA:914:G:C6 | 2.88 | 0.42 |
| 22:BA:1070:A:C2 | 30:BI:9:LYS:CG | 2.99 | 0.42 |
| 22:BA:1437:C:H2' | 22:BA:1438:U:C6 | 2.55 | 0.42 |
| 22:BA:2134:A:H8 | 22:BA:2134:A:OP1 | 2.03 | 0.42 |
| 24:BC:90:ILE:HD12 | 24:BC:103:ILE:O | 2.19 | 0.42 |
| 26:BE:5:LEU:HD11 | 26:BE:12:LEU:HD23 | 2.01 | 0.42 |
| 28:BG:112:VAL:CG2 | 28:BG:113:ASP:N | 2.82 | 0.42 |
| 31:BJ:7:LYS:HA | 31:BJ:8:PRO:HD3 | 1.85 | 0.42 |
| 34:BM:42:THR:H | 34:BM:45:GLN:HB2 | 1.85 | 0.42 |
| 36:BO:78:VAL:O | 36:BO:79:ALA:C | 2.58 | 0.42 |
| 36:BO:92:PHE:HB2 | 36:BO:117:PHE:CD1 | 2.55 | 0.42 |
| 38:BQ:91:ARG:CD | 39:BR:11:GLN:HB2 | 2.50 | 0.42 |
| 40:BS:4:ILE:HG22 | 40:BS:106:VAL:HG13 | 2.02 | 0.42 |
| 40:BS:57:ASN:O | 40:BS:61:ASN:HB2 | 2.20 | 0.42 |
| 44:BW:39:GLN:CG | 44:BW:41:GLY:H | 2.07 | 0.42 |
| 44:BW:47:GLY:C | 44:BW:49:ASN:N | 2.71 | 0.42 |
| 53:CA:206:C:O5' | 53:CA:207:C:OP2 | 2.38 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:330:C:OP2 | 53:CA:330:C:H4' | 2.20 | 0.42 |
| 53:CA:372:C:H4' | 53:CA:373:A:H5' | 2.01 | 0.42 |
| 53:CA:415:A:H3' | 53:CA:416:G:C8 | 2.53 | 0.42 |
| 53:CA:539:A:N6 | 53:CA:540:G:O6 | 2.53 | 0.42 |
| 53:CA:764:C:C4 | 53:CA:812:G:O6 | 2.73 | 0.42 |
| 53:CA:979:C:C5 | 53:CA:1318:A:N1 | 2.88 | 0.42 |
| 53:CA:994:A:N6 | 53:CA:1216:A:H5' | 2.35 | 0.42 |
| 53:CA:1069:C:O2' | 53:CA:1192:C:H1' | 2.20 | 0.42 |
| 53:CA:1225:A:H2' | 53:CA:1225:A:N3 | 2.35 | 0.42 |
| 53:CA:1515:G:H2' | 53:CA:1516:G:C8 | 2.55 | 0.42 |
| 2:CB:103:TRP:CB | 2:CB:106:VAL:HB | 2.48 | 0.42 |
| 2:CB:161:PHE:HA | 2:CB:183:PHE:O | 2.20 | 0.42 |
| 6:CF:32:ALA:O | 6:CF:33:GLU:HB2 | 2.18 | 0.42 |
| 6:CF:38:ARG:HD3 | 6:CF:39:LEU:N | 2.35 | 0.42 |
| 6:CF:99:ALA:O | 6:CF:100:SER:CB | 2.68 | 0.42 |
| 54:CG:37:THR:HA | 54:CG:40:SER:CB | 2.49 | 0.42 |
| 8:CH:124:ILE:HG22 | 8:CH:125:ILE:H | 1.84 | 0.42 |
| 11:CK:126:ARG:HB2 | 21:CU:33:ARG:CD | 2.45 | 0.42 |
| 12:CL:14:LYS:C | 12:CL:14:LYS:HE3 | 2.40 | 0.42 |
| 17:CQ:68:LYS:O | 17:CQ:69:THR:OG1 | 2.37 | 0.42 |
| 57:DA:204:A:C4 | 57:DA:206:U:C4 | 3.08 | 0.42 |
| 57:DA:204:A:O4' | 57:DA:206:U:C6 | 2.73 | 0.42 |
| 57:DA:223:A:O2' | 57:DA:408:G:N3 | 2.53 | 0.42 |
| 57:DA:534:U:H2' | 57:DA:535:G:H8 | 1.84 | 0.42 |
| 57:DA:805:G:O2' | 57:DA:831:G:H4' | 2.20 | 0.42 |
| 57:DA:1050:A:H2' | 57:DA:1051:G:C8 | 2.55 | 0.42 |
| 57:DA:1285:A:H2' | 57:DA:1286:A:H5'' | 2.01 | 0.42 |
| 57:DA:1324:G:O2' | 57:DA:1616:A:N6 | 2.52 | 0.42 |
| 57:DA:1438:U:H5'' | 63:DA:3639:HOH:O | 2.20 | 0.42 |
| 57:DA:1571:A:H8 | 57:DA:1571:A:O5' | 2.01 | 0.42 |
| 57:DA:1655:A:H5' | 25:DD:118:PHE:CD1 | 2.55 | 0.42 |
| 57:DA:1792:G:H22 | 57:DA:1828:G:H1' | 1.84 | 0.42 |
| 57:DA:1825:U:C6 | 57:DA:1825:U:H3' | 2.55 | 0.42 |
| 57:DA:1926:U:H2' | 57:DA:1928:A:N7 | 2.34 | 0.42 |
| 57:DA:2244:U:O5' | 57:DA:2244:U:H6 | 2.03 | 0.42 |
| 57:DA:2408:U:O2' | 57:DA:2409:G:P | 2.78 | 0.42 |
| 57:DA:2415:G:C5 | 57:DA:2416:C:C4 | 3.08 | 0.42 |
| 57:DA:2530:A:C8 | 28:DG:156:TYR:OH | 2.68 | 0.42 |
| 57:DA:2649:C:H2' | 57:DA:2650:U:C6 | 2.54 | 0.42 |
| 57:DA:2699:C:N4 | 57:DA:2700:A:N6 | 2.68 | 0.42 |
| 58:DB:40:U:N3 | 58:DB:43:C:OP2 | 2.53 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 58:DB:42:C:C2 | 59:DF:88:VAL:HA | 2.55 | 0.42 |
| 24:DC:30:ALA:C | 24:DC:32:LEU:H | 2.23 | 0.42 |
| 24:DC:92:LEU:HD12 | 24:DC:92:LEU:HA | 1.95 | 0.42 |
| 24:DC:196:ASN:O | 24:DC:197:ALA:CB | 2.67 | 0.42 |
| 25:DD:101:PHE:HD2 | 25:DD:104:VAL:HG11 | 1.85 | 0.42 |
| 26:DE:5:LEU:HD12 | 26:DE:10:SER:HB2 | 2.00 | 0.42 |
| 28:DG:6:ALA:HA | 28:DG:7:PRO:HD3 | 1.66 | 0.42 |
| 30:DI:93:ASN:HD22 | 30:DI:93:ASN:HA | 1.66 | 0.42 |
| 32:DK:39:ILE:HD11 | 32:DK:62:VAL:CG2 | 2.49 | 0.42 |
| 32:DK:61:VAL:O | 32:DK:61:VAL:HG23 | 2.20 | 0.42 |
| 34:DM:76:LYS:O | 34:DM:77:PRO:O | 2.38 | 0.42 |
| 36:DO:24:THR:H | 36:DO:90:VAL:HG12 | 1.84 | 0.42 |
| 36:DO:39:VAL:HB | 36:DO:49:VAL:H | 1.85 | 0.42 |
| 38:DQ:26:ALA:O | 38:DQ:30:VAL:HB | 2.19 | 0.42 |
| 39:DR:38:VAL:O | 39:DR:53:PHE:HA | 2.19 | 0.42 |
| 41:DT:5:GLU:CD | 46:DY:18:LEU:HD21 | 2.40 | 0.42 |
| 41:DT:29:THR:HB | 41:DT:86:THR:N | 2.35 | 0.42 |
| 45:DX:64:ASP:HA | 45:DX:67:LEU:HD12 | 2.02 | 0.42 |
| 51:D3:7:ARG:HD2 | 51:D3:7:ARG:HA | 1.85 | 0.42 |
| 1:AA:42:G:C6 | 1:AA:43:C:C4 | 3.08 | 0.42 |
| 1:AA:123:U:H2' | 1:AA:124:C:C6 | 2.55 | 0.42 |
| 1:AA:181:A:N1 | 1:AA:195:A:C8 | 2.88 | 0.42 |
| 1:AA:372:C:C4' | 1:AA:373:A:OP1 | 2.64 | 0.42 |
| 1:AA:501:C:O2' | 1:AA:502:A:H5' | 2.20 | 0.42 |
| 1:AA:575:G:C5 | 1:AA:881:G:C2 | 3.08 | 0.42 |
| 1:AA:693:G:C2' | 1:AA:694:A:H5' | 2.50 | 0.42 |
| 1:AA:1048:G:OP1 | 14:AN:3:GLN:N | 2.48 | 0.42 |
| 1:AA:1089:G:C2 | 1:AA:1090:U:HI' | 2.54 | 0.42 |
| 1:AA:1374:A:H2' | 1:AA:1375:A:C8 | 2.55 | 0.42 |
| 2:AB:184:ALA:HB3 | 2:AB:195:VAL:CG2 | 2.50 | 0.42 |
| 3:AC:15:LYS:HG3 | 3:AC:16:PRO:HD2 | 2.02 | 0.42 |
| 4:AD:167:PRO:HB2 | 4:AD:170:LEU:CD1 | 2.47 | 0.42 |
| 5:AE:10:LEU:HD23 | 5:AE:10:LEU:H | 1.84 | 0.42 |
| 7:AG:108:ARG:HH21 | 7:AG:118:ARG:NH2 | 2.17 | 0.42 |
| 8:AH:9:MET:CE | 8:AH:32:LYS:HA | 2.47 | 0.42 |
| 8:AH:79:ARG:HB2 | 8:AH:80:PRO:HD2 | 2.02 | 0.42 |
| 9:AI:25:GLY:HA3 | 9:AI:57:VAL:O | 2.20 | 0.42 |
| 9:AI:33:SER:OG | 9:AI:35:GLU:HG2 | 2.20 | 0.42 |
| 10:AJ:17:LEU:HD23 | 10:AJ:17:LEU:C | 2.40 | 0.42 |
| 17:AQ:12:VAL:HG11 | 17:AQ:21:VAL:HG22 | 2.01 | 0.42 |
| 18:AR:33:THR:HG21 | 18:AR:37:LYS:HB2 | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 21:AU:16:ARG:HG2 | 21:AU:19:LYS:HG2 | 2.02 | 0.42 |
| 22:BA:28:A:H2' | 22:BA:29:U:H6 | 1.85 | 0.42 |
| 22:BA:332:A:C5 | 22:BA:335:C:C4 | 3.08 | 0.42 |
| 22:BA:418:C:H2' | 22:BA:419:U:O4' | 2.20 | 0.42 |
| 22:BA:675:A:H4' | 26:BE:62:GLN:NE2 | 2.35 | 0.42 |
| 22:BA:763:G:H8 | 22:BA:763:G:H2' | 1.37 | 0.42 |
| 22:BA:769:U:N3 | 22:BA:770:G:N7 | 2.68 | 0.42 |
| 22:BA:1141:U:C5 | 31:BJ:65:THR:CG2 | 3.03 | 0.42 |
| 22:BA:1253:A:C5 | 63:BA:3330:HOH:O | 2.72 | 0.42 |
| 22:BA:1765:U:C2' | 22:BA:1766:G:H5' | 2.50 | 0.42 |
| 22:BA:1858:A:OP2 | 22:BA:1858:A:C8 | 2.73 | 0.42 |
| 22:BA:1910:G:O2' | 22:BA:1911:U:H5' | 2.20 | 0.42 |
| 22:BA:2199:A:H5' | 22:BA:2200:C:C5 | 2.50 | 0.42 |
| 22:BA:2425:A:H5' | 22:BA:2427:C:H5' | 2.02 | 0.42 |
| 22:BA:2517:C:H2' | 22:BA:2542:A:N7 | 2.35 | 0.42 |
| 22:BA:2574:G:C6 | 22:BA:2575:C:C4 | 3.08 | 0.42 |
| 22:BA:2599:G:C2 | 22:BA:2600:A:C4 | 3.08 | 0.42 |
| 22:BA:2830:C:C2' | 22:BA:2831:G:H5' | 2.49 | 0.42 |
| 24:BC:109:LEU:CD2 | 24:BC:110:LYS:H | 2.28 | 0.42 |
| 25:BD:98:VAL:C | 25:BD:100:LEU:N | 2.73 | 0.42 |
| 27:BF:102:LEU:O | 27:BF:107:VAL:HB | 2.20 | 0.42 |
| 30:BI:56:VAL:CG2 | 30:BI:57:VAL:N | 2.83 | 0.42 |
| 31:BJ:64:VAL:HG13 | 31:BJ:65:THR:N | 2.34 | 0.42 |
| 35:BN:51:LEU:HD12 | 35:BN:51:LEU:HA | 1.68 | 0.42 |
| 37:BP:33:GLU:HG3 | 37:BP:34:GLY:N | 2.35 | 0.42 |
| 38:BQ:94:LEU:HD22 | 38:BQ:94:LEU:HA | 1.29 | 0.42 |
| 40:BS:48:LYS:HD3 | 40:BS:52:GLU:CD | 2.41 | 0.42 |
| 41:BT:4:GLU:OE1 | 41:BT:6:ARG:HG3 | 2.20 | 0.42 |
| 41:BT:33:LYS:HG3 | 41:BT:80:TRP:HE3 | 1.85 | 0.42 |
| 53:CA:102:G:H2' | 53:CA:103:U:H6 | 1.83 | 0.42 |
| 53:CA:496:A:O2' | 53:CA:497:G:H8 | 1.98 | 0.42 |
| 53:CA:1072:G:C5 | 53:CA:1073:U:C5 | 3.08 | 0.42 |
| 53:CA:1146:A:C2 | 53:CA:1147:C:C2 | 3.08 | 0.42 |
| 53:CA:1200:C:O2' | 53:CA:1201:A:P | 2.78 | 0.42 |
| 53:CA:1242:G:N2 | 53:CA:1302:C:O2 | 2.53 | 0.42 |
| 2:CB:72:LYS:O | 2:CB:74:ALA:N | 2.53 | 0.42 |
| 3:CC:53:ARG:NH1 | 3:CC:53:ARG:HB2 | 2.35 | 0.42 |
| 4:CD:203:TYR:C | 4:CD:205:LYS:H | 2.22 | 0.42 |
| 6:CF:66:ALA:HA | 6:CF:67:PRO:HD2 | 1.94 | 0.42 |
| 10:CJ:13:PHE:CE2 | 10:CJ:69:THR:HG23 | 2.55 | 0.42 |
| 56:CP:52:LEU:CD2 | 56:CP:75:ILE:HG23 | 2.49 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 17:CQ:45:VAL:HG21 | 17:CQ:60:ILE:HG21 | 2.02 | 0.42 |
| 18:CR:61:ALA:HB1 | 18:CR:66:LEU:HB2 | 2.02 | 0.42 |
| 19:CS:43:MET:O | 19:CS:61:VAL:HG11 | 2.20 | 0.42 |
| 19:CS:62:THR:HG22 | 19:CS:63:ASP:N | 2.32 | 0.42 |
| 20:CT:11:ILE:C | 20:CT:13:SER:N | 2.74 | 0.42 |
| 21:CU:31:VAL:O | 21:CU:32:ARG:C | 2.58 | 0.42 |
| 57:DA:196:A:N6 | 57:DA:831:G:H21 | 2.17 | 0.42 |
| 57:DA:321:U:C1' | 26:DE:159:LEU:HG | 2.49 | 0.42 |
| 57:DA:469:G:OP2 | 26:DE:55:SER:HB3 | 2.20 | 0.42 |
| 57:DA:498:G:C6 | 57:DA:499:U:C4 | 3.07 | 0.42 |
| 57:DA:584:C:OP1 | 38:DQ:5:ARG:HD3 | 2.19 | 0.42 |
| 57:DA:861:A:O2' | 57:DA:862:G:C5' | 2.68 | 0.42 |
| 57:DA:1109:C:N4 | 57:DA:1110:G:N1 | 2.68 | 0.42 |
| 57:DA:1142:A:N7 | 57:DA:1144:A:C5 | 2.87 | 0.42 |
| 57:DA:1210:G:N7 | 57:DA:1237:A:N6 | 2.68 | 0.42 |
| 57:DA:1295:C:H1' | 35:DN:23:ASN:HD21 | 1.85 | 0.42 |
| 57:DA:1854:A:O4' | 57:DA:2233:U:H4' | 2.20 | 0.42 |
| 57:DA:1965:C:C5' | 57:DA:1966:A:H5'' | 2.46 | 0.42 |
| 57:DA:2102:G:C5 | 57:DA:2103:C:C5 | 3.08 | 0.42 |
| 57:DA:2235:G:C4 | 57:DA:2236:U:C5 | 3.08 | 0.42 |
| 57:DA:2811:G:H2' | 57:DA:2812:G:O4' | 2.19 | 0.42 |
| 58:DB:57:A:C2' | 58:DB:58:A:C8 | 3.01 | 0.42 |
| 24:DC:12:ARG:O | 24:DC:14:HIS:N | 2.53 | 0.42 |
| 24:DC:33:LEU:O | 24:DC:34:GLU:CB | 2.64 | 0.42 |
| 24:DC:76:VAL:O | 24:DC:76:VAL:HG23 | 2.19 | 0.42 |
| 28:DG:40:VAL:HB | 28:DG:41:GLU:H | 1.69 | 0.42 |
| 28:DG:84:LYS:HB3 | 28:DG:132:LEU:O | 2.20 | 0.42 |
| 29:DH:9:VAL:HG13 | 29:DH:10:ALA:N | 2.35 | 0.42 |
| 29:DH:94:ILE:HG13 | 29:DH:98:ASP:HB3 | 2.01 | 0.42 |
| 30:DI:132:ALA:HB1 | 30:DI:137:LEU:HB2 | 2.02 | 0.42 |
| 31:DJ:64:VAL:O | 31:DJ:68:LYS:HE2 | 2.20 | 0.42 |
| 34:DM:78:LEU:HD23 | 34:DM:78:LEU:HA | 1.80 | 0.42 |
| 35:DN:97:ILE:HD12 | 35:DN:99:LYS:HD3 | 2.01 | 0.42 |
| 37:DP:91:VAL:HG21 | 37:DP:96:LEU:HD21 | 2.02 | 0.42 |
| 39:DR:10:LYS:N | 39:DR:10:LYS:HD2 | 2.35 | 0.42 |
| 40:DS:20:VAL:HG23 | 40:DS:23:LEU:CD1 | 2.44 | 0.42 |
| 42:DU:10:VAL:O | 42:DU:21:ARG:HA | 2.19 | 0.42 |
| 42:DU:16:LYS:HD3 | 42:DU:16:LYS:HA | 1.77 | 0.42 |
| 42:DU:94:PHE:O | 42:DU:94:PHE:CD2 | 2.73 | 0.42 |
| 44:DW:17:ALA:CB | 44:DW:36:ILE:HA | 2.50 | 0.42 |
| 46:DY:23:ARG:O | 46:DY:27:ASN:HB2 | 2.20 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 52:D4:15:LYS:O | 52:D4:16:ILE:HB | 2.19 | 0.42 |
| 1:AA:15:G:C5 | 1:AA:1396:A:C2 | 3.08 | 0.41 |
| 1:AA:269:C:N4 | 1:AA:270:A:H62 | 2.18 | 0.41 |
| 1:AA:404:G:H2' | 1:AA:405:U:O4' | 2.20 | 0.41 |
| 1:AA:429:U:H1' | 1:AA:430:A:C5' | 2.50 | 0.41 |
| 1:AA:503:C:O5' | 1:AA:503:C:H6 | 2.02 | 0.41 |
| 1:AA:564:C:H2' | 1:AA:565:U:C6 | 2.55 | 0.41 |
| 1:AA:592:G:C6 | 1:AA:648:A:C6 | 3.08 | 0.41 |
| 1:AA:945:G:H2' | 1:AA:945:G:N3 | 2.35 | 0.41 |
| 2:AB:57:ASN:C | 2:AB:57:ASN:HD22 | 2.23 | 0.41 |
| 2:AB:116:LEU:HB3 | 2:AB:140:LEU:HG | 2.01 | 0.41 |
| 3:AC:5:HIS:O | 3:AC:9:ILE:HG22 | 2.20 | 0.41 |
| 5:AE:147:ASN:O | 5:AE:149:PRO:HD3 | 2.19 | 0.41 |
| 6:AF:11:HIS:CD2 | 6:AF:12:PRO:HD2 | 2.54 | 0.41 |
| 9:AI:44:ARG:HB2 | 9:AI:45:MET:HE3 | 2.01 | 0.41 |
| 10:AJ:78:GLU:HA | 10:AJ:79:PRO:HD2 | 1.91 | 0.41 |
| 11:AK:110:THR:HG22 | 21:AU:4:LYS:HB3 | 2.01 | 0.41 |
| 13:AM:5:GLY:HA3 | 13:AM:65:GLU:HG3 | 2.02 | 0.41 |
| 16:AP:70:ARG:HG3 | 16:AP:70:ARG:O | 2.20 | 0.41 |
| 22:BA:229:C:H2' | 22:BA:230:G:O4' | 2.20 | 0.41 |
| 22:BA:377:G:H2' | 22:BA:378:C:O4' | 2.20 | 0.41 |
| 22:BA:538:A:H2' | 22:BA:539:G:O4' | 2.20 | 0.41 |
| 22:BA:920:A:H2' | 22:BA:921:C:O4' | 2.20 | 0.41 |
| 22:BA:1061:U:C5 | 30:BI:9:LYS:HG3 | 2.54 | 0.41 |
| 22:BA:1177:G:C5 | 22:BA:1178:C:C5 | 3.08 | 0.41 |
| 22:BA:1179:G:C5 | 22:BA:1180:U:C1' | 2.90 | 0.41 |
| 22:BA:1303:G:H2' | 22:BA:1304:A:H8 | 1.85 | 0.41 |
| 22:BA:1319:C:O2 | 22:BA:1334:G:C2 | 2.73 | 0.41 |
| 22:BA:1324:G:H1' | 22:BA:1616:A:N6 | 2.35 | 0.41 |
| 22:BA:1588:G:N3 | 22:BA:1589:U:C6 | 2.87 | 0.41 |
| 22:BA:1712:U:C4 | 22:BA:1713:A:C5 | 3.08 | 0.41 |
| 22:BA:2293:G:H2' | 22:BA:2294:G:O4' | 2.20 | 0.41 |
| 22:BA:2297:A:N3 | 22:BA:2297:A:H2' | 2.35 | 0.41 |
| 22:BA:2532:G:C5 | 22:BA:2533:U:C4 | 3.08 | 0.41 |
| 24:BC:175:LEU:HD12 | 24:BC:175:LEU:HA | 1.81 | 0.41 |
| 24:BC:257:ARG:NE | 24:BC:269:ARG:HH22 | 2.17 | 0.41 |
| 28:BG:139:VAL:HG12 | 28:BG:140:ILE:N | 2.35 | 0.41 |
| 30:BI:58:ILE:HG22 | 30:BI:60:VAL:CG2 | 2.50 | 0.41 |
| 30:BI:123:ALA:C | 30:BI:125:THR:N | 2.72 | 0.41 |
| 31:BJ:141:ASP:HB3 | 31:BJ:142:ILE:H | 1.49 | 0.41 |
| 37:BP:24:THR:CG2 | 37:BP:86:LYS:HB2 | 2.50 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 38:BQ:63:ARG:NH2 | 38:BQ:96:ASP:CA | 2.83 | 0.41 |
| 40:BS:54:ALA:O | 40:BS:57:ASN:HB2 | 2.20 | 0.41 |
| 42:BU:31:GLY:O | 42:BU:66:VAL:HB | 2.20 | 0.41 |
| 46:BY:56:LEU:HA | 46:BY:59:GLU:CG | 2.50 | 0.41 |
| 53:CA:45:G:O2' | 53:CA:46:G:H5' | 2.20 | 0.41 |
| 53:CA:264:C:H1' | 17:CQ:65:PRO:HG2 | 2.01 | 0.41 |
| 53:CA:284:C:O5' | 53:CA:284:C:H6 | 2.03 | 0.41 |
| 53:CA:428:G:C2 | 53:CA:430:A:N6 | 2.88 | 0.41 |
| 53:CA:566:G:C4' | 53:CA:567:G:OP1 | 2.67 | 0.41 |
| 53:CA:1215:G:O2' | 53:CA:1216:A:H5' | 2.19 | 0.41 |
| 3:CC:35:ASP:CG | 3:CC:56:ILE:HD12 | 2.40 | 0.41 |
| 6:CF:11:HIS:HD2 | 6:CF:54:LEU:HD21 | 1.79 | 0.41 |
| 54:CG:10:LYS:HE3 | 54:CG:10:LYS:H | 1.85 | 0.41 |
| 54:CG:70:PRO:HB3 | 54:CG:98:LEU:HD12 | 2.01 | 0.41 |
| 8:CH:124:ILE:HG22 | 8:CH:125:ILE:N | 2.35 | 0.41 |
| 9:CI:35:GLU:CA | 9:CI:39:GLY:HA3 | 2.49 | 0.41 |
| 11:CK:42:GLY:HA3 | 11:CK:73:VAL:HB | 2.02 | 0.41 |
| 55:CM:46:GLU:O | 55:CM:47:LEU:HB2 | 2.19 | 0.41 |
| 55:CM:78:ARG:HH11 | 55:CM:78:ARG:HG2 | 1.84 | 0.41 |
| 56:CP:20:VAL:HG21 | 56:CP:32:PHE:CB | 2.50 | 0.41 |
| 19:CS:45:GLY:N | 19:CS:61:VAL:HB | 2.32 | 0.41 |
| 21:CU:13:VAL:CG2 | 21:CU:15:LEU:HD23 | 2.49 | 0.41 |
| 57:DA:33:C:H4' | 57:DA:34:U:OP1 | 2.16 | 0.41 |
| 57:DA:294:A:H2' | 57:DA:295:G:O5' | 2.20 | 0.41 |
| 57:DA:481:G:O2' | 57:DA:482:A:P | 2.77 | 0.41 |
| 57:DA:527:C:O2' | 57:DA:528:A:O5' | 2.38 | 0.41 |
| 57:DA:604:G:N1 | 57:DA:605:G:C6 | 2.88 | 0.41 |
| 57:DA:729:G:O6 | 24:DC:206:LYS:HB2 | 2.20 | 0.41 |
| 57:DA:763:G:O2' | 57:DA:764:A:H3' | 2.20 | 0.41 |
| 57:DA:818:G:C2' | 57:DA:819:A:H5'' | 2.50 | 0.41 |
| 57:DA:1329:U:O2' | 57:DA:1330:C:P | 2.78 | 0.41 |
| 57:DA:1439:A:C2 | 57:DA:1553:A:C8 | 3.08 | 0.41 |
| 57:DA:1702:G:C6 | 57:DA:1703:G:N7 | 2.88 | 0.41 |
| 57:DA:1745:A:C2 | 57:DA:1746:A:C8 | 3.08 | 0.41 |
| 57:DA:1821:A:H5' | 24:DC:156:SER:OG | 2.19 | 0.41 |
| 57:DA:1886:U:H6 | 57:DA:1886:U:O5' | 2.02 | 0.41 |
| 57:DA:2456:C:H2' | 57:DA:2457:U:O4' | 2.20 | 0.41 |
| 57:DA:2654:A:H62 | 57:DA:2667:C:N4 | 2.18 | 0.41 |
| 58:DB:67:G:O2' | 58:DB:68:C:O5' | 2.38 | 0.41 |
| 58:DB:76:G:H5'' | 43:DV:17:SER:OG | 2.21 | 0.41 |
| 24:DC:115:ILE:O | 24:DC:116:GLN:HG3 | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 24:DC:135:PRO:HG2 | 24:DC:138:SER:OG | 2.19 | 0.41 |
| 24:DC:174:ARG:HA | 24:DC:180:MET:HG2 | 2.02 | 0.41 |
| 25:DD:22:ILE:HA | 25:DD:23:PRO:HD2 | 1.91 | 0.41 |
| 25:DD:148:GLN:HG2 | 25:DD:152:PRO:CG | 2.50 | 0.41 |
| 59:DF:69:ALA:HB2 | 59:DF:82:TYR:O | 2.20 | 0.41 |
| 30:DI:112:LYS:NZ | 30:DI:128:ILE:HD12 | 2.34 | 0.41 |
| 32:DK:114:LYS:O | 32:DK:117:SER:HB2 | 2.20 | 0.41 |
| 34:DM:41:LEU:HB3 | 34:DM:46:ILE:CG2 | 2.50 | 0.41 |
| 37:DP:45:VAL:O | 37:DP:60:VAL:HA | 2.19 | 0.41 |
| 42:DU:59:GLU:C | 42:DU:60:LYS:HD2 | 2.41 | 0.41 |
| 45:DX:1:SER:C | 45:DX:3:VAL:N | 2.74 | 0.41 |
| 52:D4:19:ARG:HH12 | 52:D4:26:ILE:CG1 | 2.34 | 0.41 |
| 1:AA:252:U:O2' | 1:AA:275:G:N2 | 2.53 | 0.41 |
| 1:AA:370:C:O2' | 1:AA:371:A:H5' | 2.20 | 0.41 |
| 1:AA:499:A:H4' | 1:AA:500:G:O5' | 2.20 | 0.41 |
| 1:AA:687:A:C2 | 1:AA:704:A:C5 | 3.07 | 0.41 |
| 1:AA:1039:G:C2' | 1:AA:1040:U:H5' | 2.49 | 0.41 |
| 1:AA:1046:A:H2' | 1:AA:1047:G:H8 | 1.85 | 0.41 |
| 1:AA:1108:G:N7 | 1:AA:1109:C:C5 | 2.88 | 0.41 |
| 1:AA:1488:G:O2' | 1:AA:1489:G:H5' | 2.21 | 0.41 |
| 2:AB:27:LYS:N | 2:AB:28:PRO:CD | 2.83 | 0.41 |
| 2:AB:81:ASP:OD1 | 2:AB:83:ALA:N | 2.48 | 0.41 |
| 2:AB:140:LEU:O | 2:AB:141:GLU:C | 2.59 | 0.41 |
| 3:AC:137:VAL:HA | 3:AC:148:ILE:CD1 | 2.48 | 0.41 |
| 4:AD:191:SER:OG | 4:AD:192:ALA:N | 2.48 | 0.41 |
| 9:AI:49:GLN:O | 9:AI:51:LEU:N | 2.54 | 0.41 |
| 10:AJ:33:GLY:O | 10:AJ:34:ALA:HB2 | 2.20 | 0.41 |
| 11:AK:55:ARG:O | 11:AK:58:THR:HG23 | 2.19 | 0.41 |
| 11:AK:92:ARG:HG2 | 11:AK:92:ARG:O | 2.20 | 0.41 |
| 11:AK:113:THR:HA | 11:AK:114:PRO:HD3 | 1.82 | 0.41 |
| 17:AQ:32:ILE:HD12 | 17:AQ:32:ILE:N | 2.35 | 0.41 |
| 22:BA:86:G:C2 | 22:BA:97:C:C2 | 3.08 | 0.41 |
| 22:BA:125:A:C6 | 50:B2:10:LEU:HD13 | 2.55 | 0.41 |
| 22:BA:263:G:H2' | 22:BA:264:C:O5' | 2.20 | 0.41 |
| 22:BA:686:U:O4 | 50:B2:12:ARG:CB | 2.68 | 0.41 |
| 22:BA:866:A:O2' | 22:BA:867:C:H5' | 2.20 | 0.41 |
| 22:BA:1049:C:H2' | 22:BA:1050:A:H5' | 2.02 | 0.41 |
| 22:BA:1655:A:H5' | 25:BD:118:PHE:CD2 | 2.55 | 0.41 |
| 22:BA:1770:G:C4' | 63:BA:3730:HOH:O | 2.68 | 0.41 |
| 22:BA:2197:U:O2' | 22:BA:2198:A:C2' | 2.68 | 0.41 |
| 22:BA:2593:U:H2' | 22:BA:2594:C:H6 | 1.85 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:BA:2645:G:C3' | 22:BA:2646:C:H5' | 2.50 | 0.41 |
| 22:BA:2732:G:H8 | 22:BA:2732:G:OP2 | 2.03 | 0.41 |
| 23:BB:89:U:OP2 | 23:BB:89:U:C4' | 2.67 | 0.41 |
| 24:BC:115:ILE:HD12 | 24:BC:115:ILE:HA | 1.78 | 0.41 |
| 25:BD:191:GLY:O | 25:BD:192:ALA:CB | 2.68 | 0.41 |
| 26:BE:95:LYS:O | 26:BE:96:VAL:CB | 2.67 | 0.41 |
| 26:BE:129:PRO:HG3 | 26:BE:156:ASN:OD1 | 2.20 | 0.41 |
| 27:BF:170:ALA:O | 27:BF:172:PHE:O | 2.38 | 0.41 |
| 30:BI:111:THR:O | 30:BI:113:ALA:N | 2.47 | 0.41 |
| 31:BJ:93:ILE:O | 31:BJ:97:PRO:HG3 | 2.19 | 0.41 |
| 31:BJ:101:ILE:O | 31:BJ:105:VAL:CG1 | 2.69 | 0.41 |
| 31:BJ:114:LEU:O | 31:BJ:115:GLY:C | 2.59 | 0.41 |
| 32:BK:107:LEU:HD12 | 32:BK:107:LEU:HA | 1.79 | 0.41 |
| 35:BN:33:ILE:HD12 | 35:BN:33:ILE:N | 2.35 | 0.41 |
| 37:BP:71:ARG:HD3 | 37:BP:73:PHE:CZ | 2.55 | 0.41 |
| 38:BQ:8:ILE:O | 38:BQ:12:ARG:HG3 | 2.21 | 0.41 |
| 38:BQ:91:ARG:HE | 39:BR:11:GLN:HB2 | 1.85 | 0.41 |
| 39:BR:68:ARG:HH11 | 39:BR:90:ARG:HH11 | 1.68 | 0.41 |
| 39:BR:102:SER:O | 39:BR:103:ALA:O | 2.38 | 0.41 |
| 40:BS:4:ILE:CG2 | 40:BS:106:VAL:HG13 | 2.50 | 0.41 |
| 41:BT:21:SER:HA | 41:BT:31:VAL:HG11 | 2.01 | 0.41 |
| 44:BW:39:GLN:HG2 | 44:BW:40:ARG:N | 2.33 | 0.41 |
| 45:BX:68:ALA:C | 45:BX:69:GLU:O | 2.58 | 0.41 |
| 46:BY:6:LEU:O | 46:BY:7:ARG:HB3 | 2.19 | 0.41 |
| 46:BY:47:ARG:CG | 46:BY:47:ARG:NH2 | 2.72 | 0.41 |
| 47:BZ:23:LEU:HD21 | 47:BZ:53:MET:HE2 | 2.01 | 0.41 |
| 50:B2:24:THR:O | 50:B2:25:LYS:C | 2.58 | 0.41 |
| 53:CA:62:U:O2' | 53:CA:379:C:O2 | 2.31 | 0.41 |
| 53:CA:116:A:H2' | 53:CA:117:G:C8 | 2.54 | 0.41 |
| 53:CA:203:G:H8 | 53:CA:203:G:O5' | 2.03 | 0.41 |
| 53:CA:254:G:O2' | 17:CQ:17:GLU:O | 2.36 | 0.41 |
| 53:CA:321:A:O3' | 53:CA:1436:U:H5' | 2.20 | 0.41 |
| 53:CA:674:G:H5'' | 6:CF:49:TYR:CE2 | 2.55 | 0.41 |
| 53:CA:1082:A:OP1 | 5:CE:22:LYS:HE3 | 2.21 | 0.41 |
| 53:CA:1179:A:H2' | 53:CA:1180:A:O4' | 2.20 | 0.41 |
| 53:CA:1241:G:H2' | 53:CA:1242:G:C8 | 2.39 | 0.41 |
| 53:CA:1316:G:H22 | 53:CA:1318:A:H3' | 1.85 | 0.41 |
| 3:CC:39:ARG:C | 3:CC:41:TYR:H | 2.23 | 0.41 |
| 4:CD:33:ILE:HD12 | 4:CD:33:ILE:HA | 1.84 | 0.41 |
| 4:CD:117:VAL:O | 4:CD:130:ASN:HA | 2.20 | 0.41 |
| 6:CF:80:PHE:N | 6:CF:80:PHE:CD1 | 2.88 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 54:CG:27:ASN:O | 54:CG:30:MET:HB2 | 2.20 | 0.41 |
| 9:CI:4:GLN:HB3 | 9:CI:21:LYS:CG | 2.51 | 0.41 |
| 12:CL:37:TYR:O | 12:CL:38:THR:HG23 | 2.21 | 0.41 |
| 55:CM:15:VAL:O | 55:CM:19:THR:HG23 | 2.19 | 0.41 |
| 55:CM:23:GLY:HA3 | 55:CM:64:VAL:HG13 | 2.01 | 0.41 |
| 56:CP:19:VAL:HG13 | 56:CP:37:GLY:CA | 2.50 | 0.41 |
| 57:DA:379:G:N1 | 57:DA:380:G:C4 | 2.88 | 0.41 |
| 57:DA:581:C:H2' | 57:DA:582:A:C8 | 2.55 | 0.41 |
| 57:DA:946:C:O2' | 57:DA:947:A:C5' | 2.68 | 0.41 |
| 57:DA:985:C:H6 | 57:DA:985:C:O5' | 2.03 | 0.41 |
| 57:DA:1000:A:N1 | 57:DA:1001:A:C2 | 2.89 | 0.41 |
| 57:DA:1298:C:H2' | 57:DA:1299:G:O4' | 2.20 | 0.41 |
| 57:DA:1386:C:HO2' | 57:DA:1387:A:P | 2.43 | 0.41 |
| 57:DA:1388:G:C2 | 57:DA:1389:G:C8 | 3.08 | 0.41 |
| 57:DA:1455:G:N7 | 35:DN:64:ARG:NH1 | 2.68 | 0.41 |
| 57:DA:1540:G:H2' | 57:DA:1541:C:C6 | 2.55 | 0.41 |
| 57:DA:1802:A:P | 57:DA:1815:A:H61 | 2.42 | 0.41 |
| 57:DA:1845:G:C6 | 57:DA:1846:G:N7 | 2.89 | 0.41 |
| 57:DA:1875:G:H8 | 57:DA:1875:G:OP2 | 2.03 | 0.41 |
| 57:DA:2092:U:C2' | 57:DA:2093:G:C8 | 2.82 | 0.41 |
| 57:DA:2307:G:H1 | 59:DF:38:GLY:HA3 | 1.85 | 0.41 |
| 57:DA:2428:G:H4' | 57:DA:2429:G:C5 | 2.55 | 0.41 |
| 57:DA:2516:A:C2 | 57:DA:2569:G:N3 | 2.89 | 0.41 |
| 57:DA:2529:G:C4' | 28:DG:174:LYS:HD3 | 2.46 | 0.41 |
| 57:DA:2635:A:H5'' | 25:DD:79:LEU:O | 2.20 | 0.41 |
| 24:DC:130:PRO:C | 24:DC:132:ARG:N | 2.74 | 0.41 |
| 25:DD:33:ARG:NH2 | 25:DD:51:THR:HG22 | 2.35 | 0.41 |
| 59:DF:122:ASP:HB2 | 59:DF:126:ASN:CB | 2.49 | 0.41 |
| 28:DG:7:PRO:HB3 | 28:DG:48:THR:HB | 2.01 | 0.41 |
| 29:DH:40:THR:O | 29:DH:42:LYS:N | 2.47 | 0.41 |
| 30:DI:24:GLY:HA3 | 30:DI:25:PRO:HD3 | 1.91 | 0.41 |
| 30:DI:95:ASP:CG | 30:DI:96:LYS:H | 2.23 | 0.41 |
| 31:DJ:51:GLY:HA3 | 31:DJ:121:LYS:HE3 | 2.01 | 0.41 |
| 31:DJ:106:LYS:HD2 | 31:DJ:119:PHE:HD2 | 1.84 | 0.41 |
| 34:DM:1:MET:HB3 | 34:DM:2:LEU:H | 1.67 | 0.41 |
| 44:DW:18:LYS:CD | 44:DW:19:ARG:HG2 | 2.47 | 0.41 |
| 44:DW:37:VAL:CG2 | 44:DW:38:ARG:HH11 | 2.33 | 0.41 |
| 45:DX:16:ASN:N | 45:DX:26:ARG:HB3 | 2.35 | 0.41 |
| 1:AA:7:A:H3' | 5:AE:105:ILE:HD12 | 2.02 | 0.41 |
| 1:AA:55:A:C5 | 1:AA:56:U:C5 | 3.08 | 0.41 |
| 1:AA:158:G:C2' | 1:AA:159:G:H5'' | 2.49 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:338:A:H2' | 1:AA:339:C:O4' | 2.21 | 0.41 |
| 1:AA:428:G:C5 | 1:AA:430:A:C6 | 3.08 | 0.41 |
| 1:AA:439:U:C6 | 4:AD:119:HIS:CD2 | 3.05 | 0.41 |
| 1:AA:652:U:H1' | 1:AA:653:U:C6 | 2.55 | 0.41 |
| 1:AA:772:U:O2' | 1:AA:773:G:H5' | 2.21 | 0.41 |
| 1:AA:974:A:C4' | 1:AA:975:A:H5' | 2.44 | 0.41 |
| 1:AA:977:A:N3 | 1:AA:977:A:C2' | 2.73 | 0.41 |
| 1:AA:978:A:HO2' | 1:AA:1322:C:H5 | 1.68 | 0.41 |
| 1:AA:1261:A:N3 | 1:AA:1275:A:C6 | 2.89 | 0.41 |
| 1:AA:1322:C:O2' | 1:AA:1323:G:C5' | 2.68 | 0.41 |
| 2:AB:67:LEU:O | 2:AB:160:LEU:HD12 | 2.20 | 0.41 |
| 3:AC:188:ALA:O | 3:AC:194:VAL:HA | 2.20 | 0.41 |
| 4:AD:138:PRO:HA | 4:AD:181:PHE:HD2 | 1.85 | 0.41 |
| 5:AE:12:GLU:CB | 5:AE:38:VAL:HG12 | 2.49 | 0.41 |
| 6:AF:62:MET:O | 6:AF:63:ASN:HB2 | 2.20 | 0.41 |
| 7:AG:110:ARG:NH1 | 7:AG:110:ARG:HB2 | 2.35 | 0.41 |
| 10:AJ:18:ILE:CG2 | 10:AJ:19:ASP:N | 2.82 | 0.41 |
| 10:AJ:51:VAL:CG1 | 14:AN:80:ARG:HB2 | 2.50 | 0.41 |
| 15:AO:17:ASP:O | 15:AO:20:ASP:HB3 | 2.19 | 0.41 |
| 16:AP:15:PRO:HG2 | 16:AP:41:PRO:HG3 | 2.02 | 0.41 |
| 17:AQ:11:VAL:HG12 | 17:AQ:13:SER:H | 1.85 | 0.41 |
| 19:AS:79:TYR:O | 19:AS:80:ARG:HB3 | 2.20 | 0.41 |
| 21:AU:13:VAL:HG13 | 21:AU:15:LEU:CG | 2.41 | 0.41 |
| 22:BA:64:A:C5 | 22:BA:65:U:C4 | 3.08 | 0.41 |
| 22:BA:253:C:O2 | 22:BA:253:C:H2' | 2.20 | 0.41 |
| 22:BA:272:A:O2' | 22:BA:273:G:P | 2.78 | 0.41 |
| 22:BA:387:U:C5 | 22:BA:388:G:C6 | 3.08 | 0.41 |
| 22:BA:430:A:H5'' | 22:BA:431:U:OP2 | 2.20 | 0.41 |
| 22:BA:470:A:H61 | 41:BT:72:GLN:HE22 | 1.68 | 0.41 |
| 22:BA:763:G:O2' | 22:BA:764:A:H5'' | 2.20 | 0.41 |
| 22:BA:1098:A:H5' | 22:BA:1099:G:OP2 | 2.20 | 0.41 |
| 22:BA:1131:G:N7 | 22:BA:2025:C:H4' | 2.36 | 0.41 |
| 22:BA:1316:U:H2' | 22:BA:1317:G:H8 | 1.85 | 0.41 |
| 22:BA:1474:U:H2' | 22:BA:1475:G:H5' | 2.02 | 0.41 |
| 22:BA:1655:A:H61 | 22:BA:2005:A:H1' | 1.85 | 0.41 |
| 22:BA:1855:U:H6 | 22:BA:1855:U:O5' | 2.03 | 0.41 |
| 22:BA:2075:U:H2' | 22:BA:2238:G:N2 | 2.35 | 0.41 |
| 22:BA:2145:C:OP1 | 22:BA:2148:G:C5 | 2.73 | 0.41 |
| 22:BA:2486:C:C2' | 22:BA:2487:G:O5' | 2.68 | 0.41 |
| 22:BA:2840:C:H2' | 22:BA:2841:C:C6 | 2.55 | 0.41 |
| 24:BC:259:ASN:C | 24:BC:261:ARG:N | 2.73 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:BD:133:THR:O | 25:BD:134:HIS:HB2 | 2.20 | 0.41 |
| 26:BE:119:ILE:O | 26:BE:119:ILE:HG12 | 2.21 | 0.41 |
| 26:BE:134:LEU:CD2 | 26:BE:161:ALA:HB2 | 2.49 | 0.41 |
| 26:BE:150:THR:HA | 26:BE:189:THR:CG2 | 2.50 | 0.41 |
| 27:BF:121:PHE:HD1 | 27:BF:126:ASN:O | 2.02 | 0.41 |
| 29:BH:41:LYS:HA | 29:BH:44:ILE:CG1 | 2.48 | 0.41 |
| 29:BH:44:ILE:O | 29:BH:48:GLU:HB2 | 2.20 | 0.41 |
| 30:BI:93:ASN:OD1 | 30:BI:136:GLY:HA2 | 2.21 | 0.41 |
| 30:BI:115:ASP:OD1 | 30:BI:115:ASP:C | 2.59 | 0.41 |
| 31:BJ:36:LEU:HD12 | 31:BJ:36:LEU:HA | 1.60 | 0.41 |
| 32:BK:65:THR:OG1 | 32:BK:68:GLY:N | 2.44 | 0.41 |
| 35:BN:87:PHE:O | 35:BN:89:SER:N | 2.53 | 0.41 |
| 36:BO:3:LYS:HG3 | 36:BO:4:LYS:H | 1.85 | 0.41 |
| 36:BO:104:GLN:C | 36:BO:105:ALA:O | 2.57 | 0.41 |
| 37:BP:24:THR:O | 37:BP:44:GLY:O | 2.38 | 0.41 |
| 39:BR:49:ILE:CG2 | 39:BR:53:PHE:N | 2.82 | 0.41 |
| 41:BT:13:ALA:HB3 | 41:BT:33:LYS:HB3 | 2.02 | 0.41 |
| 41:BT:69:ARG:NE | 41:BT:70:HIS:H | 2.19 | 0.41 |
| 43:BV:5:ASN:ND2 | 43:BV:5:ASN:N | 2.64 | 0.41 |
| 43:BV:66:ASP:O | 43:BV:66:ASP:CG | 2.58 | 0.41 |
| 44:BW:16:GLU:OE2 | 44:BW:16:GLU:CA | 2.67 | 0.41 |
| 53:CA:79:G:N2 | 53:CA:91:U:C2 | 2.88 | 0.41 |
| 53:CA:83:C:C4 | 53:CA:85:U:N3 | 2.88 | 0.41 |
| 53:CA:427:U:C4 | 53:CA:428:G:C6 | 3.08 | 0.41 |
| 53:CA:497:G:O2' | 53:CA:498:A:H8 | 1.99 | 0.41 |
| 53:CA:553:A:O4' | 12:CL:27:PRO:HA | 2.21 | 0.41 |
| 53:CA:558:G:O5' | 53:CA:559:A:H3' | 2.20 | 0.41 |
| 53:CA:605:U:H2' | 53:CA:606:G:C8 | 2.56 | 0.41 |
| 53:CA:637:C:H2' | 53:CA:638:U:H6 | 1.82 | 0.41 |
| 53:CA:749:A:C2 | 53:CA:750:C:C2 | 3.08 | 0.41 |
| 53:CA:751:U:H2' | 53:CA:752:G:O4' | 2.20 | 0.41 |
| 53:CA:803:G:H2' | 53:CA:804:U:C6 | 2.55 | 0.41 |
| 53:CA:831:A:OP1 | 2:CB:20:ARG:HG3 | 2.20 | 0.41 |
| 53:CA:836:G:C5 | 53:CA:851:G:C6 | 3.08 | 0.41 |
| 53:CA:1002:G:C6 | 53:CA:1003:G:C6 | 3.08 | 0.41 |
| 53:CA:1140:C:H2' | 53:CA:1141:C:H5 | 1.84 | 0.41 |
| 53:CA:1294:G:C8 | 53:CA:1294:G:OP2 | 2.74 | 0.41 |
| 53:CA:1386:G:N2 | 53:CA:1387:G:C4 | 2.89 | 0.41 |
| 2:CB:130:LYS:HA | 2:CB:130:LYS:HD3 | 1.83 | 0.41 |
| 2:CB:178:LEU:HD12 | 2:CB:178:LEU:HA | 1.80 | 0.41 |
| 3:CC:119:ILE:HD11 | 3:CC:136:ALA:CB | 2.50 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:CF:43:GLY:HA2 | 6:CF:58:HIS:HE1 | 1.83 | 0.41 |
| 8:CH:85:TYR:CE1 | 17:CQ:36:PHE:HE2 | 2.38 | 0.41 |
| 11:CK:124:LYS:O | 21:CU:33:ARG:CZ | 2.69 | 0.41 |
| 12:CL:89:LEU:HB3 | 12:CL:92:VAL:CG2 | 2.51 | 0.41 |
| 19:CS:32:THR:O | 19:CS:32:THR:HG23 | 2.19 | 0.41 |
| 57:DA:301:G:O5' | 42:DU:81:ARG:NH1 | 2.53 | 0.41 |
| 57:DA:464:U:C6 | 57:DA:788:A:C2 | 3.08 | 0.41 |
| 57:DA:506:G:H4' | 57:DA:509:C:O2 | 2.20 | 0.41 |
| 57:DA:575:A:C4 | 57:DA:576:U:C5 | 3.07 | 0.41 |
| 57:DA:579:G:C8 | 57:DA:2017:U:O4 | 2.74 | 0.41 |
| 57:DA:822:G:H2' | 57:DA:823:C:H6 | 1.85 | 0.41 |
| 57:DA:916:G:HO2' | 57:DA:917:A:P | 2.42 | 0.41 |
| 57:DA:980:A:O5' | 57:DA:982:C:N4 | 2.53 | 0.41 |
| 57:DA:984:A:O2' | 57:DA:985:C:P | 2.78 | 0.41 |
| 57:DA:1335:C:H2' | 57:DA:1336:A:C1' | 2.51 | 0.41 |
| 57:DA:1512:C:H2' | 57:DA:1513:U:H6 | 1.83 | 0.41 |
| 57:DA:2141:G:H2' | 57:DA:2142:A:H8 | 1.84 | 0.41 |
| 57:DA:2373:G:C6 | 57:DA:2374:C:C4 | 3.08 | 0.41 |
| 57:DA:2567:G:H2' | 57:DA:2568:U:C6 | 2.55 | 0.41 |
| 57:DA:2665:A:C2 | 57:DA:2666:C:N3 | 2.89 | 0.41 |
| 57:DA:2898:U:H2' | 57:DA:2899:A:H8 | 1.85 | 0.41 |
| 24:DC:198:GLU:HG3 | 24:DC:198:GLU:O | 2.20 | 0.41 |
| 24:DC:245:THR:HG23 | 24:DC:249:VAL:O | 2.19 | 0.41 |
| 24:DC:259:ASN:O | 24:DC:260:LYS:CB | 2.67 | 0.41 |
| 25:DD:5:VAL:HG21 | 25:DD:80:TRP:CG | 2.55 | 0.41 |
| 25:DD:175:LEU:HB3 | 25:DD:176:ASP:H | 1.48 | 0.41 |
| 28:DG:100:ASN:O | 28:DG:115:GLN:HB2 | 2.19 | 0.41 |
| 30:DI:102:ARG:NH1 | 30:DI:105:LEU:HD13 | 2.35 | 0.41 |
| 32:DK:2:ILE:HD11 | 32:DK:65:THR:HG22 | 2.03 | 0.41 |
| 34:DM:136:MET:HE2 | 43:DV:57:TYR:CD2 | 2.52 | 0.41 |
| 40:DS:41:LYS:O | 40:DS:44:ALA:N | 2.44 | 0.41 |
| 41:DT:14:PRO:HG2 | 41:DT:15:HIS:H | 1.85 | 0.41 |
| 42:DU:91:LYS:O | 42:DU:92:VAL:HG22 | 2.19 | 0.41 |
| 44:DW:37:VAL:HA | 44:DW:55:ASP:O | 2.20 | 0.41 |
| 46:DY:52:ARG:C | 46:DY:54:LYS:N | 2.73 | 0.41 |
| 52:D4:7:VAL:O | 52:D4:8:LYS:O | 2.38 | 0.41 |
| 1:AA:330:C:H5'' | 1:AA:330:C:C6 | 2.53 | 0.41 |
| 1:AA:414:A:HO2' | 1:AA:415:A:H8 | 1.68 | 0.41 |
| 1:AA:511:C:O2' | 1:AA:512:U:P | 2.79 | 0.41 |
| 1:AA:1030:U:OP2 | 1:AA:1031:C:O2 | 2.39 | 0.41 |
| 1:AA:1250:A:H2 | 1:AA:1370:G:H1' | 1.85 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:AB:106:VAL:O | 2:AB:110:ILE:HD13 | 2.20 | 0.41 |
| 2:AB:113:LEU:HB2 | 2:AB:143:LEU:HD12 | 2.02 | 0.41 |
| 4:AD:147:LYS:N | 4:AD:147:LYS:CD | 2.84 | 0.41 |
| 5:AE:46:GLY:CA | 5:AE:70:MET:HA | 2.50 | 0.41 |
| 5:AE:108:GLY:O | 5:AE:109:ALA:CB | 2.69 | 0.41 |
| 8:AH:45:ILE:CG2 | 8:AH:62:LEU:HD13 | 2.51 | 0.41 |
| 9:AI:18:VAL:HG11 | 9:AI:82:ILE:HG12 | 2.02 | 0.41 |
| 11:AK:24:ALA:CB | 11:AK:29:THR:HG23 | 2.50 | 0.41 |
| 12:AL:85:ARG:HA | 12:AL:93:ARG:HA | 2.02 | 0.41 |
| 13:AM:76:ILE:O | 13:AM:79:LEU:HB2 | 2.20 | 0.41 |
| 18:AR:43:ILE:HD13 | 18:AR:43:ILE:HA | 1.83 | 0.41 |
| 22:BA:155:A:H2' | 22:BA:156:A:C8 | 2.55 | 0.41 |
| 22:BA:375:G:C4 | 22:BA:376:G:C8 | 3.07 | 0.41 |
| 22:BA:497:A:H2' | 22:BA:498:G:O4' | 2.20 | 0.41 |
| 22:BA:861:A:H5'' | 22:BA:862:G:OP2 | 2.21 | 0.41 |
| 22:BA:1001:A:OP2 | 63:BA:3737:HOH:O | 2.22 | 0.41 |
| 22:BA:1299:G:O6 | 22:BA:1639:C:H5'' | 2.20 | 0.41 |
| 22:BA:1535:A:H4' | 22:BA:1536:C:OP2 | 2.18 | 0.41 |
| 22:BA:1862:G:C2 | 22:BA:1863:G:C8 | 3.09 | 0.41 |
| 22:BA:1919:A:C2' | 22:BA:1920:C:H5' | 2.49 | 0.41 |
| 22:BA:2365:G:H4' | 44:BW:59:PHE:CE2 | 2.55 | 0.41 |
| 22:BA:2682:A:C8 | 25:BD:11:MET:HG2 | 2.55 | 0.41 |
| 27:BF:30:VAL:HG12 | 27:BF:96:TRP:CH2 | 2.56 | 0.41 |
| 28:BG:82:PHE:HB2 | 28:BG:134:GLY:O | 2.21 | 0.41 |
| 28:BG:109:SER:O | 28:BG:110:HIS:HB3 | 2.21 | 0.41 |
| 29:BH:72:ILE:O | 29:BH:72:ILE:HG23 | 2.20 | 0.41 |
| 30:BI:78:LEU:HD13 | 30:BI:108:ILE:CG2 | 2.46 | 0.41 |
| 31:BJ:97:PRO:O | 31:BJ:99:ARG:N | 2.53 | 0.41 |
| 33:BL:56:PRO:O | 33:BL:57:LEU:C | 2.59 | 0.41 |
| 35:BN:15:SER:O | 35:BN:16:HIS:C | 2.58 | 0.41 |
| 39:BR:11:GLN:C | 39:BR:12:HIS:CG | 2.93 | 0.41 |
| 39:BR:48:LYS:HD2 | 39:BR:48:LYS:O | 2.20 | 0.41 |
| 44:BW:76:ARG:HH21 | 44:BW:76:ARG:HG3 | 1.85 | 0.41 |
| 48:B0:9:ARG:CZ | 48:B0:9:ARG:HB3 | 2.51 | 0.41 |
| 49:B1:38:PHE:CZ | 49:B1:43:ARG:HA | 2.56 | 0.41 |
| 52:B4:9:LYS:HE2 | 52:B4:9:LYS:HB2 | 1.83 | 0.41 |
| 53:CA:66:A:C6 | 53:CA:67:C:N4 | 2.88 | 0.41 |
| 53:CA:273:U:C2' | 53:CA:274:A:H5' | 2.50 | 0.41 |
| 53:CA:275:G:H2' | 53:CA:276:G:H8 | 1.86 | 0.41 |
| 53:CA:408:A:C2 | 53:CA:435:A:C2 | 3.08 | 0.41 |
| 53:CA:926:G:H5' | 53:CA:927:G:O5' | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 53:CA:1026:G:H1 | 53:CA:1036:A:H61 | 1.65 | 0.41 |
| 53:CA:1250:A:C2 | 53:CA:1287:A:C6 | 3.08 | 0.41 |
| 53:CA:1328:C:H2' | 53:CA:1329:A:C8 | 2.56 | 0.41 |
| 53:CA:1479:C:C2 | 53:CA:1480:A:C8 | 3.09 | 0.41 |
| 2:CB:100:LEU:C | 2:CB:102:ASN:H | 2.24 | 0.41 |
| 2:CB:164:ASP:CB | 2:CB:167:HIS:HB3 | 2.50 | 0.41 |
| 2:CB:191:ASP:HA | 2:CB:192:PRO:HD2 | 1.89 | 0.41 |
| 2:CB:209:VAL:CG2 | 2:CB:210:THR:N | 2.83 | 0.41 |
| 3:CC:127:VAL:O | 3:CC:128:MET:HB2 | 2.20 | 0.41 |
| 4:CD:11:SER:HA | 4:CD:18:LEU:CD1 | 2.50 | 0.41 |
| 4:CD:21:LYS:O | 4:CD:21:LYS:CG | 2.68 | 0.41 |
| 4:CD:107:GLY:N | 4:CD:157:ALA:CB | 2.83 | 0.41 |
| 54:CG:64:ALA:HB2 | 54:CG:126:ALA:CB | 2.47 | 0.41 |
| 8:CH:46:GLU:N | 8:CH:63:LYS:HG3 | 2.35 | 0.41 |
| 15:CO:62:ARG:HH22 | 15:CO:88:ARG:NH2 | 2.18 | 0.41 |
| 19:CS:35:ARG:HA | 19:CS:70:LEU:CB | 2.46 | 0.41 |
| 57:DA:121:G:N2 | 57:DA:131:A:C4 | 2.88 | 0.41 |
| 57:DA:122:G:O2' | 57:DA:123:G:C5' | 2.68 | 0.41 |
| 57:DA:338:G:C2' | 57:DA:339:U:H5' | 2.50 | 0.41 |
| 57:DA:526:A:C6 | 57:DA:2626:C:H4' | 2.55 | 0.41 |
| 57:DA:617:G:H2' | 57:DA:618:G:H8 | 1.85 | 0.41 |
| 57:DA:653:U:O2 | 57:DA:653:U:H2' | 2.20 | 0.41 |
| 57:DA:802:A:O2' | 57:DA:803:U:H5' | 2.21 | 0.41 |
| 57:DA:910:A:H62 | 34:DM:12:MET:C | 2.24 | 0.41 |
| 57:DA:996:A:OP1 | 39:DR:10:LYS:HG2 | 2.20 | 0.41 |
| 57:DA:999:U:C2' | 57:DA:1000:A:H5' | 2.50 | 0.41 |
| 57:DA:1010:A:H4' | 38:DQ:75:TYR:CD2 | 2.56 | 0.41 |
| 57:DA:1034:G:O2' | 57:DA:1035:U:O4' | 2.25 | 0.41 |
| 57:DA:1050:A:H2' | 57:DA:1051:G:H8 | 1.85 | 0.41 |
| 57:DA:1203:U:H2' | 57:DA:1204:A:C2 | 2.55 | 0.41 |
| 57:DA:1203:U:H3 | 57:DA:1204:A:N6 | 2.18 | 0.41 |
| 57:DA:1245:G:H4' | 26:DE:33:VAL:CG1 | 2.41 | 0.41 |
| 57:DA:1331:G:C4 | 57:DA:1333:G:C8 | 3.08 | 0.41 |
| 57:DA:1333:G:O2' | 57:DA:1334:G:H5' | 2.20 | 0.41 |
| 57:DA:1343:G:N2 | 57:DA:1344:U:C2 | 2.88 | 0.41 |
| 57:DA:1462:C:C1' | 57:DA:2702:G:H21 | 2.33 | 0.41 |
| 57:DA:1510:G:H3' | 57:DA:1510:G:OP2 | 2.20 | 0.41 |
| 57:DA:1515:A:H4' | 57:DA:1556:C:O2' | 2.21 | 0.41 |
| 57:DA:1568:G:N2 | 24:DC:57:HIS:CE1 | 2.89 | 0.41 |
| 57:DA:1585:C:H3' | 57:DA:1586:A:C8 | 2.56 | 0.41 |
| 57:DA:1666:G:C4' | 32:DK:6:THR:HG23 | 2.50 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:1710:G:H4' | 57:DA:2858:C:O2 | 2.20 | 0.41 |
| 57:DA:1718:G:N2 | 57:DA:1743:G:H1' | 2.35 | 0.41 |
| 57:DA:1930:G:O2' | 57:DA:1931:U:P | 2.78 | 0.41 |
| 57:DA:2097:A:C6 | 57:DA:2098:U:C4 | 3.08 | 0.41 |
| 57:DA:2209:G:C4 | 57:DA:2210:U:C5 | 3.09 | 0.41 |
| 57:DA:2235:G:C6 | 57:DA:2236:U:C4 | 3.09 | 0.41 |
| 57:DA:2391:G:O2' | 57:DA:2392:A:O5' | 2.39 | 0.41 |
| 57:DA:2770:G:H8 | 57:DA:2770:G:O5' | 2.02 | 0.41 |
| 58:DB:66:A:OP2 | 58:DB:108:A:N6 | 2.54 | 0.41 |
| 24:DC:70:LYS:HD3 | 24:DC:101:ARG:NH1 | 2.32 | 0.41 |
| 24:DC:77:VAL:HA | 24:DC:92:LEU:O | 2.21 | 0.41 |
| 25:DD:119:ALA:O | 25:DD:120:GLY:O | 2.37 | 0.41 |
| 25:DD:127:PHE:CZ | 25:DD:160:LYS:HD2 | 2.55 | 0.41 |
| 26:DE:77:ILE:H | 26:DE:77:ILE:HG12 | 1.51 | 0.41 |
| 26:DE:105:LEU:O | 26:DE:105:LEU:HD13 | 2.19 | 0.41 |
| 26:DE:195:GLN:CD | 26:DE:195:GLN:H | 2.24 | 0.41 |
| 59:DF:134:GLN:HG3 | 59:DF:149:ARG:O | 2.20 | 0.41 |
| 29:DH:98:ASP:O | 29:DH:99:ILE:HG12 | 2.19 | 0.41 |
| 33:DL:128:THR:HG22 | 33:DL:129:LYS:N | 2.36 | 0.41 |
| 34:DM:73:ILE:HD13 | 34:DM:73:ILE:HA | 1.71 | 0.41 |
| 38:DQ:31:TYR:O | 38:DQ:33:VAL:N | 2.54 | 0.41 |
| 39:DR:37:GLU:HB2 | 39:DR:53:PHE:CD2 | 2.56 | 0.41 |
| 42:DU:47:PRO:HB3 | 42:DU:54:PRO:HG2 | 2.02 | 0.41 |
| 45:DX:76:LYS:HB2 | 45:DX:76:LYS:HE3 | 1.85 | 0.41 |
| 47:DZ:31:ILE:O | 47:DZ:31:ILE:HG13 | 2.21 | 0.41 |
| 49:D1:8:ILE:O | 49:D1:21:THR:HA | 2.21 | 0.41 |
| 51:D3:29:ARG:CZ | 51:D3:29:ARG:CB | 2.98 | 0.41 |
| 1:AA:22:G:C6 | 1:AA:23:C:C4 | 3.08 | 0.41 |
| 1:AA:346:G:N3 | 1:AA:346:G:H2' | 2.35 | 0.41 |
| 1:AA:393:A:H5' | 1:AA:483:C:O2' | 2.21 | 0.41 |
| 1:AA:439:U:H1' | 4:AD:118:SER:O | 2.21 | 0.41 |
| 1:AA:787:A:C6 | 1:AA:788:U:C4 | 3.09 | 0.41 |
| 1:AA:935:A:C2 | 1:AA:936:C:C2 | 3.09 | 0.41 |
| 1:AA:1391:U:H2' | 1:AA:1392:G:C8 | 2.54 | 0.41 |
| 1:AA:1528:U:H4' | 1:AA:1529:G:H5' | 2.01 | 0.41 |
| 1:AA:1533:C:C3' | 1:AA:1534:A:H5'' | 2.48 | 0.41 |
| 2:AB:89:PHE:CE1 | 2:AB:153:MET:HB2 | 2.55 | 0.41 |
| 4:AD:54:LEU:C | 4:AD:54:LEU:HD23 | 2.41 | 0.41 |
| 4:AD:84:ASN:O | 4:AD:85:THR:C | 2.59 | 0.41 |
| 5:AE:37:VAL:HG12 | 5:AE:116:VAL:HG21 | 2.02 | 0.41 |
| 5:AE:109:ALA:O | 5:AE:110:MET:CG | 2.55 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:AE:132:PRO:HA | 5:AE:135:VAL:CG1 | 2.49 | 0.41 |
| 7:AG:108:ARG:HH21 | 7:AG:118:ARG:HH12 | 1.69 | 0.41 |
| 10:AJ:81:GLU:HA | 10:AJ:84:VAL:HG12 | 2.03 | 0.41 |
| 13:AM:84:CYS:HA | 19:AS:73:PHE:CD2 | 2.55 | 0.41 |
| 14:AN:46:LYS:C | 14:AN:48:GLN:H | 2.24 | 0.41 |
| 17:AQ:74:LEU:C | 17:AQ:74:LEU:CD1 | 2.88 | 0.41 |
| 18:AR:33:THR:OG1 | 18:AR:34:GLU:N | 2.53 | 0.41 |
| 22:BA:96:C:H4' | 46:BY:41:HIS:CE1 | 2.55 | 0.41 |
| 22:BA:556:A:H5'' | 22:BA:557:C:OP2 | 2.21 | 0.41 |
| 22:BA:610:C:H2' | 22:BA:611:C:H6 | 1.85 | 0.41 |
| 22:BA:616:A:H2' | 22:BA:617:G:C8 | 2.56 | 0.41 |
| 22:BA:900:A:H2' | 22:BA:901:C:O4' | 2.20 | 0.41 |
| 22:BA:1059:G:C6 | 22:BA:1080:A:N1 | 2.89 | 0.41 |
| 22:BA:1121:C:H2' | 22:BA:1122:G:O4' | 2.21 | 0.41 |
| 22:BA:1139:G:C2' | 22:BA:1140:C:H5' | 2.50 | 0.41 |
| 22:BA:1176:U:H2' | 22:BA:1177:G:C4 | 2.55 | 0.41 |
| 22:BA:1217:U:OP2 | 38:BQ:14:LYS:NZ | 2.49 | 0.41 |
| 22:BA:1630:A:H2' | 22:BA:1631:G:H5' | 2.01 | 0.41 |
| 22:BA:2280:G:C2 | 22:BA:2281:A:C8 | 3.09 | 0.41 |
| 22:BA:2504:U:O5' | 22:BA:2504:U:H6 | 2.03 | 0.41 |
| 22:BA:2748:A:H1' | 28:BG:66:THR:HG23 | 2.02 | 0.41 |
| 24:BC:7:PRO:C | 24:BC:9:SER:H | 2.24 | 0.41 |
| 24:BC:32:LEU:HA | 24:BC:32:LEU:HD23 | 1.64 | 0.41 |
| 25:BD:144:GLY:O | 25:BD:145:SER:HB3 | 2.19 | 0.41 |
| 25:BD:163:GLY:O | 25:BD:164:GLN:C | 2.58 | 0.41 |
| 26:BE:3:LEU:O | 26:BE:11:ALA:HA | 2.19 | 0.41 |
| 28:BG:26:LYS:CB | 28:BG:32:LEU:HA | 2.49 | 0.41 |
| 28:BG:36:LEU:HA | 28:BG:36:LEU:HD13 | 1.73 | 0.41 |
| 29:BH:78:VAL:HG11 | 29:BH:145:ASN:CB | 2.48 | 0.41 |
| 30:BI:57:VAL:HG12 | 30:BI:58:ILE:N | 2.35 | 0.41 |
| 31:BJ:18:VAL:HG11 | 31:BJ:28:LEU:HD11 | 2.02 | 0.41 |
| 33:BL:82:LEU:C | 33:BL:82:LEU:CD2 | 2.89 | 0.41 |
| 35:BN:52:ILE:O | 35:BN:54:LEU:N | 2.54 | 0.41 |
| 35:BN:98:LEU:HB3 | 48:B0:42:ILE:HG12 | 2.01 | 0.41 |
| 38:BQ:14:LYS:O | 38:BQ:15:LYS:C | 2.59 | 0.41 |
| 38:BQ:40:LYS:HA | 38:BQ:43:GLN:HB2 | 2.03 | 0.41 |
| 40:BS:28:LYS:O | 40:BS:29:VAL:C | 2.59 | 0.41 |
| 43:BV:40:ILE:HG22 | 43:BV:41:GLU:H | 1.82 | 0.41 |
| 45:BX:48:LEU:HD11 | 45:BX:67:LEU:HD21 | 2.02 | 0.41 |
| 46:BY:24:GLU:O | 46:BY:28:LEU:HB2 | 2.21 | 0.41 |
| 53:CA:171:A:C6 | 53:CA:172:A:C6 | 3.09 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:177:G:H2' | 53:CA:178:C:H5' | 2.03 | 0.41 |
| 53:CA:652:U:O2' | 53:CA:653:U:P | 2.76 | 0.41 |
| 53:CA:687:A:C2 | 53:CA:700:G:N2 | 2.84 | 0.41 |
| 53:CA:931:C:H2' | 53:CA:932:C:H6 | 1.84 | 0.41 |
| 53:CA:934:C:N3 | 53:CA:1345:U:C5 | 2.88 | 0.41 |
| 53:CA:1412:C:H2' | 53:CA:1413:A:C8 | 2.55 | 0.41 |
| 53:CA:1453:G:N3 | 53:CA:1453:G:C2' | 2.82 | 0.41 |
| 2:CB:213:LEU:HD12 | 2:CB:213:LEU:HA | 1.87 | 0.41 |
| 4:CD:29:THR:HG22 | 4:CD:30:LYS:CD | 2.50 | 0.41 |
| 5:CE:81:GLN:HB3 | 5:CE:82:HIS:H | 1.71 | 0.41 |
| 5:CE:157:GLY:CA | 8:CH:63:LYS:NZ | 2.81 | 0.41 |
| 9:CI:7:GLY:HA3 | 9:CI:84:ARG:O | 2.20 | 0.41 |
| 55:CM:35:ALA:HB3 | 55:CM:55:LEU:HD22 | 2.03 | 0.41 |
| 55:CM:82:LEU:HD12 | 55:CM:82:LEU:N | 2.36 | 0.41 |
| 14:CN:76:PHE:CZ | 14:CN:95:LEU:HD22 | 2.55 | 0.41 |
| 56:CP:6:LEU:HD12 | 56:CP:6:LEU:O | 2.21 | 0.41 |
| 19:CS:10:ILE:HD12 | 19:CS:10:ILE:N | 2.36 | 0.41 |
| 19:CS:11:ASP:H | 19:CS:14:LEU:HD21 | 1.85 | 0.41 |
| 19:CS:20:LYS:C | 19:CS:20:LYS:HD3 | 2.40 | 0.41 |
| 57:DA:35:G:C5 | 57:DA:454:A:C2 | 3.08 | 0.41 |
| 57:DA:37:C:H1' | 26:DE:45:ALA:HB2 | 2.02 | 0.41 |
| 57:DA:496:G:C2 | 57:DA:497:A:H1' | 2.56 | 0.41 |
| 57:DA:764:A:C2 | 57:DA:781:A:C6 | 3.08 | 0.41 |
| 57:DA:777:G:C2 | 57:DA:778:G:C8 | 3.07 | 0.41 |
| 57:DA:904:G:C6 | 57:DA:905:A:C5 | 3.09 | 0.41 |
| 57:DA:988:A:C2 | 57:DA:989:G:C2 | 3.08 | 0.41 |
| 57:DA:1009:A:O2' | 57:DA:1010:A:C8 | 2.58 | 0.41 |
| 57:DA:1071:G:O6 | 57:DA:1089:A:C2 | 2.73 | 0.41 |
| 57:DA:1171:G:H8 | 57:DA:1171:G:O5' | 2.03 | 0.41 |
| 57:DA:1374:G:H2' | 57:DA:1375:U:C6 | 2.55 | 0.41 |
| 57:DA:1649:G:O6 | 57:DA:2009:A:N6 | 2.53 | 0.41 |
| 57:DA:1717:A:C6 | 57:DA:1744:A:C5 | 3.08 | 0.41 |
| 57:DA:2093:G:N2 | 57:DA:2094:A:C8 | 2.88 | 0.41 |
| 57:DA:2232:C:OP2 | 45:DX:26:ARG:NH1 | 2.53 | 0.41 |
| 57:DA:2307:G:N1 | 59:DF:38:GLY:HA3 | 2.36 | 0.41 |
| 57:DA:2312:U:O2 | 57:DA:2312:U:C2' | 2.68 | 0.41 |
| 57:DA:2356:U:H2' | 57:DA:2357:G:O4' | 2.21 | 0.41 |
| 57:DA:2414:G:H2' | 57:DA:2415:G:H5' | 2.01 | 0.41 |
| 57:DA:2474:U:O2 | 57:DA:2474:U:O4' | 2.38 | 0.41 |
| 57:DA:2478:A:C8 | 57:DA:2529:G:C5 | 3.08 | 0.41 |
| 57:DA:2639:A:C2 | 57:DA:2778:A:O4' | 2.74 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 26:DE:148:ILE:CD1 | 26:DE:187:VAL:HG21 | 2.42 | 0.41 |
| 30:DI:78:LEU:O | 30:DI:81:LYS:HG2 | 2.21 | 0.41 |
| 33:DL:88:GLY:O | 33:DL:89:VAL:O | 2.38 | 0.41 |
| 33:DL:108:ALA:HB3 | 33:DL:125:LEU:HD22 | 2.03 | 0.41 |
| 35:DN:9:GLN:O | 35:DN:17:ARG:CD | 2.68 | 0.41 |
| 35:DN:92:GLY:N | 35:DN:94:TYR:HE1 | 2.11 | 0.41 |
| 36:DO:63:LYS:C | 36:DO:63:LYS:HD3 | 2.41 | 0.41 |
| 37:DP:103:THR:HG22 | 37:DP:104:GLY:N | 2.35 | 0.41 |
| 39:DR:39:LEU:O | 39:DR:40:MET:CB | 2.66 | 0.41 |
| 41:DT:3:ARG:O | 41:DT:4:GLU:C | 2.59 | 0.41 |
| 41:DT:38:ALA:C | 41:DT:39:THR:HG22 | 2.40 | 0.41 |
| 42:DU:47:PRO:HB3 | 42:DU:54:PRO:HG3 | 2.02 | 0.41 |
| 42:DU:82:VAL:O | 42:DU:96:LYS:HG3 | 2.20 | 0.41 |
| 42:DU:85:ARG:HA | 42:DU:85:ARG:NE | 2.36 | 0.41 |
| 44:DW:45:HIS:O | 44:DW:46:ALA:HB2 | 2.20 | 0.41 |
| 48:D0:28:SER:O | 48:D0:36:LYS:HA | 2.20 | 0.41 |
| 51:D3:54:LEU:O | 51:D3:58:ILE:HG13 | 2.21 | 0.41 |
| 1:AA:409:U:H2' | 1:AA:410:G:C8 | 2.56 | 0.41 |
| 1:AA:927:G:N1 | 1:AA:1391:U:C2 | 2.89 | 0.41 |
| 1:AA:1030:U:H5' | 1:AA:1031:C:O2 | 2.21 | 0.41 |
| 1:AA:1323:G:HO2' | 1:AA:1324:A:H8 | 1.63 | 0.41 |
| 2:AB:9:LEU:HD21 | 2:AB:11:ALA:O | 2.20 | 0.41 |
| 2:AB:68:PHE:HE2 | 2:AB:88:GLN:HB2 | 1.84 | 0.41 |
| 2:AB:128:LEU:HB3 | 2:AB:129:THR:H | 1.79 | 0.41 |
| 2:AB:149:GLY:O | 2:AB:153:MET:HE3 | 2.20 | 0.41 |
| 2:AB:170:ILE:H | 2:AB:170:ILE:HG12 | 1.45 | 0.41 |
| 3:AC:28:PHE:HE2 | 3:AC:32:LEU:HD22 | 1.84 | 0.41 |
| 4:AD:104:MET:HG2 | 4:AD:170:LEU:HD22 | 2.03 | 0.41 |
| 4:AD:144:ILE:O | 4:AD:145:ARG:C | 2.59 | 0.41 |
| 4:AD:147:LYS:HE2 | 4:AD:147:LYS:H | 1.86 | 0.41 |
| 5:AE:149:PRO:C | 5:AE:151:MET:N | 2.74 | 0.41 |
| 5:AE:152:VAL:CA | 5:AE:155:LYS:NZ | 2.84 | 0.41 |
| 7:AG:68:VAL:HG21 | 7:AG:103:ILE:HD11 | 2.01 | 0.41 |
| 7:AG:107:ALA:HB2 | 7:AG:122:GLU:HG3 | 2.02 | 0.41 |
| 15:AO:10:ILE:HG23 | 15:AO:14:PHE:CE1 | 2.56 | 0.41 |
| 17:AQ:48:GLU:O | 17:AQ:49:ASN:C | 2.58 | 0.41 |
| 22:BA:71:A:C5' | 22:BA:71:A:N3 | 2.84 | 0.41 |
| 22:BA:96:C:H4' | 46:BY:41:HIS:CG | 2.56 | 0.41 |
| 22:BA:231:A:C6 | 22:BA:232:G:C2 | 3.08 | 0.41 |
| 22:BA:237:C:N4 | 22:BA:261:G:C6 | 2.88 | 0.41 |
| 22:BA:246:C:C2' | 22:BA:247:G:H5' | 2.50 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:638:G:H2' | 22:BA:639:U:H6 | 1.84 | 0.41 |
| 22:BA:1083:U:C5 | 22:BA:1085:A:OP2 | 2.74 | 0.41 |
| 22:BA:1578:U:H6 | 22:BA:1578:U:OP2 | 2.03 | 0.41 |
| 22:BA:1720:U:H2' | 22:BA:1721:G:O4' | 2.20 | 0.41 |
| 22:BA:1780:A:OP1 | 63:BA:3693:HOH:O | 2.21 | 0.41 |
| 22:BA:2394:C:OP1 | 51:B3:29:ARG:NH2 | 2.53 | 0.41 |
| 22:BA:2527:C:C2' | 22:BA:2528:U:H5' | 2.51 | 0.41 |
| 22:BA:2579:C:C2' | 22:BA:2580:U:H5' | 2.51 | 0.41 |
| 26:BE:58:LYS:O | 26:BE:59:PRO:C | 2.57 | 0.41 |
| 26:BE:92:HIS:O | 26:BE:93:SER:C | 2.59 | 0.41 |
| 27:BF:90:LEU:HD12 | 27:BF:90:LEU:HA | 1.76 | 0.41 |
| 27:BF:134:GLN:HG3 | 27:BF:140:ILE:HG12 | 2.01 | 0.41 |
| 29:BH:27:ARG:NH1 | 45:BX:59:ASP:O | 2.53 | 0.41 |
| 30:BI:49:GLU:HG2 | 30:BI:50:LYS:N | 2.35 | 0.41 |
| 30:BI:50:LYS:HE2 | 30:BI:50:LYS:HB2 | 1.88 | 0.41 |
| 31:BJ:37:ARG:HG3 | 31:BJ:118:MET:HE1 | 2.03 | 0.41 |
| 33:BL:132:ARG:HA | 33:BL:142:ILE:HD11 | 2.03 | 0.41 |
| 34:BM:43:ALA:O | 34:BM:47:GLU:HB2 | 2.20 | 0.41 |
| 36:BO:2:ASP:OD1 | 36:BO:3:LYS:HG2 | 2.20 | 0.41 |
| 37:BP:7:LEU:HD12 | 37:BP:7:LEU:HA | 1.70 | 0.41 |
| 42:BU:35:VAL:HB | 42:BU:38:ILE:CG1 | 2.50 | 0.41 |
| 43:BV:20:LEU:HD23 | 43:BV:25:LYS:HB2 | 2.02 | 0.41 |
| 47:BZ:36:GLU:C | 47:BZ:37:ARG:HD2 | 2.41 | 0.41 |
| 52:B4:9:LYS:HB3 | 52:B4:14:CYS:CB | 2.51 | 0.41 |
| 53:CA:83:C:N4 | 53:CA:85:U:C4 | 2.88 | 0.41 |
| 53:CA:195:A:C5 | 53:CA:196:A:C6 | 3.08 | 0.41 |
| 53:CA:552:U:N3 | 53:CA:553:A:N7 | 2.69 | 0.41 |
| 53:CA:577:G:C8 | 53:CA:816:A:C2 | 3.08 | 0.41 |
| 53:CA:828:U:OP1 | 8:CH:21:LYS:HD3 | 2.19 | 0.41 |
| 53:CA:923:A:C6 | 53:CA:924:C:C4 | 3.09 | 0.41 |
| 53:CA:978:A:C8 | 53:CA:1319:A:C2 | 3.08 | 0.41 |
| 53:CA:1049:U:O2 | 53:CA:1049:U:H2' | 2.21 | 0.41 |
| 53:CA:1124:G:O2' | 53:CA:1127:G:O6 | 2.39 | 0.41 |
| 53:CA:1333:A:H2' | 53:CA:1334:G:O4' | 2.20 | 0.41 |
| 53:CA:1386:G:N3 | 53:CA:1387:G:C8 | 2.88 | 0.41 |
| 2:CB:208:ALA:O | 2:CB:211:LEU:HB3 | 2.20 | 0.41 |
| 3:CC:76:ILE:HD11 | 3:CC:102:ILE:CD1 | 2.45 | 0.41 |
| 4:CD:187:ARG:O | 4:CD:189:ASP:N | 2.54 | 0.41 |
| 4:CD:204:SER:HB2 | 5:CE:105:ILE:HD11 | 2.03 | 0.41 |
| 8:CH:23:ALA:HA | 8:CH:62:LEU:CD2 | 2.51 | 0.41 |
| 8:CH:75:GLN:OE1 | 8:CH:75:GLN:HA | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:CI:81:GLY:HA2 | 9:CI:84:ARG:HB2 | 2.03 | 0.41 |
| 14:CN:79:SER:HB2 | 14:CN:81:ILE:HD11 | 2.03 | 0.41 |
| 15:CO:11:VAL:O | 15:CO:15:GLY:CA | 2.69 | 0.41 |
| 56:CP:50:THR:O | 56:CP:51:ARG:CZ | 2.69 | 0.41 |
| 57:DA:35:G:O2' | 57:DA:36:G:O5' | 2.35 | 0.41 |
| 57:DA:136:G:H2' | 57:DA:137:U:C6 | 2.54 | 0.41 |
| 57:DA:139:U:O2 | 57:DA:139:U:H2' | 2.19 | 0.41 |
| 57:DA:151:C:OP1 | 57:DA:1359:A:O2' | 2.26 | 0.41 |
| 57:DA:166:U:O2 | 57:DA:166:U:H2' | 2.20 | 0.41 |
| 57:DA:189:G:C2' | 57:DA:190:A:O5' | 2.67 | 0.41 |
| 57:DA:230:G:HO2' | 57:DA:231:A:C5' | 2.33 | 0.41 |
| 57:DA:301:G:C5 | 57:DA:302:C:N4 | 2.89 | 0.41 |
| 57:DA:303:G:H2' | 57:DA:304:U:C6 | 2.55 | 0.41 |
| 57:DA:323:C:O2 | 57:DA:323:C:O4' | 2.38 | 0.41 |
| 57:DA:457:A:N3 | 57:DA:459:U:O4 | 2.54 | 0.41 |
| 57:DA:496:G:H2' | 57:DA:497:A:O4' | 2.21 | 0.41 |
| 57:DA:533:G:OP1 | 38:DQ:23:TYR:HB3 | 2.20 | 0.41 |
| 57:DA:716:A:H2' | 57:DA:717:C:H5'' | 2.02 | 0.41 |
| 57:DA:807:U:C2 | 57:DA:808:G:C8 | 3.08 | 0.41 |
| 57:DA:856:G:N2 | 57:DA:922:C:C2 | 2.89 | 0.41 |
| 57:DA:918:A:H5'' | 58:DB:97:C:O2' | 2.21 | 0.41 |
| 57:DA:958:U:H6 | 57:DA:958:U:H2' | 1.49 | 0.41 |
| 57:DA:1210:G:H5' | 57:DA:1212:G:O4' | 2.20 | 0.41 |
| 57:DA:1289:C:H1' | 57:DA:1330:C:H5' | 2.03 | 0.41 |
| 57:DA:1515:A:H2' | 57:DA:1516:G:O4' | 2.20 | 0.41 |
| 57:DA:1551:A:H2' | 57:DA:1552:A:O4' | 2.20 | 0.41 |
| 57:DA:1680:U:H2' | 57:DA:1681:G:O4' | 2.21 | 0.41 |
| 57:DA:1760:C:C2' | 57:DA:1761:C:H5' | 2.51 | 0.41 |
| 57:DA:1760:C:H3' | 57:DA:1761:C:H6 | 1.85 | 0.41 |
| 57:DA:1923:U:O2' | 57:DA:1924:C:H5' | 2.20 | 0.41 |
| 57:DA:2144:G:N2 | 57:DA:2148:G:O6 | 2.53 | 0.41 |
| 57:DA:2196:C:N3 | 57:DA:2197:U:C4 | 2.89 | 0.41 |
| 57:DA:2324:U:O2 | 57:DA:2385:C:N4 | 2.54 | 0.41 |
| 57:DA:2360:G:H1' | 33:DL:60:ARG:NH2 | 2.32 | 0.41 |
| 57:DA:2660:A:C2 | 57:DA:2661:G:N7 | 2.88 | 0.41 |
| 57:DA:2878:U:O5' | 57:DA:2878:U:H6 | 2.03 | 0.41 |
| 57:DA:2891:U:C2' | 57:DA:2892:G:H5' | 2.51 | 0.41 |
| 24:DC:35:LYS:O | 24:DC:36:ASN:HB3 | 2.21 | 0.41 |
| 24:DC:211:ARG:CD | 24:DC:217:PRO:HD3 | 2.50 | 0.41 |
| 25:DD:47:ALA:HA | 25:DD:84:LEU:HG | 2.02 | 0.41 |
| 25:DD:177:VAL:CG1 | 25:DD:187:LEU:HD11 | 2.51 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 59:DF:37:MET:N | 59:DF:151:LEU:HB3 | 2.35 | 0.41 |
| 33:DL:63:LYS:HB3 | 51:D3:12:ARG:CD | 2.48 | 0.41 |
| 33:DL:131:ALA:O | 33:DL:135:ILE:HG22 | 2.20 | 0.41 |
| 34:DM:42:THR:HB | 34:DM:45:GLN:CD | 2.40 | 0.41 |
| 35:DN:29:VAL:O | 35:DN:30:ARG:HB2 | 2.20 | 0.41 |
| 39:DR:16:GLU:HA | 39:DR:98:ILE:HG22 | 2.01 | 0.41 |
| 40:DS:31:GLN:O | 40:DS:35:ILE:HG12 | 2.20 | 0.41 |
| 42:DU:54:PRO:CG | 42:DU:55:GLY:N | 2.81 | 0.41 |
| 44:DW:73:PRO:O | 44:DW:74:LYS:C | 2.58 | 0.41 |
| 45:DX:26:ARG:O | 45:DX:27:ARG:HB3 | 2.21 | 0.41 |
| 47:DZ:26:LEU:HG | 47:DZ:46:MET:HE2 | 2.03 | 0.41 |
| 47:DZ:32:GLY:C | 47:DZ:34:THR:N | 2.73 | 0.41 |
| 51:D3:11:LYS:C | 51:D3:12:ARG:HD3 | 2.41 | 0.41 |
| 1:AA:372:C:H2' | 1:AA:387:U:O4 | 2.21 | 0.41 |
| 1:AA:515:G:N2 | 1:AA:537:G:C4 | 2.89 | 0.41 |
| 1:AA:587:G:C2 | 1:AA:755:G:C5 | 3.09 | 0.41 |
| 1:AA:633:G:H2' | 1:AA:634:C:C6 | 2.54 | 0.41 |
| 1:AA:674:G:N2 | 1:AA:717:U:O2 | 2.54 | 0.41 |
| 1:AA:675:A:H1' | 11:AK:117:HIS:CD2 | 2.56 | 0.41 |
| 1:AA:1109:C:C2 | 1:AA:1110:A:C8 | 3.08 | 0.41 |
| 1:AA:1272:G:C6 | 1:AA:1273:C:C4 | 3.08 | 0.41 |
| 1:AA:1288:A:H1' | 1:AA:1352:C:O2' | 2.20 | 0.41 |
| 1:AA:1348:U:O2' | 1:AA:1349:A:H8 | 2.04 | 0.41 |
| 3:AC:10:ARG:HH12 | 3:AC:174:LEU:HD12 | 1.85 | 0.41 |
| 3:AC:120:THR:C | 3:AC:122:GLN:H | 2.23 | 0.41 |
| 5:AE:114:LEU:HG | 5:AE:119:VAL:CG2 | 2.50 | 0.41 |
| 7:AG:25:PHE:HA | 7:AG:100:MET:HE3 | 2.02 | 0.41 |
| 8:AH:104:SER:HB2 | 8:AH:125:ILE:CD1 | 2.50 | 0.41 |
| 9:AI:54:VAL:O | 9:AI:55:ASP:O | 2.39 | 0.41 |
| 12:AL:42:LYS:HB3 | 12:AL:42:LYS:HE2 | 1.89 | 0.41 |
| 13:AM:100:ARG:NH1 | 13:AM:103:THR:OG1 | 2.54 | 0.41 |
| 19:AS:55:GLN:CD | 19:AS:56:HIS:H | 2.24 | 0.41 |
| 22:BA:100:U:HO2' | 22:BA:101:A:P | 2.42 | 0.41 |
| 22:BA:115:C:C2' | 22:BA:116:C:H5' | 2.51 | 0.41 |
| 22:BA:301:G:C6 | 22:BA:317:G:C6 | 3.09 | 0.41 |
| 22:BA:477:A:C6 | 22:BA:478:A:C6 | 3.09 | 0.41 |
| 22:BA:650:C:H6 | 22:BA:650:C:O5' | 2.03 | 0.41 |
| 22:BA:669:G:N2 | 22:BA:670:A:C2 | 2.89 | 0.41 |
| 22:BA:729:G:H5'' | 22:BA:730:A:H5'' | 2.01 | 0.41 |
| 22:BA:987:C:N4 | 22:BA:988:A:C6 | 2.89 | 0.41 |
| 22:BA:996:A:N3 | 22:BA:997:G:C8 | 2.88 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:BA:1059:G:C6 | 22:BA:1060:U:C4 | 3.09 | 0.41 |
| 22:BA:1155:A:C2 | 22:BA:1157:G:C8 | 3.08 | 0.41 |
| 22:BA:1331:G:C5 | 22:BA:1333:G:N7 | 2.89 | 0.41 |
| 22:BA:1487:U:N3 | 22:BA:1503:A:C2 | 2.89 | 0.41 |
| 22:BA:1646:C:H5'' | 22:BA:1647:U:C5' | 2.51 | 0.41 |
| 22:BA:1665:A:H5'' | 32:BK:66:LYS:HG3 | 2.02 | 0.41 |
| 22:BA:1760:C:H3' | 22:BA:1761:C:H6 | 1.85 | 0.41 |
| 22:BA:1773:A:C2' | 22:BA:1774:C:H5' | 2.51 | 0.41 |
| 22:BA:1850:G:C6 | 22:BA:1851:U:C4 | 3.09 | 0.41 |
| 22:BA:2198:A:P | 22:BA:2198:A:C2' | 3.05 | 0.41 |
| 22:BA:2341:G:H2' | 22:BA:2342:C:H6 | 1.83 | 0.41 |
| 22:BA:2373:G:H2' | 22:BA:2374:C:H6 | 1.84 | 0.41 |
| 22:BA:2403:C:N4 | 22:BA:2415:G:N1 | 2.68 | 0.41 |
| 22:BA:2502:G:C5' | 22:BA:2503:A:H5'' | 2.43 | 0.41 |
| 23:BB:42:C:OP1 | 27:BF:63:LYS:HE2 | 2.20 | 0.41 |
| 24:BC:156:SER:O | 24:BC:157:ALA:C | 2.59 | 0.41 |
| 25:BD:119:ALA:HB2 | 25:BD:165:MET:HB2 | 2.03 | 0.41 |
| 29:BH:27:ARG:O | 29:BH:28:ASN:CB | 2.68 | 0.41 |
| 30:BI:41:PHE:CE2 | 30:BI:45:THR:HG21 | 2.56 | 0.41 |
| 30:BI:130:GLY:HA2 | 30:BI:133:ARG:HB3 | 2.01 | 0.41 |
| 31:BJ:44:TYR:HA | 38:BQ:59:LEU:CD2 | 2.51 | 0.41 |
| 31:BJ:112:GLY:O | 31:BJ:113:PRO:C | 2.58 | 0.41 |
| 34:BM:108:VAL:CG1 | 34:BM:112:LEU:HB3 | 2.51 | 0.41 |
| 35:BN:70:THR:CG2 | 35:BN:75:ILE:HD11 | 2.50 | 0.41 |
| 37:BP:12:MET:HE2 | 37:BP:12:MET:HB3 | 1.83 | 0.41 |
| 41:BT:43:ILE:CD1 | 41:BT:58:VAL:HG21 | 2.51 | 0.41 |
| 43:BV:40:ILE:CG2 | 43:BV:41:GLU:H | 2.33 | 0.41 |
| 44:BW:28:GLU:H | 44:BW:31:LEU:CD1 | 2.34 | 0.41 |
| 46:BY:7:ARG:O | 46:BY:7:ARG:HG3 | 2.20 | 0.41 |
| 53:CA:79:G:N1 | 53:CA:80:A:N6 | 2.68 | 0.41 |
| 53:CA:200:G:N1 | 53:CA:201:G:C5 | 2.88 | 0.41 |
| 53:CA:374:A:OP1 | 53:CA:452:A:N1 | 2.53 | 0.41 |
| 53:CA:444:G:C2' | 53:CA:445:G:H5' | 2.51 | 0.41 |
| 53:CA:642:A:O2' | 53:CA:643:C:C5' | 2.68 | 0.41 |
| 53:CA:695:A:H2' | 53:CA:696:A:O4' | 2.20 | 0.41 |
| 53:CA:704:A:O2' | 53:CA:705:G:C5' | 2.68 | 0.41 |
| 53:CA:754:C:O2 | 53:CA:754:C:H5'' | 2.20 | 0.41 |
| 53:CA:852:G:H2' | 53:CA:853:C:O4' | 2.21 | 0.41 |
| 53:CA:885:G:H8 | 53:CA:885:G:OP2 | 2.03 | 0.41 |
| 53:CA:1151:A:C2' | 53:CA:1152:A:O5' | 2.69 | 0.41 |
| 53:CA:1505:G:H8 | 53:CA:1505:G:H2' | 1.66 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 2:CB:91:VAL:HG11 | 2:CB:95:TRP:HD1 | 1.85 | 0.41 |
| 2:CB:124:THR:HG23 | 2:CB:125:PHE:H | 1.85 | 0.41 |
| 4:CD:160:LEU:HD13 | 4:CD:160:LEU:HA | 1.78 | 0.41 |
| 5:CE:48:GLY:CA | 5:CE:66:ALA:HB2 | 2.47 | 0.41 |
| 9:CI:61:ASP:C | 9:CI:62:LEU:HD22 | 2.41 | 0.41 |
| 15:CO:7:THR:O | 15:CO:11:VAL:N | 2.51 | 0.41 |
| 17:CQ:68:LYS:O | 17:CQ:69:THR:HG23 | 2.20 | 0.41 |
| 19:CS:36:ARG:O | 19:CS:36:ARG:HG2 | 2.20 | 0.41 |
| 20:CT:11:ILE:H | 20:CT:11:ILE:HG13 | 1.46 | 0.41 |
| 57:DA:24:G:O2' | 40:DS:77:ASP:HB3 | 2.21 | 0.41 |
| 57:DA:33:C:O2' | 57:DA:34:U:C5' | 2.47 | 0.41 |
| 57:DA:49:A:N6 | 57:DA:177:G:C5 | 2.88 | 0.41 |
| 57:DA:279:A:C6 | 57:DA:361:G:O2' | 2.74 | 0.41 |
| 57:DA:614:A:C4' | 57:DA:616:A:H62 | 2.33 | 0.41 |
| 57:DA:682:G:C2 | 57:DA:796:C:C2 | 3.08 | 0.41 |
| 57:DA:980:A:H2 | 57:DA:2038:G:O4' | 2.03 | 0.41 |
| 57:DA:1019:U:O2' | 57:DA:1021:A:N1 | 2.32 | 0.41 |
| 57:DA:1026:G:O2' | 57:DA:1027:A:C5' | 2.56 | 0.41 |
| 57:DA:1053:C:H42 | 57:DA:1054:A:N6 | 2.18 | 0.41 |
| 57:DA:1059:G:O2' | 30:DI:131:THR:HG21 | 2.21 | 0.41 |
| 57:DA:1068:G:H2' | 57:DA:1069:A:C8 | 2.56 | 0.41 |
| 57:DA:1083:U:H1' | 57:DA:1086:A:N1 | 2.35 | 0.41 |
| 57:DA:1218:G:C6 | 57:DA:1232:G:C6 | 3.09 | 0.41 |
| 57:DA:1329:U:O2' | 57:DA:1330:C:OP1 | 2.37 | 0.41 |
| 57:DA:1510:G:C2 | 57:DA:1511:G:C4 | 3.08 | 0.41 |
| 57:DA:1754:A:C6 | 57:DA:1755:A:C5 | 3.08 | 0.41 |
| 57:DA:1838:C:N4 | 57:DA:1898:U:H2' | 2.35 | 0.41 |
| 57:DA:1904:G:H2' | 57:DA:1905:C:H5' | 2.03 | 0.41 |
| 57:DA:2043:C:H2' | 57:DA:2044:C:H6 | 1.85 | 0.41 |
| 57:DA:2192:U:O2 | 57:DA:2192:U:H2' | 2.20 | 0.41 |
| 57:DA:2259:U:C5 | 57:DA:2427:C:N4 | 2.89 | 0.41 |
| 57:DA:2423:U:H5'' | 57:DA:2424:C:OP1 | 2.20 | 0.41 |
| 57:DA:2484:G:OP1 | 34:DM:44:ARG:HD3 | 2.20 | 0.41 |
| 57:DA:2493:U:H2' | 57:DA:2494:G:H5'' | 2.03 | 0.41 |
| 57:DA:2499:C:N4 | 57:DA:2500:U:O4 | 2.53 | 0.41 |
| 57:DA:2611:C:O2' | 57:DA:2612:C:C5' | 2.68 | 0.41 |
| 57:DA:2624:G:H1' | 48:D0:18:HIS:CE1 | 2.56 | 0.41 |
| 57:DA:2627:G:O2' | 57:DA:2781:A:N1 | 2.46 | 0.41 |
| 57:DA:2725:A:C4 | 57:DA:2727:A:C8 | 3.09 | 0.41 |
| 57:DA:2751:G:H5' | 28:DG:2:ARG:HD2 | 2.01 | 0.41 |
| 59:DF:177:ARG:CZ | 59:DF:178:LYS:HB3 | 2.51 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 28:DG:88:LEU:N | 28:DG:128:THR:O | 2.53 | 0.41 |
| 29:DH:37:VAL:CG2 | 29:DH:43:ASN:HD22 | 2.34 | 0.41 |
| 29:DH:89:LYS:HB2 | 29:DH:90:LEU:H | 1.77 | 0.41 |
| 29:DH:103:VAL:C | 29:DH:105:ALA:H | 2.23 | 0.41 |
| 32:DK:34:GLY:H | 32:DK:37:ASP:HB2 | 1.86 | 0.41 |
| 33:DL:20:GLY:CA | 33:DL:28:GLY:HA2 | 2.43 | 0.41 |
| 33:DL:57:LEU:HA | 33:DL:60:ARG:HG3 | 2.02 | 0.41 |
| 35:DN:8:ARG:HB2 | 35:DN:43:GLU:OE1 | 2.21 | 0.41 |
| 36:DO:30:ARG:NH1 | 36:DO:102:ARG:HE | 2.19 | 0.41 |
| 38:DQ:72:GLY:HA3 | 38:DQ:113:LYS:NZ | 2.36 | 0.41 |
| 40:DS:40:ASN:OD1 | 40:DS:41:LYS:N | 2.54 | 0.41 |
| 41:DT:68:LYS:HB3 | 41:DT:69:ARG:H | 1.53 | 0.41 |
| 42:DU:58:VAL:HG12 | 42:DU:59:GLU:N | 2.36 | 0.41 |
| 43:DV:63:ILE:O | 43:DV:63:ILE:HG22 | 2.21 | 0.41 |
| 45:DX:2:ARG:HA | 45:DX:2:ARG:HD3 | 1.92 | 0.41 |
| 46:DY:57:LEU:HD13 | 46:DY:60:LYS:HE3 | 2.03 | 0.41 |
| 47:DZ:23:LEU:HD12 | 47:DZ:28:LEU:HD11 | 2.01 | 0.41 |
| 48:D0:11:LYS:HD2 | 48:D0:14:MET:HB2 | 2.02 | 0.41 |
| 1:AA:512:U:O5' | 4:AD:40:HIS:CE1 | 2.74 | 0.41 |
| 1:AA:523:A:H61 | 12:AL:88:ASP:CB | 2.34 | 0.41 |
| 1:AA:601:G:C2 | 1:AA:602:A:C4 | 3.08 | 0.41 |
| 1:AA:628:G:N2 | 1:AA:629:A:N3 | 2.68 | 0.41 |
| 1:AA:655:A:C2 | 1:AA:656:G:C4 | 3.09 | 0.41 |
| 1:AA:768:A:H2' | 1:AA:769:G:O4' | 2.21 | 0.41 |
| 1:AA:995:C:H4' | 14:AN:7:ALA:HB2 | 2.03 | 0.41 |
| 1:AA:1154:G:N3 | 1:AA:1155:A:C8 | 2.89 | 0.41 |
| 1:AA:1213:A:HO2' | 1:AA:1214:C:P | 2.43 | 0.41 |
| 1:AA:1219:A:H2' | 1:AA:1220:G:C8 | 2.55 | 0.41 |
| 1:AA:1241:G:C2 | 1:AA:1242:G:N7 | 2.89 | 0.41 |
| 1:AA:1319:A:C5 | 1:AA:1323:G:C4 | 3.09 | 0.41 |
| 1:AA:1426:G:H2' | 1:AA:1427:C:O4' | 2.20 | 0.41 |
| 4:AD:116:LEU:HD23 | 4:AD:116:LEU:HA | 1.91 | 0.41 |
| 8:AH:82:LEU:HD22 | 8:AH:84:ILE:CD1 | 2.50 | 0.41 |
| 10:AJ:56:HIS:O | 10:AJ:57:VAL:HG12 | 2.21 | 0.41 |
| 11:AK:110:THR:HG22 | 21:AU:4:LYS:HB2 | 2.02 | 0.41 |
| 11:AK:122:PRO:HG2 | 21:AU:33:ARG:O | 2.21 | 0.41 |
| 12:AL:2:THR:HB | 12:AL:5:GLN:H | 1.85 | 0.41 |
| 12:AL:101:LEU:HB3 | 12:AL:102:ASP:H | 1.69 | 0.41 |
| 20:AT:33:LYS:HE2 | 20:AT:33:LYS:H | 1.85 | 0.41 |
| 22:BA:274:C:H2' | 22:BA:275:C:O4' | 2.21 | 0.41 |
| 22:BA:285:G:C5 | 22:BA:356:G:C2 | 3.09 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 22:BA:527:C:C2 | 22:BA:2779:U:H2' | 2.54 | 0.41 |
| 22:BA:601:C:O2 | 22:BA:605:G:H4' | 2.21 | 0.41 |
| 22:BA:832:U:H2' | 22:BA:833:A:C8 | 2.56 | 0.41 |
| 22:BA:1085:A:H1' | 22:BA:1105:U:H1' | 2.03 | 0.41 |
| 22:BA:1125:G:H5' | 52:B4:37:GLN:HG3 | 2.03 | 0.41 |
| 22:BA:1193:G:C2' | 22:BA:1194:A:H5' | 2.49 | 0.41 |
| 22:BA:1275:A:C2 | 22:BA:1295:C:O2 | 2.73 | 0.41 |
| 22:BA:1714:U:H5' | 22:BA:1715:G:H5' | 2.03 | 0.41 |
| 22:BA:1733:G:C2 | 22:BA:1734:G:C8 | 3.08 | 0.41 |
| 22:BA:1907:G:C2 | 22:BA:1924:C:C2 | 3.09 | 0.41 |
| 22:BA:2294:G:H2' | 22:BA:2295:C:C6 | 2.56 | 0.41 |
| 22:BA:2641:G:H5'' | 31:BJ:78:THR:HB | 2.03 | 0.41 |
| 22:BA:2766:A:N3 | 22:BA:2766:A:H2' | 2.35 | 0.41 |
| 24:BC:75:ALA:HB1 | 24:BC:93:VAL:HG13 | 2.02 | 0.41 |
| 24:BC:171:VAL:CG2 | 24:BC:185:ALA:HA | 2.51 | 0.41 |
| 24:BC:246:PRO:HG2 | 24:BC:247:TRP:CE3 | 2.51 | 0.41 |
| 25:BD:47:ALA:N | 25:BD:84:LEU:HD12 | 2.35 | 0.41 |
| 27:BF:148:VAL:O | 27:BF:150:GLY:N | 2.52 | 0.41 |
| 28:BG:102:ILE:N | 28:BG:114:HIS:O | 2.53 | 0.41 |
| 31:BJ:4:PHE:CD1 | 31:BJ:5:THR:N | 2.89 | 0.41 |
| 31:BJ:72:LYS:HB2 | 31:BJ:89:PHE:HB2 | 2.02 | 0.41 |
| 34:BM:119:LEU:HD23 | 34:BM:119:LEU:HA | 1.92 | 0.41 |
| 35:BN:106:ASP:OD1 | 35:BN:106:ASP:C | 2.59 | 0.41 |
| 38:BQ:10:ARG:HB2 | 38:BQ:10:ARG:HH11 | 1.86 | 0.41 |
| 39:BR:1:MET:HB2 | 39:BR:43:ASN:HD21 | 1.85 | 0.41 |
| 42:BU:5:ARG:O | 42:BU:8:ASP:HB2 | 2.20 | 0.41 |
| 43:BV:43:ASP:OD1 | 43:BV:43:ASP:C | 2.59 | 0.41 |
| 44:BW:50:VAL:C | 44:BW:52:CYS:N | 2.73 | 0.41 |
| 53:CA:204:G:C6 | 53:CA:465:A:C2 | 3.08 | 0.41 |
| 53:CA:415:A:N1 | 53:CA:428:G:O6 | 2.54 | 0.41 |
| 53:CA:542:G:H2' | 53:CA:543:U:C6 | 2.53 | 0.41 |
| 53:CA:796:C:H4' | 11:CK:126:ARG:NH2 | 2.35 | 0.41 |
| 53:CA:890:G:O2' | 53:CA:906:A:N6 | 2.54 | 0.41 |
| 53:CA:933:G:H8 | 53:CA:933:G:O5' | 2.04 | 0.41 |
| 53:CA:976:G:C2 | 53:CA:1363:A:C2 | 3.08 | 0.41 |
| 53:CA:1129:C:C1' | 53:CA:1146:A:H61 | 2.24 | 0.41 |
| 53:CA:1215:G:C2' | 53:CA:1216:A:H8 | 2.34 | 0.41 |
| 53:CA:1449:C:O2' | 53:CA:1450:U:O4' | 2.30 | 0.41 |
| 53:CA:1476:A:H2' | 53:CA:1477:U:O4' | 2.20 | 0.41 |
| 53:CA:1495:U:O2' | 53:CA:1496:C:H5' | 2.20 | 0.41 |
| 2:CB:161:PHE:CZ | 2:CB:216:VAL:HG21 | 2.55 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:CC:88:LYS:HA | 3:CC:91:ALA:HB3 | 2.02 | 0.41 |
| 4:CD:72:ARG:O | 4:CD:75:TYR:HB3 | 2.21 | 0.41 |
| 4:CD:107:GLY:N | 4:CD:157:ALA:HB1 | 2.36 | 0.41 |
| 8:CH:93:LYS:HD3 | 8:CH:93:LYS:H | 1.83 | 0.41 |
| 10:CJ:74:VAL:HG12 | 10:CJ:75:ASP:N | 2.36 | 0.41 |
| 55:CM:13:HIS:HB3 | 55:CM:16:ILE:CB | 2.45 | 0.41 |
| 55:CM:96:VAL:O | 55:CM:96:VAL:HG12 | 2.20 | 0.41 |
| 17:CQ:77:VAL:HG12 | 17:CQ:78:VAL:N | 2.35 | 0.41 |
| 57:DA:13:A:C2 | 57:DA:525:U:C2 | 3.08 | 0.41 |
| 57:DA:332:A:O2' | 57:DA:334:C:OP2 | 2.34 | 0.41 |
| 57:DA:413:C:H2' | 57:DA:414:C:C6 | 2.55 | 0.41 |
| 57:DA:455:C:N4 | 57:DA:473:G:OP2 | 2.52 | 0.41 |
| 57:DA:460:A:H5' | 41:DT:72:GLN:O | 2.21 | 0.41 |
| 57:DA:509:C:H6 | 57:DA:509:C:H2' | 1.59 | 0.41 |
| 57:DA:708:G:C4 | 57:DA:709:U:C5 | 3.09 | 0.41 |
| 57:DA:850:U:O2' | 47:DZ:22:THR:HG22 | 2.20 | 0.41 |
| 57:DA:1071:G:N2 | 57:DA:1090:A:OP2 | 2.53 | 0.41 |
| 57:DA:1549:A:H2' | 57:DA:1550:C:O4' | 2.21 | 0.41 |
| 57:DA:1628:G:H2' | 57:DA:1629:U:C6 | 2.52 | 0.41 |
| 57:DA:1929:G:C4' | 57:DA:1930:G:OP1 | 2.61 | 0.41 |
| 57:DA:1989:G:C2' | 57:DA:1990:C:H5' | 2.50 | 0.41 |
| 57:DA:2235:G:C5 | 57:DA:2236:U:C5 | 3.09 | 0.41 |
| 57:DA:2289:G:O2' | 57:DA:2290:G:H5' | 2.20 | 0.41 |
| 57:DA:2290:G:C6 | 57:DA:2291:U:C4 | 3.09 | 0.41 |
| 24:DC:62:ARG:HD3 | 24:DC:83:ASP:OD1 | 2.21 | 0.41 |
| 24:DC:140:VAL:HG22 | 24:DC:161:VAL:O | 2.20 | 0.41 |
| 24:DC:159:THR:N | 24:DC:194:VAL:HG13 | 2.35 | 0.41 |
| 24:DC:245:THR:C | 24:DC:247:TRP:H | 2.24 | 0.41 |
| 26:DE:146:VAL:HG13 | 26:DE:187:VAL:HG23 | 2.03 | 0.41 |
| 59:DF:100:GLU:HG2 | 59:DF:100:GLU:O | 2.20 | 0.41 |
| 59:DF:102:LEU:C | 59:DF:103:ILE:HD12 | 2.41 | 0.41 |
| 28:DG:70:LEU:HD12 | 28:DG:71:LEU:N | 2.35 | 0.41 |
| 29:DH:58:LEU:HD12 | 29:DH:58:LEU:HA | 1.87 | 0.41 |
| 29:DH:77:THR:HG22 | 29:DH:143:ILE:HD11 | 2.03 | 0.41 |
| 33:DL:128:THR:HG22 | 33:DL:130:GLY:H | 1.85 | 0.41 |
| 37:DP:54:LEU:HA | 37:DP:76:HIS:CD2 | 2.55 | 0.41 |
| 37:DP:91:VAL:O | 37:DP:92:ARG:HB3 | 2.21 | 0.41 |
| 44:DW:54:ARG:C | 44:DW:56:HIS:H | 2.24 | 0.41 |
| 49:D1:41:VAL:O | 49:D1:41:VAL:HG12 | 2.21 | 0.41 |
| 1:AA:15:G:C4 | 1:AA:16:A:C8 | 3.09 | 0.41 |
| 1:AA:162:A:N7 | 1:AA:163:C:H1' | 2.36 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:198:G:O6 | 1:AA:220:G:C6 | 2.73 | 0.41 |
| 1:AA:248:C:H4' | 1:AA:283:U:O2' | 2.21 | 0.41 |
| 1:AA:335:C:H2' | 1:AA:336:A:H8 | 1.86 | 0.41 |
| 1:AA:582:C:C4 | 1:AA:583:A:N7 | 2.89 | 0.41 |
| 1:AA:969:A:H2' | 1:AA:970:C:H6 | 1.86 | 0.41 |
| 1:AA:1004:A:C6 | 1:AA:1005:A:C4 | 3.09 | 0.41 |
| 1:AA:1125:U:OP2 | 1:AA:1145:A:N6 | 2.54 | 0.41 |
| 1:AA:1125:U:HO2' | 1:AA:1126:U:H2' | 1.86 | 0.41 |
| 1:AA:1127:G:O2' | 1:AA:1128:C:C5' | 2.65 | 0.41 |
| 1:AA:1167:A:N7 | 1:AA:1169:A:C6 | 2.88 | 0.41 |
| 1:AA:1239:A:H1' | 1:AA:1241:G:C5 | 2.55 | 0.41 |
| 1:AA:1261:A:N1 | 1:AA:1274:A:N3 | 2.68 | 0.41 |
| 1:AA:1324:A:H2' | 1:AA:1325:C:H6 | 1.83 | 0.41 |
| 1:AA:1381:U:H2' | 1:AA:1382:C:C5 | 2.56 | 0.41 |
| 1:AA:1412:C:H2' | 1:AA:1413:A:C8 | 2.56 | 0.41 |
| 1:AA:1507:A:H2' | 1:AA:1508:A:C8 | 2.56 | 0.41 |
| 2:AB:20:ARG:HA | 2:AB:20:ARG:CZ | 2.50 | 0.41 |
| 2:AB:95:TRP:CZ2 | 2:AB:100:LEU:HD23 | 2.45 | 0.41 |
| 3:AC:10:ARG:O | 3:AC:13:ILE:N | 2.54 | 0.41 |
| 4:AD:103:ARG:HH12 | 4:AD:110:ARG:HH22 | 1.68 | 0.41 |
| 5:AE:94:PHE:CZ | 5:AE:96:GLN:HG2 | 2.56 | 0.41 |
| 5:AE:156:ARG:HH12 | 8:AH:113:ARG:HH12 | 1.68 | 0.41 |
| 6:AF:11:HIS:CD2 | 6:AF:13:ASP:H | 2.39 | 0.41 |
| 6:AF:41:ASP:C | 6:AF:43:GLY:H | 2.24 | 0.41 |
| 7:AG:108:ARG:HH21 | 7:AG:118:ARG:NH1 | 2.18 | 0.41 |
| 7:AG:134:VAL:O | 7:AG:137:ARG:HB3 | 2.21 | 0.41 |
| 9:AI:35:GLU:HG2 | 9:AI:35:GLU:H | 1.62 | 0.41 |
| 11:AK:15:VAL:CG1 | 11:AK:78:ILE:HG23 | 2.44 | 0.41 |
| 11:AK:110:THR:HA | 21:AU:4:LYS:HA | 2.03 | 0.41 |
| 12:AL:82:ARG:HB2 | 12:AL:97:VAL:CG2 | 2.51 | 0.41 |
| 12:AL:82:ARG:O | 12:AL:82:ARG:HG3 | 2.20 | 0.41 |
| 14:AN:20:PHE:HA | 14:AN:24:ALA:CB | 2.50 | 0.41 |
| 14:AN:48:GLN:HA | 14:AN:48:GLN:HE21 | 1.86 | 0.41 |
| 15:AO:45:HIS:C | 15:AO:47:LYS:H | 2.24 | 0.41 |
| 16:AP:77:GLU:C | 16:AP:79:ASN:N | 2.72 | 0.41 |
| 17:AQ:16:MET:SD | 17:AQ:20:ILE:HD12 | 2.61 | 0.41 |
| 19:AS:79:TYR:CE1 | 19:AS:80:ARG:HB2 | 2.55 | 0.41 |
| 21:AU:8:ASN:N | 21:AU:8:ASN:ND2 | 2.67 | 0.41 |
| 22:BA:137:U:C5 | 22:BA:137:U:OP2 | 2.74 | 0.41 |
| 22:BA:221:A:C8 | 22:BA:266:G:C6 | 3.09 | 0.41 |
| 22:BA:273:G:N2 | 22:BA:365:U:C2 | 2.89 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 22:BA:291:G:H1' | 22:BA:350:G:N2 | 2.35 | 0.41 |
| 22:BA:329:G:O4' | 22:BA:477:A:H1' | 2.20 | 0.41 |
| 22:BA:533:G:O3' | 38:BQ:23:TYR:HE2 | 2.04 | 0.41 |
| 22:BA:571:U:O3' | 39:BR:80:ARG:NH2 | 2.54 | 0.41 |
| 22:BA:806:C:C2 | 22:BA:807:U:C5 | 3.09 | 0.41 |
| 22:BA:963:U:H2' | 22:BA:964:C:H6 | 1.84 | 0.41 |
| 22:BA:1070:A:HO2' | 22:BA:1071:G:P | 2.43 | 0.41 |
| 22:BA:1113:U:N3 | 22:BA:1114:C:C5 | 2.89 | 0.41 |
| 22:BA:1141:U:C5 | 31:BJ:65:THR:HG23 | 2.55 | 0.41 |
| 22:BA:1252:G:C2 | 38:BQ:32:ARG:HG2 | 2.56 | 0.41 |
| 22:BA:1260:A:C5 | 22:BA:1261:C:C5 | 3.09 | 0.41 |
| 22:BA:1326:U:O2' | 22:BA:1327:A:H5' | 2.21 | 0.41 |
| 22:BA:1333:G:OP2 | 63:BA:3392:HOH:O | 2.22 | 0.41 |
| 22:BA:1489:C:C2 | 22:BA:1501:G:N2 | 2.88 | 0.41 |
| 22:BA:1506:U:H2' | 22:BA:1507:C:H6 | 1.83 | 0.41 |
| 22:BA:1593:A:H2' | 22:BA:1594:U:O4' | 2.21 | 0.41 |
| 22:BA:1826:G:C2' | 22:BA:1827:U:O5' | 2.68 | 0.41 |
| 22:BA:1837:C:N3 | 22:BA:1899:A:C6 | 2.89 | 0.41 |
| 22:BA:1997:C:O2' | 22:BA:1998:A:H5' | 2.20 | 0.41 |
| 22:BA:2065:C:H1' | 22:BA:2449:U:O2 | 2.20 | 0.41 |
| 22:BA:2380:C:H2' | 22:BA:2381:A:C8 | 2.56 | 0.41 |
| 22:BA:2488:G:O2' | 22:BA:2489:U:H5' | 2.21 | 0.41 |
| 22:BA:2508:G:C2 | 22:BA:2582:G:C6 | 3.09 | 0.41 |
| 22:BA:2680:U:H5' | 25:BD:194:PRO:HA | 2.03 | 0.41 |
| 22:BA:2784:U:H2' | 22:BA:2785:C:C6 | 2.56 | 0.41 |
| 22:BA:2897:U:H2' | 22:BA:2898:U:H6 | 1.84 | 0.41 |
| 23:BB:51:G:N2 | 23:BB:53:A:H62 | 2.19 | 0.41 |
| 24:BC:43:ASN:C | 24:BC:45:ASN:H | 2.24 | 0.41 |
| 24:BC:128:THR:HG22 | 24:BC:188:ARG:HD2 | 2.01 | 0.41 |
| 24:BC:199:HIS:O | 24:BC:202:ARG:HG3 | 2.20 | 0.41 |
| 28:BG:25:ILE:HD11 | 28:BG:71:LEU:HD12 | 2.01 | 0.41 |
| 28:BG:27:GLY:O | 28:BG:29:ASN:O | 2.39 | 0.41 |
| 28:BG:54:ARG:HG3 | 28:BG:57:TYR:HD1 | 1.85 | 0.41 |
| 29:BH:8:LYS:O | 29:BH:13:GLY:CA | 2.69 | 0.41 |
| 29:BH:21:VAL:HG21 | 29:BH:25:TYR:HD2 | 1.85 | 0.41 |
| 31:BJ:16:TYR:N | 31:BJ:16:TYR:CD1 | 2.89 | 0.41 |
| 33:BL:61:LEU:HG | 51:B3:23:HIS:ND1 | 2.36 | 0.41 |
| 34:BM:71:LYS:HD3 | 34:BM:95:LEU:HD13 | 2.03 | 0.41 |
| 35:BN:48:VAL:O | 35:BN:51:LEU:HB2 | 2.20 | 0.41 |
| 35:BN:67:PHE:O | 35:BN:71:ARG:HD2 | 2.21 | 0.41 |
| 35:BN:73:ASN:HA | 35:BN:76:VAL:CG1 | 2.49 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 37:BP:50:ARG:H | 37:BP:50:ARG:HG3 | 1.50 | 0.41 |
| 37:BP:90:ALA:HB3 | 37:BP:110:LYS:HB2 | 2.03 | 0.41 |
| 37:BP:112:ARG:O | 37:BP:113:LEU:C | 2.58 | 0.41 |
| 39:BR:62:GLU:O | 39:BR:62:GLU:HG3 | 2.20 | 0.41 |
| 40:BS:83:LYS:O | 40:BS:84:ARG:HD3 | 2.21 | 0.41 |
| 41:BT:61:LEU:HD11 | 41:BT:82:LYS:HB2 | 2.03 | 0.41 |
| 43:BV:5:ASN:N | 43:BV:5:ASN:HD22 | 2.18 | 0.41 |
| 43:BV:14:LYS:HD2 | 63:BV:101:HOH:O | 2.20 | 0.41 |
| 43:BV:40:ILE:HG22 | 43:BV:42:LEU:HD23 | 2.02 | 0.41 |
| 44:BW:23:LYS:CG | 44:BW:24:ARG:N | 2.84 | 0.41 |
| 45:BX:33:HIS:O | 45:BX:34:SER:O | 2.39 | 0.41 |
| 49:B1:39:ASP:HA | 49:B1:40:PRO:HD2 | 1.92 | 0.41 |
| 50:B2:1:MET:CE | 50:B2:2:LYS:H | 2.34 | 0.41 |
| 51:B3:30:HIS:O | 51:B3:31:ILE:C | 2.59 | 0.41 |
| 52:B4:13:ASN:N | 52:B4:13:ASN:HD22 | 2.19 | 0.41 |
| 53:CA:98:A:H2' | 53:CA:99:C:C6 | 2.56 | 0.41 |
| 53:CA:115:G:C2 | 53:CA:289:G:C5 | 3.09 | 0.41 |
| 53:CA:168:G:C6 | 53:CA:169:C:C4 | 3.09 | 0.41 |
| 53:CA:176:C:H3' | 53:CA:177:G:H21 | 1.86 | 0.41 |
| 53:CA:195:A:C6 | 53:CA:196:A:N1 | 2.89 | 0.41 |
| 53:CA:227:G:H2' | 53:CA:228:A:O4' | 2.21 | 0.41 |
| 53:CA:293:G:N2 | 53:CA:305:G:H1' | 2.36 | 0.41 |
| 53:CA:319:G:H5' | 53:CA:1468:A:H4' | 2.03 | 0.41 |
| 53:CA:386:C:N4 | 53:CA:387:U:C4 | 2.89 | 0.41 |
| 53:CA:444:G:O2' | 53:CA:445:G:H5' | 2.20 | 0.41 |
| 53:CA:821:G:O2' | 53:CA:822:U:C5' | 2.68 | 0.41 |
| 53:CA:872:A:C4 | 53:CA:874:G:N7 | 2.89 | 0.41 |
| 53:CA:978:A:C6 | 53:CA:1319:A:C5 | 3.08 | 0.41 |
| 53:CA:990:C:C2' | 53:CA:991:U:O4' | 2.59 | 0.41 |
| 53:CA:1075:U:H4' | 53:CA:1101:A:N6 | 2.36 | 0.41 |
| 53:CA:1091:U:H2' | 53:CA:1093:A:OP2 | 2.21 | 0.41 |
| 53:CA:1184:G:N3 | 53:CA:1185:G:C8 | 2.89 | 0.41 |
| 53:CA:1189:U:O2' | 3:CC:175:HIS:HD2 | 2.04 | 0.41 |
| 53:CA:1200:C:HO2' | 53:CA:1201:A:P | 2.42 | 0.41 |
| 53:CA:1279:G:OP2 | 53:CA:1279:G:N2 | 2.54 | 0.41 |
| 53:CA:1318:A:H4' | 19:CS:9:PHE:CE1 | 2.56 | 0.41 |
| 53:CA:1496:C:H2' | 53:CA:1497:G:O4' | 2.20 | 0.41 |
| 53:CA:1511:G:O2' | 53:CA:1512:U:H5' | 2.21 | 0.41 |
| 2:CB:42:LEU:H | 2:CB:42:LEU:HG | 1.44 | 0.41 |
| 2:CB:57:ASN:OD1 | 2:CB:219:THR:O | 2.39 | 0.41 |
| 2:CB:84:LEU:HG | 2:CB:84:LEU:O | 2.21 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 3:CC:104:GLU:HG2 | 3:CC:105:VAL:N | 2.36 | 0.41 |
| 4:CD:11:SER:HB3 | 4:CD:16:THR:O | 2.21 | 0.41 |
| 4:CD:29:THR:HB | 4:CD:30:LYS:HE3 | 2.03 | 0.41 |
| 4:CD:84:ASN:C | 4:CD:84:ASN:ND2 | 2.74 | 0.41 |
| 4:CD:183:ARG:HE | 4:CD:183:ARG:HB2 | 1.48 | 0.41 |
| 4:CD:187:ARG:CZ | 4:CD:191:SER:OG | 2.69 | 0.41 |
| 5:CE:33:THR:OG1 | 5:CE:49:TYR:OH | 2.36 | 0.41 |
| 5:CE:56:PRO:O | 5:CE:59:ILE:HG23 | 2.21 | 0.41 |
| 54:CG:29:LEU:O | 54:CG:30:MET:O | 2.39 | 0.41 |
| 8:CH:85:TYR:HA | 8:CH:123:GLU:HA | 2.03 | 0.41 |
| 8:CH:97:GLY:O | 8:CH:98:LEU:HB2 | 2.21 | 0.41 |
| 8:CH:109:VAL:C | 8:CH:110:MET:HG3 | 2.41 | 0.41 |
| 9:CI:45:MET:O | 9:CI:49:GLN:HG3 | 2.20 | 0.41 |
| 10:CJ:12:ALA:N | 10:CJ:18:ILE:HD12 | 2.36 | 0.41 |
| 10:CJ:38:GLY:HA2 | 10:CJ:39:PRO:HD2 | 1.89 | 0.41 |
| 12:CL:33:CYS:CA | 12:CL:54:VAL:HG13 | 2.51 | 0.41 |
| 14:CN:85:GLU:O | 14:CN:89:ARG:HD3 | 2.20 | 0.41 |
| 56:CP:25:ARG:O | 56:CP:26:ASN:ND2 | 2.54 | 0.41 |
| 56:CP:54:LEU:O | 56:CP:57:ILE:HB | 2.21 | 0.41 |
| 19:CS:38:THR:N | 19:CS:69:LYS:HD3 | 2.36 | 0.41 |
| 57:DA:30:G:C5 | 57:DA:31:C:N3 | 2.89 | 0.41 |
| 57:DA:119:A:C5' | 57:DA:120:U:OP1 | 2.69 | 0.41 |
| 57:DA:146:A:C6 | 57:DA:147:C:C4 | 3.09 | 0.41 |
| 57:DA:151:C:H2' | 57:DA:152:A:H8 | 1.85 | 0.41 |
| 57:DA:160:A:C6 | 57:DA:167:A:H1' | 2.56 | 0.41 |
| 57:DA:164:C:H2' | 57:DA:165:A:O4' | 2.20 | 0.41 |
| 57:DA:176:A:H8 | 57:DA:176:A:O5' | 2.04 | 0.41 |
| 57:DA:249:C:O2 | 57:DA:249:C:C2' | 2.64 | 0.41 |
| 57:DA:270:A:N1 | 57:DA:369:U:O2' | 2.42 | 0.41 |
| 57:DA:272:A:N3 | 57:DA:273:G:N7 | 2.69 | 0.41 |
| 57:DA:309:A:C2 | 57:DA:329:G:O2' | 2.67 | 0.41 |
| 57:DA:332:A:C4 | 57:DA:335:C:N4 | 2.89 | 0.41 |
| 57:DA:567:U:H2' | 57:DA:568:U:O4' | 2.20 | 0.41 |
| 57:DA:600:G:C5 | 57:DA:601:C:C4 | 3.09 | 0.41 |
| 57:DA:800:A:C4 | 57:DA:802:A:H5' | 2.56 | 0.41 |
| 57:DA:818:G:H5' | 57:DA:839:U:OP1 | 2.20 | 0.41 |
| 57:DA:957:C:H42 | 57:DA:2494:G:N2 | 2.18 | 0.41 |
| 57:DA:983:A:N6 | 57:DA:984:A:C2 | 2.89 | 0.41 |
| 57:DA:996:A:C2 | 57:DA:997:G:C8 | 3.09 | 0.41 |
| 57:DA:1011:G:C2 | 57:DA:1013:C:C2 | 3.09 | 0.41 |
| 57:DA:1069:A:H4' | 57:DA:1070:A:C5' | 2.50 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 57:DA:1070:A:C5 | 57:DA:1097:U:H4' | 2.55 | 0.41 |
| 57:DA:1085:A:H2' | 57:DA:1086:A:N3 | 2.36 | 0.41 |
| 57:DA:1098:A:H2' | 57:DA:1099:G:O4' | 2.20 | 0.41 |
| 57:DA:1206:G:C5 | 57:DA:1207:C:C4 | 3.09 | 0.41 |
| 57:DA:1314:C:OP1 | 57:DA:1332:G:H5'' | 2.21 | 0.41 |
| 57:DA:1413:A:H2' | 57:DA:1414:C:C5 | 2.56 | 0.41 |
| 57:DA:1670:C:H1' | 57:DA:1993:U:O2 | 2.20 | 0.41 |
| 57:DA:1760:C:H2' | 57:DA:1761:C:H5' | 2.03 | 0.41 |
| 57:DA:1778:U:O4 | 57:DA:1784:A:H1' | 2.21 | 0.41 |
| 57:DA:1799:G:O2' | 57:DA:1800:C:P | 2.79 | 0.41 |
| 57:DA:1847:A:O2' | 57:DA:1848:A:O5' | 2.39 | 0.41 |
| 57:DA:1914:C:O2 | 57:DA:1914:C:O4' | 2.39 | 0.41 |
| 57:DA:1952:A:H5' | 32:DK:42:THR:HG23 | 2.02 | 0.41 |
| 57:DA:1957:C:H5' | 57:DA:1984:G:O2' | 2.21 | 0.41 |
| 57:DA:2335:A:C4 | 57:DA:2337:G:N7 | 2.89 | 0.41 |
| 57:DA:2358:A:OP1 | 57:DA:2358:A:C8 | 2.74 | 0.41 |
| 57:DA:2420:C:N4 | 51:D3:29:ARG:O | 2.52 | 0.41 |
| 57:DA:2466:C:OP1 | 52:D4:4:ARG:HD2 | 2.21 | 0.41 |
| 57:DA:2489:U:C4 | 57:DA:2490:G:N1 | 2.88 | 0.41 |
| 57:DA:2603:G:C5 | 57:DA:2604:U:C5 | 3.08 | 0.41 |
| 57:DA:2725:A:C4 | 57:DA:2727:A:N7 | 2.89 | 0.41 |
| 57:DA:2843:G:N2 | 57:DA:2875:C:C2 | 2.89 | 0.41 |
| 58:DB:81:G:C5 | 58:DB:82:U:C4 | 3.09 | 0.41 |
| 24:DC:159:THR:N | 24:DC:194:VAL:CG1 | 2.84 | 0.41 |
| 25:DD:151:THR:HB | 25:DD:152:PRO:HD3 | 2.02 | 0.41 |
| 25:DD:179:ARG:HH12 | 37:DP:7:LEU:HD11 | 1.86 | 0.41 |
| 26:DE:2:GLU:HA | 26:DE:13:THR:HA | 2.03 | 0.41 |
| 26:DE:109:LEU:HD12 | 26:DE:109:LEU:HA | 1.74 | 0.41 |
| 59:DF:42:ALA:HB2 | 59:DF:48:LEU:HD11 | 2.03 | 0.41 |
| 59:DF:49:LEU:HD22 | 59:DF:49:LEU:N | 2.23 | 0.41 |
| 59:DF:49:LEU:HD13 | 59:DF:49:LEU:N | 2.35 | 0.41 |
| 28:DG:38:ASP:O | 28:DG:39:ALA:HB2 | 2.20 | 0.41 |
| 28:DG:44:HIS:HE1 | 28:DG:46:ASP:O | 2.04 | 0.41 |
| 28:DG:152:ARG:CD | 28:DG:153:PRO:HD2 | 2.50 | 0.41 |
| 29:DH:65:ALA:O | 29:DH:66:ASN:C | 2.58 | 0.41 |
| 31:DJ:51:GLY:O | 31:DJ:121:LYS:HE3 | 2.21 | 0.41 |
| 31:DJ:89:PHE:HA | 31:DJ:92:MET:HB2 | 2.03 | 0.41 |
| 32:DK:16:ALA:HB1 | 32:DK:45:GLU:HG3 | 2.03 | 0.41 |
| 33:DL:58:TYR:O | 51:D3:12:ARG:CZ | 2.69 | 0.41 |
| 34:DM:114:ARG:HA | 34:DM:130:PHE:CE1 | 2.56 | 0.41 |
| 37:DP:95:LYS:HB3 | 37:DP:97:TYR:CE1 | 2.55 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 40:DS:70:LYS:HD2 | 40:DS:110:ARG:O | 2.21 | 0.41 |
| 41:DT:28:ASN:O | 41:DT:29:THR:CG2 | 2.69 | 0.41 |
| 41:DT:61:LEU:C | 41:DT:61:LEU:HD12 | 2.41 | 0.41 |
| 44:DW:27:GLY:HA3 | 44:DW:31:LEU:HD11 | 1.99 | 0.41 |
| 45:DX:52:ALA:C | 45:DX:54:GLY:N | 2.75 | 0.41 |
| 46:DY:31:GLN:C | 46:DY:33:ALA:N | 2.73 | 0.41 |
| 46:DY:53:VAL:O | 46:DY:57:LEU:HB2 | 2.21 | 0.41 |
| 1:AA:518:C:H4' | 1:AA:519:C:O5' | 2.21 | 0.41 |
| 1:AA:575:G:H4' | 1:AA:576:C:O5' | 2.19 | 0.41 |
| 1:AA:725:G:H2' | 1:AA:726:C:H6 | 1.86 | 0.41 |
| 1:AA:854:U:H3' | 1:AA:871:U:O4 | 2.21 | 0.41 |
| 1:AA:1305:G:H21 | 1:AA:1332:A:H2 | 1.69 | 0.41 |
| 1:AA:1532:U:H2' | 1:AA:1534:A:H5' | 2.03 | 0.41 |
| 2:AB:79:VAL:O | 2:AB:83:ALA:HB3 | 2.21 | 0.41 |
| 3:AC:125:ARG:O | 3:AC:126:ARG:CB | 2.69 | 0.41 |
| 3:AC:131:ARG:HH21 | 3:AC:135:ARG:HH21 | 1.68 | 0.41 |
| 4:AD:116:LEU:C | 4:AD:122:ILE:HD11 | 2.40 | 0.41 |
| 5:AE:155:LYS:HB3 | 8:AH:70:VAL:HG13 | 2.03 | 0.41 |
| 6:AF:92:THR:HG22 | 6:AF:93:LYS:N | 2.35 | 0.41 |
| 13:AM:11:HIS:C | 13:AM:12:LYS:HG3 | 2.40 | 0.41 |
| 20:AT:33:LYS:HD3 | 20:AT:33:LYS:HA | 1.81 | 0.41 |
| 22:BA:161:A:P | 22:BA:162:U:H3' | 2.61 | 0.41 |
| 22:BA:786:C:H5'' | 22:BA:1780:A:C8 | 2.56 | 0.41 |
| 22:BA:919:U:C6 | 22:BA:919:U:C4' | 3.03 | 0.41 |
| 22:BA:1107:G:H2' | 22:BA:1108:U:C6 | 2.56 | 0.41 |
| 22:BA:1246:A:H4' | 26:BE:40:ARG:NH2 | 2.36 | 0.41 |
| 22:BA:1277:G:H4' | 35:BN:20:MET:CE | 2.51 | 0.41 |
| 22:BA:1563:U:H2' | 22:BA:1564:C:H6 | 1.85 | 0.41 |
| 22:BA:1847:A:O2' | 22:BA:1848:A:OP1 | 2.33 | 0.41 |
| 22:BA:1885:A:O2' | 22:BA:1886:U:H5' | 2.21 | 0.41 |
| 22:BA:2197:U:C5 | 22:BA:2224:G:C6 | 3.08 | 0.41 |
| 22:BA:2308:G:C5 | 27:BF:76:PHE:HE2 | 2.39 | 0.41 |
| 22:BA:2647:U:O2' | 22:BA:2648:G:H5' | 2.21 | 0.41 |
| 22:BA:2849:U:H5'' | 22:BA:2867:G:N2 | 2.36 | 0.41 |
| 25:BD:197:THR:HG22 | 25:BD:198:GLY:N | 2.36 | 0.41 |
| 26:BE:35:TYR:O | 26:BE:37:ALA:O | 2.39 | 0.41 |
| 27:BF:137:PHE:HA | 27:BF:138:PRO:HD3 | 1.93 | 0.41 |
| 28:BG:32:LEU:O | 28:BG:33:THR:HG23 | 2.20 | 0.41 |
| 37:BP:4:ILE:CG2 | 37:BP:5:LYS:N | 2.64 | 0.41 |
| 39:BR:46:GLU:OE1 | 39:BR:46:GLU:C | 2.59 | 0.41 |
| 44:BW:58:LEU:N | 44:BW:58:LEU:CD1 | 2.84 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 52:B4:3:VAL:O | 52:B4:37:GLN:HB3 | 2.21 | 0.41 |
| 53:CA:9:G:H4' | 5:CE:108:GLY:H | 1.86 | 0.41 |
| 53:CA:66:A:C6 | 53:CA:67:C:C5 | 3.09 | 0.41 |
| 53:CA:95:C:O2' | 53:CA:96:U:H5' | 2.20 | 0.41 |
| 53:CA:201:G:N2 | 53:CA:217:C:H1' | 2.36 | 0.41 |
| 53:CA:304:U:H2' | 53:CA:305:G:H8 | 1.83 | 0.41 |
| 53:CA:669:G:N1 | 53:CA:670:G:C5 | 2.89 | 0.41 |
| 53:CA:750:C:O2' | 15:CO:20:ASP:HB2 | 2.21 | 0.41 |
| 53:CA:757:U:O2' | 53:CA:879:C:H1' | 2.21 | 0.41 |
| 53:CA:790:A:H2' | 53:CA:791:G:O4' | 2.21 | 0.41 |
| 53:CA:824:G:H1' | 8:CH:1:SER:N | 2.35 | 0.41 |
| 53:CA:886:G:H2' | 53:CA:887:G:O4' | 2.21 | 0.41 |
| 53:CA:1074:G:H4' | 2:CB:102:ASN:CB | 2.35 | 0.41 |
| 53:CA:1095:U:H2' | 53:CA:1096:C:H6 | 1.86 | 0.41 |
| 53:CA:1100:C:O2' | 53:CA:1101:A:H5' | 2.21 | 0.41 |
| 53:CA:1238:A:N6 | 53:CA:1302:C:N4 | 2.69 | 0.41 |
| 53:CA:1270:G:H2' | 53:CA:1271:A:H8 | 1.86 | 0.41 |
| 53:CA:1366:C:O2' | 53:CA:1367:C:H5' | 2.20 | 0.41 |
| 53:CA:1432:G:H1' | 53:CA:1468:A:N6 | 2.36 | 0.41 |
| 53:CA:1453:G:H2' | 53:CA:1454:G:O4' | 2.21 | 0.41 |
| 4:CD:115:GLN:HE21 | 4:CD:153:ARG:HH22 | 1.66 | 0.41 |
| 5:CE:17:VAL:HA | 5:CE:33:THR:O | 2.20 | 0.41 |
| 5:CE:113:VAL:HG12 | 5:CE:114:LEU:N | 2.35 | 0.41 |
| 9:CI:128:LYS:O | 9:CI:128:LYS:HG3 | 2.21 | 0.41 |
| 10:CJ:92:LEU:O | 10:CJ:94:ALA:N | 2.54 | 0.41 |
| 11:CK:125:LYS:HB3 | 11:CK:126:ARG:H | 1.48 | 0.41 |
| 15:CO:70:LYS:HD2 | 15:CO:77:TYR:CE2 | 2.55 | 0.41 |
| 56:CP:16:PHE:CD2 | 56:CP:40:ASN:HB2 | 2.56 | 0.41 |
| 17:CQ:37:ILE:HD11 | 17:CQ:39:ARG:CZ | 2.51 | 0.41 |
| 57:DA:47:C:H6 | 57:DA:47:C:O5' | 2.04 | 0.41 |
| 57:DA:102:U:H3 | 46:DY:2:LYS:HG2 | 1.86 | 0.41 |
| 57:DA:186:G:N2 | 57:DA:211:C:C2 | 2.89 | 0.41 |
| 57:DA:289:G:C2 | 57:DA:352:A:C2 | 3.09 | 0.41 |
| 57:DA:320:A:N7 | 26:DE:132:LYS:HB2 | 2.36 | 0.41 |
| 57:DA:546:U:H5' | 57:DA:547:A:OP1 | 2.20 | 0.41 |
| 57:DA:569:U:H5'' | 57:DA:821:A:C2 | 2.56 | 0.41 |
| 57:DA:570:G:H2' | 57:DA:571:U:H5' | 2.03 | 0.41 |
| 57:DA:600:G:H1' | 26:DE:100:MET:HG2 | 2.03 | 0.41 |
| 57:DA:633:A:H5'' | 33:DL:70:LYS:HD3 | 2.03 | 0.41 |
| 57:DA:636:G:H5' | 57:DA:639:U:OP1 | 2.21 | 0.41 |
| 57:DA:700:G:H2' | 57:DA:701:G:O4' | 2.21 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:727:A:O2' | 57:DA:728:G:C8 | 2.69 | 0.41 |
| 57:DA:782:A:O2' | 24:DC:223:ALA:O | 2.38 | 0.41 |
| 57:DA:1112:G:H2' | 57:DA:1113:U:C6 | 2.55 | 0.41 |
| 57:DA:1358:G:H8 | 57:DA:1358:G:O5' | 2.03 | 0.41 |
| 57:DA:1478:G:C6 | 57:DA:1514:G:C2 | 3.09 | 0.41 |
| 57:DA:1500:G:C6 | 57:DA:1501:G:N7 | 2.89 | 0.41 |
| 57:DA:1567:G:H5'' | 24:DC:84:PRO:CG | 2.50 | 0.41 |
| 57:DA:1681:G:O2' | 57:DA:1762:A:H2' | 2.20 | 0.41 |
| 57:DA:1884:G:H2' | 57:DA:1884:G:N3 | 2.36 | 0.41 |
| 57:DA:1997:C:P | 25:DD:129:THR:HG1 | 2.42 | 0.41 |
| 57:DA:2093:G:N3 | 57:DA:2093:G:H2' | 2.35 | 0.41 |
| 57:DA:2494:G:O2' | 34:DM:79:ALA:HA | 2.21 | 0.41 |
| 57:DA:2506:U:C5 | 57:DA:2576:G:O6 | 2.74 | 0.41 |
| 57:DA:2683:C:OP1 | 37:DP:55:HIS:CB | 2.69 | 0.41 |
| 57:DA:2748:A:C6 | 57:DA:2749:A:C5 | 3.08 | 0.41 |
| 58:DB:32:U:C2 | 58:DB:51:G:N2 | 2.89 | 0.41 |
| 24:DC:161:VAL:HG13 | 24:DC:174:ARG:O | 2.20 | 0.41 |
| 26:DE:63:LYS:HA | 26:DE:63:LYS:HE2 | 2.03 | 0.41 |
| 59:DF:149:ARG:HD3 | 59:DF:149:ARG:HA | 1.80 | 0.41 |
| 28:DG:39:ALA:O | 28:DG:40:VAL:HG13 | 2.21 | 0.41 |
| 29:DH:68:ARG:HG2 | 29:DH:71:LYS:HD3 | 2.03 | 0.41 |
| 30:DI:22:PRO:HB2 | 30:DI:23:VAL:H | 1.56 | 0.41 |
| 30:DI:102:ARG:CZ | 30:DI:105:LEU:HD22 | 2.50 | 0.41 |
| 31:DJ:18:VAL:CG1 | 31:DJ:54:ILE:HD11 | 2.51 | 0.41 |
| 31:DJ:38:GLY:O | 31:DJ:43:GLU:HB2 | 2.21 | 0.41 |
| 31:DJ:45:THR:C | 31:DJ:47:HIS:N | 2.74 | 0.41 |
| 31:DJ:98:GLU:H | 31:DJ:98:GLU:HG2 | 1.64 | 0.41 |
| 32:DK:73:ASP:OD1 | 32:DK:73:ASP:N | 2.36 | 0.41 |
| 35:DN:10:LEU:HD13 | 35:DN:10:LEU:HA | 1.81 | 0.41 |
| 42:DU:21:ARG:H | 42:DU:21:ARG:HG2 | 1.63 | 0.41 |
| 44:DW:37:VAL:O | 44:DW:38:ARG:HB2 | 2.21 | 0.41 |
| 46:DY:1:MET:H2 | 46:DY:5:GLU:CG | 2.34 | 0.41 |
| 47:DZ:51:SER:HA | 47:DZ:54:VAL:HG22 | 2.01 | 0.41 |
| 48:D0:33:SER:HB3 | 48:D0:34:GLY:H | 1.62 | 0.41 |
| 51:D3:30:HIS:HB3 | 51:D3:31:ILE:H | 1.37 | 0.41 |
| 1:AA:27:G:H2' | 1:AA:28:A:H8 | 1.85 | 0.40 |
| 1:AA:57:G:H2' | 1:AA:58:C:O4' | 2.21 | 0.40 |
| 1:AA:75:G:N3 | 1:AA:76:G:H1' | 2.37 | 0.40 |
| 1:AA:76:G:N1 | 1:AA:95:C:N4 | 2.68 | 0.40 |
| 1:AA:155:A:H2' | 1:AA:156:C:C6 | 2.56 | 0.40 |
| 1:AA:181:A:N6 | 1:AA:195:A:C8 | 2.89 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:184:G:H2' | 1:AA:185:U:H5 | 1.83 | 0.40 |
| 1:AA:210:C:C4' | 1:AA:211:G:N2 | 2.82 | 0.40 |
| 1:AA:343:U:H2' | 1:AA:345:C:C5 | 2.56 | 0.40 |
| 1:AA:462:G:H3' | 1:AA:463:U:C6 | 2.55 | 0.40 |
| 1:AA:574:A:H1' | 1:AA:883:C:O4' | 2.21 | 0.40 |
| 1:AA:625:U:H4' | 16:AP:16:PHE:CZ | 2.56 | 0.40 |
| 1:AA:698:G:H1' | 1:AA:798:U:O2' | 2.21 | 0.40 |
| 1:AA:792:A:N3 | 1:AA:794:A:C6 | 2.88 | 0.40 |
| 1:AA:858:G:O2' | 1:AA:859:G:H5' | 2.21 | 0.40 |
| 1:AA:979:C:H1' | 1:AA:1317:C:N4 | 2.36 | 0.40 |
| 1:AA:1130:A:C5 | 1:AA:1146:A:C6 | 3.09 | 0.40 |
| 4:AD:93:LEU:HD23 | 4:AD:93:LEU:HA | 1.70 | 0.40 |
| 5:AE:82:HIS:HB2 | 5:AE:83:PRO:HD2 | 2.02 | 0.40 |
| 5:AE:89:THR:CG2 | 5:AE:90:GLY:N | 2.67 | 0.40 |
| 6:AF:6:ILE:HD13 | 6:AF:74:LEU:HD23 | 2.03 | 0.40 |
| 7:AG:14:ASP:OD1 | 7:AG:17:PHE:HB2 | 2.21 | 0.40 |
| 8:AH:5:PRO:O | 8:AH:8:ASP:HB3 | 2.20 | 0.40 |
| 11:AK:32:THR:HG23 | 11:AK:42:GLY:O | 2.20 | 0.40 |
| 12:AL:6:LEU:HB3 | 17:AQ:33:TYR:CE1 | 2.56 | 0.40 |
| 12:AL:72:ASN:OD1 | 12:AL:104:SER:CB | 2.69 | 0.40 |
| 15:AO:23:SER:HB3 | 15:AO:26:VAL:CG2 | 2.51 | 0.40 |
| 17:AQ:11:VAL:HG12 | 17:AQ:12:VAL:HG12 | 2.03 | 0.40 |
| 19:AS:52:ASN:HB3 | 19:AS:74:ALA:HB1 | 2.03 | 0.40 |
| 21:AU:24:LYS:O | 21:AU:28:LEU:HB2 | 2.21 | 0.40 |
| 22:BA:35:G:N2 | 22:BA:36:G:H1' | 2.36 | 0.40 |
| 22:BA:182:A:C6 | 22:BA:183:C:C4 | 3.09 | 0.40 |
| 22:BA:289:G:H2' | 22:BA:290:U:C6 | 2.56 | 0.40 |
| 22:BA:465:G:H2' | 22:BA:466:A:C8 | 2.56 | 0.40 |
| 22:BA:565:C:P | 39:BR:80:ARG:H | 2.44 | 0.40 |
| 22:BA:923:G:H5' | 44:BW:25:PHE:CZ | 2.56 | 0.40 |
| 22:BA:999:U:P | 63:BA:3357:HOH:O | 2.78 | 0.40 |
| 22:BA:1071:G:C5 | 22:BA:1089:A:C6 | 3.08 | 0.40 |
| 22:BA:1276:A:O2' | 35:BN:20:MET:HE3 | 2.21 | 0.40 |
| 22:BA:1338:G:O2' | 22:BA:1393:A:N1 | 2.44 | 0.40 |
| 22:BA:1459:G:C6 | 22:BA:1461:C:C4 | 3.09 | 0.40 |
| 22:BA:1493:C:H5'' | 22:BA:1494:A:OP2 | 2.21 | 0.40 |
| 22:BA:1644:C:O2' | 22:BA:1645:G:H5' | 2.21 | 0.40 |
| 22:BA:1999:C:O2' | 22:BA:2000:C:H5' | 2.20 | 0.40 |
| 22:BA:2001:C:H4' | 22:BA:2689:U:C2' | 2.51 | 0.40 |
| 22:BA:2038:G:H2' | 22:BA:2039:U:O4' | 2.21 | 0.40 |
| 22:BA:2149:U:O2' | 22:BA:2150:C:O4' | 2.39 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:BA:2232:C:C4 | 22:BA:2233:U:C5 | 3.09 | 0.40 |
| 22:BA:2350:C:C2' | 22:BA:2351:G:H5' | 2.51 | 0.40 |
| 22:BA:2386:A:C2 | 44:BW:38:ARG:HD2 | 2.55 | 0.40 |
| 22:BA:2413:G:C4 | 22:BA:2414:G:C8 | 3.09 | 0.40 |
| 22:BA:2476:A:C2' | 22:BA:2477:U:H5' | 2.51 | 0.40 |
| 22:BA:2617:U:H2' | 22:BA:2618:G:H5' | 2.02 | 0.40 |
| 22:BA:2801:G:O2' | 22:BA:2802:G:C5' | 2.60 | 0.40 |
| 22:BA:2887:A:C5 | 22:BA:2888:C:C5 | 3.09 | 0.40 |
| 24:BC:89:ASN:O | 24:BC:90:ILE:HD13 | 2.21 | 0.40 |
| 24:BC:186:ASP:OD1 | 4:CD:173:ASP:OD2 | 2.39 | 0.40 |
| 26:BE:123:LYS:HE3 | 26:BE:123:LYS:HB2 | 1.87 | 0.40 |
| 26:BE:196:VAL:O | 26:BE:197:GLU:C | 2.57 | 0.40 |
| 32:BK:80:ASP:OD2 | 37:BP:61:ARG:NH1 | 2.53 | 0.40 |
| 35:BN:30:ARG:HE | 35:BN:30:ARG:HB2 | 1.26 | 0.40 |
| 35:BN:32:GLU:HA | 35:BN:115:LEU:HD12 | 2.03 | 0.40 |
| 36:BO:3:LYS:CG | 36:BO:4:LYS:N | 2.84 | 0.40 |
| 37:BP:24:THR:HG21 | 37:BP:87:ARG:HB3 | 2.03 | 0.40 |
| 37:BP:33:GLU:HG2 | 37:BP:36:LYS:HD2 | 2.02 | 0.40 |
| 38:BQ:91:ARG:HB3 | 38:BQ:93:ILE:HG23 | 2.03 | 0.40 |
| 39:BR:28:ALA:HB3 | 39:BR:31:GLU:HG3 | 2.02 | 0.40 |
| 39:BR:49:ILE:C | 39:BR:51:VAL:O | 2.59 | 0.40 |
| 47:BZ:2:LYS:O | 47:BZ:3:THR:O | 2.39 | 0.40 |
| 47:BZ:35:VAL:CG2 | 47:BZ:37:ARG:CZ | 2.99 | 0.40 |
| 49:B1:46:VAL:HG12 | 49:B1:47:ILE:H | 1.86 | 0.40 |
| 53:CA:65:A:N1 | 53:CA:381:C:C5 | 2.90 | 0.40 |
| 53:CA:68:G:H5' | 53:CA:171:A:O2' | 2.20 | 0.40 |
| 53:CA:71:A:C2' | 53:CA:72:A:O5' | 2.69 | 0.40 |
| 53:CA:182:A:O2' | 53:CA:183:C:H2' | 2.22 | 0.40 |
| 53:CA:331:G:O2' | 53:CA:332:G:P | 2.79 | 0.40 |
| 53:CA:511:C:O2' | 53:CA:512:U:C5' | 2.63 | 0.40 |
| 53:CA:687:A:C2 | 53:CA:704:A:C6 | 3.09 | 0.40 |
| 53:CA:734:G:N2 | 18:CR:63:TYR:HH | 2.18 | 0.40 |
| 53:CA:821:G:C4 | 53:CA:822:U:C5 | 3.09 | 0.40 |
| 53:CA:922:G:C6 | 53:CA:923:A:C6 | 3.09 | 0.40 |
| 53:CA:985:C:HO2' | 53:CA:986:U:C5' | 2.34 | 0.40 |
| 53:CA:1035:A:H2' | 53:CA:1036:A:C8 | 2.56 | 0.40 |
| 53:CA:1189:U:O2' | 3:CC:175:HIS:CD2 | 2.74 | 0.40 |
| 53:CA:1215:G:C2 | 53:CA:1216:A:C5 | 3.08 | 0.40 |
| 53:CA:1252:A:H4' | 53:CA:1369:C:H4' | 2.03 | 0.40 |
| 53:CA:1271:A:H2' | 53:CA:1272:G:C8 | 2.56 | 0.40 |
| 53:CA:1348:U:O2' | 53:CA:1349:A:C5' | 2.70 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 53:CA:1357:A:C5 | 53:CA:1358:U:C4 | 3.09 | 0.40 |
| 53:CA:1360:A:C2 | 53:CA:1361:G:H1' | 2.56 | 0.40 |
| 53:CA:1363:A:C6 | 53:CA:1365:G:O6 | 2.73 | 0.40 |
| 2:CB:21:TYR:N | 2:CB:21:TYR:CD1 | 2.89 | 0.40 |
| 3:CC:65:VAL:HG12 | 3:CC:67:ILE:HD11 | 2.04 | 0.40 |
| 5:CE:37:VAL:HA | 5:CE:47:PHE:HA | 2.02 | 0.40 |
| 55:CM:77:LYS:HD3 | 55:CM:77:LYS:C | 2.42 | 0.40 |
| 56:CP:26:ASN:HD22 | 56:CP:26:ASN:HA | 1.63 | 0.40 |
| 57:DA:14:A:N7 | 57:DA:526:A:C6 | 2.89 | 0.40 |
| 57:DA:228:C:H4' | 57:DA:229:C:C6 | 2.56 | 0.40 |
| 57:DA:231:A:O2' | 57:DA:232:G:C5' | 2.69 | 0.40 |
| 57:DA:244:A:C2' | 57:DA:245:G:O4' | 2.68 | 0.40 |
| 57:DA:262:A:H2 | 57:DA:430:A:H1' | 1.85 | 0.40 |
| 57:DA:280:U:H2' | 57:DA:281:C:C6 | 2.55 | 0.40 |
| 57:DA:313:G:H2' | 57:DA:314:C:C6 | 2.56 | 0.40 |
| 57:DA:603:A:H4' | 57:DA:604:G:O5' | 2.21 | 0.40 |
| 57:DA:673:C:H5'' | 26:DE:75:SER:HB2 | 2.03 | 0.40 |
| 57:DA:856:G:O4' | 44:DW:23:LYS:HB3 | 2.22 | 0.40 |
| 57:DA:970:U:O5' | 57:DA:970:U:H6 | 2.04 | 0.40 |
| 57:DA:1082:U:H2' | 57:DA:1083:U:H5' | 2.03 | 0.40 |
| 57:DA:1356:G:N2 | 57:DA:1357:C:H1' | 2.36 | 0.40 |
| 57:DA:1517:G:C6 | 57:DA:1518:C:C4 | 3.10 | 0.40 |
| 57:DA:1568:G:HO2' | 57:DA:1569:A:P | 2.44 | 0.40 |
| 57:DA:1612:C:N4 | 57:DA:1620:G:C6 | 2.89 | 0.40 |
| 57:DA:1707:G:O2' | 57:DA:1708:C:H5' | 2.22 | 0.40 |
| 57:DA:1914:C:O2' | 57:DA:1915:U:H5'' | 2.21 | 0.40 |
| 57:DA:2240:U:C2 | 57:DA:2241:A:C8 | 3.09 | 0.40 |
| 57:DA:2266:A:N3 | 57:DA:2272:U:C4 | 2.88 | 0.40 |
| 57:DA:2287:A:C8 | 57:DA:2289:G:C8 | 3.09 | 0.40 |
| 57:DA:2811:G:OP1 | 25:DD:61:THR:HB | 2.21 | 0.40 |
| 57:DA:2819:G:N3 | 57:DA:2828:G:C2 | 2.89 | 0.40 |
| 57:DA:2823:A:C6 | 57:DA:2824:C:C4 | 3.09 | 0.40 |
| 57:DA:2831:G:H1' | 57:DA:2883:A:C2 | 2.56 | 0.40 |
| 24:DC:15:VAL:HG13 | 24:DC:204:LEU:O | 2.21 | 0.40 |
| 24:DC:29:PHE:O | 24:DC:32:LEU:N | 2.51 | 0.40 |
| 24:DC:67:LYS:CG | 24:DC:150:GLY:HA2 | 2.51 | 0.40 |
| 25:DD:121:THR:HG21 | 25:DD:127:PHE:CD1 | 2.55 | 0.40 |
| 26:DE:79:ARG:HG2 | 26:DE:80:SER:H | 1.86 | 0.40 |
| 26:DE:147:LEU:CB | 26:DE:186:VAL:HG23 | 2.51 | 0.40 |
| 59:DF:113:PHE:CZ | 59:DF:116:LEU:HD22 | 2.56 | 0.40 |
| 30:DI:27:LEU:HD13 | 30:DI:32:VAL:HG11 | 2.03 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 30:DI:64:ARG:CZ | 30:DI:64:ARG:HB2 | 2.51 | 0.40 |
| 32:DK:59:LYS:HE3 | 32:DK:89:ASN:OD1 | 2.21 | 0.40 |
| 34:DM:17:ASN:CB | 34:DM:38:ARG:HH22 | 2.25 | 0.40 |
| 36:DO:27:VAL:O | 36:DO:37:ALA:HA | 2.21 | 0.40 |
| 37:DP:63:ILE:CA | 37:DP:68:GLY:HA2 | 2.40 | 0.40 |
| 37:DP:81:ASP:HB3 | 37:DP:82:SER:H | 1.65 | 0.40 |
| 38:DQ:26:ALA:HB1 | 38:DQ:30:VAL:HB | 2.03 | 0.40 |
| 45:DX:66:VAL:O | 45:DX:66:VAL:HG12 | 2.20 | 0.40 |
| 46:DY:49:ASP:HA | 46:DY:52:ARG:HD2 | 2.03 | 0.40 |
| 46:DY:52:ARG:C | 46:DY:54:LYS:H | 2.24 | 0.40 |
| 50:D2:1:MET:CG | 50:D2:2:LYS:N | 2.85 | 0.40 |
| 1:AA:49:U:C5 | 1:AA:364:A:C6 | 3.09 | 0.40 |
| 1:AA:198:G:O2' | 1:AA:199:A:H5' | 2.22 | 0.40 |
| 1:AA:199:A:C2 | 1:AA:200:G:C8 | 3.09 | 0.40 |
| 1:AA:716:A:N3 | 11:AK:119:GLY:HA2 | 2.36 | 0.40 |
| 1:AA:723:U:OP1 | 21:AU:48:LYS:HD3 | 2.21 | 0.40 |
| 1:AA:877:G:N3 | 8:AH:1:SER:N | 2.62 | 0.40 |
| 1:AA:1256:A:H1' | 1:AA:1258:G:C6 | 2.55 | 0.40 |
| 1:AA:1365:G:O2' | 1:AA:1366:C:H5' | 2.22 | 0.40 |
| 1:AA:1381:U:O2' | 1:AA:1382:C:H6 | 2.04 | 0.40 |
| 5:AE:79:THR:HB | 5:AE:121:ASN:HD21 | 1.79 | 0.40 |
| 6:AF:1:MET:SD | 6:AF:67:PRO:HD3 | 2.62 | 0.40 |
| 7:AG:74:VAL:HG21 | 7:AG:143:MET:HG2 | 2.03 | 0.40 |
| 11:AK:55:ARG:HA | 11:AK:55:ARG:HE | 1.87 | 0.40 |
| 11:AK:61:ALA:O | 11:AK:64:VAL:HG13 | 2.20 | 0.40 |
| 11:AK:111:ASP:CB | 21:AU:19:LYS:HD2 | 2.51 | 0.40 |
| 15:AO:74:VAL:O | 15:AO:77:TYR:N | 2.54 | 0.40 |
| 22:BA:64:A:C6 | 22:BA:65:U:C4 | 3.10 | 0.40 |
| 22:BA:116:C:H2' | 22:BA:117:G:O4' | 2.22 | 0.40 |
| 22:BA:163:C:O2' | 22:BA:164:C:C5' | 2.68 | 0.40 |
| 22:BA:1076:C:C2 | 22:BA:1077:A:C8 | 3.09 | 0.40 |
| 22:BA:1097:U:O2' | 30:BI:8:VAL:HG12 | 2.21 | 0.40 |
| 22:BA:1233:C:C4 | 22:BA:1234:U:C5 | 3.08 | 0.40 |
| 22:BA:1288:G:C5 | 22:BA:1327:A:C2 | 3.10 | 0.40 |
| 22:BA:1328:A:C2 | 22:BA:1330:C:O2 | 2.74 | 0.40 |
| 22:BA:2043:C:N3 | 22:BA:2777:G:C2 | 2.89 | 0.40 |
| 22:BA:2261:C:N4 | 44:BW:10:ARG:HB3 | 2.37 | 0.40 |
| 22:BA:2273:A:H2' | 22:BA:2274:A:C8 | 2.56 | 0.40 |
| 22:BA:2555:U:C5 | 22:BA:2556:C:C6 | 3.09 | 0.40 |
| 22:BA:2667:C:H2' | 22:BA:2668:G:O4' | 2.21 | 0.40 |
| 22:BA:2702:G:C5 | 22:BA:2703:C:C4 | 3.09 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 23:BB:94:A:H2' | 23:BB:95:U:H6 | 1.85 | 0.40 |
| 24:BC:103:ILE:O | 24:BC:104:LEU:O | 2.39 | 0.40 |
| 24:BC:131:MET:HA | 24:BC:134:ILE:CD1 | 2.49 | 0.40 |
| 24:BC:255:LYS:C | 24:BC:257:ARG:N | 2.74 | 0.40 |
| 27:BF:72:SER:CB | 27:BF:80:GLN:HB2 | 2.50 | 0.40 |
| 28:BG:90:GLY:O | 28:BG:91:VAL:C | 2.60 | 0.40 |
| 29:BH:4:ILE:O | 29:BH:37:VAL:HG12 | 2.21 | 0.40 |
| 30:BI:41:PHE:N | 30:BI:68:PHE:HZ | 2.19 | 0.40 |
| 32:BK:58:LEU:HB2 | 32:BK:59:LYS:H | 1.46 | 0.40 |
| 41:BT:28:ASN:CA | 41:BT:91:GLN:HE22 | 2.34 | 0.40 |
| 42:BU:50:ALA:O | 42:BU:51:LEU:O | 2.38 | 0.40 |
| 43:BV:29:ILE:HG22 | 43:BV:90:ASP:HA | 2.02 | 0.40 |
| 46:BY:36:GLN:O | 46:BY:37:LEU:O | 2.39 | 0.40 |
| 53:CA:87:C:O2' | 53:CA:88:U:C4' | 2.67 | 0.40 |
| 53:CA:253:A:O2' | 53:CA:254:G:O5' | 2.38 | 0.40 |
| 53:CA:259:G:C4 | 53:CA:260:G:C8 | 3.09 | 0.40 |
| 53:CA:346:G:N3 | 53:CA:346:G:C2' | 2.85 | 0.40 |
| 53:CA:391:G:H2' | 53:CA:392:C:O4' | 2.21 | 0.40 |
| 53:CA:757:U:H5'' | 53:CA:822:U:O2 | 2.20 | 0.40 |
| 53:CA:985:C:H2' | 53:CA:986:U:C5 | 2.56 | 0.40 |
| 53:CA:1111:A:C8 | 53:CA:1111:A:H3' | 2.56 | 0.40 |
| 53:CA:1215:G:H2' | 53:CA:1216:A:H8 | 1.87 | 0.40 |
| 53:CA:1493:A:H2' | 53:CA:1494:G:OP1 | 2.21 | 0.40 |
| 53:CA:1528:U:O2' | 53:CA:1530:G:H5'' | 2.21 | 0.40 |
| 2:CB:124:THR:C | 2:CB:126:ASP:H | 2.24 | 0.40 |
| 2:CB:141:GLU:O | 2:CB:145:ASN:N | 2.53 | 0.40 |
| 2:CB:162:VAL:CG2 | 2:CB:163:ILE:N | 2.85 | 0.40 |
| 4:CD:66:VAL:CG1 | 4:CD:70:GLN:HB3 | 2.51 | 0.40 |
| 4:CD:90:LEU:HD13 | 4:CD:90:LEU:HA | 1.82 | 0.40 |
| 4:CD:195:ASN:O | 4:CD:197:HIS:N | 2.55 | 0.40 |
| 6:CF:9:MET:HB2 | 6:CF:85:ILE:HG13 | 2.03 | 0.40 |
| 54:CG:148:LYS:HD2 | 11:CK:60:PHE:CD1 | 2.55 | 0.40 |
| 8:CH:104:SER:CA | 8:CH:109:VAL:HG13 | 2.51 | 0.40 |
| 10:CJ:64:GLN:CB | 14:CN:98:ALA:HB3 | 2.42 | 0.40 |
| 55:CM:8:ILE:N | 55:CM:9:PRO:CD | 2.84 | 0.40 |
| 15:CO:66:LEU:O | 15:CO:67:ASP:C | 2.59 | 0.40 |
| 57:DA:201:C:H6 | 57:DA:201:C:O5' | 2.04 | 0.40 |
| 57:DA:201:C:OP1 | 45:DX:17:ARG:NH1 | 2.54 | 0.40 |
| 57:DA:481:G:H1' | 57:DA:506:G:H21 | 1.86 | 0.40 |
| 57:DA:742:A:H2' | 57:DA:743:A:H8 | 1.84 | 0.40 |
| 57:DA:1034:G:C6 | 57:DA:1122:G:C6 | 3.09 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:1147:A:H2' | 57:DA:1148:U:C6 | 2.56 | 0.40 |
| 57:DA:1228:G:H2' | 57:DA:1229:C:H6 | 1.86 | 0.40 |
| 57:DA:1229:C:H2' | 57:DA:1230:A:H8 | 1.86 | 0.40 |
| 57:DA:1395:A:C4 | 57:DA:1398:C:C5 | 3.08 | 0.40 |
| 57:DA:1653:G:OP2 | 57:DA:1653:G:H8 | 2.04 | 0.40 |
| 57:DA:1677:A:C8 | 63:DA:3747:HOH:O | 2.73 | 0.40 |
| 57:DA:1814:G:C6 | 57:DA:1815:A:C6 | 3.09 | 0.40 |
| 57:DA:1965:C:H5'' | 57:DA:1966:A:H2' | 2.03 | 0.40 |
| 57:DA:2586:U:O2' | 57:DA:2587:A:H5' | 2.20 | 0.40 |
| 57:DA:2586:U:C5 | 57:DA:2608:G:N2 | 2.89 | 0.40 |
| 58:DB:56:G:H5' | 59:DF:23:SER:OG | 2.20 | 0.40 |
| 24:DC:75:ALA:HA | 24:DC:95:TYR:HA | 2.03 | 0.40 |
| 25:DD:119:ALA:HB2 | 25:DD:163:GLY:O | 2.21 | 0.40 |
| 26:DE:112:LEU:HD13 | 26:DE:112:LEU:O | 2.22 | 0.40 |
| 26:DE:119:ILE:CD1 | 26:DE:143:LEU:HD21 | 2.51 | 0.40 |
| 26:DE:187:VAL:HG12 | 26:DE:188:MET:N | 2.36 | 0.40 |
| 59:DF:28:PRO:HB2 | 59:DF:168:LEU:CG | 2.51 | 0.40 |
| 28:DG:1:SER:HG | 28:DG:61:TRP:HE3 | 1.66 | 0.40 |
| 32:DK:104:THR:O | 32:DK:106:GLU:N | 2.54 | 0.40 |
| 34:DM:22:GLN:HB2 | 34:DM:100:LYS:HZ3 | 1.87 | 0.40 |
| 37:DP:9:GLN:HB3 | 37:DP:12:MET:HE3 | 2.02 | 0.40 |
| 37:DP:59:THR:HG23 | 37:DP:72:VAL:CG1 | 2.51 | 0.40 |
| 38:DQ:26:ALA:HA | 38:DQ:29:ARG:CG | 2.51 | 0.40 |
| 39:DR:33:VAL:HG23 | 39:DR:33:VAL:O | 2.21 | 0.40 |
| 41:DT:73:ARG:HD3 | 41:DT:73:ARG:HA | 1.96 | 0.40 |
| 42:DU:86:PHE:HB2 | 42:DU:92:VAL:HG22 | 2.02 | 0.40 |
| 43:DV:40:ILE:HD13 | 43:DV:40:ILE:N | 2.36 | 0.40 |
| 44:DW:8:SER:O | 44:DW:9:THR:CB | 2.68 | 0.40 |
| 44:DW:44:PHE:HB2 | 44:DW:78:PHE:H | 1.85 | 0.40 |
| 44:DW:81:ILE:HD12 | 44:DW:81:ILE:C | 2.41 | 0.40 |
| 46:DY:23:ARG:H | 46:DY:23:ARG:HG2 | 1.70 | 0.40 |
| 49:D1:3:GLY:C | 49:D1:5:ARG:H | 2.24 | 0.40 |
| 49:D1:37:LYS:O | 49:D1:48:TYR:CD2 | 2.74 | 0.40 |
| 49:D1:38:PHE:CD2 | 49:D1:39:ASP:N | 2.88 | 0.40 |
| 1:AA:21:G:N2 | 1:AA:22:G:C6 | 2.89 | 0.40 |
| 1:AA:112:G:C2 | 1:AA:113:G:C8 | 3.10 | 0.40 |
| 1:AA:257:G:C2 | 1:AA:258:G:N7 | 2.90 | 0.40 |
| 1:AA:429:U:O3' | 4:AD:8:LEU:HD23 | 2.20 | 0.40 |
| 1:AA:652:U:H1' | 1:AA:653:U:C5 | 2.55 | 0.40 |
| 1:AA:974:A:H5' | 1:AA:975:A:H5' | 2.03 | 0.40 |
| 1:AA:1348:U:H2' | 1:AA:1349:A:C8 | 2.55 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1489:G:C2' | 1:AA:1490:U:H5' | 2.51 | 0.40 |
| 3:AC:113:LYS:HD2 | 3:AC:113:LYS:HA | 1.83 | 0.40 |
| 4:AD:115:GLN:HA | 4:AD:115:GLN:HE21 | 1.85 | 0.40 |
| 5:AE:10:LEU:HG | 5:AE:11:GLN:N | 2.36 | 0.40 |
| 6:AF:14:GLN:OE1 | 6:AF:17:GLN:HB2 | 2.22 | 0.40 |
| 9:AI:41:GLU:HB3 | 9:AI:42:THR:H | 1.58 | 0.40 |
| 9:AI:86:LEU:O | 9:AI:93:LEU:HD11 | 2.22 | 0.40 |
| 10:AJ:35:GLN:CA | 10:AJ:35:GLN:HE21 | 2.34 | 0.40 |
| 11:AK:16:SER:C | 11:AK:78:ILE:HG22 | 2.42 | 0.40 |
| 12:AL:62:VAL:CG2 | 12:AL:94:TYR:CE2 | 2.93 | 0.40 |
| 15:AO:23:SER:O | 15:AO:26:VAL:N | 2.52 | 0.40 |
| 16:AP:56:ARG:NH1 | 16:AP:59:HIS:CD2 | 2.90 | 0.40 |
| 18:AR:35:SER:HB3 | 21:AU:3:ILE:CG1 | 2.51 | 0.40 |
| 22:BA:1:G:N3 | 22:BA:1:G:C2' | 2.81 | 0.40 |
| 22:BA:276:U:O2 | 22:BA:276:U:H2' | 2.20 | 0.40 |
| 22:BA:399:U:H2' | 22:BA:400:G:H5' | 2.03 | 0.40 |
| 22:BA:498:G:C4 | 22:BA:499:U:C5 | 3.10 | 0.40 |
| 22:BA:579:G:H2' | 22:BA:580:U:H6 | 1.87 | 0.40 |
| 22:BA:669:G:C6 | 22:BA:801:G:O6 | 2.74 | 0.40 |
| 22:BA:971:G:C2' | 22:BA:972:A:H5' | 2.51 | 0.40 |
| 22:BA:996:A:C2 | 22:BA:997:G:N9 | 2.89 | 0.40 |
| 22:BA:1046:A:H3' | 22:BA:1047:G:C5' | 2.51 | 0.40 |
| 22:BA:1071:G:C4 | 22:BA:1089:A:C6 | 3.10 | 0.40 |
| 22:BA:1252:G:N2 | 38:BQ:36:GLN:OE1 | 2.54 | 0.40 |
| 22:BA:1410:G:C2 | 22:BA:1593:A:C2 | 3.09 | 0.40 |
| 22:BA:1429:G:N3 | 22:BA:1568:G:C2 | 2.90 | 0.40 |
| 22:BA:1789:A:P | 24:BC:220:ARG:HD3 | 2.61 | 0.40 |
| 22:BA:1813:G:H1' | 24:BC:49:THR:HG21 | 2.02 | 0.40 |
| 22:BA:2024:G:OP2 | 22:BA:2034:U:H4' | 2.21 | 0.40 |
| 22:BA:2149:U:O2' | 22:BA:2150:C:C4' | 2.69 | 0.40 |
| 22:BA:2353:G:O2' | 44:BW:31:LEU:HD23 | 2.21 | 0.40 |
| 22:BA:2440:C:H2' | 22:BA:2441:U:O4' | 2.21 | 0.40 |
| 22:BA:2515:C:O5' | 22:BA:2515:C:H6 | 2.05 | 0.40 |
| 22:BA:2544:G:C2' | 22:BA:2545:G:H5' | 2.52 | 0.40 |
| 22:BA:2575:C:H5'' | 22:BA:2576:G:OP2 | 2.21 | 0.40 |
| 22:BA:2765:A:N3 | 22:BA:2765:A:C2' | 2.85 | 0.40 |
| 22:BA:2848:G:H8 | 37:BP:94:ALA:HB2 | 1.86 | 0.40 |
| 22:BA:2870:C:H2' | 22:BA:2871:U:H5' | 2.03 | 0.40 |
| 23:BB:66:A:C2 | 23:BB:108:A:C2 | 3.09 | 0.40 |
| 23:BB:94:A:H2' | 23:BB:95:U:C6 | 2.56 | 0.40 |
| 24:BC:16:VAL:N | 24:BC:203:VAL:HG11 | 2.36 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 24:BC:184:GLU:O | 24:BC:185:ALA:HB3 | 2.22 | 0.40 |
| 25:BD:34:VAL:HA | 25:BD:50:VAL:HG12 | 2.02 | 0.40 |
| 26:BE:8:ALA:O | 26:BE:9:GLN:C | 2.60 | 0.40 |
| 27:BF:42:ALA:HA | 27:BF:45:ASP:O | 2.22 | 0.40 |
| 28:BG:25:ILE:HD11 | 28:BG:71:LEU:CD1 | 2.51 | 0.40 |
| 28:BG:140:ILE:HD12 | 28:BG:141:GLY:N | 2.37 | 0.40 |
| 28:BG:164:ALA:C | 28:BG:166:GLU:H | 2.25 | 0.40 |
| 30:BI:52:LEU:HD11 | 30:BI:81:LYS:HE2 | 2.03 | 0.40 |
| 30:BI:56:VAL:HG22 | 30:BI:68:PHE:HB2 | 2.03 | 0.40 |
| 30:BI:126:ARG:HD3 | 30:BI:126:ARG:H | 1.86 | 0.40 |
| 31:BJ:64:VAL:HG13 | 31:BJ:65:THR:O | 2.21 | 0.40 |
| 32:BK:114:LYS:HE2 | 32:BK:114:LYS:HA | 2.04 | 0.40 |
| 36:BO:31:THR:CG2 | 36:BO:34:HIS:N | 2.78 | 0.40 |
| 36:BO:76:LYS:O | 36:BO:79:ALA:HB3 | 2.21 | 0.40 |
| 37:BP:92:ARG:O | 37:BP:92:ARG:CG | 2.67 | 0.40 |
| 39:BR:75:VAL:HG22 | 39:BR:86:GLN:HG3 | 2.02 | 0.40 |
| 41:BT:30:ILE:HG12 | 41:BT:32:LEU:HD22 | 2.02 | 0.40 |
| 49:B1:32:LYS:HG2 | 49:B1:52:LYS:OXT | 2.22 | 0.40 |
| 49:B1:42:VAL:O | 49:B1:42:VAL:CG1 | 2.69 | 0.40 |
| 53:CA:76:G:N2 | 53:CA:95:C:N3 | 2.69 | 0.40 |
| 53:CA:158:G:N2 | 53:CA:162:A:N6 | 2.69 | 0.40 |
| 53:CA:261:U:O2' | 53:CA:263:A:N7 | 2.39 | 0.40 |
| 53:CA:676:A:C4 | 53:CA:677:U:C5 | 3.09 | 0.40 |
| 53:CA:737:C:H2' | 53:CA:738:C:C6 | 2.56 | 0.40 |
| 53:CA:807:A:C5 | 53:CA:808:C:C4 | 3.09 | 0.40 |
| 53:CA:1004:A:C8 | 53:CA:1025:U:O2' | 2.75 | 0.40 |
| 53:CA:1125:U:C2 | 53:CA:1127:G:N7 | 2.89 | 0.40 |
| 53:CA:1158:C:O2 | 53:CA:1158:C:H2' | 2.21 | 0.40 |
| 53:CA:1215:G:O2' | 53:CA:1216:A:C5' | 2.69 | 0.40 |
| 53:CA:1346:A:H5'' | 9:CI:121:ARG:HH22 | 1.86 | 0.40 |
| 53:CA:1487:G:H8 | 53:CA:1487:G:O5' | 2.04 | 0.40 |
| 5:CE:125:LYS:HE3 | 5:CE:125:LYS:HB2 | 1.63 | 0.40 |
| 5:CE:132:PRO:C | 5:CE:134:ASN:N | 2.74 | 0.40 |
| 6:CF:81:ASN:O | 6:CF:84:VAL:HG12 | 2.22 | 0.40 |
| 10:CJ:51:VAL:CB | 14:CN:80:ARG:HB2 | 2.48 | 0.40 |
| 10:CJ:76:ILE:HG22 | 10:CJ:77:VAL:N | 2.36 | 0.40 |
| 12:CL:35:ARG:O | 12:CL:53:ARG:N | 2.54 | 0.40 |
| 57:DA:104:A:O2' | 57:DA:105:C:H5' | 2.21 | 0.40 |
| 57:DA:155:A:H2' | 57:DA:156:A:H8 | 1.87 | 0.40 |
| 57:DA:163:C:H2' | 57:DA:164:C:C6 | 2.56 | 0.40 |
| 57:DA:243:U:O2' | 57:DA:244:A:H5' | 2.22 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 57:DA:243:U:H3' | 51:D3:7:ARG:HH22 | 1.87 | 0.40 |
| 57:DA:271:G:O2' | 57:DA:272:A:O4' | 2.38 | 0.40 |
| 57:DA:458:G:H22 | 57:DA:469:G:H2' | 1.85 | 0.40 |
| 57:DA:471:A:H2' | 57:DA:472:A:O4' | 2.22 | 0.40 |
| 57:DA:779:U:H5'' | 24:DC:42:ARG:NH2 | 2.36 | 0.40 |
| 57:DA:845:A:C2 | 57:DA:847:U:N1 | 2.89 | 0.40 |
| 57:DA:1117:C:H2' | 57:DA:1118:C:H6 | 1.83 | 0.40 |
| 57:DA:1180:U:C4 | 57:DA:1181:U:C4 | 3.10 | 0.40 |
| 57:DA:1267:U:O2' | 57:DA:1268:A:H8 | 2.04 | 0.40 |
| 57:DA:1379:U:O2 | 57:DA:1379:U:C2' | 2.68 | 0.40 |
| 57:DA:1456:G:O2' | 57:DA:1457:U:H5' | 2.21 | 0.40 |
| 57:DA:1569:A:N1 | 57:DA:1570:A:C2 | 2.89 | 0.40 |
| 57:DA:1813:G:H2' | 57:DA:1814:G:O4' | 2.22 | 0.40 |
| 57:DA:1869:G:C2 | 57:DA:1873:G:C6 | 3.09 | 0.40 |
| 57:DA:1925:C:H3' | 57:DA:1925:C:C6 | 2.56 | 0.40 |
| 57:DA:2021:C:H4' | 57:DA:2022:U:OP2 | 2.21 | 0.40 |
| 57:DA:2135:A:C3' | 57:DA:2136:G:C5' | 2.89 | 0.40 |
| 57:DA:2187:U:O2' | 57:DA:2188:U:H5' | 2.22 | 0.40 |
| 57:DA:2314:A:N3 | 57:DA:2315:G:C8 | 2.89 | 0.40 |
| 57:DA:2422:C:C2' | 57:DA:2423:U:H5'' | 2.51 | 0.40 |
| 57:DA:2515:C:H2' | 57:DA:2516:A:C8 | 2.56 | 0.40 |
| 57:DA:2735:G:C4 | 57:DA:2736:A:C8 | 3.09 | 0.40 |
| 57:DA:2748:A:C6 | 57:DA:2749:A:C6 | 3.10 | 0.40 |
| 26:DE:34:ALA:O | 26:DE:37:ALA:HB3 | 2.22 | 0.40 |
| 26:DE:134:LEU:HA | 26:DE:137:LYS:HB2 | 2.03 | 0.40 |
| 59:DF:43:ILE:HG12 | 59:DF:77:LYS:CD | 2.46 | 0.40 |
| 59:DF:147:ARG:HG2 | 59:DF:149:ARG:NH1 | 2.34 | 0.40 |
| 28:DG:5:LYS:HZ1 | 28:DG:61:TRP:HZ3 | 1.68 | 0.40 |
| 29:DH:8:LYS:HB3 | 29:DH:15:LEU:CD1 | 2.51 | 0.40 |
| 29:DH:46:PHE:CD2 | 29:DH:50:ARG:NH2 | 2.89 | 0.40 |
| 29:DH:48:GLU:HA | 29:DH:51:ARG:HE | 1.86 | 0.40 |
| 29:DH:94:ILE:HB | 29:DH:98:ASP:HB2 | 2.03 | 0.40 |
| 31:DJ:64:VAL:HG22 | 31:DJ:68:LYS:HG3 | 2.02 | 0.40 |
| 35:DN:75:ILE:O | 35:DN:79:LEU:HB2 | 2.21 | 0.40 |
| 38:DQ:69:ARG:HH21 | 38:DQ:69:ARG:HB2 | 1.87 | 0.40 |
| 41:DT:18:GLU:HA | 41:DT:22:THR:HG21 | 2.02 | 0.40 |
| 41:DT:39:THR:C | 41:DT:41:ALA:H | 2.25 | 0.40 |
| 44:DW:67:LYS:CB | 44:DW:80:SER:HB2 | 2.50 | 0.40 |
| 52:D4:37:GLN:HG2 | 52:D4:38:GLY:N | 2.36 | 0.40 |
| 1:AA:233:C:C2 | 1:AA:234:C:C5 | 3.10 | 0.40 |
| 1:AA:258:G:C5 | 1:AA:259:G:C8 | 3.10 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:258:G:C2 | 1:AA:259:G:N9 | 2.90 | 0.40 |
| 1:AA:372:C:H5' | 1:AA:373:A:OP1 | 2.21 | 0.40 |
| 1:AA:414:A:C2 | 1:AA:415:A:C8 | 3.09 | 0.40 |
| 1:AA:420:U:C2' | 1:AA:421:U:H5'' | 2.51 | 0.40 |
| 1:AA:814:A:P | 63:AA:1758:HOH:O | 2.79 | 0.40 |
| 1:AA:833:G:H2' | 1:AA:834:U:H6 | 1.86 | 0.40 |
| 1:AA:858:G:H2' | 1:AA:859:G:H5' | 2.02 | 0.40 |
| 1:AA:994:A:O2' | 1:AA:995:C:H5' | 2.21 | 0.40 |
| 1:AA:1121:U:O2' | 1:AA:1122:U:H5' | 2.20 | 0.40 |
| 4:AD:2:ARG:CZ | 4:AD:114:ARG:CD | 2.98 | 0.40 |
| 4:AD:71:PHE:O | 4:AD:74:TYR:HB2 | 2.21 | 0.40 |
| 5:AE:148:SER:O | 5:AE:152:VAL:HG13 | 2.21 | 0.40 |
| 8:AH:4:ASP:OD1 | 8:AH:7:ALA:HB2 | 2.22 | 0.40 |
| 12:AL:35:ARG:HB3 | 12:AL:37:TYR:CZ | 2.57 | 0.40 |
| 14:AN:46:LYS:C | 14:AN:48:GLN:N | 2.74 | 0.40 |
| 22:BA:49:A:N6 | 22:BA:177:G:N9 | 2.70 | 0.40 |
| 22:BA:659:G:C6 | 22:BA:660:C:C4 | 3.10 | 0.40 |
| 22:BA:826:U:O2' | 33:BL:53:GLY:CA | 2.67 | 0.40 |
| 22:BA:950:G:C5 | 22:BA:951:C:C5 | 3.09 | 0.40 |
| 22:BA:1070:A:C2 | 22:BA:1097:U:H4' | 2.57 | 0.40 |
| 22:BA:1277:G:C5' | 35:BN:20:MET:HE1 | 2.46 | 0.40 |
| 22:BA:1338:G:O2' | 41:BT:18:GLU:HG2 | 2.20 | 0.40 |
| 22:BA:1426:G:H8 | 22:BA:1426:G:O5' | 2.05 | 0.40 |
| 22:BA:1460:U:H6 | 22:BA:1460:U:H2' | 1.54 | 0.40 |
| 22:BA:1464:G:O2' | 22:BA:1465:G:H5' | 2.21 | 0.40 |
| 22:BA:1604:C:H2' | 22:BA:1605:C:C6 | 2.57 | 0.40 |
| 22:BA:1731:G:N1 | 22:BA:1733:G:C6 | 2.89 | 0.40 |
| 22:BA:1733:G:O2' | 22:BA:1734:G:O5' | 2.39 | 0.40 |
| 22:BA:2078:C:H2' | 22:BA:2079:U:C6 | 2.57 | 0.40 |
| 22:BA:2259:U:O2' | 22:BA:2260:C:H5' | 2.21 | 0.40 |
| 22:BA:2671:G:C6 | 22:BA:2672:U:C4 | 3.09 | 0.40 |
| 24:BC:145:MET:SD | 24:BC:153:LEU:HD21 | 2.62 | 0.40 |
| 26:BE:46:GLN:CG | 26:BE:86:ALA:HA | 2.51 | 0.40 |
| 29:BH:4:ILE:HG12 | 29:BH:18:GLN:HE22 | 1.87 | 0.40 |
| 29:BH:86:ASP:CB | 29:BH:89:LYS:HB3 | 2.51 | 0.40 |
| 34:BM:108:VAL:HG13 | 34:BM:112:LEU:HB3 | 2.04 | 0.40 |
| 42:BU:48:VAL:O | 42:BU:53:GLN:HB3 | 2.22 | 0.40 |
| 42:BU:86:PHE:HB3 | 42:BU:87:GLU:H | 1.53 | 0.40 |
| 44:BW:23:LYS:HD2 | 44:BW:24:ARG:CB | 2.51 | 0.40 |
| 51:B3:21:PHE:CB | 51:B3:49:VAL:CG1 | 2.94 | 0.40 |
| 53:CA:91:U:O2' | 53:CA:92:U:C5' | 2.69 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 53:CA:158:G:H22 | 53:CA:162:A:N6 | 2.20 | 0.40 |
| 53:CA:243:A:H4' | 53:CA:244:U:OP2 | 2.21 | 0.40 |
| 53:CA:248:C:O2' | 53:CA:249:U:O4' | 2.31 | 0.40 |
| 53:CA:408:A:C5 | 53:CA:409:U:C5 | 3.09 | 0.40 |
| 53:CA:527:G:C2 | 53:CA:528:C:C6 | 3.09 | 0.40 |
| 53:CA:818:G:O2' | 53:CA:820:U:C5 | 2.73 | 0.40 |
| 53:CA:846:G:H2' | 53:CA:847:G:H8 | 1.86 | 0.40 |
| 53:CA:1060:U:C5' | 10:CJ:53:ILE:HG12 | 2.51 | 0.40 |
| 53:CA:1067:A:O2' | 53:CA:1094:G:H3' | 2.20 | 0.40 |
| 53:CA:1087:G:C2 | 53:CA:1088:G:C5 | 3.10 | 0.40 |
| 53:CA:1221:G:N2 | 53:CA:1222:G:H1' | 2.36 | 0.40 |
| 53:CA:1243:C:N4 | 53:CA:1244:G:O6 | 2.54 | 0.40 |
| 53:CA:1300:G:N2 | 53:CA:1334:G:H2' | 2.32 | 0.40 |
| 53:CA:1394:A:C5 | 53:CA:1501:C:H4' | 2.57 | 0.40 |
| 2:CB:122:ASP:OD1 | 2:CB:124:THR:HG22 | 2.22 | 0.40 |
| 3:CC:37:LYS:HD3 | 3:CC:37:LYS:HA | 1.97 | 0.40 |
| 3:CC:148:ILE:CD1 | 3:CC:201:ILE:HG12 | 2.49 | 0.40 |
| 8:CH:38:VAL:O | 8:CH:41:GLU:HB2 | 2.20 | 0.40 |
| 8:CH:39:LEU:HB2 | 8:CH:45:ILE:HD11 | 2.02 | 0.40 |
| 8:CH:80:PRO:HA | 8:CH:83:ARG:NE | 2.36 | 0.40 |
| 10:CJ:87:LEU:HD22 | 10:CJ:87:LEU:HA | 1.92 | 0.40 |
| 11:CK:17:ASP:HA | 11:CK:80:ASN:O | 2.21 | 0.40 |
| 15:CO:70:LYS:HG3 | 15:CO:77:TYR:CD2 | 2.57 | 0.40 |
| 15:CO:72:LYS:HD3 | 15:CO:72:LYS:HA | 1.81 | 0.40 |
| 56:CP:44:SER:HB2 | 56:CP:46:LYS:HG3 | 2.04 | 0.40 |
| 20:CT:49:ALA:O | 20:CT:52:GLU:HB3 | 2.21 | 0.40 |
| 57:DA:30:G:N7 | 57:DA:31:C:C4 | 2.88 | 0.40 |
| 57:DA:31:C:O5' | 57:DA:31:C:H6 | 2.04 | 0.40 |
| 57:DA:117:G:H4' | 57:DA:126:A:H2 | 1.86 | 0.40 |
| 57:DA:206:U:C2' | 57:DA:207:A:H8 | 2.35 | 0.40 |
| 57:DA:216:A:N6 | 57:DA:432:A:C1' | 2.84 | 0.40 |
| 57:DA:324:A:O2' | 57:DA:325:G:O4' | 2.37 | 0.40 |
| 57:DA:381:G:H5'' | 45:DX:15:ASN:ND2 | 2.36 | 0.40 |
| 57:DA:487:C:C2' | 57:DA:488:G:H5' | 2.51 | 0.40 |
| 57:DA:545:U:H3' | 57:DA:545:U:H6 | 1.87 | 0.40 |
| 57:DA:552:U:C4 | 57:DA:553:G:N7 | 2.90 | 0.40 |
| 57:DA:591:U:H2' | 57:DA:592:A:H8 | 1.86 | 0.40 |
| 57:DA:628:G:O6 | 57:DA:636:G:N1 | 2.54 | 0.40 |
| 57:DA:764:A:C2 | 57:DA:781:A:C5 | 3.10 | 0.40 |
| 57:DA:901:C:C6 | 57:DA:902:C:H5 | 2.39 | 0.40 |
| 57:DA:989:G:OP2 | 47:DZ:13:ILE:HD11 | 2.21 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 57:DA:1082:U:H4' | 30:DI:117:THR:O | 2.21 | 0.40 |
| 57:DA:1099:G:C6 | 57:DA:1100:C:C2 | 3.09 | 0.40 |
| 57:DA:1171:G:C6 | 57:DA:1179:G:C2 | 3.10 | 0.40 |
| 57:DA:1255:U:O2' | 57:DA:1256:G:P | 2.78 | 0.40 |
| 57:DA:1330:C:HO2' | 57:DA:1331:G:P | 2.45 | 0.40 |
| 57:DA:1401:G:H2' | 57:DA:1402:U:C5 | 2.52 | 0.40 |
| 57:DA:1411:U:H2' | 57:DA:1412:U:O4' | 2.22 | 0.40 |
| 57:DA:1612:C:O2' | 57:DA:1613:G:O5' | 2.39 | 0.40 |
| 57:DA:1802:A:H2' | 57:DA:1803:A:C8 | 2.56 | 0.40 |
| 57:DA:1911:U:H2' | 57:DA:1918:A:C2 | 2.56 | 0.40 |
| 57:DA:2542:A:H4' | 57:DA:2543:G:H5'' | 1.98 | 0.40 |
| 57:DA:2547:A:C8 | 57:DA:2566:A:C8 | 3.10 | 0.40 |
| 57:DA:2652:C:N4 | 57:DA:2653:U:C4 | 2.90 | 0.40 |
| 57:DA:2717:C:H2' | 57:DA:2718:G:O4' | 2.21 | 0.40 |
| 58:DB:31:C:C5' | 59:DF:29:ARG:HH12 | 2.32 | 0.40 |
| 24:DC:14:HIS:O | 24:DC:16:VAL:HG23 | 2.20 | 0.40 |
| 26:DE:134:LEU:HA | 26:DE:137:LYS:CB | 2.52 | 0.40 |
| 26:DE:146:VAL:HG12 | 26:DE:167:VAL:HG23 | 2.03 | 0.40 |
| 26:DE:154:ASP:C | 26:DE:156:ASN:H | 2.24 | 0.40 |
| 26:DE:159:LEU:HA | 26:DE:159:LEU:HD12 | 1.84 | 0.40 |
| 26:DE:175:ILE:O | 26:DE:175:ILE:HG23 | 2.20 | 0.40 |
| 59:DF:97:GLU:O | 59:DF:97:GLU:HG2 | 2.20 | 0.40 |
| 28:DG:25:ILE:HG22 | 28:DG:78:VAL:HG11 | 2.03 | 0.40 |
| 28:DG:145:ALA:HA | 28:DG:148:ARG:HG2 | 2.03 | 0.40 |
| 28:DG:152:ARG:HD2 | 28:DG:152:ARG:HA | 1.95 | 0.40 |
| 28:DG:152:ARG:HD2 | 28:DG:153:PRO:CD | 2.52 | 0.40 |
| 29:DH:57:LYS:HE3 | 29:DH:58:LEU:HD13 | 2.04 | 0.40 |
| 30:DI:32:VAL:HG13 | 30:DI:58:ILE:HD12 | 2.03 | 0.40 |
| 31:DJ:22:GLY:O | 31:DJ:23:LYS:C | 2.59 | 0.40 |
| 31:DJ:37:ARG:HG3 | 31:DJ:118:MET:SD | 2.61 | 0.40 |
| 32:DK:103:VAL:O | 32:DK:104:THR:HB | 2.21 | 0.40 |
| 32:DK:107:LEU:C | 32:DK:109:SER:N | 2.75 | 0.40 |
| 34:DM:21:ALA:HB1 | 34:DM:100:LYS:HG2 | 2.04 | 0.40 |
| 39:DR:2:TYR:H | 39:DR:42:ALA:HB3 | 1.85 | 0.40 |
| 43:DV:6:ALA:HB1 | 43:DV:40:ILE:HB | 2.03 | 0.40 |
| 1:AA:135:C:C2' | 1:AA:136:C:H5' | 2.51 | 0.40 |
| 1:AA:208:U:H5 | 1:AA:210:C:C6 | 2.39 | 0.40 |
| 1:AA:212:G:C2 | 1:AA:213:G:C5 | 3.09 | 0.40 |
| 1:AA:213:G:C8 | 1:AA:214:C:C5 | 3.09 | 0.40 |
| 1:AA:457:G:C5 | 1:AA:458:U:C5 | 3.10 | 0.40 |
| 1:AA:627:G:C4 | 1:AA:628:G:C8 | 3.09 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:627:G:H2' | 1:AA:628:G:H8 | 1.87 | 0.40 |
| 1:AA:723:U:H5' | 21:AU:48:LYS:HE2 | 2.03 | 0.40 |
| 1:AA:771:G:H2' | 1:AA:772:U:H6 | 1.86 | 0.40 |
| 1:AA:892:A:O2' | 1:AA:893:C:H5' | 2.22 | 0.40 |
| 1:AA:901:A:N7 | 1:AA:902:G:C1' | 2.83 | 0.40 |
| 1:AA:920:U:O4' | 1:AA:1080:A:N1 | 2.54 | 0.40 |
| 1:AA:1114:C:C4 | 1:AA:1115:U:C5 | 3.09 | 0.40 |
| 2:AB:20:ARG:HA | 2:AB:20:ARG:HD3 | 1.84 | 0.40 |
| 2:AB:58:LYS:C | 2:AB:58:LYS:HD3 | 2.42 | 0.40 |
| 3:AC:119:ILE:HA | 3:AC:122:GLN:HG3 | 2.03 | 0.40 |
| 4:AD:104:MET:SD | 4:AD:179:GLY:HA3 | 2.62 | 0.40 |
| 7:AG:3:ARG:HH11 | 7:AG:3:ARG:HB2 | 1.86 | 0.40 |
| 7:AG:69:ARG:CG | 7:AG:95:ARG:HG2 | 2.48 | 0.40 |
| 9:AI:44:ARG:HG3 | 9:AI:45:MET:CE | 2.51 | 0.40 |
| 12:AL:73:LEU:HD13 | 12:AL:73:LEU:HA | 1.86 | 0.40 |
| 13:AM:113:LYS:N | 13:AM:114:PRO:CD | 2.77 | 0.40 |
| 15:AO:38:LEU:O | 15:AO:41:HIS:HB3 | 2.21 | 0.40 |
| 17:AQ:15:LYS:O | 17:AQ:16:MET:SD | 2.79 | 0.40 |
| 22:BA:18:U:P | 38:BQ:29:ARG:HH22 | 2.43 | 0.40 |
| 22:BA:77:G:C2 | 22:BA:110:G:N3 | 2.90 | 0.40 |
| 22:BA:141:G:H5' | 22:BA:142:A:N7 | 2.36 | 0.40 |
| 22:BA:142:A:O2' | 22:BA:143:C:O5' | 2.39 | 0.40 |
| 22:BA:152:A:H2' | 22:BA:153:U:C6 | 2.57 | 0.40 |
| 22:BA:235:U:H2' | 22:BA:236:C:H6 | 1.87 | 0.40 |
| 22:BA:312:G:O2' | 22:BA:313:G:H5' | 2.21 | 0.40 |
| 22:BA:415:A:C2 | 22:BA:2409:G:C2 | 3.09 | 0.40 |
| 22:BA:513:A:HO2' | 22:BA:514:A:H5' | 1.85 | 0.40 |
| 22:BA:598:U:H2' | 22:BA:599:A:C8 | 2.56 | 0.40 |
| 22:BA:960:A:O4' | 22:BA:2457:U:H4' | 2.21 | 0.40 |
| 22:BA:1210:G:OP1 | 22:BA:1212:G:H5' | 2.21 | 0.40 |
| 22:BA:1576:U:O2' | 22:BA:1577:C:H5' | 2.21 | 0.40 |
| 22:BA:1870:C:H3' | 22:BA:1871:A:C2 | 2.56 | 0.40 |
| 22:BA:1996:C:C4' | 22:BA:1997:C:OP1 | 2.54 | 0.40 |
| 22:BA:2092:U:O2' | 22:BA:2093:G:OP2 | 2.39 | 0.40 |
| 22:BA:2444:G:P | 26:BE:63:LYS:HD2 | 2.61 | 0.40 |
| 22:BA:2560:A:C5 | 22:BA:2561:U:C5 | 3.10 | 0.40 |
| 22:BA:2665:A:H2' | 22:BA:2665:A:N3 | 2.36 | 0.40 |
| 22:BA:2802:G:H2' | 22:BA:2803:G:O4' | 2.21 | 0.40 |
| 24:BC:119:VAL:HG12 | 24:BC:130:PRO:HG2 | 2.02 | 0.40 |
| 26:BE:42:GLY:C | 26:BE:43:THR:HG23 | 2.42 | 0.40 |
| 27:BF:62:GLN:HB3 | 27:BF:63:LYS:H | 1.56 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:BF:82:TYR:CD2 | 27:BF:83:PRO:HD2 | 2.54 | 0.40 |
| 27:BF:111:ARG:HB3 | 27:BF:112:ASP:H | 1.38 | 0.40 |
| 28:BG:17:LYS:HE3 | 28:BG:17:LYS:HB2 | 1.95 | 0.40 |
| 28:BG:26:LYS:HD2 | 28:BG:32:LEU:CD2 | 2.52 | 0.40 |
| 31:BJ:44:TYR:O | 31:BJ:45:THR:CB | 2.69 | 0.40 |
| 31:BJ:45:THR:HA | 31:BJ:46:PRO:HD3 | 1.72 | 0.40 |
| 32:BK:88:ASN:HD22 | 32:BK:91:SER:N | 2.20 | 0.40 |
| 33:BL:80:SER:HB3 | 33:BL:115:GLU:CD | 2.41 | 0.40 |
| 34:BM:126:ILE:O | 34:BM:128:THR:HG23 | 2.22 | 0.40 |
| 35:BN:8:ARG:HB2 | 35:BN:43:GLU:CD | 2.42 | 0.40 |
| 37:BP:64:SER:HB3 | 37:BP:69:VAL:CG1 | 2.52 | 0.40 |
| 38:BQ:40:LYS:HG2 | 38:BQ:44:TYR:CE1 | 2.56 | 0.40 |
| 39:BR:87:GLN:HG2 | 39:BR:88:GLY:N | 2.37 | 0.40 |
| 40:BS:33:LEU:HD11 | 40:BS:52:GLU:HG2 | 2.04 | 0.40 |
| 41:BT:4:GLU:CD | 41:BT:5:GLU:H | 2.25 | 0.40 |
| 44:BW:18:LYS:O | 44:BW:20:LEU:HG | 2.21 | 0.40 |
| 45:BX:21:LEU:HA | 45:BX:21:LEU:HD23 | 1.84 | 0.40 |
| 53:CA:16:A:O4' | 5:CE:21:SER:HB3 | 2.21 | 0.40 |
| 53:CA:198:G:C4 | 53:CA:199:A:N7 | 2.89 | 0.40 |
| 53:CA:255:G:H5' | 17:CQ:17:GLU:O | 2.22 | 0.40 |
| 53:CA:369:G:H2' | 53:CA:370:C:C6 | 2.57 | 0.40 |
| 53:CA:537:G:H2' | 53:CA:538:G:H8 | 1.84 | 0.40 |
| 53:CA:704:A:O2' | 53:CA:705:G:O5' | 2.39 | 0.40 |
| 53:CA:722:G:H4' | 53:CA:723:U:H5 | 1.87 | 0.40 |
| 53:CA:815:A:H4' | 53:CA:817:C:C4 | 2.57 | 0.40 |
| 53:CA:833:G:C5 | 53:CA:834:U:C5 | 3.10 | 0.40 |
| 53:CA:960:U:C4 | 53:CA:1225:A:H1' | 2.56 | 0.40 |
| 53:CA:992:U:H1' | 53:CA:993:G:C2 | 2.56 | 0.40 |
| 53:CA:1076:U:N3 | 53:CA:1082:A:C2 | 2.89 | 0.40 |
| 53:CA:1165:U:H2' | 53:CA:1166:G:H5' | 2.04 | 0.40 |
| 53:CA:1271:A:O2' | 14:CN:33:VAL:HG21 | 2.22 | 0.40 |
| 53:CA:1277:C:O2' | 53:CA:1279:G:C8 | 2.66 | 0.40 |
| 53:CA:1361:G:C2' | 53:CA:1362:A:H5' | 2.50 | 0.40 |
| 53:CA:1408:A:C2 | 53:CA:1494:G:C4 | 3.09 | 0.40 |
| 5:CE:17:VAL:HG21 | 5:CE:55:VAL:HG13 | 2.03 | 0.40 |
| 54:CG:8:GLN:NE2 | 54:CG:9:ARG:HG2 | 2.36 | 0.40 |
| 11:CK:92:ARG:HB3 | 11:CK:93:GLU:H | 1.63 | 0.40 |
| 12:CL:20:VAL:C | 12:CL:22:ALA:H | 2.25 | 0.40 |
| 55:CM:17:ALA:HB3 | 55:CM:18:LEU:HD12 | 2.04 | 0.40 |
| 55:CM:65:GLU:H | 55:CM:65:GLU:HG3 | 1.70 | 0.40 |
| 14:CN:72:PHE:CD1 | 14:CN:72:PHE:C | 2.94 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 56:CP:51:ARG:HD3 | 56:CP:51:ARG:HA | 1.88 | 0.40 |
| 17:CQ:13:SER:CB | 17:CQ:21:VAL:HB | 2.50 | 0.40 |
| 20:CT:63:LYS:HG3 | 20:CT:63:LYS:O | 2.21 | 0.40 |
| 57:DA:9:G:C6 | 57:DA:2629:U:C5 | 3.10 | 0.40 |
| 57:DA:88:G:C2 | 57:DA:89:A:C8 | 3.09 | 0.40 |
| 57:DA:137:U:H2' | 57:DA:138:U:O4' | 2.22 | 0.40 |
| 57:DA:349:U:H2' | 57:DA:350:G:H8 | 1.87 | 0.40 |
| 57:DA:391:A:C2 | 57:DA:411:G:C4 | 3.09 | 0.40 |
| 57:DA:538:A:O2' | 31:DJ:8:PRO:CD | 2.69 | 0.40 |
| 57:DA:656:G:O2' | 57:DA:657:U:C5' | 2.70 | 0.40 |
| 57:DA:686:U:OP2 | 63:DA:3705:HOH:O | 2.22 | 0.40 |
| 57:DA:792:A:H3' | 57:DA:793:A:H5' | 2.03 | 0.40 |
| 57:DA:996:A:C4' | 38:DQ:91:ARG:HD2 | 2.47 | 0.40 |
| 57:DA:1020:A:C2 | 57:DA:1141:U:H2' | 2.56 | 0.40 |
| 57:DA:1133:A:C8 | 57:DA:2026:U:H4' | 2.57 | 0.40 |
| 57:DA:1293:C:H2' | 57:DA:1294:U:O4' | 2.21 | 0.40 |
| 57:DA:1304:A:HO2' | 57:DA:1305:C:C5' | 2.34 | 0.40 |
| 57:DA:1346:G:O2' | 57:DA:1347:A:P | 2.80 | 0.40 |
| 57:DA:1426:G:H5' | 57:DA:1427:A:OP2 | 2.21 | 0.40 |
| 57:DA:1526:C:C4 | 57:DA:1527:G:C5 | 3.09 | 0.40 |
| 57:DA:1540:G:H2' | 57:DA:1541:C:H6 | 1.86 | 0.40 |
| 57:DA:1683:U:H2' | 57:DA:1684:G:C8 | 2.56 | 0.40 |
| 57:DA:1723:G:O2' | 57:DA:1724:G:H5' | 2.22 | 0.40 |
| 57:DA:2102:G:H2' | 57:DA:2103:C:H5' | 2.04 | 0.40 |
| 57:DA:2297:A:HO2' | 57:DA:2298:A:H8 | 1.63 | 0.40 |
| 57:DA:2413:G:H2' | 57:DA:2414:G:C8 | 2.56 | 0.40 |
| 57:DA:2654:A:N3 | 57:DA:2656:U:O4 | 2.55 | 0.40 |
| 58:DB:65:U:H3' | 58:DB:108:A:H61 | 1.83 | 0.40 |
| 58:DB:90:C:H6 | 58:DB:90:C:C5' | 2.33 | 0.40 |
| 24:DC:246:PRO:HB2 | 24:DC:247:TRP:CZ3 | 2.57 | 0.40 |
| 25:DD:78:GLY:C | 25:DD:80:TRP:CZ3 | 2.95 | 0.40 |
| 25:DD:101:PHE:HA | 25:DD:104:VAL:HB | 2.04 | 0.40 |
| 25:DD:166:GLY:O | 25:DD:167:ASN:HB3 | 2.21 | 0.40 |
| 26:DE:178:VAL:HG13 | 26:DE:179:SER:H | 1.86 | 0.40 |
| 59:DF:60:SER:C | 59:DF:62:GLN:N | 2.75 | 0.40 |
| 29:DH:78:VAL:HG11 | 29:DH:144:VAL:HG12 | 2.03 | 0.40 |
| 30:DI:127:SER:O | 30:DI:131:THR:HG23 | 2.21 | 0.40 |
| 31:DJ:64:VAL:HG11 | 31:DJ:69:ARG:CA | 2.50 | 0.40 |
| 31:DJ:97:PRO:C | 31:DJ:99:ARG:N | 2.75 | 0.40 |
| 33:DL:38:GLN:C | 33:DL:40:SER:H | 2.25 | 0.40 |
| 37:DP:99:LEU:HD23 | 37:DP:99:LEU:HA | 1.92 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 38:DQ:4:LYS:O | 38:DQ:5:ARG:CB | 2.70 | 0.40 |
| 42:DU:64:ILE:O | 42:DU:64:ILE:HG23 | 2.21 | 0.40 |
| 43:DV:40:ILE:HD13 | 43:DV:40:ILE:H | 1.87 | 0.40 |
| 43:DV:56:PHE:C | 43:DV:56:PHE:CD1 | 2.95 | 0.40 |
| 45:DX:2:ARG:HD3 | 45:DX:32:LEU:HD23 | 2.02 | 0.40 |
| 48:D0:32:THR:HG21 | 48:D0:47:TYR:CD2 | 2.56 | 0.40 |
| 48:D0:37:HIS:HB3 | 48:D0:43:THR:HG22 | 2.03 | 0.40 |

