# Full wwPDB X-ray Structure Validation Report ⓘ

Dec 15, 2024 – 10:29 PM EST

| | | |
|---|---|---|
| PDB ID | : | 4V85 |
| Title | : | Crystal Structure of Release Factor RF3 Trapped in the GTP State on a Rotated Conformation of the Ribosome. |
| Authors | : | Zhou, J.; Lancaster, L.; Trakhanov, S.; Noller, H.F. |
| Deposited on | : | 2011-06-13 |
| Resolution | : | 3.20 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.

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

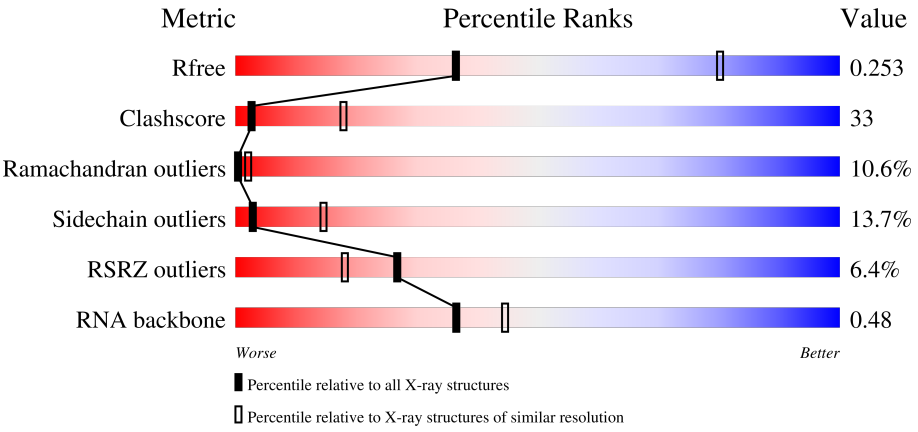
| | | |
|---|---|---|
| MolProbity | : | 4.02b-467 |
| Mogul | : | 2022.3.0, CSD as543be (2022) |
| Xtriage (Phenix) | : | 1.21 |
| EDS | : | 3.0 |
| buster-report | : | 1.1.7 (2018) |
| Percentile statistics | : | 20231227.v01 (using entries in the PDB archive December 27th 2023) |
| CCP4 | : | 9.0.004 (Gargrove) |
| Density-Fitness | : | 1.0.11 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.40 |

# 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 3.20 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)) |
|---|---|---|
| $R_{free}$ | 164625 | 1370 (3.20-3.20) |
| Clashscore | 180529 | 1497 (3.20-3.20) |
| Ramachandran outliers | 177936 | 1479 (3.20-3.20) |
| Sidechain outliers | 177891 | 1478 (3.20-3.20) |
| RSRZ outliers | 164620 | 1371 (3.20-3.20) |
| RNA backbone | 3690 | 1111 (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 <=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 | 3% 28% 56% 16% |
| 2 | AB | 241 | 8% 25% 45% 17% 10% |
| 3 | AC | 233 | 5% 30% 44% 13% 12% |
| 4 | AD | 206 | 15% 27% 57% 15% |

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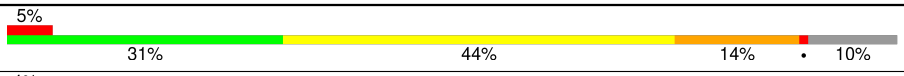
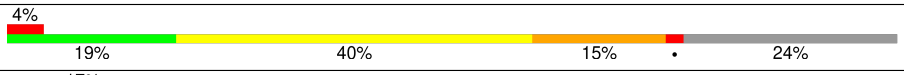
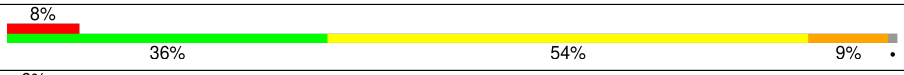
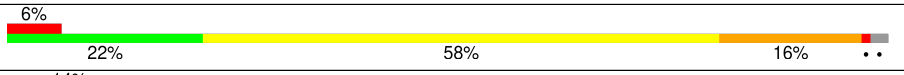
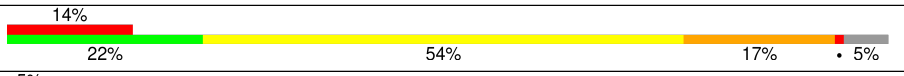
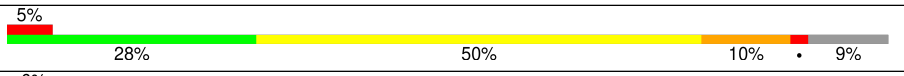
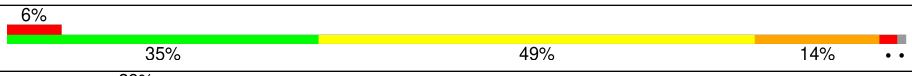
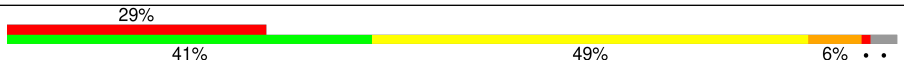
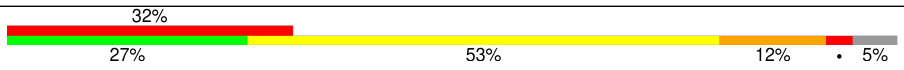
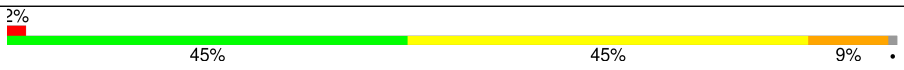
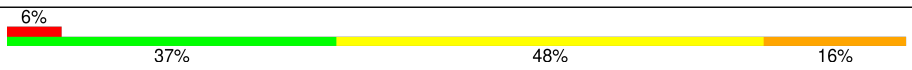
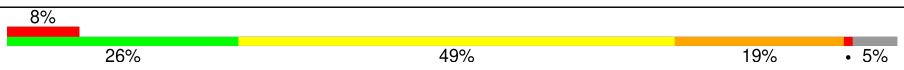
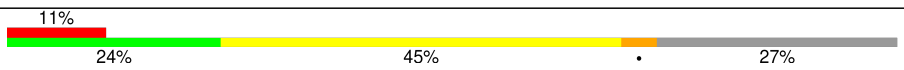
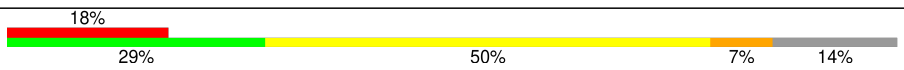
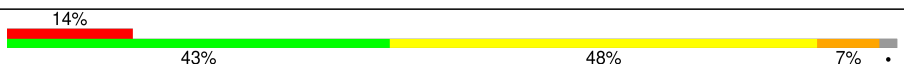
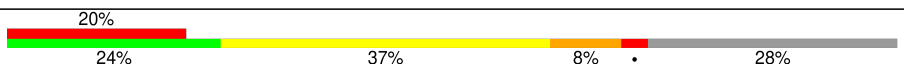
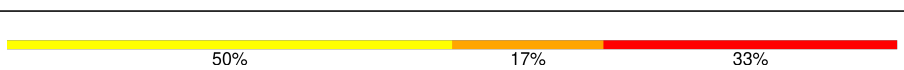
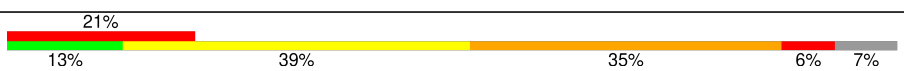
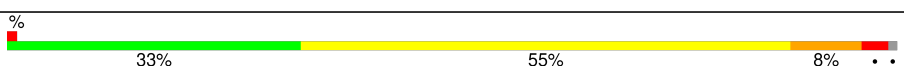
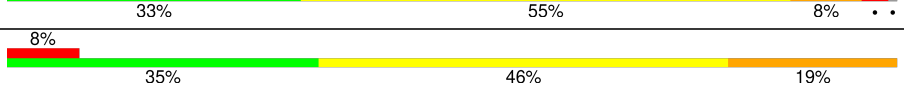
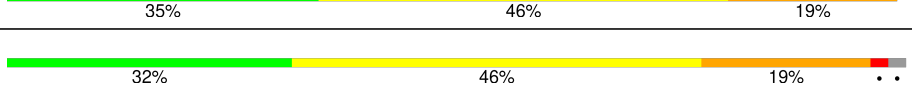
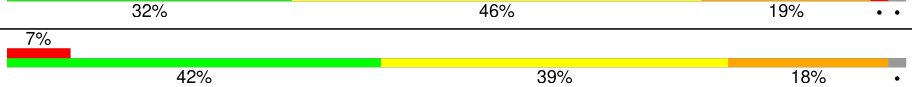
| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 5 | AE | 167 |   |
| 6 | AF | 131 |   |
| 7 | AG | 156 | |
| 8 | AH | 130 |   |
| 9 | AI | 130 |   |
| 10 | AJ | 103 |   |
| 11 | AK | 129 |   |
| 12 | AL | 124 |   |
| 13 | AM | 118 |   |
| 14 | AN | 101 |   |
| 15 | AO | 89 |   |
| 16 | AP | 82 |   |
| 17 | AQ | 84 |   |
| 18 | AR | 75 |   |
| 19 | AS | 92 |   |
| 20 | AT | 87 |   |
| 21 | AU | 71 |   |
| 22 | AV | 27 | |
| 23 | AW | 529 | |
| 24 | AY | 6 |   |
| 25 | B0 | 85 |   |
| 26 | B1 | 78 |   |
| 27 | B2 | 63 |   |
| 28 | B3 | 59 |   |
| 29 | B4 | 57 |   |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 30 | B5 | 55 | 11% 29% 53% 7% 9% |
| 31 | B6 | 46 | 7% 65% 26% 9% |
| 32 | B7 | 65 | 2% 51% 43% |
| 33 | B8 | 38 | 3% 34% 50% 16% |
| 34 | BA | 2903 | % 34% 49% 14% |
| 35 | BB | 118 | 36% 50% 14% |
| 36 | BC | 273 | 4% 32% 51% 15% |
| 37 | BD | 209 | 2% 33% 47% 19% |
| 38 | BE | 201 | 3% 36% 47% 15% |
| 39 | BF | 179 | 5% 34% 52% 12% |
| 40 | BG | 177 | 3% 41% 40% 15% |
| 41 | BH | 165 | 34% 18% 61% 16% |
| 42 | BI | 142 | 33% 36% 53% 11% |
| 43 | BJ | 121 | 3% 6% 13% 6% 75% |
| 43 | BK | 121 | 5% 13% 10% 75% |
| 43 | BL | 121 | 12% 7% 16% 75% |
| 43 | BM | 121 | 3% 7% 15% 75% |
| 44 | BN | 142 | 7% 30% 52% 14% |
| 45 | BO | 123 | 3% 26% 51% 20% |
| 46 | BP | 144 | 3% 36% 49% 12% |
| 47 | BQ | 136 | % 41% 46% 12% |
| 48 | BR | 127 | % 37% 45% 11% 6% |
| 49 | BS | 117 | 3% 32% 54% 13% |
| 50 | BT | 115 | 3% 29% 47% 21% |
| 51 | BU | 118 | 3% 37% 49% 13% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 52 | BV | 103 | 3% 31% 54% 15% |
| 53 | BW | 116 | 44% 37% 12% 5% |
| 54 | BX | 100 | 5% 21% 46% 23% 7% |
| 55 | BY | 104 | 7% 37% 46% 15% |
| 56 | BZ | 94 | 2% 52% 37% 11% |

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 |
|---|---|---|---|---|---|---|---|
| 24 | KBE | AY | 1 | - | - | X | - |
| 24 | UAL | AY | 5 | - | - | X | - |
| 24 | 5OH | AY | 6 | - | - | X | - |
| 57 | MG | BA | 3349 | - | - | - | X |

## 2 Entry composition

There are 59 unique types of molecules in this entry. The entry contains 147221 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 | 1532 | 32873 | 14661 | 6031 | 10649 | 1532 | 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 | 1704 | 1081 | 305 | 311 | 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 | 1624 | 1028 | 305 | 288 | 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 |

- 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 | 1105 | 687 | 211 | 201 | 6 | 0 | 0 | 0 |

- Molecule 6 is a protein called 30S ribosomal protein S6 1.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | | |
| 6 | AF | 100 | 817 | 515 | 148 | 148 | 6 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | AG | 151 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1181 | 735 | 227 | 215 | 4 | | | |

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

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

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

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

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 | AJ | 98 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 786 | 493 | 150 | 142 | 1 | | | |

- 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 | | | |

- Molecule 12 is a protein called 30S ribosomal protein S12 1.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 12 | AL | 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 |
| | | | 883 | 546 | 178 | 156 | 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 | | | |

- Molecule 15 is a protein called 30S ribosomal protein S15 1.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 15 | AO | 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 |
| | | | 648 | 411 | 121 | 113 | 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 | 0 | 0 | 0 |
| | | | 455 | 288 | 86 | 81 | | | |

- 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 |
| | | | 637 | 408 | 120 | 107 | 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 | | | |

- 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 |
| | | | 425 | 265 | 86 | 73 | 1 | | | |

- Molecule 22 is a RNA chain called messenger RNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 22 | AV | 6 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 129 | 58 | 24 | 41 | 6 | | | |

- Molecule 23 is a protein called Peptide chain release factor 3.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 23 | AW | 525 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 4144 | 2617 | 722 | 783 | 22 | | | |

- Molecule 24 is a protein called Viomycin.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 24 | AY | 6 | Total | C | N | O | 0 | 0 | 0 |
| | | | 48 | 25 | 13 | 10 | | | |

- Molecule 25 is a protein called 50S ribosomal protein L27.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 25 | B0 | 79 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 596 | 367 | 120 | 108 | 1 | | | |

- Molecule 26 is a protein called 50S ribosomal protein L28.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 26 | B1 | 77 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 625 | 388 | 129 | 106 | 2 | | | |

- Molecule 27 is a protein called 50S ribosomal protein L29.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 27 | B2 | 63 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 509 | 313 | 99 | 95 | 2 | | | |

- Molecule 28 is a protein called 50S ribosomal protein L30.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 28 | B3 | 58 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 449 | 281 | 87 | 79 | 2 | | | |

- Molecule 29 is a protein called 50S ribosomal protein L32.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 29 | B4 | 56 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 444 | 269 | 94 | 80 | 1 | | | |

- Molecule 30 is a protein called 50S ribosomal protein L33.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 30 | B5 | 50 | Total | C | N | O | 0 | 0 | 0 |
| | | | 409 | 263 | 75 | 71 | | | |

- Molecule 31 is a protein called 50S ribosomal protein L34.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 31 | B6 | 46 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 377 | 228 | 90 | 57 | 2 | | | |

- Molecule 32 is a protein called 50S ribosomal protein L35.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 32 | B7 | 64 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 504 | 323 | 105 | 74 | 2 | | | |

- Molecule 33 is a protein called 50S ribosomal protein L36 1.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 33 | B8 | 38 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 302 | 185 | 65 | 48 | 4 | | | |

- Molecule 34 is a RNA chain called 23S rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 34 | BA | 2853 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 61252 | 27324 | 11274 | 19801 | 2853 | | | |

- Molecule 35 is a RNA chain called 5S ribosomal RNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 35 | BB | 118 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 2529 | 1126 | 464 | 821 | 118 | | | |

- Molecule 36 is a protein called 50S ribosomal protein L2.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 36 | BC | 271 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 2082 | 1288 | 423 | 364 | 7 | | | |

- Molecule 37 is a protein called 50S ribosomal protein L3.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 37 | BD | 209 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1565 | 979 | 288 | 294 | 4 | | | |

- Molecule 38 is a protein called 50S ribosomal protein L4.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 38 | BE | 201 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1552 | 974 | 283 | 290 | 5 | | | |

- Molecule 39 is a protein called 50S ribosomal protein L5.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 39 | BF | 177 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1410 | 899 | 249 | 256 | 6 | | | |

- Molecule 40 is a protein called 50S ribosomal protein L6.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 40 | BG | 176 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1323 | 832 | 243 | 246 | 2 | | | |

- Molecule 41 is a protein called 50S ribosomal protein L10.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 41 | BH | 163 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1230 | 775 | 219 | 229 | 7 | | | |

- Molecule 42 is a protein called 50S ribosomal protein L11.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 42 | BI | 141 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1032 | 651 | 179 | 196 | 6 | | | |

- Molecule 43 is a protein called 50S ribosomal protein L7/L12.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 43 | BJ | 30 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 227 | 144 | 33 | 47 | 3 | | | |
| 43 | BK | 30 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 227 | 144 | 33 | 47 | 3 | | | |
| 43 | BL | 30 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 227 | 144 | 33 | 47 | 3 | | | |
| 43 | BM | 30 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 227 | 144 | 33 | 47 | 3 | | | |

- Molecule 44 is a protein called 50S ribosomal protein L13.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 44 | BN | 142 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1129 | 714 | 212 | 199 | 4 | | | |

- Molecule 45 is a protein called 50S ribosomal protein L14.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | BO | 122 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 938 | 587 | 180 | 165 | 6 | | | |

- Molecule 46 is a protein called 50S ribosomal protein L15.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 46 | BP | 143 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1045 | 649 | 206 | 189 | 1 | | | |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|---|---|---|---|---|---|
| BP | 77 | ILE | VAL | SEE REMARK 999 | UNP C3SR37 |

- Molecule 47 is a protein called 50S ribosomal protein L16.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 47 | BQ | 136 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1074 | 686 | 205 | 177 | 6 | | | |

- Molecule 48 is a protein called 50S ribosomal protein L17.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 48 | BR | 120 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 960 | 593 | 196 | 166 | 5 | | | |

- Molecule 49 is a protein called 50S ribosomal protein L18.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 49 | BS | 116 | Total | C | N | O | 0 | 0 | 0 |
| | | | 892 | 552 | 178 | 162 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 50 | BT | 114 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 917 | 574 | 179 | 163 | 1 | | | |

- Molecule 51 is a protein called 50S ribosomal protein L20.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 51 | BU | 117 | Total | C | N | O | 0 | 0 | 0 |
| | | | 947 | 604 | 192 | 151 | | | |

- Molecule 52 is a protein called 50S ribosomal protein L21.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 52 | BV | 103 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 816 | 516 | 153 | 145 | 2 | | | |

- Molecule 53 is a protein called 50S ribosomal protein L22.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 53 | BW | 110 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 856 | 532 | 166 | 155 | 3 | | | |

There are 6 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|---|---|---|---|---|---|
| BW | 111 | HIS | - | expression tag | UNP C3SQW7 |
| BW | 112 | HIS | - | expression tag | UNP C3SQW7 |
| BW | 113 | HIS | - | expression tag | UNP C3SQW7 |
| BW | 114 | HIS | - | expression tag | UNP C3SQW7 |
| BW | 115 | HIS | - | expression tag | UNP C3SQW7 |
| BW | 116 | HIS | - | expression tag | UNP C3SQW7 |

- Molecule 54 is a protein called 50S ribosomal protein L23.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 54 | BX | 93 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 738 | 466 | 139 | 131 | 2 | | | |

- Molecule 55 is a protein called 50S ribosomal protein L24 1.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 55 | BY | 102 | Total | C | N | O | 0 | 0 | 0 |
| | | | 779 | 492 | 146 | 141 | | | |

- Molecule 56 is a protein called 50S ribosomal protein L25 1.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|---|
| 56 | BZ | 94 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 753 | 479 | 137 | 134 | 3 | | | |

- Molecule 57 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|---|---|---|---|---|---|---|
| 57 | AA | 102 | Total | Mg | 0 | 0 |
| | | | 102 | 102 | | |
| 57 | AF | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | AH | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | AL | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 57 | AM | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | AW | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | B0 | 3 | Total | Mg | 0 | 0 |
| | | | 3 | 3 | | |

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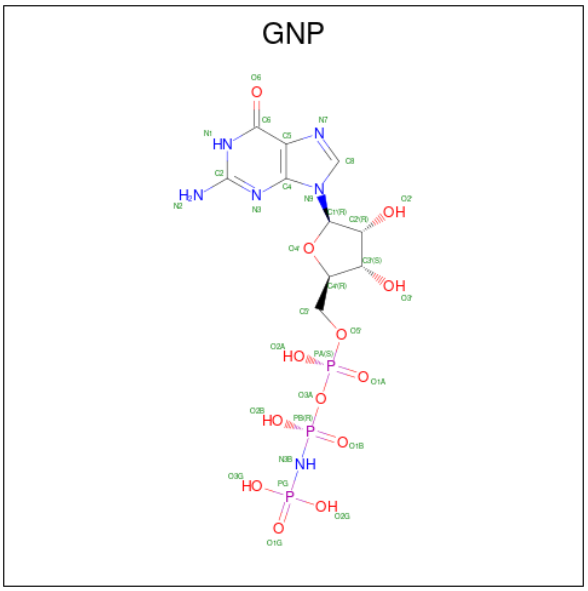
*Continued from previous page...*

| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|---|---|---|---|---|---|
| 57 | B2 | 1 | Total Mg<br>1 1 | 0 | 0 |
| 57 | B4 | 1 | Total Mg<br>1 1 | 0 | 0 |
| 57 | BA | 357 | Total Mg<br>357 357 | 0 | 0 |
| 57 | BB | 9 | Total Mg<br>9 9 | 0 | 0 |
| 57 | BC | 1 | Total Mg<br>1 1 | 0 | 0 |
| 57 | BD | 5 | Total Mg<br>5 5 | 0 | 0 |
| 57 | BE | 1 | Total Mg<br>1 1 | 0 | 0 |
| 57 | BN | 1 | Total Mg<br>1 1 | 0 | 0 |
| 57 | BO | 1 | Total Mg<br>1 1 | 0 | 0 |
| 57 | BQ | 1 | Total Mg<br>1 1 | 0 | 0 |
| 57 | BR | 2 | Total Mg<br>2 2 | 0 | 0 |
| 57 | BT | 1 | Total Mg<br>1 1 | 0 | 0 |
| 57 | BX | 1 | Total Mg<br>1 1 | 0 | 0 |

- Molecule 58 is PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER (three-letter code: GNP) (formula: $C_{10}H_{17}N_6O_{13}P_3$).




| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf |
|---|---|---|---|---|---|---|---|---|---|
| 58 | AW | 1 | Total | C | N | O | P | 0 | 0 |
| | | | 32 | 10 | 6 | 13 | 3 | | |

- Molecule 59 is water.

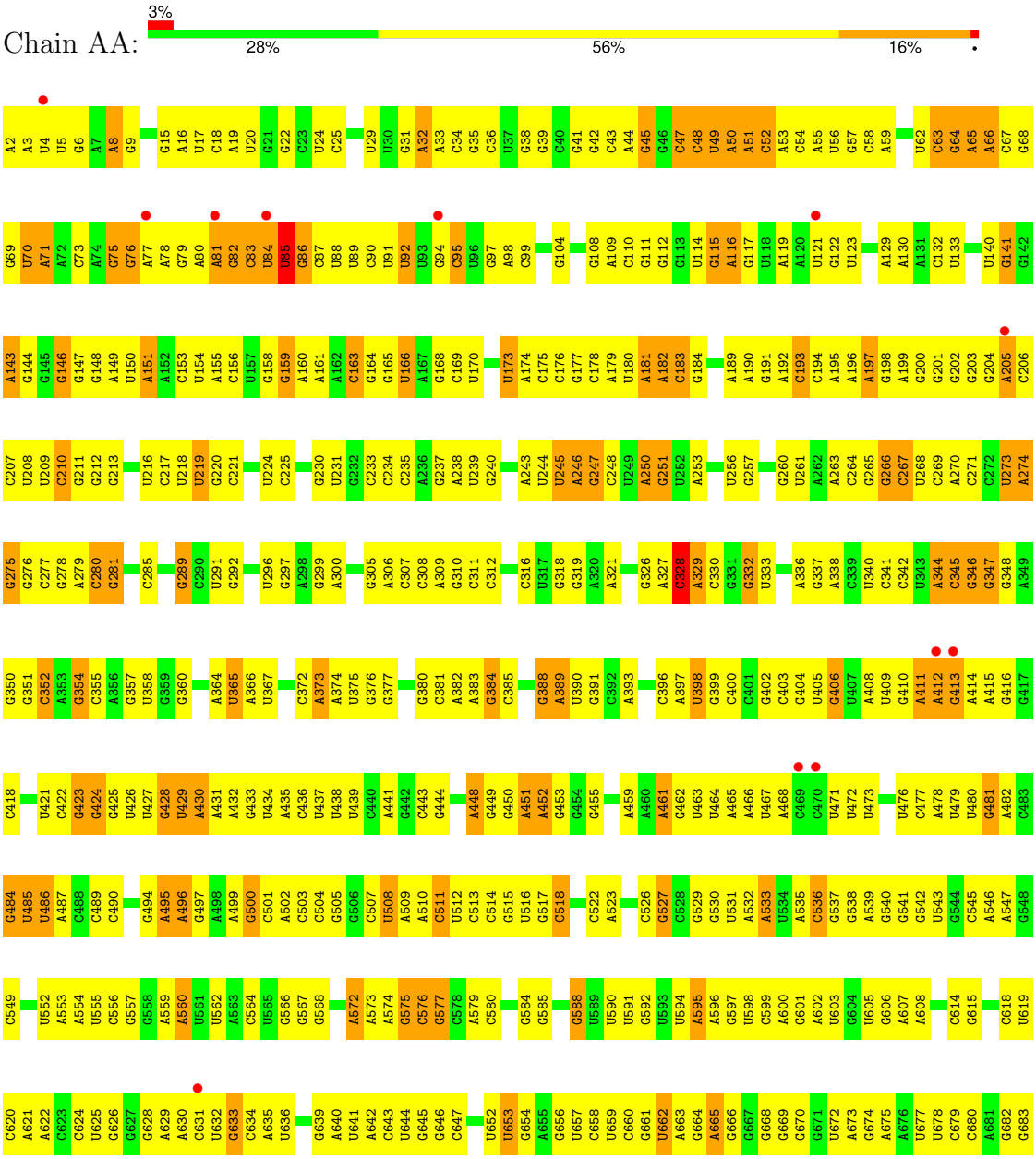
| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|---|---|---|---|---|---|---|
| 59 | AW | 2 | Total | O | 0 | 0 |
| | | | 2 | 2 | | |
| 59 | B8 | 1 | Total | O | 0 | 0 |
| | | | 1 | 1 | | |
| 59 | BA | 8 | Total | O | 0 | 0 |
| | | | 8 | 8 | | |
| 59 | BC | 2 | Total | O | 0 | 0 |
| | | | 2 | 2 | | |
| 59 | BD | 1 | Total | O | 0 | 0 |
| | | | 1 | 1 | | |
| 59 | BF | 1 | Total | O | 0 | 0 |
| | | | 1 | 1 | | |
| 59 | BG | 1 | Total | O | 0 | 0 |
| | | | 1 | 1 | | |
| 59 | BW | 1 | Total | O | 0 | 0 |
| | | | 1 | 1 | | |

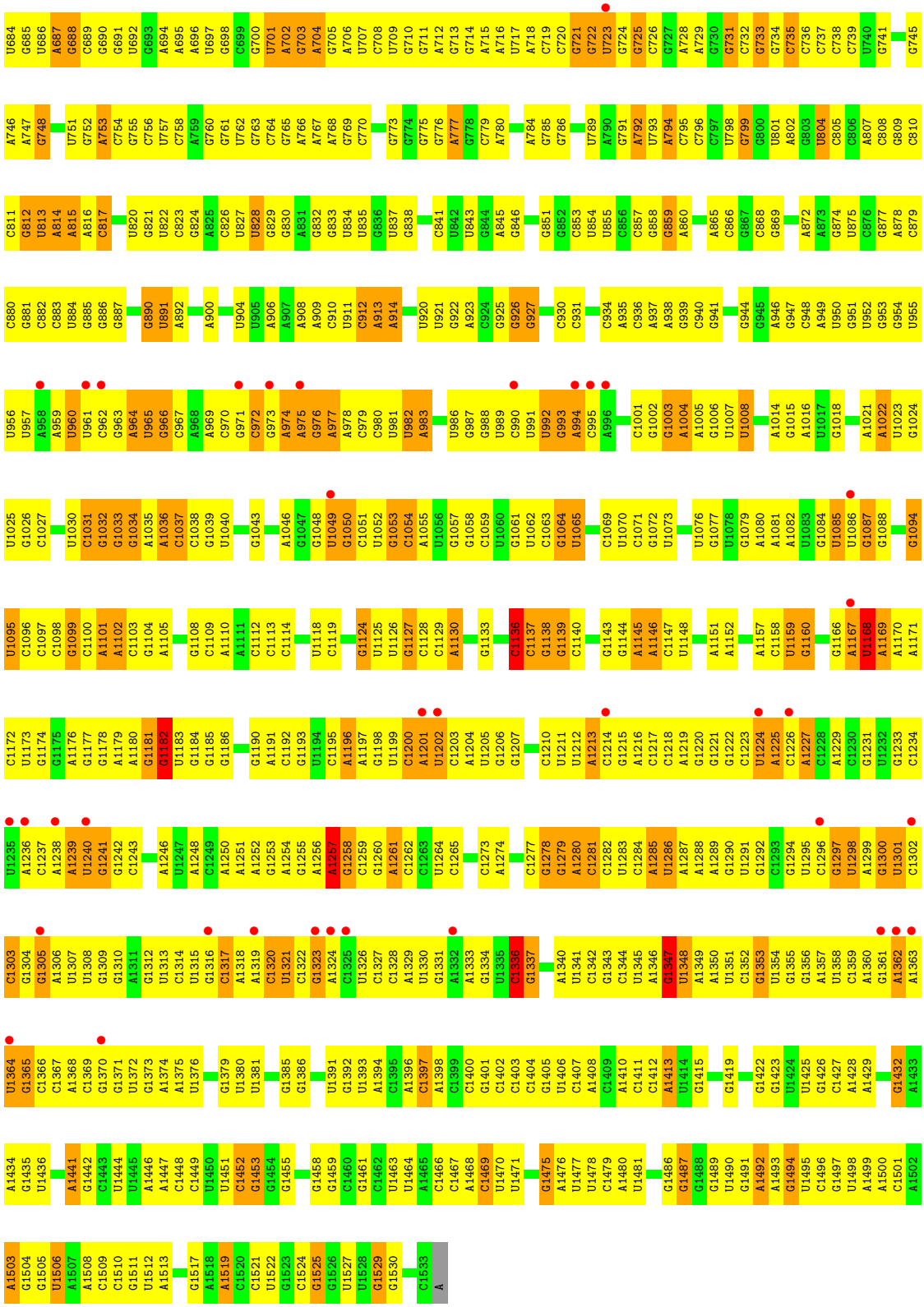
# 3 Residue-property plots (i)

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

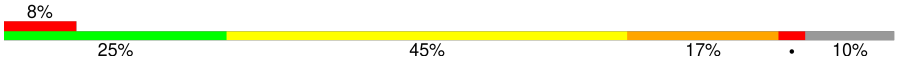
Chain AA:

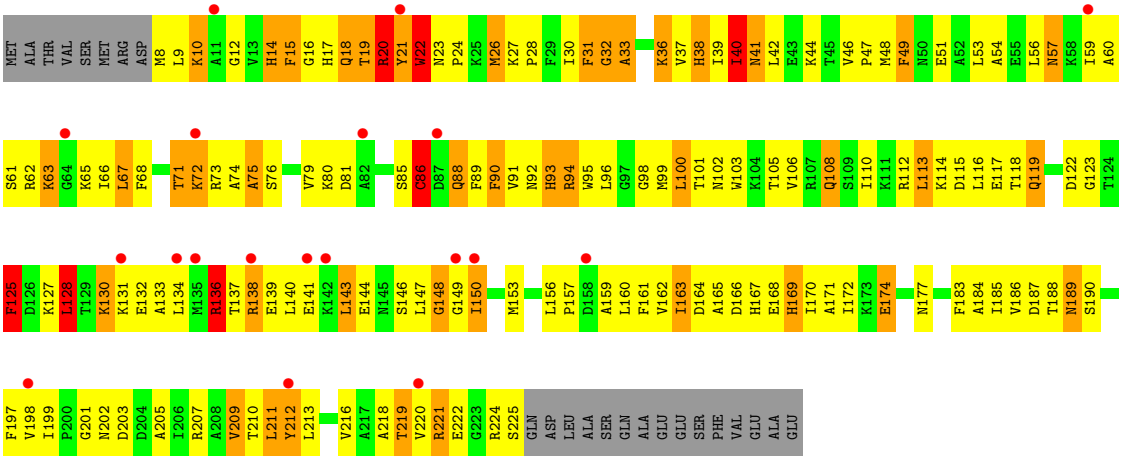




• Molecule 2: 30S ribosomal protein S2

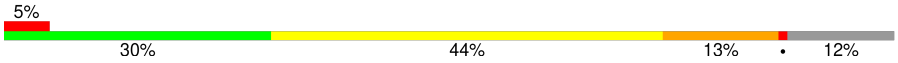
Chain AB:

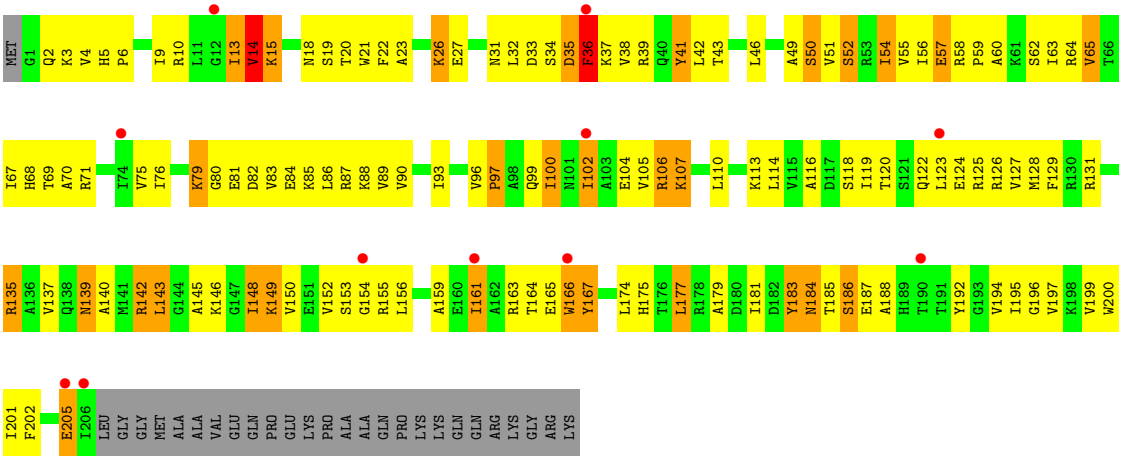




• Molecule 3: 30S ribosomal protein S3

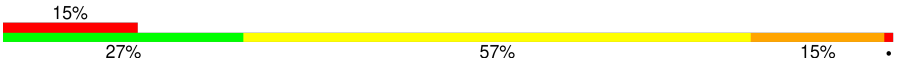
Chain AC:

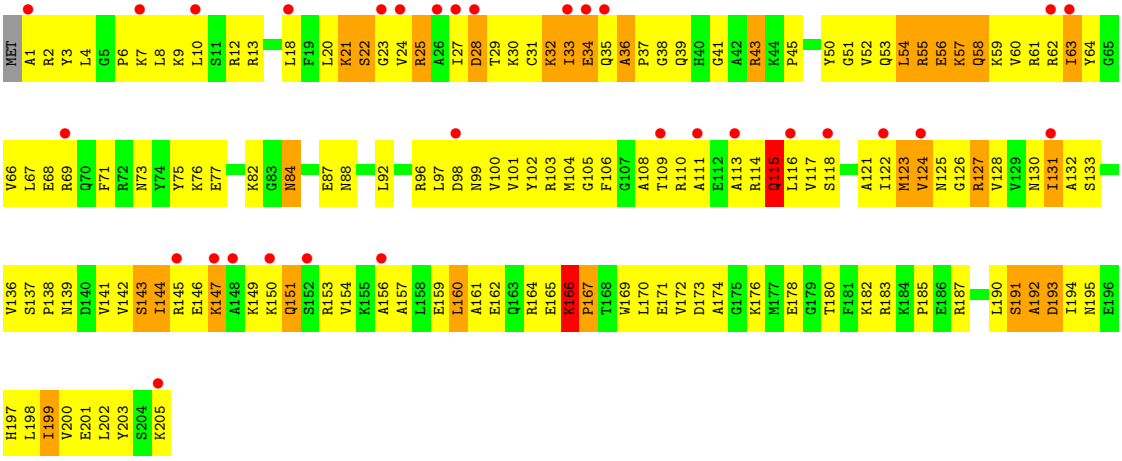


• Molecule 4: 30S ribosomal protein S4

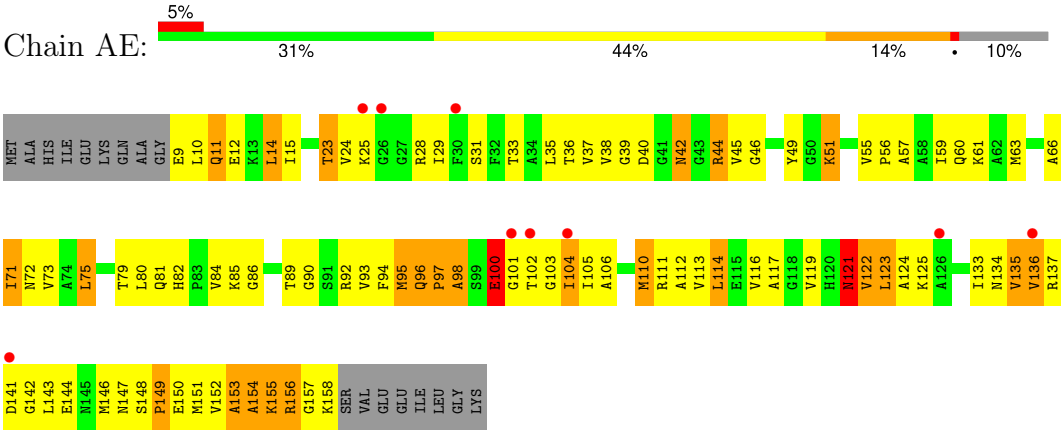
Chain AD:



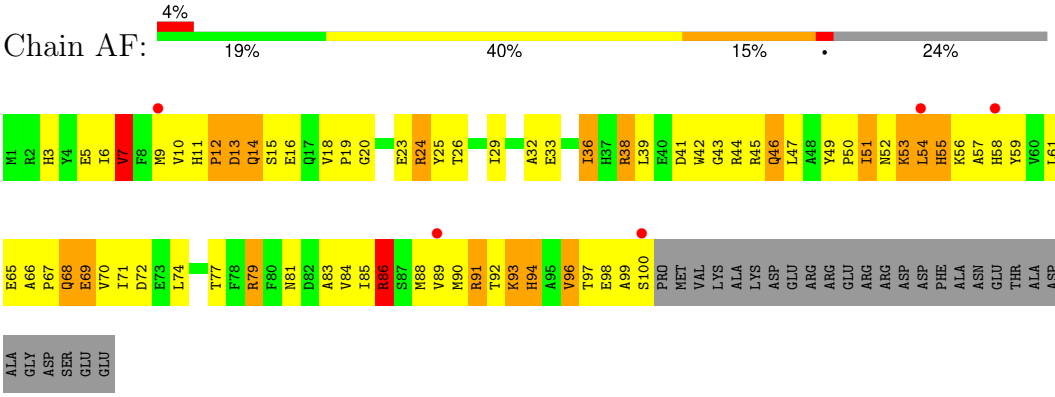
• Molecule 5: 30S ribosomal protein S5

Chain AE:



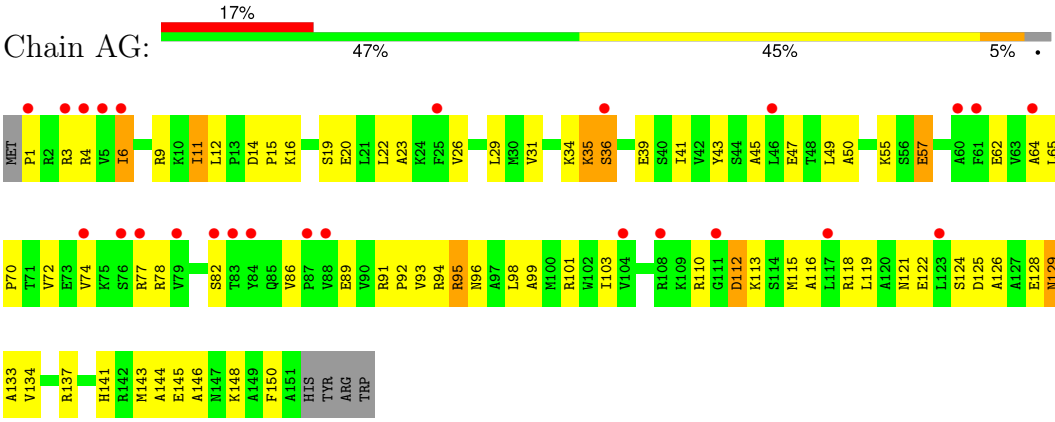

• Molecule 6: 30S ribosomal protein S6 1

Chain AF:



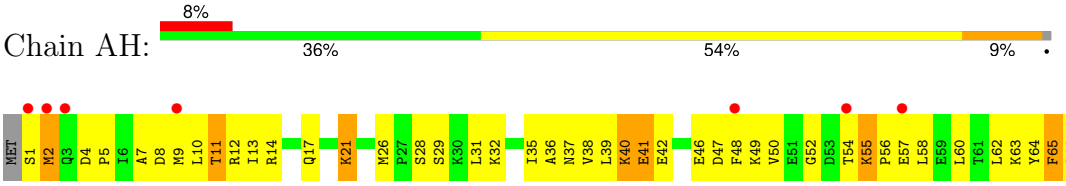

• Molecule 7: 30S ribosomal protein S7

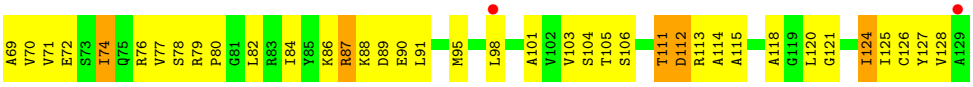
Chain AG:



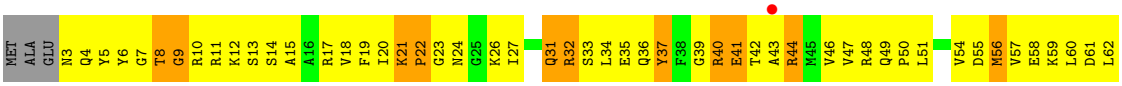

• Molecule 8: 30S ribosomal protein S8

Chain AH:

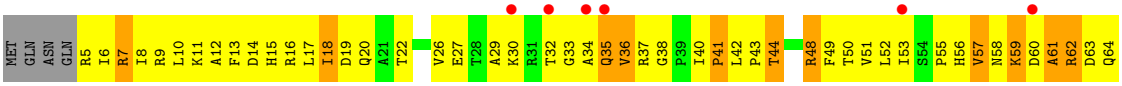


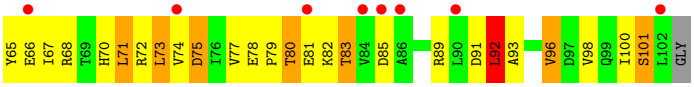



• Molecule 9: 30S ribosomal protein S9

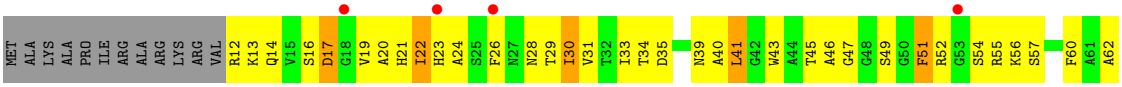


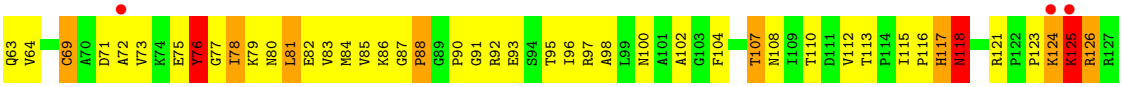
• Molecule 10: 30S ribosomal protein S10



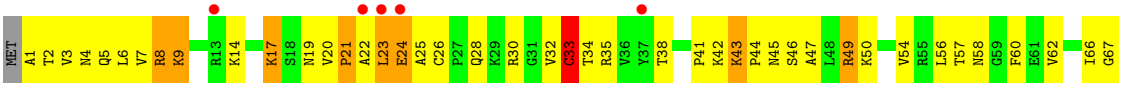



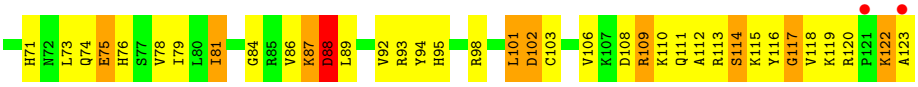

• Molecule 11: 30S ribosomal protein S11



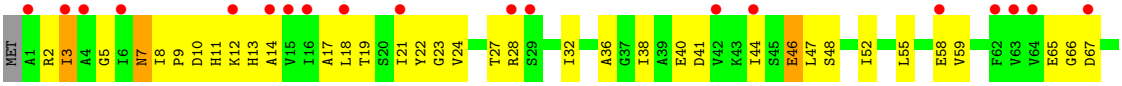
• Molecule 12: 30S ribosomal protein S12 1

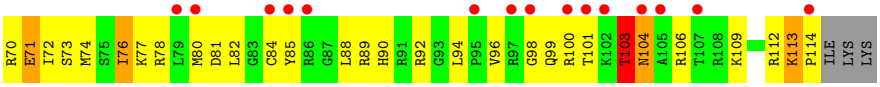





• Molecule 13: 30S ribosomal protein S13

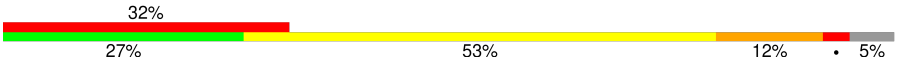
Chain AM:

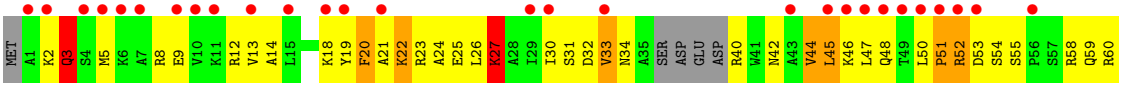


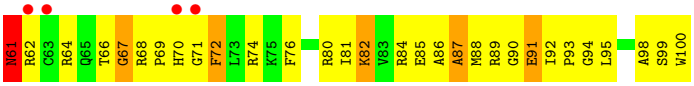




• Molecule 14: 30S ribosomal protein S14

Chain AN:

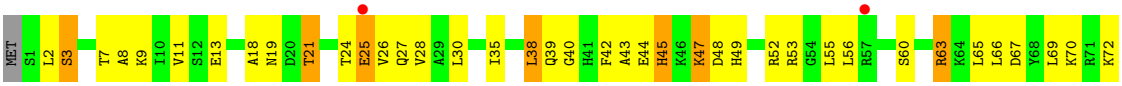


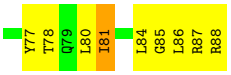




• Molecule 15: 30S ribosomal protein S15 1

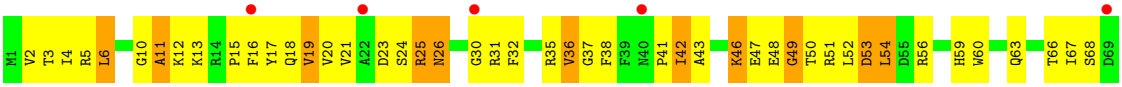
Chain AO:

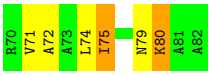



• Molecule 16: 30S ribosomal protein S16

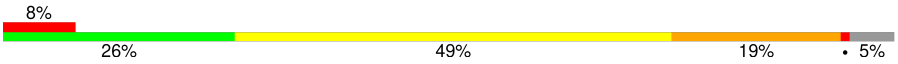
Chain AP:

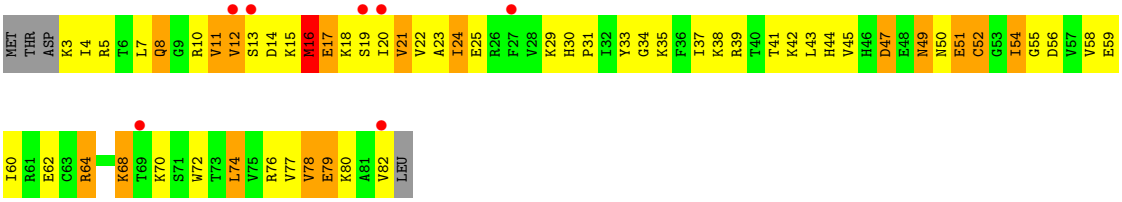



• Molecule 17: 30S ribosomal protein S17

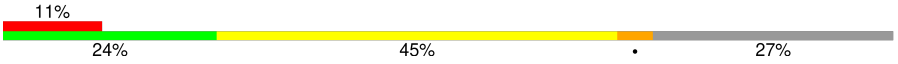
Chain AQ:

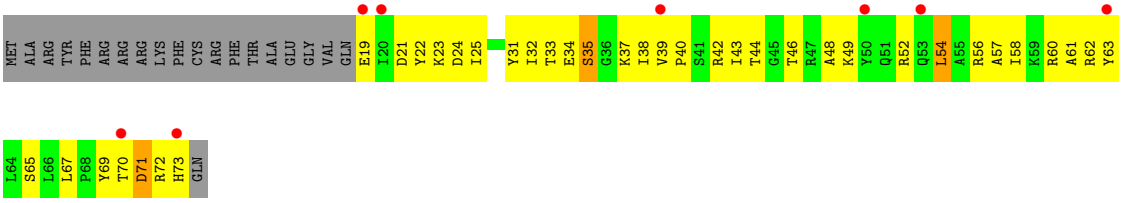




• Molecule 18: 30S ribosomal protein S18

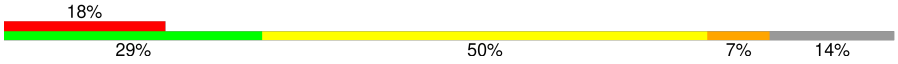
Chain AR:

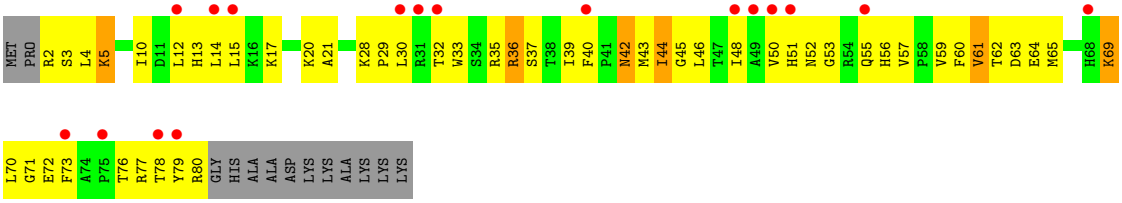


• Molecule 19: 30S ribosomal protein S19

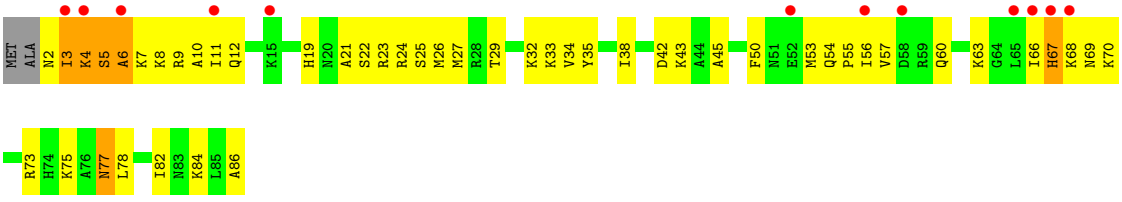
Chain AS:



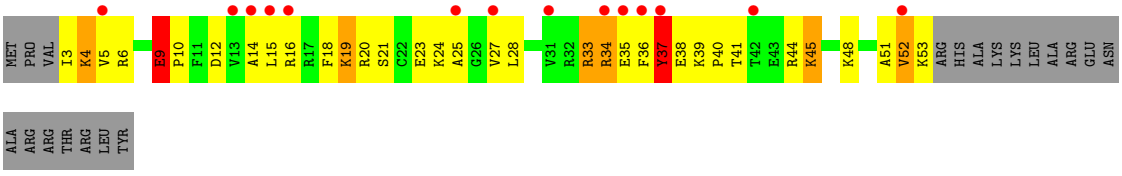
• Molecule 20: 30S ribosomal protein S20

Chain AT:



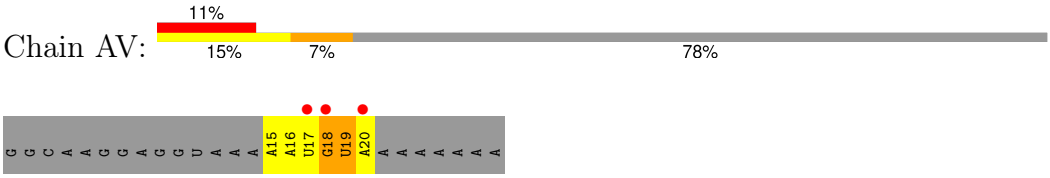
• Molecule 21: 30S ribosomal protein S21

Chain AU:



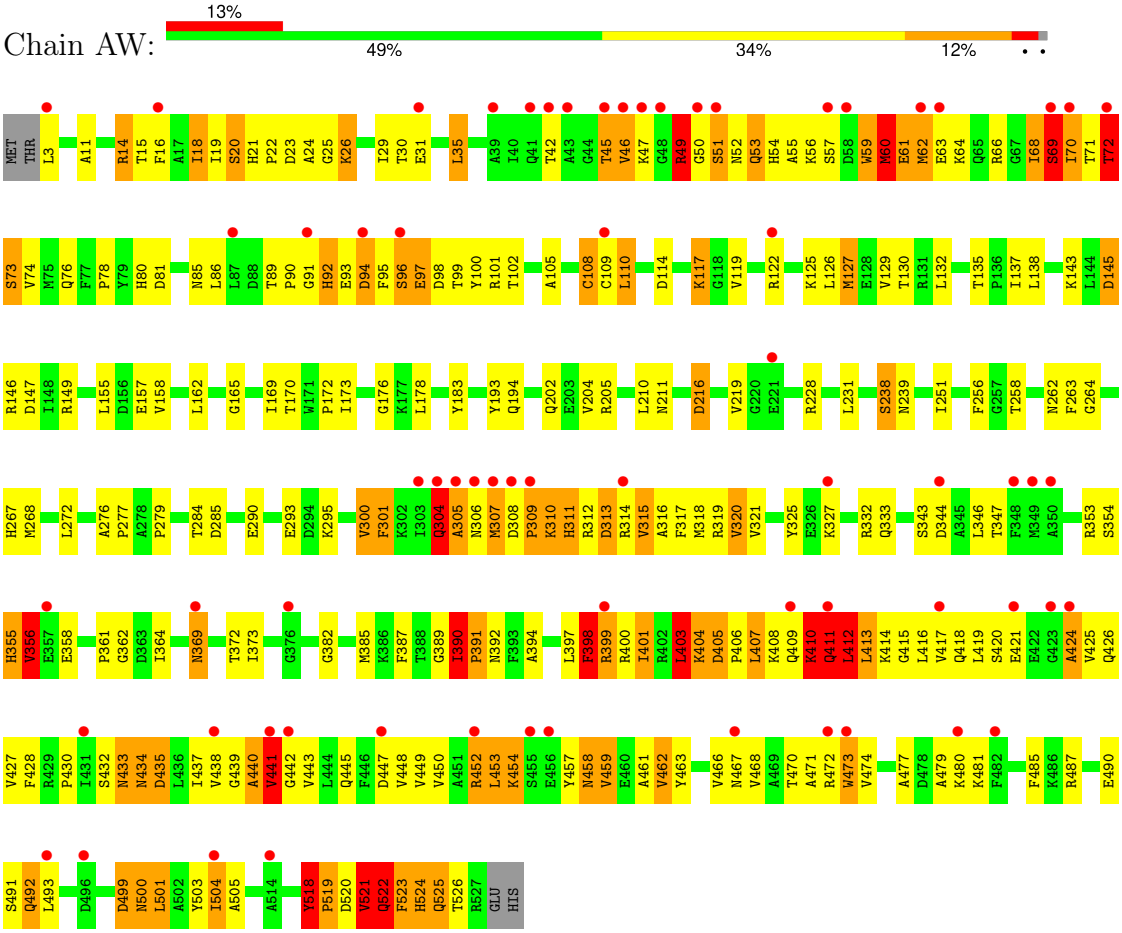
• Molecule 22: messenger RNA

Chain AV:




• Molecule 23: Peptide chain release factor 3

Chain AW:

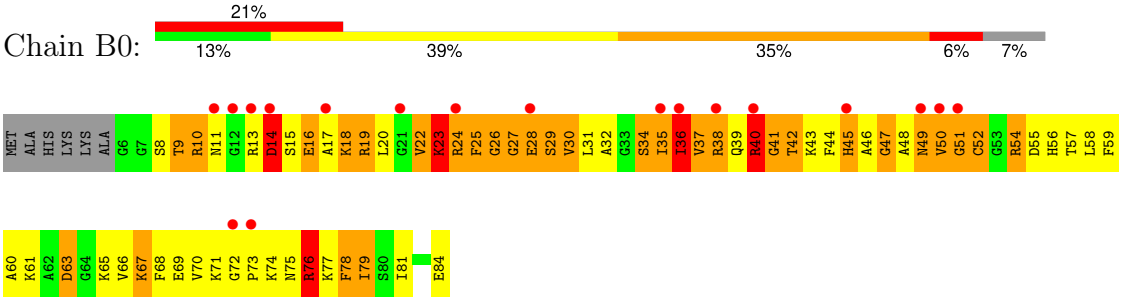



• Molecule 24: Viomycin

Chain AY:

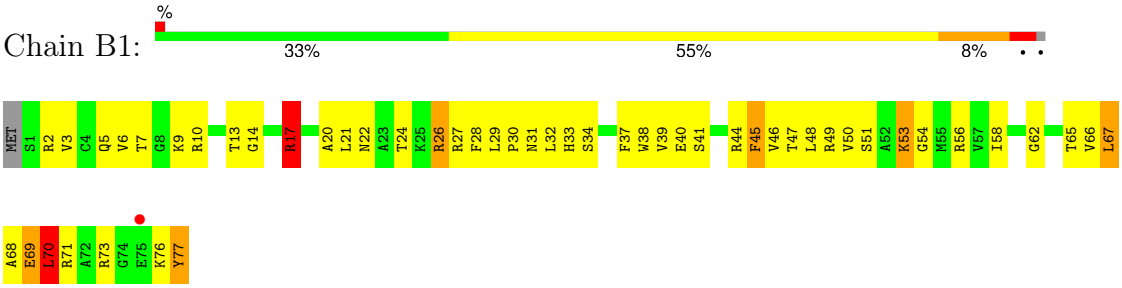
• Molecule 25: 50S ribosomal protein L27

Chain B0:



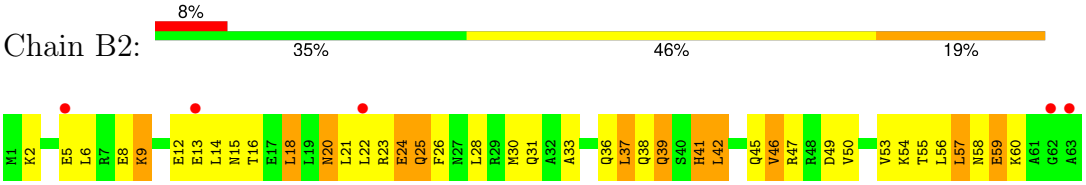
• Molecule 26: 50S ribosomal protein L28

Chain B1:



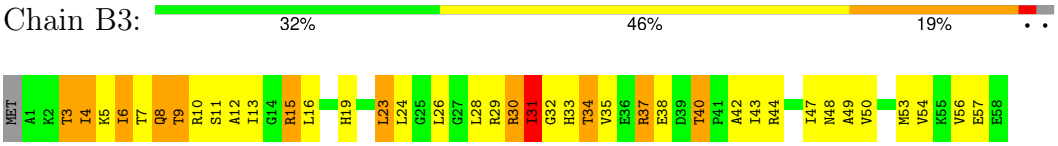

• Molecule 27: 50S ribosomal protein L29

Chain B2:



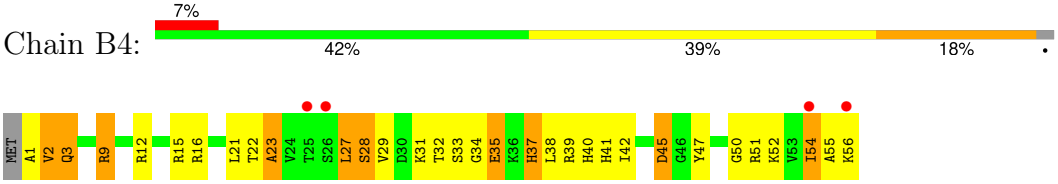

• Molecule 28: 50S ribosomal protein L30

Chain B3:



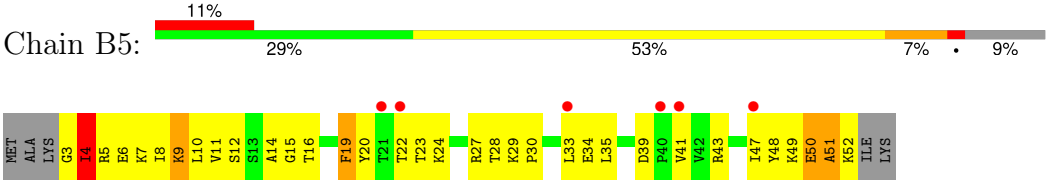

• Molecule 29: 50S ribosomal protein L32

Chain B4:



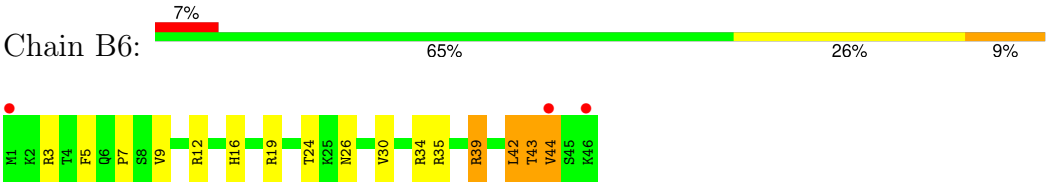

• Molecule 30: 50S ribosomal protein L33

Chain B5:




• Molecule 31: 50S ribosomal protein L34

Chain B6:




• Molecule 32: 50S ribosomal protein L35

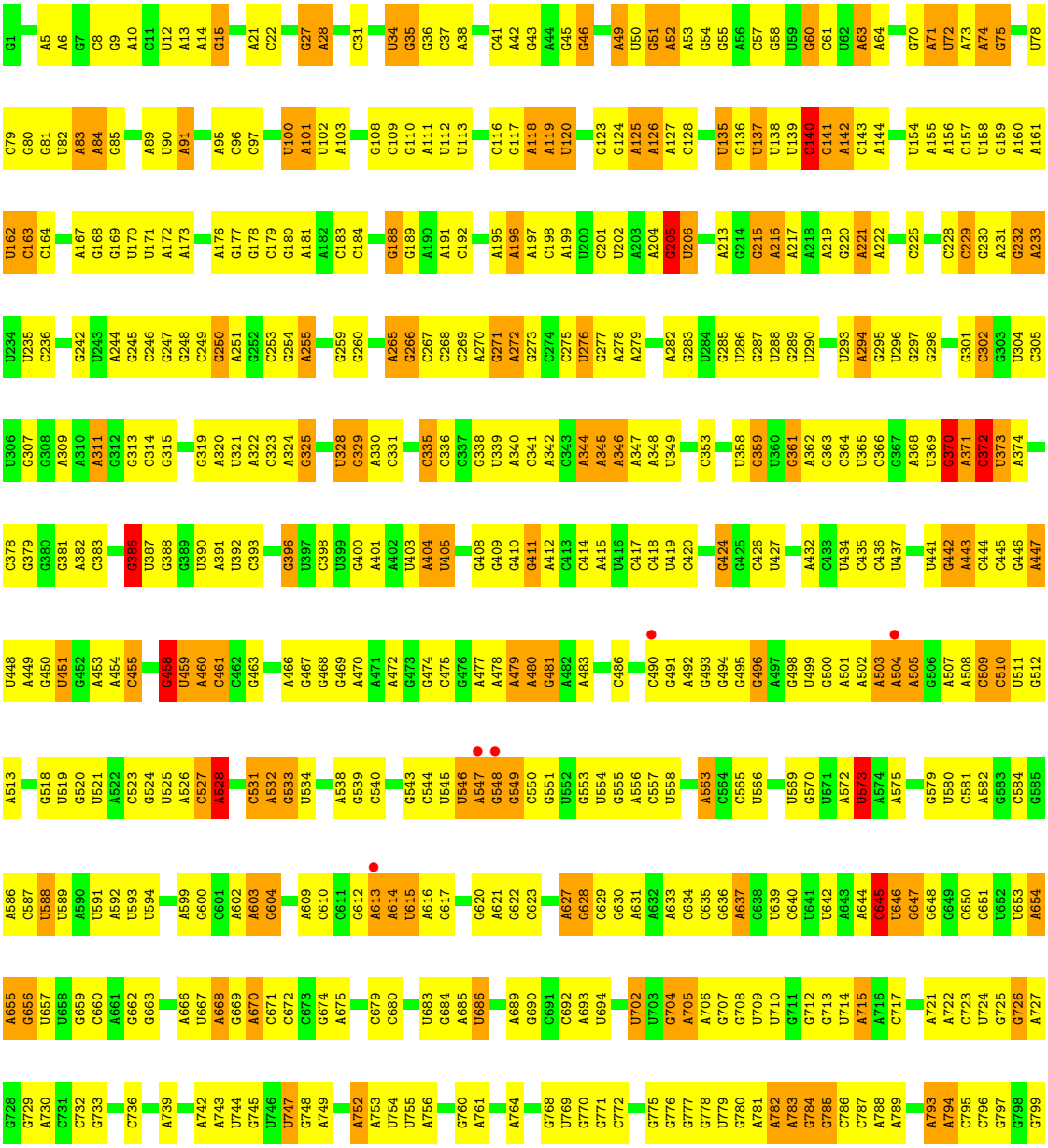
Chain B7:

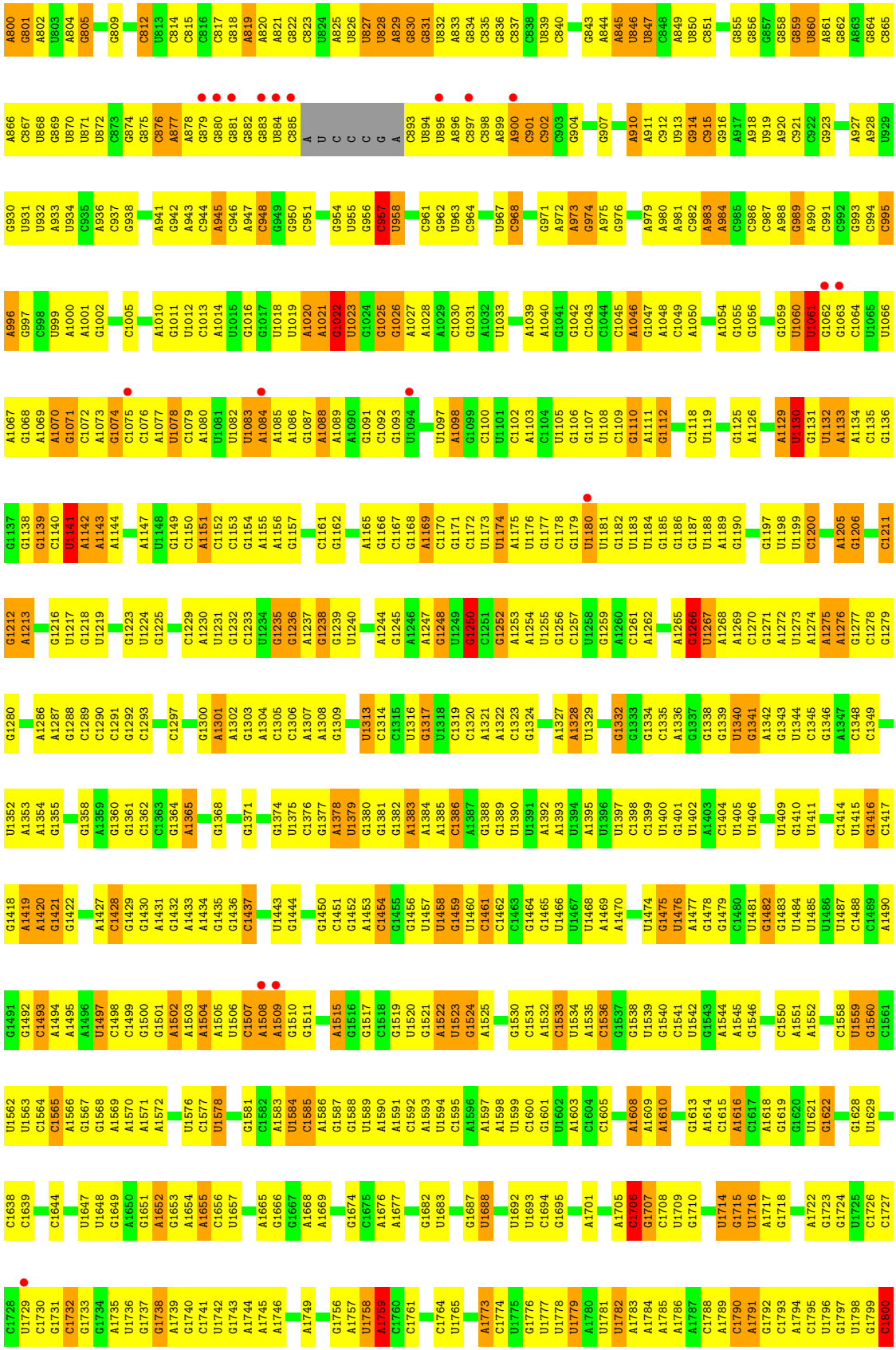
• Molecule 33: 50S ribosomal protein L36 1

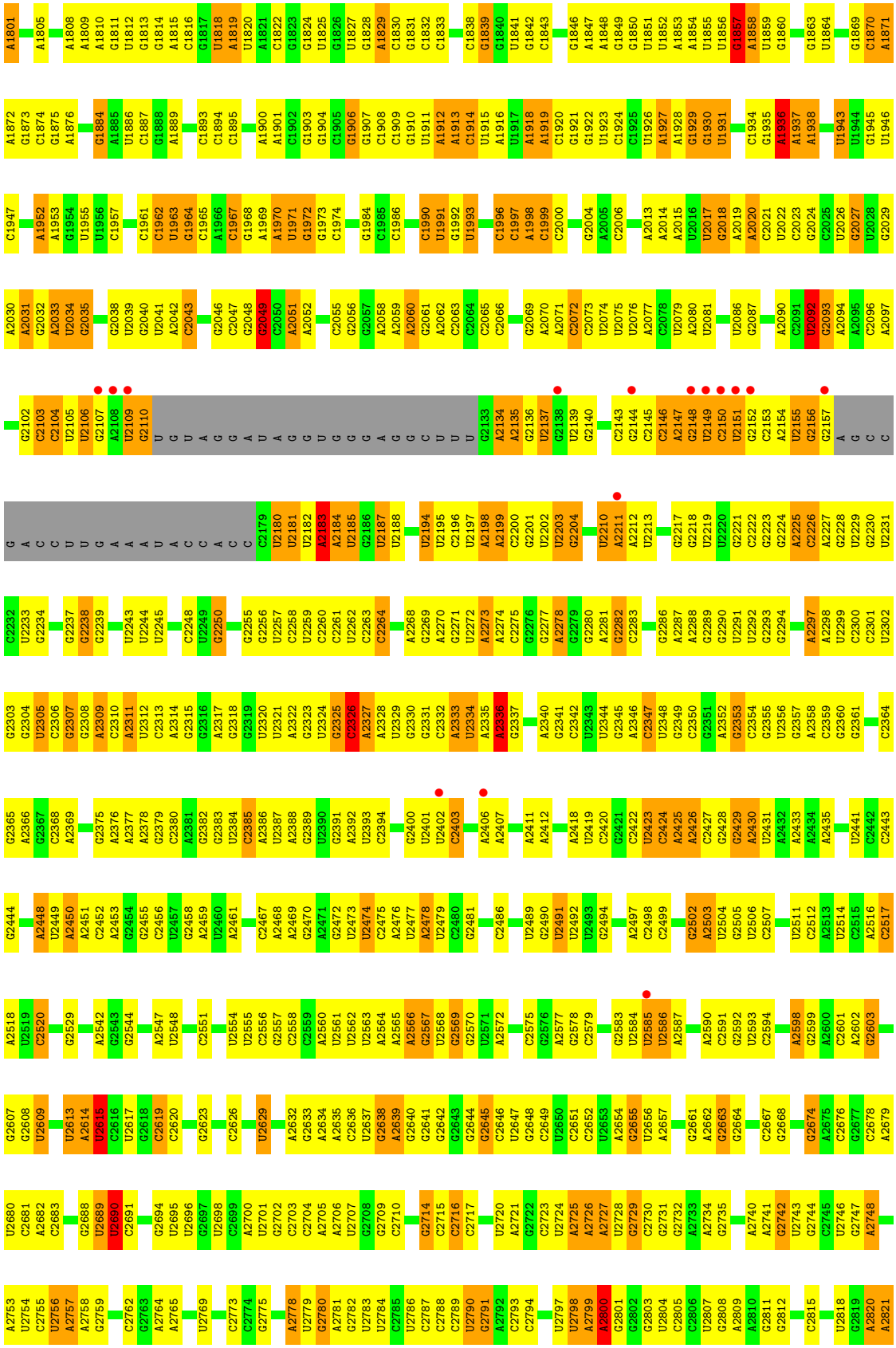
Chain B8:

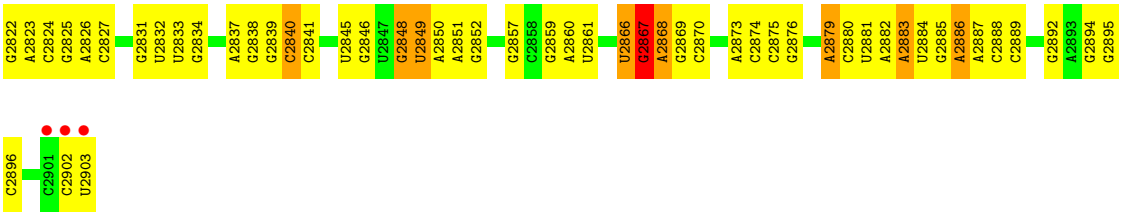
• Molecule 34: 23S rRNA

Chain BA:



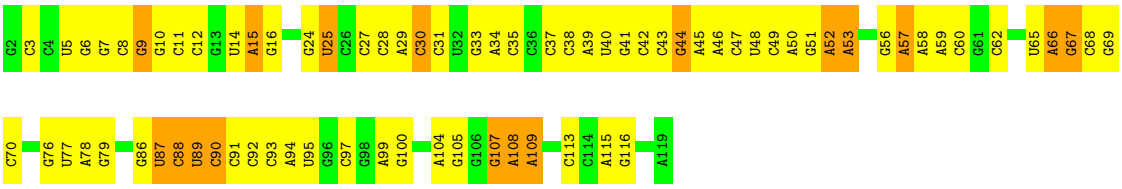






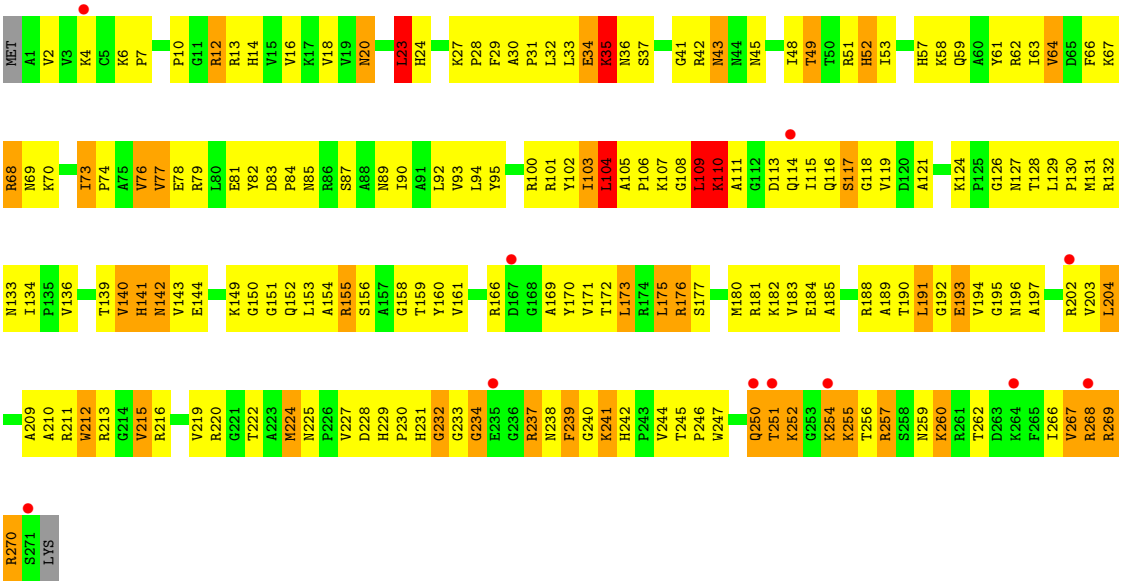
• Molecule 35: 5S ribosomal RNA

Chain BB:



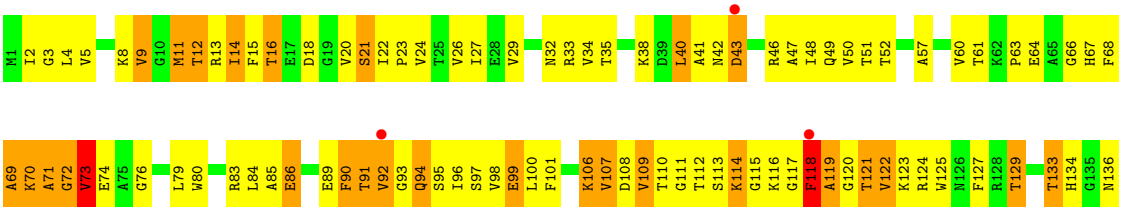
• Molecule 36: 50S ribosomal protein L2

Chain BC:

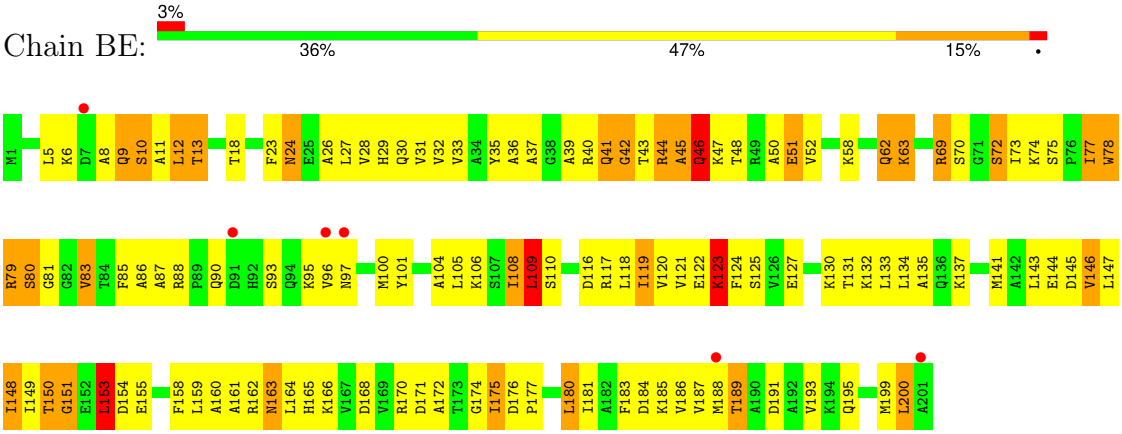


• Molecule 37: 50S ribosomal protein L3

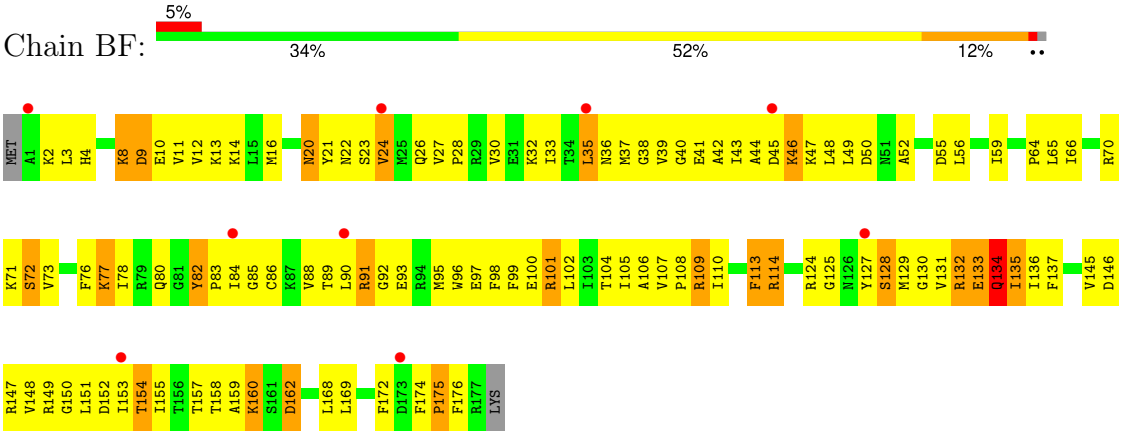
Chain BD:



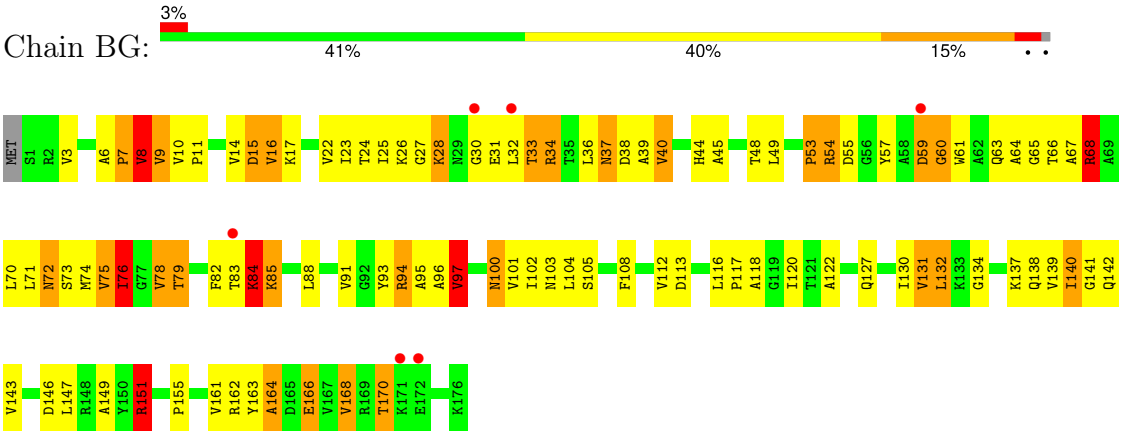
• Molecule 38: 50S ribosomal protein L4



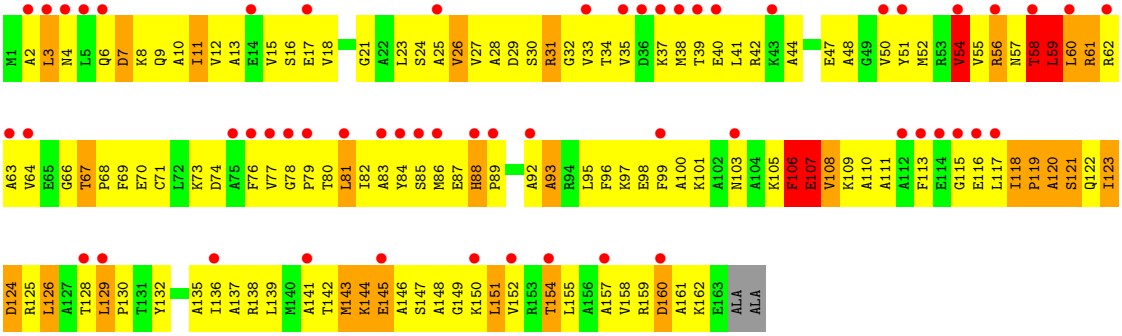

• Molecule 39: 50S ribosomal protein L5




• Molecule 40: 50S ribosomal protein L6

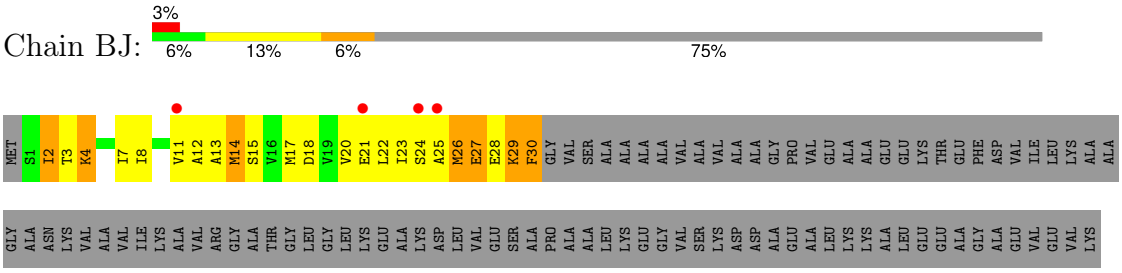



• Molecule 41: 50S ribosomal protein L10

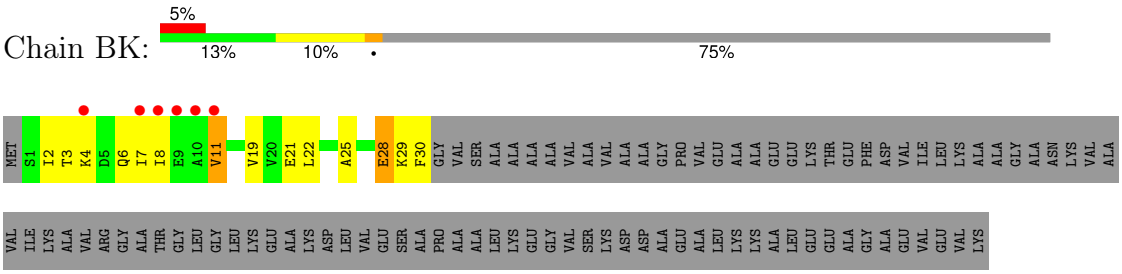



• Molecule 42: 50S ribosomal protein L11

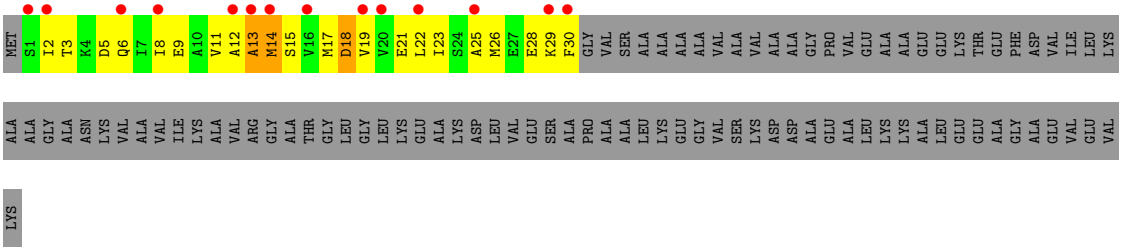
• Molecule 43: 50S ribosomal protein L7/L12

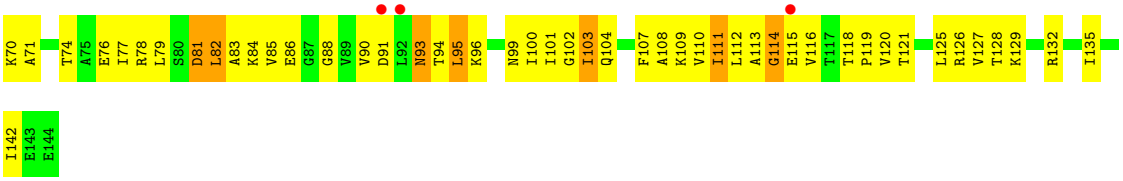



• Molecule 43: 50S ribosomal protein L7/L12



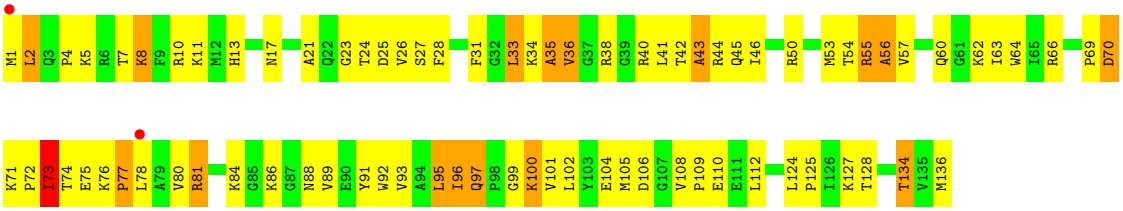

• Molecule 43: 50S ribosomal protein L7/L12





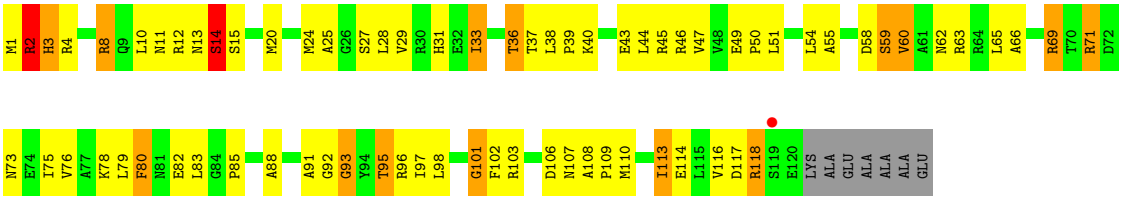

• Molecule 47: 50S ribosomal protein L16

Chain BQ:



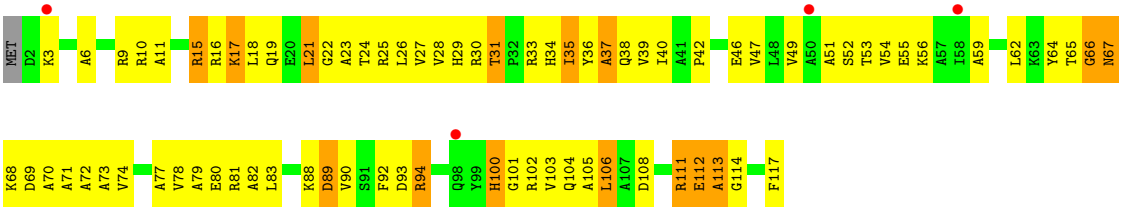

• Molecule 48: 50S ribosomal protein L17

Chain BR:



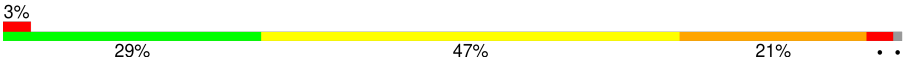

• Molecule 49: 50S ribosomal protein L18

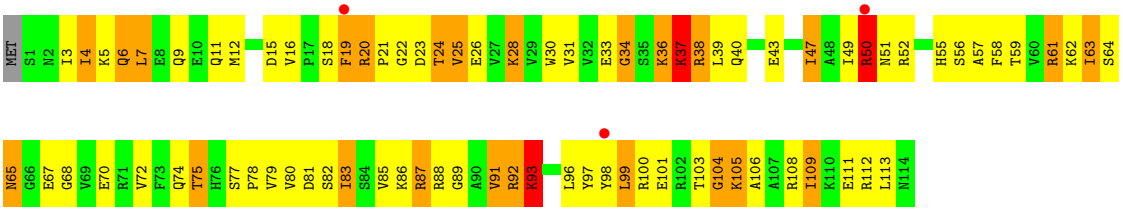
Chain BS:




• Molecule 50: 50S ribosomal protein L19

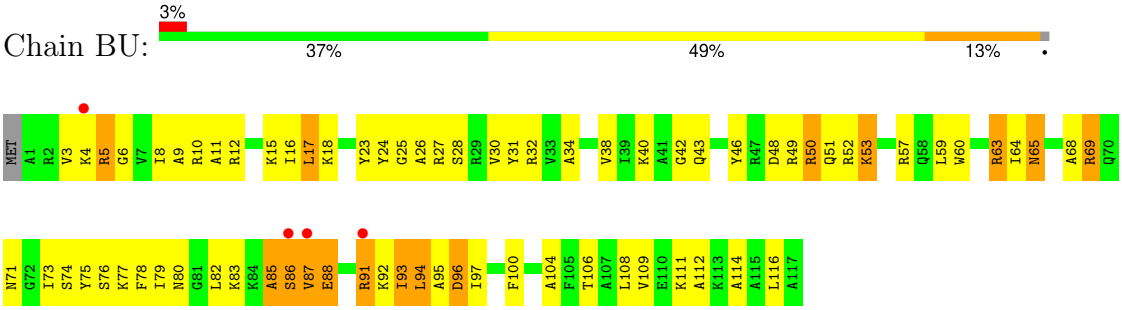
Chain BT:



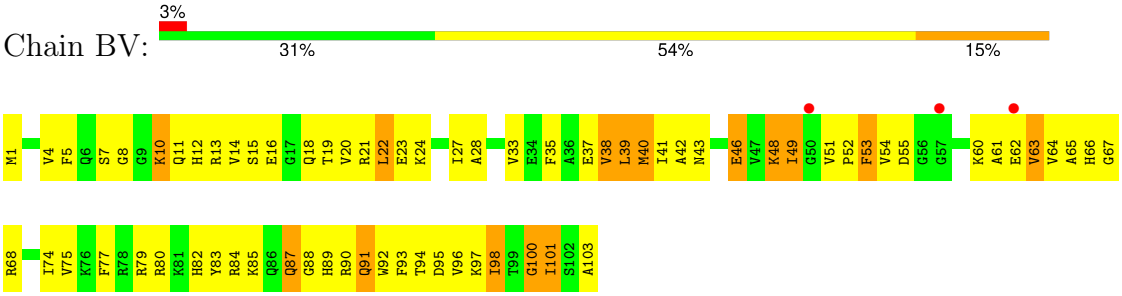
• Molecule 51: 50S ribosomal protein L20

Chain BU:



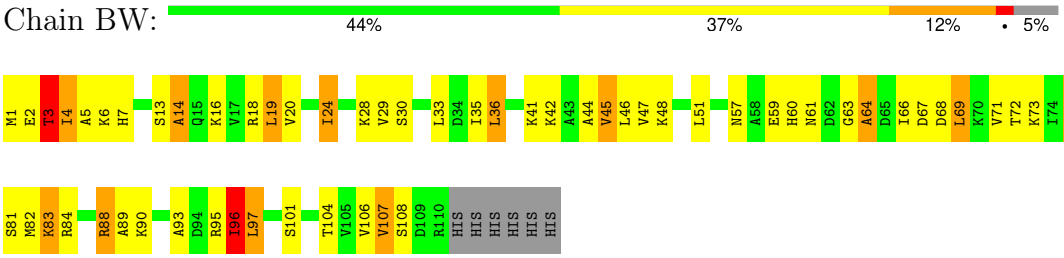

• Molecule 52: 50S ribosomal protein L21

Chain BV:



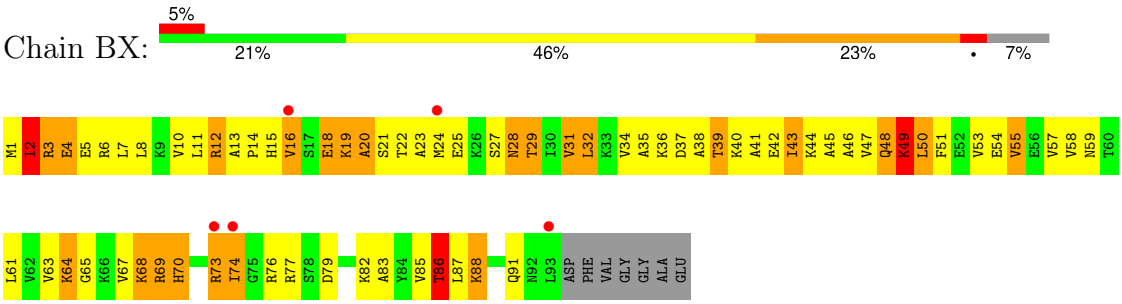

• Molecule 53: 50S ribosomal protein L22

Chain BW:



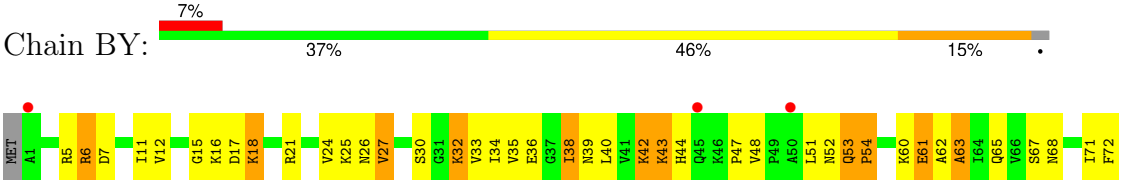

• Molecule 54: 50S ribosomal protein L23

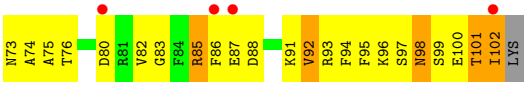
Chain BX:




• Molecule 55: 50S ribosomal protein L24 1

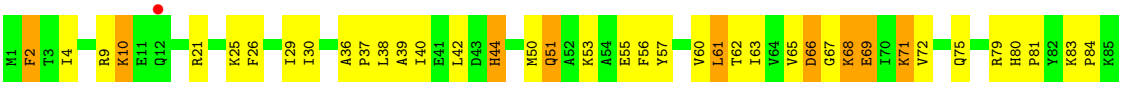
Chain BY:

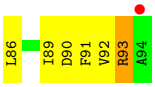





• Molecule 56: 50S ribosomal protein L25 1

Chain BZ:



# 4 Data and refinement statistics (i)

| Property | Value | Source |
|---|---|---|
| Space group | P 21 21 21 | Depositor |
| Cell constants<br>a, b, c, $\alpha$, $\beta$, $\gamma$ | 257.60Å 312.90Å 328.60Å<br>90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 40.00 – 3.20<br>40.00 – 3.20 | Depositor<br>EDS |
| % Data completeness<br>(in resolution range) | (Not available) (40.00-3.20)<br>99.9 (40.00-3.20) | Depositor<br>EDS |
| $R_{merge}$ | (Not available) | Depositor |
| $R_{sym}$ | (Not available) | Depositor |
| $< I/\sigma(I) >$ [1] | 1.34 (at 3.01Å) | Xtriage |
| Refinement program | PHENIX, CNS 1.2 | Depositor |
| R, $R_{free}$ | 0.210 , 0.250<br>0.227 , 0.253 | Depositor<br>DCC |
| $R_{free}$ test set | 21734 reflections (5.02%) | wwPDB-VP |
| Wilson B-factor (Å$^2$) | 64.1 | Xtriage |
| Anisotropy | 0.241 | Xtriage |
| Bulk solvent $k_{sol}$(e/Å$^3$), $B_{sol}$(Å$^2$) | 0.34 , 90.5 | EDS |
| L-test for twinning[2] | $< \|L\| > = 0.45$, $< L^2 > = 0.27$ | Xtriage |
| Estimated twinning fraction | 0.020 for -h,l,k | Xtriage |
| $F_o$,$F_c$ correlation | 0.91 | EDS |
| Total number of atoms | 147221 | wwPDB-VP |
| Average B, all atoms (Å$^2$) | 95.0 | wwPDB-VP |

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.42% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ 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: GNP, MG, 5OH, DPP, UAL, KBE

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 | 0.44 | 0/36809 | 0.81 | 26/57423 (0.0%) |
| 2 | AB | 0.29 | 0/1735 | 0.48 | 0/2338 |
| 3 | AC | 0.29 | 0/1651 | 0.51 | 0/2225 |
| 4 | AD | 0.29 | 0/1665 | 0.50 | 0/2227 |
| 5 | AE | 0.34 | 0/1118 | 0.58 | 0/1504 |
| 6 | AF | 0.27 | 0/835 | 0.49 | 0/1128 |
| 7 | AG | 0.23 | 0/1195 | 0.41 | 0/1602 |
| 8 | AH | 0.30 | 0/989 | 0.50 | 0/1326 |
| 9 | AI | 0.26 | 0/1034 | 0.49 | 0/1375 |
| 10 | AJ | 0.30 | 0/796 | 0.54 | 0/1077 |
| 11 | AK | 0.29 | 0/893 | 0.51 | 0/1205 |
| 12 | AL | 0.38 | 0/969 | 0.65 | 0/1300 |
| 13 | AM | 0.21 | 0/892 | 0.42 | 0/1193 |
| 14 | AN | 0.28 | 0/785 | 0.47 | 0/1043 |
| 15 | AO | 0.28 | 0/722 | 0.49 | 0/964 |
| 16 | AP | 0.30 | 0/659 | 0.48 | 0/884 |
| 17 | AQ | 0.30 | 0/657 | 0.52 | 0/881 |
| 18 | AR | 0.30 | 0/462 | 0.49 | 0/621 |
| 19 | AS | 0.23 | 0/652 | 0.42 | 0/877 |
| 20 | AT | 0.31 | 0/671 | 0.53 | 0/888 |
| 21 | AU | 0.31 | 0/430 | 0.46 | 0/570 |
| 22 | AV | 0.53 | 0/144 | 0.91 | 0/222 |
| 23 | AW | 0.47 | 2/4221 (0.0%) | 0.73 | 5/5702 (0.1%) |
| 24 | AY | 0.97 | 0/11 | 0.62 | 0/13 |
| 25 | B0 | 0.43 | 0/603 | 0.64 | 0/797 |
| 26 | B1 | 0.37 | 0/635 | 0.66 | 0/848 |
| 27 | B2 | 0.31 | 0/510 | 0.55 | 0/677 |
| 28 | B3 | 0.34 | 0/453 | 0.59 | 0/605 |
| 29 | B4 | 0.42 | 0/450 | 0.64 | 0/599 |
| 30 | B5 | 0.27 | 0/416 | 0.46 | 0/554 |
| 31 | B6 | 0.42 | 0/380 | 0.64 | 0/498 |
| 32 | B7 | 0.37 | 0/513 | 0.57 | 0/676 |

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #\|Z\| >5 | RMSZ | #\|Z\| >5 |
| 33 | B8 | 0.42 | 0/303 | 0.65 | 0/397 |
| 34 | BA | 0.61 | 9/68601 (0.0%) | 0.98 | 142/107017 (0.1%) |
| 35 | BB | 0.40 | 0/2828 | 0.78 | 1/4410 (0.0%) |
| 36 | BC | 0.42 | 0/2121 | 0.70 | 0/2852 |
| 37 | BD | 0.46 | 0/1586 | 0.70 | 0/2134 |
| 38 | BE | 0.36 | 0/1571 | 0.56 | 0/2113 |
| 39 | BF | 0.27 | 0/1434 | 0.45 | 0/1926 |
| 40 | BG | 0.34 | 0/1343 | 0.60 | 0/1816 |
| 41 | BH | 0.28 | 0/1244 | 0.53 | 1/1675 (0.1%) |
| 42 | BI | 0.22 | 0/1046 | 0.42 | 0/1410 |
| 43 | BJ | 0.28 | 0/227 | 0.52 | 0/304 |
| 43 | BK | 0.25 | 0/227 | 0.44 | 0/304 |
| 43 | BL | 0.27 | 0/227 | 0.49 | 0/304 |
| 43 | BM | 0.25 | 0/227 | 0.42 | 0/304 |
| 44 | BN | 0.41 | 0/1152 | 0.66 | 0/1551 |
| 45 | BO | 0.47 | 0/947 | 0.70 | 0/1268 |
| 46 | BP | 0.35 | 0/1054 | 0.64 | 0/1403 |
| 47 | BQ | 0.38 | 0/1093 | 0.61 | 0/1460 |
| 48 | BR | 0.42 | 0/973 | 0.64 | 0/1301 |
| 49 | BS | 0.32 | 0/902 | 0.51 | 0/1209 |
| 50 | BT | 0.43 | 0/929 | 0.67 | 0/1242 |
| 51 | BU | 0.42 | 0/960 | 0.58 | 0/1278 |
| 52 | BV | 0.36 | 0/829 | 0.62 | 0/1107 |
| 53 | BW | 0.45 | 0/863 | 0.63 | 0/1156 |
| 54 | BX | 0.40 | 0/744 | 0.65 | 0/994 |
| 55 | BY | 0.38 | 0/787 | 0.60 | 0/1051 |
| 56 | BZ | 0.32 | 0/766 | 0.50 | 0/1025 |
| All | All | 0.50 | 11/158939 (0.0%) | 0.84 | 175/236853 (0.1%) |

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 |
|---|---|---|---|
| 12 | AL | 0 | 1 |
| 23 | AW | 0 | 2 |
| 24 | AY | 0 | 2 |
| All | All | 0 | 5 |

All (11) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 34 | BA | 2106 | U | O3'-P | 20.78 | 1.86 | 1.61 |
| 34 | BA | 2183 | A | O3'-P | 15.69 | 1.79 | 1.61 |
| 34 | BA | 974 | G | O3'-P | -15.38 | 1.42 | 1.61 |
| 34 | BA | 973 | A | O3'-P | -13.70 | 1.44 | 1.61 |
| 34 | BA | 974 | G | N7-C5 | -6.57 | 1.35 | 1.39 |
| 23 | AW | 72 | THR | C-O | 6.02 | 1.34 | 1.23 |
| 34 | BA | 974 | G | P-O5' | -5.74 | 1.54 | 1.59 |
| 23 | AW | 73 | SER | CB-OG | 5.44 | 1.49 | 1.42 |
| 34 | BA | 528 | A | N9-C4 | -5.38 | 1.34 | 1.37 |
| 34 | BA | 974 | G | N3-C4 | -5.13 | 1.31 | 1.35 |
| 34 | BA | 783 | A | N9-C4 | -5.10 | 1.34 | 1.37 |

All (175) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 34 | BA | 2183 | A | O3'-P-O5' | -12.34 | 80.55 | 104.00 |
| 34 | BA | 2183 | A | OP2-P-O3' | 12.19 | 132.01 | 105.20 |
| 34 | BA | 752 | A | C5-N7-C8 | -8.85 | 99.48 | 103.90 |
| 34 | BA | 2106 | U | OP2-P-O3' | 8.38 | 123.64 | 105.20 |
| 34 | BA | 2183 | A | P-O3'-C3' | -8.25 | 109.80 | 119.70 |
| 34 | BA | 974 | G | N9-C1'-C2' | 8.16 | 124.61 | 114.00 |
| 34 | BA | 974 | G | P-O3'-C3' | 7.94 | 129.23 | 119.70 |
| 34 | BA | 2000 | C | C6-N1-C2 | 7.92 | 123.47 | 120.30 |
| 34 | BA | 1936 | A | C2-N3-C4 | -7.75 | 106.73 | 110.60 |
| 34 | BA | 974 | G | C8-N9-C4 | -7.71 | 103.32 | 106.40 |
| 34 | BA | 752 | A | N1-C6-N6 | 7.68 | 123.21 | 118.60 |
| 34 | BA | 2800 | A | N9-C4-C5 | -7.61 | 102.76 | 105.80 |
| 34 | BA | 1779 | U | C5-C6-N1 | -7.54 | 118.93 | 122.70 |
| 34 | BA | 830 | G | N9-C4-C5 | -7.50 | 102.40 | 105.40 |
| 34 | BA | 752 | A | C4-C5-N7 | 7.45 | 114.42 | 110.70 |
| 34 | BA | 783 | A | C5-N7-C8 | -7.44 | 100.18 | 103.90 |
| 34 | BA | 1129 | A | C8-N9-C4 | 7.27 | 108.71 | 105.80 |
| 34 | BA | 974 | G | N7-C8-N9 | 7.24 | 116.72 | 113.10 |
| 34 | BA | 1655 | A | C8-N9-C4 | 7.15 | 108.66 | 105.80 |
| 34 | BA | 2486 | C | C6-N1-C2 | 6.89 | 123.05 | 120.30 |
| 34 | BA | 2075 | U | C5-C6-N1 | -6.88 | 119.26 | 122.70 |
| 1 | AA | 1499 | A | C8-N9-C4 | 6.80 | 108.52 | 105.80 |
| 34 | BA | 1857 | G | C4-N9-C1' | 6.78 | 135.32 | 126.50 |
| 34 | BA | 2551 | C | C6-N1-C2 | 6.78 | 123.01 | 120.30 |
| 34 | BA | 752 | A | N7-C8-N9 | 6.76 | 117.18 | 113.80 |
| 34 | BA | 2544 | G | N1-C6-O6 | 6.70 | 123.92 | 119.90 |
| 34 | BA | 2800 | A | C8-N9-C4 | 6.68 | 108.47 | 105.80 |
| 34 | BA | 1934 | C | C6-N1-C2 | 6.67 | 122.97 | 120.30 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 34 | BA | 1998 | A | C8-N9-C4 | 6.66 | 108.47 | 105.80 |
| 34 | BA | 140 | C | C2-N1-C1' | 6.66 | 126.12 | 118.80 |
| 34 | BA | 2619 | C | C6-N1-C2 | 6.61 | 122.94 | 120.30 |
| 34 | BA | 739 | A | C8-N9-C4 | 6.55 | 108.42 | 105.80 |
| 34 | BA | 736 | C | C6-N1-C2 | 6.55 | 122.92 | 120.30 |
| 34 | BA | 2336 | A | C8-N9-C4 | 6.53 | 108.41 | 105.80 |
| 34 | BA | 783 | A | N7-C8-N9 | 6.53 | 117.06 | 113.80 |
| 34 | BA | 974 | G | C5-N7-C8 | -6.47 | 101.06 | 104.30 |
| 34 | BA | 2626 | C | C6-N1-C2 | 6.46 | 122.88 | 120.30 |
| 34 | BA | 1030 | C | N1-C2-O2 | -6.42 | 115.05 | 118.90 |
| 1 | AA | 912 | C | C6-N1-C2 | 6.34 | 122.84 | 120.30 |
| 34 | BA | 1706 | C | C2-N1-C1' | 6.33 | 125.76 | 118.80 |
| 34 | BA | 2615 | U | C5-C6-N1 | 6.32 | 125.86 | 122.70 |
| 1 | AA | 1099 | G | C5-C6-O6 | 6.28 | 132.37 | 128.60 |
| 34 | BA | 752 | A | C6-C5-N7 | -6.28 | 127.91 | 132.30 |
| 34 | BA | 1857 | G | C8-N9-C1' | -6.27 | 118.85 | 127.00 |
| 34 | BA | 2544 | G | C5-C6-O6 | -6.26 | 124.84 | 128.60 |
| 34 | BA | 573 | U | C6-N1-C2 | 6.25 | 124.75 | 121.00 |
| 1 | AA | 49 | U | C6-N1-C2 | 6.25 | 124.75 | 121.00 |
| 34 | BA | 974 | G | OP2-P-O3' | -6.25 | 91.45 | 105.20 |
| 34 | BA | 205 | G | C4-N9-C1' | -6.22 | 118.41 | 126.50 |
| 34 | BA | 974 | G | C6-C5-N7 | -6.20 | 126.68 | 130.40 |
| 34 | BA | 645 | C | C2-N1-C1' | 6.17 | 125.59 | 118.80 |
| 23 | AW | 26 | LYS | CA-C-N | -6.17 | 103.63 | 117.20 |
| 34 | BA | 386 | G | C8-N9-C4 | 6.15 | 108.86 | 106.40 |
| 34 | BA | 1779 | U | C2-N1-C1' | -6.13 | 110.35 | 117.70 |
| 34 | BA | 2668 | G | C8-N9-C4 | 6.08 | 108.83 | 106.40 |
| 34 | BA | 1952 | A | C8-N9-C4 | 6.07 | 108.23 | 105.80 |
| 34 | BA | 2332 | C | C6-N1-C2 | 6.03 | 122.71 | 120.30 |
| 1 | AA | 328 | C | C6-N1-C2 | 6.02 | 122.71 | 120.30 |
| 34 | BA | 1934 | C | N3-C4-C5 | 6.01 | 124.31 | 121.90 |
| 34 | BA | 528 | A | C2-N3-C4 | -5.99 | 107.60 | 110.60 |
| 34 | BA | 974 | G | O4'-C1'-C2' | -5.97 | 99.83 | 105.80 |
| 34 | BA | 830 | G | C8-N9-C4 | 5.94 | 108.78 | 106.40 |
| 34 | BA | 1022 | G | N3-C4-N9 | -5.94 | 122.44 | 126.00 |
| 1 | AA | 1496 | C | N3-C4-C5 | 5.93 | 124.27 | 121.90 |
| 34 | BA | 944 | C | C2-N1-C1' | -5.93 | 112.28 | 118.80 |
| 34 | BA | 984 | A | C2-N3-C4 | -5.92 | 107.64 | 110.60 |
| 34 | BA | 1998 | A | C4-C5-C6 | -5.91 | 114.05 | 117.00 |
| 34 | BA | 2867 | G | C4-N9-C1' | -5.91 | 118.82 | 126.50 |
| 34 | BA | 1706 | C | C6-N1-C1' | -5.91 | 113.71 | 120.80 |
| 34 | BA | 1250 | G | N3-C4-N9 | 5.90 | 129.54 | 126.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 34 | BA | 1022 | G | N3-C4-C5 | 5.89 | 131.54 | 128.60 |
| 34 | BA | 1765 | U | C5-C6-N1 | -5.87 | 119.76 | 122.70 |
| 23 | AW | 522 | GLN | C-N-CA | 5.87 | 136.37 | 121.70 |
| 1 | AA | 328 | C | C6-N1-C1' | -5.84 | 113.79 | 120.80 |
| 34 | BA | 1779 | U | N3-C4-O4 | -5.82 | 115.33 | 119.40 |
| 34 | BA | 2689 | U | C5-C6-N1 | -5.82 | 119.79 | 122.70 |
| 34 | BA | 2594 | C | N1-C2-O2 | -5.81 | 115.41 | 118.90 |
| 1 | AA | 816 | A | C8-N9-C4 | 5.77 | 108.11 | 105.80 |
| 1 | AA | 104 | G | C8-N9-C4 | 5.76 | 108.70 | 106.40 |
| 34 | BA | 458 | G | C4-N9-C1' | -5.74 | 119.04 | 126.50 |
| 34 | BA | 944 | C | C6-N1-C1' | 5.74 | 127.68 | 120.80 |
| 23 | AW | 26 | LYS | O-C-N | 5.71 | 131.84 | 122.70 |
| 34 | BA | 1934 | C | C5-C6-N1 | -5.71 | 118.14 | 121.00 |
| 34 | BA | 1141 | U | C2-N1-C1' | 5.70 | 124.54 | 117.70 |
| 34 | BA | 2840 | C | C6-N1-C2 | 5.68 | 122.57 | 120.30 |
| 34 | BA | 1800 | C | C6-N1-C2 | 5.64 | 122.56 | 120.30 |
| 34 | BA | 1953 | A | C8-N9-C4 | 5.64 | 108.06 | 105.80 |
| 1 | AA | 45 | G | N3-C4-C5 | 5.64 | 131.42 | 128.60 |
| 34 | BA | 1266 | G | C4-N9-C1' | -5.63 | 119.17 | 126.50 |
| 34 | BA | 2047 | C | N1-C2-O2 | -5.63 | 115.52 | 118.90 |
| 34 | BA | 2520 | C | N1-C2-O2 | -5.63 | 115.52 | 118.90 |
| 34 | BA | 974 | G | C4-N9-C1' | 5.62 | 133.80 | 126.50 |
| 34 | BA | 2520 | C | N3-C2-O2 | 5.62 | 125.83 | 121.90 |
| 34 | BA | 2619 | C | C5-C6-N1 | -5.58 | 118.21 | 121.00 |
| 1 | AA | 1347 | G | C4-N9-C1' | -5.58 | 119.24 | 126.50 |
| 34 | BA | 451 | U | C2-N1-C1' | -5.58 | 111.01 | 117.70 |
| 34 | BA | 1943 | U | C5-C6-N1 | -5.58 | 119.91 | 122.70 |
| 34 | BA | 739 | A | N9-C4-C5 | -5.57 | 103.57 | 105.80 |
| 34 | BA | 1342 | A | C8-N9-C4 | 5.57 | 108.03 | 105.80 |
| 1 | AA | 1099 | G | C4-C5-N7 | -5.56 | 108.58 | 110.80 |
| 23 | AW | 25 | GLY | O-C-N | -5.55 | 113.82 | 122.70 |
| 34 | BA | 2598 | A | C8-N9-C4 | 5.54 | 108.02 | 105.80 |
| 34 | BA | 1200 | C | N1-C2-O2 | -5.53 | 115.58 | 118.90 |
| 34 | BA | 2092 | U | P-O3'-C3' | 5.52 | 126.32 | 119.70 |
| 34 | BA | 2674 | G | C8-N9-C4 | 5.52 | 108.61 | 106.40 |
| 34 | BA | 2512 | C | C6-N1-C2 | 5.49 | 122.50 | 120.30 |
| 34 | BA | 2742 | G | C5-C6-O6 | -5.49 | 125.31 | 128.60 |
| 34 | BA | 1235 | G | N1-C6-O6 | -5.48 | 116.61 | 119.90 |
| 34 | BA | 1615 | C | C6-N1-C2 | 5.48 | 122.49 | 120.30 |
| 34 | BA | 948 | C | C6-N1-C2 | -5.47 | 118.11 | 120.30 |
| 34 | BA | 2706 | A | N1-C6-N6 | 5.46 | 121.88 | 118.60 |
| 34 | BA | 1779 | U | C5-C4-O4 | 5.46 | 129.18 | 125.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 34 | BA | 752 | A | C2-N3-C4 | -5.45 | 107.87 | 110.60 |
| 34 | BA | 2336 | A | N9-C4-C5 | -5.45 | 103.62 | 105.80 |
| 1 | AA | 108 | G | N7-C8-N9 | 5.44 | 115.82 | 113.10 |
| 34 | BA | 52 | A | N1-C6-N6 | 5.44 | 121.86 | 118.60 |
| 34 | BA | 2049 | G | C8-N9-C4 | 5.44 | 108.58 | 106.40 |
| 34 | BA | 205 | G | C8-N9-C1' | 5.43 | 134.07 | 127.00 |
| 34 | BA | 2690 | U | C6-N1-C2 | 5.42 | 124.25 | 121.00 |
| 1 | AA | 1099 | G | N9-C4-C5 | 5.40 | 107.56 | 105.40 |
| 1 | AA | 1347 | G | C8-N9-C1' | 5.37 | 133.99 | 127.00 |
| 34 | BA | 370 | G | C4-N9-C1' | 5.37 | 133.48 | 126.50 |
| 1 | AA | 365 | U | C5-C6-N1 | -5.36 | 120.02 | 122.70 |
| 1 | AA | 1182 | G | C4-N9-C1' | -5.36 | 119.53 | 126.50 |
| 34 | BA | 1998 | A | N3-C4-C5 | 5.36 | 130.55 | 126.80 |
| 1 | AA | 904 | U | C5-C4-O4 | -5.33 | 122.70 | 125.90 |
| 34 | BA | 2867 | G | C8-N9-C1' | 5.33 | 133.92 | 127.00 |
| 1 | AA | 45 | G | C8-N9-C4 | 5.31 | 108.52 | 106.40 |
| 34 | BA | 1061 | U | C2-N1-C1' | 5.30 | 124.06 | 117.70 |
| 34 | BA | 974 | G | C1'-O4'-C4' | -5.30 | 105.66 | 109.90 |
| 1 | AA | 1182 | G | N3-C4-C5 | 5.29 | 131.24 | 128.60 |
| 34 | BA | 328 | U | C6-N1-C2 | 5.27 | 124.16 | 121.00 |
| 34 | BA | 1130 | U | C6-N1-C2 | 5.27 | 124.16 | 121.00 |
| 23 | AW | 69 | SER | N-CA-C | 5.26 | 125.21 | 111.00 |
| 34 | BA | 1129 | A | N7-C8-N9 | -5.26 | 111.17 | 113.80 |
| 34 | BA | 370 | G | C8-N9-C1' | -5.25 | 120.17 | 127.00 |
| 34 | BA | 957 | C | C2-N1-C1' | 5.25 | 124.57 | 118.80 |
| 34 | BA | 60 | G | C4-N9-C1' | 5.24 | 133.31 | 126.50 |
| 34 | BA | 830 | G | C4-C5-N7 | 5.24 | 112.89 | 110.80 |
| 34 | BA | 2514 | U | C6-N1-C2 | 5.23 | 124.14 | 121.00 |
| 34 | BA | 645 | C | C6-N1-C1' | -5.23 | 114.53 | 120.80 |
| 34 | BA | 1999 | C | N3-C4-C5 | 5.22 | 123.99 | 121.90 |
| 1 | AA | 1336 | C | C2-N1-C1' | 5.22 | 124.54 | 118.80 |
| 34 | BA | 1250 | G | C5-C6-O6 | -5.21 | 125.47 | 128.60 |
| 34 | BA | 1605 | C | N1-C2-O2 | -5.21 | 115.77 | 118.90 |
| 1 | AA | 85 | U | C2-N1-C1' | 5.21 | 123.95 | 117.70 |
| 34 | BA | 458 | G | C6-C5-N7 | 5.19 | 133.51 | 130.40 |
| 34 | BA | 1790 | C | C6-N1-C2 | 5.18 | 122.37 | 120.30 |
| 1 | AA | 1136 | C | C2-N1-C1' | 5.17 | 124.48 | 118.80 |
| 34 | BA | 660 | C | C6-N1-C2 | 5.17 | 122.37 | 120.30 |
| 41 | BH | 160 | ASP | CB-CG-OD2 | 5.17 | 122.95 | 118.30 |
| 34 | BA | 458 | G | N3-C4-N9 | -5.16 | 122.91 | 126.00 |
| 34 | BA | 1943 | U | C6-N1-C2 | 5.16 | 124.09 | 121.00 |
| 34 | BA | 2326 | C | C2-N1-C1' | 5.14 | 124.46 | 118.80 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 34 | BA | 2486 | C | N3-C4-C5 | 5.14 | 123.96 | 121.90 |
| 34 | BA | 945 | A | C8-N9-C4 | -5.14 | 103.75 | 105.80 |
| 34 | BA | 968 | C | N3-C4-C5 | 5.12 | 123.95 | 121.90 |
| 34 | BA | 1990 | C | C5-C6-N1 | -5.12 | 118.44 | 121.00 |
| 34 | BA | 2004 | G | C5-C6-O6 | -5.11 | 125.54 | 128.60 |
| 34 | BA | 447 | A | C6-N1-C2 | 5.10 | 121.66 | 118.60 |
| 34 | BA | 2326 | C | C3'-C2'-C1' | 5.09 | 105.58 | 101.50 |
| 1 | AA | 1525 | G | C8-N9-C4 | 5.09 | 108.44 | 106.40 |
| 34 | BA | 2237 | G | N3-C4-C5 | 5.08 | 131.14 | 128.60 |
| 34 | BA | 1190 | G | C5-C6-O6 | -5.08 | 125.55 | 128.60 |
| 34 | BA | 1759 | A | N9-C4-C5 | -5.08 | 103.77 | 105.80 |
| 1 | AA | 1168 | U | C2-N1-C1' | 5.08 | 123.79 | 117.70 |
| 34 | BA | 2264 | C | C6-N1-C2 | 5.08 | 122.33 | 120.30 |
| 34 | BA | 1857 | G | N3-C4-N9 | 5.06 | 129.04 | 126.00 |
| 34 | BA | 2827 | C | C6-N1-C2 | 5.06 | 122.32 | 120.30 |
| 1 | AA | 1257 | A | C3'-C2'-C1' | 5.05 | 105.54 | 101.50 |
| 34 | BA | 2744 | G | N1-C6-O6 | 5.03 | 122.92 | 119.90 |
| 34 | BA | 372 | G | C8-N9-C4 | 5.03 | 108.41 | 106.40 |
| 35 | BB | 14 | U | C6-N1-C2 | 5.01 | 124.01 | 121.00 |
| 34 | BA | 1934 | C | C2-N3-C4 | -5.01 | 117.39 | 119.90 |
| 34 | BA | 474 | G | C8-N9-C4 | 5.01 | 108.40 | 106.40 |

There are no chirality outliers.