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|----------|-------------|----|
| 2 | AB | 216/218 (99%) | 132 (61%) | 55 (26%) | 29 (13%) | 0 | 1 |
| 2 | CB | 216/218 (99%) | 149 (69%) | 49 (23%) | 18 (8%) | 1 | 5 |
| 3 | AC | 204/206 (99%) | 153 (75%) | 34 (17%) | 17 (8%) | 1 | 5 |
| 3 | CC | 204/206 (99%) | 145 (71%) | 39 (19%) | 20 (10%) | 0 | 3 |
| 4 | AD | 203/205 (99%) | 133 (66%) | 43 (21%) | 27 (13%) | 0 | 1 |
| 4 | CD | 203/205 (99%) | 138 (68%) | 42 (21%) | 23 (11%) | 0 | 2 |
| 5 | AE | 148/150 (99%) | 103 (70%) | 28 (19%) | 17 (12%) | 0 | 2 |
| 5 | CE | 148/150 (99%) | 106 (72%) | 24 (16%) | 18 (12%) | 0 | 2 |
| 6 | AF | 98/100 (98%) | 71 (72%) | 20 (20%) | 7 (7%) | 1 | 8 |
| 6 | CF | 98/100 (98%) | 68 (69%) | 19 (19%) | 11 (11%) | 0 | 2 |
| 7 | AG | 149/151 (99%) | 108 (72%) | 35 (24%) | 6 (4%) | 3 | 21 |
| 8 | AH | 127/129 (98%) | 94 (74%) | 27 (21%) | 6 (5%) | 2 | 17 |
| 8 | CH | 127/129 (98%) | 89 (70%) | 29 (23%) | 9 (7%) | 1 | 8 |
| 9 | AI | 125/127 (98%) | 84 (67%) | 30 (24%) | 11 (9%) | 1 | 4 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|----------|-------------|----|
| 9 | CI | 125/127 (98%) | 90 (72%) | 23 (18%) | 12 (10%) | 0 | 3 |
| 10 | AJ | 96/98 (98%) | 70 (73%) | 16 (17%) | 10 (10%) | 0 | 3 |
| 10 | CJ | 96/98 (98%) | 55 (57%) | 26 (27%) | 15 (16%) | 0 | 1 |
| 11 | AK | 115/117 (98%) | 86 (75%) | 20 (17%) | 9 (8%) | 1 | 6 |
| 11 | CK | 115/117 (98%) | 86 (75%) | 20 (17%) | 9 (8%) | 1 | 6 |
| 12 | AL | 121/123 (98%) | 88 (73%) | 16 (13%) | 17 (14%) | 0 | 1 |
| 12 | CL | 121/123 (98%) | 83 (69%) | 30 (25%) | 8 (7%) | 1 | 9 |
| 13 | AM | 112/114 (98%) | 84 (75%) | 19 (17%) | 9 (8%) | 1 | 6 |
| 14 | AN | 92/100 (92%) | 58 (63%) | 22 (24%) | 12 (13%) | 0 | 1 |
| 14 | CN | 91/100 (91%) | 60 (66%) | 26 (29%) | 5 (6%) | 2 | 14 |
| 15 | AO | 86/88 (98%) | 62 (72%) | 13 (15%) | 11 (13%) | 0 | 1 |
| 15 | CO | 86/88 (98%) | 65 (76%) | 18 (21%) | 3 (4%) | 3 | 24 |
| 16 | AP | 80/82 (98%) | 56 (70%) | 15 (19%) | 9 (11%) | 0 | 2 |
| 17 | AQ | 78/80 (98%) | 55 (70%) | 11 (14%) | 12 (15%) | 0 | 1 |
| 17 | CQ | 78/80 (98%) | 61 (78%) | 8 (10%) | 9 (12%) | 0 | 2 |
| 18 | AR | 53/55 (96%) | 41 (77%) | 10 (19%) | 2 (4%) | 3 | 22 |
| 18 | CR | 53/55 (96%) | 42 (79%) | 10 (19%) | 1 (2%) | 8 | 39 |
| 19 | AS | 77/79 (98%) | 59 (77%) | 12 (16%) | 6 (8%) | 1 | 6 |
| 19 | CS | 77/79 (98%) | 46 (60%) | 24 (31%) | 7 (9%) | 1 | 3 |
| 20 | AT | 83/85 (98%) | 65 (78%) | 10 (12%) | 8 (10%) | 0 | 3 |
| 20 | CT | 83/85 (98%) | 61 (74%) | 13 (16%) | 9 (11%) | 0 | 2 |
| 21 | AU | 49/51 (96%) | 26 (53%) | 15 (31%) | 8 (16%) | 0 | 0 |
| 21 | CU | 49/51 (96%) | 21 (43%) | 12 (24%) | 16 (33%) | 0 | 0 |
| 24 | BC | 269/271 (99%) | 180 (67%) | 61 (23%) | 28 (10%) | 0 | 3 |
| 24 | DC | 269/271 (99%) | 164 (61%) | 72 (27%) | 33 (12%) | 0 | 2 |
| 25 | BD | 207/209 (99%) | 141 (68%) | 37 (18%) | 29 (14%) | 0 | 1 |
| 25 | DD | 207/209 (99%) | 134 (65%) | 41 (20%) | 32 (16%) | 0 | 1 |
| 26 | BE | 199/201 (99%) | 148 (74%) | 31 (16%) | 20 (10%) | 0 | 3 |
| 26 | DE | 199/201 (99%) | 120 (60%) | 54 (27%) | 25 (13%) | 0 | 1 |
| 27 | BF | 175/177 (99%) | 127 (73%) | 29 (17%) | 19 (11%) | 0 | 2 |
| 28 | BG | 174/176 (99%) | 116 (67%) | 34 (20%) | 24 (14%) | 0 | 1 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|----------|-------------|----|
| 28 | DG | 174/176 (99%) | 104 (60%) | 39 (22%) | 31 (18%) | 0 | 0 |
| 29 | BH | 147/149 (99%) | 63 (43%) | 52 (35%) | 32 (22%) | 0 | 0 |
| 29 | DH | 147/149 (99%) | 73 (50%) | 53 (36%) | 21 (14%) | 0 | 1 |
| 30 | BI | 139/141 (99%) | 84 (60%) | 41 (30%) | 14 (10%) | 0 | 3 |
| 30 | DI | 139/141 (99%) | 83 (60%) | 38 (27%) | 18 (13%) | 0 | 1 |
| 31 | BJ | 140/142 (99%) | 106 (76%) | 20 (14%) | 14 (10%) | 0 | 3 |
| 31 | DJ | 140/142 (99%) | 92 (66%) | 30 (21%) | 18 (13%) | 0 | 1 |
| 32 | BK | 120/122 (98%) | 83 (69%) | 20 (17%) | 17 (14%) | 0 | 1 |
| 32 | DK | 120/122 (98%) | 77 (64%) | 21 (18%) | 22 (18%) | 0 | 0 |
| 33 | BL | 141/143 (99%) | 95 (67%) | 30 (21%) | 16 (11%) | 0 | 2 |
| 33 | DL | 141/143 (99%) | 78 (55%) | 42 (30%) | 21 (15%) | 0 | 1 |
| 34 | BM | 134/136 (98%) | 96 (72%) | 24 (18%) | 14 (10%) | 0 | 3 |
| 34 | DM | 134/136 (98%) | 94 (70%) | 25 (19%) | 15 (11%) | 0 | 2 |
| 35 | BN | 118/120 (98%) | 88 (75%) | 20 (17%) | 10 (8%) | 1 | 4 |
| 35 | DN | 118/120 (98%) | 67 (57%) | 35 (30%) | 16 (14%) | 0 | 1 |
| 36 | BO | 114/116 (98%) | 88 (77%) | 17 (15%) | 9 (8%) | 1 | 6 |
| 36 | DO | 114/116 (98%) | 79 (69%) | 27 (24%) | 8 (7%) | 1 | 8 |
| 37 | BP | 112/114 (98%) | 74 (66%) | 23 (20%) | 15 (13%) | 0 | 1 |
| 37 | DP | 112/114 (98%) | 66 (59%) | 28 (25%) | 18 (16%) | 0 | 0 |
| 38 | BQ | 115/117 (98%) | 99 (86%) | 9 (8%) | 7 (6%) | 1 | 12 |
| 38 | DQ | 115/117 (98%) | 78 (68%) | 24 (21%) | 13 (11%) | 0 | 2 |
| 39 | BR | 101/103 (98%) | 82 (81%) | 11 (11%) | 8 (8%) | 1 | 6 |
| 39 | DR | 101/103 (98%) | 70 (69%) | 21 (21%) | 10 (10%) | 0 | 3 |
| 40 | BS | 108/110 (98%) | 83 (77%) | 16 (15%) | 9 (8%) | 1 | 5 |
| 40 | DS | 108/110 (98%) | 76 (70%) | 24 (22%) | 8 (7%) | 1 | 7 |
| 41 | BT | 91/93 (98%) | 58 (64%) | 20 (22%) | 13 (14%) | 0 | 1 |
| 41 | DT | 91/93 (98%) | 49 (54%) | 26 (29%) | 16 (18%) | 0 | 0 |
| 42 | BU | 100/102 (98%) | 70 (70%) | 16 (16%) | 14 (14%) | 0 | 1 |
| 42 | DU | 100/102 (98%) | 51 (51%) | 27 (27%) | 22 (22%) | 0 | 0 |
| 43 | BV | 92/94 (98%) | 77 (84%) | 14 (15%) | 1 (1%) | 14 | 51 |
| 43 | DV | 92/94 (98%) | 65 (71%) | 22 (24%) | 5 (5%) | 2 | 14 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-------------------|------------|------------|------------|-------------|----|
| 44 | BW | 77/79 (98%) | 31 (40%) | 18 (23%) | 28 (36%) | 0 | 0 |
| 44 | DW | 77/79 (98%) | 32 (42%) | 26 (34%) | 19 (25%) | 0 | 0 |
| 45 | BX | 75/77 (97%) | 58 (77%) | 13 (17%) | 4 (5%) | 2 | 15 |
| 45 | DX | 75/77 (97%) | 48 (64%) | 19 (25%) | 8 (11%) | 0 | 2 |
| 46 | BY | 61/63 (97%) | 40 (66%) | 13 (21%) | 8 (13%) | 0 | 1 |
| 46 | DY | 61/63 (97%) | 43 (70%) | 13 (21%) | 5 (8%) | 1 | 5 |
| 47 | BZ | 56/58 (97%) | 43 (77%) | 10 (18%) | 3 (5%) | 2 | 14 |
| 47 | DZ | 56/58 (97%) | 34 (61%) | 16 (29%) | 6 (11%) | 0 | 2 |
| 48 | B0 | 54/56 (96%) | 42 (78%) | 7 (13%) | 5 (9%) | 0 | 3 |
| 48 | D0 | 54/56 (96%) | 40 (74%) | 7 (13%) | 7 (13%) | 0 | 1 |
| 49 | B1 | 48/50 (96%) | 35 (73%) | 10 (21%) | 3 (6%) | 1 | 10 |
| 49 | D1 | 48/50 (96%) | 37 (77%) | 6 (12%) | 5 (10%) | 0 | 3 |
| 50 | B2 | 44/46 (96%) | 39 (89%) | 4 (9%) | 1 (2%) | 6 | 34 |
| 50 | D2 | 44/46 (96%) | 30 (68%) | 7 (16%) | 7 (16%) | 0 | 0 |
| 51 | B3 | 62/64 (97%) | 51 (82%) | 8 (13%) | 3 (5%) | 2 | 17 |
| 51 | D3 | 62/64 (97%) | 40 (64%) | 17 (27%) | 5 (8%) | 1 | 5 |
| 52 | B4 | 36/38 (95%) | 27 (75%) | 6 (17%) | 3 (8%) | 1 | 5 |
| 52 | D4 | 36/38 (95%) | 22 (61%) | 9 (25%) | 5 (14%) | 0 | 1 |
| 54 | CG | 148/150 (99%) | 98 (66%) | 42 (28%) | 8 (5%) | 2 | 14 |
| 55 | CM | 111/113 (98%) | 63 (57%) | 36 (32%) | 12 (11%) | 0 | 2 |
| 56 | CP | 78/80 (98%) | 49 (63%) | 19 (24%) | 10 (13%) | 0 | 1 |
| 59 | DF | 176/178 (99%) | 98 (56%) | 44 (25%) | 34 (19%) | 0 | 0 |
| All | All | 11238/11447 (98%) | 7571 (67%) | 2387 (21%) | 1280 (11%) | 0 | 2 |