All (5) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|---|---|---|---|---|
| 12 | AL | 22 | ALA | Peptide |
| 23 | AW | 410 | LYS | Peptide |
| 23 | AW | 411 | GLN | Peptide |
| 24 | AY | 1 | KBE | Mainchain |
| 24 | AY | 2 | DPP | 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 | 32873 | 0 | 16542 | 1452 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 2 | AB | 1704 | 0 | 1732 | 189 | 0 |
| 3 | AC | 1624 | 0 | 1699 | 162 | 7 |
| 4 | AD | 1643 | 0 | 1710 | 196 | 0 |
| 5 | AE | 1105 | 0 | 1148 | 135 | 0 |
| 6 | AF | 817 | 0 | 808 | 102 | 0 |
| 7 | AG | 1181 | 0 | 1240 | 70 | 0 |
| 8 | AH | 979 | 0 | 1034 | 91 | 0 |
| 9 | AI | 1022 | 0 | 1070 | 126 | 0 |
| 10 | AJ | 786 | 0 | 828 | 97 | 0 |
| 11 | AK | 877 | 0 | 887 | 104 | 0 |
| 12 | AL | 955 | 0 | 1019 | 123 | 0 |
| 13 | AM | 883 | 0 | 944 | 96 | 0 |
| 14 | AN | 774 | 0 | 827 | 90 | 0 |
| 15 | AO | 714 | 0 | 737 | 45 | 0 |
| 16 | AP | 649 | 0 | 666 | 63 | 0 |
| 17 | AQ | 648 | 0 | 691 | 62 | 0 |
| 18 | AR | 455 | 0 | 478 | 41 | 0 |
| 19 | AS | 637 | 0 | 665 | 70 | 0 |
| 20 | AT | 665 | 0 | 714 | 60 | 0 |
| 21 | AU | 425 | 0 | 449 | 67 | 0 |
| 22 | AV | 129 | 0 | 65 | 9 | 0 |
| 23 | AW | 4144 | 0 | 4127 | 284 | 0 |
| 24 | AY | 48 | 0 | 40 | 31 | 0 |
| 25 | B0 | 596 | 0 | 610 | 166 | 0 |
| 26 | B1 | 625 | 0 | 655 | 54 | 0 |
| 27 | B2 | 509 | 0 | 543 | 40 | 0 |
| 28 | B3 | 449 | 0 | 491 | 53 | 0 |
| 29 | B4 | 444 | 0 | 461 | 33 | 0 |
| 30 | B5 | 409 | 0 | 440 | 39 | 0 |
| 31 | B6 | 377 | 0 | 418 | 20 | 0 |
| 32 | B7 | 504 | 0 | 574 | 49 | 0 |
| 33 | B8 | 302 | 0 | 340 | 40 | 0 |
| 34 | BA | 61252 | 0 | 30808 | 2053 | 7 |
| 35 | BB | 2529 | 0 | 1281 | 94 | 0 |
| 36 | BC | 2082 | 0 | 2157 | 226 | 0 |
| 37 | BD | 1565 | 0 | 1616 | 201 | 0 |
| 38 | BE | 1552 | 0 | 1619 | 151 | 0 |
| 39 | BF | 1410 | 0 | 1447 | 142 | 0 |
| 40 | BG | 1323 | 0 | 1374 | 134 | 0 |
| 41 | BH | 1230 | 0 | 1282 | 253 | 0 |
| 42 | BI | 1032 | 0 | 1088 | 85 | 0 |
| 43 | BJ | 227 | 0 | 237 | 48 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 43 | BK | 227 | 0 | 237 | 23 | 0 |
| 43 | BL | 227 | 0 | 237 | 38 | 0 |
| 43 | BM | 227 | 0 | 237 | 47 | 0 |
| 44 | BN | 1129 | 0 | 1162 | 147 | 0 |
| 45 | BO | 938 | 0 | 1012 | 117 | 0 |
| 46 | BP | 1045 | 0 | 1117 | 108 | 0 |
| 47 | BQ | 1074 | 0 | 1157 | 79 | 0 |
| 48 | BR | 960 | 0 | 1000 | 87 | 0 |
| 49 | BS | 892 | 0 | 923 | 77 | 0 |
| 50 | BT | 917 | 0 | 965 | 123 | 0 |
| 51 | BU | 947 | 0 | 1022 | 108 | 0 |
| 52 | BV | 816 | 0 | 839 | 96 | 0 |
| 53 | BW | 856 | 0 | 922 | 55 | 0 |
| 54 | BX | 738 | 0 | 807 | 110 | 0 |
| 55 | BY | 779 | 0 | 834 | 74 | 0 |
| 56 | BZ | 753 | 0 | 780 | 54 | 0 |
| 57 | AA | 102 | 0 | 0 | 0 | 0 |
| 57 | AF | 1 | 0 | 0 | 0 | 0 |
| 57 | AH | 1 | 0 | 0 | 0 | 0 |
| 57 | AL | 2 | 0 | 0 | 0 | 0 |
| 57 | AM | 1 | 0 | 0 | 0 | 0 |
| 57 | AW | 1 | 0 | 0 | 0 | 0 |
| 57 | B0 | 3 | 0 | 0 | 0 | 0 |
| 57 | B2 | 1 | 0 | 0 | 0 | 0 |
| 57 | B4 | 1 | 0 | 0 | 0 | 0 |
| 57 | BA | 357 | 0 | 0 | 0 | 0 |
| 57 | BB | 9 | 0 | 0 | 0 | 0 |
| 57 | BC | 1 | 0 | 0 | 0 | 0 |
| 57 | BD | 5 | 0 | 0 | 0 | 0 |
| 57 | BE | 1 | 0 | 0 | 0 | 0 |
| 57 | BN | 1 | 0 | 0 | 0 | 0 |
| 57 | BO | 1 | 0 | 0 | 0 | 0 |
| 57 | BQ | 1 | 0 | 0 | 0 | 0 |
| 57 | BR | 2 | 0 | 0 | 0 | 0 |
| 57 | BT | 1 | 0 | 0 | 0 | 0 |
| 57 | BX | 1 | 0 | 0 | 0 | 0 |
| 58 | AW | 32 | 0 | 13 | 6 | 0 |
| 59 | AW | 2 | 0 | 0 | 2 | 0 |
| 59 | B8 | 1 | 0 | 0 | 0 | 0 |
| 59 | BA | 8 | 0 | 0 | 0 | 0 |
| 59 | BC | 2 | 0 | 0 | 0 | 0 |
| 59 | BD | 1 | 0 | 0 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 59 | BF | 1 | 0 | 0 | 0 | 0 |
| 59 | BG | 1 | 0 | 0 | 0 | 0 |
| 59 | BW | 1 | 0 | 0 | 1 | 0 |
| All | All | 147221 | 0 | 100825 | 8115 | 7 |

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 33.

All (8115) 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) |
|---|---|---|---|
| 1:AA:1495:U:O4 | 24:AY:1:KBE:CE | 1.84 | 1.26 |
| 1:AA:1494:G:N7 | 24:AY:1:KBE:HGA | 1.52 | 1.24 |
| 1:AA:1494:G:O6 | 24:AY:1:KBE:HG | 1.35 | 1.22 |
| 1:AA:1495:U:C4 | 24:AY:1:KBE:HE | 1.75 | 1.20 |
| 51:BU:63:ARG:NH1 | 51:BU:96:ASP:HA | 1.58 | 1.18 |
| 34:BA:2149:U:O3' | 34:BA:2150:C:H4' | 1.36 | 1.15 |
| 34:BA:2150:C:H2' | 34:BA:2151:U:C5 | 1.82 | 1.14 |
| 34:BA:2149:U:H5" | 34:BA:2150:C:OP2 | 1.48 | 1.14 |
| 1:AA:877:G:H21 | 8:AH:1:SER:HB2 | 1.13 | 1.14 |
| 25:B0:28:GLU:HB3 | 25:B0:31:LEU:HD21 | 1.23 | 1.13 |
| 34:BA:265:A:H4' | 34:BA:266:G:OP1 | 1.38 | 1.13 |
| 50:BT:50:ARG:CB | 50:BT:57:ALA:H | 1.60 | 1.11 |
| 50:BT:63:ILE:HA | 50:BT:68:GLY:HA2 | 1.30 | 1.11 |
| 34:BA:100:U:H4' | 34:BA:101:A:O5' | 1.50 | 1.11 |
| 34:BA:1073:A:H3' | 34:BA:1074:G:H5" | 1.18 | 1.10 |
| 51:BU:91:ARG:HH21 | 51:BU:93:ILE:HG12 | 1.10 | 1.09 |
| 1:AA:1452:C:H4' | 1:AA:1453:G:C2 | 1.86 | 1.09 |
| 1:AA:1494:G:C6 | 24:AY:1:KBE:HG | 1.86 | 1.09 |
| 34:BA:1559:U:H4' | 34:BA:1560:G:OP2 | 1.49 | 1.08 |
| 38:BE:44:ARG:HH21 | 38:BE:44:ARG:HG3 | 1.16 | 1.08 |
| 1:AA:1495:U:O4 | 24:AY:1:KBE:HE | 0.91 | 1.08 |
| 12:AL:33:CYS:HA | 12:AL:54:VAL:HA | 1.31 | 1.08 |
| 34:BA:1059:G:C8 | 34:BA:1060:U:H2' | 1.88 | 1.08 |
| 1:AA:484:G:H4' | 1:AA:485:U:O5' | 1.53 | 1.07 |
| 50:BT:50:ARG:HD3 | 50:BT:56:SER:HB3 | 1.35 | 1.07 |
| 8:AH:74:ILE:HD13 | 8:AH:128:VAL:HG22 | 1.33 | 1.06 |
| 21:AU:33:ARG:HE | 21:AU:34:ARG:HG3 | 1.15 | 1.06 |
| 34:BA:1059:G:H5" | 34:BA:1060:U:H3' | 1.35 | 1.06 |
| 10:AJ:80:THR:HG22 | 10:AJ:83:THR:H | 1.21 | 1.06 |
| 1:AA:429:U:H3' | 4:AD:8:LEU:HD23 | 1.36 | 1.06 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:71:A:O2' | 34:BA:72:U:OP2 | 1.74 | 1.05 |
| 54:BX:50:LEU:H | 54:BX:50:LEU:HD12 | 1.21 | 1.05 |
| 51:BU:63:ARG:HH12 | 51:BU:96:ASP:HA | 0.92 | 1.05 |
| 9:AI:98:ARG:HG3 | 9:AI:103:VAL:HG21 | 1.39 | 1.05 |
| 34:BA:271:G:H4' | 34:BA:272:A:OP1 | 1.52 | 1.05 |
| 50:BT:50:ARG:HB3 | 50:BT:57:ALA:H | 0.89 | 1.05 |
| 41:BH:88:HIS:HB2 | 41:BH:89:PRO:HD3 | 1.32 | 1.04 |
| 46:BP:29:LYS:HG2 | 46:BP:30:THR:HG23 | 1.39 | 1.04 |
| 34:BA:666:A:H4' | 46:BP:48:ARG:HD2 | 1.34 | 1.04 |
| 35:BB:66:A:H4' | 35:BB:67:G:OP1 | 1.57 | 1.04 |
| 41:BH:25:ALA:HB3 | 41:BH:85:SER:OG | 1.55 | 1.04 |
| 41:BH:59:LEU:HD23 | 41:BH:62:ARG:HD2 | 1.40 | 1.04 |
| 39:BF:82:TYR:HD2 | 39:BF:83:PRO:HD2 | 1.24 | 1.03 |
| 50:BT:50:ARG:HB3 | 50:BT:57:ALA:N | 1.72 | 1.03 |
| 37:BD:15:PHE:H | 50:BT:11:GLN:HE22 | 1.05 | 1.02 |
| 37:BD:40:LEU:H | 37:BD:40:LEU:HD12 | 1.24 | 1.02 |
| 23:AW:26:LYS:HD2 | 59:AW:702:HOH:O | 1.59 | 1.02 |
| 25:B0:23:LYS:HG2 | 34:BA:855:G:H21 | 1.21 | 1.02 |
| 1:AA:1328:C:H5" | 13:AM:27:THR:HG21 | 1.38 | 1.02 |
| 11:AK:87:GLY:N | 11:AK:113:THR:HG22 | 1.74 | 1.02 |
| 34:BA:2197:U:O2' | 34:BA:2198:A:H2' | 1.59 | 1.02 |
| 11:AK:87:GLY:H | 11:AK:113:THR:HG22 | 0.89 | 1.02 |
| 14:AN:8:ARG:HB3 | 14:AN:12:ARG:HH12 | 1.23 | 1.02 |
| 34:BA:1340:U:H4' | 34:BA:1341:G:OP2 | 1.57 | 1.02 |
| 44:BN:111:LYS:HD3 | 44:BN:112:GLY:H | 1.23 | 1.02 |
| 25:B0:9:THR:HG23 | 25:B0:10:ARG:HD3 | 1.38 | 1.02 |
| 13:AM:106:ARG:HH21 | 13:AM:112:ARG:HB3 | 1.23 | 1.01 |
| 45:BO:111:LYS:H | 45:BO:111:LYS:HE2 | 1.23 | 1.00 |
| 54:BX:48:GLN:HE21 | 54:BX:48:GLN:HA | 1.18 | 1.00 |
| 1:AA:158:G:H2' | 1:AA:159:G:H5" | 1.44 | 1.00 |
| 34:BA:2150:C:O2' | 34:BA:2151:U:O5' | 1.78 | 1.00 |
| 44:BN:81:ILE:HG23 | 44:BN:82:GLY:H | 1.25 | 1.00 |
| 46:BP:109:LYS:HG2 | 46:BP:126:ARG:HB3 | 1.43 | 1.00 |
| 34:BA:45:G:H5" | 34:BA:46:G:H5' | 1.43 | 1.00 |
| 34:BA:1205:A:H4' | 34:BA:1206:G:OP2 | 1.59 | 1.00 |
| 34:BA:1565:C:O2' | 34:BA:1566:A:H2' | 1.61 | 1.00 |
| 25:B0:37:VAL:HG12 | 25:B0:38:ARG:H | 1.27 | 0.99 |
| 30:B5:33:LEU:H | 30:B5:51:ALA:HB3 | 1.26 | 0.99 |
| 1:AA:965:U:H5" | 1:AA:966:G:OP1 | 1.60 | 0.99 |
| 13:AM:52:ILE:HD12 | 13:AM:55:LEU:HD12 | 1.42 | 0.99 |
| 12:AL:30:ARG:NH1 | 23:AW:408:LYS:HG3 | 1.78 | 0.99 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:73:C:H42 | 1:AA:97:G:H1 | 1.10 | 0.98 |
| 38:BE:46:GLN:HG3 | 38:BE:87:ALA:H | 1.26 | 0.98 |
| 54:BX:29:THR:HA | 54:BX:86:THR:HA | 1.43 | 0.98 |
| 5:AE:96:GLN:HE21 | 5:AE:97:PRO:HD2 | 1.26 | 0.98 |
| 34:BA:2150:C:H2' | 34:BA:2151:U:C6 | 1.99 | 0.97 |
| 25:B0:20:LEU:HD13 | 34:BA:2355:G:H4' | 1.45 | 0.97 |
| 34:BA:161:A:H3' | 34:BA:162:U:H5" | 1.46 | 0.97 |
| 2:AB:114:LYS:HA | 2:AB:117:GLU:HG2 | 1.45 | 0.97 |
| 23:AW:411:GLN:H | 23:AW:414:LYS:HB3 | 1.29 | 0.97 |
| 23:AW:59:TRP:NE1 | 23:AW:69:SER:OG | 1.98 | 0.97 |
| 34:BA:1779:U:H5 | 34:BA:1784:A:N7 | 1.62 | 0.97 |
| 54:BX:11:LEU:HA | 54:BX:34:VAL:HG12 | 1.44 | 0.96 |
| 54:BX:12:ARG:HH11 | 54:BX:12:ARG:HG3 | 1.30 | 0.96 |
| 34:BA:1460:U:H5" | 34:BA:1461:C:OP2 | 1.65 | 0.96 |
| 1:AA:1129:C:H5" | 1:AA:1130:A:OP1 | 1.65 | 0.96 |
| 38:BE:161:ALA:HA | 38:BE:164:LEU:HB2 | 1.45 | 0.96 |
| 11:AK:87:GLY:H | 11:AK:113:THR:CG2 | 1.77 | 0.96 |
| 37:BD:184:ARG:NH1 | 50:BT:6:GLN:HE22 | 1.63 | 0.96 |
| 23:AW:61:GLU:HG3 | 23:AW:64:LYS:HE3 | 1.45 | 0.96 |
| 1:AA:246:A:H4' | 1:AA:247:G:OP1 | 1.65 | 0.96 |
| 17:AQ:12:VAL:HG11 | 17:AQ:21:VAL:HG13 | 1.48 | 0.96 |
| 23:AW:19:ILE:HA | 23:AW:26:LYS:CE | 1.96 | 0.95 |
| 37:BD:118:PHE:HD2 | 37:BD:119:ALA:H | 0.96 | 0.95 |
| 34:BA:215:G:H4' | 34:BA:216:A:OP1 | 1.63 | 0.95 |
| 41:BH:2:ALA:HB3 | 41:BH:6:GLN:HB2 | 1.48 | 0.95 |
| 34:BA:979:A:H2' | 34:BA:982:C:H42 | 1.31 | 0.95 |
| 1:AA:518:C:H2' | 1:AA:530:G:C8 | 2.02 | 0.95 |
| 34:BA:947:A:HO2' | 34:BA:984:A:H2 | 0.96 | 0.94 |
| 39:BF:33:ILE:HD12 | 39:BF:155:ILE:HG13 | 1.45 | 0.94 |
| 34:BA:636:G:N1 | 46:BP:111:ILE:HD11 | 1.82 | 0.94 |
| 1:AA:181:A:H5" | 1:AA:182:A:OP1 | 1.68 | 0.94 |
| 38:BE:79:ARG:HG2 | 38:BE:80:SER:H | 1.31 | 0.94 |
| 23:AW:26:LYS:HE2 | 23:AW:89:THR:OG1 | 1.68 | 0.94 |
| 44:BN:3:THR:HB | 44:BN:44:TYR:OH | 1.68 | 0.94 |
| 41:BH:11:ILE:HG21 | 41:BH:66:GLY:HA3 | 1.49 | 0.94 |
| 23:AW:70:ILE:HG23 | 23:AW:95:PHE:HZ | 1.31 | 0.94 |
| 37:BD:5:VAL:H | 37:BD:32:ASN:HD21 | 1.15 | 0.94 |
| 23:AW:20:SER:H | 23:AW:26:LYS:NZ | 1.65 | 0.93 |
| 35:BB:87:U:H5' | 35:BB:88:C:OP2 | 1.68 | 0.93 |
| 3:AC:139:ASN:HA | 3:AC:142:ARG:HB2 | 1.47 | 0.93 |
| 55:BY:82:VAL:HG12 | 55:BY:83:GLY:H | 1.32 | 0.93 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 23:AW:145:ASP:OD2 | 58:AW:602:GNP:N2 | 2.01 | 0.93 |
| 1:AA:1301:U:HO2' | 1:AA:1302:C:H5 | 1.05 | 0.93 |
| 5:AE:35:LEU:HD21 | 5:AE:136:VAL:HG11 | 1.51 | 0.93 |
| 40:BG:83:THR:HA | 40:BG:84:LYS:NZ | 1.83 | 0.93 |
| 40:BG:84:LYS:HG3 | 40:BG:132:LEU:N | 1.83 | 0.93 |
| 1:AA:804:U:H5" | 1:AA:805:C:OP2 | 1.67 | 0.92 |
| 34:BA:1085:A:H61 | 41:BH:34:THR:HG22 | 1.31 | 0.92 |
| 51:BU:63:ARG:HH12 | 51:BU:96:ASP:CA | 1.81 | 0.92 |
| 34:BA:2149:U:C3' | 34:BA:2150:C:H4' | 1.99 | 0.92 |
| 1:AA:1053:G:O6 | 1:AA:1199:U:H2' | 1.70 | 0.92 |
| 33:B8:9:LYS:H | 33:B8:9:LYS:HD3 | 1.32 | 0.92 |
| 1:AA:1101:A:H4' | 1:AA:1102:A:O5' | 1.67 | 0.92 |
| 4:AD:117:VAL:HG13 | 4:AD:122:ILE:HD11 | 1.50 | 0.92 |
| 41:BH:51:TYR:HB2 | 41:BH:89:PRO:HD2 | 1.51 | 0.92 |
| 56:BZ:44:HIS:HE1 | 56:BZ:86:LEU:H | 1.05 | 0.92 |
| 41:BH:44:ALA:HA | 41:BH:48:ALA:HB3 | 1.48 | 0.92 |
| 13:AM:106:ARG:HH12 | 13:AM:109:LYS:HD3 | 1.34 | 0.92 |
| 23:AW:412:LEU:HB2 | 23:AW:459:VAL:HG11 | 1.52 | 0.92 |
| 34:BA:995:C:H5' | 34:BA:995:C:H6 | 1.34 | 0.92 |
| 44:BN:64:VAL:O | 44:BN:65:THR:HB | 1.69 | 0.92 |
| 25:B0:43:LYS:HD2 | 25:B0:79:ILE:HD11 | 1.51 | 0.92 |
| 34:BA:634:C:H2' | 34:BA:635:C:H6 | 1.34 | 0.92 |
| 25:B0:23:LYS:HE2 | 34:BA:923:G:N3 | 1.83 | 0.91 |
| 34:BA:2149:U:C5' | 34:BA:2150:C:OP2 | 2.17 | 0.91 |
| 34:BA:2304:G:H22 | 34:BA:2312:U:H3 | 1.09 | 0.91 |
| 7:AG:98:LEU:HA | 7:AG:101:ARG:HH12 | 1.35 | 0.91 |
| 28:B3:24:LEU:HD21 | 34:BA:930:G:H1' | 1.52 | 0.91 |
| 48:BR:73:ASN:HD22 | 48:BR:76:VAL:HG11 | 1.32 | 0.91 |
| 4:AD:200:VAL:HG12 | 5:AE:102:THR:HG23 | 1.52 | 0.91 |
| 12:AL:62:VAL:HG21 | 12:AL:94:TYR:HE2 | 1.34 | 0.91 |
| 2:AB:99:MET:HA | 2:AB:106:VAL:HG21 | 1.51 | 0.91 |
| 26:B1:5:GLN:HE21 | 26:B1:49:ARG:H | 0.92 | 0.91 |
| 1:AA:1126:U:H1' | 1:AA:1281:C:H1' | 1.53 | 0.91 |
| 43:BK:28:GLU:HG3 | 43:BK:29:LYS:H | 1.36 | 0.91 |
| 51:BU:60:TRP:CE2 | 51:BU:93:ILE:HB | 2.05 | 0.91 |
| 1:AA:507:C:H3' | 1:AA:508:U:H5" | 1.52 | 0.91 |
| 9:AI:112:ARG:HH22 | 10:AJ:64:GLN:HE22 | 1.19 | 0.91 |
| 21:AU:36:PHE:HB3 | 21:AU:40:PRO:HD3 | 1.51 | 0.91 |
| 56:BZ:72:VAL:HG12 | 56:BZ:93:ARG:HA | 1.53 | 0.91 |
| 4:AD:146:GLU:HA | 4:AD:149:LYS:HE2 | 1.50 | 0.90 |
| 41:BH:159:ARG:O | 41:BH:160:ASP:OD1 | 1.89 | 0.90 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1168:U:H5” | 1:AA:1169:A:OP2 | 1.71 | 0.90 |
| 1:AA:94:G:H5” | 1:AA:95:C:OP1 | 1.72 | 0.90 |
| 5:AE:105:ILE:HG13 | 5:AE:123:LEU:HA | 1.51 | 0.90 |
| 35:BB:15:A:H1’ | 35:BB:109:A:C8 | 2.06 | 0.90 |
| 35:BB:52:A:H4’ | 35:BB:53:A:OP1 | 1.71 | 0.90 |
| 6:AF:36:ILE:HD13 | 6:AF:36:ILE:H | 1.35 | 0.90 |
| 56:BZ:75:GLN:HB2 | 56:BZ:92:VAL:HG23 | 1.54 | 0.90 |
| 34:BA:995:C:O2’ | 34:BA:996:A:OP2 | 1.89 | 0.90 |
| 41:BH:52:MET:HG3 | 41:BH:95:LEU:HD11 | 1.53 | 0.90 |
| 8:AH:103:VAL:HG12 | 8:AH:124:ILE:HG22 | 1.53 | 0.90 |
| 9:AI:59:LYS:HD2 | 9:AI:60:LEU:HD22 | 1.54 | 0.90 |
| 16:AP:46:LYS:HE2 | 16:AP:47:GLU:H | 1.35 | 0.90 |
| 2:AB:153:MET:SD | 2:AB:157:PRO:HG3 | 2.12 | 0.89 |
| 1:AA:374:A:H5” | 1:AA:452:A:C2 | 2.07 | 0.89 |
| 34:BA:74:A:H4’ | 34:BA:75:G:O5’ | 1.72 | 0.89 |
| 34:BA:161:A:H3’ | 34:BA:162:U:C5’ | 2.02 | 0.89 |
| 1:AA:877:G:N2 | 8:AH:1:SER:HB2 | 1.86 | 0.89 |
| 45:BO:10:VAL:HG21 | 45:BO:16:ALA:HB1 | 1.52 | 0.89 |
| 54:BX:14:PRO:HB2 | 54:BX:16:VAL:HG23 | 1.54 | 0.89 |
| 34:BA:27:G:HO2’ | 34:BA:28:A:H8 | 1.18 | 0.89 |
| 5:AE:44:ARG:HG2 | 5:AE:72:ASN:ND2 | 1.88 | 0.89 |
| 45:BO:21:CYS:HA | 45:BO:41:ILE:HD12 | 1.54 | 0.89 |
| 12:AL:62:VAL:HG21 | 12:AL:94:TYR:CE2 | 2.08 | 0.89 |
| 25:B0:51:GLY:HA3 | 25:B0:59:PHE:CZ | 2.05 | 0.89 |
| 1:AA:1441:A:H62 | 1:AA:1461:G:H21 | 1.21 | 0.89 |
| 1:AA:205:A:OP1 | 1:AA:205:A:H4’ | 1.71 | 0.89 |
| 25:B0:45:HIS:HB2 | 25:B0:50:VAL:HG13 | 1.55 | 0.89 |
| 40:BG:104:LEU:HB2 | 40:BG:112:VAL:HG22 | 1.55 | 0.89 |
| 3:AC:159:ALA:HB1 | 3:AC:161:ILE:HD13 | 1.54 | 0.88 |
| 53:BW:18:ARG:HG3 | 53:BW:76:VAL:HG13 | 1.55 | 0.88 |
| 1:AA:73:C:H41 | 1:AA:94:G:H22 | 1.19 | 0.88 |
| 1:AA:1494:G:N7 | 24:AY:1:KBE:CG | 2.36 | 0.88 |
| 25:B0:18:LYS:N | 25:B0:36:ILE:HG13 | 1.87 | 0.88 |
| 26:B1:13:THR:HG21 | 34:BA:188:G:H5” | 1.54 | 0.88 |
| 37:BD:48:ILE:HD13 | 37:BD:50:VAL:HG13 | 1.54 | 0.88 |
| 34:BA:1568:G:H4’ | 36:BC:58:LYS:HB3 | 1.54 | 0.88 |
| 52:BV:61:ALA:HB2 | 52:BV:98:ILE:HA | 1.54 | 0.88 |
| 36:BC:141:HIS:HB2 | 36:BC:190:THR:HB | 1.56 | 0.88 |
| 2:AB:32:GLY:HA3 | 2:AB:39:ILE:H | 1.38 | 0.88 |
| 29:B4:9:ARG:HH21 | 29:B4:9:ARG:HG3 | 1.38 | 0.88 |
| 30:B5:7:LYS:HE3 | 32:B7:33:THR:HG21 | 1.54 | 0.88 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:BG:130:ILE:HG22 | 40:BG:132:LEU:HD22 | 1.55 | 0.88 |
| 54:BX:44:LYS:O | 54:BX:48:GLN:HG2 | 1.73 | 0.88 |
| 23:AW:146:ARG:NH1 | 34:BA:2657:A:OP2 | 2.07 | 0.88 |
| 21:AU:52:VAL:HG13 | 21:AU:53:LYS:H | 1.39 | 0.87 |
| 41:BH:144:LYS:HB3 | 41:BH:147:SER:OG | 1.73 | 0.87 |
| 1:AA:8:A:H61 | 4:AD:53:GLN:HE22 | 1.23 | 0.87 |
| 1:AA:738:C:H2' | 1:AA:739:C:H6 | 1.39 | 0.87 |
| 43:BJ:29:LYS:HD2 | 43:BJ:30:PHE:N | 1.88 | 0.87 |
| 1:AA:820:U:H4' | 1:AA:821:G:OP2 | 1.73 | 0.87 |
| 1:AA:8:A:H61 | 4:AD:53:GLN:NE2 | 1.73 | 0.87 |
| 34:BA:634:C:H2' | 34:BA:635:C:C6 | 2.08 | 0.87 |
| 1:AA:982:U:H4' | 1:AA:983:A:O5' | 1.75 | 0.87 |
| 13:AM:73:SER:HA | 13:AM:76:ILE:HD12 | 1.56 | 0.87 |
| 34:BA:1458:U:H4' | 34:BA:1459:G:O5' | 1.75 | 0.87 |
| 44:BN:111:LYS:CD | 44:BN:112:GLY:H | 1.87 | 0.87 |
| 9:AI:50:PRO:HD3 | 9:AI:79:ARG:HG2 | 1.57 | 0.87 |
| 12:AL:43:LYS:HD3 | 12:AL:43:LYS:H | 1.38 | 0.87 |
| 54:BX:39:THR:HB | 54:BX:42:GLU:HB2 | 1.57 | 0.87 |
| 14:AN:60:ARG:O | 14:AN:61:ASN:HB2 | 1.72 | 0.87 |
| 34:BA:2680:U:OP2 | 37:BD:114:LYS:HE2 | 1.75 | 0.87 |
| 1:AA:451:A:H4' | 1:AA:452:A:O5' | 1.75 | 0.86 |
| 1:AA:1257:A:H4' | 1:AA:1258:G:OP2 | 1.75 | 0.86 |
| 34:BA:704:G:H2' | 34:BA:726:G:H22 | 1.40 | 0.86 |
| 34:BA:1169:A:H61 | 34:BA:1180:U:H3 | 1.20 | 0.86 |
| 34:BA:2328:A:H2' | 34:BA:2329:U:C6 | 2.10 | 0.86 |
| 2:AB:209:VAL:HG23 | 2:AB:210:THR:H | 1.39 | 0.86 |
| 43:BJ:13:ALA:O | 43:BJ:17:MET:HG3 | 1.75 | 0.86 |
| 12:AL:102:ASP:OD1 | 23:AW:407:LEU:HD11 | 1.75 | 0.86 |
| 23:AW:416:LEU:HB3 | 23:AW:427:VAL:HG11 | 1.55 | 0.86 |
| 55:BY:73:ASN:HD22 | 55:BY:76:THR:H | 1.21 | 0.86 |
| 2:AB:71:THR:O | 2:AB:72:LYS:HG2 | 1.76 | 0.86 |
| 24:AY:4:SER:O | 24:AY:5:UAL:N1 | 2.08 | 0.86 |
| 31:B6:43:THR:O | 31:B6:44:VAL:HG23 | 1.75 | 0.86 |
| 1:AA:388:G:O2' | 1:AA:389:A:OP2 | 1.94 | 0.86 |
| 41:BH:23:LEU:HD22 | 41:BH:92:ALA:O | 1.76 | 0.86 |
| 1:AA:1088:G:H21 | 1:AA:1167:A:N6 | 1.74 | 0.86 |
| 51:BU:91:ARG:NH2 | 51:BU:93:ILE:HG12 | 1.91 | 0.86 |
| 39:BF:134:GLN:NE2 | 39:BF:134:GLN:H | 1.72 | 0.86 |
| 40:BG:104:LEU:HB2 | 40:BG:112:VAL:CG2 | 2.05 | 0.86 |
| 14:AN:82:LYS:HE2 | 14:AN:82:LYS:HA | 1.56 | 0.86 |
| 33:B8:9:LYS:H | 33:B8:9:LYS:CD | 1.88 | 0.86 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 50:BT:63:ILE:HA | 50:BT:68:GLY:CA | 2.06 | 0.86 |
| 1:AA:499:A:H4' | 1:AA:500:G:OP1 | 1.76 | 0.86 |
| 43:BL:15:SER:HA | 43:BL:18:ASP:HB2 | 1.54 | 0.86 |
| 26:B1:30:PRO:HB2 | 26:B1:32:LEU:CD1 | 2.05 | 0.85 |
| 34:BA:27:G:O2' | 34:BA:28:A:H8 | 1.58 | 0.85 |
| 23:AW:59:TRP:O | 23:AW:64:LYS:HD2 | 1.77 | 0.85 |
| 4:AD:25:ARG:NH1 | 4:AD:30:LYS:HE3 | 1.91 | 0.85 |
| 34:BA:704:G:H1' | 34:BA:727:A:N6 | 1.90 | 0.85 |
| 34:BA:1020:A:H4' | 34:BA:1021:A:O5' | 1.75 | 0.85 |
| 43:BJ:12:ALA:HA | 43:BM:14:MET:HB3 | 1.56 | 0.85 |
| 4:AD:36:ALA:HA | 4:AD:41:GLY:HA3 | 1.57 | 0.85 |
| 34:BA:2638:G:H1' | 34:BA:2778:A:H61 | 1.40 | 0.85 |
| 50:BT:61:ARG:HG2 | 50:BT:70:GLU:HG2 | 1.56 | 0.85 |
| 29:B4:21:LEU:HD11 | 53:BW:19:LEU:HB3 | 1.58 | 0.85 |
| 38:BE:46:GLN:HG3 | 38:BE:87:ALA:N | 1.90 | 0.85 |
| 40:BG:76:ILE:HD12 | 40:BG:82:PHE:CZ | 2.11 | 0.85 |
| 1:AA:327:A:O3' | 1:AA:328:C:H4' | 1.75 | 0.85 |
| 1:AA:974:A:P | 14:AN:68:ARG:HH22 | 1.98 | 0.85 |
| 1:AA:75:G:H3' | 1:AA:76:G:H8 | 1.40 | 0.85 |
| 21:AU:3:ILE:HA | 21:AU:19:LYS:HZ2 | 1.42 | 0.85 |
| 23:AW:439:GLY:HA2 | 23:AW:440:ALA:HB2 | 1.56 | 0.85 |
| 34:BA:2294:G:H5" | 49:BS:10:ARG:HD3 | 1.58 | 0.85 |
| 37:BD:91:THR:O | 37:BD:93:GLY:N | 2.09 | 0.85 |
| 43:BJ:11:VAL:HG21 | 43:BM:15:SER:HB2 | 1.56 | 0.85 |
| 38:BE:5:LEU:HD12 | 38:BE:10:SER:HB3 | 1.57 | 0.85 |
| 34:BA:1970:A:H5' | 34:BA:1972:G:H1' | 1.58 | 0.85 |
| 1:AA:978:A:HO2' | 1:AA:1322:C:H5 | 0.85 | 0.85 |
| 34:BA:38:A:O2' | 38:BE:43:THR:HA | 1.76 | 0.85 |
| 38:BE:106:LYS:HG3 | 38:BE:200:LEU:HD12 | 1.55 | 0.85 |
| 46:BP:96:LYS:HD3 | 46:BP:103:ILE:HA | 1.59 | 0.85 |
| 1:AA:1048:G:O3' | 1:AA:1049:U:H3' | 1.77 | 0.84 |
| 2:AB:103:TRP:HE1 | 2:AB:150:ILE:HD11 | 1.42 | 0.84 |
| 8:AH:9:MET:HE1 | 8:AH:32:LYS:HA | 1.58 | 0.84 |
| 31:B6:34:ARG:NH1 | 31:B6:39:ARG:HG2 | 1.91 | 0.84 |
| 37:BD:21:SER:HB2 | 45:BO:73:ASP:HA | 1.57 | 0.84 |
| 39:BF:98:PHE:O | 39:BF:102:LEU:HB2 | 1.77 | 0.84 |
| 1:AA:204:G:H3' | 1:AA:205:A:H5" | 1.56 | 0.84 |
| 34:BA:1277:G:H5' | 48:BR:20:MET:HE2 | 1.56 | 0.84 |
| 36:BC:172:THR:HG22 | 36:BC:182:LYS:HG2 | 1.57 | 0.84 |
| 23:AW:19:ILE:CA | 23:AW:26:LYS:HE3 | 2.08 | 0.84 |
| 34:BA:483:A:C8 | 55:BY:44:HIS:HD2 | 1.95 | 0.84 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:995:C:H5' | 34:BA:995:C:C6 | 2.12 | 0.84 |
| 43:BJ:11:VAL:HG13 | 43:BM:14:MET:HB2 | 1.60 | 0.84 |
| 1:AA:158:G:C2' | 1:AA:159:G:H5" | 2.08 | 0.84 |
| 1:AA:686:U:H1' | 11:AK:43:TRP:HE1 | 1.42 | 0.84 |
| 1:AA:1468:A:H2' | 1:AA:1469:C:H5" | 1.60 | 0.84 |
| 26:B1:5:GLN:HE21 | 26:B1:49:ARG:N | 1.74 | 0.84 |
| 34:BA:2577:A:H5" | 34:BA:2578:G:H5' | 1.58 | 0.84 |
| 41:BH:23:LEU:HD13 | 41:BH:92:ALA:HB1 | 1.60 | 0.84 |
| 54:BX:15:HIS:HB3 | 54:BX:31:VAL:HG22 | 1.60 | 0.84 |
| 54:BX:29:THR:CA | 54:BX:86:THR:HA | 2.06 | 0.84 |
| 1:AA:412:A:H5' | 1:AA:413:G:OP1 | 1.78 | 0.83 |
| 5:AE:148:SER:HB2 | 5:AE:151:MET:HB2 | 1.60 | 0.83 |
| 7:AG:23:ALA:O | 7:AG:26:VAL:HG22 | 1.78 | 0.83 |
| 32:B7:22:LYS:HA | 32:B7:47:ALA:O | 1.77 | 0.83 |
| 35:BB:28:C:OP1 | 49:BS:31:THR:HG21 | 1.77 | 0.83 |
| 36:BC:43:ASN:HB3 | 36:BC:45:ASN:H | 1.42 | 0.83 |
| 37:BD:106:LYS:HB3 | 37:BD:206:ALA:HB3 | 1.59 | 0.83 |
| 1:AA:962:C:H1' | 1:AA:1201:A:N6 | 1.93 | 0.83 |
| 2:AB:89:PHE:HB3 | 2:AB:149:GLY:HA2 | 1.58 | 0.83 |
| 6:AF:86:ARG:NH2 | 18:AR:63:TYR:HB3 | 1.93 | 0.83 |
| 14:AN:40:ARG:HH12 | 14:AN:44:VAL:HG21 | 1.40 | 0.83 |
| 17:AQ:16:MET:HB2 | 17:AQ:19:SER:HB3 | 1.60 | 0.83 |
| 38:BE:45:ALA:O | 38:BE:46:GLN:HG2 | 1.76 | 0.83 |
| 16:AP:72:ALA:HA | 16:AP:75:ILE:HD12 | 1.59 | 0.83 |
| 48:BR:103:ARG:HD3 | 48:BR:110:MET:HE3 | 1.60 | 0.83 |
| 11:AK:126:ARG:C | 21:AU:33:ARG:HH12 | 1.81 | 0.83 |
| 34:BA:41:C:H2' | 34:BA:42:A:O4' | 1.79 | 0.83 |
| 41:BH:158:VAL:HG13 | 43:BL:19:VAL:HG22 | 1.59 | 0.83 |
| 1:AA:977:A:H2 | 1:AA:1362:A:H61 | 1.27 | 0.83 |
| 1:AA:1218:C:H2' | 1:AA:1219:A:C8 | 2.13 | 0.83 |
| 44:BN:6:ALA:HB3 | 44:BN:45:THR:HG21 | 1.61 | 0.83 |
| 51:BU:91:ARG:HH21 | 51:BU:93:ILE:CG1 | 1.92 | 0.83 |
| 12:AL:49:ARG:HG2 | 12:AL:89:LEU:HD21 | 1.60 | 0.83 |
| 34:BA:1654:A:O2' | 37:BD:118:PHE:CG | 2.31 | 0.83 |
| 37:BD:24:VAL:HA | 37:BD:191:GLY:H | 1.44 | 0.83 |
| 33:B8:6:SER:HB2 | 34:BA:1031:G:H4' | 1.59 | 0.83 |
| 15:AO:42:PHE:CE1 | 15:AO:55:LEU:HD22 | 2.14 | 0.83 |
| 23:AW:70:ILE:O | 23:AW:95:PHE:HE2 | 1.61 | 0.82 |
| 6:AF:38:ARG:HG3 | 6:AF:39:LEU:N | 1.93 | 0.82 |
| 41:BH:151:LEU:HD23 | 41:BH:155:LEU:HD12 | 1.61 | 0.82 |
| 1:AA:1281:C:H5" | 1:AA:1282:C:H5 | 1.44 | 0.82 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1491:G:H2' | 24:AY:6:5OH:HP | 1.59 | 0.82 |
| 1:AA:545:C:H5' | 4:AD:68:GLU:HG3 | 1.61 | 0.82 |
| 1:AA:1152:A:H5' | 10:AJ:15:HIS:HD2 | 1.45 | 0.82 |
| 5:AE:152:VAL:O | 5:AE:156:ARG:HB2 | 1.79 | 0.82 |
| 1:AA:1343:G:O3' | 9:AI:123:ARG:HB3 | 1.80 | 0.82 |
| 3:AC:34:SER:O | 3:AC:38:VAL:HG13 | 1.79 | 0.82 |
| 29:B4:15:ARG:NE | 34:BA:1266:G:OP1 | 2.13 | 0.82 |
| 34:BA:1198:U:O3' | 51:BU:4:LYS:HE3 | 1.78 | 0.82 |
| 34:BA:2092:U:H4' | 34:BA:2093:G:O5' | 1.79 | 0.82 |
| 34:BA:2225:A:H4' | 34:BA:2226:C:O5' | 1.79 | 0.82 |
| 11:AK:23:HIS:HB3 | 11:AK:30:ILE:HG23 | 1.60 | 0.82 |
| 39:BF:82:TYR:CD2 | 39:BF:83:PRO:HD2 | 2.14 | 0.82 |
| 41:BH:144:LYS:HB2 | 41:BH:148:ALA:H | 1.42 | 0.82 |
| 3:AC:13:ILE:O | 3:AC:15:LYS:N | 2.12 | 0.82 |
| 4:AD:53:GLN:HA | 4:AD:198:LEU:HD22 | 1.60 | 0.82 |
| 25:B0:76:ARG:HH21 | 25:B0:76:ARG:CG | 1.91 | 0.82 |
| 28:B3:11:SER:HB3 | 34:BA:988:A:P | 2.19 | 0.82 |
| 21:AU:33:ARG:NE | 21:AU:34:ARG:HG3 | 1.93 | 0.82 |
| 34:BA:1056:G:H5' | 41:BH:34:THR:HG21 | 1.61 | 0.82 |
| 37:BD:91:THR:C | 37:BD:93:GLY:H | 1.82 | 0.82 |
| 2:AB:72:LYS:HG3 | 2:AB:74:ALA:HB3 | 1.61 | 0.82 |
| 23:AW:101:ARG:HG2 | 23:AW:391:PRO:HD2 | 1.62 | 0.82 |
| 34:BA:205:G:O2' | 34:BA:206:U:OP2 | 1.97 | 0.82 |
| 34:BA:997:G:OP1 | 51:BU:92:LYS:HG3 | 1.80 | 0.82 |
| 3:AC:118:SER:O | 3:AC:122:GLN:HG2 | 1.80 | 0.81 |
| 34:BA:1313:U:H4' | 34:BA:1332:G:H4' | 1.61 | 0.81 |
| 36:BC:124:LYS:HB3 | 36:BC:127:ASN:ND2 | 1.94 | 0.81 |
| 1:AA:815:A:H62 | 1:AA:1509:C:H1' | 1.45 | 0.81 |
| 1:AA:815:A:H4' | 1:AA:817:C:C4 | 2.15 | 0.81 |
| 34:BA:1998:A:OP2 | 37:BD:141:ARG:NH2 | 2.13 | 0.81 |
| 51:BU:68:ALA:HB1 | 51:BU:73:ILE:HG23 | 1.59 | 0.81 |
| 32:B7:3:ILE:HD12 | 34:BA:666:A:H1' | 1.63 | 0.81 |
| 37:BD:13:ARG:HH12 | 50:BT:74:GLN:HE21 | 1.27 | 0.81 |
| 38:BE:145:ASP:HB3 | 38:BE:184:ASP:HB2 | 1.59 | 0.81 |
| 46:BP:74:THR:HG22 | 46:BP:107:PHE:HB2 | 1.62 | 0.81 |
| 54:BX:28:ASN:HA | 54:BX:91:GLN:HE22 | 1.43 | 0.81 |
| 1:AA:263:A:OP1 | 20:AT:73:ARG:HD3 | 1.80 | 0.81 |
| 8:AH:10:LEU:HB3 | 8:AH:74:ILE:HG13 | 1.62 | 0.81 |
| 9:AI:31:GLN:O | 9:AI:32:ARG:HB2 | 1.80 | 0.81 |
| 37:BD:49:GLN:HE22 | 37:BD:67:HIS:CE1 | 1.97 | 0.81 |
| 1:AA:991:U:H5" | 1:AA:992:U:OP1 | 1.81 | 0.81 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1057:G:O3' | 3:AC:196:GLY:HA3 | 1.80 | 0.81 |
| 1:AA:1302:C:H5" | 1:AA:1303:C:OP2 | 1.81 | 0.81 |
| 34:BA:783:A:C8 | 34:BA:784:G:H4' | 2.15 | 0.81 |
| 1:AA:95:C:O2 | 1:AA:95:C:H2' | 1.81 | 0.81 |
| 25:B0:30:VAL:HG11 | 34:BA:2352:A:C6 | 2.15 | 0.81 |
| 1:AA:721:G:H4' | 1:AA:722:G:O5' | 1.80 | 0.81 |
| 34:BA:900:A:C2 | 34:BA:901:C:H5 | 1.99 | 0.81 |
| 34:BA:1061:U:O2' | 34:BA:1070:A:H4' | 1.80 | 0.81 |
| 40:BG:84:LYS:HG3 | 40:BG:132:LEU:H | 1.41 | 0.81 |
| 1:AA:702:A:H61 | 34:BA:1846:G:H5" | 1.46 | 0.81 |
| 1:AA:1494:G:O6 | 24:AY:1:KBE:CG | 2.26 | 0.81 |
| 11:AK:20:ALA:HB3 | 11:AK:83:VAL:HG22 | 1.61 | 0.81 |
| 25:B0:40:ARG:H | 25:B0:56:HIS:HB3 | 1.44 | 0.81 |
| 34:BA:454:A:H4' | 34:BA:455:C:OP2 | 1.81 | 0.81 |
| 34:BA:899:A:H2' | 34:BA:900:A:H8 | 1.46 | 0.81 |
| 34:BA:1073:A:H3' | 34:BA:1074:G:C5' | 2.08 | 0.81 |
| 34:BA:2502:G:H5' | 34:BA:2503:A:H5" | 1.62 | 0.81 |
| 41:BH:138:ARG:HG2 | 43:BK:22:LEU:HD21 | 1.63 | 0.81 |
| 1:AA:1152:A:H5' | 10:AJ:15:HIS:CD2 | 2.16 | 0.81 |
| 45:BO:47:ILE:HD13 | 45:BO:48:PRO:HD2 | 1.63 | 0.81 |
| 41:BH:105:LYS:O | 41:BH:106:PHE:HB3 | 1.80 | 0.80 |
| 54:BX:50:LEU:H | 54:BX:50:LEU:CD1 | 1.94 | 0.80 |
| 56:BZ:80:HIS:CD2 | 56:BZ:83:LYS:HB2 | 2.16 | 0.80 |
| 23:AW:70:ILE:HG22 | 23:AW:71:THR:N | 1.95 | 0.80 |
| 34:BA:2798:U:H5" | 34:BA:2799:A:OP1 | 1.81 | 0.80 |
| 36:BC:139:THR:O | 36:BC:161:VAL:O | 1.99 | 0.80 |
| 44:BN:21:THR:HG22 | 44:BN:22:GLY:N | 1.97 | 0.80 |
| 44:BN:54:ILE:HD11 | 44:BN:122:LEU:HD13 | 1.62 | 0.80 |
| 44:BN:123:LYS:N | 44:BN:123:LYS:HD2 | 1.96 | 0.80 |
| 50:BT:50:ARG:HD2 | 50:BT:51:ASN:H | 1.45 | 0.80 |
| 34:BA:1454:C:H41 | 48:BR:73:ASN:HD21 | 1.24 | 0.80 |
| 34:BA:2654:A:H4' | 34:BA:2655:G:OP1 | 1.79 | 0.80 |
| 50:BT:77:SER:OG | 50:BT:79:VAL:HG13 | 1.81 | 0.80 |
| 34:BA:1062:G:H2' | 34:BA:1063:G:C8 | 2.16 | 0.80 |
| 34:BA:1205:A:H2' | 38:BE:165:HIS:HE1 | 1.45 | 0.80 |
| 6:AF:91:ARG:HG3 | 6:AF:92:THR:H | 1.47 | 0.80 |
| 10:AJ:65:TYR:OH | 14:AN:84:ARG:HG3 | 1.80 | 0.80 |
| 25:B0:18:LYS:H | 25:B0:36:ILE:HG13 | 1.47 | 0.80 |
| 34:BA:1069:A:O2' | 34:BA:1070:A:H5" | 1.82 | 0.80 |
| 36:BC:173:LEU:HD22 | 36:BC:183:VAL:HG21 | 1.64 | 0.80 |
| 37:BD:27:ILE:HD12 | 37:BD:201:LEU:HD23 | 1.60 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 37:BD:174:SER:O | 37:BD:175:LEU:HB2 | 1.80 | 0.80 |
| 23:AW:49:ARG:NH2 | 34:BA:2664:G:O6 | 2.15 | 0.80 |
| 34:BA:783:A:H8 | 34:BA:784:G:H4' | 1.47 | 0.80 |
| 41:BH:58:THR:O | 41:BH:60:LEU:HG | 1.81 | 0.80 |
| 45:BO:111:LYS:HE2 | 45:BO:111:LYS:N | 1.97 | 0.80 |
| 5:AE:96:GLN:NE2 | 5:AE:97:PRO:HD2 | 1.96 | 0.80 |
| 12:AL:30:ARG:HH12 | 23:AW:408:LYS:HG3 | 1.45 | 0.80 |
| 36:BC:156:SER:O | 36:BC:194:VAL:HG11 | 1.81 | 0.80 |
| 47:BQ:23:GLY:O | 47:BQ:101:VAL:HG12 | 1.82 | 0.80 |
| 34:BA:404:A:H4' | 34:BA:405:U:O5' | 1.82 | 0.80 |
| 34:BA:1071:G:H1' | 34:BA:1089:A:N7 | 1.96 | 0.80 |
| 39:BF:36:ASN:O | 39:BF:151:LEU:HB2 | 1.81 | 0.80 |
| 41:BH:93:ALA:HA | 41:BH:129:LEU:HB3 | 1.64 | 0.80 |
| 51:BU:50:ARG:H | 51:BU:50:ARG:HD2 | 1.46 | 0.80 |
| 34:BA:645:C:O2 | 34:BA:645:C:H2' | 1.82 | 0.79 |
| 34:BA:2425:A:H5' | 34:BA:2427:C:O4' | 1.82 | 0.79 |
| 44:BN:117:ALA:HA | 44:BN:120:ARG:NH2 | 1.97 | 0.79 |
| 54:BX:39:THR:HB | 54:BX:42:GLU:CB | 2.12 | 0.79 |
| 1:AA:826:C:H5' | 8:AH:12:ARG:HH21 | 1.47 | 0.79 |
| 2:AB:163:ILE:HG23 | 2:AB:164:ASP:H | 1.45 | 0.79 |
| 9:AI:23:GLY:H | 9:AI:61:ASP:H | 1.24 | 0.79 |
| 14:AN:20:PHE:HA | 14:AN:24:ALA:HB2 | 1.62 | 0.79 |
| 1:AA:1021:A:H2' | 1:AA:1022:A:H5" | 1.65 | 0.79 |
| 42:BI:53:PRO:HG2 | 42:BI:77:VAL:HG11 | 1.63 | 0.79 |
| 50:BT:83:ILE:HD13 | 50:BT:83:ILE:C | 2.02 | 0.79 |
| 1:AA:718:A:N6 | 18:AR:62:ARG:HH12 | 1.81 | 0.79 |
| 34:BA:503:A:H5" | 34:BA:504:A:H3' | 1.63 | 0.79 |
| 16:AP:54:LEU:HD12 | 16:AP:54:LEU:H | 1.47 | 0.79 |
| 25:B0:37:VAL:HG13 | 25:B0:55:ASP:O | 1.83 | 0.79 |
| 34:BA:1993:U:H4' | 37:BD:133:THR:HG21 | 1.63 | 0.79 |
| 38:BE:44:ARG:HG3 | 38:BE:44:ARG:NH2 | 1.95 | 0.79 |
| 1:AA:49:U:O4 | 1:AA:365:U:H5 | 1.65 | 0.79 |
| 1:AA:560:A:H5' | 1:AA:566:G:N2 | 1.98 | 0.79 |
| 25:B0:23:LYS:HG2 | 34:BA:855:G:N2 | 1.98 | 0.79 |
| 37:BD:114:LYS:N | 37:BD:114:LYS:HE3 | 1.96 | 0.79 |
| 38:BE:36:ALA:O | 38:BE:39:ALA:HB3 | 1.83 | 0.79 |
| 1:AA:411:A:C5 | 1:AA:413:G:H1' | 2.18 | 0.79 |
| 1:AA:677:U:H3 | 1:AA:713:G:H22 | 1.30 | 0.79 |
| 40:BG:122:ALA:HB2 | 40:BG:132:LEU:HB3 | 1.65 | 0.79 |
| 43:BM:3:THR:O | 43:BM:7:ILE:HG12 | 1.83 | 0.79 |
| 1:AA:412:A:H4' | 1:AA:413:G:O5' | 1.80 | 0.79 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:AC:35:ASP:OD1 | 3:AC:56:ILE:HG21 | 1.84 | 0.78 |
| 40:BG:8:VAL:HG12 | 40:BG:49:LEU:H | 1.48 | 0.78 |
| 41:BH:88:HIS:CB | 41:BH:89:PRO:HD3 | 2.12 | 0.78 |
| 3:AC:153:SER:CB | 3:AC:164:THR:HG22 | 2.12 | 0.78 |
| 25:B0:23:LYS:HB3 | 34:BA:856:G:H1' | 1.64 | 0.78 |
| 34:BA:1654:A:O2' | 37:BD:118:PHE:CD2 | 2.36 | 0.78 |
| 41:BH:48:ALA:HA | 41:BH:51:TYR:HE2 | 1.47 | 0.78 |
| 54:BX:49:LYS:HB2 | 54:BX:50:LEU:HD12 | 1.65 | 0.78 |
| 1:AA:978:A:O2' | 1:AA:1322:C:H5 | 1.66 | 0.78 |
| 32:B7:30:HIS:CD2 | 32:B7:31:ILE:H | 2.02 | 0.78 |
| 34:BA:780:G:H21 | 34:BA:783:A:H62 | 1.27 | 0.78 |
| 34:BA:2197:U:C2' | 34:BA:2198:A:H2' | 2.14 | 0.78 |
| 34:BA:2729:G:H5' | 37:BD:190:LYS:HE2 | 1.65 | 0.78 |
| 39:BF:127:TYR:HE2 | 39:BF:129:MET:HB3 | 1.46 | 0.78 |
| 40:BG:8:VAL:HG11 | 40:BG:49:LEU:HB2 | 1.66 | 0.78 |
| 1:AA:495:A:H4' | 1:AA:496:A:OP1 | 1.81 | 0.78 |
| 1:AA:1201:A:O2' | 1:AA:1202:U:OP2 | 1.99 | 0.78 |
| 3:AC:69:THR:HG21 | 3:AC:75:VAL:HG21 | 1.64 | 0.78 |
| 8:AH:9:MET:HE2 | 8:AH:32:LYS:HG2 | 1.65 | 0.78 |
| 23:AW:20:SER:H | 23:AW:26:LYS:HZ1 | 1.26 | 0.78 |
| 32:B7:7:ARG:HH11 | 32:B7:7:ARG:HG3 | 1.48 | 0.78 |
| 45:BO:19:VAL:CG2 | 45:BO:41:ILE:HG13 | 2.14 | 0.78 |
| 6:AF:12:PRO:HD3 | 6:AF:57:ALA:HA | 1.66 | 0.78 |
| 9:AI:50:PRO:HB3 | 9:AI:83:THR:HG23 | 1.65 | 0.78 |
| 34:BA:265:A:C4' | 34:BA:266:G:OP1 | 2.27 | 0.78 |
| 1:AA:1347:G:O2' | 1:AA:1348:U:OP2 | 2.00 | 0.78 |
| 23:AW:238:SER:OG | 23:AW:239:ASN:N | 2.12 | 0.78 |
| 34:BA:1073:A:C3' | 34:BA:1074:G:H5" | 2.06 | 0.78 |
| 37:BD:186:LEU:HD11 | 50:BT:3:ILE:HG12 | 1.64 | 0.78 |
| 1:AA:1053:G:O5' | 1:AA:1054:C:H5' | 1.82 | 0.78 |
| 2:AB:66:ILE:HB | 2:AB:88:GLN:HB3 | 1.65 | 0.78 |
| 2:AB:103:TRP:NE1 | 2:AB:150:ILE:HD11 | 1.99 | 0.78 |
| 9:AI:128:LYS:HD3 | 9:AI:129:ARG:H | 1.49 | 0.78 |
| 25:B0:46:ALA:HB2 | 25:B0:78:PHE:HB3 | 1.65 | 0.78 |
| 34:BA:1142:A:O2' | 34:BA:1143:A:H3' | 1.84 | 0.78 |
| 41:BH:15:VAL:HG11 | 41:BH:67:THR:HA | 1.66 | 0.78 |
| 48:BR:65:LEU:HD11 | 48:BR:69:ARG:NH2 | 1.99 | 0.78 |
| 2:AB:127:LYS:HG3 | 2:AB:128:LEU:H | 1.48 | 0.78 |
| 5:AE:100:GLU:HB3 | 5:AE:121:ASN:CB | 2.13 | 0.78 |
| 14:AN:82:LYS:HE2 | 14:AN:85:GLU:HG3 | 1.64 | 0.78 |
| 39:BF:64:PRO:HA | 39:BF:88:VAL:HG22 | 1.64 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:75:G:H3' | 1:AA:76:G:C8 | 2.19 | 0.77 |
| 20:AT:29:THR:HA | 20:AT:32:LYS:HG3 | 1.65 | 0.77 |
| 34:BA:2308:G:H2' | 34:BA:2310:C:H41 | 1.50 | 0.77 |
| 34:BA:2474:U:H5" | 34:BA:2475:C:OP2 | 1.84 | 0.77 |
| 49:BS:51:ALA:HB3 | 49:BS:78:VAL:HG13 | 1.66 | 0.77 |
| 21:AU:38:GLU:OE2 | 21:AU:41:THR:HG21 | 1.84 | 0.77 |
| 34:BA:2358:A:H61 | 46:BP:54:GLN:HE22 | 1.31 | 0.77 |
| 34:BA:140:C:O2 | 34:BA:140:C:H2' | 1.84 | 0.77 |
| 37:BD:48:ILE:HG23 | 37:BD:84:LEU:HD21 | 1.65 | 0.77 |
| 41:BH:54:VAL:O | 41:BH:54:VAL:HG13 | 1.84 | 0.77 |
| 1:AA:1225:A:H1' | 19:AS:77:ARG:HD2 | 1.65 | 0.77 |
| 1:AA:1410:A:H2' | 1:AA:1411:C:C6 | 2.18 | 0.77 |
| 10:AJ:40:ILE:HB | 10:AJ:73:LEU:HB2 | 1.64 | 0.77 |
| 12:AL:30:ARG:NH1 | 23:AW:408:LYS:CG | 2.48 | 0.77 |
| 28:B3:12:ALA:HA | 28:B3:15:ARG:HD3 | 1.64 | 0.77 |
| 38:BE:149:ILE:HD11 | 38:BE:172:ALA:HA | 1.67 | 0.77 |
| 43:BK:29:LYS:HB3 | 43:BM:19:VAL:HG21 | 1.65 | 0.77 |
| 34:BA:631:A:O2' | 46:BP:66:PHE:HB3 | 1.83 | 0.77 |
| 51:BU:57:ARG:HA | 51:BU:60:TRP:CE3 | 2.20 | 0.77 |
| 26:B1:5:GLN:NE2 | 26:B1:49:ARG:H | 1.77 | 0.77 |
| 42:BI:89:SER:HA | 42:BI:135:MET:HB2 | 1.66 | 0.77 |
| 38:BE:127:GLU:H | 38:BE:127:GLU:CD | 1.88 | 0.77 |
| 41:BH:57:ASN:C | 41:BH:59:LEU:H | 1.87 | 0.77 |
| 56:BZ:44:HIS:CE1 | 56:BZ:86:LEU:H | 1.97 | 0.77 |
| 4:AD:33:ILE:O | 4:AD:34:GLU:HB3 | 1.83 | 0.77 |
| 13:AM:5:GLY:HA3 | 13:AM:65:GLU:HG3 | 1.65 | 0.77 |
| 18:AR:33:THR:HG22 | 18:AR:37:LYS:N | 1.99 | 0.77 |
| 25:B0:37:VAL:C | 25:B0:38:ARG:HG2 | 2.05 | 0.77 |
| 2:AB:22:TRP:CZ3 | 2:AB:24:PRO:HA | 2.20 | 0.77 |
| 34:BA:900:A:C2 | 34:BA:901:C:C5 | 2.73 | 0.77 |
| 42:BI:53:PRO:HD2 | 42:BI:77:VAL:HG21 | 1.66 | 0.77 |
| 47:BQ:26:VAL:HA | 47:BQ:104:GLU:OE1 | 1.84 | 0.77 |
| 53:BW:13:SER:HG | 53:BW:16:LYS:H | 1.33 | 0.77 |
| 4:AD:172:VAL:HG22 | 4:AD:173:ASP:H | 1.50 | 0.76 |
| 11:AK:14:GLN:HE22 | 11:AK:77:GLY:HA3 | 1.50 | 0.76 |
| 34:BA:204:A:H4' | 34:BA:205:G:OP1 | 1.84 | 0.76 |
| 41:BH:97:LYS:HD2 | 41:BH:130:PRO:CB | 2.14 | 0.76 |
| 15:AO:11:VAL:HG13 | 15:AO:26:VAL:HG11 | 1.66 | 0.76 |
| 34:BA:947:A:O2' | 34:BA:984:A:H2 | 1.69 | 0.76 |
| 55:BY:65:GLN:HB2 | 55:BY:68:ASN:ND2 | 2.00 | 0.76 |
| 7:AG:98:LEU:HA | 7:AG:101:ARG:NH1 | 2.00 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 12:AL:81:ILE:HD11 | 12:AL:94:TYR:HB3 | 1.66 | 0.76 |
| 23:AW:62:MET:HG2 | 23:AW:454:LYS:HG2 | 1.65 | 0.76 |
| 34:BA:819:A:OP2 | 34:BA:1187:G:N2 | 2.15 | 0.76 |
| 34:BA:1654:A:H2' | 34:BA:1655:A:H8 | 1.49 | 0.76 |
| 37:BD:15:PHE:N | 50:BT:11:GLN:HE22 | 1.81 | 0.76 |
| 41:BH:29:ASP:HA | 41:BH:108:VAL:HG11 | 1.68 | 0.76 |
| 1:AA:890:G:O2' | 1:AA:891:U:OP2 | 2.03 | 0.76 |
| 23:AW:19:ILE:C | 23:AW:26:LYS:HE3 | 2.05 | 0.76 |
| 23:AW:20:SER:N | 23:AW:26:LYS:NZ | 2.32 | 0.76 |
| 34:BA:479:A:H4' | 34:BA:480:A:OP1 | 1.85 | 0.76 |
| 1:AA:73:C:H41 | 1:AA:94:G:N2 | 1.83 | 0.76 |
| 1:AA:220:G:H2' | 1:AA:221:C:H6 | 1.48 | 0.76 |
| 6:AF:47:LEU:HD13 | 6:AF:51:ILE:HG22 | 1.68 | 0.76 |
| 14:AN:8:ARG:HB3 | 14:AN:12:ARG:NH1 | 1.99 | 0.76 |
| 23:AW:355:HIS:HA | 23:AW:356:VAL:HG23 | 1.68 | 0.76 |
| 34:BA:1936:A:C2 | 34:BA:1943:U:H5 | 2.03 | 0.76 |
| 34:BA:1997:C:OP2 | 37:BD:129:THR:HB | 1.84 | 0.76 |
| 34:BA:2641:G:OP1 | 44:BN:76:HIS:HE1 | 1.67 | 0.76 |
| 1:AA:1222:G:H5" | 19:AS:77:ARG:HH11 | 1.51 | 0.76 |
| 6:AF:6:ILE:HD12 | 6:AF:62:MET:HG2 | 1.67 | 0.76 |
| 9:AI:24:ASN:HB2 | 9:AI:26:LYS:HG2 | 1.65 | 0.76 |
| 15:AO:63:ARG:HG2 | 15:AO:87:ARG:HH12 | 1.50 | 0.76 |
| 23:AW:19:ILE:CA | 23:AW:26:LYS:CE | 2.62 | 0.76 |
| 32:B7:56:LEU:HD21 | 34:BA:834:G:H5' | 1.68 | 0.76 |
| 34:BA:2311:A:H5' | 34:BA:2312:U:OP2 | 1.86 | 0.76 |
| 44:BN:77:HIS:HD2 | 44:BN:79:GLY:H | 1.30 | 0.76 |
| 2:AB:163:ILE:HG23 | 2:AB:164:ASP:N | 2.01 | 0.76 |
| 8:AH:8:ASP:O | 8:AH:12:ARG:HG3 | 1.86 | 0.76 |
| 18:AR:61:ALA:HB3 | 18:AR:67:LEU:HD12 | 1.67 | 0.76 |
| 34:BA:1652:A:H62 | 48:BR:11:ASN:HD21 | 1.32 | 0.76 |
| 37:BD:13:ARG:HH12 | 50:BT:74:GLN:NE2 | 1.84 | 0.76 |
| 38:BE:29:HIS:O | 38:BE:33:VAL:HG23 | 1.85 | 0.76 |
| 39:BF:134:GLN:H | 39:BF:134:GLN:HE21 | 1.31 | 0.76 |
| 54:BX:51:PHE:O | 54:BX:53:VAL:HG13 | 1.86 | 0.76 |
| 3:AC:166:TRP:HE3 | 3:AC:166:TRP:H | 1.34 | 0.76 |
| 21:AU:9:GLU:HG3 | 21:AU:10:PRO:HD3 | 1.66 | 0.76 |
| 2:AB:20:ARG:NH1 | 2:AB:20:ARG:HA | 2.00 | 0.76 |
| 9:AI:9:GLY:HA2 | 9:AI:80:HIS:HD2 | 1.52 | 0.76 |
| 3:AC:86:LEU:O | 3:AC:90:VAL:HG23 | 1.85 | 0.75 |
| 27:B2:5:GLU:O | 27:B2:8:GLU:HB2 | 1.87 | 0.75 |
| 28:B3:8:GLN:HB3 | 28:B3:31:ILE:HA | 1.68 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:627:A:H4' | 34:BA:628:G:OP1 | 1.86 | 0.75 |
| 1:AA:625:U:H4' | 16:AP:16:PHE:CE2 | 2.21 | 0.75 |
| 1:AA:1094:G:O2' | 1:AA:1095:U:OP2 | 2.03 | 0.75 |
| 1:AA:1256:A:H1' | 1:AA:1258:G:C5 | 2.22 | 0.75 |
| 6:AF:38:ARG:HG3 | 6:AF:39:LEU:H | 1.51 | 0.75 |
| 9:AI:71:ILE:HD12 | 9:AI:71:ILE:H | 1.51 | 0.75 |
| 25:B0:48:ALA:O | 25:B0:61:LYS:HB2 | 1.87 | 0.75 |
| 34:BA:1266:G:O2' | 34:BA:1267:U:OP2 | 2.04 | 0.75 |
| 34:BA:2204:G:H4' | 36:BC:149:LYS:HG3 | 1.69 | 0.75 |
| 40:BG:83:THR:HA | 40:BG:84:LYS:HZ3 | 1.51 | 0.75 |
| 1:AA:913:A:H4' | 1:AA:914:A:O5' | 1.86 | 0.75 |
| 34:BA:1936:A:C2 | 34:BA:1943:U:C5 | 2.74 | 0.75 |
| 5:AE:156:ARG:HH22 | 8:AH:113:ARG:HH12 | 1.31 | 0.75 |
| 23:AW:399:ARG:HH12 | 23:AW:448:VAL:HG11 | 1.52 | 0.75 |
| 34:BA:899:A:H2' | 34:BA:900:A:C8 | 2.21 | 0.75 |
| 41:BH:23:LEU:HG | 41:BH:24:SER:H | 1.51 | 0.75 |
| 1:AA:1168:U:O2 | 1:AA:1168:U:H2' | 1.85 | 0.75 |
| 7:AG:112:ASP:HB2 | 7:AG:118:ARG:CG | 2.16 | 0.75 |
| 10:AJ:56:HIS:O | 10:AJ:57:VAL:HG12 | 1.87 | 0.75 |
| 14:AN:58:ARG:HG2 | 14:AN:58:ARG:HH11 | 1.51 | 0.75 |
| 34:BA:1563:U:H2' | 34:BA:1564:C:C6 | 2.20 | 0.75 |
| 45:BO:39:ILE:HG23 | 45:BO:41:ILE:HD13 | 1.67 | 0.75 |
| 50:BT:5:LYS:O | 50:BT:9:GLN:HG2 | 1.86 | 0.75 |
| 1:AA:376:G:H2' | 1:AA:377:G:H8 | 1.51 | 0.75 |
| 23:AW:70:ILE:O | 23:AW:95:PHE:CE2 | 2.40 | 0.75 |
| 41:BH:128:THR:O | 41:BH:129:LEU:HB2 | 1.85 | 0.75 |
| 1:AA:1355:G:H2' | 1:AA:1356:G:H8 | 1.52 | 0.75 |
| 34:BA:135:U:H3 | 34:BA:144:A:H61 | 1.34 | 0.75 |
| 44:BN:65:THR:HG22 | 44:BN:68:LYS:HE3 | 1.67 | 0.75 |
| 1:AA:51:A:H4' | 1:AA:52:C:O5' | 1.86 | 0.75 |
| 5:AE:80:LEU:HD23 | 5:AE:122:VAL:CG1 | 2.16 | 0.75 |
| 34:BA:1061:U:H1' | 34:BA:1070:A:H1' | 1.68 | 0.75 |
| 36:BC:68:ARG:HD3 | 36:BC:103:ILE:HD11 | 1.67 | 0.75 |
| 37:BD:107:VAL:HG13 | 37:BD:203:VAL:HG23 | 1.68 | 0.75 |
| 45:BO:40:LYS:NZ | 45:BO:89:ASN:HD21 | 1.85 | 0.75 |
| 52:BV:20:VAL:HG23 | 52:BV:22:LEU:HD21 | 1.69 | 0.75 |
| 21:AU:24:LYS:HG2 | 21:AU:25:ALA:H | 1.52 | 0.75 |
| 23:AW:522:GLN:HB2 | 23:AW:523:PHE:HB2 | 1.68 | 0.75 |
| 27:B2:41:HIS:CE1 | 34:BA:96:C:H4' | 2.22 | 0.75 |
| 44:BN:45:THR:OG1 | 44:BN:48:VAL:HB | 1.86 | 0.75 |
| 25:B0:37:VAL:HG12 | 25:B0:38:ARG:N | 2.00 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 41:BH:137:ALA:O | 41:BH:141:ALA:HB2 | 1.85 | 0.74 |
| 44:BN:73:VAL:HG23 | 44:BN:74:TYR:H | 1.52 | 0.74 |
| 34:BA:1901:A:OP2 | 36:BC:252:LYS:HE2 | 1.87 | 0.74 |
| 34:BA:2052:A:OP1 | 37:BD:145:SER:HA | 1.86 | 0.74 |
| 36:BC:106:PRO:HA | 36:BC:141:HIS:NE2 | 2.01 | 0.74 |
| 54:BX:69:ARG:NE | 54:BX:70:HIS:H | 1.84 | 0.74 |
| 1:AA:408:A:OP1 | 4:AD:109:THR:HG21 | 1.87 | 0.74 |
| 1:AA:484:G:C4' | 1:AA:485:U:O5' | 2.33 | 0.74 |
| 1:AA:600:A:H2' | 1:AA:601:G:H8 | 1.51 | 0.74 |
| 4:AD:137:SER:HB3 | 4:AD:138:PRO:HD2 | 1.66 | 0.74 |
| 34:BA:996:A:H4' | 51:BU:91:ARG:HD2 | 1.69 | 0.74 |
| 1:AA:664:G:H22 | 1:AA:741:G:H1 | 1.36 | 0.74 |
| 34:BA:448:U:H4' | 34:BA:449:A:OP2 | 1.87 | 0.74 |
| 37:BD:49:GLN:NE2 | 37:BD:67:HIS:HE1 | 1.84 | 0.74 |
| 40:BG:72:ASN:O | 40:BG:76:ILE:HG22 | 1.88 | 0.74 |
| 49:BS:100:HIS:H | 49:BS:103:VAL:HG23 | 1.52 | 0.74 |
| 1:AA:975:A:O2' | 14:AN:71:GLY:HA2 | 1.87 | 0.74 |
| 3:AC:156:LEU:HB2 | 3:AC:163:ARG:HH12 | 1.51 | 0.74 |
| 10:AJ:52:LEU:HD22 | 10:AJ:59:LYS:HA | 1.69 | 0.74 |
| 19:AS:62:THR:HG22 | 19:AS:63:ASP:H | 1.53 | 0.74 |
| 25:B0:28:GLU:H | 25:B0:31:LEU:HD11 | 1.52 | 0.74 |
| 34:BA:893:C:H2' | 34:BA:894:U:O4' | 1.86 | 0.74 |
| 34:BA:2757:A:N1 | 40:BG:66:THR:HG21 | 2.02 | 0.74 |
| 36:BC:136:VAL:HG23 | 36:BC:166:ARG:NH2 | 2.02 | 0.74 |
| 44:BN:43:GLU:O | 44:BN:45:THR:N | 2.20 | 0.74 |
| 10:AJ:41:PRO:HA | 10:AJ:72:ARG:HH11 | 1.51 | 0.74 |
| 34:BA:2714:G:C2' | 34:BA:2715:C:H5' | 2.17 | 0.74 |
| 3:AC:96:VAL:HB | 3:AC:97:PRO:HD2 | 1.69 | 0.74 |
| 42:BI:3:LYS:HD3 | 42:BI:4:VAL:HG23 | 1.69 | 0.74 |
| 23:AW:70:ILE:HG23 | 23:AW:95:PHE:CZ | 2.18 | 0.74 |
| 40:BG:93:TYR:O | 40:BG:94:ARG:HB3 | 1.88 | 0.74 |
| 44:BN:103:ILE:HD13 | 44:BN:104:ALA:N | 2.02 | 0.74 |
| 45:BO:19:VAL:HG22 | 45:BO:41:ILE:HG13 | 1.68 | 0.74 |
| 1:AA:428:G:H4' | 1:AA:429:U:OP1 | 1.88 | 0.74 |
| 1:AA:501:C:H2' | 1:AA:502:A:H8 | 1.50 | 0.74 |
| 2:AB:20:ARG:HA | 2:AB:20:ARG:CZ | 2.16 | 0.74 |
| 17:AQ:11:VAL:HG12 | 17:AQ:12:VAL:N | 2.03 | 0.74 |
| 18:AR:57:ALA:HA | 18:AR:60:ARG:HD3 | 1.70 | 0.74 |
| 23:AW:19:ILE:HA | 23:AW:26:LYS:HE2 | 1.69 | 0.74 |
| 36:BC:23:LEU:HD11 | 36:BC:82:TYR:N | 2.02 | 0.74 |
| 40:BG:88:LEU:HD22 | 40:BG:161:VAL:HG22 | 1.70 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:BO:71:ARG:HB3 | 45:BO:72:PRO:HD3 | 1.68 | 0.74 |
| 9:AI:51:LEU:HB3 | 9:AI:56:MET:HG2 | 1.70 | 0.74 |
| 37:BD:47:ALA:HA | 37:BD:84:LEU:HG | 1.70 | 0.74 |
| 48:BR:73:ASN:HA | 48:BR:76:VAL:HG12 | 1.69 | 0.74 |
| 51:BU:24:TYR:O | 51:BU:27:ARG:HB2 | 1.88 | 0.74 |
| 1:AA:376:G:H5" | 16:AP:5:ARG:HB2 | 1.68 | 0.73 |
| 4:AD:200:VAL:HG11 | 5:AE:102:THR:HA | 1.69 | 0.73 |
| 34:BA:100:U:C4' | 34:BA:101:A:O5' | 2.35 | 0.73 |
| 34:BA:2638:G:O2' | 34:BA:2639:A:C8 | 2.40 | 0.73 |
| 1:AA:77:A:H62 | 1:AA:90:C:N4 | 1.86 | 0.73 |
| 1:AA:1033:G:H2' | 1:AA:1034:G:H5" | 1.69 | 0.73 |
| 1:AA:1494:G:C6 | 24:AY:1:KBE:CG | 2.70 | 0.73 |
| 13:AM:78:ARG:O | 13:AM:82:LEU:HG | 1.88 | 0.73 |
| 25:B0:38:ARG:NH2 | 34:BA:2262:U:H5" | 2.03 | 0.73 |
| 34:BA:1757:A:H3' | 34:BA:1758:U:H5' | 1.68 | 0.73 |
| 34:BA:2638:G:H1' | 34:BA:2778:A:N6 | 2.02 | 0.73 |
| 37:BD:27:ILE:CD1 | 37:BD:201:LEU:HD23 | 2.18 | 0.73 |
| 50:BT:28:LYS:HE3 | 50:BT:28:LYS:H | 1.51 | 0.73 |
| 50:BT:28:LYS:HE3 | 50:BT:28:LYS:N | 2.03 | 0.73 |
| 5:AE:80:LEU:HD23 | 5:AE:122:VAL:HG11 | 1.68 | 0.73 |
| 5:AE:121:ASN:CG | 5:AE:122:VAL:H | 1.91 | 0.73 |
| 21:AU:37:TYR:O | 21:AU:37:TYR:HD2 | 1.70 | 0.73 |
| 23:AW:493:LEU:HD23 | 23:AW:503:TYR:HA | 1.70 | 0.73 |
| 25:B0:68:PHE:CE1 | 25:B0:79:ILE:HD12 | 2.23 | 0.73 |
| 34:BA:2786:U:OP1 | 37:BD:70:LYS:HE2 | 1.88 | 0.73 |
| 37:BD:184:ARG:HH11 | 50:BT:6:GLN:HE22 | 1.36 | 0.73 |
| 1:AA:1408:A:N1 | 24:AY:2:DPP:N | 2.37 | 0.73 |
| 6:AF:38:ARG:NH1 | 6:AF:61:LEU:HD21 | 2.03 | 0.73 |
| 25:B0:39:GLN:HG2 | 25:B0:41:GLY:H | 1.54 | 0.73 |
| 41:BH:11:ILE:CG2 | 41:BH:66:GLY:HA3 | 2.17 | 0.73 |
| 13:AM:19:THR:HA | 13:AM:24:VAL:HG23 | 1.68 | 0.73 |
| 34:BA:246:C:H2' | 34:BA:247:G:H5' | 1.69 | 0.73 |
| 34:BA:459:U:O2' | 34:BA:460:A:H5' | 1.89 | 0.73 |
| 43:BJ:18:ASP:O | 43:BJ:22:LEU:HG | 1.87 | 0.73 |
| 1:AA:1239:A:H4' | 1:AA:1240:U:C5' | 2.18 | 0.73 |
| 3:AC:149:LYS:HD2 | 3:AC:200:TRP:CE3 | 2.24 | 0.73 |
| 21:AU:3:ILE:HD13 | 21:AU:19:LYS:HZ2 | 1.52 | 0.73 |
| 22:AV:15:A:N3 | 22:AV:15:A:H2' | 2.03 | 0.73 |
| 23:AW:50:GLY:HA3 | 34:BA:2655:G:C8 | 2.24 | 0.73 |
| 34:BA:441:U:O2' | 34:BA:442:G:H5' | 1.88 | 0.73 |
| 39:BF:39:VAL:HG11 | 39:BF:42:ALA:HB2 | 1.70 | 0.73 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:BG:83:THR:C | 40:BG:84:LYS:HD3 | 2.09 | 0.73 |
| 54:BX:44:LYS:HE3 | 54:BX:55:VAL:HG12 | 1.71 | 0.73 |
| 1:AA:672:U:H2' | 1:AA:673:A:H8 | 1.53 | 0.73 |
| 1:AA:1324:A:O4' | 1:AA:1362:A:H4' | 1.88 | 0.73 |
| 29:B4:21:LEU:CD1 | 53:BW:19:LEU:HB3 | 2.17 | 0.73 |
| 34:BA:372:G:O2' | 34:BA:373:U:P | 2.46 | 0.73 |
| 1:AA:182:A:N7 | 1:AA:184:G:C5 | 2.57 | 0.73 |
| 4:AD:106:PHE:HB3 | 4:AD:144:ILE:HD11 | 1.70 | 0.73 |
| 20:AT:68:LYS:HB2 | 20:AT:68:LYS:NZ | 2.04 | 0.73 |
| 34:BA:163:C:O2 | 34:BA:163:C:H2' | 1.87 | 0.73 |
| 1:AA:204:G:H3' | 1:AA:205:A:C5' | 2.19 | 0.73 |
| 33:B8:36:ARG:HG2 | 33:B8:37:GLN:H | 1.54 | 0.73 |
| 34:BA:2298:A:OP1 | 39:BF:70:ARG:HD2 | 1.89 | 0.73 |
| 39:BF:72:SER:HB2 | 39:BF:80:GLN:N | 2.03 | 0.73 |
| 41:BH:32:GLY:HA3 | 41:BH:56:ARG:HH22 | 1.53 | 0.73 |
| 48:BR:79:LEU:O | 48:BR:80:PHE:HB2 | 1.87 | 0.73 |
| 1:AA:501:C:H2' | 1:AA:502:A:C8 | 2.23 | 0.73 |
| 1:AA:950:U:H2' | 1:AA:951:G:C8 | 2.24 | 0.73 |
| 1:AA:978:A:OP2 | 1:AA:1362:A:N6 | 2.20 | 0.73 |
| 34:BA:2359:C:H2' | 34:BA:2360:G:C8 | 2.24 | 0.73 |
| 45:BO:10:VAL:HG21 | 45:BO:16:ALA:CB | 2.18 | 0.73 |
| 52:BV:42:ALA:HA | 52:BV:46:GLU:HB2 | 1.69 | 0.73 |
| 1:AA:1202:U:O4' | 14:AN:68:ARG:HD2 | 1.89 | 0.72 |
| 23:AW:147:ASP:HB3 | 40:BG:91:VAL:HG11 | 1.71 | 0.72 |
| 25:B0:38:ARG:HH22 | 34:BA:2262:U:H5" | 1.53 | 0.72 |
| 34:BA:2073:C:H5" | 36:BC:227:VAL:HG12 | 1.71 | 0.72 |
| 39:BF:38:GLY:HA2 | 39:BF:85:GLY:HA2 | 1.71 | 0.72 |
| 45:BO:21:CYS:SG | 45:BO:39:ILE:HD11 | 2.29 | 0.72 |
| 28:B3:40:THR:HG23 | 28:B3:43:ILE:HG23 | 1.71 | 0.72 |
| 46:BP:132:ARG:HG3 | 46:BP:142:ILE:HG13 | 1.70 | 0.72 |
| 1:AA:1494:G:C5 | 24:AY:1:KBE:CG | 2.73 | 0.72 |
| 3:AC:32:LEU:HD21 | 14:AN:92:ILE:HG12 | 1.70 | 0.72 |
| 11:AK:22:ILE:HD13 | 11:AK:22:ILE:H | 1.54 | 0.72 |
| 34:BA:859:G:H1' | 34:BA:860:U:H5 | 1.54 | 0.72 |
| 51:BU:78:PHE:CZ | 51:BU:82:LEU:HD11 | 2.24 | 0.72 |
| 28:B3:43:ILE:O | 28:B3:47:ILE:HG12 | 1.90 | 0.72 |
| 34:BA:878:A:C6 | 34:BA:900:A:H1' | 2.25 | 0.72 |
| 34:BA:979:A:H2' | 34:BA:982:C:N4 | 2.05 | 0.72 |
| 34:BA:1060:U:H4' | 34:BA:1061:U:O5' | 1.87 | 0.72 |
| 34:BA:2742:G:C2' | 34:BA:2743:U:H5' | 2.18 | 0.72 |
| 55:BY:42:LYS:HD3 | 55:BY:42:LYS:N | 2.02 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:373:A:H1' | 1:AA:481:G:H1' | 1.71 | 0.72 |
| 1:AA:1251:A:O2' | 1:AA:1370:G:H5' | 1.90 | 0.72 |
| 1:AA:1505:G:H4' | 1:AA:1506:U:H5" | 1.72 | 0.72 |
| 2:AB:165:ALA:HB3 | 2:AB:190:SER:HB3 | 1.71 | 0.72 |
| 34:BA:2150:C:C2 | 34:BA:2151:U:C4 | 2.78 | 0.72 |
| 34:BA:2328:A:H2' | 34:BA:2329:U:H6 | 1.52 | 0.72 |
| 37:BD:15:PHE:H | 50:BT:11:GLN:NE2 | 1.83 | 0.72 |
| 43:BJ:11:VAL:HG21 | 43:BM:15:SER:CB | 2.19 | 0.72 |
| 1:AA:1347:G:N2 | 1:AA:1373:G:H2' | 2.05 | 0.72 |
| 23:AW:59:TRP:CE3 | 23:AW:59:TRP:HA | 2.24 | 0.72 |
| 34:BA:653:U:C5 | 34:BA:654:A:H2 | 2.08 | 0.72 |
| 44:BN:17:VAL:HG23 | 44:BN:137:PRO:HB2 | 1.72 | 0.72 |
| 45:BO:2:ILE:O | 45:BO:3:GLN:HG2 | 1.89 | 0.72 |
| 1:AA:738:C:H2' | 1:AA:739:C:C6 | 2.23 | 0.72 |
| 13:AM:38:ILE:HG13 | 13:AM:55:LEU:HD21 | 1.70 | 0.72 |
| 34:BA:1784:A:H4' | 34:BA:1785:A:O5' | 1.90 | 0.72 |
| 46:BP:110:VAL:O | 46:BP:111:ILE:HB | 1.89 | 0.72 |
| 12:AL:23:LEU:HB3 | 12:AL:58:ASN:HD22 | 1.54 | 0.72 |
| 15:AO:77:TYR:O | 15:AO:81:ILE:HG12 | 1.90 | 0.72 |
| 23:AW:300:VAL:H | 23:AW:318:MET:HG3 | 1.54 | 0.72 |
| 34:BA:1141:U:H4' | 34:BA:1142:A:O4' | 1.90 | 0.72 |
| 34:BA:1510:G:C2' | 34:BA:1511:G:H5' | 2.18 | 0.72 |
| 34:BA:1996:C:H4' | 34:BA:1997:C:OP1 | 1.90 | 0.72 |
| 37:BD:98:VAL:HG12 | 37:BD:180:VAL:HG13 | 1.71 | 0.72 |
| 53:BW:69:LEU:HG | 53:BW:107:VAL:HG13 | 1.71 | 0.72 |
| 1:AA:1498:U:C5 | 22:AV:17:U:H5" | 2.24 | 0.72 |
| 3:AC:106:ARG:HD3 | 3:AC:106:ARG:H | 1.54 | 0.72 |
| 5:AE:152:VAL:C | 5:AE:156:ARG:HB2 | 2.10 | 0.72 |
| 7:AG:122:GLU:HA | 7:AG:125:ASP:HB3 | 1.71 | 0.72 |
| 11:AK:60:PHE:O | 11:AK:64:VAL:HG13 | 1.90 | 0.72 |
| 34:BA:612:G:C2 | 34:BA:614:A:H1' | 2.24 | 0.72 |
| 34:BA:1654:A:H1' | 37:BD:118:PHE:CD1 | 2.25 | 0.72 |
| 36:BC:245:THR:HB | 36:BC:246:PRO:HD2 | 1.69 | 0.72 |
| 39:BF:40:GLY:HA2 | 39:BF:84:ILE:HD11 | 1.72 | 0.72 |
| 1:AA:211:G:C2 | 1:AA:212:G:H1' | 2.23 | 0.72 |
| 1:AA:600:A:H2' | 1:AA:601:G:C8 | 2.25 | 0.72 |
| 23:AW:76:GLN:HE21 | 23:AW:85:ASN:HD21 | 1.37 | 0.72 |
| 34:BA:289:G:H2' | 34:BA:290:U:H6 | 1.54 | 0.72 |
| 34:BA:1475:G:O2' | 34:BA:1476:U:P | 2.48 | 0.72 |
| 45:BO:77:ILE:HD11 | 45:BO:105:ARG:HH12 | 1.55 | 0.72 |
| 2:AB:114:LYS:HA | 2:AB:117:GLU:CG | 2.19 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:AB:161:PHE:HA | 2:AB:183:PHE:O | 1.89 | 0.71 |
| 10:AJ:80:THR:HG22 | 10:AJ:83:THR:N | 1.99 | 0.71 |
| 23:AW:312:ARG:O | 23:AW:314:ARG:N | 2.22 | 0.71 |
| 45:BO:18:ARG:H | 45:BO:45:GLU:HB2 | 1.54 | 0.71 |
| 54:BX:29:THR:HB | 54:BX:86:THR:HG22 | 1.72 | 0.71 |
| 1:AA:1355:G:H2' | 1:AA:1356:G:C8 | 2.25 | 0.71 |
| 5:AE:105:ILE:CG1 | 5:AE:123:LEU:HA | 2.19 | 0.71 |
| 10:AJ:22:THR:OG1 | 10:AJ:72:ARG:HG3 | 1.90 | 0.71 |
| 18:AR:33:THR:HG23 | 18:AR:35:SER:H | 1.54 | 0.71 |
| 20:AT:67:HIS:HB3 | 20:AT:68:LYS:HZ2 | 1.54 | 0.71 |
| 20:AT:67:HIS:HB3 | 20:AT:68:LYS:NZ | 2.05 | 0.71 |
| 25:B0:30:VAL:CG1 | 34:BA:2353:G:H1' | 2.19 | 0.71 |
| 34:BA:1111:A:N3 | 34:BA:1112:G:H1' | 2.05 | 0.71 |
| 34:BA:2058:A:H5" | 34:BA:2059:A:OP2 | 1.90 | 0.71 |
| 34:BA:2150:C:C2' | 34:BA:2151:U:C5 | 2.67 | 0.71 |
| 47:BQ:35:ALA:O | 47:BQ:36:VAL:HB | 1.90 | 0.71 |
| 52:BV:41:ILE:O | 52:BV:46:GLU:HB2 | 1.89 | 0.71 |
| 55:BY:97:SER:O | 55:BY:98:ASN:HB3 | 1.87 | 0.71 |
| 34:BA:483:A:C8 | 55:BY:44:HIS:CD2 | 2.77 | 0.71 |
| 49:BS:33:ARG:HG2 | 49:BS:34:HIS:ND1 | 2.05 | 0.71 |
| 54:BX:39:THR:HG22 | 54:BX:39:THR:O | 1.90 | 0.71 |
| 1:AA:672:U:H2' | 1:AA:673:A:C8 | 2.24 | 0.71 |
| 1:AA:890:G:O2' | 1:AA:891:U:P | 2.48 | 0.71 |
| 7:AG:69:ARG:HG3 | 7:AG:95:ARG:HG2 | 1.73 | 0.71 |
| 34:BA:246:C:C2' | 34:BA:247:G:H5' | 2.21 | 0.71 |
| 34:BA:1797:G:O3' | 36:BC:255:LYS:HA | 1.90 | 0.71 |
| 40:BG:75:VAL:HG12 | 40:BG:76:ILE:N | 2.05 | 0.71 |
| 41:BH:138:ARG:HA | 41:BH:141:ALA:HB3 | 1.73 | 0.71 |
| 1:AA:1524:C:H2' | 1:AA:1525:G:C8 | 2.26 | 0.71 |
| 4:AD:43:ARG:O | 4:AD:45:PRO:HD3 | 1.89 | 0.71 |
| 7:AG:12:LEU:H | 7:AG:12:LEU:HD22 | 1.55 | 0.71 |
| 7:AG:112:ASP:HB2 | 7:AG:118:ARG:HG2 | 1.73 | 0.71 |
| 34:BA:900:A:O2' | 34:BA:901:C:OP1 | 2.07 | 0.71 |
| 34:BA:1174:U:O2 | 34:BA:1174:U:H2' | 1.88 | 0.71 |
| 34:BA:2150:C:C2 | 34:BA:2151:U:O4 | 2.43 | 0.71 |
| 54:BX:48:GLN:HA | 54:BX:48:GLN:NE2 | 1.98 | 0.71 |
| 56:BZ:72:VAL:HG21 | 56:BZ:91:PHE:HB3 | 1.73 | 0.71 |
| 1:AA:58:C:O2' | 1:AA:59:A:H5' | 1.90 | 0.71 |
| 1:AA:1219:A:H2' | 1:AA:1220:G:H8 | 1.56 | 0.71 |
| 4:AD:97:LEU:HD22 | 4:AD:117:VAL:HG11 | 1.72 | 0.71 |
| 13:AM:47:LEU:CD2 | 13:AM:52:ILE:HB | 2.21 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 13:AM:82:LEU:HB3 | 19:AS:73:PHE:HE2 | 1.55 | 0.71 |
| 23:AW:92:HIS:HB3 | 23:AW:95:PHE:HB3 | 1.71 | 0.71 |
| 34:BA:1857:G:N2 | 34:BA:1884:G:H2' | 2.05 | 0.71 |
| 34:BA:2273:A:H2' | 34:BA:2274:A:C8 | 2.25 | 0.71 |
| 35:BB:28:C:H42 | 35:BB:56:G:H1 | 1.37 | 0.71 |
| 50:BT:50:ARG:CD | 50:BT:51:ASN:H | 2.03 | 0.71 |
| 53:BW:72:THR:O | 53:BW:73:LYS:HD2 | 1.91 | 0.71 |
| 23:AW:60:MET:SD | 23:AW:61:GLU:N | 2.64 | 0.71 |
| 45:BO:54:LYS:NZ | 45:BO:54:LYS:HB3 | 2.05 | 0.71 |
| 1:AA:250:A:H4' | 1:AA:251:G:O5' | 1.91 | 0.71 |
| 14:AN:19:TYR:O | 14:AN:22:LYS:HB3 | 1.90 | 0.71 |
| 27:B2:56:LEU:O | 27:B2:57:LEU:HB3 | 1.88 | 0.71 |
| 35:BB:30:C:H2' | 35:BB:31:C:H5' | 1.71 | 0.71 |
| 45:BO:59:LYS:HE2 | 45:BO:89:ASN:HD22 | 1.56 | 0.71 |
| 54:BX:67:VAL:HG12 | 54:BX:76:ARG:HG3 | 1.72 | 0.71 |
| 55:BY:80:ASP:HB3 | 55:BY:95:PHE:HD2 | 1.55 | 0.71 |
| 2:AB:101:THR:HG22 | 2:AB:174:GLU:OE1 | 1.90 | 0.71 |
| 3:AC:142:ARG:HB3 | 3:AC:143:LEU:HD13 | 1.73 | 0.71 |
| 34:BA:370:G:O2' | 34:BA:424:G:OP1 | 2.09 | 0.71 |
| 34:BA:1812:U:H2' | 34:BA:1813:G:C8 | 2.26 | 0.71 |
| 34:BA:2297:A:C2 | 34:BA:2298:A:C8 | 2.78 | 0.71 |
| 35:BB:52:A:C4' | 35:BB:53:A:OP1 | 2.38 | 0.71 |
| 34:BA:2674:G:H4' | 45:BO:30:ARG:HG3 | 1.71 | 0.71 |
| 41:BH:23:LEU:HB3 | 41:BH:87:GLU:HG3 | 1.72 | 0.71 |
| 1:AA:1251:A:H2' | 1:AA:1252:A:C8 | 2.26 | 0.70 |
| 8:AH:52:GLY:HA3 | 8:AH:56:PRO:HA | 1.72 | 0.70 |
| 34:BA:825:A:H1' | 46:BP:54:GLN:NE2 | 2.06 | 0.70 |
| 34:BA:1714:U:H5" | 34:BA:1715:G:H5' | 1.72 | 0.70 |
| 38:BE:175:ILE:HD11 | 38:BE:180:LEU:HD11 | 1.72 | 0.70 |
| 46:BP:19:LEU:HA | 46:BP:27:LEU:HD13 | 1.73 | 0.70 |
| 50:BT:67:GLU:HG3 | 50:BT:68:GLY:H | 1.56 | 0.70 |
| 54:BX:28:ASN:OD1 | 54:BX:29:THR:HG22 | 1.91 | 0.70 |
| 1:AA:662:U:H2' | 1:AA:663:A:C8 | 2.25 | 0.70 |
| 1:AA:983:A:H5' | 14:AN:2:LYS:NZ | 2.06 | 0.70 |
| 32:B7:3:ILE:CD1 | 34:BA:666:A:H1' | 2.21 | 0.70 |
| 34:BA:2286:G:H5" | 34:BA:2287:A:O5' | 1.90 | 0.70 |
| 41:BH:81:LEU:HD23 | 41:BH:82:ILE:N | 2.05 | 0.70 |
| 1:AA:981:U:H2' | 1:AA:982:U:C5 | 2.26 | 0.70 |
| 1:AA:1236:A:H4' | 1:AA:1304:G:H4' | 1.72 | 0.70 |
| 29:B4:29:VAL:HG13 | 29:B4:34:GLY:O | 1.91 | 0.70 |
| 34:BA:614:A:O2' | 34:BA:615:U:H5' | 1.91 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:2198:A:H4' | 34:BA:2199:A:OP1 | 1.91 | 0.70 |
| 37:BD:118:PHE:HD2 | 37:BD:119:ALA:N | 1.81 | 0.70 |
| 45:BO:97:THR:HB | 45:BO:98:ARG:HH21 | 1.57 | 0.70 |
| 51:BU:60:TRP:O | 51:BU:64:ILE:HG12 | 1.92 | 0.70 |
| 54:BX:29:THR:HA | 54:BX:86:THR:CA | 2.19 | 0.70 |
| 4:AD:25:ARG:HH12 | 4:AD:30:LYS:HE3 | 1.54 | 0.70 |
| 13:AM:106:ARG:NH1 | 13:AM:109:LYS:HD3 | 2.05 | 0.70 |
| 34:BA:859:G:O2' | 34:BA:860:U:P | 2.49 | 0.70 |
| 34:BA:2104:C:H41 | 34:BA:2184:A:N6 | 1.89 | 0.70 |
| 34:BA:2150:C:C2' | 34:BA:2151:U:C6 | 2.72 | 0.70 |
| 38:BE:23:PHE:CZ | 38:BE:28:VAL:HG11 | 2.26 | 0.70 |
| 38:BE:151:GLY:HA3 | 38:BE:191:ASP:OD1 | 1.91 | 0.70 |
| 1:AA:403:C:H2' | 1:AA:404:G:H8 | 1.57 | 0.70 |
| 1:AA:1308:U:H4' | 13:AM:90:HIS:HE1 | 1.57 | 0.70 |
| 34:BA:1693:U:H4' | 34:BA:1694:C:OP2 | 1.89 | 0.70 |
| 41:BH:2:ALA:HB3 | 41:BH:6:GLN:CB | 2.21 | 0.70 |
| 43:BM:7:ILE:O | 43:BM:11:VAL:HG23 | 1.91 | 0.70 |
| 1:AA:974:A:H4' | 1:AA:975:A:H5' | 1.74 | 0.70 |
| 1:AA:1227:A:O2' | 13:AM:114:PRO:HG2 | 1.90 | 0.70 |
| 10:AJ:57:VAL:HG22 | 10:AJ:58:ASN:H | 1.57 | 0.70 |
| 13:AM:47:LEU:HD21 | 13:AM:52:ILE:HB | 1.72 | 0.70 |
| 34:BA:140:C:H5' | 34:BA:141:G:H21 | 1.56 | 0.70 |
| 34:BA:2681:C:H4' | 34:BA:2682:A:OP1 | 1.91 | 0.70 |
| 39:BF:114:ARG:HD2 | 39:BF:114:ARG:H | 1.57 | 0.70 |
| 1:AA:731:G:H5' | 1:AA:766:A:H4' | 1.73 | 0.70 |
| 1:AA:978:A:O2' | 1:AA:1322:C:C5 | 2.43 | 0.70 |
| 2:AB:216:VAL:O | 2:AB:219:THR:HG22 | 1.92 | 0.70 |
| 9:AI:128:LYS:CD | 9:AI:129:ARG:H | 2.04 | 0.70 |
| 23:AW:500:ASN:HB2 | 23:AW:501:LEU:HG | 1.74 | 0.70 |
| 35:BB:49:C:OP1 | 49:BS:102:ARG:HG2 | 1.91 | 0.70 |
| 38:BE:137:LYS:O | 38:BE:141:MET:HG3 | 1.91 | 0.70 |
| 3:AC:41:TYR:OH | 3:AC:89:VAL:HG21 | 1.92 | 0.70 |
| 35:BB:87:U:C5' | 35:BB:88:C:OP2 | 2.40 | 0.70 |
| 38:BE:79:ARG:HG2 | 38:BE:80:SER:N | 2.06 | 0.70 |
| 1:AA:554:A:H5' | 12:AL:25:ALA:HB1 | 1.74 | 0.70 |
| 1:AA:972:C:OP2 | 10:AJ:59:LYS:HE3 | 1.92 | 0.70 |
| 20:AT:19:HIS:O | 20:AT:23:ARG:HG2 | 1.91 | 0.70 |
| 29:B4:9:ARG:HH21 | 29:B4:9:ARG:CG | 2.03 | 0.70 |
| 36:BC:124:LYS:HB3 | 36:BC:127:ASN:HD22 | 1.56 | 0.70 |
| 45:BO:122:VAL:O | 45:BO:122:VAL:HG12 | 1.92 | 0.70 |
| 47:BQ:63:ILE:HD11 | 47:BQ:105:MET:CE | 2.22 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:403:C:H2' | 1:AA:404:G:C8 | 2.27 | 0.70 |
| 1:AA:812:G:O2' | 1:AA:813:U:OP2 | 2.10 | 0.70 |
| 26:B1:13:THR:CG2 | 34:BA:188:G:H5" | 2.21 | 0.70 |
| 34:BA:1084:A:N6 | 41:BH:37:LYS:HZ1 | 1.90 | 0.70 |
| 34:BA:2149:U:H2' | 34:BA:2150:C:O2' | 1.91 | 0.70 |
| 34:BA:2197:U:O2' | 34:BA:2198:A:C8 | 2.44 | 0.70 |
| 37:BD:107:VAL:O | 37:BD:174:SER:O | 2.10 | 0.70 |
| 1:AA:1494:G:C5 | 24:AY:1:KBE:HGA | 2.27 | 0.69 |
| 2:AB:14:HIS:O | 2:AB:14:HIS:CG | 2.44 | 0.69 |
| 5:AE:14:LEU:H | 5:AE:14:LEU:HD12 | 1.56 | 0.69 |
| 30:B5:49:LYS:HG2 | 30:B5:50:GLU:H | 1.55 | 0.69 |
| 34:BA:527:C:H4' | 34:BA:528:A:O5' | 1.92 | 0.69 |
| 41:BH:17:GLU:HG2 | 41:BH:88:HIS:CE1 | 2.27 | 0.69 |
| 47:BQ:41:LEU:HD12 | 47:BQ:96:ILE:HG21 | 1.73 | 0.69 |
| 50:BT:104:GLY:O | 50:BT:106:ALA:N | 2.25 | 0.69 |
| 52:BV:4:VAL:HG23 | 52:BV:39:LEU:HG | 1.72 | 0.69 |
| 1:AA:687:A:H4' | 1:AA:688:G:OP1 | 1.92 | 0.69 |
| 2:AB:96:LEU:HB2 | 2:AB:99:MET:HE3 | 1.73 | 0.69 |
| 25:B0:43:LYS:HD2 | 25:B0:79:ILE:CD1 | 2.21 | 0.69 |
| 25:B0:70:VAL:C | 25:B0:71:LYS:HD2 | 2.12 | 0.69 |
| 34:BA:276:U:O2' | 34:BA:278:A:N7 | 2.25 | 0.69 |
| 38:BE:158:PHE:HD1 | 38:BE:159:LEU:HD12 | 1.55 | 0.69 |
| 39:BF:35:LEU:HB3 | 39:BF:153:ILE:HG22 | 1.74 | 0.69 |
| 46:BP:30:THR:O | 46:BP:33:ARG:HG2 | 1.91 | 0.69 |
| 1:AA:484:G:H4' | 1:AA:485:U:C5' | 2.21 | 0.69 |
| 9:AI:111:GLU:HG2 | 9:AI:114:LYS:NZ | 2.08 | 0.69 |
| 34:BA:782:A:H5' | 34:BA:783:A:C2 | 2.27 | 0.69 |
| 34:BA:2840:C:H2' | 34:BA:2841:C:C6 | 2.26 | 0.69 |
| 35:BB:56:G:H5" | 35:BB:57:A:OP1 | 1.92 | 0.69 |
| 38:BE:130:LYS:HB2 | 38:BE:133:LEU:HD12 | 1.72 | 0.69 |
| 40:BG:33:THR:C | 40:BG:34:ARG:HD3 | 2.12 | 0.69 |
| 41:BH:26:VAL:HG22 | 41:BH:82:ILE:HG21 | 1.73 | 0.69 |
| 47:BQ:35:ALA:O | 47:BQ:128:THR:HA | 1.91 | 0.69 |
| 1:AA:940:C:H2' | 1:AA:941:G:C8 | 2.27 | 0.69 |
| 1:AA:1277:C:H1' | 1:AA:1282:C:O2 | 1.91 | 0.69 |
| 5:AE:56:PRO:O | 5:AE:59:ILE:HG13 | 1.92 | 0.69 |
| 8:AH:40:LYS:HG3 | 8:AH:47:ASP:HA | 1.73 | 0.69 |
| 14:AN:62:ARG:HG2 | 14:AN:69:PRO:HB3 | 1.74 | 0.69 |
| 23:AW:50:GLY:HA3 | 34:BA:2655:G:H8 | 1.55 | 0.69 |
| 25:B0:17:ALA:HB1 | 25:B0:36:ILE:HG12 | 1.74 | 0.69 |
| 34:BA:910:A:H2' | 34:BA:911:A:C8 | 2.27 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1061:U:HO2' | 34:BA:1070:A:H4' | 1.55 | 0.69 |
| 34:BA:1497:U:H5" | 34:BA:1498:C:OP2 | 1.91 | 0.69 |
| 34:BA:1970:A:H5" | 34:BA:1971:U:OP1 | 1.92 | 0.69 |
| 34:BA:2638:G:O2' | 34:BA:2639:A:H8 | 1.76 | 0.69 |
| 35:BB:66:A:C4' | 35:BB:67:G:OP1 | 2.37 | 0.69 |
| 51:BU:86:SER:O | 52:BV:51:VAL:HA | 1.92 | 0.69 |
| 1:AA:1004:A:H2' | 1:AA:1005:A:O4' | 1.92 | 0.69 |
| 9:AI:33:SER:HB3 | 9:AI:36:GLN:HG2 | 1.74 | 0.69 |
| 23:AW:399:ARG:HH22 | 23:AW:448:VAL:HG21 | 1.57 | 0.69 |
| 34:BA:1110:G:O2' | 34:BA:1111:A:H8 | 1.75 | 0.69 |
| 1:AA:377:G:H5' | 16:AP:5:ARG:HH12 | 1.57 | 0.69 |
| 1:AA:476:U:H2' | 1:AA:477:C:C6 | 2.27 | 0.69 |
| 23:AW:138:LEU:HD11 | 23:AW:272:LEU:HD23 | 1.73 | 0.69 |
| 34:BA:1279:G:C2' | 34:BA:1280:G:H5' | 2.22 | 0.69 |
| 37:BD:118:PHE:O | 37:BD:120:GLY:N | 2.23 | 0.69 |
| 46:BP:91:ASP:HB2 | 46:BP:94:THR:OG1 | 1.92 | 0.69 |
| 52:BV:28:ALA:O | 52:BV:63:VAL:HG11 | 1.93 | 0.69 |
| 1:AA:1201:A:O2' | 1:AA:1202:U:P | 2.51 | 0.69 |
| 5:AE:100:GLU:HB3 | 5:AE:121:ASN:HB3 | 1.73 | 0.69 |
| 12:AL:30:ARG:HH12 | 23:AW:408:LYS:CE | 2.04 | 0.69 |
| 32:B7:30:HIS:CD2 | 32:B7:31:ILE:N | 2.60 | 0.69 |
| 34:BA:899:A:C2' | 34:BA:900:A:H8 | 2.04 | 0.69 |
| 34:BA:996:A:H4' | 51:BU:91:ARG:CD | 2.22 | 0.69 |
| 39:BF:35:LEU:HD11 | 39:BF:88:VAL:HB | 1.73 | 0.69 |
| 41:BH:11:ILE:CD1 | 41:BH:62:ARG:HB3 | 2.23 | 0.69 |
| 41:BH:11:ILE:HD12 | 41:BH:62:ARG:HB3 | 1.73 | 0.69 |
| 42:BI:42:ASN:HA | 42:BI:45:THR:HB | 1.75 | 0.69 |
| 45:BO:18:ARG:HB2 | 45:BO:45:GLU:CG | 2.22 | 0.69 |
| 55:BY:80:ASP:OD1 | 55:BY:95:PHE:HB3 | 1.92 | 0.69 |
| 7:AG:50:ALA:HB2 | 7:AG:57:GLU:OE2 | 1.93 | 0.69 |
| 11:AK:108:ASN:HB3 | 21:AU:6:ARG:HG2 | 1.74 | 0.69 |
| 15:AO:63:ARG:HD3 | 15:AO:87:ARG:HH22 | 1.57 | 0.69 |
| 15:AO:80:LEU:HD11 | 15:AO:84:LEU:HD22 | 1.75 | 0.69 |
| 25:B0:24:ARG:HD3 | 25:B0:65:LYS:HD3 | 1.73 | 0.69 |
| 29:B4:33:SER:OG | 29:B4:35:GLU:HG3 | 1.93 | 0.69 |
| 34:BA:622:G:H2' | 34:BA:623:C:H6 | 1.58 | 0.69 |
| 34:BA:1045:C:H1' | 34:BA:1047:G:C2 | 2.26 | 0.69 |
| 34:BA:1779:U:C5 | 34:BA:1784:A:N7 | 2.55 | 0.69 |
| 36:BC:12:ARG:HH11 | 36:BC:12:ARG:HG3 | 1.56 | 0.69 |
| 41:BH:144:LYS:HD2 | 41:BH:148:ALA:HB2 | 1.74 | 0.69 |
| 46:BP:95:LEU:HB3 | 46:BP:100:ILE:HD11 | 1.74 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 50:BT:50:ARG:HD3 | 50:BT:56:SER:CB | 2.19 | 0.69 |
| 52:BV:41:ILE:HD11 | 52:BV:54:VAL:HG21 | 1.75 | 0.69 |
| 54:BX:22:THR:HA | 54:BX:25:GLU:HB3 | 1.74 | 0.69 |
| 55:BY:27:VAL:HG23 | 55:BY:33:VAL:HG12 | 1.75 | 0.69 |
| 9:AI:98:ARG:HG2 | 9:AI:98:ARG:HH11 | 1.58 | 0.69 |
| 37:BD:49:GLN:NE2 | 37:BD:67:HIS:CE1 | 2.59 | 0.69 |
| 44:BN:45:THR:CG2 | 44:BN:50:THR:HG21 | 2.23 | 0.69 |
| 51:BU:100:PHE:HD1 | 52:BV:13:ARG:HH22 | 1.40 | 0.69 |
| 52:BV:16:GLU:HA | 52:BV:98:ILE:HG22 | 1.73 | 0.69 |
| 1:AA:429:U:C3' | 4:AD:8:LEU:HD23 | 2.20 | 0.69 |
| 5:AE:14:LEU:HD13 | 5:AE:14:LEU:O | 1.92 | 0.69 |
| 34:BA:528:A:C2 | 34:BA:2043:C:H4' | 2.28 | 0.69 |
| 34:BA:1061:U:O2 | 34:BA:1061:U:H2' | 1.92 | 0.69 |
| 34:BA:1594:U:H2' | 34:BA:1595:C:C6 | 2.28 | 0.69 |
| 39:BF:71:LYS:HD3 | 39:BF:80:GLN:HG3 | 1.75 | 0.69 |
| 40:BG:132:LEU:N | 40:BG:132:LEU:HD23 | 2.08 | 0.69 |
| 41:BH:93:ALA:HB1 | 41:BH:130:PRO:HA | 1.74 | 0.69 |
| 41:BH:95:LEU:HD13 | 41:BH:98:GLU:OE1 | 1.92 | 0.69 |
| 49:BS:66:GLY:HA3 | 49:BS:102:ARG:NH1 | 2.08 | 0.69 |
| 1:AA:1321:U:H5' | 13:AM:85:TYR:CE2 | 2.28 | 0.68 |
| 1:AA:1347:G:HO2' | 1:AA:1348:U:P | 2.15 | 0.68 |
| 2:AB:212:TYR:O | 2:AB:216:VAL:HG23 | 1.92 | 0.68 |
| 23:AW:59:TRP:CE2 | 23:AW:69:SER:OG | 2.45 | 0.68 |
| 36:BC:130:PRO:HA | 36:BC:188:ARG:HA | 1.75 | 0.68 |
| 44:BN:56:VAL:O | 44:BN:124:VAL:O | 2.11 | 0.68 |
| 1:AA:1054:C:H1' | 1:AA:1196:A:N7 | 2.08 | 0.68 |
| 1:AA:1144:G:H5" | 1:AA:1145:A:OP2 | 1.94 | 0.68 |
| 1:AA:1308:U:OP1 | 13:AM:96:VAL:N | 2.23 | 0.68 |
| 3:AC:81:GLU:O | 3:AC:84:GLU:HB3 | 1.93 | 0.68 |
| 6:AF:38:ARG:HB3 | 6:AF:63:ASN:HB2 | 1.76 | 0.68 |
| 11:AK:51:PHE:N | 11:AK:51:PHE:CD2 | 2.60 | 0.68 |
| 12:AL:23:LEU:HB3 | 12:AL:58:ASN:ND2 | 2.08 | 0.68 |
| 36:BC:20:ASN:O | 36:BC:23:LEU:HB2 | 1.93 | 0.68 |
| 37:BD:114:LYS:NZ | 37:BD:116:LYS:HE2 | 2.07 | 0.68 |
| 37:BD:121:THR:O | 37:BD:122:VAL:HB | 1.92 | 0.68 |
| 38:BE:31:VAL:HG21 | 38:BE:104:ALA:HB2 | 1.73 | 0.68 |
| 48:BR:38:LEU:HB3 | 48:BR:39:PRO:HD3 | 1.74 | 0.68 |
| 51:BU:40:LYS:HA | 51:BU:43:GLN:HG3 | 1.73 | 0.68 |
| 25:B0:72:GLY:N | 25:B0:73:PRO:HD2 | 2.08 | 0.68 |
| 34:BA:458:G:O2' | 34:BA:459:U:P | 2.51 | 0.68 |
| 35:BB:87:U:OP2 | 35:BB:88:C:H5 | 1.77 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 46:BP:82:LEU:HD23 | 46:BP:83:ALA:H | 1.58 | 0.68 |
| 4:AD:58:GLN:HA | 4:AD:58:GLN:HE21 | 1.59 | 0.68 |
| 33:B8:15:LYS:O | 33:B8:16:ILE:HB | 1.92 | 0.68 |
| 34:BA:528:A:N1 | 34:BA:2042:A:H2' | 2.09 | 0.68 |
| 34:BA:1509:A:O2' | 34:BA:1510:G:C8 | 2.47 | 0.68 |
| 34:BA:1778:U:H2' | 34:BA:1784:A:N6 | 2.09 | 0.68 |
| 38:BE:147:LEU:HB3 | 38:BE:186:VAL:HG23 | 1.76 | 0.68 |
| 54:BX:28:ASN:HA | 54:BX:91:GLN:NE2 | 2.09 | 0.68 |
| 7:AG:94:ARG:NH1 | 7:AG:98:LEU:HD21 | 2.07 | 0.68 |
| 35:BB:66:A:H61 | 35:BB:107:G:H2' | 1.57 | 0.68 |
| 36:BC:83:ASP:HB2 | 36:BC:90:ILE:HD12 | 1.74 | 0.68 |
| 44:BN:77:HIS:CD2 | 44:BN:79:GLY:H | 2.11 | 0.68 |
| 1:AA:344:A:H4' | 1:AA:345:C:OP2 | 1.91 | 0.68 |
| 1:AA:963:G:H2' | 1:AA:964:A:H8 | 1.59 | 0.68 |
| 5:AE:89:THR:HG22 | 5:AE:90:GLY:N | 2.07 | 0.68 |
| 5:AE:135:VAL:C | 5:AE:137:ARG:H | 1.94 | 0.68 |
| 8:AH:10:LEU:HB3 | 8:AH:74:ILE:CG1 | 2.24 | 0.68 |
| 10:AJ:12:ALA:HB3 | 10:AJ:18:ILE:HG12 | 1.76 | 0.68 |
| 18:AR:70:THR:HG23 | 18:AR:72:ARG:H | 1.58 | 0.68 |
| 32:B7:30:HIS:HD2 | 32:B7:31:ILE:H | 1.40 | 0.68 |
| 34:BA:435:C:H2' | 34:BA:436:C:H5' | 1.76 | 0.68 |
| 34:BA:2516:A:O2' | 34:BA:2517:C:H5' | 1.92 | 0.68 |
| 34:BA:2714:G:O2' | 34:BA:2715:C:H5' | 1.93 | 0.68 |
| 36:BC:159:THR:O | 36:BC:194:VAL:HG12 | 1.93 | 0.68 |
| 41:BH:136:ILE:HG23 | 41:BH:139:LEU:HD12 | 1.75 | 0.68 |
| 43:BM:19:VAL:O | 43:BM:23:ILE:HG12 | 1.94 | 0.68 |
| 44:BN:130:HIS:CD2 | 44:BN:132:HIS:H | 2.11 | 0.68 |
| 4:AD:167:PRO:HG2 | 4:AD:170:LEU:HD11 | 1.76 | 0.68 |
| 12:AL:30:ARG:HH12 | 23:AW:408:LYS:HE2 | 1.57 | 0.68 |
| 34:BA:1063:G:H2' | 34:BA:1064:C:O4' | 1.93 | 0.68 |
| 34:BA:1568:G:H4' | 36:BC:58:LYS:CB | 2.22 | 0.68 |
| 1:AA:1279:G:H5" | 10:AJ:9:ARG:NH2 | 2.09 | 0.68 |
| 10:AJ:6:ILE:HD11 | 10:AJ:79:PRO:HB3 | 1.75 | 0.68 |
| 34:BA:1509:A:O2' | 34:BA:1510:G:H8 | 1.77 | 0.68 |
| 36:BC:110:LYS:HB3 | 36:BC:110:LYS:NZ | 2.09 | 0.68 |
| 38:BE:44:ARG:HH21 | 38:BE:44:ARG:CG | 2.00 | 0.68 |
| 43:BJ:8:ILE:HG21 | 43:BK:28:GLU:OE1 | 1.93 | 0.68 |
| 50:BT:83:ILE:HD13 | 50:BT:83:ILE:O | 1.94 | 0.68 |
| 1:AA:1065:U:H5" | 1:AA:1190:G:N2 | 2.08 | 0.68 |
| 1:AA:1088:G:H21 | 1:AA:1167:A:H62 | 1.38 | 0.68 |
| 34:BA:468:G:H2' | 34:BA:469:G:H5' | 1.76 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1585:C:H2' | 34:BA:1586:A:O4' | 1.94 | 0.68 |
| 34:BA:2341:G:H2' | 34:BA:2342:C:C6 | 2.29 | 0.68 |
| 41:BH:88:HIS:HB2 | 41:BH:89:PRO:CD | 2.17 | 0.68 |
| 51:BU:91:ARG:NH1 | 52:BV:10:LYS:HB3 | 2.08 | 0.68 |
| 1:AA:1225:A:H2' | 1:AA:1225:A:N3 | 2.08 | 0.68 |
| 4:AD:61:ARG:HG2 | 4:AD:71:PHE:CD2 | 2.28 | 0.68 |
| 5:AE:33:THR:HB | 5:AE:49:TYR:CE2 | 2.29 | 0.68 |
| 5:AE:84:VAL:HG22 | 5:AE:85:LYS:H | 1.57 | 0.68 |
| 25:B0:76:ARG:HH21 | 25:B0:76:ARG:HG3 | 1.58 | 0.68 |
| 27:B2:46:VAL:O | 27:B2:50:VAL:HG23 | 1.94 | 0.68 |
| 30:B5:34:GLU:HG2 | 30:B5:49:LYS:HA | 1.75 | 0.68 |
| 41:BH:35:VAL:O | 41:BH:39:THR:HG23 | 1.94 | 0.68 |
| 44:BN:88:THR:HG22 | 44:BN:91:GLU:CD | 2.14 | 0.68 |
| 45:BO:71:ARG:CB | 45:BO:72:PRO:CD | 2.72 | 0.68 |
| 23:AW:472:ARG:HG3 | 23:AW:504:ILE:H | 1.59 | 0.67 |
| 28:B3:29:ARG:H | 28:B3:33:HIS:CD2 | 2.12 | 0.67 |
| 34:BA:289:G:H2' | 34:BA:290:U:C6 | 2.29 | 0.67 |
| 34:BA:587:C:OP2 | 46:BP:21:ARG:NH1 | 2.26 | 0.67 |
| 34:BA:812:C:H4' | 51:BU:12:ARG:HH12 | 1.58 | 0.67 |
| 51:BU:104:ALA:HA | 52:BV:46:GLU:OE2 | 1.93 | 0.67 |
| 1:AA:1151:A:H5" | 10:AJ:44:THR:OG1 | 1.94 | 0.67 |
| 20:AT:27:MET:CE | 20:AT:57:VAL:HG22 | 2.24 | 0.67 |
| 23:AW:18:ILE:HG12 | 23:AW:110:LEU:HD23 | 1.74 | 0.67 |
| 34:BA:1911:U:H2' | 34:BA:1918:A:N1 | 2.09 | 0.67 |
| 34:BA:2052:A:H4' | 37:BD:148:GLN:O | 1.94 | 0.67 |
| 4:AD:160:LEU:H | 4:AD:160:LEU:HD13 | 1.57 | 0.67 |
| 19:AS:37:SER:O | 19:AS:70:LEU:HG | 1.95 | 0.67 |
| 19:AS:62:THR:HG22 | 19:AS:63:ASP:N | 2.09 | 0.67 |
| 23:AW:80:HIS:ND1 | 23:AW:81:ASP:OD1 | 2.27 | 0.67 |
| 34:BA:826:U:O2' | 46:BP:53:GLY:HA3 | 1.93 | 0.67 |
| 39:BF:133:GLU:HA | 39:BF:148:VAL:O | 1.94 | 0.67 |
| 53:BW:84:ARG:O | 53:BW:95:ARG:O | 2.12 | 0.67 |
| 54:BX:70:HIS:CD2 | 54:BX:73:ARG:HB2 | 2.30 | 0.67 |
| 1:AA:73:C:N4 | 1:AA:94:G:H22 | 1.91 | 0.67 |
| 1:AA:718:A:H62 | 18:AR:62:ARG:HH12 | 1.41 | 0.67 |
| 3:AC:153:SER:HB3 | 3:AC:164:THR:HG22 | 1.75 | 0.67 |
| 8:AH:49:LYS:O | 8:AH:58:LEU:HD22 | 1.95 | 0.67 |
| 12:AL:81:ILE:HD11 | 12:AL:94:TYR:CG | 2.29 | 0.67 |
| 23:AW:399:ARG:NE | 23:AW:445:GLN:OE1 | 2.20 | 0.67 |
| 29:B4:3:GLN:HA | 34:BA:2615:U:C2 | 2.28 | 0.67 |
| 34:BA:1059:G:C8 | 34:BA:1060:U:C2' | 2.74 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 41:BH:162:LYS:HD2 | 43:BL:19:VAL:HG21 | 1.75 | 0.67 |
| 48:BR:58:ASP:OD2 | 48:BR:63:ARG:HD2 | 1.94 | 0.67 |
| 54:BX:50:LEU:O | 54:BX:51:PHE:HB2 | 1.93 | 0.67 |
| 1:AA:1101:A:H61 | 2:AB:101:THR:HG21 | 1.60 | 0.67 |
| 21:AU:45:LYS:HA | 21:AU:45:LYS:HE3 | 1.77 | 0.67 |
| 30:B5:7:LYS:HA | 30:B5:23:THR:HG22 | 1.75 | 0.67 |
| 34:BA:659:G:H21 | 38:BE:30:GLN:HE22 | 1.42 | 0.67 |
| 34:BA:1481:U:H2' | 34:BA:1482:G:H4' | 1.76 | 0.67 |
| 34:BA:1818:U:O2' | 34:BA:1819:A:OP2 | 2.12 | 0.67 |
| 36:BC:158:GLY:N | 36:BC:194:VAL:HG13 | 2.09 | 0.67 |
| 48:BR:71:ARG:HH21 | 48:BR:71:ARG:CG | 2.08 | 0.67 |
| 2:AB:18:GLN:HG2 | 2:AB:189:ASN:ND2 | 2.10 | 0.67 |
| 15:AO:78:THR:HA | 15:AO:81:ILE:HD11 | 1.75 | 0.67 |
| 23:AW:130:THR:HG21 | 23:AW:137:ILE:HD11 | 1.77 | 0.67 |
| 23:AW:307:MET:HG3 | 23:AW:308:ASP:HA | 1.77 | 0.67 |
| 23:AW:474:VAL:HG22 | 23:AW:501:LEU:HD12 | 1.75 | 0.67 |
| 25:B0:23:LYS:HD3 | 34:BA:855:G:H1' | 1.74 | 0.67 |
| 34:BA:2287:A:C8 | 34:BA:2289:G:C8 | 2.82 | 0.67 |
| 36:BC:100:ARG:HH11 | 36:BC:100:ARG:HG2 | 1.58 | 0.67 |
| 41:BH:97:LYS:HD2 | 41:BH:130:PRO:HB3 | 1.75 | 0.67 |
| 51:BU:48:ASP:HA | 51:BU:51:GLN:HB2 | 1.76 | 0.67 |
| 53:BW:59:GLU:HA | 53:BW:64:ALA:HB2 | 1.76 | 0.67 |
| 4:AD:50:TYR:OH | 4:AD:54:LEU:HD12 | 1.94 | 0.67 |
| 18:AR:42:ARG:HG3 | 18:AR:43:ILE:HG12 | 1.76 | 0.67 |
| 34:BA:1334:G:C2' | 34:BA:1335:C:H5' | 2.25 | 0.67 |
| 34:BA:2341:G:H2' | 34:BA:2342:C:H6 | 1.59 | 0.67 |
| 42:BI:20:SER:HB3 | 42:BI:21:PRO:HD3 | 1.75 | 0.67 |
| 54:BX:12:ARG:HG3 | 54:BX:12:ARG:NH1 | 2.06 | 0.67 |
| 1:AA:115:G:H4' | 1:AA:116:A:O5' | 1.95 | 0.67 |
| 2:AB:156:LEU:HD23 | 2:AB:156:LEU:H | 1.59 | 0.67 |
| 8:AH:79:ARG:HB2 | 8:AH:80:PRO:HD2 | 1.77 | 0.67 |
| 10:AJ:50:THR:HG22 | 10:AJ:64:GLN:HG2 | 1.76 | 0.67 |
| 25:B0:59:PHE:CE2 | 34:BA:2365:G:H4' | 2.29 | 0.67 |
| 32:B7:7:ARG:HG3 | 32:B7:7:ARG:NH1 | 2.08 | 0.67 |
| 34:BA:1936:A:H2 | 34:BA:1943:U:C5 | 2.11 | 0.67 |
| 36:BC:170:TYR:HE2 | 36:BC:184:GLU:HG2 | 1.59 | 0.67 |
| 40:BG:95:ALA:CB | 40:BG:130:ILE:HD11 | 2.25 | 0.67 |
| 51:BU:91:ARG:HD3 | 52:BV:11:GLN:HB2 | 1.77 | 0.67 |
| 52:BV:39:LEU:HA | 52:BV:49:ILE:HG21 | 1.76 | 0.67 |
| 1:AA:299:G:H2' | 1:AA:300:A:C8 | 2.30 | 0.67 |
| 1:AA:377:G:H5' | 16:AP:5:ARG:NH1 | 2.09 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:AC:21:TRP:HB3 | 3:AC:58:ARG:H | 1.60 | 0.67 |
| 11:AK:22:ILE:HD11 | 11:AK:85:VAL:HA | 1.77 | 0.67 |
| 20:AT:53:MET:HA | 20:AT:56:ILE:HG22 | 1.76 | 0.67 |
| 34:BA:324:A:N6 | 34:BA:338:G:O2' | 2.28 | 0.67 |
| 34:BA:372:G:H2' | 34:BA:400:G:O6 | 1.94 | 0.67 |
| 34:BA:2033:A:O2' | 34:BA:2035:G:OP2 | 2.09 | 0.67 |
| 34:BA:2147:A:H3' | 34:BA:2148:G:H5' | 1.76 | 0.67 |
| 34:BA:2720:U:OP1 | 50:BT:52:ARG:NH2 | 2.28 | 0.67 |
| 39:BF:128:SER:HA | 39:BF:153:ILE:O | 1.94 | 0.67 |
| 47:BQ:62:LYS:O | 47:BQ:105:MET:HA | 1.95 | 0.67 |
| 1:AA:64:G:H4' | 1:AA:65:A:O5' | 1.95 | 0.67 |
| 34:BA:1510:G:O2' | 34:BA:1511:G:H5' | 1.94 | 0.67 |
| 34:BA:1923:U:H2' | 34:BA:1924:C:C6 | 2.29 | 0.67 |
| 34:BA:2489:U:C4 | 34:BA:2490:G:C6 | 2.83 | 0.67 |
| 34:BA:2516:A:C2' | 34:BA:2517:C:H5' | 2.25 | 0.67 |
| 34:BA:2867:G:O2' | 34:BA:2868:A:OP2 | 2.12 | 0.67 |
| 39:BF:110:ILE:HD13 | 39:BF:136:ILE:HG21 | 1.76 | 0.67 |
| 46:BP:47:ARG:HG3 | 46:BP:50:PHE:HB2 | 1.75 | 0.67 |
| 5:AE:156:ARG:O | 5:AE:158:LYS:N | 2.28 | 0.66 |
| 10:AJ:41:PRO:HA | 10:AJ:72:ARG:NH1 | 2.10 | 0.66 |