All (1280) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | AB | 20 | ARG |
| 2 | AB | 40 | ILE |
| 2 | AB | 72 | LYS |
| 2 | AB | 75 | ALA |
| 2 | AB | 119 | GLN |
| 2 | AB | 133 | ALA |
| 2 | AB | 169 | HIS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | AB | 200 | PRO |
| 3 | AC | 16 | PRO |
| 3 | AC | 17 | TRP |
| 3 | AC | 60 | ALA |
| 3 | AC | 205 | GLU |
| 4 | AD | 26 | ALA |
| 4 | AD | 28 | ASP |
| 4 | AD | 29 | THR |
| 4 | AD | 34 | GLU |
| 4 | AD | 131 | ILE |
| 4 | AD | 159 | GLU |
| 4 | AD | 191 | SER |
| 4 | AD | 192 | ALA |
| 5 | AE | 44 | ARG |
| 5 | AE | 97 | PRO |
| 5 | AE | 137 | ARG |
| 5 | AE | 156 | ARG |
| 5 | AE | 157 | GLY |
| 6 | AF | 54 | LEU |
| 6 | AF | 86 | ARG |
| 7 | AG | 93 | VAL |
| 8 | AH | 26 | MET |
| 8 | AH | 49 | LYS |
| 8 | AH | 66 | GLN |
| 9 | AI | 8 | THR |
| 9 | AI | 40 | ARG |
| 9 | AI | 43 | ALA |
| 9 | AI | 55 | ASP |
| 9 | AI | 71 | ILE |
| 9 | AI | 128 | LYS |
| 10 | AJ | 57 | VAL |
| 10 | AJ | 61 | ALA |
| 10 | AJ | 92 | LEU |
| 11 | AK | 13 | LYS |
| 11 | AK | 51 | PHE |
| 11 | AK | 125 | LYS |
| 11 | AK | 126 | ARG |
| 12 | AL | 23 | LEU |
| 12 | AL | 24 | GLU |
| 12 | AL | 43 | LYS |
| 12 | AL | 75 | GLU |
| 13 | AM | 46 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 14 | AN | 22 | LYS |
| 14 | AN | 33 | VAL |
| 14 | AN | 51 | PRO |
| 14 | AN | 61 | ASN |
| 15 | AO | 17 | ASP |
| 16 | AP | 11 | ALA |
| 16 | AP | 80 | LYS |
| 17 | AQ | 12 | VAL |
| 17 | AQ | 16 | MET |
| 17 | AQ | 52 | CYS |
| 17 | AQ | 70 | LYS |
| 19 | AS | 48 | ILE |
| 19 | AS | 63 | ASP |
| 20 | AT | 3 | ILE |
| 20 | AT | 4 | LYS |
| 20 | AT | 5 | SER |
| 21 | AU | 11 | PHE |
| 21 | AU | 12 | ASP |
| 24 | BC | 57 | HIS |
| 24 | BC | 104 | LEU |
| 24 | BC | 105 | ALA |
| 24 | BC | 120 | ASP |
| 24 | BC | 121 | ALA |
| 24 | BC | 140 | VAL |
| 25 | BD | 43 | ASP |
| 25 | BD | 73 | VAL |
| 25 | BD | 92 | VAL |
| 25 | BD | 99 | GLU |
| 25 | BD | 103 | ASP |
| 25 | BD | 104 | VAL |
| 25 | BD | 122 | VAL |
| 25 | BD | 169 | ARG |
| 25 | BD | 183 | GLU |
| 25 | BD | 191 | GLY |
| 26 | BE | 8 | ALA |
| 26 | BE | 46 | GLN |
| 26 | BE | 79 | ARG |
| 26 | BE | 80 | SER |
| 26 | BE | 86 | ALA |
| 26 | BE | 175 | ILE |
| 27 | BF | 134 | GLN |
| 27 | BF | 175 | PRO |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 28 | BG | 7 | PRO |
| 28 | BG | 8 | VAL |
| 28 | BG | 31 | GLU |
| 28 | BG | 33 | THR |
| 28 | BG | 44 | HIS |
| 28 | BG | 45 | ALA |
| 28 | BG | 84 | LYS |
| 28 | BG | 94 | ARG |
| 28 | BG | 118 | ALA |
| 28 | BG | 168 | VAL |
| 29 | BH | 8 | LYS |
| 29 | BH | 9 | VAL |
| 29 | BH | 10 | ALA |
| 29 | BH | 14 | SER |
| 29 | BH | 28 | ASN |
| 29 | BH | 32 | PRO |
| 29 | BH | 33 | GLN |
| 29 | BH | 83 | LYS |
| 29 | BH | 101 | ASP |
| 30 | BI | 65 | SER |
| 30 | BI | 92 | PRO |
| 31 | BJ | 4 | PHE |
| 31 | BJ | 21 | THR |
| 31 | BJ | 41 | LYS |
| 31 | BJ | 44 | TYR |
| 31 | BJ | 45 | THR |
| 31 | BJ | 111 | LYS |
| 32 | BK | 13 | ASN |
| 32 | BK | 35 | VAL |
| 32 | BK | 46 | ALA |
| 32 | BK | 48 | PRO |
| 32 | BK | 49 | ARG |
| 32 | BK | 71 | ARG |
| 32 | BK | 72 | PRO |
| 32 | BK | 108 | ARG |
| 33 | BL | 15 | ALA |
| 33 | BL | 29 | LYS |
| 33 | BL | 66 | PHE |
| 34 | BM | 2 | LEU |
| 34 | BM | 14 | LYS |
| 34 | BM | 36 | VAL |
| 34 | BM | 54 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 34 | BM | 56 | ALA |
| 34 | BM | 60 | GLN |
| 34 | BM | 69 | PRO |
| 34 | BM | 77 | PRO |
| 35 | BN | 14 | SER |
| 35 | BN | 80 | PHE |
| 35 | BN | 101 | GLY |
| 35 | BN | 117 | ASP |
| 36 | BO | 3 | LYS |
| 36 | BO | 68 | LYS |
| 36 | BO | 112 | GLU |
| 37 | BP | 25 | VAL |
| 37 | BP | 33 | GLU |
| 37 | BP | 50 | ARG |
| 37 | BP | 103 | THR |
| 37 | BP | 105 | LYS |
| 38 | BQ | 87 | VAL |
| 38 | BQ | 91 | ARG |
| 40 | BS | 3 | THR |
| 40 | BS | 14 | ALA |
| 40 | BS | 19 | LEU |
| 41 | BT | 27 | SER |
| 41 | BT | 29 | THR |
| 41 | BT | 69 | ARG |
| 41 | BT | 88 | LYS |
| 42 | BU | 6 | ARG |
| 42 | BU | 51 | LEU |
| 42 | BU | 88 | ASP |
| 43 | BV | 69 | GLU |
| 44 | BW | 9 | THR |
| 44 | BW | 10 | ARG |
| 44 | BW | 18 | LYS |
| 44 | BW | 23 | LYS |
| 44 | BW | 27 | GLY |
| 44 | BW | 29 | SER |
| 44 | BW | 30 | VAL |
| 44 | BW | 48 | ALA |
| 44 | BW | 50 | VAL |
| 45 | BX | 34 | SER |
| 45 | BX | 53 | LYS |
| 46 | BY | 23 | ARG |
| 46 | BY | 24 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 46 | BY | 37 | LEU |
| 47 | BZ | 3 | THR |
| 47 | BZ | 9 | THR |
| 48 | B0 | 54 | ILE |
| 49 | B1 | 51 | ALA |
| 50 | B2 | 44 | VAL |
| 52 | B4 | 4 | ARG |
| 52 | B4 | 16 | ILE |
| 2 | CB | 81 | ASP |
| 2 | CB | 84 | LEU |
| 2 | CB | 102 | ASN |
| 2 | CB | 129 | THR |
| 2 | CB | 150 | ILE |
| 3 | CC | 59 | PRO |
| 3 | CC | 63 | ILE |
| 4 | CD | 24 | VAL |
| 4 | CD | 25 | ARG |
| 4 | CD | 26 | ALA |
| 4 | CD | 35 | GLN |
| 4 | CD | 80 | ARG |
| 4 | CD | 82 | LYS |
| 4 | CD | 191 | SER |
| 4 | CD | 192 | ALA |
| 5 | CE | 31 | SER |
| 5 | CE | 100 | GLU |
| 5 | CE | 144 | GLU |
| 6 | CF | 44 | ARG |
| 6 | CF | 68 | GLN |
| 6 | CF | 82 | ASP |
| 6 | CF | 99 | ALA |
| 54 | CG | 29 | LEU |
| 54 | CG | 30 | MET |
| 54 | CG | 31 | VAL |
| 54 | CG | 52 | ARG |
| 9 | CI | 71 | ILE |
| 11 | CK | 70 | ALA |
| 11 | CK | 118 | ASN |
| 11 | CK | 126 | ARG |
| 11 | CK | 127 | ARG |
| 55 | CM | 4 | ALA |
| 55 | CM | 65 | GLU |
| 14 | CN | 95 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 56 | CP | 63 | GLN |
| 17 | CQ | 52 | CYS |
| 19 | CS | 46 | LEU |
| 20 | CT | 3 | ILE |
| 20 | CT | 43 | LYS |
| 20 | CT | 65 | LEU |
| 21 | CU | 4 | LYS |
| 21 | CU | 8 | ASN |
| 21 | CU | 9 | GLU |
| 21 | CU | 15 | LEU |
| 21 | CU | 23 | GLU |
| 21 | CU | 32 | ARG |
| 21 | CU | 35 | GLU |
| 21 | CU | 36 | PHE |
| 21 | CU | 38 | GLU |
| 24 | DC | 9 | SER |
| 24 | DC | 28 | PRO |
| 24 | DC | 69 | ASN |
| 24 | DC | 140 | VAL |
| 24 | DC | 217 | PRO |
| 24 | DC | 232 | GLY |
| 24 | DC | 269 | ARG |
| 25 | DD | 11 | MET |
| 25 | DD | 14 | ILE |
| 25 | DD | 31 | ALA |
| 25 | DD | 74 | GLU |
| 25 | DD | 77 | ARG |
| 25 | DD | 95 | SER |
| 25 | DD | 102 | ALA |
| 25 | DD | 112 | THR |
| 25 | DD | 150 | GLN |
| 25 | DD | 162 | ALA |
| 25 | DD | 164 | GLN |
| 25 | DD | 170 | VAL |
| 25 | DD | 175 | LEU |
| 25 | DD | 194 | PRO |
| 26 | DE | 41 | GLN |
| 26 | DE | 55 | SER |
| 26 | DE | 62 | GLN |
| 26 | DE | 73 | ILE |
| 26 | DE | 99 | LYS |
| 26 | DE | 116 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 26 | DE | 127 | GLU |
| 59 | DF | 10 | GLU |
| 59 | DF | 12 | VAL |
| 59 | DF | 32 | LYS |
| 59 | DF | 36 | ASN |
| 59 | DF | 42 | ALA |
| 59 | DF | 43 | ILE |
| 59 | DF | 112 | ASP |
| 59 | DF | 114 | ARG |
| 59 | DF | 120 | SER |
| 59 | DF | 122 | ASP |
| 59 | DF | 137 | PHE |
| 59 | DF | 145 | VAL |
| 59 | DF | 148 | VAL |
| 28 | DG | 49 | LEU |
| 28 | DG | 59 | ASP |
| 28 | DG | 95 | ALA |
| 28 | DG | 165 | ASP |
| 29 | DH | 3 | VAL |
| 29 | DH | 9 | VAL |
| 29 | DH | 10 | ALA |
| 29 | DH | 39 | ALA |
| 29 | DH | 76 | GLU |
| 29 | DH | 98 | ASP |
| 29 | DH | 102 | ALA |
| 30 | DI | 22 | PRO |
| 30 | DI | 29 | GLN |
| 30 | DI | 58 | ILE |
| 31 | DJ | 45 | THR |
| 31 | DJ | 81 | ILE |
| 31 | DJ | 83 | GLY |
| 31 | DJ | 95 | ARG |
| 32 | DK | 18 | ARG |
| 32 | DK | 29 | HIS |
| 32 | DK | 49 | ARG |
| 32 | DK | 71 | ARG |
| 32 | DK | 110 | GLU |
| 32 | DK | 120 | PRO |
| 33 | DL | 4 | ASN |
| 33 | DL | 29 | LYS |
| 33 | DL | 41 | ARG |
| 33 | DL | 82 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 33 | DL | 85 | VAL |
| 33 | DL | 89 | VAL |
| 33 | DL | 101 | ILE |
| 33 | DL | 111 | ILE |
| 34 | DM | 2 | LEU |
| 34 | DM | 72 | PRO |
| 34 | DM | 73 | ILE |
| 34 | DM | 77 | PRO |
| 34 | DM | 135 | VAL |
| 35 | DN | 10 | LEU |
| 35 | DN | 30 | ARG |
| 35 | DN | 63 | ARG |
| 35 | DN | 104 | ALA |
| 37 | DP | 25 | VAL |
| 37 | DP | 50 | ARG |
| 37 | DP | 83 | ILE |
| 37 | DP | 94 | ALA |
| 37 | DP | 108 | ARG |
| 37 | DP | 112 | ARG |
| 38 | DQ | 23 | TYR |
| 40 | DS | 28 | LYS |
| 40 | DS | 33 | LEU |
| 40 | DS | 72 | THR |
| 41 | DT | 14 | PRO |
| 41 | DT | 15 | HIS |
| 41 | DT | 20 | ALA |
| 41 | DT | 29 | THR |
| 41 | DT | 56 | GLU |
| 41 | DT | 88 | LYS |
| 42 | DU | 65 | GLN |
| 42 | DU | 82 | VAL |
| 42 | DU | 92 | VAL |
| 42 | DU | 96 | LYS |
| 43 | DV | 56 | PHE |
| 43 | DV | 58 | SER |
| 44 | DW | 9 | THR |
| 44 | DW | 34 | SER |
| 44 | DW | 35 | ILE |
| 44 | DW | 83 | ALA |
| 45 | DX | 41 | SER |
| 47 | DZ | 30 | ARG |
| 48 | D0 | 54 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 50 | D2 | 40 | ALA |
| 51 | D3 | 3 | ILE |
| 51 | D3 | 29 | ARG |
| 51 | D3 | 51 | LYS |
| 52 | D4 | 3 | VAL |
| 52 | D4 | 8 | LYS |
| 52 | D4 | 20 | ASP |
| 2 | AB | 17 | HIS |
| 2 | AB | 18 | GLN |
| 2 | AB | 21 | TYR |
| 2 | AB | 22 | TRP |
| 2 | AB | 37 | VAL |
| 2 | AB | 63 | LYS |
| 2 | AB | 125 | PHE |
| 2 | AB | 140 | LEU |
| 2 | AB | 189 | ASN |
| 2 | AB | 210 | THR |
| 2 | AB | 211 | LEU |
| 3 | AC | 14 | VAL |
| 3 | AC | 126 | ARG |
| 3 | AC | 165 | GLU |
| 4 | AD | 22 | SER |
| 4 | AD | 23 | GLY |
| 4 | AD | 31 | CYS |
| 4 | AD | 33 | ILE |
| 4 | AD | 35 | GLN |
| 4 | AD | 147 | LYS |
| 4 | AD | 148 | ALA |
| 4 | AD | 150 | LYS |
| 4 | AD | 152 | SER |
| 4 | AD | 173 | ASP |
| 4 | AD | 174 | ALA |
| 5 | AE | 11 | GLN |
| 5 | AE | 50 | GLY |
| 5 | AE | 98 | ALA |
| 5 | AE | 121 | ASN |
| 5 | AE | 154 | ALA |
| 7 | AG | 95 | ARG |
| 7 | AG | 129 | ASN |
| 8 | AH | 48 | PHE |
| 8 | AH | 77 | VAL |
| 8 | AH | 88 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 10 | AJ | 74 | VAL |
| 10 | AJ | 101 | SER |
| 12 | AL | 33 | CYS |
| 12 | AL | 73 | LEU |
| 12 | AL | 88 | ASP |
| 12 | AL | 97 | VAL |
| 12 | AL | 117 | GLY |
| 13 | AM | 4 | ALA |
| 14 | AN | 27 | LYS |
| 14 | AN | 44 | VAL |
| 14 | AN | 52 | ARG |
| 16 | AP | 10 | GLY |
| 16 | AP | 16 | PHE |
| 16 | AP | 36 | VAL |
| 17 | AQ | 34 | GLY |
| 17 | AQ | 75 | VAL |
| 18 | AR | 47 | ARG |
| 19 | AS | 27 | LYS |
| 20 | AT | 67 | HIS |
| 21 | AU | 8 | ASN |
| 24 | BC | 188 | ARG |
| 24 | BC | 239 | PHE |
| 25 | BD | 144 | GLY |
| 25 | BD | 153 | GLY |
| 25 | BD | 170 | VAL |
| 25 | BD | 192 | ALA |
| 26 | BE | 45 | ALA |
| 26 | BE | 116 | ASP |
| 26 | BE | 123 | LYS |
| 26 | BE | 153 | LEU |
| 26 | BE | 173 | THR |
| 27 | BF | 61 | GLY |
| 28 | BG | 9 | VAL |
| 28 | BG | 30 | GLY |
| 28 | BG | 53 | PRO |
| 28 | BG | 60 | GLY |
| 28 | BG | 164 | ALA |
| 28 | BG | 170 | THR |
| 29 | BH | 3 | VAL |
| 29 | BH | 15 | LEU |
| 29 | BH | 34 | GLY |
| 29 | BH | 54 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 29 | BH | 81 | ALA |
| 29 | BH | 107 | GLY |
| 29 | BH | 111 | ALA |
| 29 | BH | 121 | VAL |
| 29 | BH | 131 | SER |
| 30 | BI | 30 | GLN |
| 30 | BI | 105 | LEU |
| 31 | BJ | 14 | ASP |
| 31 | BJ | 81 | ILE |
| 32 | BK | 50 | GLY |
| 32 | BK | 93 | GLN |
| 33 | BL | 27 | LEU |
| 33 | BL | 31 | GLY |
| 33 | BL | 65 | GLY |
| 33 | BL | 88 | GLY |
| 33 | BL | 111 | ILE |
| 33 | BL | 114 | GLY |
| 34 | BM | 35 | ALA |
| 34 | BM | 55 | ARG |
| 35 | BN | 59 | SER |
| 35 | BN | 84 | GLY |
| 36 | BO | 22 | GLY |
| 36 | BO | 58 | ILE |
| 36 | BO | 113 | ALA |
| 37 | BP | 15 | ASP |
| 38 | BQ | 4 | LYS |
| 39 | BR | 49 | ILE |
| 39 | BR | 55 | ASP |
| 40 | BS | 64 | ALA |
| 40 | BS | 96 | ILE |
| 41 | BT | 16 | VAL |
| 41 | BT | 38 | ALA |
| 41 | BT | 39 | THR |
| 41 | BT | 68 | LYS |
| 41 | BT | 70 | HIS |
| 42 | BU | 18 | LYS |
| 42 | BU | 45 | GLN |
| 42 | BU | 98 | ASN |
| 44 | BW | 15 | SER |
| 44 | BW | 33 | GLY |
| 44 | BW | 34 | SER |
| 44 | BW | 37 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 44 | BW | 40 | ARG |
| 44 | BW | 47 | GLY |
| 44 | BW | 51 | GLY |
| 44 | BW | 74 | LYS |
| 46 | BY | 22 | LEU |
| 48 | B0 | 34 | GLY |
| 48 | B0 | 35 | GLU |
| 48 | B0 | 51 | ARG |
| 51 | B3 | 22 | LYS |
| 51 | B3 | 30 | HIS |
| 2 | CB | 26 | MET |
| 2 | CB | 85 | SER |
| 2 | CB | 128 | LEU |
| 2 | CB | 148 | GLY |
| 2 | CB | 149 | GLY |
| 2 | CB | 205 | ALA |
| 3 | CC | 60 | ALA |
| 3 | CC | 77 | GLY |
| 3 | CC | 87 | ARG |
| 3 | CC | 100 | ILE |
| 3 | CC | 140 | ALA |
| 3 | CC | 178 | ARG |
| 3 | CC | 205 | GLU |
| 4 | CD | 12 | ARG |
| 4 | CD | 27 | ILE |
| 4 | CD | 29 | THR |
| 4 | CD | 39 | GLN |
| 4 | CD | 47 | LEU |
| 4 | CD | 187 | ARG |
| 4 | CD | 188 | SER |
| 5 | CE | 29 | ILE |
| 5 | CE | 68 | ARG |
| 5 | CE | 69 | ASN |
| 5 | CE | 81 | GLN |
| 5 | CE | 104 | ILE |
| 5 | CE | 111 | ARG |
| 5 | CE | 143 | LEU |
| 6 | CF | 85 | ILE |
| 6 | CF | 94 | HIS |
| 6 | CF | 98 | GLU |
| 54 | CG | 36 | SER |
| 54 | CG | 62 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 54 | CG | 113 | LYS |
| 54 | CG | 133 | ALA |
| 8 | CH | 2 | MET |
| 8 | CH | 30 | LYS |
| 8 | CH | 43 | GLY |
| 8 | CH | 117 | GLN |
| 9 | CI | 44 | ARG |
| 9 | CI | 54 | VAL |
| 9 | CI | 58 | GLU |
| 10 | CJ | 34 | ALA |
| 10 | CJ | 44 | THR |
| 10 | CJ | 46 | LYS |
| 10 | CJ | 57 | VAL |
| 10 | CJ | 74 | VAL |
| 10 | CJ | 83 | THR |
| 10 | CJ | 93 | ALA |
| 11 | CK | 14 | GLN |
| 11 | CK | 90 | PRO |
| 11 | CK | 91 | GLY |
| 11 | CK | 104 | PHE |
| 12 | CL | 8 | ARG |
| 12 | CL | 16 | ALA |
| 12 | CL | 34 | THR |
| 12 | CL | 43 | LYS |
| 12 | CL | 117 | GLY |
| 55 | CM | 11 | HIS |
| 55 | CM | 14 | ALA |
| 55 | CM | 49 | GLU |
| 55 | CM | 76 | ILE |
| 14 | CN | 21 | ALA |
| 14 | CN | 53 | ASP |
| 15 | CO | 13 | GLU |
| 56 | CP | 31 | ARG |
| 56 | CP | 78 | VAL |
| 17 | CQ | 69 | THR |
| 17 | CQ | 76 | ARG |
| 18 | CR | 70 | THR |
| 19 | CS | 4 | LEU |
| 19 | CS | 7 | GLY |
| 20 | CT | 82 | ILE |
| 21 | CU | 30 | GLU |
| 21 | CU | 31 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 21 | CU | 34 | ARG |
| 24 | DC | 3 | VAL |
| 24 | DC | 34 | GLU |
| 24 | DC | 35 | LYS |
| 24 | DC | 36 | ASN |
| 24 | DC | 59 | GLN |
| 24 | DC | 121 | ALA |
| 24 | DC | 141 | HIS |
| 25 | DD | 93 | GLY |
| 25 | DD | 118 | PHE |
| 25 | DD | 119 | ALA |
| 25 | DD | 120 | GLY |
| 25 | DD | 136 | ASN |
| 25 | DD | 143 | PRO |
| 25 | DD | 176 | ASP |
| 26 | DE | 22 | ASP |
| 26 | DE | 69 | ARG |
| 26 | DE | 80 | SER |
| 26 | DE | 81 | GLY |
| 26 | DE | 96 | VAL |
| 26 | DE | 153 | LEU |
| 26 | DE | 165 | HIS |
| 26 | DE | 188 | MET |
| 59 | DF | 8 | LYS |
| 59 | DF | 41 | GLU |
| 59 | DF | 67 | THR |
| 59 | DF | 76 | PHE |
| 59 | DF | 113 | PHE |
| 59 | DF | 138 | PRO |
| 28 | DG | 40 | VAL |
| 28 | DG | 83 | THR |
| 28 | DG | 85 | LYS |
| 28 | DG | 86 | LEU |
| 28 | DG | 92 | GLY |
| 28 | DG | 93 | TYR |
| 28 | DG | 123 | GLU |
| 28 | DG | 125 | PRO |
| 28 | DG | 126 | THR |
| 28 | DG | 149 | ALA |
| 28 | DG | 150 | TYR |
| 28 | DG | 164 | ALA |
| 29 | DH | 61 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 29 | DH | 66 | ASN |
| 29 | DH | 72 | ILE |
| 29 | DH | 97 | ARG |
| 29 | DH | 99 | ILE |
| 30 | DI | 23 | VAL |
| 30 | DI | 30 | GLN |
| 30 | DI | 51 | GLY |
| 30 | DI | 52 | LEU |
| 30 | DI | 62 | ALA |
| 30 | DI | 69 | VAL |
| 30 | DI | 140 | GLU |
| 31 | DJ | 39 | LYS |
| 31 | DJ | 84 | ILE |
| 31 | DJ | 87 | ALA |
| 32 | DK | 16 | ALA |
| 32 | DK | 30 | ARG |
| 32 | DK | 35 | VAL |
| 32 | DK | 46 | ALA |
| 32 | DK | 93 | GLN |
| 32 | DK | 98 | ARG |
| 32 | DK | 103 | VAL |
| 32 | DK | 104 | THR |
| 33 | DL | 66 | PHE |
| 33 | DL | 115 | GLU |
| 34 | DM | 14 | LYS |
| 35 | DN | 2 | ARG |
| 35 | DN | 91 | ALA |
| 35 | DN | 102 | PHE |
| 36 | DO | 3 | LYS |
| 36 | DO | 72 | ALA |
| 36 | DO | 90 | VAL |
| 37 | DP | 32 | VAL |
| 37 | DP | 51 | ASN |
| 37 | DP | 85 | VAL |
| 38 | DQ | 5 | ARG |
| 38 | DQ | 86 | SER |
| 38 | DQ | 88 | GLU |
| 38 | DQ | 91 | ARG |
| 39 | DR | 8 | GLY |
| 39 | DR | 40 | MET |
| 40 | DS | 40 | ASN |
| 40 | DS | 71 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 41 | DT | 18 | GLU |
| 41 | DT | 19 | LYS |
| 41 | DT | 39 | THR |
| 41 | DT | 68 | LYS |
| 41 | DT | 74 | ILE |
| 42 | DU | 4 | ILE |
| 42 | DU | 87 | GLU |
| 42 | DU | 88 | ASP |
| 42 | DU | 89 | GLY |
| 42 | DU | 95 | PHE |
| 42 | DU | 97 | SER |
| 43 | DV | 33 | GLY |
| 43 | DV | 55 | GLU |
| 44 | DW | 18 | LYS |
| 44 | DW | 26 | GLY |
| 44 | DW | 33 | GLY |
| 44 | DW | 46 | ALA |
| 44 | DW | 53 | GLY |
| 44 | DW | 57 | THR |
| 44 | DW | 71 | LYS |
| 45 | DX | 2 | ARG |
| 45 | DX | 25 | LYS |
| 45 | DX | 34 | SER |
| 46 | DY | 9 | LYS |
| 46 | DY | 22 | LEU |
| 46 | DY | 37 | LEU |
| 47 | DZ | 4 | ILE |
| 47 | DZ | 13 | ILE |
| 48 | D0 | 21 | LEU |
| 48 | D0 | 55 | ALA |
| 49 | D1 | 35 | LEU |
| 49 | D1 | 36 | LYS |
| 50 | D2 | 24 | THR |
| 50 | D2 | 43 | THR |
| 51 | D3 | 6 | VAL |
| 51 | D3 | 22 | LYS |
| 2 | AB | 33 | ALA |
| 2 | AB | 58 | LYS |
| 2 | AB | 128 | LEU |
| 2 | AB | 142 | LYS |
| 2 | AB | 150 | ILE |
| 2 | AB | 219 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | AC | 192 | TYR |
| 4 | AD | 124 | VAL |
| 4 | AD | 167 | PRO |
| 4 | AD | 195 | ASN |
| 4 | AD | 196 | GLU |
| 5 | AE | 109 | ALA |
| 5 | AE | 149 | PRO |
| 6 | AF | 7 | VAL |
| 9 | AI | 119 | LYS |
| 11 | AK | 97 | ARG |
| 12 | AL | 102 | ASP |
| 13 | AM | 3 | ILE |
| 13 | AM | 113 | LYS |
| 14 | AN | 41 | TRP |
| 14 | AN | 43 | ALA |
| 15 | AO | 45 | HIS |
| 16 | AP | 49 | GLY |
| 16 | AP | 78 | VAL |
| 17 | AQ | 11 | VAL |
| 17 | AQ | 49 | ASN |
| 17 | AQ | 50 | ASN |
| 17 | AQ | 67 | SER |
| 21 | AU | 23 | GLU |
| 24 | BC | 22 | GLU |
| 24 | BC | 77 | VAL |
| 24 | BC | 149 | LYS |
| 24 | BC | 157 | ALA |
| 24 | BC | 196 | ASN |
| 24 | BC | 224 | MET |
| 24 | BC | 243 | PRO |
| 24 | BC | 265 | PHE |
| 25 | BD | 71 | ALA |
| 25 | BD | 107 | VAL |
| 25 | BD | 118 | PHE |
| 25 | BD | 173 | GLN |
| 25 | BD | 182 | ALA |
| 25 | BD | 190 | LYS |
| 26 | BE | 11 | ALA |
| 26 | BE | 69 | ARG |
| 27 | BF | 111 | ARG |
| 27 | BF | 132 | ARG |
| 27 | BF | 147 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 27 | BF | 174 | PHE |
| 28 | BG | 28 | LYS |
| 29 | BH | 7 | ASP |
| 29 | BH | 30 | LEU |
| 29 | BH | 89 | LYS |
| 29 | BH | 125 | THR |
| 30 | BI | 59 | THR |
| 31 | BJ | 2 | LYS |
| 31 | BJ | 65 | THR |
| 31 | BJ | 74 | TYR |
| 32 | BK | 73 | ASP |
| 32 | BK | 75 | SER |
| 32 | BK | 92 | GLU |
| 33 | BL | 19 | LEU |
| 33 | BL | 58 | TYR |
| 33 | BL | 64 | PHE |
| 33 | BL | 94 | THR |
| 35 | BN | 3 | HIS |
| 35 | BN | 15 | SER |
| 35 | BN | 55 | ALA |
| 36 | BO | 59 | ALA |
| 36 | BO | 77 | ALA |
| 36 | BO | 111 | ARG |
| 37 | BP | 65 | ASN |
| 38 | BQ | 86 | SER |
| 39 | BR | 53 | PHE |
| 41 | BT | 86 | THR |
| 42 | BU | 8 | ASP |
| 42 | BU | 85 | ARG |
| 42 | BU | 87 | GLU |
| 42 | BU | 92 | VAL |
| 44 | BW | 22 | VAL |
| 44 | BW | 26 | GLY |
| 44 | BW | 39 | GLN |
| 44 | BW | 41 | GLY |
| 46 | BY | 9 | LYS |
| 46 | BY | 41 | HIS |
| 49 | B1 | 4 | ILE |
| 51 | B3 | 31 | ILE |
| 2 | CB | 73 | ARG |
| 3 | CC | 130 | ARG |
| 3 | CC | 145 | ALA |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | CC | 164 | THR |
| 3 | CC | 173 | PRO |
| 3 | CC | 186 | SER |
| 3 | CC | 188 | ALA |
| 4 | CD | 3 | TYR |
| 4 | CD | 33 | ILE |
| 4 | CD | 40 | HIS |
| 5 | CE | 38 | VAL |
| 5 | CE | 43 | GLY |
| 5 | CE | 75 | LEU |
| 5 | CE | 112 | ALA |
| 6 | CF | 92 | THR |
| 8 | CH | 29 | SER |
| 8 | CH | 41 | GLU |
| 9 | CI | 11 | ARG |
| 9 | CI | 52 | GLU |
| 9 | CI | 55 | ASP |
| 10 | CJ | 87 | LEU |
| 11 | CK | 88 | PRO |
| 12 | CL | 42 | LYS |
| 12 | CL | 47 | ALA |
| 55 | CM | 45 | SER |
| 55 | CM | 46 | GLU |
| 55 | CM | 77 | LYS |
| 56 | CP | 47 | GLU |
| 56 | CP | 53 | ASP |
| 17 | CQ | 12 | VAL |
| 17 | CQ | 31 | PRO |
| 17 | CQ | 79 | GLU |
| 20 | CT | 72 | ALA |
| 20 | CT | 77 | ASN |
| 21 | CU | 7 | GLU |
| 21 | CU | 11 | PHE |
| 24 | DC | 13 | ARG |
| 24 | DC | 37 | SER |
| 24 | DC | 88 | ALA |
| 24 | DC | 98 | GLY |
| 24 | DC | 195 | GLY |
| 24 | DC | 237 | ARG |
| 25 | DD | 107 | VAL |
| 25 | DD | 169 | ARG |
| 25 | DD | 197 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 26 | DE | 13 | THR |
| 26 | DE | 45 | ALA |
| 26 | DE | 46 | GLN |
| 26 | DE | 166 | LYS |
| 59 | DF | 37 | MET |
| 59 | DF | 116 | LEU |
| 59 | DF | 133 | GLU |
| 28 | DG | 9 | VAL |
| 28 | DG | 11 | PRO |
| 28 | DG | 39 | ALA |
| 28 | DG | 45 | ALA |
| 28 | DG | 80 | GLU |
| 28 | DG | 117 | PRO |
| 28 | DG | 155 | PRO |
| 29 | DH | 23 | ALA |
| 29 | DH | 28 | ASN |
| 29 | DH | 124 | THR |
| 30 | DI | 19 | PRO |
| 30 | DI | 35 | MET |
| 31 | DJ | 44 | TYR |
| 31 | DJ | 112 | GLY |
| 31 | DJ | 113 | PRO |
| 32 | DK | 6 | THR |
| 32 | DK | 14 | SER |
| 32 | DK | 17 | ARG |
| 32 | DK | 72 | PRO |
| 33 | DL | 43 | GLY |
| 33 | DL | 64 | PHE |
| 33 | DL | 88 | GLY |
| 33 | DL | 117 | THR |
| 34 | DM | 95 | LEU |
| 35 | DN | 8 | ARG |
| 35 | DN | 82 | GLU |
| 36 | DO | 8 | ILE |
| 37 | DP | 33 | GLU |
| 37 | DP | 65 | ASN |
| 37 | DP | 93 | LYS |
| 37 | DP | 109 | ILE |
| 38 | DQ | 4 | LYS |
| 38 | DQ | 29 | ARG |
| 38 | DQ | 32 | ARG |
| 38 | DQ | 39 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 38 | DQ | 87 | VAL |
| 39 | DR | 3 | ALA |
| 39 | DR | 29 | THR |
| 39 | DR | 65 | ALA |
| 40 | DS | 32 | ALA |
| 41 | DT | 38 | ALA |
| 41 | DT | 66 | LYS |
| 42 | DU | 40 | LEU |
| 42 | DU | 54 | PRO |
| 44 | DW | 16 | GLU |
| 44 | DW | 23 | LYS |
| 44 | DW | 24 | ARG |
| 44 | DW | 36 | ILE |
| 44 | DW | 39 | GLN |
| 45 | DX | 21 | LEU |
| 48 | D0 | 32 | THR |
| 48 | D0 | 53 | VAL |
| 50 | D2 | 4 | THR |
| 2 | AB | 96 | LEU |
| 3 | AC | 35 | ASP |
| 3 | AC | 100 | ILE |
| 3 | AC | 139 | ASN |
| 3 | AC | 148 | ILE |
| 4 | AD | 125 | ASN |
| 4 | AD | 197 | HIS |
| 5 | AE | 23 | THR |
| 6 | AF | 39 | LEU |
| 6 | AF | 56 | LYS |
| 7 | AG | 130 | LYS |
| 9 | AI | 37 | TYR |
| 9 | AI | 120 | ALA |
| 10 | AJ | 36 | VAL |
| 11 | AK | 124 | LYS |
| 12 | AL | 22 | ALA |
| 12 | AL | 72 | ASN |
| 12 | AL | 77 | SER |
| 13 | AM | 104 | ASN |
| 14 | AN | 63 | CYS |
| 15 | AO | 16 | ARG |
| 15 | AO | 24 | THR |
| 15 | AO | 72 | LYS |
| 15 | AO | 86 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 17 | AQ | 10 | ARG |
| 19 | AS | 5 | LYS |
| 24 | BC | 109 | LEU |
| 24 | BC | 135 | PRO |
| 24 | BC | 246 | PRO |
| 24 | BC | 264 | LYS |
| 25 | BD | 72 | GLY |
| 25 | BD | 109 | VAL |
| 25 | BD | 119 | ALA |
| 25 | BD | 175 | LEU |
| 25 | BD | 181 | ASP |
| 26 | BE | 10 | SER |
| 27 | BF | 2 | LYS |
| 27 | BF | 10 | GLU |
| 27 | BF | 54 | ALA |
| 27 | BF | 113 | PHE |
| 28 | BG | 61 | TRP |
| 28 | BG | 91 | VAL |
| 28 | BG | 97 | VAL |
| 28 | BG | 119 | GLY |
| 29 | BH | 16 | GLY |
| 29 | BH | 29 | PHE |
| 29 | BH | 40 | THR |
| 29 | BH | 138 | VAL |
| 30 | BI | 6 | ALA |
| 30 | BI | 83 | ALA |
| 30 | BI | 89 | SER |
| 32 | BK | 3 | GLN |
| 32 | BK | 69 | VAL |
| 33 | BL | 40 | SER |
| 33 | BL | 54 | GLN |
| 35 | BN | 2 | ARG |
| 37 | BP | 5 | LYS |
| 37 | BP | 51 | ASN |
| 37 | BP | 93 | LYS |
| 38 | BQ | 5 | ARG |
| 39 | BR | 51 | VAL |
| 39 | BR | 91 | GLN |
| 39 | BR | 100 | GLY |
| 41 | BT | 35 | ALA |
| 41 | BT | 90 | GLY |
| 42 | BU | 38 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 44 | BW | 14 | ASP |
| 44 | BW | 25 | PHE |
| 44 | BW | 70 | VAL |
| 45 | BX | 17 | ARG |
| 47 | BZ | 34 | THR |
| 49 | B1 | 50 | GLU |
| 2 | CB | 18 | GLN |
| 2 | CB | 22 | TRP |
| 3 | CC | 180 | ASP |
| 4 | CD | 11 | SER |
| 5 | CE | 56 | PRO |
| 8 | CH | 98 | LEU |
| 10 | CJ | 61 | ALA |
| 10 | CJ | 82 | LYS |
| 55 | CM | 42 | VAL |
| 55 | CM | 93 | GLY |
| 15 | CO | 19 | ASN |
| 56 | CP | 54 | LEU |
| 56 | CP | 69 | ASP |
| 17 | CQ | 78 | VAL |
| 19 | CS | 3 | SER |
| 20 | CT | 67 | HIS |
| 20 | CT | 76 | ALA |
| 21 | CU | 10 | PRO |
| 21 | CU | 26 | GLY |
| 24 | DC | 64 | VAL |
| 24 | DC | 72 | GLY |
| 24 | DC | 147 | PRO |
| 24 | DC | 227 | VAL |
| 24 | DC | 238 | ASN |
| 24 | DC | 239 | PHE |
| 25 | DD | 43 | ASP |
| 25 | DD | 106 | LYS |
| 25 | DD | 109 | VAL |
| 25 | DD | 145 | SER |
| 25 | DD | 167 | ASN |
| 26 | DE | 148 | ILE |
| 26 | DE | 187 | VAL |
| 59 | DF | 70 | ARG |
| 59 | DF | 83 | PRO |
| 59 | DF | 94 | ARG |
| 59 | DF | 104 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 59 | DF | 142 | TYR |
| 28 | DG | 46 | ASP |
| 28 | DG | 91 | VAL |
| 28 | DG | 166 | GLU |
| 29 | DH | 121 | VAL |
| 29 | DH | 144 | VAL |
| 30 | DI | 87 | SER |
| 30 | DI | 119 | ALA |
| 31 | DJ | 25 | LEU |
| 31 | DJ | 74 | TYR |
| 31 | DJ | 120 | ARG |
| 32 | DK | 89 | ASN |
| 32 | DK | 105 | ARG |
| 32 | DK | 119 | ALA |
| 33 | DL | 93 | ASN |
| 33 | DL | 99 | ASN |
| 33 | DL | 100 | ILE |
| 34 | DM | 69 | PRO |
| 34 | DM | 70 | ASP |
| 34 | DM | 87 | GLY |
| 34 | DM | 106 | ASP |
| 34 | DM | 111 | GLU |
| 34 | DM | 134 | THR |
| 35 | DN | 13 | ASN |
| 35 | DN | 17 | ARG |
| 35 | DN | 105 | GLY |
| 36 | DO | 7 | ARG |
| 37 | DP | 20 | ARG |
| 38 | DQ | 44 | TYR |
| 39 | DR | 53 | PHE |
| 39 | DR | 80 | ARG |
| 39 | DR | 98 | ILE |
| 42 | DU | 34 | ILE |
| 42 | DU | 67 | SER |
| 42 | DU | 101 | THR |
| 45 | DX | 33 | HIS |
| 46 | DY | 46 | VAL |
| 49 | D1 | 50 | GLU |
| 50 | D2 | 8 | SER |
| 50 | D2 | 39 | ARG |
| 3 | AC | 65 | VAL |
| 3 | AC | 107 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | AC | 145 | ALA |
| 3 | AC | 191 | THR |
| 4 | AD | 166 | LYS |
| 5 | AE | 77 | ASN |
| 5 | AE | 144 | GLU |
| 6 | AF | 15 | SER |
| 6 | AF | 63 | ASN |
| 7 | AG | 84 | TYR |
| 9 | AI | 56 | MET |
| 9 | AI | 122 | ARG |
| 10 | AJ | 35 | GLN |
| 11 | AK | 88 | PRO |
| 12 | AL | 122 | LYS |
| 13 | AM | 6 | ILE |
| 13 | AM | 84 | CYS |
| 14 | AN | 91 | GLU |
| 15 | AO | 43 | ALA |
| 15 | AO | 68 | TYR |
| 17 | AQ | 5 | ARG |
| 18 | AR | 54 | LEU |
| 20 | AT | 72 | ALA |
| 20 | AT | 74 | HIS |
| 21 | AU | 37 | TYR |
| 24 | BC | 59 | GLN |
| 24 | BC | 64 | VAL |
| 24 | BC | 110 | LYS |
| 24 | BC | 150 | GLY |
| 24 | BC | 252 | LYS |
| 25 | BD | 145 | SER |
| 25 | BD | 150 | GLN |
| 26 | BE | 53 | THR |
| 26 | BE | 70 | SER |
| 26 | BE | 83 | VAL |
| 26 | BE | 96 | VAL |
| 27 | BF | 20 | ASN |
| 27 | BF | 83 | PRO |
| 27 | BF | 133 | GLU |
| 27 | BF | 150 | GLY |
| 28 | BG | 16 | VAL |
| 28 | BG | 20 | GLY |
| 28 | BG | 46 | ASP |
| 29 | BH | 25 | TYR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 29 | BH | 35 | LYS |
| 30 | BI | 3 | LYS |
| 30 | BI | 20 | SER |
| 31 | BJ | 13 | ARG |
| 31 | BJ | 125 | TYR |
| 32 | BK | 5 | GLN |
| 32 | BK | 119 | ALA |
| 34 | BM | 73 | ILE |
| 34 | BM | 81 | ARG |
| 34 | BM | 134 | THR |
| 37 | BP | 2 | ASN |
| 37 | BP | 20 | ARG |
| 38 | BQ | 95 | ALA |
| 39 | BR | 98 | ILE |
| 40 | BS | 56 | ALA |
| 40 | BS | 57 | ASN |
| 41 | BT | 55 | VAL |
| 42 | BU | 101 | THR |
| 44 | BW | 36 | ILE |
| 44 | BW | 76 | ARG |
| 44 | BW | 78 | PHE |
| 46 | BY | 46 | VAL |
| 46 | BY | 57 | LEU |
| 52 | B4 | 8 | LYS |
| 2 | CB | 177 | ASN |
| 2 | CB | 179 | GLY |
| 2 | CB | 188 | THR |
| 2 | CB | 200 | PRO |
| 3 | CC | 24 | ASN |
| 3 | CC | 65 | VAL |
| 3 | CC | 128 | MET |
| 4 | CD | 68 | GLU |
| 4 | CD | 196 | GLU |
| 5 | CE | 113 | VAL |
| 8 | CH | 74 | ILE |
| 9 | CI | 103 | VAL |
| 9 | CI | 119 | LYS |
| 10 | CJ | 36 | VAL |
| 10 | CJ | 75 | ASP |
| 15 | CO | 87 | ARG |
| 56 | CP | 43 | ALA |
| 56 | CP | 46 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 17 | CQ | 81 | ALA |
| 19 | CS | 54 | ARG |
| 19 | CS | 79 | TYR |
| 20 | CT | 73 | ARG |
| 24 | DC | 96 | LYS |
| 24 | DC | 106 | PRO |
| 24 | DC | 197 | ALA |
| 24 | DC | 204 | LEU |
| 25 | DD | 99 | GLU |
| 26 | DE | 60 | TRP |
| 59 | DF | 31 | GLU |
| 59 | DF | 82 | TYR |
| 59 | DF | 84 | ILE |
| 59 | DF | 175 | PRO |
| 28 | DG | 152 | ARG |
| 29 | DH | 25 | TYR |
| 29 | DH | 103 | VAL |
| 29 | DH | 143 | ILE |
| 30 | DI | 83 | ALA |
| 31 | DJ | 13 | ARG |
| 31 | DJ | 42 | ALA |
| 32 | DK | 48 | PRO |
| 33 | DL | 19 | LEU |
| 33 | DL | 105 | ILE |
| 35 | DN | 36 | THR |
| 35 | DN | 70 | THR |
| 36 | DO | 109 | ALA |
| 37 | DP | 63 | ILE |
| 37 | DP | 113 | LEU |
| 38 | DQ | 6 | GLY |
| 38 | DQ | 58 | GLN |
| 39 | DR | 89 | HIS |
| 42 | DU | 12 | VAL |
| 43 | DV | 84 | PRO |
| 44 | DW | 41 | GLY |
| 44 | DW | 49 | ASN |
| 45 | DX | 27 | ARG |
| 46 | DY | 2 | LYS |
| 47 | DZ | 52 | PHE |
| 48 | D0 | 17 | SER |
| 49 | D1 | 38 | PHE |
| 52 | D4 | 16 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | AB | 120 | SER |
| 2 | AB | 141 | GLU |
| 3 | AC | 173 | PRO |
| 5 | AE | 104 | ILE |
| 10 | AJ | 33 | GLY |
| 11 | AK | 40 | ALA |
| 13 | AM | 11 | HIS |
| 15 | AO | 2 | LEU |
| 15 | AO | 35 | ILE |
| 19 | AS | 22 | VAL |
| 19 | AS | 26 | ASP |
| 20 | AT | 76 | ALA |
| 21 | AU | 33 | ARG |
| 21 | AU | 36 | PHE |
| 24 | BC | 37 | SER |
| 24 | BC | 230 | PRO |
| 25 | BD | 11 | MET |
| 26 | BE | 13 | THR |
| 27 | BF | 128 | SER |
| 27 | BF | 149 | ARG |
| 29 | BH | 31 | VAL |
| 30 | BI | 7 | TYR |
| 33 | BL | 41 | ARG |
| 38 | BQ | 101 | ASP |
| 40 | BS | 32 | ALA |
| 42 | BU | 26 | ASN |
| 42 | BU | 53 | GLN |
| 44 | BW | 17 | ALA |
| 45 | BX | 69 | GLU |
| 4 | CD | 166 | LYS |
| 5 | CE | 89 | THR |
| 6 | CF | 63 | ASN |
| 6 | CF | 69 | GLU |
| 8 | CH | 58 | LEU |
| 9 | CI | 31 | GLN |
| 9 | CI | 127 | SER |
| 10 | CJ | 41 | PRO |
| 17 | CQ | 4 | ILE |
| 26 | DE | 129 | PRO |
| 59 | DF | 88 | VAL |
| 28 | DG | 170 | THR |
| 29 | DH | 134 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 30 | DI | 31 | GLY |
| 31 | DJ | 23 | LYS |
| 31 | DJ | 43 | GLU |
| 33 | DL | 28 | GLY |
| 34 | DM | 16 | ARG |
| 36 | DO | 27 | VAL |
| 37 | DP | 57 | ALA |
| 40 | DS | 29 | VAL |
| 41 | DT | 50 | LEU |
| 42 | DU | 33 | VAL |
| 42 | DU | 41 | VAL |
| 42 | DU | 52 | ASN |
| 45 | DX | 63 | ILE |
| 47 | DZ | 32 | GLY |
| 48 | D0 | 26 | SER |
| 4 | AD | 172 | VAL |
| 5 | AE | 148 | SER |
| 10 | AJ | 41 | PRO |
| 12 | AL | 86 | VAL |
| 16 | AP | 42 | ILE |
| 21 | AU | 52 | VAL |
| 25 | BD | 93 | GLY |
| 27 | BF | 11 | VAL |
| 30 | BI | 97 | VAL |
| 31 | BJ | 73 | VAL |
| 34 | BM | 87 | GLY |
| 37 | BP | 4 | ILE |
| 37 | BP | 104 | GLY |
| 39 | BR | 27 | ILE |
| 55 | CM | 50 | GLY |
| 26 | DE | 82 | GLY |
| 36 | DO | 42 | PRO |
| 41 | DT | 53 | VAL |
| 42 | DU | 35 | VAL |
| 7 | AG | 6 | ILE |
| 10 | AJ | 42 | LEU |
| 11 | AK | 15 | VAL |
| 15 | AO | 85 | GLY |
| 20 | AT | 57 | VAL |
| 24 | BC | 28 | PRO |
| 29 | BH | 13 | GLY |
| 29 | BH | 80 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 40 | BS | 63 | GLY |
| 48 | B0 | 53 | VAL |
| 4 | CD | 37 | PRO |
| 5 | CE | 17 | VAL |
| 10 | CJ | 33 | GLY |
| 14 | CN | 56 | PRO |
| 56 | CP | 49 | GLY |
| 24 | DC | 246 | PRO |
| 25 | DD | 44 | GLY |
| 30 | DI | 138 | VAL |
| 31 | DJ | 139 | VAL |
| 33 | DL | 46 | VAL |
| 37 | DP | 34 | GLY |
| 40 | DS | 74 | ILE |
| 41 | DT | 16 | VAL |
| 49 | D1 | 4 | ILE |
| 2 | AB | 209 | VAL |
| 12 | AL | 41 | PRO |
| 16 | AP | 15 | PRO |
| 26 | BE | 59 | PRO |
| 29 | BH | 103 | VAL |
| 30 | BI | 23 | VAL |
| 6 | CF | 64 | VAL |
| 12 | CL | 7 | VAL |
| 19 | CS | 29 | PRO |
| 24 | DC | 2 | VAL |
| 26 | DE | 126 | VAL |
| 59 | DF | 125 | GLY |
| 28 | DG | 97 | VAL |
| 30 | DI | 28 | GLY |
| 35 | DN | 85 | PRO |
| 39 | DR | 52 | PRO |
| 42 | DU | 47 | PRO |
| 42 | DU | 64 | ILE |
| 44 | DW | 22 | VAL |
| 50 | D2 | 38 | GLY |
| 52 | D4 | 21 | GLY |
| 12 | AL | 54 | VAL |
| 13 | AM | 9 | PRO |
| 14 | AN | 81 | ILE |
| 30 | BI | 31 | GLY |
| 3 | CC | 54 | ILE |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 14 | CN | 51 | PRO |
| 24 | DC | 226 | PRO |
| 25 | DD | 2 | ILE |
| 59 | DF | 81 | GLY |
| 28 | DG | 53 | PRO |
| 28 | DG | 119 | GLY |
| 34 | DM | 36 | VAL |
| 35 | DN | 29 | VAL |
| 47 | DZ | 50 | VAL |
| 27 | BF | 145 | VAL |
| 37 | BP | 34 | GLY |
| 9 | CI | 50 | PRO |
| 10 | CJ | 25 | ILE |