| 25:B0:31:LEU:HD22 | 34:BA:2354:C:H4' | 1.77 | 0.66 |
| 30:B5:49:LYS:O | 30:B5:50:GLU:HB3 | 1.93 | 0.66 |
| 31:B6:34:ARG:HG2 | 31:B6:34:ARG:HH11 | 1.60 | 0.66 |
| 34:BA:503:A:O2' | 34:BA:504:A:OP2 | 2.11 | 0.66 |
| 34:BA:876:C:H42 | 34:BA:900:A:N6 | 1.93 | 0.66 |
| 36:BC:13:ARG:HG2 | 36:BC:14:HIS:CD2 | 2.29 | 0.66 |
| 42:BI:100:ILE:HG22 | 42:BI:101:SER:H | 1.60 | 0.66 |
| 44:BN:6:ALA:CB | 44:BN:45:THR:HG21 | 2.24 | 0.66 |
| 50:BT:96:LEU:HB3 | 50:BT:99:LEU:HD23 | 1.76 | 0.66 |
| 54:BX:32:LEU:H | 54:BX:83:ALA:HB3 | 1.60 | 0.66 |
| 56:BZ:44:HIS:HE1 | 56:BZ:86:LEU:N | 1.88 | 0.66 |
| 1:AA:1126:U:H1' | 1:AA:1281:C:C1' | 2.23 | 0.66 |
| 8:AH:84:ILE:HG22 | 8:AH:124:ILE:HD11 | 1.76 | 0.66 |
| 10:AJ:67:ILE:HG12 | 14:AN:94:GLY:O | 1.96 | 0.66 |
| 13:AM:106:ARG:NH2 | 13:AM:112:ARG:HB3 | 2.05 | 0.66 |
| 17:AQ:12:VAL:CG1 | 17:AQ:21:VAL:HG13 | 2.24 | 0.66 |
| 23:AW:472:ARG:HD2 | 23:AW:503:TYR:HB3 | 1.76 | 0.66 |
| 28:B3:3:THR:HA | 28:B3:37:ARG:O | 1.96 | 0.66 |
| 34:BA:1205:A:H2' | 38:BE:165:HIS:CE1 | 2.27 | 0.66 |
| 34:BA:1420:A:H5' | 34:BA:1421:G:OP2 | 1.94 | 0.66 |
| 46:BP:109:LYS:HA | 46:BP:126:ARG:O | 1.95 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:BQ:1:MET:O | 47:BQ:2:LEU:HB2 | 1.94 | 0.66 |
| 10:AJ:41:PRO:O | 10:AJ:42:LEU:HB2 | 1.95 | 0.66 |
| 11:AK:30:ILE:HB | 11:AK:45:THR:HG22 | 1.78 | 0.66 |
| 23:AW:108:CYS:SG | 23:AW:109:CYS:N | 2.68 | 0.66 |
| 23:AW:403:LEU:HD12 | 23:AW:407:LEU:HD23 | 1.76 | 0.66 |
| 32:B7:12:ARG:NH1 | 34:BA:250:G:OP2 | 2.27 | 0.66 |
| 34:BA:1110:G:O2' | 34:BA:1111:A:C8 | 2.46 | 0.66 |
| 34:BA:1973:G:O2' | 34:BA:1974:C:H5' | 1.95 | 0.66 |
| 34:BA:2259:U:C5 | 34:BA:2427:C:N4 | 2.64 | 0.66 |
| 34:BA:2302:U:H2' | 34:BA:2303:G:H8 | 1.60 | 0.66 |
| 37:BD:47:ALA:HB2 | 37:BD:83:ARG:HA | 1.78 | 0.66 |
| 41:BH:26:VAL:HG13 | 41:BH:82:ILE:HD12 | 1.76 | 0.66 |
| 41:BH:151:LEU:HA | 41:BH:155:LEU:HB2 | 1.78 | 0.66 |
| 43:BM:13:ALA:HB1 | 43:BM:21:GLU:OE2 | 1.95 | 0.66 |
| 53:BW:59:GLU:HA | 53:BW:64:ALA:CB | 2.24 | 0.66 |
| 54:BX:87:LEU:HB2 | 54:BX:91:GLN:HE21 | 1.60 | 0.66 |
| 1:AA:1289:A:H61 | 9:AI:71:ILE:HD11 | 1.60 | 0.66 |
| 12:AL:78:VAL:HG21 | 23:AW:407:LEU:HB2 | 1.76 | 0.66 |
| 23:AW:210:LEU:O | 23:AW:228:ARG:NH1 | 2.28 | 0.66 |
| 25:B0:38:ARG:CZ | 34:BA:2387:U:H1' | 2.24 | 0.66 |
| 34:BA:1568:G:C4' | 36:BC:58:LYS:HB3 | 2.25 | 0.66 |
| 34:BA:2197:U:O2' | 34:BA:2198:A:C2' | 2.39 | 0.66 |
| 40:BG:82:PHE:HB3 | 40:BG:140:ILE:HD13 | 1.76 | 0.66 |
| 42:BI:7:TYR:HB3 | 42:BI:58:ILE:H | 1.60 | 0.66 |
| 44:BN:2:LYS:HD3 | 44:BN:2:LYS:H | 1.60 | 0.66 |
| 44:BN:24:THR:OG1 | 44:BN:27:ARG:HB2 | 1.95 | 0.66 |
| 44:BN:45:THR:HG21 | 44:BN:50:THR:HG21 | 1.77 | 0.66 |
| 50:BT:22:GLY:O | 50:BT:109:ILE:HD11 | 1.96 | 0.66 |
| 50:BT:57:ALA:HA | 50:BT:75:THR:HG22 | 1.78 | 0.66 |
| 1:AA:981:U:H2' | 1:AA:982:U:H5 | 1.61 | 0.66 |
| 1:AA:1237:C:H3' | 1:AA:1238:A:H5' | 1.78 | 0.66 |
| 25:B0:59:PHE:CZ | 34:BA:2365:G:H4' | 2.30 | 0.66 |
| 34:BA:2584:U:H2' | 34:BA:2585:U:H5' | 1.78 | 0.66 |
| 40:BG:94:ARG:HH12 | 40:BG:96:ALA:HB2 | 1.59 | 0.66 |
| 45:BO:71:ARG:CB | 45:BO:72:PRO:HD3 | 2.25 | 0.66 |
| 47:BQ:55:ARG:HG3 | 47:BQ:55:ARG:O | 1.94 | 0.66 |
| 1:AA:433:G:O2' | 1:AA:434:U:H5' | 1.96 | 0.66 |
| 1:AA:1070:U:H2' | 1:AA:1071:C:H6 | 1.59 | 0.66 |
| 2:AB:164:ASP:O | 2:AB:168:GLU:HG2 | 1.96 | 0.66 |
| 5:AE:152:VAL:HB | 5:AE:156:ARG:HG3 | 1.78 | 0.66 |
| 11:AK:86:LYS:HB2 | 11:AK:112:VAL:HG23 | 1.76 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1288:G:C4 | 34:BA:1327:A:C2 | 2.83 | 0.66 |
| 34:BA:1474:U:C2' | 34:BA:1475:G:H5' | 2.25 | 0.66 |
| 34:BA:2040:G:H2' | 34:BA:2041:U:C6 | 2.31 | 0.66 |
| 34:BA:2149:U:O3' | 34:BA:2150:C:C4' | 2.30 | 0.66 |
| 36:BC:180:MET:HB2 | 36:BC:268:ARG:H | 1.60 | 0.66 |
| 37:BD:107:VAL:H | 37:BD:206:ALA:H | 1.43 | 0.66 |
| 38:BE:143:LEU:HD13 | 38:BE:146:VAL:HG11 | 1.78 | 0.66 |
| 55:BY:94:PHE:HA | 55:BY:101:THR:HA | 1.78 | 0.66 |
| 6:AF:3:HIS:H | 6:AF:92:THR:HG23 | 1.61 | 0.66 |
| 9:AI:9:GLY:HA2 | 9:AI:80:HIS:CD2 | 2.31 | 0.66 |
| 34:BA:386:G:H4' | 34:BA:387:U:OP2 | 1.96 | 0.66 |
| 34:BA:1199:U:H1' | 51:BU:3:VAL:HG22 | 1.76 | 0.66 |
| 34:BA:1847:A:H2' | 34:BA:1848:A:C8 | 2.31 | 0.66 |
| 34:BA:2243:U:H2' | 34:BA:2244:U:C6 | 2.31 | 0.66 |
| 34:BA:2307:G:H1' | 34:BA:2308:G:C5 | 2.30 | 0.66 |
| 36:BC:29:PHE:CE2 | 36:BC:31:PRO:HG2 | 2.31 | 0.66 |
| 48:BR:24:MET:HG2 | 48:BR:44:LEU:HD22 | 1.78 | 0.66 |
| 54:BX:8:LEU:HD12 | 54:BX:46:ALA:HA | 1.76 | 0.66 |
| 1:AA:973:G:H3' | 1:AA:974:A:H5" | 1.78 | 0.66 |
| 1:AA:1096:C:H2' | 1:AA:1097:C:C6 | 2.31 | 0.66 |
| 1:AA:1491:G:C5' | 1:AA:1492:A:OP2 | 2.44 | 0.66 |
| 1:AA:1494:G:C5 | 24:AY:1:KBE:HG | 2.31 | 0.66 |
| 7:AG:94:ARG:CZ | 7:AG:98:LEU:HD21 | 2.26 | 0.66 |
| 20:AT:27:MET:HE1 | 20:AT:57:VAL:HG22 | 1.78 | 0.66 |
| 23:AW:522:GLN:CB | 23:AW:523:PHE:HB2 | 2.26 | 0.66 |
| 40:BG:22:VAL:HG22 | 40:BG:36:LEU:HD11 | 1.77 | 0.66 |
| 50:BT:105:LYS:HA | 50:BT:108:ARG:HH21 | 1.59 | 0.66 |
| 1:AA:937:A:H1' | 1:AA:1379:G:N2 | 2.10 | 0.66 |
| 4:AD:197:HIS:O | 4:AD:201:GLU:HB2 | 1.96 | 0.66 |
| 9:AI:21:LYS:HZ2 | 9:AI:23:GLY:HA3 | 1.60 | 0.66 |
| 9:AI:111:GLU:HG2 | 9:AI:114:LYS:HZ2 | 1.60 | 0.66 |
| 34:BA:2747:G:O2' | 40:BG:66:THR:HG22 | 1.96 | 0.66 |
| 34:BA:2804:U:H2' | 34:BA:2805:C:C6 | 2.30 | 0.66 |
| 37:BD:136:ASN:HD21 | 37:BD:139:SER:HB2 | 1.61 | 0.66 |
| 41:BH:149:GLY:HA3 | 43:BK:30:PHE:CE1 | 2.31 | 0.66 |
| 44:BN:99:ARG:O | 44:BN:103:ILE:HG23 | 1.96 | 0.66 |
| 49:BS:88:LYS:O | 49:BS:89:ASP:HB2 | 1.96 | 0.66 |
| 1:AA:64:G:H5" | 1:AA:65:A:OP1 | 1.94 | 0.66 |
| 1:AA:1033:G:H2' | 1:AA:1034:G:C5' | 2.26 | 0.66 |
| 1:AA:1468:A:C2' | 1:AA:1469:C:H5" | 2.26 | 0.66 |
| 2:AB:218:ALA:HA | 2:AB:221:ARG:HH21 | 1.61 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:AD:63:ILE:HG23 | 4:AD:64:TYR:HD1 | 1.61 | 0.66 |
| 6:AF:50:PRO:HD3 | 18:AR:73:HIS:HB3 | 1.77 | 0.66 |
| 23:AW:64:LYS:HE2 | 23:AW:71:THR:H | 1.60 | 0.66 |
| 25:B0:28:GLU:HB3 | 25:B0:31:LEU:CD2 | 2.14 | 0.66 |
| 34:BA:282:A:H2' | 34:BA:283:G:C8 | 2.30 | 0.66 |
| 34:BA:1212:G:HO2' | 34:BA:1213:A:P | 2.18 | 0.66 |
| 34:BA:2726:A:O2' | 34:BA:2727:A:O5' | 2.13 | 0.66 |
| 36:BC:259:ASN:O | 36:BC:260:LYS:HB2 | 1.95 | 0.66 |
| 45:BO:111:LYS:H | 45:BO:111:LYS:CE | 2.03 | 0.66 |
| 1:AA:438:U:C4 | 1:AA:494:G:C5 | 2.84 | 0.65 |
| 1:AA:595:A:C5 | 1:AA:641:U:C4 | 2.83 | 0.65 |
| 4:AD:75:TYR:CG | 4:AD:203:TYR:HD1 | 2.14 | 0.65 |
| 16:AP:6:LEU:HG | 16:AP:17:TYR:HB3 | 1.78 | 0.65 |
| 34:BA:962:G:H21 | 34:BA:2250:G:H1 | 1.44 | 0.65 |
| 34:BA:2305:U:H5" | 39:BF:130:GLY:HA3 | 1.77 | 0.65 |
| 35:BB:51:G:OP2 | 49:BS:64:TYR:CD2 | 2.49 | 0.65 |
| 37:BD:29:VAL:HB | 37:BD:98:VAL:HG22 | 1.78 | 0.65 |
| 41:BH:18:VAL:HA | 41:BH:86:MET:HE2 | 1.76 | 0.65 |
| 9:AI:3:ASN:CG | 9:AI:4:GLN:H | 1.99 | 0.65 |
| 13:AM:14:ALA:O | 13:AM:18:LEU:HD23 | 1.96 | 0.65 |
| 25:B0:35:ILE:O | 25:B0:37:VAL:N | 2.30 | 0.65 |
| 26:B1:9:LYS:HE3 | 26:B1:53:LYS:HD2 | 1.78 | 0.65 |
| 39:BF:4:HIS:CE1 | 39:BF:8:LYS:HD3 | 2.31 | 0.65 |
| 41:BH:29:ASP:HA | 41:BH:108:VAL:CG1 | 2.26 | 0.65 |
| 45:BO:16:ALA:HB2 | 45:BO:86:LEU:HD11 | 1.78 | 0.65 |
| 51:BU:91:ARG:HB2 | 51:BU:94:LEU:HB2 | 1.78 | 0.65 |
| 16:AP:4:ILE:O | 16:AP:71:VAL:HG21 | 1.96 | 0.65 |
| 27:B2:41:HIS:ND1 | 34:BA:96:C:H4' | 2.11 | 0.65 |
| 1:AA:640:A:H2' | 1:AA:641:U:O4' | 1.96 | 0.65 |
| 1:AA:813:U:H2' | 1:AA:814:A:H5" | 1.79 | 0.65 |
| 4:AD:99:ASN:O | 4:AD:103:ARG:HB2 | 1.96 | 0.65 |
| 23:AW:403:LEU:HG | 23:AW:412:LEU:HG | 1.77 | 0.65 |
| 28:B3:15:ARG:HD2 | 28:B3:15:ARG:N | 2.11 | 0.65 |
| 32:B7:53:ASP:HB3 | 46:BP:57:LEU:HD22 | 1.77 | 0.65 |
| 34:BA:994:C:O2 | 52:BV:10:LYS:HE2 | 1.96 | 0.65 |
| 1:AA:597:G:H2' | 1:AA:598:U:H5' | 1.78 | 0.65 |
| 1:AA:686:U:H1' | 11:AK:43:TRP:NE1 | 2.11 | 0.65 |
| 1:AA:1171:A:H2' | 1:AA:1172:C:C6 | 2.31 | 0.65 |
| 8:AH:87:ARG:O | 8:AH:121:GLY:HA3 | 1.96 | 0.65 |
| 9:AI:5:TYR:HB2 | 9:AI:20:ILE:HB | 1.79 | 0.65 |
| 25:B0:19:ARG:HA | 25:B0:34:SER:HA | 1.78 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:467:G:O2' | 34:BA:468:G:H5' | 1.96 | 0.65 |
| 36:BC:24:HIS:CD2 | 36:BC:79:ARG:HH21 | 2.14 | 0.65 |
| 37:BD:5:VAL:HG21 | 37:BD:80:TRP:CD2 | 2.32 | 0.65 |
| 44:BN:17:VAL:HG22 | 44:BN:55:ILE:HG23 | 1.77 | 0.65 |
| 53:BW:2:GLU:HA | 53:BW:108:SER:HB3 | 1.79 | 0.65 |
| 56:BZ:38:LEU:HD23 | 56:BZ:40:ILE:HD11 | 1.78 | 0.65 |
| 1:AA:160:A:H2' | 1:AA:161:A:O4' | 1.97 | 0.65 |
| 1:AA:1084:G:C5 | 1:AA:1085:U:C4 | 2.85 | 0.65 |
| 1:AA:1160:G:C6 | 1:AA:1181:G:O6 | 2.49 | 0.65 |
| 1:AA:1491:G:H5" | 1:AA:1492:A:OP2 | 1.96 | 0.65 |
| 2:AB:67:LEU:HD21 | 2:AB:91:VAL:HG23 | 1.77 | 0.65 |
| 23:AW:401:ILE:HD11 | 23:AW:438:VAL:HG21 | 1.78 | 0.65 |
| 34:BA:108:G:C2' | 34:BA:109:C:H5' | 2.26 | 0.65 |
| 34:BA:372:G:O2' | 34:BA:373:U:OP2 | 2.15 | 0.65 |
| 36:BC:43:ASN:HB3 | 36:BC:45:ASN:N | 2.11 | 0.65 |
| 45:BO:42:THR:HG23 | 45:BO:44:LYS:HE2 | 1.78 | 0.65 |
| 50:BT:33:GLU:HB2 | 50:BT:38:ARG:HH11 | 1.59 | 0.65 |
| 1:AA:511:C:O2' | 1:AA:512:U:O5' | 2.15 | 0.65 |
| 2:AB:72:LYS:C | 2:AB:74:ALA:H | 2.00 | 0.65 |
| 34:BA:2566:A:N1 | 45:BO:28:SER:HB3 | 2.11 | 0.65 |
| 39:BF:127:TYR:CE2 | 39:BF:129:MET:HB3 | 2.30 | 0.65 |
| 40:BG:84:LYS:CG | 40:BG:132:LEU:H | 2.09 | 0.65 |
| 42:BI:34:ILE:H | 42:BI:34:ILE:HD12 | 1.62 | 0.65 |
| 44:BN:3:THR:HG21 | 51:BU:60:TRP:HE1 | 1.61 | 0.65 |
| 45:BO:87:LEU:HD13 | 45:BO:92:GLU:HB3 | 1.78 | 0.65 |
| 4:AD:131:ILE:HD13 | 4:AD:131:ILE:H | 1.62 | 0.65 |
| 6:AF:81:ASN:HB3 | 6:AF:84:VAL:HG12 | 1.79 | 0.65 |
| 34:BA:205:G:C2' | 34:BA:206:U:OP2 | 2.44 | 0.65 |
| 34:BA:444:C:H4' | 38:BE:44:ARG:HD3 | 1.79 | 0.65 |
| 34:BA:884:U:O5' | 34:BA:884:U:H6 | 1.80 | 0.65 |
| 34:BA:1484:U:H2' | 34:BA:1485:U:C6 | 2.32 | 0.65 |
| 34:BA:2060:A:H1' | 34:BA:2502:G:C1' | 2.25 | 0.65 |
| 34:BA:2149:U:C3' | 34:BA:2150:C:C4' | 2.75 | 0.65 |
| 34:BA:2314:A:H2' | 34:BA:2315:G:H8 | 1.62 | 0.65 |
| 34:BA:2344:U:H4' | 34:BA:2345:G:OP1 | 1.96 | 0.65 |
| 41:BH:25:ALA:CB | 41:BH:85:SER:OG | 2.38 | 0.65 |
| 43:BL:15:SER:HA | 43:BL:18:ASP:CB | 2.26 | 0.65 |
| 46:BP:19:LEU:HD23 | 46:BP:19:LEU:C | 2.17 | 0.65 |
| 46:BP:76:GLU:HB2 | 46:BP:111:ILE:HD12 | 1.78 | 0.65 |
| 1:AA:150:U:H2' | 1:AA:151:A:H8 | 1.60 | 0.65 |
| 3:AC:41:TYR:CZ | 3:AC:89:VAL:HG21 | 2.32 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 10:AJ:53:ILE:HG22 | 10:AJ:61:ALA:HB1 | 1.78 | 0.65 |
| 12:AL:23:LEU:C | 12:AL:25:ALA:H | 2.00 | 0.65 |
| 14:AN:66:THR:OG1 | 14:AN:67:GLY:N | 2.22 | 0.65 |
| 26:B1:5:GLN:HG3 | 26:B1:49:ARG:O | 1.97 | 0.65 |
| 34:BA:2286:G:H4' | 34:BA:2287:A:O4' | 1.96 | 0.65 |
| 49:BS:16:ARG:HH21 | 49:BS:19:GLN:HE22 | 1.44 | 0.65 |
| 10:AJ:74:VAL:HG12 | 10:AJ:75:ASP:N | 2.12 | 0.65 |
| 21:AU:39:LYS:N | 21:AU:40:PRO:CD | 2.60 | 0.65 |
| 23:AW:19:ILE:HB | 23:AW:126:LEU:HD13 | 1.79 | 0.65 |
| 23:AW:445:GLN:O | 23:AW:463:TYR:OH | 2.11 | 0.65 |
| 34:BA:2591:C:H2' | 34:BA:2592:G:C8 | 2.32 | 0.65 |
| 34:BA:2748:A:H1' | 40:BG:66:THR:CG2 | 2.26 | 0.65 |
| 35:BB:24:G:H4' | 35:BB:25:U:H5 | 1.61 | 0.65 |
| 37:BD:12:THR:CG2 | 37:BD:13:ARG:N | 2.59 | 0.65 |
| 40:BG:117:PRO:HG2 | 40:BG:120:ILE:CG2 | 2.27 | 0.65 |
| 41:BH:101:LYS:O | 41:BH:105:LYS:HG3 | 1.95 | 0.65 |
| 42:BI:126:ARG:HA | 42:BI:129:GLU:CG | 2.27 | 0.65 |
| 49:BS:35:ILE:HG22 | 49:BS:53:THR:HG23 | 1.79 | 0.65 |
| 52:BV:10:LYS:HD2 | 52:BV:10:LYS:N | 2.11 | 0.65 |
| 52:BV:60:LYS:H | 52:BV:100:GLY:HA3 | 1.62 | 0.65 |
| 52:BV:61:ALA:CB | 52:BV:98:ILE:HA | 2.25 | 0.65 |
| 1:AA:1432:G:H1' | 1:AA:1468:A:N6 | 2.12 | 0.64 |
| 1:AA:1444:U:H1' | 1:AA:1459:G:N2 | 2.12 | 0.64 |
| 6:AF:92:THR:O | 6:AF:93:LYS:HG2 | 1.96 | 0.64 |
| 25:B0:18:LYS:HG2 | 34:BA:2269:G:O2' | 1.96 | 0.64 |
| 25:B0:39:GLN:H | 25:B0:56:HIS:CD2 | 2.15 | 0.64 |
| 25:B0:51:GLY:HA3 | 25:B0:59:PHE:CE2 | 2.31 | 0.64 |
| 34:BA:2804:U:H2' | 34:BA:2805:C:H6 | 1.61 | 0.64 |
| 41:BH:97:LYS:HD2 | 41:BH:130:PRO:HB2 | 1.77 | 0.64 |
| 44:BN:21:THR:HG22 | 44:BN:22:GLY:H | 1.61 | 0.64 |
| 45:BO:21:CYS:HA | 45:BO:41:ILE:CD1 | 2.27 | 0.64 |
| 1:AA:374:A:H5" | 1:AA:452:A:H2 | 1.61 | 0.64 |
| 1:AA:789:U:O3' | 22:AV:15:A:N6 | 2.30 | 0.64 |
| 4:AD:105:GLY:HA3 | 4:AD:161:ALA:HB1 | 1.79 | 0.64 |
| 4:AD:157:ALA:O | 4:AD:160:LEU:HD22 | 1.97 | 0.64 |
| 10:AJ:12:ALA:HB2 | 10:AJ:96:VAL:HG13 | 1.79 | 0.64 |
| 21:AU:39:LYS:N | 21:AU:40:PRO:HD2 | 2.13 | 0.64 |
| 25:B0:37:VAL:O | 25:B0:38:ARG:HG2 | 1.97 | 0.64 |
| 32:B7:21:PHE:O | 32:B7:22:LYS:HG2 | 1.97 | 0.64 |
| 34:BA:845:A:H3' | 34:BA:845:A:N3 | 2.13 | 0.64 |
| 34:BA:1474:U:H2' | 34:BA:1475:G:H5' | 1.79 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:2321:U:H5' | 34:BA:2322:A:OP2 | 1.97 | 0.64 |
| 38:BE:47:LYS:HB3 | 38:BE:51:GLU:HG3 | 1.78 | 0.64 |
| 38:BE:105:LEU:HB2 | 38:BE:200:LEU:HD11 | 1.78 | 0.64 |
| 41:BH:74:ASP:HA | 41:BH:77:VAL:HB | 1.79 | 0.64 |
| 42:BI:7:TYR:HA | 42:BI:58:ILE:HB | 1.80 | 0.64 |
| 44:BN:58:ASN:HB3 | 44:BN:61:LYS:HE2 | 1.78 | 0.64 |
| 45:BO:61:VAL:HG22 | 45:BO:87:LEU:HD11 | 1.78 | 0.64 |
| 50:BT:4:ILE:HG22 | 50:BT:5:LYS:N | 2.12 | 0.64 |
| 1:AA:652:U:O4 | 1:AA:752:G:H2' | 1.97 | 0.64 |
| 1:AA:812:G:O2' | 1:AA:813:U:P | 2.55 | 0.64 |
| 1:AA:1478:U:H2' | 1:AA:1479:C:C6 | 2.32 | 0.64 |
| 2:AB:32:GLY:HA3 | 2:AB:39:ILE:N | 2.09 | 0.64 |
| 2:AB:113:LEU:HD13 | 2:AB:143:LEU:HD12 | 1.78 | 0.64 |
| 10:AJ:100:ILE:HD12 | 10:AJ:101:SER:H | 1.62 | 0.64 |
| 23:AW:158:VAL:HG13 | 23:AW:162:LEU:HD12 | 1.79 | 0.64 |
| 25:B0:44:PHE:O | 25:B0:78:PHE:HA | 1.97 | 0.64 |
| 34:BA:780:G:N2 | 34:BA:783:A:H62 | 1.95 | 0.64 |
| 34:BA:2314:A:H2' | 34:BA:2315:G:C8 | 2.32 | 0.64 |
| 34:BA:2892:G:H5" | 34:BA:2894:G:N2 | 2.13 | 0.64 |
| 37:BD:106:LYS:HB3 | 37:BD:206:ALA:CB | 2.26 | 0.64 |
| 47:BQ:50:ARG:HA | 47:BQ:53:MET:HE3 | 1.80 | 0.64 |
| 52:BV:96:VAL:HG23 | 52:BV:98:ILE:HD12 | 1.79 | 0.64 |
| 1:AA:1508:A:H2' | 1:AA:1509:C:O4' | 1.97 | 0.64 |
| 6:AF:36:ILE:HG22 | 6:AF:64:VAL:HG22 | 1.79 | 0.64 |
| 34:BA:228:C:H4' | 34:BA:229:C:H5" | 1.79 | 0.64 |
| 34:BA:833:A:H2' | 34:BA:834:G:H8 | 1.63 | 0.64 |
| 34:BA:900:A:H2 | 34:BA:901:C:C5 | 2.12 | 0.64 |
| 34:BA:1055:G:O3' | 41:BH:34:THR:HG23 | 1.96 | 0.64 |
| 34:BA:1316:U:H2' | 34:BA:1317:G:H8 | 1.63 | 0.64 |
| 34:BA:2093:G:H1' | 34:BA:2198:A:H2 | 1.62 | 0.64 |
| 14:AN:81:ILE:O | 14:AN:85:GLU:HG2 | 1.97 | 0.64 |
| 34:BA:796:C:H2' | 34:BA:797:G:C8 | 2.32 | 0.64 |
| 39:BF:40:GLY:CA | 39:BF:84:ILE:HD11 | 2.27 | 0.64 |
| 48:BR:73:ASN:ND2 | 48:BR:76:VAL:HG11 | 2.10 | 0.64 |
| 1:AA:598:U:H2' | 1:AA:599:C:C6 | 2.32 | 0.64 |
| 1:AA:1328:C:H5" | 13:AM:27:THR:CG2 | 2.23 | 0.64 |
| 1:AA:1469:C:H5' | 1:AA:1469:C:H6 | 1.62 | 0.64 |
| 17:AQ:11:VAL:O | 17:AQ:12:VAL:HB | 1.96 | 0.64 |
| 23:AW:149:ARG:NH1 | 23:AW:157:GLU:OE1 | 2.31 | 0.64 |
| 29:B4:35:GLU:OE1 | 29:B4:45:ASP:HB2 | 1.98 | 0.64 |
| 34:BA:1853:A:N1 | 34:BA:2087:G:H1' | 2.13 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:2800:A:H3' | 34:BA:2801:G:C5' | 2.28 | 0.64 |
| 35:BB:94:A:O2' | 35:BB:95:U:H5' | 1.97 | 0.64 |
| 38:BE:146:VAL:HA | 38:BE:185:LYS:O | 1.98 | 0.64 |
| 41:BH:158:VAL:HG11 | 43:BL:23:ILE:HG13 | 1.78 | 0.64 |
| 46:BP:77:ILE:O | 46:BP:110:VAL:O | 2.16 | 0.64 |
| 52:BV:39:LEU:O | 52:BV:40:MET:HB2 | 1.97 | 0.64 |
| 1:AA:181:A:O2' | 1:AA:182:A:C8 | 2.51 | 0.64 |
| 1:AA:477:C:H2' | 1:AA:478:A:C8 | 2.33 | 0.64 |
| 1:AA:1084:G:C6 | 1:AA:1085:U:O4 | 2.51 | 0.64 |
| 1:AA:1347:G:C2' | 1:AA:1348:U:OP2 | 2.46 | 0.64 |
| 4:AD:56:GLU:O | 4:AD:59:LYS:HB3 | 1.97 | 0.64 |
| 5:AE:80:LEU:HD12 | 5:AE:146:MET:SD | 2.37 | 0.64 |
| 10:AJ:65:TYR:HB3 | 14:AN:95:LEU:HD11 | 1.78 | 0.64 |
| 27:B2:31:GLN:HG2 | 27:B2:37:LEU:HB2 | 1.79 | 0.64 |
| 34:BA:1313:U:H2' | 34:BA:1610:A:C2 | 2.32 | 0.64 |
| 37:BD:172:VAL:O | 37:BD:173:GLN:HB2 | 1.98 | 0.64 |
| 43:BJ:15:SER:HB3 | 43:BM:11:VAL:HG12 | 1.80 | 0.64 |
| 56:BZ:26:PHE:CZ | 56:BZ:42:LEU:HD12 | 2.32 | 0.64 |
| 1:AA:73:C:N4 | 1:AA:97:G:H1 | 1.88 | 0.64 |
| 1:AA:158:G:C3' | 1:AA:159:G:H5" | 2.28 | 0.64 |
| 1:AA:376:G:C2 | 1:AA:389:A:C2 | 2.85 | 0.64 |
| 1:AA:976:G:C2 | 1:AA:1363:A:C2 | 2.85 | 0.64 |
| 2:AB:19:THR:HA | 2:AB:37:VAL:HG23 | 1.80 | 0.64 |
| 9:AI:57:VAL:HG12 | 9:AI:58:GLU:HG2 | 1.80 | 0.64 |
| 9:AI:112:ARG:HH22 | 10:AJ:64:GLN:NE2 | 1.92 | 0.64 |
| 21:AU:3:ILE:HD13 | 21:AU:19:LYS:NZ | 2.13 | 0.64 |
| 25:B0:24:ARG:HD3 | 25:B0:65:LYS:CD | 2.27 | 0.64 |
| 30:B5:5:ARG:CZ | 30:B5:24:LYS:HA | 2.27 | 0.64 |
| 33:B8:19:ARG:NH1 | 34:BA:2755:C:C4 | 2.66 | 0.64 |
| 34:BA:659:G:H21 | 38:BE:30:GLN:NE2 | 1.96 | 0.64 |
| 34:BA:1858:A:H8 | 34:BA:1858:A:OP2 | 1.81 | 0.64 |
| 34:BA:2840:C:H2' | 34:BA:2841:C:H6 | 1.63 | 0.64 |
| 37:BD:184:ARG:HH11 | 50:BT:6:GLN:NE2 | 1.95 | 0.64 |
| 38:BE:35:TYR:CE2 | 38:BE:176:ASP:HB2 | 2.33 | 0.64 |
| 38:BE:119:ILE:HD11 | 38:BE:187:VAL:HG22 | 1.80 | 0.64 |
| 51:BU:63:ARG:CZ | 51:BU:96:ASP:HA | 2.25 | 0.64 |
| 51:BU:63:ARG:HD2 | 51:BU:64:ILE:N | 2.13 | 0.64 |
| 1:AA:33:A:H2' | 1:AA:34:C:C6 | 2.32 | 0.64 |
| 1:AA:203:G:H4' | 1:AA:466:A:H2 | 1.63 | 0.64 |
| 1:AA:878:A:OP1 | 8:AH:79:ARG:HD2 | 1.98 | 0.64 |
| 1:AA:1054:C:H1' | 1:AA:1196:A:C5 | 2.32 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1173:U:H2' | 1:AA:1174:G:C8 | 2.33 | 0.64 |
| 16:AP:10:GLY:HA3 | 16:AP:15:PRO:HA | 1.80 | 0.64 |
| 17:AQ:55:GLY:HA3 | 17:AQ:82:VAL:HG11 | 1.79 | 0.64 |
| 25:B0:37:VAL:CG1 | 25:B0:38:ARG:H | 2.06 | 0.64 |
| 25:B0:73:PRO:CG | 25:B0:76:ARG:HD2 | 2.28 | 0.64 |
| 30:B5:9:LYS:HB2 | 30:B5:19:PHE:HD2 | 1.62 | 0.64 |
| 34:BA:1084:A:H5' | 41:BH:55:VAL:HG22 | 1.79 | 0.64 |
| 34:BA:1521:G:C6 | 34:BA:1522:A:N6 | 2.66 | 0.64 |
| 41:BH:58:THR:HG22 | 41:BH:82:ILE:O | 1.97 | 0.64 |
| 46:BP:29:LYS:C | 46:BP:31:GLY:H | 2.01 | 0.64 |
| 50:BT:50:ARG:HD2 | 50:BT:51:ASN:N | 2.12 | 0.64 |
| 1:AA:277:C:OP1 | 17:AQ:44:HIS:CE1 | 2.51 | 0.64 |
| 1:AA:409:U:H2' | 1:AA:410:G:C8 | 2.33 | 0.64 |
| 1:AA:1281:C:H5" | 1:AA:1282:C:C5 | 2.29 | 0.64 |
| 9:AI:90:ASP:OD2 | 9:AI:93:LEU:HG | 1.98 | 0.64 |
| 12:AL:21:PRO:C | 12:AL:23:LEU:H | 2.01 | 0.64 |
| 13:AM:32:ILE:HG23 | 13:AM:58:GLU:HG2 | 1.79 | 0.64 |
| 25:B0:49:ASN:HD22 | 25:B0:60:ALA:HA | 1.63 | 0.64 |
| 32:B7:44:ARG:N | 32:B7:45:PRO:HD2 | 2.13 | 0.64 |
| 34:BA:833:A:H2' | 34:BA:834:G:C8 | 2.33 | 0.64 |
| 34:BA:2149:U:H3' | 34:BA:2150:C:C4' | 2.28 | 0.64 |
| 40:BG:22:VAL:HG22 | 40:BG:36:LEU:CD1 | 2.28 | 0.64 |
| 55:BY:39:ASN:HB3 | 55:BY:62:ALA:O | 1.97 | 0.64 |
| 1:AA:49:U:O4 | 1:AA:365:U:C5 | 2.49 | 0.63 |
| 1:AA:71:A:H61 | 1:AA:99:C:H1' | 1.63 | 0.63 |
| 1:AA:1251:A:H2' | 1:AA:1252:A:H8 | 1.61 | 0.63 |
| 1:AA:1297:G:H5' | 1:AA:1302:C:H42 | 1.63 | 0.63 |
| 14:AN:30:ILE:HG23 | 14:AN:44:VAL:HG12 | 1.80 | 0.63 |
| 23:AW:56:LYS:HB2 | 23:AW:57:SER:HA | 1.80 | 0.63 |
| 29:B4:39:ARG:HG2 | 29:B4:40:HIS:CE1 | 2.32 | 0.63 |
| 34:BA:875:G:H2' | 34:BA:876:C:H5' | 1.79 | 0.63 |
| 34:BA:1715:G:O2' | 34:BA:1716:U:H6 | 1.81 | 0.63 |
| 34:BA:2104:C:H2' | 34:BA:2105:U:O4' | 1.98 | 0.63 |
| 34:BA:2714:G:H2' | 34:BA:2715:C:H5' | 1.79 | 0.63 |
| 36:BC:109:LEU:O | 36:BC:110:LYS:HB2 | 1.96 | 0.63 |
| 42:BI:24:GLY:O | 42:BI:27:LEU:HG | 1.99 | 0.63 |
| 56:BZ:75:GLN:HB2 | 56:BZ:92:VAL:CG2 | 2.28 | 0.63 |
| 2:AB:71:THR:HG22 | 2:AB:72:LYS:H | 1.63 | 0.63 |
| 5:AE:152:VAL:HG11 | 8:AH:98:LEU:HD22 | 1.81 | 0.63 |
| 12:AL:23:LEU:HG | 12:AL:24:GLU:N | 2.13 | 0.63 |
| 14:AN:46:LYS:HD2 | 19:AS:12:LEU:HD21 | 1.80 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1131:G:H4' | 34:BA:1132:U:OP1 | 1.98 | 0.63 |
| 45:BO:76:VAL:HB | 50:BT:72:VAL:CG2 | 2.28 | 0.63 |
| 51:BU:87:VAL:HB | 52:BV:52:PRO:HD3 | 1.80 | 0.63 |
| 1:AA:55:A:N1 | 23:AW:311:HIS:CE1 | 2.66 | 0.63 |
| 1:AA:1242:G:C6 | 1:AA:1243:C:C4 | 2.86 | 0.63 |
| 34:BA:587:C:O2' | 46:BP:19:LEU:HD22 | 1.97 | 0.63 |
| 34:BA:1913:A:O2' | 34:BA:1914:C:OP2 | 2.15 | 0.63 |
| 34:BA:1962:C:O2' | 34:BA:1964:G:OP2 | 2.17 | 0.63 |
| 40:BG:117:PRO:HG2 | 40:BG:120:ILE:HG21 | 1.79 | 0.63 |
| 41:BH:136:ILE:HD12 | 41:BH:136:ILE:H | 1.64 | 0.63 |
| 54:BX:44:LYS:HG3 | 54:BX:55:VAL:HG11 | 1.80 | 0.63 |
| 54:BX:48:GLN:HE21 | 54:BX:48:GLN:CA | 2.02 | 0.63 |
| 1:AA:309:A:H2' | 1:AA:310:G:H8 | 1.63 | 0.63 |
| 1:AA:1055:A:H1' | 3:AC:155:ARG:NH2 | 2.13 | 0.63 |
| 1:AA:1343:G:H2' | 1:AA:1344:C:C6 | 2.33 | 0.63 |
| 7:AG:145:GLU:HA | 7:AG:148:LYS:HE2 | 1.80 | 0.63 |
| 8:AH:82:LEU:HD12 | 12:AL:3:VAL:HG11 | 1.79 | 0.63 |
| 9:AI:51:LEU:HA | 9:AI:54:VAL:HG23 | 1.80 | 0.63 |
| 34:BA:1161:C:H1' | 52:BV:8:GLY:O | 1.97 | 0.63 |
| 34:BA:2423:U:C2' | 34:BA:2424:C:OP2 | 2.46 | 0.63 |
| 34:BA:2867:G:O2' | 34:BA:2868:A:P | 2.56 | 0.63 |
| 36:BC:229:HIS:ND1 | 36:BC:230:PRO:HD2 | 2.13 | 0.63 |
| 40:BG:23:ILE:N | 40:BG:23:ILE:HD12 | 2.13 | 0.63 |
| 45:BO:113:MET:O | 45:BO:116:ILE:HG13 | 1.98 | 0.63 |
| 51:BU:6:GLY:HA2 | 51:BU:9:ALA:HB3 | 1.81 | 0.63 |
| 54:BX:39:THR:O | 54:BX:40:LYS:HB2 | 1.99 | 0.63 |
| 1:AA:64:G:C2 | 1:AA:67:C:N4 | 2.66 | 0.63 |
| 1:AA:1222:G:H5" | 19:AS:77:ARG:NH1 | 2.14 | 0.63 |
| 3:AC:153:SER:HB2 | 3:AC:164:THR:HG22 | 1.81 | 0.63 |
| 4:AD:117:VAL:HG13 | 4:AD:122:ILE:CD1 | 2.26 | 0.63 |
| 5:AE:114:LEU:O | 5:AE:119:VAL:HG22 | 1.98 | 0.63 |
| 6:AF:38:ARG:NH2 | 6:AF:96:VAL:HG23 | 2.13 | 0.63 |
| 25:B0:23:LYS:HD3 | 34:BA:855:G:N3 | 2.14 | 0.63 |
| 34:BA:558:U:H5" | 44:BN:111:LYS:CE | 2.28 | 0.63 |
| 34:BA:622:G:H2' | 34:BA:623:C:C6 | 2.33 | 0.63 |
| 35:BB:34:A:N6 | 35:BB:44:G:O2' | 2.32 | 0.63 |
| 35:BB:48:U:P | 49:BS:30:ARG:HH22 | 2.22 | 0.63 |
| 36:BC:116:GLN:HG2 | 36:BC:117:SER:H | 1.63 | 0.63 |
| 39:BF:134:GLN:HE22 | 39:BF:149:ARG:HB3 | 1.63 | 0.63 |
| 50:BT:24:THR:O | 50:BT:24:THR:HG23 | 1.98 | 0.63 |
| 1:AA:277:C:OP1 | 17:AQ:44:HIS:HE1 | 1.80 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:428:G:OP2 | 4:AD:9:LYS:HD2 | 1.99 | 0.63 |
| 1:AA:450:G:N7 | 1:AA:481:G:O6 | 2.31 | 0.63 |
| 1:AA:566:G:H4' | 1:AA:567:G:OP1 | 1.98 | 0.63 |
| 4:AD:53:GLN:HE21 | 4:AD:202:LEU:HA | 1.63 | 0.63 |
| 8:AH:7:ALA:O | 8:AH:11:THR:HB | 1.99 | 0.63 |
| 12:AL:24:GLU:HB2 | 12:AL:26:CYS:SG | 2.39 | 0.63 |
| 15:AO:77:TYR:CE1 | 15:AO:81:ILE:HD13 | 2.34 | 0.63 |
| 34:BA:629:G:H4' | 34:BA:650:C:O2 | 1.99 | 0.63 |
| 34:BA:2197:U:HO2' | 34:BA:2198:A:H2' | 1.59 | 0.63 |
| 39:BF:37:MET:HB2 | 39:BF:86:CYS:SG | 2.39 | 0.63 |
| 40:BG:76:ILE:HD13 | 40:BG:76:ILE:C | 2.18 | 0.63 |
| 50:BT:30:TRP:CH2 | 50:BT:39:LEU:HD11 | 2.34 | 0.63 |
| 1:AA:673:A:H1' | 18:AR:63:TYR:CD1 | 2.34 | 0.63 |
| 1:AA:1167:A:C8 | 1:AA:1169:A:C5 | 2.87 | 0.63 |
| 8:AH:28:SER:HB2 | 8:AH:58:LEU:HB2 | 1.81 | 0.63 |
| 17:AQ:11:VAL:HG12 | 17:AQ:13:SER:H | 1.64 | 0.63 |
| 32:B7:31:ILE:O | 32:B7:35:LYS:HE3 | 1.97 | 0.63 |
| 34:BA:108:G:O2' | 34:BA:109:C:H5' | 1.99 | 0.63 |
| 34:BA:543:G:N2 | 34:BA:551:G:H1' | 2.14 | 0.63 |
| 34:BA:864:G:C6 | 34:BA:865:C:N4 | 2.67 | 0.63 |
| 34:BA:1509:A:O2' | 34:BA:1510:G:O5' | 2.15 | 0.63 |
| 35:BB:5:U:H2' | 35:BB:6:G:C8 | 2.33 | 0.63 |
| 51:BU:73:ILE:HG21 | 51:BU:109:VAL:HG13 | 1.80 | 0.63 |
| 1:AA:736:C:H2' | 1:AA:737:C:H6 | 1.64 | 0.63 |
| 1:AA:1102:A:H2' | 1:AA:1103:C:H6 | 1.64 | 0.63 |
| 2:AB:80:LYS:HD3 | 2:AB:90:PHE:HE1 | 1.64 | 0.63 |
| 3:AC:181:ILE:HD13 | 3:AC:202:PHE:HA | 1.80 | 0.63 |
| 10:AJ:5:ARG:HA | 10:AJ:5:ARG:HH11 | 1.64 | 0.63 |
| 10:AJ:66:GLU:HB3 | 14:AN:98:ALA:HB2 | 1.80 | 0.63 |
| 23:AW:21:HIS:HD2 | 23:AW:122:ARG:H | 1.47 | 0.63 |
| 25:B0:45:HIS:CB | 25:B0:50:VAL:HG13 | 2.28 | 0.63 |
| 29:B4:9:ARG:HB2 | 29:B4:12:ARG:NH2 | 2.14 | 0.63 |
| 34:BA:2787:C:H2' | 34:BA:2788:C:H6 | 1.64 | 0.63 |
| 35:BB:30:C:C2' | 35:BB:31:C:H5' | 2.29 | 0.63 |
| 40:BG:95:ALA:HB3 | 40:BG:130:ILE:HD11 | 1.80 | 0.63 |
| 43:BJ:11:VAL:CG2 | 43:BM:15:SER:H | 2.12 | 0.63 |
| 45:BO:73:ASP:O | 50:BT:74:GLN:HG3 | 1.99 | 0.63 |
| 56:BZ:80:HIS:HD2 | 56:BZ:83:LYS:N | 1.95 | 0.63 |
| 1:AA:182:A:O2' | 1:AA:183:C:H6 | 1.82 | 0.63 |
| 1:AA:182:A:O2' | 1:AA:183:C:C6 | 2.51 | 0.63 |
| 1:AA:810:C:O2' | 1:AA:811:C:H5' | 1.98 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1469:C:H6 | 1:AA:1469:C:C5' | 2.12 | 0.63 |
| 10:AJ:10:LEU:HB2 | 10:AJ:72:ARG:HB2 | 1.81 | 0.63 |
| 20:AT:8:LYS:O | 20:AT:12:GLN:HB2 | 1.98 | 0.63 |
| 23:AW:59:TRP:CD2 | 23:AW:64:LYS:HD3 | 2.34 | 0.63 |
| 34:BA:1360:G:H5' | 34:BA:1361:G:OP2 | 1.99 | 0.63 |
| 34:BA:1818:U:O2' | 34:BA:1819:A:P | 2.56 | 0.63 |
| 49:BS:102:ARG:HA | 49:BS:105:ALA:HB3 | 1.81 | 0.63 |
| 1:AA:41:G:H2' | 1:AA:42:G:C8 | 2.33 | 0.62 |
| 1:AA:182:A:HO2' | 1:AA:183:C:H6 | 1.45 | 0.62 |
| 2:AB:90:PHE:O | 2:AB:149:GLY:HA3 | 1.98 | 0.62 |
| 9:AI:3:ASN:ND2 | 9:AI:4:GLN:H | 1.96 | 0.62 |
| 16:AP:18:GLN:HE21 | 16:AP:35:ARG:HD2 | 1.62 | 0.62 |
| 25:B0:17:ALA:HA | 25:B0:35:ILE:CG2 | 2.29 | 0.62 |
| 28:B3:6:ILE:HG21 | 28:B3:47:ILE:HD12 | 1.79 | 0.62 |
| 30:B5:16:THR:HG21 | 30:B5:41:VAL:HG23 | 1.81 | 0.62 |
| 34:BA:504:A:H4' | 34:BA:505:A:OP2 | 1.97 | 0.62 |
| 34:BA:693:A:H2' | 34:BA:694:U:H6 | 1.64 | 0.62 |
| 34:BA:995:C:O2' | 34:BA:996:A:P | 2.57 | 0.62 |
| 34:BA:1319:C:O2 | 34:BA:1334:G:C2 | 2.52 | 0.62 |
| 38:BE:45:ALA:C | 38:BE:46:GLN:HG2 | 2.20 | 0.62 |
| 41:BH:77:VAL:O | 41:BH:77:VAL:HG12 | 1.98 | 0.62 |
| 54:BX:59:ASN:O | 54:BX:83:ALA:O | 2.17 | 0.62 |
| 55:BY:95:PHE:HE1 | 55:BY:102:ILE:HB | 1.63 | 0.62 |
| 3:AC:13:ILE:HD11 | 3:AC:177:LEU:HB3 | 1.81 | 0.62 |
| 6:AF:13:ASP:O | 6:AF:15:SER:N | 2.32 | 0.62 |
| 34:BA:1107:G:H2' | 34:BA:1108:U:C6 | 2.35 | 0.62 |
| 34:BA:1334:G:H2' | 34:BA:1335:C:H5' | 1.81 | 0.62 |
| 34:BA:1842:G:H2' | 34:BA:1843:C:C6 | 2.33 | 0.62 |
| 34:BA:2148:G:C6 | 34:BA:2149:U:O2 | 2.51 | 0.62 |
| 37:BD:133:THR:HG23 | 37:BD:134:HIS:N | 2.14 | 0.62 |
| 41:BH:18:VAL:CG1 | 41:BH:117:LEU:HD12 | 2.29 | 0.62 |
| 41:BH:27:VAL:HG13 | 41:BH:110:ALA:HA | 1.80 | 0.62 |
| 1:AA:17:U:H2' | 1:AA:18:C:C6 | 2.33 | 0.62 |
| 1:AA:634:C:H2' | 1:AA:635:A:H8 | 1.64 | 0.62 |
| 1:AA:922:G:H2' | 1:AA:923:A:C8 | 2.34 | 0.62 |
| 1:AA:1299:A:C5 | 1:AA:1301:U:O2 | 2.52 | 0.62 |
| 1:AA:1343:G:H1' | 9:AI:122:ARG:NH1 | 2.14 | 0.62 |
| 1:AA:1494:G:H4' | 34:BA:1913:A:N7 | 2.14 | 0.62 |
| 2:AB:40:ILE:HG21 | 2:AB:201:GLY:H | 1.65 | 0.62 |
| 4:AD:3:TYR:O | 4:AD:4:LEU:HB2 | 1.99 | 0.62 |
| 12:AL:41:PRO:HG2 | 12:AL:45:ASN:O | 1.99 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 23:AW:59:TRP:CZ2 | 23:AW:69:SER:CB | 2.81 | 0.62 |
| 25:B0:41:GLY:HA2 | 25:B0:44:PHE:CE2 | 2.34 | 0.62 |
| 34:BA:1812:U:H2' | 34:BA:1813:G:H8 | 1.61 | 0.62 |
| 39:BF:125:GLY:H | 39:BF:162:ASP:HB3 | 1.64 | 0.62 |
| 46:BP:68:SER:HB3 | 46:BP:71:ALA:CB | 2.28 | 0.62 |
| 56:BZ:9:ARG:HB2 | 56:BZ:39:ALA:HB1 | 1.81 | 0.62 |
| 2:AB:17:HIS:CD2 | 2:AB:202:ASN:HD21 | 2.17 | 0.62 |
| 2:AB:187:ASP:HB2 | 2:AB:203:ASP:HB3 | 1.81 | 0.62 |
| 9:AI:21:LYS:NZ | 9:AI:23:GLY:HA3 | 2.15 | 0.62 |
| 13:AM:84:CYS:HB2 | 19:AS:72:GLU:HB3 | 1.82 | 0.62 |
| 17:AQ:64:ARG:H | 17:AQ:64:ARG:HD3 | 1.65 | 0.62 |
| 21:AU:9:GLU:CG | 21:AU:10:PRO:HD3 | 2.29 | 0.62 |
| 23:AW:304:GLN:O | 23:AW:306:ASN:N | 2.32 | 0.62 |
| 34:BA:37:C:O2' | 38:BE:45:ALA:HB2 | 1.98 | 0.62 |
| 34:BA:2325:G:C6 | 34:BA:2326:C:N4 | 2.66 | 0.62 |
| 34:BA:2567:G:H2' | 34:BA:2568:U:C6 | 2.34 | 0.62 |
| 36:BC:33:LEU:O | 36:BC:34:GLU:HB3 | 1.99 | 0.62 |
| 38:BE:161:ALA:C | 38:BE:163:ASN:H | 2.01 | 0.62 |
| 38:BE:195:GLN:O | 38:BE:199:MET:HB2 | 2.00 | 0.62 |
| 46:BP:68:SER:HB3 | 46:BP:71:ALA:HB2 | 1.82 | 0.62 |
| 52:BV:49:ILE:HG13 | 52:BV:52:PRO:HA | 1.81 | 0.62 |
| 52:BV:90:ARG:O | 52:BV:91:GLN:HB3 | 2.00 | 0.62 |
| 1:AA:1410:A:H2' | 1:AA:1411:C:H6 | 1.63 | 0.62 |
| 15:AO:72:LYS:HE2 | 15:AO:72:LYS:HA | 1.81 | 0.62 |
| 34:BA:1187:G:H5" | 52:BV:83:TYR:CE2 | 2.34 | 0.62 |
| 34:BA:1327:A:H2' | 34:BA:1328:A:O4' | 2.00 | 0.62 |
| 40:BG:120:ILE:HD13 | 40:BG:143:VAL:HG21 | 1.82 | 0.62 |
| 45:BO:63:VAL:HG12 | 45:BO:64:ARG:HG3 | 1.82 | 0.62 |
| 1:AA:216:U:H2' | 1:AA:217:C:C6 | 2.35 | 0.62 |
| 1:AA:235:C:H1' | 17:AQ:62:GLU:OE2 | 1.98 | 0.62 |
| 1:AA:507:C:C3' | 1:AA:508:U:H5" | 2.26 | 0.62 |
| 1:AA:633:G:H2' | 1:AA:634:C:C6 | 2.34 | 0.62 |
| 1:AA:1129:C:O2' | 1:AA:1130:A:C8 | 2.51 | 0.62 |
| 34:BA:2391:G:O6 | 34:BA:2425:A:H8 | 1.82 | 0.62 |
| 35:BB:104:A:H2' | 35:BB:105:G:O4' | 1.99 | 0.62 |
| 42:BI:102:ARG:HB2 | 42:BI:141:ASP:HA | 1.82 | 0.62 |
| 54:BX:22:THR:HA | 54:BX:25:GLU:CB | 2.29 | 0.62 |
| 2:AB:221:ARG:HB3 | 2:AB:221:ARG:CZ | 2.29 | 0.62 |
| 4:AD:121:ALA:HA | 4:AD:145:ARG:CG | 2.29 | 0.62 |
| 26:B1:39:VAL:C | 26:B1:41:SER:H | 2.00 | 0.62 |
| 34:BA:616:A:H4' | 38:BE:101:TYR:CE2 | 2.35 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1405:U:O2' | 34:BA:1406:U:H5' | 2.00 | 0.62 |
| 34:BA:2393:U:H5' | 46:BP:60:ARG:O | 1.99 | 0.62 |
| 37:BD:121:THR:HB | 37:BD:127:PHE:CD1 | 2.34 | 0.62 |
| 37:BD:181:ASP:HB3 | 37:BD:186:LEU:HB2 | 1.82 | 0.62 |
| 39:BF:128:SER:OG | 39:BF:154:THR:HB | 1.99 | 0.62 |
| 39:BF:134:GLN:HE21 | 39:BF:134:GLN:N | 1.97 | 0.62 |
| 39:BF:135:ILE:HD11 | 39:BF:145:VAL:HG11 | 1.81 | 0.62 |
| 41:BH:154:THR:H | 43:BM:22:LEU:HD21 | 1.64 | 0.62 |
| 45:BO:2:ILE:O | 45:BO:6:THR:OG1 | 2.18 | 0.62 |
| 46:BP:95:LEU:O | 46:BP:100:ILE:HG12 | 1.99 | 0.62 |
| 47:BQ:41:LEU:HA | 47:BQ:45:GLN:OE1 | 2.00 | 0.62 |
| 1:AA:1127:G:H5' | 1:AA:1280:A:O2' | 1.98 | 0.62 |
| 1:AA:1320:C:H41 | 19:AS:36:ARG:HG2 | 1.64 | 0.62 |
| 3:AC:71:ARG:O | 3:AC:75:VAL:HG23 | 1.99 | 0.62 |
| 18:AR:34:GLU:HB2 | 21:AU:18:PHE:HZ | 1.64 | 0.62 |
| 34:BA:1923:U:H2' | 34:BA:1924:C:H6 | 1.64 | 0.62 |
| 34:BA:2723:C:O3' | 48:BR:1:MET:HE3 | 2.00 | 0.62 |
| 41:BH:23:LEU:HA | 41:BH:118:ILE:HG13 | 1.81 | 0.62 |
| 42:BI:46:ASP:HA | 42:BI:50:LYS:HD2 | 1.82 | 0.62 |
| 44:BN:88:THR:HG22 | 44:BN:91:GLU:CG | 2.29 | 0.62 |
| 56:BZ:29:ILE:HD12 | 56:BZ:38:LEU:O | 1.99 | 0.62 |
| 1:AA:812:G:HO2' | 1:AA:813:U:P | 2.23 | 0.62 |
| 1:AA:1064:G:N2 | 1:AA:1190:G:O2' | 2.32 | 0.62 |
| 1:AA:1486:G:H2' | 1:AA:1487:G:O4' | 1.99 | 0.62 |
| 2:AB:221:ARG:HH11 | 2:AB:222:GLU:HG2 | 1.64 | 0.62 |
| 5:AE:11:GLN:HG3 | 5:AE:116:VAL:HB | 1.82 | 0.62 |
| 34:BA:588:U:H2' | 34:BA:589:U:C6 | 2.35 | 0.62 |
| 34:BA:1279:G:H4' | 48:BR:31:HIS:CD2 | 2.34 | 0.62 |
| 35:BB:115:A:H2' | 35:BB:116:G:C8 | 2.33 | 0.62 |
| 36:BC:119:VAL:HB | 36:BC:133:ASN:ND2 | 2.15 | 0.62 |
| 36:BC:142:ASN:HA | 36:BC:153:LEU:O | 2.00 | 0.62 |
| 37:BD:38:LYS:O | 37:BD:46:ARG:HA | 1.99 | 0.62 |
| 41:BH:57:ASN:C | 41:BH:59:LEU:N | 2.52 | 0.62 |
| 46:BP:85:VAL:HG21 | 46:BP:94:THR:HG22 | 1.82 | 0.62 |
| 1:AA:274:A:H4' | 1:AA:275:G:O5' | 1.98 | 0.62 |
| 1:AA:429:U:H3' | 4:AD:8:LEU:CD2 | 2.21 | 0.62 |
| 1:AA:1031:C:H4' | 1:AA:1032:G:C4 | 2.35 | 0.62 |
| 13:AM:72:ILE:O | 13:AM:76:ILE:HG13 | 1.99 | 0.62 |
| 23:AW:314:ARG:CZ | 23:AW:421:GLU:HB2 | 2.29 | 0.62 |
| 34:BA:962:G:N2 | 34:BA:2250:G:H1 | 1.98 | 0.62 |
| 36:BC:59:GLN:HG2 | 36:BC:84:PRO:HB2 | 1.82 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 39:BF:169:LEU:HD23 | 39:BF:174:PHE:CE1 | 2.35 | 0.62 |
| 52:BV:49:ILE:O | 52:BV:49:ILE:HG12 | 2.00 | 0.62 |
| 1:AA:728:A:H2' | 1:AA:729:A:C8 | 2.33 | 0.61 |
| 1:AA:955:U:H3 | 1:AA:1225:A:H61 | 1.48 | 0.61 |
| 1:AA:1412:C:H2' | 1:AA:1413:A:C8 | 2.34 | 0.61 |
| 34:BA:458:G:O2' | 34:BA:459:U:OP2 | 2.18 | 0.61 |
| 34:BA:636:G:C6 | 46:BP:111:ILE:HD11 | 2.34 | 0.61 |
| 39:BF:8:LYS:O | 39:BF:12:VAL:HG12 | 1.99 | 0.61 |
| 55:BY:11:ILE:HG13 | 55:BY:21:ARG:HG3 | 1.82 | 0.61 |
| 1:AA:189:A:H2' | 1:AA:190:A:O4' | 2.00 | 0.61 |
| 1:AA:977:A:H2 | 1:AA:1362:A:N6 | 1.97 | 0.61 |
| 1:AA:1016:A:H4' | 1:AA:1217:C:O2' | 2.00 | 0.61 |
| 8:AH:13:ILE:HD11 | 8:AH:60:LEU:HD12 | 1.82 | 0.61 |
| 9:AI:83:THR:HG22 | 9:AI:97:LEU:HD21 | 1.82 | 0.61 |
| 11:AK:75:GLU:C | 11:AK:77:GLY:H | 2.04 | 0.61 |
| 11:AK:110:THR:HG22 | 21:AU:4:LYS:HA | 1.83 | 0.61 |
| 20:AT:24:ARG:O | 20:AT:27:MET:HB3 | 1.99 | 0.61 |
| 34:BA:1278:C:OP1 | 48:BR:36:THR:HB | 1.98 | 0.61 |
| 45:BO:47:ILE:CD1 | 45:BO:48:PRO:HD2 | 2.30 | 0.61 |
| 46:BP:79:LEU:H | 46:BP:113:ALA:HB3 | 1.65 | 0.61 |
| 52:BV:48:LYS:HD2 | 52:BV:48:LYS:C | 2.21 | 0.61 |
| 1:AA:194:C:O2' | 1:AA:195:A:H5' | 2.00 | 0.61 |
| 1:AA:208:U:O4 | 1:AA:210:C:H1' | 1.99 | 0.61 |
| 1:AA:220:G:H2' | 1:AA:221:C:C6 | 2.34 | 0.61 |
| 1:AA:624:C:H4' | 16:AP:10:GLY:O | 1.99 | 0.61 |
| 4:AD:145:ARG:HH11 | 4:AD:147:LYS:NZ | 1.97 | 0.61 |
| 4:AD:151:GLN:H | 4:AD:154:VAL:CG1 | 2.14 | 0.61 |
| 15:AO:9:LYS:O | 15:AO:13:GLU:HG3 | 2.00 | 0.61 |
| 20:AT:43:LYS:HE2 | 20:AT:86:ALA:HB1 | 1.83 | 0.61 |
| 27:B2:16:THR:O | 27:B2:20:ASN:HB2 | 2.00 | 0.61 |
| 34:BA:1935:G:H1 | 34:BA:1962:C:H2' | 1.65 | 0.61 |
| 41:BH:12:VAL:HG13 | 41:BH:69:PHE:HZ | 1.64 | 0.61 |
| 42:BI:48:ILE:O | 42:BI:49:GLU:HB2 | 1.99 | 0.61 |
| 48:BR:1:MET:O | 48:BR:2:ARG:HB2 | 2.00 | 0.61 |
| 54:BX:69:ARG:CZ | 54:BX:70:HIS:H | 2.12 | 0.61 |
| 1:AA:33:A:H2' | 1:AA:34:C:H6 | 1.64 | 0.61 |
| 1:AA:711:G:O2' | 1:AA:712:A:H5' | 2.00 | 0.61 |
| 1:AA:1170:A:H2' | 1:AA:1171:A:O4' | 2.00 | 0.61 |
| 3:AC:35:ASP:O | 3:AC:38:VAL:HG22 | 2.01 | 0.61 |
| 15:AO:28:VAL:HG11 | 15:AO:66:LEU:HD21 | 1.80 | 0.61 |
| 21:AU:19:LYS:HB2 | 21:AU:20:ARG:NH1 | 2.14 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 26:B1:7:THR:HG21 | 26:B1:53:LYS:HD3 | 1.81 | 0.61 |
| 34:BA:27:G:O2' | 34:BA:28:A:P | 2.57 | 0.61 |
| 34:BA:704:G:H1' | 34:BA:727:A:H62 | 1.65 | 0.61 |
| 34:BA:1084:A:OP2 | 41:BH:55:VAL:HG22 | 2.01 | 0.61 |
| 34:BA:1131:G:OP1 | 44:BN:82:GLY:HA2 | 2.00 | 0.61 |
| 35:BB:37:C:C5 | 35:BB:38:C:C4 | 2.88 | 0.61 |
| 36:BC:77:VAL:HG12 | 36:BC:113:ASP:O | 2.01 | 0.61 |
| 36:BC:210:ALA:O | 36:BC:215:VAL:HG23 | 2.01 | 0.61 |
| 38:BE:131:THR:HG22 | 38:BE:160:ALA:HA | 1.82 | 0.61 |
| 7:AG:115:MET:HE2 | 7:AG:115:MET:O | 2.01 | 0.61 |
| 13:AM:2:ARG:O | 13:AM:3:ILE:HG12 | 2.00 | 0.61 |
| 26:B1:34:SER:HA | 26:B1:48:LEU:O | 2.00 | 0.61 |
| 26:B1:69:GLU:O | 26:B1:71:ARG:N | 2.33 | 0.61 |
| 34:BA:558:U:H5" | 44:BN:111:LYS:HE3 | 1.82 | 0.61 |
| 34:BA:883:G:H2' | 34:BA:884:U:C6 | 2.36 | 0.61 |
| 34:BA:2282:G:H4' | 34:BA:2389:G:O2' | 2.00 | 0.61 |
| 35:BB:65:U:H3' | 35:BB:108:A:N6 | 2.16 | 0.61 |
| 39:BF:71:LYS:NZ | 39:BF:80:GLN:HE21 | 1.97 | 0.61 |
| 1:AA:785:G:C2' | 1:AA:786:G:H5' | 2.30 | 0.61 |
| 2:AB:49:PHE:CD1 | 2:AB:49:PHE:C | 2.74 | 0.61 |
| 5:AE:105:ILE:HD11 | 5:AE:123:LEU:HD23 | 1.82 | 0.61 |
| 12:AL:23:LEU:O | 12:AL:25:ALA:N | 2.33 | 0.61 |
| 23:AW:59:TRP:HA | 23:AW:59:TRP:HE3 | 1.65 | 0.61 |
| 25:B0:39:GLN:C | 25:B0:41:GLY:N | 2.49 | 0.61 |
| 27:B2:49:ASP:O | 27:B2:53:VAL:HG23 | 2.00 | 0.61 |
| 34:BA:458:G:C2' | 34:BA:459:U:OP2 | 2.49 | 0.61 |
| 34:BA:679:C:O2' | 34:BA:680:C:H5' | 2.00 | 0.61 |
| 40:BG:24:THR:OG1 | 40:BG:34:ARG:HB3 | 2.01 | 0.61 |
| 43:BL:25:ALA:HA | 43:BL:28:GLU:OE1 | 2.00 | 0.61 |
| 45:BO:24:VAL:HA | 45:BO:39:ILE:HD12 | 1.81 | 0.61 |
| 51:BU:60:TRP:CZ2 | 51:BU:93:ILE:HB | 2.35 | 0.61 |
| 53:BW:6:LYS:HB3 | 53:BW:104:THR:HG23 | 1.81 | 0.61 |
| 1:AA:503:C:O5' | 1:AA:503:C:H6 | 1.82 | 0.61 |
| 1:AA:1126:U:O2 | 1:AA:1126:U:H2' | 2.00 | 0.61 |
| 1:AA:1312:G:N7 | 19:AS:2:ARG:HA | 2.16 | 0.61 |
| 2:AB:9:LEU:HD12 | 2:AB:42:LEU:HD22 | 1.82 | 0.61 |
| 2:AB:96:LEU:HB2 | 2:AB:99:MET:CE | 2.30 | 0.61 |
| 3:AC:123:LEU:HD21 | 3:AC:129:PHE:HB3 | 1.81 | 0.61 |
| 3:AC:146:LYS:HB2 | 3:AC:202:PHE:CD2 | 2.36 | 0.61 |
| 10:AJ:81:GLU:O | 10:AJ:85:ASP:HB2 | 2.01 | 0.61 |
| 14:AN:44:VAL:HG23 | 14:AN:45:LEU:H | 1.65 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 21:AU:4:LYS:HD2 | 21:AU:4:LYS:O | 2.00 | 0.61 |
| 34:BA:286:U:H2' | 34:BA:287:G:C8 | 2.36 | 0.61 |
| 34:BA:370:G:H4' | 34:BA:371:A:OP2 | 1.99 | 0.61 |
| 34:BA:646:U:H3' | 34:BA:647:G:H5" | 1.82 | 0.61 |
| 34:BA:1268:A:H2' | 34:BA:1269:A:O4' | 2.00 | 0.61 |
| 34:BA:1348:C:H2' | 34:BA:1349:C:H5' | 1.82 | 0.61 |
| 34:BA:2788:C:H2' | 34:BA:2789:C:C6 | 2.36 | 0.61 |
| 36:BC:255:LYS:O | 36:BC:257:ARG:N | 2.34 | 0.61 |
| 37:BD:68:PHE:O | 37:BD:71:ALA:O | 2.18 | 0.61 |
| 39:BF:71:LYS:HZ2 | 39:BF:80:GLN:HE21 | 1.48 | 0.61 |
| 40:BG:73:SER:HA | 40:BG:76:ILE:CG2 | 2.30 | 0.61 |
| 40:BG:84:LYS:HB3 | 40:BG:132:LEU:O | 2.00 | 0.61 |
| 41:BH:143:MET:C | 41:BH:145:GLU:H | 2.01 | 0.61 |
| 1:AA:153:C:H2' | 1:AA:154:U:C6 | 2.36 | 0.61 |
| 1:AA:408:A:OP1 | 4:AD:111:ALA:HB3 | 2.00 | 0.61 |
| 1:AA:634:C:H2' | 1:AA:635:A:C8 | 2.35 | 0.61 |
| 1:AA:890:G:C2' | 1:AA:891:U:OP2 | 2.48 | 0.61 |
| 1:AA:1521:C:H2' | 1:AA:1522:U:H6 | 1.66 | 0.61 |
| 10:AJ:52:LEU:HD23 | 10:AJ:62:ARG:HG3 | 1.81 | 0.61 |
| 12:AL:81:ILE:HD11 | 12:AL:94:TYR:CB | 2.31 | 0.61 |
| 14:AN:5:MET:SD | 14:AN:8:ARG:HD2 | 2.41 | 0.61 |
| 14:AN:82:LYS:CE | 14:AN:85:GLU:HG3 | 2.31 | 0.61 |
| 16:AP:21:VAL:HG21 | 16:AP:60:TRP:CD1 | 2.35 | 0.61 |
| 20:AT:4:LYS:HE2 | 20:AT:5:SER:N | 2.16 | 0.61 |
| 34:BA:468:G:C2' | 34:BA:469:G:H5' | 2.30 | 0.61 |
| 34:BA:675:A:OP1 | 38:BE:58:LYS:HE2 | 2.01 | 0.61 |
| 34:BA:878:A:H1' | 34:BA:901:C:C5 | 2.36 | 0.61 |
| 35:BB:89:U:H5' | 35:BB:90:C:C6 | 2.35 | 0.61 |
| 37:BD:89:GLU:HG3 | 37:BD:94:GLN:OE1 | 2.01 | 0.61 |
| 41:BH:100:ALA:HB2 | 41:BH:125:ARG:CZ | 2.31 | 0.61 |
| 44:BN:21:THR:C | 44:BN:23:LYS:H | 2.03 | 0.61 |
| 49:BS:17:LYS:O | 49:BS:21:LEU:HB2 | 2.00 | 0.61 |
| 53:BW:2:GLU:O | 53:BW:107:VAL:O | 2.19 | 0.61 |
| 1:AA:965:U:C5' | 1:AA:966:G:OP1 | 2.45 | 0.61 |
| 1:AA:1327:C:H2' | 1:AA:1328:C:C6 | 2.36 | 0.61 |
| 2:AB:207:ARG:HB3 | 2:AB:211:LEU:HD13 | 1.82 | 0.61 |
| 4:AD:166:LYS:HB3 | 4:AD:166:LYS:NZ | 2.16 | 0.61 |
| 6:AF:89:VAL:HG22 | 6:AF:90:MET:H | 1.64 | 0.61 |
| 12:AL:87:LYS:O | 12:AL:87:LYS:HG3 | 2.00 | 0.61 |
| 20:AT:43:LYS:HB3 | 20:AT:86:ALA:HB1 | 1.82 | 0.61 |
| 23:AW:432:SER:O | 23:AW:434:ASN:N | 2.34 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 27:B2:50:VAL:O | 27:B2:54:LYS:HG3 | 2.01 | 0.61 |
| 33:B8:10:LEU:HD12 | 33:B8:33:HIS:CD2 | 2.36 | 0.61 |
| 34:BA:2092:U:C4' | 34:BA:2093:G:O5' | 2.49 | 0.61 |
| 34:BA:2260:C:H2' | 34:BA:2261:C:H6 | 1.66 | 0.61 |
| 35:BB:51:G:OP2 | 49:BS:64:TYR:HD2 | 1.83 | 0.61 |
| 42:BI:3:LYS:CD | 42:BI:4:VAL:HG23 | 2.31 | 0.61 |
| 45:BO:59:LYS:HE2 | 45:BO:89:ASN:ND2 | 2.16 | 0.61 |
| 52:BV:7:SER:OG | 52:BV:22:LEU:HD13 | 2.01 | 0.61 |
| 1:AA:1185:G:C2' | 1:AA:1186:G:H5' | 2.30 | 0.61 |
| 1:AA:1324:A:H5' | 1:AA:1362:A:O2' | 2.01 | 0.61 |
| 8:AH:104:SER:HB2 | 8:AH:125:ILE:HD11 | 1.83 | 0.61 |
| 13:AM:84:CYS:O | 13:AM:88:LEU:HG | 2.00 | 0.61 |
| 14:AN:90:GLY:O | 14:AN:92:ILE:N | 2.34 | 0.61 |
| 19:AS:35:ARG:HB3 | 19:AS:71:GLY:CA | 2.30 | 0.61 |
| 19:AS:51:HIS:CD2 | 19:AS:53:GLY:H | 2.18 | 0.61 |
| 27:B2:9:LYS:HB3 | 27:B2:12:GLU:HB2 | 1.83 | 0.61 |
| 34:BA:704:G:H2' | 34:BA:726:G:N2 | 2.14 | 0.61 |
| 34:BA:1188:U:O2' | 34:BA:1189:A:H5' | 2.01 | 0.61 |
| 34:BA:1509:A:O2' | 34:BA:1510:G:O4' | 2.18 | 0.61 |
| 34:BA:1722:A:H2' | 34:BA:1723:G:H8 | 1.66 | 0.61 |
| 43:BK:28:GLU:HG3 | 43:BK:29:LYS:N | 2.12 | 0.61 |
| 46:BP:93:ASN:HD22 | 46:BP:94:THR:H | 1.47 | 0.61 |
| 54:BX:22:THR:O | 54:BX:25:GLU:HB3 | 2.01 | 0.61 |
| 54:BX:28:ASN:CA | 54:BX:91:GLN:HE22 | 2.10 | 0.61 |
| 1:AA:673:A:H1' | 18:AR:63:TYR:CE1 | 2.36 | 0.60 |
| 1:AA:1323:G:H4' | 1:AA:1362:A:C2 | 2.35 | 0.60 |
| 3:AC:39:ARG:NH1 | 3:AC:54:ILE:HG12 | 2.15 | 0.60 |
| 4:AD:171:GLU:OE2 | 4:AD:182:LYS:HD3 | 2.01 | 0.60 |
| 9:AI:24:ASN:H | 9:AI:61:ASP:HB2 | 1.65 | 0.60 |
| 12:AL:101:LEU:HG | 23:AW:409:GLN:NE2 | 2.16 | 0.60 |
| 13:AM:113:LYS:HB2 | 13:AM:114:PRO:HD3 | 1.83 | 0.60 |
| 34:BA:866:A:H2' | 34:BA:867:C:H5' | 1.83 | 0.60 |
| 34:BA:1460:U:C5' | 34:BA:1461:C:OP2 | 2.45 | 0.60 |
| 34:BA:2150:C:N3 | 34:BA:2151:U:O4 | 2.34 | 0.60 |
| 37:BD:91:THR:C | 37:BD:93:GLY:N | 2.51 | 0.60 |
| 37:BD:191:GLY:O | 37:BD:192:ALA:HB3 | 2.01 | 0.60 |
| 41:BH:117:LEU:O | 41:BH:119:PRO:HD2 | 2.01 | 0.60 |
| 50:BT:21:PRO:HD3 | 50:BT:49:ILE:HD12 | 1.82 | 0.60 |
| 1:AA:36:C:H4' | 12:AL:118:VAL:O | 2.01 | 0.60 |
| 1:AA:940:C:H2' | 1:AA:941:G:H8 | 1.66 | 0.60 |
| 1:AA:1401:G:OP1 | 22:AV:19:U:OP1 | 2.19 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 8:AH:17:GLN:OE1 | 8:AH:62:LEU:HD12 | 2.01 | 0.60 |
| 19:AS:51:HIS:HB2 | 19:AS:56:HIS:CD2 | 2.36 | 0.60 |
| 25:B0:73:PRO:HG2 | 25:B0:76:ARG:HD2 | 1.83 | 0.60 |
| 47:BQ:41:LEU:HD22 | 47:BQ:124:LEU:HD22 | 1.82 | 0.60 |
| 49:BS:100:HIS:H | 49:BS:103:VAL:CG2 | 2.13 | 0.60 |
| 1:AA:70:U:HO2' | 1:AA:71:A:H8 | 1.45 | 0.60 |
| 1:AA:433:G:C2' | 1:AA:434:U:H5' | 2.31 | 0.60 |
| 3:AC:76:ILE:HD11 | 3:AC:102:ILE:HG21 | 1.84 | 0.60 |
| 4:AD:54:LEU:HD23 | 4:AD:55:ARG:N | 2.16 | 0.60 |
| 4:AD:113:ALA:O | 4:AD:117:VAL:HG23 | 2.02 | 0.60 |
| 8:AH:9:MET:CE | 8:AH:32:LYS:HA | 2.31 | 0.60 |
| 9:AI:46:VAL:HA | 9:AI:49:GLN:HE21 | 1.66 | 0.60 |
| 13:AM:82:LEU:HB3 | 19:AS:73:PHE:CE2 | 2.35 | 0.60 |
| 23:AW:20:SER:OG | 23:AW:24:ALA:HB3 | 2.01 | 0.60 |
| 25:B0:50:VAL:HG12 | 25:B0:51:GLY:N | 2.15 | 0.60 |
| 34:BA:545:U:H3' | 34:BA:545:U:H6 | 1.66 | 0.60 |
| 34:BA:859:G:H2' | 34:BA:916:G:O6 | 2.00 | 0.60 |
| 34:BA:2152:G:H2' | 34:BA:2153:C:O4' | 2.01 | 0.60 |
| 34:BA:2294:G:C5' | 49:BS:10:ARG:HD3 | 2.31 | 0.60 |
| 41:BH:31:ARG:HH12 | 41:BH:109:LYS:HE3 | 1.66 | 0.60 |
| 41:BH:162:LYS:HE3 | 43:BL:15:SER:HB2 | 1.83 | 0.60 |
| 42:BI:14:ALA:HB3 | 42:BI:51:GLY:H | 1.66 | 0.60 |
| 49:BS:40:ILE:HG12 | 49:BS:47:VAL:HG12 | 1.83 | 0.60 |
| 1:AA:85:U:O2 | 1:AA:85:U:H2' | 2.00 | 0.60 |
| 1:AA:87:C:H2' | 1:AA:88:U:O4' | 2.01 | 0.60 |
| 1:AA:1039:G:O2' | 1:AA:1040:U:H5' | 2.01 | 0.60 |
| 1:AA:1220:G:C4 | 1:AA:1221:G:C8 | 2.89 | 0.60 |
| 4:AD:143:SER:HB3 | 4:AD:178:GLU:CB | 2.31 | 0.60 |
| 5:AE:11:GLN:HB3 | 5:AE:39:GLY:O | 2.00 | 0.60 |
| 6:AF:62:MET:HG3 | 6:AF:64:VAL:HG23 | 1.83 | 0.60 |
| 33:B8:22:VAL:HG11 | 33:B8:36:ARG:HG2 | 1.83 | 0.60 |
| 34:BA:372:G:HO2' | 34:BA:373:U:P | 2.25 | 0.60 |
| 34:BA:784:G:C6 | 36:BC:227:VAL:HG11 | 2.37 | 0.60 |
| 34:BA:900:A:C2 | 34:BA:902:C:N4 | 2.69 | 0.60 |
| 34:BA:995:C:HO2' | 34:BA:996:A:P | 2.21 | 0.60 |
| 34:BA:1211:C:H4' | 34:BA:1212:G:OP2 | 2.01 | 0.60 |
| 34:BA:1274:A:N3 | 34:BA:1297:C:H1' | 2.17 | 0.60 |
| 34:BA:2425:A:H5" | 34:BA:2426:A:H3' | 1.83 | 0.60 |
| 34:BA:2561:U:H4' | 45:BO:22:ILE:HD11 | 1.83 | 0.60 |
| 40:BG:97:VAL:HG23 | 40:BG:102:ILE:HG12 | 1.82 | 0.60 |
| 44:BN:81:ILE:CG2 | 44:BN:82:GLY:H | 2.00 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 48:BR:96:ARG:HD3 | 48:BR:98:LEU:HD21 | 1.82 | 0.60 |
| 1:AA:109:A:H4' | 1:AA:110:C:OP2 | 2.00 | 0.60 |
| 1:AA:659:U:O2' | 1:AA:660:C:H5' | 2.00 | 0.60 |
| 1:AA:829:G:C2' | 1:AA:830:G:H5' | 2.31 | 0.60 |
| 1:AA:1036:A:H4' | 1:AA:1037:C:OP1 | 2.02 | 0.60 |
| 1:AA:1477:U:H2' | 1:AA:1478:U:C6 | 2.36 | 0.60 |
| 5:AE:80:LEU:CD2 | 5:AE:122:VAL:HG11 | 2.32 | 0.60 |
| 6:AF:67:PRO:HG2 | 6:AF:70:VAL:HG22 | 1.82 | 0.60 |
| 20:AT:2:ASN:O | 20:AT:3:ILE:C | 2.39 | 0.60 |
| 26:B1:29:LEU:HD23 | 34:BA:2231:U:P | 2.41 | 0.60 |
| 34:BA:481:G:C4 | 34:BA:507:A:C2 | 2.89 | 0.60 |
| 34:BA:572:A:H5" | 34:BA:573:U:OP2 | 2.02 | 0.60 |
| 34:BA:1141:U:H4' | 34:BA:1142:A:O5' | 2.02 | 0.60 |
| 34:BA:1420:A:C4 | 34:BA:2211:A:N6 | 2.68 | 0.60 |
| 34:BA:2748:A:H4' | 40:BG:3:VAL:HG11 | 1.82 | 0.60 |
| 34:BA:2787:C:H2' | 34:BA:2788:C:C6 | 2.37 | 0.60 |
| 36:BC:209:ALA:HA | 36:BC:212:TRP:NE1 | 2.17 | 0.60 |
| 36:BC:222:THR:HA | 36:BC:232:GLY:H | 1.67 | 0.60 |
| 46:BP:29:LYS:O | 46:BP:31:GLY:N | 2.34 | 0.60 |
| 54:BX:45:ALA:O | 54:BX:48:GLN:HB2 | 2.02 | 0.60 |
| 1:AA:620:C:H1' | 4:AD:131:ILE:HG13 | 1.83 | 0.60 |
| 1:AA:992:U:C4 | 1:AA:1043:G:C8 | 2.90 | 0.60 |
| 1:AA:1113:C:H2' | 1:AA:1114:C:H6 | 1.67 | 0.60 |
| 1:AA:1464:U:P | 50:BT:108:ARG:HH12 | 2.25 | 0.60 |
| 20:AT:8:LYS:HE2 | 20:AT:12:GLN:NE2 | 2.17 | 0.60 |
| 25:B0:30:VAL:O | 25:B0:30:VAL:HG22 | 1.99 | 0.60 |
| 34:BA:866:A:C2' | 34:BA:867:C:H5' | 2.31 | 0.60 |
| 34:BA:933:A:H5' | 34:BA:934:U:OP2 | 2.02 | 0.60 |
| 34:BA:1654:A:H2' | 34:BA:1655:A:C8 | 2.35 | 0.60 |
| 34:BA:1935:G:H1' | 34:BA:1964:G:N2 | 2.17 | 0.60 |
| 34:BA:1936:A:H2 | 34:BA:1943:U:C4 | 2.20 | 0.60 |
| 34:BA:2742:G:H2' | 34:BA:2743:U:H5' | 1.82 | 0.60 |
| 37:BD:12:THR:HG23 | 37:BD:13:ARG:N | 2.16 | 0.60 |
| 41:BH:52:MET:HE1 | 41:BH:87:GLU:HG2 | 1.81 | 0.60 |
| 41:BH:73:LYS:O | 41:BH:77:VAL:HG23 | 2.01 | 0.60 |
| 44:BN:88:THR:HG23 | 44:BN:90:GLU:HG2 | 1.84 | 0.60 |
| 46:BP:112:LEU:HD23 | 46:BP:114:GLY:H | 1.65 | 0.60 |
| 48:BR:101:GLY:HA2 | 48:BR:110:MET:H | 1.65 | 0.60 |
| 50:BT:61:ARG:HG2 | 50:BT:70:GLU:CG | 2.31 | 0.60 |
| 55:BY:86:PHE:CE1 | 55:BY:101:THR:HG21 | 2.36 | 0.60 |
| 1:AA:1085:U:H1' | 1:AA:1094:G:C6 | 2.36 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1367:C:C4 | 1:AA:1368:A:N7 | 2.69 | 0.60 |
| 1:AA:1452:C:H5' | 1:AA:1453:G:C6 | 2.36 | 0.60 |
| 23:AW:300:VAL:HG12 | 23:AW:301:PHE:H | 1.66 | 0.60 |
| 23:AW:472:ARG:HH21 | 23:AW:505:ALA:HB2 | 1.66 | 0.60 |
| 34:BA:636:G:C2 | 46:BP:111:ILE:HD11 | 2.37 | 0.60 |
| 34:BA:659:G:O5' | 38:BE:95:LYS:HD3 | 2.02 | 0.60 |
| 34:BA:2203:U:H5" | 34:BA:2204:G:OP1 | 2.01 | 0.60 |
| 34:BA:2287:A:O2' | 34:BA:2288:A:O5' | 2.19 | 0.60 |
| 34:BA:2678:C:H2' | 34:BA:2679:A:O4' | 2.01 | 0.60 |
| 37:BD:184:ARG:NH1 | 50:BT:6:GLN:NE2 | 2.42 | 0.60 |
| 40:BG:59:ASP:HB3 | 40:BG:63:GLN:HG2 | 1.84 | 0.60 |
| 41:BH:30:SER:O | 41:BH:108:VAL:HG13 | 2.01 | 0.60 |
| 51:BU:8:ILE:O | 51:BU:11:ALA:HB3 | 2.01 | 0.60 |
| 1:AA:607:A:H2' | 1:AA:608:A:C8 | 2.36 | 0.60 |
| 1:AA:811:C:H4' | 1:AA:900:A:N6 | 2.17 | 0.60 |
| 4:AD:145:ARG:HD2 | 4:AD:147:LYS:HE2 | 1.83 | 0.60 |
| 5:AE:81:GLN:CD | 5:AE:149:PRO:HG3 | 2.22 | 0.60 |
| 6:AF:15:SER:O | 6:AF:18:VAL:HG23 | 2.01 | 0.60 |
| 8:AH:86:LYS:HB3 | 8:AH:91:LEU:HD23 | 1.82 | 0.60 |
| 13:AM:52:ILE:CD1 | 13:AM:55:LEU:HD12 | 2.27 | 0.60 |
| 16:AP:23:ASP:OD2 | 16:AP:25:ARG:HB2 | 2.01 | 0.60 |
| 16:AP:51:ARG:C | 16:AP:52:LEU:HD12 | 2.23 | 0.60 |
| 21:AU:36:PHE:HA | 21:AU:39:LYS:HE2 | 1.83 | 0.60 |
| 34:BA:309:A:H4' | 55:BY:15:GLY:HA2 | 1.82 | 0.60 |
| 34:BA:2867:G:C2' | 34:BA:2868:A:OP2 | 2.49 | 0.60 |
| 40:BG:24:THR:HG23 | 40:BG:34:ARG:HD2 | 1.83 | 0.60 |
| 49:BS:31:THR:HG23 | 49:BS:34:HIS:H | 1.66 | 0.60 |
| 50:BT:28:LYS:O | 50:BT:80:VAL:O | 2.19 | 0.60 |
| 51:BU:94:LEU:C | 51:BU:96:ASP:H | 2.05 | 0.60 |
| 53:BW:73:LYS:HA | 53:BW:73:LYS:HE3 | 1.83 | 0.60 |
| 1:AA:619:U:H3 | 4:AD:130:ASN:HB3 | 1.66 | 0.60 |
| 1:AA:959:A:H2' | 1:AA:960:U:H4' | 1.84 | 0.60 |
| 3:AC:161:ILE:HD13 | 3:AC:161:ILE:H | 1.66 | 0.60 |
| 7:AG:16:LYS:HD3 | 7:AG:43:TYR:CD1 | 2.36 | 0.60 |
| 10:AJ:51:VAL:O | 10:AJ:62:ARG:HA | 2.02 | 0.60 |
| 13:AM:21:ILE:O | 13:AM:24:VAL:HG22 | 2.02 | 0.60 |
| 23:AW:20:SER:H | 23:AW:26:LYS:HZ2 | 1.47 | 0.60 |
| 23:AW:23:ASP:OD2 | 23:AW:68:ILE:HD13 | 2.02 | 0.60 |
| 23:AW:53:GLN:O | 23:AW:55:ALA:N | 2.32 | 0.60 |
| 23:AW:59:TRP:CZ2 | 23:AW:69:SER:OG | 2.54 | 0.60 |
| 23:AW:63:GLU:HB2 | 23:AW:450:VAL:HG11 | 1.83 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 23:AW:427:VAL:HG12 | 23:AW:438:VAL:HG22 | 1.83 | 0.60 |
| 23:AW:518:TYR:CD1 | 23:AW:519:PRO:HA | 2.36 | 0.60 |
| 34:BA:533:G:H2' | 34:BA:534:U:C6 | 2.37 | 0.60 |
| 34:BA:1783:A:H5' | 34:BA:2608:G:H4' | 1.82 | 0.60 |
| 34:BA:2311:A:O2' | 39:BF:78:ILE:HD13 | 2.01 | 0.60 |
| 51:BU:85:ALA:O | 51:BU:88:GLU:HB2 | 2.01 | 0.60 |
| 1:AA:328:C:C2' | 1:AA:328:C:O2 | 2.50 | 0.60 |
| 1:AA:1281:C:H5' | 1:AA:1282:C:OP2 | 2.01 | 0.60 |
| 9:AI:86:LEU:O | 9:AI:86:LEU:HD23 | 2.01 | 0.60 |
| 14:AN:50:LEU:HB3 | 14:AN:51:PRO:HD2 | 1.83 | 0.60 |
| 23:AW:18:ILE:O | 23:AW:26:LYS:HE2 | 2.02 | 0.60 |
| 23:AW:35:LEU:HD11 | 23:AW:262:ASN:HD21 | 1.67 | 0.60 |
| 34:BA:232:G:H4' | 34:BA:233:A:OP1 | 2.02 | 0.60 |
| 34:BA:328:U:O3' | 55:BY:65:GLN:HG3 | 2.01 | 0.60 |
| 34:BA:504:A:C4' | 34:BA:505:A:OP2 | 2.49 | 0.60 |
| 34:BA:868:U:C4 | 34:BA:869:G:N7 | 2.70 | 0.60 |
| 34:BA:900:A:H2' | 34:BA:900:A:N3 | 2.17 | 0.60 |
| 34:BA:2490:G:H4' | 34:BA:2491:U:OP1 | 2.02 | 0.60 |
| 37:BD:113:SER:HB3 | 37:BD:170:VAL:HG11 | 1.83 | 0.60 |
| 46:BP:82:LEU:HD23 | 46:BP:83:ALA:N | 2.17 | 0.60 |
| 1:AA:658:C:H2' | 1:AA:659:U:H6 | 1.67 | 0.59 |
| 1:AA:1347:G:O2' | 1:AA:1348:U:P | 2.58 | 0.59 |
| 14:AN:47:LEU:O | 14:AN:47:LEU:HD23 | 2.02 | 0.59 |
| 23:AW:522:GLN:HB2 | 23:AW:524:HIS:H | 1.67 | 0.59 |
| 25:B0:30:VAL:HG12 | 34:BA:2353:G:H1' | 1.82 | 0.59 |
| 34:BA:815:C:OP2 | 52:BV:85:LYS:HE3 | 2.02 | 0.59 |
| 34:BA:1105:U:H2' | 34:BA:1106:G:H8 | 1.67 | 0.59 |
| 34:BA:1621:U:H5" | 34:BA:1622:G:OP1 | 2.02 | 0.59 |
| 34:BA:2377:A:O2' | 34:BA:2378:A:H5' | 2.02 | 0.59 |
| 34:BA:2469:A:N6 | 34:BA:2481:G:O2' | 2.35 | 0.59 |
| 37:BD:106:LYS:O | 37:BD:107:VAL:HB | 2.02 | 0.59 |
| 39:BF:4:HIS:HE1 | 39:BF:8:LYS:HD3 | 1.65 | 0.59 |
| 41:BH:32:GLY:HA2 | 41:BH:108:VAL:HG21 | 1.83 | 0.59 |
| 41:BH:78:GLY:N | 41:BH:79:PRO:CD | 2.65 | 0.59 |
| 52:BV:21:ARG:HD3 | 52:BV:93:PHE:CG | 2.37 | 0.59 |
| 1:AA:404:G:H4' | 1:AA:439:U:H3 | 1.66 | 0.59 |
| 1:AA:792:A:H1' | 1:AA:794:A:N7 | 2.17 | 0.59 |
| 1:AA:1491:G:C2' | 24:AY:6:5OH:HP | 2.31 | 0.59 |
| 1:AA:1504:G:H4' | 1:AA:1505:G:C4 | 2.37 | 0.59 |
| 6:AF:51:ILE:O | 6:AF:52:ASN:HB2 | 2.01 | 0.59 |
| 7:AG:112:ASP:HB2 | 7:AG:118:ARG:HG3 | 1.84 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 10:AJ:42:LEU:HD12 | 10:AJ:71:LEU:HD12 | 1.84 | 0.59 |
| 11:AK:125:LYS:O | 11:AK:126:ARG:HB2 | 2.02 | 0.59 |
| 12:AL:113:ARG:NH2 | 12:AL:120:ARG:HG2 | 2.16 | 0.59 |
| 25:B0:17:ALA:O | 25:B0:18:LYS:CB | 2.49 | 0.59 |
| 25:B0:76:ARG:HH21 | 25:B0:76:ARG:HG2 | 1.67 | 0.59 |
| 41:BH:103:ASN:CB | 41:BH:110:ALA:HB2 | 2.32 | 0.59 |
| 44:BN:38:GLY:O | 44:BN:43:GLU:HB2 | 2.02 | 0.59 |
| 45:BO:7:MET:SD | 45:BO:20:MET:HB2 | 2.41 | 0.59 |
| 47:BQ:43:ALA:HA | 47:BQ:46:ILE:HG12 | 1.84 | 0.59 |
| 47:BQ:108:VAL:HG13 | 47:BQ:112:LEU:HB3 | 1.82 | 0.59 |
| 1:AA:123:U:OP1 | 1:AA:312:C:H5' | 2.02 | 0.59 |
| 1:AA:211:G:N1 | 1:AA:212:G:H1' | 2.17 | 0.59 |
| 1:AA:703:G:H5' | 1:AA:704:A:OP1 | 2.02 | 0.59 |
| 1:AA:882:C:O2' | 1:AA:883:C:H5' | 2.02 | 0.59 |
| 2:AB:219:THR:HG23 | 2:AB:220:VAL:H | 1.66 | 0.59 |
| 11:AK:22:ILE:HG22 | 11:AK:31:VAL:HG22 | 1.84 | 0.59 |
| 21:AU:18:PHE:O | 21:AU:21:SER:HB3 | 2.01 | 0.59 |
| 23:AW:105:ALA:O | 23:AW:319:ARG:NH1 | 2.32 | 0.59 |
| 34:BA:345:A:H5" | 34:BA:346:A:OP1 | 2.03 | 0.59 |
| 34:BA:1179:G:H3' | 34:BA:1180:U:H4' | 1.84 | 0.59 |
| 34:BA:2726:A:O2' | 34:BA:2727:A:P | 2.60 | 0.59 |
| 34:BA:2748:A:H1' | 40:BG:66:THR:HG23 | 1.83 | 0.59 |
| 36:BC:250:GLN:HG2 | 36:BC:254:LYS:HE2 | 1.83 | 0.59 |
| 1:AA:835:U:OP1 | 18:AR:52:ARG:NH1 | 2.34 | 0.59 |
| 4:AD:62:ARG:NE | 4:AD:62:ARG:HA | 2.17 | 0.59 |
| 10:AJ:100:ILE:HD12 | 10:AJ:101:SER:N | 2.17 | 0.59 |
| 13:AM:21:ILE:HB | 13:AM:24:VAL:CG2 | 2.33 | 0.59 |
| 34:BA:500:G:N2 | 34:BA:502:A:H3' | 2.18 | 0.59 |
| 34:BA:1061:U:O2' | 34:BA:1070:A:C4' | 2.50 | 0.59 |
| 34:BA:1161:C:H2' | 34:BA:1162:G:H8 | 1.66 | 0.59 |
| 39:BF:39:VAL:CG1 | 39:BF:49:LEU:HD13 | 2.32 | 0.59 |
| 40:BG:8:VAL:HG12 | 40:BG:49:LEU:N | 2.15 | 0.59 |
| 45:BO:76:VAL:HB | 50:BT:72:VAL:HG22 | 1.84 | 0.59 |
| 47:BQ:28:PHE:HB3 | 47:BQ:64:TRP:CE2 | 2.38 | 0.59 |
| 1:AA:405:U:OP1 | 1:AA:406:G:O2' | 2.14 | 0.59 |
| 1:AA:959:A:H5" | 1:AA:960:U:OP2 | 2.02 | 0.59 |
| 4:AD:57:LYS:HG3 | 4:AD:58:GLN:N | 2.17 | 0.59 |
| 4:AD:172:VAL:HG22 | 4:AD:173:ASP:N | 2.18 | 0.59 |
| 5:AE:106:ALA:HB2 | 5:AE:124:ALA:HB3 | 1.85 | 0.59 |
| 23:AW:19:ILE:O | 23:AW:20:SER:HB3 | 2.03 | 0.59 |
| 25:B0:23:LYS:NZ | 34:BA:923:G:H21 | 2.01 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 33:B8:18:LYS:HG3 | 33:B8:23:ILE:HD12 | 1.84 | 0.59 |
| 34:BA:205:G:O2' | 34:BA:206:U:P | 2.60 | 0.59 |
| 34:BA:1796:U:H2' | 34:BA:1797:G:C8 | 2.37 | 0.59 |
| 34:BA:2017:U:H5" | 34:BA:2018:G:OP2 | 2.02 | 0.59 |
| 34:BA:2259:U:C6 | 34:BA:2427:C:C4 | 2.91 | 0.59 |
| 37:BD:181:ASP:HB3 | 37:BD:186:LEU:CB | 2.33 | 0.59 |
| 39:BF:24:VAL:O | 39:BF:27:VAL:HG12 | 2.03 | 0.59 |
| 47:BQ:62:LYS:C | 47:BQ:63:ILE:HD12 | 2.22 | 0.59 |
| 47:BQ:108:VAL:HG13 | 47:BQ:109:PRO:HD2 | 1.83 | 0.59 |
| 1:AA:110:C:H2' | 1:AA:111:G:O4' | 2.03 | 0.59 |
| 1:AA:1102:A:H2' | 1:AA:1103:C:C6 | 2.38 | 0.59 |
| 16:AP:52:LEU:O | 16:AP:54:LEU:HD12 | 2.02 | 0.59 |
| 34:BA:5:A:H2' | 34:BA:6:A:C8 | 2.37 | 0.59 |
| 34:BA:603:A:H4' | 34:BA:604:G:OP1 | 2.03 | 0.59 |
| 34:BA:1000:A:C6 | 34:BA:1155:A:C8 | 2.90 | 0.59 |
| 34:BA:1005:C:O2' | 44:BN:30:THR:HG21 | 2.03 | 0.59 |
| 34:BA:1248:G:OP2 | 38:BE:44:ARG:NH1 | 2.36 | 0.59 |
| 34:BA:1818:U:H5 | 36:BC:155:ARG:HH12 | 1.51 | 0.59 |
| 34:BA:2287:A:O2' | 34:BA:2288:A:H3' | 2.02 | 0.59 |
| 34:BA:2820:A:C2' | 34:BA:2821:A:OP1 | 2.51 | 0.59 |
| 41:BH:4:ASN:O | 41:BH:8:LYS:HG3 | 2.02 | 0.59 |
| 44:BN:40:HIS:CE1 | 44:BN:41:LYS:HE3 | 2.37 | 0.59 |
| 48:BR:73:ASN:HD22 | 48:BR:76:VAL:CG1 | 2.09 | 0.59 |
| 1:AA:815:A:N6 | 1:AA:1509:C:H1' | 2.16 | 0.59 |
| 1:AA:1342:C:O2' | 1:AA:1343:G:H5' | 2.02 | 0.59 |
| 1:AA:1435:G:H2' | 1:AA:1436:U:C6 | 2.38 | 0.59 |
| 3:AC:51:VAL:HG22 | 3:AC:52:SER:H | 1.68 | 0.59 |
| 6:AF:3:HIS:ND1 | 6:AF:65:GLU:HB2 | 2.17 | 0.59 |
| 12:AL:1:ALA:HB3 | 12:AL:5:GLN:OE1 | 2.03 | 0.59 |
| 12:AL:23:LEU:HG | 12:AL:24:GLU:HG3 | 1.85 | 0.59 |
| 13:AM:7:ASN:HD22 | 13:AM:8:ILE:N | 2.00 | 0.59 |
| 23:AW:22:PRO:HA | 58:AW:602:GNP:O2G | 2.02 | 0.59 |
| 27:B2:2:LYS:N | 27:B2:2:LYS:HD2 | 2.17 | 0.59 |
| 48:BR:96:ARG:HH22 | 48:BR:116:VAL:HG23 | 1.67 | 0.59 |
| 54:BX:39:THR:O | 54:BX:39:THR:CG2 | 2.50 | 0.59 |
| 56:BZ:86:LEU:HD13 | 56:BZ:89:ILE:HD11 | 1.85 | 0.59 |
| 1:AA:274:A:H4' | 17:AQ:15:LYS:HE2 | 1.84 | 0.59 |
| 4:AD:55:ARG:HA | 4:AD:55:ARG:HH11 | 1.68 | 0.59 |
| 4:AD:73:ASN:HA | 4:AD:76:LYS:HE2 | 1.85 | 0.59 |
| 5:AE:12:GLU:HB3 | 5:AE:38:VAL:HG12 | 1.84 | 0.59 |
| 9:AI:23:GLY:H | 9:AI:61:ASP:N | 1.98 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 25:B0:30:VAL:HG23 | 25:B0:60:ALA:O | 2.03 | 0.59 |
| 30:B5:49:LYS:HG2 | 30:B5:50:GLU:N | 2.18 | 0.59 |
| 33:B8:9:LYS:HG3 | 33:B8:16:ILE:HG13 | 1.84 | 0.59 |
| 35:BB:86:G:C6 | 35:BB:88:C:H1' | 2.38 | 0.59 |
| 36:BC:24:HIS:CD2 | 36:BC:79:ARG:NH2 | 2.71 | 0.59 |
| 38:BE:148:ILE:HA | 38:BE:187:VAL:HB | 1.85 | 0.59 |
| 39:BF:127:TYR:HB3 | 39:BF:155:ILE:HB | 1.85 | 0.59 |
| 41:BH:24:SER:HB3 | 41:BH:86:MET:HE1 | 1.84 | 0.59 |
| 41:BH:143:MET:O | 41:BH:148:ALA:HB3 | 2.03 | 0.59 |
| 48:BR:114:GLU:HB2 | 48:BR:118:ARG:HD3 | 1.85 | 0.59 |
| 50:BT:50:ARG:CB | 50:BT:57:ALA:N | 2.45 | 0.59 |
| 53:BW:13:SER:O | 53:BW:14:ALA:CB | 2.50 | 0.59 |
| 56:BZ:2:PHE:CE2 | 56:BZ:56:PHE:HA | 2.37 | 0.59 |
| 1:AA:82:G:C6 | 1:AA:88:U:O2 | 2.56 | 0.59 |
| 1:AA:1369:C:H2' | 1:AA:1370:G:C8 | 2.37 | 0.59 |
| 2:AB:105:THR:HA | 2:AB:108:GLN:OE1 | 2.03 | 0.59 |
| 18:AR:33:THR:HG23 | 18:AR:35:SER:N | 2.17 | 0.59 |
| 23:AW:56:LYS:H | 23:AW:57:SER:HB3 | 1.68 | 0.59 |
| 34:BA:511:U:H2' | 34:BA:512:G:H5' | 1.83 | 0.59 |
| 34:BA:912:C:C2 | 34:BA:913:U:C5 | 2.90 | 0.59 |
| 34:BA:1049:C:C2' | 34:BA:1050:A:H5' | 2.33 | 0.59 |
| 34:BA:1131:G:OP1 | 44:BN:77:HIS:HE1 | 1.86 | 0.59 |
| 34:BA:1722:A:H2' | 34:BA:1723:G:C8 | 2.37 | 0.59 |
| 39:BF:28:PRO:CB | 39:BF:168:LEU:HD22 | 2.32 | 0.59 |
| 45:BO:103:VAL:O | 45:BO:122:VAL:HB | 2.02 | 0.59 |
| 47:BQ:40:ARG:HB2 | 47:BQ:93:VAL:CG2 | 2.33 | 0.59 |
| 54:BX:64:LYS:HA | 54:BX:79:ASP:OD1 | 2.02 | 0.59 |
| 1:AA:230:G:O2' | 1:AA:231:U:H5' | 2.02 | 0.59 |
| 1:AA:594:U:H2' | 1:AA:595:A:O4' | 2.03 | 0.59 |
| 1:AA:1003:G:N2 | 1:AA:1005:A:H5' | 2.18 | 0.59 |
| 1:AA:1478:U:H2' | 1:AA:1479:C:H6 | 1.66 | 0.59 |
| 2:AB:39:ILE:HG22 | 2:AB:40:ILE:HD12 | 1.85 | 0.59 |
| 2:AB:53:LEU:HD13 | 2:AB:56:LEU:HD12 | 1.85 | 0.59 |
| 9:AI:41:GLU:C | 9:AI:43:ALA:H | 2.06 | 0.59 |
| 11:AK:30:ILE:HB | 11:AK:45:THR:CG2 | 2.33 | 0.59 |
| 17:AQ:25:GLU:OE2 | 17:AQ:38:LYS:HD3 | 2.02 | 0.59 |
| 23:AW:401:ILE:HG22 | 23:AW:461:ALA:HB1 | 1.84 | 0.59 |
| 34:BA:995:C:H1' | 51:BU:60:TRP:HZ2 | 1.68 | 0.59 |
| 34:BA:1656:C:H2' | 34:BA:1657:U:C6 | 2.38 | 0.59 |
| 34:BA:1993:U:H4' | 37:BD:133:THR:CG2 | 2.31 | 0.59 |
| 34:BA:2146:C:H4' | 34:BA:2147:A:OP1 | 2.02 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 38:BE:48:THR:HG22 | 38:BE:86:ALA:HB3 | 1.85 | 0.59 |
| 40:BG:9:VAL:O | 40:BG:11:PRO:HD3 | 2.03 | 0.59 |
| 41:BH:155:LEU:HD22 | 43:BL:22:LEU:HB3 | 1.85 | 0.59 |
| 56:BZ:80:HIS:HD2 | 56:BZ:83:LYS:HB2 | 1.63 | 0.59 |
| 1:AA:85:U:H1' | 1:AA:86:G:C2 | 2.38 | 0.58 |
| 1:AA:555:U:H2' | 1:AA:556:C:C6 | 2.37 | 0.58 |
| 1:AA:937:A:H1' | 1:AA:1379:G:H22 | 1.67 | 0.58 |
| 2:AB:205:ALA:O | 2:AB:209:VAL:HG22 | 2.02 | 0.58 |
| 4:AD:131:ILE:O | 4:AD:131:ILE:HG12 | 2.03 | 0.58 |
| 25:B0:72:GLY:N | 25:B0:73:PRO:CD | 2.66 | 0.58 |
| 34:BA:1565:C:HO2' | 34:BA:1566:A:H2' | 1.68 | 0.58 |
| 39:BF:128:SER:HA | 39:BF:154:THR:HA | 1.85 | 0.58 |
| 40:BG:6:ALA:HB1 | 40:BG:7:PRO:HD2 | 1.85 | 0.58 |
| 40:BG:10:VAL:HG11 | 40:BG:16:VAL:HG21 | 1.86 | 0.58 |
| 50:BT:91:VAL:O | 50:BT:92:ARG:C | 2.41 | 0.58 |
| 55:BY:82:VAL:HG12 | 55:BY:83:GLY:N | 2.12 | 0.58 |
| 1:AA:247:G:C6 | 1:AA:278:G:C2 | 2.92 | 0.58 |
| 1:AA:1195:C:H5" | 1:AA:1196:A:OP2 | 2.03 | 0.58 |
| 3:AC:54:ILE:H | 3:AC:54:ILE:HD13 | 1.68 | 0.58 |
| 12:AL:19:ASN:O | 12:AL:93:ARG:HD2 | 2.02 | 0.58 |
| 15:AO:70:LYS:HD2 | 15:AO:77:TYR:CE2 | 2.38 | 0.58 |
| 33:B8:14:CYS:SG | 33:B8:33:HIS:ND1 | 2.76 | 0.58 |
| 34:BA:2226:C:H2' | 34:BA:2227:A:O4' | 2.03 | 0.58 |
| 34:BA:2423:U:O2' | 34:BA:2424:C:OP2 | 2.21 | 0.58 |
| 34:BA:2425:A:H4' | 34:BA:2426:A:O5' | 2.03 | 0.58 |
| 49:BS:59:ALA:HA | 49:BS:62:LEU:HD12 | 1.86 | 0.58 |
| 1:AA:69:G:H5' | 1:AA:70:U:OP1 | 2.03 | 0.58 |
| 1:AA:437:U:H4' | 4:AD:153:ARG:NH2 | 2.19 | 0.58 |
| 1:AA:500:G:N2 | 1:AA:546:A:H1' | 2.18 | 0.58 |
| 1:AA:1129:C:C5' | 1:AA:1130:A:OP1 | 2.46 | 0.58 |
| 1:AA:1323:G:O2' | 1:AA:1362:A:C1' | 2.51 | 0.58 |
| 11:AK:69:CYS:O | 11:AK:73:VAL:HG13 | 2.03 | 0.58 |
| 14:AN:12:ARG:HG2 | 14:AN:53:ASP:HB3 | 1.84 | 0.58 |
| 24:AY:4:SER:O | 34:BA:1914:C:OP2 | 2.21 | 0.58 |
| 34:BA:398:C:H5" | 34:BA:2090:A:O4' | 2.03 | 0.58 |
| 34:BA:1666:G:H1' | 45:BO:3:GLN:OE1 | 2.03 | 0.58 |
| 41:BH:57:ASN:O | 41:BH:59:LEU:N | 2.37 | 0.58 |
| 43:BM:2:ILE:HG23 | 43:BM:3:THR:N | 2.18 | 0.58 |
| 43:BM:6:GLN:O | 43:BM:10:ALA:HB2 | 2.03 | 0.58 |
| 53:BW:75:PHE:CE1 | 53:BW:104:THR:HB | 2.38 | 0.58 |
| 1:AA:951:G:O2' | 1:AA:972:C:N4 | 2.36 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1129:C:H2' | 1:AA:1139:G:O6 | 2.04 | 0.58 |
| 1:AA:1379:G:O6 | 7:AG:1:PRO:HG2 | 2.03 | 0.58 |
| 2:AB:22:TRP:CG | 2:AB:22:TRP:O | 2.57 | 0.58 |
| 6:AF:42:TRP:HZ2 | 6:AF:61:LEU:HD22 | 1.68 | 0.58 |
| 11:AK:57:SER:O | 11:AK:90:PRO:HG3 | 2.03 | 0.58 |
| 12:AL:89:LEU:HD22 | 12:AL:89:LEU:N | 2.19 | 0.58 |
| 25:B0:36:ILE:HG22 | 25:B0:36:ILE:O | 2.03 | 0.58 |
| 28:B3:4:ILE:HG12 | 28:B3:5:LYS:N | 2.17 | 0.58 |
| 30:B5:5:ARG:HG3 | 30:B5:24:LYS:O | 2.04 | 0.58 |
| 31:B6:19:ARG:HD3 | 34:BA:125:A:OP2 | 2.03 | 0.58 |
| 32:B7:14:LYS:O | 32:B7:21:PHE:O | 2.20 | 0.58 |
| 32:B7:41:ARG:HG3 | 32:B7:44:ARG:HH22 | 1.68 | 0.58 |
| 34:BA:532:A:HO2' | 34:BA:2021:C:H5 | 1.51 | 0.58 |
| 34:BA:995:C:C2' | 34:BA:996:A:OP2 | 2.51 | 0.58 |
| 34:BA:1061:U:H5" | 42:BI:9:LYS:NZ | 2.18 | 0.58 |
| 34:BA:2106:U:H3 | 34:BA:2183:A:H61 | 1.50 | 0.58 |
| 37:BD:120:GLY:HA2 | 37:BD:162:ALA:CB | 2.33 | 0.58 |
| 38:BE:159:LEU:HD12 | 38:BE:159:LEU:N | 2.19 | 0.58 |
| 41:BH:26:VAL:HG23 | 41:BH:116:GLU:OE1 | 2.03 | 0.58 |
| 45:BO:102:PRO:HB3 | 45:BO:121:GLU:HB3 | 1.84 | 0.58 |
| 48:BR:13:ASN:O | 48:BR:15:SER:N | 2.36 | 0.58 |
| 54:BX:12:ARG:HG2 | 54:BX:35:ALA:H | 1.69 | 0.58 |
| 1:AA:98:A:H2' | 1:AA:99:C:C6 | 2.37 | 0.58 |
| 1:AA:746:A:C6 | 1:AA:747:A:N6 | 2.72 | 0.58 |
| 1:AA:1491:G:O2' | 24:AY:6:5OH:HR | 2.03 | 0.58 |
| 9:AI:6:TYR:HE2 | 9:AI:17:ARG:HB2 | 1.67 | 0.58 |
| 12:AL:30:ARG:HH12 | 23:AW:408:LYS:CG | 2.10 | 0.58 |
| 13:AM:44:ILE:HD12 | 13:AM:44:ILE:N | 2.17 | 0.58 |
| 25:B0:30:VAL:HG11 | 34:BA:2352:A:N1 | 2.18 | 0.58 |
| 26:B1:58:ILE:HD13 | 26:B1:66:VAL:HG21 | 1.86 | 0.58 |
| 34:BA:435:C:C2' | 34:BA:436:C:H5' | 2.32 | 0.58 |
| 34:BA:1107:G:H2' | 34:BA:1108:U:H6 | 1.67 | 0.58 |
| 34:BA:1181:U:H2' | 34:BA:1182:G:C8 | 2.38 | 0.58 |
| 37:BD:40:LEU:H | 37:BD:40:LEU:CD1 | 2.01 | 0.58 |
| 41:BH:23:LEU:HB2 | 41:BH:92:ALA:HB1 | 1.85 | 0.58 |
| 41:BH:28:ALA:H | 41:BH:111:ALA:HB2 | 1.68 | 0.58 |
| 43:BL:17:MET:O | 43:BL:21:GLU:HG3 | 2.03 | 0.58 |
| 51:BU:23:TYR:HB3 | 51:BU:27:ARG:HB3 | 1.84 | 0.58 |
| 56:BZ:72:VAL:HB | 56:BZ:92:VAL:O | 2.04 | 0.58 |
| 1:AA:265:G:N2 | 1:AA:267:C:H5' | 2.19 | 0.58 |
| 1:AA:977:A:C2 | 1:AA:1362:A:N6 | 2.67 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:983:A:H5' | 14:AN:2:LYS:HZ2 | 1.67 | 0.58 |
| 1:AA:1323:G:O2' | 1:AA:1362:A:H1' | 2.04 | 0.58 |
| 2:AB:53:LEU:HA | 2:AB:56:LEU:HB3 | 1.84 | 0.58 |
| 3:AC:128:MET:HB3 | 3:AC:131:ARG:HB2 | 1.84 | 0.58 |
| 6:AF:3:HIS:HB2 | 6:AF:92:THR:HG23 | 1.84 | 0.58 |
| 11:AK:28:ASN:ND2 | 11:AK:56:LYS:HD2 | 2.19 | 0.58 |
| 13:AM:85:TYR:H | 19:AS:72:GLU:HB3 | 1.68 | 0.58 |
| 25:B0:23:LYS:HE3 | 25:B0:24:ARG:O | 2.04 | 0.58 |
| 25:B0:43:LYS:CD | 25:B0:79:ILE:HD11 | 2.29 | 0.58 |
| 34:BA:319:G:H2' | 34:BA:320:A:O4' | 2.04 | 0.58 |
| 34:BA:322:A:H5' | 34:BA:340:A:H1' | 1.85 | 0.58 |
| 34:BA:388:G:N7 | 34:BA:390:U:H2' | 2.19 | 0.58 |
| 34:BA:901:C:H2' | 34:BA:902:C:O5' | 2.04 | 0.58 |
| 34:BA:1020:A:O5' | 34:BA:1020:A:H8 | 1.86 | 0.58 |
| 34:BA:1056:G:O2' | 34:BA:1086:A:H1' | 2.04 | 0.58 |
| 34:BA:1107:G:H5" | 41:BH:58:THR:OG1 | 2.04 | 0.58 |
| 34:BA:1107:G:H4' | 41:BH:81:LEU:HG | 1.85 | 0.58 |
| 34:BA:2297:A:H2' | 34:BA:2297:A:N3 | 2.18 | 0.58 |
| 36:BC:141:HIS:HD2 | 36:BC:192:GLY:O | 1.86 | 0.58 |
| 40:BG:168:VAL:HG23 | 40:BG:168:VAL:O | 2.04 | 0.58 |
| 42:BI:33:ASN:HB3 | 42:BI:36:GLU:HB2 | 1.85 | 0.58 |
| 42:BI:70:THR:C | 42:BI:71:LYS:HD3 | 2.23 | 0.58 |
| 42:BI:116:MET:HE2 | 42:BI:116:MET:HA | 1.86 | 0.58 |
| 46:BP:19:LEU:HD23 | 46:BP:19:LEU:O | 2.04 | 0.58 |
| 50:BT:79:VAL:HG23 | 50:BT:79:VAL:O | 2.02 | 0.58 |
| 52:BV:49:ILE:HG12 | 52:BV:51:VAL:O | 2.04 | 0.58 |
| 56:BZ:62:THR:HA | 56:BZ:71:LYS:HA | 1.84 | 0.58 |
| 1:AA:641:U:H4' | 8:AH:106:SER:O | 2.03 | 0.58 |
| 1:AA:713:G:H2' | 1:AA:714:G:C8 | 2.38 | 0.58 |
| 1:AA:1054:C:O2' | 1:AA:1055:A:H5" | 2.02 | 0.58 |
| 1:AA:1110:A:H8 | 1:AA:1110:A:O5' | 1.87 | 0.58 |
| 11:AK:86:LYS:HG3 | 11:AK:112:VAL:O | 2.04 | 0.58 |
| 12:AL:41:PRO:HA | 12:AL:88:ASP:O | 2.04 | 0.58 |
| 12:AL:109:ARG:CG | 12:AL:109:ARG:HH11 | 2.17 | 0.58 |
| 26:B1:30:PRO:HB2 | 26:B1:32:LEU:HD11 | 1.83 | 0.58 |
| 34:BA:1340:U:C4' | 34:BA:1341:G:OP2 | 2.40 | 0.58 |
| 34:BA:1913:A:O2' | 34:BA:1914:C:P | 2.61 | 0.58 |
| 34:BA:1913:A:H4' | 34:BA:1914:C:H5' | 1.84 | 0.58 |
| 42:BI:19:PRO:HG2 | 42:BI:23:VAL:HG22 | 1.86 | 0.58 |
| 50:BT:50:ARG:CB | 50:BT:57:ALA:O | 2.51 | 0.58 |
| 51:BU:85:ALA:O | 51:BU:86:SER:C | 2.42 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 52:BV:24:LYS:HA | 52:BV:94:THR:HG23 | 1.86 | 0.58 |
| 1:AA:1124:G:O2' | 1:AA:1125:U:C5 | 2.56 | 0.58 |
| 1:AA:1219:A:H2' | 1:AA:1220:G:C8 | 2.36 | 0.58 |
| 1:AA:1321:U:H5" | 1:AA:1322:C:OP2 | 2.04 | 0.58 |
| 1:AA:1495:U:C5 | 24:AY:1:KBE:HE | 2.34 | 0.58 |
| 4:AD:29:THR:O | 4:AD:30:LYS:HE2 | 2.02 | 0.58 |
| 19:AS:10:ILE:HG22 | 19:AS:37:SER:HB3 | 1.84 | 0.58 |
| 23:AW:314:ARG:NH2 | 23:AW:418:GLN:HA | 2.19 | 0.58 |
| 26:B1:56:ARG:NH1 | 34:BA:400:G:O6 | 2.36 | 0.58 |
| 34:BA:158:U:H2' | 34:BA:159:G:H5' | 1.85 | 0.58 |
| 34:BA:849:A:H2' | 34:BA:850:U:C6 | 2.39 | 0.58 |
| 34:BA:2800:A:H3' | 34:BA:2801:G:H5' | 1.86 | 0.58 |
| 36:BC:141:HIS:CB | 36:BC:190:THR:HB | 2.29 | 0.58 |
| 36:BC:161:VAL:CG1 | 36:BC:173:LEU:HG | 2.32 | 0.58 |
| 44:BN:55:ILE:HD11 | 44:BN:130:HIS:CG | 2.39 | 0.58 |
| 53:BW:20:VAL:CG1 | 53:BW:47:VAL:HG11 | 2.33 | 0.58 |
| 1:AA:509:A:N3 | 1:AA:543:U:O2' | 2.31 | 0.58 |
| 1:AA:1206:G:H4' | 3:AC:192:TYR:HA | 1.84 | 0.58 |
| 1:AA:1240:U:C4 | 7:AG:31:VAL:HG11 | 2.39 | 0.58 |
| 1:AA:1253:G:N2 | 1:AA:1254:A:C4 | 2.72 | 0.58 |
| 1:AA:1306:A:N6 | 1:AA:1331:G:H1' | 2.18 | 0.58 |
| 6:AF:9:MET:HA | 6:AF:58:HIS:O | 2.04 | 0.58 |
| 7:AG:74:VAL:HG11 | 7:AG:143:MET:HG3 | 1.85 | 0.58 |
| 8:AH:115:ALA:HA | 8:AH:118:ALA:HB3 | 1.86 | 0.58 |
| 10:AJ:18:ILE:HG23 | 10:AJ:72:ARG:HE | 1.69 | 0.58 |
| 14:AN:21:ALA:N | 14:AN:24:ALA:HB3 | 2.19 | 0.58 |
| 17:AQ:11:VAL:HG12 | 17:AQ:12:VAL:H | 1.69 | 0.58 |
| 17:AQ:45:VAL:HG11 | 17:AQ:60:ILE:HD12 | 1.85 | 0.58 |
| 23:AW:448:VAL:HG13 | 23:AW:452:ARG:HH21 | 1.68 | 0.58 |
| 25:B0:23:LYS:HD2 | 25:B0:24:ARG:N | 2.19 | 0.58 |
| 34:BA:277:G:H4' | 34:BA:278:A:N7 | 2.18 | 0.58 |
| 34:BA:882:G:C2 | 34:BA:883:G:C5 | 2.91 | 0.58 |
| 34:BA:1261:C:C2' | 34:BA:1262:A:O5' | 2.52 | 0.58 |
| 34:BA:1831:G:O2' | 34:BA:1832:C:H5' | 2.04 | 0.58 |
| 34:BA:2811:G:H2' | 34:BA:2812:G:O4' | 2.04 | 0.58 |
| 39:BF:175:PRO:O | 39:BF:176:PHE:HB2 | 2.04 | 0.58 |
| 40:BG:60:GLY:O | 40:BG:61:TRP:HB2 | 2.02 | 0.58 |
| 41:BH:58:THR:C | 41:BH:60:LEU:N | 2.56 | 0.58 |
| 50:BT:19:PHE:HE2 | 50:BT:83:ILE:HD12 | 1.67 | 0.58 |
| 1:AA:418:C:O5' | 1:AA:418:C:H6 | 1.87 | 0.58 |
| 1:AA:950:U:H2' | 1:AA:951:G:H8 | 1.68 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1005:A:H2' | 1:AA:1006:G:O4' | 2.04 | 0.58 |
| 2:AB:51:GLU:HG2 | 2:AB:197:PHE:HE1 | 1.69 | 0.58 |
| 3:AC:57:GLU:HG2 | 3:AC:64:ARG:HB3 | 1.86 | 0.58 |
| 4:AD:63:ILE:HG23 | 4:AD:64:TYR:CD1 | 2.38 | 0.58 |
| 5:AE:75:LEU:HD21 | 5:AE:119:VAL:HG12 | 1.86 | 0.58 |
| 5:AE:140:ILE:C | 5:AE:142:GLY:H | 2.05 | 0.58 |
| 23:AW:97:GLU:O | 23:AW:99:THR:N | 2.37 | 0.58 |
| 28:B3:28:LEU:HA | 28:B3:33:HIS:HD2 | 1.67 | 0.58 |
| 34:BA:967:U:H2' | 34:BA:968:C:C6 | 2.39 | 0.58 |
| 34:BA:2294:G:P | 49:BS:94:ARG:HH12 | 2.27 | 0.58 |
| 37:BD:97:SER:OG | 37:BD:98:VAL:N | 2.37 | 0.58 |
| 38:BE:153:LEU:HB3 | 38:BE:171:ASP:HB3 | 1.85 | 0.58 |
| 39:BF:3:LEU:HD12 | 39:BF:172:PHE:CE2 | 2.39 | 0.58 |
| 48:BR:31:HIS:O | 48:BR:33:ILE:HD12 | 2.03 | 0.58 |
| 1:AA:1015:G:O2' | 1:AA:1218:C:H4' | 2.04 | 0.57 |
| 2:AB:56:LEU:HD22 | 2:AB:59:ILE:HD11 | 1.86 | 0.57 |
| 11:AK:14:GLN:HE22 | 11:AK:77:GLY:CA | 2.16 | 0.57 |
| 12:AL:2:THR:HG22 | 12:AL:4:ASN:H | 1.69 | 0.57 |
| 12:AL:115:LYS:HB2 | 12:AL:116:TYR:CD2 | 2.39 | 0.57 |
| 16:AP:68:SER:HB2 | 16:AP:71:VAL:H | 1.69 | 0.57 |
| 34:BA:936:A:H2' | 34:BA:937:C:C6 | 2.38 | 0.57 |
| 34:BA:1165:A:H2' | 34:BA:1166:G:H8 | 1.69 | 0.57 |
| 34:BA:1799:G:OP2 | 36:BC:269:ARG:NH2 | 2.37 | 0.57 |
| 34:BA:1809:A:H2' | 34:BA:1810:A:C8 | 2.39 | 0.57 |
| 47:BQ:63:ILE:HD11 | 47:BQ:105:MET:HE2 | 1.85 | 0.57 |
| 1:AA:376:G:H2' | 1:AA:377:G:C8 | 2.37 | 0.57 |
| 1:AA:701:U:H1' | 1:AA:703:G:C2 | 2.39 | 0.57 |
| 1:AA:1494:G:O6 | 24:AY:1:KBE:HAA | 2.03 | 0.57 |
| 3:AC:83:VAL:HA | 3:AC:86:LEU:HD12 | 1.86 | 0.57 |
| 5:AE:63:MET:O | 5:AE:67:ARG:HG2 | 2.04 | 0.57 |
| 7:AG:68:VAL:HG11 | 7:AG:133:ALA:HB1 | 1.86 | 0.57 |
| 8:AH:54:THR:O | 8:AH:56:PRO:HD3 | 2.04 | 0.57 |
| 11:AK:84:MET:HE3 | 11:AK:112:VAL:HG11 | 1.86 | 0.57 |
| 26:B1:29:LEU:HD23 | 34:BA:2231:U:OP1 | 2.04 | 0.57 |
| 34:BA:1533:C:O2 | 34:BA:1533:C:H2' | 2.04 | 0.57 |
| 34:BA:2297:A:N1 | 34:BA:2321:U:H5 | 2.02 | 0.57 |
| 38:BE:149:ILE:HD12 | 38:BE:175:ILE:HB | 1.84 | 0.57 |
| 39:BF:46:LYS:H | 39:BF:46:LYS:HD2 | 1.68 | 0.57 |
| 42:BI:23:VAL:HG23 | 42:BI:24:GLY:H | 1.69 | 0.57 |
| 43:BJ:3:THR:O | 43:BJ:7:ILE:HG12 | 2.04 | 0.57 |
| 43:BJ:27:GLU:CD | 43:BJ:28:GLU:H | 2.07 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 43:BM:26:MET:SD | 43:BM:30:PHE:HB2 | 2.44 | 0.57 |
| 44:BN:98:GLU:HB3 | 44:BN:124:VAL:HG21 | 1.87 | 0.57 |
| 49:BS:11:ALA:O | 49:BS:15:ARG:HB2 | 2.05 | 0.57 |
| 50:BT:99:LEU:C | 50:BT:101:GLU:H | 2.08 | 0.57 |
| 54:BX:67:VAL:O | 54:BX:68:LYS:HD2 | 2.03 | 0.57 |
| 1:AA:598:U:H2' | 1:AA:599:C:H6 | 1.70 | 0.57 |
| 1:AA:702:A:C2' | 1:AA:703:G:OP1 | 2.51 | 0.57 |
| 1:AA:1370:G:P | 9:AI:110:VAL:HG21 | 2.44 | 0.57 |
| 1:AA:1458:G:H4' | 20:AT:22:SER:HB2 | 1.86 | 0.57 |
| 2:AB:143:LEU:HA | 2:AB:146:SER:OG | 2.04 | 0.57 |
| 7:AG:110:ARG:HG2 | 7:AG:112:ASP:OD2 | 2.05 | 0.57 |
| 12:AL:86:VAL:HG22 | 12:AL:95:HIS:CE1 | 2.39 | 0.57 |
| 19:AS:52:ASN:HB2 | 19:AS:76:THR:HG22 | 1.86 | 0.57 |
| 23:AW:68:ILE:HG23 | 23:AW:68:ILE:O | 2.03 | 0.57 |
| 28:B3:26:LEU:HD21 | 28:B3:47:ILE:HD13 | 1.86 | 0.57 |
| 34:BA:642:U:H2' | 34:BA:644:A:OP2 | 2.05 | 0.57 |
| 34:BA:782:A:C8 | 36:BC:219:VAL:HG21 | 2.39 | 0.57 |
| 34:BA:1338:G:H4' | 54:BX:18:GLU:HB2 | 1.84 | 0.57 |
| 34:BA:1652:A:OP1 | 48:BR:8:ARG:HD3 | 2.04 | 0.57 |
| 35:BB:87:U:C4' | 35:BB:88:C:OP2 | 2.51 | 0.57 |
| 37:BD:5:VAL:HG21 | 37:BD:80:TRP:CE3 | 2.39 | 0.57 |
| 41:BH:23:LEU:HD21 | 41:BH:96:PHE:CD2 | 2.38 | 0.57 |
| 44:BN:111:LYS:HD3 | 44:BN:112:GLY:N | 2.07 | 0.57 |
| 45:BO:36:GLY:HA2 | 45:BO:62:VAL:O | 2.04 | 0.57 |
| 45:BO:70:ARG:HG2 | 45:BO:76:VAL:HG22 | 1.85 | 0.57 |
| 46:BP:90:VAL:O | 46:BP:90:VAL:HG12 | 2.03 | 0.57 |
| 48:BR:65:LEU:HD11 | 48:BR:69:ARG:CZ | 2.34 | 0.57 |
| 1:AA:345:C:H1' | 1:AA:346:G:C2 | 2.38 | 0.57 |
| 1:AA:585:G:O3' | 17:AQ:35:LYS:NZ | 2.34 | 0.57 |
| 1:AA:1069:C:H4' | 1:AA:1192:C:O2 | 2.03 | 0.57 |
| 2:AB:103:TRP:CD1 | 2:AB:150:ILE:HD11 | 2.39 | 0.57 |
| 2:AB:108:GLN:NE2 | 2:AB:108:GLN:H | 2.02 | 0.57 |
| 5:AE:79:THR:OG1 | 5:AE:80:LEU:N | 2.37 | 0.57 |
| 7:AG:14:ASP:HB3 | 7:AG:19:SER:H | 1.68 | 0.57 |
| 9:AI:117:LEU:CD2 | 9:AI:123:ARG:HA | 2.34 | 0.57 |
| 11:AK:26:PHE:CE1 | 11:AK:88:PRO:HG2 | 2.40 | 0.57 |
| 12:AL:33:CYS:HB2 | 12:AL:54:VAL:HG22 | 1.86 | 0.57 |
| 12:AL:49:ARG:HG2 | 12:AL:49:ARG:HH11 | 1.70 | 0.57 |
| 23:AW:399:ARG:HG3 | 23:AW:438:VAL:O | 2.05 | 0.57 |
| 34:BA:136:G:C6 | 34:BA:142:A:N6 | 2.71 | 0.57 |
| 34:BA:480:A:OP2 | 55:BY:43:LYS:HD2 | 2.04 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:528:A:C2 | 34:BA:2042:A:H2' | 2.39 | 0.57 |
| 34:BA:1316:U:H2' | 34:BA:1317:G:C8 | 2.39 | 0.57 |
| 34:BA:2040:G:H2' | 34:BA:2041:U:H6 | 1.67 | 0.57 |
| 34:BA:2756:U:H1' | 34:BA:2757:A:H5" | 1.86 | 0.57 |
| 38:BE:147:LEU:O | 38:BE:168:ASP:O | 2.20 | 0.57 |
| 51:BU:91:ARG:HH11 | 52:BV:11:GLN:H | 1.50 | 0.57 |
| 54:BX:12:ARG:HH11 | 54:BX:12:ARG:CG | 2.12 | 0.57 |
| 1:AA:8:A:H5' | 5:AE:124:ALA:O | 2.04 | 0.57 |
| 1:AA:1190:G:H5' | 3:AC:175:HIS:NE2 | 2.20 | 0.57 |
| 1:AA:1239:A:H1' | 1:AA:1241:G:C4 | 2.39 | 0.57 |
| 1:AA:1366:C:O2' | 10:AJ:62:ARG:NH2 | 2.36 | 0.57 |
| 2:AB:15:PHE:O | 2:AB:40:ILE:HG13 | 2.04 | 0.57 |
| 3:AC:185:THR:HG22 | 3:AC:186:SER:N | 2.19 | 0.57 |
| 14:AN:58:ARG:HG2 | 14:AN:58:ARG:NH1 | 2.19 | 0.57 |
| 19:AS:14:LEU:HD13 | 19:AS:32:THR:HG21 | 1.85 | 0.57 |
| 20:AT:26:MET:HG3 | 20:AT:27:MET:N | 2.18 | 0.57 |
| 34:BA:878:A:N1 | 34:BA:900:A:H1' | 2.18 | 0.57 |
| 34:BA:1140:C:OP1 | 44:BN:25:LEU:O | 2.22 | 0.57 |
| 34:BA:1458:U:H5' | 34:BA:1459:G:N3 | 2.20 | 0.57 |
| 36:BC:216:ARG:HH11 | 36:BC:216:ARG:HG3 | 1.69 | 0.57 |
| 38:BE:188:MET:SD | 38:BE:193:VAL:HG22 | 2.44 | 0.57 |
| 44:BN:42:ALA:O | 44:BN:45:THR:HG22 | 2.03 | 0.57 |
| 50:BT:59:THR:OG1 | 50:BT:72:VAL:HG12 | 2.05 | 0.57 |
| 55:BY:71:ILE:HD13 | 55:BY:82:VAL:HG22 | 1.87 | 0.57 |
| 1:AA:633:G:H2' | 1:AA:634:C:H6 | 1.70 | 0.57 |
| 1:AA:1003:G:O6 | 1:AA:1036:A:N7 | 2.37 | 0.57 |
| 1:AA:1180:A:H5" | 1:AA:1181:G:OP2 | 2.04 | 0.57 |
| 2:AB:26:MET:HG2 | 2:AB:188:THR:HA | 1.87 | 0.57 |
| 2:AB:65:LYS:HG2 | 2:AB:89:PHE:HE1 | 1.68 | 0.57 |
| 3:AC:110:LEU:HD21 | 3:AC:143:LEU:HD23 | 1.87 | 0.57 |
| 8:AH:84:ILE:CG2 | 8:AH:124:ILE:HD11 | 2.34 | 0.57 |
| 12:AL:109:ARG:HH11 | 12:AL:109:ARG:HG2 | 1.69 | 0.57 |
| 16:AP:20:VAL:HG21 | 16:AP:32:PHE:CG | 2.39 | 0.57 |
| 18:AR:44:THR:OG1 | 18:AR:46:THR:HG22 | 2.04 | 0.57 |
| 27:B2:39:GLN:HG3 | 27:B2:42:LEU:HD22 | 1.87 | 0.57 |
| 34:BA:870:U:C2' | 34:BA:871:U:H5' | 2.34 | 0.57 |
| 34:BA:996:A:O3' | 51:BU:91:ARG:HG2 | 2.05 | 0.57 |
| 34:BA:1056:G:H5' | 41:BH:34:THR:CG2 | 2.34 | 0.57 |
| 34:BA:1522:A:H1' | 34:BA:1524:G:C5 | 2.40 | 0.57 |
| 36:BC:255:LYS:C | 36:BC:257:ARG:H | 2.08 | 0.57 |
| 37:BD:107:VAL:HG13 | 37:BD:203:VAL:CG2 | 2.35 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 44:BN:54:ILE:CD1 | 44:BN:122:LEU:HD13 | 2.33 | 0.57 |
| 47:BQ:36:VAL:HB | 47:BQ:127:LYS:O | 2.04 | 0.57 |
| 48:BR:55:ALA:HB1 | 48:BR:80:PHE:N | 2.19 | 0.57 |
| 53:BW:63:GLY:O | 53:BW:64:ALA:HB3 | 2.04 | 0.57 |
| 55:BY:5:ARG:O | 55:BY:6:ARG:O | 2.22 | 0.57 |
| 1:AA:939:G:C6 | 1:AA:940:C:C4 | 2.93 | 0.57 |
| 1:AA:962:C:C1' | 1:AA:1201:A:N6 | 2.66 | 0.57 |
| 1:AA:963:G:H2' | 1:AA:964:A:C8 | 2.39 | 0.57 |
| 1:AA:1203:C:H6 | 1:AA:1203:C:O5' | 1.87 | 0.57 |
| 1:AA:1239:A:H1' | 1:AA:1241:G:C5 | 2.39 | 0.57 |
| 1:AA:1512:U:H2' | 1:AA:1513:A:C8 | 2.40 | 0.57 |
| 6:AF:61:LEU:HG | 6:AF:62:MET:H | 1.69 | 0.57 |
| 16:AP:71:VAL:O | 16:AP:75:ILE:HG13 | 2.04 | 0.57 |
| 34:BA:142:A:H2' | 34:BA:143:C:C6 | 2.39 | 0.57 |
| 34:BA:686:U:H2' | 34:BA:788:A:C2 | 2.40 | 0.57 |
| 34:BA:1535:A:H4' | 34:BA:1536:C:OP2 | 2.04 | 0.57 |
| 34:BA:2287:A:O2' | 34:BA:2288:A:H2' | 2.04 | 0.57 |
| 38:BE:18:THR:HB | 38:BE:106:LYS:HG2 | 1.87 | 0.57 |
| 38:BE:47:LYS:HA | 38:BE:51:GLU:OE2 | 2.05 | 0.57 |
| 41:BH:116:GLU:HG2 | 41:BH:117:LEU:H | 1.69 | 0.57 |
| 45:BO:107:LEU:C | 45:BO:109:SER:H | 2.08 | 0.57 |
| 48:BR:25:ALA:O | 48:BR:29:VAL:HG23 | 2.05 | 0.57 |
| 50:BT:50:ARG:HB3 | 50:BT:57:ALA:O | 2.05 | 0.57 |
| 54:BX:43:ILE:O | 54:BX:47:VAL:HG23 | 2.03 | 0.57 |
| 56:BZ:80:HIS:CD2 | 56:BZ:83:LYS:H | 2.23 | 0.57 |
| 1:AA:752:G:H1' | 1:AA:754:C:N4 | 2.20 | 0.57 |
| 1:AA:965:U:H4' | 1:AA:966:G:C5' | 2.35 | 0.57 |
| 1:AA:1347:G:H22 | 1:AA:1373:G:H2' | 1.67 | 0.57 |
| 2:AB:41:ASN:HD22 | 2:AB:42:LEU:N | 2.03 | 0.57 |
| 2:AB:183:PHE:CZ | 2:AB:197:PHE:CE2 | 2.92 | 0.57 |
| 3:AC:148:ILE:CG1 | 3:AC:201:ILE:HG12 | 2.35 | 0.57 |
| 5:AE:154:ALA:HB3 | 5:AE:155:LYS:HE3 | 1.86 | 0.57 |
| 30:B5:33:LEU:N | 30:B5:51:ALA:HB3 | 2.07 | 0.57 |
| 34:BA:1022:G:O6 | 44:BN:68:LYS:HE2 | 2.05 | 0.57 |
| 34:BA:1930:G:C2' | 34:BA:1931:U:OP2 | 2.53 | 0.57 |
| 42:BI:126:ARG:HA | 42:BI:129:GLU:CD | 2.25 | 0.57 |
| 44:BN:45:THR:H | 44:BN:46:PRO:HD3 | 1.69 | 0.57 |
| 46:BP:27:LEU:HD12 | 46:BP:27:LEU:N | 2.19 | 0.57 |
| 49:BS:74:VAL:O | 49:BS:78:VAL:HG22 | 2.04 | 0.57 |
| 51:BU:49:ARG:HH11 | 51:BU:49:ARG:HG3 | 1.69 | 0.57 |
| 51:BU:63:ARG:HD2 | 51:BU:63:ARG:C | 2.24 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 55:BY:6:ARG:O | 55:BY:24:VAL:HB | 2.04 | 0.57 |
| 1:AA:155:A:H2' | 1:AA:156:C:O4' | 2.05 | 0.57 |
| 1:AA:641:U:O2' | 1:AA:642:A:C8 | 2.57 | 0.57 |
| 1:AA:801:U:H2' | 1:AA:802:A:C8 | 2.39 | 0.57 |
| 2:AB:44:LYS:O | 2:AB:48:MET:HB2 | 2.04 | 0.57 |
| 2:AB:185:ILE:HA | 2:AB:199:ILE:HB | 1.86 | 0.57 |
| 9:AI:49:GLN:N | 9:AI:50:PRO:HD2 | 2.19 | 0.57 |
| 12:AL:49:ARG:HH11 | 12:AL:89:LEU:HD21 | 1.70 | 0.57 |
| 32:B7:33:THR:HB | 34:BA:2420:C:OP1 | 2.05 | 0.57 |
| 32:B7:63:TYR:CE2 | 34:BA:242:G:H5" | 2.40 | 0.57 |
| 34:BA:563:A:OP2 | 52:BV:79:ARG:NH2 | 2.35 | 0.57 |
| 34:BA:883:G:C2 | 34:BA:884:U:C2 | 2.92 | 0.57 |
| 34:BA:1212:G:O2' | 34:BA:1213:A:OP2 | 2.14 | 0.57 |
| 34:BA:1257:C:H5' | 38:BE:78:TRP:CH2 | 2.40 | 0.57 |
| 34:BA:1535:A:N3 | 34:BA:1535:A:H2' | 2.20 | 0.57 |
| 35:BB:5:U:H2' | 35:BB:6:G:H8 | 1.68 | 0.57 |
| 35:BB:65:U:H3' | 35:BB:108:A:H61 | 1.68 | 0.57 |
| 45:BO:51:LYS:HD2 | 45:BO:51:LYS:O | 2.05 | 0.57 |
| 48:BR:55:ALA:HB2 | 48:BR:79:LEU:HB3 | 1.86 | 0.57 |
| 52:BV:38:VAL:O | 52:BV:53:PHE:HA | 2.05 | 0.57 |
| 1:AA:688:G:H2' | 1:AA:689:C:O4' | 2.05 | 0.57 |
| 6:AF:51:ILE:HD12 | 6:AF:85:ILE:HD12 | 1.86 | 0.57 |
| 8:AH:46:GLU:HA | 8:AH:63:LYS:HD2 | 1.86 | 0.57 |
| 11:AK:28:ASN:OD1 | 11:AK:46:ALA:HB3 | 2.05 | 0.57 |
| 20:AT:34:VAL:O | 20:AT:38:ILE:HG12 | 2.05 | 0.57 |
| 34:BA:172:A:H2' | 34:BA:173:A:C8 | 2.40 | 0.57 |
| 34:BA:492:A:H2' | 34:BA:493:G:O4' | 2.05 | 0.57 |
| 34:BA:1343:G:N3 | 34:BA:1343:G:H2' | 2.20 | 0.57 |
| 34:BA:2281:A:C2' | 34:BA:2282:G:H5' | 2.33 | 0.57 |
| 37:BD:61:THR:OG1 | 37:BD:63:PRO:HD2 | 2.05 | 0.57 |
| 38:BE:108:ILE:HG13 | 38:BE:181:ILE:HG12 | 1.86 | 0.57 |
| 41:BH:32:GLY:HA3 | 41:BH:56:ARG:NH2 | 2.20 | 0.57 |
| 1:AA:960:U:O4 | 1:AA:1225:A:C4 | 2.58 | 0.56 |
| 1:AA:1233:G:C6 | 1:AA:1234:C:N4 | 2.73 | 0.56 |
| 4:AD:145:ARG:O | 4:AD:149:LYS:HG3 | 2.05 | 0.56 |
| 19:AS:33:TRP:NE1 | 19:AS:51:HIS:ND1 | 2.52 | 0.56 |
| 34:BA:358:U:H2' | 34:BA:359:G:O4' | 2.05 | 0.56 |
| 34:BA:1509:A:O2' | 34:BA:1510:G:C5' | 2.53 | 0.56 |
| 34:BA:2758:A:H2' | 34:BA:2759:G:H5' | 1.87 | 0.56 |
| 36:BC:118:GLY:O | 36:BC:129:LEU:HD23 | 2.04 | 0.56 |
| 44:BN:24:THR:HA | 44:BN:63:ALA:HB3 | 1.87 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 52:BV:61:ALA:HB1 | 52:BV:98:ILE:H | 1.70 | 0.56 |
| 1:AA:484:G:N7 | 1:AA:486:U:H1' | 2.20 | 0.56 |
| 1:AA:736:C:H2' | 1:AA:737:C:C6 | 2.39 | 0.56 |
| 1:AA:1206:G:H2' | 1:AA:1207:G:O4' | 2.05 | 0.56 |
| 4:AD:199:ILE:HD13 | 4:AD:199:ILE:C | 2.26 | 0.56 |
| 6:AF:45:ARG:HB3 | 6:AF:59:TYR:CE1 | 2.40 | 0.56 |
| 7:AG:22:LEU:O | 7:AG:26:VAL:HG13 | 2.04 | 0.56 |
| 12:AL:101:LEU:HG | 23:AW:409:GLN:HE22 | 1.69 | 0.56 |
| 13:AM:28:ARG:NH1 | 13:AM:28:ARG:HB3 | 2.20 | 0.56 |
| 23:AW:147:ASP:OD2 | 40:BG:91:VAL:HG13 | 2.05 | 0.56 |
| 30:B5:8:ILE:HG23 | 30:B5:51:ALA:HA | 1.87 | 0.56 |
| 33:B8:11:CYS:SG | 33:B8:33:HIS:ND1 | 2.76 | 0.56 |
| 34:BA:170:U:O2' | 34:BA:171:U:H5' | 2.04 | 0.56 |
| 34:BA:459:U:C2' | 34:BA:460:A:H5' | 2.36 | 0.56 |
| 34:BA:1154:G:OP2 | 51:BU:57:ARG:NH1 | 2.38 | 0.56 |
| 34:BA:2275:C:O2 | 47:BQ:84:LYS:HD2 | 2.05 | 0.56 |
| 34:BA:2839:G:H2' | 34:BA:2840:C:C6 | 2.40 | 0.56 |
| 36:BC:140:VAL:CG1 | 36:BC:189:ALA:HB1 | 2.34 | 0.56 |
| 41:BH:157:ALA:O | 41:BH:161:ALA:N | 2.38 | 0.56 |
| 44:BN:44:TYR:CD2 | 51:BU:63:ARG:HG2 | 2.39 | 0.56 |
| 48:BR:106:ASP:O | 48:BR:107:ASN:HB3 | 2.05 | 0.56 |
| 1:AA:237:G:OP1 | 17:AQ:41:THR:HG23 | 2.05 | 0.56 |
| 1:AA:328:C:O2 | 1:AA:328:C:H2' | 2.05 | 0.56 |
| 1:AA:427:U:OP1 | 4:AD:12:ARG:NH2 | 2.38 | 0.56 |
| 1:AA:686:U:C1' | 11:AK:43:TRP:HE1 | 2.16 | 0.56 |
| 1:AA:965:U:H4' | 1:AA:966:G:H5" | 1.86 | 0.56 |
| 1:AA:1125:U:N3 | 1:AA:1127:G:C8 | 2.73 | 0.56 |
| 1:AA:1300:G:O2' | 1:AA:1301:U:P | 2.62 | 0.56 |
| 5:AE:63:MET:O | 5:AE:66:ALA:HB3 | 2.05 | 0.56 |
| 16:AP:48:GLU:HG3 | 16:AP:49:GLY:H | 1.70 | 0.56 |
| 20:AT:50:PHE:O | 20:AT:53:MET:HG3 | 2.05 | 0.56 |
| 23:AW:71:THR:HG22 | 23:AW:72:THR:H | 1.70 | 0.56 |
| 23:AW:145:ASP:OD2 | 58:AW:602:GNP:N1 | 2.37 | 0.56 |
| 23:AW:394:ALA:HB2 | 23:AW:525:GLN:HG2 | 1.86 | 0.56 |
| 34:BA:27:G:O2' | 34:BA:28:A:O5' | 2.22 | 0.56 |
| 34:BA:1261:C:H2' | 34:BA:1262:A:O5' | 2.06 | 0.56 |
| 34:BA:1717:A:N6 | 34:BA:1743:G:H1' | 2.21 | 0.56 |
| 34:BA:2557:G:H2' | 34:BA:2558:C:C6 | 2.40 | 0.56 |
| 34:BA:2564:A:OP1 | 34:BA:2648:G:H4' | 2.04 | 0.56 |
| 34:BA:2636:C:H2' | 34:BA:2637:U:C6 | 2.40 | 0.56 |
| 36:BC:119:VAL:HB | 36:BC:133:ASN:HD21 | 1.69 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 36:BC:121:ALA:HB3 | 36:BC:129:LEU:HD21 | 1.87 | 0.56 |
| 36:BC:154:ALA:HB2 | 36:BC:161:VAL:HG23 | 1.88 | 0.56 |
| 37:BD:118:PHE:CD2 | 37:BD:119:ALA:N | 2.65 | 0.56 |
| 40:BG:83:THR:HA | 40:BG:84:LYS:CE | 2.35 | 0.56 |
| 40:BG:163:TYR:O | 40:BG:164:ALA:HB2 | 2.04 | 0.56 |
| 41:BH:31:ARG:HH22 | 41:BH:109:LYS:HE3 | 1.69 | 0.56 |
| 44:BN:2:LYS:H | 44:BN:2:LYS:CD | 2.18 | 0.56 |
| 47:BQ:40:ARG:HB2 | 47:BQ:93:VAL:HG21 | 1.87 | 0.56 |
| 53:BW:73:LYS:HA | 53:BW:73:LYS:CE | 2.34 | 0.56 |
| 1:AA:518:C:H2' | 1:AA:530:G:H8 | 1.68 | 0.56 |
| 1:AA:1058:G:H2' | 1:AA:1059:C:O4' | 2.06 | 0.56 |
| 1:AA:1359:C:H5 | 14:AN:74:ARG:HH12 | 1.53 | 0.56 |
| 2:AB:170:ILE:O | 2:AB:174:GLU:HB2 | 2.05 | 0.56 |
| 6:AF:70:VAL:HG23 | 6:AF:71:ILE:N | 2.20 | 0.56 |
| 14:AN:51:PRO:O | 14:AN:52:ARG:HB2 | 2.06 | 0.56 |
| 24:AY:6:5OH:N | 24:AY:6:5OH:HS | 2.19 | 0.56 |
| 26:B1:76:LYS:HG3 | 26:B1:77:TYR:H | 1.70 | 0.56 |
| 34:BA:1266:G:C2' | 34:BA:1267:U:OP2 | 2.53 | 0.56 |
| 34:BA:1279:G:H2' | 34:BA:1280:G:H5' | 1.88 | 0.56 |
| 37:BD:191:GLY:O | 37:BD:192:ALA:CB | 2.53 | 0.56 |
| 38:BE:27:LEU:O | 38:BE:31:VAL:HG23 | 2.05 | 0.56 |
| 40:BG:94:ARG:HG3 | 40:BG:127:GLN:HB3 | 1.86 | 0.56 |
| 41:BH:51:TYR:HB2 | 41:BH:89:PRO:CD | 2.32 | 0.56 |
| 41:BH:139:LEU:HD13 | 43:BJ:26:MET:SD | 2.45 | 0.56 |
| 44:BN:31:GLU:HG3 | 44:BN:142:ILE:HG21 | 1.88 | 0.56 |
| 49:BS:16:ARG:NH2 | 49:BS:19:GLN:HE22 | 2.03 | 0.56 |
| 50:BT:19:PHE:CE2 | 50:BT:83:ILE:CD1 | 2.89 | 0.56 |
| 51:BU:4:LYS:HG3 | 51:BU:5:ARG:H | 1.69 | 0.56 |
| 1:AA:169:C:O2' | 1:AA:170:U:H5' | 2.06 | 0.56 |
| 9:AI:26:LYS:HG3 | 9:AI:61:ASP:OD1 | 2.06 | 0.56 |
| 9:AI:93:LEU:HD12 | 9:AI:94:ARG:N | 2.20 | 0.56 |
| 13:AM:32:ILE:HG23 | 13:AM:58:GLU:CG | 2.36 | 0.56 |
| 18:AR:40:PRO:HB2 | 18:AR:42:ARG:HG2 | 1.87 | 0.56 |
| 23:AW:108:CYS:HA | 23:AW:135:THR:HG23 | 1.88 | 0.56 |
| 34:BA:287:G:H2' | 34:BA:288:U:C6 | 2.41 | 0.56 |
| 34:BA:361:G:O2' | 34:BA:362:A:H5' | 2.06 | 0.56 |
| 34:BA:372:G:C2' | 34:BA:373:U:OP2 | 2.53 | 0.56 |
| 34:BA:495:G:H21 | 53:BW:61:ASN:HD21 | 1.53 | 0.56 |
| 34:BA:1799:G:N2 | 36:BC:153:LEU:HD23 | 2.21 | 0.56 |
| 38:BE:175:ILE:O | 38:BE:175:ILE:HG23 | 2.05 | 0.56 |
| 41:BH:151:LEU:CD2 | 41:BH:155:LEU:HD12 | 2.34 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 43:BJ:7:ILE:HG22 | 43:BJ:8:ILE:HD13 | 1.87 | 0.56 |
| 48:BR:33:ILE:HG23 | 48:BR:114:GLU:HB3 | 1.88 | 0.56 |
| 55:BY:80:ASP:HB3 | 55:BY:95:PHE:CD2 | 2.39 | 0.56 |
| 1:AA:1054:C:OP2 | 1:AA:1197:A:OP2 | 2.24 | 0.56 |
| 1:AA:1214:C:H5" | 1:AA:1215:G:OP2 | 2.05 | 0.56 |
| 3:AC:83:VAL:CG1 | 3:AC:100:ILE:HG21 | 2.35 | 0.56 |
| 4:AD:2:ARG:CZ | 4:AD:114:ARG:HD2 | 2.36 | 0.56 |
| 4:AD:23:GLY:O | 4:AD:160:LEU:HG | 2.05 | 0.56 |
| 6:AF:47:LEU:HD23 | 6:AF:59:TYR:OH | 2.06 | 0.56 |
| 9:AI:24:ASN:C | 9:AI:26:LYS:H | 2.09 | 0.56 |
| 9:AI:78:ILE:O | 9:AI:82:ILE:HG13 | 2.06 | 0.56 |
| 12:AL:23:LEU:C | 12:AL:25:ALA:N | 2.59 | 0.56 |
| 34:BA:161:A:O5' | 34:BA:162:U:H5' | 2.06 | 0.56 |
| 34:BA:345:A:O2' | 34:BA:346:A:N7 | 2.36 | 0.56 |
| 34:BA:2591:C:OP1 | 36:BC:237:ARG:HG3 | 2.05 | 0.56 |
| 35:BB:86:G:N1 | 35:BB:88:C:H1' | 2.20 | 0.56 |
| 36:BC:52:HIS:HA | 36:BC:216:ARG:HB2 | 1.87 | 0.56 |
| 36:BC:67:LYS:O | 36:BC:68:ARG:HB2 | 2.04 | 0.56 |
| 39:BF:28:PRO:HB2 | 39:BF:168:LEU:HD22 | 1.86 | 0.56 |
| 51:BU:42:GLY:HA3 | 52:BV:75:VAL:HG21 | 1.87 | 0.56 |
| 52:BV:66:HIS:CD2 | 52:BV:94:THR:HG22 | 2.40 | 0.56 |
| 1:AA:1327:C:H2' | 1:AA:1328:C:H6 | 1.69 | 0.56 |
| 5:AE:149:PRO:HG2 | 5:AE:150:GLU:H | 1.71 | 0.56 |
| 11:AK:22:ILE:HD11 | 11:AK:85:VAL:HG22 | 1.86 | 0.56 |
| 17:AQ:8:GLN:O | 17:AQ:24:ILE:HG23 | 2.05 | 0.56 |
| 23:AW:47:LYS:HE2 | 23:AW:66:ARG:O | 2.06 | 0.56 |
| 34:BA:323:C:H6 | 34:BA:1205:A:N1 | 2.03 | 0.56 |
| 34:BA:519:U:O2' | 53:BW:73:LYS:HE2 | 2.06 | 0.56 |
| 34:BA:878:A:N6 | 34:BA:900:A:H1' | 2.20 | 0.56 |
| 34:BA:995:C:C6 | 34:BA:995:C:C5' | 2.88 | 0.56 |
| 34:BA:1737:G:C6 | 34:BA:1738:G:N2 | 2.74 | 0.56 |
| 34:BA:2287:A:HO2' | 34:BA:2288:A:P | 2.28 | 0.56 |
| 34:BA:2468:A:HO2' | 34:BA:2469:A:H8 | 1.53 | 0.56 |
| 37:BD:3:GLY:O | 37:BD:4:LEU:HD12 | 2.06 | 0.56 |
| 41:BH:76:PHE:O | 41:BH:79:PRO:HD3 | 2.06 | 0.56 |
| 41:BH:81:LEU:O | 41:BH:82:ILE:HD13 | 2.06 | 0.56 |
| 41:BH:93:ALA:CA | 41:BH:129:LEU:HB3 | 2.36 | 0.56 |
| 46:BP:51:GLU:OE1 | 46:BP:56:PRO:HA | 2.06 | 0.56 |
| 55:BY:73:ASN:ND2 | 55:BY:76:THR:H | 1.99 | 0.56 |
| 1:AA:49:U:H5 | 1:AA:365:U:O4 | 1.89 | 0.56 |
| 1:AA:198:G:H2' | 1:AA:199:A:H8 | 1.70 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:538:G:OP1 | 12:AL:109:ARG:HD3 | 2.06 | 0.56 |
| 1:AA:738:C:C2 | 1:AA:739:C:C5 | 2.93 | 0.56 |
| 1:AA:875:U:O2' | 8:AH:14:ARG:NH1 | 2.39 | 0.56 |
| 1:AA:1124:G:O2' | 1:AA:1125:U:C6 | 2.59 | 0.56 |
| 1:AA:1159:U:N3 | 1:AA:1182:G:C4 | 2.72 | 0.56 |
| 1:AA:1495:U:C5 | 24:AY:1:KBE:CE | 2.89 | 0.56 |
| 2:AB:98:GLY:HA2 | 2:AB:101:THR:CG2 | 2.36 | 0.56 |
| 3:AC:124:GLU:C | 3:AC:126:ARG:H | 2.09 | 0.56 |
| 3:AC:194:VAL:C | 3:AC:195:ILE:HD12 | 2.26 | 0.56 |
| 4:AD:124:VAL:C | 4:AD:126:GLY:H | 2.09 | 0.56 |
| 12:AL:17:LYS:O | 12:AL:17:LYS:HD2 | 2.05 | 0.56 |
| 23:AW:453:LEU:HD13 | 23:AW:458:ASN:HA | 1.86 | 0.56 |
| 34:BA:127:A:H5" | 34:BA:128:C:O4' | 2.05 | 0.56 |
| 34:BA:1914:C:O2 | 34:BA:1914:C:H2' | 2.04 | 0.56 |
| 34:BA:2379:G:H4' | 49:BS:21:LEU:HD11 | 1.87 | 0.56 |
| 34:BA:2591:C:P | 36:BC:237:ARG:HG3 | 2.45 | 0.56 |
| 38:BE:121:VAL:O | 38:BE:189:THR:HA | 2.04 | 0.56 |
| 45:BO:71:ARG:HB2 | 45:BO:72:PRO:CD | 2.35 | 0.56 |
| 48:BR:24:MET:HG2 | 48:BR:44:LEU:CD2 | 2.36 | 0.56 |
| 49:BS:100:HIS:O | 49:BS:104:GLN:HB3 | 2.05 | 0.56 |
| 51:BU:34:ALA:O | 51:BU:38:VAL:HG23 | 2.05 | 0.56 |
| 54:BX:4:GLU:OE1 | 54:BX:6:ARG:HG3 | 2.06 | 0.56 |
| 1:AA:751:U:H2' | 1:AA:752:G:O4' | 2.06 | 0.56 |
| 1:AA:1006:G:H2' | 1:AA:1007:U:C6 | 2.40 | 0.56 |
| 1:AA:1100:C:OP2 | 2:AB:94:ARG:HG2 | 2.06 | 0.56 |
| 3:AC:20:THR:O | 3:AC:57:GLU:HA | 2.06 | 0.56 |
| 23:AW:26:LYS:CE | 23:AW:89:THR:O | 2.54 | 0.56 |
| 23:AW:525:GLN:HE21 | 23:AW:525:GLN:N | 2.04 | 0.56 |
| 33:B8:27:CYS:HB3 | 33:B8:30:GLU:O | 2.06 | 0.56 |
| 34:BA:37:C:O2' | 38:BE:45:ALA:CB | 2.54 | 0.56 |
| 34:BA:693:A:H2' | 34:BA:694:U:C6 | 2.41 | 0.56 |
| 34:BA:1849:G:H2' | 34:BA:1850:G:H8 | 1.70 | 0.56 |
| 34:BA:1930:G:O2' | 34:BA:1931:U:P | 2.64 | 0.56 |
| 38:BE:12:LEU:O | 38:BE:12:LEU:HD13 | 2.05 | 0.56 |
| 40:BG:96:ALA:HB3 | 40:BG:103:ASN:HB3 | 1.86 | 0.56 |
| 41:BH:59:LEU:O | 41:BH:61:ARG:N | 2.39 | 0.56 |
| 41:BH:144:LYS:HB2 | 41:BH:148:ALA:N | 2.17 | 0.56 |
| 42:BI:8:VAL:HG22 | 42:BI:58:ILE:HG13 | 1.87 | 0.56 |
| 47:BQ:35:ALA:O | 47:BQ:36:VAL:CB | 2.54 | 0.56 |
| 48:BR:66:ALA:O | 48:BR:69:ARG:O | 2.24 | 0.56 |
| 1:AA:399:G:H2' | 1:AA:400:C:C6 | 2.41 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:646:G:N1 | 1:AA:647:C:C2 | 2.74 | 0.56 |
| 2:AB:22:TRP:CH2 | 2:AB:24:PRO:HA | 2.41 | 0.56 |
| 4:AD:31:CYS:O | 4:AD:32:LYS:HB2 | 2.05 | 0.56 |
| 4:AD:67:LEU:O | 4:AD:71:PHE:HB2 | 2.06 | 0.56 |
| 10:AJ:13:PHE:HA | 10:AJ:68:ARG:O | 2.05 | 0.56 |
| 18:AR:43:ILE:O | 18:AR:43:ILE:HG22 | 2.06 | 0.56 |
| 23:AW:428:PHE:HB2 | 23:AW:437:ILE:HB | 1.87 | 0.56 |
| 25:B0:18:LYS:CA | 25:B0:36:ILE:HG13 | 2.35 | 0.56 |
| 32:B7:12:ARG:NH2 | 46:BP:59:ARG:HA | 2.21 | 0.56 |
| 34:BA:609:A:H2' | 34:BA:610:C:O4' | 2.06 | 0.56 |
| 36:BC:64:VAL:HG11 | 36:BC:66:PHE:CZ | 2.42 | 0.56 |
| 39:BF:30:VAL:HG13 | 39:BF:30:VAL:O | 2.06 | 0.56 |
| 41:BH:3:LEU:H | 41:BH:3:LEU:HD12 | 1.71 | 0.56 |
| 42:BI:79:LEU:HA | 42:BI:83:ALA:HB3 | 1.88 | 0.56 |
| 46:BP:55:MET:HA | 46:BP:55:MET:HE3 | 1.87 | 0.56 |
| 47:BQ:72:PRO:O | 47:BQ:91:TYR:O | 2.23 | 0.56 |
| 51:BU:49:ARG:HG3 | 51:BU:49:ARG:NH1 | 2.21 | 0.56 |
| 51:BU:82:LEU:O | 51:BU:88:GLU:HB3 | 2.05 | 0.56 |
| 53:BW:13:SER:OG | 53:BW:14:ALA:N | 2.39 | 0.56 |
| 1:AA:140:U:H2' | 1:AA:141:G:O4' | 2.05 | 0.55 |
| 1:AA:251:G:N1 | 1:AA:266:G:O6 | 2.39 | 0.55 |
| 1:AA:345:C:C2' | 1:AA:346:G:OP2 | 2.54 | 0.55 |
| 1:AA:798:U:H2' | 1:AA:799:G:O4' | 2.05 | 0.55 |
| 1:AA:1297:G:C2' | 1:AA:1298:U:OP2 | 2.53 | 0.55 |
| 7:AG:121:ASN:O | 7:AG:125:ASP:HB2 | 2.06 | 0.55 |
| 11:AK:28:ASN:OD1 | 11:AK:29:THR:N | 2.38 | 0.55 |
| 17:AQ:17:GLU:O | 17:AQ:18:LYS:HB2 | 2.06 | 0.55 |
| 34:BA:1045:C:C5' | 34:BA:1046:A:H5' | 2.37 | 0.55 |
| 34:BA:1416:G:H2' | 34:BA:1417:C:C6 | 2.41 | 0.55 |
| 34:BA:1851:U:H2' | 34:BA:1852:U:O4' | 2.06 | 0.55 |
| 34:BA:2468:A:O2' | 34:BA:2469:A:H8 | 1.88 | 0.55 |
| 34:BA:2473:U:O2 | 34:BA:2473:U:H2' | 2.05 | 0.55 |
| 38:BE:119:ILE:O | 38:BE:119:ILE:HG12 | 2.06 | 0.55 |
| 50:BT:50:ARG:CD | 50:BT:56:SER:HB3 | 2.23 | 0.55 |
| 1:AA:329:A:C6 | 1:AA:332:G:C2 | 2.94 | 0.55 |
| 1:AA:981:U:O3' | 14:AN:62:ARG:NH2 | 2.39 | 0.55 |
| 1:AA:1458:G:O3' | 20:AT:22:SER:HB3 | 2.06 | 0.55 |
| 5:AE:93:VAL:HG21 | 5:AE:110:MET:SD | 2.46 | 0.55 |
| 5:AE:121:ASN:CG | 5:AE:122:VAL:N | 2.58 | 0.55 |
| 5:AE:155:LYS:CB | 8:AH:70:VAL:HG13 | 2.36 | 0.55 |
| 6:AF:43:GLY:HA2 | 6:AF:58:HIS:CE1 | 2.41 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:AF:66:ALA:HB1 | 6:AF:67:PRO:HD2 | 1.87 | 0.55 |
| 11:AK:124:LYS:O | 21:AU:33:ARG:NE | 2.40 | 0.55 |
| 16:AP:10:GLY:O | 16:AP:11:ALA:HB2 | 2.06 | 0.55 |
| 23:AW:20:SER:N | 23:AW:26:LYS:HZ1 | 2.00 | 0.55 |
| 34:BA:859:G:O2' | 34:BA:860:U:OP2 | 2.25 | 0.55 |
| 34:BA:1085:A:N7 | 41:BH:37:LYS:HE2 | 2.21 | 0.55 |
| 34:BA:1266:G:O2' | 34:BA:1267:U:P | 2.64 | 0.55 |
| 34:BA:1399:C:H2' | 34:BA:1400:U:H6 | 1.71 | 0.55 |
| 34:BA:1789:A:OP1 | 36:BC:219:VAL:HA | 2.06 | 0.55 |
| 36:BC:30:ALA:HA | 36:BC:33:LEU:HD12 | 1.88 | 0.55 |
| 37:BD:8:LYS:HB2 | 37:BD:201:LEU:HD22 | 1.88 | 0.55 |
| 37:BD:97:SER:HB3 | 37:BD:99:GLU:OE1 | 2.07 | 0.55 |
| 44:BN:81:ILE:HG23 | 44:BN:82:GLY:N | 2.09 | 0.55 |
| 44:BN:111:LYS:CD | 44:BN:112:GLY:N | 2.64 | 0.55 |
| 45:BO:18:ARG:HB2 | 45:BO:45:GLU:HG2 | 1.87 | 0.55 |
| 47:BQ:73:ILE:HG21 | 47:BQ:91:TYR:CZ | 2.41 | 0.55 |
| 53:BW:13:SER:O | 53:BW:14:ALA:HB2 | 2.06 | 0.55 |
| 1:AA:246:A:C4' | 1:AA:247:G:OP1 | 2.47 | 0.55 |
| 1:AA:269:C:H2' | 1:AA:270:A:C8 | 2.41 | 0.55 |
| 1:AA:662:U:H2' | 1:AA:663:A:H8 | 1.69 | 0.55 |
| 1:AA:668:G:O4' | 15:AO:48:ASP:HB2 | 2.06 | 0.55 |
| 1:AA:1014:A:H2' | 1:AA:1015:G:O4' | 2.06 | 0.55 |
| 6:AF:89:VAL:HG22 | 6:AF:90:MET:N | 2.21 | 0.55 |
| 7:AG:125:ASP:OD1 | 7:AG:131:GLY:HA2 | 2.07 | 0.55 |
| 12:AL:23:LEU:CG | 12:AL:24:GLU:H | 2.19 | 0.55 |
| 12:AL:81:ILE:HD11 | 12:AL:94:TYR:CD1 | 2.41 | 0.55 |
| 12:AL:81:ILE:CD1 | 12:AL:94:TYR:HB3 | 2.35 | 0.55 |
| 13:AM:44:ILE:HD12 | 13:AM:44:ILE:H | 1.69 | 0.55 |
| 14:AN:55:SER:HB3 | 14:AN:58:ARG:HB2 | 1.87 | 0.55 |
| 21:AU:3:ILE:HA | 21:AU:19:LYS:NZ | 2.18 | 0.55 |
| 26:B1:39:VAL:HG23 | 26:B1:40:GLU:N | 2.21 | 0.55 |
| 34:BA:1503:A:N6 | 34:BA:1504:A:N6 | 2.54 | 0.55 |
| 34:BA:1567:G:H2' | 36:BC:84:PRO:HG3 | 1.88 | 0.55 |
| 34:BA:1571:A:H2' | 34:BA:1572:A:C8 | 2.41 | 0.55 |
| 34:BA:1805:A:N3 | 36:BC:49:THR:HG22 | 2.20 | 0.55 |
| 34:BA:2742:G:O2' | 34:BA:2743:U:H5' | 2.06 | 0.55 |
| 35:BB:28:C:N4 | 35:BB:56:G:H1 | 2.04 | 0.55 |
| 38:BE:29:HIS:O | 38:BE:32:VAL:HG22 | 2.06 | 0.55 |
| 41:BH:158:VAL:HG23 | 43:BL:22:LEU:HD12 | 1.86 | 0.55 |
| 44:BN:17:VAL:HG23 | 44:BN:137:PRO:CB | 2.37 | 0.55 |
| 50:BT:19:PHE:O | 50:BT:20:ARG:CB | 2.55 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:AC:19:SER:HB2 | 3:AC:39:ARG:NH2 | 2.21 | 0.55 |
| 4:AD:36:ALA:H | 4:AD:37:PRO:HD3 | 1.71 | 0.55 |
| 25:B0:39:GLN:O | 25:B0:41:GLY:N | 2.40 | 0.55 |
| 34:BA:523:C:H5" | 34:BA:540:C:O2' | 2.06 | 0.55 |
| 34:BA:1599:U:OP2 | 54:BX:40:LYS:HD2 | 2.06 | 0.55 |
| 34:BA:1799:G:N2 | 34:BA:1818:U:O2' | 2.39 | 0.55 |
| 34:BA:2491:U:H5' | 34:BA:2570:G:H5" | 1.87 | 0.55 |
| 35:BB:42:C:H2' | 35:BB:43:C:H5' | 1.88 | 0.55 |
| 36:BC:42:ARG:NH2 | 36:BC:48:ILE:HD11 | 2.20 | 0.55 |
| 37:BD:148:GLN:OE1 | 37:BD:152:PRO:HG2 | 2.06 | 0.55 |
| 49:BS:51:ALA:HA | 49:BS:55:GLU:OE2 | 2.07 | 0.55 |
| 55:BY:82:VAL:O | 55:BY:96:LYS:HE3 | 2.07 | 0.55 |
| 56:BZ:4:ILE:HG12 | 56:BZ:50:MET:SD | 2.46 | 0.55 |
| 1:AA:911:U:H2' | 1:AA:912:C:C6 | 2.41 | 0.55 |
| 1:AA:1145:A:O2' | 1:AA:1146:A:H8 | 1.90 | 0.55 |
| 1:AA:1158:C:O2' | 2:AB:131:LYS:HB2 | 2.06 | 0.55 |
| 3:AC:129:PHE:CZ | 3:AC:156:LEU:HB3 | 2.42 | 0.55 |
| 3:AC:139:ASN:HD22 | 3:AC:139:ASN:N | 2.04 | 0.55 |
| 7:AG:78:ARG:HD2 | 7:AG:82:SER:O | 2.07 | 0.55 |
| 12:AL:23:LEU:HG | 12:AL:24:GLU:H | 1.71 | 0.55 |
| 19:AS:39:ILE:HD12 | 19:AS:65:MET:O | 2.06 | 0.55 |
| 25:B0:65:LYS:HE3 | 25:B0:84:GLU:HB3 | 1.89 | 0.55 |
| 32:B7:32:LEU:HD13 | 34:BA:2419:U:OP2 | 2.06 | 0.55 |
| 34:BA:391:A:C6 | 34:BA:411:G:C2 | 2.94 | 0.55 |
| 34:BA:1188:U:C2' | 34:BA:1189:A:H5' | 2.37 | 0.55 |
| 34:BA:1379:U:C6 | 34:BA:1379:U:OP1 | 2.60 | 0.55 |
| 38:BE:130:LYS:O | 38:BE:133:LEU:HB2 | 2.07 | 0.55 |
| 39:BF:127:TYR:CD2 | 39:BF:128:SER:N | 2.73 | 0.55 |
| 39:BF:134:GLN:HG2 | 39:BF:135:ILE:H | 1.70 | 0.55 |
| 39:BF:146:ASP:HB2 | 39:BF:149:ARG:HH21 | 1.71 | 0.55 |
| 44:BN:74:TYR:HB2 | 44:BN:87:ALA:O | 2.06 | 0.55 |
| 47:BQ:64:TRP:CH2 | 47:BQ:106:ASP:HB2 | 2.42 | 0.55 |
| 1:AA:41:G:H2' | 1:AA:42:G:H8 | 1.71 | 0.55 |
| 1:AA:1491:G:H2' | 24:AY:6:5OH:CB | 2.34 | 0.55 |
| 13:AM:14:ALA:HB3 | 13:AM:40:GLU:O | 2.07 | 0.55 |
| 13:AM:73:SER:HA | 13:AM:76:ILE:CD1 | 2.32 | 0.55 |
| 17:AQ:22:VAL:HG12 | 17:AQ:23:ALA:N | 2.21 | 0.55 |
| 25:B0:51:GLY:H | 25:B0:61:LYS:HE3 | 1.71 | 0.55 |
| 26:B1:65:THR:O | 26:B1:68:ALA:HB3 | 2.06 | 0.55 |
| 34:BA:900:A:HO2' | 34:BA:901:C:P | 2.30 | 0.55 |
| 34:BA:1475:G:HO2' | 34:BA:1476:U:P | 2.28 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1656:C:H2' | 34:BA:1657:U:H6 | 1.71 | 0.55 |
| 34:BA:2272:U:H5" | 34:BA:2273:A:OP1 | 2.07 | 0.55 |
| 34:BA:2294:G:OP1 | 49:BS:94:ARG:NH1 | 2.39 | 0.55 |
| 34:BA:2725:A:O2' | 34:BA:2726:A:H2' | 2.06 | 0.55 |
| 37:BD:41:ALA:C | 37:BD:43:ASP:H | 2.09 | 0.55 |
| 41:BH:54:VAL:O | 41:BH:54:VAL:CG1 | 2.52 | 0.55 |
| 45:BO:19:VAL:HG21 | 45:BO:41:ILE:HG13 | 1.86 | 0.55 |
| 53:BW:71:VAL:O | 53:BW:71:VAL:HG22 | 2.07 | 0.55 |
| 1:AA:590:U:H2' | 1:AA:591:U:C6 | 2.42 | 0.55 |
| 1:AA:590:U:H2' | 1:AA:591:U:H6 | 1.72 | 0.55 |
| 1:AA:628:G:H2' | 1:AA:629:A:C8 | 2.42 | 0.55 |
| 1:AA:868:C:H2' | 1:AA:869:G:O4' | 2.07 | 0.55 |
| 1:AA:994:A:C5 | 1:AA:1216:A:H4' | 2.42 | 0.55 |
| 1:AA:1070:U:O2' | 1:AA:1071:C:H5' | 2.06 | 0.55 |
| 1:AA:1401:G:H2' | 1:AA:1402:C:O4' | 2.07 | 0.55 |
| 2:AB:116:LEU:HB3 | 2:AB:140:LEU:HD21 | 1.88 | 0.55 |
| 3:AC:156:LEU:H | 3:AC:156:LEU:HD12 | 1.70 | 0.55 |
| 4:AD:2:ARG:HB2 | 4:AD:4:LEU:HD13 | 1.89 | 0.55 |
| 9:AI:11:ARG:HG3 | 9:AI:11:ARG:HH11 | 1.70 | 0.55 |
| 13:AM:71:GLU:O | 13:AM:74:MET:HB3 | 2.07 | 0.55 |
| 15:AO:63:ARG:HD3 | 15:AO:67:ASP:OD1 | 2.06 | 0.55 |
| 15:AO:86:LEU:C | 15:AO:88:ARG:H | 2.09 | 0.55 |
| 23:AW:399:ARG:CZ | 23:AW:445:GLN:HB3 | 2.37 | 0.55 |
| 34:BA:419:U:H2' | 34:BA:420:C:H6 | 1.70 | 0.55 |
| 34:BA:659:G:H4' | 38:BE:95:LYS:HB3 | 1.88 | 0.55 |
| 34:BA:667:U:H2' | 34:BA:668:A:O4' | 2.06 | 0.55 |
| 34:BA:1232:G:C5 | 34:BA:1233:C:C5 | 2.95 | 0.55 |
| 34:BA:1813:G:N3 | 36:BC:49:THR:HG21 | 2.22 | 0.55 |
| 34:BA:2076:U:O2 | 34:BA:2076:U:O4' | 2.23 | 0.55 |
| 41:BH:115:GLY:HA3 | 41:BH:122:GLN:O | 2.07 | 0.55 |
| 42:BI:115:ASP:O | 42:BI:116:MET:HG2 | 2.06 | 0.55 |
| 43:BM:2:ILE:HG22 | 43:BM:6:GLN:HB2 | 1.88 | 0.55 |
| 49:BS:67:ASN:C | 49:BS:69:ASP:H | 2.10 | 0.55 |
| 1:AA:206:C:H2' | 1:AA:207:C:O4' | 2.05 | 0.55 |
| 1:AA:279:A:H5" | 1:AA:280:C:O5' | 2.07 | 0.55 |
| 1:AA:1070:U:H2' | 1:AA:1071:C:C6 | 2.39 | 0.55 |
| 1:AA:1354:U:H2' | 1:AA:1355:G:C8 | 2.42 | 0.55 |
| 4:AD:52:VAL:HG23 | 4:AD:53:GLN:N | 2.20 | 0.55 |
| 4:AD:84:ASN:HB3 | 4:AD:87:GLU:HG2 | 1.89 | 0.55 |
| 4:AD:96:ARG:HB3 | 4:AD:98:ASP:OD1 | 2.06 | 0.55 |
| 4:AD:97:LEU:HD22 | 4:AD:117:VAL:CG1 | 2.35 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 9:AI:93:LEU:C | 9:AI:95:SER:H | 2.10 | 0.55 |
| 10:AJ:15:HIS:CG | 10:AJ:16:ARG:N | 2.74 | 0.55 |
| 10:AJ:18:ILE:HG22 | 10:AJ:19:ASP:N | 2.21 | 0.55 |
| 19:AS:50:VAL:HG21 | 19:AS:70:LEU:O | 2.07 | 0.55 |
| 23:AW:26:LYS:CD | 23:AW:89:THR:O | 2.55 | 0.55 |
| 23:AW:472:ARG:HG3 | 23:AW:504:ILE:HA | 1.89 | 0.55 |
| 25:B0:39:GLN:HB3 | 25:B0:56:HIS:HB3 | 1.89 | 0.55 |
| 26:B1:17:ARG:NH2 | 34:BA:381:G:OP1 | 2.40 | 0.55 |
| 28:B3:53:MET:O | 28:B3:54:VAL:HG13 | 2.07 | 0.55 |
| 31:B6:16:HIS:CD2 | 34:BA:684:G:OP1 | 2.60 | 0.55 |
| 31:B6:34:ARG:HB3 | 31:B6:42:LEU:HD13 | 1.89 | 0.55 |
| 34:BA:580:U:O3' | 51:BU:30:VAL:HG13 | 2.07 | 0.55 |
| 34:BA:670:A:H5" | 46:BP:43:GLY:CA | 2.37 | 0.55 |
| 34:BA:692:C:H2' | 34:BA:693:A:H8 | 1.72 | 0.55 |
| 34:BA:1430:G:H2' | 34:BA:1431:A:C8 | 2.41 | 0.55 |
| 34:BA:2071:A:H2' | 34:BA:2072:C:C6 | 2.41 | 0.55 |
| 39:BF:134:GLN:HE22 | 39:BF:150:GLY:H | 1.54 | 0.55 |
| 1:AA:2:A:N6 | 1:AA:3:A:N1 | 2.54 | 0.55 |
| 1:AA:123:U:H5" | 1:AA:311:C:O2' | 2.07 | 0.55 |
| 2:AB:219:THR:HG23 | 2:AB:220:VAL:N | 2.22 | 0.55 |
| 4:AD:100:VAL:HG21 | 4:AD:136:VAL:HG21 | 1.89 | 0.55 |
| 17:AQ:7:LEU:O | 17:AQ:59:GLU:HA | 2.07 | 0.55 |
| 23:AW:72:THR:HG21 | 23:AW:102:THR:HG21 | 1.89 | 0.55 |
| 25:B0:24:ARG:HD2 | 25:B0:24:ARG:C | 2.28 | 0.55 |
| 28:B3:23:LEU:HD21 | 28:B3:53:MET:CE | 2.36 | 0.55 |
| 32:B7:1:PRO:N | 34:BA:591:U:O2 | 2.40 | 0.55 |
| 34:BA:948:C:O2 | 34:BA:984:A:O2' | 2.25 | 0.55 |
| 34:BA:1800:C:OP2 | 36:BC:181:ARG:NH1 | 2.40 | 0.55 |
| 34:BA:1829:A:C8 | 34:BA:1830:C:C5 | 2.93 | 0.55 |
| 34:BA:2837:A:H2' | 34:BA:2838:G:C8 | 2.42 | 0.55 |
| 34:BA:2848:G:O2' | 34:BA:2849:U:H5' | 2.07 | 0.55 |
| 35:BB:56:G:H4' | 35:BB:57:A:C8 | 2.42 | 0.55 |
| 40:BG:15:ASP:OD1 | 40:BG:17:LYS:HB2 | 2.07 | 0.55 |
| 43:BJ:30:PHE:N | 43:BJ:30:PHE:CD1 | 2.72 | 0.55 |
| 47:BQ:42:THR:OG1 | 47:BQ:45:GLN:HG3 | 2.07 | 0.55 |
| 52:BV:49:ILE:HD13 | 52:BV:49:ILE:H | 1.72 | 0.55 |
| 1:AA:390:U:O2' | 1:AA:391:G:H5' | 2.06 | 0.55 |
| 1:AA:443:C:C2' | 1:AA:444:G:H5' | 2.37 | 0.55 |
| 1:AA:658:C:O2' | 1:AA:659:U:H5' | 2.06 | 0.55 |
| 1:AA:745:G:O2' | 1:AA:746:A:H5' | 2.06 | 0.55 |
| 1:AA:1318:A:O2' | 19:AS:36:ARG:HD3 | 2.07 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:AD:21:LYS:O | 4:AD:21:LYS:HD3 | 2.07 | 0.55 |
| 7:AG:14:ASP:OD2 | 7:AG:15:PRO:HD2 | 2.06 | 0.55 |
| 25:B0:39:GLN:O | 25:B0:40:ARG:C | 2.45 | 0.55 |
| 26:B1:31:ASN:OD1 | 26:B1:33:HIS:NE2 | 2.38 | 0.55 |
| 34:BA:1343:G:H1' | 34:BA:1597:A:C4 | 2.42 | 0.55 |
| 34:BA:1436:G:H2' | 34:BA:1437:C:O4' | 2.06 | 0.55 |
| 34:BA:1818:U:H3' | 36:BC:155:ARG:HB2 | 1.89 | 0.55 |
| 34:BA:2149:U:H3' | 34:BA:2150:C:O4' | 2.07 | 0.55 |
| 44:BN:53:TYR:CE1 | 44:BN:121:LYS:HG2 | 2.42 | 0.55 |
| 44:BN:77:HIS:HD2 | 44:BN:79:GLY:N | 2.02 | 0.55 |
| 44:BN:124:VAL:O | 44:BN:125:TYR:HB2 | 2.06 | 0.55 |
| 50:BT:77:SER:HG | 50:BT:79:VAL:HG13 | 1.72 | 0.55 |
| 1:AA:452:A:H2' | 1:AA:453:G:O4' | 2.08 | 0.54 |
| 1:AA:1006:G:H2' | 1:AA:1007:U:O4' | 2.08 | 0.54 |
| 4:AD:7:LYS:O | 4:AD:20:LEU:HD12 | 2.06 | 0.54 |
| 8:AH:101:ALA:HB3 | 8:AH:112:ASP:HB3 | 1.89 | 0.54 |
| 9:AI:98:ARG:HH11 | 9:AI:98:ARG:CG | 2.19 | 0.54 |
| 10:AJ:11:LYS:HA | 10:AJ:70:HIS:O | 2.07 | 0.54 |
| 12:AL:78:VAL:O | 12:AL:102:ASP:HB2 | 2.07 | 0.54 |
| 16:AP:48:GLU:HG3 | 16:AP:49:GLY:N | 2.21 | 0.54 |
| 17:AQ:13:SER:HB3 | 17:AQ:16:MET:HE1 | 1.89 | 0.54 |
| 20:AT:7:LYS:O | 20:AT:10:ALA:HB3 | 2.07 | 0.54 |
| 23:AW:472:ARG:HA | 23:AW:473:TRP:HB2 | 1.89 | 0.54 |
| 25:B0:23:LYS:HZ1 | 34:BA:923:G:H21 | 1.55 | 0.54 |
| 34:BA:533:G:H2' | 34:BA:534:U:H6 | 1.71 | 0.54 |
| 34:BA:655:A:H4' | 34:BA:656:G:OP1 | 2.07 | 0.54 |
| 34:BA:859:G:H2' | 34:BA:916:G:C6 | 2.42 | 0.54 |
| 34:BA:1085:A:H62 | 41:BH:37:LYS:HD2 | 1.71 | 0.54 |
| 34:BA:1142:A:C6 | 34:BA:1144:A:C4 | 2.95 | 0.54 |
| 34:BA:1252:G:H1' | 51:BU:32:ARG:NH2 | 2.22 | 0.54 |
| 34:BA:1805:A:N3 | 36:BC:49:THR:CG2 | 2.71 | 0.54 |
| 34:BA:1909:C:O2' | 34:BA:1910:G:H5' | 2.06 | 0.54 |
| 37:BD:114:LYS:HE3 | 37:BD:114:LYS:O | 2.07 | 0.54 |
| 44:BN:73:VAL:HG12 | 44:BN:75:TYR:HE2 | 1.71 | 0.54 |
| 47:BQ:54:THR:O | 47:BQ:56:ALA:N | 2.37 | 0.54 |
| 1:AA:57:G:H2' | 1:AA:58:C:C6 | 2.42 | 0.54 |
| 1:AA:734:G:N2 | 18:AR:63:TYR:CE1 | 2.74 | 0.54 |
| 1:AA:815:A:O2' | 1:AA:1527:U:H1' | 2.07 | 0.54 |
| 1:AA:959:A:C2' | 1:AA:960:U:H4' | 2.37 | 0.54 |
| 1:AA:1495:U:O2' | 34:BA:1919:A:N1 | 2.37 | 0.54 |
| 2:AB:30:ILE:HD11 | 2:AB:38:HIS:CG | 2.41 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:AB:89:PHE:CZ | 2:AB:153:MET:HB2 | 2.42 | 0.54 |
| 7:AG:64:ALA:HB1 | 7:AG:126:ALA:HB3 | 1.88 | 0.54 |
| 8:AH:8:ASP:O | 8:AH:11:THR:HG22 | 2.07 | 0.54 |
| 11:AK:108:ASN:CB | 21:AU:6:ARG:HG2 | 2.37 | 0.54 |
| 25:B0:20:LEU:CD1 | 34:BA:2355:G:H4' | 2.29 | 0.54 |
| 34:BA:286:U:H2' | 34:BA:287:G:H8 | 1.70 | 0.54 |
| 34:BA:414:C:H2' | 34:BA:415:A:C8 | 2.42 | 0.54 |
| 34:BA:453:A:H4' | 34:BA:472:A:N6 | 2.22 | 0.54 |
| 34:BA:882:G:H2' | 34:BA:883:G:C8 | 2.42 | 0.54 |
| 34:BA:1022:G:H22 | 34:BA:1142:A:H2 | 1.56 | 0.54 |
| 34:BA:1776:G:C2 | 34:BA:1777:U:C6 | 2.95 | 0.54 |
| 34:BA:2103:C:H4' | 34:BA:2104:C:OP1 | 2.06 | 0.54 |
| 34:BA:2150:C:H2' | 34:BA:2151:U:H5 | 1.56 | 0.54 |
| 41:BH:143:MET:C | 41:BH:145:GLU:N | 2.60 | 0.54 |
| 43:BJ:2:ILE:HA | 43:BJ:4:LYS:HE3 | 1.90 | 0.54 |
| 1:AA:425:G:H2' | 1:AA:426:U:O4' | 2.07 | 0.54 |
| 1:AA:1022:A:H2' | 1:AA:1023:U:O4' | 2.08 | 0.54 |
| 2:AB:140:LEU:O | 2:AB:144:GLU:N | 2.39 | 0.54 |
| 4:AD:12:ARG:NH2 | 4:AD:36:ALA:O | 2.40 | 0.54 |
| 16:AP:3:THR:HG22 | 16:AP:4:ILE:N | 2.23 | 0.54 |
| 16:AP:17:TYR:CE1 | 16:AP:41:PRO:HG3 | 2.42 | 0.54 |
| 23:AW:20:SER:N | 23:AW:26:LYS:HZ2 | 2.04 | 0.54 |
| 23:AW:59:TRP:CZ2 | 23:AW:69:SER:HB3 | 2.43 | 0.54 |
| 23:AW:490:GLU:HA | 23:AW:493:LEU:HD12 | 1.89 | 0.54 |
| 25:B0:40:ARG:HB3 | 34:BA:2336:A:H61 | 1.72 | 0.54 |
| 34:BA:409:G:O2' | 34:BA:410:G:H5' | 2.06 | 0.54 |
| 34:BA:412:A:N7 | 34:BA:2411:A:H2 | 2.06 | 0.54 |
| 34:BA:2147:A:H3' | 34:BA:2148:G:C5' | 2.37 | 0.54 |
| 34:BA:2210:U:H4' | 34:BA:2211:A:O5' | 2.07 | 0.54 |
| 34:BA:2358:A:N6 | 46:BP:54:GLN:HE22 | 2.02 | 0.54 |
| 37:BD:109:VAL:O | 37:BD:109:VAL:HG12 | 2.07 | 0.54 |
| 39:BF:46:LYS:H | 39:BF:46:LYS:CD | 2.20 | 0.54 |
| 39:BF:72:SER:H | 39:BF:80:GLN:HB2 | 1.73 | 0.54 |
| 43:BJ:2:ILE:O | 43:BJ:2:ILE:HG22 | 2.06 | 0.54 |
| 47:BQ:72:PRO:O | 47:BQ:89:VAL:HG13 | 2.07 | 0.54 |
| 54:BX:54:GLU:O | 54:BX:55:VAL:HB | 2.06 | 0.54 |
| 56:BZ:80:HIS:HB3 | 56:BZ:83:LYS:O | 2.07 | 0.54 |
| 1:AA:129:A:O2' | 1:AA:130:A:H8 | 1.91 | 0.54 |
| 1:AA:243:A:C2 | 1:AA:245:U:H2' | 2.42 | 0.54 |
| 1:AA:342:C:C2 | 1:AA:348:G:N2 | 2.76 | 0.54 |
| 1:AA:376:G:H4' | 16:AP:5:ARG:HD2 | 1.89 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:607:A:H2' | 1:AA:608:A:H8 | 1.72 | 0.54 |
| 1:AA:1307:U:P | 13:AM:99:GLN:HE21 | 2.31 | 0.54 |
| 16:AP:5:ARG:HA | 16:AP:68:SER:OG | 2.07 | 0.54 |
| 17:AQ:42:LYS:NZ | 17:AQ:42:LYS:HB3 | 2.23 | 0.54 |
| 27:B2:23:ARG:O | 27:B2:24:GLU:C | 2.45 | 0.54 |
| 31:B6:34:ARG:NH1 | 31:B6:34:ARG:HG2 | 2.22 | 0.54 |
| 34:BA:51:G:O2' | 34:BA:119:A:N1 | 2.39 | 0.54 |
| 34:BA:639:U:H2' | 34:BA:640:C:C6 | 2.43 | 0.54 |
| 34:BA:753:A:H2' | 34:BA:754:U:H6 | 1.73 | 0.54 |
| 34:BA:1468:U:H5' | 34:BA:1469:A:OP1 | 2.07 | 0.54 |
| 34:BA:2564:A:C5 | 34:BA:2565:A:C6 | 2.95 | 0.54 |
| 36:BC:242:HIS:O | 36:BC:244:VAL:HG13 | 2.08 | 0.54 |
| 39:BF:127:TYR:CB | 39:BF:155:ILE:HB | 2.37 | 0.54 |
| 46:BP:96:LYS:HE2 | 46:BP:101:ILE:HG21 | 1.90 | 0.54 |
| 1:AA:480:U:H5" | 1:AA:481:G:OP2 | 2.07 | 0.54 |
| 1:AA:511:C:O2' | 1:AA:512:U:O4' | 2.25 | 0.54 |
| 1:AA:1299:A:H2' | 1:AA:1301:U:H1' | 1.88 | 0.54 |
| 1:AA:1301:U:O2' | 1:AA:1302:C:H5 | 1.81 | 0.54 |
| 1:AA:1441:A:H62 | 1:AA:1461:G:N2 | 2.00 | 0.54 |
| 5:AE:40:ASP:OD1 | 5:AE:44:ARG:HB2 | 2.07 | 0.54 |
| 19:AS:35:ARG:HB3 | 19:AS:71:GLY:HA3 | 1.88 | 0.54 |
| 23:AW:473:TRP:HA | 23:AW:524:HIS:O | 2.08 | 0.54 |
| 24:AY:3:SER:O | 24:AY:5:UAL:N | 2.38 | 0.54 |
| 29:B4:1:ALA:HB3 | 34:BA:2614:A:O4' | 2.07 | 0.54 |
| 34:BA:293:U:C4 | 34:BA:345:A:C6 | 2.96 | 0.54 |
| 34:BA:511:U:C2' | 34:BA:512:G:H5' | 2.37 | 0.54 |
| 34:BA:975:A:H2' | 34:BA:976:G:H5' | 1.88 | 0.54 |
| 34:BA:996:A:C5' | 51:BU:93:ILE:HG21 | 2.38 | 0.54 |
| 45:BO:42:THR:CG2 | 45:BO:44:LYS:HE2 | 2.37 | 0.54 |
| 47:BQ:66:ARG:NH1 | 47:BQ:101:VAL:HG11 | 2.21 | 0.54 |
| 56:BZ:75:GLN:OE1 | 56:BZ:75:GLN:HA | 2.08 | 0.54 |
| 1:AA:181:A:C5' | 1:AA:182:A:OP1 | 2.51 | 0.54 |
| 1:AA:646:G:C6 | 1:AA:647:C:C4 | 2.96 | 0.54 |
| 1:AA:694:A:OP1 | 11:AK:54:SER:HB3 | 2.07 | 0.54 |
| 2:AB:95:TRP:HZ2 | 2:AB:100:LEU:HD23 | 1.71 | 0.54 |
| 2:AB:98:GLY:HA2 | 2:AB:101:THR:HG22 | 1.90 | 0.54 |
| 2:AB:162:VAL:HG22 | 2:AB:184:ALA:CB | 2.38 | 0.54 |
| 3:AC:49:ALA:O | 3:AC:71:ARG:HB3 | 2.08 | 0.54 |
| 7:AG:11:ILE:HD13 | 7:AG:11:ILE:N | 2.22 | 0.54 |
| 7:AG:86:VAL:HG22 | 7:AG:150:PHE:HB3 | 1.88 | 0.54 |
| 10:AJ:53:ILE:CG2 | 10:AJ:61:ALA:HB1 | 2.37 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 11:AK:69:CYS:O | 11:AK:71:ASP:O | 2.26 | 0.54 |
| 12:AL:33:CYS:CA | 12:AL:54:VAL:HA | 2.22 | 0.54 |
| 12:AL:102:ASP:OD1 | 23:AW:407:LEU:CD1 | 2.52 | 0.54 |
| 15:AO:7:THR:O | 15:AO:11:VAL:HG23 | 2.08 | 0.54 |
| 23:AW:479:ALA:O | 23:AW:481:LYS:N | 2.39 | 0.54 |
| 25:B0:76:ARG:CG | 25:B0:76:ARG:NH2 | 2.59 | 0.54 |
| 29:B4:39:ARG:HG2 | 29:B4:40:HIS:ND1 | 2.23 | 0.54 |
| 34:BA:443:A:N7 | 38:BE:40:ARG:HD3 | 2.23 | 0.54 |
| 34:BA:545:U:H2' | 34:BA:546:U:O3' | 2.08 | 0.54 |
| 34:BA:1212:G:O2' | 34:BA:1213:A:P | 2.65 | 0.54 |
| 34:BA:1784:A:H4' | 34:BA:1785:A:C5' | 2.38 | 0.54 |
| 34:BA:2060:A:H1' | 34:BA:2502:G:H1' | 1.88 | 0.54 |
| 34:BA:2297:A:N1 | 34:BA:2321:U:C5 | 2.76 | 0.54 |
| 34:BA:2547:A:H2' | 34:BA:2548:U:C6 | 2.43 | 0.54 |
| 34:BA:2591:C:H2' | 34:BA:2592:G:H8 | 1.71 | 0.54 |
| 34:BA:2848:G:H1' | 34:BA:2868:A:N6 | 2.23 | 0.54 |
| 38:BE:32:VAL:HG23 | 38:BE:33:VAL:N | 2.22 | 0.54 |
| 40:BG:53:PRO:HD3 | 40:BG:61:TRP:CZ3 | 2.43 | 0.54 |
| 1:AA:308:C:H2' | 1:AA:309:A:C8 | 2.43 | 0.54 |
| 1:AA:1125:U:C2 | 1:AA:1127:G:C8 | 2.94 | 0.54 |
| 2:AB:138:ARG:HG3 | 2:AB:139:GLU:N | 2.23 | 0.54 |
| 2:AB:141:GLU:HA | 2:AB:144:GLU:HB2 | 1.87 | 0.54 |
| 3:AC:123:LEU:CD1 | 3:AC:195:ILE:HG21 | 2.38 | 0.54 |
| 3:AC:139:ASN:HA | 3:AC:142:ARG:CB | 2.28 | 0.54 |
| 4:AD:66:VAL:HG12 | 4:AD:67:LEU:O | 2.07 | 0.54 |
| 6:AF:6:ILE:H | 6:AF:62:MET:HB3 | 1.72 | 0.54 |
| 9:AI:7:GLY:HA3 | 9:AI:85:ALA:HB2 | 1.90 | 0.54 |
| 23:AW:15:THR:OG1 | 23:AW:362:GLY:O | 2.13 | 0.54 |
| 23:AW:145:ASP:OD2 | 58:AW:602:GNP:C2 | 2.55 | 0.54 |
| 25:B0:50:VAL:O | 25:B0:52:CYS:N | 2.41 | 0.54 |
| 34:BA:538:A:H2' | 34:BA:539:G:O4' | 2.08 | 0.54 |
| 34:BA:755:U:H2' | 34:BA:756:A:C8 | 2.43 | 0.54 |
| 34:BA:834:G:C6 | 34:BA:835:C:C4 | 2.96 | 0.54 |
| 34:BA:1521:G:N1 | 34:BA:1522:A:N6 | 2.55 | 0.54 |
| 34:BA:1652:A:C2 | 34:BA:2006:C:N3 | 2.75 | 0.54 |
| 34:BA:2428:G:H5" | 34:BA:2429:G:O5' | 2.08 | 0.54 |
| 34:BA:2503:A:H4' | 34:BA:2504:U:OP1 | 2.08 | 0.54 |
| 34:BA:2704:C:H2' | 34:BA:2705:A:O4' | 2.07 | 0.54 |
| 41:BH:144:LYS:NZ | 43:BL:30:PHE:HB2 | 2.22 | 0.54 |
| 43:BL:3:THR:HB | 43:BM:21:GLU:HG2 | 1.90 | 0.54 |
| 43:BM:11:VAL:HG12 | 43:BM:11:VAL:O | 2.07 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 44:BN:44:TYR:HD1 | 44:BN:44:TYR:C | 2.10 | 0.54 |
| 47:BQ:63:ILE:HD11 | 47:BQ:105:MET:HE3 | 1.89 | 0.54 |
| 48:BR:24:MET:CG | 48:BR:44:LEU:HD22 | 2.38 | 0.54 |
| 48:BR:71:ARG:CG | 48:BR:71:ARG:NH2 | 2.70 | 0.54 |
| 49:BS:36:TYR:HA | 49:BS:52:SER:HB3 | 1.90 | 0.54 |
| 56:BZ:29:ILE:HG22 | 56:BZ:90:ASP:HA | 1.90 | 0.54 |
| 1:AA:210:C:O2' | 1:AA:211:G:N2 | 2.41 | 0.54 |
| 1:AA:1291:U:H4' | 9:AI:41:GLU:OE2 | 2.08 | 0.54 |
| 4:AD:105:GLY:HA3 | 4:AD:161:ALA:CB | 2.37 | 0.54 |
| 5:AE:94:PHE:CZ | 5:AE:96:GLN:HG2 | 2.43 | 0.54 |
| 6:AF:3:HIS:N | 6:AF:92:THR:HG23 | 2.23 | 0.54 |
| 6:AF:45:ARG:HG2 | 6:AF:46:GLN:N | 2.23 | 0.54 |
| 9:AI:82:ILE:O | 9:AI:86:LEU:HB2 | 2.07 | 0.54 |
| 23:AW:310:LYS:O | 23:AW:311:HIS:ND1 | 2.41 | 0.54 |
| 23:AW:347:THR:O | 23:AW:354:SER:HB3 | 2.08 | 0.54 |
| 23:AW:439:GLY:HA2 | 23:AW:440:ALA:CB | 2.33 | 0.54 |
| 25:B0:43:LYS:HB3 | 25:B0:79:ILE:HD11 | 1.90 | 0.54 |
| 32:B7:44:ARG:HD3 | 34:BA:2418:A:OP1 | 2.08 | 0.54 |
| 33:B8:6:SER:HB2 | 34:BA:1031:G:C4' | 2.36 | 0.54 |
| 33:B8:7:VAL:HG23 | 33:B8:8:LYS:H | 1.71 | 0.54 |
| 34:BA:189:G:H1 | 34:BA:205:G:HO2' | 1.56 | 0.54 |
| 34:BA:498:G:O2' | 34:BA:499:U:H5' | 2.08 | 0.54 |
| 34:BA:778:G:H2' | 34:BA:779:U:C6 | 2.43 | 0.54 |
| 34:BA:880:G:O6 | 34:BA:898:C:N3 | 2.41 | 0.54 |
| 34:BA:910:A:N1 | 34:BA:2277:G:H1' | 2.23 | 0.54 |
| 34:BA:1131:G:O2' | 34:BA:2026:U:H5' | 2.07 | 0.54 |
| 34:BA:1279:G:O2' | 34:BA:1280:G:H5' | 2.08 | 0.54 |
| 35:BB:45:A:H2' | 35:BB:46:A:C8 | 2.43 | 0.54 |
| 37:BD:12:THR:O | 37:BD:24:VAL:HG22 | 2.08 | 0.54 |
| 39:BF:114:ARG:HD2 | 39:BF:114:ARG:N | 2.22 | 0.54 |
| 41:BH:23:LEU:HD11 | 41:BH:96:PHE:CE2 | 2.42 | 0.54 |
| 42:BI:100:ILE:HD12 | 42:BI:132:ALA:HB1 | 1.89 | 0.54 |
| 50:BT:26:GLU:HG2 | 50:BT:28:LYS:HE2 | 1.90 | 0.54 |
| 52:BV:68:ARG:HD3 | 52:BV:92:TRP:CE2 | 2.43 | 0.54 |
| 1:AA:1363:A:O2' | 1:AA:1365:G:N7 | 2.40 | 0.54 |
| 2:AB:136:ARG:HH11 | 2:AB:136:ARG:CG | 2.21 | 0.54 |
| 3:AC:120:THR:HG23 | 3:AC:188:ALA:CB | 2.37 | 0.54 |
| 4:AD:10:LEU:HD22 | 4:AD:62:ARG:HG3 | 1.90 | 0.54 |
| 4:AD:54:LEU:HD23 | 4:AD:54:LEU:C | 2.29 | 0.54 |
| 10:AJ:34:ALA:O | 10:AJ:36:VAL:HG23 | 2.08 | 0.54 |
| 13:AM:18:LEU:O | 13:AM:24:VAL:HG21 | 2.08 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 15:AO:84:LEU:HB3 | 15:AO:86:LEU:CD2 | 2.38 | 0.54 |
| 32:B7:1:PRO:O | 34:BA:592:A:H1' | 2.08 | 0.54 |
| 32:B7:41:ARG:HG3 | 32:B7:44:ARG:NH2 | 2.22 | 0.54 |
| 34:BA:534:U:O2' | 51:BU:48:ASP:OD1 | 2.17 | 0.54 |
| 34:BA:558:U:H5' | 44:BN:114:LEU:HD12 | 1.89 | 0.54 |
| 34:BA:875:G:C5 | 34:BA:876:C:C5 | 2.96 | 0.54 |
| 34:BA:1252:G:H1' | 51:BU:32:ARG:HH22 | 1.73 | 0.54 |
| 34:BA:2807:U:C2' | 34:BA:2808:G:H5' | 2.37 | 0.54 |
| 34:BA:2880:C:C2 | 34:BA:2881:U:C5 | 2.95 | 0.54 |
| 36:BC:90:ILE:HG23 | 36:BC:102:TYR:CD1 | 2.43 | 0.54 |
| 41:BH:128:THR:O | 41:BH:129:LEU:CB | 2.55 | 0.54 |
| 42:BI:96:LYS:HD2 | 42:BI:96:LYS:N | 2.23 | 0.54 |
| 52:BV:64:VAL:O | 52:BV:65:ALA:HB3 | 2.08 | 0.54 |
| 1:AA:537:G:H2' | 1:AA:538:G:H8 | 1.72 | 0.54 |
| 1:AA:1342:C:O2' | 9:AI:125:GLN:HA | 2.07 | 0.54 |
| 4:AD:191:SER:O | 4:AD:192:ALA:HB2 | 2.08 | 0.54 |
| 13:AM:22:TYR:OH | 13:AM:72:ILE:HD12 | 2.07 | 0.54 |
| 20:AT:57:VAL:HG13 | 20:AT:66:ILE:HD13 | 1.89 | 0.54 |
| 23:AW:91:GLY:O | 23:AW:92:HIS:HB2 | 2.08 | 0.54 |
| 30:B5:5:ARG:NH2 | 30:B5:24:LYS:HA | 2.23 | 0.54 |
| 34:BA:244:A:H2' | 34:BA:245:G:O4' | 2.08 | 0.54 |
| 34:BA:259:G:O2' | 34:BA:260:G:H5' | 2.07 | 0.54 |
| 34:BA:364:C:H2' | 34:BA:365:U:C6 | 2.43 | 0.54 |
| 34:BA:796:C:H2' | 34:BA:797:G:H8 | 1.73 | 0.54 |
| 34:BA:915:C:O2 | 35:BB:100:G:H4' | 2.08 | 0.54 |
| 34:BA:1205:A:C4' | 34:BA:1206:G:OP2 | 2.47 | 0.54 |
| 35:BB:66:A:H61 | 35:BB:107:G:C2' | 2.21 | 0.54 |
| 39:BF:12:VAL:HG13 | 39:BF:13:LYS:N | 2.23 | 0.54 |
| 41:BH:26:VAL:O | 41:BH:26:VAL:HG12 | 2.08 | 0.54 |
| 41:BH:40:GLU:O | 41:BH:40:GLU:HG2 | 2.07 | 0.54 |
| 41:BH:119:PRO:O | 41:BH:120:ALA:HB3 | 2.08 | 0.54 |
| 41:BH:158:VAL:HG21 | 43:BL:22:LEU:HB2 | 1.89 | 0.54 |
| 43:BK:7:ILE:O | 43:BK:11:VAL:HG23 | 2.08 | 0.54 |
| 50:BT:21:PRO:O | 50:BT:91:VAL:HG21 | 2.07 | 0.54 |
| 1:AA:381:C:O2 | 1:AA:381:C:H2' | 2.07 | 0.53 |
| 1:AA:408:A:OP1 | 4:AD:109:THR:CG2 | 2.57 | 0.53 |
| 1:AA:496:A:H2' | 1:AA:497:G:C8 | 2.44 | 0.53 |
| 1:AA:1211:U:O2' | 1:AA:1213:A:C2 | 2.58 | 0.53 |
| 1:AA:1297:G:H2' | 1:AA:1298:U:OP2 | 2.07 | 0.53 |
| 2:AB:114:LYS:CA | 2:AB:117:GLU:HG2 | 2.28 | 0.53 |
| 5:AE:55:VAL:HB | 5:AE:56:PRO:CD | 2.38 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:AF:50:PRO:CD | 18:AR:73:HIS:HB3 | 2.38 | 0.53 |
| 11:AK:73:VAL:O | 11:AK:78:ILE:HD11 | 2.08 | 0.53 |
| 19:AS:62:THR:CG2 | 19:AS:63:ASP:H | 2.21 | 0.53 |
| 23:AW:129:VAL:O | 23:AW:132:LEU:HB2 | 2.09 | 0.53 |
| 34:BA:602:A:O2' | 34:BA:604:G:H4' | 2.07 | 0.53 |
| 34:BA:2585:U:O2' | 34:BA:2586:U:H5' | 2.07 | 0.53 |
| 36:BC:30:ALA:HA | 36:BC:33:LEU:CD1 | 2.38 | 0.53 |
| 37:BD:119:ALA:HB1 | 37:BD:123:LYS:HB3 | 1.91 | 0.53 |
| 39:BF:52:ALA:O | 39:BF:55:ASP:HB2 | 2.09 | 0.53 |
| 45:BO:18:ARG:HB2 | 45:BO:45:GLU:HG3 | 1.90 | 0.53 |
| 49:BS:66:GLY:N | 49:BS:70:ALA:HB3 | 2.23 | 0.53 |
| 52:BV:27:ILE:HG22 | 52:BV:63:VAL:HG11 | 1.89 | 0.53 |
| 1:AA:88:U:O2 | 1:AA:88:U:H2' | 2.07 | 0.53 |
| 1:AA:1035:A:H2' | 1:AA:1036:A:O4' | 2.09 | 0.53 |
| 5:AE:42:ASN:C | 5:AE:42:ASN:HD22 | 2.10 | 0.53 |
| 5:AE:71:ILE:HD13 | 5:AE:72:ASN:N | 2.24 | 0.53 |
| 5:AE:113:VAL:HG21 | 5:AE:140:ILE:HD11 | 1.91 | 0.53 |
| 7:AG:144:ALA:C | 7:AG:146:ALA:H | 2.12 | 0.53 |
| 18:AR:21:ASP:OD1 | 18:AR:23:LYS:HG3 | 2.08 | 0.53 |
| 20:AT:68:LYS:HB2 | 20:AT:68:LYS:HZ2 | 1.69 | 0.53 |
| 23:AW:472:ARG:HG3 | 23:AW:504:ILE:N | 2.22 | 0.53 |
| 25:B0:25:PHE:O | 25:B0:27:GLY:N | 2.42 | 0.53 |
| 34:BA:293:U:C4 | 34:BA:345:A:N1 | 2.76 | 0.53 |
| 34:BA:675:A:H4' | 38:BE:62:GLN:NE2 | 2.24 | 0.53 |
| 34:BA:1212:G:H2' | 34:BA:1236:G:H22 | 1.74 | 0.53 |
| 34:BA:2564:A:C2 | 34:BA:2647:U:H4' | 2.43 | 0.53 |
| 37:BD:35:THR:OG1 | 37:BD:49:GLN:HG2 | 2.09 | 0.53 |
| 40:BG:59:ASP:HB3 | 40:BG:63:GLN:CG | 2.39 | 0.53 |
| 42:BI:24:GLY:C | 42:BI:26:ALA:H | 2.12 | 0.53 |
| 54:BX:50:LEU:HD12 | 54:BX:50:LEU:N | 2.06 | 0.53 |
| 1:AA:308:C:H2' | 1:AA:309:A:H8 | 1.72 | 0.53 |
| 1:AA:464:U:H2' | 1:AA:466:A:OP2 | 2.09 | 0.53 |
| 1:AA:970:C:O2 | 1:AA:1231:G:H1' | 2.08 | 0.53 |
| 1:AA:1391:U:H2' | 1:AA:1392:G:C8 | 2.43 | 0.53 |
| 12:AL:78:VAL:HB | 23:AW:407:LEU:HD12 | 1.89 | 0.53 |
| 16:AP:19:VAL:HG22 | 16:AP:36:VAL:HG13 | 1.89 | 0.53 |
| 34:BA:805:G:OP2 | 46:BP:41:ARG:HD2 | 2.08 | 0.53 |
| 34:BA:999:U:O2' | 34:BA:1000:A:H5' | 2.09 | 0.53 |
| 34:BA:1107:G:OP1 | 41:BH:58:THR:C | 2.47 | 0.53 |
| 37:BD:151:THR:O | 37:BD:152:PRO:C | 2.42 | 0.53 |
| 39:BF:100:GLU:C | 39:BF:102:LEU:H | 2.10 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 43:BJ:26:MET:HG3 | 43:BJ:29:LYS:NZ | 2.24 | 0.53 |
| 43:BL:11:VAL:HG13 | 43:BM:29:LYS:HZ1 | 1.72 | 0.53 |
| 44:BN:32:LEU:HD22 | 44:BN:54:ILE:HD11 | 1.90 | 0.53 |
| 49:BS:52:SER:HA | 49:BS:74:VAL:HG11 | 1.90 | 0.53 |
| 1:AA:114:U:O2' | 1:AA:115:G:H5' | 2.08 | 0.53 |
| 1:AA:686:U:O2' | 11:AK:43:TRP:CZ2 | 2.60 | 0.53 |
| 1:AA:796:C:H4' | 11:AK:126:ARG:HH21 | 1.73 | 0.53 |
| 1:AA:1062:U:H2' | 1:AA:1063:C:C6 | 2.43 | 0.53 |
| 1:AA:1113:C:H2' | 1:AA:1114:C:C6 | 2.43 | 0.53 |
| 1:AA:1300:G:C2' | 1:AA:1301:U:OP2 | 2.57 | 0.53 |
| 3:AC:54:ILE:HD13 | 3:AC:54:ILE:N | 2.22 | 0.53 |
| 5:AE:23:THR:HA | 5:AE:28:ARG:HA | 1.90 | 0.53 |
| 12:AL:14:LYS:HG3 | 12:AL:14:LYS:O | 2.08 | 0.53 |
| 13:AM:44:ILE:HG23 | 13:AM:47:LEU:HB3 | 1.90 | 0.53 |
| 13:AM:92:ARG:HG2 | 13:AM:92:ARG:HH11 | 1.73 | 0.53 |
| 16:AP:80:LYS:HB2 | 16:AP:80:LYS:HZ2 | 1.73 | 0.53 |
| 18:AR:61:ALA:CB | 18:AR:67:LEU:HD12 | 2.38 | 0.53 |
| 34:BA:1358:G:C8 | 34:BA:1371:G:O6 | 2.61 | 0.53 |
| 34:BA:1378:A:C4 | 34:BA:1380:G:N7 | 2.77 | 0.53 |
| 34:BA:1786:A:H1' | 34:BA:1938:A:N6 | 2.22 | 0.53 |
| 34:BA:1794:A:H2' | 34:BA:1795:C:C6 | 2.44 | 0.53 |
| 36:BC:161:VAL:HG11 | 36:BC:173:LEU:HG | 1.89 | 0.53 |
| 36:BC:203:VAL:O | 36:BC:204:LEU:HB2 | 2.08 | 0.53 |
| 49:BS:26:LEU:HD13 | 49:BS:39:VAL:HG22 | 1.90 | 0.53 |
| 54:BX:39:THR:O | 54:BX:41:ALA:N | 2.41 | 0.53 |
| 56:BZ:80:HIS:HD2 | 56:BZ:83:LYS:CB | 2.20 | 0.53 |
| 1:AA:73:C:N4 | 1:AA:94:G:N2 | 2.52 | 0.53 |
| 1:AA:411:A:C6 | 1:AA:413:G:O2' | 2.61 | 0.53 |
| 1:AA:735:C:H2' | 1:AA:736:C:H6 | 1.73 | 0.53 |
| 1:AA:1280:A:OP1 | 10:AJ:9:ARG:NH1 | 2.42 | 0.53 |
| 1:AA:1291:U:OP1 | 7:AG:36:SER:HB3 | 2.08 | 0.53 |
| 1:AA:1495:U:C4 | 24:AY:1:KBE:CE | 2.63 | 0.53 |
| 3:AC:154:GLY:O | 3:AC:155:ARG:C | 2.45 | 0.53 |
| 5:AE:110:MET:HE1 | 5:AE:124:ALA:HB1 | 1.90 | 0.53 |
| 7:AG:98:LEU:HD23 | 7:AG:101:ARG:HH12 | 1.73 | 0.53 |
| 14:AN:31:SER:O | 14:AN:32:ASP:HB2 | 2.08 | 0.53 |
| 34:BA:221:A:C8 | 34:BA:266:G:O6 | 2.62 | 0.53 |
| 34:BA:348:A:H2' | 34:BA:349:U:O4' | 2.08 | 0.53 |
| 34:BA:675:A:N3 | 34:BA:2443:C:O2' | 2.38 | 0.53 |
| 34:BA:1859:U:H2' | 34:BA:1860:G:H8 | 1.74 | 0.53 |
| 34:BA:2327:A:H2' | 34:BA:2328:A:C8 | 2.43 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 39:BF:37:MET:SD | 39:BF:56:LEU:HG | 2.48 | 0.53 |
| 39:BF:38:GLY:HA2 | 39:BF:85:GLY:CA | 2.39 | 0.53 |
| 44:BN:44:TYR:C | 44:BN:44:TYR:CD1 | 2.82 | 0.53 |
| 47:BQ:21:ALA:HB1 | 47:BQ:100:LYS:HG2 | 1.90 | 0.53 |
| 49:BS:70:ALA:O | 49:BS:73:ALA:HB3 | 2.09 | 0.53 |
| 53:BW:4:ILE:HG12 | 53:BW:5:ALA:N | 2.23 | 0.53 |
| 1:AA:115:G:H1' | 1:AA:116:A:N7 | 2.23 | 0.53 |
| 1:AA:947:G:H1 | 1:AA:1234:C:H42 | 1.55 | 0.53 |
| 1:AA:1104:G:O2' | 1:AA:1105:A:H5' | 2.09 | 0.53 |
| 5:AE:12:GLU:HB2 | 5:AE:63:MET:CE | 2.39 | 0.53 |
| 6:AF:45:ARG:O | 6:AF:56:LYS:HA | 2.08 | 0.53 |
| 7:AG:11:ILE:HD13 | 7:AG:11:ILE:H | 1.74 | 0.53 |
| 8:AH:111:THR:H | 8:AH:114:ALA:HB3 | 1.74 | 0.53 |
| 9:AI:6:TYR:CG | 9:AI:7:GLY:N | 2.76 | 0.53 |
| 9:AI:112:ARG:NH2 | 10:AJ:64:GLN:HE22 | 1.98 | 0.53 |
| 10:AJ:10:LEU:CD1 | 10:AJ:98:VAL:HG12 | 2.38 | 0.53 |
| 11:AK:76:TYR:HD1 | 11:AK:76:TYR:H | 1.57 | 0.53 |
| 18:AR:58:ILE:O | 18:AR:62:ARG:HG3 | 2.08 | 0.53 |
| 25:B0:16:GLU:HG3 | 34:BA:2356:U:H4' | 1.89 | 0.53 |
| 34:BA:110:G:C2 | 34:BA:111:A:C8 | 2.97 | 0.53 |
| 34:BA:1287:A:H5' | 48:BR:103:ARG:HD2 | 1.90 | 0.53 |
| 34:BA:1492:G:H2' | 34:BA:1493:C:OP1 | 2.09 | 0.53 |
| 34:BA:1566:A:C6 | 36:BC:212:TRP:CZ3 | 2.97 | 0.53 |
| 34:BA:1599:U:OP1 | 54:BX:40:LYS:HG3 | 2.08 | 0.53 |
| 34:BA:2683:C:O2 | 45:BO:70:ARG:NH2 | 2.41 | 0.53 |
| 37:BD:113:SER:O | 37:BD:167:ASN:HA | 2.09 | 0.53 |
| 38:BE:172:ALA:O | 38:BE:175:ILE:HG22 | 2.08 | 0.53 |
| 38:BE:187:VAL:O | 38:BE:188:MET:HB3 | 2.08 | 0.53 |
| 40:BG:6:ALA:HB3 | 40:BG:68:ARG:NH1 | 2.24 | 0.53 |
| 40:BG:104:LEU:HB2 | 40:BG:112:VAL:HG21 | 1.90 | 0.53 |
| 49:BS:31:THR:HG23 | 49:BS:34:HIS:N | 2.24 | 0.53 |
| 50:BT:23:ASP:OD2 | 50:BT:88:ARG:HA | 2.09 | 0.53 |
| 1:AA:35:G:H2' | 1:AA:36:C:C6 | 2.44 | 0.53 |
| 1:AA:57:G:C5 | 1:AA:58:C:C4 | 2.97 | 0.53 |
| 1:AA:1392:G:O2' | 1:AA:1393:U:H5' | 2.08 | 0.53 |
| 3:AC:148:ILE:HG13 | 3:AC:201:ILE:HG12 | 1.90 | 0.53 |
| 5:AE:105:ILE:HD11 | 5:AE:123:LEU:CG | 2.39 | 0.53 |
| 5:AE:134:ASN:O | 5:AE:137:ARG:HB3 | 2.08 | 0.53 |
| 5:AE:135:VAL:O | 5:AE:139:THR:HG23 | 2.09 | 0.53 |
| 6:AF:45:ARG:HB3 | 6:AF:59:TYR:CD1 | 2.44 | 0.53 |
| 8:AH:17:GLN:NE2 | 8:AH:69:ALA:HB1 | 2.24 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 9:AI:6:TYR:HA | 9:AI:18:VAL:O | 2.09 | 0.53 |
| 9:AI:17:ARG:CZ | 9:AI:67:LYS:HZ1 | 2.21 | 0.53 |
| 17:AQ:16:MET:O | 17:AQ:19:SER:N | 2.42 | 0.53 |
| 23:AW:522:GLN:HB2 | 23:AW:523:PHE:CB | 2.37 | 0.53 |
| 26:B1:34:SER:HA | 26:B1:49:ARG:HA | 1.91 | 0.53 |
| 26:B1:56:ARG:NH1 | 34:BA:400:G:N7 | 2.45 | 0.53 |
| 34:BA:483:A:N7 | 55:BY:44:HIS:HD2 | 2.05 | 0.53 |
| 34:BA:805:G:N2 | 34:BA:829:A:OP1 | 2.41 | 0.53 |
| 34:BA:900:A:O2' | 34:BA:901:C:P | 2.67 | 0.53 |
| 34:BA:2564:A:C6 | 34:BA:2565:A:N1 | 2.77 | 0.53 |
| 37:BD:12:THR:HG23 | 37:BD:13:ARG:H | 1.72 | 0.53 |
| 40:BG:3:VAL:O | 40:BG:68:ARG:HG3 | 2.09 | 0.53 |
| 41:BH:15:VAL:HG13 | 41:BH:67:THR:HG22 | 1.90 | 0.53 |
| 41:BH:143:MET:O | 41:BH:145:GLU:N | 2.41 | 0.53 |
| 1:AA:267:C:H2' | 1:AA:268:U:C6 | 2.44 | 0.53 |
| 1:AA:767:A:H2' | 1:AA:768:A:O4' | 2.08 | 0.53 |
| 1:AA:1087:G:N2 | 1:AA:1099:G:H1' | 2.23 | 0.53 |
| 1:AA:1159:U:O2 | 1:AA:1182:G:N3 | 2.42 | 0.53 |
| 1:AA:1425:U:O2' | 1:AA:1426:G:H5' | 2.08 | 0.53 |
| 2:AB:49:PHE:CG | 2:AB:212:TYR:OH | 2.62 | 0.53 |
| 2:AB:96:LEU:N | 2:AB:99:MET:HE3 | 2.23 | 0.53 |
| 5:AE:12:GLU:CB | 5:AE:38:VAL:HG12 | 2.39 | 0.53 |
| 5:AE:156:ARG:NH2 | 8:AH:113:ARG:HH12 | 2.04 | 0.53 |
| 10:AJ:8:ILE:O | 10:AJ:8:ILE:HG22 | 2.07 | 0.53 |
| 17:AQ:4:ILE:N | 17:AQ:4:ILE:HD12 | 2.24 | 0.53 |
| 23:AW:45:THR:N | 23:AW:56:LYS:O | 2.41 | 0.53 |
| 28:B3:50:VAL:O | 28:B3:54:VAL:HG22 | 2.09 | 0.53 |
| 34:BA:1319:C:O2' | 34:BA:1320:C:H5' | 2.09 | 0.53 |
| 34:BA:1714:U:H5" | 34:BA:1715:G:C5' | 2.37 | 0.53 |
| 34:BA:1798:U:OP1 | 36:BC:257:ARG:HB2 | 2.09 | 0.53 |
| 34:BA:2840:C:H6 | 34:BA:2840:C:O5' | 1.92 | 0.53 |
| 38:BE:150:THR:HA | 38:BE:189:THR:HG22 | 1.90 | 0.53 |
| 41:BH:136:ILE:HD12 | 41:BH:136:ILE:N | 2.23 | 0.53 |
| 44:BN:21:THR:O | 44:BN:23:LYS:N | 2.41 | 0.53 |
| 50:BT:39:LEU:N | 50:BT:39:LEU:HD12 | 2.24 | 0.53 |
| 54:BX:69:ARG:O | 54:BX:74:ILE:HD12 | 2.08 | 0.53 |
| 1:AA:373:A:C1' | 1:AA:481:G:H1' | 2.37 | 0.53 |
| 1:AA:522:C:H41 | 12:AL:49:ARG:HH22 | 1.56 | 0.53 |
| 1:AA:688:G:H2' | 1:AA:689:C:H6 | 1.72 | 0.53 |
| 1:AA:1006:G:H2' | 1:AA:1007:U:H6 | 1.74 | 0.53 |
| 1:AA:1303:C:H2' | 1:AA:1304:G:O4' | 2.08 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:AB:209:VAL:HG23 | 2:AB:210:THR:N | 2.18 | 0.53 |
| 3:AC:106:ARG:H | 3:AC:106:ARG:CD | 2.22 | 0.53 |
| 3:AC:156:LEU:HD12 | 3:AC:156:LEU:N | 2.23 | 0.53 |
| 6:AF:64:VAL:HG12 | 6:AF:65:GLU:N | 2.24 | 0.53 |
| 6:AF:64:VAL:CG1 | 6:AF:65:GLU:N | 2.72 | 0.53 |
| 8:AH:95:MET:HB2 | 8:AH:98:LEU:O | 2.09 | 0.53 |
| 16:AP:46:LYS:CE | 16:AP:47:GLU:H | 2.16 | 0.53 |
| 25:B0:23:LYS:HB3 | 34:BA:856:G:C1' | 2.35 | 0.53 |
| 34:BA:1045:C:H5" | 34:BA:1046:A:H5' | 1.91 | 0.53 |
| 34:BA:1152:C:O2' | 34:BA:1153:C:H5' | 2.08 | 0.53 |
| 34:BA:1384:A:H1' | 34:BA:1405:U:H1' | 1.91 | 0.53 |
| 34:BA:1794:A:H1' | 34:BA:1900:A:C2 | 2.43 | 0.53 |
| 34:BA:2741:A:H2' | 34:BA:2742:G:O4' | 2.09 | 0.53 |
| 34:BA:2746:U:H2' | 34:BA:2747:G:H5' | 1.91 | 0.53 |
| 41:BH:23:LEU:HD21 | 41:BH:96:PHE:CE2 | 2.44 | 0.53 |
| 47:BQ:42:THR:H | 47:BQ:45:GLN:HB2 | 1.74 | 0.53 |
| 52:BV:66:HIS:CG | 52:BV:94:THR:HG22 | 2.43 | 0.53 |
| 1:AA:6:G:O6 | 5:AE:98:ALA:CB | 2.57 | 0.53 |
| 1:AA:130:A:O2' | 1:AA:264:C:H5' | 2.09 | 0.53 |
| 1:AA:182:A:N6 | 1:AA:184:G:C4 | 2.76 | 0.53 |
| 1:AA:776:G:HO2' | 1:AA:777:A:H8 | 1.56 | 0.53 |
| 2:AB:41:ASN:HD22 | 2:AB:41:ASN:C | 2.11 | 0.53 |
| 8:AH:29:SER:HB3 | 8:AH:32:LYS:HG3 | 1.91 | 0.53 |
| 9:AI:18:VAL:HA | 9:AI:64:ILE:HG23 | 1.91 | 0.53 |
| 9:AI:19:PHE:HD2 | 9:AI:63:TYR:O | 1.92 | 0.53 |
| 10:AJ:18:ILE:CG2 | 10:AJ:72:ARG:HE | 2.21 | 0.53 |
| 15:AO:84:LEU:HB3 | 15:AO:86:LEU:HD22 | 1.90 | 0.53 |
| 21:AU:19:LYS:C | 21:AU:21:SER:H | 2.10 | 0.53 |
| 23:AW:300:VAL:O | 23:AW:301:PHE:HB3 | 2.09 | 0.53 |
| 25:B0:39:GLN:O | 34:BA:2331:G:O2' | 2.20 | 0.53 |
| 34:BA:125:A:H4' | 34:BA:126:A:OP2 | 2.09 | 0.53 |
| 34:BA:205:G:HO2' | 34:BA:206:U:P | 2.28 | 0.53 |
| 34:BA:809:G:O4' | 34:BA:1254:A:H1' | 2.10 | 0.53 |
| 34:BA:859:G:O2' | 34:BA:860:U:O5' | 2.25 | 0.53 |
| 34:BA:927:A:C6 | 34:BA:928:A:C6 | 2.97 | 0.53 |
| 34:BA:1126:A:H8 | 34:BA:1126:A:OP1 | 1.92 | 0.53 |
| 34:BA:1587:G:C2 | 34:BA:1588:G:C8 | 2.97 | 0.53 |
| 34:BA:1818:U:C5 | 36:BC:155:ARG:NH1 | 2.75 | 0.53 |
| 34:BA:2838:G:H1' | 48:BR:45:ARG:NH1 | 2.23 | 0.53 |
| 35:BB:49:C:O3' | 49:BS:68:LYS:HE2 | 2.09 | 0.53 |
| 38:BE:5:LEU:HD13 | 38:BE:122:GLU:HG3 | 1.91 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 41:BH:138:ARG:HA | 41:BH:141:ALA:CB | 2.39 | 0.53 |
| 43:BJ:14:MET:HB2 | 43:BM:12:ALA:HA | 1.89 | 0.53 |
| 56:BZ:63:ILE:O | 56:BZ:69:GLU:HA | 2.09 | 0.53 |
| 1:AA:501:C:H1' | 1:AA:549:C:O2' | 2.09 | 0.52 |
| 1:AA:511:C:O2 | 1:AA:540:G:N2 | 2.38 | 0.52 |
| 1:AA:769:G:O2' | 1:AA:770:C:H5' | 2.09 | 0.52 |
| 1:AA:993:G:O6 | 1:AA:1046:A:C6 | 2.62 | 0.52 |
| 1:AA:994:A:C4 | 1:AA:1216:A:H4' | 2.44 | 0.52 |
| 1:AA:1512:U:H2' | 1:AA:1513:A:H8 | 1.74 | 0.52 |
| 8:AH:54:THR:HG23 | 8:AH:55:LYS:HD3 | 1.90 | 0.52 |
| 20:AT:8:LYS:HA | 20:AT:11:ILE:HG22 | 1.91 | 0.52 |
| 23:AW:472:ARG:HG3 | 23:AW:504:ILE:CA | 2.39 | 0.52 |
| 28:B3:29:ARG:H | 28:B3:33:HIS:HD2 | 1.57 | 0.52 |
| 34:BA:566:U:O4 | 52:BV:80:ARG:HD3 | 2.09 | 0.52 |
| 34:BA:783:A:H2' | 34:BA:784:G:O3' | 2.09 | 0.52 |
| 34:BA:1022:G:N2 | 34:BA:1142:A:C2 | 2.77 | 0.52 |
| 34:BA:1873:G:H2' | 34:BA:1874:C:H6 | 1.74 | 0.52 |
| 34:BA:2074:U:H1' | 34:BA:2598:A:N3 | 2.25 | 0.52 |
| 36:BC:170:TYR:CE2 | 36:BC:184:GLU:HG2 | 2.43 | 0.52 |
| 37:BD:13:ARG:NH1 | 50:BT:74:GLN:HE21 | 2.00 | 0.52 |
| 39:BF:33:ILE:CD1 | 39:BF:155:ILE:HG13 | 2.29 | 0.52 |
| 41:BH:23:LEU:HG | 41:BH:24:SER:N | 2.22 | 0.52 |
| 41:BH:136:ILE:HA | 41:BH:139:LEU:HD12 | 1.91 | 0.52 |
| 43:BJ:11:VAL:HB | 43:BK:29:LYS:HZ3 | 1.72 | 0.52 |
| 43:BJ:27:GLU:O | 43:BJ:28:GLU:HB2 | 2.08 | 0.52 |
| 45:BO:23:LYS:HB3 | 45:BO:40:LYS:HB3 | 1.91 | 0.52 |
| 47:BQ:1:MET:O | 47:BQ:2:LEU:CB | 2.58 | 0.52 |
| 54:BX:13:ALA:O | 54:BX:32:LEU:HB2 | 2.09 | 0.52 |
| 56:BZ:80:HIS:CD2 | 56:BZ:83:LYS:N | 2.78 | 0.52 |
| 1:AA:234:C:H2' | 1:AA:235:C:C6 | 2.43 | 0.52 |
| 1:AA:538:G:OP2 | 12:AL:111:GLN:HB2 | 2.09 | 0.52 |
| 1:AA:679:C:H2' | 1:AA:680:C:C6 | 2.44 | 0.52 |
| 1:AA:971:G:O2' | 1:AA:1365:G:O2' | 2.28 | 0.52 |
| 1:AA:1364:U:O2 | 1:AA:1364:U:C2' | 2.58 | 0.52 |
| 1:AA:1368:A:O2' | 1:AA:1369:C:H5' | 2.09 | 0.52 |
| 1:AA:1371:G:N3 | 1:AA:1371:G:H2' | 2.23 | 0.52 |
| 4:AD:96:ARG:O | 4:AD:100:VAL:HG23 | 2.09 | 0.52 |
| 5:AE:95:MET:HE3 | 5:AE:114:LEU:HD21 | 1.91 | 0.52 |
| 5:AE:135:VAL:C | 5:AE:137:ARG:N | 2.62 | 0.52 |
| 6:AF:3:HIS:CB | 6:AF:92:THR:HG23 | 2.38 | 0.52 |
| 17:AQ:8:GLN:HE21 | 17:AQ:8:GLN:HA | 1.73 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 32:B7:23:HIS:ND1 | 46:BP:61:LEU:HG | 2.23 | 0.52 |
| 33:B8:37:GLN:O | 33:B8:37:GLN:HG2 | 2.08 | 0.52 |
| 34:BA:340:A:C2' | 34:BA:341:C:H5' | 2.40 | 0.52 |
| 34:BA:449:A:H2' | 34:BA:450:G:H5' | 1.91 | 0.52 |
| 34:BA:646:U:H3' | 34:BA:647:G:C5' | 2.38 | 0.52 |
| 34:BA:871:U:H2' | 34:BA:872:U:C6 | 2.44 | 0.52 |
| 34:BA:1028:A:N6 | 34:BA:1125:G:H2' | 2.24 | 0.52 |
| 34:BA:1218:G:C2 | 34:BA:1232:G:C5 | 2.97 | 0.52 |
| 34:BA:1501:G:C2' | 34:BA:1502:A:H5' | 2.39 | 0.52 |
| 34:BA:1797:G:H4' | 36:BC:255:LYS:H | 1.73 | 0.52 |
| 34:BA:2758:A:C2' | 34:BA:2759:G:H5' | 2.40 | 0.52 |
| 34:BA:2797:U:H5" | 34:BA:2798:U:OP1 | 2.08 | 0.52 |
| 38:BE:153:LEU:HD12 | 38:BE:154:ASP:O | 2.08 | 0.52 |
| 41:BH:63:ALA:O | 41:BH:67:THR:HG23 | 2.09 | 0.52 |
| 45:BO:105:ARG:HD3 | 45:BO:105:ARG:H | 1.74 | 0.52 |
| 54:BX:54:GLU:HB3 | 54:BX:88:LYS:CG | 2.40 | 0.52 |
| 1:AA:439:U:H1' | 4:AD:118:SER:O | 2.09 | 0.52 |
| 4:AD:35:GLN:O | 4:AD:36:ALA:HB2 | 2.08 | 0.52 |
| 19:AS:28:LYS:HB3 | 19:AS:29:PRO:HD2 | 1.92 | 0.52 |
| 19:AS:42:ASN:C | 19:AS:42:ASN:HD22 | 2.13 | 0.52 |
| 23:AW:68:ILE:HD11 | 58:AW:602:GNP:H5'1 | 1.92 | 0.52 |
| 27:B2:38:GLN:O | 34:BA:95:A:H4' | 2.08 | 0.52 |
| 28:B3:6:ILE:HG23 | 28:B3:56:VAL:HG23 | 1.90 | 0.52 |
| 34:BA:1484:U:H2' | 34:BA:1485:U:H6 | 1.74 | 0.52 |
| 34:BA:1638:C:H1' | 34:BA:2698:U:O2' | 2.09 | 0.52 |
| 34:BA:1758:U:C5 | 34:BA:2696:U:H5' | 2.44 | 0.52 |
| 34:BA:2825:G:H5" | 34:BA:2825:G:N3 | 2.25 | 0.52 |
| 37:BD:48:ILE:C | 37:BD:48:ILE:HD12 | 2.29 | 0.52 |
| 37:BD:110:THR:OG1 | 37:BD:171:THR:HB | 2.09 | 0.52 |
| 37:BD:117:GLY:C | 37:BD:118:PHE:CG | 2.81 | 0.52 |
| 38:BE:46:GLN:CG | 38:BE:87:ALA:H | 2.08 | 0.52 |
| 38:BE:161:ALA:H | 38:BE:164:LEU:HD13 | 1.74 | 0.52 |
| 39:BF:76:PHE:O | 39:BF:77:LYS:HB2 | 2.09 | 0.52 |
| 44:BN:21:THR:CG2 | 44:BN:22:GLY:N | 2.66 | 0.52 |
| 45:BO:88:ASN:HD22 | 45:BO:91:SER:H | 1.56 | 0.52 |
| 1:AA:652:U:O2' | 1:AA:653:U:O5' | 2.27 | 0.52 |
| 1:AA:1285:A:H4' | 1:AA:1286:U:C4 | 2.45 | 0.52 |
| 4:AD:124:VAL:O | 4:AD:126:GLY:N | 2.37 | 0.52 |
| 4:AD:143:SER:HB3 | 4:AD:178:GLU:HB3 | 1.90 | 0.52 |
| 6:AF:3:HIS:HA | 6:AF:64:VAL:O | 2.10 | 0.52 |
| 8:AH:40:LYS:C | 8:AH:42:GLU:H | 2.13 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 25:B0:19:ARG:HH22 | 34:BA:856:G:H21 | 1.57 | 0.52 |
| 34:BA:653:U:C5 | 34:BA:654:A:C2 | 2.94 | 0.52 |
| 34:BA:898:C:O5' | 34:BA:898:C:H6 | 1.92 | 0.52 |
| 34:BA:1454:C:N4 | 48:BR:73:ASN:HD21 | 2.00 | 0.52 |
| 34:BA:1688:U:H1' | 34:BA:1701:A:C6 | 2.44 | 0.52 |
| 34:BA:1757:A:H3' | 34:BA:1758:U:C5' | 2.36 | 0.52 |
| 34:BA:1918:A:O2' | 34:BA:1919:A:N7 | 2.42 | 0.52 |
| 34:BA:2103:C:O2' | 34:BA:2104:C:P | 2.67 | 0.52 |
| 41:BH:136:ILE:HG13 | 41:BH:139:LEU:HD12 | 1.91 | 0.52 |
| 54:BX:2:ILE:HD13 | 54:BX:3:ARG:NE | 2.24 | 0.52 |
| 54:BX:24:MET:O | 54:BX:29:THR:HG23 | 2.09 | 0.52 |
| 56:BZ:10:LYS:HB2 | 56:BZ:10:LYS:NZ | 2.23 | 0.52 |
| 1:AA:746:A:N6 | 1:AA:747:A:N6 | 2.58 | 0.52 |
| 1:AA:872:A:C5 | 1:AA:874:G:C8 | 2.96 | 0.52 |
| 1:AA:1179:A:O3' | 9:AI:104:THR:HG23 | 2.09 | 0.52 |
| 1:AA:1220:G:N3 | 1:AA:1221:G:C8 | 2.78 | 0.52 |
| 1:AA:1227:A:OP2 | 13:AM:109:LYS:HE2 | 2.10 | 0.52 |
| 2:AB:46:VAL:HB | 2:AB:47:PRO:HD3 | 1.91 | 0.52 |
| 3:AC:20:THR:HG23 | 3:AC:57:GLU:HB3 | 1.92 | 0.52 |
| 23:AW:26:LYS:HD2 | 23:AW:89:THR:O | 2.09 | 0.52 |
| 23:AW:408:LYS:HB3 | 23:AW:409:GLN:O | 2.08 | 0.52 |
| 34:BA:1070:A:C2 | 34:BA:1097:U:H4' | 2.45 | 0.52 |
| 34:BA:1385:A:H1' | 34:BA:1386:C:C6 | 2.44 | 0.52 |
| 34:BA:2644:G:N7 | 34:BA:2645:G:C6 | 2.78 | 0.52 |
| 37:BD:149:ASN:OD1 | 37:BD:150:GLN:N | 2.42 | 0.52 |
| 38:BE:75:SER:OG | 38:BE:77:ILE:HG12 | 2.08 | 0.52 |
| 39:BF:102:LEU:HD13 | 39:BF:107:VAL:HG23 | 1.92 | 0.52 |
| 41:BH:15:VAL:HG12 | 41:BH:69:PHE:CD1 | 2.45 | 0.52 |
| 41:BH:117:LEU:O | 41:BH:118:ILE:HB | 2.09 | 0.52 |
| 42:BI:78:LEU:HD13 | 42:BI:108:ILE:HG23 | 1.92 | 0.52 |
| 44:BN:124:VAL:O | 44:BN:125:TYR:CB | 2.58 | 0.52 |
| 48:BR:54:LEU:HD11 | 48:BR:62:ASN:ND2 | 2.24 | 0.52 |
| 50:BT:19:PHE:HE2 | 50:BT:83:ILE:CD1 | 2.23 | 0.52 |
| 51:BU:65:ASN:O | 51:BU:69:ARG:HB2 | 2.10 | 0.52 |
| 52:BV:4:VAL:HG12 | 52:BV:13:ARG:HB2 | 1.91 | 0.52 |
| 1:AA:50:A:O2' | 1:AA:360:G:N2 | 2.43 | 0.52 |
| 1:AA:66:A:H4' | 1:AA:173:U:C5 | 2.45 | 0.52 |
| 1:AA:97:G:H2' | 1:AA:98:A:O4' | 2.09 | 0.52 |
| 2:AB:27:LYS:N | 2:AB:28:PRO:CD | 2.72 | 0.52 |
| 3:AC:46:LEU:O | 3:AC:49:ALA:HB3 | 2.10 | 0.52 |
| 3:AC:179:ALA:HB1 | 3:AC:202:PHE:HE1 | 1.74 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:AD:145:ARG:HD2 | 4:AD:147:LYS:CE | 2.40 | 0.52 |
| 5:AE:121:ASN:O | 5:AE:122:VAL:O | 2.28 | 0.52 |
| 6:AF:42:TRP:CZ2 | 6:AF:61:LEU:HD22 | 2.44 | 0.52 |
| 21:AU:16:ARG:NH1 | 21:AU:19:LYS:CG | 2.72 | 0.52 |
| 26:B1:67:LEU:HD23 | 26:B1:67:LEU:N | 2.25 | 0.52 |
| 30:B5:9:LYS:HB2 | 30:B5:19:PHE:CD2 | 2.43 | 0.52 |
| 34:BA:620:G:H4' | 34:BA:621:A:O5' | 2.09 | 0.52 |
| 34:BA:995:C:O2 | 44:BN:3:THR:HG23 | 2.10 | 0.52 |
| 34:BA:1568:G:H4' | 36:BC:58:LYS:CG | 2.40 | 0.52 |
| 34:BA:1717:A:H2' | 34:BA:1718:G:O4' | 2.09 | 0.52 |
| 34:BA:1935:G:N1 | 34:BA:1962:C:H2' | 2.25 | 0.52 |
| 34:BA:2498:C:O2' | 34:BA:2499:C:H5' | 2.09 | 0.52 |
| 34:BA:2845:U:O3' | 50:BT:52:ARG:NH1 | 2.42 | 0.52 |
| 36:BC:23:LEU:HD11 | 36:BC:81:GLU:C | 2.30 | 0.52 |
| 37:BD:4:LEU:HD21 | 37:BD:97:SER:O | 2.09 | 0.52 |
| 37:BD:98:VAL:HG12 | 37:BD:180:VAL:CG1 | 2.37 | 0.52 |
| 38:BE:149:ILE:O | 38:BE:188:MET:HA | 2.10 | 0.52 |