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles |
|-----|-------|----------------|-----------|----------|-------------|
| 2 | AB | 180/180 (100%) | 142 (79%) | 38 (21%) | 1 6 |
| 2 | CB | 180/180 (100%) | 156 (87%) | 24 (13%) | 4 18 |
| 3 | AC | 170/170 (100%) | 142 (84%) | 28 (16%) | 2 10 |
| 3 | CC | 170/170 (100%) | 152 (89%) | 18 (11%) | 6 27 |
| 4 | AD | 172/172 (100%) | 146 (85%) | 26 (15%) | 3 14 |
| 4 | CD | 172/172 (100%) | 140 (81%) | 32 (19%) | 1 8 |
| 5 | AE | 113/113 (100%) | 90 (80%) | 23 (20%) | 1 6 |
| 5 | CE | 113/113 (100%) | 94 (83%) | 19 (17%) | 2 10 |
| 6 | AF | 87/87 (100%) | 75 (86%) | 12 (14%) | 3 16 |
| 6 | CF | 87/87 (100%) | 75 (86%) | 12 (14%) | 3 16 |
| 7 | AG | 124/124 (100%) | 108 (87%) | 16 (13%) | 4 19 |
| 8 | AH | 104/104 (100%) | 87 (84%) | 17 (16%) | 2 11 |
| 8 | CH | 104/104 (100%) | 87 (84%) | 17 (16%) | 2 11 |
| 9 | AI | 105/105 (100%) | 84 (80%) | 21 (20%) | 1 6 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------------|-----------|----------|-------------|----|
| 9 | CI | 105/105 (100%) | 89 (85%) | 16 (15%) | 3 | 13 |
| 10 | AJ | 86/86 (100%) | 72 (84%) | 14 (16%) | 2 | 11 |
| 10 | CJ | 86/86 (100%) | 77 (90%) | 9 (10%) | 7 | 28 |
| 11 | AK | 90/90 (100%) | 73 (81%) | 17 (19%) | 1 | 8 |
| 11 | CK | 90/90 (100%) | 77 (86%) | 13 (14%) | 3 | 15 |
| 12 | AL | 103/103 (100%) | 82 (80%) | 21 (20%) | 1 | 6 |
| 12 | CL | 103/103 (100%) | 86 (84%) | 17 (16%) | 2 | 10 |
| 13 | AM | 92/92 (100%) | 87 (95%) | 5 (5%) | 22 | 58 |
| 14 | AN | 79/83 (95%) | 72 (91%) | 7 (9%) | 9 | 35 |
| 14 | CN | 79/83 (95%) | 67 (85%) | 12 (15%) | 3 | 13 |
| 15 | AO | 76/76 (100%) | 67 (88%) | 9 (12%) | 5 | 23 |
| 15 | CO | 76/76 (100%) | 69 (91%) | 7 (9%) | 9 | 33 |
| 16 | AP | 65/65 (100%) | 57 (88%) | 8 (12%) | 4 | 21 |
| 17 | AQ | 74/74 (100%) | 58 (78%) | 16 (22%) | 1 | 5 |
| 17 | CQ | 74/74 (100%) | 61 (82%) | 13 (18%) | 2 | 9 |
| 18 | AR | 48/48 (100%) | 46 (96%) | 2 (4%) | 30 | 65 |
| 18 | CR | 48/48 (100%) | 44 (92%) | 4 (8%) | 11 | 40 |
| 19 | AS | 70/70 (100%) | 61 (87%) | 9 (13%) | 4 | 19 |
| 19 | CS | 70/70 (100%) | 62 (89%) | 8 (11%) | 5 | 24 |
| 20 | AT | 65/65 (100%) | 49 (75%) | 16 (25%) | 0 | 2 |
| 20 | CT | 65/65 (100%) | 53 (82%) | 12 (18%) | 1 | 8 |
| 21 | AU | 44/44 (100%) | 33 (75%) | 11 (25%) | 0 | 2 |
| 21 | CU | 44/44 (100%) | 33 (75%) | 11 (25%) | 0 | 2 |
| 24 | BC | 216/216 (100%) | 169 (78%) | 47 (22%) | 1 | 5 |
| 24 | DC | 216/216 (100%) | 189 (88%) | 27 (12%) | 4 | 21 |
| 25 | BD | 164/164 (100%) | 131 (80%) | 33 (20%) | 1 | 6 |
| 25 | DD | 164/164 (100%) | 141 (86%) | 23 (14%) | 3 | 16 |
| 26 | BE | 165/165 (100%) | 123 (74%) | 42 (26%) | 0 | 2 |
| 26 | DE | 165/165 (100%) | 147 (89%) | 18 (11%) | 6 | 26 |
| 27 | BF | 148/148 (100%) | 127 (86%) | 21 (14%) | 3 | 15 |
| 28 | BG | 137/137 (100%) | 108 (79%) | 29 (21%) | 1 | 5 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------------|-----------|----------|-------------|----|
| 28 | DG | 137/137 (100%) | 118 (86%) | 19 (14%) | 3 | 16 |
| 29 | BH | 114/114 (100%) | 96 (84%) | 18 (16%) | 2 | 12 |
| 29 | DH | 114/114 (100%) | 94 (82%) | 20 (18%) | 2 | 9 |
| 30 | BI | 109/109 (100%) | 91 (84%) | 18 (16%) | 2 | 10 |
| 30 | DI | 109/109 (100%) | 102 (94%) | 7 (6%) | 17 | 52 |
| 31 | BJ | 116/116 (100%) | 87 (75%) | 29 (25%) | 0 | 2 |
| 31 | DJ | 116/116 (100%) | 102 (88%) | 14 (12%) | 5 | 22 |
| 32 | BK | 103/103 (100%) | 86 (84%) | 17 (16%) | 2 | 10 |
| 32 | DK | 103/103 (100%) | 81 (79%) | 22 (21%) | 1 | 5 |
| 33 | BL | 102/102 (100%) | 77 (76%) | 25 (24%) | 0 | 2 |
| 33 | DL | 102/102 (100%) | 87 (85%) | 15 (15%) | 3 | 14 |
| 34 | BM | 109/109 (100%) | 85 (78%) | 24 (22%) | 1 | 5 |
| 34 | DM | 109/109 (100%) | 97 (89%) | 12 (11%) | 6 | 26 |
| 35 | BN | 100/100 (100%) | 77 (77%) | 23 (23%) | 1 | 3 |
| 35 | DN | 100/100 (100%) | 82 (82%) | 18 (18%) | 1 | 9 |
| 36 | BO | 86/86 (100%) | 69 (80%) | 17 (20%) | 1 | 7 |
| 36 | DO | 86/86 (100%) | 79 (92%) | 7 (8%) | 11 | 42 |
| 37 | BP | 99/99 (100%) | 69 (70%) | 30 (30%) | 0 | 0 |
| 37 | DP | 99/99 (100%) | 88 (89%) | 11 (11%) | 6 | 25 |
| 38 | BQ | 89/89 (100%) | 75 (84%) | 14 (16%) | 2 | 12 |
| 38 | DQ | 89/89 (100%) | 75 (84%) | 14 (16%) | 2 | 12 |
| 39 | BR | 84/84 (100%) | 68 (81%) | 16 (19%) | 1 | 8 |
| 39 | DR | 84/84 (100%) | 71 (84%) | 13 (16%) | 2 | 12 |
| 40 | BS | 93/93 (100%) | 71 (76%) | 22 (24%) | 1 | 3 |
| 40 | DS | 93/93 (100%) | 77 (83%) | 16 (17%) | 2 | 10 |
| 41 | BT | 80/80 (100%) | 59 (74%) | 21 (26%) | 0 | 2 |
| 41 | DT | 80/80 (100%) | 74 (92%) | 6 (8%) | 13 | 45 |
| 42 | BU | 83/83 (100%) | 66 (80%) | 17 (20%) | 1 | 6 |
| 42 | DU | 83/83 (100%) | 72 (87%) | 11 (13%) | 4 | 18 |
| 43 | BV | 78/78 (100%) | 59 (76%) | 19 (24%) | 0 | 2 |
| 43 | DV | 78/78 (100%) | 67 (86%) | 11 (14%) | 3 | 16 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|------------------|------------|------------|-------------|----|
| 44 | BW | 59/59 (100%) | 42 (71%) | 17 (29%) | 0 | 1 |
| 44 | DW | 59/59 (100%) | 46 (78%) | 13 (22%) | 1 | 5 |
| 45 | BX | 67/67 (100%) | 51 (76%) | 16 (24%) | 0 | 3 |
| 45 | DX | 67/67 (100%) | 58 (87%) | 9 (13%) | 4 | 18 |
| 46 | BY | 55/55 (100%) | 42 (76%) | 13 (24%) | 1 | 3 |
| 46 | DY | 55/55 (100%) | 52 (94%) | 3 (6%) | 21 | 57 |
| 47 | BZ | 48/48 (100%) | 34 (71%) | 14 (29%) | 0 | 1 |
| 47 | DZ | 48/48 (100%) | 40 (83%) | 8 (17%) | 2 | 10 |
| 48 | B0 | 47/47 (100%) | 38 (81%) | 9 (19%) | 1 | 8 |
| 48 | D0 | 47/47 (100%) | 40 (85%) | 7 (15%) | 3 | 14 |
| 49 | B1 | 45/45 (100%) | 36 (80%) | 9 (20%) | 1 | 6 |
| 49 | D1 | 45/45 (100%) | 41 (91%) | 4 (9%) | 9 | 35 |
| 50 | B2 | 38/38 (100%) | 31 (82%) | 7 (18%) | 1 | 8 |
| 50 | D2 | 38/38 (100%) | 34 (90%) | 4 (10%) | 7 | 28 |
| 51 | B3 | 51/51 (100%) | 44 (86%) | 7 (14%) | 3 | 17 |
| 51 | D3 | 51/51 (100%) | 42 (82%) | 9 (18%) | 2 | 9 |
| 52 | B4 | 34/34 (100%) | 29 (85%) | 5 (15%) | 3 | 14 |
| 52 | D4 | 34/34 (100%) | 27 (79%) | 7 (21%) | 1 | 6 |
| 54 | CG | 123/123 (100%) | 101 (82%) | 22 (18%) | 2 | 9 |
| 55 | CM | 91/91 (100%) | 80 (88%) | 11 (12%) | 5 | 22 |
| 56 | CP | 65/65 (100%) | 52 (80%) | 13 (20%) | 1 | 6 |
| 59 | DF | 149/149 (100%) | 123 (83%) | 26 (17%) | 2 | 10 |
| All | All | 9331/9339 (100%) | 7772 (83%) | 1559 (17%) | 2 | 10 |

All (1559) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | AB | 10 | LYS |
| 2 | AB | 13 | VAL |
| 2 | AB | 15 | PHE |
| 2 | AB | 19 | THR |
| 2 | AB | 20 | ARG |
| 2 | AB | 22 | TRP |
| 2 | AB | 30 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | AB | 36 | LYS |
| 2 | AB | 38 | HIS |
| 2 | AB | 42 | LEU |
| 2 | AB | 56 | LEU |
| 2 | AB | 57 | ASN |
| 2 | AB | 67 | LEU |
| 2 | AB | 73 | ARG |
| 2 | AB | 86 | CYS |
| 2 | AB | 87 | ASP |
| 2 | AB | 88 | GLN |
| 2 | AB | 90 | PHE |
| 2 | AB | 94 | ARG |
| 2 | AB | 100 | LEU |
| 2 | AB | 102 | ASN |
| 2 | AB | 108 | GLN |
| 2 | AB | 112 | ARG |
| 2 | AB | 115 | ASP |
| 2 | AB | 116 | LEU |
| 2 | AB | 119 | GLN |
| 2 | AB | 125 | PHE |
| 2 | AB | 128 | LEU |
| 2 | AB | 130 | LYS |
| 2 | AB | 141 | GLU |
| 2 | AB | 143 | LEU |
| 2 | AB | 156 | LEU |
| 2 | AB | 170 | ILE |
| 2 | AB | 185 | ILE |
| 2 | AB | 206 | ILE |
| 2 | AB | 207 | ARG |
| 2 | AB | 209 | VAL |
| 2 | AB | 219 | THR |
| 3 | AC | 2 | GLN |
| 3 | AC | 13 | ILE |
| 3 | AC | 17 | TRP |
| 3 | AC | 24 | ASN |
| 3 | AC | 25 | THR |
| 3 | AC | 26 | LYS |
| 3 | AC | 28 | PHE |
| 3 | AC | 32 | LEU |
| 3 | AC | 35 | ASP |
| 3 | AC | 36 | PHE |
| 3 | AC | 42 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | AC | 50 | SER |
| 3 | AC | 58 | ARG |
| 3 | AC | 69 | THR |
| 3 | AC | 79 | LYS |
| 3 | AC | 89 | VAL |
| 3 | AC | 106 | ARG |
| 3 | AC | 119 | ILE |
| 3 | AC | 127 | VAL |
| 3 | AC | 139 | ASN |
| 3 | AC | 143 | LEU |
| 3 | AC | 148 | ILE |
| 3 | AC | 156 | LEU |
| 3 | AC | 161 | ILE |
| 3 | AC | 165 | GLU |
| 3 | AC | 166 | TRP |
| 3 | AC | 184 | ASN |
| 3 | AC | 199 | VAL |
| 4 | AD | 11 | SER |
| 4 | AD | 19 | PHE |
| 4 | AD | 21 | LYS |
| 4 | AD | 25 | ARG |
| 4 | AD | 30 | LYS |
| 4 | AD | 31 | CYS |
| 4 | AD | 43 | ARG |
| 4 | AD | 52 | VAL |
| 4 | AD | 54 | LEU |
| 4 | AD | 55 | ARG |
| 4 | AD | 57 | LYS |
| 4 | AD | 58 | GLN |
| 4 | AD | 69 | ARG |
| 4 | AD | 88 | ASN |
| 4 | AD | 99 | ASN |
| 4 | AD | 115 | GLN |
| 4 | AD | 122 | ILE |
| 4 | AD | 127 | ARG |
| 4 | AD | 131 | ILE |
| 4 | AD | 147 | LYS |
| 4 | AD | 160 | LEU |
| 4 | AD | 166 | LYS |
| 4 | AD | 170 | LEU |
| 4 | AD | 178 | GLU |
| 4 | AD | 193 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 4 | AD | 205 | LYS |
| 5 | AE | 10 | LEU |
| 5 | AE | 11 | GLN |
| 5 | AE | 14 | LEU |
| 5 | AE | 18 | ASN |
| 5 | AE | 28 | ARG |
| 5 | AE | 31 | SER |
| 5 | AE | 68 | ARG |
| 5 | AE | 75 | LEU |
| 5 | AE | 79 | THR |
| 5 | AE | 81 | GLN |
| 5 | AE | 95 | MET |
| 5 | AE | 96 | GLN |
| 5 | AE | 100 | GLU |
| 5 | AE | 113 | VAL |
| 5 | AE | 116 | VAL |
| 5 | AE | 119 | VAL |
| 5 | AE | 121 | ASN |
| 5 | AE | 123 | LEU |
| 5 | AE | 135 | VAL |
| 5 | AE | 136 | VAL |
| 5 | AE | 141 | ASP |
| 5 | AE | 155 | LYS |
| 5 | AE | 156 | ARG |
| 6 | AF | 14 | GLN |
| 6 | AF | 17 | GLN |
| 6 | AF | 24 | ARG |
| 6 | AF | 29 | ILE |
| 6 | AF | 38 | ARG |
| 6 | AF | 46 | GLN |
| 6 | AF | 54 | LEU |
| 6 | AF | 55 | HIS |
| 6 | AF | 68 | GLN |
| 6 | AF | 69 | GLU |
| 6 | AF | 77 | THR |
| 6 | AF | 86 | ARG |
| 7 | AG | 3 | ARG |
| 7 | AG | 8 | GLN |
| 7 | AG | 12 | LEU |
| 7 | AG | 21 | LEU |
| 7 | AG | 22 | LEU |
| 7 | AG | 37 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 7 | AG | 47 | GLU |
| 7 | AG | 62 | GLU |
| 7 | AG | 68 | VAL |
| 7 | AG | 83 | THR |
| 7 | AG | 85 | GLN |
| 7 | AG | 93 | VAL |
| 7 | AG | 105 | GLU |
| 7 | AG | 117 | LEU |
| 7 | AG | 123 | LEU |
| 7 | AG | 143 | MET |
| 8 | AH | 21 | LYS |
| 8 | AH | 29 | SER |
| 8 | AH | 30 | LYS |
| 8 | AH | 64 | TYR |
| 8 | AH | 65 | PHE |
| 8 | AH | 72 | GLU |
| 8 | AH | 76 | ARG |
| 8 | AH | 79 | ARG |
| 8 | AH | 82 | LEU |
| 8 | AH | 86 | LYS |
| 8 | AH | 89 | ASP |
| 8 | AH | 98 | LEU |
| 8 | AH | 100 | ILE |
| 8 | AH | 110 | MET |
| 8 | AH | 111 | THR |
| 8 | AH | 120 | LEU |
| 8 | AH | 128 | VAL |
| 9 | AI | 4 | GLN |
| 9 | AI | 21 | LYS |
| 9 | AI | 28 | VAL |
| 9 | AI | 35 | GLU |
| 9 | AI | 37 | TYR |
| 9 | AI | 42 | THR |
| 9 | AI | 44 | ARG |
| 9 | AI | 47 | VAL |
| 9 | AI | 48 | ARG |
| 9 | AI | 54 | VAL |
| 9 | AI | 56 | MET |
| 9 | AI | 62 | LEU |
| 9 | AI | 67 | LYS |
| 9 | AI | 87 | MET |
| 9 | AI | 88 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 9 | AI | 98 | ARG |
| 9 | AI | 105 | ARG |
| 9 | AI | 106 | ASP |
| 9 | AI | 125 | GLN |
| 9 | AI | 126 | PHE |
| 9 | AI | 128 | LYS |
| 10 | AJ | 6 | ILE |
| 10 | AJ | 22 | THR |
| 10 | AJ | 32 | THR |
| 10 | AJ | 35 | GLN |
| 10 | AJ | 48 | ARG |
| 10 | AJ | 49 | PHE |
| 10 | AJ | 50 | THR |
| 10 | AJ | 59 | LYS |
| 10 | AJ | 63 | ASP |
| 10 | AJ | 70 | HIS |
| 10 | AJ | 73 | LEU |
| 10 | AJ | 89 | ARG |
| 10 | AJ | 92 | LEU |
| 10 | AJ | 96 | VAL |
| 11 | AK | 17 | ASP |
| 11 | AK | 30 | ILE |
| 11 | AK | 35 | ASP |
| 11 | AK | 51 | PHE |
| 11 | AK | 55 | ARG |
| 11 | AK | 64 | VAL |
| 11 | AK | 76 | TYR |
| 11 | AK | 78 | ILE |
| 11 | AK | 82 | GLU |
| 11 | AK | 96 | ILE |
| 11 | AK | 100 | ASN |
| 11 | AK | 106 | ILE |
| 11 | AK | 118 | ASN |
| 11 | AK | 124 | LYS |
| 11 | AK | 125 | LYS |
| 11 | AK | 127 | ARG |
| 11 | AK | 128 | VAL |
| 12 | AL | 3 | VAL |
| 12 | AL | 17 | LYS |
| 12 | AL | 18 | SER |
| 12 | AL | 20 | VAL |
| 12 | AL | 26 | CYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 12 | AL | 34 | THR |
| 12 | AL | 35 | ARG |
| 12 | AL | 38 | THR |
| 12 | AL | 41 | PRO |
| 12 | AL | 43 | LYS |
| 12 | AL | 49 | ARG |
| 12 | AL | 51 | VAL |
| 12 | AL | 57 | THR |
| 12 | AL | 63 | THR |
| 12 | AL | 64 | SER |
| 12 | AL | 74 | GLN |
| 12 | AL | 87 | LYS |
| 12 | AL | 88 | ASP |
| 12 | AL | 94 | TYR |
| 12 | AL | 104 | SER |
| 12 | AL | 109 | ARG |
| 13 | AM | 3 | ILE |
| 13 | AM | 7 | ASN |
| 13 | AM | 42 | VAL |
| 13 | AM | 58 | GLU |
| 13 | AM | 106 | ARG |
| 14 | AN | 13 | VAL |
| 14 | AN | 58 | ARG |
| 14 | AN | 59 | GLN |
| 14 | AN | 61 | ASN |
| 14 | AN | 73 | LEU |
| 14 | AN | 96 | LYS |
| 14 | AN | 99 | SER |
| 15 | AO | 16 | ARG |
| 15 | AO | 34 | GLN |
| 15 | AO | 57 | ARG |
| 15 | AO | 63 | ARG |
| 15 | AO | 65 | LEU |
| 15 | AO | 67 | ASP |
| 15 | AO | 80 | LEU |
| 15 | AO | 84 | LEU |
| 15 | AO | 86 | LEU |
| 16 | AP | 6 | LEU |
| 16 | AP | 19 | VAL |
| 16 | AP | 33 | ILE |
| 16 | AP | 46 | LYS |
| 16 | AP | 55 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 16 | AP | 63 | GLN |
| 16 | AP | 68 | SER |
| 16 | AP | 77 | GLU |
| 17 | AQ | 3 | LYS |
| 17 | AQ | 16 | MET |
| 17 | AQ | 20 | ILE |
| 17 | AQ | 28 | VAL |
| 17 | AQ | 29 | LYS |
| 17 | AQ | 37 | ILE |
| 17 | AQ | 47 | ASP |
| 17 | AQ | 49 | ASN |
| 17 | AQ | 50 | ASN |
| 17 | AQ | 51 | GLU |
| 17 | AQ | 54 | ILE |
| 17 | AQ | 64 | ARG |
| 17 | AQ | 74 | LEU |
| 17 | AQ | 75 | VAL |
| 17 | AQ | 78 | VAL |
| 17 | AQ | 80 | LYS |
| 18 | AR | 20 | ILE |
| 18 | AR | 54 | LEU |
| 19 | AS | 42 | ASN |
| 19 | AS | 54 | ARG |
| 19 | AS | 55 | GLN |
| 19 | AS | 57 | VAL |
| 19 | AS | 59 | VAL |
| 19 | AS | 60 | PHE |
| 19 | AS | 61 | VAL |
| 19 | AS | 64 | GLU |
| 19 | AS | 79 | TYR |
| 20 | AT | 2 | ASN |
| 20 | AT | 4 | LYS |
| 20 | AT | 11 | ILE |
| 20 | AT | 26 | MET |
| 20 | AT | 27 | MET |
| 20 | AT | 28 | ARG |
| 20 | AT | 29 | THR |
| 20 | AT | 33 | LYS |
| 20 | AT | 35 | TYR |
| 20 | AT | 38 | ILE |
| 20 | AT | 42 | ASP |
| 20 | AT | 53 | MET |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 20 | AT | 67 | HIS |
| 20 | AT | 75 | LYS |
| 20 | AT | 77 | ASN |
| 20 | AT | 84 | LYS |
| 21 | AU | 4 | LYS |
| 21 | AU | 8 | ASN |
| 21 | AU | 9 | GLU |
| 21 | AU | 10 | PRO |
| 21 | AU | 15 | LEU |
| 21 | AU | 18 | PHE |
| 21 | AU | 27 | VAL |
| 21 | AU | 33 | ARG |
| 21 | AU | 37 | TYR |
| 21 | AU | 38 | GLU |
| 21 | AU | 42 | THR |
| 24 | BC | 2 | VAL |
| 24 | BC | 12 | ARG |
| 24 | BC | 20 | ASN |
| 24 | BC | 27 | LYS |
| 24 | BC | 35 | LYS |
| 24 | BC | 38 | LYS |
| 24 | BC | 43 | ASN |
| 24 | BC | 49 | THR |
| 24 | BC | 70 | LYS |
| 24 | BC | 73 | ILE |
| 24 | BC | 77 | VAL |
| 24 | BC | 85 | ASN |
| 24 | BC | 90 | ILE |
| 24 | BC | 93 | VAL |
| 24 | BC | 100 | ARG |
| 24 | BC | 103 | ILE |
| 24 | BC | 104 | LEU |
| 24 | BC | 109 | LEU |
| 24 | BC | 110 | LYS |
| 24 | BC | 114 | GLN |
| 24 | BC | 115 | ILE |
| 24 | BC | 120 | ASP |
| 24 | BC | 123 | ILE |
| 24 | BC | 129 | LEU |
| 24 | BC | 142 | ASN |
| 24 | BC | 155 | ARG |
| 24 | BC | 163 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 24 | BC | 164 | VAL |
| 24 | BC | 166 | ARG |
| 24 | BC | 171 | VAL |
| 24 | BC | 172 | THR |
| 24 | BC | 173 | LEU |
| 24 | BC | 175 | LEU |
| 24 | BC | 176 | ARG |
| 24 | BC | 181 | ARG |
| 24 | BC | 200 | MET |
| 24 | BC | 201 | LEU |
| 24 | BC | 202 | ARG |
| 24 | BC | 203 | VAL |
| 24 | BC | 212 | TRP |
| 24 | BC | 215 | VAL |
| 24 | BC | 216 | ARG |
| 24 | BC | 250 | GLN |
| 24 | BC | 252 | LYS |
| 24 | BC | 254 | LYS |
| 24 | BC | 258 | SER |
| 24 | BC | 268 | ARG |
| 25 | BD | 4 | LEU |
| 25 | BD | 9 | VAL |
| 25 | BD | 13 | ARG |
| 25 | BD | 14 | ILE |
| 25 | BD | 16 | THR |
| 25 | BD | 33 | ARG |
| 25 | BD | 40 | LEU |
| 25 | BD | 43 | ASP |
| 25 | BD | 45 | TYR |
| 25 | BD | 67 | HIS |
| 25 | BD | 73 | VAL |
| 25 | BD | 79 | LEU |
| 25 | BD | 89 | GLU |
| 25 | BD | 90 | PHE |
| 25 | BD | 91 | THR |
| 25 | BD | 95 | SER |
| 25 | BD | 98 | VAL |
| 25 | BD | 100 | LEU |
| 25 | BD | 101 | PHE |
| 25 | BD | 113 | SER |
| 25 | BD | 114 | LYS |
| 25 | BD | 118 | PHE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | BD | 124 | ARG |
| 25 | BD | 150 | GLN |
| 25 | BD | 151 | THR |
| 25 | BD | 159 | LYS |
| 25 | BD | 170 | VAL |
| 25 | BD | 176 | ASP |
| 25 | BD | 177 | VAL |
| 25 | BD | 183 | GLU |
| 25 | BD | 186 | LEU |
| 25 | BD | 203 | VAL |
| 25 | BD | 207 | VAL |
| 26 | BE | 12 | LEU |
| 26 | BE | 18 | THR |
| 26 | BE | 21 | ARG |
| 26 | BE | 24 | ASN |
| 26 | BE | 40 | ARG |
| 26 | BE | 43 | THR |
| 26 | BE | 44 | ARG |
| 26 | BE | 48 | THR |
| 26 | BE | 61 | ARG |
| 26 | BE | 62 | GLN |
| 26 | BE | 65 | THR |
| 26 | BE | 69 | ARG |
| 26 | BE | 77 | ILE |
| 26 | BE | 78 | TRP |
| 26 | BE | 80 | SER |
| 26 | BE | 90 | GLN |
| 26 | BE | 108 | ILE |
| 26 | BE | 109 | LEU |
| 26 | BE | 113 | VAL |
| 26 | BE | 116 | ASP |
| 26 | BE | 118 | LEU |
| 26 | BE | 119 | ILE |
| 26 | BE | 121 | VAL |
| 26 | BE | 122 | GLU |
| 26 | BE | 123 | LYS |
| 26 | BE | 124 | PHE |
| 26 | BE | 127 | GLU |
| 26 | BE | 131 | THR |
| 26 | BE | 132 | LYS |
| 26 | BE | 136 | GLN |
| 26 | BE | 141 | MET |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 26 | BE | 146 | VAL |
| 26 | BE | 147 | LEU |
| 26 | BE | 149 | ILE |
| 26 | BE | 153 | LEU |
| 26 | BE | 159 | LEU |
| 26 | BE | 163 | ASN |
| 26 | BE | 167 | VAL |
| 26 | BE | 170 | ARG |
| 26 | BE | 171 | ASP |
| 26 | BE | 186 | VAL |
| 26 | BE | 189 | THR |
| 27 | BF | 3 | LEU |
| 27 | BF | 8 | LYS |
| 27 | BF | 9 | ASP |
| 27 | BF | 12 | VAL |
| 27 | BF | 17 | THR |
| 27 | BF | 24 | VAL |
| 27 | BF | 34 | THR |
| 27 | BF | 35 | LEU |
| 27 | BF | 36 | ASN |
| 27 | BF | 46 | LYS |
| 27 | BF | 65 | LEU |
| 27 | BF | 80 | GLN |
| 27 | BF | 90 | LEU |
| 27 | BF | 103 | ILE |
| 27 | BF | 109 | ARG |
| 27 | BF | 114 | ARG |
| 27 | BF | 132 | ARG |
| 27 | BF | 134 | GLN |
| 27 | BF | 154 | THR |
| 27 | BF | 157 | THR |
| 27 | BF | 166 | ARG |
| 28 | BG | 2 | ARG |
| 28 | BG | 8 | VAL |
| 28 | BG | 29 | ASN |
| 28 | BG | 34 | ARG |
| 28 | BG | 35 | THR |
| 28 | BG | 37 | ASN |
| 28 | BG | 40 | VAL |
| 28 | BG | 55 | ASP |
| 28 | BG | 59 | ASP |
| 28 | BG | 68 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 28 | BG | 78 | VAL |
| 28 | BG | 80 | GLU |
| 28 | BG | 84 | LYS |
| 28 | BG | 86 | LEU |
| 28 | BG | 88 | LEU |
| 28 | BG | 91 | VAL |
| 28 | BG | 101 | VAL |
| 28 | BG | 115 | GLN |
| 28 | BG | 116 | LEU |
| 28 | BG | 120 | ILE |
| 28 | BG | 121 | THR |
| 28 | BG | 123 | GLU |
| 28 | BG | 131 | VAL |
| 28 | BG | 132 | LEU |
| 28 | BG | 138 | GLN |
| 28 | BG | 148 | ARG |
| 28 | BG | 165 | ASP |
| 28 | BG | 170 | THR |
| 28 | BG | 174 | LYS |
| 29 | BH | 3 | VAL |
| 29 | BH | 6 | LEU |
| 29 | BH | 12 | LEU |
| 29 | BH | 18 | GLN |
| 29 | BH | 25 | TYR |
| 29 | BH | 28 | ASN |
| 29 | BH | 31 | VAL |
| 29 | BH | 33 | GLN |
| 29 | BH | 43 | ASN |
| 29 | BH | 50 | ARG |
| 29 | BH | 54 | LEU |
| 29 | BH | 68 | ARG |
| 29 | BH | 75 | LEU |
| 29 | BH | 83 | LYS |
| 29 | BH | 96 | THR |
| 29 | BH | 104 | THR |
| 29 | BH | 125 | THR |
| 29 | BH | 135 | HIS |
| 30 | BI | 2 | LYS |
| 30 | BI | 10 | LEU |
| 30 | BI | 11 | GLN |
| 30 | BI | 12 | VAL |
| 30 | BI | 23 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 30 | BI | 30 | GLN |
| 30 | BI | 37 | PHE |
| 30 | BI | 39 | LYS |
| 30 | BI | 49 | GLU |
| 30 | BI | 61 | TYR |
| 30 | BI | 71 | LYS |
| 30 | BI | 81 | LYS |
| 30 | BI | 86 | LYS |
| 30 | BI | 95 | ASP |
| 30 | BI | 107 | GLU |
| 30 | BI | 124 | MET |
| 30 | BI | 126 | ARG |
| 30 | BI | 135 | MET |
| 31 | BJ | 1 | MET |
| 31 | BJ | 2 | LYS |
| 31 | BJ | 3 | THR |
| 31 | BJ | 24 | THR |
| 31 | BJ | 25 | LEU |
| 31 | BJ | 30 | THR |
| 31 | BJ | 34 | ARG |
| 31 | BJ | 36 | LEU |
| 31 | BJ | 40 | HIS |
| 31 | BJ | 41 | LYS |
| 31 | BJ | 44 | TYR |
| 31 | BJ | 54 | ILE |
| 31 | BJ | 55 | ILE |
| 31 | BJ | 57 | LEU |
| 31 | BJ | 64 | VAL |
| 31 | BJ | 65 | THR |
| 31 | BJ | 67 | ASN |
| 31 | BJ | 69 | ARG |
| 31 | BJ | 72 | LYS |
| 31 | BJ | 86 | GLN |
| 31 | BJ | 103 | ILE |
| 31 | BJ | 105 | VAL |
| 31 | BJ | 109 | LEU |
| 31 | BJ | 111 | LYS |
| 31 | BJ | 114 | LEU |
| 31 | BJ | 123 | LYS |
| 31 | BJ | 129 | GLU |
| 31 | BJ | 135 | GLN |
| 31 | BJ | 140 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 32 | BK | 8 | LEU |
| 32 | BK | 18 | ARG |
| 32 | BK | 23 | LYS |
| 32 | BK | 41 | ILE |
| 32 | BK | 42 | THR |
| 32 | BK | 51 | LYS |
| 32 | BK | 52 | VAL |
| 32 | BK | 54 | LYS |
| 32 | BK | 58 | LEU |
| 32 | BK | 61 | VAL |
| 32 | BK | 73 | ASP |
| 32 | BK | 89 | ASN |
| 32 | BK | 95 | ILE |
| 32 | BK | 105 | ARG |
| 32 | BK | 111 | LYS |
| 32 | BK | 114 | LYS |
| 32 | BK | 118 | LEU |
| 33 | BL | 3 | LEU |
| 33 | BL | 4 | ASN |
| 33 | BL | 6 | LEU |
| 33 | BL | 8 | PRO |
| 33 | BL | 12 | SER |
| 33 | BL | 14 | LYS |
| 33 | BL | 19 | LEU |
| 33 | BL | 21 | ARG |
| 33 | BL | 27 | LEU |
| 33 | BL | 30 | THR |
| 33 | BL | 35 | HIS |
| 33 | BL | 47 | ARG |
| 33 | BL | 55 | MET |
| 33 | BL | 61 | LEU |
| 33 | BL | 66 | PHE |
| 33 | BL | 82 | LEU |
| 33 | BL | 91 | ASP |
| 33 | BL | 93 | ASN |
| 33 | BL | 94 | THR |
| 33 | BL | 101 | ILE |
| 33 | BL | 111 | ILE |
| 33 | BL | 112 | LEU |
| 33 | BL | 115 | GLU |
| 33 | BL | 127 | VAL |
| 33 | BL | 135 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 34 | BM | 2 | LEU |
| 34 | BM | 8 | LYS |
| 34 | BM | 10 | ARG |
| 34 | BM | 12 | MET |
| 34 | BM | 24 | THR |
| 34 | BM | 25 | ASP |
| 34 | BM | 27 | SER |
| 34 | BM | 33 | LEU |
| 34 | BM | 36 | VAL |
| 34 | BM | 58 | LYS |
| 34 | BM | 70 | ASP |
| 34 | BM | 75 | GLU |
| 34 | BM | 76 | LYS |
| 34 | BM | 80 | VAL |
| 34 | BM | 81 | ARG |
| 34 | BM | 90 | GLU |
| 34 | BM | 96 | ILE |
| 34 | BM | 97 | GLN |
| 34 | BM | 102 | LEU |
| 34 | BM | 110 | GLU |
| 34 | BM | 118 | LYS |
| 34 | BM | 131 | VAL |
| 34 | BM | 133 | LYS |
| 34 | BM | 134 | THR |
| 35 | BN | 2 | ARG |
| 35 | BN | 3 | HIS |
| 35 | BN | 8 | ARG |
| 35 | BN | 10 | LEU |
| 35 | BN | 11 | ASN |
| 35 | BN | 14 | SER |
| 35 | BN | 15 | SER |
| 35 | BN | 22 | ARG |
| 35 | BN | 23 | ASN |
| 35 | BN | 30 | ARG |
| 35 | BN | 33 | ILE |
| 35 | BN | 35 | LYS |
| 35 | BN | 38 | LEU |
| 35 | BN | 43 | GLU |
| 35 | BN | 51 | LEU |
| 35 | BN | 54 | LEU |
| 35 | BN | 69 | ARG |
| 35 | BN | 71 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BN | 75 | ILE |
| 35 | BN | 86 | ARG |
| 35 | BN | 95 | THR |
| 35 | BN | 96 | ARG |
| 35 | BN | 118 | ARG |
| 36 | BO | 5 | SER |
| 36 | BO | 9 | ARG |
| 36 | BO | 16 | ARG |
| 36 | BO | 17 | LYS |
| 36 | BO | 28 | VAL |
| 36 | BO | 31 | THR |
| 36 | BO | 36 | TYR |
| 36 | BO | 80 | GLU |
| 36 | BO | 83 | LEU |
| 36 | BO | 84 | GLU |
| 36 | BO | 89 | ASP |
| 36 | BO | 94 | ARG |
| 36 | BO | 100 | HIS |
| 36 | BO | 103 | VAL |
| 36 | BO | 106 | LEU |
| 36 | BO | 111 | ARG |
| 36 | BO | 116 | GLN |
| 37 | BP | 3 | ILE |
| 37 | BP | 6 | GLN |
| 37 | BP | 7 | LEU |
| 37 | BP | 14 | GLN |
| 37 | BP | 16 | VAL |
| 37 | BP | 18 | SER |
| 37 | BP | 19 | PHE |
| 37 | BP | 20 | ARG |
| 37 | BP | 24 | THR |
| 37 | BP | 28 | LYS |
| 37 | BP | 35 | SER |
| 37 | BP | 36 | LYS |
| 37 | BP | 37 | LYS |
| 37 | BP | 38 | ARG |
| 37 | BP | 56 | SER |
| 37 | BP | 61 | ARG |
| 37 | BP | 64 | SER |
| 37 | BP | 72 | VAL |
| 37 | BP | 75 | THR |
| 37 | BP | 79 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 37 | BP | 80 | VAL |
| 37 | BP | 83 | ILE |
| 37 | BP | 91 | VAL |
| 37 | BP | 92 | ARG |
| 37 | BP | 93 | LYS |
| 37 | BP | 95 | LYS |
| 37 | BP | 96 | LEU |
| 37 | BP | 99 | LEU |
| 37 | BP | 101 | GLU |
| 37 | BP | 109 | ILE |
| 38 | BQ | 2 | ARG |
| 38 | BQ | 8 | ILE |
| 38 | BQ | 10 | ARG |
| 38 | BQ | 50 | ARG |
| 38 | BQ | 63 | ARG |
| 38 | BQ | 65 | ASN |
| 38 | BQ | 69 | ARG |
| 38 | BQ | 88 | GLU |
| 38 | BQ | 89 | ILE |
| 38 | BQ | 93 | ILE |
| 38 | BQ | 94 | LEU |
| 38 | BQ | 96 | ASP |
| 38 | BQ | 97 | ILE |
| 38 | BQ | 103 | VAL |
| 39 | BR | 10 | LYS |
| 39 | BR | 14 | VAL |
| 39 | BR | 25 | LEU |
| 39 | BR | 37 | GLU |
| 39 | BR | 38 | VAL |
| 39 | BR | 39 | LEU |
| 39 | BR | 43 | ASN |
| 39 | BR | 46 | GLU |
| 39 | BR | 48 | LYS |
| 39 | BR | 51 | VAL |
| 39 | BR | 54 | VAL |
| 39 | BR | 55 | ASP |
| 39 | BR | 63 | VAL |
| 39 | BR | 85 | LYS |
| 39 | BR | 86 | GLN |
| 39 | BR | 97 | LYS |
| 40 | BS | 1 | MET |
| 40 | BS | 3 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 40 | BS | 4 | ILE |
| 40 | BS | 7 | HIS |
| 40 | BS | 24 | ILE |
| 40 | BS | 30 | SER |
| 40 | BS | 33 | LEU |
| 40 | BS | 36 | LEU |
| 40 | BS | 39 | THR |
| 40 | BS | 41 | LYS |
| 40 | BS | 45 | VAL |
| 40 | BS | 48 | LYS |
| 40 | BS | 66 | ILE |
| 40 | BS | 68 | ASP |
| 40 | BS | 71 | VAL |
| 40 | BS | 73 | LYS |
| 40 | BS | 76 | VAL |
| 40 | BS | 88 | ARG |
| 40 | BS | 96 | ILE |
| 40 | BS | 101 | SER |
| 40 | BS | 107 | VAL |
| 40 | BS | 109 | ASP |
| 41 | BT | 2 | ILE |
| 41 | BT | 3 | ARG |
| 41 | BT | 4 | GLU |
| 41 | BT | 8 | LEU |
| 41 | BT | 17 | SER |
| 41 | BT | 19 | LYS |
| 41 | BT | 28 | ASN |
| 41 | BT | 29 | THR |
| 41 | BT | 30 | ILE |
| 41 | BT | 31 | VAL |
| 41 | BT | 32 | LEU |
| 41 | BT | 37 | ASP |
| 41 | BT | 43 | ILE |
| 41 | BT | 48 | GLN |
| 41 | BT | 58 | VAL |
| 41 | BT | 61 | LEU |
| 41 | BT | 64 | LYS |
| 41 | BT | 67 | VAL |
| 41 | BT | 68 | LYS |
| 41 | BT | 69 | ARG |
| 41 | BT | 74 | ILE |
| 42 | BU | 6 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 42 | BU | 8 | ASP |
| 42 | BU | 18 | LYS |
| 42 | BU | 20 | LYS |
| 42 | BU | 23 | LYS |
| 42 | BU | 26 | ASN |
| 42 | BU | 29 | SER |
| 42 | BU | 42 | LYS |
| 42 | BU | 61 | GLU |
| 42 | BU | 64 | ILE |
| 42 | BU | 67 | SER |
| 42 | BU | 80 | ASP |
| 42 | BU | 86 | PHE |
| 42 | BU | 87 | GLU |
| 42 | BU | 92 | VAL |
| 42 | BU | 99 | SER |
| 42 | BU | 102 | ILE |
| 43 | BV | 1 | MET |
| 43 | BV | 3 | THR |
| 43 | BV | 5 | ASN |
| 43 | BV | 8 | VAL |
| 43 | BV | 10 | LYS |
| 43 | BV | 12 | GLN |
| 43 | BV | 14 | LYS |
| 43 | BV | 20 | LEU |
| 43 | BV | 29 | ILE |
| 43 | BV | 35 | GLU |
| 43 | BV | 41 | GLU |
| 43 | BV | 42 | LEU |
| 43 | BV | 43 | ASP |
| 43 | BV | 46 | LYS |
| 43 | BV | 51 | GLN |
| 43 | BV | 55 | GLU |
| 43 | BV | 60 | VAL |
| 43 | BV | 61 | LEU |
| 43 | BV | 66 | ASP |
| 44 | BW | 14 | ASP |
| 44 | BW | 15 | SER |
| 44 | BW | 23 | LYS |
| 44 | BW | 24 | ARG |
| 44 | BW | 25 | PHE |
| 44 | BW | 38 | ARG |
| 44 | BW | 40 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 44 | BW | 45 | HIS |
| 44 | BW | 49 | ASN |
| 44 | BW | 54 | ARG |
| 44 | BW | 58 | LEU |
| 44 | BW | 61 | LYS |
| 44 | BW | 67 | LYS |
| 44 | BW | 71 | LYS |
| 44 | BW | 76 | ARG |
| 44 | BW | 77 | LYS |
| 44 | BW | 80 | SER |
| 45 | BX | 6 | VAL |
| 45 | BX | 10 | ARG |
| 45 | BX | 19 | HIS |
| 45 | BX | 24 | THR |
| 45 | BX | 26 | ARG |
| 45 | BX | 27 | ARG |
| 45 | BX | 29 | LEU |
| 45 | BX | 36 | ARG |
| 45 | BX | 41 | SER |
| 45 | BX | 47 | THR |
| 45 | BX | 53 | LYS |
| 45 | BX | 60 | LYS |
| 45 | BX | 63 | ILE |
| 45 | BX | 65 | THR |
| 45 | BX | 71 | ARG |
| 45 | BX | 77 | TYR |
| 46 | BY | 9 | LYS |
| 46 | BY | 10 | SER |
| 46 | BY | 14 | LEU |
| 46 | BY | 17 | GLU |
| 46 | BY | 18 | LEU |
| 46 | BY | 19 | LEU |
| 46 | BY | 22 | LEU |
| 46 | BY | 37 | LEU |
| 46 | BY | 42 | LEU |
| 46 | BY | 47 | ARG |
| 46 | BY | 56 | LEU |
| 46 | BY | 57 | LEU |
| 46 | BY | 59 | GLU |
| 47 | BZ | 2 | LYS |
| 47 | BZ | 3 | THR |
| 47 | BZ | 4 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 47 | BZ | 5 | LYS |
| 47 | BZ | 8 | GLN |
| 47 | BZ | 9 | THR |
| 47 | BZ | 15 | ARG |
| 47 | BZ | 23 | LEU |
| 47 | BZ | 30 | ARG |
| 47 | BZ | 37 | ARG |
| 47 | BZ | 38 | GLU |
| 47 | BZ | 43 | ILE |
| 47 | BZ | 51 | SER |
| 47 | BZ | 58 | GLU |
| 48 | B0 | 5 | ASN |
| 48 | B0 | 9 | ARG |
| 48 | B0 | 17 | SER |
| 48 | B0 | 21 | LEU |
| 48 | B0 | 22 | THR |
| 48 | B0 | 26 | SER |
| 48 | B0 | 27 | LEU |
| 48 | B0 | 39 | ARG |
| 48 | B0 | 42 | ILE |
| 49 | B1 | 4 | ILE |
| 49 | B1 | 9 | LYS |
| 49 | B1 | 16 | THR |
| 49 | B1 | 29 | LYS |
| 49 | B1 | 33 | LEU |
| 49 | B1 | 35 | LEU |
| 49 | B1 | 41 | VAL |
| 49 | B1 | 42 | VAL |
| 49 | B1 | 43 | ARG |
| 50 | B2 | 1 | MET |
| 50 | B2 | 3 | ARG |
| 50 | B2 | 9 | VAL |
| 50 | B2 | 12 | ARG |
| 50 | B2 | 16 | HIS |
| 50 | B2 | 21 | ARG |
| 50 | B2 | 39 | ARG |
| 51 | B3 | 5 | THR |
| 51 | B3 | 7 | ARG |
| 51 | B3 | 22 | LYS |
| 51 | B3 | 31 | ILE |
| 51 | B3 | 49 | VAL |
| 51 | B3 | 51 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 51 | B3 | 56 | LEU |
| 52 | B4 | 1 | MET |
| 52 | B4 | 4 | ARG |
| 52 | B4 | 9 | LYS |
| 52 | B4 | 13 | ASN |
| 52 | B4 | 27 | CYS |
| 2 | CB | 9 | LEU |
| 2 | CB | 10 | LYS |
| 2 | CB | 14 | HIS |
| 2 | CB | 19 | THR |
| 2 | CB | 21 | TYR |
| 2 | CB | 22 | TRP |
| 2 | CB | 26 | MET |
| 2 | CB | 34 | ARG |
| 2 | CB | 36 | LYS |
| 2 | CB | 39 | ILE |
| 2 | CB | 42 | LEU |
| 2 | CB | 46 | VAL |
| 2 | CB | 69 | VAL |
| 2 | CB | 88 | GLN |
| 2 | CB | 103 | TRP |
| 2 | CB | 124 | THR |
| 2 | CB | 125 | PHE |
| 2 | CB | 131 | LYS |
| 2 | CB | 147 | LEU |
| 2 | CB | 164 | ASP |
| 2 | CB | 177 | ASN |
| 2 | CB | 182 | VAL |
| 2 | CB | 191 | ASP |
| 2 | CB | 196 | ASP |
| 3 | CC | 26 | LYS |
| 3 | CC | 30 | ASP |
| 3 | CC | 35 | ASP |
| 3 | CC | 41 | TYR |
| 3 | CC | 53 | ARG |
| 3 | CC | 106 | ARG |
| 3 | CC | 123 | LEU |
| 3 | CC | 126 | ARG |
| 3 | CC | 134 | LYS |
| 3 | CC | 139 | ASN |
| 3 | CC | 153 | SER |
| 3 | CC | 161 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 3 | CC | 164 | THR |
| 3 | CC | 166 | TRP |
| 3 | CC | 178 | ARG |
| 3 | CC | 183 | TYR |
| 3 | CC | 185 | THR |
| 3 | CC | 194 | VAL |
| 4 | CD | 2 | ARG |
| 4 | CD | 8 | LEU |
| 4 | CD | 16 | THR |
| 4 | CD | 24 | VAL |
| 4 | CD | 25 | ARG |
| 4 | CD | 29 | THR |
| 4 | CD | 30 | LYS |
| 4 | CD | 34 | GLU |
| 4 | CD | 55 | ARG |
| 4 | CD | 57 | LYS |
| 4 | CD | 62 | ARG |
| 4 | CD | 80 | ARG |
| 4 | CD | 84 | ASN |
| 4 | CD | 106 | PHE |
| 4 | CD | 119 | HIS |
| 4 | CD | 125 | ASN |
| 4 | CD | 127 | ARG |
| 4 | CD | 137 | SER |
| 4 | CD | 140 | ASP |
| 4 | CD | 142 | VAL |
| 4 | CD | 147 | LYS |
| 4 | CD | 151 | GLN |
| 4 | CD | 153 | ARG |
| 4 | CD | 160 | LEU |
| 4 | CD | 168 | THR |
| 4 | CD | 170 | LEU |
| 4 | CD | 182 | LYS |
| 4 | CD | 183 | ARG |
| 4 | CD | 187 | ARG |
| 4 | CD | 189 | ASP |
| 4 | CD | 194 | ILE |
| 4 | CD | 199 | ILE |
| 5 | CE | 11 | GLN |
| 5 | CE | 13 | LYS |
| 5 | CE | 18 | ASN |
| 5 | CE | 24 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 5 | CE | 25 | LYS |
| 5 | CE | 59 | ILE |
| 5 | CE | 75 | LEU |
| 5 | CE | 80 | LEU |
| 5 | CE | 81 | GLN |
| 5 | CE | 87 | VAL |
| 5 | CE | 91 | SER |
| 5 | CE | 95 | MET |
| 5 | CE | 99 | SER |
| 5 | CE | 119 | VAL |
| 5 | CE | 131 | ASN |
| 5 | CE | 133 | ILE |
| 5 | CE | 134 | ASN |
| 5 | CE | 136 | VAL |
| 5 | CE | 144 | GLU |
| 6 | CF | 33 | GLU |
| 6 | CF | 38 | ARG |
| 6 | CF | 44 | ARG |
| 6 | CF | 52 | ASN |
| 6 | CF | 54 | LEU |
| 6 | CF | 56 | LYS |
| 6 | CF | 58 | HIS |
| 6 | CF | 61 | LEU |
| 6 | CF | 72 | ASP |
| 6 | CF | 86 | ARG |
| 6 | CF | 89 | VAL |
| 6 | CF | 98 | GLU |
| 54 | CG | 3 | ARG |
| 54 | CG | 5 | VAL |
| 54 | CG | 6 | ILE |
| 54 | CG | 10 | LYS |
| 54 | CG | 12 | LEU |
| 54 | CG | 16 | LYS |
| 54 | CG | 55 | LYS |
| 54 | CG | 58 | LEU |
| 54 | CG | 66 | GLU |
| 54 | CG | 75 | LYS |
| 54 | CG | 77 | ARG |
| 54 | CG | 78 | ARG |
| 54 | CG | 85 | GLN |
| 54 | CG | 90 | VAL |
| 54 | CG | 100 | MET |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 54 | CG | 102 | TRP |
| 54 | CG | 112 | ASP |
| 54 | CG | 119 | LEU |
| 54 | CG | 123 | LEU |
| 54 | CG | 137 | ARG |
| 54 | CG | 139 | ASP |
| 54 | CG | 148 | LYS |
| 8 | CH | 2 | MET |
| 8 | CH | 11 | THR |
| 8 | CH | 37 | ASN |
| 8 | CH | 42 | GLU |
| 8 | CH | 46 | GLU |
| 8 | CH | 50 | VAL |
| 8 | CH | 54 | THR |
| 8 | CH | 59 | GLU |
| 8 | CH | 73 | SER |
| 8 | CH | 75 | GLN |
| 8 | CH | 76 | ARG |
| 8 | CH | 78 | SER |
| 8 | CH | 79 | ARG |
| 8 | CH | 82 | LEU |
| 8 | CH | 89 | ASP |
| 8 | CH | 93 | LYS |
| 8 | CH | 110 | MET |
| 9 | CI | 3 | ASN |
| 9 | CI | 4 | GLN |
| 9 | CI | 5 | TYR |
| 9 | CI | 36 | GLN |
| 9 | CI | 37 | TYR |
| 9 | CI | 45 | MET |
| 9 | CI | 53 | LEU |
| 9 | CI | 54 | VAL |
| 9 | CI | 60 | LEU |
| 9 | CI | 61 | ASP |
| 9 | CI | 83 | THR |
| 9 | CI | 87 | MET |
| 9 | CI | 93 | LEU |
| 9 | CI | 125 | GLN |
| 9 | CI | 126 | PHE |
| 9 | CI | 129 | ARG |
| 10 | CJ | 11 | LYS |
| 10 | CJ | 15 | HIS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 10 | CJ | 48 | ARG |
| 10 | CJ | 59 | LYS |
| 10 | CJ | 67 | ILE |
| 10 | CJ | 69 | THR |
| 10 | CJ | 82 | LYS |
| 10 | CJ | 87 | LEU |
| 10 | CJ | 92 | LEU |
| 11 | CK | 12 | ARG |
| 11 | CK | 27 | ASN |
| 11 | CK | 33 | ILE |
| 11 | CK | 34 | THR |
| 11 | CK | 57 | SER |
| 11 | CK | 73 | VAL |
| 11 | CK | 78 | ILE |
| 11 | CK | 81 | LEU |
| 11 | CK | 94 | SER |
| 11 | CK | 95 | THR |
| 11 | CK | 105 | ARG |
| 11 | CK | 115 | ILE |
| 11 | CK | 128 | VAL |
| 12 | CL | 3 | VAL |
| 12 | CL | 4 | ASN |
| 12 | CL | 5 | GLN |
| 12 | CL | 9 | LYS |
| 12 | CL | 18 | SER |
| 12 | CL | 19 | ASN |
| 12 | CL | 28 | GLN |
| 12 | CL | 39 | THR |
| 12 | CL | 48 | LEU |
| 12 | CL | 49 | ARG |
| 12 | CL | 57 | THR |
| 12 | CL | 62 | VAL |
| 12 | CL | 72 | ASN |
| 12 | CL | 88 | ASP |
| 12 | CL | 96 | THR |
| 12 | CL | 107 | LYS |
| 12 | CL | 120 | ARG |
| 55 | CM | 12 | LYS |
| 55 | CM | 24 | VAL |
| 55 | CM | 28 | ARG |
| 55 | CM | 32 | ILE |
| 55 | CM | 46 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 55 | CM | 53 | ASP |
| 55 | CM | 77 | LYS |
| 55 | CM | 91 | ARG |
| 55 | CM | 92 | ARG |
| 55 | CM | 100 | ARG |
| 55 | CM | 113 | LYS |
| 14 | CN | 3 | GLN |
| 14 | CN | 27 | LYS |
| 14 | CN | 41 | TRP |
| 14 | CN | 52 | ARG |
| 14 | CN | 53 | ASP |
| 14 | CN | 58 | ARG |
| 14 | CN | 61 | ASN |
| 14 | CN | 63 | CYS |
| 14 | CN | 65 | GLN |
| 14 | CN | 72 | PHE |
| 14 | CN | 96 | LYS |
| 14 | CN | 100 | TRP |
| 15 | CO | 16 | ARG |
| 15 | CO | 34 | GLN |
| 15 | CO | 38 | LEU |
| 15 | CO | 39 | GLN |
| 15 | CO | 45 | HIS |
| 15 | CO | 65 | LEU |
| 15 | CO | 80 | LEU |
| 56 | CP | 1 | MET |
| 56 | CP | 3 | THR |
| 56 | CP | 19 | VAL |
| 56 | CP | 29 | ASN |
| 56 | CP | 32 | PHE |
| 56 | CP | 35 | ARG |
| 56 | CP | 41 | PRO |
| 56 | CP | 44 | SER |
| 56 | CP | 46 | LYS |
| 56 | CP | 54 | LEU |
| 56 | CP | 56 | ARG |
| 56 | CP | 69 | ASP |
| 56 | CP | 71 | VAL |
| 17 | CQ | 3 | LYS |
| 17 | CQ | 6 | THR |
| 17 | CQ | 7 | LEU |
| 17 | CQ | 20 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 17 | CQ | 32 | ILE |
| 17 | CQ | 37 | ILE |
| 17 | CQ | 39 | ARG |
| 17 | CQ | 51 | GLU |
| 17 | CQ | 52 | CYS |
| 17 | CQ | 58 | VAL |
| 17 | CQ | 60 | ILE |
| 17 | CQ | 75 | VAL |
| 17 | CQ | 80 | LYS |
| 18 | CR | 25 | ILE |
| 18 | CR | 44 | THR |
| 18 | CR | 65 | SER |
| 18 | CR | 72 | ARG |
| 19 | CS | 5 | LYS |
| 19 | CS | 10 | ILE |
| 19 | CS | 11 | ASP |
| 19 | CS | 52 | ASN |
| 19 | CS | 54 | ARG |
| 19 | CS | 55 | GLN |
| 19 | CS | 56 | HIS |
| 19 | CS | 73 | PHE |
| 20 | CT | 11 | ILE |
| 20 | CT | 26 | MET |
| 20 | CT | 30 | PHE |
| 20 | CT | 35 | TYR |
| 20 | CT | 42 | ASP |
| 20 | CT | 47 | GLN |
| 20 | CT | 53 | MET |
| 20 | CT | 67 | HIS |
| 20 | CT | 68 | LYS |
| 20 | CT | 69 | ASN |
| 20 | CT | 73 | ARG |
| 20 | CT | 82 | ILE |
| 21 | CU | 4 | LYS |
| 21 | CU | 9 | GLU |
| 21 | CU | 13 | VAL |
| 21 | CU | 17 | ARG |
| 21 | CU | 18 | PHE |
| 21 | CU | 19 | LYS |
| 21 | CU | 27 | VAL |
| 21 | CU | 32 | ARG |
| 21 | CU | 36 | PHE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 21 | CU | 37 | TYR |
| 21 | CU | 53 | LYS |
| 24 | DC | 23 | LEU |
| 24 | DC | 35 | LYS |
| 24 | DC | 43 | ASN |
| 24 | DC | 51 | ARG |
| 24 | DC | 53 | ILE |
| 24 | DC | 62 | ARG |
| 24 | DC | 90 | ILE |
| 24 | DC | 102 | TYR |
| 24 | DC | 124 | LYS |
| 24 | DC | 152 | GLN |
| 24 | DC | 164 | VAL |
| 24 | DC | 172 | THR |
| 24 | DC | 173 | LEU |
| 24 | DC | 187 | CYS |
| 24 | DC | 188 | ARG |
| 24 | DC | 190 | THR |
| 24 | DC | 203 | VAL |
| 24 | DC | 212 | TRP |
| 24 | DC | 213 | ARG |
| 24 | DC | 220 | ARG |
| 24 | DC | 227 | VAL |
| 24 | DC | 228 | ASP |
| 24 | DC | 235 | GLU |
| 24 | DC | 251 | THR |
| 24 | DC | 260 | LYS |
| 24 | DC | 267 | VAL |
| 24 | DC | 269 | ARG |
| 25 | DD | 24 | VAL |
| 25 | DD | 28 | GLU |
| 25 | DD | 32 | ASN |
| 25 | DD | 33 | ARG |
| 25 | DD | 34 | VAL |
| 25 | DD | 38 | LYS |
| 25 | DD | 48 | ILE |
| 25 | DD | 50 | VAL |
| 25 | DD | 55 | LYS |
| 25 | DD | 58 | ASN |
| 25 | DD | 62 | LYS |
| 25 | DD | 79 | LEU |
| 25 | DD | 84 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | DD | 100 | LEU |
| 25 | DD | 106 | LYS |
| 25 | DD | 121 | THR |
| 25 | DD | 138 | LEU |
| 25 | DD | 140 | HIS |
| 25 | DD | 148 | GLN |
| 25 | DD | 159 | LYS |
| 25 | DD | 168 | GLU |
| 25 | DD | 189 | VAL |
| 25 | DD | 193 | VAL |
| 26 | DE | 53 | THR |
| 26 | DE | 57 | LYS |
| 26 | DE | 63 | LYS |
| 26 | DE | 67 | ARG |
| 26 | DE | 73 | ILE |
| 26 | DE | 77 | ILE |
| 26 | DE | 78 | TRP |
| 26 | DE | 91 | ASP |
| 26 | DE | 108 | ILE |
| 26 | DE | 112 | LEU |
| 26 | DE | 126 | VAL |
| 26 | DE | 127 | GLU |
| 26 | DE | 139 | LYS |
| 26 | DE | 149 | ILE |
| 26 | DE | 157 | LEU |
| 26 | DE | 163 | ASN |
| 26 | DE | 164 | LEU |
| 26 | DE | 166 | LYS |
| 59 | DF | 13 | LYS |
| 59 | DF | 25 | MET |
| 59 | DF | 47 | LYS |
| 59 | DF | 48 | LEU |
| 59 | DF | 49 | LEU |
| 59 | DF | 76 | PHE |
| 59 | DF | 77 | LYS |
| 59 | DF | 94 | ARG |
| 59 | DF | 97 | GLU |
| 59 | DF | 110 | ILE |
| 59 | DF | 111 | ARG |
| 59 | DF | 113 | PHE |
| 59 | DF | 119 | LYS |
| 59 | DF | 131 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 59 | DF | 133 | GLU |
| 59 | DF | 134 | GLN |
| 59 | DF | 135 | ILE |
| 59 | DF | 139 | GLU |
| 59 | DF | 142 | TYR |
| 59 | DF | 147 | ARG |
| 59 | DF | 148 | VAL |
| 59 | DF | 151 | LEU |
| 59 | DF | 160 | LYS |
| 59 | DF | 166 | ARG |
| 59 | DF | 172 | PHE |
| 59 | DF | 177 | ARG |
| 28 | DG | 2 | ARG |
| 28 | DG | 18 | ILE |
| 28 | DG | 19 | ASN |
| 28 | DG | 21 | GLN |
| 28 | DG | 34 | ARG |
| 28 | DG | 35 | THR |
| 28 | DG | 40 | VAL |
| 28 | DG | 42 | VAL |
| 28 | DG | 51 | PHE |
| 28 | DG | 72 | ASN |
| 28 | DG | 84 | LYS |
| 28 | DG | 93 | TYR |
| 28 | DG | 120 | ILE |
| 28 | DG | 132 | LEU |
| 28 | DG | 143 | VAL |
| 28 | DG | 162 | ARG |
| 28 | DG | 163 | TYR |
| 28 | DG | 166 | GLU |
| 28 | DG | 176 | LYS |
| 29 | DH | 8 | LYS |
| 29 | DH | 22 | LYS |
| 29 | DH | 25 | TYR |
| 29 | DH | 27 | ARG |
| 29 | DH | 28 | ASN |
| 29 | DH | 44 | ILE |
| 29 | DH | 50 | ARG |
| 29 | DH | 57 | LYS |
| 29 | DH | 66 | ASN |
| 29 | DH | 68 | ARG |
| 29 | DH | 76 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 29 | DH | 86 | ASP |
| 29 | DH | 90 | LEU |
| 29 | DH | 91 | PHE |
| 29 | DH | 103 | VAL |
| 29 | DH | 104 | THR |
| 29 | DH | 109 | GLU |
| 29 | DH | 119 | ASN |
| 29 | DH | 132 | PHE |
| 29 | DH | 144 | VAL |
| 30 | DI | 7 | TYR |
| 30 | DI | 16 | MET |
| 30 | DI | 30 | GLN |
| 30 | DI | 58 | ILE |
| 30 | DI | 68 | PHE |
| 30 | DI | 72 | THR |
| 30 | DI | 93 | ASN |
| 31 | DJ | 3 | THR |
| 31 | DJ | 25 | LEU |
| 31 | DJ | 34 | ARG |
| 31 | DJ | 43 | GLU |
| 31 | DJ | 47 | HIS |
| 31 | DJ | 52 | ASP |
| 31 | DJ | 54 | ILE |
| 31 | DJ | 57 | LEU |
| 31 | DJ | 80 | HIS |
| 31 | DJ | 81 | ILE |
| 31 | DJ | 95 | ARG |
| 31 | DJ | 106 | LYS |
| 31 | DJ | 129 | GLU |
| 31 | DJ | 139 | VAL |
| 32 | DK | 3 | GLN |
| 32 | DK | 7 | MET |
| 32 | DK | 13 | ASN |
| 32 | DK | 25 | LEU |
| 32 | DK | 39 | ILE |
| 32 | DK | 41 | ILE |
| 32 | DK | 47 | ILE |
| 32 | DK | 49 | ARG |
| 32 | DK | 54 | LYS |
| 32 | DK | 65 | THR |
| 32 | DK | 73 | ASP |
| 32 | DK | 79 | PHE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 32 | DK | 87 | LEU |
| 32 | DK | 91 | SER |
| 32 | DK | 95 | ILE |
| 32 | DK | 100 | PHE |
| 32 | DK | 103 | VAL |
| 32 | DK | 105 | ARG |
| 32 | DK | 106 | GLU |
| 32 | DK | 107 | LEU |
| 32 | DK | 111 | LYS |
| 32 | DK | 114 | LYS |
| 33 | DL | 3 | LEU |
| 33 | DL | 4 | ASN |
| 33 | DL | 6 | LEU |
| 33 | DL | 47 | ARG |
| 33 | DL | 48 | ARG |
| 33 | DL | 79 | LEU |
| 33 | DL | 82 | LEU |
| 33 | DL | 92 | LEU |
| 33 | DL | 99 | ASN |
| 33 | DL | 103 | ILE |
| 33 | DL | 111 | ILE |
| 33 | DL | 112 | LEU |
| 33 | DL | 118 | THR |
| 33 | DL | 141 | LYS |
| 33 | DL | 143 | GLU |
| 34 | DM | 8 | LYS |
| 34 | DM | 33 | LEU |
| 34 | DM | 38 | ARG |
| 34 | DM | 73 | ILE |
| 34 | DM | 78 | LEU |
| 34 | DM | 89 | VAL |
| 34 | DM | 95 | LEU |
| 34 | DM | 97 | GLN |
| 34 | DM | 105 | MET |
| 34 | DM | 115 | GLU |
| 34 | DM | 126 | ILE |
| 34 | DM | 129 | THR |
| 35 | DN | 14 | SER |
| 35 | DN | 18 | GLN |
| 35 | DN | 20 | MET |
| 35 | DN | 29 | VAL |
| 35 | DN | 33 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | DN | 34 | ILE |
| 35 | DN | 53 | THR |
| 35 | DN | 62 | ASN |
| 35 | DN | 63 | ARG |
| 35 | DN | 69 | ARG |
| 35 | DN | 75 | ILE |
| 35 | DN | 90 | ARG |
| 35 | DN | 94 | TYR |
| 35 | DN | 95 | THR |
| 35 | DN | 97 | ILE |
| 35 | DN | 98 | LEU |
| 35 | DN | 107 | ASN |
| 35 | DN | 114 | GLU |
| 36 | DO | 17 | LYS |
| 36 | DO | 31 | THR |
| 36 | DO | 65 | THR |
| 36 | DO | 68 | LYS |
| 36 | DO | 90 | VAL |
| 36 | DO | 115 | LEU |
| 36 | DO | 117 | PHE |
| 37 | DP | 6 | GLN |
| 37 | DP | 7 | LEU |
| 37 | DP | 13 | LYS |
| 37 | DP | 19 | PHE |
| 37 | DP | 28 | LYS |
| 37 | DP | 31 | VAL |
| 37 | DP | 52 | ARG |
| 37 | DP | 83 | ILE |
| 37 | DP | 86 | LYS |
| 37 | DP | 95 | LYS |
| 37 | DP | 101 | GLU |
| 38 | DQ | 3 | VAL |
| 38 | DQ | 10 | ARG |
| 38 | DQ | 12 | ARG |
| 38 | DQ | 13 | HIS |
| 38 | DQ | 15 | LYS |
| 38 | DQ | 35 | PHE |
| 38 | DQ | 46 | TYR |
| 38 | DQ | 50 | ARG |
| 38 | DQ | 54 | ARG |
| 38 | DQ | 57 | ARG |
| 38 | DQ | 63 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 38 | DQ | 69 | ARG |
| 38 | DQ | 79 | ILE |
| 38 | DQ | 96 | ASP |
| 39 | DR | 6 | GLN |
| 39 | DR | 10 | LYS |
| 39 | DR | 13 | ARG |
| 39 | DR | 37 | GLU |
| 39 | DR | 48 | LYS |
| 39 | DR | 58 | VAL |
| 39 | DR | 75 | VAL |
| 39 | DR | 80 | ARG |
| 39 | DR | 81 | LYS |
| 39 | DR | 83 | TYR |
| 39 | DR | 86 | GLN |
| 39 | DR | 90 | ARG |
| 39 | DR | 93 | PHE |
| 40 | DS | 6 | LYS |
| 40 | DS | 22 | ASP |
| 40 | DS | 23 | LEU |
| 40 | DS | 31 | GLN |
| 40 | DS | 36 | LEU |
| 40 | DS | 45 | VAL |
| 40 | DS | 46 | LEU |
| 40 | DS | 66 | ILE |
| 40 | DS | 70 | LYS |
| 40 | DS | 74 | ILE |
| 40 | DS | 76 | VAL |
| 40 | DS | 81 | SER |
| 40 | DS | 84 | ARG |
| 40 | DS | 86 | MET |
| 40 | DS | 88 | ARG |
| 40 | DS | 107 | VAL |
| 41 | DT | 9 | LYS |
| 41 | DT | 12 | ARG |
| 41 | DT | 18 | GLU |
| 41 | DT | 39 | THR |
| 41 | DT | 50 | LEU |
| 41 | DT | 54 | GLU |
| 42 | DU | 13 | LEU |
| 42 | DU | 14 | THR |
| 42 | DU | 16 | LYS |
| 42 | DU | 17 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 42 | DU | 20 | LYS |
| 42 | DU | 21 | ARG |
| 42 | DU | 40 | LEU |
| 42 | DU | 45 | GLN |
| 42 | DU | 85 | ARG |
| 42 | DU | 94 | PHE |
| 42 | DU | 95 | PHE |
| 43 | DV | 17 | SER |
| 43 | DV | 26 | PHE |
| 43 | DV | 40 | ILE |
| 43 | DV | 44 | HIS |
| 43 | DV | 51 | GLN |
| 43 | DV | 61 | LEU |
| 43 | DV | 65 | VAL |
| 43 | DV | 69 | GLU |
| 43 | DV | 70 | ILE |
| 43 | DV | 76 | ASP |
| 43 | DV | 90 | ASP |
| 44 | DW | 18 | LYS |
| 44 | DW | 20 | LEU |
| 44 | DW | 22 | VAL |
| 44 | DW | 23 | LYS |
| 44 | DW | 30 | VAL |
| 44 | DW | 37 | VAL |
| 44 | DW | 39 | GLN |
| 44 | DW | 40 | ARG |
| 44 | DW | 58 | LEU |
| 44 | DW | 68 | PHE |
| 44 | DW | 76 | ARG |
| 44 | DW | 77 | LYS |
| 44 | DW | 80 | SER |
| 45 | DX | 5 | GLN |
| 45 | DX | 6 | VAL |
| 45 | DX | 26 | ARG |
| 45 | DX | 29 | LEU |
| 45 | DX | 31 | ASN |
| 45 | DX | 46 | VAL |
| 45 | DX | 47 | THR |
| 45 | DX | 63 | ILE |
| 45 | DX | 73 | ARG |
| 46 | DY | 1 | MET |
| 46 | DY | 4 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 46 | DY | 28 | LEU |
| 47 | DZ | 16 | LEU |
| 47 | DZ | 24 | LEU |
| 47 | DZ | 28 | LEU |
| 47 | DZ | 29 | ARG |
| 47 | DZ | 30 | ARG |
| 47 | DZ | 37 | ARG |
| 47 | DZ | 50 | VAL |
| 47 | DZ | 53 | MET |
| 48 | D0 | 3 | GLN |
| 48 | D0 | 5 | ASN |
| 48 | D0 | 22 | THR |
| 48 | D0 | 41 | HIS |
| 48 | D0 | 42 | ILE |
| 48 | D0 | 49 | ARG |
| 48 | D0 | 53 | VAL |
| 49 | D1 | 10 | LEU |
| 49 | D1 | 20 | TYR |
| 49 | D1 | 35 | LEU |
| 49 | D1 | 44 | GLN |
| 50 | D2 | 9 | VAL |
| 50 | D2 | 26 | ASN |
| 50 | D2 | 33 | ARG |
| 50 | D2 | 46 | LYS |
| 51 | D3 | 12 | ARG |
| 51 | D3 | 14 | LYS |
| 51 | D3 | 27 | ASN |
| 51 | D3 | 29 | ARG |
| 51 | D3 | 41 | ARG |
| 51 | D3 | 46 | LYS |
| 51 | D3 | 48 | MET |
| 51 | D3 | 51 | LYS |
| 51 | D3 | 61 | LEU |
| 52 | D4 | 2 | LYS |
| 52 | D4 | 3 | VAL |
| 52 | D4 | 9 | LYS |
| 52 | D4 | 11 | CYS |
| 52 | D4 | 13 | ASN |
| 52 | D4 | 15 | LYS |
| 52 | D4 | 17 | VAL |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (333) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | AB | 14 | HIS |
| 2 | AB | 38 | HIS |
| 2 | AB | 57 | ASN |
| 2 | AB | 102 | ASN |
| 2 | AB | 108 | GLN |
| 2 | AB | 119 | GLN |
| 2 | AB | 169 | HIS |
| 3 | AC | 5 | HIS |
| 3 | AC | 24 | ASN |
| 3 | AC | 68 | HIS |
| 3 | AC | 138 | GLN |
| 3 | AC | 139 | ASN |
| 4 | AD | 40 | HIS |
| 4 | AD | 53 | GLN |
| 4 | AD | 58 | GLN |
| 4 | AD | 70 | GLN |
| 4 | AD | 73 | ASN |
| 4 | AD | 84 | ASN |
| 4 | AD | 99 | ASN |
| 4 | AD | 119 | HIS |
| 4 | AD | 163 | GLN |
| 5 | AE | 11 | GLN |
| 5 | AE | 42 | ASN |
| 5 | AE | 72 | ASN |
| 5 | AE | 77 | ASN |
| 5 | AE | 121 | ASN |
| 6 | AF | 11 | HIS |
| 6 | AF | 46 | GLN |
| 6 | AF | 52 | ASN |
| 6 | AF | 68 | GLN |
| 7 | AG | 85 | GLN |
| 7 | AG | 121 | ASN |
| 7 | AG | 147 | ASN |
| 8 | AH | 3 | GLN |
| 8 | AH | 17 | GLN |
| 8 | AH | 20 | ASN |
| 8 | AH | 117 | GLN |
| 9 | AI | 3 | ASN |
| 9 | AI | 4 | GLN |
| 9 | AI | 80 | HIS |
| 9 | AI | 125 | GLN |
| 10 | AJ | 20 | GLN |
| 10 | AJ | 35 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 10 | AJ | 58 | ASN |
| 10 | AJ | 64 | GLN |
| 11 | AK | 100 | ASN |
| 11 | AK | 108 | ASN |
| 12 | AL | 4 | ASN |
| 12 | AL | 45 | ASN |
| 12 | AL | 74 | GLN |
| 13 | AM | 7 | ASN |
| 14 | AN | 42 | ASN |
| 14 | AN | 48 | GLN |
| 14 | AN | 61 | ASN |
| 15 | AO | 19 | ASN |
| 15 | AO | 36 | ASN |
| 15 | AO | 45 | HIS |
| 15 | AO | 61 | GLN |
| 16 | AP | 29 | ASN |
| 16 | AP | 59 | HIS |
| 16 | AP | 63 | GLN |
| 17 | AQ | 44 | HIS |
| 17 | AQ | 49 | ASN |
| 18 | AR | 30 | ASN |
| 18 | AR | 53 | GLN |
| 18 | AR | 73 | HIS |
| 19 | AS | 42 | ASN |
| 20 | AT | 12 | GLN |
| 20 | AT | 47 | GLN |
| 20 | AT | 51 | ASN |
| 20 | AT | 54 | GLN |
| 20 | AT | 60 | GLN |
| 20 | AT | 74 | HIS |
| 20 | AT | 77 | ASN |
| 21 | AU | 8 | ASN |
| 24 | BC | 14 | HIS |
| 24 | BC | 20 | ASN |
| 24 | BC | 59 | GLN |
| 24 | BC | 89 | ASN |
| 24 | BC | 114 | GLN |
| 24 | BC | 141 | HIS |
| 24 | BC | 152 | GLN |
| 24 | BC | 242 | HIS |
| 24 | BC | 250 | GLN |
| 24 | BC | 259 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | BD | 32 | ASN |
| 25 | BD | 58 | ASN |
| 25 | BD | 126 | ASN |
| 25 | BD | 130 | GLN |
| 25 | BD | 150 | GLN |
| 26 | BE | 24 | ASN |
| 26 | BE | 29 | HIS |
| 26 | BE | 30 | GLN |
| 26 | BE | 62 | GLN |
| 26 | BE | 97 | ASN |
| 26 | BE | 136 | GLN |
| 27 | BF | 22 | ASN |
| 27 | BF | 26 | GLN |
| 27 | BF | 134 | GLN |
| 28 | BG | 72 | ASN |
| 28 | BG | 114 | HIS |
| 29 | BH | 2 | GLN |
| 29 | BH | 18 | GLN |
| 29 | BH | 20 | ASN |
| 29 | BH | 33 | GLN |
| 29 | BH | 43 | ASN |
| 29 | BH | 145 | ASN |
| 30 | BI | 5 | GLN |
| 30 | BI | 30 | GLN |
| 30 | BI | 110 | GLN |
| 31 | BJ | 40 | HIS |
| 31 | BJ | 76 | HIS |
| 31 | BJ | 77 | HIS |
| 31 | BJ | 128 | ASN |
| 31 | BJ | 130 | HIS |
| 32 | BK | 5 | GLN |
| 32 | BK | 88 | ASN |
| 32 | BK | 89 | ASN |
| 33 | BL | 4 | ASN |
| 33 | BL | 54 | GLN |
| 33 | BL | 93 | ASN |
| 33 | BL | 99 | ASN |
| 33 | BL | 104 | GLN |
| 34 | BM | 88 | ASN |
| 35 | BN | 9 | GLN |
| 35 | BN | 11 | ASN |
| 35 | BN | 23 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | BN | 62 | ASN |
| 35 | BN | 73 | ASN |
| 35 | BN | 107 | ASN |
| 36 | BO | 19 | GLN |
| 36 | BO | 34 | HIS |
| 36 | BO | 38 | GLN |
| 36 | BO | 100 | HIS |
| 37 | BP | 9 | GLN |
| 37 | BP | 74 | GLN |
| 38 | BQ | 13 | HIS |
| 38 | BQ | 19 | GLN |
| 38 | BQ | 43 | GLN |
| 38 | BQ | 65 | ASN |
| 39 | BR | 18 | GLN |
| 39 | BR | 43 | ASN |
| 39 | BR | 66 | HIS |
| 39 | BR | 82 | HIS |
| 39 | BR | 87 | GLN |
| 40 | BS | 15 | GLN |
| 40 | BS | 40 | ASN |
| 40 | BS | 57 | ASN |
| 41 | BT | 48 | GLN |
| 41 | BT | 70 | HIS |
| 41 | BT | 72 | GLN |
| 41 | BT | 91 | GLN |
| 42 | BU | 52 | ASN |
| 42 | BU | 65 | GLN |
| 42 | BU | 73 | ASN |
| 43 | BV | 5 | ASN |
| 43 | BV | 44 | HIS |
| 43 | BV | 51 | GLN |
| 43 | BV | 80 | HIS |
| 43 | BV | 88 | HIS |
| 44 | BW | 11 | ASN |
| 44 | BW | 39 | GLN |
| 45 | BX | 5 | GLN |
| 45 | BX | 15 | ASN |
| 45 | BX | 22 | ASN |
| 46 | BY | 15 | ASN |
| 46 | BY | 27 | ASN |
| 46 | BY | 41 | HIS |
| 48 | B0 | 3 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 50 | B2 | 6 | GLN |
| 50 | B2 | 13 | ASN |
| 50 | B2 | 16 | HIS |
| 50 | B2 | 26 | ASN |
| 51 | B3 | 27 | ASN |
| 52 | B4 | 13 | ASN |
| 52 | B4 | 33 | HIS |
| 52 | B4 | 35 | GLN |
| 2 | CB | 18 | GLN |
| 2 | CB | 23 | ASN |
| 2 | CB | 38 | HIS |
| 2 | CB | 108 | GLN |
| 2 | CB | 145 | ASN |
| 2 | CB | 169 | HIS |
| 2 | CB | 176 | ASN |
| 2 | CB | 177 | ASN |
| 3 | CC | 2 | GLN |
| 3 | CC | 7 | ASN |
| 3 | CC | 18 | ASN |
| 3 | CC | 31 | ASN |
| 3 | CC | 68 | HIS |
| 3 | CC | 139 | ASN |
| 3 | CC | 184 | ASN |
| 4 | CD | 70 | GLN |
| 4 | CD | 84 | ASN |
| 4 | CD | 115 | GLN |
| 4 | CD | 119 | HIS |
| 4 | CD | 125 | ASN |
| 4 | CD | 163 | GLN |
| 5 | CE | 11 | GLN |
| 5 | CE | 76 | ASN |
| 5 | CE | 121 | ASN |
| 5 | CE | 131 | ASN |
| 6 | CF | 11 | HIS |
| 6 | CF | 58 | HIS |
| 6 | CF | 81 | ASN |
| 54 | CG | 67 | ASN |
| 54 | CG | 85 | GLN |
| 8 | CH | 3 | GLN |
| 8 | CH | 17 | GLN |
| 9 | CI | 3 | ASN |
| 9 | CI | 4 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 9 | CI | 49 | GLN |
| 9 | CI | 74 | GLN |
| 9 | CI | 109 | GLN |
| 9 | CI | 125 | GLN |
| 10 | CJ | 70 | HIS |
| 11 | CK | 27 | ASN |
| 11 | CK | 108 | ASN |
| 12 | CL | 4 | ASN |
| 12 | CL | 5 | GLN |
| 12 | CL | 19 | ASN |
| 12 | CL | 72 | ASN |
| 12 | CL | 74 | GLN |
| 12 | CL | 111 | GLN |
| 55 | CM | 90 | HIS |
| 14 | CN | 65 | GLN |
| 15 | CO | 27 | GLN |
| 15 | CO | 34 | GLN |
| 15 | CO | 39 | GLN |
| 15 | CO | 45 | HIS |
| 56 | CP | 18 | GLN |
| 56 | CP | 26 | ASN |
| 17 | CQ | 44 | HIS |
| 17 | CQ | 49 | ASN |
| 19 | CS | 51 | HIS |
| 19 | CS | 52 | ASN |
| 19 | CS | 56 | HIS |
| 20 | CT | 12 | GLN |
| 20 | CT | 74 | HIS |
| 21 | CU | 8 | ASN |
| 24 | DC | 14 | HIS |
| 24 | DC | 20 | ASN |
| 24 | DC | 43 | ASN |
| 24 | DC | 52 | HIS |
| 24 | DC | 57 | HIS |
| 24 | DC | 59 | GLN |
| 24 | DC | 89 | ASN |
| 24 | DC | 116 | GLN |
| 24 | DC | 133 | ASN |
| 24 | DC | 196 | ASN |
| 25 | DD | 36 | GLN |
| 25 | DD | 49 | GLN |
| 25 | DD | 58 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | DD | 126 | ASN |
| 25 | DD | 136 | ASN |
| 25 | DD | 140 | HIS |
| 25 | DD | 150 | GLN |
| 25 | DD | 185 | ASN |
| 26 | DE | 29 | HIS |
| 59 | DF | 126 | ASN |
| 28 | DG | 19 | ASN |
| 28 | DG | 21 | GLN |
| 28 | DG | 37 | ASN |
| 28 | DG | 44 | HIS |
| 28 | DG | 103 | ASN |
| 28 | DG | 138 | GLN |
| 29 | DH | 2 | GLN |
| 29 | DH | 28 | ASN |
| 29 | DH | 43 | ASN |
| 29 | DH | 66 | ASN |
| 30 | DI | 42 | ASN |
| 30 | DI | 93 | ASN |
| 30 | DI | 106 | GLN |
| 31 | DJ | 40 | HIS |
| 31 | DJ | 77 | HIS |
| 31 | DJ | 138 | GLN |
| 32 | DK | 3 | GLN |
| 32 | DK | 9 | ASN |
| 32 | DK | 13 | ASN |
| 32 | DK | 89 | ASN |
| 33 | DL | 4 | ASN |
| 33 | DL | 54 | GLN |
| 34 | DM | 13 | HIS |
| 35 | DN | 3 | HIS |
| 35 | DN | 16 | HIS |
| 35 | DN | 18 | GLN |
| 35 | DN | 23 | ASN |
| 35 | DN | 31 | HIS |
| 35 | DN | 73 | ASN |
| 35 | DN | 107 | ASN |
| 36 | DO | 29 | HIS |
| 36 | DO | 38 | GLN |
| 37 | DP | 2 | ASN |
| 37 | DP | 6 | GLN |
| 37 | DP | 9 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 37 | DP | 65 | ASN |
| 37 | DP | 114 | ASN |
| 38 | DQ | 19 | GLN |
| 38 | DQ | 71 | ASN |
| 38 | DQ | 80 | ASN |
| 39 | DR | 6 | GLN |
| 39 | DR | 82 | HIS |
| 39 | DR | 86 | GLN |
| 39 | DR | 87 | GLN |
| 40 | DS | 31 | GLN |
| 40 | DS | 57 | ASN |
| 41 | DT | 15 | HIS |
| 41 | DT | 48 | GLN |
| 41 | DT | 92 | ASN |
| 42 | DU | 44 | HIS |
| 42 | DU | 45 | GLN |
| 42 | DU | 52 | ASN |
| 42 | DU | 53 | GLN |
| 43 | DV | 51 | GLN |
| 43 | DV | 80 | HIS |
| 43 | DV | 88 | HIS |
| 45 | DX | 15 | ASN |
| 45 | DX | 22 | ASN |
| 45 | DX | 31 | ASN |
| 45 | DX | 35 | HIS |
| 46 | DY | 15 | ASN |
| 46 | DY | 20 | ASN |
| 46 | DY | 41 | HIS |
| 47 | DZ | 19 | HIS |
| 48 | D0 | 41 | HIS |
| 50 | D2 | 6 | GLN |
| 50 | D2 | 16 | HIS |
| 50 | D2 | 26 | ASN |
| 50 | D2 | 29 | GLN |
| 51 | D3 | 27 | ASN |
| 51 | D3 | 30 | HIS |
| 51 | D3 | 42 | HIS |
| 52 | D4 | 37 | GLN |