| 39:BF:127:TYR:O | 39:BF:128:SER:HB2 | 2.09 | 0.52 |
| 41:BH:144:LYS:O | 41:BH:146:ALA:N | 2.43 | 0.52 |
| 43:BJ:2:ILE:HG23 | 43:BJ:4:LYS:HD2 | 1.91 | 0.52 |
| 48:BR:96:ARG:HH12 | 48:BR:116:VAL:HG23 | 1.74 | 0.52 |
| 50:BT:50:ARG:CG | 50:BT:57:ALA:H | 2.21 | 0.52 |
| 50:BT:64:SER:O | 50:BT:65:ASN:C | 2.48 | 0.52 |
| 1:AA:53:A:H2' | 1:AA:54:C:O5' | 2.10 | 0.52 |
| 1:AA:632:U:H5" | 1:AA:633:G:C8 | 2.45 | 0.52 |
| 1:AA:883:C:O2' | 1:AA:884:U:H5' | 2.09 | 0.52 |
| 1:AA:946:A:H2' | 1:AA:947:G:C8 | 2.45 | 0.52 |
| 1:AA:963:G:O2' | 10:AJ:56:HIS:HE1 | 1.91 | 0.52 |
| 1:AA:991:U:O2' | 1:AA:993:G:C8 | 2.62 | 0.52 |
| 1:AA:1220:G:C2 | 1:AA:1221:G:C8 | 2.98 | 0.52 |
| 1:AA:1428:A:H2' | 1:AA:1429:A:O4' | 2.09 | 0.52 |
| 1:AA:1441:A:N6 | 1:AA:1461:G:H21 | 2.01 | 0.52 |
| 1:AA:1452:C:H4' | 1:AA:1453:G:N1 | 2.23 | 0.52 |
| 2:AB:96:LEU:CB | 2:AB:99:MET:HE3 | 2.40 | 0.52 |
| 3:AC:54:ILE:HG12 | 3:AC:54:ILE:O | 2.10 | 0.52 |
| 9:AI:22:PRO:HA | 9:AI:60:LEU:HA | 1.92 | 0.52 |
| 12:AL:43:LYS:HD3 | 12:AL:43:LYS:N | 2.18 | 0.52 |
| 17:AQ:58:VAL:HG22 | 17:AQ:59:GLU:N | 2.25 | 0.52 |
| 23:AW:70:ILE:O | 23:AW:90:PRO:HB3 | 2.09 | 0.52 |
| 23:AW:499:ASP:O | 23:AW:500:ASN:HB3 | 2.10 | 0.52 |
| 30:B5:10:LEU:HB2 | 30:B5:20:TYR:HB2 | 1.90 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:374:A:C2 | 34:BA:401:A:C4 | 2.98 | 0.52 |
| 34:BA:613:A:C8 | 34:BA:616:A:N1 | 2.78 | 0.52 |
| 34:BA:1064:C:N4 | 34:BA:1070:A:OP2 | 2.41 | 0.52 |
| 34:BA:1125:G:C6 | 34:BA:1126:A:N6 | 2.77 | 0.52 |
| 34:BA:1174:U:O2 | 34:BA:1174:U:C2' | 2.58 | 0.52 |
| 34:BA:1199:U:C1' | 51:BU:3:VAL:HG22 | 2.39 | 0.52 |
| 34:BA:1903:G:OP1 | 36:BC:239:PHE:HB3 | 2.10 | 0.52 |
| 34:BA:2773:C:OP1 | 37:BD:171:THR:CG2 | 2.57 | 0.52 |
| 35:BB:29:A:C2 | 35:BB:30:C:N3 | 2.78 | 0.52 |
| 36:BC:93:VAL:HG13 | 36:BC:94:LEU:N | 2.25 | 0.52 |
| 36:BC:95:TYR:CE1 | 36:BC:101:ARG:HD2 | 2.45 | 0.52 |
| 38:BE:5:LEU:HD23 | 38:BE:120:VAL:HG22 | 1.91 | 0.52 |
| 40:BG:142:GLN:HG3 | 40:BG:146:ASP:OD2 | 2.09 | 0.52 |
| 42:BI:21:PRO:HB2 | 42:BI:22:PRO:HD3 | 1.91 | 0.52 |
| 43:BJ:24:SER:C | 43:BJ:26:MET:H | 2.13 | 0.52 |
| 43:BK:29:LYS:HD3 | 43:BM:15:SER:OG | 2.09 | 0.52 |
| 45:BO:88:ASN:ND2 | 45:BO:91:SER:H | 2.07 | 0.52 |
| 51:BU:71:ASN:CB | 51:BU:109:VAL:HG21 | 2.39 | 0.52 |
| 52:BV:27:ILE:HG12 | 52:BV:33:VAL:HG12 | 1.92 | 0.52 |
| 1:AA:785:G:O2' | 1:AA:786:G:H5' | 2.10 | 0.52 |
| 1:AA:936:C:H2' | 1:AA:937:A:O4' | 2.10 | 0.52 |
| 1:AA:947:G:C6 | 1:AA:948:C:N4 | 2.77 | 0.52 |
| 1:AA:1057:G:H4' | 3:AC:196:GLY:H | 1.75 | 0.52 |
| 1:AA:1202:U:C1' | 14:AN:68:ARG:HD2 | 2.40 | 0.52 |
| 2:AB:30:ILE:HG12 | 2:AB:31:PHE:H | 1.75 | 0.52 |
| 4:AD:53:GLN:NE2 | 4:AD:202:LEU:HA | 2.24 | 0.52 |
| 6:AF:46:GLN:HA | 6:AF:46:GLN:HE21 | 1.75 | 0.52 |
| 11:AK:20:ALA:HA | 11:AK:33:ILE:HD13 | 1.90 | 0.52 |
| 14:AN:27:LYS:O | 14:AN:31:SER:HB2 | 2.10 | 0.52 |
| 21:AU:19:LYS:HB2 | 21:AU:20:ARG:HH11 | 1.74 | 0.52 |
| 23:AW:521:VAL:HG22 | 23:AW:522:GLN:HG2 | 1.92 | 0.52 |
| 28:B3:26:LEU:HD21 | 28:B3:47:ILE:CD1 | 2.40 | 0.52 |
| 32:B7:29:ARG:NH2 | 46:BP:62:PRO:HB2 | 2.25 | 0.52 |
| 32:B7:32:LEU:HB2 | 34:BA:2420:C:OP2 | 2.09 | 0.52 |
| 34:BA:616:A:H2' | 34:BA:617:G:H5' | 1.91 | 0.52 |
| 34:BA:1936:A:N6 | 34:BA:1963:U:N3 | 2.57 | 0.52 |
| 34:BA:2578:G:H1' | 37:BD:144:GLY:HA2 | 1.92 | 0.52 |
| 40:BG:84:LYS:CB | 40:BG:132:LEU:H | 2.21 | 0.52 |
| 40:BG:102:ILE:HG13 | 40:BG:116:LEU:HD21 | 1.92 | 0.52 |
| 40:BG:137:LYS:HA | 40:BG:140:ILE:HD11 | 1.92 | 0.52 |
| 53:BW:13:SER:OG | 53:BW:16:LYS:N | 2.37 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 55:BY:47:PRO:HB3 | 55:BY:54:PRO:C | 2.29 | 0.52 |
| 1:AA:70:U:C2 | 1:AA:94:G:N7 | 2.77 | 0.52 |
| 1:AA:579:A:H2' | 1:AA:580:C:C6 | 2.44 | 0.52 |
| 1:AA:579:A:O2' | 15:AO:53:ARG:NH1 | 2.43 | 0.52 |
| 1:AA:705:G:C5 | 1:AA:706:A:C8 | 2.97 | 0.52 |
| 1:AA:1196:A:C2 | 3:AC:161:ILE:HG22 | 2.45 | 0.52 |
| 3:AC:79:LYS:HA | 3:AC:79:LYS:HE3 | 1.92 | 0.52 |
| 3:AC:163:ARG:HH11 | 3:AC:163:ARG:HB2 | 1.75 | 0.52 |
| 3:AC:163:ARG:HB2 | 3:AC:163:ARG:NH1 | 2.25 | 0.52 |
| 5:AE:155:LYS:HB3 | 8:AH:70:VAL:HG13 | 1.92 | 0.52 |
| 6:AF:36:ILE:H | 6:AF:36:ILE:CD1 | 2.14 | 0.52 |
| 8:AH:12:ARG:HH11 | 8:AH:26:MET:CB | 2.23 | 0.52 |
| 14:AN:40:ARG:HH12 | 14:AN:44:VAL:CG2 | 2.17 | 0.52 |
| 14:AN:42:ASN:HD21 | 14:AN:46:LYS:HE2 | 1.73 | 0.52 |
| 20:AT:29:THR:O | 20:AT:32:LYS:HB2 | 2.10 | 0.52 |
| 25:B0:58:LEU:HD12 | 25:B0:58:LEU:N | 2.25 | 0.52 |
| 28:B3:40:THR:CG2 | 28:B3:43:ILE:HG23 | 2.40 | 0.52 |
| 34:BA:670:A:H5" | 46:BP:43:GLY:HA3 | 1.92 | 0.52 |
| 34:BA:825:A:H1' | 46:BP:54:GLN:HE21 | 1.73 | 0.52 |
| 39:BF:12:VAL:HG13 | 39:BF:13:LYS:H | 1.75 | 0.52 |
| 39:BF:154:THR:C | 39:BF:155:ILE:HD12 | 2.30 | 0.52 |
| 41:BH:158:VAL:CG1 | 43:BL:23:ILE:HG13 | 2.40 | 0.52 |
| 45:BO:47:ILE:HG23 | 45:BO:48:PRO:HD2 | 1.91 | 0.52 |
| 47:BQ:43:ALA:O | 47:BQ:44:ARG:C | 2.48 | 0.52 |
| 47:BQ:97:GLN:CD | 47:BQ:97:GLN:N | 2.63 | 0.52 |
| 47:BQ:108:VAL:CG1 | 47:BQ:112:LEU:HB3 | 2.40 | 0.52 |
| 1:AA:183:C:H5" | 1:AA:184:G:OP2 | 2.10 | 0.52 |
| 1:AA:253:A:OP2 | 17:AQ:68:LYS:HD3 | 2.10 | 0.52 |
| 1:AA:545:C:H5' | 4:AD:68:GLU:CG | 2.35 | 0.52 |
| 1:AA:567:G:H2' | 1:AA:568:G:O4' | 2.09 | 0.52 |
| 1:AA:975:A:N1 | 1:AA:1366:C:O2' | 2.35 | 0.52 |
| 1:AA:1143:G:H2' | 1:AA:1144:G:O4' | 2.10 | 0.52 |
| 2:AB:59:ILE:HD12 | 2:AB:66:ILE:HD11 | 1.92 | 0.52 |
| 4:AD:191:SER:O | 4:AD:192:ALA:CB | 2.58 | 0.52 |
| 7:AG:65:LEU:HG | 7:AG:69:ARG:NE | 2.25 | 0.52 |
| 23:AW:369:ASN:ND2 | 23:AW:373:ILE:H | 2.08 | 0.52 |
| 25:B0:18:LYS:HG3 | 25:B0:19:ARG:H | 1.75 | 0.52 |
| 25:B0:18:LYS:HG3 | 25:B0:19:ARG:N | 2.25 | 0.52 |
| 29:B4:54:ILE:HG22 | 29:B4:54:ILE:O | 2.09 | 0.52 |
| 32:B7:24:LYS:HD3 | 46:BP:62:PRO:HG2 | 1.92 | 0.52 |
| 34:BA:320:A:H4' | 34:BA:322:A:N7 | 2.25 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:508:A:H4' | 34:BA:509:C:OP2 | 2.10 | 0.52 |
| 34:BA:1045:C:H5' | 34:BA:1047:G:O4' | 2.10 | 0.52 |
| 34:BA:2773:C:OP1 | 37:BD:171:THR:HG22 | 2.09 | 0.52 |
| 43:BJ:11:VAL:HG22 | 43:BM:15:SER:H | 1.74 | 0.52 |
| 44:BN:98:GLU:O | 44:BN:102:GLU:HG3 | 2.10 | 0.52 |
| 48:BR:96:ARG:NH2 | 48:BR:116:VAL:HG23 | 2.25 | 0.52 |
| 50:BT:72:VAL:O | 50:BT:72:VAL:HG23 | 2.10 | 0.52 |
| 53:BW:95:ARG:O | 53:BW:96:ILE:HG12 | 2.10 | 0.52 |
| 54:BX:69:ARG:NH2 | 54:BX:70:HIS:HA | 2.25 | 0.52 |
| 55:BY:53:GLN:N | 55:BY:54:PRO:CD | 2.72 | 0.52 |
| 1:AA:373:A:C4 | 1:AA:482:A:N7 | 2.78 | 0.51 |
| 1:AA:552:U:C2 | 1:AA:553:A:C8 | 2.99 | 0.51 |
| 1:AA:702:A:O2' | 1:AA:703:G:P | 2.68 | 0.51 |
| 1:AA:974:A:OP2 | 14:AN:68:ARG:NH2 | 2.43 | 0.51 |
| 1:AA:1221:G:H5" | 19:AS:35:ARG:HH11 | 1.75 | 0.51 |
| 1:AA:1370:G:O5' | 9:AI:110:VAL:HG21 | 2.10 | 0.51 |
| 1:AA:1525:G:H5" | 21:AU:37:TYR:CD1 | 2.45 | 0.51 |
| 3:AC:123:LEU:CD2 | 3:AC:129:PHE:HB3 | 2.40 | 0.51 |
| 5:AE:10:LEU:HD23 | 5:AE:10:LEU:H | 1.75 | 0.51 |
| 8:AH:65:PHE:CD2 | 8:AH:66:GLN:OE1 | 2.63 | 0.51 |
| 13:AM:46:GLU:HG3 | 13:AM:46:GLU:O | 2.10 | 0.51 |
| 23:AW:290:GLU:HB2 | 23:AW:293:GLU:HG3 | 1.92 | 0.51 |
| 29:B4:9:ARG:CG | 29:B4:9:ARG:NH2 | 2.67 | 0.51 |
| 34:BA:219:A:N6 | 34:BA:220:G:C6 | 2.78 | 0.51 |
| 34:BA:301:G:O2' | 34:BA:302:C:P | 2.68 | 0.51 |
| 34:BA:417:C:C2 | 34:BA:418:C:C5 | 2.98 | 0.51 |
| 34:BA:753:A:H2' | 34:BA:754:U:C6 | 2.45 | 0.51 |
| 34:BA:1092:C:N4 | 34:BA:1093:G:C2 | 2.78 | 0.51 |
| 34:BA:1436:G:O2' | 34:BA:1515:A:N1 | 2.36 | 0.51 |
| 34:BA:2033:A:H4' | 34:BA:2034:U:OP1 | 2.09 | 0.51 |
| 34:BA:2502:G:H5' | 34:BA:2503:A:C5' | 2.38 | 0.51 |
| 34:BA:2598:A:H5" | 36:BC:233:GLY:HA3 | 1.91 | 0.51 |
| 34:BA:2680:U:P | 37:BD:114:LYS:HE2 | 2.49 | 0.51 |
| 34:BA:2781:A:H5" | 34:BA:2782:G:H5' | 1.91 | 0.51 |
| 35:BB:40:U:N3 | 35:BB:44:G:OP2 | 2.39 | 0.51 |
| 36:BC:173:LEU:HD22 | 36:BC:183:VAL:CG2 | 2.36 | 0.51 |
| 39:BF:16:MET:O | 39:BF:20:ASN:HA | 2.09 | 0.51 |
| 39:BF:22:ASN:N | 39:BF:22:ASN:HD22 | 2.08 | 0.51 |
| 39:BF:157:THR:C | 39:BF:159:ALA:H | 2.13 | 0.51 |
| 40:BG:140:ILE:HG13 | 40:BG:141:GLY:H | 1.75 | 0.51 |
| 41:BH:58:THR:C | 41:BH:60:LEU:H | 2.13 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 50:BT:86:LYS:O | 50:BT:87:ARG:HB2 | 2.09 | 0.51 |
| 52:BV:96:VAL:HG23 | 52:BV:98:ILE:CD1 | 2.39 | 0.51 |
| 1:AA:65:A:N6 | 1:AA:381:C:C2 | 2.78 | 0.51 |
| 1:AA:148:G:C6 | 1:AA:149:A:N7 | 2.79 | 0.51 |
| 1:AA:920:U:H2' | 1:AA:921:U:C6 | 2.46 | 0.51 |
| 1:AA:1392:G:C2' | 1:AA:1393:U:H5' | 2.41 | 0.51 |
| 8:AH:86:LYS:HG3 | 8:AH:90:GLU:HB3 | 1.92 | 0.51 |
| 10:AJ:18:ILE:CG2 | 10:AJ:19:ASP:N | 2.72 | 0.51 |
| 20:AT:4:LYS:HE2 | 20:AT:4:LYS:C | 2.31 | 0.51 |
| 23:AW:470:THR:HA | 23:AW:471:ALA:HB3 | 1.91 | 0.51 |
| 25:B0:65:LYS:HE3 | 25:B0:84:GLU:CB | 2.40 | 0.51 |
| 25:B0:67:LYS:O | 25:B0:68:PHE:HB2 | 2.10 | 0.51 |
| 27:B2:8:GLU:O | 27:B2:9:LYS:HB3 | 2.09 | 0.51 |
| 30:B5:34:GLU:HA | 30:B5:48:TYR:O | 2.10 | 0.51 |
| 34:BA:723:C:H2' | 34:BA:724:U:O4' | 2.11 | 0.51 |
| 34:BA:779:U:H5" | 36:BC:48:ILE:CD1 | 2.40 | 0.51 |
| 34:BA:1847:A:C8 | 34:BA:1848:A:N7 | 2.78 | 0.51 |
| 34:BA:1926:U:O2 | 34:BA:1928:A:C8 | 2.64 | 0.51 |
| 34:BA:2030:A:C2 | 34:BA:2499:C:H5" | 2.45 | 0.51 |
| 34:BA:2048:G:H2' | 34:BA:2049:G:H5" | 1.91 | 0.51 |
| 34:BA:2063:C:O2 | 34:BA:2450:A:N1 | 2.43 | 0.51 |
| 34:BA:2262:U:H4' | 34:BA:2328:A:C2 | 2.46 | 0.51 |
| 34:BA:2287:A:O2' | 34:BA:2288:A:P | 2.68 | 0.51 |
| 35:BB:33:G:H2' | 35:BB:34:A:O4' | 2.09 | 0.51 |
| 35:BB:69:G:H2' | 35:BB:70:C:H5' | 1.93 | 0.51 |
| 39:BF:35:LEU:HD12 | 39:BF:35:LEU:O | 2.10 | 0.51 |
| 41:BH:106:PHE:O | 41:BH:108:VAL:N | 2.43 | 0.51 |
| 43:BM:13:ALA:O | 43:BM:14:MET:O | 2.28 | 0.51 |
| 46:BP:7:SER:HB2 | 46:BP:8:PRO:HD2 | 1.90 | 0.51 |
| 50:BT:37:LYS:HD3 | 50:BT:37:LYS:N | 2.25 | 0.51 |
| 52:BV:64:VAL:HG21 | 52:BV:97:LYS:HB2 | 1.92 | 0.51 |
| 1:AA:692:U:H2' | 1:AA:694:A:OP2 | 2.09 | 0.51 |
| 1:AA:1021:A:C2' | 1:AA:1022:A:H5" | 2.38 | 0.51 |
| 19:AS:20:LYS:NZ | 19:AS:20:LYS:HB2 | 2.24 | 0.51 |
| 20:AT:84:LYS:O | 20:AT:84:LYS:HD2 | 2.10 | 0.51 |
| 21:AU:24:LYS:HA | 21:AU:28:LEU:HD12 | 1.93 | 0.51 |
| 26:B1:70:LEU:O | 26:B1:73:ARG:HG2 | 2.10 | 0.51 |
| 34:BA:158:U:C2' | 34:BA:159:G:H5' | 2.40 | 0.51 |
| 34:BA:393:C:O2 | 34:BA:393:C:H2' | 2.09 | 0.51 |
| 34:BA:996:A:H5' | 51:BU:91:ARG:CZ | 2.40 | 0.51 |
| 34:BA:996:A:OP1 | 52:BV:10:LYS:HG2 | 2.11 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1926:U:C2 | 34:BA:1928:A:OP2 | 2.63 | 0.51 |
| 34:BA:2148:G:H2' | 34:BA:2149:U:O5' | 2.10 | 0.51 |
| 34:BA:2292:U:O2' | 34:BA:2293:G:H5' | 2.11 | 0.51 |
| 34:BA:2726:A:HO2' | 34:BA:2727:A:P | 2.31 | 0.51 |
| 34:BA:2734:A:H2' | 34:BA:2735:G:H5' | 1.93 | 0.51 |
| 34:BA:2838:G:H2' | 34:BA:2839:G:O4' | 2.10 | 0.51 |
| 37:BD:14:ILE:C | 37:BD:14:ILE:HD12 | 2.30 | 0.51 |
| 41:BH:154:THR:HG23 | 43:BM:22:LEU:HG | 1.93 | 0.51 |
| 43:BL:12:ALA:O | 43:BL:14:MET:N | 2.43 | 0.51 |
| 46:BP:64:PHE:CD1 | 46:BP:64:PHE:C | 2.83 | 0.51 |
| 48:BR:73:ASN:HA | 48:BR:76:VAL:CG1 | 2.38 | 0.51 |
| 56:BZ:61:LEU:O | 56:BZ:71:LYS:HA | 2.11 | 0.51 |
| 1:AA:8:A:N6 | 4:AD:53:GLN:HE22 | 2.01 | 0.51 |
| 1:AA:430:A:OP2 | 4:AD:7:LYS:HG2 | 2.10 | 0.51 |
| 1:AA:1007:U:H2' | 1:AA:1008:U:H5" | 1.93 | 0.51 |
| 1:AA:1173:U:H2' | 1:AA:1174:G:H8 | 1.74 | 0.51 |
| 1:AA:1256:A:C6 | 1:AA:1278:G:N2 | 2.79 | 0.51 |
| 2:AB:89:PHE:CE2 | 2:AB:153:MET:HB2 | 2.46 | 0.51 |
| 4:AD:121:ALA:HA | 4:AD:145:ARG:HG3 | 1.92 | 0.51 |
| 9:AI:87:MET:SD | 9:AI:88:GLU:N | 2.84 | 0.51 |
| 10:AJ:11:LYS:HB3 | 10:AJ:71:LEU:HD22 | 1.92 | 0.51 |
| 10:AJ:12:ALA:CB | 10:AJ:18:ILE:HG12 | 2.40 | 0.51 |
| 13:AM:2:ARG:C | 13:AM:3:ILE:HG12 | 2.30 | 0.51 |
| 20:AT:42:ASP:HB3 | 20:AT:45:ALA:HB3 | 1.93 | 0.51 |
| 21:AU:16:ARG:HH11 | 21:AU:19:LYS:HG2 | 1.76 | 0.51 |
| 23:AW:59:TRP:HZ2 | 23:AW:69:SER:HB3 | 1.75 | 0.51 |
| 23:AW:173:ILE:HG21 | 23:AW:219:VAL:HG11 | 1.93 | 0.51 |
| 25:B0:19:ARG:NH2 | 25:B0:22:VAL:HG21 | 2.25 | 0.51 |
| 26:B1:39:VAL:C | 26:B1:41:SER:N | 2.64 | 0.51 |
| 27:B2:18:LEU:HD11 | 54:BX:5:GLU:OE1 | 2.11 | 0.51 |
| 28:B3:13:ILE:HD12 | 34:BA:989:G:C8 | 2.45 | 0.51 |
| 28:B3:29:ARG:O | 28:B3:30:ARG:HG3 | 2.09 | 0.51 |
| 33:B8:36:ARG:HG2 | 33:B8:37:GLN:N | 2.24 | 0.51 |
| 34:BA:2017:U:H5" | 34:BA:2018:G:P | 2.50 | 0.51 |
| 34:BA:2821:A:OP2 | 37:BD:115:GLY:N | 2.43 | 0.51 |
| 34:BA:2823:A:OP2 | 37:BD:118:PHE:CE1 | 2.63 | 0.51 |
| 36:BC:43:ASN:CB | 36:BC:45:ASN:H | 2.20 | 0.51 |
| 36:BC:121:ALA:HB3 | 36:BC:129:LEU:CD2 | 2.40 | 0.51 |
| 38:BE:51:GLU:OE2 | 38:BE:88:ARG:NH1 | 2.43 | 0.51 |
| 44:BN:42:ALA:C | 44:BN:44:TYR:N | 2.59 | 0.51 |
| 54:BX:7:LEU:O | 54:BX:8:LEU:HD22 | 2.11 | 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:374:A:H2' | 1:AA:375:U:H6 | 1.76 | 0.51 |
| 1:AA:410:G:H5" | 1:AA:411:A:OP1 | 2.11 | 0.51 |
| 1:AA:448:A:C8 | 1:AA:487:A:C6 | 2.99 | 0.51 |
| 1:AA:1096:C:H2' | 1:AA:1097:C:H6 | 1.71 | 0.51 |
| 1:AA:1185:G:H2' | 1:AA:1186:G:H5' | 1.91 | 0.51 |
| 1:AA:1222:G:OP1 | 1:AA:1321:U:H2' | 2.11 | 0.51 |
| 1:AA:1242:G:C5 | 1:AA:1243:C:C4 | 2.98 | 0.51 |
| 1:AA:1449:C:C2 | 1:AA:1455:G:N2 | 2.78 | 0.51 |
| 16:AP:17:TYR:HE1 | 16:AP:41:PRO:HG3 | 1.75 | 0.51 |
| 23:AW:290:GLU:N | 23:AW:293:GLU:OE2 | 2.44 | 0.51 |
| 25:B0:47:GLY:C | 25:B0:49:ASN:N | 2.64 | 0.51 |
| 28:B3:7:THR:O | 28:B3:54:VAL:HA | 2.10 | 0.51 |
| 28:B3:8:GLN:O | 28:B3:10:ARG:N | 2.43 | 0.51 |
| 34:BA:221:A:N1 | 34:BA:265:A:O2' | 2.43 | 0.51 |
| 34:BA:621:A:OP2 | 34:BA:622:G:OP2 | 2.27 | 0.51 |
| 34:BA:621:A:H2' | 34:BA:622:G:H5' | 1.93 | 0.51 |
| 34:BA:723:C:O2' | 34:BA:724:U:H5' | 2.10 | 0.51 |
| 34:BA:725:G:C6 | 34:BA:726:G:N1 | 2.78 | 0.51 |
| 34:BA:878:A:N6 | 34:BA:879:G:N3 | 2.58 | 0.51 |
| 34:BA:1025:G:H4' | 34:BA:1026:G:OP2 | 2.10 | 0.51 |
| 34:BA:1340:U:H3' | 54:BX:61:LEU:HD22 | 1.93 | 0.51 |
| 34:BA:1973:G:C2' | 34:BA:1974:C:H5' | 2.41 | 0.51 |
| 34:BA:2444:G:OP2 | 38:BE:63:LYS:HD2 | 2.10 | 0.51 |
| 34:BA:2564:A:C6 | 34:BA:2565:A:C6 | 2.98 | 0.51 |
| 35:BB:113:C:H1' | 49:BS:46:GLU:HA | 1.92 | 0.51 |
| 36:BC:90:ILE:CG2 | 36:BC:102:TYR:CD1 | 2.93 | 0.51 |
| 38:BE:125:SER:O | 38:BE:137:LYS:HE3 | 2.09 | 0.51 |
| 43:BJ:26:MET:HG3 | 43:BJ:29:LYS:HZ3 | 1.75 | 0.51 |
| 50:BT:24:THR:CG2 | 50:BT:87:ARG:HB3 | 2.41 | 0.51 |
| 1:AA:6:G:O6 | 5:AE:98:ALA:HB1 | 2.10 | 0.51 |
| 1:AA:345:C:H1' | 1:AA:346:G:N1 | 2.26 | 0.51 |
| 1:AA:357:G:C2 | 1:AA:358:U:C5 | 2.99 | 0.51 |
| 1:AA:415:A:H2' | 1:AA:416:G:O4' | 2.10 | 0.51 |
| 1:AA:962:C:H1' | 1:AA:1201:A:C6 | 2.44 | 0.51 |
| 1:AA:1094:G:C2' | 1:AA:1095:U:OP2 | 2.59 | 0.51 |
| 2:AB:221:ARG:NH1 | 2:AB:222:GLU:HG2 | 2.25 | 0.51 |
| 3:AC:33:ASP:CG | 14:AN:64:ARG:HG2 | 2.30 | 0.51 |
| 3:AC:137:VAL:O | 3:AC:140:ALA:HB3 | 2.11 | 0.51 |
| 9:AI:33:SER:HB3 | 9:AI:36:GLN:CG | 2.38 | 0.51 |
| 11:AK:73:VAL:O | 11:AK:73:VAL:HG23 | 2.10 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 12:AL:84:GLY:O | 12:AL:95:HIS:CD2 | 2.63 | 0.51 |
| 12:AL:115:LYS:C | 12:AL:117:GLY:H | 2.13 | 0.51 |
| 13:AM:10:ASP:CG | 13:AM:11:HIS:H | 2.13 | 0.51 |
| 13:AM:82:LEU:HD22 | 19:AS:65:MET:HE2 | 1.92 | 0.51 |
| 15:AO:52:ARG:O | 15:AO:55:LEU:HB3 | 2.10 | 0.51 |
| 18:AR:19:GLU:HG3 | 18:AR:54:LEU:HD21 | 1.91 | 0.51 |
| 19:AS:35:ARG:HE | 19:AS:71:GLY:HA2 | 1.76 | 0.51 |
| 28:B3:11:SER:HB3 | 34:BA:988:A:OP1 | 2.10 | 0.51 |
| 34:BA:825:A:C1’ | 46:BP:54:GLN:HE21 | 2.23 | 0.51 |
| 34:BA:1212:G:O2’ | 34:BA:1236:G:N2 | 2.43 | 0.51 |
| 34:BA:1254:A:H5” | 34:BA:1255:U:H5” | 1.93 | 0.51 |
| 34:BA:1399:C:H2’ | 34:BA:1400:U:C6 | 2.46 | 0.51 |
| 34:BA:2400:G:H2’ | 34:BA:2401:U:C6 | 2.46 | 0.51 |
| 34:BA:2778:A:H4’ | 34:BA:2779:U:OP2 | 2.10 | 0.51 |
| 37:BD:66:GLY:O | 37:BD:69:ALA:HB3 | 2.10 | 0.51 |
| 39:BF:32:LYS:HD2 | 39:BF:89:THR:HG23 | 1.93 | 0.51 |
| 40:BG:27:GLY:O | 40:BG:28:LYS:C | 2.47 | 0.51 |
| 41:BH:128:THR:C | 41:BH:130:PRO:HD2 | 2.31 | 0.51 |
| 42:BI:19:PRO:HB2 | 42:BI:22:PRO:HD2 | 1.93 | 0.51 |
| 44:BN:99:ARG:HD2 | 44:BN:102:GLU:OE1 | 2.10 | 0.51 |
| 1:AA:231:U:P | 16:AP:31:ARG:HH22 | 2.34 | 0.51 |
| 1:AA:990:C:H2’ | 1:AA:991:U:O4’ | 2.11 | 0.51 |
| 1:AA:1498:U:OP2 | 22:AV:16:A:O2’ | 2.25 | 0.51 |
| 3:AC:149:LYS:HG3 | 3:AC:200:TRP:HE3 | 1.76 | 0.51 |
| 4:AD:169:TRP:HB2 | 4:AD:183:ARG:O | 2.10 | 0.51 |
| 11:AK:71:ASP:C | 11:AK:73:VAL:H | 2.13 | 0.51 |
| 12:AL:2:THR:HG22 | 12:AL:4:ASN:N | 2.25 | 0.51 |
| 16:AP:12:LYS:O | 16:AP:13:LYS:HB2 | 2.11 | 0.51 |
| 21:AU:24:LYS:O | 21:AU:28:LEU:HB2 | 2.11 | 0.51 |
| 33:B8:19:ARG:HG2 | 34:BA:2756:U:OP2 | 2.11 | 0.51 |
| 34:BA:644:A:H2’ | 34:BA:645:C:O4’ | 2.11 | 0.51 |
| 34:BA:662:G:O2’ | 34:BA:663:G:H5’ | 2.10 | 0.51 |
| 34:BA:1046:A:O2’ | 41:BH:61:ARG:HB2 | 2.11 | 0.51 |
| 34:BA:2341:G:H2’ | 34:BA:2342:C:O4’ | 2.11 | 0.51 |
| 37:BD:111:GLY:O | 37:BD:169:ARG:O | 2.29 | 0.51 |
| 39:BF:9:ASP:O | 39:BF:10:GLU:HB2 | 2.11 | 0.51 |
| 48:BR:73:ASN:O | 48:BR:76:VAL:HG12 | 2.09 | 0.51 |
| 1:AA:1367:C:H5’ | 10:AJ:62:ARG:NH1 | 2.25 | 0.51 |
| 2:AB:132:GLU:HG3 | 2:AB:136:ARG:HB2 | 1.91 | 0.51 |
| 3:AC:70:ALA:HB2 | 3:AC:114:LEU:CD1 | 2.41 | 0.51 |
| 9:AI:9:GLY:N | 9:AI:84:ARG:HH12 | 2.08 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 15:AO:44:GLU:O | 15:AO:45:HIS:HB2 | 2.11 | 0.51 |
| 16:AP:46:LYS:NZ | 16:AP:48:GLU:H | 2.08 | 0.51 |
| 23:AW:11:ALA:O | 23:AW:14:ARG:NH2 | 2.43 | 0.51 |
| 25:B0:51:GLY:N | 25:B0:61:LYS:HE3 | 2.25 | 0.51 |
| 27:B2:57:LEU:HA | 27:B2:60:LYS:HB3 | 1.92 | 0.51 |
| 34:BA:84:A:H4' | 34:BA:85:G:O5' | 2.10 | 0.51 |
| 34:BA:975:A:C2' | 34:BA:976:G:H5' | 2.41 | 0.51 |
| 34:BA:1087:G:H2' | 34:BA:1089:A:H1' | 1.92 | 0.51 |
| 34:BA:1427:A:H4' | 34:BA:1428:C:O5' | 2.11 | 0.51 |
| 34:BA:1894:C:H2' | 34:BA:1895:C:H6 | 1.75 | 0.51 |
| 34:BA:2104:C:N4 | 34:BA:2184:A:N6 | 2.56 | 0.51 |
| 34:BA:2287:A:O2' | 34:BA:2288:A:C3' | 2.59 | 0.51 |
| 34:BA:2716:C:C2' | 34:BA:2717:C:H5' | 2.40 | 0.51 |
| 34:BA:2790:U:H4' | 34:BA:2791:G:OP2 | 2.09 | 0.51 |
| 36:BC:158:GLY:H | 36:BC:194:VAL:HG13 | 1.73 | 0.51 |
| 39:BF:55:ASP:O | 39:BF:59:ILE:HG13 | 2.11 | 0.51 |
| 40:BG:8:VAL:HG11 | 40:BG:49:LEU:HD12 | 1.93 | 0.51 |
| 40:BG:164:ALA:C | 40:BG:166:GLU:H | 2.14 | 0.51 |
| 43:BJ:17:MET:O | 43:BJ:20:VAL:HB | 2.11 | 0.51 |
| 43:BL:6:GLN:HE22 | 43:BM:13:ALA:HB2 | 1.75 | 0.51 |
| 43:BL:25:ALA:O | 43:BL:28:GLU:HG2 | 2.10 | 0.51 |
| 46:BP:82:LEU:C | 46:BP:84:LYS:H | 2.14 | 0.51 |
| 51:BU:91:ARG:HE | 51:BU:93:ILE:HG23 | 1.75 | 0.51 |
| 52:BV:1:MET:HA | 52:BV:42:ALA:O | 2.11 | 0.51 |
| 55:BY:73:ASN:ND2 | 55:BY:75:ALA:HB3 | 2.26 | 0.51 |
| 55:BY:86:PHE:HB2 | 55:BY:92:VAL:HB | 1.93 | 0.51 |
| 1:AA:98:A:H2' | 1:AA:99:C:H6 | 1.75 | 0.51 |
| 1:AA:449:G:N1 | 1:AA:450:G:C6 | 2.79 | 0.51 |
| 1:AA:588:G:H5" | 8:AH:2:MET:O | 2.11 | 0.51 |
| 1:AA:957:U:H4' | 19:AS:78:THR:O | 2.11 | 0.51 |
| 1:AA:1136:C:H5" | 1:AA:1137:C:OP1 | 2.10 | 0.51 |
| 1:AA:1396:A:H4' | 1:AA:1397:C:H5" | 1.92 | 0.51 |
| 2:AB:90:PHE:O | 2:AB:149:GLY:CA | 2.59 | 0.51 |
| 2:AB:168:GLU:O | 2:AB:169:HIS:C | 2.50 | 0.51 |
| 5:AE:51:LYS:HZ3 | 5:AE:51:LYS:HB2 | 1.75 | 0.51 |
| 13:AM:28:ARG:HB3 | 13:AM:28:ARG:HH11 | 1.76 | 0.51 |
| 34:BA:235:U:H2' | 34:BA:236:C:H6 | 1.75 | 0.51 |
| 34:BA:321:U:O4' | 38:BE:159:LEU:HB3 | 2.10 | 0.51 |
| 34:BA:588:U:O4 | 34:BA:670:A:H1' | 2.10 | 0.51 |
| 34:BA:1091:G:H2' | 34:BA:1092:C:H6 | 1.76 | 0.51 |
| 34:BA:1353:A:H2' | 34:BA:1354:A:C8 | 2.45 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:2233:U:H2' | 34:BA:2234:G:C8 | 2.46 | 0.51 |
| 34:BA:2282:G:H5" | 34:BA:2389:G:H1' | 1.93 | 0.51 |
| 34:BA:2895:G:H2' | 34:BA:2896:C:C6 | 2.46 | 0.51 |
| 37:BD:69:ALA:O | 37:BD:71:ALA:N | 2.43 | 0.51 |
| 40:BG:83:THR:HA | 40:BG:84:LYS:HZ2 | 1.73 | 0.51 |
| 50:BT:67:GLU:CG | 50:BT:68:GLY:H | 2.23 | 0.51 |
| 1:AA:1343:G:H4' | 9:AI:123:ARG:O | 2.10 | 0.51 |
| 1:AA:1345:U:OP1 | 9:AI:121:ARG:NH1 | 2.44 | 0.51 |
| 3:AC:70:ALA:HA | 3:AC:105:VAL:HB | 1.93 | 0.51 |
| 9:AI:17:ARG:NH2 | 9:AI:67:LYS:HZ1 | 2.08 | 0.51 |
| 10:AJ:40:ILE:HB | 10:AJ:73:LEU:CB | 2.36 | 0.51 |
| 10:AJ:42:LEU:CD1 | 10:AJ:71:LEU:HD12 | 2.41 | 0.51 |
| 11:AK:107:THR:HG22 | 11:AK:108:ASN:ND2 | 2.26 | 0.51 |
| 11:AK:124:LYS:HG2 | 21:AU:34:ARG:HG2 | 1.92 | 0.51 |
| 12:AL:122:LYS:HD3 | 23:AW:487:ARG:O | 2.10 | 0.51 |
| 13:AM:47:LEU:HD23 | 13:AM:48:SER:O | 2.11 | 0.51 |
| 25:B0:76:ARG:HG2 | 25:B0:76:ARG:NH2 | 2.25 | 0.51 |
| 28:B3:4:ILE:HD11 | 28:B3:56:VAL:CG2 | 2.41 | 0.51 |
| 33:B8:33:HIS:O | 33:B8:35:GLN:HG3 | 2.11 | 0.51 |
| 34:BA:732:C:H2' | 34:BA:733:G:O4' | 2.11 | 0.51 |
| 34:BA:915:C:H2' | 34:BA:916:G:H5' | 1.93 | 0.51 |
| 34:BA:1303:G:C2' | 34:BA:1304:A:H5' | 2.41 | 0.51 |
| 34:BA:1432:G:H2' | 34:BA:1433:A:C8 | 2.46 | 0.51 |
| 34:BA:2730:C:O3' | 37:BD:174:SER:HB3 | 2.10 | 0.51 |
| 34:BA:2747:G:O6 | 34:BA:2755:C:H5" | 2.11 | 0.51 |
| 36:BC:190:THR:HG22 | 36:BC:191:LEU:N | 2.26 | 0.51 |
| 36:BC:259:ASN:O | 36:BC:260:LYS:CB | 2.58 | 0.51 |
| 38:BE:58:LYS:HE3 | 38:BE:62:GLN:HE21 | 1.76 | 0.51 |
| 40:BG:101:VAL:HG23 | 40:BG:101:VAL:O | 2.10 | 0.51 |
| 41:BH:33:VAL:HG12 | 41:BH:34:THR:N | 2.26 | 0.51 |
| 41:BH:154:THR:N | 43:BM:22:LEU:HD21 | 2.25 | 0.51 |
| 43:BJ:4:LYS:NZ | 43:BK:21:GLU:HG2 | 2.26 | 0.51 |
| 56:BZ:62:THR:HG22 | 56:BZ:71:LYS:HG3 | 1.93 | 0.51 |
| 1:AA:55:A:C6 | 1:AA:56:U:C2 | 3.00 | 0.50 |
| 1:AA:337:G:H2' | 1:AA:338:A:C8 | 2.46 | 0.50 |
| 1:AA:686:U:O2' | 11:AK:43:TRP:HZ2 | 1.94 | 0.50 |
| 1:AA:824:G:N3 | 8:AH:1:SER:HA | 2.26 | 0.50 |
| 1:AA:952:U:H2' | 1:AA:953:G:C8 | 2.47 | 0.50 |
| 1:AA:1124:G:H2' | 1:AA:1145:A:N6 | 2.26 | 0.50 |
| 3:AC:42:LEU:HD21 | 3:AC:67:ILE:HD11 | 1.94 | 0.50 |
| 3:AC:149:LYS:HD2 | 3:AC:200:TRP:CZ3 | 2.45 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:AD:56:GLU:OE2 | 4:AD:194:ILE:HA | 2.11 | 0.50 |
| 4:AD:121:ALA:HA | 4:AD:145:ARG:HG2 | 1.92 | 0.50 |
| 4:AD:190:LEU:HD12 | 4:AD:190:LEU:O | 2.11 | 0.50 |
| 6:AF:32:ALA:O | 6:AF:33:GLU:HB2 | 2.10 | 0.50 |
| 15:AO:8:ALA:O | 15:AO:11:VAL:HG23 | 2.10 | 0.50 |
| 23:AW:437:ILE:HD12 | 23:AW:504:ILE:HD13 | 1.92 | 0.50 |
| 25:B0:22:VAL:HG23 | 34:BA:856:G:O2' | 2.11 | 0.50 |
| 34:BA:253:C:H2' | 34:BA:254:G:O4' | 2.11 | 0.50 |
| 34:BA:455:C:N3 | 34:BA:472:A:H2' | 2.25 | 0.50 |
| 34:BA:878:A:C6 | 34:BA:900:A:C1' | 2.94 | 0.50 |
| 34:BA:1205:A:C2' | 38:BE:165:HIS:CE1 | 2.94 | 0.50 |
| 34:BA:1813:G:N3 | 36:BC:49:THR:CG2 | 2.74 | 0.50 |
| 34:BA:1913:A:HO2' | 34:BA:1914:C:P | 2.34 | 0.50 |
| 34:BA:2260:C:H2' | 34:BA:2261:C:C6 | 2.46 | 0.50 |
| 34:BA:2793:C:H2' | 34:BA:2794:C:C6 | 2.46 | 0.50 |
| 35:BB:91:C:H2' | 35:BB:92:C:H6 | 1.75 | 0.50 |
| 41:BH:154:THR:HG23 | 43:BM:22:LEU:CD2 | 2.41 | 0.50 |
| 49:BS:88:LYS:O | 49:BS:89:ASP:CB | 2.60 | 0.50 |
| 51:BU:24:TYR:CG | 51:BU:25:GLY:N | 2.79 | 0.50 |
| 51:BU:91:ARG:HH11 | 52:BV:10:LYS:HB3 | 1.74 | 0.50 |
| 1:AA:574:A:H5" | 1:AA:575:G:OP2 | 2.10 | 0.50 |
| 1:AA:575:G:H4' | 1:AA:576:C:OP1 | 2.10 | 0.50 |
| 1:AA:579:A:H2' | 1:AA:580:C:H6 | 1.76 | 0.50 |
| 1:AA:642:A:C5 | 1:AA:643:C:C4 | 2.99 | 0.50 |
| 1:AA:652:U:O2' | 1:AA:653:U:C6 | 2.62 | 0.50 |
| 1:AA:793:U:H5' | 1:AA:794:A:O5' | 2.11 | 0.50 |
| 1:AA:939:G:N3 | 1:AA:1375:A:C2 | 2.79 | 0.50 |
| 1:AA:1347:G:C8 | 9:AI:108:ARG:HB3 | 2.47 | 0.50 |
| 2:AB:95:TRP:CH2 | 2:AB:174:GLU:CD | 2.85 | 0.50 |
| 4:AD:29:THR:O | 4:AD:30:LYS:HB2 | 2.11 | 0.50 |
| 8:AH:10:LEU:HD13 | 8:AH:74:ILE:HD11 | 1.92 | 0.50 |
| 8:AH:48:PHE:O | 8:AH:49:LYS:HG3 | 2.11 | 0.50 |
| 8:AH:77:VAL:HG12 | 8:AH:78:SER:N | 2.26 | 0.50 |
| 12:AL:38:THR:HG22 | 12:AL:50:LYS:HA | 1.93 | 0.50 |
| 12:AL:56:LEU:HB2 | 12:AL:60:PHE:O | 2.11 | 0.50 |
| 13:AM:19:THR:CA | 13:AM:24:VAL:HG23 | 2.40 | 0.50 |
| 20:AT:21:ALA:O | 20:AT:25:SER:HB2 | 2.11 | 0.50 |
| 33:B8:25:VAL:HG21 | 33:B8:35:GLN:NE2 | 2.26 | 0.50 |
| 34:BA:468:G:H2' | 34:BA:469:G:C5' | 2.40 | 0.50 |
| 34:BA:498:G:C2' | 34:BA:499:U:H5' | 2.41 | 0.50 |
| 34:BA:752:A:H62 | 34:BA:2609:U:H3 | 1.58 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1810:A:C8 | 34:BA:1811:G:C8 | 2.99 | 0.50 |
| 34:BA:1824:G:O2' | 36:BC:245:THR:HG22 | 2.11 | 0.50 |
| 34:BA:2197:U:O2' | 34:BA:2198:A:O5' | 2.28 | 0.50 |
| 34:BA:2211:A:OP2 | 34:BA:2211:A:H4' | 2.10 | 0.50 |
| 37:BD:34:VAL:HG22 | 37:BD:94:GLN:H | 1.76 | 0.50 |
| 37:BD:193:VAL:HB | 37:BD:194:PRO:HD2 | 1.93 | 0.50 |
| 42:BI:7:TYR:HB3 | 42:BI:57:VAL:HG13 | 1.94 | 0.50 |
| 45:BO:39:ILE:CG2 | 45:BO:41:ILE:HD13 | 2.39 | 0.50 |
| 50:BT:112:ARG:C | 50:BT:113:LEU:HD23 | 2.32 | 0.50 |
| 52:BV:4:VAL:HA | 52:BV:12:HIS:O | 2.12 | 0.50 |
| 52:BV:21:ARG:HD3 | 52:BV:93:PHE:CD1 | 2.46 | 0.50 |
| 54:BX:70:HIS:HD2 | 54:BX:73:ARG:HB2 | 1.75 | 0.50 |
| 1:AA:428:G:C4' | 1:AA:429:U:OP1 | 2.59 | 0.50 |
| 1:AA:449:G:O2' | 1:AA:450:G:H5' | 2.12 | 0.50 |
| 1:AA:686:U:HO2' | 11:AK:43:TRP:HZ2 | 1.53 | 0.50 |
| 5:AE:15:ILE:HD11 | 5:AE:112:ALA:HB3 | 1.92 | 0.50 |
| 5:AE:110:MET:O | 5:AE:114:LEU:HB2 | 2.10 | 0.50 |
| 9:AI:31:GLN:O | 9:AI:32:ARG:CB | 2.57 | 0.50 |
| 11:AK:82:GLU:H | 11:AK:82:GLU:CD | 2.15 | 0.50 |
| 12:AL:3:VAL:HG23 | 12:AL:4:ASN:N | 2.26 | 0.50 |
| 13:AM:21:ILE:HB | 13:AM:24:VAL:HG22 | 1.93 | 0.50 |
| 32:B7:22:LYS:H | 32:B7:48:MET:HA | 1.76 | 0.50 |
| 34:BA:167:A:H2' | 34:BA:168:G:O4' | 2.11 | 0.50 |
| 34:BA:295:G:O2' | 34:BA:296:U:H5' | 2.12 | 0.50 |
| 34:BA:445:C:O2' | 34:BA:446:G:H5' | 2.10 | 0.50 |
| 34:BA:467:G:C2' | 34:BA:468:G:H5' | 2.42 | 0.50 |
| 34:BA:770:G:H1' | 34:BA:1379:U:C4 | 2.47 | 0.50 |
| 34:BA:971:G:H2' | 34:BA:972:A:O4' | 2.11 | 0.50 |
| 34:BA:1361:G:H2' | 34:BA:1362:C:C6 | 2.46 | 0.50 |
| 34:BA:1849:G:H2' | 34:BA:1850:G:C8 | 2.46 | 0.50 |
| 34:BA:2281:A:O2' | 34:BA:2282:G:H5' | 2.10 | 0.50 |
| 34:BA:2869:G:H2' | 34:BA:2870:C:C6 | 2.47 | 0.50 |
| 36:BC:140:VAL:HG13 | 36:BC:189:ALA:HB1 | 1.93 | 0.50 |
| 37:BD:170:VAL:O | 37:BD:170:VAL:HG22 | 2.11 | 0.50 |
| 38:BE:177:PRO:O | 38:BE:181:ILE:HG13 | 2.11 | 0.50 |
| 51:BU:46:TYR:CZ | 51:BU:50:ARG:NH2 | 2.79 | 0.50 |
| 1:AA:55:A:C6 | 23:AW:311:HIS:CE1 | 3.00 | 0.50 |
| 1:AA:148:G:H1' | 1:AA:1447:A:H1' | 1.94 | 0.50 |
| 1:AA:203:G:H4' | 1:AA:466:A:C2 | 2.45 | 0.50 |
| 1:AA:1166:G:H8 | 1:AA:1166:G:O5' | 1.95 | 0.50 |
| 2:AB:75:ALA:O | 2:AB:79:VAL:HG23 | 2.12 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:AC:123:LEU:HD21 | 3:AC:129:PHE:CB | 2.41 | 0.50 |
| 11:AK:34:THR:HG23 | 11:AK:35:ASP:O | 2.11 | 0.50 |
| 34:BA:161:A:H2 | 34:BA:2217:G:N3 | 2.09 | 0.50 |
| 34:BA:340:A:H2' | 34:BA:341:C:H5' | 1.93 | 0.50 |
| 34:BA:419:U:H2' | 34:BA:420:C:C6 | 2.46 | 0.50 |
| 34:BA:495:G:N2 | 34:BA:496:G:H1' | 2.26 | 0.50 |
| 34:BA:1522:A:C2' | 34:BA:1523:U:OP2 | 2.59 | 0.50 |
| 34:BA:1614:A:O5' | 34:BA:1614:A:H8 | 1.94 | 0.50 |
| 34:BA:1943:U:C5 | 34:BA:1945:G:O4' | 2.65 | 0.50 |
| 34:BA:2277:G:H3' | 34:BA:2278:A:H5" | 1.93 | 0.50 |
| 34:BA:2378:A:N3 | 49:BS:18:LEU:HD11 | 2.26 | 0.50 |
| 34:BA:2779:U:OP1 | 34:BA:2780:G:H2' | 2.11 | 0.50 |
| 35:BB:87:U:H4' | 35:BB:88:C:OP2 | 2.10 | 0.50 |
| 38:BE:79:ARG:O | 38:BE:80:SER:C | 2.50 | 0.50 |
| 44:BN:32:LEU:HD22 | 44:BN:54:ILE:CD1 | 2.41 | 0.50 |
| 50:BT:92:ARG:O | 50:BT:93:LYS:HB2 | 2.10 | 0.50 |
| 52:BV:51:VAL:HB | 52:BV:52:PRO:CD | 2.42 | 0.50 |
| 54:BX:32:LEU:N | 54:BX:83:ALA:HB3 | 2.25 | 0.50 |
| 1:AA:201:G:H2' | 1:AA:202:G:O4' | 2.12 | 0.50 |
| 1:AA:426:U:H5" | 4:AD:36:ALA:HB1 | 1.94 | 0.50 |
| 1:AA:697:U:H2' | 1:AA:698:G:H5' | 1.94 | 0.50 |
| 1:AA:1350:A:C6 | 1:AA:1351:U:N3 | 2.80 | 0.50 |
| 4:AD:123:MET:O | 4:AD:142:VAL:HA | 2.12 | 0.50 |
| 4:AD:191:SER:HA | 4:AD:194:ILE:HD11 | 1.92 | 0.50 |
| 9:AI:83:THR:HG21 | 9:AI:102:PHE:HB3 | 1.92 | 0.50 |
| 12:AL:43:LYS:N | 12:AL:44:PRO:HD2 | 2.26 | 0.50 |
| 12:AL:88:ASP:HB3 | 12:AL:89:LEU:HD22 | 1.94 | 0.50 |
| 13:AM:70:ARG:HA | 13:AM:73:SER:HB2 | 1.93 | 0.50 |
| 15:AO:45:HIS:C | 15:AO:47:LYS:H | 2.15 | 0.50 |
| 19:AS:39:ILE:HD13 | 19:AS:61:VAL:HG12 | 1.93 | 0.50 |
| 25:B0:40:ARG:HB3 | 34:BA:2336:A:N6 | 2.26 | 0.50 |
| 32:B7:1:PRO:HD2 | 34:BA:667:U:O2 | 2.11 | 0.50 |
| 34:BA:945:A:C4 | 34:BA:2448:A:C2 | 2.99 | 0.50 |
| 34:BA:1165:A:H2' | 34:BA:1166:G:C8 | 2.46 | 0.50 |
| 34:BA:1205:A:N1 | 38:BE:165:HIS:HB2 | 2.27 | 0.50 |
| 34:BA:1494:A:H2' | 34:BA:1495:A:C8 | 2.46 | 0.50 |
| 34:BA:1583:A:H2' | 34:BA:1584:U:OP2 | 2.11 | 0.50 |
| 34:BA:1818:U:C2' | 34:BA:1819:A:OP2 | 2.58 | 0.50 |
| 34:BA:1936:A:N3 | 34:BA:1943:U:H5 | 2.10 | 0.50 |
| 34:BA:2149:U:H3' | 34:BA:2149:U:H6 | 1.76 | 0.50 |
| 34:BA:2470:G:OP1 | 47:BQ:55:ARG:NH1 | 2.44 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 35:BB:29:A:C4 | 35:BB:56:G:N2 | 2.79 | 0.50 |
| 36:BC:269:ARG:HD3 | 36:BC:270:ARG:H | 1.77 | 0.50 |
| 37:BD:40:LEU:HD12 | 37:BD:40:LEU:N | 2.08 | 0.50 |
| 37:BD:48:ILE:CD1 | 37:BD:50:VAL:HG13 | 2.36 | 0.50 |
| 40:BG:94:ARG:HH21 | 40:BG:105:SER:HB2 | 1.75 | 0.50 |
| 42:BI:102:ARG:HB2 | 42:BI:141:ASP:OD2 | 2.12 | 0.50 |
| 43:BJ:11:VAL:HB | 43:BK:29:LYS:NZ | 2.27 | 0.50 |
| 50:BT:33:GLU:CB | 50:BT:38:ARG:HH11 | 2.25 | 0.50 |
| 53:BW:89:ALA:O | 53:BW:90:LYS:HB2 | 2.11 | 0.50 |
| 55:BY:95:PHE:CE1 | 55:BY:102:ILE:HB | 2.45 | 0.50 |
| 2:AB:113:LEU:HD12 | 2:AB:113:LEU:O | 2.12 | 0.50 |
| 2:AB:132:GLU:CG | 2:AB:136:ARG:HG3 | 2.41 | 0.50 |
| 2:AB:140:LEU:O | 2:AB:143:LEU:N | 2.45 | 0.50 |
| 3:AC:143:LEU:HD22 | 3:AC:143:LEU:H | 1.77 | 0.50 |
| 9:AI:9:GLY:H | 9:AI:84:ARG:HH12 | 1.59 | 0.50 |
| 9:AI:60:LEU:N | 9:AI:60:LEU:HD23 | 2.27 | 0.50 |
| 11:AK:30:ILE:HD13 | 11:AK:30:ILE:O | 2.12 | 0.50 |
| 28:B3:7:THR:HG22 | 28:B3:9:THR:H | 1.76 | 0.50 |
| 28:B3:37:ARG:HD2 | 28:B3:37:ARG:N | 2.27 | 0.50 |
| 31:B6:34:ARG:HD3 | 31:B6:42:LEU:HA | 1.94 | 0.50 |
| 34:BA:31:C:O2' | 34:BA:1238:G:H5' | 2.11 | 0.50 |
| 34:BA:171:U:H2' | 34:BA:172:A:C8 | 2.47 | 0.50 |
| 34:BA:368:A:C2' | 34:BA:369:U:H5' | 2.42 | 0.50 |
| 34:BA:417:C:H2' | 34:BA:418:C:H6 | 1.77 | 0.50 |
| 34:BA:804:A:H5" | 34:BA:805:G:OP1 | 2.11 | 0.50 |
| 34:BA:1087:G:H2' | 34:BA:1089:A:C1' | 2.42 | 0.50 |
| 34:BA:1245:G:OP1 | 46:BP:13:LYS:HE3 | 2.11 | 0.50 |
| 34:BA:2134:A:O2' | 34:BA:2135:A:H8 | 1.93 | 0.50 |
| 34:BA:2786:U:O2 | 37:BD:63:PRO:HB3 | 2.11 | 0.50 |
| 34:BA:2807:U:O2' | 34:BA:2808:G:H5' | 2.12 | 0.50 |
| 36:BC:68:ARG:CD | 36:BC:103:ILE:HD11 | 2.37 | 0.50 |
| 37:BD:168:GLU:HG3 | 37:BD:170:VAL:HG12 | 1.94 | 0.50 |
| 38:BE:83:VAL:HG11 | 38:BE:86:ALA:HA | 1.92 | 0.50 |
| 40:BG:95:ALA:HB2 | 40:BG:104:LEU:HD23 | 1.92 | 0.50 |
| 41:BH:78:GLY:N | 41:BH:79:PRO:HD3 | 2.27 | 0.50 |
| 43:BJ:4:LYS:HZ3 | 43:BK:21:GLU:HG2 | 1.76 | 0.50 |
| 49:BS:77:ALA:O | 49:BS:80:GLU:HG2 | 2.12 | 0.50 |
| 55:BY:21:ARG:CZ | 55:BY:72:PHE:CZ | 2.94 | 0.50 |
| 1:AA:204:G:C3' | 1:AA:205:A:H5" | 2.33 | 0.50 |
| 1:AA:618:C:O2 | 1:AA:618:C:H2' | 2.11 | 0.50 |
| 1:AA:938:A:C6 | 1:AA:939:G:C5 | 2.99 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:960:U:N3 | 1:AA:1225:A:C8 | 2.79 | 0.50 |
| 1:AA:1258:G:O2' | 1:AA:1259:C:H5' | 2.11 | 0.50 |
| 1:AA:1316:G:N1 | 1:AA:1319:A:OP2 | 2.44 | 0.50 |
| 5:AE:79:THR:HG23 | 5:AE:80:LEU:O | 2.11 | 0.50 |
| 19:AS:36:ARG:HA | 19:AS:69:LYS:HD2 | 1.92 | 0.50 |
| 25:B0:28:GLU:HG3 | 25:B0:29:SER:N | 2.26 | 0.50 |
| 34:BA:289:G:O2' | 34:BA:290:U:H5' | 2.11 | 0.50 |
| 34:BA:364:C:H2' | 34:BA:365:U:H6 | 1.77 | 0.50 |
| 34:BA:721:A:H2' | 34:BA:722:A:C8 | 2.47 | 0.50 |
| 34:BA:1813:G:H1' | 36:BC:49:THR:HG21 | 1.93 | 0.50 |
| 34:BA:2335:A:C6 | 34:BA:2337:G:H1' | 2.47 | 0.50 |
| 34:BA:2831:G:H1' | 34:BA:2883:A:H2' | 1.94 | 0.50 |
| 35:BB:29:A:C2 | 35:BB:30:C:C2 | 2.99 | 0.50 |
| 35:BB:91:C:H2' | 35:BB:92:C:C6 | 2.46 | 0.50 |
| 36:BC:58:LYS:O | 36:BC:59:GLN:HB2 | 2.11 | 0.50 |
| 37:BD:26:VAL:HG22 | 37:BD:188:LEU:HD22 | 1.94 | 0.50 |
| 37:BD:107:VAL:HA | 37:BD:204:LYS:O | 2.11 | 0.50 |
| 37:BD:172:VAL:CG1 | 37:BD:175:LEU:HD11 | 2.41 | 0.50 |
| 40:BG:37:ASN:OD1 | 40:BG:37:ASN:N | 2.45 | 0.50 |
| 42:BI:126:ARG:HA | 42:BI:129:GLU:HG3 | 1.93 | 0.50 |
| 43:BL:25:ALA:HA | 43:BL:28:GLU:CD | 2.32 | 0.50 |
| 48:BR:55:ALA:HA | 48:BR:80:PHE:CE1 | 2.45 | 0.50 |
| 51:BU:16:ILE:HG23 | 51:BU:38:VAL:HG21 | 1.92 | 0.50 |
| 54:BX:19:LYS:O | 54:BX:23:ALA:N | 2.35 | 0.50 |
| 54:BX:61:LEU:HG | 54:BX:82:LYS:HB2 | 1.93 | 0.50 |
| 56:BZ:50:MET:O | 56:BZ:56:PHE:HB2 | 2.12 | 0.50 |
| 1:AA:309:A:H2' | 1:AA:310:G:C8 | 2.46 | 0.50 |
| 1:AA:501:C:O2' | 1:AA:502:A:H5' | 2.12 | 0.50 |
| 1:AA:763:G:H2' | 1:AA:764:C:H6 | 1.77 | 0.50 |
| 1:AA:791:G:C6 | 1:AA:792:A:N7 | 2.79 | 0.50 |
| 1:AA:1036:A:H5' | 1:AA:1037:C:OP2 | 2.11 | 0.50 |
| 1:AA:1322:C:O2' | 1:AA:1323:G:C5' | 2.60 | 0.50 |
| 1:AA:1479:C:H2' | 1:AA:1480:A:H8 | 1.76 | 0.50 |
| 2:AB:20:ARG:O | 2:AB:21:TYR:C | 2.50 | 0.50 |
| 2:AB:49:PHE:C | 2:AB:49:PHE:HD1 | 2.15 | 0.50 |
| 2:AB:209:VAL:O | 2:AB:213:LEU:HB3 | 2.12 | 0.50 |
| 4:AD:53:GLN:HE21 | 4:AD:202:LEU:CA | 2.23 | 0.50 |
| 4:AD:58:GLN:HE22 | 4:AD:61:ARG:HH11 | 1.60 | 0.50 |
| 4:AD:60:VAL:HA | 4:AD:63:ILE:HG22 | 1.93 | 0.50 |
| 5:AE:105:ILE:HD11 | 5:AE:123:LEU:CD2 | 2.41 | 0.50 |
| 6:AF:24:ARG:H | 6:AF:24:ARG:HD2 | 1.76 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:AF:26:THR:HG22 | 6:AF:36:ILE:HG21 | 1.94 | 0.50 |
| 11:AK:81:LEU:HD21 | 11:AK:104:PHE:HB3 | 1.94 | 0.50 |
| 12:AL:24:GLU:O | 12:AL:25:ALA:C | 2.50 | 0.50 |
| 23:AW:333:GLN:NE2 | 23:AW:372:THR:O | 2.35 | 0.50 |
| 24:AY:3:SER:O | 24:AY:4:SER:HB3 | 2.12 | 0.50 |
| 34:BA:581:C:H2' | 34:BA:582:A:C8 | 2.47 | 0.50 |
| 34:BA:662:G:C2' | 34:BA:663:G:H5' | 2.42 | 0.50 |
| 34:BA:822:G:H2' | 34:BA:823:C:H6 | 1.76 | 0.50 |
| 34:BA:1324:G:H1' | 34:BA:1616:A:N6 | 2.26 | 0.50 |
| 34:BA:2331:G:N2 | 34:BA:2385:C:C2 | 2.80 | 0.50 |
| 34:BA:2688:G:H1' | 34:BA:2721:A:N6 | 2.27 | 0.50 |
| 37:BD:49:GLN:CD | 37:BD:79:LEU:HD23 | 2.31 | 0.50 |
| 38:BE:144:GLU:O | 38:BE:166:LYS:HB2 | 2.12 | 0.50 |
| 41:BH:48:ALA:HA | 41:BH:51:TYR:CE2 | 2.37 | 0.50 |
| 41:BH:48:ALA:CA | 41:BH:51:TYR:HE2 | 2.20 | 0.50 |
| 41:BH:59:LEU:O | 41:BH:61:ARG:HG2 | 2.12 | 0.50 |
| 42:BI:5:GLN:O | 42:BI:6:ALA:HB2 | 2.11 | 0.50 |
| 42:BI:32:VAL:HG13 | 42:BI:66:PHE:CE2 | 2.47 | 0.50 |
| 43:BJ:15:SER:HB3 | 43:BM:11:VAL:CG1 | 2.41 | 0.50 |
| 44:BN:44:TYR:C | 44:BN:45:THR:HG22 | 2.32 | 0.50 |
| 46:BP:29:LYS:C | 46:BP:31:GLY:N | 2.65 | 0.50 |
| 49:BS:16:ARG:HD3 | 49:BS:19:GLN:NE2 | 2.27 | 0.50 |
| 55:BY:21:ARG:CZ | 55:BY:72:PHE:CE2 | 2.95 | 0.50 |
| 55:BY:80:ASP:CB | 55:BY:95:PHE:HD2 | 2.23 | 0.50 |
| 1:AA:70:U:O2 | 1:AA:70:U:H2' | 2.11 | 0.50 |
| 1:AA:81:A:H2 | 1:AA:88:U:H3 | 1.58 | 0.50 |
| 1:AA:92:U:OP2 | 1:AA:92:U:H6 | 1.95 | 0.50 |
| 1:AA:332:G:H2' | 1:AA:333:U:C6 | 2.46 | 0.50 |
| 1:AA:345:C:O3' | 50:BT:33:GLU:OE1 | 2.29 | 0.50 |
| 1:AA:476:U:H2' | 1:AA:477:C:H6 | 1.75 | 0.50 |
| 1:AA:552:U:H2' | 1:AA:553:A:H8 | 1.77 | 0.50 |
| 1:AA:1255:G:C8 | 1:AA:1279:G:O6 | 2.65 | 0.50 |
| 3:AC:31:ASN:O | 3:AC:34:SER:HB3 | 2.12 | 0.50 |
| 3:AC:149:LYS:CD | 3:AC:200:TRP:CE3 | 2.95 | 0.50 |
| 3:AC:195:ILE:HD12 | 3:AC:195:ILE:N | 2.27 | 0.50 |
| 5:AE:81:GLN:H | 5:AE:146:MET:HE1 | 1.76 | 0.50 |
| 6:AF:24:ARG:H | 6:AF:24:ARG:CD | 2.24 | 0.50 |
| 11:AK:34:THR:HA | 11:AK:40:ALA:HA | 1.94 | 0.50 |
| 11:AK:47:GLY:HA3 | 11:AK:52:ARG:NH1 | 2.27 | 0.50 |
| 11:AK:75:GLU:O | 11:AK:77:GLY:N | 2.45 | 0.50 |
| 26:B1:39:VAL:HG23 | 26:B1:40:GLU:H | 1.77 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 26:B1:39:VAL:HG22 | 26:B1:44:ARG:O | 2.12 | 0.50 |
| 28:B3:56:VAL:C | 28:B3:57:GLU:HG3 | 2.32 | 0.50 |
| 34:BA:825:A:C1' | 46:BP:54:GLN:NE2 | 2.75 | 0.50 |
| 34:BA:1118:C:H5" | 56:BZ:84:PRO:HG2 | 1.94 | 0.50 |
| 34:BA:1829:A:O2' | 36:BC:14:HIS:CE1 | 2.65 | 0.50 |
| 34:BA:2182:U:C2' | 34:BA:2183:A:OP1 | 2.60 | 0.50 |
| 39:BF:3:LEU:HD12 | 39:BF:172:PHE:HE2 | 1.77 | 0.50 |
| 41:BH:29:ASP:CA | 41:BH:108:VAL:HG11 | 2.39 | 0.50 |
| 44:BN:21:THR:HG23 | 44:BN:61:LYS:HE3 | 1.93 | 0.50 |
| 44:BN:93:ILE:O | 44:BN:97:PRO:HG3 | 2.12 | 0.50 |
| 45:BO:40:LYS:HZ2 | 45:BO:89:ASN:HD21 | 1.57 | 0.50 |
| 48:BR:82:GLU:O | 48:BR:85:PRO:HD2 | 2.11 | 0.50 |
| 51:BU:97:ILE:HD11 | 51:BU:108:LEU:HD12 | 1.93 | 0.50 |
| 53:BW:24:ILE:HG12 | 53:BW:36:LEU:HD22 | 1.94 | 0.50 |
| 1:AA:220:G:O2' | 1:AA:221:C:H5' | 2.12 | 0.49 |
| 1:AA:596:A:C2 | 1:AA:597:G:C8 | 2.99 | 0.49 |
| 1:AA:685:G:H2' | 1:AA:686:U:C6 | 2.47 | 0.49 |
| 1:AA:747:A:N6 | 1:AA:748:G:C6 | 2.80 | 0.49 |
| 1:AA:957:U:O2 | 1:AA:959:A:C8 | 2.65 | 0.49 |
| 1:AA:1242:G:C6 | 1:AA:1243:C:N3 | 2.79 | 0.49 |
| 1:AA:1361:G:C2' | 1:AA:1362:A:H5' | 2.42 | 0.49 |
| 2:AB:19:THR:HB | 2:AB:37:VAL:HB | 1.94 | 0.49 |
| 3:AC:150:VAL:HG12 | 3:AC:199:VAL:HB | 1.93 | 0.49 |
| 7:AG:14:ASP:CG | 7:AG:22:LEU:HD22 | 2.32 | 0.49 |
| 7:AG:86:VAL:HG22 | 7:AG:150:PHE:CB | 2.41 | 0.49 |
| 8:AH:82:LEU:HD23 | 8:AH:82:LEU:C | 2.33 | 0.49 |
| 12:AL:3:VAL:HG23 | 12:AL:4:ASN:H | 1.77 | 0.49 |
| 21:AU:48:LYS:HD2 | 21:AU:51:ALA:HB3 | 1.94 | 0.49 |
| 23:AW:26:LYS:CD | 59:AW:702:HOH:O | 2.37 | 0.49 |
| 23:AW:145:ASP:CG | 58:AW:602:GNP:HN1 | 2.15 | 0.49 |
| 25:B0:18:LYS:HA | 25:B0:36:ILE:HG13 | 1.94 | 0.49 |
| 25:B0:23:LYS:HZ2 | 25:B0:24:ARG:HG3 | 1.77 | 0.49 |
| 26:B1:51:SER:C | 26:B1:53:LYS:H | 2.16 | 0.49 |
| 34:BA:368:A:H2' | 34:BA:369:U:O4' | 2.11 | 0.49 |
| 34:BA:704:G:HO2' | 34:BA:705:A:P | 2.34 | 0.49 |
| 34:BA:784:G:N1 | 36:BC:227:VAL:HG11 | 2.27 | 0.49 |
| 34:BA:800:A:H4' | 34:BA:801:G:O5' | 2.11 | 0.49 |
| 34:BA:1392:A:H62 | 54:BX:19:LYS:HD2 | 1.77 | 0.49 |
| 34:BA:1450:G:H21 | 34:BA:1452:G:H1 | 1.60 | 0.49 |
| 34:BA:1653:G:O5' | 48:BR:2:ARG:HD3 | 2.11 | 0.49 |
| 34:BA:2848:G:O2' | 34:BA:2867:G:N2 | 2.45 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 36:BC:29:PHE:CZ | 36:BC:100:ARG:HG3 | 2.47 | 0.49 |
| 37:BD:4:LEU:HD22 | 37:BD:101:PHE:HE1 | 1.76 | 0.49 |
| 37:BD:16:THR:HG23 | 37:BD:20:VAL:HB | 1.94 | 0.49 |
| 37:BD:189:VAL:O | 37:BD:191:GLY:N | 2.44 | 0.49 |
| 38:BE:188:MET:HG2 | 38:BE:193:VAL:HG23 | 1.94 | 0.49 |
| 41:BH:145:GLU:HA | 43:BK:30:PHE:CE2 | 2.47 | 0.49 |
| 41:BH:150:LYS:C | 41:BH:152:VAL:H | 2.15 | 0.49 |
| 45:BO:91:SER:O | 45:BO:92:GLU:C | 2.51 | 0.49 |
| 1:AA:146:G:O2' | 1:AA:147:G:H5' | 2.12 | 0.49 |
| 1:AA:220:G:N3 | 1:AA:221:C:C6 | 2.80 | 0.49 |
| 1:AA:413:G:O2' | 1:AA:428:G:N2 | 2.43 | 0.49 |
| 1:AA:959:A:C3' | 1:AA:960:U:H4' | 2.42 | 0.49 |
| 1:AA:1147:C:O2 | 9:AI:17:ARG:NH1 | 2.44 | 0.49 |
| 4:AD:145:ARG:HH11 | 4:AD:147:LYS:CE | 2.25 | 0.49 |
| 4:AD:176:LYS:HG2 | 4:AD:178:GLU:HG2 | 1.94 | 0.49 |
| 4:AD:200:VAL:CG1 | 5:AE:102:THR:HA | 2.38 | 0.49 |
| 7:AG:70:PRO:O | 7:AG:95:ARG:HG3 | 2.13 | 0.49 |
| 11:AK:22:ILE:CD1 | 11:AK:85:VAL:HA | 2.41 | 0.49 |
| 11:AK:108:ASN:HB3 | 21:AU:5:VAL:O | 2.12 | 0.49 |
| 20:AT:53:MET:HE1 | 20:AT:57:VAL:HG21 | 1.93 | 0.49 |
| 21:AU:34:ARG:HD3 | 21:AU:39:LYS:HZ2 | 1.77 | 0.49 |
| 23:AW:407:LEU:HB3 | 23:AW:409:GLN:HG3 | 1.94 | 0.49 |
| 34:BA:163:C:O2 | 34:BA:163:C:C2' | 2.57 | 0.49 |
| 34:BA:686:U:H2' | 34:BA:788:A:N1 | 2.27 | 0.49 |
| 34:BA:702:U:O2 | 34:BA:702:U:H2' | 2.11 | 0.49 |
| 34:BA:733:G:O6 | 34:BA:761:A:C8 | 2.65 | 0.49 |
| 34:BA:1179:G:C5 | 34:BA:1180:U:H1' | 2.47 | 0.49 |
| 34:BA:1410:G:O2' | 34:BA:1411:U:H5' | 2.12 | 0.49 |
| 34:BA:1533:C:H42 | 34:BA:1538:G:H1 | 1.61 | 0.49 |
| 34:BA:1783:A:N1 | 34:BA:2587:A:H2' | 2.27 | 0.49 |
| 34:BA:2430:A:H5' | 34:BA:2431:U:OP2 | 2.12 | 0.49 |
| 36:BC:4:LYS:HG2 | 36:BC:16:VAL:HG22 | 1.94 | 0.49 |
| 40:BG:76:ILE:CD1 | 40:BG:82:PHE:CZ | 2.91 | 0.49 |
| 41:BH:57:ASN:HB3 | 41:BH:59:LEU:HD22 | 1.94 | 0.49 |
| 42:BI:132:ALA:O | 42:BI:137:LEU:HB2 | 2.11 | 0.49 |
| 43:BJ:23:ILE:O | 43:BJ:27:GLU:HB2 | 2.12 | 0.49 |
| 50:BT:91:VAL:HG11 | 50:BT:96:LEU:HD21 | 1.94 | 0.49 |
| 52:BV:77:PHE:HD2 | 52:BV:84:ARG:HB3 | 1.77 | 0.49 |
| 1:AA:345:C:H5' | 50:BT:33:GLU:OE1 | 2.12 | 0.49 |
| 1:AA:404:G:H2' | 1:AA:405:U:H6 | 1.76 | 0.49 |
| 1:AA:591:U:H2' | 1:AA:592:G:H8 | 1.77 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:757:U:O2' | 1:AA:879:C:H1' | 2.12 | 0.49 |
| 1:AA:859:G:H2' | 1:AA:860:A:C8 | 2.48 | 0.49 |
| 3:AC:83:VAL:HG12 | 3:AC:100:ILE:HG21 | 1.92 | 0.49 |
| 3:AC:120:THR:HG23 | 3:AC:188:ALA:HB2 | 1.93 | 0.49 |
| 4:AD:63:ILE:O | 4:AD:63:ILE:HG12 | 2.12 | 0.49 |
| 5:AE:42:ASN:C | 5:AE:42:ASN:ND2 | 2.64 | 0.49 |
| 6:AF:79:ARG:HA | 6:AF:79:ARG:HE | 1.78 | 0.49 |
| 12:AL:86:VAL:CG1 | 12:AL:89:LEU:HD23 | 2.42 | 0.49 |
| 17:AQ:76:ARG:HG2 | 17:AQ:77:VAL:N | 2.28 | 0.49 |
| 23:AW:314:ARG:NH1 | 23:AW:421:GLU:HB2 | 2.27 | 0.49 |
| 26:B1:3:VAL:HA | 26:B1:9:LYS:O | 2.11 | 0.49 |
| 34:BA:270:A:C2 | 34:BA:369:U:H4' | 2.46 | 0.49 |
| 34:BA:307:G:N2 | 34:BA:309:A:H3' | 2.27 | 0.49 |
| 34:BA:417:C:C2 | 34:BA:418:C:C6 | 3.01 | 0.49 |
| 34:BA:1419:A:H2' | 34:BA:1421:G:C8 | 2.47 | 0.49 |
| 34:BA:1510:G:H2' | 34:BA:1511:G:H5' | 1.92 | 0.49 |
| 34:BA:2557:G:H2' | 34:BA:2558:C:H6 | 1.77 | 0.49 |
| 39:BF:37:MET:HG2 | 39:BF:151:LEU:HB3 | 1.92 | 0.49 |
| 39:BF:43:ILE:HD12 | 39:BF:44:ALA:N | 2.27 | 0.49 |
| 39:BF:72:SER:HB2 | 39:BF:80:GLN:HB2 | 1.94 | 0.49 |
| 41:BH:42:ARG:C | 41:BH:44:ALA:H | 2.15 | 0.49 |
| 41:BH:120:ALA:O | 41:BH:121:SER:HB2 | 2.12 | 0.49 |
| 44:BN:58:ASN:HA | 44:BN:126:ALA:O | 2.13 | 0.49 |
| 46:BP:68:SER:O | 46:BP:69:ARG:HB2 | 2.12 | 0.49 |
| 49:BS:24:THR:OG1 | 49:BS:90:VAL:HG12 | 2.12 | 0.49 |
| 1:AA:205:A:C8 | 1:AA:206:C:C5 | 3.01 | 0.49 |
| 1:AA:472:U:H2' | 1:AA:473:U:C6 | 2.47 | 0.49 |
| 1:AA:529:G:O6 | 12:AL:45:ASN:HA | 2.12 | 0.49 |
| 1:AA:940:C:C2 | 1:AA:941:G:C8 | 3.00 | 0.49 |
| 2:AB:49:PHE:CB | 2:AB:212:TYR:OH | 2.60 | 0.49 |
| 3:AC:18:ASN:H | 14:AN:90:GLY:HA3 | 1.76 | 0.49 |
| 3:AC:21:TRP:CE2 | 14:AN:93:PRO:HG2 | 2.47 | 0.49 |
| 4:AD:75:TYR:CE2 | 4:AD:203:TYR:HB2 | 2.47 | 0.49 |
| 6:AF:6:ILE:HB | 6:AF:62:MET:CB | 2.42 | 0.49 |
| 11:AK:84:MET:HG2 | 11:AK:110:THR:OG1 | 2.11 | 0.49 |
| 12:AL:86:VAL:HG12 | 12:AL:89:LEU:HD23 | 1.94 | 0.49 |
| 13:AM:84:CYS:HB3 | 19:AS:73:PHE:CZ | 2.47 | 0.49 |
| 21:AU:24:LYS:HG2 | 21:AU:25:ALA:N | 2.23 | 0.49 |
| 26:B1:46:VAL:HG23 | 26:B1:46:VAL:O | 2.12 | 0.49 |
| 34:BA:840:C:H42 | 34:BA:938:G:H1 | 1.59 | 0.49 |
| 34:BA:1059:G:N7 | 34:BA:1060:U:H2' | 2.23 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1061:U:H1' | 34:BA:1070:A:C1' | 2.40 | 0.49 |
| 34:BA:1707:G:C5 | 34:BA:1756:G:C6 | 3.00 | 0.49 |
| 34:BA:2150:C:O2' | 34:BA:2151:U:P | 2.70 | 0.49 |
| 34:BA:2255:G:H2' | 34:BA:2256:G:O4' | 2.12 | 0.49 |
| 37:BD:116:LYS:O | 37:BD:118:PHE:CE2 | 2.65 | 0.49 |
| 39:BF:32:LYS:O | 39:BF:33:ILE:HD13 | 2.11 | 0.49 |
| 39:BF:96:TRP:HA | 39:BF:99:PHE:HB3 | 1.94 | 0.49 |
| 41:BH:51:TYR:CE1 | 41:BH:95:LEU:HD21 | 2.48 | 0.49 |
| 44:BN:32:LEU:O | 44:BN:33:ALA:C | 2.50 | 0.49 |
| 51:BU:60:TRP:O | 51:BU:63:ARG:HG3 | 2.11 | 0.49 |
| 1:AA:267:C:H2' | 1:AA:268:U:H6 | 1.76 | 0.49 |
| 1:AA:411:A:N6 | 1:AA:413:G:N3 | 2.60 | 0.49 |
| 1:AA:514:C:H2' | 1:AA:515:G:C8 | 2.46 | 0.49 |
| 1:AA:666:G:C6 | 1:AA:741:G:C6 | 3.01 | 0.49 |
| 1:AA:687:A:N6 | 1:AA:703:G:O2' | 2.41 | 0.49 |
| 1:AA:940:C:C2 | 1:AA:941:G:N7 | 2.81 | 0.49 |
| 1:AA:1304:G:C6 | 1:AA:1305:G:N2 | 2.81 | 0.49 |
| 1:AA:1349:A:C2 | 1:AA:1374:A:C5 | 3.01 | 0.49 |
| 3:AC:165:GLU:N | 3:AC:165:GLU:OE1 | 2.45 | 0.49 |
| 5:AE:14:LEU:H | 5:AE:14:LEU:CD1 | 2.23 | 0.49 |
| 5:AE:81:GLN:HG2 | 5:AE:149:PRO:CB | 2.43 | 0.49 |
| 8:AH:12:ARG:NH1 | 8:AH:26:MET:HA | 2.27 | 0.49 |
| 9:AI:62:LEU:N | 9:AI:62:LEU:HD23 | 2.27 | 0.49 |
| 21:AU:38:GLU:HG3 | 21:AU:41:THR:OG1 | 2.11 | 0.49 |
| 23:AW:355:HIS:HA | 23:AW:356:VAL:CG2 | 2.41 | 0.49 |
| 27:B2:55:THR:O | 27:B2:58:ASN:HB3 | 2.12 | 0.49 |
| 33:B8:27:CYS:CB | 33:B8:33:HIS:HB2 | 2.42 | 0.49 |
| 34:BA:172:A:O2' | 34:BA:173:A:H5' | 2.13 | 0.49 |
| 34:BA:846:U:O2 | 34:BA:846:U:H2' | 2.12 | 0.49 |
| 34:BA:1265:A:O4' | 34:BA:1267:U:C6 | 2.66 | 0.49 |
| 34:BA:1487:U:H2' | 34:BA:1488:C:C6 | 2.48 | 0.49 |
| 34:BA:1665:A:H5" | 45:BO:66:LYS:HG3 | 1.94 | 0.49 |
| 34:BA:1692:U:O2' | 34:BA:1693:U:H2' | 2.13 | 0.49 |
| 34:BA:2065:C:H1' | 34:BA:2449:U:O2 | 2.12 | 0.49 |
| 34:BA:2740:A:H2' | 34:BA:2741:A:C8 | 2.47 | 0.49 |
| 34:BA:2885:G:H3' | 34:BA:2886:A:H5" | 1.93 | 0.49 |
| 36:BC:160:TYR:HB3 | 36:BC:193:GLU:HB3 | 1.95 | 0.49 |
| 40:BG:24:THR:HG23 | 40:BG:34:ARG:CD | 2.43 | 0.49 |
| 44:BN:25:LEU:HB2 | 44:BN:62:VAL:HG22 | 1.95 | 0.49 |
| 50:BT:20:ARG:HB3 | 50:BT:23:ASP:OD1 | 2.12 | 0.49 |
| 52:BV:14:VAL:HG22 | 52:BV:15:SER:N | 2.27 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 52:BV:20:VAL:CG2 | 52:BV:22:LEU:HD21 | 2.42 | 0.49 |
| 1:AA:345:C:H2' | 1:AA:346:G:OP2 | 2.13 | 0.49 |
| 1:AA:471:U:C2' | 1:AA:472:U:H5' | 2.42 | 0.49 |
| 1:AA:1400:C:OP2 | 22:AV:18:G:O6 | 2.31 | 0.49 |
| 2:AB:112:ARG:O | 2:AB:116:LEU:HD23 | 2.13 | 0.49 |
| 3:AC:36:PHE:HA | 3:AC:39:ARG:HD2 | 1.94 | 0.49 |
| 3:AC:49:ALA:O | 3:AC:50:SER:HB3 | 2.13 | 0.49 |
| 11:AK:47:GLY:C | 11:AK:49:SER:H | 2.14 | 0.49 |
| 12:AL:43:LYS:H | 12:AL:43:LYS:CD | 2.18 | 0.49 |
| 13:AM:47:LEU:HD22 | 13:AM:52:ILE:HB | 1.95 | 0.49 |
| 23:AW:19:ILE:C | 23:AW:26:LYS:CE | 2.79 | 0.49 |
| 23:AW:91:GLY:HA2 | 23:AW:122:ARG:NH1 | 2.28 | 0.49 |
| 23:AW:211:ASN:HA | 23:AW:228:ARG:NH1 | 2.27 | 0.49 |
| 25:B0:47:GLY:C | 25:B0:49:ASN:H | 2.16 | 0.49 |
| 34:BA:191:A:H2' | 34:BA:192:C:C6 | 2.47 | 0.49 |
| 34:BA:294:A:N7 | 34:BA:344:A:H2 | 2.10 | 0.49 |
| 34:BA:321:U:OP2 | 38:BE:130:LYS:HD3 | 2.13 | 0.49 |
| 34:BA:463:G:N2 | 34:BA:466:A:OP2 | 2.42 | 0.49 |
| 34:BA:1735:A:H2' | 34:BA:1736:U:O4' | 2.12 | 0.49 |
| 34:BA:2103:C:H2' | 34:BA:2104:C:C6 | 2.47 | 0.49 |
| 34:BA:2180:U:H2' | 34:BA:2181:U:C5 | 2.48 | 0.49 |
| 34:BA:2837:A:H2' | 34:BA:2838:G:H8 | 1.77 | 0.49 |
| 42:BI:90:GLY:O | 42:BI:92:PRO:HD3 | 2.12 | 0.49 |
| 45:BO:11:ALA:O | 45:BO:100:PHE:HD1 | 1.96 | 0.49 |
| 47:BQ:80:VAL:HG22 | 47:BQ:81:ARG:O | 2.13 | 0.49 |
| 48:BR:28:LEU:HD22 | 48:BR:113:ILE:HD12 | 1.93 | 0.49 |
| 51:BU:91:ARG:HD3 | 52:BV:11:GLN:CB | 2.41 | 0.49 |
| 55:BY:38:ILE:HG22 | 55:BY:39:ASN:N | 2.27 | 0.49 |
| 1:AA:1159:U:O2 | 1:AA:1182:G:C2 | 2.65 | 0.49 |
| 1:AA:1202:U:O2 | 1:AA:1202:U:H2' | 2.13 | 0.49 |
| 8:AH:31:LEU:O | 8:AH:35:ILE:HG12 | 2.12 | 0.49 |
| 9:AI:18:VAL:HG21 | 9:AI:82:ILE:N | 2.28 | 0.49 |
| 9:AI:55:ASP:O | 9:AI:59:LYS:HE3 | 2.13 | 0.49 |
| 23:AW:408:LYS:HG2 | 23:AW:409:GLN:HB2 | 1.95 | 0.49 |
| 25:B0:9:THR:OG1 | 25:B0:10:ARG:N | 2.44 | 0.49 |
| 34:BA:1022:G:N2 | 34:BA:1142:A:H2 | 2.11 | 0.49 |
| 34:BA:1404:C:H2' | 34:BA:1405:U:H6 | 1.78 | 0.49 |
| 34:BA:2422:C:H5' | 34:BA:2423:U:OP2 | 2.11 | 0.49 |
| 34:BA:2875:C:O2' | 34:BA:2876:G:H5' | 2.13 | 0.49 |
| 36:BC:254:LYS:O | 36:BC:255:LYS:HB2 | 2.12 | 0.49 |
| 39:BF:101:ARG:O | 39:BF:101:ARG:HG3 | 2.13 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 43:BJ:17:MET:O | 43:BJ:21:GLU:HG3 | 2.12 | 0.49 |
| 1:AA:130:A:H61 | 1:AA:233:C:C2' | 2.25 | 0.49 |
| 1:AA:1036:A:H5' | 1:AA:1037:C:P | 2.53 | 0.49 |
| 1:AA:1098:C:O2' | 1:AA:1099:G:H5' | 2.13 | 0.49 |
| 1:AA:1223:C:OP2 | 1:AA:1224:U:C6 | 2.66 | 0.49 |
| 1:AA:1300:G:HO2' | 1:AA:1301:U:H6 | 1.60 | 0.49 |
| 1:AA:1435:G:H2' | 1:AA:1436:U:H6 | 1.76 | 0.49 |
| 2:AB:65:LYS:HG2 | 2:AB:89:PHE:CE1 | 2.47 | 0.49 |
| 2:AB:95:TRP:CZ2 | 2:AB:100:LEU:HD23 | 2.47 | 0.49 |
| 9:AI:59:LYS:CD | 9:AI:60:LEU:HD22 | 2.36 | 0.49 |
| 13:AM:101:THR:C | 13:AM:103:THR:N | 2.66 | 0.49 |
| 17:AQ:74:LEU:C | 17:AQ:74:LEU:HD22 | 2.33 | 0.49 |
| 23:AW:415:GLY:HA2 | 23:AW:457:TYR:CZ | 2.48 | 0.49 |
| 28:B3:6:ILE:O | 28:B3:34:THR:HA | 2.13 | 0.49 |
| 32:B7:27:ASN:HD22 | 34:BA:2392:A:H5" | 1.77 | 0.49 |
| 33:B8:22:VAL:HG11 | 33:B8:36:ARG:CG | 2.42 | 0.49 |
| 34:BA:882:G:N2 | 34:BA:883:G:C4 | 2.81 | 0.49 |
| 34:BA:1078:U:H4' | 34:BA:1079:C:C6 | 2.48 | 0.49 |
| 34:BA:1430:G:H2' | 34:BA:1431:A:H8 | 1.78 | 0.49 |
| 34:BA:2280:G:N3 | 34:BA:2388:A:H2 | 2.11 | 0.49 |
| 36:BC:141:HIS:N | 36:BC:190:THR:O | 2.41 | 0.49 |
| 37:BD:111:GLY:HA2 | 37:BD:201:LEU:HD12 | 1.94 | 0.49 |
| 40:BG:25:ILE:O | 40:BG:32:LEU:O | 2.30 | 0.49 |
| 42:BI:126:ARG:HD3 | 42:BI:126:ARG:H | 1.77 | 0.49 |
| 1:AA:80:A:C2 | 1:AA:90:C:C2 | 3.01 | 0.49 |
| 1:AA:513:C:H2' | 1:AA:514:C:H6 | 1.78 | 0.49 |
| 1:AA:773:G:C2 | 1:AA:807:A:C2 | 3.01 | 0.49 |
| 1:AA:1053:G:N7 | 1:AA:1200:C:H5" | 2.27 | 0.49 |
| 1:AA:1159:U:N3 | 1:AA:1182:G:C5 | 2.79 | 0.49 |
| 1:AA:1239:A:H5' | 1:AA:1240:U:OP1 | 2.12 | 0.49 |
| 1:AA:1322:C:O2' | 1:AA:1323:G:H5' | 2.13 | 0.49 |
| 3:AC:22:PHE:CD2 | 3:AC:23:ALA:N | 2.81 | 0.49 |
| 4:AD:101:VAL:HG12 | 4:AD:102:TYR:N | 2.28 | 0.49 |
| 16:AP:71:VAL:HG12 | 16:AP:75:ILE:HD11 | 1.95 | 0.49 |
| 19:AS:30:LEU:HD12 | 19:AS:30:LEU:H | 1.78 | 0.49 |
| 23:AW:194:GLN:HB2 | 23:AW:205:ARG:HH12 | 1.76 | 0.49 |
| 25:B0:19:ARG:NH1 | 25:B0:22:VAL:HG11 | 2.27 | 0.49 |
| 34:BA:328:U:C2' | 34:BA:329:G:OP1 | 2.61 | 0.49 |
| 34:BA:1169:A:N6 | 34:BA:1180:U:H3 | 2.00 | 0.49 |
| 34:BA:1710:G:C2 | 34:BA:1749:A:C2 | 3.00 | 0.49 |
| 34:BA:2182:U:H2' | 34:BA:2183:A:OP1 | 2.11 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 36:BC:51:ARG:HH22 | 36:BC:246:PRO:HG3 | 1.77 | 0.49 |
| 36:BC:67:LYS:HG2 | 36:BC:150:GLY:HA2 | 1.93 | 0.49 |
| 37:BD:57:ALA:O | 37:BD:60:VAL:HG12 | 2.13 | 0.49 |
| 37:BD:73:VAL:HG23 | 37:BD:74:GLU:H | 1.77 | 0.49 |
| 39:BF:102:LEU:HD22 | 39:BF:106:ALA:HB3 | 1.94 | 0.49 |
| 45:BO:47:ILE:HD13 | 45:BO:48:PRO:CD | 2.38 | 0.49 |
| 46:BP:28:GLY:O | 46:BP:29:LYS:O | 2.30 | 0.49 |
| 48:BR:55:ALA:CB | 48:BR:79:LEU:HB3 | 2.42 | 0.49 |
| 49:BS:16:ARG:HD3 | 49:BS:19:GLN:HE21 | 1.76 | 0.49 |
| 50:BT:9:GLN:HA | 50:BT:12:MET:HG3 | 1.94 | 0.49 |
| 54:BX:49:LYS:HE3 | 54:BX:49:LYS:HA | 1.95 | 0.49 |
| 55:BY:98:ASN:OD1 | 55:BY:100:GLU:N | 2.36 | 0.49 |
| 1:AA:132:C:H2' | 1:AA:133:U:H6 | 1.78 | 0.49 |
| 1:AA:352:C:H4' | 1:AA:354:G:OP1 | 2.12 | 0.49 |
| 1:AA:735:C:H2' | 1:AA:736:C:C6 | 2.48 | 0.49 |
| 1:AA:1077:G:N2 | 1:AA:1080:A:OP2 | 2.45 | 0.49 |
| 1:AA:1494:G:H4' | 34:BA:1913:A:C5 | 2.47 | 0.49 |
| 2:AB:90:PHE:H | 2:AB:149:GLY:HA2 | 1.78 | 0.49 |
| 3:AC:6:PRO:HG2 | 3:AC:183:TYR:CD2 | 2.48 | 0.49 |
| 5:AE:93:VAL:HG22 | 5:AE:94:PHE:N | 2.28 | 0.49 |
| 9:AI:98:ARG:CG | 9:AI:103:VAL:HG21 | 2.28 | 0.49 |
| 10:AJ:7:ARG:O | 10:AJ:100:ILE:HA | 2.13 | 0.49 |
| 33:B8:36:ARG:CG | 33:B8:37:GLN:H | 2.22 | 0.49 |
| 34:BA:1628:G:C4 | 34:BA:1629:U:C5 | 3.00 | 0.49 |
| 34:BA:1717:A:H61 | 34:BA:1743:G:H1' | 1.78 | 0.49 |
| 34:BA:1906:G:C5' | 34:BA:1929:G:O2' | 2.60 | 0.49 |
| 34:BA:2702:G:H2' | 34:BA:2703:C:C6 | 2.48 | 0.49 |
| 36:BC:32:LEU:HD22 | 36:BC:63:ILE:HB | 1.95 | 0.49 |
| 41:BH:81:LEU:CD2 | 41:BH:82:ILE:N | 2.74 | 0.49 |
| 44:BN:35:ARG:HA | 44:BN:40:HIS:CD2 | 2.48 | 0.49 |
| 45:BO:13:ASN:O | 45:BO:15:GLY:N | 2.46 | 0.49 |
| 45:BO:72:PRO:O | 45:BO:74:GLY:N | 2.46 | 0.49 |
| 47:BQ:96:ILE:HA | 47:BQ:97:GLN:OE1 | 2.12 | 0.49 |
| 50:BT:111:GLU:CD | 50:BT:111:GLU:N | 2.65 | 0.49 |
| 53:BW:97:LEU:N | 53:BW:97:LEU:HD22 | 2.28 | 0.49 |
| 1:AA:191:G:C4 | 1:AA:192:A:C8 | 3.01 | 0.48 |
| 1:AA:342:C:C2 | 1:AA:348:G:C2 | 3.01 | 0.48 |
| 1:AA:426:U:O3' | 4:AD:38:GLY:O | 2.30 | 0.48 |
| 1:AA:478:A:H2' | 1:AA:479:U:O4' | 2.13 | 0.48 |
| 1:AA:539:A:H2' | 1:AA:540:G:H8 | 1.77 | 0.48 |
| 1:AA:1185:G:O2' | 1:AA:1186:G:H5' | 2.13 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1288:A:C6 | 1:AA:1289:A:C5 | 3.01 | 0.48 |
| 1:AA:1469:C:H5' | 1:AA:1469:C:C6 | 2.44 | 0.48 |
| 2:AB:15:PHE:HD1 | 2:AB:16:GLY:N | 2.11 | 0.48 |
| 5:AE:12:GLU:HB2 | 5:AE:63:MET:HE3 | 1.93 | 0.48 |
| 6:AF:61:LEU:CG | 6:AF:62:MET:H | 2.26 | 0.48 |
| 11:AK:20:ALA:HA | 11:AK:33:ILE:CD1 | 2.43 | 0.48 |
| 11:AK:49:SER:HB2 | 11:AK:51:PHE:HE2 | 1.78 | 0.48 |
| 34:BA:435:C:H2' | 34:BA:436:C:C5' | 2.42 | 0.48 |
| 34:BA:784:G:O2' | 34:BA:785:G:H5" | 2.13 | 0.48 |
| 34:BA:814:C:H2' | 34:BA:815:C:H6 | 1.78 | 0.48 |
| 34:BA:1049:C:O2' | 34:BA:1050:A:H5' | 2.13 | 0.48 |
| 34:BA:1097:U:H3' | 34:BA:1098:A:H4' | 1.95 | 0.48 |
| 34:BA:1383:A:H2 | 34:BA:1405:U:O2 | 1.96 | 0.48 |
| 34:BA:1795:C:H2' | 34:BA:1796:U:O4' | 2.12 | 0.48 |
| 34:BA:1858:A:N6 | 34:BA:1884:G:O2' | 2.45 | 0.48 |
| 34:BA:2358:A:H61 | 46:BP:54:GLN:NE2 | 2.04 | 0.48 |
| 34:BA:2646:C:H2' | 34:BA:2647:U:O4' | 2.12 | 0.48 |
| 35:BB:78:A:H2' | 35:BB:79:G:O4' | 2.13 | 0.48 |
| 36:BC:131:MET:HA | 36:BC:134:ILE:HD12 | 1.94 | 0.48 |
| 36:BC:141:HIS:CD2 | 36:BC:192:GLY:O | 2.66 | 0.48 |
| 40:BG:28:LYS:HD3 | 40:BG:79:THR:O | 2.13 | 0.48 |
| 45:BO:16:ALA:O | 45:BO:17:ARG:HB2 | 2.13 | 0.48 |
| 45:BO:77:ILE:CD1 | 45:BO:105:ARG:HH12 | 2.24 | 0.48 |
| 45:BO:80:ASP:OD2 | 50:BT:61:ARG:NH1 | 2.46 | 0.48 |
| 48:BR:79:LEU:O | 48:BR:80:PHE:CB | 2.56 | 0.48 |
| 51:BU:15:LYS:O | 51:BU:18:LYS:HB3 | 2.13 | 0.48 |
| 51:BU:91:ARG:CB | 51:BU:94:LEU:HB2 | 2.41 | 0.48 |
| 1:AA:130:A:H1' | 1:AA:264:C:C4' | 2.42 | 0.48 |
| 1:AA:380:G:C2 | 1:AA:384:G:C6 | 3.00 | 0.48 |
| 1:AA:779:C:C2' | 1:AA:780:A:H5' | 2.43 | 0.48 |
| 1:AA:829:G:H2' | 1:AA:830:G:H5' | 1.94 | 0.48 |
| 1:AA:1470:U:O2' | 1:AA:1471:U:H5' | 2.13 | 0.48 |
| 2:AB:96:LEU:H | 2:AB:99:MET:HE3 | 1.78 | 0.48 |
| 4:AD:137:SER:HB3 | 4:AD:138:PRO:CD | 2.42 | 0.48 |
| 4:AD:176:LYS:HG2 | 4:AD:178:GLU:CD | 2.33 | 0.48 |
| 11:AK:69:CYS:O | 11:AK:73:VAL:HG22 | 2.13 | 0.48 |
| 15:AO:77:TYR:CZ | 15:AO:81:ILE:HD13 | 2.48 | 0.48 |
| 17:AQ:18:LYS:HA | 17:AQ:47:ASP:CG | 2.33 | 0.48 |
| 17:AQ:60:ILE:HG22 | 17:AQ:72:TRP:HE3 | 1.77 | 0.48 |
| 21:AU:33:ARG:HD3 | 21:AU:34:ARG:H | 1.77 | 0.48 |
| 23:AW:94:ASP:HB3 | 23:AW:443:VAL:H | 1.77 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 25:B0:27:GLY:HA2 | 25:B0:31:LEU:HD12 | 1.94 | 0.48 |
| 25:B0:37:VAL:C | 25:B0:38:ARG:CG | 2.79 | 0.48 |
| 25:B0:46:ALA:HB3 | 25:B0:79:ILE:C | 2.33 | 0.48 |
| 33:B8:16:ILE:HA | 33:B8:24:ARG:O | 2.12 | 0.48 |
| 34:BA:492:A:H2' | 34:BA:493:G:C5' | 2.43 | 0.48 |
| 34:BA:871:U:OP1 | 47:BQ:5:LYS:HG3 | 2.13 | 0.48 |
| 34:BA:1334:G:O2' | 34:BA:1335:C:H5' | 2.13 | 0.48 |
| 34:BA:1497:U:C5' | 34:BA:1498:C:OP2 | 2.59 | 0.48 |
| 34:BA:1567:G:C8 | 36:BC:82:TYR:CE1 | 3.01 | 0.48 |
| 34:BA:1797:G:O3' | 36:BC:255:LYS:O | 2.31 | 0.48 |
| 34:BA:2340:A:H2' | 34:BA:2341:G:H8 | 1.78 | 0.48 |
| 34:BA:2709:G:H2' | 34:BA:2710:C:C6 | 2.48 | 0.48 |
| 37:BD:14:ILE:HD12 | 37:BD:14:ILE:O | 2.13 | 0.48 |
| 37:BD:64:GLU:O | 37:BD:68:PHE:CD1 | 2.67 | 0.48 |
| 39:BF:41:GLU:HB2 | 39:BF:48:LEU:HD23 | 1.95 | 0.48 |
| 40:BG:82:PHE:HB3 | 40:BG:140:ILE:CD1 | 2.42 | 0.48 |
| 40:BG:82:PHE:HB2 | 40:BG:134:GLY:O | 2.13 | 0.48 |
| 47:BQ:31:PHE:CE1 | 47:BQ:110:GLU:HA | 2.48 | 0.48 |
| 49:BS:66:GLY:H | 49:BS:70:ALA:CB | 2.26 | 0.48 |
| 54:BX:12:ARG:NH1 | 54:BX:12:ARG:CG | 2.75 | 0.48 |
| 1:AA:175:C:C2' | 1:AA:176:C:H5' | 2.44 | 0.48 |
| 1:AA:658:C:C2 | 1:AA:659:U:C5 | 3.01 | 0.48 |
| 1:AA:674:G:O2' | 1:AA:675:A:H5' | 2.13 | 0.48 |
| 1:AA:833:G:C6 | 1:AA:834:U:C4 | 3.01 | 0.48 |
| 1:AA:911:U:H2' | 1:AA:912:C:H6 | 1.78 | 0.48 |
| 1:AA:923:A:N6 | 1:AA:1392:G:O6 | 2.46 | 0.48 |
| 1:AA:1306:A:C6 | 1:AA:1307:U:C2 | 3.00 | 0.48 |
| 1:AA:1374:A:C4 | 1:AA:1375:A:C8 | 3.01 | 0.48 |
| 1:AA:1489:G:O2' | 1:AA:1490:U:H5' | 2.13 | 0.48 |
| 2:AB:110:ILE:HD12 | 2:AB:110:ILE:N | 2.28 | 0.48 |
| 6:AF:16:GLU:O | 6:AF:19:PRO:HD2 | 2.14 | 0.48 |
| 6:AF:20:GLY:O | 6:AF:23:GLU:HB3 | 2.14 | 0.48 |
| 12:AL:34:THR:C | 12:AL:35:ARG:HG2 | 2.33 | 0.48 |
| 12:AL:67:GLY:O | 12:AL:98:ARG:NH1 | 2.46 | 0.48 |
| 15:AO:81:ILE:HG22 | 15:AO:87:ARG:HB2 | 1.96 | 0.48 |
| 17:AQ:42:LYS:HB3 | 17:AQ:42:LYS:HZ3 | 1.76 | 0.48 |
| 23:AW:16:PHE:CZ | 23:AW:276:ALA:HB1 | 2.48 | 0.48 |
| 23:AW:117:LYS:O | 23:AW:149:ARG:NH2 | 2.46 | 0.48 |
| 23:AW:300:VAL:HG13 | 23:AW:316:ALA:HB1 | 1.96 | 0.48 |
| 27:B2:41:HIS:NE2 | 27:B2:42:LEU:HD13 | 2.28 | 0.48 |
| 34:BA:742:A:H2' | 34:BA:743:A:C8 | 2.47 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:901:C:C2’ | 34:BA:902:C:O5’ | 2.61 | 0.48 |
| 34:BA:1693:U:H3’ | 34:BA:1694:C:H6 | 1.78 | 0.48 |
| 34:BA:2290:G:H2’ | 34:BA:2291:U:H6 | 1.78 | 0.48 |
| 34:BA:2333:A:H4’ | 34:BA:2334:U:O5’ | 2.12 | 0.48 |
| 36:BC:14:HIS:O | 36:BC:203:VAL:HG11 | 2.13 | 0.48 |
| 40:BG:7:PRO:O | 40:BG:68:ARG:NH1 | 2.47 | 0.48 |
| 40:BG:8:VAL:CG1 | 40:BG:49:LEU:HB2 | 2.40 | 0.48 |
| 41:BH:13:ALA:O | 41:BH:17:GLU:HG3 | 2.13 | 0.48 |
| 41:BH:54:VAL:HG23 | 41:BH:85:SER:HA | 1.95 | 0.48 |
| 44:BN:44:TYR:HB2 | 51:BU:63:ARG:HB3 | 1.95 | 0.48 |
| 47:BQ:42:THR:O | 47:BQ:44:ARG:N | 2.47 | 0.48 |
| 48:BR:54:LEU:HD23 | 48:BR:66:ALA:HB2 | 1.95 | 0.48 |
| 48:BR:85:PRO:HA | 48:BR:88:ALA:HB2 | 1.94 | 0.48 |
| 50:BT:33:GLU:HG2 | 50:BT:36:LYS:HD3 | 1.94 | 0.48 |
| 1:AA:80:A:C2 | 1:AA:81:A:H1’ | 2.49 | 0.48 |
| 1:AA:346:G:H4’ | 50:BT:38:ARG:NH2 | 2.29 | 0.48 |
| 1:AA:779:C:O2’ | 1:AA:780:A:H5’ | 2.13 | 0.48 |
| 1:AA:930:C:O2’ | 1:AA:931:C:H5’ | 2.12 | 0.48 |
| 1:AA:1037:C:H2’ | 1:AA:1038:C:C6 | 2.49 | 0.48 |
| 1:AA:1097:C:H2’ | 1:AA:1098:C:C6 | 2.49 | 0.48 |
| 1:AA:1198:G:C5 | 1:AA:1199:U:C5 | 3.01 | 0.48 |
| 4:AD:156:ALA:O | 4:AD:159:GLU:HB3 | 2.13 | 0.48 |
| 6:AF:93:LYS:O | 6:AF:94:HIS:HB2 | 2.13 | 0.48 |
| 7:AG:72:VAL:HG12 | 7:AG:89:GLU:HG3 | 1.94 | 0.48 |
| 11:AK:22:ILE:HD13 | 11:AK:22:ILE:N | 2.26 | 0.48 |
| 16:AP:46:LYS:NZ | 16:AP:48:GLU:N | 2.62 | 0.48 |
| 19:AS:37:SER:HB2 | 19:AS:70:LEU:CD1 | 2.43 | 0.48 |
| 25:B0:75:ASN:O | 25:B0:76:ARG:HB2 | 2.13 | 0.48 |
| 26:B1:50:VAL:HG12 | 26:B1:51:SER:N | 2.27 | 0.48 |
| 34:BA:57:C:H2’ | 34:BA:58:G:O4’ | 2.13 | 0.48 |
| 34:BA:786:C:O2’ | 34:BA:787:C:H5’ | 2.13 | 0.48 |
| 34:BA:864:G:C5 | 34:BA:865:C:C5 | 3.01 | 0.48 |
| 34:BA:1063:G:H1 | 34:BA:1075:C:H42 | 1.60 | 0.48 |
| 34:BA:1443:U:H2’ | 34:BA:1444:G:C8 | 2.49 | 0.48 |
| 34:BA:2287:A:N7 | 34:BA:2289:G:C8 | 2.81 | 0.48 |
| 34:BA:2807:U:O2 | 34:BA:2892:G:C2 | 2.67 | 0.48 |
| 41:BH:18:VAL:HG11 | 41:BH:117:LEU:HD12 | 1.94 | 0.48 |
| 44:BN:12:LYS:O | 44:BN:13:ARG:HB2 | 2.14 | 0.48 |
| 48:BR:3:HIS:O | 48:BR:4:ARG:HB2 | 2.13 | 0.48 |
| 51:BU:50:ARG:HG2 | 51:BU:50:ARG:HH11 | 1.77 | 0.48 |
| 52:BV:89:HIS:NE2 | 52:BV:91:GLN:HB2 | 2.28 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:94:G:H4' | 1:AA:95:C:C5 | 2.49 | 0.48 |
| 1:AA:1190:G:OP2 | 3:AC:4:VAL:HB | 2.13 | 0.48 |
| 1:AA:1221:G:H4' | 19:AS:76:THR:HG21 | 1.96 | 0.48 |
| 1:AA:1466:C:H2' | 1:AA:1467:C:O4' | 2.14 | 0.48 |
| 3:AC:148:ILE:HA | 3:AC:200:TRP:O | 2.13 | 0.48 |
| 7:AG:130:LYS:N | 7:AG:134:VAL:HG21 | 2.28 | 0.48 |
| 9:AI:10:ARG:HB2 | 9:AI:15:ALA:HA | 1.94 | 0.48 |
| 9:AI:24:ASN:O | 9:AI:61:ASP:HA | 2.13 | 0.48 |
| 10:AJ:42:LEU:HD11 | 10:AJ:73:LEU:HD23 | 1.95 | 0.48 |
| 11:AK:19:VAL:HB | 11:AK:34:THR:HG22 | 1.93 | 0.48 |
| 18:AR:63:TYR:CE1 | 18:AR:69:TYR:OH | 2.67 | 0.48 |
| 23:AW:419:LEU:HD12 | 23:AW:452:ARG:NH2 | 2.27 | 0.48 |
| 23:AW:448:VAL:HG13 | 23:AW:452:ARG:NH2 | 2.28 | 0.48 |
| 34:BA:460:A:C2' | 34:BA:461:C:O5' | 2.62 | 0.48 |
| 34:BA:634:C:OP2 | 46:BP:70:LYS:HE2 | 2.13 | 0.48 |
| 34:BA:1085:A:N6 | 41:BH:37:LYS:HZ3 | 2.11 | 0.48 |
| 34:BA:1085:A:N6 | 41:BH:34:THR:HG22 | 2.13 | 0.48 |
| 34:BA:1181:U:H2' | 34:BA:1182:G:H8 | 1.78 | 0.48 |
| 34:BA:1250:G:H5" | 51:BU:5:ARG:HD2 | 1.95 | 0.48 |
| 34:BA:1289:C:O2 | 34:BA:1289:C:H2' | 2.13 | 0.48 |
| 34:BA:1416:G:H2' | 34:BA:1417:C:H6 | 1.78 | 0.48 |
| 34:BA:1510:G:H2' | 34:BA:1511:G:O4' | 2.14 | 0.48 |
| 34:BA:2583:G:H2' | 34:BA:2584:U:O4' | 2.14 | 0.48 |
| 34:BA:2619:C:O2' | 34:BA:2620:C:H5' | 2.13 | 0.48 |
| 34:BA:2720:U:H2' | 34:BA:2721:A:C8 | 2.49 | 0.48 |
| 41:BH:71:CYS:HB3 | 41:BH:74:ASP:OD2 | 2.14 | 0.48 |
| 43:BL:12:ALA:O | 43:BL:13:ALA:C | 2.50 | 0.48 |
| 46:BP:95:LEU:HB2 | 46:BP:101:ILE:CD1 | 2.44 | 0.48 |
| 48:BR:78:LYS:HG2 | 48:BR:83:LEU:HD13 | 1.95 | 0.48 |
| 52:BV:14:VAL:HG23 | 52:BV:18:GLN:CD | 2.34 | 0.48 |
| 53:BW:42:LYS:HG2 | 59:BW:201:HOH:O | 2.14 | 0.48 |
| 1:AA:66:A:H5' | 1:AA:173:U:O4 | 2.14 | 0.48 |
| 1:AA:130:A:H2' | 1:AA:263:A:O2' | 2.13 | 0.48 |
| 1:AA:344:A:C4' | 1:AA:345:C:OP2 | 2.60 | 0.48 |
| 1:AA:365:U:H5" | 1:AA:366:A:OP1 | 2.12 | 0.48 |
| 1:AA:380:G:N2 | 1:AA:384:G:C6 | 2.82 | 0.48 |
| 1:AA:382:A:H2' | 1:AA:383:A:C8 | 2.49 | 0.48 |
| 1:AA:388:G:C2' | 1:AA:389:A:OP2 | 2.62 | 0.48 |
| 1:AA:927:G:O2' | 1:AA:1503:A:N7 | 2.45 | 0.48 |
| 1:AA:1053:G:N7 | 1:AA:1199:U:H3' | 2.28 | 0.48 |
| 1:AA:1256:A:N6 | 1:AA:1278:G:H21 | 2.12 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:AC:86:LEU:O | 3:AC:89:VAL:HG22 | 2.14 | 0.48 |
| 3:AC:148:ILE:HG12 | 3:AC:200:TRP:O | 2.14 | 0.48 |
| 6:AF:38:ARG:HH11 | 6:AF:61:LEU:HD21 | 1.74 | 0.48 |
| 23:AW:71:THR:HG22 | 23:AW:72:THR:N | 2.28 | 0.48 |
| 23:AW:279:PRO:HG3 | 23:AW:362:GLY:HA3 | 1.96 | 0.48 |
| 23:AW:448:VAL:HG22 | 23:AW:452:ARG:HH21 | 1.79 | 0.48 |
| 25:B0:18:LYS:NZ | 34:BA:858:G:H4' | 2.28 | 0.48 |
| 29:B4:12:ARG:HG3 | 29:B4:15:ARG:NH1 | 2.28 | 0.48 |
| 34:BA:532:A:N3 | 34:BA:532:A:H2' | 2.27 | 0.48 |
| 34:BA:777:G:O2' | 34:BA:778:G:H5' | 2.13 | 0.48 |
| 34:BA:779:U:H5" | 36:BC:48:ILE:HD13 | 1.96 | 0.48 |
| 34:BA:1239:G:H2' | 34:BA:1240:U:O4' | 2.13 | 0.48 |
| 34:BA:1322:A:C5 | 34:BA:1323:C:C5 | 3.01 | 0.48 |
| 34:BA:1566:A:H5' | 36:BC:213:ARG:NH1 | 2.29 | 0.48 |
| 34:BA:1930:G:O2' | 34:BA:1931:U:O5' | 2.31 | 0.48 |
| 34:BA:1930:G:H2' | 34:BA:1931:U:OP2 | 2.14 | 0.48 |
| 34:BA:2198:A:C4' | 34:BA:2199:A:OP1 | 2.58 | 0.48 |
| 34:BA:2217:G:H2' | 34:BA:2218:G:O4' | 2.14 | 0.48 |
| 34:BA:2317:A:N6 | 34:BA:2318:G:C2 | 2.81 | 0.48 |
| 34:BA:2651:C:O2' | 34:BA:2652:C:H5' | 2.13 | 0.48 |
| 34:BA:2746:U:C2' | 34:BA:2747:G:H5' | 2.44 | 0.48 |
| 35:BB:77:U:C2' | 35:BB:78:A:H5' | 2.42 | 0.48 |
| 35:BB:92:C:O2' | 35:BB:93:C:H5' | 2.13 | 0.48 |
| 39:BF:134:GLN:HG2 | 39:BF:135:ILE:N | 2.29 | 0.48 |
| 54:BX:29:THR:HA | 54:BX:86:THR:N | 2.27 | 0.48 |
| 1:AA:62:U:H2' | 1:AA:63:C:C6 | 2.48 | 0.48 |
| 1:AA:86:G:O2' | 1:AA:87:C:O4' | 2.32 | 0.48 |
| 1:AA:207:C:H2' | 1:AA:208:U:C5 | 2.48 | 0.48 |
| 1:AA:1057:G:O2' | 3:AC:187:GLU:HG2 | 2.13 | 0.48 |
| 1:AA:1072:G:C6 | 1:AA:1073:U:N3 | 2.81 | 0.48 |
| 1:AA:1101:A:N7 | 2:AB:170:ILE:HG23 | 2.29 | 0.48 |
| 1:AA:1279:G:H5" | 10:AJ:9:ARG:CZ | 2.43 | 0.48 |
| 1:AA:1361:G:N2 | 1:AA:1362:A:N7 | 2.62 | 0.48 |
| 2:AB:132:GLU:HG2 | 2:AB:136:ARG:HG3 | 1.96 | 0.48 |
| 3:AC:106:ARG:HD3 | 3:AC:106:ARG:N | 2.26 | 0.48 |
| 12:AL:20:VAL:HB | 12:AL:94:TYR:HE1 | 1.79 | 0.48 |
| 20:AT:8:LYS:HE2 | 20:AT:12:GLN:HE22 | 1.79 | 0.48 |
| 23:AW:500:ASN:HB2 | 23:AW:501:LEU:CG | 2.42 | 0.48 |
| 30:B5:14:ALA:C | 30:B5:16:THR:H | 2.17 | 0.48 |
| 34:BA:1919:A:H8 | 34:BA:1919:A:O5' | 1.97 | 0.48 |
| 34:BA:2199:A:N3 | 34:BA:2199:A:H2' | 2.27 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:2800:A:H4' | 34:BA:2801:G:OP2 | 2.13 | 0.48 |
| 38:BE:31:VAL:HG21 | 38:BE:104:ALA:CB | 2.41 | 0.48 |
| 40:BG:132:LEU:N | 40:BG:132:LEU:CD2 | 2.77 | 0.48 |
| 41:BH:147:SER:O | 41:BH:150:LYS:HB3 | 2.14 | 0.48 |
| 42:BI:107:GLU:O | 42:BI:111:THR:HG23 | 2.13 | 0.48 |
| 44:BN:21:THR:C | 44:BN:23:LYS:N | 2.67 | 0.48 |
| 48:BR:73:ASN:CA | 48:BR:76:VAL:HG12 | 2.40 | 0.48 |
| 52:BV:42:ALA:HA | 52:BV:46:GLU:CB | 2.40 | 0.48 |
| 54:BX:85:VAL:C | 54:BX:86:THR:HG23 | 2.34 | 0.48 |
| 1:AA:646:G:C2 | 1:AA:647:C:C2 | 3.01 | 0.48 |
| 1:AA:810:C:H2' | 1:AA:811:C:O4' | 2.13 | 0.48 |
| 1:AA:980:C:O3' | 14:AN:12:ARG:NH2 | 2.47 | 0.48 |
| 1:AA:1136:C:O2 | 1:AA:1136:C:C2' | 2.61 | 0.48 |
| 1:AA:1284:C:C6 | 1:AA:1285:A:N7 | 2.81 | 0.48 |
| 2:AB:117:GLU:HG3 | 2:AB:118:THR:H | 1.79 | 0.48 |
| 3:AC:35:ASP:C | 3:AC:37:LYS:H | 2.17 | 0.48 |
| 3:AC:76:ILE:HG23 | 3:AC:80:GLY:HA2 | 1.96 | 0.48 |
| 6:AF:97:THR:HG22 | 6:AF:98:GLU:H | 1.77 | 0.48 |
| 7:AG:43:TYR:O | 7:AG:47:GLU:N | 2.47 | 0.48 |
| 17:AQ:76:ARG:HG2 | 17:AQ:77:VAL:H | 1.79 | 0.48 |
| 34:BA:155:A:H2' | 34:BA:156:A:C8 | 2.48 | 0.48 |
| 34:BA:633:A:H2' | 34:BA:634:C:H5' | 1.95 | 0.48 |
| 34:BA:1061:U:O2 | 34:BA:1061:U:C2' | 2.61 | 0.48 |
| 34:BA:1257:C:H5' | 38:BE:78:TRP:CZ3 | 2.47 | 0.48 |
| 34:BA:1381:G:H2' | 34:BA:1382:G:H5' | 1.96 | 0.48 |
| 34:BA:1912:A:H4' | 34:BA:1913:A:OP1 | 2.14 | 0.48 |
| 34:BA:2230:G:H2' | 34:BA:2231:U:C6 | 2.48 | 0.48 |
| 34:BA:2637:U:H2' | 34:BA:2638:G:O4' | 2.14 | 0.48 |
| 38:BE:8:ALA:O | 38:BE:9:GLN:C | 2.52 | 0.48 |
| 40:BG:23:ILE:HD12 | 40:BG:23:ILE:H | 1.79 | 0.48 |
| 46:BP:27:LEU:HD12 | 46:BP:27:LEU:H | 1.77 | 0.48 |
| 52:BV:90:ARG:O | 52:BV:91:GLN:CB | 2.62 | 0.48 |
| 1:AA:24:U:O2' | 1:AA:25:C:H5' | 2.13 | 0.48 |
| 1:AA:52:C:H6 | 1:AA:52:C:H5' | 1.79 | 0.48 |
| 1:AA:333:U:O5' | 1:AA:333:U:H6 | 1.96 | 0.48 |
| 1:AA:526:C:OP2 | 12:AL:87:LYS:HD3 | 2.14 | 0.48 |
| 1:AA:542:G:O2' | 1:AA:543:U:H5' | 2.13 | 0.48 |
| 1:AA:947:G:C6 | 1:AA:948:C:C4 | 3.02 | 0.48 |
| 4:AD:7:LYS:NZ | 4:AD:21:LYS:HG3 | 2.28 | 0.48 |
| 4:AD:185:PRO:HB2 | 4:AD:190:LEU:HD21 | 1.96 | 0.48 |
| 5:AE:153:ALA:O | 5:AE:154:ALA:O | 2.32 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 11:AK:88:PRO:HD3 | 21:AU:28:LEU:HD13 | 1.95 | 0.48 |
| 13:AM:44:ILE:O | 13:AM:44:ILE:HG22 | 2.14 | 0.48 |