5.3.3 RNA

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1 | AA | 1532/1533 (99%) | 478 (31%) | 237 (15%) |
| 22 | BA | 2850/2903 (98%) | 829 (29%) | 411 (14%) |
| 23 | BB | 117/118 (99%) | 31 (26%) | 17 (14%) |
| 53 | CA | 1529/1530 (99%) | 540 (35%) | 242 (15%) |
| 57 | DA | 2838/2904 (97%) | 1042 (36%) | 504 (17%) |
| 58 | DB | 116/117 (99%) | 37 (31%) | 17 (14%) |
| All | All | 8982/9105 (98%) | 2957 (32%) | 1428 (15%) |

All (2957) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | AA | 5 | U |
| 1 | AA | 6 | G |
| 1 | AA | 7 | A |
| 1 | AA | 8 | A |
| 1 | AA | 9 | G |
| 1 | AA | 14 | U |
| 1 | AA | 22 | G |
| 1 | AA | 31 | G |
| 1 | AA | 32 | A |
| 1 | AA | 33 | A |
| 1 | AA | 39 | G |
| 1 | AA | 47 | C |
| 1 | AA | 48 | C |
| 1 | AA | 50 | A |
| 1 | AA | 51 | A |
| 1 | AA | 52 | C |
| 1 | AA | 61 | G |
| 1 | AA | 65 | A |
| 1 | AA | 66 | A |
| 1 | AA | 67 | C |
| 1 | AA | 70 | U |
| 1 | AA | 71 | A |
| 1 | AA | 72 | A |
| 1 | AA | 73 | C |
| 1 | AA | 74 | A |
| 1 | AA | 75 | G |
| 1 | AA | 76 | G |
| 1 | AA | 77 | A |
| 1 | AA | 79 | G |
| 1 | AA | 82 | G |
| 1 | AA | 83 | C |
| 1 | AA | 85 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 86 | G |
| 1 | AA | 87 | C |
| 1 | AA | 88 | U |
| 1 | AA | 89 | U |
| 1 | AA | 90 | C |
| 1 | AA | 91 | U |
| 1 | AA | 92 | U |
| 1 | AA | 93 | U |
| 1 | AA | 94 | G |
| 1 | AA | 95 | C |
| 1 | AA | 96 | U |
| 1 | AA | 97 | G |
| 1 | AA | 98 | A |
| 1 | AA | 109 | A |
| 1 | AA | 110 | C |
| 1 | AA | 116 | A |
| 1 | AA | 119 | A |
| 1 | AA | 120 | A |
| 1 | AA | 121 | U |
| 1 | AA | 122 | G |
| 1 | AA | 127 | G |
| 1 | AA | 130 | A |
| 1 | AA | 131 | A |
| 1 | AA | 132 | C |
| 1 | AA | 138 | G |
| 1 | AA | 141 | G |
| 1 | AA | 143 | A |
| 1 | AA | 159 | G |
| 1 | AA | 163 | C |
| 1 | AA | 164 | G |
| 1 | AA | 174 | A |
| 1 | AA | 175 | C |
| 1 | AA | 177 | G |
| 1 | AA | 181 | A |
| 1 | AA | 182 | A |
| 1 | AA | 183 | C |
| 1 | AA | 184 | G |
| 1 | AA | 185 | U |
| 1 | AA | 195 | A |
| 1 | AA | 197 | A |
| 1 | AA | 198 | G |
| 1 | AA | 199 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 200 | G |
| 1 | AA | 205 | A |
| 1 | AA | 207 | C |
| 1 | AA | 208 | U |
| 1 | AA | 209 | U |
| 1 | AA | 210 | C |
| 1 | AA | 211 | G |
| 1 | AA | 212 | G |
| 1 | AA | 214 | C |
| 1 | AA | 232 | G |
| 1 | AA | 240 | G |
| 1 | AA | 243 | A |
| 1 | AA | 244 | U |
| 1 | AA | 245 | U |
| 1 | AA | 247 | G |
| 1 | AA | 250 | A |
| 1 | AA | 251 | G |
| 1 | AA | 252 | U |
| 1 | AA | 253 | A |
| 1 | AA | 258 | G |
| 1 | AA | 266 | G |
| 1 | AA | 267 | C |
| 1 | AA | 268 | U |
| 1 | AA | 273 | U |
| 1 | AA | 274 | A |
| 1 | AA | 275 | G |
| 1 | AA | 276 | G |
| 1 | AA | 279 | A |
| 1 | AA | 285 | C |
| 1 | AA | 289 | G |
| 1 | AA | 299 | G |
| 1 | AA | 305 | G |
| 1 | AA | 306 | A |
| 1 | AA | 307 | C |
| 1 | AA | 308 | C |
| 1 | AA | 316 | C |
| 1 | AA | 320 | A |
| 1 | AA | 321 | A |
| 1 | AA | 328 | C |
| 1 | AA | 329 | A |
| 1 | AA | 330 | C |
| 1 | AA | 331 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 332 | G |
| 1 | AA | 344 | A |
| 1 | AA | 345 | C |
| 1 | AA | 346 | G |
| 1 | AA | 347 | G |
| 1 | AA | 352 | C |
| 1 | AA | 353 | A |
| 1 | AA | 354 | G |
| 1 | AA | 356 | A |
| 1 | AA | 367 | U |
| 1 | AA | 368 | U |
| 1 | AA | 369 | G |
| 1 | AA | 373 | A |
| 1 | AA | 374 | A |
| 1 | AA | 384 | G |
| 1 | AA | 388 | G |
| 1 | AA | 389 | A |
| 1 | AA | 390 | U |
| 1 | AA | 392 | C |
| 1 | AA | 406 | G |
| 1 | AA | 409 | U |
| 1 | AA | 411 | A |
| 1 | AA | 412 | A |
| 1 | AA | 413 | G |
| 1 | AA | 414 | A |
| 1 | AA | 415 | A |
| 1 | AA | 421 | U |
| 1 | AA | 422 | C |
| 1 | AA | 423 | G |
| 1 | AA | 424 | G |
| 1 | AA | 428 | G |
| 1 | AA | 429 | U |
| 1 | AA | 430 | A |
| 1 | AA | 431 | A |
| 1 | AA | 438 | U |
| 1 | AA | 439 | U |
| 1 | AA | 448 | A |
| 1 | AA | 451 | A |
| 1 | AA | 452 | A |
| 1 | AA | 453 | G |
| 1 | AA | 458 | U |
| 1 | AA | 459 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 461 | A |
| 1 | AA | 462 | G |
| 1 | AA | 463 | U |
| 1 | AA | 466 | A |
| 1 | AA | 467 | U |
| 1 | AA | 468 | A |
| 1 | AA | 469 | C |
| 1 | AA | 481 | G |
| 1 | AA | 482 | A |
| 1 | AA | 484 | G |
| 1 | AA | 485 | U |
| 1 | AA | 486 | U |
| 1 | AA | 487 | A |
| 1 | AA | 495 | A |
| 1 | AA | 496 | A |
| 1 | AA | 497 | G |
| 1 | AA | 498 | A |
| 1 | AA | 499 | A |
| 1 | AA | 500 | G |
| 1 | AA | 501 | C |
| 1 | AA | 508 | U |
| 1 | AA | 509 | A |
| 1 | AA | 511 | C |
| 1 | AA | 512 | U |
| 1 | AA | 513 | C |
| 1 | AA | 518 | C |
| 1 | AA | 519 | C |
| 1 | AA | 520 | A |
| 1 | AA | 524 | G |
| 1 | AA | 527 | G |
| 1 | AA | 532 | A |
| 1 | AA | 533 | A |
| 1 | AA | 534 | U |
| 1 | AA | 535 | A |
| 1 | AA | 536 | C |
| 1 | AA | 537 | G |
| 1 | AA | 538 | G |
| 1 | AA | 548 | G |
| 1 | AA | 549 | C |
| 1 | AA | 550 | G |
| 1 | AA | 556 | C |
| 1 | AA | 559 | A |

Continued on next page...

Continued from previous page...

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 560 | A |
| 1 | AA | 562 | U |
| 1 | AA | 563 | A |
| 1 | AA | 564 | C |
| 1 | AA | 566 | G |
| 1 | AA | 567 | G |
| 1 | AA | 572 | A |
| 1 | AA | 573 | A |
| 1 | AA | 575 | G |
| 1 | AA | 576 | C |
| 1 | AA | 577 | G |
| 1 | AA | 579 | A |
| 1 | AA | 588 | G |
| 1 | AA | 595 | A |
| 1 | AA | 596 | A |
| 1 | AA | 597 | G |
| 1 | AA | 604 | G |
| 1 | AA | 633 | G |
| 1 | AA | 642 | A |
| 1 | AA | 649 | A |
| 1 | AA | 653 | U |
| 1 | AA | 654 | G |
| 1 | AA | 655 | A |
| 1 | AA | 663 | A |
| 1 | AA | 665 | A |
| 1 | AA | 682 | G |
| 1 | AA | 688 | G |
| 1 | AA | 700 | G |
| 1 | AA | 701 | U |
| 1 | AA | 702 | A |
| 1 | AA | 703 | G |
| 1 | AA | 717 | U |
| 1 | AA | 718 | A |
| 1 | AA | 721 | G |
| 1 | AA | 722 | G |
| 1 | AA | 723 | U |
| 1 | AA | 724 | G |
| 1 | AA | 731 | G |
| 1 | AA | 733 | G |
| 1 | AA | 748 | G |
| 1 | AA | 752 | G |
| 1 | AA | 753 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 754 | C |
| 1 | AA | 755 | G |
| 1 | AA | 776 | G |
| 1 | AA | 777 | A |
| 1 | AA | 792 | A |
| 1 | AA | 793 | U |
| 1 | AA | 794 | A |
| 1 | AA | 795 | C |
| 1 | AA | 802 | A |
| 1 | AA | 813 | U |
| 1 | AA | 814 | A |
| 1 | AA | 815 | A |
| 1 | AA | 816 | A |
| 1 | AA | 817 | C |
| 1 | AA | 818 | G |
| 1 | AA | 828 | U |
| 1 | AA | 829 | G |
| 1 | AA | 832 | G |
| 1 | AA | 841 | C |
| 1 | AA | 843 | U |
| 1 | AA | 845 | A |
| 1 | AA | 846 | G |
| 1 | AA | 849 | G |
| 1 | AA | 855 | U |
| 1 | AA | 859 | G |
| 1 | AA | 861 | G |
| 1 | AA | 870 | U |
| 1 | AA | 871 | U |
| 1 | AA | 874 | G |
| 1 | AA | 875 | U |
| 1 | AA | 884 | U |
| 1 | AA | 885 | G |
| 1 | AA | 889 | A |
| 1 | AA | 890 | G |
| 1 | AA | 914 | A |
| 1 | AA | 915 | A |
| 1 | AA | 926 | G |
| 1 | AA | 927 | G |
| 1 | AA | 932 | C |
| 1 | AA | 934 | C |
| 1 | AA | 935 | A |
| 1 | AA | 936 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 960 | U |
| 1 | AA | 961 | U |
| 1 | AA | 965 | U |
| 1 | AA | 966 | G |
| 1 | AA | 968 | A |
| 1 | AA | 969 | A |
| 1 | AA | 971 | G |
| 1 | AA | 972 | C |
| 1 | AA | 974 | A |
| 1 | AA | 975 | A |
| 1 | AA | 976 | G |
| 1 | AA | 977 | A |
| 1 | AA | 978 | A |
| 1 | AA | 982 | U |
| 1 | AA | 983 | A |
| 1 | AA | 984 | C |
| 1 | AA | 985 | C |
| 1 | AA | 989 | U |
| 1 | AA | 992 | U |
| 1 | AA | 993 | G |
| 1 | AA | 995 | C |
| 1 | AA | 1003 | G |
| 1 | AA | 1004 | A |
| 1 | AA | 1008 | U |
| 1 | AA | 1017 | U |
| 1 | AA | 1018 | G |
| 1 | AA | 1022 | A |
| 1 | AA | 1030 | U |
| 1 | AA | 1031 | C |
| 1 | AA | 1032 | G |
| 1 | AA | 1033 | G |
| 1 | AA | 1034 | G |
| 1 | AA | 1037 | C |
| 1 | AA | 1050 | G |
| 1 | AA | 1051 | C |
| 1 | AA | 1053 | G |
| 1 | AA | 1054 | C |
| 1 | AA | 1055 | A |
| 1 | AA | 1064 | G |
| 1 | AA | 1065 | U |
| 1 | AA | 1066 | C |
| 1 | AA | 1085 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 1086 | U |
| 1 | AA | 1087 | G |
| 1 | AA | 1088 | G |
| 1 | AA | 1093 | A |
| 1 | AA | 1094 | G |
| 1 | AA | 1095 | U |
| 1 | AA | 1096 | C |
| 1 | AA | 1101 | A |
| 1 | AA | 1102 | A |
| 1 | AA | 1103 | C |
| 1 | AA | 1104 | G |
| 1 | AA | 1113 | C |
| 1 | AA | 1124 | G |
| 1 | AA | 1125 | U |
| 1 | AA | 1126 | U |
| 1 | AA | 1127 | G |
| 1 | AA | 1128 | C |
| 1 | AA | 1129 | C |
| 1 | AA | 1130 | A |
| 1 | AA | 1131 | G |
| 1 | AA | 1133 | G |
| 1 | AA | 1135 | U |
| 1 | AA | 1137 | C |
| 1 | AA | 1138 | G |
| 1 | AA | 1140 | C |
| 1 | AA | 1141 | C |
| 1 | AA | 1142 | G |
| 1 | AA | 1143 | G |
| 1 | AA | 1144 | G |
| 1 | AA | 1145 | A |
| 1 | AA | 1151 | A |
| 1 | AA | 1152 | A |
| 1 | AA | 1153 | G |
| 1 | AA | 1157 | A |
| 1 | AA | 1158 | C |
| 1 | AA | 1159 | U |
| 1 | AA | 1160 | G |
| 1 | AA | 1161 | C |
| 1 | AA | 1162 | C |
| 1 | AA | 1167 | A |
| 1 | AA | 1168 | U |
| 1 | AA | 1169 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 1170 | A |
| 1 | AA | 1178 | G |
| 1 | AA | 1181 | G |
| 1 | AA | 1182 | G |
| 1 | AA | 1183 | U |
| 1 | AA | 1184 | G |
| 1 | AA | 1191 | A |
| 1 | AA | 1192 | C |
| 1 | AA | 1196 | A |
| 1 | AA | 1197 | A |
| 1 | AA | 1198 | G |
| 1 | AA | 1200 | C |
| 1 | AA | 1201 | A |
| 1 | AA | 1202 | U |
| 1 | AA | 1203 | C |
| 1 | AA | 1212 | U |
| 1 | AA | 1213 | A |
| 1 | AA | 1224 | U |
| 1 | AA | 1225 | A |
| 1 | AA | 1226 | C |
| 1 | AA | 1227 | A |
| 1 | AA | 1228 | C |
| 1 | AA | 1229 | A |
| 1 | AA | 1238 | A |
| 1 | AA | 1239 | A |
| 1 | AA | 1240 | U |
| 1 | AA | 1241 | G |
| 1 | AA | 1242 | G |
| 1 | AA | 1256 | A |
| 1 | AA | 1257 | A |
| 1 | AA | 1258 | G |
| 1 | AA | 1259 | C |
| 1 | AA | 1278 | G |
| 1 | AA | 1279 | G |
| 1 | AA | 1280 | A |
| 1 | AA | 1282 | C |
| 1 | AA | 1283 | U |
| 1 | AA | 1284 | C |
| 1 | AA | 1285 | A |
| 1 | AA | 1286 | U |
| 1 | AA | 1287 | A |
| 1 | AA | 1293 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 1297 | G |
| 1 | AA | 1299 | A |
| 1 | AA | 1303 | C |
| 1 | AA | 1304 | G |
| 1 | AA | 1305 | G |
| 1 | AA | 1308 | U |
| 1 | AA | 1315 | U |
| 1 | AA | 1316 | G |
| 1 | AA | 1317 | C |
| 1 | AA | 1318 | A |
| 1 | AA | 1320 | C |
| 1 | AA | 1321 | U |
| 1 | AA | 1322 | C |
| 1 | AA | 1323 | G |
| 1 | AA | 1324 | A |
| 1 | AA | 1332 | A |
| 1 | AA | 1333 | A |
| 1 | AA | 1337 | G |
| 1 | AA | 1338 | G |
| 1 | AA | 1346 | A |
| 1 | AA | 1348 | U |
| 1 | AA | 1349 | A |
| 1 | AA | 1353 | G |
| 1 | AA | 1362 | A |
| 1 | AA | 1363 | A |
| 1 | AA | 1364 | U |
| 1 | AA | 1370 | G |
| 1 | AA | 1371 | G |
| 1 | AA | 1380 | U |
| 1 | AA | 1381 | U |
| 1 | AA | 1382 | C |
| 1 | AA | 1394 | A |
| 1 | AA | 1395 | C |
| 1 | AA | 1396 | A |
| 1 | AA | 1397 | C |
| 1 | AA | 1398 | A |
| 1 | AA | 1399 | C |
| 1 | AA | 1400 | C |
| 1 | AA | 1402 | C |
| 1 | AA | 1408 | A |
| 1 | AA | 1432 | G |
| 1 | AA | 1433 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 1441 | A |
| 1 | AA | 1446 | A |
| 1 | AA | 1448 | C |
| 1 | AA | 1451 | U |
| 1 | AA | 1452 | C |
| 1 | AA | 1453 | G |
| 1 | AA | 1454 | G |
| 1 | AA | 1455 | G |
| 1 | AA | 1469 | C |
| 1 | AA | 1470 | U |
| 1 | AA | 1490 | U |
| 1 | AA | 1492 | A |
| 1 | AA | 1494 | G |
| 1 | AA | 1497 | G |
| 1 | AA | 1498 | U |
| 1 | AA | 1499 | A |
| 1 | AA | 1502 | A |
| 1 | AA | 1503 | A |
| 1 | AA | 1505 | G |
| 1 | AA | 1506 | U |
| 1 | AA | 1507 | A |
| 1 | AA | 1517 | G |
| 1 | AA | 1529 | G |
| 1 | AA | 1530 | G |
| 1 | AA | 1531 | A |
| 1 | AA | 1532 | U |
| 22 | BA | 10 | A |
| 22 | BA | 12 | U |
| 22 | BA | 13 | A |
| 22 | BA | 14 | A |
| 22 | BA | 15 | G |
| 22 | BA | 27 | G |
| 22 | BA | 28 | A |
| 22 | BA | 34 | U |
| 22 | BA | 35 | G |
| 22 | BA | 42 | A |
| 22 | BA | 43 | G |
| 22 | BA | 46 | G |
| 22 | BA | 49 | A |
| 22 | BA | 50 | U |
| 22 | BA | 52 | A |
| 22 | BA | 53 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 61 | C |
| 22 | BA | 63 | A |
| 22 | BA | 70 | G |
| 22 | BA | 71 | A |
| 22 | BA | 74 | A |
| 22 | BA | 75 | G |
| 22 | BA | 76 | C |
| 22 | BA | 80 | G |
| 22 | BA | 82 | U |
| 22 | BA | 84 | A |
| 22 | BA | 85 | G |
| 22 | BA | 92 | U |
| 22 | BA | 93 | G |
| 22 | BA | 101 | A |
| 22 | BA | 102 | U |
| 22 | BA | 117 | G |
| 22 | BA | 118 | A |
| 22 | BA | 119 | A |
| 22 | BA | 120 | U |
| 22 | BA | 126 | A |
| 22 | BA | 127 | A |
| 22 | BA | 135 | U |
| 22 | BA | 136 | G |
| 22 | BA | 137 | U |
| 22 | BA | 138 | U |
| 22 | BA | 139 | U |
| 22 | BA | 140 | C |
| 22 | BA | 141 | G |
| 22 | BA | 142 | A |
| 22 | BA | 143 | C |
| 22 | BA | 144 | A |
| 22 | BA | 145 | C |
| 22 | BA | 149 | A |
| 22 | BA | 162 | U |
| 22 | BA | 163 | C |
| 22 | BA | 164 | C |
| 22 | BA | 165 | A |
| 22 | BA | 174 | U |
| 22 | BA | 196 | A |
| 22 | BA | 197 | A |
| 22 | BA | 199 | A |
| 22 | BA | 204 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 205 | G |
| 22 | BA | 206 | U |
| 22 | BA | 207 | A |
| 22 | BA | 215 | G |
| 22 | BA | 216 | A |
| 22 | BA | 217 | A |
| 22 | BA | 221 | A |
| 22 | BA | 222 | A |
| 22 | BA | 223 | A |
| 22 | BA | 230 | G |
| 22 | BA | 232 | G |
| 22 | BA | 233 | A |
| 22 | BA | 241 | A |
| 22 | BA | 242 | G |
| 22 | BA | 243 | U |
| 22 | BA | 244 | A |
| 22 | BA | 248 | G |
| 22 | BA | 249 | C |
| 22 | BA | 250 | G |
| 22 | BA | 255 | A |
| 22 | BA | 256 | A |
| 22 | BA | 264 | C |
| 22 | BA | 265 | A |
| 22 | BA | 266 | G |
| 22 | BA | 267 | C |
| 22 | BA | 268 | C |
| 22 | BA | 271 | G |
| 22 | BA | 272 | A |
| 22 | BA | 273 | G |
| 22 | BA | 274 | C |
| 22 | BA | 276 | U |
| 22 | BA | 278 | A |
| 22 | BA | 285 | G |
| 22 | BA | 301 | G |
| 22 | BA | 302 | C |
| 22 | BA | 303 | G |
| 22 | BA | 311 | A |
| 22 | BA | 312 | G |
| 22 | BA | 313 | G |
| 22 | BA | 322 | A |
| 22 | BA | 329 | G |
| 22 | BA | 330 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 345 | A |
| 22 | BA | 346 | A |
| 22 | BA | 347 | A |
| 22 | BA | 353 | C |
| 22 | BA | 359 | G |
| 22 | BA | 361 | G |
| 22 | BA | 362 | A |
| 22 | BA | 371 | A |
| 22 | BA | 372 | G |
| 22 | BA | 386 | G |
| 22 | BA | 387 | U |
| 22 | BA | 388 | G |
| 22 | BA | 389 | G |
| 22 | BA | 391 | A |
| 22 | BA | 395 | U |
| 22 | BA | 396 | G |
| 22 | BA | 404 | A |
| 22 | BA | 405 | U |
| 22 | BA | 411 | G |
| 22 | BA | 412 | A |
| 22 | BA | 413 | C |
| 22 | BA | 421 | C |
| 22 | BA | 422 | A |
| 22 | BA | 423 | A |
| 22 | BA | 424 | G |
| 22 | BA | 435 | C |
| 22 | BA | 436 | C |
| 22 | BA | 443 | A |
| 22 | BA | 449 | A |
| 22 | BA | 451 | U |
| 22 | BA | 452 | G |
| 22 | BA | 454 | A |
| 22 | BA | 455 | C |
| 22 | BA | 457 | A |
| 22 | BA | 459 | U |
| 22 | BA | 460 | A |
| 22 | BA | 461 | C |
| 22 | BA | 462 | C |
| 22 | BA | 475 | C |
| 22 | BA | 476 | G |
| 22 | BA | 479 | A |
| 22 | BA | 480 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 481 | G |
| 22 | BA | 482 | A |
| 22 | BA | 483 | A |
| 22 | BA | 489 | G |
| 22 | BA | 490 | C |
| 22 | BA | 491 | G |
| 22 | BA | 504 | A |
| 22 | BA | 505 | A |
| 22 | BA | 507 | A |
| 22 | BA | 508 | A |
| 22 | BA | 509 | C |
| 22 | BA | 510 | C |
| 22 | BA | 512 | G |
| 22 | BA | 513 | A |
| 22 | BA | 514 | A |
| 22 | BA | 526 | A |
| 22 | BA | 528 | A |
| 22 | BA | 529 | A |
| 22 | BA | 530 | G |
| 22 | BA | 531 | C |
| 22 | BA | 532 | A |
| 22 | BA | 533 | G |
| 22 | BA | 538 | A |
| 22 | BA | 541 | A |
| 22 | BA | 544 | C |
| 22 | BA | 546 | U |
| 22 | BA | 548 | G |
| 22 | BA | 549 | G |
| 22 | BA | 550 | C |
| 22 | BA | 553 | G |
| 22 | BA | 555 | G |
| 22 | BA | 556 | A |
| 22 | BA | 563 | A |
| 22 | BA | 564 | C |
| 22 | BA | 572 | A |
| 22 | BA | 573 | U |
| 22 | BA | 575 | A |
| 22 | BA | 586 | A |
| 22 | BA | 588 | U |
| 22 | BA | 603 | A |
| 22 | BA | 604 | G |
| 22 | BA | 605 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 613 | A |
| 22 | BA | 614 | A |
| 22 | BA | 615 | U |
| 22 | BA | 618 | G |
| 22 | BA | 621 | A |
| 22 | BA | 622 | G |
| 22 | BA | 627 | A |
| 22 | BA | 631 | A |
| 22 | BA | 634 | C |
| 22 | BA | 637 | A |
| 22 | BA | 638 | G |
| 22 | BA | 645 | C |
| 22 | BA | 646 | U |
| 22 | BA | 647 | G |
| 22 | BA | 654 | A |
| 22 | BA | 655 | A |
| 22 | BA | 656 | G |
| 22 | BA | 664 | G |
| 22 | BA | 668 | A |
| 22 | BA | 669 | G |
| 22 | BA | 670 | A |
| 22 | BA | 685 | A |
| 22 | BA | 686 | U |
| 22 | BA | 688 | U |
| 22 | BA | 705 | A |
| 22 | BA | 706 | A |
| 22 | BA | 714 | U |
| 22 | BA | 722 | A |
| 22 | BA | 727 | A |
| 22 | BA | 728 | G |
| 22 | BA | 729 | G |
| 22 | BA | 730 | A |
| 22 | BA | 738 | G |
| 22 | BA | 740 | C |
| 22 | BA | 747 | U |
| 22 | BA | 748 | G |
| 22 | BA | 751 | A |
| 22 | BA | 752 | A |
| 22 | BA | 763 | G |
| 22 | BA | 764 | A |
| 22 | BA | 765 | C |
| 22 | BA | 774 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 775 | G |
| 22 | BA | 776 | G |
| 22 | BA | 777 | G |
| 22 | BA | 782 | A |
| 22 | BA | 783 | A |
| 22 | BA | 784 | G |
| 22 | BA | 785 | G |
| 22 | BA | 791 | C |
| 22 | BA | 792 | A |
| 22 | BA | 801 | G |
| 22 | BA | 805 | G |
| 22 | BA | 806 | C |
| 22 | BA | 811 | U |
| 22 | BA | 812 | C |
| 22 | BA | 819 | A |
| 22 | BA | 827 | U |
| 22 | BA | 828 | U |
| 22 | BA | 829 | A |
| 22 | BA | 830 | G |
| 22 | BA | 845 | A |
| 22 | BA | 846 | U |
| 22 | BA | 847 | U |
| 22 | BA | 858 | G |
| 22 | BA | 859 | G |
| 22 | BA | 860 | U |
| 22 | BA | 865 | C |
| 22 | BA | 866 | A |
| 22 | BA | 876 | C |
| 22 | BA | 878 | A |
| 22 | BA | 896 | A |
| 22 | BA | 897 | C |
| 22 | BA | 910 | A |
| 22 | BA | 913 | U |
| 22 | BA | 914 | G |
| 22 | BA | 915 | C |
| 22 | BA | 916 | G |
| 22 | BA | 919 | U |
| 22 | BA | 932 | U |
| 22 | BA | 933 | A |
| 22 | BA | 934 | U |
| 22 | BA | 941 | A |
| 22 | BA | 946 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 955 | U |
| 22 | BA | 958 | U |
| 22 | BA | 959 | A |
| 22 | BA | 961 | C |
| 22 | BA | 962 | G |
| 22 | BA | 968 | C |
| 22 | BA | 973 | A |
| 22 | BA | 974 | G |
| 22 | BA | 983 | A |
| 22 | BA | 984 | A |
| 22 | BA | 985 | C |
| 22 | BA | 989 | G |
| 22 | BA | 990 | A |
| 22 | BA | 991 | C |
| 22 | BA | 995 | C |
| 22 | BA | 996 | A |
| 22 | BA | 1004 | U |
| 22 | BA | 1005 | C |
| 22 | BA | 1008 | A |
| 22 | BA | 1009 | A |
| 22 | BA | 1011 | G |
| 22 | BA | 1012 | U |
| 22 | BA | 1013 | C |
| 22 | BA | 1014 | A |
| 22 | BA | 1021 | A |
| 22 | BA | 1022 | G |
| 22 | BA | 1023 | U |
| 22 | BA | 1024 | G |
| 22 | BA | 1025 | G |
| 22 | BA | 1026 | G |
| 22 | BA | 1027 | A |
| 22 | BA | 1033 | U |
| 22 | BA | 1034 | G |
| 22 | BA | 1044 | C |
| 22 | BA | 1046 | A |
| 22 | BA | 1047 | G |
| 22 | BA | 1060 | U |
| 22 | BA | 1061 | U |
| 22 | BA | 1062 | G |
| 22 | BA | 1063 | G |
| 22 | BA | 1064 | C |
| 22 | BA | 1065 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 1066 | U |
| 22 | BA | 1070 | A |
| 22 | BA | 1071 | G |
| 22 | BA | 1072 | C |
| 22 | BA | 1073 | A |
| 22 | BA | 1074 | G |
| 22 | BA | 1075 | C |
| 22 | BA | 1078 | U |
| 22 | BA | 1082 | U |
| 22 | BA | 1083 | U |
| 22 | BA | 1084 | A |
| 22 | BA | 1088 | A |
| 22 | BA | 1090 | A |
| 22 | BA | 1098 | A |
| 22 | BA | 1111 | A |
| 22 | BA | 1112 | G |
| 22 | BA | 1128 | G |
| 22 | BA | 1129 | A |
| 22 | BA | 1130 | U |
| 22 | BA | 1132 | U |
| 22 | BA | 1133 | A |
| 22 | BA | 1135 | C |
| 22 | BA | 1136 | G |
| 22 | BA | 1138 | G |
| 22 | BA | 1139 | G |
| 22 | BA | 1142 | A |
| 22 | BA | 1144 | A |
| 22 | BA | 1151 | A |
| 22 | BA | 1156 | A |
| 22 | BA | 1157 | G |
| 22 | BA | 1158 | C |
| 22 | BA | 1169 | A |
| 22 | BA | 1170 | C |
| 22 | BA | 1172 | C |
| 22 | BA | 1175 | A |
| 22 | BA | 1176 | U |
| 22 | BA | 1180 | U |
| 22 | BA | 1181 | U |
| 22 | BA | 1182 | G |
| 22 | BA | 1185 | G |
| 22 | BA | 1186 | G |
| 22 | BA | 1205 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 1206 | G |
| 22 | BA | 1207 | C |
| 22 | BA | 1210 | G |
| 22 | BA | 1213 | A |
| 22 | BA | 1227 | G |
| 22 | BA | 1236 | G |
| 22 | BA | 1237 | A |
| 22 | BA | 1238 | G |
| 22 | BA | 1248 | G |
| 22 | BA | 1249 | U |
| 22 | BA | 1250 | G |
| 22 | BA | 1251 | C |
| 22 | BA | 1253 | A |
| 22 | BA | 1255 | U |
| 22 | BA | 1256 | G |
| 22 | BA | 1261 | C |
| 22 | BA | 1266 | G |
| 22 | BA | 1271 | G |
| 22 | BA | 1272 | A |
| 22 | BA | 1273 | U |
| 22 | BA | 1275 | A |
| 22 | BA | 1276 | A |
| 22 | BA | 1281 | G |
| 22 | BA | 1287 | A |
| 22 | BA | 1288 | G |
| 22 | BA | 1289 | C |
| 22 | BA | 1290 | C |
| 22 | BA | 1300 | G |
| 22 | BA | 1301 | A |
| 22 | BA | 1303 | G |
| 22 | BA | 1321 | A |
| 22 | BA | 1324 | G |
| 22 | BA | 1325 | U |
| 22 | BA | 1326 | U |
| 22 | BA | 1327 | A |
| 22 | BA | 1329 | U |
| 22 | BA | 1330 | C |
| 22 | BA | 1331 | G |
| 22 | BA | 1332 | G |
| 22 | BA | 1336 | A |
| 22 | BA | 1341 | G |
| 22 | BA | 1343 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 1344 | U |
| 22 | BA | 1349 | C |
| 22 | BA | 1352 | U |
| 22 | BA | 1359 | A |
| 22 | BA | 1360 | G |
| 22 | BA | 1365 | A |
| 22 | BA | 1374 | G |
| 22 | BA | 1378 | A |
| 22 | BA | 1379 | U |
| 22 | BA | 1380 | G |
| 22 | BA | 1383 | A |
| 22 | BA | 1385 | A |
| 22 | BA | 1386 | C |
| 22 | BA | 1387 | A |
| 22 | BA | 1395 | A |
| 22 | BA | 1397 | U |
| 22 | BA | 1398 | C |
| 22 | BA | 1399 | C |
| 22 | BA | 1403 | A |
| 22 | BA | 1413 | A |
| 22 | BA | 1416 | G |
| 22 | BA | 1417 | C |
| 22 | BA | 1419 | A |
| 22 | BA | 1420 | A |
| 22 | BA | 1421 | G |
| 22 | BA | 1427 | A |
| 22 | BA | 1428 | C |
| 22 | BA | 1429 | G |
| 22 | BA | 1430 | G |
| 22 | BA | 1434 | A |
| 22 | BA | 1437 | C |
| 22 | BA | 1440 | U |
| 22 | BA | 1451 | C |
| 22 | BA | 1452 | G |
| 22 | BA | 1455 | G |
| 22 | BA | 1459 | G |
| 22 | BA | 1460 | U |
| 22 | BA | 1461 | C |
| 22 | BA | 1475 | G |
| 22 | BA | 1476 | U |
| 22 | BA | 1477 | A |
| 22 | BA | 1482 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 1490 | A |
| 22 | BA | 1491 | G |
| 22 | BA | 1492 | G |
| 22 | BA | 1494 | A |
| 22 | BA | 1495 | A |
| 22 | BA | 1497 | U |
| 22 | BA | 1498 | C |
| 22 | BA | 1499 | C |
| 22 | BA | 1504 | A |
| 22 | BA | 1507 | C |
| 22 | BA | 1508 | A |
| 22 | BA | 1509 | A |
| 22 | BA | 1510 | G |
| 22 | BA | 1511 | G |
| 22 | BA | 1512 | C |
| 22 | BA | 1515 | A |
| 22 | BA | 1522 | A |
| 22 | BA | 1523 | U |
| 22 | BA | 1527 | G |
| 22 | BA | 1528 | A |
| 22 | BA | 1533 | C |
| 22 | BA | 1534 | U |
| 22 | BA | 1535 | A |
| 22 | BA | 1536 | C |
| 22 | BA | 1537 | G |
| 22 | BA | 1538 | G |
| 22 | BA | 1539 | U |
| 22 | BA | 1555 | G |
| 22 | BA | 1556 | C |
| 22 | BA | 1558 | C |
| 22 | BA | 1559 | U |
| 22 | BA | 1566 | A |
| 22 | BA | 1567 | G |
| 22 | BA | 1569 | A |
| 22 | BA | 1578 | U |
| 22 | BA | 1581 | G |
| 22 | BA | 1583 | A |
| 22 | BA | 1584 | U |
| 22 | BA | 1585 | C |
| 22 | BA | 1603 | A |
| 22 | BA | 1607 | C |
| 22 | BA | 1608 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 1610 | A |
| 22 | BA | 1616 | A |
| 22 | BA | 1626 | A |
| 22 | BA | 1627 | G |
| 22 | BA | 1634 | A |
| 22 | BA | 1635 | A |
| 22 | BA | 1646 | C |
| 22 | BA | 1647 | U |
| 22 | BA | 1648 | U |
| 22 | BA | 1649 | G |
| 22 | BA | 1652 | A |
| 22 | BA | 1653 | G |
| 22 | BA | 1654 | A |
| 22 | BA | 1655 | A |
| 22 | BA | 1674 | G |
| 22 | BA | 1675 | C |
| 22 | BA | 1693 | U |
| 22 | BA | 1694 | C |
| 22 | BA | 1695 | G |
| 22 | BA | 1696 | G |
| 22 | BA | 1697 | G |
| 22 | BA | 1698 | A |
| 22 | BA | 1699 | G |
| 22 | BA | 1700 | A |
| 22 | BA | 1701 | A |
| 22 | BA | 1707 | G |
| 22 | BA | 1713 | A |
| 22 | BA | 1714 | U |
| 22 | BA | 1715 | G |
| 22 | BA | 1716 | U |
| 22 | BA | 1717 | A |
| 22 | BA | 1723 | G |
| 22 | BA | 1729 | U |
| 22 | BA | 1730 | C |
| 22 | BA | 1732 | C |
| 22 | BA | 1733 | G |
| 22 | BA | 1734 | G |
| 22 | BA | 1735 | A |
| 22 | BA | 1736 | U |
| 22 | BA | 1737 | G |
| 22 | BA | 1738 | G |
| 22 | BA | 1744 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 1755 | A |
| 22 | BA | 1764 | C |
| 22 | BA | 1769 | U |
| 22 | BA | 1773 | A |
| 22 | BA | 1776 | G |
| 22 | BA | 1780 | A |
| 22 | BA | 1782 | U |
| 22 | BA | 1785 | A |
| 22 | BA | 1786 | A |
| 22 | BA | 1787 | A |
| 22 | BA | 1788 | C |
| 22 | BA | 1791 | A |
| 22 | BA | 1799 | G |
| 22 | BA | 1800 | C |
| 22 | BA | 1801 | A |
| 22 | BA | 1802 | A |
| 22 | BA | 1808 | A |
| 22 | BA | 1809 | A |
| 22 | BA | 1816 | C |
| 22 | BA | 1819 | A |
| 22 | BA | 1821 | A |
| 22 | BA | 1827 | U |
| 22 | BA | 1829 | A |
| 22 | BA | 1848 | A |
| 22 | BA | 1849 | G |
| 22 | BA | 1858 | A |
| 22 | BA | 1859 | U |
| 22 | BA | 1865 | U |
| 22 | BA | 1866 | A |
| 22 | BA | 1867 | G |
| 22 | BA | 1869 | G |
| 22 | BA | 1871 | A |
| 22 | BA | 1872 | A |
| 22 | BA | 1873 | G |
| 22 | BA | 1876 | A |
| 22 | BA | 1885 | A |
| 22 | BA | 1886 | U |
| 22 | BA | 1900 | A |
| 22 | BA | 1901 | A |
| 22 | BA | 1902 | C |
| 22 | BA | 1906 | G |
| 22 | BA | 1907 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 1913 | A |
| 22 | BA | 1914 | C |
| 22 | BA | 1918 | A |
| 22 | BA | 1919 | A |
| 22 | BA | 1920 | C |
| 22 | BA | 1926 | U |
| 22 | BA | 1927 | A |
| 22 | BA | 1929 | G |
| 22 | BA | 1930 | G |
| 22 | BA | 1931 | U |
| 22 | BA | 1937 | A |
| 22 | BA | 1938 | A |
| 22 | BA | 1941 | C |
| 22 | BA | 1943 | U |
| 22 | BA | 1944 | U |
| 22 | BA | 1945 | G |
| 22 | BA | 1954 | G |
| 22 | BA | 1955 | U |
| 22 | BA | 1960 | A |
| 22 | BA | 1962 | C |
| 22 | BA | 1963 | U |
| 22 | BA | 1964 | G |
| 22 | BA | 1966 | A |
| 22 | BA | 1967 | C |
| 22 | BA | 1968 | G |
| 22 | BA | 1970 | A |
| 22 | BA | 1971 | U |
| 22 | BA | 1972 | G |
| 22 | BA | 1986 | C |
| 22 | BA | 1991 | U |
| 22 | BA | 1992 | G |
| 22 | BA | 1993 | U |
| 22 | BA | 1996 | C |
| 22 | BA | 1997 | C |
| 22 | BA | 2022 | U |
| 22 | BA | 2023 | C |
| 22 | BA | 2030 | A |
| 22 | BA | 2031 | A |
| 22 | BA | 2032 | G |
| 22 | BA | 2033 | A |
| 22 | BA | 2035 | G |
| 22 | BA | 2036 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 2037 | A |
| 22 | BA | 2043 | C |
| 22 | BA | 2049 | G |
| 22 | BA | 2051 | A |
| 22 | BA | 2052 | A |
| 22 | BA | 2055 | C |
| 22 | BA | 2056 | G |
| 22 | BA | 2059 | A |
| 22 | BA | 2060 | A |
| 22 | BA | 2061 | G |
| 22 | BA | 2062 | A |
| 22 | BA | 2067 | G |
| 22 | BA | 2068 | U |
| 22 | BA | 2069 | G |
| 22 | BA | 2092 | U |
| 22 | BA | 2093 | G |
| 22 | BA | 2104 | C |
| 22 | BA | 2106 | U |
| 22 | BA | 2107 | G |
| 22 | BA | 2109 | U |
| 22 | BA | 2110 | G |
| 22 | BA | 2134 | A |
| 22 | BA | 2135 | A |
| 22 | BA | 2136 | G |
| 22 | BA | 2137 | U |
| 22 | BA | 2140 | G |
| 22 | BA | 2143 | C |
| 22 | BA | 2144 | G |
| 22 | BA | 2145 | C |
| 22 | BA | 2146 | C |
| 22 | BA | 2147 | A |
| 22 | BA | 2148 | G |
| 22 | BA | 2149 | U |
| 22 | BA | 2150 | C |
| 22 | BA | 2151 | U |
| 22 | BA | 2155 | U |
| 22 | BA | 2156 | G |
| 22 | BA | 2180 | U |
| 22 | BA | 2181 | U |
| 22 | BA | 2183 | A |
| 22 | BA | 2184 | A |
| 22 | BA | 2185 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 2187 | U |
| 22 | BA | 2198 | A |
| 22 | BA | 2199 | A |
| 22 | BA | 2200 | C |
| 22 | BA | 2203 | U |
| 22 | BA | 2204 | G |
| 22 | BA | 2210 | U |
| 22 | BA | 2211 | A |
| 22 | BA | 2212 | A |
| 22 | BA | 2214 | C |
| 22 | BA | 2215 | C |
| 22 | BA | 2223 | G |
| 22 | BA | 2225 | A |
| 22 | BA | 2226 | C |
| 22 | BA | 2238 | G |
| 22 | BA | 2239 | G |
| 22 | BA | 2248 | C |
| 22 | BA | 2250 | G |
| 22 | BA | 2258 | C |
| 22 | BA | 2259 | U |
| 22 | BA | 2266 | A |
| 22 | BA | 2267 | A |
| 22 | BA | 2268 | A |
| 22 | BA | 2273 | A |
| 22 | BA | 2275 | C |
| 22 | BA | 2276 | G |
| 22 | BA | 2278 | A |
| 22 | BA | 2283 | C |
| 22 | BA | 2284 | A |
| 22 | BA | 2286 | G |
| 22 | BA | 2287 | A |
| 22 | BA | 2297 | A |
| 22 | BA | 2298 | A |
| 22 | BA | 2305 | U |
| 22 | BA | 2307 | G |
| 22 | BA | 2308 | G |
| 22 | BA | 2309 | A |
| 22 | BA | 2310 | C |
| 22 | BA | 2311 | A |
| 22 | BA | 2312 | U |
| 22 | BA | 2320 | U |
| 22 | BA | 2321 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 2325 | G |
| 22 | BA | 2326 | C |
| 22 | BA | 2327 | A |
| 22 | BA | 2333 | A |
| 22 | BA | 2334 | U |
| 22 | BA | 2335 | A |
| 22 | BA | 2336 | A |
| 22 | BA | 2337 | G |
| 22 | BA | 2344 | U |
| 22 | BA | 2345 | G |
| 22 | BA | 2347 | C |
| 22 | BA | 2358 | A |
| 22 | BA | 2361 | G |
| 22 | BA | 2383 | G |
| 22 | BA | 2384 | U |
| 22 | BA | 2385 | C |
| 22 | BA | 2386 | A |
| 22 | BA | 2392 | A |
| 22 | BA | 2402 | U |
| 22 | BA | 2403 | C |
| 22 | BA | 2406 | A |
| 22 | BA | 2423 | U |
| 22 | BA | 2424 | C |
| 22 | BA | 2425 | A |
| 22 | BA | 2426 | A |
| 22 | BA | 2427 | C |
| 22 | BA | 2428 | G |
| 22 | BA | 2429 | G |
| 22 | BA | 2430 | A |
| 22 | BA | 2431 | U |
| 22 | BA | 2435 | A |
| 22 | BA | 2439 | A |
| 22 | BA | 2440 | C |
| 22 | BA | 2441 | U |
| 22 | BA | 2447 | G |
| 22 | BA | 2448 | A |
| 22 | BA | 2458 | G |
| 22 | BA | 2459 | A |
| 22 | BA | 2476 | A |
| 22 | BA | 2491 | U |
| 22 | BA | 2493 | U |
| 22 | BA | 2497 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 2500 | U |
| 22 | BA | 2501 | C |
| 22 | BA | 2502 | G |
| 22 | BA | 2503 | A |
| 22 | BA | 2504 | U |
| 22 | BA | 2505 | G |
| 22 | BA | 2506 | U |
| 22 | BA | 2507 | C |
| 22 | BA | 2515 | C |
| 22 | BA | 2518 | A |
| 22 | BA | 2525 | G |
| 22 | BA | 2529 | G |
| 22 | BA | 2543 | G |
| 22 | BA | 2547 | A |
| 22 | BA | 2554 | U |
| 22 | BA | 2566 | A |
| 22 | BA | 2567 | G |
| 22 | BA | 2573 | C |
| 22 | BA | 2574 | G |
| 22 | BA | 2576 | G |
| 22 | BA | 2579 | C |
| 22 | BA | 2585 | U |
| 22 | BA | 2586 | U |
| 22 | BA | 2603 | G |
| 22 | BA | 2604 | U |
| 22 | BA | 2609 | U |
| 22 | BA | 2610 | C |
| 22 | BA | 2611 | C |
| 22 | BA | 2612 | C |
| 22 | BA | 2613 | U |
| 22 | BA | 2614 | A |
| 22 | BA | 2615 | U |
| 22 | BA | 2621 | G |
| 22 | BA | 2629 | U |
| 22 | BA | 2630 | G |
| 22 | BA | 2638 | G |
| 22 | BA | 2645 | G |
| 22 | BA | 2646 | C |
| 22 | BA | 2654 | A |
| 22 | BA | 2655 | G |
| 22 | BA | 2661 | G |
| 22 | BA | 2663 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 2672 | U |
| 22 | BA | 2673 | G |
| 22 | BA | 2681 | C |
| 22 | BA | 2682 | A |
| 22 | BA | 2690 | U |
| 22 | BA | 2713 | U |
| 22 | BA | 2714 | G |
| 22 | BA | 2724 | U |
| 22 | BA | 2725 | A |
| 22 | BA | 2726 | A |
| 22 | BA | 2727 | A |
| 22 | BA | 2728 | U |
| 22 | BA | 2729 | G |
| 22 | BA | 2732 | G |
| 22 | BA | 2733 | A |
| 22 | BA | 2748 | A |
| 22 | BA | 2750 | A |
| 22 | BA | 2751 | G |
| 22 | BA | 2753 | A |
| 22 | BA | 2756 | U |
| 22 | BA | 2757 | A |
| 22 | BA | 2758 | A |
| 22 | BA | 2765 | A |
| 22 | BA | 2771 | C |
| 22 | BA | 2778 | A |
| 22 | BA | 2779 | U |
| 22 | BA | 2791 | G |
| 22 | BA | 2797 | U |
| 22 | BA | 2798 | U |
| 22 | BA | 2800 | A |
| 22 | BA | 2801 | G |
| 22 | BA | 2808 | G |
| 22 | BA | 2809 | A |
| 22 | BA | 2812 | G |
| 22 | BA | 2818 | U |
| 22 | BA | 2820 | A |
| 22 | BA | 2821 | A |
| 22 | BA | 2824 | C |
| 22 | BA | 2825 | G |
| 22 | BA | 2826 | A |
| 22 | BA | 2833 | U |
| 22 | BA | 2835 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 2836 | U |
| 22 | BA | 2849 | U |
| 22 | BA | 2866 | U |
| 22 | BA | 2867 | G |
| 22 | BA | 2868 | A |
| 22 | BA | 2869 | G |
| 22 | BA | 2873 | A |
| 22 | BA | 2874 | C |
| 22 | BA | 2879 | A |
| 22 | BA | 2880 | C |
| 22 | BA | 2883 | A |
| 22 | BA | 2884 | U |
| 22 | BA | 2886 | A |
| 22 | BA | 2894 | G |
| 22 | BA | 2895 | G |
| 23 | BB | 12 | C |
| 23 | BB | 13 | G |
| 23 | BB | 14 | U |
| 23 | BB | 15 | A |
| 23 | BB | 16 | G |
| 23 | BB | 24 | G |
| 23 | BB | 25 | U |
| 23 | BB | 30 | C |
| 23 | BB | 35 | C |
| 23 | BB | 37 | C |
| 23 | BB | 41 | G |
| 23 | BB | 42 | C |
| 23 | BB | 43 | C |
| 23 | BB | 44 | G |
| 23 | BB | 45 | A |
| 23 | BB | 46 | A |
| 23 | BB | 52 | A |
| 23 | BB | 53 | A |
| 23 | BB | 56 | G |
| 23 | BB | 57 | A |
| 23 | BB | 58 | A |
| 23 | BB | 66 | A |
| 23 | BB | 67 | G |
| 23 | BB | 87 | U |
| 23 | BB | 88 | C |
| 23 | BB | 89 | U |
| 23 | BB | 90 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 23 | BB | 91 | C |
| 23 | BB | 99 | A |
| 23 | BB | 108 | A |
| 23 | BB | 109 | A |
| 53 | CA | 6 | G |
| 53 | CA | 7 | A |
| 53 | CA | 8 | A |
| 53 | CA | 9 | G |
| 53 | CA | 13 | U |
| 53 | CA | 14 | U |
| 53 | CA | 15 | G |
| 53 | CA | 16 | A |
| 53 | CA | 17 | U |
| 53 | CA | 19 | A |
| 53 | CA | 22 | G |
| 53 | CA | 31 | G |
| 53 | CA | 32 | A |
| 53 | CA | 33 | A |
| 53 | CA | 39 | G |
| 53 | CA | 40 | C |
| 53 | CA | 47 | C |
| 53 | CA | 48 | C |
| 53 | CA | 51 | A |
| 53 | CA | 52 | C |
| 53 | CA | 53 | A |
| 53 | CA | 61 | G |
| 53 | CA | 65 | A |
| 53 | CA | 66 | A |
| 53 | CA | 67 | C |
| 53 | CA | 68 | G |
| 53 | CA | 70 | U |
| 53 | CA | 71 | A |
| 53 | CA | 72 | A |
| 53 | CA | 73 | C |
| 53 | CA | 74 | A |
| 53 | CA | 76 | G |
| 53 | CA | 77 | A |
| 53 | CA | 80 | A |
| 53 | CA | 81 | A |
| 53 | CA | 82 | G |
| 53 | CA | 83 | C |
| 53 | CA | 85 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 86 | G |
| 53 | CA | 87 | C |
| 53 | CA | 88 | U |
| 53 | CA | 89 | U |
| 53 | CA | 90 | C |
| 53 | CA | 91 | U |
| 53 | CA | 92 | U |
| 53 | CA | 93 | U |
| 53 | CA | 94 | G |
| 53 | CA | 95 | C |
| 53 | CA | 96 | U |
| 53 | CA | 98 | A |
| 53 | CA | 101 | A |
| 53 | CA | 110 | C |
| 53 | CA | 115 | G |
| 53 | CA | 116 | A |
| 53 | CA | 119 | A |
| 53 | CA | 120 | A |
| 53 | CA | 121 | U |
| 53 | CA | 122 | G |
| 53 | CA | 131 | A |
| 53 | CA | 132 | C |
| 53 | CA | 133 | U |
| 53 | CA | 141 | G |
| 53 | CA | 143 | A |
| 53 | CA | 144 | G |
| 53 | CA | 155 | A |
| 53 | CA | 164 | G |
| 53 | CA | 166 | U |
| 53 | CA | 174 | A |
| 53 | CA | 175 | C |
| 53 | CA | 177 | G |
| 53 | CA | 178 | C |
| 53 | CA | 181 | A |
| 53 | CA | 182 | A |
| 53 | CA | 184 | G |
| 53 | CA | 185 | U |
| 53 | CA | 198 | G |
| 53 | CA | 199 | A |
| 53 | CA | 200 | G |
| 53 | CA | 201 | G |
| 53 | CA | 206 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 207 | C |
| 53 | CA | 208 | U |
| 53 | CA | 209 | U |
| 53 | CA | 210 | C |
| 53 | CA | 211 | G |
| 53 | CA | 212 | G |
| 53 | CA | 213 | G |
| 53 | CA | 214 | C |
| 53 | CA | 239 | U |
| 53 | CA | 240 | G |
| 53 | CA | 241 | G |
| 53 | CA | 243 | A |
| 53 | CA | 244 | U |
| 53 | CA | 245 | U |
| 53 | CA | 246 | A |
| 53 | CA | 247 | G |
| 53 | CA | 248 | C |
| 53 | CA | 249 | U |
| 53 | CA | 250 | A |
| 53 | CA | 251 | G |
| 53 | CA | 252 | U |
| 53 | CA | 253 | A |
| 53 | CA | 254 | G |
| 53 | CA | 266 | G |
| 53 | CA | 267 | C |
| 53 | CA | 268 | U |
| 53 | CA | 275 | G |
| 53 | CA | 276 | G |
| 53 | CA | 277 | C |
| 53 | CA | 280 | C |
| 53 | CA | 289 | G |
| 53 | CA | 294 | U |
| 53 | CA | 298 | A |
| 53 | CA | 301 | G |
| 53 | CA | 305 | G |
| 53 | CA | 306 | A |
| 53 | CA | 315 | A |
| 53 | CA | 316 | C |
| 53 | CA | 317 | U |
| 53 | CA | 321 | A |
| 53 | CA | 328 | C |
| 53 | CA | 329 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 330 | C |
| 53 | CA | 331 | G |
| 53 | CA | 332 | G |
| 53 | CA | 338 | A |
| 53 | CA | 339 | C |
| 53 | CA | 344 | A |
| 53 | CA | 345 | C |
| 53 | CA | 346 | G |
| 53 | CA | 347 | G |
| 53 | CA | 348 | G |
| 53 | CA | 349 | A |
| 53 | CA | 352 | C |
| 53 | CA | 353 | A |
| 53 | CA | 354 | G |
| 53 | CA | 367 | U |
| 53 | CA | 368 | U |
| 53 | CA | 369 | G |
| 53 | CA | 372 | C |
| 53 | CA | 373 | A |
| 53 | CA | 374 | A |
| 53 | CA | 376 | G |
| 53 | CA | 381 | C |
| 53 | CA | 382 | A |
| 53 | CA | 384 | G |
| 53 | CA | 389 | A |
| 53 | CA | 390 | U |
| 53 | CA | 397 | A |
| 53 | CA | 398 | U |
| 53 | CA | 406 | G |
| 53 | CA | 412 | A |
| 53 | CA | 413 | G |
| 53 | CA | 414 | A |
| 53 | CA | 415 | A |
| 53 | CA | 416 | G |
| 53 | CA | 421 | U |
| 53 | CA | 422 | C |
| 53 | CA | 423 | G |
| 53 | CA | 424 | G |
| 53 | CA | 425 | G |
| 53 | CA | 426 | U |
| 53 | CA | 428 | G |
| 53 | CA | 429 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 430 | A |
| 53 | CA | 435 | A |
| 53 | CA | 438 | U |
| 53 | CA | 452 | A |
| 53 | CA | 453 | G |
| 53 | CA | 454 | G |
| 53 | CA | 456 | A |
| 53 | CA | 457 | G |
| 53 | CA | 458 | U |
| 53 | CA | 459 | A |
| 53 | CA | 461 | A |
| 53 | CA | 463 | U |
| 53 | CA | 464 | U |
| 53 | CA | 465 | A |
| 53 | CA | 466 | A |
| 53 | CA | 467 | U |
| 53 | CA | 468 | A |
| 53 | CA | 469 | C |
| 53 | CA | 474 | G |
| 53 | CA | 476 | U |
| 53 | CA | 478 | A |
| 53 | CA | 479 | U |
| 53 | CA | 481 | G |
| 53 | CA | 482 | A |
| 53 | CA | 483 | C |
| 53 | CA | 484 | G |
| 53 | CA | 485 | U |
| 53 | CA | 486 | U |
| 53 | CA | 493 | A |
| 53 | CA | 496 | A |
| 53 | CA | 497 | G |
| 53 | CA | 498 | A |
| 53 | CA | 500 | G |
| 53 | CA | 501 | C |
| 53 | CA | 508 | U |
| 53 | CA | 509 | A |
| 53 | CA | 510 | A |
| 53 | CA | 511 | C |
| 53 | CA | 512 | U |
| 53 | CA | 513 | C |
| 53 | CA | 514 | C |
| 53 | CA | 516 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 517 | G |
| 53 | CA | 518 | C |
| 53 | CA | 519 | C |
| 53 | CA | 520 | A |
| 53 | CA | 521 | G |
| 53 | CA | 524 | G |
| 53 | CA | 527 | G |
| 53 | CA | 530 | G |
| 53 | CA | 532 | A |
| 53 | CA | 533 | A |
| 53 | CA | 534 | U |
| 53 | CA | 535 | A |
| 53 | CA | 536 | C |
| 53 | CA | 537 | G |
| 53 | CA | 548 | G |
| 53 | CA | 559 | A |
| 53 | CA | 560 | A |
| 53 | CA | 562 | U |
| 53 | CA | 563 | A |
| 53 | CA | 564 | C |
| 53 | CA | 565 | U |
| 53 | CA | 566 | G |
| 53 | CA | 567 | G |
| 53 | CA | 568 | G |
| 53 | CA | 572 | A |
| 53 | CA | 573 | A |
| 53 | CA | 575 | G |
| 53 | CA | 576 | C |
| 53 | CA | 577 | G |
| 53 | CA | 578 | C |
| 53 | CA | 596 | A |
| 53 | CA | 597 | G |
| 53 | CA | 604 | G |
| 53 | CA | 616 | G |
| 53 | CA | 617 | G |
| 53 | CA | 633 | G |
| 53 | CA | 642 | A |
| 53 | CA | 643 | C |
| 53 | CA | 644 | U |
| 53 | CA | 653 | U |
| 53 | CA | 654 | G |
| 53 | CA | 655 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 665 | A |
| 53 | CA | 666 | G |
| 53 | CA | 688 | G |
| 53 | CA | 689 | C |
| 53 | CA | 695 | A |
| 53 | CA | 700 | G |
| 53 | CA | 701 | U |
| 53 | CA | 702 | A |
| 53 | CA | 703 | G |
| 53 | CA | 704 | A |
| 53 | CA | 705 | G |
| 53 | CA | 718 | A |
| 53 | CA | 719 | C |
| 53 | CA | 721 | G |
| 53 | CA | 722 | G |
| 53 | CA | 723 | U |
| 53 | CA | 724 | G |
| 53 | CA | 728 | A |
| 53 | CA | 731 | G |
| 53 | CA | 733 | G |
| 53 | CA | 734 | G |
| 53 | CA | 735 | C |
| 53 | CA | 748 | G |
| 53 | CA | 754 | C |
| 53 | CA | 755 | G |
| 53 | CA | 758 | C |
| 53 | CA | 760 | G |
| 53 | CA | 777 | A |
| 53 | CA | 781 | A |
| 53 | CA | 782 | A |
| 53 | CA | 785 | G |
| 53 | CA | 792 | A |
| 53 | CA | 793 | U |
| 53 | CA | 794 | A |
| 53 | CA | 795 | C |
| 53 | CA | 803 | G |
| 53 | CA | 810 | C |
| 53 | CA | 812 | G |
| 53 | CA | 815 | A |
| 53 | CA | 816 | A |
| 53 | CA | 817 | C |
| 53 | CA | 818 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 819 | A |
| 53 | CA | 820 | U |
| 53 | CA | 821 | G |
| 53 | CA | 826 | C |
| 53 | CA | 828 | U |
| 53 | CA | 829 | G |
| 53 | CA | 841 | C |
| 53 | CA | 842 | U |
| 53 | CA | 843 | U |
| 53 | CA | 844 | G |
| 53 | CA | 845 | A |
| 53 | CA | 846 | G |
| 53 | CA | 847 | G |
| 53 | CA | 849 | G |
| 53 | CA | 859 | G |
| 53 | CA | 870 | U |
| 53 | CA | 871 | U |
| 53 | CA | 874 | G |
| 53 | CA | 880 | C |
| 53 | CA | 885 | G |
| 53 | CA | 889 | A |
| 53 | CA | 890 | G |
| 53 | CA | 891 | U |
| 53 | CA | 892 | A |
| 53 | CA | 914 | A |
| 53 | CA | 915 | A |
| 53 | CA | 926 | G |
| 53 | CA | 927 | G |
| 53 | CA | 934 | C |
| 53 | CA | 935 | A |
| 53 | CA | 936 | C |
| 53 | CA | 937 | A |
| 53 | CA | 942 | G |
| 53 | CA | 945 | G |
| 53 | CA | 960 | U |
| 53 | CA | 961 | U |
| 53 | CA | 962 | C |
| 53 | CA | 963 | G |
| 53 | CA | 966 | G |
| 53 | CA | 968 | A |
| 53 | CA | 969 | A |
| 53 | CA | 970 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 972 | C |
| 53 | CA | 974 | A |
| 53 | CA | 975 | A |
| 53 | CA | 976 | G |
| 53 | CA | 977 | A |
| 53 | CA | 978 | A |
| 53 | CA | 979 | C |
| 53 | CA | 980 | C |
| 53 | CA | 982 | U |
| 53 | CA | 983 | A |
| 53 | CA | 984 | C |
| 53 | CA | 985 | C |
| 53 | CA | 986 | U |
| 53 | CA | 987 | G |
| 53 | CA | 990 | C |
| 53 | CA | 991 | U |
| 53 | CA | 992 | U |
| 53 | CA | 993 | G |
| 53 | CA | 995 | C |
| 53 | CA | 996 | A |
| 53 | CA | 997 | U |
| 53 | CA | 1000 | A |
| 53 | CA | 1004 | A |
| 53 | CA | 1006 | G |
| 53 | CA | 1016 | A |
| 53 | CA | 1019 | A |
| 53 | CA | 1020 | G |
| 53 | CA | 1022 | A |
| 53 | CA | 1024 | G |
| 53 | CA | 1026 | G |
| 53 | CA | 1029 | U |
| 53 | CA | 1031 | C |
| 53 | CA | 1032 | G |
| 53 | CA | 1036 | A |
| 53 | CA | 1037 | C |
| 53 | CA | 1049 | U |
| 53 | CA | 1050 | G |
| 53 | CA | 1051 | C |
| 53 | CA | 1052 | U |
| 53 | CA | 1053 | G |
| 53 | CA | 1054 | C |
| 53 | CA | 1064 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 1065 | U |
| 53 | CA | 1066 | C |
| 53 | CA | 1067 | A |
| 53 | CA | 1068 | G |
| 53 | CA | 1085 | U |
| 53 | CA | 1086 | U |
| 53 | CA | 1087 | G |
| 53 | CA | 1094 | G |
| 53 | CA | 1101 | A |
| 53 | CA | 1102 | A |
| 53 | CA | 1103 | C |
| 53 | CA | 1113 | C |
| 53 | CA | 1124 | G |
| 53 | CA | 1125 | U |
| 53 | CA | 1127 | G |
| 53 | CA | 1128 | C |
| 53 | CA | 1130 | A |
| 53 | CA | 1131 | G |
| 53 | CA | 1136 | C |
| 53 | CA | 1137 | C |
| 53 | CA | 1138 | G |
| 53 | CA | 1139 | G |
| 53 | CA | 1140 | C |
| 53 | CA | 1141 | C |
| 53 | CA | 1142 | G |
| 53 | CA | 1143 | G |
| 53 | CA | 1144 | G |
| 53 | CA | 1145 | A |
| 53 | CA | 1146 | A |
| 53 | CA | 1147 | C |
| 53 | CA | 1148 | U |
| 53 | CA | 1149 | C |
| 53 | CA | 1151 | A |
| 53 | CA | 1152 | A |
| 53 | CA | 1153 | G |
| 53 | CA | 1158 | C |
| 53 | CA | 1159 | U |
| 53 | CA | 1160 | G |
| 53 | CA | 1161 | C |
| 53 | CA | 1162 | C |
| 53 | CA | 1168 | U |
| 53 | CA | 1169 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 1181 | G |
| 53 | CA | 1183 | U |
| 53 | CA | 1184 | G |
| 53 | CA | 1185 | G |
| 53 | CA | 1190 | G |
| 53 | CA | 1191 | A |
| 53 | CA | 1192 | C |
| 53 | CA | 1193 | G |
| 53 | CA | 1196 | A |
| 53 | CA | 1197 | A |
| 53 | CA | 1200 | C |
| 53 | CA | 1201 | A |
| 53 | CA | 1202 | U |
| 53 | CA | 1203 | C |
| 53 | CA | 1211 | U |
| 53 | CA | 1212 | U |
| 53 | CA | 1213 | A |
| 53 | CA | 1214 | C |
| 53 | CA | 1215 | G |
| 53 | CA | 1217 | C |
| 53 | CA | 1222 | G |
| 53 | CA | 1224 | U |
| 53 | CA | 1225 | A |
| 53 | CA | 1226 | C |
| 53 | CA | 1227 | A |
| 53 | CA | 1228 | C |
| 53 | CA | 1229 | A |
| 53 | CA | 1230 | C |
| 53 | CA | 1231 | G |
| 53 | CA | 1238 | A |
| 53 | CA | 1239 | A |
| 53 | CA | 1240 | U |
| 53 | CA | 1241 | G |
| 53 | CA | 1243 | C |
| 53 | CA | 1244 | G |
| 53 | CA | 1250 | A |
| 53 | CA | 1251 | A |
| 53 | CA | 1256 | A |
| 53 | CA | 1257 | A |
| 53 | CA | 1260 | G |
| 53 | CA | 1266 | G |
| 53 | CA | 1278 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 1279 | G |
| 53 | CA | 1280 | A |
| 53 | CA | 1281 | C |
| 53 | CA | 1282 | C |
| 53 | CA | 1283 | U |
| 53 | CA | 1284 | C |
| 53 | CA | 1285 | A |
| 53 | CA | 1286 | U |
| 53 | CA | 1287 | A |
| 53 | CA | 1288 | A |
| 53 | CA | 1289 | A |
| 53 | CA | 1294 | G |
| 53 | CA | 1295 | U |
| 53 | CA | 1297 | G |
| 53 | CA | 1299 | A |
| 53 | CA | 1300 | G |
| 53 | CA | 1301 | U |
| 53 | CA | 1302 | C |
| 53 | CA | 1303 | C |
| 53 | CA | 1305 | G |
| 53 | CA | 1312 | G |
| 53 | CA | 1316 | G |
| 53 | CA | 1317 | C |
| 53 | CA | 1320 | C |
| 53 | CA | 1322 | C |
| 53 | CA | 1323 | G |
| 53 | CA | 1324 | A |
| 53 | CA | 1332 | A |
| 53 | CA | 1338 | G |
| 53 | CA | 1346 | A |
| 53 | CA | 1348 | U |
| 53 | CA | 1349 | A |
| 53 | CA | 1350 | A |
| 53 | CA | 1359 | C |
| 53 | CA | 1362 | A |
| 53 | CA | 1364 | U |
| 53 | CA | 1365 | G |
| 53 | CA | 1367 | C |
| 53 | CA | 1368 | A |
| 53 | CA | 1370 | G |
| 53 | CA | 1379 | G |
| 53 | CA | 1381 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 1382 | C |
| 53 | CA | 1394 | A |
| 53 | CA | 1395 | C |
| 53 | CA | 1396 | A |
| 53 | CA | 1397 | C |
| 53 | CA | 1398 | A |
| 53 | CA | 1400 | C |
| 53 | CA | 1411 | C |
| 53 | CA | 1422 | G |
| 53 | CA | 1429 | A |
| 53 | CA | 1431 | A |
| 53 | CA | 1432 | G |
| 53 | CA | 1441 | A |
| 53 | CA | 1446 | A |
| 53 | CA | 1447 | A |
| 53 | CA | 1448 | C |
| 53 | CA | 1449 | C |
| 53 | CA | 1450 | U |
| 53 | CA | 1452 | C |
| 53 | CA | 1453 | G |
| 53 | CA | 1454 | G |
| 53 | CA | 1455 | G |
| 53 | CA | 1456 | A |
| 53 | CA | 1491 | G |
| 53 | CA | 1493 | A |
| 53 | CA | 1494 | G |
| 53 | CA | 1497 | G |
| 53 | CA | 1499 | A |
| 53 | CA | 1502 | A |
| 53 | CA | 1503 | A |
| 53 | CA | 1505 | G |
| 53 | CA | 1507 | A |
| 53 | CA | 1508 | A |
| 53 | CA | 1517 | G |
| 53 | CA | 1519 | A |
| 53 | CA | 1520 | C |
| 53 | CA | 1529 | G |
| 53 | CA | 1530 | G |
| 53 | CA | 1531 | A |
| 53 | CA | 1534 | A |
| 57 | DA | 12 | U |
| 57 | DA | 14 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 15 | G |
| 57 | DA | 27 | G |
| 57 | DA | 28 | A |
| 57 | DA | 34 | U |
| 57 | DA | 35 | G |
| 57 | DA | 36 | G |
| 57 | DA | 37 | C |
| 57 | DA | 39 | G |
| 57 | DA | 46 | G |
| 57 | DA | 49 | A |
| 57 | DA | 50 | U |
| 57 | DA | 52 | A |
| 57 | DA | 53 | A |
| 57 | DA | 55 | G |
| 57 | DA | 61 | C |
| 57 | DA | 62 | U |
| 57 | DA | 70 | G |
| 57 | DA | 71 | A |
| 57 | DA | 73 | A |
| 57 | DA | 74 | A |
| 57 | DA | 75 | G |
| 57 | DA | 76 | C |
| 57 | DA | 77 | G |
| 57 | DA | 78 | U |
| 57 | DA | 79 | C |
| 57 | DA | 83 | A |
| 57 | DA | 84 | A |
| 57 | DA | 85 | G |
| 57 | DA | 86 | G |
| 57 | DA | 87 | U |
| 57 | DA | 88 | G |
| 57 | DA | 91 | A |
| 57 | DA | 92 | U |
| 57 | DA | 93 | G |
| 57 | DA | 96 | C |
| 57 | DA | 100 | U |
| 57 | DA | 101 | A |
| 57 | DA | 102 | U |
| 57 | DA | 103 | A |
| 57 | DA | 104 | A |
| 57 | DA | 118 | A |
| 57 | DA | 119 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 120 | U |
| 57 | DA | 121 | G |
| 57 | DA | 122 | G |
| 57 | DA | 123 | G |
| 57 | DA | 126 | A |
| 57 | DA | 128 | C |
| 57 | DA | 129 | C |
| 57 | DA | 134 | G |
| 57 | DA | 139 | U |
| 57 | DA | 140 | C |
| 57 | DA | 141 | G |
| 57 | DA | 142 | A |
| 57 | DA | 143 | C |
| 57 | DA | 144 | A |
| 57 | DA | 150 | U |
| 57 | DA | 155 | A |
| 57 | DA | 156 | A |
| 57 | DA | 160 | A |
| 57 | DA | 161 | A |
| 57 | DA | 162 | U |
| 57 | DA | 163 | C |
| 57 | DA | 164 | C |
| 57 | DA | 165 | A |
| 57 | DA | 166 | U |
| 57 | DA | 180 | G |
| 57 | DA | 181 | A |
| 57 | DA | 196 | A |
| 57 | DA | 197 | A |
| 57 | DA | 199 | A |
| 57 | DA | 204 | A |
| 57 | DA | 205 | G |
| 57 | DA | 206 | U |
| 57 | DA | 207 | A |
| 57 | DA | 208 | C |
| 57 | DA | 215 | G |
| 57 | DA | 216 | A |
| 57 | DA | 217 | A |
| 57 | DA | 221 | A |
| 57 | DA | 222 | A |
| 57 | DA | 223 | A |
| 57 | DA | 224 | U |
| 57 | DA | 225 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 227 | A |
| 57 | DA | 228 | C |
| 57 | DA | 229 | C |
| 57 | DA | 230 | G |
| 57 | DA | 231 | A |
| 57 | DA | 232 | G |
| 57 | DA | 233 | A |
| 57 | DA | 234 | U |
| 57 | DA | 235 | U |
| 57 | DA | 241 | A |
| 57 | DA | 242 | G |
| 57 | DA | 243 | U |
| 57 | DA | 244 | A |
| 57 | DA | 245 | G |
| 57 | DA | 248 | G |
| 57 | DA | 249 | C |
| 57 | DA | 250 | G |
| 57 | DA | 251 | A |
| 57 | DA | 255 | A |
| 57 | DA | 264 | C |
| 57 | DA | 265 | A |
| 57 | DA | 266 | G |
| 57 | DA | 271 | G |
| 57 | DA | 272 | A |
| 57 | DA | 273 | G |
| 57 | DA | 274 | C |
| 57 | DA | 277 | G |
| 57 | DA | 280 | U |
| 57 | DA | 281 | C |
| 57 | DA | 284 | U |
| 57 | DA | 285 | G |
| 57 | DA | 294 | A |
| 57 | DA | 295 | G |
| 57 | DA | 299 | A |
| 57 | DA | 301 | G |
| 57 | DA | 302 | C |
| 57 | DA | 303 | G |
| 57 | DA | 304 | U |
| 57 | DA | 305 | C |
| 57 | DA | 311 | A |
| 57 | DA | 312 | G |
| 57 | DA | 314 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 315 | G |
| 57 | DA | 322 | A |
| 57 | DA | 323 | C |
| 57 | DA | 324 | A |
| 57 | DA | 325 | G |
| 57 | DA | 329 | G |
| 57 | DA | 330 | A |
| 57 | DA | 334 | C |
| 57 | DA | 335 | C |
| 57 | DA | 336 | C |
| 57 | DA | 343 | C |
| 57 | DA | 351 | C |
| 57 | DA | 353 | C |
| 57 | DA | 354 | A |
| 57 | DA | 362 | A |
| 57 | DA | 367 | G |
| 57 | DA | 370 | G |
| 57 | DA | 371 | A |
| 57 | DA | 372 | G |
| 57 | DA | 373 | U |
| 57 | DA | 374 | A |
| 57 | DA | 375 | G |
| 57 | DA | 383 | C |
| 57 | DA | 385 | C |
| 57 | DA | 387 | U |
| 57 | DA | 388 | G |
| 57 | DA | 389 | G |
| 57 | DA | 390 | U |
| 57 | DA | 391 | A |
| 57 | DA | 392 | U |
| 57 | DA | 395 | U |
| 57 | DA | 396 | G |
| 57 | DA | 397 | U |
| 57 | DA | 398 | C |
| 57 | DA | 399 | U |
| 57 | DA | 404 | A |
| 57 | DA | 405 | U |
| 57 | DA | 406 | G |
| 57 | DA | 407 | G |
| 57 | DA | 408 | G |
| 57 | DA | 411 | G |
| 57 | DA | 412 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 413 | C |
| 57 | DA | 424 | G |
| 57 | DA | 428 | A |
| 57 | DA | 430 | A |
| 57 | DA | 436 | C |
| 57 | DA | 442 | G |
| 57 | DA | 443 | A |
| 57 | DA | 444 | C |
| 57 | DA | 445 | C |
| 57 | DA | 446 | G |
| 57 | DA | 447 | A |
| 57 | DA | 449 | A |
| 57 | DA | 450 | G |
| 57 | DA | 451 | U |
| 57 | DA | 455 | C |
| 57 | DA | 457 | A |
| 57 | DA | 459 | U |
| 57 | DA | 460 | A |
| 57 | DA | 461 | C |
| 57 | DA | 475 | C |
| 57 | DA | 476 | G |
| 57 | DA | 477 | A |
| 57 | DA | 478 | A |
| 57 | DA | 479 | A |
| 57 | DA | 480 | A |
| 57 | DA | 481 | G |
| 57 | DA | 482 | A |
| 57 | DA | 484 | C |
| 57 | DA | 485 | C |
| 57 | DA | 490 | C |
| 57 | DA | 491 | G |
| 57 | DA | 492 | A |
| 57 | DA | 498 | G |
| 57 | DA | 502 | A |
| 57 | DA | 504 | A |
| 57 | DA | 505 | A |
| 57 | DA | 507 | A |
| 57 | DA | 510 | C |
| 57 | DA | 511 | U |
| 57 | DA | 512 | G |
| 57 | DA | 527 | C |
| 57 | DA | 528 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 529 | A |
| 57 | DA | 530 | G |
| 57 | DA | 531 | C |
| 57 | DA | 532 | A |
| 57 | DA | 533 | G |
| 57 | DA | 534 | U |
| 57 | DA | 544 | C |
| 57 | DA | 545 | U |
| 57 | DA | 546 | U |
| 57 | DA | 547 | A |
| 57 | DA | 548 | G |
| 57 | DA | 549 | G |
| 57 | DA | 550 | C |
| 57 | DA | 562 | U |
| 57 | DA | 563 | A |
| 57 | DA | 571 | U |
| 57 | DA | 572 | A |
| 57 | DA | 573 | U |
| 57 | DA | 574 | A |
| 57 | DA | 575 | A |
| 57 | DA | 576 | U |
| 57 | DA | 577 | G |
| 57 | DA | 586 | A |
| 57 | DA | 590 | A |
| 57 | DA | 603 | A |
| 57 | DA | 604 | G |
| 57 | DA | 605 | G |
| 57 | DA | 606 | U |
| 57 | DA | 613 | A |
| 57 | DA | 614 | A |
| 57 | DA | 615 | U |
| 57 | DA | 616 | A |
| 57 | DA | 617 | G |
| 57 | DA | 618 | G |
| 57 | DA | 621 | A |
| 57 | DA | 622 | G |
| 57 | DA | 623 | C |
| 57 | DA | 627 | A |
| 57 | DA | 628 | G |
| 57 | DA | 629 | G |
| 57 | DA | 637 | A |
| 57 | DA | 638 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 639 | U |
| 57 | DA | 640 | C |
| 57 | DA | 643 | A |
| 57 | DA | 645 | C |
| 57 | DA | 646 | U |
| 57 | DA | 654 | A |
| 57 | DA | 656 | G |
| 57 | DA | 657 | U |
| 57 | DA | 662 | G |
| 57 | DA | 664 | G |
| 57 | DA | 669 | G |
| 57 | DA | 671 | C |
| 57 | DA | 672 | C |
| 57 | DA | 673 | C |
| 57 | DA | 686 | U |
| 57 | DA | 687 | C |
| 57 | DA | 688 | U |
| 57 | DA | 695 | G |
| 57 | DA | 699 | A |
| 57 | DA | 705 | A |
| 57 | DA | 717 | C |
| 57 | DA | 726 | G |
| 57 | DA | 727 | A |
| 57 | DA | 728 | G |
| 57 | DA | 729 | G |
| 57 | DA | 730 | A |
| 57 | DA | 739 | A |
| 57 | DA | 740 | C |
| 57 | DA | 741 | U |
| 57 | DA | 746 | U |
| 57 | DA | 747 | U |
| 57 | DA | 748 | G |
| 57 | DA | 749 | A |
| 57 | DA | 750 | A |
| 57 | DA | 751 | A |
| 57 | DA | 753 | A |
| 57 | DA | 756 | A |
| 57 | DA | 757 | G |
| 57 | DA | 763 | G |
| 57 | DA | 764 | A |
| 57 | DA | 775 | G |
| 57 | DA | 776 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 782 | A |
| 57 | DA | 783 | A |
| 57 | DA | 784 | G |
| 57 | DA | 785 | G |
| 57 | DA | 789 | A |
| 57 | DA | 790 | U |
| 57 | DA | 792 | A |
| 57 | DA | 794 | A |
| 57 | DA | 798 | G |
| 57 | DA | 800 | A |
| 57 | DA | 801 | G |
| 57 | DA | 802 | A |
| 57 | DA | 803 | U |
| 57 | DA | 805 | G |
| 57 | DA | 806 | C |
| 57 | DA | 812 | C |
| 57 | DA | 819 | A |
| 57 | DA | 827 | U |
| 57 | DA | 828 | U |
| 57 | DA | 829 | A |
| 57 | DA | 830 | G |
| 57 | DA | 831 | G |
| 57 | DA | 832 | U |
| 57 | DA | 846 | U |
| 57 | DA | 847 | U |
| 57 | DA | 858 | G |
| 57 | DA | 859 | G |
| 57 | DA | 860 | U |
| 57 | DA | 861 | A |
| 57 | DA | 862 | G |
| 57 | DA | 866 | A |
| 57 | DA | 867 | C |
| 57 | DA | 868 | U |
| 57 | DA | 873 | C |
| 57 | DA | 875 | G |
| 57 | DA | 877 | A |
| 57 | DA | 878 | A |
| 57 | DA | 902 | C |
| 57 | DA | 910 | A |
| 57 | DA | 912 | C |
| 57 | DA | 914 | G |
| 57 | DA | 915 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 916 | G |
| 57 | DA | 917 | A |
| 57 | DA | 922 | C |
| 57 | DA | 932 | U |
| 57 | DA | 933 | A |
| 57 | DA | 934 | U |
| 57 | DA | 941 | A |
| 57 | DA | 944 | C |
| 57 | DA | 946 | C |
| 57 | DA | 947 | A |
| 57 | DA | 953 | G |
| 57 | DA | 958 | U |
| 57 | DA | 959 | A |
| 57 | DA | 960 | A |
| 57 | DA | 961 | C |
| 57 | DA | 962 | G |
| 57 | DA | 963 | U |
| 57 | DA | 964 | C |
| 57 | DA | 965 | C |
| 57 | DA | 973 | A |
| 57 | DA | 974 | G |
| 57 | DA | 976 | G |
| 57 | DA | 977 | G |
| 57 | DA | 983 | A |
| 57 | DA | 985 | C |
| 57 | DA | 989 | G |
| 57 | DA | 990 | A |
| 57 | DA | 991 | C |
| 57 | DA | 992 | C |
| 57 | DA | 995 | C |
| 57 | DA | 996 | A |
| 57 | DA | 1005 | C |
| 57 | DA | 1008 | A |
| 57 | DA | 1009 | A |
| 57 | DA | 1010 | A |
| 57 | DA | 1011 | G |
| 57 | DA | 1012 | U |
| 57 | DA | 1013 | C |
| 57 | DA | 1020 | A |
| 57 | DA | 1021 | A |
| 57 | DA | 1022 | G |
| 57 | DA | 1023 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1024 | G |
| 57 | DA | 1025 | G |
| 57 | DA | 1026 | G |
| 57 | DA | 1027 | A |
| 57 | DA | 1033 | U |
| 57 | DA | 1034 | G |
| 57 | DA | 1035 | U |
| 57 | DA | 1037 | G |
| 57 | DA | 1039 | A |
| 57 | DA | 1044 | C |
| 57 | DA | 1045 | C |
| 57 | DA | 1046 | A |
| 57 | DA | 1047 | G |
| 57 | DA | 1050 | A |
| 57 | DA | 1055 | G |
| 57 | DA | 1056 | G |
| 57 | DA | 1057 | A |
| 57 | DA | 1060 | U |
| 57 | DA | 1061 | U |
| 57 | DA | 1063 | G |
| 57 | DA | 1064 | C |
| 57 | DA | 1065 | U |
| 57 | DA | 1066 | U |
| 57 | DA | 1068 | G |
| 57 | DA | 1069 | A |
| 57 | DA | 1070 | A |
| 57 | DA | 1071 | G |
| 57 | DA | 1072 | C |
| 57 | DA | 1073 | A |
| 57 | DA | 1074 | G |
| 57 | DA | 1075 | C |
| 57 | DA | 1076 | C |
| 57 | DA | 1077 | A |
| 57 | DA | 1078 | U |
| 57 | DA | 1079 | C |
| 57 | DA | 1080 | A |
| 57 | DA | 1081 | U |
| 57 | DA | 1083 | U |
| 57 | DA | 1088 | A |
| 57 | DA | 1089 | A |
| 57 | DA | 1091 | G |
| 57 | DA | 1097 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1100 | C |
| 57 | DA | 1103 | A |
| 57 | DA | 1111 | A |
| 57 | DA | 1112 | G |
| 57 | DA | 1113 | U |
| 57 | DA | 1114 | C |
| 57 | DA | 1115 | G |
| 57 | DA | 1126 | A |
| 57 | DA | 1127 | A |
| 57 | DA | 1128 | G |
| 57 | DA | 1129 | A |
| 57 | DA | 1130 | U |
| 57 | DA | 1132 | U |
| 57 | DA | 1133 | A |
| 57 | DA | 1135 | C |
| 57 | DA | 1136 | G |
| 57 | DA | 1139 | G |
| 57 | DA | 1142 | A |
| 57 | DA | 1144 | A |
| 57 | DA | 1145 | C |
| 57 | DA | 1156 | A |
| 57 | DA | 1157 | G |
| 57 | DA | 1158 | C |
| 57 | DA | 1159 | U |
| 57 | DA | 1169 | A |
| 57 | DA | 1172 | C |
| 57 | DA | 1174 | U |
| 57 | DA | 1176 | U |
| 57 | DA | 1194 | A |
| 57 | DA | 1204 | A |
| 57 | DA | 1205 | A |
| 57 | DA | 1206 | G |
| 57 | DA | 1207 | C |
| 57 | DA | 1208 | C |
| 57 | DA | 1211 | C |
| 57 | DA | 1227 | G |
| 57 | DA | 1231 | U |
| 57 | DA | 1235 | G |
| 57 | DA | 1237 | A |
| 57 | DA | 1241 | A |
| 57 | DA | 1242 | U |
| 57 | DA | 1246 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1247 | A |
| 57 | DA | 1248 | G |
| 57 | DA | 1249 | U |
| 57 | DA | 1250 | G |
| 57 | DA | 1253 | A |
| 57 | DA | 1255 | U |
| 57 | DA | 1256 | G |
| 57 | DA | 1257 | C |
| 57 | DA | 1262 | A |
| 57 | DA | 1264 | A |
| 57 | DA | 1265 | A |
| 57 | DA | 1266 | G |
| 57 | DA | 1267 | U |
| 57 | DA | 1268 | A |
| 57 | DA | 1269 | A |
| 57 | DA | 1271 | G |
| 57 | DA | 1272 | A |
| 57 | DA | 1273 | U |
| 57 | DA | 1274 | A |
| 57 | DA | 1275 | A |
| 57 | DA | 1276 | A |
| 57 | DA | 1277 | G |
| 57 | DA | 1278 | C |
| 57 | DA | 1286 | A |
| 57 | DA | 1287 | A |
| 57 | DA | 1288 | G |
| 57 | DA | 1289 | C |
| 57 | DA | 1290 | C |
| 57 | DA | 1291 | C |
| 57 | DA | 1292 | G |
| 57 | DA | 1300 | G |
| 57 | DA | 1301 | A |
| 57 | DA | 1304 | A |
| 57 | DA | 1305 | C |
| 57 | DA | 1311 | G |
| 57 | DA | 1313 | U |
| 57 | DA | 1314 | C |
| 57 | DA | 1315 | C |
| 57 | DA | 1321 | A |
| 57 | DA | 1324 | G |
| 57 | DA | 1325 | U |
| 57 | DA | 1326 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1327 | A |
| 57 | DA | 1328 | A |
| 57 | DA | 1329 | U |
| 57 | DA | 1330 | C |
| 57 | DA | 1331 | G |
| 57 | DA | 1332 | G |
| 57 | DA | 1333 | G |
| 57 | DA | 1334 | G |
| 57 | DA | 1336 | A |
| 57 | DA | 1337 | G |
| 57 | DA | 1338 | G |
| 57 | DA | 1340 | U |
| 57 | DA | 1341 | G |
| 57 | DA | 1344 | U |
| 57 | DA | 1345 | C |
| 57 | DA | 1346 | G |
| 57 | DA | 1347 | A |
| 57 | DA | 1349 | C |
| 57 | DA | 1352 | U |
| 57 | DA | 1355 | G |
| 57 | DA | 1365 | A |
| 57 | DA | 1374 | G |
| 57 | DA | 1376 | C |
| 57 | DA | 1379 | U |
| 57 | DA | 1382 | G |
| 57 | DA | 1383 | A |
| 57 | DA | 1385 | A |
| 57 | DA | 1386 | C |
| 57 | DA | 1387 | A |
| 57 | DA | 1388 | G |
| 57 | DA | 1389 | G |
| 57 | DA | 1397 | U |
| 57 | DA | 1398 | C |
| 57 | DA | 1399 | C |
| 57 | DA | 1400 | U |
| 57 | DA | 1401 | G |
| 57 | DA | 1402 | U |
| 57 | DA | 1403 | A |
| 57 | DA | 1404 | C |
| 57 | DA | 1416 | G |
| 57 | DA | 1417 | C |
| 57 | DA | 1418 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1419 | A |
| 57 | DA | 1421 | G |
| 57 | DA | 1426 | G |
| 57 | DA | 1427 | A |
| 57 | DA | 1428 | C |
| 57 | DA | 1430 | G |
| 57 | DA | 1434 | A |
| 57 | DA | 1438 | U |
| 57 | DA | 1440 | U |
| 57 | DA | 1452 | G |
| 57 | DA | 1453 | A |
| 57 | DA | 1455 | G |
| 57 | DA | 1456 | G |
| 57 | DA | 1457 | U |
| 57 | DA | 1458 | U |
| 57 | DA | 1459 | G |
| 57 | DA | 1460 | U |
| 57 | DA | 1461 | C |
| 57 | DA | 1470 | A |
| 57 | DA | 1478 | G |
| 57 | DA | 1481 | U |
| 57 | DA | 1482 | G |
| 57 | DA | 1483 | G |
| 57 | DA | 1484 | U |
| 57 | DA | 1490 | A |
| 57 | DA | 1491 | G |
| 57 | DA | 1492 | G |
| 57 | DA | 1493 | C |
| 57 | DA | 1494 | A |
| 57 | DA | 1497 | U |
| 57 | DA | 1498 | C |
| 57 | DA | 1499 | C |
| 57 | DA | 1503 | A |
| 57 | DA | 1504 | A |
| 57 | DA | 1507 | C |
| 57 | DA | 1508 | A |
| 57 | DA | 1509 | A |
| 57 | DA | 1510 | G |
| 57 | DA | 1511 | G |
| 57 | DA | 1512 | C |
| 57 | DA | 1520 | U |
| 57 | DA | 1522 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1523 | U |
| 57 | DA | 1524 | G |
| 57 | DA | 1530 | G |
| 57 | DA | 1531 | C |
| 57 | DA | 1532 | A |
| 57 | DA | 1534 | U |
| 57 | DA | 1535 | A |
| 57 | DA | 1536 | C |
| 57 | DA | 1537 | G |
| 57 | DA | 1538 | G |
| 57 | DA | 1539 | U |
| 57 | DA | 1540 | G |
| 57 | DA | 1541 | C |
| 57 | DA | 1555 | G |
| 57 | DA | 1556 | C |
| 57 | DA | 1557 | C |
| 57 | DA | 1558 | C |
| 57 | DA | 1559 | U |
| 57 | DA | 1560 | G |
| 57 | DA | 1561 | C |
| 57 | DA | 1566 | A |
| 57 | DA | 1567 | G |
| 57 | DA | 1568 | G |
| 57 | DA | 1569 | A |
| 57 | DA | 1570 | A |
| 57 | DA | 1583 | A |
| 57 | DA | 1584 | U |
| 57 | DA | 1585 | C |
| 57 | DA | 1586 | A |
| 57 | DA | 1600 | C |
| 57 | DA | 1603 | A |
| 57 | DA | 1607 | C |
| 57 | DA | 1608 | A |
| 57 | DA | 1609 | A |
| 57 | DA | 1610 | A |
| 57 | DA | 1612 | C |
| 57 | DA | 1613 | G |
| 57 | DA | 1616 | A |
| 57 | DA | 1618 | A |
| 57 | DA | 1626 | A |
| 57 | DA | 1635 | A |
| 57 | DA | 1636 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1640 | A |
| 57 | DA | 1646 | C |
| 57 | DA | 1647 | U |
| 57 | DA | 1648 | U |
| 57 | DA | 1649 | G |
| 57 | DA | 1650 | A |
| 57 | DA | 1653 | G |
| 57 | DA | 1654 | A |
| 57 | DA | 1655 | A |
| 57 | DA | 1663 | G |
| 57 | DA | 1668 | A |
| 57 | DA | 1669 | A |
| 57 | DA | 1670 | C |
| 57 | DA | 1674 | G |
| 57 | DA | 1675 | C |
| 57 | DA | 1681 | G |
| 57 | DA | 1682 | G |
| 57 | DA | 1683 | U |
| 57 | DA | 1694 | C |
| 57 | DA | 1695 | G |
| 57 | DA | 1696 | G |
| 57 | DA | 1698 | A |
| 57 | DA | 1699 | G |
| 57 | DA | 1700 | A |
| 57 | DA | 1701 | A |
| 57 | DA | 1707 | G |
| 57 | DA | 1713 | A |
| 57 | DA | 1714 | U |
| 57 | DA | 1715 | G |
| 57 | DA | 1717 | A |
| 57 | DA | 1718 | G |
| 57 | DA | 1722 | A |
| 57 | DA | 1723 | G |
| 57 | DA | 1728 | C |
| 57 | DA | 1729 | U |
| 57 | DA | 1730 | C |
| 57 | DA | 1731 | G |
| 57 | DA | 1732 | C |
| 57 | DA | 1733 | G |
| 57 | DA | 1734 | G |
| 57 | DA | 1735 | A |
| 57 | DA | 1739 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1740 | G |
| 57 | DA | 1750 | G |
| 57 | DA | 1754 | A |
| 57 | DA | 1758 | U |
| 57 | DA | 1759 | A |
| 57 | DA | 1760 | C |
| 57 | DA | 1764 | C |
| 57 | DA | 1773 | A |
| 57 | DA | 1776 | G |
| 57 | DA | 1777 | U |
| 57 | DA | 1780 | A |
| 57 | DA | 1781 | U |
| 57 | DA | 1782 | U |
| 57 | DA | 1783 | A |
| 57 | DA | 1784 | A |
| 57 | DA | 1785 | A |
| 57 | DA | 1786 | A |
| 57 | DA | 1787 | A |
| 57 | DA | 1788 | C |
| 57 | DA | 1800 | C |
| 57 | DA | 1802 | A |
| 57 | DA | 1803 | A |
| 57 | DA | 1804 | C |
| 57 | DA | 1808 | A |
| 57 | DA | 1809 | A |
| 57 | DA | 1810 | A |
| 57 | DA | 1811 | G |
| 57 | DA | 1815 | A |
| 57 | DA | 1816 | C |
| 57 | DA | 1817 | G |
| 57 | DA | 1818 | U |
| 57 | DA | 1820 | U |
| 57 | DA | 1821 | A |
| 57 | DA | 1822 | C |
| 57 | DA | 1827 | U |
| 57 | DA | 1829 | A |
| 57 | DA | 1830 | C |
| 57 | DA | 1832 | C |
| 57 | DA | 1838 | C |
| 57 | DA | 1839 | G |
| 57 | DA | 1840 | G |
| 57 | DA | 1847 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1848 | A |
| 57 | DA | 1857 | G |
| 57 | DA | 1870 | C |
| 57 | DA | 1873 | G |
| 57 | DA | 1875 | G |
| 57 | DA | 1877 | A |
| 57 | DA | 1884 | G |
| 57 | DA | 1889 | A |
| 57 | DA | 1900 | A |
| 57 | DA | 1901 | A |
| 57 | DA | 1902 | C |
| 57 | DA | 1903 | G |
| 57 | DA | 1906 | G |
| 57 | DA | 1913 | A |
| 57 | DA | 1914 | C |
| 57 | DA | 1915 | U |
| 57 | DA | 1916 | A |
| 57 | DA | 1919 | A |
| 57 | DA | 1920 | C |
| 57 | DA | 1927 | A |
| 57 | DA | 1930 | G |
| 57 | DA | 1931 | U |
| 57 | DA | 1932 | A |
| 57 | DA | 1937 | A |
| 57 | DA | 1938 | A |
| 57 | DA | 1939 | U |
| 57 | DA | 1941 | C |
| 57 | DA | 1942 | C |
| 57 | DA | 1943 | U |
| 57 | DA | 1944 | U |
| 57 | DA | 1945 | G |
| 57 | DA | 1946 | U |
| 57 | DA | 1955 | U |
| 57 | DA | 1956 | U |
| 57 | DA | 1963 | U |
| 57 | DA | 1964 | G |
| 57 | DA | 1966 | A |
| 57 | DA | 1967 | C |
| 57 | DA | 1968 | G |
| 57 | DA | 1970 | A |
| 57 | DA | 1971 | U |
| 57 | DA | 1972 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1973 | G |
| 57 | DA | 1975 | G |
| 57 | DA | 1981 | A |
| 57 | DA | 1982 | U |
| 57 | DA | 1983 | G |
| 57 | DA | 1989 | G |
| 57 | DA | 1991 | U |
| 57 | DA | 1993 | U |
| 57 | DA | 1996 | C |
| 57 | DA | 1997 | C |
| 57 | DA | 1998 | A |
| 57 | DA | 2015 | A |
| 57 | DA | 2020 | A |
| 57 | DA | 2021 | C |
| 57 | DA | 2022 | U |
| 57 | DA | 2023 | C |
| 57 | DA | 2024 | G |
| 57 | DA | 2030 | A |
| 57 | DA | 2031 | A |
| 57 | DA | 2033 | A |
| 57 | DA | 2034 | U |
| 57 | DA | 2035 | G |
| 57 | DA | 2036 | C |
| 57 | DA | 2037 | A |
| 57 | DA | 2043 | C |
| 57 | DA | 2052 | A |
| 57 | DA | 2055 | C |
| 57 | DA | 2056 | G |
| 57 | DA | 2060 | A |
| 57 | DA | 2061 | G |
| 57 | DA | 2062 | A |
| 57 | DA | 2063 | C |
| 57 | DA | 2068 | U |
| 57 | DA | 2069 | G |
| 57 | DA | 2072 | C |
| 57 | DA | 2080 | A |
| 57 | DA | 2092 | U |
| 57 | DA | 2093 | G |
| 57 | DA | 2094 | A |
| 57 | DA | 2095 | A |
| 57 | DA | 2104 | C |
| 57 | DA | 2107 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 2108 | A |
| 57 | DA | 2109 | U |
| 57 | DA | 2110 | G |
| 57 | DA | 2134 | A |
| 57 | DA | 2135 | A |
| 57 | DA | 2136 | G |
| 57 | DA | 2137 | U |
| 57 | DA | 2138 | G |
| 57 | DA | 2139 | U |
| 57 | DA | 2143 | C |
| 57 | DA | 2144 | G |
| 57 | DA | 2145 | C |
| 57 | DA | 2147 | A |
| 57 | DA | 2148 | G |
| 57 | DA | 2149 | U |
| 57 | DA | 2150 | C |
| 57 | DA | 2152 | G |
| 57 | DA | 2153 | C |
| 57 | DA | 2154 | A |
| 57 | DA | 2156 | G |
| 57 | DA | 2157 | G |
| 57 | DA | 2180 | U |
| 57 | DA | 2181 | U |
| 57 | DA | 2183 | A |
| 57 | DA | 2187 | U |
| 57 | DA | 2191 | A |
| 57 | DA | 2192 | U |
| 57 | DA | 2198 | A |
| 57 | DA | 2199 | A |
| 57 | DA | 2203 | U |
| 57 | DA | 2204 | G |
| 57 | DA | 2210 | U |
| 57 | DA | 2211 | A |
| 57 | DA | 2212 | A |
| 57 | DA | 2213 | U |
| 57 | DA | 2214 | C |
| 57 | DA | 2215 | C |
| 57 | DA | 2216 | G |
| 57 | DA | 2217 | G |
| 57 | DA | 2225 | A |
| 57 | DA | 2226 | C |
| 57 | DA | 2227 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 2238 | G |
| 57 | DA | 2239 | G |
| 57 | DA | 2240 | U |
| 57 | DA | 2243 | U |
| 57 | DA | 2249 | U |
| 57 | DA | 2250 | G |
| 57 | DA | 2259 | U |
| 57 | DA | 2260 | C |
| 57 | DA | 2266 | A |
| 57 | DA | 2267 | A |
| 57 | DA | 2268 | A |
| 57 | DA | 2275 | C |
| 57 | DA | 2276 | G |
| 57 | DA | 2277 | G |
| 57 | DA | 2279 | G |
| 57 | DA | 2283 | C |
| 57 | DA | 2284 | A |
| 57 | DA | 2286 | G |
| 57 | DA | 2287 | A |
| 57 | DA | 2289 | G |
| 57 | DA | 2296 | U |
| 57 | DA | 2297 | A |
| 57 | DA | 2298 | A |
| 57 | DA | 2299 | U |
| 57 | DA | 2305 | U |
| 57 | DA | 2306 | C |
| 57 | DA | 2308 | G |
| 57 | DA | 2309 | A |
| 57 | DA | 2310 | C |
| 57 | DA | 2311 | A |
| 57 | DA | 2312 | U |
| 57 | DA | 2313 | C |
| 57 | DA | 2314 | A |
| 57 | DA | 2320 | U |
| 57 | DA | 2325 | G |
| 57 | DA | 2332 | C |
| 57 | DA | 2334 | U |
| 57 | DA | 2335 | A |
| 57 | DA | 2337 | G |
| 57 | DA | 2338 | C |
| 57 | DA | 2339 | C |
| 57 | DA | 2345 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 2347 | C |
| 57 | DA | 2348 | U |
| 57 | DA | 2349 | G |
| 57 | DA | 2358 | A |
| 57 | DA | 2379 | G |
| 57 | DA | 2382 | G |
| 57 | DA | 2383 | G |
| 57 | DA | 2384 | U |
| 57 | DA | 2385 | C |
| 57 | DA | 2386 | A |
| 57 | DA | 2387 | U |
| 57 | DA | 2388 | A |
| 57 | DA | 2392 | A |
| 57 | DA | 2394 | C |
| 57 | DA | 2401 | U |
| 57 | DA | 2402 | U |
| 57 | DA | 2403 | C |
| 57 | DA | 2404 | U |
| 57 | DA | 2405 | G |
| 57 | DA | 2406 | A |
| 57 | DA | 2407 | A |
| 57 | DA | 2408 | U |
| 57 | DA | 2409 | G |
| 57 | DA | 2410 | G |
| 57 | DA | 2423 | U |
| 57 | DA | 2424 | C |
| 57 | DA | 2426 | A |
| 57 | DA | 2427 | C |
| 57 | DA | 2428 | G |
| 57 | DA | 2429 | G |
| 57 | DA | 2430 | A |
| 57 | DA | 2431 | U |
| 57 | DA | 2435 | A |
| 57 | DA | 2439 | A |
| 57 | DA | 2440 | C |
| 57 | DA | 2441 | U |
| 57 | DA | 2447 | G |
| 57 | DA | 2448 | A |
| 57 | DA | 2459 | A |
| 57 | DA | 2460 | U |
| 57 | DA | 2475 | C |
| 57 | DA | 2476 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 2490 | G |
| 57 | DA | 2491 | U |
| 57 | DA | 2492 | U |
| 57 | DA | 2493 | U |
| 57 | DA | 2494 | G |
| 57 | DA | 2498 | C |
| 57 | DA | 2499 | C |
| 57 | DA | 2502 | G |
| 57 | DA | 2503 | A |
| 57 | DA | 2504 | U |
| 57 | DA | 2505 | G |
| 57 | DA | 2518 | A |
| 57 | DA | 2519 | U |
| 57 | DA | 2520 | C |
| 57 | DA | 2521 | C |
| 57 | DA | 2529 | G |
| 57 | DA | 2534 | A |
| 57 | DA | 2542 | A |
| 57 | DA | 2543 | G |
| 57 | DA | 2544 | G |
| 57 | DA | 2547 | A |
| 57 | DA | 2554 | U |
| 57 | DA | 2567 | G |
| 57 | DA | 2573 | C |
| 57 | DA | 2574 | G |
| 57 | DA | 2578 | G |
| 57 | DA | 2582 | G |
| 57 | DA | 2583 | G |
| 57 | DA | 2585 | U |
| 57 | DA | 2602 | A |
| 57 | DA | 2609 | U |
| 57 | DA | 2610 | C |
| 57 | DA | 2611 | C |
| 57 | DA | 2612 | C |
| 57 | DA | 2613 | U |
| 57 | DA | 2614 | A |
| 57 | DA | 2615 | U |
| 57 | DA | 2616 | C |
| 57 | DA | 2629 | U |
| 57 | DA | 2630 | G |
| 57 | DA | 2632 | A |
| 57 | DA | 2646 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 2654 | A |
| 57 | DA | 2655 | G |
| 57 | DA | 2656 | U |
| 57 | DA | 2657 | A |
| 57 | DA | 2658 | C |
| 57 | DA | 2660 | A |
| 57 | DA | 2667 | C |
| 57 | DA | 2668 | G |
| 57 | DA | 2669 | G |
| 57 | DA | 2682 | A |
| 57 | DA | 2683 | C |
| 57 | DA | 2690 | U |
| 57 | DA | 2691 | C |
| 57 | DA | 2712 | C |
| 57 | DA | 2713 | U |
| 57 | DA | 2714 | G |
| 57 | DA | 2718 | G |
| 57 | DA | 2725 | A |
| 57 | DA | 2726 | A |
| 57 | DA | 2727 | A |
| 57 | DA | 2728 | U |
| 57 | DA | 2729 | G |
| 57 | DA | 2732 | G |
| 57 | DA | 2736 | A |
| 57 | DA | 2739 | U |
| 57 | DA | 2748 | A |
| 57 | DA | 2750 | A |
| 57 | DA | 2751 | G |
| 57 | DA | 2752 | C |
| 57 | DA | 2753 | A |
| 57 | DA | 2756 | U |
| 57 | DA | 2757 | A |
| 57 | DA | 2758 | A |
| 57 | DA | 2765 | A |
| 57 | DA | 2766 | A |
| 57 | DA | 2777 | G |
| 57 | DA | 2778 | A |
| 57 | DA | 2779 | U |
| 57 | DA | 2791 | G |
| 57 | DA | 2799 | A |
| 57 | DA | 2801 | G |
| 57 | DA | 2808 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 2820 | A |
| 57 | DA | 2822 | G |
| 57 | DA | 2823 | A |
| 57 | DA | 2833 | U |
| 57 | DA | 2834 | G |
| 57 | DA | 2835 | A |
| 57 | DA | 2836 | U |
| 57 | DA | 2837 | A |
| 57 | DA | 2838 | G |
| 57 | DA | 2848 | G |
| 57 | DA | 2849 | U |
| 57 | DA | 2850 | A |
| 57 | DA | 2851 | A |
| 57 | DA | 2852 | G |
| 57 | DA | 2861 | U |
| 57 | DA | 2866 | U |
| 57 | DA | 2867 | G |
| 57 | DA | 2868 | A |
| 57 | DA | 2869 | G |
| 57 | DA | 2872 | A |
| 57 | DA | 2874 | C |
| 57 | DA | 2875 | C |
| 57 | DA | 2876 | G |
| 57 | DA | 2877 | G |
| 57 | DA | 2879 | A |
| 57 | DA | 2880 | C |
| 57 | DA | 2881 | U |
| 57 | DA | 2883 | A |
| 57 | DA | 2894 | G |
| 57 | DA | 2895 | G |
| 57 | DA | 2896 | C |
| 57 | DA | 2902 | C |
| 58 | DB | 12 | C |
| 58 | DB | 13 | G |
| 58 | DB | 15 | A |
| 58 | DB | 16 | G |
| 58 | DB | 17 | C |
| 58 | DB | 18 | G |
| 58 | DB | 24 | G |
| 58 | DB | 25 | U |
| 58 | DB | 30 | C |
| 58 | DB | 35 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 58 | DB | 36 | C |
| 58 | DB | 41 | G |
| 58 | DB | 42 | C |
| 58 | DB | 43 | C |
| 58 | DB | 44 | G |
| 58 | DB | 45 | A |
| 58 | DB | 46 | A |
| 58 | DB | 48 | U |
| 58 | DB | 57 | A |
| 58 | DB | 58 | A |
| 58 | DB | 59 | A |
| 58 | DB | 63 | C |
| 58 | DB | 64 | G |
| 58 | DB | 65 | U |
| 58 | DB | 66 | A |
| 58 | DB | 67 | G |
| 58 | DB | 68 | C |
| 58 | DB | 69 | G |
| 58 | DB | 87 | U |
| 58 | DB | 88 | C |
| 58 | DB | 89 | U |
| 58 | DB | 90 | C |
| 58 | DB | 91 | C |
| 58 | DB | 99 | A |
| 58 | DB | 109 | A |
| 58 | DB | 110 | C |
| 58 | DB | 111 | U |