| 23:AW:96:SER:HA | 23:AW:97:GLU:CB | 2.43 | 0.48 |
| 25:B0:71:LYS:HD2 | 25:B0:71:LYS:N | 2.28 | 0.48 |
| 34:BA:80:G:C4 | 34:BA:81:G:C8 | 3.02 | 0.48 |
| 34:BA:176:A:C2' | 34:BA:177:G:H5' | 2.43 | 0.48 |
| 34:BA:219:A:C6 | 34:BA:220:G:C6 | 3.02 | 0.48 |
| 34:BA:363:G:H2' | 34:BA:364:C:C6 | 2.49 | 0.48 |
| 34:BA:443:A:C5 | 38:BE:40:ARG:HD3 | 2.49 | 0.48 |
| 34:BA:460:A:C2 | 34:BA:470:A:C4 | 3.02 | 0.48 |
| 34:BA:565:C:H2' | 34:BA:566:U:O4' | 2.14 | 0.48 |
| 34:BA:630:G:N2 | 34:BA:633:A:OP2 | 2.46 | 0.48 |
| 34:BA:866:A:O4' | 34:BA:914:G:N2 | 2.47 | 0.48 |
| 34:BA:1166:G:C6 | 34:BA:1167:C:C4 | 3.02 | 0.48 |
| 34:BA:1570:A:C6 | 34:BA:1571:A:C6 | 3.02 | 0.48 |
| 34:BA:2489:U:H1' | 34:BA:2491:U:O4 | 2.14 | 0.48 |
| 35:BB:43:C:O2 | 39:BF:91:ARG:HD2 | 2.14 | 0.48 |
| 35:BB:56:G:H5' | 39:BF:23:SER:HB2 | 1.96 | 0.48 |
| 36:BC:219:VAL:HG12 | 36:BC:224:MET:CE | 2.44 | 0.48 |
| 38:BE:97:ASN:HB2 | 38:BE:100:MET:HG3 | 1.96 | 0.48 |
| 40:BG:72:ASN:C | 40:BG:72:ASN:HD22 | 2.17 | 0.48 |
| 40:BG:101:VAL:O | 40:BG:101:VAL:CG2 | 2.61 | 0.48 |
| 40:BG:155:PRO:O | 40:BG:170:THR:HA | 2.14 | 0.48 |
| 41:BH:149:GLY:HA3 | 43:BK:30:PHE:CZ | 2.49 | 0.48 |
| 46:BP:55:MET:HA | 46:BP:56:PRO:HD3 | 1.66 | 0.48 |
| 47:BQ:8:LYS:HD2 | 47:BQ:8:LYS:HA | 1.52 | 0.48 |
| 52:BV:49:ILE:CG1 | 52:BV:51:VAL:O | 2.62 | 0.48 |
| 52:BV:49:ILE:HG22 | 52:BV:54:VAL:HG13 | 1.95 | 0.48 |
| 54:BX:55:VAL:HG12 | 54:BX:55:VAL:O | 2.14 | 0.48 |
| 1:AA:340:U:O2 | 1:AA:350:G:N2 | 2.47 | 0.48 |
| 1:AA:452:A:N6 | 1:AA:480:U:C2 | 2.82 | 0.48 |
| 1:AA:732:C:H5" | 1:AA:733:G:OP2 | 2.14 | 0.48 |
| 1:AA:953:G:C6 | 1:AA:1229:A:N1 | 2.82 | 0.48 |
| 1:AA:1225:A:H4' | 19:AS:77:ARG:HE | 1.77 | 0.48 |
| 2:AB:166:ASP:OD2 | 2:AB:190:SER:HA | 2.14 | 0.48 |
| 2:AB:212:TYR:O | 2:AB:216:VAL:N | 2.44 | 0.48 |
| 4:AD:36:ALA:N | 4:AD:37:PRO:HD3 | 2.28 | 0.48 |
| 6:AF:86:ARG:CZ | 18:AR:63:TYR:HB3 | 2.44 | 0.48 |
| 7:AG:112:ASP:O | 7:AG:113:LYS:HD3 | 2.14 | 0.48 |
| 11:AK:125:LYS:O | 11:AK:126:ARG:CB | 2.61 | 0.48 |
| 14:AN:76:PHE:CD2 | 14:AN:92:ILE:HG21 | 2.49 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 16:AP:74:LEU:O | 16:AP:75:ILE:C | 2.52 | 0.48 |
| 17:AQ:51:GLU:H | 17:AQ:51:GLU:CD | 2.17 | 0.48 |
| 19:AS:45:GLY:N | 19:AS:61:VAL:HG23 | 2.29 | 0.48 |
| 21:AU:16:ARG:HH11 | 21:AU:19:LYS:CG | 2.25 | 0.48 |
| 25:B0:17:ALA:HA | 25:B0:35:ILE:HG23 | 1.96 | 0.48 |
| 28:B3:8:GLN:CG | 28:B3:28:LEU:HB3 | 2.44 | 0.48 |
| 34:BA:5:A:H2' | 34:BA:6:A:H8 | 1.79 | 0.48 |
| 34:BA:100:U:C2 | 34:BA:101:A:C6 | 3.02 | 0.48 |
| 34:BA:692:C:H2' | 34:BA:693:A:C8 | 2.49 | 0.48 |
| 34:BA:1091:G:O2' | 34:BA:1092:C:H5' | 2.14 | 0.48 |
| 34:BA:1177:G:H2' | 34:BA:1178:C:O4' | 2.14 | 0.48 |
| 34:BA:2134:A:HO2' | 34:BA:2135:A:H8 | 1.53 | 0.48 |
| 34:BA:2846:G:OP1 | 50:BT:52:ARG:NH1 | 2.43 | 0.48 |
| 35:BB:42:C:C2' | 35:BB:43:C:H5' | 2.44 | 0.48 |
| 36:BC:23:LEU:HD13 | 36:BC:24:HIS:H | 1.78 | 0.48 |
| 43:BJ:22:LEU:O | 43:BJ:26:MET:HG2 | 2.14 | 0.48 |
| 43:BL:28:GLU:HG3 | 43:BL:29:LYS:N | 2.29 | 0.48 |
| 44:BN:44:TYR:CD1 | 44:BN:44:TYR:O | 2.67 | 0.48 |
| 44:BN:114:LEU:O | 44:BN:118:MET:HG3 | 2.13 | 0.48 |
| 50:BT:50:ARG:HG2 | 50:BT:57:ALA:N | 2.29 | 0.48 |
| 51:BU:71:ASN:HB3 | 51:BU:109:VAL:HG11 | 1.96 | 0.48 |
| 53:BW:20:VAL:HG12 | 53:BW:47:VAL:HG11 | 1.95 | 0.48 |
| 53:BW:29:VAL:HG12 | 53:BW:30:SER:N | 2.27 | 0.48 |
| 54:BX:64:LYS:HG3 | 54:BX:79:ASP:OD1 | 2.13 | 0.48 |
| 1:AA:674:G:H2' | 1:AA:675:A:H8 | 1.79 | 0.47 |
| 1:AA:719:C:O2 | 18:AR:38:ILE:HG12 | 2.14 | 0.47 |
| 1:AA:826:C:H5' | 8:AH:12:ARG:NH2 | 2.25 | 0.47 |
| 1:AA:913:A:C4' | 1:AA:914:A:O5' | 2.58 | 0.47 |
| 1:AA:1118:U:H2' | 1:AA:1119:C:O4' | 2.14 | 0.47 |
| 1:AA:1353:G:H8 | 1:AA:1353:G:OP2 | 1.96 | 0.47 |
| 1:AA:1452:C:C4' | 1:AA:1453:G:C2 | 2.79 | 0.47 |
| 1:AA:1492:A:OP1 | 12:AL:43:LYS:HA | 2.14 | 0.47 |
| 3:AC:82:ASP:O | 3:AC:85:LYS:HG2 | 2.14 | 0.47 |
| 12:AL:43:LYS:HB2 | 12:AL:44:PRO:HD3 | 1.96 | 0.47 |
| 15:AO:81:ILE:HG12 | 15:AO:81:ILE:H | 1.41 | 0.47 |
| 18:AR:38:ILE:CD1 | 18:AR:58:ILE:HG21 | 2.43 | 0.47 |
| 32:B7:38:LYS:NZ | 34:BA:2365:G:N7 | 2.62 | 0.47 |
| 34:BA:1049:C:H2' | 34:BA:1050:A:H5' | 1.95 | 0.47 |
| 34:BA:1084:A:C4' | 41:BH:55:VAL:HG13 | 2.43 | 0.47 |
| 34:BA:1870:C:H5" | 34:BA:1871:A:OP2 | 2.13 | 0.47 |
| 36:BC:110:LYS:HB3 | 36:BC:110:LYS:HZ3 | 1.79 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:BG:100:ASN:O | 40:BG:116:LEU:HB2 | 2.13 | 0.47 |
| 41:BH:52:MET:CE | 41:BH:87:GLU:HG2 | 2.44 | 0.47 |
| 41:BH:87:GLU:OE2 | 41:BH:95:LEU:HB2 | 2.14 | 0.47 |
| 54:BX:40:LYS:CA | 54:BX:43:ILE:HG23 | 2.44 | 0.47 |
| 1:AA:65:A:C5 | 1:AA:381:C:C5 | 3.02 | 0.47 |
| 1:AA:79:G:N2 | 1:AA:91:U:N3 | 2.62 | 0.47 |
| 1:AA:266:G:O2' | 1:AA:267:C:OP2 | 2.27 | 0.47 |
| 1:AA:347:G:C2' | 1:AA:348:G:O5' | 2.62 | 0.47 |
| 1:AA:393:A:OP2 | 16:AP:12:LYS:HD2 | 2.14 | 0.47 |
| 1:AA:539:A:H2' | 1:AA:540:G:C8 | 2.49 | 0.47 |
| 1:AA:657:U:O2' | 1:AA:658:C:H5' | 2.14 | 0.47 |
| 1:AA:810:C:C2' | 1:AA:811:C:H5' | 2.43 | 0.47 |
| 1:AA:922:G:H4' | 5:AE:24:VAL:HA | 1.96 | 0.47 |
| 1:AA:1126:U:O2 | 1:AA:1126:U:C2' | 2.61 | 0.47 |
| 1:AA:1248:A:HO2' | 9:AI:37:TYR:HE2 | 1.62 | 0.47 |
| 1:AA:1358:U:H5" | 14:AN:72:PHE:O | 2.13 | 0.47 |
| 1:AA:1510:C:H2' | 1:AA:1511:G:C8 | 2.49 | 0.47 |
| 5:AE:45:VAL:HG22 | 5:AE:117:ALA:HA | 1.95 | 0.47 |
| 6:AF:79:ARG:HE | 6:AF:79:ARG:CA | 2.27 | 0.47 |
| 10:AJ:11:LYS:HE2 | 10:AJ:71:LEU:HD21 | 1.96 | 0.47 |
| 17:AQ:51:GLU:O | 17:AQ:52:CYS:O | 2.31 | 0.47 |
| 25:B0:9:THR:HG23 | 25:B0:10:ARG:CD | 2.27 | 0.47 |
| 26:B1:14:GLY:O | 26:B1:26:ARG:HG3 | 2.14 | 0.47 |
| 27:B2:56:LEU:C | 27:B2:58:ASN:H | 2.17 | 0.47 |
| 30:B5:39:ASP:O | 30:B5:43:ARG:N | 2.46 | 0.47 |
| 34:BA:31:C:O3' | 34:BA:1238:G:H5" | 2.14 | 0.47 |
| 34:BA:70:G:H5" | 34:BA:112:U:O2 | 2.14 | 0.47 |
| 34:BA:70:G:H2' | 34:BA:113:U:O2' | 2.13 | 0.47 |
| 34:BA:275:C:H3' | 34:BA:276:U:H5" | 1.95 | 0.47 |
| 34:BA:878:A:N6 | 34:BA:900:A:C8 | 2.82 | 0.47 |
| 34:BA:1398:C:H2' | 34:BA:1399:C:C6 | 2.48 | 0.47 |
| 34:BA:1568:G:H4' | 36:BC:58:LYS:HG2 | 1.95 | 0.47 |
| 34:BA:2258:C:H4' | 34:BA:2259:U:OP2 | 2.13 | 0.47 |
| 34:BA:2311:A:C5' | 34:BA:2312:U:OP2 | 2.60 | 0.47 |
| 36:BC:169:ALA:O | 36:BC:185:ALA:HB3 | 2.14 | 0.47 |
| 39:BF:30:VAL:CG2 | 39:BF:33:ILE:HD11 | 2.43 | 0.47 |
| 39:BF:131:VAL:HG22 | 39:BF:151:LEU:H | 1.80 | 0.47 |
| 41:BH:96:PHE:CB | 41:BH:125:ARG:HH22 | 2.27 | 0.47 |
| 49:BS:51:ALA:HB3 | 49:BS:78:VAL:CG1 | 2.41 | 0.47 |
| 50:BT:19:PHE:CE2 | 50:BT:83:ILE:HD11 | 2.49 | 0.47 |
| 55:BY:82:VAL:CG1 | 55:BY:93:ARG:HB3 | 2.44 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:256:U:O2' | 1:AA:257:G:H5' | 2.14 | 0.47 |
| 1:AA:433:G:C6 | 1:AA:434:U:C4 | 3.03 | 0.47 |
| 1:AA:605:U:H2' | 1:AA:606:G:H8 | 1.80 | 0.47 |
| 1:AA:801:U:H2' | 1:AA:802:A:H8 | 1.78 | 0.47 |
| 1:AA:979:C:H41 | 1:AA:1360:A:N6 | 2.13 | 0.47 |
| 1:AA:1314:C:OP2 | 19:AS:5:LYS:HD2 | 2.13 | 0.47 |
| 1:AA:1340:A:H2' | 1:AA:1341:U:O4' | 2.14 | 0.47 |
| 1:AA:1525:G:OP1 | 11:AK:121:ARG:NH2 | 2.45 | 0.47 |
| 3:AC:5:HIS:O | 3:AC:9:ILE:HG22 | 2.15 | 0.47 |
| 4:AD:57:LYS:HB3 | 4:AD:199:ILE:HG12 | 1.96 | 0.47 |
| 4:AD:97:LEU:O | 4:AD:97:LEU:HD23 | 2.12 | 0.47 |
| 7:AG:29:LEU:O | 7:AG:29:LEU:HD23 | 2.14 | 0.47 |
| 7:AG:49:LEU:O | 7:AG:49:LEU:HD13 | 2.13 | 0.47 |
| 11:AK:86:LYS:HG3 | 11:AK:113:THR:HA | 1.95 | 0.47 |
| 11:AK:117:HIS:O | 11:AK:118:ASN:HB2 | 2.14 | 0.47 |
| 12:AL:56:LEU:HD21 | 12:AL:81:ILE:HG21 | 1.96 | 0.47 |
| 12:AL:108:ASP:O | 12:AL:110:LYS:HG3 | 2.14 | 0.47 |
| 14:AN:42:ASN:HD21 | 14:AN:46:LYS:CE | 2.27 | 0.47 |
| 17:AQ:10:ARG:O | 17:AQ:22:VAL:HG13 | 2.14 | 0.47 |
| 20:AT:78:LEU:O | 20:AT:82:ILE:HG23 | 2.14 | 0.47 |
| 21:AU:9:GLU:CB | 21:AU:10:PRO:HD3 | 2.44 | 0.47 |
| 25:B0:11:ASN:ND2 | 34:BA:2264:C:H41 | 2.11 | 0.47 |
| 25:B0:77:LYS:O | 25:B0:78:PHE:HB2 | 2.14 | 0.47 |
| 28:B3:8:GLN:HG2 | 28:B3:28:LEU:HB3 | 1.96 | 0.47 |
| 29:B4:47:TYR:CZ | 29:B4:52:LYS:HD3 | 2.50 | 0.47 |
| 30:B5:14:ALA:O | 30:B5:16:THR:N | 2.46 | 0.47 |
| 34:BA:196:A:OP2 | 46:BP:47:ARG:NH1 | 2.47 | 0.47 |
| 34:BA:346:A:C2 | 34:BA:347:A:H1' | 2.48 | 0.47 |
| 34:BA:659:G:N2 | 38:BE:30:GLN:HE22 | 2.10 | 0.47 |
| 34:BA:822:G:H2' | 34:BA:823:C:C6 | 2.49 | 0.47 |
| 34:BA:996:A:H5" | 51:BU:93:ILE:HG21 | 1.97 | 0.47 |
| 34:BA:1150:C:H2' | 34:BA:1151:A:O5' | 2.14 | 0.47 |
| 34:BA:1161:C:H2' | 34:BA:1162:G:C8 | 2.47 | 0.47 |
| 34:BA:1682:G:H2' | 34:BA:1683:U:C6 | 2.48 | 0.47 |
| 34:BA:1827:U:H2' | 34:BA:1828:G:O4' | 2.14 | 0.47 |
| 34:BA:1886:U:H2' | 34:BA:1887:C:H6 | 1.78 | 0.47 |
| 34:BA:2261:C:C2 | 34:BA:2280:G:C2 | 3.02 | 0.47 |
| 34:BA:2262:U:H4' | 34:BA:2328:A:H2 | 1.80 | 0.47 |
| 34:BA:2282:G:C4 | 34:BA:2425:A:N6 | 2.82 | 0.47 |
| 36:BC:12:ARG:HH11 | 36:BC:12:ARG:CG | 2.22 | 0.47 |
| 38:BE:83:VAL:CG1 | 38:BE:86:ALA:HA | 2.44 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 38:BE:104:ALA:O | 38:BE:108:ILE:HG22 | 2.14 | 0.47 |
| 38:BE:132:LYS:O | 38:BE:135:ALA:HB3 | 2.14 | 0.47 |
| 39:BF:46:LYS:HD2 | 39:BF:46:LYS:N | 2.30 | 0.47 |
| 40:BG:71:LEU:HD13 | 40:BG:71:LEU:HA | 1.74 | 0.47 |
| 43:BM:26:MET:HA | 43:BM:29:LYS:O | 2.15 | 0.47 |
| 44:BN:4:PHE:O | 44:BN:44:TYR:HE1 | 1.96 | 0.47 |
| 45:BO:122:VAL:O | 45:BO:122:VAL:CG1 | 2.62 | 0.47 |
| 46:BP:78:ARG:NH2 | 46:BP:78:ARG:HB3 | 2.29 | 0.47 |
| 49:BS:49:VAL:HG21 | 49:BS:82:ALA:HA | 1.96 | 0.47 |
| 56:BZ:10:LYS:HD3 | 56:BZ:10:LYS:H | 1.77 | 0.47 |
| 56:BZ:51:GLN:NE2 | 56:BZ:79:ARG:HH22 | 2.13 | 0.47 |
| 1:AA:2:A:H2 | 1:AA:614:C:O4' | 1.98 | 0.47 |
| 1:AA:207:C:H2' | 1:AA:208:U:C4 | 2.50 | 0.47 |
| 1:AA:807:A:H2' | 1:AA:808:C:C6 | 2.48 | 0.47 |
| 1:AA:1239:A:H4' | 1:AA:1240:U:O5' | 2.14 | 0.47 |
| 1:AA:1308:U:H5" | 13:AM:96:VAL:CG2 | 2.43 | 0.47 |
| 1:AA:1327:C:O2' | 1:AA:1328:C:H5' | 2.14 | 0.47 |
| 2:AB:125:PHE:N | 2:AB:125:PHE:HD2 | 2.13 | 0.47 |
| 2:AB:183:PHE:CZ | 2:AB:197:PHE:HE2 | 2.32 | 0.47 |
| 3:AC:22:PHE:CD2 | 3:AC:22:PHE:C | 2.88 | 0.47 |
| 5:AE:25:LYS:NZ | 5:AE:25:LYS:HB3 | 2.30 | 0.47 |
| 5:AE:140:ILE:O | 5:AE:142:GLY:N | 2.45 | 0.47 |
| 6:AF:42:TRP:CZ2 | 6:AF:61:LEU:HB2 | 2.50 | 0.47 |
| 9:AI:98:ARG:CG | 9:AI:98:ARG:NH1 | 2.77 | 0.47 |
| 15:AO:69:LEU:HD22 | 15:AO:77:TYR:HB2 | 1.95 | 0.47 |
| 30:B5:8:ILE:N | 30:B5:22:THR:O | 2.44 | 0.47 |
| 34:BA:878:A:N7 | 34:BA:899:A:H2 | 2.12 | 0.47 |
| 34:BA:1179:G:C6 | 34:BA:1180:U:O2' | 2.67 | 0.47 |
| 34:BA:1277:G:C5' | 48:BR:20:MET:HE2 | 2.38 | 0.47 |
| 34:BA:1628:G:H2' | 34:BA:1629:U:H6 | 1.78 | 0.47 |
| 34:BA:1850:G:C6 | 34:BA:1851:U:C4 | 3.02 | 0.47 |
| 34:BA:1936:A:H2 | 34:BA:1943:U:O4 | 1.97 | 0.47 |
| 34:BA:2032:G:N1 | 34:BA:2572:A:C8 | 2.82 | 0.47 |
| 34:BA:2714:G:H2' | 34:BA:2715:C:C5' | 2.42 | 0.47 |
| 34:BA:2800:A:C2 | 34:BA:2895:G:H1' | 2.48 | 0.47 |
| 36:BC:140:VAL:HA | 36:BC:190:THR:O | 2.14 | 0.47 |
| 37:BD:69:ALA:HA | 37:BD:73:VAL:HG13 | 1.95 | 0.47 |
| 37:BD:94:GLN:O | 37:BD:94:GLN:HG2 | 2.15 | 0.47 |
| 40:BG:76:ILE:HD13 | 40:BG:76:ILE:O | 2.14 | 0.47 |
| 41:BH:96:PHE:HB3 | 41:BH:125:ARG:HH12 | 1.79 | 0.47 |
| 42:BI:123:ALA:HA | 42:BI:126:ARG:CZ | 2.44 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 44:BN:4:PHE:CG | 44:BN:5:THR:N | 2.82 | 0.47 |
| 45:BO:43:ILE:HG21 | 45:BO:46:ALA:HB2 | 1.97 | 0.47 |
| 52:BV:51:VAL:HG23 | 52:BV:52:PRO:O | 2.14 | 0.47 |
| 55:BY:25:LYS:HG2 | 55:BY:36:GLU:HB3 | 1.96 | 0.47 |
| 55:BY:27:VAL:HG23 | 55:BY:33:VAL:CG1 | 2.43 | 0.47 |
| 1:AA:58:C:H1' | 1:AA:388:G:O6 | 2.14 | 0.47 |
| 1:AA:76:G:N2 | 1:AA:77:A:H1' | 2.29 | 0.47 |
| 1:AA:205:A:C6 | 1:AA:206:C:C2 | 3.03 | 0.47 |
| 1:AA:429:U:H3 | 1:AA:431:A:H62 | 1.61 | 0.47 |
| 1:AA:615:G:C6 | 1:AA:626:G:C6 | 3.03 | 0.47 |
| 1:AA:695:A:H2' | 1:AA:696:A:C8 | 2.49 | 0.47 |
| 1:AA:947:G:OP1 | 13:AM:106:ARG:HG3 | 2.15 | 0.47 |
| 1:AA:1171:A:H2' | 1:AA:1172:C:H6 | 1.75 | 0.47 |
| 3:AC:21:TRP:HB3 | 3:AC:58:ARG:N | 2.27 | 0.47 |
| 3:AC:26:LYS:HB2 | 3:AC:27:GLU:OE1 | 2.14 | 0.47 |
| 4:AD:97:LEU:HD23 | 4:AD:97:LEU:C | 2.35 | 0.47 |
| 4:AD:138:PRO:O | 4:AD:139:ASN:HB2 | 2.13 | 0.47 |
| 5:AE:152:VAL:O | 5:AE:154:ALA:N | 2.47 | 0.47 |
| 6:AF:3:HIS:HA | 6:AF:65:GLU:HA | 1.95 | 0.47 |
| 7:AG:14:ASP:CB | 7:AG:19:SER:H | 2.28 | 0.47 |
| 14:AN:14:ALA:O | 14:AN:18:LYS:HG3 | 2.14 | 0.47 |
| 14:AN:25:GLU:HG3 | 14:AN:26:LEU:HD12 | 1.97 | 0.47 |
| 16:AP:20:VAL:CG2 | 16:AP:32:PHE:HB2 | 2.44 | 0.47 |
| 23:AW:491:SER:N | 23:AW:492:GLN:HB2 | 2.30 | 0.47 |
| 25:B0:49:ASN:HD22 | 25:B0:60:ALA:CA | 2.26 | 0.47 |
| 26:B1:38:TRP:HA | 26:B1:38:TRP:CE3 | 2.50 | 0.47 |
| 28:B3:35:VAL:HG22 | 28:B3:37:ARG:NE | 2.29 | 0.47 |
| 31:B6:16:HIS:HD2 | 34:BA:684:G:OP1 | 1.97 | 0.47 |
| 34:BA:192:C:O2' | 34:BA:802:A:H1' | 2.14 | 0.47 |
| 34:BA:566:U:H5 | 52:BV:80:ARG:HG2 | 1.78 | 0.47 |
| 34:BA:980:A:C6 | 34:BA:981:A:C6 | 3.03 | 0.47 |
| 34:BA:1386:C:H1' | 34:BA:1470:A:H1' | 1.96 | 0.47 |
| 34:BA:1559:U:C4' | 34:BA:1560:G:OP2 | 2.38 | 0.47 |
| 34:BA:2703:C:H2' | 34:BA:2704:C:H6 | 1.79 | 0.47 |
| 35:BB:52:A:C5' | 35:BB:53:A:OP1 | 2.62 | 0.47 |
| 36:BC:77:VAL:HG22 | 36:BC:111:ALA:HA | 1.97 | 0.47 |
| 36:BC:108:GLY:O | 36:BC:109:LEU:HD22 | 2.14 | 0.47 |
| 37:BD:157:LYS:HD2 | 44:BN:79:GLY:O | 2.15 | 0.47 |
| 39:BF:47:LYS:NZ | 39:BF:47:LYS:HB3 | 2.29 | 0.47 |
| 39:BF:172:PHE:C | 39:BF:174:PHE:H | 2.18 | 0.47 |
| 40:BG:117:PRO:HD2 | 40:BG:120:ILE:HG23 | 1.96 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 42:BI:123:ALA:C | 42:BI:125:THR:H | 2.18 | 0.47 |
| 44:BN:6:ALA:HB3 | 44:BN:45:THR:CG2 | 2.39 | 0.47 |
| 51:BU:6:GLY:HA2 | 51:BU:9:ALA:CB | 2.43 | 0.47 |
| 51:BU:26:ALA:HB1 | 51:BU:30:VAL:HB | 1.96 | 0.47 |
| 54:BX:29:THR:HB | 54:BX:86:THR:CG2 | 2.42 | 0.47 |
| 54:BX:32:LEU:O | 54:BX:83:ALA:HB2 | 2.15 | 0.47 |
| 54:BX:34:VAL:HG21 | 54:BX:43:ILE:HD12 | 1.97 | 0.47 |
| 1:AA:8:A:N1 | 5:AE:111:ARG:NH1 | 2.62 | 0.47 |
| 1:AA:47:C:H4' | 1:AA:48:C:O5' | 2.14 | 0.47 |
| 1:AA:202:G:H21 | 1:AA:466:A:H61 | 1.62 | 0.47 |
| 1:AA:516:U:C5 | 1:AA:517:G:C6 | 3.03 | 0.47 |
| 1:AA:707:U:H2' | 1:AA:708:C:C6 | 2.50 | 0.47 |
| 1:AA:723:U:H5" | 21:AU:48:LYS:HG2 | 1.96 | 0.47 |
| 1:AA:1007:U:C3' | 1:AA:1008:U:H5" | 2.44 | 0.47 |
| 1:AA:1256:A:C6 | 1:AA:1278:G:N3 | 2.83 | 0.47 |
| 1:AA:1372:U:H2' | 1:AA:1373:G:H5' | 1.96 | 0.47 |
| 3:AC:6:PRO:HB3 | 3:AC:174:LEU:HD13 | 1.96 | 0.47 |
| 3:AC:70:ALA:HB2 | 3:AC:114:LEU:HD11 | 1.96 | 0.47 |
| 4:AD:7:LYS:HZ1 | 4:AD:21:LYS:HG3 | 1.78 | 0.47 |
| 7:AG:77:ARG:O | 7:AG:78:ARG:HB2 | 2.14 | 0.47 |
| 10:AJ:10:LEU:HD11 | 10:AJ:98:VAL:HG12 | 1.97 | 0.47 |
| 13:AM:2:ARG:HG3 | 13:AM:3:ILE:H | 1.79 | 0.47 |
| 23:AW:127:MET:HG3 | 23:AW:162:LEU:HD22 | 1.96 | 0.47 |
| 24:AY:4:SER:C | 34:BA:1914:C:OP2 | 2.52 | 0.47 |
| 25:B0:72:GLY:HA2 | 35:BB:12:C:H2' | 1.97 | 0.47 |
| 28:B3:23:LEU:HD21 | 28:B3:53:MET:HE1 | 1.95 | 0.47 |
| 30:B5:39:ASP:OD1 | 30:B5:41:VAL:HG22 | 2.14 | 0.47 |
| 34:BA:156:A:H2' | 34:BA:157:C:C6 | 2.49 | 0.47 |
| 34:BA:1022:G:O6 | 44:BN:68:LYS:CE | 2.62 | 0.47 |
| 34:BA:1292:G:H2' | 34:BA:1293:C:C6 | 2.49 | 0.47 |
| 34:BA:1303:G:H2' | 34:BA:1304:A:H5' | 1.96 | 0.47 |
| 34:BA:1583:A:C2' | 34:BA:1584:U:OP2 | 2.62 | 0.47 |
| 34:BA:1886:U:H2' | 34:BA:1887:C:C6 | 2.49 | 0.47 |
| 34:BA:1969:A:O2' | 34:BA:1972:G:N3 | 2.38 | 0.47 |
| 34:BA:2307:G:C2 | 34:BA:2311:A:N7 | 2.82 | 0.47 |
| 34:BA:2307:G:N3 | 34:BA:2311:A:N7 | 2.62 | 0.47 |
| 34:BA:2579:C:O5' | 34:BA:2579:C:H6 | 1.97 | 0.47 |
| 34:BA:2655:G:O2' | 34:BA:2656:U:OP2 | 2.33 | 0.47 |
| 34:BA:2753:A:C2' | 34:BA:2754:U:H5' | 2.44 | 0.47 |
| 37:BD:169:ARG:O | 37:BD:170:VAL:HG13 | 2.15 | 0.47 |
| 39:BF:65:LEU:O | 39:BF:86:CYS:HA | 2.14 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 39:BF:102:LEU:HD13 | 39:BF:107:VAL:CG2 | 2.45 | 0.47 |
| 40:BG:32:LEU:O | 40:BG:33:THR:HG23 | 2.14 | 0.47 |
| 43:BJ:4:LYS:O | 43:BJ:8:ILE:HG12 | 2.14 | 0.47 |
| 43:BJ:29:LYS:HD2 | 43:BJ:29:LYS:C | 2.32 | 0.47 |
| 43:BM:17:MET:O | 43:BM:21:GLU:HG3 | 2.14 | 0.47 |
| 44:BN:13:ARG:O | 44:BN:52:ASP:OD2 | 2.31 | 0.47 |
| 45:BO:24:VAL:HG13 | 45:BO:33:ALA:HB2 | 1.95 | 0.47 |
| 45:BO:91:SER:O | 45:BO:93:GLN:HB2 | 2.14 | 0.47 |
| 46:BP:93:ASN:O | 46:BP:94:THR:HB | 2.15 | 0.47 |
| 47:BQ:62:LYS:O | 47:BQ:63:ILE:HD12 | 2.14 | 0.47 |
| 55:BY:12:VAL:O | 55:BY:18:LYS:O | 2.33 | 0.47 |
| 1:AA:181:A:H4' | 1:AA:182:A:O5' | 2.13 | 0.47 |
| 1:AA:411:A:C4 | 1:AA:413:G:H1' | 2.49 | 0.47 |
| 1:AA:429:U:H4' | 1:AA:430:A:OP1 | 2.12 | 0.47 |
| 1:AA:556:C:C2' | 1:AA:557:G:H5' | 2.45 | 0.47 |
| 1:AA:769:G:H4' | 1:AA:1513:A:H4' | 1.96 | 0.47 |
| 1:AA:813:U:C2' | 1:AA:814:A:H5" | 2.44 | 0.47 |
| 1:AA:957:U:H4' | 19:AS:78:THR:OG1 | 2.14 | 0.47 |
| 1:AA:1168:U:O2 | 1:AA:1168:U:C2' | 2.61 | 0.47 |
| 1:AA:1229:A:OP2 | 13:AM:112:ARG:HD3 | 2.14 | 0.47 |
| 1:AA:1308:U:H5" | 13:AM:96:VAL:HG23 | 1.97 | 0.47 |
| 2:AB:20:ARG:O | 2:AB:22:TRP:N | 2.47 | 0.47 |
| 2:AB:137:THR:HA | 2:AB:140:LEU:HD13 | 1.95 | 0.47 |
| 2:AB:140:LEU:HD12 | 2:AB:140:LEU:N | 2.30 | 0.47 |
| 2:AB:186:VAL:HG21 | 2:AB:198:VAL:HG23 | 1.96 | 0.47 |
| 5:AE:105:ILE:HD11 | 5:AE:123:LEU:HG | 1.97 | 0.47 |
| 6:AF:68:GLN:H | 6:AF:68:GLN:CD | 2.16 | 0.47 |
| 7:AG:91:ARG:C | 7:AG:93:VAL:H | 2.18 | 0.47 |
| 8:AH:17:GLN:NE2 | 8:AH:71:VAL:H | 2.11 | 0.47 |
| 8:AH:74:ILE:HD12 | 8:AH:127:TYR:O | 2.15 | 0.47 |
| 8:AH:82:LEU:HD22 | 8:AH:84:ILE:HD11 | 1.97 | 0.47 |
| 10:AJ:19:ASP:HA | 10:AJ:22:THR:HB | 1.95 | 0.47 |
| 11:AK:30:ILE:CB | 11:AK:45:THR:HG22 | 2.43 | 0.47 |
| 12:AL:21:PRO:C | 12:AL:23:LEU:N | 2.67 | 0.47 |
| 13:AM:21:ILE:HB | 13:AM:24:VAL:HG21 | 1.95 | 0.47 |
| 13:AM:47:LEU:HD11 | 13:AM:52:ILE:HD13 | 1.96 | 0.47 |
| 19:AS:10:ILE:HD11 | 19:AS:15:LEU:HD13 | 1.95 | 0.47 |
| 20:AT:5:SER:C | 20:AT:7:LYS:H | 2.18 | 0.47 |
| 23:AW:307:MET:CG | 23:AW:308:ASP:HA | 2.44 | 0.47 |
| 25:B0:14:ASP:O | 25:B0:15:SER:HB2 | 2.15 | 0.47 |
| 25:B0:18:LYS:H | 25:B0:36:ILE:CG1 | 2.23 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 28:B3:16:LEU:H | 28:B3:19:HIS:CD2 | 2.32 | 0.47 |
| 28:B3:42:ALA:O | 34:BA:851:C:O2' | 2.28 | 0.47 |
| 34:BA:8:C:H5" | 44:BN:53:TYR:OH | 2.15 | 0.47 |
| 34:BA:27:G:O2' | 34:BA:28:A:C8 | 2.42 | 0.47 |
| 34:BA:455:C:HO2' | 34:BA:472:A:H2 | 1.60 | 0.47 |
| 34:BA:543:G:C5 | 34:BA:551:G:C2 | 3.02 | 0.47 |
| 34:BA:545:U:H3' | 34:BA:545:U:C6 | 2.48 | 0.47 |
| 34:BA:588:U:H1' | 38:BE:85:PHE:CD1 | 2.49 | 0.47 |
| 34:BA:646:U:O4 | 34:BA:2368:C:H1' | 2.14 | 0.47 |
| 34:BA:709:U:O2' | 34:BA:710:U:H5' | 2.14 | 0.47 |
| 34:BA:729:G:OP1 | 36:BC:12:ARG:HB2 | 2.15 | 0.47 |
| 34:BA:861:A:H2' | 34:BA:862:G:O4' | 2.15 | 0.47 |
| 34:BA:893:C:C2' | 34:BA:894:U:O4' | 2.61 | 0.47 |
| 34:BA:1046:A:N6 | 41:BH:8:LYS:HG2 | 2.30 | 0.47 |
| 34:BA:1059:G:C6 | 34:BA:1080:A:N1 | 2.83 | 0.47 |
| 34:BA:1430:G:H2' | 34:BA:1431:A:O4' | 2.15 | 0.47 |
| 34:BA:1497:U:C5 | 34:BA:1578:U:O5' | 2.68 | 0.47 |
| 34:BA:1524:G:H2' | 34:BA:1525:A:O4' | 2.14 | 0.47 |
| 34:BA:1820:U:OP1 | 36:BC:176:ARG:HG3 | 2.15 | 0.47 |
| 34:BA:1893:C:C5 | 34:BA:1894:C:C5 | 3.02 | 0.47 |
| 34:BA:2244:U:C2' | 34:BA:2245:U:H5' | 2.45 | 0.47 |
| 34:BA:2783:U:H2' | 34:BA:2784:U:C6 | 2.49 | 0.47 |
| 34:BA:2857:G:C5 | 34:BA:2859:G:OP2 | 2.68 | 0.47 |
| 36:BC:116:GLN:HG2 | 36:BC:117:SER:N | 2.28 | 0.47 |
| 37:BD:114:LYS:N | 37:BD:114:LYS:CE | 2.72 | 0.47 |
| 38:BE:42:GLY:O | 38:BE:43:THR:OG1 | 2.27 | 0.47 |
| 38:BE:158:PHE:CD1 | 38:BE:159:LEU:HD12 | 2.42 | 0.47 |
| 38:BE:175:ILE:HD11 | 38:BE:180:LEU:CD1 | 2.43 | 0.47 |
| 39:BF:102:LEU:O | 39:BF:107:VAL:HG23 | 2.14 | 0.47 |
| 40:BG:94:ARG:HG2 | 40:BG:95:ALA:N | 2.27 | 0.47 |
| 41:BH:21:GLY:HA2 | 41:BH:87:GLU:O | 2.13 | 0.47 |
| 41:BH:55:VAL:HG12 | 41:BH:57:ASN:ND2 | 2.30 | 0.47 |
| 41:BH:59:LEU:HB2 | 41:BH:62:ARG:HB2 | 1.96 | 0.47 |
| 41:BH:71:CYS:SG | 41:BH:117:LEU:HD11 | 2.55 | 0.47 |
| 41:BH:106:PHE:O | 41:BH:107:GLU:C | 2.53 | 0.47 |
| 42:BI:89:SER:HA | 42:BI:135:MET:CB | 2.42 | 0.47 |
| 43:BK:22:LEU:O | 43:BK:25:ALA:HB3 | 2.15 | 0.47 |
| 45:BO:41:ILE:HD12 | 45:BO:41:ILE:HA | 1.68 | 0.47 |
| 47:BQ:71:LYS:HD2 | 47:BQ:95:LEU:HD13 | 1.95 | 0.47 |
| 48:BR:71:ARG:HH21 | 48:BR:71:ARG:HG2 | 1.80 | 0.47 |
| 50:BT:33:GLU:HG3 | 50:BT:34:GLY:N | 2.30 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 54:BX:29:THR:HA | 54:BX:86:THR:H | 1.80 | 0.47 |
| 1:AA:38:G:C2 | 1:AA:397:A:C2 | 3.03 | 0.47 |
| 1:AA:169:C:H2' | 1:AA:170:U:H6 | 1.78 | 0.47 |
| 1:AA:175:C:O2' | 1:AA:176:C:H5' | 2.15 | 0.47 |
| 1:AA:176:C:H2' | 1:AA:177:G:N3 | 2.30 | 0.47 |
| 1:AA:1370:G:C2 | 1:AA:1371:G:C8 | 3.03 | 0.47 |
| 2:AB:20:ARG:O | 2:AB:22:TRP:HB3 | 2.14 | 0.47 |
| 2:AB:36:LYS:HA | 2:AB:36:LYS:HE3 | 1.97 | 0.47 |
| 3:AC:14:VAL:HG21 | 3:AC:177:LEU:O | 2.15 | 0.47 |
| 3:AC:49:ALA:O | 3:AC:50:SER:CB | 2.63 | 0.47 |
| 5:AE:146:MET:O | 5:AE:146:MET:HG2 | 2.14 | 0.47 |
| 6:AF:6:ILE:HB | 6:AF:62:MET:HG2 | 1.95 | 0.47 |
| 6:AF:25:TYR:O | 6:AF:29:ILE:CD1 | 2.63 | 0.47 |
| 6:AF:38:ARG:HH11 | 6:AF:61:LEU:CD2 | 2.28 | 0.47 |
| 6:AF:51:ILE:O | 6:AF:51:ILE:HG23 | 2.15 | 0.47 |
| 6:AF:53:LYS:HG3 | 6:AF:54:LEU:H | 1.80 | 0.47 |
| 6:AF:68:GLN:O | 6:AF:71:ILE:HG22 | 2.15 | 0.47 |
| 11:AK:60:PHE:O | 11:AK:64:VAL:CG1 | 2.62 | 0.47 |
| 13:AM:90:HIS:C | 13:AM:92:ARG:H | 2.17 | 0.47 |
| 16:AP:42:ILE:HG22 | 16:AP:43:ALA:N | 2.29 | 0.47 |
| 18:AR:38:ILE:HD11 | 18:AR:62:ARG:HH21 | 1.80 | 0.47 |
| 19:AS:21:ALA:HB1 | 19:AS:46:LEU:HD21 | 1.97 | 0.47 |
| 19:AS:51:HIS:HD2 | 19:AS:53:GLY:H | 1.63 | 0.47 |
| 19:AS:79:TYR:CG | 19:AS:80:ARG:N | 2.82 | 0.47 |
| 21:AU:35:GLU:OE2 | 21:AU:37:TYR:HB2 | 2.15 | 0.47 |
| 23:AW:276:ALA:HA | 23:AW:277:PRO:HD3 | 1.80 | 0.47 |
| 23:AW:398:PHE:CG | 23:AW:399:ARG:N | 2.83 | 0.47 |
| 25:B0:13:ARG:HG2 | 25:B0:14:ASP:HB2 | 1.96 | 0.47 |
| 29:B4:31:LYS:HB3 | 34:BA:2885:G:N2 | 2.29 | 0.47 |
| 33:B8:9:LYS:CD | 33:B8:9:LYS:N | 2.67 | 0.47 |
| 34:BA:830:G:H4' | 34:BA:831:G:OP2 | 2.15 | 0.47 |
| 34:BA:1042:G:C5 | 34:BA:1043:C:C5 | 3.03 | 0.47 |
| 34:BA:1072:C:N4 | 34:BA:1093:G:H1 | 2.12 | 0.47 |
| 34:BA:1501:G:O2' | 34:BA:1502:A:H5' | 2.14 | 0.47 |
| 34:BA:1761:C:O5' | 34:BA:1761:C:H6 | 1.98 | 0.47 |
| 34:BA:2423:U:O2' | 34:BA:2424:C:P | 2.73 | 0.47 |
| 34:BA:2682:A:C8 | 37:BD:11:MET:HG2 | 2.50 | 0.47 |
| 34:BA:2840:C:O2' | 34:BA:2841:C:H5' | 2.14 | 0.47 |
| 36:BC:104:LEU:HB3 | 36:BC:105:ALA:H | 1.55 | 0.47 |
| 36:BC:219:VAL:HG12 | 36:BC:224:MET:HE3 | 1.97 | 0.47 |
| 36:BC:224:MET:HB2 | 36:BC:228:ASP:HB2 | 1.96 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 37:BD:98:VAL:CG1 | 37:BD:180:VAL:HG13 | 2.42 | 0.47 |
| 43:BL:14:MET:HA | 43:BL:14:MET:HE2 | 1.97 | 0.47 |
| 44:BN:4:PHE:O | 44:BN:44:TYR:CE1 | 2.68 | 0.47 |
| 48:BR:33:ILE:HG13 | 48:BR:118:ARG:HD2 | 1.96 | 0.47 |
| 50:BT:37:LYS:O | 50:BT:37:LYS:HG2 | 2.14 | 0.47 |
| 56:BZ:80:HIS:ND1 | 56:BZ:81:PRO:HD2 | 2.30 | 0.47 |
| 1:AA:234:C:H2' | 1:AA:235:C:H6 | 1.80 | 0.47 |
| 2:AB:222:GLU:OE1 | 2:AB:225:SER:HA | 2.15 | 0.47 |
| 3:AC:119:ILE:HA | 3:AC:122:GLN:HG3 | 1.96 | 0.47 |
| 4:AD:102:TYR:CG | 4:AD:110:ARG:HG3 | 2.50 | 0.47 |
| 13:AM:70:ARG:O | 13:AM:74:MET:HB2 | 2.15 | 0.47 |
| 14:AN:14:ALA:HB1 | 14:AN:18:LYS:HE2 | 1.96 | 0.47 |
| 14:AN:21:ALA:H | 14:AN:24:ALA:HB3 | 1.79 | 0.47 |
| 19:AS:30:LEU:HD12 | 19:AS:30:LEU:N | 2.30 | 0.47 |
| 20:AT:34:VAL:HG11 | 20:AT:78:LEU:HD22 | 1.97 | 0.47 |
| 23:AW:172:PRO:HD3 | 23:AW:256:PHE:CG | 2.50 | 0.47 |
| 23:AW:284:THR:HG21 | 23:AW:385:MET:SD | 2.55 | 0.47 |
| 25:B0:20:LEU:HD12 | 25:B0:32:ALA:O | 2.14 | 0.47 |
| 25:B0:46:ALA:O | 25:B0:47:GLY:O | 2.32 | 0.47 |
| 30:B5:34:GLU:HG2 | 30:B5:49:LYS:HG3 | 1.96 | 0.47 |
| 34:BA:659:G:C5' | 38:BE:95:LYS:HD3 | 2.44 | 0.47 |
| 34:BA:996:A:H5' | 51:BU:93:ILE:HG21 | 1.96 | 0.47 |
| 34:BA:1142:A:N6 | 34:BA:1144:A:C2 | 2.82 | 0.47 |
| 34:BA:1801:A:H5' | 34:BA:2203:U:O2' | 2.14 | 0.47 |
| 34:BA:1992:G:N2 | 34:BA:1996:C:O2' | 2.48 | 0.47 |
| 34:BA:2287:A:HO2' | 34:BA:2288:A:H2' | 1.80 | 0.47 |
| 34:BA:2290:G:H2' | 34:BA:2291:U:C6 | 2.50 | 0.47 |
| 38:BE:44:ARG:NH2 | 38:BE:44:ARG:CG | 2.66 | 0.47 |
| 40:BG:10:VAL:HG23 | 40:BG:10:VAL:O | 2.15 | 0.47 |
| 41:BH:4:ASN:O | 41:BH:7:ASP:HB2 | 2.14 | 0.47 |
| 44:BN:64:VAL:CG1 | 44:BN:65:THR:N | 2.78 | 0.47 |
| 44:BN:130:HIS:CD2 | 44:BN:132:HIS:HB2 | 2.50 | 0.47 |
| 45:BO:17:ARG:HB2 | 45:BO:45:GLU:HB3 | 1.96 | 0.47 |
| 47:BQ:33:LEU:CD2 | 47:BQ:128:THR:HB | 2.44 | 0.47 |
| 48:BR:47:VAL:O | 48:BR:50:PRO:HD2 | 2.15 | 0.47 |
| 51:BU:71:ASN:OD1 | 51:BU:106:THR:HG23 | 2.15 | 0.47 |
| 54:BX:29:THR:N | 54:BX:86:THR:HA | 2.29 | 0.47 |
| 55:BY:86:PHE:HB2 | 55:BY:92:VAL:CG1 | 2.45 | 0.47 |
| 1:AA:481:G:H4' | 1:AA:481:G:OP1 | 2.15 | 0.47 |
| 1:AA:513:C:C2 | 1:AA:514:C:C6 | 3.03 | 0.47 |
| 1:AA:537:G:H2' | 1:AA:538:G:C8 | 2.50 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:679:C:H2' | 1:AA:680:C:H6 | 1.80 | 0.47 |
| 1:AA:715:A:H2' | 1:AA:716:A:C8 | 2.49 | 0.47 |
| 1:AA:734:G:C2 | 1:AA:735:C:C2 | 3.03 | 0.47 |
| 1:AA:980:C:C5 | 1:AA:981:U:C2 | 3.03 | 0.47 |
| 1:AA:1001:C:H2' | 1:AA:1002:G:C8 | 2.50 | 0.47 |
| 1:AA:1081:A:H2' | 1:AA:1082:A:O4' | 2.15 | 0.47 |
| 1:AA:1126:U:C6 | 1:AA:1281:C:C2 | 3.02 | 0.47 |
| 1:AA:1422:G:C2 | 1:AA:1423:G:C8 | 3.02 | 0.47 |
| 2:AB:76:SER:HB2 | 2:AB:92:ASN:HB2 | 1.97 | 0.47 |
| 2:AB:125:PHE:N | 2:AB:125:PHE:CD2 | 2.83 | 0.47 |
| 6:AF:10:VAL:HG13 | 6:AF:83:ALA:O | 2.15 | 0.47 |
| 7:AG:20:GLU:O | 7:AG:23:ALA:HB3 | 2.15 | 0.47 |
| 11:AK:60:PHE:CZ | 11:AK:64:VAL:HG11 | 2.50 | 0.47 |
| 20:AT:53:MET:CE | 20:AT:57:VAL:HG21 | 2.45 | 0.47 |
| 23:AW:59:TRP:HZ2 | 23:AW:69:SER:CB | 2.24 | 0.47 |
| 23:AW:64:LYS:CE | 23:AW:71:THR:H | 2.25 | 0.47 |
| 25:B0:46:ALA:HB3 | 25:B0:79:ILE:O | 2.15 | 0.47 |
| 26:B1:2:ARG:HD2 | 26:B1:29:LEU:HD12 | 1.97 | 0.47 |
| 26:B1:27:ARG:NH2 | 34:BA:1365:A:O5' | 2.40 | 0.47 |
| 31:B6:39:ARG:NH2 | 34:BA:468:G:N7 | 2.62 | 0.47 |
| 33:B8:19:ARG:O | 33:B8:20:ASP:HB2 | 2.15 | 0.47 |
| 34:BA:531:C:H5" | 34:BA:532:A:C5 | 2.50 | 0.47 |
| 34:BA:747:U:O2 | 34:BA:2014:A:H1' | 2.15 | 0.47 |
| 34:BA:782:A:N7 | 36:BC:219:VAL:HG21 | 2.30 | 0.47 |
| 34:BA:963:U:H2' | 34:BA:964:C:C6 | 2.50 | 0.47 |
| 34:BA:1014:A:C2 | 34:BA:1149:G:C2 | 3.03 | 0.47 |
| 34:BA:1100:C:O5' | 34:BA:1100:C:H6 | 1.97 | 0.47 |
| 34:BA:1416:G:O2' | 34:BA:1417:C:O4' | 2.30 | 0.47 |
| 34:BA:1692:U:H2' | 34:BA:1694:C:C5 | 2.50 | 0.47 |
| 34:BA:1889:A:N3 | 34:BA:2086:U:O2' | 2.42 | 0.47 |
| 36:BC:106:PRO:HA | 36:BC:141:HIS:CE1 | 2.50 | 0.47 |
| 36:BC:143:VAL:O | 36:BC:151:GLY:HA2 | 2.14 | 0.47 |
| 36:BC:159:THR:HG22 | 36:BC:176:ARG:HG2 | 1.97 | 0.47 |
| 38:BE:41:GLN:O | 38:BE:41:GLN:HG2 | 2.14 | 0.47 |
| 38:BE:160:ALA:O | 38:BE:161:ALA:HB3 | 2.15 | 0.47 |
| 41:BH:23:LEU:HB2 | 41:BH:92:ALA:CB | 2.45 | 0.47 |
| 41:BH:57:ASN:HA | 41:BH:59:LEU:HD13 | 1.96 | 0.47 |
| 44:BN:27:ARG:HH11 | 44:BN:27:ARG:HG2 | 1.80 | 0.47 |
| 45:BO:40:LYS:NZ | 45:BO:89:ASN:ND2 | 2.59 | 0.47 |
| 48:BR:71:ARG:NH2 | 48:BR:71:ARG:HG3 | 2.30 | 0.47 |
| 56:BZ:65:VAL:HG23 | 56:BZ:65:VAL:O | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:669:G:O2' | 1:AA:670:G:H5' | 2.15 | 0.46 |
| 1:AA:679:C:O2' | 1:AA:680:C:H5' | 2.15 | 0.46 |
| 1:AA:1032:G:N2 | 1:AA:1033:G:C8 | 2.83 | 0.46 |
| 1:AA:1108:G:H5" | 3:AC:175:HIS:ND1 | 2.30 | 0.46 |
| 1:AA:1138:G:H3' | 1:AA:1138:G:N3 | 2.30 | 0.46 |
| 4:AD:2:ARG:HB2 | 4:AD:4:LEU:CD1 | 2.45 | 0.46 |
| 7:AG:125:ASP:OD2 | 7:AG:130:LYS:HG3 | 2.15 | 0.46 |
| 11:AK:16:SER:O | 11:AK:78:ILE:HA | 2.14 | 0.46 |
| 14:AN:42:ASN:C | 14:AN:44:VAL:H | 2.19 | 0.46 |
| 16:AP:24:SER:C | 16:AP:26:ASN:H | 2.18 | 0.46 |
| 17:AQ:47:ASP:OD2 | 17:AQ:47:ASP:N | 2.45 | 0.46 |
| 23:AW:401:ILE:HD11 | 23:AW:438:VAL:CG2 | 2.44 | 0.46 |
| 29:B4:22:THR:O | 29:B4:23:ALA:O | 2.33 | 0.46 |
| 33:B8:16:ILE:O | 33:B8:16:ILE:HG22 | 2.14 | 0.46 |
| 33:B8:27:CYS:HB2 | 33:B8:33:HIS:HB2 | 1.96 | 0.46 |
| 34:BA:49:A:H5' | 34:BA:51:G:O4' | 2.15 | 0.46 |
| 34:BA:449:A:C2' | 34:BA:450:G:H5' | 2.45 | 0.46 |
| 34:BA:460:A:H2' | 34:BA:461:C:O5' | 2.15 | 0.46 |
| 34:BA:511:U:H4' | 34:BA:1235:G:H4' | 1.97 | 0.46 |
| 34:BA:1109:C:N4 | 34:BA:1110:G:N2 | 2.64 | 0.46 |
| 34:BA:1138:G:H2' | 34:BA:1139:G:O4' | 2.14 | 0.46 |
| 34:BA:1297:C:OP1 | 34:BA:2710:C:H4' | 2.16 | 0.46 |
| 34:BA:2038:G:H2' | 34:BA:2039:U:O4' | 2.15 | 0.46 |
| 34:BA:2197:U:O2' | 34:BA:2198:A:H8 | 1.94 | 0.46 |
| 34:BA:2638:G:O2' | 34:BA:2639:A:P | 2.73 | 0.46 |
| 34:BA:2857:G:C4 | 34:BA:2859:G:OP2 | 2.68 | 0.46 |
| 36:BC:151:GLY:C | 36:BC:152:GLN:HG3 | 2.36 | 0.46 |
| 39:BF:135:ILE:C | 39:BF:137:PHE:N | 2.68 | 0.46 |
| 40:BG:9:VAL:O | 40:BG:9:VAL:HG13 | 2.14 | 0.46 |
| 40:BG:116:LEU:HA | 40:BG:116:LEU:HD13 | 1.70 | 0.46 |
| 44:BN:58:ASN:CB | 44:BN:61:LYS:HE2 | 2.43 | 0.46 |
| 54:BX:40:LYS:HA | 54:BX:58:VAL:HG11 | 1.97 | 0.46 |
| 55:BY:91:LYS:O | 55:BY:92:VAL:HB | 2.15 | 0.46 |
| 56:BZ:67:GLY:O | 56:BZ:68:LYS:HG3 | 2.15 | 0.46 |
| 1:AA:177:G:C2' | 1:AA:178:C:H5' | 2.46 | 0.46 |
| 1:AA:374:A:H2' | 1:AA:375:U:C6 | 2.50 | 0.46 |
| 1:AA:624:C:C2 | 1:AA:625:U:C6 | 3.03 | 0.46 |
| 1:AA:720:C:H2' | 1:AA:721:G:C8 | 2.51 | 0.46 |
| 1:AA:1055:A:H2 | 3:AC:192:TYR:O | 1.99 | 0.46 |
| 3:AC:55:VAL:O | 3:AC:65:VAL:HA | 2.16 | 0.46 |
| 6:AF:97:THR:HG22 | 6:AF:98:GLU:N | 2.31 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 9:AI:12:LYS:HA | 9:AI:109:GLN:OE1 | 2.15 | 0.46 |
| 12:AL:30:ARG:HH12 | 23:AW:408:LYS:CD | 2.28 | 0.46 |
| 25:B0:68:PHE:CD1 | 25:B0:79:ILE:HD12 | 2.48 | 0.46 |
| 26:B1:37:PHE:O | 26:B1:45:PHE:HD2 | 1.98 | 0.46 |
| 27:B2:23:ARG:NE | 27:B2:23:ARG:HA | 2.31 | 0.46 |
| 31:B6:34:ARG:HH12 | 31:B6:39:ARG:HG2 | 1.77 | 0.46 |
| 33:B8:7:VAL:HG23 | 33:B8:8:LYS:N | 2.30 | 0.46 |
| 34:BA:112:U:H2' | 34:BA:113:U:H5' | 1.97 | 0.46 |
| 34:BA:1476:U:H1' | 34:BA:1732:C:O2 | 2.15 | 0.46 |
| 34:BA:1913:A:H4' | 34:BA:1914:C:C5' | 2.45 | 0.46 |
| 34:BA:2033:A:C4' | 34:BA:2034:U:OP1 | 2.63 | 0.46 |
| 34:BA:2148:G:C2' | 34:BA:2149:U:O5' | 2.63 | 0.46 |
| 34:BA:2230:G:H2' | 34:BA:2231:U:H6 | 1.80 | 0.46 |
| 34:BA:2287:A:O2' | 34:BA:2288:A:C2' | 2.63 | 0.46 |
| 34:BA:2306:C:C4 | 34:BA:2307:G:C5 | 3.03 | 0.46 |
| 37:BD:158:GLY:O | 37:BD:159:LYS:C | 2.54 | 0.46 |
| 39:BF:114:ARG:N | 39:BF:114:ARG:CD | 2.78 | 0.46 |
| 40:BG:14:VAL:HA | 40:BG:26:LYS:O | 2.15 | 0.46 |
| 45:BO:11:ALA:HB2 | 45:BO:64:ARG:NH2 | 2.30 | 0.46 |
| 51:BU:64:ILE:HD12 | 51:BU:95:ALA:HB3 | 1.98 | 0.46 |
| 54:BX:11:LEU:HD22 | 54:BX:34:VAL:HG11 | 1.97 | 0.46 |
| 55:BY:27:VAL:HA | 55:BY:33:VAL:HG12 | 1.97 | 0.46 |
| 1:AA:200:G:H22 | 1:AA:218:U:H1' | 1.81 | 0.46 |
| 1:AA:318:G:O2' | 1:AA:319:G:H5' | 2.15 | 0.46 |
| 1:AA:579:A:C2 | 1:AA:763:G:C2 | 3.03 | 0.46 |
| 1:AA:602:A:O2' | 1:AA:603:U:H5' | 2.15 | 0.46 |
| 1:AA:1314:C:O2' | 1:AA:1315:U:H5' | 2.14 | 0.46 |
| 1:AA:1329:A:O2' | 13:AM:23:GLY:HA2 | 2.15 | 0.46 |
| 1:AA:1364:U:O2 | 1:AA:1364:U:H2' | 2.15 | 0.46 |
| 5:AE:149:PRO:C | 5:AE:151:MET:H | 2.19 | 0.46 |
| 7:AG:124:SER:C | 7:AG:126:ALA:H | 2.19 | 0.46 |
| 11:AK:21:HIS:HE1 | 11:AK:84:MET:CE | 2.28 | 0.46 |
| 11:AK:76:TYR:N | 11:AK:76:TYR:CD1 | 2.83 | 0.46 |
| 11:AK:125:LYS:C | 21:AU:33:ARG:NH2 | 2.69 | 0.46 |
| 18:AR:32:ILE:HD12 | 18:AR:33:THR:O | 2.16 | 0.46 |
| 23:AW:26:LYS:NZ | 23:AW:89:THR:O | 2.46 | 0.46 |
| 23:AW:315:VAL:HG11 | 23:AW:346:LEU:HD12 | 1.98 | 0.46 |
| 23:AW:403:LEU:HD21 | 23:AW:459:VAL:HG12 | 1.97 | 0.46 |
| 23:AW:449:VAL:HG23 | 23:AW:463:TYR:OH | 2.15 | 0.46 |
| 25:B0:49:ASN:HB2 | 25:B0:81:ILE:CG1 | 2.46 | 0.46 |
| 28:B3:8:GLN:HB2 | 28:B3:33:HIS:H | 1.81 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:340:A:H2' | 34:BA:341:C:O4' | 2.15 | 0.46 |
| 34:BA:345:A:H4' | 34:BA:346:A:OP1 | 2.16 | 0.46 |
| 34:BA:954:G:C5 | 34:BA:955:U:C5 | 3.04 | 0.46 |
| 34:BA:1097:U:H1' | 42:BI:8:VAL:HG12 | 1.97 | 0.46 |
| 34:BA:1109:C:C4 | 34:BA:1110:G:N2 | 2.84 | 0.46 |
| 34:BA:1799:G:O6 | 36:BC:177:SER:HB3 | 2.15 | 0.46 |
| 34:BA:2026:U:H2' | 34:BA:2027:G:O4' | 2.15 | 0.46 |
| 34:BA:2716:C:H2' | 34:BA:2717:C:H5' | 1.97 | 0.46 |
| 34:BA:2822:G:OP2 | 37:BD:115:GLY:HA3 | 2.16 | 0.46 |
| 34:BA:2888:C:H2' | 34:BA:2889:C:H6 | 1.80 | 0.46 |
| 41:BH:18:VAL:HG22 | 41:BH:86:MET:HE2 | 1.98 | 0.46 |
| 44:BN:23:LYS:C | 44:BN:63:ALA:HB3 | 2.34 | 0.46 |
| 50:BT:111:GLU:CD | 50:BT:111:GLU:H | 2.19 | 0.46 |
| 55:BY:62:ALA:O | 55:BY:63:ALA:O | 2.33 | 0.46 |
| 1:AA:266:G:H4' | 1:AA:267:C:H5 | 1.80 | 0.46 |
| 1:AA:332:G:O2' | 1:AA:333:U:H5' | 2.16 | 0.46 |
| 1:AA:620:C:C2 | 4:AD:131:ILE:HG21 | 2.50 | 0.46 |
| 1:AA:978:A:C4 | 1:AA:1319:A:N3 | 2.83 | 0.46 |
| 1:AA:1402:C:O2 | 1:AA:1500:A:N1 | 2.48 | 0.46 |
| 2:AB:23:ASN:H | 2:AB:189:ASN:HA | 1.81 | 0.46 |
| 2:AB:90:PHE:HE2 | 2:AB:148:GLY:HA3 | 1.80 | 0.46 |
| 3:AC:100:ILE:C | 3:AC:100:ILE:HD13 | 2.35 | 0.46 |
| 4:AD:116:LEU:HD21 | 4:AD:153:ARG:HH21 | 1.80 | 0.46 |
| 6:AF:71:ILE:HG23 | 6:AF:72:ASP:N | 2.31 | 0.46 |
| 10:AJ:73:LEU:O | 10:AJ:74:VAL:HB | 2.14 | 0.46 |
| 12:AL:32:VAL:O | 12:AL:76:HIS:O | 2.33 | 0.46 |
| 13:AM:89:ARG:HG3 | 13:AM:96:VAL:HA | 1.98 | 0.46 |
| 14:AN:30:ILE:HD12 | 14:AN:30:ILE:N | 2.29 | 0.46 |
| 14:AN:68:ARG:HH11 | 14:AN:68:ARG:HG2 | 1.81 | 0.46 |
| 23:AW:300:VAL:HA | 23:AW:318:MET:HA | 1.98 | 0.46 |
| 23:AW:523:PHE:O | 23:AW:525:GLN:NE2 | 2.49 | 0.46 |
| 25:B0:31:LEU:N | 25:B0:31:LEU:HD23 | 2.30 | 0.46 |
| 34:BA:372:G:O2' | 34:BA:373:U:O5' | 2.29 | 0.46 |
| 34:BA:1169:A:N1 | 34:BA:1181:U:O2 | 2.48 | 0.46 |
| 34:BA:2270:A:H2' | 34:BA:2271:G:O4' | 2.15 | 0.46 |
| 34:BA:2312:U:OP1 | 39:BF:70:ARG:HB3 | 2.16 | 0.46 |
| 35:BB:66:A:N6 | 35:BB:107:G:H2' | 2.28 | 0.46 |
| 41:BH:59:LEU:H | 41:BH:59:LEU:HD13 | 1.79 | 0.46 |
| 41:BH:67:THR:N | 41:BH:68:PRO:CD | 2.78 | 0.46 |
| 42:BI:80:LYS:HA | 42:BI:85:ILE:O | 2.15 | 0.46 |
| 44:BN:45:THR:N | 44:BN:46:PRO:HD3 | 2.30 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:BQ:41:LEU:CD2 | 47:BQ:124:LEU:HD22 | 2.44 | 0.46 |
| 47:BQ:76:LYS:O | 47:BQ:77:PRO:O | 2.33 | 0.46 |
| 50:BT:99:LEU:C | 50:BT:101:GLU:N | 2.69 | 0.46 |
| 53:BW:1:MET:CE | 53:BW:1:MET:HA | 2.46 | 0.46 |
| 1:AA:347:G:H2' | 1:AA:348:G:O5' | 2.15 | 0.46 |
| 1:AA:596:A:H61 | 1:AA:644:U:H3 | 1.63 | 0.46 |
| 1:AA:1112:C:H6 | 1:AA:1112:C:O5' | 1.99 | 0.46 |
| 1:AA:1336:C:HO2' | 1:AA:1337:G:P | 2.39 | 0.46 |
| 2:AB:41:ASN:HB3 | 2:AB:44:LYS:HB3 | 1.98 | 0.46 |
| 2:AB:67:LEU:O | 2:AB:160:LEU:HD12 | 2.16 | 0.46 |
| 4:AD:59:LYS:HE3 | 4:AD:193:ASP:O | 2.15 | 0.46 |
| 4:AD:164:ARG:HG2 | 4:AD:165:GLU:H | 1.80 | 0.46 |
| 4:AD:190:LEU:O | 4:AD:191:SER:HB2 | 2.16 | 0.46 |
| 5:AE:14:LEU:CD1 | 5:AE:14:LEU:N | 2.78 | 0.46 |
| 5:AE:155:LYS:O | 5:AE:158:LYS:O | 2.33 | 0.46 |
| 9:AI:3:ASN:CG | 9:AI:4:GLN:N | 2.69 | 0.46 |
| 9:AI:23:GLY:H | 9:AI:60:LEU:HA | 1.80 | 0.46 |
| 23:AW:26:LYS:HE2 | 23:AW:89:THR:HG1 | 1.75 | 0.46 |
| 23:AW:472:ARG:HA | 23:AW:473:TRP:CB | 2.46 | 0.46 |
| 23:AW:491:SER:HB2 | 23:AW:492:GLN:HB2 | 1.98 | 0.46 |
| 25:B0:47:GLY:O | 25:B0:49:ASN:N | 2.49 | 0.46 |
| 25:B0:54:ARG:NH2 | 34:BA:2384:U:OP2 | 2.48 | 0.46 |
| 26:B1:50:VAL:HG12 | 26:B1:51:SER:O | 2.16 | 0.46 |
| 28:B3:24:LEU:HD23 | 28:B3:24:LEU:C | 2.36 | 0.46 |
| 30:B5:33:LEU:HD11 | 30:B5:35:LEU:HD22 | 1.97 | 0.46 |
| 34:BA:477:A:C6 | 34:BA:478:A:C6 | 3.02 | 0.46 |
| 34:BA:621:A:OP2 | 46:BP:99:ASN:ND2 | 2.49 | 0.46 |
| 34:BA:879:G:N2 | 34:BA:899:A:H1' | 2.29 | 0.46 |
| 34:BA:1045:C:H1' | 34:BA:1047:G:N3 | 2.30 | 0.46 |
| 34:BA:1062:G:C4 | 34:BA:1088:A:N7 | 2.83 | 0.46 |
| 34:BA:1172:C:C4 | 34:BA:1173:U:H1' | 2.51 | 0.46 |
| 34:BA:2308:G:O6 | 34:BA:2311:A:C5 | 2.69 | 0.46 |
| 34:BA:2590:A:O2' | 34:BA:2591:C:H5' | 2.16 | 0.46 |
| 34:BA:2834:G:H2' | 34:BA:2879:A:H61 | 1.80 | 0.46 |
| 35:BB:59:A:H2' | 35:BB:60:C:O4' | 2.15 | 0.46 |
| 37:BD:182:ALA:C | 37:BD:183:GLU:HG3 | 2.36 | 0.46 |
| 39:BF:3:LEU:HB2 | 39:BF:96:TRP:HB3 | 1.98 | 0.46 |
| 39:BF:39:VAL:CG1 | 39:BF:42:ALA:HB2 | 2.41 | 0.46 |
| 39:BF:127:TYR:HE2 | 39:BF:129:MET:CB | 2.21 | 0.46 |
| 41:BH:23:LEU:HD21 | 41:BH:96:PHE:CG | 2.50 | 0.46 |
| 46:BP:21:ARG:HD3 | 46:BP:21:ARG:HA | 1.74 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:BQ:57:VAL:HA | 47:BQ:112:LEU:HD21 | 1.97 | 0.46 |
| 53:BW:24:ILE:HD11 | 53:BW:35:ILE:HB | 1.97 | 0.46 |
| 55:BY:40:LEU:HD23 | 55:BY:61:GLU:HA | 1.98 | 0.46 |
| 1:AA:265:G:H2' | 1:AA:266:G:H4' | 1.98 | 0.46 |
| 1:AA:443:C:O2' | 1:AA:444:G:H5' | 2.16 | 0.46 |
| 1:AA:858:G:O2' | 1:AA:859:G:H5' | 2.15 | 0.46 |
| 1:AA:1198:G:H2' | 1:AA:1199:U:O4' | 2.15 | 0.46 |
| 1:AA:1210:C:C2' | 1:AA:1211:U:H5' | 2.46 | 0.46 |
| 1:AA:1333:A:C8 | 1:AA:1334:G:C8 | 3.03 | 0.46 |
| 2:AB:117:GLU:HG3 | 2:AB:118:THR:N | 2.30 | 0.46 |
| 3:AC:123:LEU:HD13 | 3:AC:195:ILE:HG21 | 1.97 | 0.46 |
| 4:AD:13:ARG:CG | 4:AD:55:ARG:HH21 | 2.28 | 0.46 |
| 4:AD:84:ASN:O | 4:AD:87:GLU:HG2 | 2.15 | 0.46 |
| 4:AD:122:ILE:HD12 | 4:AD:122:ILE:C | 2.36 | 0.46 |
| 7:AG:68:VAL:O | 7:AG:68:VAL:HG12 | 2.16 | 0.46 |
| 23:AW:30:THR:HG23 | 23:AW:86:LEU:HD21 | 1.97 | 0.46 |
| 23:AW:306:ASN:HD21 | 23:AW:313:ASP:HB2 | 1.80 | 0.46 |
| 27:B2:33:ALA:CB | 54:BX:14:PRO:HD2 | 2.46 | 0.46 |
| 27:B2:41:HIS:CD2 | 34:BA:95:A:O2' | 2.69 | 0.46 |
| 31:B6:35:ARG:HG2 | 31:B6:42:LEU:HD11 | 1.97 | 0.46 |
| 34:BA:221:A:C8 | 34:BA:266:G:C6 | 3.03 | 0.46 |
| 34:BA:279:A:N6 | 34:BA:361:G:H1' | 2.31 | 0.46 |
| 34:BA:634:C:C2 | 34:BA:635:C:C5 | 3.04 | 0.46 |
| 34:BA:1019:U:H3 | 34:BA:1142:A:H62 | 1.61 | 0.46 |
| 34:BA:1060:U:O4' | 34:BA:1062:G:H5' | 2.16 | 0.46 |
| 34:BA:1304:A:H2' | 34:BA:1305:C:H6 | 1.80 | 0.46 |
| 34:BA:1477:A:C2' | 34:BA:1478:G:H5' | 2.46 | 0.46 |
| 34:BA:1745:A:O2' | 34:BA:1746:A:H5' | 2.16 | 0.46 |
| 34:BA:2137:U:O4 | 34:BA:2154:A:C6 | 2.69 | 0.46 |
| 34:BA:2425:A:H4' | 34:BA:2426:A:C5' | 2.45 | 0.46 |
| 36:BC:61:TYR:CE1 | 36:BC:62:ARG:O | 2.69 | 0.46 |
| 37:BD:114:LYS:HZ3 | 37:BD:116:LYS:HE2 | 1.77 | 0.46 |
| 37:BD:133:THR:HG23 | 37:BD:134:HIS:H | 1.81 | 0.46 |
| 38:BE:124:PHE:CD1 | 38:BE:124:PHE:C | 2.89 | 0.46 |
| 39:BF:56:LEU:HA | 39:BF:56:LEU:HD23 | 1.65 | 0.46 |
| 41:BH:52:MET:SD | 41:BH:87:GLU:HG2 | 2.56 | 0.46 |
| 41:BH:154:THR:O | 41:BH:155:LEU:HD23 | 2.16 | 0.46 |
| 43:BJ:4:LYS:NZ | 43:BK:21:GLU:OE2 | 2.42 | 0.46 |
| 44:BN:123:LYS:HD2 | 44:BN:123:LYS:H | 1.80 | 0.46 |
| 47:BQ:50:ARG:HA | 47:BQ:53:MET:CE | 2.45 | 0.46 |
| 54:BX:39:THR:HB | 54:BX:42:GLU:HB3 | 1.96 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:441:A:H1' | 1:AA:497:G:N2 | 2.31 | 0.46 |
| 1:AA:542:G:OP1 | 4:AD:9:LYS:HE2 | 2.15 | 0.46 |
| 1:AA:1176:A:H2' | 1:AA:1177:G:O4' | 2.16 | 0.46 |
| 1:AA:1256:A:C5 | 1:AA:1278:G:N3 | 2.83 | 0.46 |
| 8:AH:1:SER:OG | 8:AH:2:MET:N | 2.44 | 0.46 |
| 8:AH:88:LYS:HG3 | 8:AH:89:ASP:H | 1.79 | 0.46 |
| 12:AL:23:LEU:CG | 12:AL:24:GLU:N | 2.73 | 0.46 |
| 13:AM:59:VAL:HG22 | 13:AM:59:VAL:O | 2.16 | 0.46 |
| 14:AN:22:LYS:HG3 | 14:AN:23:ARG:N | 2.31 | 0.46 |
| 17:AQ:20:ILE:HG23 | 17:AQ:20:ILE:O | 2.15 | 0.46 |
| 25:B0:20:LEU:HD11 | 25:B0:35:ILE:HB | 1.97 | 0.46 |
| 25:B0:26:GLY:O | 25:B0:27:GLY:C | 2.54 | 0.46 |
| 27:B2:37:LEU:HD21 | 27:B2:39:GLN:O | 2.16 | 0.46 |
| 29:B4:2:VAL:HG23 | 34:BA:2015:A:C6 | 2.51 | 0.46 |
| 34:BA:154:U:H2' | 34:BA:155:A:C8 | 2.50 | 0.46 |
| 34:BA:748:G:OP2 | 53:BW:88:ARG:HG3 | 2.16 | 0.46 |
| 34:BA:1290:C:H2' | 34:BA:1291:C:H6 | 1.81 | 0.46 |
| 34:BA:1475:G:H1' | 34:BA:1476:U:OP2 | 2.15 | 0.46 |
| 34:BA:1551:A:H2' | 34:BA:1552:A:O4' | 2.16 | 0.46 |
| 34:BA:1874:C:H2' | 34:BA:1875:G:O4' | 2.15 | 0.46 |
| 34:BA:1921:G:O2' | 34:BA:1922:G:H5' | 2.16 | 0.46 |
| 34:BA:2286:G:C5' | 34:BA:2287:A:O4' | 2.64 | 0.46 |
| 35:BB:39:A:H2' | 35:BB:40:U:C6 | 2.50 | 0.46 |
| 42:BI:6:ALA:HB3 | 42:BI:60:VAL:H | 1.80 | 0.46 |
| 43:BL:22:LEU:O | 43:BL:26:MET:HG3 | 2.15 | 0.46 |
| 48:BR:37:THR:OG1 | 48:BR:40:LYS:HG3 | 2.16 | 0.46 |
| 48:BR:96:ARG:NH1 | 48:BR:116:VAL:HG23 | 2.30 | 0.46 |
| 55:BY:24:VAL:O | 55:BY:24:VAL:HG12 | 2.14 | 0.46 |
| 1:AA:409:U:OP1 | 4:AD:23:GLY:HA3 | 2.16 | 0.46 |
| 1:AA:620:C:N3 | 4:AD:131:ILE:HG21 | 2.31 | 0.46 |
| 1:AA:976:G:C8 | 1:AA:1358:U:O2 | 2.69 | 0.46 |
| 1:AA:1220:G:C5 | 1:AA:1221:G:N7 | 2.84 | 0.46 |
| 1:AA:1434:A:N6 | 1:AA:1435:G:C6 | 2.84 | 0.46 |
| 1:AA:1468:A:C3' | 1:AA:1469:C:H5" | 2.46 | 0.46 |
| 5:AE:12:GLU:OE1 | 5:AE:67:ARG:NH1 | 2.49 | 0.46 |
| 6:AF:52:ASN:O | 6:AF:53:LYS:CB | 2.64 | 0.46 |
| 9:AI:117:LEU:HD22 | 9:AI:123:ARG:HA | 1.98 | 0.46 |
| 14:AN:76:PHE:HE2 | 14:AN:95:LEU:HD22 | 1.81 | 0.46 |
| 15:AO:78:THR:HA | 15:AO:81:ILE:CD1 | 2.44 | 0.46 |
| 16:AP:24:SER:O | 16:AP:26:ASN:N | 2.49 | 0.46 |
| 17:AQ:54:ILE:HG12 | 17:AQ:55:GLY:N | 2.31 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 17:AQ:59:GLU:O | 17:AQ:60:ILE:HD13 | 2.15 | 0.46 |
| 25:B0:39:GLN:HG3 | 25:B0:42:THR:N | 2.30 | 0.46 |
| 31:B6:12:ARG:HD2 | 34:BA:686:U:O4 | 2.16 | 0.46 |
| 34:BA:781:A:C2' | 34:BA:782:A:OP2 | 2.63 | 0.46 |
| 34:BA:1129:A:C2 | 34:BA:2569:G:N3 | 2.84 | 0.46 |
| 34:BA:1519:G:C6 | 34:BA:1520:U:C4 | 3.04 | 0.46 |
| 34:BA:1541:C:H2' | 34:BA:1542:U:H6 | 1.81 | 0.46 |
| 34:BA:1600:C:O2' | 34:BA:1601:G:H5' | 2.16 | 0.46 |
| 34:BA:1682:G:H2' | 34:BA:1683:U:H6 | 1.80 | 0.46 |
| 34:BA:1705:A:C5 | 34:BA:1706:C:N4 | 2.84 | 0.46 |
| 34:BA:1799:G:H22 | 34:BA:1818:U:C2' | 2.29 | 0.46 |
| 34:BA:1894:C:H2' | 34:BA:1895:C:C6 | 2.50 | 0.46 |
| 35:BB:15:A:H1' | 35:BB:109:A:N7 | 2.27 | 0.46 |
| 36:BC:30:ALA:N | 36:BC:31:PRO:HD2 | 2.31 | 0.46 |
| 36:BC:41:GLY:HA3 | 36:BC:53:ILE:HB | 1.98 | 0.46 |
| 36:BC:109:LEU:HD23 | 36:BC:110:LYS:N | 2.31 | 0.46 |
| 36:BC:245:THR:HB | 36:BC:246:PRO:CD | 2.43 | 0.46 |
| 37:BD:52:THR:HG22 | 37:BD:80:TRP:CZ3 | 2.51 | 0.46 |
| 38:BE:117:ARG:NH2 | 38:BE:183:PHE:O | 2.48 | 0.46 |
| 38:BE:119:ILE:HD13 | 38:BE:119:ILE:H | 1.79 | 0.46 |
| 38:BE:171:ASP:OD1 | 38:BE:174:GLY:N | 2.49 | 0.46 |
| 42:BI:8:VAL:H | 42:BI:58:ILE:HG12 | 1.81 | 0.46 |
| 42:BI:57:VAL:O | 42:BI:58:ILE:HD13 | 2.16 | 0.46 |
| 42:BI:123:ALA:HA | 42:BI:126:ARG:NH2 | 2.31 | 0.46 |
| 43:BJ:2:ILE:HA | 43:BJ:4:LYS:CE | 2.46 | 0.46 |
| 43:BK:3:THR:O | 43:BK:7:ILE:HG12 | 2.15 | 0.46 |
| 45:BO:77:ILE:HD11 | 45:BO:105:ARG:NH1 | 2.29 | 0.46 |
| 47:BQ:41:LEU:O | 47:BQ:93:VAL:HG23 | 2.14 | 0.46 |
| 50:BT:4:ILE:HA | 50:BT:7:LEU:HB2 | 1.98 | 0.46 |
| 50:BT:83:ILE:C | 50:BT:83:ILE:CD1 | 2.77 | 0.46 |
| 56:BZ:38:LEU:HD12 | 56:BZ:38:LEU:HA | 1.77 | 0.46 |
| 1:AA:75:G:H1 | 1:AA:95:C:H42 | 1.63 | 0.46 |
| 1:AA:273:U:OP2 | 1:AA:273:U:H6 | 1.99 | 0.46 |
| 1:AA:522:C:H1' | 1:AA:536:C:H5" | 1.98 | 0.46 |
| 1:AA:666:G:H5' | 1:AA:726:C:H1' | 1.97 | 0.46 |
| 1:AA:826:C:C5' | 8:AH:12:ARG:HH21 | 2.24 | 0.46 |
| 1:AA:1052:U:H5' | 1:AA:1053:G:OP2 | 2.16 | 0.46 |
| 1:AA:1300:G:O2' | 1:AA:1301:U:O5' | 2.34 | 0.46 |
| 1:AA:1426:G:H2' | 1:AA:1427:C:O4' | 2.16 | 0.46 |
| 11:AK:63:GLN:HG3 | 11:AK:98:ALA:HB2 | 1.98 | 0.46 |
| 12:AL:78:VAL:H | 12:AL:102:ASP:HB2 | 1.80 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 21:AU:16:ARG:NH1 | 21:AU:19:LYS:HG2 | 2.31 | 0.46 |
| 23:AW:169:ILE:HG22 | 23:AW:170:THR:HG23 | 1.98 | 0.46 |
| 30:B5:11:VAL:HA | 30:B5:19:PHE:HB3 | 1.98 | 0.46 |
| 34:BA:178:G:C2' | 34:BA:179:C:H5' | 2.46 | 0.46 |
| 34:BA:271:G:C4' | 34:BA:272:A:OP1 | 2.40 | 0.46 |
| 34:BA:451:U:C2 | 34:BA:453:A:N7 | 2.84 | 0.46 |
| 34:BA:525:U:O2' | 34:BA:526:A:H5' | 2.16 | 0.46 |
| 34:BA:914:G:H5' | 34:BA:915:C:OP2 | 2.16 | 0.46 |
| 34:BA:1001:A:H2' | 34:BA:1002:G:O4' | 2.16 | 0.46 |
| 34:BA:1212:G:C2' | 34:BA:1213:A:OP2 | 2.64 | 0.46 |
| 34:BA:1818:U:C6 | 36:BC:155:ARG:NH1 | 2.84 | 0.46 |
| 34:BA:1847:A:N3 | 34:BA:1847:A:H5" | 2.31 | 0.46 |
| 34:BA:2346:A:H3' | 34:BA:2347:C:H5" | 1.98 | 0.46 |
| 40:BG:33:THR:HA | 40:BG:34:ARG:NH1 | 2.31 | 0.46 |
| 41:BH:96:PHE:HB3 | 41:BH:125:ARG:HH22 | 1.80 | 0.46 |
| 43:BM:21:GLU:O | 43:BM:25:ALA:HB2 | 2.15 | 0.46 |
| 43:BM:29:LYS:O | 43:BM:30:PHE:HB2 | 2.16 | 0.46 |
| 44:BN:47:HIS:ND1 | 44:BN:48:VAL:HG23 | 2.31 | 0.46 |
| 45:BO:107:LEU:HD23 | 45:BO:115:ILE:HG21 | 1.97 | 0.46 |
| 48:BR:108:ALA:O | 48:BR:110:MET:HG2 | 2.16 | 0.46 |
| 52:BV:14:VAL:HG23 | 52:BV:18:GLN:OE1 | 2.16 | 0.46 |
| 55:BY:5:ARG:O | 55:BY:6:ARG:C | 2.54 | 0.46 |
| 55:BY:48:VAL:H | 55:BY:53:GLN:HA | 1.80 | 0.46 |
| 1:AA:688:G:C6 | 1:AA:700:G:C2 | 3.04 | 0.46 |
| 1:AA:992:U:N3 | 1:AA:1043:G:N7 | 2.64 | 0.46 |
| 2:AB:49:PHE:HB2 | 2:AB:212:TYR:OH | 2.15 | 0.46 |
| 5:AE:104:ILE:H | 5:AE:121:ASN:CA | 2.28 | 0.46 |
| 6:AF:85:ILE:O | 6:AF:86:ARG:C | 2.54 | 0.46 |
| 10:AJ:6:ILE:CD1 | 10:AJ:79:PRO:HB3 | 2.44 | 0.46 |
| 10:AJ:71:LEU:O | 10:AJ:72:ARG:HD3 | 2.16 | 0.46 |
| 12:AL:23:LEU:HD23 | 12:AL:58:ASN:CB | 2.46 | 0.46 |
| 12:AL:109:ARG:CG | 12:AL:109:ARG:NH1 | 2.76 | 0.46 |
| 14:AN:53:ASP:HA | 14:AN:58:ARG:HH11 | 1.80 | 0.46 |
| 23:AW:94:ASP:HB3 | 23:AW:442:GLY:HA3 | 1.98 | 0.46 |
| 26:B1:54:GLY:O | 26:B1:58:ILE:HG12 | 2.16 | 0.46 |
| 33:B8:37:GLN:HG3 | 34:BA:1125:G:H5' | 1.97 | 0.46 |
| 34:BA:45:G:C5' | 34:BA:46:G:H5' | 2.31 | 0.46 |
| 34:BA:747:U:C5 | 34:BA:2613:U:C5 | 3.04 | 0.46 |
| 34:BA:819:A:C4 | 34:BA:1189:A:C2 | 3.04 | 0.46 |
| 34:BA:884:U:H2' | 34:BA:885:C:O5' | 2.16 | 0.46 |
| 34:BA:2104:C:H41 | 34:BA:2184:A:H61 | 1.60 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:2223:G:H2' | 34:BA:2224:G:H5' | 1.98 | 0.46 |
| 34:BA:2511:U:O4 | 34:BA:2575:C:N3 | 2.48 | 0.46 |
| 34:BA:2623:G:H4' | 34:BA:2825:G:C8 | 2.51 | 0.46 |
| 34:BA:2703:C:C2 | 34:BA:2704:C:C5 | 3.04 | 0.46 |
| 34:BA:2715:C:O5' | 34:BA:2715:C:H6 | 1.99 | 0.46 |
| 36:BC:100:ARG:HH11 | 36:BC:100:ARG:CG | 2.27 | 0.46 |
| 36:BC:104:LEU:HD12 | 36:BC:104:LEU:HA | 1.56 | 0.46 |
| 41:BH:24:SER:HB2 | 41:BH:116:GLU:CD | 2.37 | 0.46 |
| 42:BI:135:MET:HG2 | 42:BI:137:LEU:HG | 1.97 | 0.46 |
| 43:BK:19:VAL:C | 43:BK:21:GLU:H | 2.20 | 0.46 |
| 43:BM:14:MET:HG3 | 43:BM:16:VAL:HB | 1.97 | 0.46 |
| 45:BO:51:LYS:HE2 | 45:BO:95:ILE:HG13 | 1.98 | 0.46 |
| 52:BV:20:VAL:HG22 | 52:BV:98:ILE:HD11 | 1.98 | 0.46 |
| 52:BV:52:PRO:O | 52:BV:53:PHE:HB2 | 2.15 | 0.46 |
| 53:BW:66:ILE:HG13 | 53:BW:67:ASP:N | 2.31 | 0.46 |
| 55:BY:65:GLN:O | 55:BY:68:ASN:N | 2.46 | 0.46 |
| 1:AA:82:G:N2 | 1:AA:88:U:HO2' | 2.13 | 0.45 |
| 1:AA:154:U:O2' | 1:AA:155:A:H5' | 2.16 | 0.45 |
| 1:AA:591:U:H2' | 1:AA:592:G:C8 | 2.51 | 0.45 |
| 1:AA:597:G:C2' | 1:AA:598:U:H5' | 2.47 | 0.45 |
| 1:AA:1157:A:C6 | 1:AA:1180:A:C6 | 3.04 | 0.45 |
| 1:AA:1199:U:H4' | 10:AJ:56:HIS:ND1 | 2.30 | 0.45 |
| 1:AA:1221:G:H5" | 19:AS:35:ARG:NH1 | 2.31 | 0.45 |
| 1:AA:1405:G:O4' | 1:AA:1519:A:H4' | 2.16 | 0.45 |
| 2:AB:110:ILE:HD11 | 2:AB:147:LEU:HD22 | 1.98 | 0.45 |
| 2:AB:156:LEU:H | 2:AB:156:LEU:CD2 | 2.28 | 0.45 |
| 3:AC:139:ASN:CA | 3:AC:142:ARG:HB2 | 2.33 | 0.45 |
| 5:AE:85:LYS:HG3 | 5:AE:93:VAL:O | 2.16 | 0.45 |
| 6:AF:47:LEU:HG | 6:AF:56:LYS:N | 2.31 | 0.45 |
| 8:AH:40:LYS:O | 8:AH:42:GLU:N | 2.48 | 0.45 |
| 9:AI:6:TYR:CD1 | 9:AI:7:GLY:N | 2.84 | 0.45 |
| 10:AJ:48:ARG:NH2 | 14:AN:100:TRP:CE2 | 2.84 | 0.45 |
| 15:AO:18:ALA:O | 15:AO:19:ASN:HB2 | 2.16 | 0.45 |
| 23:AW:310:LYS:HE2 | 23:AW:310:LYS:HB3 | 1.67 | 0.45 |
| 28:B3:48:ASN:O | 28:B3:50:VAL:N | 2.48 | 0.45 |
| 34:BA:216:A:C8 | 34:BA:432:A:C6 | 3.04 | 0.45 |
| 34:BA:460:A:H2' | 34:BA:461:C:O4' | 2.16 | 0.45 |
| 34:BA:528:A:H3' | 44:BN:116:ARG:HH22 | 1.81 | 0.45 |
| 34:BA:918:A:H5" | 35:BB:97:C:O2' | 2.16 | 0.45 |
| 34:BA:1019:U:C2 | 34:BA:1142:A:N6 | 2.84 | 0.45 |
| 34:BA:1961:C:C5 | 34:BA:1962:C:C4 | 3.04 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:2682:A:O2' | 34:BA:2683:C:H5' | 2.16 | 0.45 |
| 45:BO:13:ASN:C | 45:BO:15:GLY:H | 2.19 | 0.45 |
| 47:BQ:97:GLN:N | 47:BQ:97:GLN:OE1 | 2.48 | 0.45 |
| 52:BV:38:VAL:HG22 | 52:BV:54:VAL:HG22 | 1.97 | 0.45 |
| 53:BW:20:VAL:HG11 | 53:BW:47:VAL:HG11 | 1.98 | 0.45 |
| 1:AA:32:A:OP2 | 1:AA:398:U:H1' | 2.16 | 0.45 |
| 1:AA:141:G:H4' | 1:AA:141:G:OP1 | 2.16 | 0.45 |
| 1:AA:423:G:N2 | 1:AA:424:G:C8 | 2.85 | 0.45 |
| 1:AA:496:A:H2' | 1:AA:497:G:N7 | 2.31 | 0.45 |
| 1:AA:621:A:N6 | 1:AA:622:A:C6 | 2.84 | 0.45 |
| 1:AA:751:U:O4 | 1:AA:752:G:C2 | 2.69 | 0.45 |
| 1:AA:981:U:C5 | 1:AA:982:U:H2' | 2.51 | 0.45 |
| 1:AA:1084:G:C5 | 1:AA:1085:U:O4 | 2.68 | 0.45 |
| 1:AA:1203:C:H2' | 1:AA:1204:A:O4' | 2.16 | 0.45 |
| 1:AA:1357:A:C8 | 1:AA:1358:U:C5 | 3.05 | 0.45 |
| 1:AA:1422:G:C4 | 1:AA:1423:G:C8 | 3.04 | 0.45 |
| 2:AB:130:LYS:HA | 2:AB:130:LYS:NZ | 2.31 | 0.45 |
| 9:AI:60:LEU:HD23 | 9:AI:60:LEU:H | 1.80 | 0.45 |
| 15:AO:77:TYR:OH | 15:AO:87:ARG:HG2 | 2.17 | 0.45 |
| 18:AR:39:VAL:CG1 | 18:AR:40:PRO:HD2 | 2.46 | 0.45 |
| 27:B2:5:GLU:O | 27:B2:6:LEU:C | 2.54 | 0.45 |
| 27:B2:47:ARG:HH21 | 27:B2:47:ARG:HG3 | 1.80 | 0.45 |
| 34:BA:179:C:H2' | 34:BA:180:G:O4' | 2.16 | 0.45 |
| 34:BA:1506:U:H2' | 34:BA:1507:C:C6 | 2.51 | 0.45 |
| 34:BA:1906:G:H5' | 34:BA:1929:G:O2' | 2.17 | 0.45 |
| 34:BA:2223:G:C2' | 34:BA:2224:G:H5' | 2.46 | 0.45 |
| 34:BA:2401:U:O5' | 34:BA:2401:U:H6 | 2.00 | 0.45 |
| 34:BA:2807:U:H2' | 34:BA:2808:G:H5' | 1.95 | 0.45 |
| 34:BA:2821:A:P | 37:BD:115:GLY:H | 2.39 | 0.45 |
| 36:BC:180:MET:CB | 36:BC:267:VAL:HB | 2.46 | 0.45 |
| 37:BD:190:LYS:O | 37:BD:191:GLY:O | 2.35 | 0.45 |
| 40:BG:9:VAL:HA | 40:BG:48:THR:HG22 | 1.98 | 0.45 |
| 41:BH:52:MET:SD | 41:BH:87:GLU:HA | 2.56 | 0.45 |
| 41:BH:142:THR:O | 41:BH:145:GLU:HG3 | 2.16 | 0.45 |
| 42:BI:107:GLU:HA | 42:BI:110:GLN:HB3 | 1.98 | 0.45 |
| 50:BT:12:MET:HE2 | 50:BT:12:MET:HB3 | 1.84 | 0.45 |
| 55:BY:6:ARG:HD2 | 55:BY:6:ARG:HA | 1.86 | 0.45 |
| 1:AA:49:U:C5 | 1:AA:365:U:O4 | 2.69 | 0.45 |
| 1:AA:193:C:O2' | 1:AA:194:C:H5' | 2.16 | 0.45 |
| 1:AA:396:C:H2' | 1:AA:397:A:H5" | 1.98 | 0.45 |
| 1:AA:411:A:N1 | 1:AA:413:G:O2' | 2.47 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:660:C:H2' | 1:AA:661:G:H8 | 1.80 | 0.45 |
| 1:AA:822:U:H2' | 1:AA:823:C:H6 | 1.81 | 0.45 |
| 1:AA:948:C:H2' | 1:AA:949:A:H8 | 1.81 | 0.45 |
| 1:AA:1253:G:C2 | 1:AA:1254:A:C4 | 3.05 | 0.45 |
| 4:AD:143:SER:HB3 | 4:AD:178:GLU:HB2 | 1.99 | 0.45 |
| 5:AE:44:ARG:HA | 5:AE:71:ILE:O | 2.17 | 0.45 |
| 7:AG:94:ARG:O | 7:AG:98:LEU:HG | 2.16 | 0.45 |
| 9:AI:23:GLY:N | 9:AI:61:ASP:H | 2.05 | 0.45 |
| 12:AL:79:ILE:HG22 | 12:AL:103:CYS:HB2 | 1.99 | 0.45 |
| 21:AU:48:LYS:HA | 21:AU:51:ALA:HB3 | 1.97 | 0.45 |
| 23:AW:64:LYS:HE2 | 23:AW:71:THR:N | 2.30 | 0.45 |
| 25:B0:14:ASP:OD2 | 25:B0:16:GLU:OE1 | 2.33 | 0.45 |
| 26:B1:17:ARG:NH1 | 34:BA:201:C:OP1 | 2.50 | 0.45 |
| 34:BA:301:G:O2' | 34:BA:302:C:OP2 | 2.31 | 0.45 |
| 34:BA:1010:A:H1' | 34:BA:1153:C:C1' | 2.47 | 0.45 |
| 34:BA:1068:G:H2' | 34:BA:1068:G:N3 | 2.31 | 0.45 |
| 34:BA:2243:U:H2' | 34:BA:2244:U:H6 | 1.81 | 0.45 |
| 34:BA:2472:G:H2' | 34:BA:2475:C:H42 | 1.81 | 0.45 |
| 34:BA:2637:U:H5" | 37:BD:83:ARG:NH2 | 2.31 | 0.45 |
| 35:BB:45:A:H2' | 35:BB:46:A:H8 | 1.79 | 0.45 |
| 37:BD:22:ILE:HA | 37:BD:23:PRO:HD3 | 1.79 | 0.45 |
| 37:BD:174:SER:O | 37:BD:175:LEU:CB | 2.58 | 0.45 |
| 40:BG:68:ARG:HD2 | 40:BG:68:ARG:C | 2.37 | 0.45 |
| 42:BI:32:VAL:HG22 | 42:BI:66:PHE:CD2 | 2.51 | 0.45 |
| 43:BJ:14:MET:HB2 | 43:BM:12:ALA:CB | 2.46 | 0.45 |
| 45:BO:2:ILE:HD12 | 45:BO:8:LEU:HD13 | 1.99 | 0.45 |
| 51:BU:64:ILE:CD1 | 51:BU:95:ALA:HB3 | 2.46 | 0.45 |
| 1:AA:62:U:OP1 | 1:AA:385:C:O2' | 2.30 | 0.45 |
| 1:AA:364:A:H8 | 1:AA:364:A:O5' | 1.98 | 0.45 |
| 1:AA:554:A:C5' | 12:AL:25:ALA:HB1 | 2.43 | 0.45 |
| 1:AA:607:A:C4 | 1:AA:608:A:C8 | 3.05 | 0.45 |
| 1:AA:1314:C:N4 | 19:AS:3:SER:O | 2.42 | 0.45 |
| 2:AB:86:CYS:SG | 2:AB:221:ARG:HB2 | 2.56 | 0.45 |
| 2:AB:116:LEU:HD12 | 2:AB:140:LEU:HD11 | 1.98 | 0.45 |
| 3:AC:76:ILE:HD12 | 3:AC:76:ILE:N | 2.31 | 0.45 |
| 8:AH:74:ILE:HD13 | 8:AH:128:VAL:CG2 | 2.25 | 0.45 |
| 11:AK:60:PHE:CE2 | 11:AK:64:VAL:HG11 | 2.52 | 0.45 |
| 12:AL:81:ILE:CG1 | 12:AL:94:TYR:HB3 | 2.46 | 0.45 |
| 19:AS:13:HIS:O | 19:AS:17:LYS:HG3 | 2.17 | 0.45 |
| 23:AW:308:ASP:CG | 23:AW:309:PRO:HD2 | 2.37 | 0.45 |
| 23:AW:522:GLN:OE1 | 23:AW:524:HIS:ND1 | 2.48 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 25:B0:58:LEU:N | 25:B0:58:LEU:CD1 | 2.78 | 0.45 |
| 25:B0:63:ASP:OD1 | 25:B0:63:ASP:N | 2.49 | 0.45 |
| 26:B1:32:LEU:HD23 | 26:B1:49:ARG:HE | 1.80 | 0.45 |
| 30:B5:7:LYS:HE3 | 32:B7:33:THR:CG2 | 2.37 | 0.45 |
| 30:B5:7:LYS:NZ | 34:BA:2420:C:H5" | 2.31 | 0.45 |
| 34:BA:847:U:O2 | 34:BA:934:U:H1' | 2.16 | 0.45 |
| 34:BA:869:G:H2' | 34:BA:870:U:O4' | 2.16 | 0.45 |
| 34:BA:878:A:C6 | 34:BA:879:G:H1' | 2.52 | 0.45 |
| 34:BA:993:G:C6 | 34:BA:994:C:N4 | 2.85 | 0.45 |
| 34:BA:1084:A:C6 | 41:BH:37:LYS:NZ | 2.82 | 0.45 |
| 34:BA:1653:G:H3' | 48:BR:2:ARG:HG3 | 1.98 | 0.45 |
| 34:BA:1789:A:H2' | 34:BA:1790:C:O4' | 2.16 | 0.45 |
| 34:BA:1872:A:H2' | 34:BA:1873:G:O4' | 2.16 | 0.45 |
| 34:BA:2263:C:H4' | 34:BA:2329:U:H4' | 1.98 | 0.45 |
| 34:BA:2347:C:H4' | 34:BA:2347:C:OP1 | 2.15 | 0.45 |
| 35:BB:24:G:O2' | 35:BB:27:C:N4 | 2.49 | 0.45 |
| 37:BD:47:ALA:CB | 37:BD:83:ARG:HA | 2.46 | 0.45 |
| 43:BM:10:ALA:O | 43:BM:12:ALA:N | 2.50 | 0.45 |
| 46:BP:79:LEU:O | 46:BP:81:ASP:O | 2.35 | 0.45 |
| 50:BT:24:THR:O | 50:BT:24:THR:CG2 | 2.64 | 0.45 |
| 50:BT:25:VAL:HA | 50:BT:85:VAL:HA | 1.99 | 0.45 |
| 50:BT:58:PHE:N | 50:BT:58:PHE:CD2 | 2.84 | 0.45 |
| 1:AA:682:G:O2' | 1:AA:683:G:H5' | 2.16 | 0.45 |
| 1:AA:775:G:C2' | 1:AA:776:G:H5' | 2.47 | 0.45 |
| 1:AA:1159:U:H4' | 1:AA:1160:G:OP1 | 2.16 | 0.45 |
| 1:AA:1181:G:C6 | 1:AA:1182:G:N2 | 2.84 | 0.45 |
| 1:AA:1312:G:C2 | 1:AA:1326:U:C2 | 3.04 | 0.45 |
| 1:AA:1402:C:H3' | 1:AA:1403:C:H6 | 1.81 | 0.45 |
| 3:AC:84:GLU:HA | 3:AC:87:ARG:HH21 | 1.82 | 0.45 |
| 5:AE:89:THR:HG22 | 5:AE:90:GLY:H | 1.82 | 0.45 |
| 5:AE:105:ILE:HG12 | 5:AE:122:VAL:O | 2.16 | 0.45 |
| 7:AG:41:ILE:O | 7:AG:41:ILE:HG22 | 2.16 | 0.45 |
| 11:AK:93:GLU:O | 11:AK:96:ILE:HG12 | 2.16 | 0.45 |
| 12:AL:43:LYS:N | 12:AL:44:PRO:CD | 2.79 | 0.45 |
| 14:AN:32:ASP:O | 14:AN:34:ASN:N | 2.50 | 0.45 |
| 15:AO:26:VAL:HG12 | 15:AO:30:LEU:CD1 | 2.46 | 0.45 |
| 16:AP:50:THR:HG22 | 16:AP:51:ARG:N | 2.30 | 0.45 |
| 23:AW:74:VAL:CG1 | 23:AW:317:PHE:HE2 | 2.30 | 0.45 |
| 23:AW:314:ARG:NH1 | 23:AW:418:GLN:O | 2.50 | 0.45 |
| 23:AW:430:PRO:HD2 | 23:AW:435:ASP:O | 2.17 | 0.45 |
| 28:B3:44:ARG:HA | 28:B3:47:ILE:HG12 | 1.98 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:27:G:H1' | 34:BA:513:A:H62 | 1.82 | 0.45 |
| 34:BA:80:G:C6 | 34:BA:81:G:C5 | 3.05 | 0.45 |
| 34:BA:708:G:O2' | 34:BA:709:U:H5' | 2.16 | 0.45 |
| 34:BA:986:C:H2' | 34:BA:987:C:H6 | 1.82 | 0.45 |
| 34:BA:1183:U:H2' | 34:BA:1184:U:C6 | 2.52 | 0.45 |
| 34:BA:1275:A:H4' | 34:BA:1276:A:OP1 | 2.16 | 0.45 |
| 34:BA:1388:G:O2' | 34:BA:1389:G:H5' | 2.17 | 0.45 |
| 34:BA:1654:A:H4' | 37:BD:118:PHE:CZ | 2.51 | 0.45 |
| 34:BA:1695:G:H8 | 36:BC:7:PRO:O | 1.99 | 0.45 |
| 34:BA:1708:C:H2' | 34:BA:1709:U:C6 | 2.51 | 0.45 |
| 34:BA:1715:G:C2' | 34:BA:1716:U:OP2 | 2.64 | 0.45 |
| 34:BA:2452:C:C4 | 34:BA:2453:A:C6 | 3.04 | 0.45 |
| 34:BA:2489:U:HO2' | 34:BA:2491:U:H5 | 1.64 | 0.45 |
| 34:BA:2599:G:N7 | 36:BC:234:GLY:HA2 | 2.32 | 0.45 |
| 36:BC:115:ILE:HD12 | 36:BC:115:ILE:HA | 1.80 | 0.45 |
| 37:BD:60:VAL:O | 37:BD:60:VAL:HG13 | 2.16 | 0.45 |
| 38:BE:48:THR:C | 38:BE:50:ALA:H | 2.19 | 0.45 |
| 38:BE:147:LEU:HD23 | 38:BE:183:PHE:CE1 | 2.51 | 0.45 |
| 39:BF:107:VAL:HG12 | 39:BF:113:PHE:CZ | 2.52 | 0.45 |
| 40:BG:8:VAL:HG11 | 40:BG:49:LEU:CB | 2.42 | 0.45 |
| 40:BG:137:LYS:O | 40:BG:140:ILE:HG13 | 2.17 | 0.45 |
| 41:BH:17:GLU:HG2 | 41:BH:88:HIS:NE2 | 2.31 | 0.45 |
| 41:BH:51:TYR:CD1 | 41:BH:52:MET:HG2 | 2.51 | 0.45 |
| 44:BN:55:ILE:HD11 | 44:BN:130:HIS:CB | 2.47 | 0.45 |
| 44:BN:55:ILE:CD1 | 44:BN:130:HIS:CG | 2.99 | 0.45 |
| 45:BO:64:ARG:HH12 | 45:BO:101:GLY:C | 2.20 | 0.45 |
| 56:BZ:30:ILE:HG12 | 56:BZ:91:PHE:HB2 | 1.98 | 0.45 |
| 1:AA:155:A:C5 | 1:AA:156:C:C5 | 3.05 | 0.45 |
| 1:AA:174:A:C5 | 1:AA:175:C:C5 | 3.04 | 0.45 |
| 1:AA:198:G:H2' | 1:AA:199:A:C8 | 2.50 | 0.45 |
| 1:AA:211:G:C6 | 1:AA:212:G:H1' | 2.52 | 0.45 |
| 1:AA:230:G:H4' | 16:AP:25:ARG:NH2 | 2.31 | 0.45 |
| 1:AA:307:C:O5' | 1:AA:307:C:H6 | 1.99 | 0.45 |
| 1:AA:435:A:H2' | 1:AA:435:A:N3 | 2.32 | 0.45 |
| 1:AA:484:G:C5 | 1:AA:486:U:H1' | 2.52 | 0.45 |
| 1:AA:503:C:OP2 | 12:AL:112:ALA:HB2 | 2.16 | 0.45 |
| 1:AA:628:G:H2' | 1:AA:629:A:H8 | 1.81 | 0.45 |
| 6:AF:3:HIS:CD2 | 6:AF:94:HIS:HA | 2.51 | 0.45 |
| 7:AG:137:ARG:HG3 | 7:AG:141:HIS:CE1 | 2.51 | 0.45 |
| 7:AG:145:GLU:HA | 7:AG:148:LYS:HB2 | 1.99 | 0.45 |
| 10:AJ:53:ILE:HG22 | 10:AJ:62:ARG:H | 1.82 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 12:AL:6:LEU:HB3 | 17:AQ:33:TYR:CE1 | 2.52 | 0.45 |
| 13:AM:40:GLU:HG3 | 13:AM:41:ASP:H | 1.82 | 0.45 |
| 16:AP:4:ILE:N | 16:AP:4:ILE:HD12 | 2.32 | 0.45 |
| 28:B3:4:ILE:HD11 | 28:B3:56:VAL:HG23 | 1.98 | 0.45 |
| 34:BA:55:G:N2 | 34:BA:116:C:C2 | 2.84 | 0.45 |
| 34:BA:135:U:H3 | 34:BA:144:A:N6 | 2.06 | 0.45 |
| 34:BA:324:A:H2' | 34:BA:325:G:O4' | 2.17 | 0.45 |
| 34:BA:417:C:N3 | 34:BA:418:C:C5 | 2.84 | 0.45 |
| 34:BA:1082:U:O3' | 41:BH:41:LEU:HD13 | 2.16 | 0.45 |
| 34:BA:1205:A:C2 | 38:BE:165:HIS:HB2 | 2.51 | 0.45 |
| 34:BA:1644:C:O2 | 34:BA:1644:C:H2' | 2.17 | 0.45 |
| 34:BA:2197:U:C5 | 34:BA:2224:G:C6 | 3.04 | 0.45 |
| 36:BC:73:ILE:HA | 36:BC:74:PRO:HD3 | 1.62 | 0.45 |
| 36:BC:203:VAL:O | 36:BC:204:LEU:CB | 2.63 | 0.45 |
| 37:BD:98:VAL:O | 37:BD:100:LEU:N | 2.50 | 0.45 |
| 41:BH:96:PHE:CA | 41:BH:125:ARG:HH22 | 2.30 | 0.45 |
| 41:BH:144:LYS:HB2 | 41:BH:148:ALA:CB | 2.47 | 0.45 |
| 43:BJ:8:ILE:HG21 | 43:BK:28:GLU:CD | 2.37 | 0.45 |
| 43:BK:2:ILE:O | 43:BK:6:GLN:HG3 | 2.16 | 0.45 |
| 44:BN:23:LYS:O | 44:BN:63:ALA:HB3 | 2.16 | 0.45 |
| 44:BN:124:VAL:HG23 | 44:BN:125:TYR:H | 1.80 | 0.45 |
| 45:BO:38:ILE:HD12 | 45:BO:38:ILE:N | 2.32 | 0.45 |
| 46:BP:2:ARG:C | 46:BP:4:ASN:H | 2.19 | 0.45 |
| 48:BR:108:ALA:HA | 48:BR:109:PRO:HD2 | 1.83 | 0.45 |
| 52:BV:87:GLN:HE21 | 52:BV:87:GLN:HB3 | 1.55 | 0.45 |
| 1:AA:129:A:O2' | 1:AA:130:A:C8 | 2.70 | 0.45 |
| 1:AA:273:U:H2' | 1:AA:274:A:H5' | 1.97 | 0.45 |
| 1:AA:489:C:O2' | 1:AA:490:C:H5' | 2.16 | 0.45 |
| 1:AA:523:A:H61 | 12:AL:88:ASP:HB2 | 1.82 | 0.45 |
| 1:AA:541:G:H2' | 1:AA:542:G:H8 | 1.81 | 0.45 |
| 1:AA:656:G:O2' | 15:AO:27:GLN:OE1 | 2.35 | 0.45 |
| 1:AA:858:G:C6 | 1:AA:869:G:C8 | 3.05 | 0.45 |
| 1:AA:886:G:H2' | 1:AA:887:G:O4' | 2.17 | 0.45 |
| 1:AA:988:G:C6 | 1:AA:989:U:C4 | 3.05 | 0.45 |
| 1:AA:1081:A:OP2 | 5:AE:51:LYS:HE3 | 2.16 | 0.45 |
| 1:AA:1125:U:O2 | 1:AA:1125:U:H2' | 2.16 | 0.45 |
| 1:AA:1261:A:N7 | 1:AA:1262:C:C2 | 2.85 | 0.45 |
| 1:AA:1385:G:H2' | 1:AA:1386:G:O4' | 2.16 | 0.45 |
| 2:AB:67:LEU:HD21 | 2:AB:91:VAL:CG2 | 2.47 | 0.45 |
| 4:AD:167:PRO:CG | 4:AD:170:LEU:HD11 | 2.44 | 0.45 |
| 4:AD:191:SER:OG | 4:AD:192:ALA:N | 2.48 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:AE:46:GLY:HA3 | 5:AE:70:MET:HG2 | 1.99 | 0.45 |
| 12:AL:7:VAL:O | 12:AL:8:ARG:O | 2.35 | 0.45 |
| 12:AL:66:ILE:HG21 | 12:AL:71:HIS:CD2 | 2.52 | 0.45 |
| 29:B4:40:HIS:CE1 | 34:BA:2815:C:HO2' | 2.34 | 0.45 |
| 34:BA:704:G:C2' | 34:BA:705:A:OP2 | 2.64 | 0.45 |
| 34:BA:870:U:H2' | 34:BA:871:U:H5' | 1.98 | 0.45 |
| 34:BA:877:A:C6 | 34:BA:899:A:N6 | 2.85 | 0.45 |
| 34:BA:1061:U:H5" | 42:BI:9:LYS:HZ1 | 1.81 | 0.45 |
| 34:BA:1109:C:N4 | 34:BA:1110:G:H22 | 2.15 | 0.45 |
| 34:BA:1179:G:C2 | 34:BA:1180:U:O2' | 2.69 | 0.45 |
| 34:BA:1278:C:H2' | 34:BA:1279:G:C8 | 2.52 | 0.45 |
| 34:BA:1782:U:C4 | 34:BA:2587:A:C2 | 3.04 | 0.45 |
| 34:BA:1853:A:H2' | 34:BA:1854:A:C8 | 2.51 | 0.45 |
| 34:BA:2013:A:OP1 | 53:BW:96:ILE:HA | 2.15 | 0.45 |
| 34:BA:2014:A:H2' | 34:BA:2015:A:C8 | 2.52 | 0.45 |
| 34:BA:2051:A:H5' | 34:BA:2578:G:O4' | 2.16 | 0.45 |
| 34:BA:2201:G:H2' | 34:BA:2202:U:H6 | 1.82 | 0.45 |
| 35:BB:7:G:O2' | 49:BS:38:GLN:NE2 | 2.49 | 0.45 |
| 35:BB:116:G:H4' | 49:BS:54:VAL:O | 2.17 | 0.45 |
| 36:BC:18:VAL:HG13 | 36:BC:18:VAL:O | 2.17 | 0.45 |
| 36:BC:170:TYR:CD2 | 36:BC:184:GLU:HA | 2.52 | 0.45 |
| 38:BE:101:TYR:CZ | 38:BE:105:LEU:HD11 | 2.50 | 0.45 |
| 41:BH:23:LEU:O | 41:BH:86:MET:HE3 | 2.17 | 0.45 |
| 41:BH:67:THR:C | 41:BH:69:PHE:H | 2.20 | 0.45 |
| 42:BI:120:ASP:OD1 | 42:BI:122:GLU:HB3 | 2.17 | 0.45 |
| 43:BJ:26:MET:O | 43:BJ:29:LYS:HG3 | 2.16 | 0.45 |
| 43:BL:2:ILE:HB | 43:BL:5:ASP:OD2 | 2.17 | 0.45 |
| 44:BN:16:TYR:HA | 44:BN:138:GLN:O | 2.17 | 0.45 |
| 44:BN:124:VAL:O | 44:BN:125:TYR:CD2 | 2.69 | 0.45 |
| 44:BN:132:HIS:O | 44:BN:133:ALA:C | 2.55 | 0.45 |
| 47:BQ:41:LEU:HB3 | 47:BQ:46:ILE:CG2 | 2.46 | 0.45 |
| 51:BU:17:LEU:HD12 | 51:BU:28:SER:O | 2.17 | 0.45 |
| 51:BU:100:PHE:HD1 | 52:BV:13:ARG:NH2 | 2.12 | 0.45 |
| 1:AA:57:G:C6 | 1:AA:58:C:N4 | 2.84 | 0.45 |
| 1:AA:66:A:H4' | 1:AA:173:U:C4 | 2.52 | 0.45 |
| 1:AA:584:G:O2' | 1:AA:585:G:H5' | 2.17 | 0.45 |
| 1:AA:678:U:O2' | 1:AA:679:C:H5' | 2.17 | 0.45 |
| 1:AA:747:A:H2' | 1:AA:748:G:O4' | 2.16 | 0.45 |
| 1:AA:913:A:H1' | 1:AA:914:A:O4' | 2.17 | 0.45 |
| 1:AA:1136:C:O2 | 1:AA:1136:C:H2' | 2.17 | 0.45 |
| 1:AA:1220:G:C6 | 1:AA:1221:G:N7 | 2.84 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1358:U:O2' | 1:AA:1359:C:H5' | 2.17 | 0.45 |
| 8:AH:4:ASP:HB2 | 8:AH:80:PRO:HG3 | 1.98 | 0.45 |
| 10:AJ:67:ILE:HG13 | 14:AN:95:LEU:HD13 | 1.99 | 0.45 |
| 11:AK:20:ALA:CB | 11:AK:83:VAL:HG22 | 2.40 | 0.45 |
| 17:AQ:7:LEU:HD21 | 17:AQ:24:ILE:HD13 | 1.99 | 0.45 |
| 18:AR:57:ALA:O | 18:AR:60:ARG:HB2 | 2.17 | 0.45 |
| 23:AW:89:THR:HA | 23:AW:90:PRO:HD2 | 1.59 | 0.45 |
| 25:B0:15:SER:C | 25:B0:16:GLU:HG2 | 2.37 | 0.45 |
| 25:B0:23:LYS:CD | 34:BA:855:G:N3 | 2.79 | 0.45 |
| 26:B1:50:VAL:CG1 | 26:B1:51:SER:N | 2.80 | 0.45 |
| 27:B2:30:MET:HE1 | 54:BX:51:PHE:HZ | 1.82 | 0.45 |
| 29:B4:27:LEU:O | 29:B4:27:LEU:HD23 | 2.17 | 0.45 |
| 30:B5:29:LYS:HE3 | 34:BA:2286:G:H3' | 1.97 | 0.45 |
| 34:BA:545:U:C6 | 34:BA:545:U:C3' | 2.99 | 0.45 |
| 34:BA:547:A:H3' | 34:BA:548:G:C5' | 2.47 | 0.45 |
| 34:BA:874:G:C2 | 34:BA:904:G:C2 | 3.04 | 0.45 |
| 34:BA:1000:A:C2 | 34:BA:1155:A:C4 | 3.05 | 0.45 |
| 34:BA:1083:U:C6 | 34:BA:1085:A:OP2 | 2.68 | 0.45 |
| 34:BA:1154:G:O5' | 34:BA:1154:G:H8 | 1.99 | 0.45 |
| 34:BA:1456:G:C6 | 34:BA:1457:U:C4 | 3.05 | 0.45 |
| 34:BA:2360:G:H4' | 46:BP:61:LEU:HD11 | 1.98 | 0.45 |
| 34:BA:2572:A:N7 | 37:BD:150:GLN:HB3 | 2.32 | 0.45 |
| 34:BA:2820:A:O2' | 34:BA:2821:A:OP1 | 2.34 | 0.45 |
| 34:BA:2845:U:H5" | 50:BT:51:ASN:O | 2.17 | 0.45 |
| 37:BD:93:GLY:O | 37:BD:95:SER:N | 2.49 | 0.45 |
| 41:BH:74:ASP:HA | 41:BH:77:VAL:CB | 2.47 | 0.45 |
| 43:BL:14:MET:HA | 43:BL:14:MET:CE | 2.47 | 0.45 |
| 44:BN:57:LEU:HA | 44:BN:57:LEU:HD13 | 1.68 | 0.45 |
| 46:BP:78:ARG:CZ | 46:BP:113:ALA:HB1 | 2.47 | 0.45 |
| 46:BP:111:ILE:HA | 46:BP:128:THR:HG21 | 1.98 | 0.45 |
| 55:BY:15:GLY:O | 55:BY:17:ASP:N | 2.50 | 0.45 |
| 1:AA:683:G:O2' | 1:AA:684:U:H5' | 2.17 | 0.45 |
| 1:AA:1217:C:H2' | 1:AA:1218:C:H6 | 1.81 | 0.45 |
| 1:AA:1352:C:H2' | 1:AA:1353:G:C8 | 2.51 | 0.45 |
| 1:AA:1394:A:C5 | 1:AA:1501:C:H4' | 2.51 | 0.45 |
| 3:AC:59:PRO:HG3 | 3:AC:64:ARG:HH21 | 1.80 | 0.45 |
| 5:AE:155:LYS:HD2 | 5:AE:156:ARG:N | 2.32 | 0.45 |
| 8:AH:8:ASP:HA | 8:AH:11:THR:HG22 | 1.99 | 0.45 |
| 11:AK:17:ASP:HA | 11:AK:80:ASN:O | 2.17 | 0.45 |
| 11:AK:92:ARG:NH2 | 21:AU:19:LYS:HG3 | 2.32 | 0.45 |
| 20:AT:53:MET:O | 20:AT:57:VAL:HG23 | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 23:AW:46:VAL:O | 23:AW:49:ARG:HB2 | 2.17 | 0.45 |
| 23:AW:398:PHE:O | 23:AW:399:ARG:HB2 | 2.17 | 0.45 |
| 26:B1:44:ARG:HG2 | 26:B1:45:PHE:N | 2.31 | 0.45 |
| 28:B3:28:LEU:HA | 28:B3:33:HIS:CD2 | 2.51 | 0.45 |
| 34:BA:36:G:N3 | 34:BA:450:G:O2' | 2.50 | 0.45 |
| 34:BA:158:U:H2' | 34:BA:158:U:O2 | 2.17 | 0.45 |
| 34:BA:314:C:O2' | 34:BA:315:G:H5' | 2.17 | 0.45 |
| 34:BA:441:U:H2' | 34:BA:442:G:C8 | 2.51 | 0.45 |
| 34:BA:495:G:C2 | 34:BA:496:G:H1' | 2.52 | 0.45 |
| 34:BA:538:A:H61 | 34:BA:555:G:H1' | 1.82 | 0.45 |
| 34:BA:973:A:O4' | 34:BA:1188:U:C6 | 2.70 | 0.45 |
| 34:BA:1011:G:C6 | 34:BA:1151:A:C6 | 3.05 | 0.45 |
| 34:BA:1216:G:C5 | 34:BA:1217:U:C5 | 3.05 | 0.45 |
| 34:BA:1558:C:H4' | 34:BA:1559:U:H5" | 1.99 | 0.45 |
| 34:BA:1859:U:H2' | 34:BA:1860:G:C8 | 2.52 | 0.45 |
| 34:BA:1946:U:H2' | 34:BA:1947:C:H6 | 1.81 | 0.45 |
| 34:BA:2803:G:H2' | 34:BA:2804:U:H6 | 1.82 | 0.45 |
| 34:BA:2824:C:C4 | 34:BA:2825:G:C5 | 3.05 | 0.45 |
| 35:BB:57:A:H1' | 39:BF:26:GLN:HA | 1.98 | 0.45 |
| 36:BC:143:VAL:HG12 | 36:BC:144:GLU:O | 2.17 | 0.45 |
| 37:BD:121:THR:O | 37:BD:122:VAL:CB | 2.62 | 0.45 |
| 39:BF:107:VAL:N | 39:BF:108:PRO:CD | 2.80 | 0.45 |
| 40:BG:84:LYS:HB2 | 40:BG:132:LEU:H | 1.82 | 0.45 |
| 52:BV:48:LYS:HD2 | 52:BV:48:LYS:O | 2.17 | 0.45 |
| 54:BX:44:LYS:HE3 | 54:BX:55:VAL:CG1 | 2.45 | 0.45 |
| 1:AA:424:G:O2' | 1:AA:425:G:H5' | 2.17 | 0.45 |
| 1:AA:702:A:H2' | 1:AA:703:G:OP1 | 2.15 | 0.45 |