All (1428) RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 7 | A |
| 1 | AA | 13 | U |
| 1 | AA | 30 | U |
| 1 | AA | 32 | A |
| 1 | AA | 47 | C |
| 1 | AA | 51 | A |
| 1 | AA | 52 | C |
| 1 | AA | 60 | A |
| 1 | AA | 61 | G |
| 1 | AA | 64 | G |
| 1 | AA | 66 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 71 | A |
| 1 | AA | 73 | C |
| 1 | AA | 74 | A |
| 1 | AA | 85 | U |
| 1 | AA | 87 | C |
| 1 | AA | 91 | U |
| 1 | AA | 92 | U |
| 1 | AA | 94 | G |
| 1 | AA | 95 | C |
| 1 | AA | 97 | G |
| 1 | AA | 109 | A |
| 1 | AA | 115 | G |
| 1 | AA | 116 | A |
| 1 | AA | 119 | A |
| 1 | AA | 121 | U |
| 1 | AA | 129 | A |
| 1 | AA | 131 | A |
| 1 | AA | 173 | U |
| 1 | AA | 174 | A |
| 1 | AA | 181 | A |
| 1 | AA | 184 | G |
| 1 | AA | 197 | A |
| 1 | AA | 198 | G |
| 1 | AA | 199 | A |
| 1 | AA | 243 | A |
| 1 | AA | 245 | U |
| 1 | AA | 246 | A |
| 1 | AA | 250 | A |
| 1 | AA | 251 | G |
| 1 | AA | 252 | U |
| 1 | AA | 266 | G |
| 1 | AA | 267 | C |
| 1 | AA | 274 | A |
| 1 | AA | 275 | G |
| 1 | AA | 279 | A |
| 1 | AA | 305 | G |
| 1 | AA | 306 | A |
| 1 | AA | 315 | A |
| 1 | AA | 327 | A |
| 1 | AA | 330 | C |
| 1 | AA | 331 | G |
| 1 | AA | 344 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 346 | G |
| 1 | AA | 347 | G |
| 1 | AA | 351 | G |
| 1 | AA | 352 | C |
| 1 | AA | 366 | A |
| 1 | AA | 368 | U |
| 1 | AA | 372 | C |
| 1 | AA | 373 | A |
| 1 | AA | 388 | G |
| 1 | AA | 389 | A |
| 1 | AA | 411 | A |
| 1 | AA | 414 | A |
| 1 | AA | 422 | C |
| 1 | AA | 423 | G |
| 1 | AA | 428 | G |
| 1 | AA | 429 | U |
| 1 | AA | 430 | A |
| 1 | AA | 439 | U |
| 1 | AA | 451 | A |
| 1 | AA | 452 | A |
| 1 | AA | 466 | A |
| 1 | AA | 468 | A |
| 1 | AA | 484 | G |
| 1 | AA | 486 | U |
| 1 | AA | 487 | A |
| 1 | AA | 495 | A |
| 1 | AA | 496 | A |
| 1 | AA | 497 | G |
| 1 | AA | 499 | A |
| 1 | AA | 500 | G |
| 1 | AA | 508 | U |
| 1 | AA | 509 | A |
| 1 | AA | 511 | C |
| 1 | AA | 512 | U |
| 1 | AA | 517 | G |
| 1 | AA | 519 | C |
| 1 | AA | 531 | U |
| 1 | AA | 534 | U |
| 1 | AA | 535 | A |
| 1 | AA | 536 | C |
| 1 | AA | 537 | G |
| 1 | AA | 547 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 548 | G |
| 1 | AA | 549 | C |
| 1 | AA | 559 | A |
| 1 | AA | 563 | A |
| 1 | AA | 564 | C |
| 1 | AA | 566 | G |
| 1 | AA | 575 | G |
| 1 | AA | 577 | G |
| 1 | AA | 595 | A |
| 1 | AA | 596 | A |
| 1 | AA | 641 | U |
| 1 | AA | 642 | A |
| 1 | AA | 653 | U |
| 1 | AA | 654 | G |
| 1 | AA | 686 | U |
| 1 | AA | 688 | G |
| 1 | AA | 701 | U |
| 1 | AA | 704 | A |
| 1 | AA | 717 | U |
| 1 | AA | 718 | A |
| 1 | AA | 721 | G |
| 1 | AA | 722 | G |
| 1 | AA | 723 | U |
| 1 | AA | 724 | G |
| 1 | AA | 752 | G |
| 1 | AA | 754 | C |
| 1 | AA | 755 | G |
| 1 | AA | 792 | A |
| 1 | AA | 794 | A |
| 1 | AA | 812 | G |
| 1 | AA | 813 | U |
| 1 | AA | 815 | A |
| 1 | AA | 816 | A |
| 1 | AA | 817 | C |
| 1 | AA | 821 | G |
| 1 | AA | 870 | U |
| 1 | AA | 874 | G |
| 1 | AA | 884 | U |
| 1 | AA | 885 | G |
| 1 | AA | 889 | A |
| 1 | AA | 891 | U |
| 1 | AA | 913 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 914 | A |
| 1 | AA | 934 | C |
| 1 | AA | 935 | A |
| 1 | AA | 960 | U |
| 1 | AA | 961 | U |
| 1 | AA | 965 | U |
| 1 | AA | 968 | A |
| 1 | AA | 969 | A |
| 1 | AA | 971 | G |
| 1 | AA | 972 | C |
| 1 | AA | 974 | A |
| 1 | AA | 976 | G |
| 1 | AA | 977 | A |
| 1 | AA | 982 | U |
| 1 | AA | 984 | C |
| 1 | AA | 991 | U |
| 1 | AA | 994 | A |
| 1 | AA | 1049 | U |
| 1 | AA | 1050 | G |
| 1 | AA | 1053 | G |
| 1 | AA | 1054 | C |
| 1 | AA | 1055 | A |
| 1 | AA | 1064 | G |
| 1 | AA | 1066 | C |
| 1 | AA | 1068 | G |
| 1 | AA | 1085 | U |
| 1 | AA | 1087 | G |
| 1 | AA | 1094 | G |
| 1 | AA | 1095 | U |
| 1 | AA | 1101 | A |
| 1 | AA | 1102 | A |
| 1 | AA | 1127 | G |
| 1 | AA | 1129 | C |
| 1 | AA | 1130 | A |
| 1 | AA | 1136 | C |
| 1 | AA | 1138 | G |
| 1 | AA | 1141 | C |
| 1 | AA | 1142 | G |
| 1 | AA | 1151 | A |
| 1 | AA | 1152 | A |
| 1 | AA | 1157 | A |
| 1 | AA | 1158 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 1161 | C |
| 1 | AA | 1168 | U |
| 1 | AA | 1169 | A |
| 1 | AA | 1181 | G |
| 1 | AA | 1183 | U |
| 1 | AA | 1184 | G |
| 1 | AA | 1190 | G |
| 1 | AA | 1191 | A |
| 1 | AA | 1196 | A |
| 1 | AA | 1197 | A |
| 1 | AA | 1200 | C |
| 1 | AA | 1201 | A |
| 1 | AA | 1202 | U |
| 1 | AA | 1215 | G |
| 1 | AA | 1224 | U |
| 1 | AA | 1228 | C |
| 1 | AA | 1229 | A |
| 1 | AA | 1239 | A |
| 1 | AA | 1241 | G |
| 1 | AA | 1256 | A |
| 1 | AA | 1258 | G |
| 1 | AA | 1282 | C |
| 1 | AA | 1283 | U |
| 1 | AA | 1297 | G |
| 1 | AA | 1303 | C |
| 1 | AA | 1319 | A |
| 1 | AA | 1320 | C |
| 1 | AA | 1322 | C |
| 1 | AA | 1323 | G |
| 1 | AA | 1331 | G |
| 1 | AA | 1332 | A |
| 1 | AA | 1336 | C |
| 1 | AA | 1337 | G |
| 1 | AA | 1338 | G |
| 1 | AA | 1345 | U |
| 1 | AA | 1348 | U |
| 1 | AA | 1362 | A |
| 1 | AA | 1365 | G |
| 1 | AA | 1380 | U |
| 1 | AA | 1381 | U |
| 1 | AA | 1394 | A |
| 1 | AA | 1395 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | AA | 1396 | A |
| 1 | AA | 1398 | A |
| 1 | AA | 1399 | C |
| 1 | AA | 1432 | G |
| 1 | AA | 1447 | A |
| 1 | AA | 1448 | C |
| 1 | AA | 1451 | U |
| 1 | AA | 1453 | G |
| 1 | AA | 1454 | G |
| 1 | AA | 1498 | U |
| 1 | AA | 1502 | A |
| 1 | AA | 1505 | G |
| 1 | AA | 1506 | U |
| 1 | AA | 1528 | U |
| 1 | AA | 1530 | G |
| 1 | AA | 1531 | A |
| 22 | BA | 13 | A |
| 22 | BA | 14 | A |
| 22 | BA | 27 | G |
| 22 | BA | 33 | C |
| 22 | BA | 34 | U |
| 22 | BA | 35 | G |
| 22 | BA | 49 | A |
| 22 | BA | 52 | A |
| 22 | BA | 60 | G |
| 22 | BA | 62 | U |
| 22 | BA | 63 | A |
| 22 | BA | 70 | G |
| 22 | BA | 71 | A |
| 22 | BA | 74 | A |
| 22 | BA | 75 | G |
| 22 | BA | 84 | A |
| 22 | BA | 85 | G |
| 22 | BA | 91 | A |
| 22 | BA | 92 | U |
| 22 | BA | 100 | U |
| 22 | BA | 119 | A |
| 22 | BA | 125 | A |
| 22 | BA | 126 | A |
| 22 | BA | 137 | U |
| 22 | BA | 138 | U |
| 22 | BA | 142 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 143 | C |
| 22 | BA | 144 | A |
| 22 | BA | 162 | U |
| 22 | BA | 164 | C |
| 22 | BA | 177 | G |
| 22 | BA | 196 | A |
| 22 | BA | 199 | A |
| 22 | BA | 204 | A |
| 22 | BA | 206 | U |
| 22 | BA | 215 | G |
| 22 | BA | 216 | A |
| 22 | BA | 221 | A |
| 22 | BA | 229 | C |
| 22 | BA | 232 | G |
| 22 | BA | 241 | A |
| 22 | BA | 243 | U |
| 22 | BA | 249 | C |
| 22 | BA | 265 | A |
| 22 | BA | 266 | G |
| 22 | BA | 271 | G |
| 22 | BA | 273 | G |
| 22 | BA | 301 | G |
| 22 | BA | 302 | C |
| 22 | BA | 310 | A |
| 22 | BA | 312 | G |
| 22 | BA | 321 | U |
| 22 | BA | 324 | A |
| 22 | BA | 329 | G |
| 22 | BA | 333 | G |
| 22 | BA | 345 | A |
| 22 | BA | 346 | A |
| 22 | BA | 369 | U |
| 22 | BA | 373 | U |
| 22 | BA | 386 | G |
| 22 | BA | 388 | G |
| 22 | BA | 390 | U |
| 22 | BA | 395 | U |
| 22 | BA | 403 | U |
| 22 | BA | 404 | A |
| 22 | BA | 411 | G |
| 22 | BA | 412 | A |
| 22 | BA | 421 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 422 | A |
| 22 | BA | 434 | U |
| 22 | BA | 435 | C |
| 22 | BA | 442 | G |
| 22 | BA | 446 | G |
| 22 | BA | 454 | A |
| 22 | BA | 459 | U |
| 22 | BA | 474 | G |
| 22 | BA | 475 | C |
| 22 | BA | 479 | A |
| 22 | BA | 480 | A |
| 22 | BA | 481 | G |
| 22 | BA | 482 | A |
| 22 | BA | 489 | G |
| 22 | BA | 491 | G |
| 22 | BA | 503 | A |
| 22 | BA | 506 | G |
| 22 | BA | 507 | A |
| 22 | BA | 509 | C |
| 22 | BA | 512 | G |
| 22 | BA | 513 | A |
| 22 | BA | 527 | C |
| 22 | BA | 529 | A |
| 22 | BA | 531 | C |
| 22 | BA | 533 | G |
| 22 | BA | 555 | G |
| 22 | BA | 571 | U |
| 22 | BA | 572 | A |
| 22 | BA | 587 | C |
| 22 | BA | 588 | U |
| 22 | BA | 603 | A |
| 22 | BA | 604 | G |
| 22 | BA | 613 | A |
| 22 | BA | 616 | A |
| 22 | BA | 620 | G |
| 22 | BA | 637 | A |
| 22 | BA | 638 | G |
| 22 | BA | 645 | C |
| 22 | BA | 655 | A |
| 22 | BA | 667 | U |
| 22 | BA | 669 | G |
| 22 | BA | 685 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 687 | C |
| 22 | BA | 704 | G |
| 22 | BA | 727 | A |
| 22 | BA | 729 | G |
| 22 | BA | 739 | A |
| 22 | BA | 746 | U |
| 22 | BA | 747 | U |
| 22 | BA | 762 | U |
| 22 | BA | 763 | G |
| 22 | BA | 764 | A |
| 22 | BA | 765 | C |
| 22 | BA | 774 | G |
| 22 | BA | 782 | A |
| 22 | BA | 790 | U |
| 22 | BA | 800 | A |
| 22 | BA | 802 | A |
| 22 | BA | 805 | G |
| 22 | BA | 811 | U |
| 22 | BA | 829 | A |
| 22 | BA | 858 | G |
| 22 | BA | 860 | U |
| 22 | BA | 865 | C |
| 22 | BA | 913 | U |
| 22 | BA | 914 | G |
| 22 | BA | 915 | C |
| 22 | BA | 931 | U |
| 22 | BA | 933 | A |
| 22 | BA | 945 | A |
| 22 | BA | 946 | C |
| 22 | BA | 957 | C |
| 22 | BA | 958 | U |
| 22 | BA | 961 | C |
| 22 | BA | 972 | A |
| 22 | BA | 984 | A |
| 22 | BA | 985 | C |
| 22 | BA | 989 | G |
| 22 | BA | 990 | A |
| 22 | BA | 995 | C |
| 22 | BA | 996 | A |
| 22 | BA | 1008 | A |
| 22 | BA | 1009 | A |
| 22 | BA | 1011 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 1013 | C |
| 22 | BA | 1020 | A |
| 22 | BA | 1021 | A |
| 22 | BA | 1022 | G |
| 22 | BA | 1023 | U |
| 22 | BA | 1025 | G |
| 22 | BA | 1026 | G |
| 22 | BA | 1027 | A |
| 22 | BA | 1033 | U |
| 22 | BA | 1045 | C |
| 22 | BA | 1048 | A |
| 22 | BA | 1060 | U |
| 22 | BA | 1062 | G |
| 22 | BA | 1071 | G |
| 22 | BA | 1073 | A |
| 22 | BA | 1110 | G |
| 22 | BA | 1112 | G |
| 22 | BA | 1128 | G |
| 22 | BA | 1129 | A |
| 22 | BA | 1130 | U |
| 22 | BA | 1135 | C |
| 22 | BA | 1141 | U |
| 22 | BA | 1144 | A |
| 22 | BA | 1157 | G |
| 22 | BA | 1181 | U |
| 22 | BA | 1204 | A |
| 22 | BA | 1206 | G |
| 22 | BA | 1210 | G |
| 22 | BA | 1236 | G |
| 22 | BA | 1247 | A |
| 22 | BA | 1249 | U |
| 22 | BA | 1250 | G |
| 22 | BA | 1265 | A |
| 22 | BA | 1267 | U |
| 22 | BA | 1275 | A |
| 22 | BA | 1276 | A |
| 22 | BA | 1286 | A |
| 22 | BA | 1287 | A |
| 22 | BA | 1289 | C |
| 22 | BA | 1300 | G |
| 22 | BA | 1320 | C |
| 22 | BA | 1321 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 1324 | G |
| 22 | BA | 1326 | U |
| 22 | BA | 1329 | U |
| 22 | BA | 1330 | C |
| 22 | BA | 1340 | U |
| 22 | BA | 1343 | G |
| 22 | BA | 1378 | A |
| 22 | BA | 1379 | U |
| 22 | BA | 1385 | A |
| 22 | BA | 1386 | C |
| 22 | BA | 1394 | U |
| 22 | BA | 1396 | U |
| 22 | BA | 1398 | C |
| 22 | BA | 1416 | G |
| 22 | BA | 1417 | C |
| 22 | BA | 1427 | A |
| 22 | BA | 1429 | G |
| 22 | BA | 1434 | A |
| 22 | BA | 1451 | C |
| 22 | BA | 1458 | U |
| 22 | BA | 1459 | G |
| 22 | BA | 1461 | C |
| 22 | BA | 1475 | G |
| 22 | BA | 1476 | U |
| 22 | BA | 1490 | A |
| 22 | BA | 1491 | G |
| 22 | BA | 1493 | C |
| 22 | BA | 1494 | A |
| 22 | BA | 1497 | U |
| 22 | BA | 1498 | C |
| 22 | BA | 1508 | A |
| 22 | BA | 1510 | G |
| 22 | BA | 1522 | A |
| 22 | BA | 1535 | A |
| 22 | BA | 1537 | G |
| 22 | BA | 1538 | G |
| 22 | BA | 1554 | U |
| 22 | BA | 1555 | G |
| 22 | BA | 1558 | C |
| 22 | BA | 1565 | C |
| 22 | BA | 1602 | U |
| 22 | BA | 1606 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 1615 | C |
| 22 | BA | 1626 | A |
| 22 | BA | 1634 | A |
| 22 | BA | 1647 | U |
| 22 | BA | 1648 | U |
| 22 | BA | 1653 | G |
| 22 | BA | 1654 | A |
| 22 | BA | 1674 | G |
| 22 | BA | 1682 | G |
| 22 | BA | 1693 | U |
| 22 | BA | 1695 | G |
| 22 | BA | 1696 | G |
| 22 | BA | 1698 | A |
| 22 | BA | 1706 | C |
| 22 | BA | 1707 | G |
| 22 | BA | 1713 | A |
| 22 | BA | 1714 | U |
| 22 | BA | 1716 | U |
| 22 | BA | 1732 | C |
| 22 | BA | 1733 | G |
| 22 | BA | 1734 | G |
| 22 | BA | 1759 | A |
| 22 | BA | 1780 | A |
| 22 | BA | 1784 | A |
| 22 | BA | 1785 | A |
| 22 | BA | 1786 | A |
| 22 | BA | 1787 | A |
| 22 | BA | 1799 | G |
| 22 | BA | 1808 | A |
| 22 | BA | 1815 | A |
| 22 | BA | 1816 | C |
| 22 | BA | 1818 | U |
| 22 | BA | 1821 | A |
| 22 | BA | 1828 | G |
| 22 | BA | 1838 | C |
| 22 | BA | 1847 | A |
| 22 | BA | 1848 | A |
| 22 | BA | 1857 | G |
| 22 | BA | 1858 | A |
| 22 | BA | 1865 | U |
| 22 | BA | 1866 | A |
| 22 | BA | 1870 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 1871 | A |
| 22 | BA | 1872 | A |
| 22 | BA | 1885 | A |
| 22 | BA | 1900 | A |
| 22 | BA | 1918 | A |
| 22 | BA | 1919 | A |
| 22 | BA | 1929 | G |
| 22 | BA | 1931 | U |
| 22 | BA | 1936 | A |
| 22 | BA | 1941 | C |
| 22 | BA | 1943 | U |
| 22 | BA | 1945 | G |
| 22 | BA | 1954 | G |
| 22 | BA | 1962 | C |
| 22 | BA | 1963 | U |
| 22 | BA | 1966 | A |
| 22 | BA | 1967 | C |
| 22 | BA | 1970 | A |
| 22 | BA | 1971 | U |
| 22 | BA | 1992 | G |
| 22 | BA | 1993 | U |
| 22 | BA | 1996 | C |
| 22 | BA | 2021 | C |
| 22 | BA | 2023 | C |
| 22 | BA | 2030 | A |
| 22 | BA | 2035 | G |
| 22 | BA | 2036 | C |
| 22 | BA | 2051 | A |
| 22 | BA | 2060 | A |
| 22 | BA | 2062 | A |
| 22 | BA | 2067 | G |
| 22 | BA | 2068 | U |
| 22 | BA | 2092 | U |
| 22 | BA | 2093 | G |
| 22 | BA | 2136 | G |
| 22 | BA | 2146 | C |
| 22 | BA | 2148 | G |
| 22 | BA | 2149 | U |
| 22 | BA | 2150 | C |
| 22 | BA | 2199 | A |
| 22 | BA | 2210 | U |
| 22 | BA | 2214 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 2225 | A |
| 22 | BA | 2238 | G |
| 22 | BA | 2249 | U |
| 22 | BA | 2258 | C |
| 22 | BA | 2266 | A |
| 22 | BA | 2267 | A |
| 22 | BA | 2275 | C |
| 22 | BA | 2282 | G |
| 22 | BA | 2283 | C |
| 22 | BA | 2286 | G |
| 22 | BA | 2296 | U |
| 22 | BA | 2297 | A |
| 22 | BA | 2307 | G |
| 22 | BA | 2309 | A |
| 22 | BA | 2311 | A |
| 22 | BA | 2319 | G |
| 22 | BA | 2321 | U |
| 22 | BA | 2324 | U |
| 22 | BA | 2325 | G |
| 22 | BA | 2326 | C |
| 22 | BA | 2327 | A |
| 22 | BA | 2333 | A |
| 22 | BA | 2335 | A |
| 22 | BA | 2336 | A |
| 22 | BA | 2337 | G |
| 22 | BA | 2344 | U |
| 22 | BA | 2347 | C |
| 22 | BA | 2382 | G |
| 22 | BA | 2383 | G |
| 22 | BA | 2385 | C |
| 22 | BA | 2391 | G |
| 22 | BA | 2392 | A |
| 22 | BA | 2405 | G |
| 22 | BA | 2407 | A |
| 22 | BA | 2423 | U |
| 22 | BA | 2424 | C |
| 22 | BA | 2425 | A |
| 22 | BA | 2427 | C |
| 22 | BA | 2439 | A |
| 22 | BA | 2458 | G |
| 22 | BA | 2468 | A |
| 22 | BA | 2490 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 2492 | U |
| 22 | BA | 2503 | A |
| 22 | BA | 2517 | C |
| 22 | BA | 2542 | A |
| 22 | BA | 2566 | A |
| 22 | BA | 2572 | A |
| 22 | BA | 2573 | C |
| 22 | BA | 2581 | G |
| 22 | BA | 2602 | A |
| 22 | BA | 2603 | G |
| 22 | BA | 2609 | U |
| 22 | BA | 2611 | C |
| 22 | BA | 2613 | U |
| 22 | BA | 2615 | U |
| 22 | BA | 2629 | U |
| 22 | BA | 2638 | G |
| 22 | BA | 2645 | G |
| 22 | BA | 2654 | A |
| 22 | BA | 2673 | G |
| 22 | BA | 2681 | C |
| 22 | BA | 2689 | U |
| 22 | BA | 2712 | C |
| 22 | BA | 2725 | A |
| 22 | BA | 2727 | A |
| 22 | BA | 2728 | U |
| 22 | BA | 2729 | G |
| 22 | BA | 2732 | G |
| 22 | BA | 2750 | A |
| 22 | BA | 2752 | C |
| 22 | BA | 2756 | U |
| 22 | BA | 2757 | A |
| 22 | BA | 2777 | G |
| 22 | BA | 2778 | A |
| 22 | BA | 2790 | U |
| 22 | BA | 2797 | U |
| 22 | BA | 2800 | A |
| 22 | BA | 2801 | G |
| 22 | BA | 2808 | G |
| 22 | BA | 2820 | A |
| 22 | BA | 2832 | U |
| 22 | BA | 2835 | A |
| 22 | BA | 2848 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 22 | BA | 2866 | U |
| 22 | BA | 2868 | A |
| 22 | BA | 2873 | A |
| 22 | BA | 2879 | A |
| 22 | BA | 2880 | C |
| 22 | BA | 2893 | A |
| 22 | BA | 2894 | G |
| 23 | BB | 12 | C |
| 23 | BB | 14 | U |
| 23 | BB | 24 | G |
| 23 | BB | 25 | U |
| 23 | BB | 40 | U |
| 23 | BB | 42 | C |
| 23 | BB | 44 | G |
| 23 | BB | 45 | A |
| 23 | BB | 52 | A |
| 23 | BB | 56 | G |
| 23 | BB | 57 | A |
| 23 | BB | 66 | A |
| 23 | BB | 67 | G |
| 23 | BB | 87 | U |
| 23 | BB | 90 | C |
| 23 | BB | 108 | A |
| 23 | BB | 109 | A |
| 53 | CA | 6 | G |
| 53 | CA | 9 | G |
| 53 | CA | 13 | U |
| 53 | CA | 14 | U |
| 53 | CA | 15 | G |
| 53 | CA | 30 | U |
| 53 | CA | 32 | A |
| 53 | CA | 47 | C |
| 53 | CA | 52 | C |
| 53 | CA | 60 | A |
| 53 | CA | 65 | A |
| 53 | CA | 66 | A |
| 53 | CA | 70 | U |
| 53 | CA | 71 | A |
| 53 | CA | 72 | A |
| 53 | CA | 73 | C |
| 53 | CA | 81 | A |
| 53 | CA | 82 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 85 | U |
| 53 | CA | 86 | G |
| 53 | CA | 87 | C |
| 53 | CA | 89 | U |
| 53 | CA | 90 | C |
| 53 | CA | 92 | U |
| 53 | CA | 94 | G |
| 53 | CA | 95 | C |
| 53 | CA | 96 | U |
| 53 | CA | 109 | A |
| 53 | CA | 115 | G |
| 53 | CA | 116 | A |
| 53 | CA | 119 | A |
| 53 | CA | 131 | A |
| 53 | CA | 132 | C |
| 53 | CA | 173 | U |
| 53 | CA | 174 | A |
| 53 | CA | 181 | A |
| 53 | CA | 184 | G |
| 53 | CA | 197 | A |
| 53 | CA | 199 | A |
| 53 | CA | 213 | G |
| 53 | CA | 239 | U |
| 53 | CA | 240 | G |
| 53 | CA | 243 | A |
| 53 | CA | 245 | U |
| 53 | CA | 247 | G |
| 53 | CA | 248 | C |
| 53 | CA | 251 | G |
| 53 | CA | 252 | U |
| 53 | CA | 253 | A |
| 53 | CA | 274 | A |
| 53 | CA | 275 | G |
| 53 | CA | 276 | G |
| 53 | CA | 279 | A |
| 53 | CA | 282 | A |
| 53 | CA | 305 | G |
| 53 | CA | 315 | A |
| 53 | CA | 316 | C |
| 53 | CA | 327 | A |
| 53 | CA | 328 | C |
| 53 | CA | 330 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 331 | G |
| 53 | CA | 347 | G |
| 53 | CA | 348 | G |
| 53 | CA | 351 | G |
| 53 | CA | 352 | C |
| 53 | CA | 353 | A |
| 53 | CA | 366 | A |
| 53 | CA | 368 | U |
| 53 | CA | 369 | G |
| 53 | CA | 372 | C |
| 53 | CA | 373 | A |
| 53 | CA | 388 | G |
| 53 | CA | 389 | A |
| 53 | CA | 411 | A |
| 53 | CA | 414 | A |
| 53 | CA | 421 | U |
| 53 | CA | 423 | G |
| 53 | CA | 424 | G |
| 53 | CA | 428 | G |
| 53 | CA | 429 | U |
| 53 | CA | 430 | A |
| 53 | CA | 438 | U |
| 53 | CA | 451 | A |
| 53 | CA | 452 | A |
| 53 | CA | 453 | G |
| 53 | CA | 481 | G |
| 53 | CA | 482 | A |
| 53 | CA | 484 | G |
| 53 | CA | 486 | U |
| 53 | CA | 495 | A |
| 53 | CA | 497 | G |
| 53 | CA | 499 | A |
| 53 | CA | 500 | G |
| 53 | CA | 508 | U |
| 53 | CA | 509 | A |
| 53 | CA | 511 | C |
| 53 | CA | 512 | U |
| 53 | CA | 513 | C |
| 53 | CA | 517 | G |
| 53 | CA | 519 | C |
| 53 | CA | 520 | A |
| 53 | CA | 531 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 534 | U |
| 53 | CA | 535 | A |
| 53 | CA | 536 | C |
| 53 | CA | 547 | A |
| 53 | CA | 548 | G |
| 53 | CA | 559 | A |
| 53 | CA | 563 | A |
| 53 | CA | 564 | C |
| 53 | CA | 566 | G |
| 53 | CA | 575 | G |
| 53 | CA | 577 | G |
| 53 | CA | 595 | A |
| 53 | CA | 596 | A |
| 53 | CA | 641 | U |
| 53 | CA | 643 | C |
| 53 | CA | 652 | U |
| 53 | CA | 654 | G |
| 53 | CA | 686 | U |
| 53 | CA | 688 | G |
| 53 | CA | 701 | U |
| 53 | CA | 704 | A |
| 53 | CA | 717 | U |
| 53 | CA | 718 | A |
| 53 | CA | 721 | G |
| 53 | CA | 722 | G |
| 53 | CA | 733 | G |
| 53 | CA | 734 | G |
| 53 | CA | 753 | A |
| 53 | CA | 792 | A |
| 53 | CA | 794 | A |
| 53 | CA | 802 | A |
| 53 | CA | 815 | A |
| 53 | CA | 816 | A |
| 53 | CA | 817 | C |
| 53 | CA | 821 | G |
| 53 | CA | 870 | U |
| 53 | CA | 874 | G |
| 53 | CA | 884 | U |
| 53 | CA | 885 | G |
| 53 | CA | 889 | A |
| 53 | CA | 891 | U |
| 53 | CA | 913 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 914 | A |
| 53 | CA | 934 | C |
| 53 | CA | 935 | A |
| 53 | CA | 936 | C |
| 53 | CA | 960 | U |
| 53 | CA | 961 | U |
| 53 | CA | 962 | C |
| 53 | CA | 969 | A |
| 53 | CA | 974 | A |
| 53 | CA | 975 | A |
| 53 | CA | 977 | A |
| 53 | CA | 978 | A |
| 53 | CA | 979 | C |
| 53 | CA | 982 | U |
| 53 | CA | 983 | A |
| 53 | CA | 984 | C |
| 53 | CA | 985 | C |
| 53 | CA | 992 | U |
| 53 | CA | 995 | C |
| 53 | CA | 996 | A |
| 53 | CA | 1049 | U |
| 53 | CA | 1051 | C |
| 53 | CA | 1052 | U |
| 53 | CA | 1064 | G |
| 53 | CA | 1066 | C |
| 53 | CA | 1067 | A |
| 53 | CA | 1068 | G |
| 53 | CA | 1085 | U |
| 53 | CA | 1086 | U |
| 53 | CA | 1101 | A |
| 53 | CA | 1102 | A |
| 53 | CA | 1124 | G |
| 53 | CA | 1127 | G |
| 53 | CA | 1138 | G |
| 53 | CA | 1139 | G |
| 53 | CA | 1140 | C |
| 53 | CA | 1141 | C |
| 53 | CA | 1142 | G |
| 53 | CA | 1143 | G |
| 53 | CA | 1145 | A |
| 53 | CA | 1146 | A |
| 53 | CA | 1147 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 1148 | U |
| 53 | CA | 1151 | A |
| 53 | CA | 1152 | A |
| 53 | CA | 1157 | A |
| 53 | CA | 1158 | C |
| 53 | CA | 1160 | G |
| 53 | CA | 1161 | C |
| 53 | CA | 1167 | A |
| 53 | CA | 1168 | U |
| 53 | CA | 1184 | G |
| 53 | CA | 1190 | G |
| 53 | CA | 1191 | A |
| 53 | CA | 1200 | C |
| 53 | CA | 1201 | A |
| 53 | CA | 1202 | U |
| 53 | CA | 1215 | G |
| 53 | CA | 1217 | C |
| 53 | CA | 1227 | A |
| 53 | CA | 1229 | A |
| 53 | CA | 1244 | G |
| 53 | CA | 1278 | G |
| 53 | CA | 1282 | C |
| 53 | CA | 1283 | U |
| 53 | CA | 1285 | A |
| 53 | CA | 1287 | A |
| 53 | CA | 1288 | A |
| 53 | CA | 1298 | U |
| 53 | CA | 1299 | A |
| 53 | CA | 1301 | U |
| 53 | CA | 1331 | G |
| 53 | CA | 1345 | U |
| 53 | CA | 1348 | U |
| 53 | CA | 1349 | A |
| 53 | CA | 1366 | C |
| 53 | CA | 1367 | C |
| 53 | CA | 1380 | U |
| 53 | CA | 1381 | U |
| 53 | CA | 1394 | A |
| 53 | CA | 1395 | C |
| 53 | CA | 1396 | A |
| 53 | CA | 1397 | C |
| 53 | CA | 1398 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 53 | CA | 1399 | C |
| 53 | CA | 1447 | A |
| 53 | CA | 1449 | C |
| 53 | CA | 1452 | C |
| 53 | CA | 1453 | G |
| 53 | CA | 1454 | G |
| 53 | CA | 1455 | G |
| 53 | CA | 1498 | U |
| 53 | CA | 1499 | A |
| 53 | CA | 1502 | A |
| 53 | CA | 1505 | G |
| 53 | CA | 1507 | A |
| 53 | CA | 1528 | U |
| 53 | CA | 1530 | G |
| 57 | DA | 13 | A |
| 57 | DA | 14 | A |
| 57 | DA | 27 | G |
| 57 | DA | 28 | A |
| 57 | DA | 33 | C |
| 57 | DA | 35 | G |
| 57 | DA | 36 | G |
| 57 | DA | 49 | A |
| 57 | DA | 52 | A |
| 57 | DA | 53 | A |
| 57 | DA | 60 | G |
| 57 | DA | 61 | C |
| 57 | DA | 70 | G |
| 57 | DA | 73 | A |
| 57 | DA | 75 | G |
| 57 | DA | 76 | C |
| 57 | DA | 77 | G |
| 57 | DA | 84 | A |
| 57 | DA | 86 | G |
| 57 | DA | 87 | U |
| 57 | DA | 91 | A |
| 57 | DA | 92 | U |
| 57 | DA | 103 | A |
| 57 | DA | 104 | A |
| 57 | DA | 119 | A |
| 57 | DA | 121 | G |
| 57 | DA | 122 | G |
| 57 | DA | 125 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 128 | C |
| 57 | DA | 129 | C |
| 57 | DA | 143 | C |
| 57 | DA | 162 | U |
| 57 | DA | 163 | C |
| 57 | DA | 164 | C |
| 57 | DA | 196 | A |
| 57 | DA | 197 | A |
| 57 | DA | 204 | A |
| 57 | DA | 206 | U |
| 57 | DA | 207 | A |
| 57 | DA | 215 | G |
| 57 | DA | 217 | A |
| 57 | DA | 222 | A |
| 57 | DA | 223 | A |
| 57 | DA | 224 | U |
| 57 | DA | 227 | A |
| 57 | DA | 229 | C |
| 57 | DA | 230 | G |
| 57 | DA | 231 | A |
| 57 | DA | 232 | G |
| 57 | DA | 234 | U |
| 57 | DA | 241 | A |
| 57 | DA | 243 | U |
| 57 | DA | 244 | A |
| 57 | DA | 249 | C |
| 57 | DA | 250 | G |
| 57 | DA | 273 | G |
| 57 | DA | 301 | G |
| 57 | DA | 302 | C |
| 57 | DA | 303 | G |
| 57 | DA | 321 | U |
| 57 | DA | 324 | A |
| 57 | DA | 329 | G |
| 57 | DA | 335 | C |
| 57 | DA | 336 | C |
| 57 | DA | 370 | G |
| 57 | DA | 374 | A |
| 57 | DA | 375 | G |
| 57 | DA | 386 | G |
| 57 | DA | 388 | G |
| 57 | DA | 389 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 390 | U |
| 57 | DA | 391 | A |
| 57 | DA | 395 | U |
| 57 | DA | 396 | G |
| 57 | DA | 397 | U |
| 57 | DA | 404 | A |
| 57 | DA | 406 | G |
| 57 | DA | 407 | G |
| 57 | DA | 411 | G |
| 57 | DA | 412 | A |
| 57 | DA | 423 | A |
| 57 | DA | 424 | G |
| 57 | DA | 442 | G |
| 57 | DA | 443 | A |
| 57 | DA | 444 | C |
| 57 | DA | 445 | C |
| 57 | DA | 446 | G |
| 57 | DA | 449 | A |
| 57 | DA | 454 | A |
| 57 | DA | 459 | U |
| 57 | DA | 474 | G |
| 57 | DA | 475 | C |
| 57 | DA | 476 | G |
| 57 | DA | 477 | A |
| 57 | DA | 479 | A |
| 57 | DA | 480 | A |
| 57 | DA | 484 | C |
| 57 | DA | 489 | G |
| 57 | DA | 491 | G |
| 57 | DA | 492 | A |
| 57 | DA | 503 | A |
| 57 | DA | 505 | A |
| 57 | DA | 510 | C |
| 57 | DA | 527 | C |
| 57 | DA | 530 | G |
| 57 | DA | 532 | A |
| 57 | DA | 533 | G |
| 57 | DA | 571 | U |
| 57 | DA | 572 | A |
| 57 | DA | 573 | U |
| 57 | DA | 575 | A |
| 57 | DA | 576 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 603 | A |
| 57 | DA | 604 | G |
| 57 | DA | 605 | G |
| 57 | DA | 615 | U |
| 57 | DA | 617 | G |
| 57 | DA | 620 | G |
| 57 | DA | 621 | A |
| 57 | DA | 622 | G |
| 57 | DA | 627 | A |
| 57 | DA | 628 | G |
| 57 | DA | 637 | A |
| 57 | DA | 638 | G |
| 57 | DA | 639 | U |
| 57 | DA | 655 | A |
| 57 | DA | 656 | G |
| 57 | DA | 669 | G |
| 57 | DA | 670 | A |
| 57 | DA | 672 | C |
| 57 | DA | 685 | A |
| 57 | DA | 687 | C |
| 57 | DA | 704 | G |
| 57 | DA | 726 | G |
| 57 | DA | 727 | A |
| 57 | DA | 730 | A |
| 57 | DA | 739 | A |
| 57 | DA | 740 | C |
| 57 | DA | 762 | U |
| 57 | DA | 763 | G |
| 57 | DA | 765 | C |
| 57 | DA | 775 | G |
| 57 | DA | 777 | G |
| 57 | DA | 782 | A |
| 57 | DA | 783 | A |
| 57 | DA | 788 | A |
| 57 | DA | 794 | A |
| 57 | DA | 800 | A |
| 57 | DA | 802 | A |
| 57 | DA | 827 | U |
| 57 | DA | 828 | U |
| 57 | DA | 829 | A |
| 57 | DA | 830 | G |
| 57 | DA | 831 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 859 | G |
| 57 | DA | 860 | U |
| 57 | DA | 861 | A |
| 57 | DA | 865 | C |
| 57 | DA | 867 | C |
| 57 | DA | 868 | U |
| 57 | DA | 913 | U |
| 57 | DA | 915 | C |
| 57 | DA | 916 | G |
| 57 | DA | 931 | U |
| 57 | DA | 933 | A |
| 57 | DA | 945 | A |
| 57 | DA | 946 | C |
| 57 | DA | 947 | A |
| 57 | DA | 957 | C |
| 57 | DA | 959 | A |
| 57 | DA | 961 | C |
| 57 | DA | 962 | G |
| 57 | DA | 963 | U |
| 57 | DA | 964 | C |
| 57 | DA | 973 | A |
| 57 | DA | 975 | A |
| 57 | DA | 976 | G |
| 57 | DA | 984 | A |
| 57 | DA | 989 | G |
| 57 | DA | 990 | A |
| 57 | DA | 991 | C |
| 57 | DA | 1008 | A |
| 57 | DA | 1009 | A |
| 57 | DA | 1010 | A |
| 57 | DA | 1011 | G |
| 57 | DA | 1020 | A |
| 57 | DA | 1021 | A |
| 57 | DA | 1023 | U |
| 57 | DA | 1024 | G |
| 57 | DA | 1025 | G |
| 57 | DA | 1026 | G |
| 57 | DA | 1027 | A |
| 57 | DA | 1033 | U |
| 57 | DA | 1034 | G |
| 57 | DA | 1050 | A |
| 57 | DA | 1060 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1063 | G |
| 57 | DA | 1064 | C |
| 57 | DA | 1069 | A |
| 57 | DA | 1074 | G |
| 57 | DA | 1077 | A |
| 57 | DA | 1078 | U |
| 57 | DA | 1079 | C |
| 57 | DA | 1080 | A |
| 57 | DA | 1110 | G |
| 57 | DA | 1112 | G |
| 57 | DA | 1114 | C |
| 57 | DA | 1126 | A |
| 57 | DA | 1129 | A |
| 57 | DA | 1135 | C |
| 57 | DA | 1136 | G |
| 57 | DA | 1141 | U |
| 57 | DA | 1144 | A |
| 57 | DA | 1156 | A |
| 57 | DA | 1157 | G |
| 57 | DA | 1158 | C |
| 57 | DA | 1204 | A |
| 57 | DA | 1206 | G |
| 57 | DA | 1207 | C |
| 57 | DA | 1210 | G |
| 57 | DA | 1213 | A |
| 57 | DA | 1247 | A |
| 57 | DA | 1249 | U |
| 57 | DA | 1254 | A |
| 57 | DA | 1255 | U |
| 57 | DA | 1256 | G |
| 57 | DA | 1265 | A |
| 57 | DA | 1267 | U |
| 57 | DA | 1268 | A |
| 57 | DA | 1272 | A |
| 57 | DA | 1274 | A |
| 57 | DA | 1275 | A |
| 57 | DA | 1276 | A |
| 57 | DA | 1287 | A |
| 57 | DA | 1288 | G |
| 57 | DA | 1289 | C |
| 57 | DA | 1291 | C |
| 57 | DA | 1300 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1303 | G |
| 57 | DA | 1304 | A |
| 57 | DA | 1312 | U |
| 57 | DA | 1313 | U |
| 57 | DA | 1314 | C |
| 57 | DA | 1325 | U |
| 57 | DA | 1327 | A |
| 57 | DA | 1329 | U |
| 57 | DA | 1333 | G |
| 57 | DA | 1340 | U |
| 57 | DA | 1346 | G |
| 57 | DA | 1385 | A |
| 57 | DA | 1386 | C |
| 57 | DA | 1388 | G |
| 57 | DA | 1397 | U |
| 57 | DA | 1398 | C |
| 57 | DA | 1399 | C |
| 57 | DA | 1400 | U |
| 57 | DA | 1401 | G |
| 57 | DA | 1416 | G |
| 57 | DA | 1417 | C |
| 57 | DA | 1418 | G |
| 57 | DA | 1427 | A |
| 57 | DA | 1429 | G |
| 57 | DA | 1451 | C |
| 57 | DA | 1455 | G |
| 57 | DA | 1456 | G |
| 57 | DA | 1482 | G |
| 57 | DA | 1483 | G |
| 57 | DA | 1489 | C |
| 57 | DA | 1491 | G |
| 57 | DA | 1492 | G |
| 57 | DA | 1497 | U |
| 57 | DA | 1498 | C |
| 57 | DA | 1508 | A |
| 57 | DA | 1510 | G |
| 57 | DA | 1511 | G |
| 57 | DA | 1536 | C |
| 57 | DA | 1537 | G |
| 57 | DA | 1539 | U |
| 57 | DA | 1555 | G |
| 57 | DA | 1557 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1558 | C |
| 57 | DA | 1560 | G |
| 57 | DA | 1565 | C |
| 57 | DA | 1568 | G |
| 57 | DA | 1569 | A |
| 57 | DA | 1603 | A |
| 57 | DA | 1606 | C |
| 57 | DA | 1611 | C |
| 57 | DA | 1612 | C |
| 57 | DA | 1613 | G |
| 57 | DA | 1615 | C |
| 57 | DA | 1634 | A |
| 57 | DA | 1635 | A |
| 57 | DA | 1636 | U |
| 57 | DA | 1647 | U |
| 57 | DA | 1648 | U |
| 57 | DA | 1649 | G |
| 57 | DA | 1653 | G |
| 57 | DA | 1654 | A |
| 57 | DA | 1667 | G |
| 57 | DA | 1669 | A |
| 57 | DA | 1674 | G |
| 57 | DA | 1675 | C |
| 57 | DA | 1681 | G |
| 57 | DA | 1682 | G |
| 57 | DA | 1693 | U |
| 57 | DA | 1695 | G |
| 57 | DA | 1698 | A |
| 57 | DA | 1700 | A |
| 57 | DA | 1706 | C |
| 57 | DA | 1713 | A |
| 57 | DA | 1717 | A |
| 57 | DA | 1722 | A |
| 57 | DA | 1731 | G |
| 57 | DA | 1733 | G |
| 57 | DA | 1734 | G |
| 57 | DA | 1735 | A |
| 57 | DA | 1738 | G |
| 57 | DA | 1739 | A |
| 57 | DA | 1758 | U |
| 57 | DA | 1759 | A |
| 57 | DA | 1775 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1776 | G |
| 57 | DA | 1780 | A |
| 57 | DA | 1782 | U |
| 57 | DA | 1784 | A |
| 57 | DA | 1785 | A |
| 57 | DA | 1786 | A |
| 57 | DA | 1787 | A |
| 57 | DA | 1799 | G |
| 57 | DA | 1802 | A |
| 57 | DA | 1803 | A |
| 57 | DA | 1808 | A |
| 57 | DA | 1809 | A |
| 57 | DA | 1810 | A |
| 57 | DA | 1815 | A |
| 57 | DA | 1816 | C |
| 57 | DA | 1817 | G |
| 57 | DA | 1821 | A |
| 57 | DA | 1828 | G |
| 57 | DA | 1838 | C |
| 57 | DA | 1839 | G |
| 57 | DA | 1847 | A |
| 57 | DA | 1857 | G |
| 57 | DA | 1900 | A |
| 57 | DA | 1901 | A |
| 57 | DA | 1913 | A |
| 57 | DA | 1915 | U |
| 57 | DA | 1918 | A |
| 57 | DA | 1919 | A |
| 57 | DA | 1929 | G |
| 57 | DA | 1931 | U |
| 57 | DA | 1936 | A |
| 57 | DA | 1941 | C |
| 57 | DA | 1942 | C |
| 57 | DA | 1943 | U |
| 57 | DA | 1945 | G |
| 57 | DA | 1954 | G |
| 57 | DA | 1956 | U |
| 57 | DA | 1962 | C |
| 57 | DA | 1963 | U |
| 57 | DA | 1965 | C |
| 57 | DA | 1967 | C |
| 57 | DA | 1972 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 1980 | G |
| 57 | DA | 1981 | A |
| 57 | DA | 1982 | U |
| 57 | DA | 1992 | G |
| 57 | DA | 1993 | U |
| 57 | DA | 1996 | C |
| 57 | DA | 1997 | C |
| 57 | DA | 2021 | C |
| 57 | DA | 2023 | C |
| 57 | DA | 2024 | G |
| 57 | DA | 2030 | A |
| 57 | DA | 2034 | U |
| 57 | DA | 2036 | C |
| 57 | DA | 2051 | A |
| 57 | DA | 2060 | A |
| 57 | DA | 2061 | G |
| 57 | DA | 2063 | C |
| 57 | DA | 2067 | G |
| 57 | DA | 2068 | U |
| 57 | DA | 2069 | G |
| 57 | DA | 2092 | U |
| 57 | DA | 2094 | A |
| 57 | DA | 2133 | G |
| 57 | DA | 2135 | A |
| 57 | DA | 2136 | G |
| 57 | DA | 2143 | C |
| 57 | DA | 2148 | G |
| 57 | DA | 2149 | U |
| 57 | DA | 2150 | C |
| 57 | DA | 2199 | A |
| 57 | DA | 2210 | U |
| 57 | DA | 2214 | C |
| 57 | DA | 2216 | G |
| 57 | DA | 2225 | A |
| 57 | DA | 2226 | C |
| 57 | DA | 2238 | G |
| 57 | DA | 2239 | G |
| 57 | DA | 2249 | U |
| 57 | DA | 2258 | C |
| 57 | DA | 2259 | U |
| 57 | DA | 2266 | A |
| 57 | DA | 2267 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 2275 | C |
| 57 | DA | 2276 | G |
| 57 | DA | 2282 | G |
| 57 | DA | 2283 | C |
| 57 | DA | 2286 | G |
| 57 | DA | 2288 | A |
| 57 | DA | 2289 | G |
| 57 | DA | 2296 | U |
| 57 | DA | 2298 | A |
| 57 | DA | 2299 | U |
| 57 | DA | 2311 | A |
| 57 | DA | 2314 | A |
| 57 | DA | 2334 | U |
| 57 | DA | 2337 | G |
| 57 | DA | 2339 | C |
| 57 | DA | 2344 | U |
| 57 | DA | 2347 | C |
| 57 | DA | 2348 | U |
| 57 | DA | 2384 | U |
| 57 | DA | 2386 | A |
| 57 | DA | 2387 | U |
| 57 | DA | 2391 | G |
| 57 | DA | 2404 | U |
| 57 | DA | 2406 | A |
| 57 | DA | 2407 | A |
| 57 | DA | 2408 | U |
| 57 | DA | 2409 | G |
| 57 | DA | 2425 | A |
| 57 | DA | 2427 | C |
| 57 | DA | 2428 | G |
| 57 | DA | 2429 | G |
| 57 | DA | 2439 | A |
| 57 | DA | 2440 | C |
| 57 | DA | 2447 | G |
| 57 | DA | 2450 | A |
| 57 | DA | 2458 | G |
| 57 | DA | 2459 | A |
| 57 | DA | 2490 | G |
| 57 | DA | 2492 | U |
| 57 | DA | 2493 | U |
| 57 | DA | 2497 | A |
| 57 | DA | 2498 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 57 | DA | 2503 | A |
| 57 | DA | 2504 | U |
| 57 | DA | 2517 | C |
| 57 | DA | 2520 | C |
| 57 | DA | 2542 | A |
| 57 | DA | 2543 | G |
| 57 | DA | 2566 | A |
| 57 | DA | 2567 | G |
| 57 | DA | 2572 | A |
| 57 | DA | 2573 | C |
| 57 | DA | 2581 | G |
| 57 | DA | 2582 | G |
| 57 | DA | 2601 | C |
| 57 | DA | 2609 | U |
| 57 | DA | 2611 | C |
| 57 | DA | 2613 | U |
| 57 | DA | 2615 | U |
| 57 | DA | 2645 | G |
| 57 | DA | 2654 | A |
| 57 | DA | 2656 | U |
| 57 | DA | 2657 | A |
| 57 | DA | 2667 | C |
| 57 | DA | 2668 | G |
| 57 | DA | 2681 | C |
| 57 | DA | 2682 | A |
| 57 | DA | 2689 | U |
| 57 | DA | 2691 | C |
| 57 | DA | 2712 | C |
| 57 | DA | 2714 | G |
| 57 | DA | 2725 | A |
| 57 | DA | 2727 | A |
| 57 | DA | 2728 | U |
| 57 | DA | 2750 | A |
| 57 | DA | 2752 | C |
| 57 | DA | 2756 | U |
| 57 | DA | 2757 | A |
| 57 | DA | 2776 | A |
| 57 | DA | 2777 | G |
| 57 | DA | 2778 | A |
| 57 | DA | 2781 | A |
| 57 | DA | 2798 | U |
| 57 | DA | 2832 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 57 | DA | 2836 | U |
| 57 | DA | 2837 | A |
| 57 | DA | 2848 | G |
| 57 | DA | 2850 | A |
| 57 | DA | 2851 | A |
| 57 | DA | 2866 | U |
| 57 | DA | 2868 | A |
| 57 | DA | 2873 | A |
| 57 | DA | 2874 | C |
| 57 | DA | 2875 | C |
| 57 | DA | 2876 | G |
| 57 | DA | 2880 | C |
| 57 | DA | 2893 | A |
| 57 | DA | 2895 | G |
| 58 | DB | 12 | C |
| 58 | DB | 13 | G |
| 58 | DB | 16 | G |
| 58 | DB | 17 | C |
| 58 | DB | 40 | U |
| 58 | DB | 41 | G |
| 58 | DB | 42 | C |
| 58 | DB | 45 | A |
| 58 | DB | 56 | G |
| 58 | DB | 58 | A |
| 58 | DB | 66 | A |
| 58 | DB | 68 | C |
| 58 | DB | 88 | C |
| 58 | DB | 90 | C |
| 58 | DB | 108 | A |
| 58 | DB | 110 | C |
| 58 | DB | 111 | U |

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry

Of 365 ligands modelled in this entry, 364 are monoatomic - leaving 1 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|------|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 61 | CLM | BA | 3136 | - | 19,20,20 | 2.56 | 4 (21%) | 23,27,27 | 2.08 | 7 (30%) |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|------|------|---------|------------|---------|
| 61 | CLM | BA | 3136 | - | - | 2/20/22/22 | 0/1/1/1 |

All (4) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|--------|------|-------------|----------|
| 61 | BA | 3136 | CLM | O9B-N9 | 7.70 | 1.35 | 1.22 |
| 61 | BA | 3136 | CLM | C11-C6 | 5.42 | 1.47 | 1.39 |
| 61 | BA | 3136 | CLM | C2-N2 | 4.05 | 1.42 | 1.34 |
| 61 | BA | 3136 | CLM | C8-C9 | 2.51 | 1.43 | 1.38 |

All (7) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 61 | BA | 3136 | CLM | C3-N2-C2 | -5.07 | 114.11 | 123.07 |
| 61 | BA | 3136 | CLM | C6-C5-C3 | 4.57 | 119.68 | 111.64 |
| 61 | BA | 3136 | CLM | C4-C3-N2 | 3.04 | 114.10 | 109.27 |
| 61 | BA | 3136 | CLM | O4-C4-C3 | 3.00 | 118.37 | 111.09 |
| 61 | BA | 3136 | CLM | O5-C5-C3 | 2.64 | 115.05 | 107.99 |
| 61 | BA | 3136 | CLM | C5-C3-N2 | 2.51 | 114.80 | 110.05 |
| 61 | BA | 3136 | CLM | O9B-N9-C9 | 2.32 | 122.08 | 118.80 |

There are no chirality outliers.

All (2) torsion outliers are listed below:

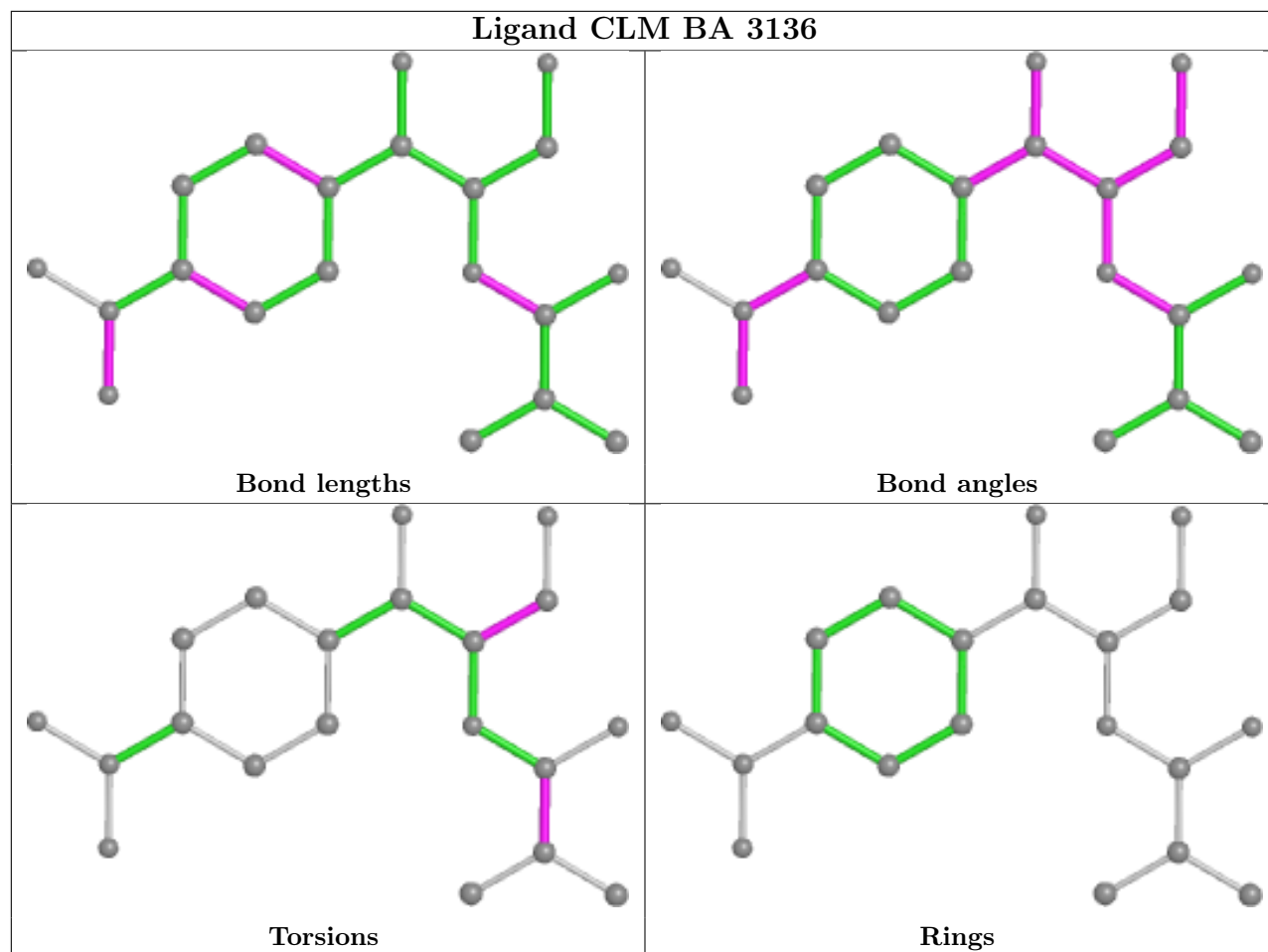
| Mol | Chain | Res | Type | Atoms |
|-----|-------|------|------|--------------|
| 61 | BA | 3136 | CLM | N2-C3-C4-O4 |
| 61 | BA | 3136 | CLM | CL2-C1-C2-N2 |

There are no ring outliers.

1 monomer is involved in 1 short contact:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 61 | BA | 3136 | CLM | 1 | 0 |

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data i

6.1 Protein, DNA and RNA chains i

In the following table, the column labelled ‘#RSRZ > 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q < 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

| Mol | Chain | Analysed | <RSRZ> | #RSRZ > 2 | OWAB(Å ²) | Q < 0.9 |
|-----|-------|------------------|--------|---------------|-----------------------|---------|
| 1 | AA | 1533/1533 (100%) | -0.64 | 16 (1%) 82 72 | 28, 82, 201, 415 | 0 |
| 2 | AB | 218/218 (100%) | 1.62 | 69 (31%) 0 0 | 117, 160, 233, 278 | 0 |
| 2 | CB | 218/218 (100%) | 1.15 | 42 (19%) 1 1 | 121, 173, 237, 292 | 0 |
| 3 | AC | 206/206 (100%) | 0.48 | 13 (6%) 20 11 | 64, 107, 164, 196 | 0 |
| 3 | CC | 206/206 (100%) | 1.04 | 27 (13%) 3 2 | 79, 158, 229, 303 | 0 |
| 4 | AD | 205/205 (100%) | -0.08 | 6 (2%) 51 36 | 45, 89, 164, 275 | 0 |
| 4 | CD | 205/205 (100%) | -0.30 | 1 (0%) 91 86 | 39, 61, 122, 254 | 0 |
| 5 | AE | 150/150 (100%) | -0.17 | 1 (0%) 87 81 | 57, 81, 142, 210 | 0 |
| 5 | CE | 150/150 (100%) | 0.33 | 3 (2%) 65 51 | 67, 99, 157, 252 | 0 |
| 6 | AF | 100/100 (100%) | 0.08 | 4 (4%) 38 25 | 55, 103, 161, 189 | 0 |
| 6 | CF | 100/100 (100%) | -0.05 | 1 (1%) 82 72 | 72, 116, 176, 217 | 0 |
| 7 | AG | 151/151 (100%) | 0.46 | 13 (8%) 10 5 | 88, 150, 218, 247 | 0 |
| 8 | AH | 129/129 (100%) | 0.14 | 7 (5%) 25 14 | 44, 82, 127, 184 | 0 |
| 8 | CH | 129/129 (100%) | 0.60 | 8 (6%) 20 11 | 68, 113, 170, 246 | 0 |
| 9 | AI | 127/127 (100%) | 0.99 | 24 (18%) 1 1 | 72, 154, 248, 287 | 0 |
| 9 | CI | 127/127 (100%) | 1.95 | 50 (39%) 0 0 | 116, 201, 289, 319 | 0 |
| 10 | AJ | 98/98 (100%) | 0.73 | 16 (16%) 1 1 | 78, 127, 203, 244 | 0 |
| 10 | CJ | 98/98 (100%) | 2.74 | 54 (55%) 0 0 | 114, 204, 278, 301 | 0 |
| 11 | AK | 117/117 (100%) | 0.81 | 15 (12%) 3 2 | 47, 117, 196, 238 | 0 |
| 11 | CK | 117/117 (100%) | 0.22 | 5 (4%) 35 22 | 68, 117, 175, 239 | 0 |
| 12 | AL | 123/123 (100%) | -0.18 | 1 (0%) 86 78 | 24, 57, 121, 180 | 0 |
| 12 | CL | 123/123 (100%) | 0.44 | 7 (5%) 23 13 | 44, 89, 144, 226 | 0 |
| 13 | AM | 114/114 (100%) | 0.63 | 15 (13%) 3 2 | 90, 158, 240, 281 | 0 |
| 14 | AN | 96/100 (96%) | 0.44 | 12 (12%) 3 2 | 76, 122, 214, 271 | 0 |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|-----------------|--------|---------------|-----------------------|-------|
| 14 | CN | 95/100 (95%) | 2.51 | 44 (46%) 0 0 | 123, 239, 369, 399 | 0 |
| 15 | AO | 88/88 (100%) | -0.42 | 0 100 100 | 40, 81, 123, 187 | 0 |
| 15 | CO | 88/88 (100%) | -0.00 | 0 100 100 | 76, 122, 190, 265 | 0 |
| 16 | AP | 82/82 (100%) | 0.47 | 8 (9%) 7 4 | 46, 79, 155, 228 | 0 |
| 17 | AQ | 80/80 (100%) | 0.38 | 6 (7%) 14 8 | 36, 79, 146, 244 | 0 |
| 17 | CQ | 80/80 (100%) | 0.96 | 10 (12%) 3 2 | 61, 112, 163, 194 | 0 |
| 18 | AR | 55/55 (100%) | 0.20 | 2 (3%) 42 27 | 60, 92, 174, 242 | 0 |
| 18 | CR | 55/55 (100%) | -0.01 | 0 100 100 | 48, 91, 159, 236 | 0 |
| 19 | AS | 79/79 (100%) | 1.23 | 22 (27%) 0 0 | 95, 156, 236, 256 | 0 |
| 19 | CS | 79/79 (100%) | 2.85 | 45 (56%) 0 0 | 206, 416, 490, 515 | 0 |
| 20 | AT | 85/85 (100%) | -0.26 | 0 100 100 | 46, 83, 124, 174 | 0 |
| 20 | CT | 85/85 (100%) | 1.06 | 17 (20%) 1 1 | 76, 142, 200, 234 | 0 |
| 21 | AU | 51/51 (100%) | 1.82 | 21 (41%) 0 0 | 91, 152, 216, 243 | 0 |
| 21 | CU | 51/51 (100%) | 0.50 | 3 (5%) 22 13 | 82, 115, 208, 290 | 0 |
| 22 | BA | 2854/2903 (98%) | -0.56 | 38 (1%) 77 65 | 7, 31, 162, 401 | 0 |
| 23 | BB | 118/118 (100%) | -0.70 | 0 100 100 | 20, 45, 78, 115 | 0 |
| 24 | BC | 271/271 (100%) | -0.37 | 5 (1%) 68 55 | 13, 41, 96, 201 | 0 |
| 24 | DC | 271/271 (100%) | 0.61 | 29 (10%) 6 3 | 45, 101, 160, 200 | 0 |
| 25 | BD | 209/209 (100%) | -0.48 | 0 100 100 | 7, 29, 80, 144 | 0 |
| 25 | DD | 209/209 (100%) | 0.92 | 37 (17%) 1 1 | 60, 123, 193, 270 | 0 |
| 26 | BE | 201/201 (100%) | -0.37 | 0 100 100 | 7, 42, 105, 189 | 0 |
| 26 | DE | 201/201 (100%) | 1.85 | 72 (35%) 0 0 | 68, 254, 429, 475 | 0 |
| 27 | BF | 177/177 (100%) | 0.03 | 5 (2%) 53 37 | 33, 78, 142, 205 | 0 |
| 28 | BG | 176/176 (100%) | -0.12 | 2 (1%) 80 69 | 23, 62, 124, 215 | 0 |
| 28 | DG | 176/176 (100%) | 2.07 | 80 (45%) 0 0 | 79, 207, 297, 363 | 0 |
| 29 | BH | 149/149 (100%) | 3.00 | 61 (40%) 0 0 | 41, 178, 274, 301 | 0 |
| 29 | DH | 149/149 (100%) | 2.64 | 63 (42%) 0 0 | 93, 182, 270, 305 | 0 |
| 30 | BI | 141/141 (100%) | 2.33 | 64 (45%) 0 0 | 171, 257, 316, 355 | 0 |
| 30 | DI | 141/141 (100%) | 3.92 | 101 (71%) 0 0 | 227, 344, 382, 400 | 0 |
| 31 | BJ | 142/142 (100%) | -0.55 | 0 100 100 | 9, 23, 68, 127 | 0 |
| 31 | DJ | 142/142 (100%) | 0.62 | 15 (10%) 6 3 | 63, 122, 184, 223 | 0 |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|----------------|--------|--------------|-----------------------|-------|
| 32 | BK | 122/122 (100%) | -0.51 | 0 100 100 | 14, 31, 84, 254 | 0 |
| 32 | DK | 122/122 (100%) | 0.78 | 18 (14%) 2 1 | 57, 106, 172, 204 | 0 |
| 33 | BL | 143/143 (100%) | -0.53 | 0 100 100 | 9, 37, 80, 126 | 0 |
| 33 | DL | 143/143 (100%) | 1.53 | 45 (31%) 0 0 | 68, 176, 296, 329 | 0 |
| 34 | BM | 136/136 (100%) | -0.56 | 0 100 100 | 9, 29, 71, 133 | 0 |
| 34 | DM | 136/136 (100%) | 0.84 | 19 (13%) 2 1 | 47, 126, 187, 223 | 0 |
| 35 | BN | 120/120 (100%) | -0.55 | 0 100 100 | 10, 25, 48, 123 | 0 |
| 35 | DN | 120/120 (100%) | 1.56 | 42 (35%) 0 0 | 90, 149, 231, 305 | 0 |
| 36 | BO | 116/116 (100%) | -0.33 | 0 100 100 | 28, 49, 93, 126 | 0 |
| 36 | DO | 116/116 (100%) | 1.51 | 35 (30%) 0 0 | 132, 176, 238, 280 | 0 |
| 37 | BP | 114/114 (100%) | -0.37 | 1 (0%) 84 75 | 17, 39, 95, 184 | 0 |
| 37 | DP | 114/114 (100%) | 1.07 | 22 (19%) 1 1 | 63, 122, 187, 204 | 0 |
| 38 | BQ | 117/117 (100%) | -0.64 | 0 100 100 | 7, 20, 46, 100 | 0 |
| 38 | DQ | 117/117 (100%) | 0.99 | 21 (17%) 1 1 | 78, 127, 221, 298 | 0 |
| 39 | BR | 103/103 (100%) | -0.51 | 1 (0%) 82 72 | 7, 34, 78, 139 | 0 |
| 39 | DR | 103/103 (100%) | 2.41 | 50 (48%) 0 0 | 80, 157, 275, 306 | 0 |
| 40 | BS | 110/110 (100%) | -0.58 | 0 100 100 | 8, 23, 56, 172 | 0 |
| 40 | DS | 110/110 (100%) | 1.70 | 40 (36%) 0 0 | 69, 142, 254, 323 | 0 |
| 41 | BT | 93/93 (100%) | -0.12 | 2 (2%) 62 48 | 22, 53, 135, 194 | 0 |
| 41 | DT | 93/93 (100%) | 2.14 | 38 (40%) 0 0 | 125, 241, 359, 398 | 0 |
| 42 | BU | 102/102 (100%) | -0.11 | 1 (0%) 82 72 | 22, 54, 111, 237 | 0 |
| 42 | DU | 102/102 (100%) | 3.84 | 64 (62%) 0 0 | 135, 334, 460, 561 | 0 |
| 43 | BV | 94/94 (100%) | -0.30 | 0 100 100 | 18, 47, 89, 149 | 0 |
| 43 | DV | 94/94 (100%) | 1.09 | 20 (21%) 0 1 | 109, 156, 208, 233 | 0 |
| 44 | BW | 79/79 (100%) | -0.19 | 2 (2%) 57 43 | 13, 36, 90, 194 | 0 |
| 44 | DW | 79/79 (100%) | 2.00 | 35 (44%) 0 0 | 99, 166, 250, 315 | 0 |
| 45 | BX | 77/77 (100%) | -0.43 | 0 100 100 | 17, 42, 87, 113 | 0 |
| 45 | DX | 77/77 (100%) | 0.78 | 12 (15%) 2 1 | 72, 122, 190, 222 | 0 |
| 46 | BY | 63/63 (100%) | -0.18 | 1 (1%) 72 59 | 34, 73, 121, 155 | 0 |
| 46 | DY | 63/63 (100%) | 1.65 | 20 (31%) 0 0 | 159, 374, 464, 494 | 0 |
| 47 | BZ | 58/58 (100%) | -0.55 | 0 100 100 | 7, 26, 61, 84 | 0 |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|-------------------|--------|----------------|-----------------------|-------|
| 47 | DZ | 58/58 (100%) | 0.60 | 5 (8%) 10 5 | 80, 142, 228, 257 | 0 |
| 48 | B0 | 56/56 (100%) | -0.71 | 0 100 100 | 6, 26, 80, 127 | 0 |
| 48 | D0 | 56/56 (100%) | 1.28 | 12 (21%) 0 1 | 75, 148, 244, 284 | 0 |
| 49 | B1 | 50/50 (100%) | 0.72 | 3 (6%) 21 12 | 42, 66, 121, 173 | 0 |
| 49 | D1 | 50/50 (100%) | 2.09 | 24 (48%) 0 0 | 114, 179, 216, 264 | 0 |
| 50 | B2 | 46/46 (100%) | -0.60 | 0 100 100 | 11, 27, 56, 164 | 0 |
| 50 | D2 | 46/46 (100%) | 1.27 | 9 (19%) 1 1 | 79, 130, 179, 205 | 0 |
| 51 | B3 | 64/64 (100%) | -0.59 | 0 100 100 | 11, 29, 53, 81 | 0 |
| 51 | D3 | 64/64 (100%) | 1.69 | 24 (37%) 0 0 | 85, 145, 232, 281 | 0 |
| 52 | B4 | 38/38 (100%) | 0.17 | 1 (2%) 56 40 | 29, 53, 95, 103 | 0 |
| 52 | D4 | 38/38 (100%) | 2.60 | 24 (63%) 0 0 | 87, 165, 229, 248 | 0 |
| 53 | CA | 1530/1530 (100%) | -0.10 | 38 (2%) 57 43 | 43, 110, 301, 420 | 0 |
| 54 | CG | 150/150 (100%) | 2.22 | 70 (46%) 0 0 | 101, 233, 303, 344 | 0 |
| 55 | CM | 113/113 (100%) | 2.49 | 63 (55%) 0 0 | 226, 447, 522, 562 | 0 |
| 56 | CP | 80/80 (100%) | 0.92 | 16 (20%) 1 1 | 49, 105, 165, 226 | 0 |
| 57 | DA | 2841/2904 (97%) | 0.17 | 82 (2%) 51 36 | 51, 132, 279, 491 | 0 |
| 58 | DB | 117/117 (100%) | -0.23 | 0 100 100 | 107, 180, 240, 264 | 0 |
| 59 | DF | 178/178 (100%) | 2.38 | 101 (56%) 0 0 | 175, 239, 286, 345 | 0 |
| All | All | 20431/20552 (99%) | 0.31 | 2121 (10%) 6 4 | 6, 103, 285, 562 | 0 |

All (2121) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 29 | DH | 92 | GLY | 21.7 |
| 14 | CN | 33 | VAL | 20.2 |
| 29 | DH | 124 | THR | 20.0 |
| 30 | DI | 51 | GLY | 19.6 |
| 29 | DH | 91 | PHE | 17.2 |
| 42 | DU | 74 | ALA | 16.6 |
| 14 | CN | 34 | ASN | 16.0 |
| 55 | CM | 93 | GLY | 15.9 |
| 29 | BH | 86 | ASP | 15.5 |
| 29 | BH | 122 | LEU | 15.3 |
| 29 | BH | 92 | GLY | 15.1 |
| 30 | DI | 50 | LYS | 15.0 |
| 29 | BH | 91 | PHE | 14.5 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 29 | BH | 90 | LEU | 14.3 |
| 42 | DU | 97 | SER | 13.7 |
| 28 | DG | 7 | PRO | 12.7 |
| 29 | DH | 123 | ARG | 12.3 |
| 42 | DU | 75 | ALA | 12.3 |
| 29 | BH | 84 | ALA | 12.2 |
| 17 | AQ | 82 | VAL | 12.2 |
| 42 | DU | 12 | VAL | 11.9 |
| 30 | DI | 4 | VAL | 11.8 |
| 42 | DU | 87 | GLU | 11.8 |
| 42 | DU | 76 | THR | 11.7 |
| 42 | DU | 86 | PHE | 11.5 |
| 42 | DU | 35 | VAL | 11.4 |
| 59 | DF | 129 | MET | 11.3 |
| 10 | CJ | 8 | ILE | 11.1 |
| 59 | DF | 141 | ASP | 11.1 |
| 29 | BH | 118 | PRO | 11.1 |
| 30 | BI | 52 | LEU | 11.0 |
| 16 | AP | 81 | ALA | 10.9 |
| 29 | BH | 93 | SER | 10.9 |
| 30 | DI | 17 | ALA | 10.9 |
| 30 | BI | 46 | ASP | 10.8 |
| 29 | BH | 117 | LEU | 10.7 |
| 29 | BH | 123 | ARG | 10.7 |
| 14 | CN | 52 | ARG | 10.6 |
| 41 | DT | 55 | VAL | 10.6 |
| 29 | DH | 93 | SER | 10.5 |
| 29 | BH | 85 | GLY | 10.3 |
| 19 | CS | 29 | PRO | 9.9 |
| 46 | DY | 63 | ALA | 9.9 |
| 55 | CM | 94 | LEU | 9.8 |
| 19 | CS | 60 | PHE | 9.6 |
| 41 | DT | 15 | HIS | 9.6 |
| 19 | CS | 28 | LYS | 9.6 |
| 19 | CS | 23 | GLU | 9.5 |
| 29 | DH | 105 | ALA | 9.5 |
| 42 | DU | 85 | ARG | 9.4 |
| 39 | DR | 50 | GLY | 9.4 |
| 29 | BH | 87 | GLU | 9.4 |
| 30 | DI | 93 | ASN | 9.4 |
| 38 | DQ | 81 | GLY | 9.2 |
| 14 | CN | 49 | THR | 9.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 51 | D3 | 20 | GLY | 9.1 |
| 54 | CG | 71 | THR | 9.1 |
| 29 | DH | 131 | SER | 9.1 |
| 22 | BA | 2154 | A | 9.1 |
| 26 | DE | 144 | GLU | 9.0 |
| 29 | BH | 105 | ALA | 9.0 |
| 30 | DI | 15 | GLY | 8.9 |
| 14 | CN | 32 | ASP | 8.9 |
| 29 | BH | 148 | ALA | 8.9 |
| 42 | DU | 88 | ASP | 8.9 |
| 39 | DR | 26 | ASP | 8.8 |
| 30 | DI | 56 | VAL | 8.8 |
| 57 | DA | 613 | A | 8.8 |
| 9 | CI | 66 | VAL | 8.8 |
| 42 | DU | 42 | LYS | 8.7 |
| 28 | DG | 83 | THR | 8.7 |
| 30 | DI | 5 | GLN | 8.7 |
| 35 | DN | 63 | ARG | 8.7 |
| 29 | BH | 143 | ILE | 8.6 |
| 30 | DI | 83 | ALA | 8.6 |
| 19 | CS | 25 | GLY | 8.5 |
| 29 | BH | 88 | GLY | 8.4 |
| 39 | DR | 96 | VAL | 8.4 |
| 46 | DY | 62 | GLY | 8.4 |
| 30 | DI | 95 | ASP | 8.4 |
| 19 | CS | 73 | PHE | 8.4 |
| 9 | CI | 42 | THR | 8.4 |
| 54 | CG | 70 | PRO | 8.3 |
| 29 | BH | 126 | GLY | 8.3 |
| 29 | DH | 121 | VAL | 8.3 |
| 29 | DH | 119 | ASN | 8.2 |
| 10 | CJ | 72 | ARG | 8.2 |
| 22 | BA | 2179 | C | 8.1 |
| 29 | BH | 128 | HIS | 8.0 |
| 53 | CA | 209 | U | 8.0 |
| 29 | BH | 146 | VAL | 8.0 |
| 29 | DH | 86 | ASP | 8.0 |
| 30 | DI | 18 | ASN | 8.0 |
| 30 | DI | 58 | ILE | 8.0 |
| 29 | BH | 145 | ASN | 8.0 |
| 59 | DF | 83 | PRO | 8.0 |
| 30 | DI | 121 | ILE | 7.9 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 30 | DI | 57 | VAL | 7.9 |
| 46 | DY | 35 | GLY | 7.9 |
| 39 | DR | 22 | LEU | 7.8 |
| 54 | CG | 65 | LEU | 7.8 |
| 42 | DU | 73 | ASN | 7.7 |
| 30 | DI | 72 | THR | 7.7 |
| 29 | BH | 125 | THR | 7.7 |
| 39 | DR | 27 | ILE | 7.7 |
| 30 | DI | 66 | PHE | 7.7 |
| 10 | CJ | 74 | VAL | 7.7 |
| 42 | DU | 2 | ALA | 7.7 |
| 26 | DE | 175 | ILE | 7.7 |
| 54 | CG | 95 | ARG | 7.6 |
| 36 | DO | 61 | GLN | 7.6 |
| 16 | AP | 82 | ALA | 7.6 |
| 9 | AI | 42 | THR | 7.6 |
| 29 | BH | 134 | VAL | 7.6 |
| 29 | DH | 143 | ILE | 7.6 |
| 29 | BH | 74 | ALA | 7.5 |
| 30 | DI | 55 | PRO | 7.5 |
| 29 | DH | 85 | GLY | 7.5 |
| 51 | D3 | 21 | PHE | 7.5 |
| 33 | DL | 82 | LEU | 7.5 |
| 29 | DH | 146 | VAL | 7.4 |
| 26 | DE | 164 | LEU | 7.4 |
| 29 | DH | 133 | GLN | 7.4 |
| 16 | AP | 80 | LYS | 7.4 |
| 30 | BI | 2 | LYS | 7.4 |
| 9 | CI | 127 | SER | 7.4 |
| 29 | DH | 87 | GLU | 7.4 |
| 9 | AI | 89 | TYR | 7.4 |
| 29 | BH | 89 | LYS | 7.3 |
| 39 | DR | 20 | VAL | 7.3 |
| 54 | CG | 72 | VAL | 7.3 |
| 29 | DH | 112 | LYS | 7.3 |
| 22 | BA | 2143 | C | 7.3 |
| 55 | CM | 108 | ARG | 7.3 |
| 39 | DR | 52 | PRO | 7.2 |
| 54 | CG | 150 | PHE | 7.2 |
| 30 | BI | 13 | ALA | 7.2 |
| 54 | CG | 151 | ALA | 7.2 |
| 30 | DI | 2 | LYS | 7.2 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 10 | CJ | 76 | ILE | 7.2 |
| 41 | DT | 43 | ILE | 7.2 |
| 22 | BA | 2147 | A | 7.2 |
| 49 | D1 | 35 | LEU | 7.2 |
| 53 | CA | 461 | A | 7.2 |
| 29 | BH | 147 | VAL | 7.2 |
| 28 | DG | 104 | LEU | 7.1 |
| 57 | DA | 1536 | C | 7.1 |
| 29 | BH | 79 | THR | 7.1 |
| 29 | DH | 125 | THR | 7.1 |
| 29 | BH | 71 | LYS | 7.1 |
| 30 | DI | 138 | VAL | 7.1 |
| 37 | DP | 109 | ILE | 7.1 |
| 40 | DS | 70 | LYS | 7.0 |
| 29 | DH | 82 | SER | 7.0 |
| 29 | DH | 88 | GLY | 7.0 |
| 57 | DA | 139 | U | 7.0 |
| 26 | DE | 180 | LEU | 7.0 |
| 54 | CG | 102 | TRP | 7.0 |
| 36 | DO | 62 | LEU | 7.0 |
| 30 | BI | 139 | VAL | 7.0 |
| 55 | CM | 46 | GLU | 7.0 |
| 9 | CI | 65 | THR | 7.0 |
| 29 | BH | 98 | ASP | 7.0 |
| 30 | BI | 67 | THR | 7.0 |
| 26 | DE | 190 | ALA | 6.9 |
| 41 | DT | 72 | GLN | 6.9 |
| 26 | DE | 24 | ASN | 6.9 |
| 39 | DR | 103 | ALA | 6.9 |
| 29 | BH | 124 | THR | 6.9 |
| 41 | DT | 16 | VAL | 6.9 |
| 30 | DI | 21 | PRO | 6.9 |
| 9 | CI | 57 | VAL | 6.9 |
| 26 | DE | 171 | ASP | 6.9 |
| 57 | DA | 2157 | G | 6.9 |
| 30 | DI | 22 | PRO | 6.8 |
| 48 | D0 | 56 | LYS | 6.8 |
| 42 | DU | 34 | ILE | 6.8 |
| 29 | BH | 73 | ASN | 6.8 |
| 12 | CL | 123 | ALA | 6.8 |
| 59 | DF | 155 | ILE | 6.7 |
| 28 | DG | 51 | PHE | 6.7 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 30 | DI | 12 | VAL | 6.7 |
| 38 | DQ | 36 | GLN | 6.7 |
| 29 | BH | 113 | SER | 6.7 |
| 57 | DA | 2146 | C | 6.7 |
| 22 | BA | 2180 | U | 6.7 |
| 54 | CG | 58 | LEU | 6.6 |
| 26 | DE | 119 | ILE | 6.6 |
| 29 | DH | 90 | LEU | 6.6 |
| 52 | D4 | 10 | LEU | 6.6 |
| 28 | DG | 8 | VAL | 6.6 |
| 54 | CG | 87 | PRO | 6.6 |
| 28 | DG | 32 | LEU | 6.6 |
| 30 | DI | 16 | MET | 6.6 |
| 30 | DI | 60 | VAL | 6.5 |
| 57 | DA | 1537 | G | 6.5 |
| 10 | CJ | 7 | ARG | 6.5 |
| 36 | DO | 60 | GLU | 6.5 |
| 29 | DH | 144 | VAL | 6.5 |
| 19 | CS | 26 | ASP | 6.5 |
| 30 | BI | 66 | PHE | 6.5 |
| 29 | BH | 80 | ILE | 6.4 |
| 40 | DS | 110 | ARG | 6.4 |
| 30 | DI | 119 | ALA | 6.4 |
| 10 | CJ | 99 | GLN | 6.4 |
| 55 | CM | 63 | VAL | 6.4 |
| 52 | D4 | 38 | GLY | 6.4 |
| 59 | DF | 39 | VAL | 6.4 |
| 9 | CI | 15 | ALA | 6.4 |
| 10 | CJ | 75 | ASP | 6.4 |
| 44 | DW | 52 | CYS | 6.4 |
| 30 | DI | 59 | THR | 6.3 |
| 22 | BA | 138 | U | 6.3 |
| 30 | DI | 140 | GLU | 6.3 |
| 29 | DH | 89 | LYS | 6.3 |
| 35 | DN | 75 | ILE | 6.3 |
| 28 | DG | 101 | VAL | 6.3 |
| 30 | BI | 11 | GLN | 6.3 |
| 29 | DH | 145 | ASN | 6.3 |
| 54 | CG | 64 | ALA | 6.3 |
| 10 | CJ | 73 | LEU | 6.3 |
| 59 | DF | 105 | ILE | 6.2 |
| 26 | DE | 186 | VAL | 6.2 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 54 | CG | 7 | GLY | 6.2 |
| 2 | AB | 51 | GLU | 6.2 |
| 57 | DA | 1535 | A | 6.2 |
| 22 | BA | 2146 | C | 6.2 |
| 53 | CA | 210 | C | 6.2 |
| 53 | CA | 1224 | U | 6.2 |
| 10 | CJ | 77 | VAL | 6.1 |
| 48 | D0 | 36 | LYS | 6.1 |
| 42 | DU | 13 | LEU | 6.1 |
| 54 | CG | 61 | PHE | 6.1 |
| 30 | DI | 123 | ALA | 6.1 |
| 25 | DD | 91 | THR | 6.1 |
| 28 | DG | 165 | ASP | 6.1 |
| 42 | DU | 11 | ILE | 6.1 |
| 42 | DU | 41 | VAL | 6.1 |
| 59 | DF | 9 | ASP | 6.1 |
| 10 | CJ | 91 | ASP | 6.0 |
| 42 | DU | 4 | ILE | 6.0 |
| 41 | DT | 83 | ALA | 6.0 |
| 9 | CI | 4 | GLN | 6.0 |
| 55 | CM | 42 | VAL | 6.0 |
| 44 | DW | 29 | SER | 6.0 |
| 59 | DF | 153 | ILE | 6.0 |
| 19 | CS | 36 | ARG | 6.0 |
| 39 | DR | 63 | VAL | 6.0 |
| 57 | DA | 2799 | A | 6.0 |
| 26 | DE | 147 | LEU | 6.0 |
| 29 | DH | 147 | VAL | 6.0 |
| 26 | DE | 172 | ALA | 6.0 |
| 26 | DE | 122 | GLU | 6.0 |
| 14 | CN | 40 | ARG | 6.0 |
| 19 | CS | 11 | ASP | 6.0 |
| 9 | CI | 39 | GLY | 5.9 |
| 30 | DI | 68 | PHE | 5.9 |
| 41 | DT | 2 | ILE | 5.9 |
| 10 | CJ | 10 | LEU | 5.9 |
| 44 | DW | 34 | SER | 5.9 |
| 29 | DH | 127 | GLU | 5.9 |
| 22 | BA | 139 | U | 5.9 |
| 2 | AB | 73 | ARG | 5.9 |
| 22 | BA | 2110 | G | 5.9 |
| 54 | CG | 15 | PRO | 5.9 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 59 | DF | 131 | VAL | 5.9 |
| 19 | CS | 30 | LEU | 5.8 |
| 30 | DI | 61 | TYR | 5.8 |
| 26 | DE | 143 | LEU | 5.8 |
| 10 | CJ | 34 | ALA | 5.8 |
| 51 | D3 | 9 | ALA | 5.8 |
| 42 | DU | 78 | LYS | 5.8 |
| 54 | CG | 73 | GLU | 5.8 |
| 2 | AB | 220 | VAL | 5.8 |
| 33 | DL | 92 | LEU | 5.8 |
| 2 | AB | 26 | MET | 5.8 |
| 30 | DI | 48 | ILE | 5.8 |
| 59 | DF | 94 | ARG | 5.8 |
| 54 | CG | 143 | MET | 5.7 |
| 42 | DU | 77 | GLY | 5.7 |
| 29 | BH | 81 | ALA | 5.7 |
| 14 | CN | 25 | GLU | 5.7 |
| 52 | D4 | 1 | MET | 5.7 |
| 37 | DP | 73 | PHE | 5.7 |
| 10 | CJ | 6 | ILE | 5.7 |
| 29 | DH | 128 | HIS | 5.7 |
| 46 | DY | 36 | GLN | 5.7 |
| 59 | DF | 150 | GLY | 5.7 |
| 29 | DH | 120 | GLY | 5.6 |
| 40 | DS | 94 | ASP | 5.6 |
| 59 | DF | 24 | VAL | 5.6 |
| 10 | CJ | 40 | ILE | 5.6 |
| 10 | CJ | 71 | LEU | 5.6 |
| 19 | CS | 59 | VAL | 5.6 |
| 10 | CJ | 100 | ILE | 5.6 |
| 56 | CP | 47 | GLU | 5.6 |
| 30 | BI | 86 | LYS | 5.6 |
| 29 | DH | 122 | LEU | 5.5 |
| 9 | AI | 129 | ARG | 5.5 |
| 30 | DI | 52 | LEU | 5.5 |
| 9 | AI | 128 | LYS | 5.5 |
| 10 | CJ | 39 | PRO | 5.5 |
| 40 | DS | 32 | ALA | 5.5 |
| 28 | DG | 56 | GLY | 5.5 |
| 54 | CG | 136 | LYS | 5.5 |
| 42 | DU | 70 | ALA | 5.5 |
| 41 | DT | 42 | GLU | 5.5 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 22 | BA | 2149 | U | 5.5 |
| 28 | DG | 72 | ASN | 5.4 |
| 55 | CM | 62 | PHE | 5.4 |
| 57 | DA | 228 | C | 5.4 |
| 52 | D4 | 8 | LYS | 5.4 |
| 33 | DL | 5 | THR | 5.4 |
| 54 | CG | 75 | LYS | 5.4 |
| 30 | DI | 120 | ASP | 5.4 |
| 57 | DA | 1075 | C | 5.4 |
| 30 | BI | 141 | ASP | 5.4 |
| 49 | D1 | 46 | VAL | 5.3 |
| 14 | CN | 48 | GLN | 5.3 |
| 33 | DL | 122 | VAL | 5.3 |
| 9 | CI | 16 | ALA | 5.3 |
| 46 | DY | 13 | GLU | 5.3 |
| 30 | DI | 62 | ALA | 5.3 |
| 22 | BA | 546 | U | 5.3 |
| 9 | CI | 63 | TYR | 5.3 |
| 2 | AB | 64 | GLY | 5.3 |
| 42 | DU | 19 | GLY | 5.3 |
| 55 | CM | 109 | LYS | 5.3 |
| 30 | BI | 132 | ALA | 5.3 |
| 4 | AD | 35 | GLN | 5.3 |
| 42 | DU | 59 | GLU | 5.3 |
| 30 | BI | 78 | LEU | 5.3 |
| 57 | DA | 1175 | A | 5.3 |
| 29 | BH | 119 | ASN | 5.3 |
| 22 | BA | 2138 | G | 5.3 |
| 19 | CS | 70 | LEU | 5.3 |
| 28 | DG | 102 | ILE | 5.3 |
| 40 | DS | 5 | ALA | 5.3 |
| 10 | CJ | 11 | LYS | 5.2 |
| 59 | DF | 152 | ASP | 5.2 |
| 29 | BH | 149 | GLU | 5.2 |
| 29 | DH | 129 | GLU | 5.2 |
| 33 | DL | 142 | ILE | 5.2 |
| 54 | CG | 54 | GLY | 5.2 |
| 26 | DE | 187 | VAL | 5.2 |
| 42 | DU | 50 | ALA | 5.2 |
| 19 | CS | 37 | SER | 5.2 |
| 30 | BI | 22 | PRO | 5.2 |
| 32 | DK | 110 | GLU | 5.2 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 40 | DS | 26 | GLY | 5.2 |
| 29 | BH | 130 | VAL | 5.2 |
| 30 | DI | 14 | ALA | 5.2 |
| 28 | DG | 33 | THR | 5.1 |
| 54 | CG | 38 | ALA | 5.1 |
| 56 | CP | 52 | LEU | 5.1 |
| 40 | DS | 4 | ILE | 5.1 |
| 36 | DO | 103 | VAL | 5.1 |
| 21 | AU | 22 | CYS | 5.1 |
| 36 | DO | 65 | THR | 5.1 |
| 54 | CG | 18 | GLY | 5.1 |
| 3 | CC | 108 | PRO | 5.1 |
| 19 | CS | 58 | PRO | 5.1 |
| 39 | DR | 87 | GLN | 5.1 |
| 30 | DI | 43 | ALA | 5.1 |
| 42 | DU | 5 | ARG | 5.1 |
| 2 | AB | 150 | ILE | 5.1 |
| 2 | CB | 110 | ILE | 5.1 |
| 29 | BH | 144 | VAL | 5.1 |
| 30 | DI | 65 | SER | 5.1 |
| 41 | DT | 35 | ALA | 5.1 |
| 33 | DL | 107 | PHE | 5.1 |
| 51 | D3 | 50 | SER | 5.1 |
| 55 | CM | 111 | PRO | 5.1 |
| 42 | DU | 51 | LEU | 5.1 |
| 30 | BI | 21 | PRO | 5.1 |
| 35 | DN | 78 | LYS | 5.1 |
| 47 | DZ | 1 | ALA | 5.1 |
| 51 | D3 | 22 | LYS | 5.1 |
| 19 | CS | 27 | LYS | 5.1 |
| 22 | BA | 1175 | A | 5.0 |
| 24 | DC | 232 | GLY | 5.1 |
| 14 | CN | 19 | TYR | 5.0 |
| 54 | CG | 90 | VAL | 5.0 |
| 37 | DP | 37 | LYS | 5.0 |
| 10 | AJ | 102 | LEU | 5.0 |
| 41 | DT | 65 | GLY | 5.0 |
| 30 | DI | 67 | THR | 5.0 |
| 30 | DI | 97 | VAL | 5.0 |
| 57 | DA | 1067 | A | 5.0 |
| 2 | AB | 135 | MET | 5.0 |
| 19 | CS | 65 | MET | 5.0 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 42 | DU | 72 | PHE | 5.0 |
| 26 | DE | 121 | VAL | 5.0 |
| 29 | DH | 142 | VAL | 5.0 |
| 19 | CS | 47 | THR | 5.0 |
| 55 | CM | 67 | ASP | 5.0 |
| 59 | DF | 10 | GLU | 5.0 |
| 57 | DA | 1078 | U | 5.0 |
| 8 | CH | 129 | ALA | 5.0 |
| 54 | CG | 55 | LYS | 5.0 |
| 54 | CG | 48 | THR | 5.0 |
| 14 | CN | 16 | ALA | 5.0 |
| 13 | AM | 42 | VAL | 5.0 |
| 46 | DY | 29 | ARG | 4.9 |
| 3 | CC | 195 | ILE | 4.9 |
| 25 | DD | 10 | GLY | 4.9 |
| 49 | D1 | 34 | GLU | 4.9 |
| 2 | AB | 50 | ASN | 4.9 |
| 26 | DE | 201 | ALA | 4.9 |
| 26 | DE | 198 | GLU | 4.9 |
| 9 | CI | 128 | LYS | 4.9 |
| 10 | CJ | 26 | VAL | 4.9 |
| 55 | CM | 97 | ARG | 4.9 |
| 30 | BI | 12 | VAL | 4.9 |
| 54 | CG | 69 | ARG | 4.9 |
| 24 | DC | 240 | GLY | 4.9 |
| 30 | DI | 23 | VAL | 4.9 |
| 2 | AB | 59 | ILE | 4.9 |
| 43 | DV | 94 | ALA | 4.9 |
| 28 | DG | 79 | THR | 4.9 |
| 46 | DY | 37 | LEU | 4.9 |
| 54 | CG | 44 | SER | 4.9 |
| 26 | DE | 127 | GLU | 4.9 |
| 30 | BI | 77 | VAL | 4.9 |
| 34 | DM | 135 | VAL | 4.9 |
| 26 | DE | 25 | GLU | 4.9 |
| 18 | AR | 19 | GLU | 4.8 |
| 48 | D0 | 34 | GLY | 4.8 |
| 10 | CJ | 41 | PRO | 4.8 |
| 3 | AC | 64 | ARG | 4.8 |
| 43 | DV | 69 | GLU | 4.8 |
| 14 | CN | 61 | ASN | 4.8 |
| 19 | CS | 79 | TYR | 4.8 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 9 | AI | 31 | GLN | 4.8 |
| 2 | AB | 66 | ILE | 4.8 |
| 30 | DI | 98 | GLY | 4.8 |
| 41 | DT | 71 | GLY | 4.8 |
| 17 | CQ | 7 | LEU | 4.8 |
| 30 | DI | 46 | ASP | 4.8 |
| 46 | DY | 31 | GLN | 4.8 |
| 30 | BI | 16 | MET | 4.8 |
| 39 | DR | 55 | ASP | 4.8 |
| 2 | CB | 129 | THR | 4.8 |
| 55 | CM | 59 | VAL | 4.8 |
| 35 | DN | 113 | ILE | 4.8 |
| 33 | DL | 101 | ILE | 4.7 |
| 30 | DI | 141 | ASP | 4.7 |
| 39 | DR | 88 | GLY | 4.7 |
| 1 | AA | 86 | G | 4.7 |
| 42 | DU | 28 | LEU | 4.7 |
| 43 | DV | 42 | LEU | 4.7 |
| 30 | DI | 41 | PHE | 4.7 |
| 29 | DH | 126 | GLY | 4.7 |
| 9 | CI | 3 | ASN | 4.7 |
| 30 | BI | 33 | ASN | 4.7 |
| 59 | DF | 51 | ASN | 4.7 |
| 41 | DT | 56 | GLU | 4.7 |
| 57 | DA | 137 | U | 4.7 |
| 57 | DA | 846 | U | 4.7 |
| 10 | AJ | 63 | ASP | 4.7 |
| 28 | DG | 1 | SER | 4.7 |
| 29 | DH | 141 | LYS | 4.7 |
| 55 | CM | 76 | ILE | 4.7 |
| 2 | AB | 45 | THR | 4.7 |
| 53 | CA | 211 | G | 4.7 |
| 54 | CG | 76 | SER | 4.7 |
| 29 | BH | 116 | ARG | 4.7 |
| 19 | AS | 38 | THR | 4.7 |
| 29 | BH | 70 | GLU | 4.7 |
| 22 | BA | 2145 | C | 4.7 |
| 10 | CJ | 80 | THR | 4.6 |
| 19 | CS | 80 | ARG | 4.6 |
| 55 | CM | 92 | ARG | 4.6 |
| 17 | CQ | 6 | THR | 4.6 |
| 55 | CM | 110 | GLY | 4.6 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 59 | DF | 41 | GLU | 4.6 |
| 41 | DT | 36 | LYS | 4.6 |
| 33 | DL | 88 | GLY | 4.6 |
| 25 | DD | 95 | SER | 4.6 |
| 25 | DD | 96 | ILE | 4.6 |
| 30 | DI | 109 | ALA | 4.6 |
| 26 | DE | 177 | PRO | 4.6 |
| 10 | CJ | 65 | TYR | 4.6 |
| 55 | CM | 112 | ARG | 4.6 |
| 28 | DG | 84 | LYS | 4.6 |
| 22 | BA | 2150 | C | 4.6 |
| 26 | DE | 42 | GLY | 4.6 |
| 53 | CA | 1534 | A | 4.6 |
| 3 | CC | 194 | VAL | 4.6 |
| 26 | DE | 188 | MET | 4.6 |
| 29 | BH | 112 | LYS | 4.6 |
| 33 | DL | 106 | GLU | 4.6 |
| 42 | DU | 26 | ASN | 4.6 |
| 14 | CN | 62 | ARG | 4.6 |
| 46 | DY | 14 | LEU | 4.6 |
| 2 | AB | 67 | LEU | 4.6 |
| 59 | DF | 171 | ALA | 4.6 |
| 42 | DU | 31 | GLY | 4.5 |
| 39 | DR | 45 | GLU | 4.5 |
| 30 | DI | 125 | THR | 4.5 |
| 37 | DP | 42 | PHE | 4.5 |
| 28 | DG | 57 | TYR | 4.5 |
| 26 | DE | 173 | THR | 4.5 |
| 9 | CI | 129 | ARG | 4.5 |
| 28 | DG | 31 | GLU | 4.5 |
| 30 | BI | 60 | VAL | 4.5 |
| 57 | DA | 2145 | C | 4.5 |
| 29 | BH | 121 | VAL | 4.5 |
| 49 | D1 | 52 | LYS | 4.5 |
| 2 | AB | 89 | PHE | 4.5 |
| 57 | DA | 645 | C | 4.5 |
| 21 | AU | 31 | VAL | 4.5 |
| 30 | DI | 94 | LYS | 4.5 |
| 28 | DG | 140 | ILE | 4.5 |
| 29 | BH | 75 | LEU | 4.5 |
| 38 | DQ | 28 | SER | 4.5 |
| 54 | CG | 17 | PHE | 4.5 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 3 | AC | 99 | GLN | 4.5 |
| 30 | DI | 3 | LYS | 4.5 |
| 14 | CN | 53 | ASP | 4.5 |
| 42 | DU | 17 | ASP | 4.5 |
| 40 | DS | 43 | ALA | 4.5 |
| 42 | DU | 71 | ILE | 4.5 |
| 30 | DI | 75 | ALA | 4.5 |
| 14 | AN | 20 | PHE | 4.5 |
| 26 | DE | 48 | THR | 4.4 |
| 30 | BI | 1 | ALA | 4.4 |
| 30 | DI | 103 | ALA | 4.4 |
| 33 | DL | 108 | ALA | 4.4 |
| 35 | DN | 62 | ASN | 4.4 |
| 9 | CI | 64 | ILE | 4.4 |
| 55 | CM | 45 | SER | 4.4 |
| 57 | DA | 1077 | A | 4.4 |
| 3 | CC | 154 | GLY | 4.4 |
| 46 | DY | 24 | GLU | 4.4 |
| 44 | DW | 50 | VAL | 4.4 |
| 21 | AU | 49 | ALA | 4.4 |
| 28 | DG | 55 | ASP | 4.4 |
| 35 | DN | 38 | LEU | 4.4 |
| 57 | DA | 931 | U | 4.4 |
| 19 | CS | 24 | SER | 4.4 |
| 26 | DE | 103 | GLY | 4.4 |
| 28 | DG | 106 | LEU | 4.4 |
| 28 | DG | 45 | ALA | 4.4 |
| 10 | CJ | 63 | ASP | 4.4 |
| 49 | D1 | 23 | THR | 4.4 |
| 42 | DU | 94 | PHE | 4.4 |
| 30 | DI | 69 | VAL | 4.4 |
| 54 | CG | 66 | GLU | 4.4 |
| 36 | DO | 40 | ILE | 4.4 |
| 55 | CM | 38 | ILE | 4.4 |
| 33 | DL | 4 | ASN | 4.4 |
| 11 | AK | 18 | GLY | 4.4 |
| 33 | DL | 28 | GLY | 4.4 |
| 3 | CC | 123 | LEU | 4.4 |
| 39 | DR | 66 | HIS | 4.4 |
| 2 | CB | 109 | SER | 4.4 |
| 42 | DU | 82 | VAL | 4.4 |
| 10 | CJ | 9 | ARG | 4.4 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 54 | CG | 149 | ALA | 4.4 |
| 38 | DQ | 87 | VAL | 4.4 |
| 36 | DO | 52 | SER | 4.4 |
| 42 | DU | 30 | SER | 4.4 |
| 3 | CC | 143 | LEU | 4.4 |
| 4 | AD | 24 | VAL | 4.4 |
| 19 | CS | 12 | LEU | 4.3 |
| 26 | DE | 23 | PHE | 4.3 |
| 35 | DN | 74 | GLU | 4.3 |
| 36 | DO | 56 | LYS | 4.3 |
| 10 | CJ | 97 | ASP | 4.3 |
| 22 | BA | 2148 | G | 4.3 |
| 25 | DD | 180 | VAL | 4.3 |
| 36 | DO | 24 | THR | 4.3 |
| 59 | DF | 110 | ILE | 4.3 |
| 33 | DL | 80 | SER | 4.3 |
| 26 | DE | 41 | GLN | 4.3 |
| 49 | D1 | 21 | THR | 4.3 |
| 30 | BI | 47 | SER | 4.3 |
| 59 | DF | 115 | GLY | 4.3 |
| 28 | DG | 82 | PHE | 4.3 |
| 42 | DU | 36 | GLU | 4.3 |
| 54 | CG | 132 | THR | 4.3 |
| 34 | DM | 136 | MET | 4.3 |
| 35 | DN | 28 | LEU | 4.3 |
| 57 | DA | 1420 | A | 4.3 |
| 29 | BH | 94 | ILE | 4.3 |
| 41 | DT | 33 | LYS | 4.3 |
| 29 | BH | 127 | GLU | 4.3 |
| 52 | D4 | 36 | ARG | 4.3 |
| 36 | DO | 27 | VAL | 4.3 |
| 55 | CM | 31 | ALA | 4.3 |
| 59 | DF | 53 | ALA | 4.3 |
| 53 | CA | 954 | G | 4.3 |
| 41 | DT | 3 | ARG | 4.3 |
| 42 | DU | 27 | VAL | 4.3 |
| 48 | D0 | 25 | THR | 4.3 |
| 31 | DJ | 44 | TYR | 4.3 |
| 55 | CM | 95 | PRO | 4.3 |
| 39 | DR | 43 | ASN | 4.3 |
| 59 | DF | 116 | LEU | 4.3 |
| 33 | DL | 113 | ALA | 4.3 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 55 | CM | 54 | THR | 4.2 |
| 42 | DU | 69 | VAL | 4.2 |
| 39 | DR | 29 | THR | 4.2 |
| 30 | DI | 118 | GLY | 4.2 |
| 52 | D4 | 25 | VAL | 4.2 |
| 19 | CS | 63 | ASP | 4.2 |
| 42 | DU | 79 | ALA | 4.2 |
| 30 | BI | 58 | ILE | 4.2 |
| 51 | D3 | 60 | CYS | 4.2 |
| 49 | B1 | 52 | LYS | 4.2 |
| 22 | BA | 2136 | G | 4.2 |
| 39 | DR | 51 | VAL | 4.2 |
| 35 | DN | 39 | PRO | 4.2 |
| 59 | DF | 93 | GLU | 4.2 |
| 2 | CB | 31 | PHE | 4.2 |
| 42 | DU | 25 | LYS | 4.2 |
| 51 | D3 | 10 | ALA | 4.2 |
| 44 | DW | 56 | HIS | 4.2 |
| 52 | D4 | 26 | ILE | 4.2 |
| 20 | CT | 40 | ALA | 4.2 |
| 24 | DC | 99 | GLU | 4.2 |
| 55 | CM | 80 | MET | 4.2 |
| 21 | AU | 30 | GLU | 4.2 |
| 28 | DG | 166 | GLU | 4.2 |
| 36 | DO | 41 | ALA | 4.2 |
| 2 | AB | 29 | PHE | 4.2 |
| 49 | D1 | 29 | LYS | 4.2 |
| 33 | DL | 81 | ASP | 4.2 |
| 9 | CI | 56 | MET | 4.2 |
| 54 | CG | 106 | ALA | 4.2 |
| 9 | CI | 10 | ARG | 4.2 |
| 14 | CN | 60 | ARG | 4.2 |
| 26 | DE | 148 | ILE | 4.2 |
| 57 | DA | 136 | G | 4.2 |
| 26 | DE | 193 | VAL | 4.2 |
| 10 | AJ | 91 | ASP | 4.1 |
| 57 | DA | 2181 | U | 4.1 |
| 49 | D1 | 26 | LYS | 4.1 |
| 1 | AA | 1030 | U | 4.1 |
| 10 | AJ | 75 | ASP | 4.1 |
| 39 | DR | 65 | ALA | 4.1 |
| 49 | D1 | 20 | TYR | 4.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 30 | DI | 54 | ILE | 4.1 |
| 59 | DF | 117 | SER | 4.1 |
| 53 | CA | 950 | U | 4.1 |
| 26 | DE | 4 | VAL | 4.1 |
| 52 | D4 | 15 | LYS | 4.1 |
| 14 | CN | 26 | LEU | 4.1 |
| 40 | DS | 16 | LYS | 4.1 |
| 9 | CI | 117 | LEU | 4.1 |
| 30 | BI | 68 | PHE | 4.1 |
| 35 | DN | 111 | ALA | 4.1 |
| 54 | CG | 80 | GLY | 4.1 |
| 13 | AM | 114 | PRO | 4.1 |
| 22 | BA | 2155 | U | 4.1 |
| 25 | DD | 185 | ASN | 4.1 |
| 35 | DN | 98 | LEU | 4.1 |
| 10 | CJ | 98 | VAL | 4.1 |
| 39 | DR | 25 | LEU | 4.1 |
| 3 | CC | 90 | VAL | 4.1 |
| 9 | CI | 126 | PHE | 4.1 |
| 25 | DD | 26 | VAL | 4.1 |
| 29 | DH | 2 | GLN | 4.1 |
| 54 | CG | 84 | TYR | 4.1 |
| 59 | DF | 140 | ILE | 4.1 |
| 17 | AQ | 6 | THR | 4.1 |
| 54 | CG | 53 | SER | 4.1 |
| 24 | DC | 100 | ARG | 4.1 |
| 30 | BI | 3 | LYS | 4.1 |
| 33 | DL | 144 | GLU | 4.1 |
| 39 | DR | 34 | GLU | 4.1 |
| 42 | DU | 37 | GLY | 4.1 |
| 53 | CA | 1314 | C | 4.1 |
| 2 | AB | 152 | ASP | 4.0 |
| 2 | AB | 28 | PRO | 4.0 |
| 33 | DL | 89 | VAL | 4.0 |
| 37 | DP | 33 | GLU | 4.0 |
| 44 | DW | 51 | GLY | 4.0 |
| 39 | DR | 61 | ALA | 4.0 |
| 48 | D0 | 22 | THR | 4.0 |
| 29 | DH | 118 | PRO | 4.0 |
| 54 | CG | 8 | GLN | 4.0 |
| 36 | DO | 46 | GLU | 4.0 |
| 30 | DI | 31 | GLY | 4.0 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 39 | DR | 92 | TRP | 4.0 |
| 26 | DE | 183 | PHE | 4.0 |
| 19 | AS | 29 | PRO | 4.0 |
| 2 | AB | 68 | PHE | 4.0 |
| 2 | CB | 87 | ASP | 4.0 |
| 1 | AA | 1534 | A | 4.0 |
| 25 | DD | 186 | LEU | 4.0 |
| 3 | AC | 63 | ILE | 4.0 |
| 29 | DH | 73 | ASN | 4.0 |
| 10 | CJ | 66 | GLU | 4.0 |
| 29 | BH | 76 | GLU | 4.0 |
| 10 | CJ | 36 | VAL | 4.0 |
| 12 | CL | 80 | LEU | 4.0 |
| 42 | DU | 21 | ARG | 4.0 |
| 57 | DA | 546 | U | 4.0 |
| 35 | DN | 46 | ARG | 4.0 |
| 10 | CJ | 51 | VAL | 4.0 |
| 53 | CA | 1271 | A | 4.0 |
| 35 | DN | 70 | THR | 4.0 |
| 9 | AI | 62 | LEU | 4.0 |
| 51 | D3 | 13 | PHE | 4.0 |
| 17 | CQ | 37 | ILE | 3.9 |
| 28 | DG | 120 | ILE | 3.9 |
| 30 | BI | 35 | MET | 3.9 |
| 39 | DR | 28 | ALA | 3.9 |
| 2 | AB | 186 | VAL | 3.9 |
| 39 | DR | 33 | VAL | 3.9 |
| 9 | CI | 116 | GLY | 3.9 |
| 21 | CU | 7 | GLU | 3.9 |
| 26 | DE | 131 | THR | 3.9 |
| 54 | CG | 67 | ASN | 3.9 |
| 35 | DN | 118 | ARG | 3.9 |
| 42 | DU | 10 | VAL | 3.9 |
| 50 | D2 | 42 | LEU | 3.9 |
| 59 | DF | 34 | THR | 3.9 |
| 43 | DV | 68 | LYS | 3.9 |
| 53 | CA | 208 | U | 3.9 |
| 27 | BF | 77 | LYS | 3.9 |
| 30 | DI | 20 | SER | 3.9 |
| 59 | DF | 31 | GLU | 3.9 |
| 40 | DS | 20 | VAL | 3.9 |
| 28 | DG | 52 | GLY | 3.9 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 35 | DN | 36 | THR | 3.9 |
| 39 | DR | 62 | GLU | 3.9 |
| 55 | CM | 4 | ALA | 3.9 |
| 44 | DW | 73 | PRO | 3.9 |
| 52 | D4 | 9 | LYS | 3.9 |
| 40 | DS | 22 | ASP | 3.9 |
| 57 | DA | 1173 | U | 3.9 |
| 4 | AD | 27 | ILE | 3.9 |
| 21 | CU | 8 | ASN | 3.9 |
| 28 | DG | 100 | ASN | 3.9 |
| 41 | DT | 14 | PRO | 3.9 |
| 59 | DF | 67 | THR | 3.8 |
| 9 | CI | 55 | ASP | 3.8 |
| 26 | DE | 157 | LEU | 3.8 |
| 29 | DH | 84 | ALA | 3.8 |
| 54 | CG | 68 | VAL | 3.8 |
| 54 | CG | 74 | VAL | 3.8 |
| 57 | DA | 1870 | C | 3.8 |
| 30 | DI | 53 | PRO | 3.8 |
| 3 | CC | 86 | LEU | 3.8 |
| 22 | BA | 2144 | G | 3.8 |
| 25 | DD | 104 | VAL | 3.8 |
| 30 | BI | 51 | GLY | 3.8 |
| 56 | CP | 80 | LYS | 3.8 |
| 9 | CI | 62 | LEU | 3.8 |
| 10 | CJ | 30 | LYS | 3.8 |
| 41 | BT | 16 | VAL | 3.8 |
| 14 | AN | 29 | ILE | 3.8 |
| 2 | CB | 113 | LEU | 3.8 |
| 3 | CC | 36 | PHE | 3.8 |
| 28 | DG | 50 | THR | 3.8 |
| 30 | BI | 114 | ALA | 3.8 |
| 55 | CM | 28 | ARG | 3.8 |
| 44 | DW | 62 | ALA | 3.8 |
| 52 | D4 | 35 | GLN | 3.8 |
| 30 | DI | 122 | GLU | 3.8 |
| 39 | DR | 102 | SER | 3.8 |
| 52 | D4 | 14 | CYS | 3.8 |
| 44 | DW | 58 | LEU | 3.8 |
| 57 | DA | 1172 | C | 3.8 |
| 3 | CC | 106 | ARG | 3.8 |
| 28 | DG | 110 | HIS | 3.8 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 33 | DL | 77 | ILE | 3.8 |
| 52 | D4 | 33 | HIS | 3.8 |
| 22 | BA | 2139 | U | 3.8 |
| 32 | DK | 103 | VAL | 3.8 |
| 30 | DI | 44 | LYS | 3.8 |
| 43 | DV | 5 | ASN | 3.8 |
| 54 | CG | 142 | ARG | 3.8 |
| 29 | BH | 77 | THR | 3.8 |
| 3 | CC | 179 | ALA | 3.7 |
| 29 | DH | 116 | ARG | 3.7 |
| 55 | CM | 82 | LEU | 3.7 |
| 40 | DS | 47 | VAL | 3.7 |
| 59 | DF | 77 | LYS | 3.7 |
| 26 | DE | 170 | ARG | 3.7 |
| 59 | DF | 30 | VAL | 3.7 |
| 32 | DK | 68 | GLY | 3.7 |
| 39 | DR | 24 | LYS | 3.7 |
| 19 | CS | 43 | MET | 3.7 |
| 39 | DR | 60 | LYS | 3.7 |
| 28 | DG | 130 | ILE | 3.7 |
| 9 | AI | 38 | PHE | 3.7 |
| 42 | DU | 98 | ASN | 3.7 |
| 28 | DG | 6 | ALA | 3.7 |
| 2 | CB | 160 | LEU | 3.7 |
| 9 | AI | 20 | ILE | 3.7 |
| 36 | DO | 87 | ILE | 3.7 |
| 25 | DD | 103 | ASP | 3.7 |
| 42 | DU | 48 | VAL | 3.7 |
| 57 | DA | 2602 | A | 3.7 |
| 3 | CC | 42 | LEU | 3.7 |
| 18 | AR | 73 | HIS | 3.7 |
| 29 | BH | 78 | VAL | 3.7 |
| 41 | DT | 58 | VAL | 3.7 |
| 56 | CP | 39 | PHE | 3.7 |
| 2 | AB | 48 | MET | 3.7 |
| 33 | DL | 125 | LEU | 3.7 |
| 3 | CC | 35 | ASP | 3.7 |
| 2 | CB | 17 | HIS | 3.7 |
| 35 | DN | 29 | VAL | 3.7 |
| 44 | DW | 45 | HIS | 3.7 |
| 25 | DD | 43 | ASP | 3.7 |
| 54 | CG | 146 | ALA | 3.7 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 10 | AJ | 35 | GLN | 3.7 |
| 42 | DU | 53 | GLN | 3.7 |
| 4 | AD | 26 | ALA | 3.6 |
| 39 | DR | 95 | ASP | 3.6 |
| 59 | DF | 163 | GLU | 3.6 |
| 2 | CB | 32 | GLY | 3.6 |
| 24 | DC | 241 | LYS | 3.6 |
| 29 | BH | 120 | GLY | 3.6 |
| 38 | DQ | 82 | LEU | 3.6 |
| 41 | DT | 32 | LEU | 3.6 |
| 29 | BH | 72 | ILE | 3.6 |
| 30 | BI | 65 | SER | 3.6 |
| 59 | DF | 54 | ALA | 3.6 |
| 19 | AS | 45 | GLY | 3.6 |
| 14 | CN | 23 | ARG | 3.6 |
| 2 | AB | 157 | PRO | 3.6 |
| 21 | AU | 27 | VAL | 3.6 |
| 2 | AB | 193 | ASP | 3.6 |
| 30 | BI | 107 | GLU | 3.6 |
| 9 | CI | 9 | GLY | 3.6 |
| 17 | CQ | 77 | VAL | 3.6 |
| 30 | DI | 139 | VAL | 3.6 |
| 34 | DM | 37 | GLY | 3.6 |
| 59 | DF | 146 | ASP | 3.6 |
| 2 | CB | 66 | ILE | 3.6 |
| 9 | CI | 67 | LYS | 3.6 |
| 34 | DM | 36 | VAL | 3.6 |
| 28 | DG | 61 | TRP | 3.6 |
| 31 | DJ | 74 | TYR | 3.6 |
| 44 | DW | 35 | ILE | 3.6 |
| 30 | BI | 53 | PRO | 3.6 |
| 35 | DN | 72 | ASP | 3.6 |
| 40 | DS | 48 | LYS | 3.6 |
| 42 | DU | 20 | LYS | 3.6 |
| 32 | DK | 89 | ASN | 3.6 |
| 1 | AA | 461 | A | 3.6 |
| 43 | DV | 60 | VAL | 3.6 |
| 19 | AS | 60 | PHE | 3.6 |
| 33 | DL | 83 | ALA | 3.6 |
| 31 | DJ | 128 | ASN | 3.6 |
| 2 | CB | 186 | VAL | 3.6 |
| 3 | CC | 160 | GLU | 3.6 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 10 | AJ | 8 | ILE | 3.6 |
| 21 | AU | 53 | LYS | 3.6 |
| 28 | DG | 113 | ASP | 3.6 |
| 44 | DW | 67 | LYS | 3.6 |
| 55 | CM | 104 | ASN | 3.6 |
| 14 | CN | 31 | SER | 3.6 |
| 31 | DJ | 98 | GLU | 3.5 |
| 9 | CI | 8 | THR | 3.5 |
| 22 | BA | 277 | G | 3.5 |
| 30 | BI | 134 | SER | 3.5 |
| 42 | DU | 80 | ASP | 3.5 |
| 28 | DG | 85 | LYS | 3.5 |
| 1 | AA | 88 | U | 3.5 |
| 30 | DI | 107 | GLU | 3.5 |
| 17 | CQ | 60 | ILE | 3.5 |
| 30 | DI | 42 | ASN | 3.5 |
| 55 | CM | 98 | GLY | 3.5 |
| 30 | DI | 117 | THR | 3.5 |
| 14 | CN | 50 | LEU | 3.5 |
| 29 | DH | 74 | ALA | 3.5 |
| 30 | DI | 33 | ASN | 3.5 |
| 38 | DQ | 1 | ALA | 3.5 |
| 41 | DT | 60 | THR | 3.5 |
| 31 | DJ | 136 | GLN | 3.5 |
| 26 | DE | 128 | ALA | 3.5 |
| 41 | DT | 70 | HIS | 3.5 |
| 28 | DG | 16 | VAL | 3.5 |
| 29 | BH | 131 | SER | 3.5 |
| 33 | DL | 70 | LYS | 3.5 |
| 49 | D1 | 49 | LYS | 3.5 |
| 19 | CS | 74 | ALA | 3.5 |
| 30 | DI | 84 | GLY | 3.5 |
| 36 | DO | 113 | ALA | 3.5 |
| 43 | DV | 6 | ALA | 3.5 |
| 6 | CF | 8 | PHE | 3.5 |
| 35 | DN | 82 | GLU | 3.5 |
| 8 | CH | 1 | SER | 3.5 |
| 20 | CT | 3 | ILE | 3.5 |
| 29 | DH | 77 | THR | 3.5 |
| 30 | BI | 87 | SER | 3.5 |
| 33 | DL | 57 | LEU | 3.5 |
| 2 | CB | 33 | ALA | 3.5 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 59 | DF | 38 | GLY | 3.5 |
| 41 | DT | 76 | ARG | 3.5 |
| 59 | DF | 55 | ASP | 3.5 |
| 30 | DI | 45 | THR | 3.5 |
| 59 | DF | 104 | THR | 3.5 |
| 54 | CG | 13 | PRO | 3.5 |
| 2 | CB | 27 | LYS | 3.5 |
| 28 | DG | 41 | GLU | 3.5 |
| 36 | DO | 88 | LYS | 3.5 |
| 44 | DW | 28 | GLU | 3.5 |
| 2 | CB | 150 | ILE | 3.5 |
| 2 | AB | 87 | ASP | 3.5 |
| 3 | CC | 32 | LEU | 3.5 |
| 30 | DI | 63 | ASP | 3.5 |
| 41 | DT | 75 | GLY | 3.5 |
| 57 | DA | 1076 | C | 3.5 |
| 10 | CJ | 5 | ARG | 3.5 |
| 29 | DH | 20 | ASN | 3.5 |
| 57 | DA | 2147 | A | 3.5 |
| 8 | AH | 129 | ALA | 3.5 |
| 3 | CC | 41 | TYR | 3.5 |
| 30 | DI | 47 | SER | 3.5 |
| 44 | DW | 81 | ILE | 3.5 |
| 42 | DU | 62 | ALA | 3.5 |
| 55 | CM | 81 | ASP | 3.5 |
| 10 | CJ | 101 | SER | 3.5 |
| 54 | CG | 43 | TYR | 3.5 |
| 7 | AG | 79 | VAL | 3.5 |
| 56 | CP | 20 | VAL | 3.5 |
| 35 | DN | 56 | LYS | 3.5 |
| 19 | CS | 22 | VAL | 3.4 |
| 7 | AG | 7 | GLY | 3.4 |
| 21 | AU | 4 | LYS | 3.4 |
| 38 | DQ | 94 | LEU | 3.4 |
| 53 | CA | 953 | G | 3.4 |
| 45 | DX | 20 | ALA | 3.4 |
| 2 | AB | 95 | TRP | 3.4 |
| 24 | DC | 236 | GLY | 3.4 |
| 29 | DH | 40 | THR | 3.4 |
| 2 | CB | 165 | ALA | 3.4 |
| 28 | DG | 58 | ALA | 3.4 |
| 39 | DR | 38 | VAL | 3.4 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 43 | DV | 57 | TYR | 3.4 |
| 14 | CN | 100 | TRP | 3.4 |
| 59 | DF | 130 | GLY | 3.4 |
| 29 | DH | 106 | ALA | 3.4 |
| 54 | CG | 88 | VAL | 3.4 |
| 34 | DM | 72 | PRO | 3.4 |
| 42 | DU | 43 | LYS | 3.4 |
| 59 | DF | 96 | TRP | 3.4 |
| 35 | DN | 37 | THR | 3.4 |
| 38 | DQ | 117 | ALA | 3.4 |
| 40 | DS | 17 | VAL | 3.4 |
| 55 | CM | 30 | LYS | 3.4 |
| 11 | AK | 20 | ALA | 3.4 |
| 44 | DW | 19 | ARG | 3.4 |
| 55 | CM | 75 | SER | 3.4 |
| 29 | BH | 64 | ALA | 3.4 |
| 50 | D2 | 33 | ARG | 3.4 |
| 10 | CJ | 78 | GLU | 3.4 |
| 47 | DZ | 33 | HIS | 3.4 |
| 21 | AU | 50 | SER | 3.4 |
| 26 | DE | 56 | GLY | 3.4 |
| 14 | CN | 51 | PRO | 3.4 |
| 29 | DH | 117 | LEU | 3.4 |
| 36 | DO | 25 | ARG | 3.4 |
| 30 | BI | 4 | VAL | 3.4 |
| 51 | D3 | 57 | VAL | 3.4 |
| 12 | CL | 79 | ILE | 3.4 |
| 13 | AM | 32 | ILE | 3.4 |
| 51 | D3 | 19 | GLY | 3.4 |
| 10 | AJ | 101 | SER | 3.4 |
| 21 | AU | 28 | LEU | 3.3 |
| 26 | DE | 118 | LEU | 3.3 |
| 2 | CB | 181 | PRO | 3.3 |
| 22 | BA | 2181 | U | 3.3 |
| 50 | D2 | 32 | ALA | 3.3 |
| 24 | DC | 63 | ILE | 3.3 |
| 19 | CS | 64 | GLU | 3.3 |
| 24 | DC | 47 | ARG | 3.3 |
| 11 | AK | 110 | THR | 3.3 |
| 34 | DM | 41 | LEU | 3.3 |
| 40 | DS | 3 | THR | 3.3 |
| 30 | BI | 40 | ALA | 3.3 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 54 | CG | 78 | ARG | 3.3 |
| 35 | DN | 73 | ASN | 3.3 |
| 26 | DE | 179 | SER | 3.3 |
| 30 | DI | 32 | VAL | 3.3 |
| 33 | DL | 74 | THR | 3.3 |
| 7 | AG | 81 | GLY | 3.3 |
| 53 | CA | 94 | G | 3.3 |
| 54 | CG | 51 | GLN | 3.3 |
| 27 | BF | 116 | LEU | 3.3 |
| 28 | DG | 168 | VAL | 3.3 |
| 30 | BI | 42 | ASN | 3.3 |
| 40 | DS | 40 | ASN | 3.3 |
| 25 | DD | 38 | LYS | 3.3 |
| 28 | DG | 48 | THR | 3.3 |
| 30 | DI | 81 | LYS | 3.3 |
| 46 | DY | 10 | SER | 3.3 |
| 37 | DP | 11 | GLN | 3.3 |
| 3 | AC | 91 | ALA | 3.3 |
| 39 | DR | 23 | GLU | 3.3 |
| 40 | DS | 68 | ASP | 3.3 |
| 30 | DI | 128 | ILE | 3.3 |
| 31 | DJ | 142 | ILE | 3.3 |
| 31 | DJ | 53 | TYR | 3.3 |
| 57 | DA | 94 | A | 3.3 |
| 14 | CN | 78 | LEU | 3.3 |
| 55 | CM | 68 | LEU | 3.3 |
| 9 | AI | 61 | ASP | 3.3 |
| 9 | CI | 19 | PHE | 3.3 |
| 41 | DT | 1 | MET | 3.3 |
| 54 | CG | 14 | ASP | 3.3 |
| 20 | CT | 2 | ASN | 3.3 |
| 2 | AB | 56 | LEU | 3.3 |
| 40 | DS | 19 | LEU | 3.3 |
| 44 | DW | 31 | LEU | 3.3 |
| 10 | CJ | 96 | VAL | 3.3 |
| 50 | D2 | 18 | PHE | 3.3 |
| 57 | DA | 93 | G | 3.3 |
| 16 | AP | 47 | GLU | 3.3 |
| 10 | CJ | 38 | GLY | 3.3 |
| 25 | DD | 47 | ALA | 3.3 |
| 37 | DP | 114 | ASN | 3.3 |
| 30 | DI | 27 | LEU | 3.3 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 21 | AU | 52 | VAL | 3.3 |
| 28 | DG | 131 | VAL | 3.3 |
| 21 | AU | 23 | GLU | 3.3 |
| 52 | D4 | 23 | ILE | 3.3 |
| 19 | AS | 2 | ARG | 3.3 |
| 2 | AB | 192 | PRO | 3.3 |
| 36 | DO | 63 | LYS | 3.3 |
| 37 | DP | 96 | LEU | 3.3 |
| 59 | DF | 151 | LEU | 3.3 |
| 30 | BI | 99 | LYS | 3.3 |
| 30 | DI | 25 | PRO | 3.3 |
| 38 | DQ | 86 | SER | 3.3 |
| 30 | DI | 130 | GLY | 3.3 |
| 26 | DE | 12 | LEU | 3.3 |
| 34 | DM | 103 | TYR | 3.3 |
| 2 | CB | 30 | ILE | 3.2 |
| 48 | D0 | 33 | SER | 3.2 |
| 50 | D2 | 36 | ALA | 3.2 |
| 26 | DE | 35 | TYR | 3.2 |
| 44 | DW | 14 | ASP | 3.2 |
| 26 | DE | 146 | VAL | 3.2 |
| 28 | DG | 5 | LYS | 3.2 |
| 29 | BH | 106 | ALA | 3.2 |
| 2 | AB | 151 | LYS | 3.2 |
| 11 | CK | 125 | LYS | 3.2 |
| 35 | DN | 112 | TYR | 3.2 |
| 52 | D4 | 24 | ARG | 3.2 |
| 2 | AB | 184 | ALA | 3.2 |
| 9 | AI | 18 | VAL | 3.2 |
| 30 | BI | 138 | VAL | 3.2 |
| 39 | DR | 6 | GLN | 3.2 |
| 54 | CG | 19 | SER | 3.2 |
| 19 | CS | 76 | THR | 3.2 |
| 59 | DF | 76 | PHE | 3.2 |
| 1 | AA | 85 | U | 3.2 |
| 9 | AI | 96 | GLU | 3.2 |
| 19 | AS | 12 | LEU | 3.2 |
| 9 | CI | 107 | ALA | 3.2 |
| 9 | CI | 89 | TYR | 3.2 |
| 39 | DR | 53 | PHE | 3.2 |
| 9 | CI | 20 | ILE | 3.2 |
| 45 | DX | 19 | HIS | 3.2 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 55 | CM | 44 | ILE | 3.2 |
| 47 | DZ | 7 | THR | 3.2 |
| 54 | CG | 86 | VAL | 3.2 |
| 9 | CI | 38 | PHE | 3.2 |
| 46 | DY | 45 | GLN | 3.2 |
| 38 | DQ | 38 | VAL | 3.2 |
| 39 | DR | 48 | LYS | 3.2 |
| 53 | CA | 79 | G | 3.2 |
| 30 | DI | 127 | SER | 3.2 |
| 22 | BA | 885 | C | 3.2 |
| 24 | DC | 26 | GLY | 3.2 |
| 30 | DI | 137 | LEU | 3.2 |
| 19 | CS | 38 | THR | 3.2 |
| 49 | D1 | 22 | THR | 3.2 |
| 59 | DF | 86 | CYS | 3.2 |
| 28 | DG | 87 | GLN | 3.2 |
| 42 | DU | 24 | VAL | 3.2 |
| 2 | AB | 185 | ILE | 3.2 |
| 10 | CJ | 49 | PHE | 3.2 |
| 8 | AH | 1 | SER | 3.2 |
| 21 | AU | 6 | ARG | 3.2 |
| 27 | BF | 79 | ARG | 3.2 |
| 10 | CJ | 22 | THR | 3.2 |
| 40 | DS | 34 | ASP | 3.2 |
| 16 | AP | 4 | ILE | 3.1 |
| 2 | AB | 165 | ALA | 3.1 |
| 2 | AB | 216 | VAL | 3.1 |
| 30 | BI | 29 | GLN | 3.1 |
| 30 | DI | 82 | ALA | 3.1 |
| 59 | DF | 44 | ALA | 3.1 |
| 13 | AM | 113 | LYS | 3.1 |
| 2 | AB | 84 | LEU | 3.1 |
| 29 | DH | 27 | ARG | 3.1 |
| 44 | DW | 21 | GLY | 3.1 |
| 44 | DW | 84 | GLU | 3.1 |
| 39 | DR | 64 | VAL | 3.1 |
| 59 | DF | 11 | VAL | 3.1 |
| 10 | CJ | 50 | THR | 3.1 |
| 44 | DW | 63 | ASP | 3.1 |
| 30 | DI | 91 | LYS | 3.1 |
| 2 | AB | 224 | ARG | 3.1 |
| 30 | DI | 40 | ALA | 3.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 45 | DX | 21 | LEU | 3.1 |
| 53 | CA | 1031 | C | 3.1 |
| 59 | DF | 35 | LEU | 3.1 |
| 2 | AB | 199 | ILE | 3.1 |
| 34 | DM | 17 | ASN | 3.1 |
| 40 | DS | 101 | SER | 3.1 |
| 31 | DJ | 118 | MET | 3.1 |
| 33 | DL | 86 | GLU | 3.1 |
| 29 | DH | 140 | ALA | 3.1 |
| 46 | DY | 21 | LEU | 3.1 |
| 2 | AB | 114 | LYS | 3.1 |
| 24 | BC | 236 | GLY | 3.1 |
| 30 | BI | 95 | ASP | 3.1 |
| 57 | DA | 318 | C | 3.1 |
| 2 | CB | 159 | ALA | 3.1 |
| 12 | AL | 123 | ALA | 3.1 |
| 19 | AS | 39 | ILE | 3.1 |
| 24 | DC | 239 | PHE | 3.1 |
| 28 | DG | 19 | ASN | 3.1 |
| 10 | AJ | 90 | LEU | 3.1 |
| 14 | CN | 18 | LYS | 3.1 |
| 39 | BR | 50 | GLY | 3.1 |
| 45 | DX | 17 | ARG | 3.1 |
| 14 | CN | 6 | LYS | 3.1 |
| 21 | AU | 51 | ALA | 3.1 |
| 39 | DR | 19 | THR | 3.1 |
| 59 | DF | 82 | TYR | 3.1 |
| 14 | CN | 76 | PHE | 3.1 |
| 57 | DA | 1044 | C | 3.1 |
| 43 | DV | 35 | GLU | 3.1 |
| 30 | BI | 96 | LYS | 3.1 |
| 50 | D2 | 37 | LYS | 3.1 |
| 9 | AI | 127 | SER | 3.1 |
| 49 | D1 | 14 | ALA | 3.1 |
| 3 | AC | 167 | TYR | 3.1 |
| 14 | CN | 71 | GLY | 3.1 |
| 26 | DE | 90 | GLN | 3.1 |
| 30 | BI | 97 | VAL | 3.1 |
| 40 | DS | 27 | LYS | 3.1 |
| 49 | D1 | 6 | GLU | 3.1 |
| 57 | DA | 101 | A | 3.1 |
| 28 | DG | 68 | ARG | 3.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 59 | DF | 109 | ARG | 3.1 |
| 41 | DT | 74 | ILE | 3.1 |
| 52 | D4 | 11 | CYS | 3.1 |
| 24 | DC | 244 | VAL | 3.1 |
| 35 | DN | 20 | MET | 3.1 |
| 59 | DF | 127 | TYR | 3.0 |
| 52 | D4 | 37 | GLN | 3.0 |
| 17 | CQ | 22 | VAL | 3.0 |
| 19 | AS | 31 | ARG | 3.0 |
| 29 | DH | 148 | ALA | 3.0 |
| 9 | CI | 37 | TYR | 3.0 |
| 19 | CS | 8 | PRO | 3.0 |
| 25 | DD | 173 | GLN | 3.0 |
| 32 | DK | 82 | ASN | 3.0 |
| 45 | DX | 18 | SER | 3.0 |
| 28 | DG | 42 | VAL | 3.0 |
| 59 | DF | 156 | THR | 3.0 |
| 19 | AS | 14 | LEU | 3.0 |
| 54 | CG | 16 | LYS | 3.0 |
| 57 | DA | 1171 | G | 3.0 |
| 1 | AA | 87 | C | 3.0 |
| 10 | AJ | 89 | ARG | 3.0 |
| 59 | DF | 114 | ARG | 3.0 |
| 34 | DM | 1 | MET | 3.0 |
| 34 | DM | 110 | GLU | 3.0 |
| 19 | CS | 61 | VAL | 3.0 |
| 19 | CS | 66 | VAL | 3.0 |
| 2 | AB | 158 | ASP | 3.0 |
| 20 | CT | 43 | LYS | 3.0 |
| 25 | DD | 97 | SER | 3.0 |
| 26 | DE | 176 | ASP | 3.0 |
| 53 | CA | 958 | A | 3.0 |
| 28 | DG | 137 | LYS | 3.0 |
| 29 | BH | 139 | PHE | 3.0 |
| 20 | CT | 86 | ALA | 3.0 |
| 1 | AA | 78 | A | 3.0 |
| 6 | AF | 51 | ILE | 3.0 |
| 9 | CI | 111 | GLU | 3.0 |
| 30 | DI | 129 | GLU | 3.0 |
| 57 | DA | 138 | U | 3.0 |
| 59 | DF | 135 | ILE | 3.0 |
| 25 | DD | 24 | VAL | 3.0 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 25 | DD | 4 | LEU | 3.0 |
| 2 | AB | 166 | ASP | 3.0 |
| 42 | DU | 1 | ALA | 3.0 |
| 53 | CA | 86 | G | 3.0 |
| 26 | DE | 102 | ARG | 3.0 |
| 19 | CS | 71 | GLY | 3.0 |
| 42 | DU | 89 | GLY | 3.0 |
| 19 | CS | 39 | ILE | 3.0 |
| 56 | CP | 57 | ILE | 3.0 |
| 28 | DG | 24 | THR | 3.0 |
| 30 | BI | 37 | PHE | 3.0 |
| 21 | AU | 3 | ILE | 3.0 |
| 24 | BC | 235 | GLU | 3.0 |
| 30 | BI | 120 | ASP | 3.0 |
| 39 | DR | 98 | ILE | 3.0 |
| 35 | DN | 76 | VAL | 3.0 |
| 40 | DS | 15 | GLN | 3.0 |
| 41 | DT | 64 | LYS | 3.0 |
| 55 | CM | 74 | MET | 3.0 |
| 59 | DF | 172 | PHE | 3.0 |
| 57 | DA | 1066 | U | 3.0 |
| 57 | DA | 2151 | U | 3.0 |
| 33 | DL | 31 | GLY | 3.0 |
| 39 | DR | 8 | GLY | 3.0 |
| 14 | CN | 42 | ASN | 3.0 |
| 55 | CM | 29 | SER | 3.0 |
| 29 | BH | 135 | HIS | 3.0 |
| 49 | D1 | 43 | ARG | 3.0 |
| 1 | AA | 412 | A | 3.0 |
| 39 | DR | 31 | GLU | 3.0 |
| 59 | DF | 139 | GLU | 3.0 |
| 57 | DA | 2797 | U | 2.9 |
| 9 | CI | 90 | ASP | 2.9 |
| 52 | D4 | 21 | GLY | 2.9 |
| 19 | AS | 48 | ILE | 2.9 |
| 59 | DF | 98 | PHE | 2.9 |
| 59 | DF | 174 | PHE | 2.9 |
| 7 | AG | 82 | SER | 2.9 |
| 24 | DC | 237 | ARG | 2.9 |
| 38 | DQ | 73 | ILE | 2.9 |
| 3 | AC | 98 | ALA | 2.9 |
| 35 | DN | 21 | PHE | 2.9 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 28 | DG | 94 | ARG | 2.9 |
| 14 | AN | 42 | ASN | 2.9 |
| 2 | AB | 188 | THR | 2.9 |
| 46 | DY | 32 | ALA | 2.9 |
| 7 | AG | 61 | PHE | 2.9 |
| 29 | BH | 129 | GLU | 2.9 |
| 19 | AS | 46 | LEU | 2.9 |
| 26 | DE | 43 | THR | 2.9 |
| 55 | CM | 70 | ARG | 2.9 |
| 38 | DQ | 111 | LYS | 2.9 |
| 59 | DF | 68 | LYS | 2.9 |
| 30 | BI | 18 | ASN | 2.9 |
| 41 | DT | 69 | ARG | 2.9 |
| 26 | DE | 98 | LYS | 2.9 |
| 57 | DA | 2152 | G | 2.9 |
| 7 | AG | 4 | ARG | 2.9 |
| 9 | AI | 49 | GLN | 2.9 |
| 19 | AS | 37 | SER | 2.9 |
| 32 | DK | 75 | SER | 2.9 |
| 7 | AG | 58 | LEU | 2.9 |
| 8 | CH | 60 | LEU | 2.9 |
| 11 | AK | 33 | ILE | 2.9 |
| 13 | AM | 38 | ILE | 2.9 |
| 4 | AD | 28 | ASP | 2.9 |
| 35 | DN | 102 | PHE | 2.9 |
| 55 | CM | 105 | ALA | 2.9 |
| 6 | AF | 62 | MET | 2.9 |
| 46 | DY | 59 | GLU | 2.9 |
| 2 | CB | 190 | SER | 2.9 |
| 37 | DP | 71 | ARG | 2.9 |
| 42 | DU | 83 | GLY | 2.9 |
| 59 | DF | 128 | SER | 2.9 |
| 9 | CI | 27 | ILE | 2.9 |
| 8 | AH | 23 | ALA | 2.9 |
| 16 | AP | 22 | ALA | 2.9 |
| 30 | DI | 26 | ALA | 2.9 |
| 59 | DF | 50 | ASP | 2.9 |
| 30 | DI | 19 | PRO | 2.9 |
| 19 | AS | 15 | LEU | 2.9 |
| 22 | BA | 2106 | U | 2.9 |
| 29 | DH | 19 | VAL | 2.9 |
| 32 | DK | 69 | VAL | 2.9 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 57 | DA | 2313 | C | 2.9 |
| 8 | CH | 44 | PHE | 2.9 |
| 19 | CS | 62 | THR | 2.9 |
| 28 | DG | 164 | ALA | 2.9 |
| 37 | DP | 74 | GLN | 2.9 |
| 26 | DE | 40 | ARG | 2.9 |
| 26 | DE | 197 | GLU | 2.9 |
| 59 | DF | 124 | ARG | 2.9 |
| 9 | CI | 99 | LYS | 2.9 |
| 11 | AK | 41 | LEU | 2.9 |
| 14 | CN | 15 | LEU | 2.9 |
| 25 | DD | 5 | VAL | 2.8 |
| 29 | BH | 142 | VAL | 2.8 |
| 41 | BT | 1 | MET | 2.8 |
| 14 | CN | 22 | LYS | 2.8 |
| 40 | DS | 21 | ALA | 2.8 |
| 51 | D3 | 46 | LYS | 2.8 |
| 59 | DF | 112 | ASP | 2.8 |
| 35 | DN | 95 | THR | 2.8 |
| 14 | CN | 69 | PRO | 2.8 |
| 36 | DO | 50 | ALA | 2.8 |
| 2 | AB | 101 | THR | 2.8 |
| 19 | CS | 5 | LYS | 2.8 |
| 42 | DU | 58 | VAL | 2.8 |
| 11 | CK | 20 | ALA | 2.8 |
| 26 | DE | 200 | LEU | 2.8 |
| 30 | BI | 137 | LEU | 2.8 |
| 19 | CS | 48 | ILE | 2.8 |
| 59 | DF | 108 | PRO | 2.8 |
| 28 | DG | 49 | LEU | 2.8 |
| 41 | DT | 12 | ARG | 2.8 |
| 1 | AA | 1492 | A | 2.8 |
| 11 | AK | 83 | VAL | 2.8 |
| 28 | DG | 35 | THR | 2.8 |
| 59 | DF | 99 | PHE | 2.8 |
| 24 | DC | 231 | HIS | 2.8 |
| 14 | CN | 21 | ALA | 2.8 |
| 21 | AU | 20 | ARG | 2.8 |
| 40 | DS | 84 | ARG | 2.8 |
| 57 | DA | 1278 | C | 2.8 |
| 54 | CG | 81 | GLY | 2.8 |
| 31 | DJ | 119 | PHE | 2.8 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 39 | DR | 46 | GLU | 2.8 |
| 4 | AD | 21 | LYS | 2.8 |
| 2 | CB | 147 | LEU | 2.8 |
| 28 | DG | 81 | GLY | 2.8 |
| 36 | DO | 19 | GLN | 2.8 |
| 42 | DU | 40 | LEU | 2.8 |
| 7 | AG | 150 | PHE | 2.8 |
| 28 | DG | 161 | VAL | 2.8 |
| 57 | DA | 343 | C | 2.8 |
| 24 | DC | 238 | ASN | 2.8 |
| 30 | DI | 86 | LYS | 2.8 |
| 26 | DE | 104 | ALA | 2.8 |
| 49 | D1 | 15 | GLY | 2.8 |
| 57 | DA | 2402 | U | 2.8 |
| 1 | AA | 79 | G | 2.8 |
| 9 | AI | 40 | ARG | 2.8 |
| 17 | AQ | 13 | SER | 2.8 |
| 22 | BA | 2153 | C | 2.8 |
| 30 | DI | 124 | MET | 2.8 |
| 57 | DA | 2107 | G | 2.8 |
| 40 | DS | 72 | THR | 2.8 |
| 2 | AB | 201 | GLY | 2.8 |
| 9 | CI | 6 | TYR | 2.8 |
| 30 | DI | 92 | PRO | 2.8 |
| 49 | D1 | 30 | PRO | 2.8 |
| 14 | AN | 30 | ILE | 2.8 |
| 17 | AQ | 19 | SER | 2.8 |
| 46 | DY | 34 | SER | 2.8 |
| 10 | AJ | 87 | LEU | 2.8 |
| 26 | DE | 156 | ASN | 2.8 |
| 30 | DI | 10 | LEU | 2.8 |
| 40 | DS | 69 | LEU | 2.8 |
| 30 | BI | 54 | ILE | 2.8 |
| 37 | DP | 111 | GLU | 2.8 |
| 1 | AA | 81 | A | 2.8 |
| 2 | CB | 146 | SER | 2.8 |
| 13 | AM | 18 | LEU | 2.8 |
| 28 | DG | 116 | LEU | 2.8 |
| 40 | DS | 23 | LEU | 2.8 |
| 59 | DF | 74 | ALA | 2.8 |
| 11 | AK | 32 | THR | 2.8 |
| 29 | DH | 115 | VAL | 2.8 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 56 | CP | 35 | ARG | 2.8 |
| 59 | DF | 173 | ASP | 2.8 |
| 53 | CA | 202 | G | 2.7 |
| 53 | CA | 1270 | G | 2.7 |
| 57 | DA | 62 | U | 2.7 |
| 21 | AU | 37 | TYR | 2.7 |
| 33 | DL | 20 | GLY | 2.7 |
| 55 | CM | 77 | LYS | 2.7 |
| 44 | DW | 37 | VAL | 2.7 |
| 20 | CT | 67 | HIS | 2.7 |
| 26 | DE | 87 | ALA | 2.7 |
| 54 | CG | 50 | ALA | 2.7 |
| 55 | CM | 22 | TYR | 2.7 |
| 19 | AS | 10 | ILE | 2.7 |
| 20 | CT | 66 | ILE | 2.7 |
| 11 | AK | 17 | ASP | 2.7 |
| 55 | CM | 107 | THR | 2.7 |
| 35 | DN | 100 | CYS | 2.7 |
| 59 | DF | 143 | ASP | 2.7 |
| 20 | CT | 33 | LYS | 2.7 |
| 55 | CM | 61 | LYS | 2.7 |
| 24 | BC | 234 | GLY | 2.7 |
| 53 | CA | 1317 | C | 2.7 |
| 57 | DA | 33 | C | 2.7 |
| 10 | AJ | 74 | VAL | 2.7 |
| 28 | DG | 173 | ALA | 2.7 |
| 32 | DK | 112 | PHE | 2.7 |
| 43 | DV | 23 | ALA | 2.7 |
| 2 | CB | 180 | ILE | 2.7 |
| 44 | DW | 69 | GLU | 2.7 |
| 59 | DF | 126 | ASN | 2.7 |
| 14 | CN | 64 | ARG | 2.7 |
| 14 | CN | 73 | LEU | 2.7 |
| 22 | BA | 2108 | A | 2.7 |
| 2 | CB | 15 | PHE | 2.7 |
| 3 | AC | 169 | GLU | 2.7 |
| 49 | D1 | 31 | GLU | 2.7 |
| 21 | AU | 34 | ARG | 2.7 |
| 50 | D2 | 34 | ARG | 2.7 |
| 2 | CB | 103 | TRP | 2.7 |
| 2 | CB | 158 | ASP | 2.7 |
| 22 | BA | 2152 | G | 2.7 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 44 | DW | 60 | ALA | 2.7 |
| 9 | CI | 58 | GLU | 2.7 |
| 59 | DF | 59 | ILE | 2.7 |
| 10 | CJ | 35 | GLN | 2.7 |
| 9 | CI | 68 | GLY | 2.7 |
| 2 | AB | 65 | LYS | 2.7 |
| 13 | AM | 40 | GLU | 2.7 |
| 25 | DD | 8 | LYS | 2.7 |
| 26 | DE | 178 | VAL | 2.7 |
| 28 | DG | 118 | ALA | 2.7 |
| 37 | DP | 32 | VAL | 2.7 |
| 24 | DC | 48 | ILE | 2.7 |
| 2 | CB | 41 | ASN | 2.7 |
| 22 | BA | 1065 | U | 2.7 |
| 29 | DH | 13 | GLY | 2.7 |
| 11 | AK | 62 | ALA | 2.7 |
| 33 | DL | 90 | VAL | 2.7 |
| 36 | DO | 57 | ALA | 2.7 |
| 9 | AI | 92 | SER | 2.7 |
| 39 | DR | 7 | SER | 2.7 |
| 21 | AU | 8 | ASN | 2.7 |
| 10 | AJ | 76 | ILE | 2.7 |
| 32 | DK | 38 | ILE | 2.7 |
| 57 | DA | 2306 | C | 2.7 |
| 59 | DF | 66 | ILE | 2.7 |
| 26 | DE | 5 | LEU | 2.7 |
| 42 | DU | 47 | PRO | 2.7 |
| 33 | DL | 115 | GLU | 2.7 |
| 56 | CP | 19 | VAL | 2.7 |
| 14 | CN | 43 | ALA | 2.7 |
| 33 | DL | 23 | ILE | 2.7 |
| 38 | DQ | 85 | ALA | 2.7 |
| 3 | CC | 85 | LYS | 2.7 |
| 22 | BA | 1072 | C | 2.7 |
| 33 | DL | 19 | LEU | 2.7 |
| 34 | DM | 16 | ARG | 2.7 |
| 8 | CH | 92 | PRO | 2.7 |
| 25 | DD | 205 | PRO | 2.7 |
| 29 | DH | 95 | GLY | 2.7 |
| 51 | D3 | 23 | HIS | 2.7 |
| 12 | CL | 81 | ILE | 2.7 |
| 10 | CJ | 37 | ARG | 2.7 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 17 | AQ | 69 | THR | 2.7 |
| 54 | CG | 139 | ASP | 2.7 |
| 16 | AP | 45 | GLU | 2.7 |
| 59 | DF | 75 | GLY | 2.6 |
| 21 | CU | 9 | GLU | 2.6 |
| 36 | DO | 59 | ALA | 2.6 |
| 51 | D3 | 1 | PRO | 2.6 |
| 17 | CQ | 5 | ARG | 2.6 |
| 36 | DO | 64 | TYR | 2.6 |
| 46 | BY | 7 | ARG | 2.6 |
| 30 | BI | 63 | ASP | 2.6 |
| 43 | DV | 64 | VAL | 2.6 |
| 52 | D4 | 34 | LYS | 2.6 |
| 50 | D2 | 12 | ARG | 2.6 |
| 2 | AB | 213 | LEU | 2.6 |
| 31 | DJ | 17 | VAL | 2.6 |
| 31 | DJ | 141 | ASP | 2.6 |
| 37 | DP | 110 | LYS | 2.6 |
| 42 | DU | 3 | LYS | 2.6 |
| 57 | DA | 356 | G | 2.6 |
| 39 | DR | 21 | ARG | 2.6 |
| 24 | DC | 102 | TYR | 2.6 |
| 29 | BH | 102 | ALA | 2.6 |
| 30 | DI | 13 | ALA | 2.6 |
| 40 | DS | 24 | ILE | 2.6 |
| 51 | D3 | 63 | TYR | 2.6 |
| 55 | CM | 35 | ALA | 2.6 |
| 59 | DF | 175 | PRO | 2.6 |
| 51 | D3 | 14 | LYS | 2.6 |
| 3 | AC | 111 | ASP | 2.6 |
| 19 | CS | 57 | VAL | 2.6 |
| 24 | DC | 81 | GLU | 2.6 |
| 40 | DS | 95 | ARG | 2.6 |
| 57 | DA | 2104 | C | 2.6 |
| 37 | BP | 65 | ASN | 2.6 |
| 42 | DU | 68 | ASN | 2.6 |
| 48 | D0 | 23 | ALA | 2.6 |
| 39 | DR | 35 | PHE | 2.6 |
| 9 | AI | 27 | ILE | 2.6 |
| 3 | CC | 107 | LYS | 2.6 |
| 29 | DH | 81 | ALA | 2.6 |
| 59 | DF | 154 | THR | 2.6 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 59 | DF | 178 | LYS | 2.6 |
| 54 | CG | 52 | ARG | 2.6 |
| 12 | CL | 92 | VAL | 2.6 |
| 35 | DN | 114 | GLU | 2.6 |
| 36 | DO | 66 | GLY | 2.6 |
| 26 | DE | 9 | GLN | 2.6 |
| 3 | AC | 79 | LYS | 2.6 |
| 30 | DI | 39 | LYS | 2.6 |
| 3 | CC | 171 | ARG | 2.6 |
| 59 | DF | 157 | THR | 2.6 |
| 2 | AB | 27 | LYS | 2.6 |
| 24 | DC | 103 | ILE | 2.6 |
| 55 | CM | 55 | LEU | 2.6 |
| 44 | DW | 42 | THR | 2.6 |
| 25 | DD | 19 | GLY | 2.6 |
| 28 | DG | 60 | GLY | 2.6 |
| 30 | DI | 24 | GLY | 2.6 |
| 54 | CG | 140 | VAL | 2.6 |
| 59 | DF | 92 | GLY | 2.6 |
| 44 | DW | 71 | LYS | 2.6 |
| 10 | CJ | 16 | ARG | 2.6 |
| 10 | CJ | 20 | GLN | 2.6 |
| 10 | CJ | 89 | ARG | 2.6 |
| 21 | AU | 32 | ARG | 2.6 |
| 59 | DF | 79 | ARG | 2.6 |
| 33 | DL | 58 | TYR | 2.6 |
| 54 | CG | 47 | GLU | 2.6 |
| 2 | AB | 72 | LYS | 2.6 |
| 57 | DA | 1459 | G | 2.6 |
| 2 | AB | 8 | MET | 2.6 |
| 53 | CA | 1036 | A | 2.6 |
| 14 | AN | 31 | SER | 2.6 |
| 19 | CS | 21 | ALA | 2.6 |
| 26 | DE | 26 | ALA | 2.6 |
| 26 | DE | 55 | SER | 2.6 |
| 10 | CJ | 92 | LEU | 2.6 |
| 17 | CQ | 76 | ARG | 2.6 |
| 33 | DL | 30 | THR | 2.6 |
| 34 | DM | 129 | THR | 2.6 |
| 44 | BW | 45 | HIS | 2.6 |
| 2 | CB | 82 | ALA | 2.6 |
| 41 | DT | 13 | ALA | 2.6 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 51 | D3 | 64 | ALA | 2.6 |
| 37 | DP | 8 | GLU | 2.6 |
| 36 | DO | 90 | VAL | 2.6 |
| 29 | BH | 99 | ILE | 2.6 |
| 31 | DJ | 54 | ILE | 2.6 |
| 36 | DO | 58 | ILE | 2.6 |
| 59 | DF | 78 | ILE | 2.6 |
| 34 | DM | 79 | ALA | 2.5 |
| 59 | DF | 2 | LYS | 2.5 |
| 26 | DE | 120 | VAL | 2.5 |
| 10 | CJ | 60 | ASP | 2.5 |
| 54 | CG | 56 | SER | 2.5 |
| 55 | CM | 88 | LEU | 2.5 |
| 30 | BI | 19 | PRO | 2.5 |
| 17 | AQ | 3 | LYS | 2.5 |
| 24 | DC | 245 | THR | 2.5 |
| 45 | DX | 53 | LYS | 2.5 |
| 10 | CJ | 27 | GLU | 2.5 |
| 54 | CG | 77 | ARG | 2.5 |
| 17 | CQ | 45 | VAL | 2.5 |
| 26 | DE | 32 | VAL | 2.5 |
| 13 | AM | 41 | ASP | 2.5 |
| 14 | CN | 45 | LEU | 2.5 |
| 22 | BA | 884 | U | 2.5 |
| 28 | DG | 105 | SER | 2.5 |
| 46 | DY | 49 | ASP | 2.5 |
| 49 | D1 | 12 | SER | 2.5 |
| 20 | CT | 84 | LYS | 2.5 |
| 22 | BA | 2107 | G | 2.5 |
| 28 | DG | 53 | PRO | 2.5 |
| 51 | D3 | 48 | MET | 2.5 |
| 41 | DT | 59 | ASN | 2.5 |
| 12 | CL | 93 | ARG | 2.5 |
| 30 | DI | 104 | GLN | 2.5 |
| 2 | AB | 153 | MET | 2.5 |
| 19 | AS | 26 | ASP | 2.5 |
| 29 | BH | 47 | PHE | 2.5 |
| 1 | AA | 80 | A | 2.5 |
| 22 | BA | 654 | A | 2.5 |
| 57 | DA | 316 | C | 2.5 |
| 11 | AK | 128 | VAL | 2.5 |
| 37 | DP | 30 | TRP | 2.5 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 44 | DW | 39 | GLN | 2.5 |
| 51 | D3 | 55 | GLY | 2.5 |
| 11 | CK | 99 | LEU | 2.5 |
| 36 | DO | 26 | LEU | 2.5 |
| 7 | AG | 77 | ARG | 2.5 |
| 28 | DG | 76 | ILE | 2.5 |
| 35 | DN | 24 | MET | 2.5 |
| 9 | CI | 14 | SER | 2.5 |
| 9 | CI | 95 | SER | 2.5 |
| 14 | CN | 93 | PRO | 2.5 |
| 29 | DH | 70 | GLU | 2.5 |
| 54 | CG | 59 | GLU | 2.5 |
| 54 | CG | 62 | GLU | 2.5 |
| 19 | CS | 49 | ALA | 2.5 |
| 37 | DP | 79 | VAL | 2.5 |
| 54 | CG | 147 | ASN | 2.5 |
| 3 | CC | 66 | THR | 2.5 |
| 3 | CC | 166 | TRP | 2.5 |
| 19 | AS | 30 | LEU | 2.5 |
| 45 | DX | 49 | ARG | 2.5 |
| 28 | DG | 115 | GLN | 2.5 |
| 55 | CM | 37 | GLY | 2.5 |
| 24 | BC | 239 | PHE | 2.5 |
| 35 | DN | 33 | ILE | 2.5 |
| 2 | AB | 195 | VAL | 2.5 |
| 8 | AH | 24 | VAL | 2.5 |
| 19 | AS | 63 | ASP | 2.5 |
| 10 | CJ | 90 | LEU | 2.5 |
| 22 | BA | 2885 | G | 2.5 |
| 54 | CG | 79 | VAL | 2.5 |
| 44 | BW | 40 | ARG | 2.5 |
| 45 | DX | 48 | LEU | 2.5 |
| 25 | DD | 90 | PHE | 2.5 |
| 56 | CP | 76 | LYS | 2.5 |
| 53 | CA | 1441 | A | 2.5 |
| 2 | CB | 225 | SER | 2.5 |
| 26 | DE | 76 | PRO | 2.5 |
| 30 | DI | 64 | ARG | 2.5 |
| 8 | CH | 74 | ILE | 2.5 |
| 14 | CN | 29 | ILE | 2.5 |
| 53 | CA | 955 | U | 2.5 |
| 57 | DA | 1731 | G | 2.5 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 57 | DA | 2307 | G | 2.5 |
| 44 | DW | 38 | ARG | 2.5 |
| 59 | DF | 132 | ARG | 2.5 |
| 25 | DD | 187 | LEU | 2.5 |
| 59 | DF | 58 | ALA | 2.5 |
| 22 | BA | 2142 | A | 2.5 |
| 55 | CM | 100 | ARG | 2.5 |
| 3 | CC | 91 | ALA | 2.5 |
| 35 | DN | 115 | LEU | 2.5 |
| 11 | AK | 125 | LYS | 2.5 |
| 28 | DG | 111 | PRO | 2.5 |
| 40 | DS | 13 | SER | 2.5 |
| 38 | DQ | 22 | GLY | 2.5 |
| 11 | AK | 72 | ALA | 2.5 |
| 54 | CG | 130 | LYS | 2.5 |
| 43 | DV | 91 | PHE | 2.5 |
| 54 | CG | 63 | VAL | 2.4 |
| 32 | DK | 33 | ALA | 2.4 |
| 26 | DE | 154 | ASP | 2.4 |
| 40 | DS | 2 | GLU | 2.4 |
| 11 | AK | 84 | MET | 2.4 |
| 14 | CN | 97 | LYS | 2.4 |
| 24 | DC | 104 | LEU | 2.4 |
| 47 | DZ | 55 | LYS | 2.4 |
| 2 | CB | 34 | ARG | 2.4 |
| 9 | AI | 126 | PHE | 2.4 |
| 19 | CS | 40 | PHE | 2.4 |
| 38 | DQ | 114 | ALA | 2.4 |
| 22 | BA | 2109 | U | 2.4 |
| 14 | AN | 51 | PRO | 2.4 |
| 25 | DD | 1 | MET | 2.4 |
| 9 | CI | 72 | SER | 2.4 |
| 10 | CJ | 33 | GLY | 2.4 |
| 55 | CM | 23 | GLY | 2.4 |
| 31 | DJ | 35 | ARG | 2.4 |
| 59 | DF | 7 | TYR | 2.4 |
| 14 | CN | 11 | LYS | 2.4 |
| 30 | DI | 38 | CYS | 2.4 |
| 55 | CM | 84 | CYS | 2.4 |
| 2 | CB | 106 | VAL | 2.4 |
| 19 | AS | 70 | LEU | 2.4 |
| 36 | DO | 28 | VAL | 2.4 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 49 | D1 | 42 | VAL | 2.4 |
| 55 | CM | 91 | ARG | 2.4 |
| 10 | CJ | 12 | ALA | 2.4 |
| 54 | CG | 107 | ALA | 2.4 |
| 2 | CB | 144 | GLU | 2.4 |
| 20 | CT | 8 | LYS | 2.4 |
| 30 | BI | 48 | ILE | 2.4 |
| 30 | DI | 49 | GLU | 2.4 |
| 26 | DE | 184 | ASP | 2.4 |
| 57 | DA | 1090 | A | 2.4 |
| 14 | CN | 72 | PHE | 2.4 |
| 29 | DH | 132 | PHE | 2.4 |
| 8 | AH | 60 | LEU | 2.4 |
| 11 | AK | 36 | ARG | 2.4 |
| 13 | AM | 94 | LEU | 2.4 |
| 25 | DD | 188 | LEU | 2.4 |
| 28 | DG | 86 | LEU | 2.4 |
| 30 | BI | 111 | THR | 2.4 |
| 36 | DO | 115 | LEU | 2.4 |
| 44 | DW | 6 | GLY | 2.4 |
| 29 | BH | 132 | PHE | 2.4 |
| 57 | DA | 405 | U | 2.4 |
| 1 | AA | 1362 | A | 2.4 |
| 30 | BI | 20 | SER | 2.4 |
| 20 | CT | 65 | LEU | 2.4 |
| 33 | DL | 79 | LEU | 2.4 |
| 14 | AN | 16 | ALA | 2.4 |
| 19 | CS | 13 | HIS | 2.4 |
| 33 | DL | 143 | GLU | 2.4 |
| 43 | DV | 55 | GLU | 2.4 |
| 51 | D3 | 3 | ILE | 2.4 |
| 8 | CH | 58 | LEU | 2.4 |
| 2 | AB | 63 | LYS | 2.4 |
| 40 | DS | 31 | GLN | 2.4 |
| 53 | CA | 1312 | G | 2.4 |
| 57 | DA | 1116 | G | 2.4 |
| 34 | DM | 6 | ARG | 2.4 |
| 30 | DI | 108 | ILE | 2.4 |
| 28 | DG | 171 | LYS | 2.4 |
| 30 | BI | 10 | LEU | 2.4 |
| 9 | CI | 76 | GLY | 2.4 |
| 24 | DC | 46 | GLY | 2.4 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 25 | DD | 203 | VAL | 2.4 |
| 26 | DE | 28 | VAL | 2.4 |
| 40 | DS | 105 | VAL | 2.4 |
| 59 | DF | 169 | LEU | 2.4 |
| 2 | AB | 200 | PRO | 2.4 |
| 35 | DN | 25 | ALA | 2.4 |
| 36 | DO | 51 | ALA | 2.4 |
| 51 | D3 | 5 | THR | 2.4 |
| 30 | BI | 121 | ILE | 2.4 |
| 48 | D0 | 41 | HIS | 2.4 |
| 55 | CM | 32 | ILE | 2.4 |
| 16 | AP | 19 | VAL | 2.4 |
| 48 | D0 | 24 | VAL | 2.4 |
| 59 | DF | 145 | VAL | 2.4 |
| 5 | CE | 117 | ALA | 2.4 |
| 51 | D3 | 51 | LYS | 2.4 |
| 25 | DD | 176 | ASP | 2.4 |
| 33 | DL | 91 | ASP | 2.4 |
| 29 | DH | 113 | SER | 2.4 |
| 54 | CG | 85 | GLN | 2.4 |
| 55 | CM | 73 | SER | 2.4 |
| 9 | AI | 91 | GLU | 2.4 |
| 2 | AB | 159 | ALA | 2.4 |
| 9 | AI | 16 | ALA | 2.4 |
| 52 | D4 | 32 | LYS | 2.4 |
| 19 | AS | 47 | THR | 2.4 |
| 30 | BI | 100 | ILE | 2.4 |
| 39 | DR | 59 | ILE | 2.4 |
| 45 | DX | 13 | THR | 2.4 |
| 55 | CM | 103 | THR | 2.4 |
| 14 | AN | 33 | VAL | 2.3 |
| 29 | DH | 3 | VAL | 2.3 |
| 32 | DK | 37 | ASP | 2.3 |
| 55 | CM | 96 | VAL | 2.3 |
| 57 | DA | 279 | A | 2.3 |
| 2 | AB | 80 | LYS | 2.3 |
| 36 | DO | 112 | GLU | 2.3 |
| 7 | AG | 84 | TYR | 2.3 |
| 59 | DF | 118 | ALA | 2.3 |
| 10 | AJ | 10 | LEU | 2.3 |
| 2 | AB | 19 | THR | 2.3 |
| 28 | DG | 103 | ASN | 2.3 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 32 | DK | 104 | THR | 2.3 |
| 14 | CN | 77 | GLY | 2.3 |
| 14 | AN | 25 | GLU | 2.3 |
| 26 | DE | 10 | SER | 2.3 |
| 28 | DG | 95 | ALA | 2.3 |
| 30 | BI | 103 | ALA | 2.3 |
| 38 | DQ | 97 | ILE | 2.3 |
| 42 | DU | 57 | ILE | 2.3 |
| 24 | BC | 250 | GLN | 2.3 |
| 14 | AN | 19 | TYR | 2.3 |
| 25 | DD | 2 | ILE | 2.3 |
| 44 | DW | 48 | ALA | 2.3 |
| 53 | CA | 1315 | U | 2.3 |
| 5 | CE | 107 | GLY | 2.3 |
| 25 | DD | 166 | GLY | 2.3 |
| 30 | DI | 88 | GLY | 2.3 |
| 30 | BI | 5 | GLN | 2.3 |
| 35 | DN | 43 | GLU | 2.3 |
| 59 | DF | 164 | GLU | 2.3 |
| 8 | CH | 127 | TYR | 2.3 |
| 2 | AB | 127 | LYS | 2.3 |
| 25 | DD | 55 | LYS | 2.3 |
| 33 | DL | 68 | SER | 2.3 |
| 30 | BI | 98 | GLY | 2.3 |
| 42 | DU | 100 | GLU | 2.3 |
| 2 | AB | 163 | ILE | 2.3 |
| 24 | DC | 94 | LEU | 2.3 |
| 9 | CI | 40 | ARG | 2.3 |
| 19 | CS | 31 | ARG | 2.3 |
| 30 | BI | 102 | ARG | 2.3 |
| 40 | DS | 18 | ARG | 2.3 |
| 2 | AB | 160 | LEU | 2.3 |
| 9 | CI | 86 | LEU | 2.3 |
| 9 | CI | 106 | ASP | 2.3 |
| 24 | DC | 109 | LEU | 2.3 |
| 29 | DH | 83 | LYS | 2.3 |
| 53 | CA | 1257 | A | 2.3 |
| 56 | CP | 17 | TYR | 2.3 |
| 44 | DW | 41 | GLY | 2.3 |
| 28 | DG | 129 | GLU | 2.3 |
| 1 | AA | 1032 | G | 2.3 |
| 57 | DA | 1407 | G | 2.3 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 2 | AB | 118 | THR | 2.3 |
| 49 | D1 | 16 | THR | 2.3 |
| 53 | CA | 80 | A | 2.3 |
| 33 | DL | 78 | ARG | 2.3 |
| 36 | DO | 16 | ARG | 2.3 |
| 2 | AB | 44 | LYS | 2.3 |
| 2 | CB | 61 | SER | 2.3 |
| 37 | DP | 84 | SER | 2.3 |
| 44 | DW | 18 | LYS | 2.3 |
| 10 | AJ | 98 | VAL | 2.3 |
| 19 | AS | 7 | GLY | 2.3 |
| 28 | BG | 15 | ASP | 2.3 |
| 30 | BI | 32 | VAL | 2.3 |
| 44 | DW | 59 | PHE | 2.3 |
| 41 | DT | 79 | ASP | 2.3 |
| 42 | BU | 87 | GLU | 2.3 |
| 53 | CA | 81 | A | 2.3 |
| 57 | DA | 1084 | A | 2.3 |
| 9 | AI | 53 | LEU | 2.3 |
| 49 | D1 | 13 | SER | 2.3 |
| 2 | AB | 180 | ILE | 2.3 |
| 14 | AN | 23 | ARG | 2.3 |
| 56 | CP | 9 | HIS | 2.3 |
| 24 | DC | 29 | PHE | 2.3 |
| 26 | DE | 11 | ALA | 2.3 |
| 32 | DK | 76 | VAL | 2.3 |
| 13 | AM | 83 | GLY | 2.3 |
| 22 | BA | 2402 | U | 2.3 |
| 53 | CA | 1230 | C | 2.3 |
| 55 | CM | 113 | LYS | 2.3 |
| 26 | DE | 51 | GLU | 2.3 |
| 32 | DK | 106 | GLU | 2.3 |
| 59 | DF | 45 | ASP | 2.3 |
| 1 | AA | 844 | G | 2.3 |
| 13 | AM | 91 | ARG | 2.3 |
| 40 | DS | 66 | ILE | 2.3 |
| 3 | AC | 65 | VAL | 2.3 |
| 28 | DG | 9 | VAL | 2.3 |
| 30 | DI | 7 | TYR | 2.3 |
| 41 | DT | 47 | VAL | 2.3 |
| 59 | DF | 142 | TYR | 2.3 |
| 32 | DK | 101 | GLY | 2.3 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 14 | AN | 32 | ASP | 2.3 |
| 24 | DC | 20 | ASN | 2.3 |
| 57 | DA | 653 | U | 2.3 |
| 10 | CJ | 52 | LEU | 2.3 |
| 28 | DG | 147 | LEU | 2.3 |
| 51 | D3 | 56 | LEU | 2.3 |
| 59 | DF | 168 | LEU | 2.3 |
| 4 | CD | 27 | ILE | 2.3 |
| 29 | DH | 130 | VAL | 2.3 |
| 2 | AB | 149 | GLY | 2.2 |
| 24 | DC | 234 | GLY | 2.2 |
| 53 | CA | 1138 | G | 2.2 |
| 13 | AM | 84 | CYS | 2.2 |
| 25 | DD | 181 | ASP | 2.2 |
| 51 | D3 | 54 | LEU | 2.2 |
| 28 | DG | 155 | PRO | 2.2 |
| 34 | DM | 46 | ILE | 2.2 |
| 41 | DT | 34 | VAL | 2.2 |
| 34 | DM | 35 | ALA | 2.2 |
| 35 | DN | 27 | SER | 2.2 |
| 44 | DW | 53 | GLY | 2.2 |
| 54 | CG | 128 | GLU | 2.2 |
| 29 | DH | 51 | ARG | 2.2 |
| 45 | DX | 10 | ARG | 2.2 |
| 2 | CB | 127 | LYS | 2.2 |
| 29 | BH | 83 | LYS | 2.2 |
| 41 | DT | 37 | ASP | 2.2 |
| 43 | DV | 84 | PRO | 2.2 |
| 55 | CM | 72 | ILE | 2.2 |
| 24 | DC | 64 | VAL | 2.2 |
| 3 | AC | 80 | GLY | 2.2 |
| 33 | DL | 16 | GLY | 2.2 |
| 37 | DP | 101 | GLU | 2.2 |
| 3 | AC | 106 | ARG | 2.2 |
| 43 | DV | 70 | ILE | 2.2 |
| 2 | AB | 181 | PRO | 2.2 |
| 28 | DG | 167 | VAL | 2.2 |
| 46 | DY | 3 | ALA | 2.2 |
| 50 | D2 | 29 | GLN | 2.2 |
| 53 | CA | 971 | G | 2.2 |
| 14 | CN | 79 | SER | 2.2 |
| 39 | DR | 12 | HIS | 2.2 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 3 | CC | 63 | ILE | 2.2 |
| 39 | DR | 5 | PHE | 2.2 |
| 43 | DV | 45 | ASP | 2.2 |
| 10 | CJ | 64 | GLN | 2.2 |
| 12 | CL | 91 | GLY | 2.2 |
| 20 | CT | 35 | TYR | 2.2 |
| 21 | AU | 35 | GLU | 2.2 |
| 52 | D4 | 12 | ARG | 2.2 |
| 55 | CM | 106 | ARG | 2.2 |
| 26 | DE | 185 | LYS | 2.2 |
| 42 | DU | 46 | LYS | 2.2 |
| 59 | DF | 62 | GLN | 2.2 |
| 35 | DN | 79 | LEU | 2.2 |
| 26 | DE | 181 | ILE | 2.2 |
| 52 | D4 | 19 | ARG | 2.2 |
| 2 | CB | 75 | ALA | 2.2 |
| 19 | CS | 75 | PRO | 2.2 |
| 24 | DC | 45 | ASN | 2.2 |
| 38 | DQ | 90 | ASP | 2.2 |
| 28 | DG | 96 | ALA | 2.2 |
| 2 | AB | 17 | HIS | 2.2 |
| 22 | BA | 2105 | U | 2.2 |
| 53 | CA | 1235 | U | 2.2 |
| 34 | DM | 12 | MET | 2.2 |
| 56 | CP | 60 | TRP | 2.2 |
| 3 | AC | 100 | ILE | 2.2 |
| 10 | CJ | 25 | ILE | 2.2 |
| 25 | DD | 70 | LYS | 2.2 |
| 41 | DT | 67 | VAL | 2.2 |
| 49 | D1 | 36 | LYS | 2.2 |
| 55 | CM | 26 | LYS | 2.2 |
| 7 | AG | 80 | GLY | 2.2 |
| 29 | DH | 60 | GLU | 2.2 |
| 30 | DI | 76 | ALA | 2.2 |
| 52 | D4 | 20 | ASP | 2.2 |
| 57 | DA | 88 | G | 2.2 |
| 57 | DA | 329 | G | 2.2 |
| 57 | DA | 1079 | C | 2.2 |
| 2 | AB | 41 | ASN | 2.2 |
| 28 | DG | 11 | PRO | 2.2 |
| 55 | CM | 18 | LEU | 2.2 |
| 10 | CJ | 56 | HIS | 2.2 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 20 | CT | 7 | LYS | 2.2 |
| 28 | DG | 44 | HIS | 2.2 |
| 30 | BI | 38 | CYS | 2.2 |
| 39 | DR | 54 | VAL | 2.2 |
| 52 | D4 | 16 | ILE | 2.2 |
| 43 | DV | 82 | TYR | 2.2 |
| 43 | DV | 86 | LEU | 2.2 |
| 49 | D1 | 33 | LEU | 2.2 |
| 28 | DG | 162 | ARG | 2.2 |
| 57 | DA | 1043 | C | 2.2 |
| 32 | DK | 53 | LYS | 2.2 |
| 39 | DR | 32 | THR | 2.2 |
| 2 | CB | 22 | TRP | 2.2 |
| 28 | DG | 18 | ILE | 2.2 |
| 59 | DF | 148 | VAL | 2.2 |
| 5 | CE | 157 | GLY | 2.2 |
| 53 | CA | 1313 | U | 2.2 |
| 57 | DA | 2142 | A | 2.2 |
| 9 | AI | 29 | ILE | 2.2 |
| 9 | CI | 83 | THR | 2.2 |
| 30 | DI | 131 | THR | 2.2 |
| 2 | CB | 79 | VAL | 2.2 |
| 29 | DH | 9 | VAL | 2.2 |
| 26 | DE | 174 | GLY | 2.2 |
| 57 | DA | 367 | G | 2.2 |
| 19 | CS | 2 | ARG | 2.2 |
| 29 | DH | 15 | LEU | 2.2 |
| 40 | DS | 44 | ALA | 2.2 |
| 59 | DF | 49 | LEU | 2.2 |
| 59 | DF | 138 | PRO | 2.2 |
| 2 | CB | 13 | VAL | 2.2 |
| 9 | AI | 88 | GLU | 2.2 |
| 25 | DD | 25 | THR | 2.2 |
| 33 | DL | 121 | THR | 2.2 |
| 39 | DR | 47 | VAL | 2.2 |
| 33 | DL | 87 | GLY | 2.2 |
| 26 | DE | 21 | ARG | 2.2 |
| 57 | DA | 1606 | C | 2.2 |
| 25 | DD | 182 | ALA | 2.2 |
| 53 | CA | 1032 | G | 2.2 |
| 57 | DA | 2133 | G | 2.2 |
| 2 | AB | 168 | GLU | 2.2 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 9 | CI | 41 | GLU | 2.2 |
| 11 | CK | 83 | VAL | 2.2 |
| 28 | DG | 10 | VAL | 2.2 |
| 34 | DM | 131 | VAL | 2.2 |
| 47 | DZ | 54 | VAL | 2.2 |
| 3 | CC | 58 | ARG | 2.2 |
| 9 | AI | 32 | ARG | 2.2 |
| 26 | DE | 47 | LYS | 2.2 |
| 21 | AU | 29 | ALA | 2.1 |
| 19 | AS | 44 | ILE | 2.1 |
| 19 | CS | 41 | PRO | 2.1 |
| 57 | DA | 1217 | U | 2.1 |
| 32 | DK | 77 | ILE | 2.1 |
| 41 | DT | 31 | VAL | 2.1 |
| 44 | DW | 70 | VAL | 2.1 |
| 55 | CM | 89 | ARG | 2.1 |
| 53 | CA | 1015 | G | 2.1 |
| 2 | AB | 14 | HIS | 2.1 |
| 31 | DJ | 75 | TYR | 2.1 |
| 2 | AB | 183 | PHE | 2.1 |
| 7 | AG | 17 | PHE | 2.1 |
| 14 | CN | 59 | GLN | 2.1 |
| 34 | DM | 60 | GLN | 2.1 |
| 2 | CB | 28 | PRO | 2.1 |
| 28 | DG | 25 | ILE | 2.1 |
| 41 | DT | 82 | LYS | 2.1 |
| 57 | DA | 1164 | C | 2.1 |
| 59 | DF | 32 | LYS | 2.1 |
| 59 | DF | 46 | LYS | 2.1 |
| 8 | AH | 53 | ASP | 2.1 |
| 28 | DG | 160 | GLY | 2.1 |
| 49 | B1 | 3 | GLY | 2.1 |
| 57 | DA | 12 | U | 2.1 |
| 33 | DL | 75 | ALA | 2.1 |
| 46 | DY | 44 | LYS | 2.1 |
| 53 | CA | 1272 | G | 2.1 |
| 17 | CQ | 32 | ILE | 2.1 |
| 25 | DD | 73 | VAL | 2.1 |
| 36 | DO | 55 | GLU | 2.1 |
| 41 | DT | 91 | GLN | 2.1 |
| 59 | DF | 134 | GLN | 2.1 |
| 33 | DL | 114 | GLY | 2.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 59 | DF | 23 | SER | 2.1 |
| 48 | D0 | 27 | LEU | 2.1 |
| 20 | CT | 83 | ASN | 2.1 |
| 29 | DH | 56 | ALA | 2.1 |
| 42 | DU | 64 | ILE | 2.1 |
| 56 | CP | 45 | GLU | 2.1 |
| 57 | DA | 39 | G | 2.1 |
| 55 | CM | 57 | ASP | 2.1 |
| 20 | CT | 71 | ALA | 2.1 |
| 36 | DO | 77 | ALA | 2.1 |
| 40 | DS | 54 | ALA | 2.1 |
| 49 | B1 | 51 | ALA | 2.1 |
| 53 | CA | 87 | C | 2.1 |
| 2 | CB | 176 | ASN | 2.1 |
| 9 | CI | 46 | VAL | 2.1 |
| 59 | DF | 20 | ASN | 2.1 |
| 54 | CG | 6 | ILE | 2.1 |
| 41 | DT | 49 | LYS | 2.1 |
| 14 | CN | 98 | ALA | 2.1 |
| 27 | BF | 118 | ALA | 2.1 |
| 38 | DQ | 41 | ALA | 2.1 |
| 13 | AM | 11 | HIS | 2.1 |
| 27 | BF | 139 | GLU | 2.1 |
| 43 | DV | 59 | GLU | 2.1 |
| 48 | D0 | 35 | GLU | 2.1 |
| 33 | DL | 73 | ILE | 2.1 |
| 42 | DU | 38 | ILE | 2.1 |
| 57 | DA | 436 | C | 2.1 |
| 57 | DA | 587 | C | 2.1 |
| 30 | DI | 11 | GLN | 2.1 |
| 38 | DQ | 32 | ARG | 2.1 |
| 40 | DS | 97 | LEU | 2.1 |
| 59 | DF | 125 | GLY | 2.1 |
| 19 | AS | 8 | PRO | 2.1 |
| 24 | DC | 121 | ALA | 2.1 |
| 55 | CM | 34 | ALA | 2.1 |
| 59 | DF | 106 | ALA | 2.1 |
| 28 | DG | 23 | ILE | 2.1 |
| 7 | AG | 22 | LEU | 2.1 |
| 9 | AI | 60 | LEU | 2.1 |
| 13 | AM | 2 | ARG | 2.1 |
| 30 | DI | 28 | GLY | 2.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 33 | DL | 21 | ARG | 2.1 |
| 54 | CG | 12 | LEU | 2.1 |
| 59 | DF | 15 | LEU | 2.1 |
| 3 | CC | 145 | ALA | 2.1 |
| 30 | DI | 89 | SER | 2.1 |
| 38 | DQ | 37 | ALA | 2.1 |
| 3 | CC | 126 | ARG | 2.1 |
| 25 | DD | 14 | ILE | 2.1 |
| 33 | DL | 102 | GLY | 2.1 |
| 57 | DA | 810 | U | 2.1 |
| 10 | CJ | 47 | GLU | 2.1 |
| 20 | CT | 63 | LYS | 2.1 |
| 35 | DN | 77 | ALA | 2.1 |
| 35 | DN | 71 | ARG | 2.1 |
| 36 | DO | 111 | ARG | 2.1 |
| 37 | DP | 4 | ILE | 2.1 |
| 52 | D4 | 6 | SER | 2.1 |
| 59 | DF | 33 | ILE | 2.1 |
| 10 | AJ | 50 | THR | 2.1 |
| 32 | DK | 90 | ASN | 2.1 |
| 2 | AB | 24 | PRO | 2.1 |
| 2 | AB | 69 | VAL | 2.1 |
| 9 | CI | 123 | ARG | 2.1 |
| 5 | AE | 114 | LEU | 2.1 |
| 22 | BA | 1171 | G | 2.1 |
| 55 | CM | 47 | LEU | 2.1 |
| 10 | AJ | 49 | PHE | 2.1 |
| 37 | DP | 62 | LYS | 2.1 |
| 25 | DD | 9 | VAL | 2.1 |
| 26 | DE | 167 | VAL | 2.1 |
| 45 | DX | 12 | VAL | 2.1 |
| 54 | CG | 144 | ALA | 2.1 |
| 56 | CP | 7 | ALA | 2.1 |
| 30 | DI | 78 | LEU | 2.1 |
| 45 | DX | 32 | LEU | 2.1 |
| 6 | AF | 37 | HIS | 2.1 |
| 9 | CI | 49 | GLN | 2.0 |
| 11 | CK | 67 | GLU | 2.0 |
| 52 | B4 | 12 | ARG | 2.0 |
| 31 | DJ | 18 | VAL | 2.0 |
| 37 | DP | 29 | VAL | 2.0 |
| 55 | CM | 85 | TYR | 2.0 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 2 | CB | 200 | PRO | 2.0 |
| 57 | DA | 2106 | U | 2.0 |
| 59 | DF | 22 | ASN | 2.0 |
| 8 | AH | 125 | ILE | 2.0 |
| 11 | AK | 99 | LEU | 2.0 |
| 30 | BI | 24 | GLY | 2.0 |
| 40 | DS | 33 | LEU | 2.0 |
| 6 | AF | 68 | GLN | 2.0 |
| 57 | DA | 1073 | A | 2.0 |
| 30 | BI | 23 | VAL | 2.0 |
| 39 | DR | 58 | VAL | 2.0 |
| 48 | D0 | 20 | ALA | 2.0 |
| 56 | CP | 21 | VAL | 2.0 |
| 28 | BG | 25 | ILE | 2.0 |
| 29 | DH | 94 | ILE | 2.0 |
| 35 | DN | 83 | LEU | 2.0 |
| 46 | DY | 56 | LEU | 2.0 |
| 49 | D1 | 40 | PRO | 2.0 |
| 51 | D3 | 58 | ILE | 2.0 |
| 59 | DF | 84 | ILE | 2.0 |
| 59 | DF | 176 | PHE | 2.0 |
| 2 | AB | 191 | ASP | 2.0 |
| 14 | CN | 99 | SER | 2.0 |
| 55 | CM | 71 | GLU | 2.0 |
| 38 | DQ | 35 | PHE | 2.0 |
| 36 | DO | 80 | GLU | 2.0 |
| 2 | AB | 38 | HIS | 2.0 |
| 2 | CB | 38 | HIS | 2.0 |
| 28 | DG | 73 | SER | 2.0 |
| 57 | DA | 1622 | G | 2.0 |
| 30 | BI | 34 | ILE | 2.0 |
| 40 | DS | 99 | ARG | 2.0 |
| 44 | DW | 7 | GLY | 2.0 |
| 9 | CI | 124 | PRO | 2.0 |
| 53 | CA | 1209 | C | 2.0 |
| 56 | CP | 48 | GLU | 2.0 |
| 37 | DP | 36 | LYS | 2.0 |
| 2 | AB | 113 | LEU | 2.0 |
| 2 | CB | 67 | LEU | 2.0 |
| 30 | BI | 6 | ALA | 2.0 |
| 35 | DN | 45 | ARG | 2.0 |
| 43 | DV | 26 | PHE | 2.0 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 57 | DA | 549 | G | 2.0 |
| 57 | DA | 344 | A | 2.0 |
| 57 | DA | 1744 | A | 2.0 |
| 20 | CT | 70 | LYS | 2.0 |
| 3 | CC | 163 | ARG | 2.0 |
| 13 | AM | 33 | LEU | 2.0 |
| 35 | DN | 30 | ARG | 2.0 |
| 35 | DN | 116 | VAL | 2.0 |

6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 60 | MG | DA | 3124 | 1/1 | 0.10 | 0.50 | 211,211,211,211 | 0 |
| 60 | MG | DA | 3025 | 1/1 | 0.12 | 1.43 | 253,253,253,253 | 0 |
| 60 | MG | DA | 3063 | 1/1 | 0.26 | 0.97 | 305,305,305,305 | 0 |
| 60 | MG | DA | 3062 | 1/1 | 0.27 | 2.37 | 262,262,262,262 | 0 |
| 60 | MG | DA | 3130 | 1/1 | 0.41 | 1.45 | 305,305,305,305 | 0 |
| 60 | MG | DA | 3019 | 1/1 | 0.48 | 0.89 | 252,252,252,252 | 0 |
| 60 | MG | DA | 3061 | 1/1 | 0.49 | 0.61 | 210,210,210,210 | 0 |
| 60 | MG | DA | 3037 | 1/1 | 0.50 | 0.18 | 203,203,203,203 | 0 |
| 60 | MG | CA | 1602 | 1/1 | 0.54 | 0.17 | 131,131,131,131 | 0 |
| 60 | MG | DA | 3105 | 1/1 | 0.54 | 0.23 | 305,305,305,305 | 0 |
| 60 | MG | DA | 3083 | 1/1 | 0.55 | 0.10 | 176,176,176,176 | 0 |
| 60 | MG | DA | 3127 | 1/1 | 0.56 | 1.91 | 274,274,274,274 | 0 |
| 60 | MG | DE | 301 | 1/1 | 0.58 | 0.31 | 191,191,191,191 | 0 |
| 60 | MG | DA | 3117 | 1/1 | 0.61 | 0.12 | 99,99,99,99 | 0 |
| 60 | MG | DA | 3026 | 1/1 | 0.62 | 0.20 | 139,139,139,139 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 60 | MG | DA | 3085 | 1/1 | 0.62 | 0.16 | 127,127,127,127 | 0 |
| 60 | MG | DA | 3075 | 1/1 | 0.63 | 0.51 | 229,229,229,229 | 0 |
| 60 | MG | DA | 3048 | 1/1 | 0.63 | 0.16 | 243,243,243,243 | 0 |
| 60 | MG | DA | 3011 | 1/1 | 0.63 | 0.27 | 215,215,215,215 | 0 |
| 60 | MG | DJ | 201 | 1/1 | 0.65 | 1.44 | 331,331,331,331 | 0 |
| 60 | MG | DA | 3044 | 1/1 | 0.66 | 0.13 | 230,230,230,230 | 0 |
| 60 | MG | DA | 3002 | 1/1 | 0.67 | 0.39 | 229,229,229,229 | 0 |
| 60 | MG | CA | 1630 | 1/1 | 0.69 | 0.12 | 176,176,176,176 | 0 |
| 60 | MG | DA | 3090 | 1/1 | 0.70 | 0.20 | 209,209,209,209 | 0 |
| 60 | MG | DA | 3077 | 1/1 | 0.71 | 0.79 | 259,259,259,259 | 0 |
| 60 | MG | DA | 3030 | 1/1 | 0.72 | 0.20 | 66,66,66,66 | 0 |
| 60 | MG | BA | 3054 | 1/1 | 0.72 | 0.21 | 214,214,214,214 | 0 |
| 60 | MG | DA | 3122 | 1/1 | 0.72 | 0.11 | 155,155,155,155 | 0 |
| 60 | MG | DA | 3008 | 1/1 | 0.72 | 0.23 | 153,153,153,153 | 0 |
| 60 | MG | DA | 3072 | 1/1 | 0.73 | 0.12 | 193,193,193,193 | 0 |
| 60 | MG | DA | 3107 | 1/1 | 0.73 | 0.60 | 201,201,201,201 | 0 |
| 60 | MG | BA | 3068 | 1/1 | 0.73 | 0.11 | 174,174,174,174 | 0 |
| 60 | MG | DA | 3007 | 1/1 | 0.74 | 0.50 | 188,188,188,188 | 0 |
| 60 | MG | DA | 3133 | 1/1 | 0.74 | 0.26 | 241,241,241,241 | 0 |
| 60 | MG | DA | 3108 | 1/1 | 0.74 | 0.31 | 123,123,123,123 | 0 |
| 60 | MG | DA | 3073 | 1/1 | 0.74 | 1.21 | 276,276,276,276 | 0 |
| 60 | MG | DA | 3132 | 1/1 | 0.75 | 0.24 | 225,225,225,225 | 0 |
| 60 | MG | DA | 3006 | 1/1 | 0.76 | 0.12 | 149,149,149,149 | 0 |
| 60 | MG | CA | 1629 | 1/1 | 0.76 | 0.20 | 214,214,214,214 | 0 |
| 60 | MG | DA | 3110 | 1/1 | 0.76 | 0.24 | 174,174,174,174 | 0 |
| 60 | MG | DA | 3017 | 1/1 | 0.76 | 0.23 | 147,147,147,147 | 0 |
| 60 | MG | DA | 3041 | 1/1 | 0.77 | 0.20 | 133,133,133,133 | 0 |
| 60 | MG | DA | 3109 | 1/1 | 0.77 | 0.33 | 169,169,169,169 | 0 |
| 60 | MG | CA | 1622 | 1/1 | 0.77 | 0.12 | 196,196,196,196 | 0 |
| 60 | MG | AN | 201 | 1/1 | 0.77 | 0.20 | 219,219,219,219 | 0 |
| 60 | MG | DA | 3023 | 1/1 | 0.78 | 0.18 | 90,90,90,90 | 0 |
| 60 | MG | DA | 3013 | 1/1 | 0.78 | 0.36 | 209,209,209,209 | 0 |
| 60 | MG | CA | 1615 | 1/1 | 0.78 | 0.18 | 243,243,243,243 | 0 |
| 60 | MG | CA | 1618 | 1/1 | 0.78 | 0.17 | 141,141,141,141 | 0 |
| 60 | MG | DA | 3082 | 1/1 | 0.79 | 0.11 | 214,214,214,214 | 0 |
| 60 | MG | BA | 3135 | 1/1 | 0.79 | 0.38 | 204,204,204,204 | 0 |
| 60 | MG | AA | 1610 | 1/1 | 0.79 | 0.08 | 200,200,200,200 | 0 |
| 60 | MG | CA | 1623 | 1/1 | 0.80 | 0.12 | 79,79,79,79 | 0 |
| 60 | MG | CA | 1617 | 1/1 | 0.80 | 0.14 | 205,205,205,205 | 0 |
| 60 | MG | DA | 3027 | 1/1 | 0.80 | 0.54 | 277,277,277,277 | 0 |
| 60 | MG | CA | 1628 | 1/1 | 0.81 | 0.34 | 259,259,259,259 | 0 |
| 60 | MG | BB | 201 | 1/1 | 0.81 | 0.22 | 246,246,246,246 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 60 | MG | DA | 3024 | 1/1 | 0.81 | 0.14 | 147,147,147,147 | 0 |
| 60 | MG | CA | 1601 | 1/1 | 0.82 | 0.08 | 123,123,123,123 | 0 |
| 60 | MG | DA | 3005 | 1/1 | 0.82 | 0.43 | 280,280,280,280 | 0 |
| 60 | MG | CA | 1616 | 1/1 | 0.82 | 0.35 | 279,279,279,279 | 0 |
| 60 | MG | BA | 3024 | 1/1 | 0.82 | 0.35 | 206,206,206,206 | 0 |
| 60 | MG | BA | 3058 | 1/1 | 0.83 | 0.18 | 106,106,106,106 | 0 |
| 60 | MG | DA | 3125 | 1/1 | 0.83 | 0.10 | 132,132,132,132 | 0 |
| 60 | MG | DA | 3098 | 1/1 | 0.83 | 0.22 | 218,218,218,218 | 0 |
| 60 | MG | BA | 3086 | 1/1 | 0.83 | 0.20 | 144,144,144,144 | 0 |
| 60 | MG | DA | 3028 | 1/1 | 0.84 | 0.39 | 195,195,195,195 | 0 |
| 60 | MG | DA | 3050 | 1/1 | 0.84 | 0.17 | 89,89,89,89 | 0 |
| 60 | MG | DA | 3056 | 1/1 | 0.84 | 0.37 | 243,243,243,243 | 0 |
| 60 | MG | CA | 1610 | 1/1 | 0.84 | 0.09 | 220,220,220,220 | 0 |
| 60 | MG | DA | 3032 | 1/1 | 0.84 | 0.19 | 193,193,193,193 | 0 |
| 60 | MG | DA | 3046 | 1/1 | 0.84 | 0.17 | 152,152,152,152 | 0 |
| 60 | MG | BA | 3097 | 1/1 | 0.85 | 0.15 | 182,182,182,182 | 0 |
| 60 | MG | AA | 1618 | 1/1 | 0.85 | 0.68 | 217,217,217,217 | 0 |
| 60 | MG | CA | 1612 | 1/1 | 0.85 | 0.26 | 133,133,133,133 | 0 |
| 60 | MG | DA | 3070 | 1/1 | 0.85 | 0.20 | 61,61,61,61 | 0 |
| 60 | MG | BA | 3092 | 1/1 | 0.86 | 0.07 | 30,30,30,30 | 0 |
| 60 | MG | DA | 3126 | 1/1 | 0.86 | 0.17 | 129,129,129,129 | 0 |
| 60 | MG | DA | 3001 | 1/1 | 0.86 | 0.12 | 149,149,149,149 | 0 |
| 60 | MG | DA | 3040 | 1/1 | 0.86 | 0.21 | 120,120,120,120 | 0 |
| 60 | MG | DA | 3074 | 1/1 | 0.87 | 0.45 | 239,239,239,239 | 0 |
| 60 | MG | DA | 3091 | 1/1 | 0.87 | 0.16 | 167,167,167,167 | 0 |
| 60 | MG | DA | 3068 | 1/1 | 0.87 | 0.28 | 225,225,225,225 | 0 |
| 60 | MG | DA | 3103 | 1/1 | 0.87 | 0.16 | 36,36,36,36 | 0 |
| 60 | MG | DA | 3003 | 1/1 | 0.87 | 0.97 | 253,253,253,253 | 0 |
| 60 | MG | CA | 1642 | 1/1 | 0.88 | 0.07 | 121,121,121,121 | 0 |
| 60 | MG | CA | 1606 | 1/1 | 0.88 | 0.14 | 77,77,77,77 | 0 |
| 60 | MG | CA | 1632 | 1/1 | 0.88 | 0.17 | 143,143,143,143 | 0 |
| 60 | MG | DA | 3087 | 1/1 | 0.88 | 0.15 | 178,178,178,178 | 0 |
| 60 | MG | DA | 3045 | 1/1 | 0.88 | 0.14 | 76,76,76,76 | 0 |
| 60 | MG | DA | 3057 | 1/1 | 0.88 | 0.39 | 257,257,257,257 | 0 |
| 60 | MG | DA | 3112 | 1/1 | 0.89 | 0.08 | 114,114,114,114 | 0 |
| 60 | MG | BA | 3069 | 1/1 | 0.89 | 0.19 | 223,223,223,223 | 0 |
| 60 | MG | DA | 3119 | 1/1 | 0.89 | 0.22 | 84,84,84,84 | 0 |
| 60 | MG | DA | 3012 | 1/1 | 0.89 | 0.12 | 57,57,57,57 | 0 |
| 60 | MG | BA | 3044 | 1/1 | 0.89 | 0.16 | 56,56,56,56 | 0 |
| 60 | MG | DA | 3004 | 1/1 | 0.89 | 0.16 | 86,86,86,86 | 0 |
| 60 | MG | DA | 3101 | 1/1 | 0.89 | 0.11 | 73,73,73,73 | 0 |
| 60 | MG | CA | 1614 | 1/1 | 0.89 | 0.65 | 271,271,271,271 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 60 | MG | CA | 1640 | 1/1 | 0.89 | 0.29 | 171,171,171,171 | 0 |
| 60 | MG | DA | 3079 | 1/1 | 0.89 | 0.13 | 149,149,149,149 | 0 |
| 60 | MG | AA | 1603 | 1/1 | 0.89 | 0.10 | 131,131,131,131 | 0 |
| 60 | MG | CA | 1608 | 1/1 | 0.89 | 0.22 | 82,82,82,82 | 0 |
| 60 | MG | DA | 3010 | 1/1 | 0.89 | 0.65 | 261,261,261,261 | 0 |
| 60 | MG | DA | 3069 | 1/1 | 0.90 | 0.12 | 93,93,93,93 | 0 |
| 60 | MG | AA | 1614 | 1/1 | 0.90 | 0.54 | 201,201,201,201 | 0 |
| 60 | MG | DA | 3071 | 1/1 | 0.90 | 0.09 | 136,136,136,136 | 0 |
| 60 | MG | CA | 1634 | 1/1 | 0.90 | 0.16 | 200,200,200,200 | 0 |
| 60 | MG | DA | 3014 | 1/1 | 0.90 | 0.40 | 177,177,177,177 | 0 |
| 60 | MG | DA | 3029 | 1/1 | 0.90 | 0.17 | 135,135,135,135 | 0 |
| 60 | MG | AA | 1617 | 1/1 | 0.90 | 0.13 | 111,111,111,111 | 0 |
| 60 | MG | BA | 3004 | 1/1 | 0.90 | 0.13 | 150,150,150,150 | 0 |
| 60 | MG | DA | 3022 | 1/1 | 0.90 | 0.17 | 118,118,118,118 | 0 |
| 60 | MG | BA | 3103 | 1/1 | 0.90 | 0.20 | 8,8,8,8 | 0 |
| 60 | MG | DB | 201 | 1/1 | 0.90 | 0.12 | 109,109,109,109 | 0 |
| 60 | MG | BA | 3117 | 1/1 | 0.90 | 0.09 | 79,79,79,79 | 0 |
| 60 | MG | BA | 3132 | 1/1 | 0.90 | 0.40 | 145,145,145,145 | 0 |
| 60 | MG | CA | 1611 | 1/1 | 0.91 | 0.18 | 116,116,116,116 | 0 |
| 60 | MG | DA | 3086 | 1/1 | 0.91 | 0.10 | 185,185,185,185 | 0 |
| 60 | MG | BA | 3022 | 1/1 | 0.91 | 0.11 | 20,20,20,20 | 0 |
| 60 | MG | CA | 1607 | 1/1 | 0.91 | 0.21 | 222,222,222,222 | 0 |
| 60 | MG | DA | 3121 | 1/1 | 0.91 | 0.15 | 114,114,114,114 | 0 |
| 60 | MG | AA | 1627 | 1/1 | 0.91 | 0.17 | 165,165,165,165 | 0 |
| 60 | MG | DA | 3094 | 1/1 | 0.91 | 0.21 | 98,98,98,98 | 0 |
| 60 | MG | DA | 3095 | 1/1 | 0.91 | 0.15 | 110,110,110,110 | 0 |
| 60 | MG | DA | 3096 | 1/1 | 0.91 | 0.29 | 180,180,180,180 | 0 |
| 60 | MG | DA | 3058 | 1/1 | 0.91 | 0.10 | 204,204,204,204 | 0 |
| 60 | MG | DA | 3129 | 1/1 | 0.91 | 0.62 | 271,271,271,271 | 0 |
| 60 | MG | DA | 3042 | 1/1 | 0.91 | 0.14 | 166,166,166,166 | 0 |
| 60 | MG | DA | 3043 | 1/1 | 0.91 | 0.22 | 112,112,112,112 | 0 |
| 60 | MG | CA | 1624 | 1/1 | 0.91 | 0.31 | 123,123,123,123 | 0 |
| 60 | MG | BA | 3089 | 1/1 | 0.91 | 0.08 | 39,39,39,39 | 0 |
| 60 | MG | DC | 301 | 1/1 | 0.91 | 0.15 | 134,134,134,134 | 0 |
| 60 | MG | DA | 3031 | 1/1 | 0.91 | 0.10 | 121,121,121,121 | 0 |
| 60 | MG | DA | 3084 | 1/1 | 0.91 | 0.26 | 157,157,157,157 | 0 |
| 60 | MG | AA | 1638 | 1/1 | 0.92 | 0.11 | 139,139,139,139 | 0 |
| 60 | MG | DA | 3049 | 1/1 | 0.92 | 0.14 | 150,150,150,150 | 0 |
| 60 | MG | DA | 3078 | 1/1 | 0.92 | 0.11 | 95,95,95,95 | 0 |
| 60 | MG | BA | 3094 | 1/1 | 0.92 | 0.07 | 42,42,42,42 | 0 |
| 60 | MG | CA | 1631 | 1/1 | 0.92 | 0.20 | 111,111,111,111 | 0 |
| 60 | MG | BA | 3047 | 1/1 | 0.92 | 0.13 | 112,112,112,112 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 60 | MG | DA | 3097 | 1/1 | 0.92 | 0.20 | 143,143,143,143 | 0 |
| 60 | MG | AA | 1639 | 1/1 | 0.92 | 0.06 | 92,92,92,92 | 0 |
| 60 | MG | DA | 3100 | 1/1 | 0.92 | 0.24 | 149,149,149,149 | 0 |
| 60 | MG | CA | 1637 | 1/1 | 0.92 | 0.19 | 140,140,140,140 | 0 |
| 60 | MG | AA | 1620 | 1/1 | 0.92 | 0.08 | 120,120,120,120 | 0 |
| 62 | ZN | D4 | 101 | 1/1 | 0.92 | 0.09 | 197,197,197,197 | 0 |
| 60 | MG | AA | 1623 | 1/1 | 0.93 | 0.07 | 104,104,104,104 | 0 |
| 60 | MG | DA | 3052 | 1/1 | 0.93 | 0.20 | 105,105,105,105 | 0 |
| 60 | MG | DA | 3053 | 1/1 | 0.93 | 0.10 | 78,78,78,78 | 0 |
| 60 | MG | BA | 3087 | 1/1 | 0.93 | 0.12 | 182,182,182,182 | 0 |
| 60 | MG | BA | 3134 | 1/1 | 0.93 | 0.11 | 145,145,145,145 | 0 |
| 60 | MG | BA | 3012 | 1/1 | 0.93 | 0.13 | 5,5,5,5 | 0 |
| 60 | MG | DA | 3131 | 1/1 | 0.93 | 0.10 | 104,104,104,104 | 0 |
| 60 | MG | DA | 3060 | 1/1 | 0.93 | 0.07 | 144,144,144,144 | 0 |
| 60 | MG | CA | 1627 | 1/1 | 0.93 | 0.33 | 220,220,220,220 | 0 |
| 60 | MG | DA | 3034 | 1/1 | 0.93 | 0.21 | 156,156,156,156 | 0 |
| 60 | MG | BA | 3090 | 1/1 | 0.93 | 0.14 | 93,93,93,93 | 0 |
| 60 | MG | DA | 3120 | 1/1 | 0.93 | 0.14 | 84,84,84,84 | 0 |
| 60 | MG | DA | 3067 | 1/1 | 0.93 | 0.11 | 95,95,95,95 | 0 |
| 60 | MG | BB | 202 | 1/1 | 0.93 | 0.09 | 54,54,54,54 | 0 |
| 60 | MG | CA | 1620 | 1/1 | 0.94 | 0.20 | 209,209,209,209 | 0 |
| 60 | MG | DA | 3059 | 1/1 | 0.94 | 0.38 | 241,241,241,241 | 0 |
| 60 | MG | DA | 3123 | 1/1 | 0.94 | 0.14 | 65,65,65,65 | 0 |
| 60 | MG | AA | 1604 | 1/1 | 0.94 | 0.10 | 112,112,112,112 | 0 |
| 60 | MG | CA | 1639 | 1/1 | 0.94 | 0.06 | 148,148,148,148 | 0 |
| 60 | MG | DA | 3081 | 1/1 | 0.94 | 0.22 | 143,143,143,143 | 0 |
| 60 | MG | DA | 3102 | 1/1 | 0.94 | 0.16 | 105,105,105,105 | 0 |
| 60 | MG | DA | 3128 | 1/1 | 0.94 | 0.26 | 138,138,138,138 | 0 |
| 60 | MG | BA | 3001 | 1/1 | 0.94 | 0.07 | 84,84,84,84 | 0 |
| 60 | MG | BA | 3002 | 1/1 | 0.94 | 0.09 | 60,60,60,60 | 0 |
| 60 | MG | BA | 3003 | 1/1 | 0.94 | 0.13 | 44,44,44,44 | 0 |
| 60 | MG | BA | 3055 | 1/1 | 0.94 | 0.36 | 240,240,240,240 | 0 |
| 60 | MG | AA | 1629 | 1/1 | 0.94 | 0.14 | 227,227,227,227 | 0 |
| 60 | MG | DA | 3018 | 1/1 | 0.94 | 0.21 | 225,225,225,225 | 0 |
| 60 | MG | AA | 1622 | 1/1 | 0.94 | 0.16 | 185,185,185,185 | 0 |
| 60 | MG | AA | 1607 | 1/1 | 0.94 | 0.10 | 98,98,98,98 | 0 |
| 60 | MG | DA | 3038 | 1/1 | 0.94 | 0.18 | 163,163,163,163 | 0 |
| 60 | MG | BA | 3075 | 1/1 | 0.94 | 0.19 | 74,74,74,74 | 0 |
| 60 | MG | BA | 3082 | 1/1 | 0.95 | 0.17 | 98,98,98,98 | 0 |
| 60 | MG | AA | 1608 | 1/1 | 0.95 | 0.14 | 38,38,38,38 | 0 |
| 60 | MG | BA | 3051 | 1/1 | 0.95 | 0.10 | 48,48,48,48 | 0 |
| 60 | MG | DA | 3106 | 1/1 | 0.95 | 0.10 | 55,55,55,55 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 60 | MG | AA | 1630 | 1/1 | 0.95 | 0.14 | 209,209,209,209 | 0 |
| 60 | MG | DA | 3009 | 1/1 | 0.95 | 0.11 | 75,75,75,75 | 0 |
| 60 | MG | CA | 1625 | 1/1 | 0.95 | 0.21 | 160,160,160,160 | 0 |
| 60 | MG | AA | 1609 | 1/1 | 0.95 | 0.10 | 47,47,47,47 | 0 |
| 60 | MG | DA | 3076 | 1/1 | 0.95 | 0.08 | 110,110,110,110 | 0 |
| 60 | MG | BA | 3091 | 1/1 | 0.95 | 0.14 | 131,131,131,131 | 0 |
| 60 | MG | CA | 1604 | 1/1 | 0.95 | 0.04 | 65,65,65,65 | 0 |
| 60 | MG | BA | 3057 | 1/1 | 0.95 | 0.06 | 43,43,43,43 | 0 |
| 60 | MG | DA | 3016 | 1/1 | 0.95 | 0.12 | 75,75,75,75 | 0 |
| 60 | MG | BA | 3033 | 1/1 | 0.95 | 0.16 | 89,89,89,89 | 0 |
| 60 | MG | BA | 3041 | 1/1 | 0.95 | 0.14 | 12,12,12,12 | 0 |
| 60 | MG | DA | 3051 | 1/1 | 0.95 | 0.09 | 49,49,49,49 | 0 |
| 60 | MG | BA | 3007 | 1/1 | 0.95 | 0.10 | 84,84,84,84 | 0 |
| 60 | MG | CA | 1636 | 1/1 | 0.95 | 0.10 | 130,130,130,130 | 0 |
| 60 | MG | BA | 3104 | 1/1 | 0.95 | 0.18 | 27,27,27,27 | 0 |
| 60 | MG | CA | 1638 | 1/1 | 0.95 | 0.11 | 106,106,106,106 | 0 |
| 60 | MG | BA | 3114 | 1/1 | 0.95 | 0.15 | 148,148,148,148 | 0 |
| 60 | MG | DA | 3092 | 1/1 | 0.95 | 0.12 | 209,209,209,209 | 0 |
| 60 | MG | DA | 3093 | 1/1 | 0.95 | 0.30 | 166,166,166,166 | 0 |
| 60 | MG | CA | 1613 | 1/1 | 0.95 | 0.08 | 116,116,116,116 | 0 |
| 60 | MG | CA | 1641 | 1/1 | 0.95 | 0.18 | 73,73,73,73 | 0 |
| 60 | MG | BA | 3073 | 1/1 | 0.95 | 0.09 | 116,116,116,116 | 0 |
| 60 | MG | BA | 3118 | 1/1 | 0.95 | 0.29 | 136,136,136,136 | 0 |
| 60 | MG | BA | 3123 | 1/1 | 0.95 | 0.56 | 112,112,112,112 | 0 |
| 60 | MG | BA | 3124 | 1/1 | 0.95 | 0.16 | 22,22,22,22 | 0 |
| 60 | MG | BA | 3046 | 1/1 | 0.95 | 0.12 | 142,142,142,142 | 0 |
| 60 | MG | DA | 3099 | 1/1 | 0.96 | 0.15 | 96,96,96,96 | 0 |
| 60 | MG | DA | 3064 | 1/1 | 0.96 | 0.13 | 65,65,65,65 | 0 |
| 60 | MG | DA | 3066 | 1/1 | 0.96 | 0.12 | 65,65,65,65 | 0 |
| 60 | MG | AA | 1633 | 1/1 | 0.96 | 0.09 | 52,52,52,52 | 0 |
| 60 | MG | DA | 3033 | 1/1 | 0.96 | 0.07 | 91,91,91,91 | 0 |
| 60 | MG | DA | 3104 | 1/1 | 0.96 | 0.15 | 48,48,48,48 | 0 |
| 60 | MG | AA | 1635 | 1/1 | 0.96 | 0.21 | 198,198,198,198 | 0 |
| 60 | MG | DA | 3035 | 1/1 | 0.96 | 0.36 | 228,228,228,228 | 0 |
| 60 | MG | DA | 3036 | 1/1 | 0.96 | 0.15 | 111,111,111,111 | 0 |
| 60 | MG | BB | 204 | 1/1 | 0.96 | 0.11 | 30,30,30,30 | 0 |
| 60 | MG | BA | 3060 | 1/1 | 0.96 | 0.26 | 257,257,257,257 | 0 |
| 60 | MG | AA | 1636 | 1/1 | 0.96 | 0.18 | 149,149,149,149 | 0 |
| 60 | MG | DA | 3111 | 1/1 | 0.96 | 0.11 | 89,89,89,89 | 0 |
| 60 | MG | CA | 1603 | 1/1 | 0.96 | 0.16 | 140,140,140,140 | 0 |
| 60 | MG | DA | 3113 | 1/1 | 0.96 | 0.06 | 123,123,123,123 | 0 |
| 60 | MG | BA | 3100 | 1/1 | 0.96 | 0.17 | 26,26,26,26 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 60 | MG | AA | 1613 | 1/1 | 0.96 | 0.09 | 56,56,56,56 | 0 |
| 60 | MG | BA | 3005 | 1/1 | 0.96 | 0.07 | 60,60,60,60 | 0 |
| 60 | MG | DA | 3015 | 1/1 | 0.96 | 0.26 | 277,277,277,277 | 0 |
| 60 | MG | DA | 3080 | 1/1 | 0.96 | 0.25 | 70,70,70,70 | 0 |
| 60 | MG | CA | 1633 | 1/1 | 0.96 | 0.07 | 82,82,82,82 | 0 |
| 60 | MG | DA | 3047 | 1/1 | 0.96 | 0.14 | 82,82,82,82 | 0 |
| 60 | MG | BA | 3106 | 1/1 | 0.96 | 0.14 | 13,13,13,13 | 0 |
| 60 | MG | BA | 3111 | 1/1 | 0.96 | 0.13 | 93,93,93,93 | 0 |
| 60 | MG | AA | 1601 | 1/1 | 0.96 | 0.15 | 93,93,93,93 | 0 |
| 60 | MG | DA | 3021 | 1/1 | 0.96 | 0.15 | 169,169,169,169 | 0 |
| 60 | MG | BA | 3115 | 1/1 | 0.96 | 0.18 | 8,8,8,8 | 0 |
| 60 | MG | BA | 3078 | 1/1 | 0.96 | 0.07 | 49,49,49,49 | 0 |
| 60 | MG | BA | 3008 | 1/1 | 0.96 | 0.16 | 29,29,29,29 | 0 |
| 60 | MG | BA | 3122 | 1/1 | 0.96 | 0.12 | 25,25,25,25 | 0 |
| 60 | MG | BA | 3083 | 1/1 | 0.96 | 0.10 | 52,52,52,52 | 0 |
| 60 | MG | BA | 3010 | 1/1 | 0.96 | 0.09 | 48,48,48,48 | 0 |
| 60 | MG | AA | 1619 | 1/1 | 0.96 | 0.06 | 165,165,165,165 | 0 |
| 60 | MG | CA | 1619 | 1/1 | 0.96 | 0.26 | 243,243,243,243 | 0 |
| 60 | MG | BA | 3014 | 1/1 | 0.96 | 0.17 | 75,75,75,75 | 0 |
| 62 | ZN | B4 | 101 | 1/1 | 0.96 | 0.05 | 81,81,81,81 | 0 |
| 60 | MG | BA | 3056 | 1/1 | 0.96 | 0.12 | 86,86,86,86 | 0 |
| 60 | MG | BA | 3107 | 1/1 | 0.97 | 0.19 | 8,8,8,8 | 0 |
| 60 | MG | AA | 1626 | 1/1 | 0.97 | 0.20 | 185,185,185,185 | 0 |
| 60 | MG | BA | 3076 | 1/1 | 0.97 | 0.06 | 31,31,31,31 | 0 |
| 60 | MG | AA | 1612 | 1/1 | 0.97 | 0.14 | 103,103,103,103 | 0 |
| 60 | MG | BA | 3079 | 1/1 | 0.97 | 0.11 | 20,20,20,20 | 0 |
| 60 | MG | BA | 3048 | 1/1 | 0.97 | 0.14 | 18,18,18,18 | 0 |
| 60 | MG | DA | 3114 | 1/1 | 0.97 | 0.24 | 166,166,166,166 | 0 |
| 60 | MG | DA | 3116 | 1/1 | 0.97 | 0.10 | 59,59,59,59 | 0 |
| 60 | MG | BA | 3049 | 1/1 | 0.97 | 0.11 | 72,72,72,72 | 0 |
| 60 | MG | DA | 3118 | 1/1 | 0.97 | 0.06 | 75,75,75,75 | 0 |
| 60 | MG | BA | 3084 | 1/1 | 0.97 | 0.13 | 9,9,9,9 | 0 |
| 60 | MG | BA | 3085 | 1/1 | 0.97 | 0.13 | 24,24,24,24 | 0 |
| 60 | MG | DA | 3088 | 1/1 | 0.97 | 0.21 | 102,102,102,102 | 0 |
| 60 | MG | AA | 1628 | 1/1 | 0.97 | 0.06 | 70,70,70,70 | 0 |
| 60 | MG | BA | 3015 | 1/1 | 0.97 | 0.07 | 30,30,30,30 | 0 |
| 60 | MG | CA | 1621 | 1/1 | 0.97 | 0.17 | 60,60,60,60 | 0 |
| 60 | MG | AA | 1637 | 1/1 | 0.97 | 0.11 | 34,34,34,34 | 0 |
| 60 | MG | AA | 1616 | 1/1 | 0.97 | 0.13 | 123,123,123,123 | 0 |
| 60 | MG | BA | 3030 | 1/1 | 0.97 | 0.13 | 34,34,34,34 | 0 |
| 60 | MG | AA | 1625 | 1/1 | 0.97 | 0.22 | 31,31,31,31 | 0 |
| 60 | MG | BA | 3035 | 1/1 | 0.97 | 0.20 | 241,241,241,241 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 60 | MG | DA | 3039 | 1/1 | 0.97 | 0.15 | 59,59,59,59 | 0 |
| 60 | MG | BA | 3061 | 1/1 | 0.97 | 0.12 | 11,11,11,11 | 0 |
| 60 | MG | BA | 3098 | 1/1 | 0.97 | 0.12 | 46,46,46,46 | 0 |
| 60 | MG | AA | 1632 | 1/1 | 0.97 | 0.10 | 53,53,53,53 | 0 |
| 60 | MG | CA | 1605 | 1/1 | 0.97 | 0.17 | 47,47,47,47 | 0 |
| 60 | MG | BA | 3009 | 1/1 | 0.97 | 0.15 | 12,12,12,12 | 0 |
| 60 | MG | BA | 3071 | 1/1 | 0.97 | 0.11 | 8,8,8,8 | 0 |
| 60 | MG | BA | 3045 | 1/1 | 0.97 | 0.12 | 13,13,13,13 | 0 |
| 61 | CLM | BA | 3136 | 20/20 | 0.97 | 0.20 | 2,26,77,92 | 0 |
| 60 | MG | CA | 1635 | 1/1 | 0.97 | 0.09 | 85,85,85,85 | 0 |
| 60 | MG | CA | 1609 | 1/1 | 0.97 | 0.13 | 71,71,71,71 | 0 |
| 60 | MG | BA | 3080 | 1/1 | 0.98 | 0.14 | 25,25,25,25 | 0 |
| 60 | MG | BA | 3081 | 1/1 | 0.98 | 0.04 | 41,41,41,41 | 0 |
| 60 | MG | BA | 3119 | 1/1 | 0.98 | 0.14 | 15,15,15,15 | 0 |
| 60 | MG | BA | 3050 | 1/1 | 0.98 | 0.10 | 12,12,12,12 | 0 |
| 60 | MG | DA | 3020 | 1/1 | 0.98 | 0.19 | 36,36,36,36 | 0 |
| 60 | MG | AA | 1641 | 1/1 | 0.98 | 0.16 | 27,27,27,27 | 0 |
| 60 | MG | CA | 1626 | 1/1 | 0.98 | 0.22 | 27,27,27,27 | 0 |
| 60 | MG | BA | 3025 | 1/1 | 0.98 | 0.10 | 38,38,38,38 | 0 |
| 60 | MG | BA | 3125 | 1/1 | 0.98 | 0.11 | 26,26,26,26 | 0 |
| 60 | MG | DA | 3065 | 1/1 | 0.98 | 0.12 | 40,40,40,40 | 0 |
| 60 | MG | BA | 3127 | 1/1 | 0.98 | 0.10 | 21,21,21,21 | 0 |
| 60 | MG | BA | 3130 | 1/1 | 0.98 | 0.44 | 257,257,257,257 | 0 |
| 60 | MG | BA | 3131 | 1/1 | 0.98 | 0.09 | 96,96,96,96 | 0 |
| 60 | MG | BA | 3027 | 1/1 | 0.98 | 0.12 | 34,34,34,34 | 0 |
| 60 | MG | BA | 3028 | 1/1 | 0.98 | 0.07 | 45,45,45,45 | 0 |
| 60 | MG | BA | 3029 | 1/1 | 0.98 | 0.20 | 10,10,10,10 | 0 |
| 60 | MG | BA | 3088 | 1/1 | 0.98 | 0.10 | 22,22,22,22 | 0 |
| 60 | MG | DA | 3115 | 1/1 | 0.98 | 0.19 | 69,69,69,69 | 0 |
| 60 | MG | AA | 1606 | 1/1 | 0.98 | 0.11 | 58,58,58,58 | 0 |
| 60 | MG | BA | 3059 | 1/1 | 0.98 | 0.16 | 147,147,147,147 | 0 |
| 60 | MG | AA | 1615 | 1/1 | 0.98 | 0.04 | 127,127,127,127 | 0 |
| 60 | MG | AA | 1611 | 1/1 | 0.98 | 0.10 | 81,81,81,81 | 0 |
| 60 | MG | BA | 3064 | 1/1 | 0.98 | 0.08 | 8,8,8,8 | 0 |
| 60 | MG | BA | 3096 | 1/1 | 0.98 | 0.17 | 59,59,59,59 | 0 |
| 60 | MG | BA | 3039 | 1/1 | 0.98 | 0.20 | 9,9,9,9 | 0 |
| 60 | MG | BA | 3011 | 1/1 | 0.98 | 0.08 | 149,149,149,149 | 0 |
| 60 | MG | AA | 1624 | 1/1 | 0.98 | 0.07 | 139,139,139,139 | 0 |
| 60 | MG | BA | 3101 | 1/1 | 0.98 | 0.06 | 105,105,105,105 | 0 |
| 60 | MG | BA | 3102 | 1/1 | 0.98 | 0.10 | 14,14,14,14 | 0 |
| 60 | MG | AA | 1634 | 1/1 | 0.98 | 0.07 | 58,58,58,58 | 0 |
| 60 | MG | BA | 3074 | 1/1 | 0.98 | 0.17 | 15,15,15,15 | 0 |

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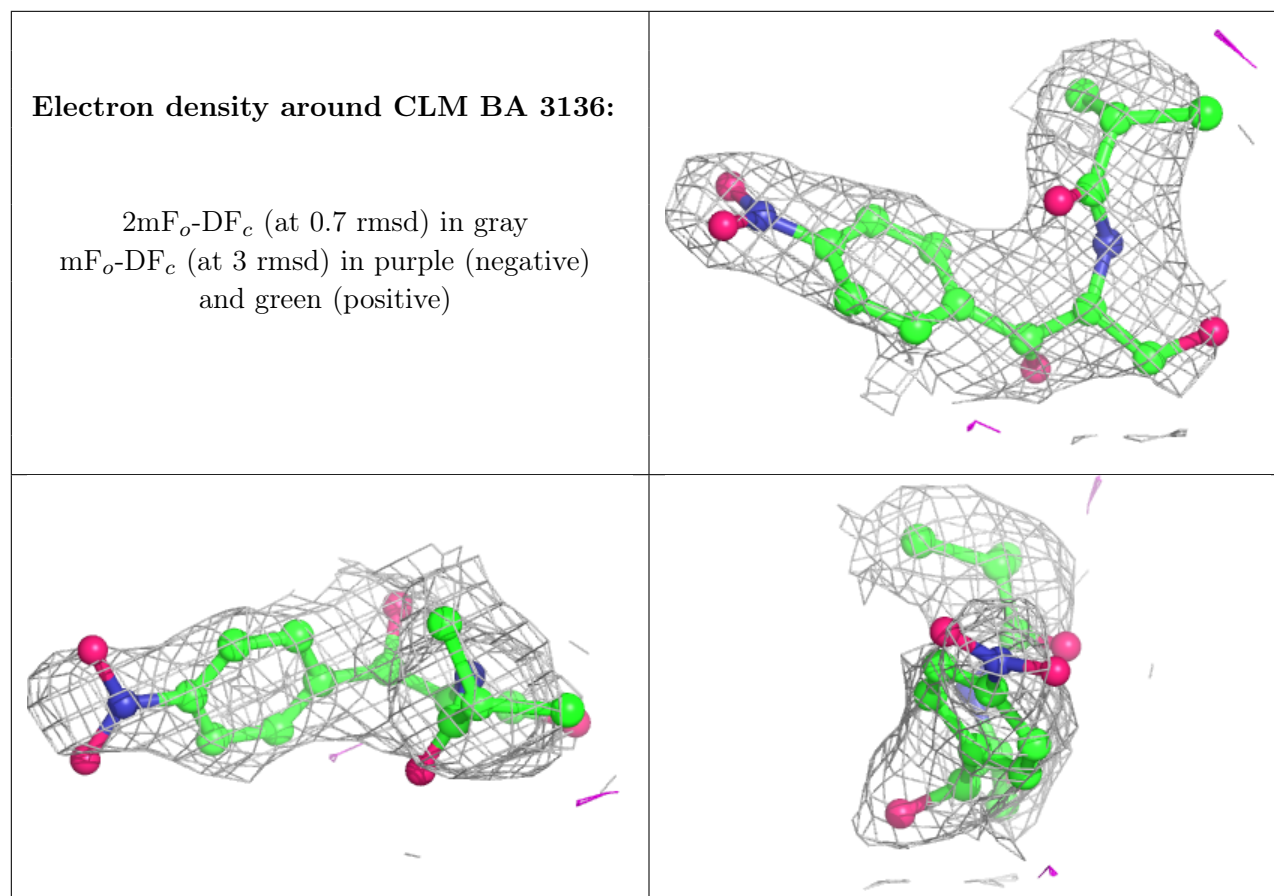
| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 60 | MG | AA | 1640 | 1/1 | 0.98 | 0.25 | 189,189,189,189 | 0 |
| 60 | MG | BA | 3017 | 1/1 | 0.98 | 0.07 | 27,27,27,27 | 0 |
| 60 | MG | BA | 3108 | 1/1 | 0.98 | 0.17 | 6,6,6,6 | 0 |
| 60 | MG | DA | 3089 | 1/1 | 0.98 | 0.06 | 81,81,81,81 | 0 |
| 60 | MG | BA | 3109 | 1/1 | 0.98 | 0.10 | 105,105,105,105 | 0 |
| 60 | MG | BA | 3077 | 1/1 | 0.98 | 0.13 | 151,151,151,151 | 0 |
| 60 | MG | BA | 3112 | 1/1 | 0.98 | 0.16 | 33,33,33,33 | 0 |
| 60 | MG | BA | 3113 | 1/1 | 0.98 | 0.10 | 34,34,34,34 | 0 |
| 60 | MG | BA | 3021 | 1/1 | 0.98 | 0.11 | 15,15,15,15 | 0 |
| 60 | MG | BA | 3006 | 1/1 | 0.98 | 0.05 | 47,47,47,47 | 0 |
| 60 | MG | DA | 3054 | 1/1 | 0.98 | 0.13 | 125,125,125,125 | 0 |
| 60 | MG | DA | 3055 | 1/1 | 0.98 | 0.10 | 121,121,121,121 | 0 |
| 60 | MG | BA | 3034 | 1/1 | 0.99 | 0.09 | 9,9,9,9 | 0 |
| 60 | MG | AA | 1631 | 1/1 | 0.99 | 0.13 | 95,95,95,95 | 0 |
| 60 | MG | BA | 3120 | 1/1 | 0.99 | 0.06 | 44,44,44,44 | 0 |
| 60 | MG | BA | 3121 | 1/1 | 0.99 | 0.14 | 5,5,5,5 | 0 |
| 60 | MG | BA | 3036 | 1/1 | 0.99 | 0.15 | 30,30,30,30 | 0 |
| 60 | MG | BA | 3037 | 1/1 | 0.99 | 0.16 | 7,7,7,7 | 0 |
| 60 | MG | BA | 3038 | 1/1 | 0.99 | 0.17 | 21,21,21,21 | 0 |
| 60 | MG | AA | 1605 | 1/1 | 0.99 | 0.12 | 30,30,30,30 | 0 |
| 60 | MG | BA | 3126 | 1/1 | 0.99 | 0.14 | 32,32,32,32 | 0 |
| 60 | MG | BA | 3040 | 1/1 | 0.99 | 0.12 | 11,11,11,11 | 0 |
| 60 | MG | BA | 3128 | 1/1 | 0.99 | 0.13 | 6,6,6,6 | 0 |
| 60 | MG | BA | 3129 | 1/1 | 0.99 | 0.15 | 15,15,15,15 | 0 |
| 60 | MG | BA | 3065 | 1/1 | 0.99 | 0.15 | 27,27,27,27 | 0 |
| 60 | MG | BA | 3093 | 1/1 | 0.99 | 0.10 | 68,68,68,68 | 0 |
| 60 | MG | BA | 3066 | 1/1 | 0.99 | 0.11 | 14,14,14,14 | 0 |
| 60 | MG | BA | 3133 | 1/1 | 0.99 | 0.14 | 5,5,5,5 | 0 |
| 60 | MG | BA | 3095 | 1/1 | 0.99 | 0.12 | 13,13,13,13 | 0 |
| 60 | MG | BA | 3067 | 1/1 | 0.99 | 0.11 | 22,22,22,22 | 0 |
| 60 | MG | BA | 3023 | 1/1 | 0.99 | 0.12 | 8,8,8,8 | 0 |
| 60 | MG | BA | 3042 | 1/1 | 0.99 | 0.13 | 34,34,34,34 | 0 |
| 60 | MG | BB | 203 | 1/1 | 0.99 | 0.10 | 16,16,16,16 | 0 |
| 60 | MG | BA | 3099 | 1/1 | 0.99 | 0.10 | 32,32,32,32 | 0 |
| 60 | MG | BL | 201 | 1/1 | 0.99 | 0.07 | 34,34,34,34 | 0 |
| 60 | MG | BA | 3070 | 1/1 | 0.99 | 0.11 | 76,76,76,76 | 0 |
| 60 | MG | BA | 3043 | 1/1 | 0.99 | 0.25 | 19,19,19,19 | 0 |
| 60 | MG | BA | 3072 | 1/1 | 0.99 | 0.16 | 81,81,81,81 | 0 |
| 60 | MG | BA | 3013 | 1/1 | 0.99 | 0.18 | 6,6,6,6 | 0 |
| 60 | MG | AA | 1602 | 1/1 | 0.99 | 0.08 | 117,117,117,117 | 0 |
| 60 | MG | BA | 3105 | 1/1 | 0.99 | 0.15 | 11,11,11,11 | 0 |
| 60 | MG | BA | 3026 | 1/1 | 0.99 | 0.18 | 122,122,122,122 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 60 | MG | AA | 1642 | 1/1 | 0.99 | 0.09 | 42,42,42,42 | 0 |
| 60 | MG | BA | 3016 | 1/1 | 0.99 | 0.07 | 5,5,5,5 | 0 |
| 60 | MG | AA | 1621 | 1/1 | 0.99 | 0.14 | 35,35,35,35 | 0 |
| 60 | MG | BA | 3110 | 1/1 | 0.99 | 0.09 | 65,65,65,65 | 0 |
| 60 | MG | BA | 3019 | 1/1 | 0.99 | 0.15 | 50,50,50,50 | 0 |
| 60 | MG | BA | 3031 | 1/1 | 0.99 | 0.12 | 15,15,15,15 | 0 |
| 60 | MG | BA | 3052 | 1/1 | 0.99 | 0.09 | 12,12,12,12 | 0 |
| 60 | MG | BA | 3053 | 1/1 | 0.99 | 0.10 | 35,35,35,35 | 0 |
| 60 | MG | BA | 3032 | 1/1 | 0.99 | 0.16 | 6,6,6,6 | 0 |
| 60 | MG | BA | 3116 | 1/1 | 0.99 | 0.06 | 14,14,14,14 | 0 |
| 60 | MG | BA | 3020 | 1/1 | 0.99 | 0.11 | 21,21,21,21 | 0 |
| 60 | MG | BA | 3062 | 1/1 | 1.00 | 0.13 | 9,9,9,9 | 0 |
| 60 | MG | BA | 3063 | 1/1 | 1.00 | 0.12 | 11,11,11,11 | 0 |
| 60 | MG | BA | 3018 | 1/1 | 1.00 | 0.30 | 10,10,10,10 | 0 |

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.



6.5 Other polymers [i](#)

There are no such residues in this entry.