| 1:AA:925:G:H2' | 1:AA:927:G:H5" | 1.98 | 0.45 |
| 1:AA:1151:A:C6 | 1:AA:1152:A:N6 | 2.85 | 0.45 |
| 1:AA:1168:U:C5' | 1:AA:1169:A:OP2 | 2.56 | 0.45 |
| 1:AA:1246:A:N1 | 1:AA:1292:G:C6 | 2.85 | 0.45 |
| 2:AB:95:TRP:CD1 | 2:AB:171:ALA:HB2 | 2.51 | 0.45 |
| 2:AB:162:VAL:HG22 | 2:AB:184:ALA:HB1 | 1.99 | 0.45 |
| 3:AC:149:LYS:HG3 | 3:AC:200:TRP:CE3 | 2.52 | 0.45 |
| 4:AD:52:VAL:CG2 | 4:AD:53:GLN:N | 2.80 | 0.45 |
| 4:AD:88:ASN:O | 4:AD:92:LEU:HD23 | 2.17 | 0.45 |
| 4:AD:104:MET:HG3 | 4:AD:170:LEU:HD22 | 1.99 | 0.45 |
| 4:AD:143:SER:O | 4:AD:144:ILE:C | 2.54 | 0.45 |
| 5:AE:152:VAL:HA | 5:AE:155:LYS:NZ | 2.32 | 0.45 |
| 6:AF:3:HIS:H | 6:AF:92:THR:CG2 | 2.29 | 0.45 |
| 9:AI:47:VAL:O | 9:AI:50:PRO:HD2 | 2.17 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 9:AI:107:ALA:O | 9:AI:109:GLN:HG2 | 2.16 | 0.45 |
| 10:AJ:15:HIS:C | 10:AJ:17:LEU:H | 2.20 | 0.45 |
| 10:AJ:27:GLU:HG2 | 10:AJ:27:GLU:O | 2.17 | 0.45 |
| 16:AP:37:GLY:HA2 | 16:AP:51:ARG:HH11 | 1.82 | 0.45 |
| 19:AS:43:MET:O | 19:AS:61:VAL:HG21 | 2.16 | 0.45 |
| 23:AW:413:LEU:O | 23:AW:417:VAL:N | 2.32 | 0.45 |
| 27:B2:9:LYS:HG2 | 27:B2:12:GLU:H | 1.82 | 0.45 |
| 32:B7:4:LYS:O | 46:BP:48:ARG:NH2 | 2.41 | 0.45 |
| 33:B8:9:LYS:HD3 | 33:B8:9:LYS:N | 2.15 | 0.45 |
| 33:B8:25:VAL:CB | 33:B8:35:GLN:HE21 | 2.30 | 0.45 |
| 34:BA:71:A:C2 | 34:BA:73:A:C2 | 3.05 | 0.45 |
| 34:BA:90:U:H2' | 34:BA:91:A:C8 | 2.51 | 0.45 |
| 34:BA:270:A:N1 | 34:BA:369:U:O2' | 2.39 | 0.45 |
| 34:BA:912:C:C4 | 34:BA:913:U:O4 | 2.70 | 0.45 |
| 34:BA:1109:C:C4 | 34:BA:1110:G:C2 | 3.05 | 0.45 |
| 34:BA:2109:U:C4 | 34:BA:2181:U:O4 | 2.70 | 0.45 |
| 34:BA:2607:G:H2' | 34:BA:2608:G:O4' | 2.17 | 0.45 |
| 35:BB:68:C:H2' | 35:BB:69:G:O4' | 2.17 | 0.45 |
| 39:BF:110:ILE:CD1 | 39:BF:136:ILE:HG21 | 2.43 | 0.45 |
| 42:BI:89:SER:O | 42:BI:91:LYS:N | 2.50 | 0.45 |
| 43:BM:13:ALA:O | 43:BM:14:MET:C | 2.55 | 0.45 |
| 44:BN:48:VAL:HG12 | 44:BN:50:THR:HG22 | 1.99 | 0.45 |
| 46:BP:68:SER:CB | 46:BP:71:ALA:HB2 | 2.46 | 0.45 |
| 56:BZ:65:VAL:C | 56:BZ:67:GLY:N | 2.69 | 0.45 |
| 56:BZ:68:LYS:O | 56:BZ:69:GLU:O | 2.35 | 0.45 |
| 1:AA:130:A:H1' | 1:AA:264:C:O4' | 2.18 | 0.44 |
| 1:AA:513:C:H2' | 1:AA:514:C:C6 | 2.52 | 0.44 |
| 1:AA:607:A:C2 | 1:AA:608:A:C4 | 3.05 | 0.44 |
| 1:AA:760:G:H2' | 1:AA:761:G:H5' | 2.00 | 0.44 |
| 1:AA:1159:U:O2 | 1:AA:1159:U:O4' | 2.35 | 0.44 |
| 1:AA:1251:A:H2' | 1:AA:1252:A:O4' | 2.16 | 0.44 |
| 3:AC:62:SER:OG | 3:AC:63:ILE:N | 2.51 | 0.44 |
| 4:AD:73:ASN:HA | 4:AD:76:LYS:CE | 2.47 | 0.44 |
| 4:AD:82:LYS:HB2 | 4:AD:82:LYS:NZ | 2.31 | 0.44 |
| 5:AE:86:GLY:O | 5:AE:93:VAL:HG12 | 2.17 | 0.44 |
| 9:AI:17:ARG:NH2 | 9:AI:67:LYS:NZ | 2.65 | 0.44 |
| 9:AI:127:SER:O | 9:AI:128:LYS:C | 2.55 | 0.44 |
| 11:AK:124:LYS:O | 21:AU:33:ARG:CZ | 2.65 | 0.44 |
| 13:AM:90:HIS:NE2 | 13:AM:96:VAL:HG21 | 2.32 | 0.44 |
| 15:AO:25:GLU:OE1 | 15:AO:25:GLU:N | 2.50 | 0.44 |
| 23:AW:125:LYS:O | 23:AW:129:VAL:HG23 | 2.18 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 32:B7:16:THR:HG21 | 32:B7:48:MET:SD | 2.57 | 0.44 |
| 32:B7:21:PHE:O | 32:B7:22:LYS:O | 2.35 | 0.44 |
| 34:BA:466:A:O4' | 34:BA:683:U:H4' | 2.16 | 0.44 |
| 34:BA:495:G:H1' | 53:BW:57:ASN:OD1 | 2.16 | 0.44 |
| 34:BA:818:G:H5' | 34:BA:839:U:OP1 | 2.17 | 0.44 |
| 34:BA:983:A:C6 | 34:BA:984:A:C2 | 3.05 | 0.44 |
| 34:BA:1047:G:O2' | 34:BA:1110:G:N2 | 2.51 | 0.44 |
| 34:BA:1088:A:O3' | 34:BA:1089:A:H8 | 2.00 | 0.44 |
| 34:BA:1374:G:H2' | 34:BA:1375:U:O4' | 2.16 | 0.44 |
| 34:BA:1856:U:C5 | 34:BA:1857:G:C6 | 3.05 | 0.44 |
| 34:BA:1857:G:H21 | 34:BA:1884:G:H2' | 1.79 | 0.44 |
| 34:BA:2063:C:O2 | 34:BA:2451:A:C2 | 2.70 | 0.44 |
| 34:BA:2096:C:H2' | 34:BA:2097:A:C8 | 2.52 | 0.44 |
| 34:BA:2102:G:N2 | 34:BA:2188:U:C2 | 2.85 | 0.44 |
| 36:BC:36:ASN:HD22 | 36:BC:85:ASN:HD21 | 1.65 | 0.44 |
| 39:BF:127:TYR:O | 39:BF:128:SER:CB | 2.65 | 0.44 |
| 40:BG:102:ILE:HG13 | 40:BG:116:LEU:CD2 | 2.46 | 0.44 |
| 44:BN:42:ALA:O | 44:BN:43:GLU:C | 2.55 | 0.44 |
| 48:BR:24:MET:SD | 48:BR:44:LEU:HD22 | 2.57 | 0.44 |
| 49:BS:117:PHE:C | 49:BS:117:PHE:CD1 | 2.89 | 0.44 |
| 55:BY:86:PHE:HB2 | 55:BY:92:VAL:HG11 | 1.98 | 0.44 |
| 1:AA:15:G:C4 | 1:AA:16:A:C8 | 3.04 | 0.44 |
| 1:AA:62:U:H2' | 1:AA:63:C:H6 | 1.83 | 0.44 |
| 1:AA:556:C:H6 | 1:AA:556:C:O5' | 2.00 | 0.44 |
| 1:AA:710:G:H2' | 1:AA:711:G:H8 | 1.82 | 0.44 |
| 1:AA:1309:G:H2' | 1:AA:1310:G:H8 | 1.83 | 0.44 |
| 2:AB:207:ARG:HB3 | 2:AB:211:LEU:CD1 | 2.47 | 0.44 |
| 3:AC:154:GLY:H | 3:AC:156:LEU:HD11 | 1.82 | 0.44 |
| 8:AH:50:VAL:HG22 | 8:AH:50:VAL:O | 2.16 | 0.44 |
| 9:AI:6:TYR:CE2 | 9:AI:17:ARG:HB2 | 2.49 | 0.44 |
| 10:AJ:14:ASP:HB2 | 10:AJ:17:LEU:HB3 | 1.99 | 0.44 |
| 13:AM:44:ILE:H | 13:AM:44:ILE:CD1 | 2.29 | 0.44 |
| 17:AQ:16:MET:O | 17:AQ:17:GLU:C | 2.55 | 0.44 |
| 19:AS:4:LEU:N | 19:AS:4:LEU:CD1 | 2.80 | 0.44 |
| 21:AU:33:ARG:CD | 21:AU:34:ARG:H | 2.30 | 0.44 |
| 23:AW:145:ASP:O | 23:AW:176:GLY:HA2 | 2.17 | 0.44 |
| 25:B0:28:GLU:H | 25:B0:31:LEU:CD1 | 2.24 | 0.44 |
| 26:B1:29:LEU:HD23 | 34:BA:2230:G:O3' | 2.18 | 0.44 |
| 27:B2:56:LEU:O | 27:B2:57:LEU:CB | 2.58 | 0.44 |
| 29:B4:38:LEU:HB2 | 29:B4:41:HIS:HB2 | 1.99 | 0.44 |
| 30:B5:12:SER:HB2 | 30:B5:48:TYR:CE1 | 2.52 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 32:B7:4:LYS:HE2 | 34:BA:242:G:C6 | 2.53 | 0.44 |
| 32:B7:51:LYS:N | 32:B7:51:LYS:HD2 | 2.31 | 0.44 |
| 34:BA:287:G:H2' | 34:BA:288:U:H6 | 1.82 | 0.44 |
| 34:BA:443:A:C8 | 38:BE:40:ARG:HD3 | 2.53 | 0.44 |
| 34:BA:569:U:H1' | 34:BA:947:A:O4' | 2.17 | 0.44 |
| 34:BA:1021:A:H2' | 34:BA:1023:U:H5' | 1.98 | 0.44 |
| 34:BA:1047:G:HO2' | 34:BA:1048:A:H8 | 1.66 | 0.44 |
| 34:BA:1097:U:C5 | 34:BA:1098:A:H1' | 2.53 | 0.44 |
| 34:BA:1385:A:H4' | 34:BA:1386:C:OP1 | 2.17 | 0.44 |
| 34:BA:1510:G:H2' | 34:BA:1511:G:C5' | 2.47 | 0.44 |
| 34:BA:1570:A:H2' | 34:BA:1571:A:C8 | 2.52 | 0.44 |
| 34:BA:1773:A:N7 | 34:BA:1829:A:H1' | 2.33 | 0.44 |
| 34:BA:1875:G:HO2' | 34:BA:1876:A:H8 | 1.63 | 0.44 |
| 34:BA:1910:G:C4 | 34:BA:1921:G:C2 | 3.06 | 0.44 |
| 34:BA:2154:A:C4 | 34:BA:2155:U:H1' | 2.52 | 0.44 |
| 35:BB:8:C:H2' | 35:BB:9:G:O4' | 2.17 | 0.44 |
| 37:BD:85:ALA:O | 37:BD:86:GLU:HB2 | 2.16 | 0.44 |
| 37:BD:120:GLY:HA2 | 37:BD:162:ALA:HA | 2.00 | 0.44 |
| 39:BF:35:LEU:CD1 | 39:BF:88:VAL:HB | 2.44 | 0.44 |
| 40:BG:15:ASP:OD1 | 40:BG:17:LYS:HE3 | 2.17 | 0.44 |
| 40:BG:132:LEU:H | 40:BG:132:LEU:HD23 | 1.82 | 0.44 |
| 41:BH:31:ARG:NH1 | 41:BH:109:LYS:HE3 | 2.32 | 0.44 |
| 42:BI:75:ALA:HB3 | 42:BI:131:THR:HG21 | 1.99 | 0.44 |
| 45:BO:61:VAL:HG11 | 45:BO:112:PHE:CZ | 2.52 | 0.44 |
| 46:BP:79:LEU:HD23 | 46:BP:79:LEU:HA | 1.75 | 0.44 |
| 48:BR:12:ARG:CZ | 48:BR:20:MET:HE1 | 2.46 | 0.44 |
| 49:BS:6:ALA:O | 49:BS:10:ARG:HB2 | 2.17 | 0.44 |
| 51:BU:65:ASN:HD21 | 51:BU:69:ARG:NH2 | 2.15 | 0.44 |
| 52:BV:67:GLY:HA3 | 52:BV:93:PHE:CZ | 2.51 | 0.44 |
| 1:AA:43:C:P | 16:AP:12:LYS:HZ3 | 2.40 | 0.44 |
| 1:AA:182:A:N7 | 1:AA:184:G:N7 | 2.64 | 0.44 |
| 1:AA:431:A:H2' | 1:AA:432:A:O4' | 2.17 | 0.44 |
| 1:AA:654:G:C2 | 1:AA:753:A:C4 | 3.06 | 0.44 |
| 1:AA:880:C:H2' | 1:AA:881:G:H8 | 1.83 | 0.44 |
| 1:AA:993:G:O6 | 1:AA:1046:A:C5 | 2.70 | 0.44 |
| 1:AA:1036:A:H3' | 1:AA:1037:C:C5 | 2.52 | 0.44 |
| 1:AA:1143:G:H2' | 1:AA:1144:G:H8 | 1.81 | 0.44 |
| 1:AA:1256:A:C6 | 1:AA:1278:G:C2 | 3.06 | 0.44 |
| 1:AA:1256:A:N7 | 1:AA:1278:G:H1' | 2.32 | 0.44 |
| 1:AA:1256:A:N7 | 1:AA:1278:G:C1' | 2.80 | 0.44 |
| 2:AB:134:LEU:O | 2:AB:138:ARG:HB3 | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:AC:5:HIS:ND1 | 14:AN:88:MET:HB3 | 2.32 | 0.44 |
| 5:AE:104:ILE:HG13 | 5:AE:111:ARG:HG3 | 1.99 | 0.44 |
| 6:AF:41:ASP:C | 6:AF:43:GLY:H | 2.20 | 0.44 |
| 14:AN:2:LYS:O | 14:AN:3:GLN:C | 2.56 | 0.44 |
| 15:AO:63:ARG:CD | 15:AO:87:ARG:HH22 | 2.28 | 0.44 |
| 17:AQ:16:MET:O | 17:AQ:19:SER:CB | 2.65 | 0.44 |
| 23:AW:100:TYR:CE1 | 23:AW:129:VAL:HG21 | 2.52 | 0.44 |
| 25:B0:8:SER:O | 25:B0:9:THR:HB | 2.18 | 0.44 |
| 25:B0:39:GLN:HE21 | 25:B0:43:LYS:N | 2.16 | 0.44 |
| 25:B0:40:ARG:HG3 | 25:B0:56:HIS:ND1 | 2.32 | 0.44 |
| 34:BA:31:C:O3' | 34:BA:1238:G:C5' | 2.66 | 0.44 |
| 34:BA:111:A:C2 | 34:BA:112:U:C2 | 3.06 | 0.44 |
| 34:BA:123:G:C2' | 34:BA:124:G:H5' | 2.48 | 0.44 |
| 34:BA:322:A:H1' | 34:BA:339:U:O2 | 2.17 | 0.44 |
| 34:BA:768:G:O2' | 34:BA:769:U:H5' | 2.18 | 0.44 |
| 34:BA:1083:U:H3' | 34:BA:1083:U:H6 | 1.83 | 0.44 |
| 34:BA:1628:G:O2' | 34:BA:1629:U:H5' | 2.17 | 0.44 |
| 34:BA:1654:A:OP2 | 48:BR:1:MET:HA | 2.18 | 0.44 |
| 34:BA:1792:G:C2' | 34:BA:1793:C:H5' | 2.47 | 0.44 |
| 34:BA:1920:C:H6 | 34:BA:1920:C:O5' | 2.00 | 0.44 |
| 34:BA:2109:U:H2' | 34:BA:2110:G:H5' | 1.99 | 0.44 |
| 34:BA:2490:G:C4' | 34:BA:2491:U:OP1 | 2.65 | 0.44 |
| 35:BB:77:U:H2' | 35:BB:78:A:H5' | 1.98 | 0.44 |
| 36:BC:245:THR:HG23 | 36:BC:251:THR:HG23 | 1.99 | 0.44 |
| 44:BN:125:TYR:HH | 44:BN:132:HIS:CE1 | 2.30 | 0.44 |
| 45:BO:97:THR:C | 45:BO:98:ARG:HE | 2.21 | 0.44 |
| 50:BT:50:ARG:CG | 50:BT:57:ALA:N | 2.80 | 0.44 |
| 51:BU:96:ASP:OD2 | 51:BU:96:ASP:C | 2.55 | 0.44 |
| 54:BX:32:LEU:HG | 54:BX:83:ALA:HB2 | 2.00 | 0.44 |
| 56:BZ:60:VAL:HG12 | 56:BZ:61:LEU:N | 2.32 | 0.44 |
| 1:AA:150:U:H2' | 1:AA:151:A:C8 | 2.47 | 0.44 |
| 1:AA:155:A:H2' | 1:AA:156:C:H6 | 1.82 | 0.44 |
| 1:AA:599:C:H2' | 1:AA:600:A:C8 | 2.51 | 0.44 |
| 1:AA:620:C:C4 | 4:AD:131:ILE:HG21 | 2.52 | 0.44 |
| 1:AA:666:G:C6 | 1:AA:741:G:C5 | 3.06 | 0.44 |
| 1:AA:716:A:H2' | 1:AA:717:U:O4' | 2.18 | 0.44 |
| 1:AA:784:A:H2' | 1:AA:785:G:O4' | 2.18 | 0.44 |
| 1:AA:872:A:C8 | 1:AA:874:G:C8 | 3.05 | 0.44 |
| 1:AA:1001:C:H2' | 1:AA:1002:G:H8 | 1.81 | 0.44 |
| 2:AB:57:ASN:O | 2:AB:57:ASN:ND2 | 2.50 | 0.44 |
| 2:AB:68:PHE:O | 2:AB:91:VAL:N | 2.50 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:AC:38:VAL:O | 3:AC:42:LEU:HB2 | 2.18 | 0.44 |
| 3:AC:76:ILE:HA | 3:AC:83:VAL:HG23 | 1.98 | 0.44 |
| 6:AF:5:GLU:OE1 | 18:AR:22:TYR:CE2 | 2.71 | 0.44 |
| 11:AK:95:THR:HG23 | 11:AK:96:ILE:N | 2.32 | 0.44 |
| 12:AL:115:LYS:H | 12:AL:115:LYS:HG3 | 1.38 | 0.44 |
| 12:AL:119:LYS:O | 12:AL:120:ARG:C | 2.56 | 0.44 |
| 12:AL:123:ALA:O | 23:AW:487:ARG:NH1 | 2.50 | 0.44 |
| 17:AQ:11:VAL:HG23 | 17:AQ:56:ASP:O | 2.18 | 0.44 |
| 18:AR:70:THR:OG1 | 18:AR:71:ASP:N | 2.48 | 0.44 |
| 19:AS:4:LEU:N | 19:AS:4:LEU:HD12 | 2.33 | 0.44 |
| 20:AT:32:LYS:O | 20:AT:33:LYS:C | 2.55 | 0.44 |
| 25:B0:39:GLN:HG3 | 25:B0:42:THR:HB | 2.00 | 0.44 |
| 32:B7:30:HIS:O | 32:B7:31:ILE:C | 2.54 | 0.44 |
| 34:BA:201:C:C2' | 34:BA:202:U:H5' | 2.47 | 0.44 |
| 34:BA:378:C:C2' | 34:BA:379:G:H5' | 2.48 | 0.44 |
| 34:BA:418:C:C2 | 34:BA:419:U:C6 | 3.05 | 0.44 |
| 34:BA:553:G:H2' | 34:BA:554:U:O4' | 2.17 | 0.44 |
| 34:BA:883:G:C5 | 34:BA:884:U:C4 | 3.05 | 0.44 |
| 34:BA:1010:A:H1' | 34:BA:1153:C:H1' | 1.98 | 0.44 |
| 34:BA:1054:A:H3' | 34:BA:1055:G:H8 | 1.81 | 0.44 |
| 34:BA:1084:A:O4' | 41:BH:55:VAL:HG13 | 2.17 | 0.44 |
| 34:BA:1097:U:H3' | 34:BA:1098:A:C4' | 2.47 | 0.44 |
| 34:BA:1130:U:HO2' | 34:BA:1131:G:H8 | 1.64 | 0.44 |
| 34:BA:1348:C:C2' | 34:BA:1349:C:H5' | 2.48 | 0.44 |
| 34:BA:1544:A:C6 | 34:BA:1545:A:C6 | 3.06 | 0.44 |
| 34:BA:2187:U:H2' | 34:BA:2188:U:C6 | 2.52 | 0.44 |
| 34:BA:2277:G:C3' | 34:BA:2278:A:H5" | 2.47 | 0.44 |
| 34:BA:2393:U:H2' | 34:BA:2394:C:H6 | 1.83 | 0.44 |
| 34:BA:2477:U:H5" | 34:BA:2479:U:O4 | 2.17 | 0.44 |
| 34:BA:2690:U:H4' | 34:BA:2691:C:OP2 | 2.16 | 0.44 |
| 34:BA:2694:G:C5 | 34:BA:2695:U:C5 | 3.06 | 0.44 |
| 34:BA:2859:G:H2' | 34:BA:2860:A:C8 | 2.53 | 0.44 |
| 35:BB:28:C:H2' | 35:BB:29:A:O4' | 2.17 | 0.44 |
| 38:BE:18:THR:HG22 | 38:BE:106:LYS:HE3 | 2.00 | 0.44 |
| 38:BE:134:LEU:CD2 | 38:BE:161:ALA:HB2 | 2.48 | 0.44 |
| 39:BF:89:THR:O | 39:BF:90:LEU:HD13 | 2.17 | 0.44 |
| 41:BH:25:ALA:C | 41:BH:85:SER:HG | 2.21 | 0.44 |
| 41:BH:81:LEU:HD23 | 41:BH:82:ILE:H | 1.80 | 0.44 |
| 44:BN:25:LEU:O | 44:BN:25:LEU:HD13 | 2.17 | 0.44 |
| 44:BN:45:THR:O | 44:BN:45:THR:HG23 | 2.17 | 0.44 |
| 44:BN:125:TYR:CE2 | 44:BN:130:HIS:HB2 | 2.53 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 50:BT:4:ILE:CG2 | 50:BT:5:LYS:N | 2.77 | 0.44 |
| 50:BT:43:GLU:O | 50:BT:62:LYS:HG3 | 2.18 | 0.44 |
| 52:BV:21:ARG:HG3 | 52:BV:95:ASP:OD1 | 2.17 | 0.44 |
| 52:BV:98:ILE:HG22 | 52:BV:98:ILE:O | 2.16 | 0.44 |
| 1:AA:2:A:N7 | 1:AA:3:A:C5 | 2.85 | 0.44 |
| 1:AA:20:U:H4' | 1:AA:572:A:C6 | 2.53 | 0.44 |
| 1:AA:219:U:N3 | 1:AA:220:G:N7 | 2.65 | 0.44 |
| 1:AA:243:A:N6 | 1:AA:281:G:O2' | 2.50 | 0.44 |
| 1:AA:247:G:O2' | 1:AA:248:C:H5' | 2.17 | 0.44 |
| 1:AA:260:G:H2' | 1:AA:261:U:C6 | 2.53 | 0.44 |
| 1:AA:668:G:O2' | 1:AA:669:G:H5' | 2.18 | 0.44 |
| 1:AA:838:G:O5' | 1:AA:838:G:H8 | 2.01 | 0.44 |
| 1:AA:909:A:C8 | 1:AA:910:C:C5 | 3.05 | 0.44 |
| 1:AA:1191:A:H5" | 3:AC:3:LYS:HE3 | 1.99 | 0.44 |
| 8:AH:36:ALA:HA | 8:AH:39:LEU:HD12 | 1.99 | 0.44 |
| 13:AM:82:LEU:HD22 | 19:AS:65:MET:HG2 | 1.98 | 0.44 |
| 14:AN:46:LYS:HD2 | 19:AS:12:LEU:CD2 | 2.46 | 0.44 |
| 15:AO:42:PHE:CZ | 15:AO:52:ARG:HA | 2.52 | 0.44 |
| 18:AR:31:TYR:O | 18:AR:39:VAL:HG23 | 2.17 | 0.44 |
| 23:AW:19:ILE:HA | 23:AW:89:THR:OG1 | 2.18 | 0.44 |
| 23:AW:452:ARG:O | 23:AW:459:VAL:HG23 | 2.16 | 0.44 |
| 23:AW:485:PHE:C | 23:AW:487:ARG:H | 2.21 | 0.44 |
| 25:B0:39:GLN:HG3 | 25:B0:42:THR:H | 1.82 | 0.44 |
| 26:B1:62:GLY:O | 26:B1:66:VAL:HG23 | 2.17 | 0.44 |
| 33:B8:4:ARG:O | 33:B8:37:GLN:O | 2.36 | 0.44 |
| 34:BA:83:A:N6 | 34:BA:101:A:C8 | 2.85 | 0.44 |
| 34:BA:225:C:C2 | 34:BA:231:A:C2 | 3.05 | 0.44 |
| 34:BA:293:U:O4 | 34:BA:345:A:C6 | 2.70 | 0.44 |
| 34:BA:543:G:C4 | 34:BA:551:G:C2 | 3.05 | 0.44 |
| 34:BA:768:G:C2' | 34:BA:769:U:H5' | 2.47 | 0.44 |
| 34:BA:950:G:H2' | 34:BA:951:C:O4' | 2.18 | 0.44 |
| 34:BA:988:A:H4' | 34:BA:1155:A:N1 | 2.33 | 0.44 |
| 34:BA:1106:G:H5" | 41:BH:59:LEU:HD11 | 1.98 | 0.44 |
| 34:BA:1301:A:H2' | 34:BA:1301:A:N3 | 2.32 | 0.44 |
| 34:BA:1377:G:O5' | 34:BA:1377:G:H8 | 2.01 | 0.44 |
| 34:BA:1545:A:H2' | 34:BA:1546:G:O4' | 2.18 | 0.44 |
| 34:BA:1745:A:C2' | 34:BA:1746:A:H5' | 2.47 | 0.44 |
| 34:BA:1779:U:C2 | 34:BA:1783:A:N7 | 2.85 | 0.44 |
| 34:BA:2199:A:H3' | 34:BA:2200:C:H6 | 1.82 | 0.44 |
| 34:BA:2218:G:C6 | 34:BA:2219:U:C4 | 3.05 | 0.44 |
| 34:BA:2725:A:O2' | 34:BA:2726:A:H3' | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 38:BE:158:PHE:HD1 | 38:BE:159:LEU:CD1 | 2.29 | 0.44 |
| 39:BF:76:PHE:O | 39:BF:77:LYS:CB | 2.64 | 0.44 |
| 41:BH:11:ILE:HD13 | 41:BH:11:ILE:N | 2.32 | 0.44 |
| 42:BI:52:LEU:HD11 | 42:BI:81:LYS:HE2 | 1.98 | 0.44 |
| 44:BN:44:TYR:O | 44:BN:45:THR:HG22 | 2.17 | 0.44 |
| 45:BO:107:LEU:O | 45:BO:109:SER:N | 2.47 | 0.44 |
| 45:BO:121:GLU:HG2 | 45:BO:122:VAL:N | 2.33 | 0.44 |
| 48:BR:49:GLU:OE2 | 48:BR:95:THR:HB | 2.18 | 0.44 |
| 53:BW:69:LEU:HA | 53:BW:108:SER:O | 2.17 | 0.44 |
| 1:AA:94:G:H4' | 1:AA:95:C:C6 | 2.52 | 0.44 |
| 1:AA:291:U:O2' | 1:AA:292:G:H5' | 2.17 | 0.44 |
| 1:AA:511:C:C2 | 1:AA:512:U:C5 | 3.05 | 0.44 |
| 1:AA:779:C:O3' | 11:AK:123:PRO:HA | 2.17 | 0.44 |
| 1:AA:853:C:C2' | 1:AA:854:U:H5' | 2.47 | 0.44 |
| 1:AA:977:A:H3' | 1:AA:977:A:N3 | 2.31 | 0.44 |
| 1:AA:1050:G:N2 | 1:AA:1051:C:C2 | 2.86 | 0.44 |
| 1:AA:1203:C:H2' | 1:AA:1204:A:H8 | 1.83 | 0.44 |
| 1:AA:1350:A:OP1 | 9:AI:122:ARG:HD3 | 2.18 | 0.44 |
| 1:AA:1372:U:C2' | 1:AA:1373:G:H5' | 2.47 | 0.44 |
| 1:AA:1441:A:H5' | 1:AA:1442:G:OP2 | 2.18 | 0.44 |
| 2:AB:22:TRP:HA | 2:AB:188:THR:O | 2.18 | 0.44 |
| 3:AC:5:HIS:CG | 14:AN:88:MET:HB3 | 2.53 | 0.44 |
| 4:AD:43:ARG:C | 4:AD:45:PRO:HD3 | 2.36 | 0.44 |
| 4:AD:50:TYR:CZ | 4:AD:54:LEU:HD12 | 2.53 | 0.44 |
| 6:AF:25:TYR:O | 6:AF:29:ILE:HD13 | 2.18 | 0.44 |
| 10:AJ:29:ALA:O | 10:AJ:33:GLY:CA | 2.65 | 0.44 |
| 11:AK:75:GLU:C | 11:AK:77:GLY:N | 2.70 | 0.44 |
| 12:AL:23:LEU:HD12 | 12:AL:24:GLU:H | 1.83 | 0.44 |
| 12:AL:106:VAL:HG23 | 12:AL:116:TYR:HB3 | 1.99 | 0.44 |
| 19:AS:39:ILE:HB | 19:AS:65:MET:O | 2.18 | 0.44 |
| 23:AW:49:ARG:HB3 | 23:AW:50:GLY:H | 1.35 | 0.44 |
| 23:AW:304:GLN:HG2 | 23:AW:305:ALA:N | 2.31 | 0.44 |
| 23:AW:472:ARG:CD | 23:AW:503:TYR:HB3 | 2.44 | 0.44 |
| 34:BA:42:A:N6 | 34:BA:437:U:H3 | 2.16 | 0.44 |
| 34:BA:143:C:O5' | 34:BA:143:C:H6 | 2.01 | 0.44 |
| 34:BA:447:A:N1 | 34:BA:454:A:O2' | 2.39 | 0.44 |
| 34:BA:493:G:H2' | 34:BA:494:G:O4' | 2.18 | 0.44 |
| 34:BA:599:A:O2' | 34:BA:600:G:H5' | 2.18 | 0.44 |
| 34:BA:706:A:OP1 | 36:BC:6:LYS:HE3 | 2.18 | 0.44 |
| 34:BA:843:G:O2' | 34:BA:844:A:H5' | 2.18 | 0.44 |
| 34:BA:1018:U:N3 | 34:BA:1019:U:C5 | 2.86 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1170:C:H2' | 34:BA:1171:G:O4' | 2.18 | 0.44 |
| 34:BA:2323:G:H2' | 34:BA:2324:U:O4' | 2.18 | 0.44 |
| 36:BC:16:VAL:HB | 36:BC:203:VAL:HG23 | 1.99 | 0.44 |
| 36:BC:29:PHE:CZ | 36:BC:31:PRO:HG2 | 2.53 | 0.44 |
| 38:BE:176:ASP:C | 38:BE:176:ASP:OD1 | 2.56 | 0.44 |
| 40:BG:64:ALA:O | 40:BG:67:ALA:HB3 | 2.17 | 0.44 |
| 43:BJ:12:ALA:HA | 43:BM:14:MET:CB | 2.39 | 0.44 |
| 50:BT:81:ASP:OD2 | 50:BT:82:SER:N | 2.51 | 0.44 |
| 51:BU:73:ILE:HD11 | 51:BU:77:LYS:HB2 | 2.00 | 0.44 |
| 52:BV:19:THR:HG23 | 52:BV:96:VAL:O | 2.17 | 0.44 |
| 56:BZ:61:LEU:O | 56:BZ:71:LYS:HG2 | 2.17 | 0.44 |
| 1:AA:70:U:O2' | 1:AA:71:A:H8 | 2.01 | 0.44 |
| 1:AA:177:G:N3 | 1:AA:177:G:O4' | 2.51 | 0.44 |
| 1:AA:280:C:O2 | 17:AQ:39:ARG:HD2 | 2.16 | 0.44 |
| 1:AA:821:G:C6 | 1:AA:822:U:C4 | 3.06 | 0.44 |
| 1:AA:960:U:N3 | 1:AA:1225:A:C5 | 2.83 | 0.44 |
| 1:AA:1014:A:N7 | 1:AA:1015:G:C5 | 2.86 | 0.44 |
| 1:AA:1202:U:H5 | 10:AJ:55:PRO:HB3 | 1.82 | 0.44 |
| 1:AA:1324:A:C4' | 1:AA:1362:A:H4' | 2.48 | 0.44 |
| 1:AA:1406:U:H5' | 1:AA:1407:C:OP2 | 2.18 | 0.44 |
| 1:AA:1489:G:C2' | 1:AA:1490:U:H5' | 2.47 | 0.44 |
| 2:AB:24:PRO:C | 2:AB:26:MET:H | 2.21 | 0.44 |
| 5:AE:10:LEU:HG | 5:AE:11:GLN:N | 2.32 | 0.44 |
| 5:AE:81:GLN:O | 5:AE:82:HIS:C | 2.55 | 0.44 |
| 9:AI:75:ALA:O | 9:AI:78:ILE:HB | 2.18 | 0.44 |
| 10:AJ:66:GLU:CB | 14:AN:98:ALA:HB2 | 2.47 | 0.44 |
| 12:AL:5:GLN:O | 12:AL:8:ARG:HB2 | 2.17 | 0.44 |
| 14:AN:30:ILE:HD12 | 14:AN:30:ILE:H | 1.82 | 0.44 |
| 15:AO:40:GLY:O | 15:AO:43:ALA:HB3 | 2.18 | 0.44 |
| 17:AQ:8:GLN:HE21 | 17:AQ:8:GLN:CA | 2.31 | 0.44 |
| 17:AQ:16:MET:O | 17:AQ:19:SER:HB3 | 2.18 | 0.44 |
| 17:AQ:29:LYS:HD3 | 17:AQ:34:GLY:HA2 | 1.99 | 0.44 |
| 19:AS:42:ASN:C | 19:AS:42:ASN:ND2 | 2.69 | 0.44 |
| 20:AT:77:ASN:HD22 | 20:AT:78:LEU:N | 2.15 | 0.44 |
| 21:AU:16:ARG:NH1 | 21:AU:19:LYS:HG3 | 2.32 | 0.44 |
| 21:AU:39:LYS:HE2 | 21:AU:39:LYS:HB2 | 1.66 | 0.44 |
| 26:B1:20:ALA:HB3 | 26:B1:22:ASN:ND2 | 2.33 | 0.44 |
| 28:B3:9:THR:HG22 | 28:B3:10:ARG:N | 2.32 | 0.44 |
| 34:BA:475:C:O5' | 34:BA:475:C:H6 | 2.01 | 0.44 |
| 34:BA:1084:A:N6 | 41:BH:37:LYS:NZ | 2.62 | 0.44 |
| 34:BA:1197:G:H2' | 34:BA:1198:U:C6 | 2.53 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1287:A:C5' | 48:BR:103:ARG:HD2 | 2.47 | 0.44 |
| 34:BA:1535:A:C4' | 34:BA:1536:C:OP2 | 2.63 | 0.44 |
| 34:BA:1538:G:O2' | 34:BA:1539:U:H5' | 2.18 | 0.44 |
| 34:BA:1597:A:H5" | 34:BA:1598:A:H5' | 1.99 | 0.44 |
| 34:BA:2308:G:C5' | 34:BA:2309:A:OP2 | 2.66 | 0.44 |
| 34:BA:2707:U:O2 | 48:BR:71:ARG:NH1 | 2.51 | 0.44 |
| 36:BC:7:PRO:HB3 | 36:BC:13:ARG:HB2 | 1.99 | 0.44 |
| 36:BC:83:ASP:HB2 | 36:BC:90:ILE:CD1 | 2.44 | 0.44 |
| 36:BC:108:GLY:O | 36:BC:109:LEU:C | 2.56 | 0.44 |
| 36:BC:266:ILE:N | 36:BC:266:ILE:HD12 | 2.33 | 0.44 |
| 37:BD:114:LYS:O | 37:BD:114:LYS:CE | 2.65 | 0.44 |
| 40:BG:67:ALA:O | 40:BG:68:ARG:C | 2.56 | 0.44 |
| 40:BG:163:TYR:O | 40:BG:164:ALA:CB | 2.65 | 0.44 |
| 41:BH:33:VAL:HG12 | 41:BH:34:THR:H | 1.82 | 0.44 |
| 41:BH:68:PRO:C | 41:BH:70:GLU:H | 2.20 | 0.44 |
| 41:BH:105:LYS:HB2 | 41:BH:107:GLU:OE2 | 2.16 | 0.44 |
| 42:BI:74:PRO:O | 42:BI:77:VAL:HG22 | 2.18 | 0.44 |
| 47:BQ:64:TRP:CZ3 | 47:BQ:106:ASP:HB2 | 2.53 | 0.44 |
| 49:BS:34:HIS:CD2 | 49:BS:53:THR:O | 2.71 | 0.44 |
| 50:BT:62:LYS:C | 50:BT:63:ILE:HD12 | 2.38 | 0.44 |
| 50:BT:79:VAL:O | 50:BT:79:VAL:CG2 | 2.64 | 0.44 |
| 50:BT:89:GLY:O | 50:BT:112:ARG:HD2 | 2.18 | 0.44 |
| 1:AA:57:G:C6 | 1:AA:58:C:C4 | 3.06 | 0.44 |
| 1:AA:244:U:O4 | 1:AA:906:A:H1' | 2.18 | 0.44 |
| 1:AA:247:G:C5 | 1:AA:278:G:N2 | 2.85 | 0.44 |
| 1:AA:652:U:O2' | 1:AA:653:U:H6 | 1.99 | 0.44 |
| 1:AA:994:A:C6 | 1:AA:995:C:C4 | 3.06 | 0.44 |
| 1:AA:1055:A:C2 | 3:AC:192:TYR:O | 2.71 | 0.44 |
| 1:AA:1284:C:C5 | 1:AA:1285:A:N7 | 2.86 | 0.44 |
| 1:AA:1357:A:N7 | 1:AA:1358:U:C5 | 2.86 | 0.44 |
| 2:AB:132:GLU:O | 2:AB:136:ARG:HB3 | 2.17 | 0.44 |
| 3:AC:99:GLN:OE1 | 3:AC:99:GLN:N | 2.51 | 0.44 |
| 3:AC:156:LEU:H | 3:AC:156:LEU:CD1 | 2.31 | 0.44 |
| 4:AD:61:ARG:CZ | 4:AD:68:GLU:HG2 | 2.47 | 0.44 |
| 5:AE:73:VAL:CG1 | 5:AE:143:LEU:HB3 | 2.48 | 0.44 |
| 5:AE:149:PRO:HG2 | 5:AE:150:GLU:HG2 | 1.99 | 0.44 |
| 9:AI:11:ARG:HG3 | 9:AI:11:ARG:NH1 | 2.31 | 0.44 |
| 17:AQ:20:ILE:O | 17:AQ:20:ILE:CG2 | 2.65 | 0.44 |
| 21:AU:52:VAL:HG13 | 21:AU:53:LYS:N | 2.18 | 0.44 |
| 23:AW:390:ILE:HA | 23:AW:391:PRO:HD3 | 1.72 | 0.44 |
| 23:AW:428:PHE:N | 23:AW:437:ILE:O | 2.47 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 23:AW:474:VAL:CG2 | 23:AW:501:LEU:H | 2.31 | 0.44 |
| 34:BA:108:G:H2' | 34:BA:109:C:H5' | 1.97 | 0.44 |
| 34:BA:320:A:HO2' | 34:BA:322:A:H8 | 1.66 | 0.44 |
| 34:BA:771:G:H2' | 34:BA:772:C:H6 | 1.82 | 0.44 |
| 34:BA:900:A:N3 | 34:BA:900:A:C2' | 2.81 | 0.44 |
| 34:BA:927:A:H2' | 34:BA:928:A:C8 | 2.53 | 0.44 |
| 34:BA:1025:G:C4' | 34:BA:1026:G:OP2 | 2.66 | 0.44 |
| 34:BA:1198:U:H2' | 34:BA:1199:U:C6 | 2.52 | 0.44 |
| 34:BA:1275:A:H4' | 34:BA:1276:A:O5' | 2.17 | 0.44 |
| 34:BA:1476:U:O2 | 34:BA:1476:U:H2' | 2.16 | 0.44 |
| 34:BA:1654:A:O2' | 37:BD:118:PHE:CD1 | 2.62 | 0.44 |
| 34:BA:2033:A:O2' | 34:BA:2035:G:P | 2.76 | 0.44 |
| 34:BA:2103:C:N4 | 34:BA:2185:U:O4 | 2.51 | 0.44 |
| 34:BA:2365:G:H2' | 34:BA:2366:A:C8 | 2.53 | 0.44 |
| 34:BA:2740:A:C6 | 34:BA:2741:A:C6 | 3.06 | 0.44 |
| 35:BB:10:G:C8 | 35:BB:11:C:C5 | 3.06 | 0.44 |
| 36:BC:118:GLY:O | 36:BC:129:LEU:CD2 | 2.66 | 0.44 |
| 39:BF:4:HIS:O | 39:BF:8:LYS:HG2 | 2.18 | 0.44 |
| 40:BG:76:ILE:HD12 | 40:BG:82:PHE:CE2 | 2.53 | 0.44 |
| 41:BH:58:THR:O | 41:BH:58:THR:OG1 | 2.36 | 0.44 |
| 42:BI:57:VAL:HG12 | 42:BI:58:ILE:N | 2.33 | 0.44 |
| 42:BI:100:ILE:HG22 | 42:BI:101:SER:N | 2.30 | 0.44 |
| 44:BN:73:VAL:HG23 | 44:BN:74:TYR:N | 2.27 | 0.44 |
| 45:BO:61:VAL:HG11 | 45:BO:112:PHE:CE1 | 2.52 | 0.44 |
| 46:BP:95:LEU:HB2 | 46:BP:101:ILE:HD11 | 1.99 | 0.44 |
| 48:BR:12:ARG:NE | 48:BR:20:MET:HE3 | 2.33 | 0.44 |
| 49:BS:49:VAL:HG21 | 49:BS:81:ARG:O | 2.17 | 0.44 |
| 51:BU:63:ARG:HH22 | 51:BU:96:ASP:N | 2.15 | 0.44 |
| 55:BY:35:VAL:CG1 | 55:BY:38:ILE:HG13 | 2.48 | 0.44 |
| 55:BY:48:VAL:HG13 | 55:BY:51:LEU:O | 2.17 | 0.44 |
| 1:AA:117:G:O6 | 1:AA:289:G:H1' | 2.18 | 0.44 |
| 1:AA:500:G:C6 | 1:AA:501:C:N4 | 2.86 | 0.44 |
| 1:AA:607:A:H2' | 1:AA:608:A:O4' | 2.18 | 0.44 |
| 1:AA:785:G:H2' | 1:AA:786:G:H5' | 2.00 | 0.44 |
| 1:AA:827:U:H5" | 1:AA:828:U:OP2 | 2.18 | 0.44 |
| 1:AA:1205:U:O2' | 3:AC:194:VAL:HG23 | 2.18 | 0.44 |
| 1:AA:1234:C:C1' | 1:AA:1364:U:H1' | 2.47 | 0.44 |
| 1:AA:1361:G:H2' | 1:AA:1362:A:H5' | 1.99 | 0.44 |
| 1:AA:1432:G:H1' | 1:AA:1468:A:H61 | 1.80 | 0.44 |
| 2:AB:61:SER:C | 2:AB:63:LYS:H | 2.22 | 0.44 |
| 3:AC:152:VAL:HG12 | 3:AC:197:VAL:HG22 | 2.00 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:AC:185:THR:HG22 | 3:AC:186:SER:H | 1.83 | 0.44 |
| 4:AD:36:ALA:O | 4:AD:38:GLY:N | 2.51 | 0.44 |
| 4:AD:69:ARG:HA | 4:AD:69:ARG:HE | 1.83 | 0.44 |
| 4:AD:114:ARG:O | 4:AD:116:LEU:N | 2.51 | 0.44 |
| 4:AD:198:LEU:HD23 | 4:AD:198:LEU:HA | 1.77 | 0.44 |
| 6:AF:46:GLN:HE21 | 6:AF:56:LYS:HG2 | 1.83 | 0.44 |
| 6:AF:51:ILE:C | 6:AF:53:LYS:H | 2.21 | 0.44 |
| 9:AI:24:ASN:HD22 | 9:AI:26:LYS:HE3 | 1.82 | 0.44 |
| 16:AP:53:ASP:HB3 | 16:AP:56:ARG:HB2 | 1.99 | 0.44 |
| 20:AT:27:MET:HE3 | 20:AT:57:VAL:HG22 | 1.98 | 0.44 |
| 21:AU:34:ARG:CZ | 21:AU:39:LYS:NZ | 2.80 | 0.44 |
| 27:B2:2:LYS:HB2 | 34:BA:102:U:H3 | 1.83 | 0.44 |
| 32:B7:22:LYS:HA | 32:B7:48:MET:HA | 2.00 | 0.44 |
| 33:B8:7:VAL:O | 33:B8:8:LYS:O | 2.36 | 0.44 |
| 34:BA:836:G:C5 | 34:BA:837:C:C4 | 3.06 | 0.44 |
| 34:BA:847:U:O2 | 34:BA:847:U:H2' | 2.16 | 0.44 |
| 34:BA:900:A:C2 | 34:BA:901:C:C6 | 3.05 | 0.44 |
| 34:BA:1465:G:H2' | 34:BA:1466:U:O4' | 2.18 | 0.44 |
| 34:BA:1492:G:C2' | 34:BA:1493:C:OP1 | 2.66 | 0.44 |
| 34:BA:1541:C:H2' | 34:BA:1542:U:C6 | 2.53 | 0.44 |
| 34:BA:1715:G:O2' | 34:BA:1716:U:C6 | 2.56 | 0.44 |
| 34:BA:1838:C:H4' | 34:BA:1839:G:C8 | 2.53 | 0.44 |
| 34:BA:2244:U:O2' | 34:BA:2245:U:H5' | 2.18 | 0.44 |
| 34:BA:2306:C:C4 | 34:BA:2307:G:C6 | 3.06 | 0.44 |
| 34:BA:2654:A:H8 | 34:BA:2654:A:OP1 | 2.01 | 0.44 |
| 35:BB:51:G:N1 | 35:BB:52:A:C2 | 2.86 | 0.44 |
| 36:BC:105:ALA:HA | 36:BC:106:PRO:HD2 | 1.86 | 0.44 |
| 37:BD:48:ILE:HD13 | 37:BD:50:VAL:CG1 | 2.37 | 0.44 |
| 38:BE:63:LYS:NZ | 38:BE:63:LYS:HB3 | 2.33 | 0.44 |
| 38:BE:130:LYS:HB2 | 38:BE:133:LEU:CD1 | 2.45 | 0.44 |
| 38:BE:159:LEU:N | 38:BE:159:LEU:CD1 | 2.81 | 0.44 |
| 39:BF:129:MET:HG3 | 39:BF:153:ILE:HG12 | 2.00 | 0.44 |
| 39:BF:134:GLN:CG | 39:BF:135:ILE:H | 2.29 | 0.44 |
| 40:BG:30:GLY:O | 40:BG:32:LEU:N | 2.51 | 0.44 |
| 41:BH:69:PHE:CD2 | 41:BH:69:PHE:N | 2.85 | 0.44 |
| 41:BH:142:THR:O | 41:BH:145:GLU:N | 2.49 | 0.44 |
| 44:BN:60:ASP:OD1 | 44:BN:60:ASP:N | 2.51 | 0.44 |
| 48:BR:2:ARG:O | 48:BR:3:HIS:C | 2.56 | 0.44 |
| 55:BY:73:ASN:HD21 | 55:BY:75:ALA:HB3 | 1.82 | 0.44 |
| 55:BY:73:ASN:HA | 55:BY:95:PHE:CE2 | 2.53 | 0.44 |
| 55:BY:98:ASN:OD1 | 55:BY:98:ASN:C | 2.56 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 56:BZ:66:ASP:CG | 56:BZ:66:ASP:O | 2.55 | 0.44 |
| 1:AA:81:A:N7 | 1:AA:83:C:N4 | 2.65 | 0.43 |
| 1:AA:179:A:H2' | 1:AA:180:U:O4' | 2.18 | 0.43 |
| 1:AA:620:C:C1' | 4:AD:131:ILE:HG13 | 2.47 | 0.43 |
| 1:AA:938:A:C6 | 1:AA:939:G:N7 | 2.86 | 0.43 |
| 1:AA:1145:A:O2' | 1:AA:1146:A:O5' | 2.36 | 0.43 |
| 1:AA:1169:A:H2' | 1:AA:1170:A:C8 | 2.53 | 0.43 |
| 1:AA:1223:C:OP2 | 1:AA:1224:U:H6 | 2.01 | 0.43 |
| 1:AA:1297:G:H5' | 1:AA:1302:C:N4 | 2.32 | 0.43 |
| 1:AA:1357:A:N7 | 1:AA:1358:U:C4 | 2.86 | 0.43 |
| 1:AA:1374:A:N3 | 1:AA:1375:A:C8 | 2.86 | 0.43 |
| 4:AD:87:GLU:HB3 | 4:AD:187:ARG:HD3 | 1.99 | 0.43 |
| 4:AD:115:GLN:O | 4:AD:115:GLN:HG3 | 2.17 | 0.43 |
| 4:AD:124:VAL:C | 4:AD:126:GLY:N | 2.72 | 0.43 |
| 4:AD:203:TYR:N | 4:AD:203:TYR:CD2 | 2.86 | 0.43 |
| 13:AM:89:ARG:HH11 | 13:AM:94:LEU:HB3 | 1.83 | 0.43 |
| 13:AM:92:ARG:HB3 | 13:AM:92:ARG:CZ | 2.48 | 0.43 |
| 14:AN:58:ARG:NH1 | 14:AN:58:ARG:CG | 2.81 | 0.43 |
| 23:AW:407:LEU:HD22 | 23:AW:409:GLN:HG3 | 2.00 | 0.43 |
| 23:AW:420:SER:HB3 | 23:AW:426:GLN:OE1 | 2.18 | 0.43 |
| 23:AW:503:TYR:O | 23:AW:504:ILE:HB | 2.17 | 0.43 |
| 26:B1:20:ALA:O | 26:B1:21:LEU:HB2 | 2.18 | 0.43 |
| 28:B3:29:ARG:NH1 | 34:BA:930:G:H5" | 2.33 | 0.43 |
| 34:BA:495:G:H21 | 53:BW:61:ASN:ND2 | 2.15 | 0.43 |
| 34:BA:593:U:H2' | 34:BA:594:U:C6 | 2.53 | 0.43 |
| 34:BA:1541:C:O2' | 34:BA:1542:U:H5' | 2.18 | 0.43 |
| 34:BA:1614:A:C2 | 53:BW:93:ALA:HB2 | 2.53 | 0.43 |
| 34:BA:1715:G:H2' | 34:BA:1716:U:OP2 | 2.18 | 0.43 |
| 34:BA:1911:U:C4 | 34:BA:1918:A:C5 | 3.06 | 0.43 |
| 34:BA:2065:C:H2' | 34:BA:2066:C:C6 | 2.53 | 0.43 |
| 34:BA:2300:C:H2' | 34:BA:2301:C:C6 | 2.53 | 0.43 |
| 37:BD:14:ILE:HD11 | 37:BD:22:ILE:HD12 | 1.98 | 0.43 |
| 37:BD:85:ALA:O | 37:BD:86:GLU:CB | 2.66 | 0.43 |
| 37:BD:106:LYS:O | 37:BD:175:LEU:O | 2.35 | 0.43 |
| 40:BG:30:GLY:HA3 | 40:BG:78:VAL:HG12 | 1.99 | 0.43 |
| 40:BG:34:ARG:HD3 | 40:BG:34:ARG:N | 2.33 | 0.43 |
| 40:BG:88:LEU:N | 40:BG:88:LEU:HD23 | 2.33 | 0.43 |
| 41:BH:54:VAL:HA | 41:BH:84:TYR:O | 2.17 | 0.43 |
| 44:BN:11:VAL:HG11 | 44:BN:50:THR:HA | 2.00 | 0.43 |
| 47:BQ:73:ILE:N | 47:BQ:73:ILE:CD1 | 2.81 | 0.43 |
| 50:BT:80:VAL:O | 50:BT:81:ASP:HB3 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 54:BX:21:SER:HA | 54:BX:31:VAL:CG1 | 2.48 | 0.43 |
| 1:AA:53:A:C2' | 1:AA:54:C:O5' | 2.65 | 0.43 |
| 1:AA:237:G:O2' | 1:AA:238:A:H5' | 2.18 | 0.43 |
| 1:AA:373:A:O2' | 1:AA:374:A:H5' | 2.18 | 0.43 |
| 1:AA:736:C:C2 | 1:AA:737:C:C5 | 3.06 | 0.43 |
| 1:AA:1144:G:N2 | 1:AA:1146:A:H62 | 2.16 | 0.43 |
| 1:AA:1261:A:C5 | 1:AA:1262:C:C4 | 3.06 | 0.43 |
| 1:AA:1315:U:O4 | 1:AA:1316:G:C6 | 2.71 | 0.43 |
| 2:AB:138:ARG:HA | 2:AB:141:GLU:OE2 | 2.18 | 0.43 |
| 9:AI:66:VAL:C | 9:AI:67:LYS:HD3 | 2.39 | 0.43 |
| 11:AK:12:ARG:O | 11:AK:14:GLN:N | 2.52 | 0.43 |
| 12:AL:2:THR:HG22 | 12:AL:3:VAL:N | 2.33 | 0.43 |
| 12:AL:20:VAL:HG23 | 12:AL:20:VAL:O | 2.17 | 0.43 |
| 12:AL:62:VAL:HG21 | 12:AL:94:TYR:CD2 | 2.53 | 0.43 |
| 17:AQ:30:HIS:HB2 | 17:AQ:37:ILE:CD1 | 2.48 | 0.43 |
| 20:AT:4:LYS:NZ | 20:AT:6:ALA:H | 2.16 | 0.43 |
| 20:AT:82:ILE:O | 20:AT:86:ALA:HB3 | 2.18 | 0.43 |
| 21:AU:18:PHE:O | 21:AU:18:PHE:HD2 | 2.00 | 0.43 |
| 23:AW:307:MET:HE2 | 23:AW:309:PRO:HD3 | 2.00 | 0.43 |
| 23:AW:319:ARG:HA | 23:AW:364:ILE:HD13 | 1.98 | 0.43 |
| 23:AW:410:LYS:HA | 23:AW:414:LYS:H | 1.84 | 0.43 |
| 23:AW:471:ALA:HA | 23:AW:472:ARG:O | 2.18 | 0.43 |
| 34:BA:63:A:O2' | 34:BA:64:A:H5' | 2.18 | 0.43 |
| 34:BA:63:A:C2 | 34:BA:64:A:C5 | 3.06 | 0.43 |
| 34:BA:215:G:O4' | 34:BA:216:A:H4' | 2.18 | 0.43 |
| 34:BA:580:U:O3' | 51:BU:30:VAL:CG1 | 2.66 | 0.43 |
| 34:BA:646:U:C4 | 34:BA:2368:C:H1' | 2.53 | 0.43 |
| 34:BA:801:G:H4' | 34:BA:802:A:OP2 | 2.17 | 0.43 |
| 34:BA:1565:C:O2' | 34:BA:1566:A:O5' | 2.33 | 0.43 |
| 34:BA:1814:G:C6 | 34:BA:1815:A:C6 | 3.06 | 0.43 |
| 34:BA:1824:G:C2' | 34:BA:1825:U:H5' | 2.48 | 0.43 |
| 34:BA:1915:U:H2' | 34:BA:1916:A:O4' | 2.18 | 0.43 |
| 34:BA:2019:A:H2' | 34:BA:2020:A:O5' | 2.17 | 0.43 |
| 34:BA:2291:U:H2' | 34:BA:2292:U:C6 | 2.53 | 0.43 |
| 34:BA:2329:U:H2' | 34:BA:2330:G:C8 | 2.53 | 0.43 |
| 34:BA:2902:C:H2' | 34:BA:2903:U:O4' | 2.19 | 0.43 |
| 35:BB:76:G:H2' | 35:BB:77:U:H6 | 1.83 | 0.43 |
| 36:BC:103:ILE:O | 36:BC:104:LEU:O | 2.36 | 0.43 |
| 39:BF:124:ARG:HA | 39:BF:160:LYS:O | 2.18 | 0.43 |
| 39:BF:134:GLN:O | 39:BF:136:ILE:N | 2.40 | 0.43 |
| 39:BF:169:LEU:O | 39:BF:174:PHE:HB3 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 43:BL:29:LYS:O | 43:BL:30:PHE:O | 2.36 | 0.43 |
| 45:BO:19:VAL:HG22 | 45:BO:20:MET:N | 2.33 | 0.43 |
| 46:BP:93:ASN:O | 46:BP:95:LEU:N | 2.45 | 0.43 |
| 53:BW:41:LYS:O | 53:BW:42:LYS:C | 2.56 | 0.43 |
| 54:BX:7:LEU:C | 54:BX:8:LEU:HD22 | 2.39 | 0.43 |
| 54:BX:10:VAL:HG23 | 54:BX:11:LEU:N | 2.33 | 0.43 |
| 54:BX:65:GLY:HA3 | 54:BX:77:ARG:O | 2.18 | 0.43 |
| 1:AA:109:A:C6 | 1:AA:326:G:C6 | 3.06 | 0.43 |
| 1:AA:261:U:OP2 | 20:AT:73:ARG:NH2 | 2.51 | 0.43 |
| 1:AA:269:C:H2' | 1:AA:270:A:H8 | 1.82 | 0.43 |
| 1:AA:545:C:P | 4:AD:61:ARG:HH12 | 2.42 | 0.43 |
| 1:AA:652:U:O4 | 1:AA:752:G:C4 | 2.71 | 0.43 |
| 1:AA:682:G:H2' | 1:AA:683:G:H8 | 1.82 | 0.43 |
| 1:AA:837:U:H2' | 1:AA:838:G:C8 | 2.53 | 0.43 |
| 1:AA:973:G:H1' | 10:AJ:56:HIS:CD2 | 2.53 | 0.43 |
| 1:AA:1058:G:H1 | 1:AA:1199:U:H3 | 1.65 | 0.43 |
| 1:AA:1322:C:O2 | 1:AA:1322:C:O4' | 2.35 | 0.43 |
| 1:AA:1329:A:C2' | 1:AA:1330:U:H5' | 2.48 | 0.43 |
| 4:AD:102:TYR:CD2 | 4:AD:102:TYR:C | 2.91 | 0.43 |
| 9:AI:119:LYS:O | 9:AI:120:ALA:HB3 | 2.18 | 0.43 |
| 10:AJ:91:ASP:O | 10:AJ:92:LEU:O | 2.35 | 0.43 |
| 13:AM:101:THR:C | 13:AM:103:THR:H | 2.21 | 0.43 |
| 13:AM:113:LYS:CB | 13:AM:114:PRO:HD3 | 2.48 | 0.43 |
| 17:AQ:30:HIS:HA | 17:AQ:31:PRO:HD3 | 1.72 | 0.43 |
| 18:AR:34:GLU:HB2 | 21:AU:18:PHE:CZ | 2.48 | 0.43 |
| 23:AW:466:VAL:HG12 | 23:AW:468:VAL:HG23 | 2.00 | 0.43 |
| 29:B4:28:SER:HB2 | 29:B4:37:HIS:NE2 | 2.33 | 0.43 |
| 31:B6:5:PHE:CZ | 31:B6:7:PRO:HB3 | 2.54 | 0.43 |
| 34:BA:183:C:N4 | 34:BA:213:A:H61 | 2.16 | 0.43 |
| 34:BA:328:U:H2' | 34:BA:329:G:OP1 | 2.18 | 0.43 |
| 34:BA:779:U:OP1 | 36:BC:48:ILE:CD1 | 2.66 | 0.43 |
| 34:BA:975:A:C4 | 34:BA:990:A:C5 | 3.07 | 0.43 |
| 34:BA:1224:U:H4' | 52:BV:88:GLY:O | 2.18 | 0.43 |
| 34:BA:1268:A:C2 | 34:BA:2013:A:C4 | 3.06 | 0.43 |
| 34:BA:2364:C:H2' | 34:BA:2365:G:O4' | 2.18 | 0.43 |
| 34:BA:2455:G:H2' | 34:BA:2456:C:C6 | 2.54 | 0.43 |
| 34:BA:2682:A:H61 | 34:BA:2728:U:H1' | 1.84 | 0.43 |
| 34:BA:2850:A:H2' | 34:BA:2851:A:O4' | 2.18 | 0.43 |
| 35:BB:46:A:C5 | 35:BB:47:C:C4 | 3.06 | 0.43 |
| 39:BF:129:MET:O | 39:BF:152:ASP:HA | 2.18 | 0.43 |
| 40:BG:84:LYS:CG | 40:BG:131:VAL:HG23 | 2.48 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 43:BL:28:GLU:CG | 43:BL:29:LYS:N | 2.82 | 0.43 |
| 43:BL:28:GLU:CG | 43:BL:29:LYS:H | 2.31 | 0.43 |
| 49:BS:59:ALA:CB | 49:BS:62:LEU:HD12 | 2.48 | 0.43 |
| 51:BU:74:SER:O | 51:BU:75:TYR:C | 2.57 | 0.43 |
| 1:AA:201:G:N2 | 1:AA:217:C:O2 | 2.51 | 0.43 |
| 1:AA:426:U:H2' | 1:AA:427:U:C6 | 2.54 | 0.43 |
| 1:AA:1087:G:H2' | 1:AA:1088:G:C8 | 2.53 | 0.43 |
| 1:AA:1098:C:C2' | 1:AA:1099:G:H5' | 2.48 | 0.43 |
| 1:AA:1169:A:H2' | 1:AA:1170:A:H8 | 1.84 | 0.43 |
| 1:AA:1192:C:C5 | 1:AA:1193:G:C8 | 3.06 | 0.43 |
| 1:AA:1368:A:C2 | 1:AA:1369:C:C6 | 3.06 | 0.43 |
| 2:AB:49:PHE:HD1 | 2:AB:49:PHE:O | 2.02 | 0.43 |
| 3:AC:13:ILE:CD1 | 3:AC:177:LEU:HB3 | 2.48 | 0.43 |
| 3:AC:55:VAL:HG23 | 3:AC:68:HIS:NE2 | 2.33 | 0.43 |
| 9:AI:23:GLY:N | 9:AI:60:LEU:HA | 2.33 | 0.43 |
| 10:AJ:71:LEU:HD22 | 10:AJ:71:LEU:HA | 1.80 | 0.43 |
| 13:AM:84:CYS:HB2 | 19:AS:72:GLU:CB | 2.48 | 0.43 |
| 14:AN:86:ALA:O | 14:AN:87:ALA:C | 2.57 | 0.43 |
| 25:B0:71:LYS:C | 25:B0:73:PRO:HD2 | 2.38 | 0.43 |
| 34:BA:178:G:O2' | 34:BA:179:C:H5' | 2.18 | 0.43 |
| 34:BA:747:U:C4 | 34:BA:2613:U:C5 | 3.06 | 0.43 |
| 34:BA:956:G:OP1 | 47:BQ:86:LYS:HG3 | 2.18 | 0.43 |
| 34:BA:1061:U:H5" | 42:BI:9:LYS:HZ2 | 1.84 | 0.43 |
| 34:BA:1286:A:H4' | 34:BA:1287:A:OP1 | 2.18 | 0.43 |
| 34:BA:1290:C:H2' | 34:BA:1291:C:C6 | 2.53 | 0.43 |
| 34:BA:1587:G:N3 | 34:BA:1588:G:C8 | 2.87 | 0.43 |
| 34:BA:1656:C:O5' | 34:BA:1656:C:H6 | 2.01 | 0.43 |
| 34:BA:1805:A:C2 | 36:BC:49:THR:CG2 | 3.02 | 0.43 |
| 34:BA:1829:A:N3 | 36:BC:14:HIS:HE1 | 2.16 | 0.43 |
| 34:BA:2137:U:H6 | 34:BA:2137:U:O5' | 2.01 | 0.43 |
| 34:BA:2467:C:H2' | 34:BA:2468:A:O4' | 2.18 | 0.43 |
| 34:BA:2565:A:H5" | 34:BA:2566:A:OP2 | 2.19 | 0.43 |
| 34:BA:2584:U:C2' | 34:BA:2585:U:H5' | 2.46 | 0.43 |
| 34:BA:2648:G:H2' | 34:BA:2649:C:C6 | 2.54 | 0.43 |
| 34:BA:2662:A:H2' | 34:BA:2663:G:O4' | 2.17 | 0.43 |
| 37:BD:96:ILE:H | 37:BD:96:ILE:HG13 | 1.49 | 0.43 |
| 38:BE:48:THR:C | 38:BE:50:ALA:N | 2.68 | 0.43 |
| 38:BE:48:THR:OG1 | 38:BE:50:ALA:HB3 | 2.18 | 0.43 |
| 39:BF:106:ALA:O | 39:BF:136:ILE:HB | 2.18 | 0.43 |
| 40:BG:70:LEU:HD23 | 40:BG:70:LEU:HA | 1.76 | 0.43 |
| 43:BJ:4:LYS:H | 43:BJ:4:LYS:HG2 | 1.62 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 48:BR:92:GLY:O | 48:BR:93:GLY:C | 2.56 | 0.43 |
| 51:BU:63:ARG:NH2 | 51:BU:95:ALA:C | 2.71 | 0.43 |
| 53:BW:44:ALA:HA | 53:BW:47:VAL:HG12 | 1.99 | 0.43 |
| 54:BX:19:LYS:O | 54:BX:20:ALA:C | 2.57 | 0.43 |
| 1:AA:177:G:H2' | 1:AA:178:C:H5' | 2.00 | 0.43 |
| 1:AA:196:A:OP1 | 20:AT:63:LYS:HE2 | 2.19 | 0.43 |
| 1:AA:205:A:C5 | 1:AA:206:C:C2 | 3.07 | 0.43 |
| 1:AA:239:U:H5" | 1:AA:240:G:OP2 | 2.19 | 0.43 |
| 1:AA:266:G:H4' | 1:AA:267:C:C5 | 2.54 | 0.43 |
| 1:AA:596:A:N6 | 1:AA:645:G:C6 | 2.85 | 0.43 |
| 1:AA:926:G:N2 | 22:AV:15:A:H4' | 2.34 | 0.43 |
| 1:AA:1004:A:H5' | 1:AA:1024:G:N2 | 2.33 | 0.43 |
| 1:AA:1252:A:C2 | 1:AA:1253:G:C8 | 3.07 | 0.43 |
| 1:AA:1264:U:H2' | 1:AA:1265:C:C6 | 2.53 | 0.43 |
| 1:AA:1458:G:OP1 | 20:AT:26:MET:HA | 2.18 | 0.43 |
| 2:AB:10:LYS:HB2 | 2:AB:10:LYS:HE3 | 1.75 | 0.43 |
| 2:AB:93:HIS:O | 2:AB:94:ARG:C | 2.57 | 0.43 |
| 4:AD:151:GLN:H | 4:AD:154:VAL:HG12 | 1.82 | 0.43 |
| 6:AF:99:ALA:O | 6:AF:100:SER:HB2 | 2.17 | 0.43 |
| 8:AH:10:LEU:HD22 | 8:AH:74:ILE:HD11 | 2.01 | 0.43 |
| 8:AH:21:LYS:HE2 | 8:AH:21:LYS:HA | 2.00 | 0.43 |
| 8:AH:88:LYS:HG3 | 8:AH:89:ASP:N | 2.33 | 0.43 |
| 23:AW:434:ASN:HB3 | 23:AW:435:ASP:H | 1.41 | 0.43 |
| 26:B1:66:VAL:O | 26:B1:69:GLU:HB2 | 2.18 | 0.43 |
| 32:B7:53:ASP:HB3 | 46:BP:57:LEU:CD2 | 2.47 | 0.43 |
| 34:BA:49:A:H4' | 34:BA:50:U:H5" | 2.00 | 0.43 |
| 34:BA:345:A:C4' | 34:BA:346:A:OP1 | 2.67 | 0.43 |
| 34:BA:827:U:H5' | 34:BA:828:U:O5' | 2.18 | 0.43 |
| 34:BA:947:A:H2' | 34:BA:948:C:C6 | 2.54 | 0.43 |
| 34:BA:1757:A:C3' | 34:BA:1758:U:C5' | 2.96 | 0.43 |
| 34:BA:1799:G:C2 | 36:BC:153:LEU:HD23 | 2.53 | 0.43 |
| 34:BA:2335:A:N6 | 34:BA:2337:G:H1' | 2.33 | 0.43 |
| 34:BA:2348:U:O2' | 34:BA:2349:G:H5' | 2.18 | 0.43 |
| 35:BB:49:C:H2' | 35:BB:50:A:C8 | 2.53 | 0.43 |
| 36:BC:61:TYR:CD1 | 36:BC:62:ARG:O | 2.72 | 0.43 |
| 37:BD:13:ARG:O | 37:BD:13:ARG:HG2 | 2.18 | 0.43 |
| 37:BD:51:THR:OG1 | 37:BD:76:GLY:HA3 | 2.18 | 0.43 |
| 38:BE:134:LEU:HB2 | 38:BE:160:ALA:HB1 | 2.01 | 0.43 |
| 39:BF:73:VAL:HG22 | 39:BF:78:ILE:HD11 | 2.00 | 0.43 |
| 43:BJ:11:VAL:HG11 | 43:BM:15:SER:HB3 | 2.00 | 0.43 |
| 45:BO:110:GLU:OE1 | 45:BO:110:GLU:HA | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:BQ:74:THR:HG21 | 47:BQ:86:LYS:HE3 | 2.00 | 0.43 |
| 56:BZ:2:PHE:HA | 56:BZ:50:MET:HE1 | 2.01 | 0.43 |
| 1:AA:205:A:H3' | 1:AA:206:C:C6 | 2.54 | 0.43 |
| 1:AA:523:A:H61 | 12:AL:49:ARG:HH12 | 1.65 | 0.43 |
| 1:AA:533:A:H8 | 1:AA:533:A:OP1 | 2.01 | 0.43 |
| 1:AA:545:C:C5' | 4:AD:68:GLU:HG3 | 2.41 | 0.43 |
| 1:AA:682:G:N2 | 1:AA:709:U:C2 | 2.86 | 0.43 |
| 1:AA:701:U:O2 | 1:AA:701:U:H2' | 2.19 | 0.43 |
| 1:AA:992:U:H5" | 1:AA:993:G:O5' | 2.18 | 0.43 |
| 1:AA:1402:C:H2' | 1:AA:1403:C:O4' | 2.19 | 0.43 |
| 1:AA:1408:A:N1 | 24:AY:1:KBE:C | 2.82 | 0.43 |
| 2:AB:164:ASP:HB3 | 2:AB:167:HIS:HB3 | 2.01 | 0.43 |
| 3:AC:185:THR:CG2 | 3:AC:186:SER:N | 2.81 | 0.43 |
| 6:AF:98:GLU:HG3 | 6:AF:99:ALA:N | 2.34 | 0.43 |
| 10:AJ:17:LEU:HA | 10:AJ:20:GLN:HB2 | 1.99 | 0.43 |
| 23:AW:216:ASP:OD2 | 23:AW:216:ASP:N | 2.52 | 0.43 |
| 25:B0:19:ARG:CZ | 25:B0:22:VAL:HB | 2.48 | 0.43 |
| 26:B1:68:ALA:C | 26:B1:69:GLU:O | 2.56 | 0.43 |
| 34:BA:444:C:C4' | 38:BE:44:ARG:HD3 | 2.45 | 0.43 |
| 34:BA:475:C:C4 | 34:BA:481:G:O6 | 2.71 | 0.43 |
| 34:BA:547:A:N6 | 34:BA:549:G:H22 | 2.17 | 0.43 |
| 34:BA:784:G:H5' | 36:BC:225:ASN:ND2 | 2.32 | 0.43 |
| 34:BA:1409:U:O2' | 34:BA:1410:G:H5' | 2.18 | 0.43 |
| 34:BA:1793:C:H2' | 34:BA:1794:A:O4' | 2.19 | 0.43 |
| 34:BA:2423:U:O2' | 34:BA:2425:A:H2' | 2.19 | 0.43 |
| 34:BA:2676:C:OP1 | 45:BO:31:ARG:NH2 | 2.52 | 0.43 |
| 36:BC:107:LYS:HA | 36:BC:195:GLY:HA2 | 2.00 | 0.43 |
| 38:BE:105:LEU:O | 38:BE:109:LEU:HB2 | 2.19 | 0.43 |
| 41:BH:11:ILE:O | 41:BH:15:VAL:N | 2.41 | 0.43 |
| 44:BN:130:HIS:HD2 | 44:BN:132:HIS:N | 2.16 | 0.43 |
| 47:BQ:7:THR:HG21 | 47:BQ:92:TRP:HH2 | 1.83 | 0.43 |
| 47:BQ:35:ALA:HB3 | 47:BQ:99:GLY:H | 1.84 | 0.43 |
| 49:BS:66:GLY:H | 49:BS:70:ALA:HB3 | 1.81 | 0.43 |
| 50:BT:4:ILE:HG22 | 50:BT:5:LYS:H | 1.79 | 0.43 |
| 54:BX:7:LEU:O | 54:BX:7:LEU:HG | 2.17 | 0.43 |
| 55:BY:73:ASN:O | 55:BY:74:ALA:HB3 | 2.19 | 0.43 |
| 1:AA:163:C:H2' | 1:AA:164:G:O4' | 2.19 | 0.43 |
| 1:AA:327:A:O3' | 1:AA:328:C:C4' | 2.57 | 0.43 |
| 1:AA:892:A:O2' | 1:AA:1415:G:H4' | 2.18 | 0.43 |
| 1:AA:982:U:P | 14:AN:62:ARG:HH22 | 2.42 | 0.43 |
| 1:AA:992:U:C5' | 1:AA:993:G:O5' | 2.67 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:AB:72:LYS:C | 2:AB:74:ALA:N | 2.67 | 0.43 |
| 5:AE:110:MET:HG3 | 5:AE:139:THR:HG21 | 2.00 | 0.43 |
| 8:AH:10:LEU:HD11 | 8:AH:126:CYS:HB3 | 2.00 | 0.43 |
| 11:AK:79:LYS:O | 11:AK:104:PHE:HD1 | 2.02 | 0.43 |
| 12:AL:42:LYS:C | 12:AL:44:PRO:HD2 | 2.39 | 0.43 |
| 12:AL:74:GLN:O | 12:AL:75:GLU:C | 2.57 | 0.43 |
| 12:AL:106:VAL:CG2 | 12:AL:116:TYR:HB3 | 2.49 | 0.43 |
| 13:AM:12:LYS:HB2 | 13:AM:17:ALA:HB2 | 1.99 | 0.43 |
| 16:AP:56:ARG:O | 16:AP:59:HIS:HB3 | 2.19 | 0.43 |
| 16:AP:66:THR:O | 16:AP:67:ILE:HD12 | 2.18 | 0.43 |
| 17:AQ:14:ASP:HB2 | 17:AQ:54:ILE:HG22 | 2.00 | 0.43 |
| 21:AU:34:ARG:CZ | 21:AU:39:LYS:HZ3 | 2.32 | 0.43 |
| 23:AW:114:ASP:HB3 | 23:AW:117:LYS:HB2 | 2.01 | 0.43 |
| 23:AW:472:ARG:CG | 23:AW:504:ILE:H | 2.28 | 0.43 |
| 25:B0:41:GLY:O | 25:B0:42:THR:C | 2.56 | 0.43 |
| 34:BA:27:G:H1' | 34:BA:513:A:N6 | 2.34 | 0.43 |
| 34:BA:36:G:O2' | 34:BA:450:G:H2' | 2.19 | 0.43 |
| 34:BA:118:A:N3 | 34:BA:178:G:H1' | 2.33 | 0.43 |
| 34:BA:273:G:N2 | 34:BA:365:U:C2 | 2.86 | 0.43 |
| 34:BA:603:A:H4' | 34:BA:604:G:H5' | 2.01 | 0.43 |
| 34:BA:1139:G:OP1 | 44:BN:103:ILE:HD11 | 2.19 | 0.43 |
| 34:BA:1416:G:O2' | 34:BA:1417:C:O5' | 2.36 | 0.43 |
| 34:BA:1521:G:C6 | 34:BA:1522:A:C6 | 3.07 | 0.43 |
| 34:BA:1774:C:O5' | 34:BA:1774:C:H6 | 2.01 | 0.43 |
| 34:BA:2290:G:C5 | 34:BA:2291:U:C5 | 3.07 | 0.43 |
| 34:BA:2412:A:H8 | 34:BA:2412:A:O5' | 2.02 | 0.43 |
| 35:BB:10:G:H2' | 35:BB:11:C:H5' | 2.01 | 0.43 |
| 36:BC:69:ASN:O | 36:BC:70:LYS:C | 2.56 | 0.43 |
| 37:BD:90:PHE:O | 37:BD:94:GLN:HB2 | 2.17 | 0.43 |
| 37:BD:169:ARG:C | 37:BD:170:VAL:CG1 | 2.87 | 0.43 |
| 39:BF:78:ILE:O | 39:BF:78:ILE:HG13 | 2.19 | 0.43 |
| 41:BH:50:VAL:HG12 | 41:BH:50:VAL:O | 2.19 | 0.43 |
| 41:BH:162:LYS:CD | 43:BL:19:VAL:HG21 | 2.47 | 0.43 |
| 42:BI:3:LYS:HB3 | 42:BI:4:VAL:H | 1.66 | 0.43 |
| 44:BN:25:LEU:HD22 | 44:BN:25:LEU:C | 2.38 | 0.43 |
| 44:BN:123:LYS:N | 44:BN:123:LYS:CD | 2.72 | 0.43 |
| 47:BQ:7:THR:HG21 | 47:BQ:92:TRP:CH2 | 2.54 | 0.43 |
| 49:BS:111:ARG:C | 49:BS:113:ALA:H | 2.22 | 0.43 |
| 51:BU:75:TYR:O | 51:BU:78:PHE:HB3 | 2.19 | 0.43 |
| 54:BX:21:SER:HA | 54:BX:31:VAL:HG11 | 1.99 | 0.43 |
| 55:BY:30:SER:HB2 | 55:BY:32:LYS:HD3 | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 55:BY:52:ASN:C | 55:BY:54:PRO:CD | 2.87 | 0.43 |
| 55:BY:86:PHE:HB2 | 55:BY:92:VAL:CB | 2.49 | 0.43 |
| 1:AA:69:G:N3 | 1:AA:69:G:H2' | 2.34 | 0.43 |
| 1:AA:110:C:C4 | 1:AA:111:G:C5 | 3.07 | 0.43 |
| 1:AA:132:C:H2' | 1:AA:133:U:C6 | 2.54 | 0.43 |
| 1:AA:277:C:P | 17:AQ:44:HIS:HE1 | 2.42 | 0.43 |
| 1:AA:755:G:H2' | 1:AA:756:C:C6 | 2.53 | 0.43 |
| 1:AA:960:U:N3 | 1:AA:1225:A:N7 | 2.67 | 0.43 |
| 1:AA:1050:G:C6 | 1:AA:1051:C:C4 | 3.07 | 0.43 |
| 1:AA:1309:G:P | 13:AM:90:HIS:HE2 | 2.42 | 0.43 |
| 1:AA:1312:G:O2' | 1:AA:1313:U:H5' | 2.19 | 0.43 |
| 2:AB:20:ARG:HA | 2:AB:20:ARG:NE | 2.22 | 0.43 |
| 3:AC:35:ASP:O | 3:AC:37:LYS:N | 2.50 | 0.43 |
| 3:AC:167:TYR:C | 3:AC:167:TYR:CD2 | 2.92 | 0.43 |
| 3:AC:167:TYR:C | 3:AC:167:TYR:HD2 | 2.22 | 0.43 |
| 6:AF:6:ILE:CD1 | 6:AF:62:MET:HG2 | 2.42 | 0.43 |
| 6:AF:20:GLY:O | 6:AF:24:ARG:HD2 | 2.18 | 0.43 |
| 6:AF:38:ARG:HH21 | 6:AF:96:VAL:HG23 | 1.82 | 0.43 |
| 6:AF:49:TYR:CE1 | 18:AR:65:SER:HA | 2.54 | 0.43 |
| 7:AG:3:ARG:HG3 | 7:AG:4:ARG:N | 2.34 | 0.43 |
| 7:AG:122:GLU:HA | 7:AG:125:ASP:CB | 2.44 | 0.43 |
| 9:AI:56:MET:O | 9:AI:58:GLU:N | 2.50 | 0.43 |
| 10:AJ:92:LEU:O | 10:AJ:93:ALA:HB3 | 2.19 | 0.43 |
| 11:AK:62:ALA:CB | 11:AK:91:GLY:HA3 | 2.49 | 0.43 |
| 13:AM:67:ASP:O | 13:AM:71:GLU:HB2 | 2.18 | 0.43 |
| 16:AP:19:VAL:HG13 | 16:AP:37:GLY:C | 2.39 | 0.43 |
| 19:AS:50:VAL:O | 19:AS:57:VAL:HG22 | 2.19 | 0.43 |
| 23:AW:401:ILE:HD12 | 23:AW:416:LEU:HD11 | 2.00 | 0.43 |
| 34:BA:53:A:H61 | 34:BA:117:G:C2' | 2.32 | 0.43 |
| 34:BA:123:G:O3' | 34:BA:1376:C:H4' | 2.18 | 0.43 |
| 34:BA:183:C:O2' | 34:BA:432:A:N3 | 2.45 | 0.43 |
| 34:BA:538:A:N6 | 34:BA:555:G:H1' | 2.34 | 0.43 |
| 34:BA:704:G:O2' | 34:BA:705:A:P | 2.76 | 0.43 |
| 34:BA:1000:A:H62 | 34:BA:1154:G:H2' | 1.84 | 0.43 |
| 34:BA:1054:A:H4' | 41:BH:31:ARG:HA | 2.00 | 0.43 |
| 34:BA:1421:G:C2 | 34:BA:1422:G:C8 | 3.06 | 0.43 |
| 34:BA:1488:C:O5' | 34:BA:1488:C:H6 | 2.02 | 0.43 |
| 34:BA:1562:U:H2' | 34:BA:1563:U:O4' | 2.18 | 0.43 |
| 34:BA:1797:G:C6 | 34:BA:1798:U:C4 | 3.06 | 0.43 |
| 34:BA:1832:C:H2' | 34:BA:1833:C:O5' | 2.19 | 0.43 |
| 34:BA:2221:G:C6 | 34:BA:2222:C:C4 | 3.07 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 35:BB:24:G:C5 | 35:BB:56:G:C4 | 3.06 | 0.43 |
| 37:BD:34:VAL:HG23 | 37:BD:91:THR:HA | 2.01 | 0.43 |
| 37:BD:70:LYS:O | 37:BD:71:ALA:HB3 | 2.18 | 0.43 |
| 37:BD:110:THR:N | 37:BD:202:ILE:O | 2.50 | 0.43 |
| 37:BD:125:TRP:CG | 37:BD:160:LYS:HB3 | 2.54 | 0.43 |
| 40:BG:104:LEU:HD11 | 40:BG:147:LEU:HD22 | 2.01 | 0.43 |
| 42:BI:109:ALA:O | 42:BI:124:MET:HE1 | 2.17 | 0.43 |
| 43:BL:11:VAL:HG13 | 43:BM:29:LYS:HE3 | 2.00 | 0.43 |
| 45:BO:92:GLU:O | 45:BO:93:GLN:O | 2.37 | 0.43 |
| 46:BP:111:ILE:HA | 46:BP:128:THR:CG2 | 2.49 | 0.43 |
| 46:BP:118:THR:HA | 46:BP:119:PRO:HD3 | 1.88 | 0.43 |
| 48:BR:51:LEU:HB3 | 48:BR:79:LEU:HD11 | 2.00 | 0.43 |
| 49:BS:36:TYR:O | 49:BS:37:ALA:HB2 | 2.19 | 0.43 |
| 50:BT:4:ILE:O | 50:BT:5:LYS:CB | 2.66 | 0.43 |
| 55:BY:73:ASN:OD1 | 55:BY:95:PHE:CD2 | 2.71 | 0.43 |
| 55:BY:86:PHE:CG | 55:BY:87:GLU:N | 2.84 | 0.43 |
| 1:AA:441:A:H2' | 1:AA:441:A:N3 | 2.33 | 0.43 |
| 1:AA:977:A:OP1 | 14:AN:60:ARG:NH2 | 2.51 | 0.43 |
| 1:AA:1108:G:H2' | 1:AA:1109:C:H5' | 2.01 | 0.43 |
| 1:AA:1127:G:O2' | 1:AA:1128:C:H5' | 2.18 | 0.43 |
| 1:AA:1148:U:H5" | 9:AI:8:THR:HG23 | 2.00 | 0.43 |
| 2:AB:63:LYS:HA | 2:AB:224:ARG:NH1 | 2.34 | 0.43 |
| 2:AB:96:LEU:H | 2:AB:99:MET:CE | 2.32 | 0.43 |
| 2:AB:163:ILE:CG2 | 2:AB:164:ASP:N | 2.71 | 0.43 |
| 3:AC:89:VAL:O | 3:AC:93:ILE:HG12 | 2.18 | 0.43 |
| 5:AE:37:VAL:HG11 | 5:AE:113:VAL:HA | 2.00 | 0.43 |
| 5:AE:103:GLY:HA2 | 5:AE:121:ASN:HA | 2.00 | 0.43 |
| 7:AG:45:ALA:HB2 | 7:AG:116:ALA:HA | 2.00 | 0.43 |
| 9:AI:100:ALA:HB1 | 9:AI:102:PHE:CE2 | 2.53 | 0.43 |
| 10:AJ:49:PHE:CE2 | 14:AN:76:PHE:HE1 | 2.37 | 0.43 |
| 11:AK:31:VAL:O | 11:AK:43:TRP:HA | 2.18 | 0.43 |
| 19:AS:37:SER:HB2 | 19:AS:70:LEU:HD12 | 2.01 | 0.43 |
| 30:B5:33:LEU:HB3 | 30:B5:51:ALA:CB | 2.49 | 0.43 |
| 31:B6:34:ARG:CB | 31:B6:42:LEU:HD13 | 2.48 | 0.43 |
| 33:B8:25:VAL:HB | 33:B8:35:GLN:HE21 | 1.83 | 0.43 |
| 34:BA:54:G:H2' | 34:BA:55:G:O4' | 2.19 | 0.43 |
| 34:BA:311:A:C2 | 34:BA:328:U:O4 | 2.72 | 0.43 |
| 34:BA:704:G:C2' | 34:BA:726:G:H22 | 2.22 | 0.43 |
| 34:BA:1039:A:H2' | 34:BA:1040:A:O4' | 2.19 | 0.43 |
| 34:BA:1855:U:O5' | 34:BA:1855:U:H6 | 2.01 | 0.43 |
| 34:BA:1873:G:H2' | 34:BA:1874:C:C6 | 2.53 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:2376:A:N1 | 49:BS:92:PHE:HD2 | 2.16 | 0.43 |
| 34:BA:2478:A:C2' | 34:BA:2479:U:H5' | 2.48 | 0.43 |
| 35:BB:40:U:H1' | 35:BB:45:A:N6 | 2.34 | 0.43 |
| 36:BC:244:VAL:HG12 | 36:BC:250:GLN:HA | 1.99 | 0.43 |
| 41:BH:136:ILE:HA | 41:BH:139:LEU:CG | 2.49 | 0.43 |
| 42:BI:1:ALA:O | 42:BI:2:LYS:HD3 | 2.18 | 0.43 |
| 42:BI:85:ILE:O | 42:BI:85:ILE:HD12 | 2.19 | 0.43 |
| 43:BJ:27:GLU:HA | 43:BJ:29:LYS:NZ | 2.33 | 0.43 |
| 43:BL:8:ILE:O | 43:BL:12:ALA:HB3 | 2.19 | 0.43 |
| 47:BQ:34:LYS:HA | 47:BQ:101:VAL:HA | 2.00 | 0.43 |
| 48:BR:13:ASN:O | 48:BR:14:SER:C | 2.57 | 0.43 |
| 51:BU:83:LYS:O | 51:BU:87:VAL:O | 2.37 | 0.43 |
| 53:BW:83:LYS:H | 53:BW:83:LYS:HG2 | 1.64 | 0.43 |
| 1:AA:44:A:O2' | 1:AA:45:G:H5' | 2.19 | 0.43 |
| 1:AA:68:G:C5 | 1:AA:69:G:H1' | 2.53 | 0.43 |
| 1:AA:499:A:C2 | 1:AA:546:A:N3 | 2.87 | 0.43 |
| 1:AA:540:G:H2' | 1:AA:541:G:O4' | 2.18 | 0.43 |
| 1:AA:792:A:H4' | 1:AA:793:U:O5' | 2.18 | 0.43 |
| 1:AA:981:U:C6 | 1:AA:982:U:H2' | 2.54 | 0.43 |
| 1:AA:1058:G:H2' | 1:AA:1059:C:C6 | 2.54 | 0.43 |
| 1:AA:1203:C:H5' | 14:AN:66:THR:HB | 2.01 | 0.43 |
| 1:AA:1239:A:C6 | 1:AA:1298:U:C5 | 3.06 | 0.43 |
| 1:AA:1491:G:O2' | 24:AY:6:5OH:CR | 2.66 | 0.43 |
| 3:AC:10:ARG:HG2 | 3:AC:10:ARG:HH11 | 1.84 | 0.43 |
| 4:AD:61:ARG:NH1 | 4:AD:68:GLU:HG2 | 2.34 | 0.43 |
| 4:AD:77:GLU:OE1 | 4:AD:77:GLU:HA | 2.19 | 0.43 |
| 6:AF:5:GLU:OE1 | 18:AR:22:TYR:HE2 | 2.02 | 0.43 |
| 7:AG:119:LEU:HD23 | 7:AG:119:LEU:C | 2.38 | 0.43 |
| 9:AI:56:MET:HA | 9:AI:59:LYS:HB3 | 2.00 | 0.43 |
| 12:AL:23:LEU:CD1 | 12:AL:24:GLU:H | 2.32 | 0.43 |
| 13:AM:103:THR:O | 13:AM:104:ASN:C | 2.57 | 0.43 |
| 15:AO:2:LEU:O | 15:AO:3:SER:C | 2.57 | 0.43 |
| 15:AO:49:HIS:O | 15:AO:52:ARG:HB3 | 2.18 | 0.43 |
| 16:AP:4:ILE:CG2 | 16:AP:19:VAL:HG23 | 2.49 | 0.43 |
| 19:AS:45:GLY:H | 19:AS:61:VAL:HG23 | 1.82 | 0.43 |
| 23:AW:24:ALA:O | 23:AW:143:LYS:HE3 | 2.19 | 0.43 |
| 23:AW:71:THR:CG2 | 23:AW:72:THR:H | 2.31 | 0.43 |
| 29:B4:42:ILE:HD11 | 48:BR:98:LEU:HD13 | 2.00 | 0.43 |
| 33:B8:36:ARG:O | 33:B8:37:GLN:C | 2.57 | 0.43 |
| 34:BA:42:A:H61 | 34:BA:437:U:H3 | 1.65 | 0.43 |
| 34:BA:176:A:O2' | 34:BA:177:G:H5' | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:335:C:H2' | 34:BA:336:C:H6 | 1.83 | 0.43 |
| 34:BA:510:C:H2' | 34:BA:511:U:O4' | 2.19 | 0.43 |
| 34:BA:707:G:O2' | 34:BA:708:G:H5' | 2.19 | 0.43 |
| 34:BA:724:U:H2' | 34:BA:725:G:O4' | 2.19 | 0.43 |
| 34:BA:1079:C:N4 | 34:BA:1088:A:C2 | 2.86 | 0.43 |
| 34:BA:1339:G:N2 | 34:BA:1603:A:H1' | 2.34 | 0.43 |
| 34:BA:1464:G:H2' | 34:BA:1465:G:C8 | 2.54 | 0.43 |
| 34:BA:1788:C:C2' | 34:BA:1789:A:H5' | 2.49 | 0.43 |
| 34:BA:1790:C:H2' | 34:BA:1791:A:C5 | 2.54 | 0.43 |
| 34:BA:1906:G:H5" | 34:BA:1929:G:O2' | 2.19 | 0.43 |
| 34:BA:2155:U:C4 | 34:BA:2156:G:C6 | 3.06 | 0.43 |
| 34:BA:2517:C:C6 | 34:BA:2542:A:N7 | 2.87 | 0.43 |
| 34:BA:2555:U:C5 | 34:BA:2556:C:C2 | 3.07 | 0.43 |
| 34:BA:2638:G:O2' | 34:BA:2639:A:O5' | 2.37 | 0.43 |
| 34:BA:2874:C:H2' | 34:BA:2875:C:C6 | 2.53 | 0.43 |
| 35:BB:66:A:OP2 | 35:BB:108:A:N6 | 2.52 | 0.43 |
| 35:BB:86:G:H2' | 35:BB:87:U:H5" | 1.99 | 0.43 |
| 35:BB:87:U:OP2 | 35:BB:88:C:C5 | 2.65 | 0.43 |
| 36:BC:74:PRO:HA | 36:BC:115:ILE:O | 2.19 | 0.43 |
| 36:BC:89:ASN:HD22 | 36:BC:89:ASN:HA | 1.66 | 0.43 |
| 36:BC:115:ILE:HD11 | 36:BC:126:GLY:HA3 | 2.01 | 0.43 |
| 36:BC:160:TYR:CD1 | 36:BC:160:TYR:C | 2.91 | 0.43 |
| 37:BD:46:ARG:HG3 | 37:BD:84:LEU:HB2 | 2.01 | 0.43 |
| 39:BF:131:VAL:O | 39:BF:132:ARG:O | 2.36 | 0.43 |
| 40:BG:53:PRO:HD3 | 40:BG:61:TRP:CE3 | 2.52 | 0.43 |
| 41:BH:144:LYS:CD | 41:BH:148:ALA:HB2 | 2.47 | 0.43 |
| 43:BL:14:MET:O | 43:BL:18:ASP:HB2 | 2.19 | 0.43 |
| 44:BN:21:THR:CG2 | 44:BN:22:GLY:H | 2.26 | 0.43 |
| 44:BN:130:HIS:HD2 | 44:BN:132:HIS:H | 1.62 | 0.43 |
| 45:BO:1:MET:HE3 | 45:BO:32:TYR:CZ | 2.54 | 0.43 |
| 45:BO:54:LYS:HB3 | 45:BO:54:LYS:HZ3 | 1.82 | 0.43 |
| 45:BO:95:ILE:HD13 | 45:BO:95:ILE:HA | 1.81 | 0.43 |
| 46:BP:3:LEU:HD23 | 46:BP:3:LEU:HA | 1.75 | 0.43 |
| 48:BR:69:ARG:H | 48:BR:69:ARG:HG2 | 1.49 | 0.43 |
| 51:BU:91:ARG:NH1 | 52:BV:11:GLN:H | 2.15 | 0.43 |
| 55:BY:25:LYS:HB2 | 55:BY:34:ILE:O | 2.19 | 0.43 |
| 55:BY:82:VAL:CG1 | 55:BY:83:GLY:H | 2.15 | 0.43 |
| 1:AA:8:A:O4' | 5:AE:106:ALA:HA | 2.19 | 0.42 |
| 1:AA:275:G:O2' | 1:AA:276:G:H5' | 2.19 | 0.42 |
| 1:AA:336:A:H2' | 1:AA:337:G:H8 | 1.84 | 0.42 |
| 1:AA:414:A:N7 | 1:AA:431:A:C2 | 2.87 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:753:A:H4' | 1:AA:754:C:O5' | 2.18 | 0.42 |
| 1:AA:1241:G:H2' | 1:AA:1242:G:H8 | 1.84 | 0.42 |
| 1:AA:1317:C:H4' | 14:AN:48:GLN:NE2 | 2.33 | 0.42 |
| 1:AA:1324:A:C1' | 1:AA:1362:A:H4' | 2.48 | 0.42 |
| 1:AA:1426:G:O2' | 1:AA:1427:C:H5' | 2.19 | 0.42 |
| 1:AA:1467:C:H2' | 1:AA:1468:A:C8 | 2.54 | 0.42 |
| 2:AB:95:TRP:HZ3 | 2:AB:98:GLY:H | 1.67 | 0.42 |
| 2:AB:162:VAL:HG22 | 2:AB:184:ALA:HB2 | 2.00 | 0.42 |
| 2:AB:185:ILE:HA | 2:AB:199:ILE:O | 2.19 | 0.42 |
| 3:AC:104:GLU:HG2 | 3:AC:105:VAL:N | 2.32 | 0.42 |
| 5:AE:33:THR:HB | 5:AE:49:TYR:CZ | 2.54 | 0.42 |
| 5:AE:104:ILE:N | 5:AE:121:ASN:O | 2.53 | 0.42 |
| 7:AG:35:LYS:O | 7:AG:39:GLU:HG2 | 2.19 | 0.42 |
| 9:AI:21:LYS:HZ2 | 9:AI:23:GLY:CA | 2.28 | 0.42 |
| 14:AN:14:ALA:HB1 | 14:AN:18:LYS:CE | 2.48 | 0.42 |
| 16:AP:20:VAL:HG22 | 16:AP:32:PHE:HB2 | 2.01 | 0.42 |
| 23:AW:59:TRP:NE1 | 23:AW:69:SER:CA | 2.82 | 0.42 |
| 23:AW:96:SER:HB3 | 23:AW:99:THR:H | 1.84 | 0.42 |
| 23:AW:114:ASP:CG | 23:AW:143:LYS:HD2 | 2.40 | 0.42 |
| 23:AW:405:ASP:O | 23:AW:407:LEU:N | 2.52 | 0.42 |
| 23:AW:411:GLN:N | 23:AW:414:LYS:HB3 | 2.13 | 0.42 |
| 23:AW:428:PHE:HB3 | 23:AW:504:ILE:HD11 | 2.01 | 0.42 |
| 23:AW:490:GLU:HA | 23:AW:493:LEU:HB2 | 2.00 | 0.42 |
| 27:B2:12:GLU:O | 27:B2:15:ASN:HB2 | 2.18 | 0.42 |
| 30:B5:24:LYS:HE2 | 30:B5:51:ALA:O | 2.19 | 0.42 |
| 31:B6:26:ASN:O | 31:B6:30:VAL:HG23 | 2.19 | 0.42 |
| 32:B7:1:PRO:H3 | 34:BA:591:U:H1' | 1.84 | 0.42 |
| 34:BA:486:C:H4' | 53:BW:60:HIS:CD2 | 2.54 | 0.42 |
| 34:BA:749:A:N3 | 34:BA:1618:A:H2' | 2.34 | 0.42 |
| 34:BA:1475:G:O2' | 34:BA:1476:U:OP2 | 2.37 | 0.42 |
| 34:BA:1930:G:O2' | 34:BA:1931:U:C6 | 2.72 | 0.42 |
| 34:BA:1990:C:H2' | 34:BA:1991:U:C1' | 2.49 | 0.42 |
| 34:BA:2029:G:N1 | 34:BA:2033:A:OP2 | 2.38 | 0.42 |
| 34:BA:2030:A:N3 | 34:BA:2499:C:H5" | 2.34 | 0.42 |
| 34:BA:2287:A:C5 | 34:BA:2289:G:C8 | 3.06 | 0.42 |
| 34:BA:2298:A:C6 | 34:BA:2299:U:C2 | 3.07 | 0.42 |
| 34:BA:2375:G:N2 | 34:BA:2378:A:C8 | 2.87 | 0.42 |
| 34:BA:2667:C:H1' | 40:BG:108:PHE:HD2 | 1.84 | 0.42 |
| 34:BA:2740:A:C6 | 34:BA:2764:A:C8 | 3.07 | 0.42 |
| 36:BC:171:VAL:O | 36:BC:182:LYS:HA | 2.18 | 0.42 |
| 39:BF:21:TYR:CE2 | 39:BF:27:VAL:HA | 2.53 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:BQ:4:PRO:CG | 47:BQ:70:ASP:HA | 2.49 | 0.42 |
| 49:BS:67:ASN:C | 49:BS:69:ASP:N | 2.72 | 0.42 |
| 56:BZ:39:ALA:O | 56:BZ:40:ILE:HD13 | 2.18 | 0.42 |
| 56:BZ:60:VAL:HG11 | 56:BZ:71:LYS:HD2 | 2.01 | 0.42 |
| 1:AA:6:G:H3' | 1:AA:6:G:N3 | 2.34 | 0.42 |
| 1:AA:354:G:C2 | 1:AA:355:C:C6 | 3.07 | 0.42 |
| 1:AA:436:C:O2' | 1:AA:437:U:H5' | 2.19 | 0.42 |
| 1:AA:455:G:C2 | 1:AA:478:A:C2 | 3.07 | 0.42 |
| 1:AA:496:A:N3 | 1:AA:497:G:N7 | 2.67 | 0.42 |
| 1:AA:502:A:H2' | 1:AA:503:C:O4' | 2.20 | 0.42 |
| 1:AA:502:A:OP1 | 12:AL:114:SER:CB | 2.67 | 0.42 |
| 1:AA:629:A:H2' | 1:AA:630:A:O4' | 2.19 | 0.42 |
| 1:AA:1057:G:H8 | 1:AA:1057:G:O5' | 2.01 | 0.42 |
| 1:AA:1104:G:H2' | 1:AA:1105:A:O4' | 2.19 | 0.42 |
| 1:AA:1255:G:N2 | 1:AA:1283:U:O2 | 2.53 | 0.42 |
| 1:AA:1288:A:N6 | 1:AA:1289:A:N6 | 2.67 | 0.42 |
| 2:AB:68:PHE:H | 2:AB:90:PHE:HA | 1.83 | 0.42 |
| 2:AB:100:LEU:HA | 2:AB:100:LEU:HD13 | 1.75 | 0.42 |
| 4:AD:117:VAL:HA | 4:AD:122:ILE:HG13 | 2.00 | 0.42 |
| 6:AF:46:GLN:HE22 | 6:AF:55:HIS:HD2 | 1.67 | 0.42 |
| 6:AF:93:LYS:O | 6:AF:94:HIS:CB | 2.67 | 0.42 |
| 11:AK:93:GLU:OE2 | 11:AK:97:ARG:NH2 | 2.52 | 0.42 |
| 12:AL:30:ARG:HH11 | 23:AW:408:LYS:CG | 2.30 | 0.42 |
| 20:AT:38:ILE:HD13 | 20:AT:38:ILE:N | 2.33 | 0.42 |
| 21:AU:37:TYR:O | 21:AU:37:TYR:CD2 | 2.60 | 0.42 |
| 23:AW:425:VAL:HB | 23:AW:426:GLN:H | 1.67 | 0.42 |
| 29:B4:16:ARG:NE | 34:BA:1266:G:OP2 | 2.49 | 0.42 |
| 30:B5:6:GLU:OE1 | 30:B5:52:LYS:HG3 | 2.19 | 0.42 |
| 34:BA:119:A:O2' | 34:BA:120:U:OP2 | 2.28 | 0.42 |
| 34:BA:771:G:C4 | 34:BA:772:C:C5 | 3.07 | 0.42 |
| 34:BA:1071:G:OP2 | 34:BA:1071:G:H8 | 2.01 | 0.42 |
| 34:BA:1152:C:C2' | 34:BA:1153:C:H5' | 2.49 | 0.42 |
| 34:BA:1223:G:OP1 | 52:BV:68:ARG:NH1 | 2.52 | 0.42 |
| 34:BA:1585:C:C2' | 34:BA:1586:A:H5' | 2.50 | 0.42 |
| 34:BA:1741:C:H2' | 34:BA:1742:U:H6 | 1.83 | 0.42 |
| 34:BA:1999:C:H5" | 34:BA:2723:C:O2' | 2.19 | 0.42 |
| 34:BA:2221:G:H2' | 34:BA:2222:C:H6 | 1.83 | 0.42 |
| 34:BA:2293:G:H2' | 34:BA:2294:G:O4' | 2.19 | 0.42 |
| 34:BA:2443:C:O2' | 34:BA:2444:G:H5' | 2.20 | 0.42 |
| 34:BA:2478:A:H2' | 34:BA:2479:U:O4' | 2.18 | 0.42 |
| 36:BC:76:VAL:O | 36:BC:77:VAL:O | 2.36 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 37:BD:89:GLU:HA | 37:BD:94:GLN:OE1 | 2.19 | 0.42 |
| 38:BE:72:SER:C | 38:BE:74:LYS:H | 2.20 | 0.42 |
| 41:BH:51:TYR:CE1 | 41:BH:52:MET:HG2 | 2.54 | 0.42 |
| 46:BP:79:LEU:O | 46:BP:82:LEU:HD22 | 2.19 | 0.42 |
| 47:BQ:63:ILE:O | 47:BQ:63:ILE:HG22 | 2.19 | 0.42 |
| 49:BS:78:VAL:HG23 | 49:BS:79:ALA:N | 2.35 | 0.42 |
| 49:BS:103:VAL:HG23 | 49:BS:104:GLN:H | 1.84 | 0.42 |
| 52:BV:82:HIS:CG | 52:BV:82:HIS:O | 2.71 | 0.42 |
| 56:BZ:53:LYS:O | 56:BZ:55:GLU:N | 2.51 | 0.42 |
| 1:AA:64:G:H5" | 1:AA:65:A:P | 2.58 | 0.42 |
| 1:AA:110:C:N4 | 1:AA:111:G:C6 | 2.87 | 0.42 |
| 1:AA:658:C:H1' | 15:AO:21:THR:HG21 | 2.02 | 0.42 |
| 1:AA:679:C:O2 | 1:AA:712:A:C2 | 2.72 | 0.42 |
| 1:AA:1118:U:H5" | 9:AI:105:ARG:HG3 | 2.01 | 0.42 |
| 1:AA:1157:A:H5' | 1:AA:1158:C:C6 | 2.54 | 0.42 |
| 1:AA:1309:G:C6 | 1:AA:1329:A:C6 | 3.08 | 0.42 |
| 3:AC:163:ARG:NH1 | 3:AC:165:GLU:OE2 | 2.51 | 0.42 |
| 6:AF:90:MET:HB3 | 6:AF:91:ARG:H | 1.46 | 0.42 |
| 7:AG:65:LEU:HG | 7:AG:69:ARG:HE | 1.83 | 0.42 |
| 16:AP:46:LYS:HE2 | 16:AP:47:GLU:N | 2.18 | 0.42 |
| 17:AQ:11:VAL:HB | 17:AQ:55:GLY:H | 1.85 | 0.42 |
| 17:AQ:12:VAL:O | 17:AQ:13:SER:HB2 | 2.19 | 0.42 |
| 19:AS:48:ILE:HD12 | 19:AS:59:VAL:O | 2.18 | 0.42 |
| 20:AT:60:GLN:NE2 | 20:AT:60:GLN:HA | 2.35 | 0.42 |
| 20:AT:66:ILE:HG13 | 20:AT:70:LYS:HE3 | 2.00 | 0.42 |
| 24:AY:5:UAL:C | 24:AY:6:5OH:HS | 2.48 | 0.42 |
| 25:B0:35:ILE:O | 25:B0:36:ILE:C | 2.57 | 0.42 |
| 25:B0:72:GLY:HA3 | 35:BB:12:C:C5 | 2.55 | 0.42 |
| 29:B4:9:ARG:HB3 | 29:B4:9:ARG:CZ | 2.49 | 0.42 |
| 29:B4:54:ILE:HG22 | 29:B4:56:LYS:OXT | 2.19 | 0.42 |
| 30:B5:6:GLU:O | 30:B5:23:THR:HB | 2.20 | 0.42 |
| 34:BA:279:A:H61 | 34:BA:361:G:H1' | 1.84 | 0.42 |
| 34:BA:579:G:H2' | 34:BA:580:U:C6 | 2.54 | 0.42 |
| 34:BA:689:A:O2' | 34:BA:690:G:H5' | 2.19 | 0.42 |
| 34:BA:794:A:H2' | 34:BA:795:C:C6 | 2.55 | 0.42 |
| 34:BA:1131:G:O6 | 34:BA:2024:G:O2' | 2.31 | 0.42 |
| 34:BA:1230:A:C2 | 34:BA:1231:U:C2 | 3.07 | 0.42 |
| 34:BA:1517:G:N2 | 34:BA:1732:C:C4 | 2.87 | 0.42 |
| 34:BA:1577:C:H2' | 34:BA:1578:U:O4' | 2.19 | 0.42 |
| 34:BA:1739:A:H2' | 34:BA:1740:G:O4' | 2.19 | 0.42 |
| 34:BA:1919:A:O5' | 34:BA:1919:A:C8 | 2.72 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1967:C:H2' | 34:BA:1968:G:H5' | 2.00 | 0.42 |
| 34:BA:2423:U:H2' | 34:BA:2424:C:OP2 | 2.17 | 0.42 |
| 34:BA:2489:U:O2 | 34:BA:2491:U:O4 | 2.37 | 0.42 |
| 34:BA:2635:A:C2 | 34:BA:2636:C:H1' | 2.54 | 0.42 |
| 34:BA:2748:A:H1' | 40:BG:66:THR:HG22 | 2.01 | 0.42 |
| 36:BC:12:ARG:CG | 36:BC:12:ARG:NH1 | 2.82 | 0.42 |
| 36:BC:216:ARG:HH11 | 36:BC:216:ARG:CG | 2.32 | 0.42 |
| 38:BE:153:LEU:O | 38:BE:153:LEU:HG | 2.19 | 0.42 |
| 41:BH:9:GLN:HG3 | 41:BH:10:ALA:N | 2.34 | 0.42 |
| 41:BH:23:LEU:CD1 | 41:BH:92:ALA:HB1 | 2.41 | 0.42 |
| 42:BI:39:LYS:HB2 | 42:BI:39:LYS:NZ | 2.34 | 0.42 |
| 42:BI:86:LYS:H | 42:BI:86:LYS:HD2 | 1.84 | 0.42 |
| 42:BI:92:PRO:HB2 | 42:BI:93:ASN:H | 1.68 | 0.42 |
| 46:BP:93:ASN:ND2 | 46:BP:94:THR:H | 2.13 | 0.42 |
| 46:BP:96:LYS:HA | 46:BP:101:ILE:HB | 2.01 | 0.42 |
| 48:BR:59:SER:O | 48:BR:60:VAL:C | 2.56 | 0.42 |
| 51:BU:112:ALA:O | 51:BU:116:LEU:HB2 | 2.19 | 0.42 |
| 54:BX:2:ILE:HB | 54:BX:3:ARG:HD3 | 2.00 | 0.42 |
| 1:AA:148:G:C2 | 1:AA:149:A:C8 | 3.08 | 0.42 |
| 1:AA:270:A:C5 | 1:AA:271:C:C4 | 3.07 | 0.42 |
| 1:AA:646:G:C6 | 1:AA:647:C:N3 | 2.87 | 0.42 |
| 1:AA:690:G:H2' | 1:AA:691:G:O4' | 2.20 | 0.42 |
| 1:AA:832:G:C2 | 1:AA:855:U:C2 | 3.07 | 0.42 |
| 1:AA:853:C:H2' | 1:AA:854:U:O4' | 2.20 | 0.42 |
| 1:AA:1251:A:H1' | 1:AA:1370:G:O4' | 2.18 | 0.42 |
| 1:AA:1350:A:C5 | 1:AA:1351:U:C4 | 3.07 | 0.42 |
| 3:AC:39:ARG:NH2 | 3:AC:56:ILE:HG12 | 2.34 | 0.42 |
| 3:AC:179:ALA:HB1 | 3:AC:202:PHE:CE1 | 2.53 | 0.42 |
| 4:AD:128:VAL:HG21 | 4:AD:145:ARG:HH21 | 1.83 | 0.42 |
| 5:AE:152:VAL:C | 5:AE:154:ALA:N | 2.72 | 0.42 |
| 7:AG:128:GLU:O | 7:AG:129:ASN:C | 2.57 | 0.42 |
| 8:AH:52:GLY:HA3 | 8:AH:57:GLU:H | 1.83 | 0.42 |
| 10:AJ:5:ARG:HA | 10:AJ:5:ARG:NH1 | 2.34 | 0.42 |
| 11:AK:26:PHE:CZ | 11:AK:88:PRO:HG2 | 2.53 | 0.42 |
| 12:AL:56:LEU:HD23 | 12:AL:56:LEU:HA | 1.78 | 0.42 |
| 14:AN:89:ARG:O | 14:AN:91:GLU:HG2 | 2.19 | 0.42 |
| 18:AR:49:LYS:O | 18:AR:52:ARG:HB2 | 2.19 | 0.42 |
| 20:AT:50:PHE:HA | 20:AT:53:MET:HG2 | 2.01 | 0.42 |
| 23:AW:419:LEU:HG | 23:AW:452:ARG:HH12 | 1.84 | 0.42 |
| 27:B2:25:GLN:O | 27:B2:26:PHE:C | 2.57 | 0.42 |
| 28:B3:29:ARG:N | 28:B3:33:HIS:HD2 | 2.16 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 33:B8:17:VAL:HG12 | 33:B8:18:LYS:N | 2.34 | 0.42 |
| 34:BA:372:G:H1' | 34:BA:373:U:H5 | 1.84 | 0.42 |
| 34:BA:864:G:O2' | 34:BA:914:G:O6 | 2.37 | 0.42 |
| 34:BA:919:U:C2' | 34:BA:920:A:H5' | 2.49 | 0.42 |
| 34:BA:1087:G:C2' | 34:BA:1089:A:H1' | 2.50 | 0.42 |
| 34:BA:1211:C:H3' | 34:BA:1212:G:H5' | 2.01 | 0.42 |
| 34:BA:1334:G:H2' | 34:BA:1335:C:C5' | 2.48 | 0.42 |
| 34:BA:2150:C:O2' | 34:BA:2151:U:C6 | 2.72 | 0.42 |
| 34:BA:2681:C:C2 | 34:BA:2724:U:O4 | 2.73 | 0.42 |
| 34:BA:2728:U:H2' | 34:BA:2729:G:C8 | 2.54 | 0.42 |
| 34:BA:2825:G:H2' | 34:BA:2826:A:H5' | 2.01 | 0.42 |
| 35:BB:7:G:H5' | 49:BS:29:HIS:CE1 | 2.54 | 0.42 |
| 35:BB:115:A:H2' | 35:BB:116:G:H8 | 1.82 | 0.42 |
| 38:BE:5:LEU:CD2 | 38:BE:120:VAL:HG22 | 2.49 | 0.42 |
| 38:BE:52:VAL:HG11 | 38:BE:81:GLY:HA3 | 2.02 | 0.42 |
| 38:BE:155:GLU:O | 38:BE:158:PHE:HB3 | 2.19 | 0.42 |
| 40:BG:70:LEU:O | 40:BG:74:MET:HG3 | 2.19 | 0.42 |
| 40:BG:84:LYS:O | 40:BG:85:LYS:HB2 | 2.19 | 0.42 |
| 40:BG:116:LEU:CD1 | 40:BG:143:VAL:HG11 | 2.49 | 0.42 |
| 42:BI:39:LYS:HB2 | 42:BI:39:LYS:HZ3 | 1.85 | 0.42 |
| 43:BM:10:ALA:O | 43:BM:11:VAL:C | 2.56 | 0.42 |
| 43:BM:14:MET:HG2 | 43:BM:17:MET:HG2 | 2.02 | 0.42 |
| 44:BN:81:ILE:HG12 | 44:BN:82:GLY:N | 2.34 | 0.42 |
| 46:BP:14:LYS:HE2 | 46:BP:14:LYS:HB2 | 1.78 | 0.42 |
| 50:BT:31:VAL:HG11 | 50:BT:40:GLN:HB2 | 2.01 | 0.42 |
| 51:BU:111:LYS:HE2 | 52:BV:48:LYS:HD3 | 2.02 | 0.42 |
| 52:BV:39:LEU:CA | 52:BV:49:ILE:HG21 | 2.48 | 0.42 |
| 53:BW:33:LEU:HD22 | 53:BW:51:LEU:HD21 | 2.00 | 0.42 |
| 54:BX:28:ASN:HA | 54:BX:91:GLN:OE1 | 2.20 | 0.42 |
| 1:AA:200:G:C2 | 1:AA:218:U:O2 | 2.72 | 0.42 |
| 1:AA:624:C:H2' | 1:AA:625:U:O4' | 2.19 | 0.42 |
| 1:AA:639:G:C2' | 1:AA:640:A:H5' | 2.50 | 0.42 |
| 1:AA:762:U:C2 | 1:AA:763:G:C8 | 3.07 | 0.42 |
| 3:AC:107:LYS:HB2 | 3:AC:107:LYS:NZ | 2.35 | 0.42 |
| 5:AE:97:PRO:HB2 | 5:AE:98:ALA:H | 1.47 | 0.42 |
| 5:AE:155:LYS:HB2 | 8:AH:70:VAL:HG13 | 2.01 | 0.42 |
| 7:AG:64:ALA:O | 7:AG:126:ALA:HB1 | 2.19 | 0.42 |
| 8:AH:36:ALA:O | 8:AH:37:ASN:C | 2.58 | 0.42 |
| 9:AI:119:LYS:HG3 | 9:AI:122:ARG:HB3 | 2.00 | 0.42 |
| 13:AM:65:GLU:HB3 | 13:AM:66:GLY:H | 1.57 | 0.42 |
| 23:AW:320:VAL:HG12 | 23:AW:361:PRO:HA | 2.01 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 26:B1:38:TRP:HA | 26:B1:38:TRP:HE3 | 1.84 | 0.42 |
| 28:B3:38:GLU:OE1 | 34:BA:928:A:H4' | 2.20 | 0.42 |
| 31:B6:39:ARG:NH1 | 34:BA:459:U:OP2 | 2.53 | 0.42 |
| 32:B7:44:ARG:N | 32:B7:45:PRO:CD | 2.82 | 0.42 |
| 34:BA:183:C:O5' | 34:BA:183:C:H6 | 2.02 | 0.42 |
| 34:BA:799:G:C6 | 34:BA:800:A:C6 | 3.07 | 0.42 |
| 34:BA:817:C:O2' | 34:BA:839:U:H5" | 2.20 | 0.42 |
| 34:BA:991:C:C5 | 34:BA:1185:G:C6 | 3.08 | 0.42 |
| 34:BA:1354:A:H2' | 34:BA:1355:G:O4' | 2.20 | 0.42 |
| 34:BA:1914:C:O2 | 34:BA:1914:C:C2' | 2.66 | 0.42 |
| 34:BA:2070:A:H2' | 34:BA:2071:A:O4' | 2.19 | 0.42 |
| 34:BA:2260:C:C2 | 34:BA:2281:A:C2 | 3.08 | 0.42 |
| 34:BA:2619:C:H5" | 37:BD:157:LYS:HA | 2.01 | 0.42 |
| 34:BA:2888:C:H2' | 34:BA:2889:C:C6 | 2.54 | 0.42 |
| 36:BC:141:HIS:HB3 | 36:BC:142:ASN:H | 1.35 | 0.42 |
| 37:BD:16:THR:HG1 | 37:BD:18:ASP:CG | 2.20 | 0.42 |
| 40:BG:39:ALA:CB | 40:BG:57:TYR:CD2 | 3.02 | 0.42 |
| 41:BH:60:LEU:C | 41:BH:62:ARG:N | 2.70 | 0.42 |
| 41:BH:67:THR:HB | 41:BH:71:CYS:HB2 | 2.01 | 0.42 |
| 41:BH:103:ASN:CG | 41:BH:110:ALA:HB2 | 2.39 | 0.42 |
| 42:BI:7:TYR:CB | 42:BI:58:ILE:H | 2.29 | 0.42 |
| 45:BO:2:ILE:O | 45:BO:3:GLN:CG | 2.63 | 0.42 |
| 49:BS:28:VAL:HG23 | 49:BS:36:TYR:O | 2.20 | 0.42 |
| 55:BY:52:ASN:C | 55:BY:54:PRO:HD2 | 2.40 | 0.42 |
| 1:AA:24:U:C2' | 1:AA:25:C:H5' | 2.50 | 0.42 |
| 1:AA:130:A:C4 | 1:AA:264:C:H1' | 2.55 | 0.42 |
| 1:AA:192:A:C6 | 1:AA:193:C:C4 | 3.07 | 0.42 |
| 1:AA:429:U:OP2 | 4:AD:31:CYS:HB2 | 2.20 | 0.42 |
| 1:AA:857:C:H2' | 1:AA:858:G:O4' | 2.20 | 0.42 |
| 1:AA:960:U:C2' | 1:AA:1222:G:O2' | 2.68 | 0.42 |
| 1:AA:979:C:C4 | 1:AA:1318:A:N6 | 2.82 | 0.42 |
| 1:AA:1007:U:H3' | 1:AA:1008:U:H5" | 2.00 | 0.42 |
| 1:AA:1190:G:HO2' | 1:AA:1191:A:P | 2.42 | 0.42 |
| 1:AA:1250:A:H2' | 1:AA:1251:A:C8 | 2.54 | 0.42 |
| 4:AD:176:LYS:HG2 | 4:AD:178:GLU:CG | 2.50 | 0.42 |
| 9:AI:41:GLU:C | 9:AI:43:ALA:N | 2.71 | 0.42 |
| 11:AK:22:ILE:HD11 | 11:AK:85:VAL:CA | 2.48 | 0.42 |
| 11:AK:24:ALA:HB1 | 11:AK:88:PRO:O | 2.18 | 0.42 |
| 11:AK:71:ASP:O | 11:AK:72:ALA:HB3 | 2.20 | 0.42 |
| 11:AK:115:ILE:N | 11:AK:115:ILE:HD12 | 2.35 | 0.42 |
| 12:AL:20:VAL:HG12 | 12:AL:94:TYR:CE1 | 2.55 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 12:AL:21:PRO:O | 12:AL:23:LEU:N | 2.53 | 0.42 |
| 14:AN:32:ASP:O | 14:AN:33:VAL:C | 2.58 | 0.42 |
| 16:AP:68:SER:HB2 | 16:AP:71:VAL:HB | 2.01 | 0.42 |
| 17:AQ:21:VAL:HG21 | 17:AQ:42:LYS:HZ3 | 1.85 | 0.42 |
| 20:AT:5:SER:O | 20:AT:7:LYS:N | 2.52 | 0.42 |
| 23:AW:193:TYR:HA | 23:AW:263:PHE:CE1 | 2.53 | 0.42 |
| 25:B0:30:VAL:HG21 | 34:BA:2352:A:N1 | 2.35 | 0.42 |
| 25:B0:49:ASN:CB | 25:B0:81:ILE:HG12 | 2.50 | 0.42 |
| 26:B1:28:PHE:HB3 | 34:BA:396:G:H1' | 2.01 | 0.42 |
| 28:B3:12:ALA:HB2 | 28:B3:53:MET:HE1 | 2.00 | 0.42 |
| 34:BA:137:U:H3' | 34:BA:140:C:H6 | 1.85 | 0.42 |
| 34:BA:408:G:N2 | 34:BA:420:C:H1' | 2.34 | 0.42 |
| 34:BA:653:U:H2' | 34:BA:654:A:OP1 | 2.20 | 0.42 |
| 34:BA:879:G:C2 | 34:BA:880:G:N7 | 2.88 | 0.42 |
| 34:BA:1045:C:C5' | 34:BA:1047:G:O4' | 2.67 | 0.42 |
| 34:BA:1414:C:C5 | 34:BA:1415:U:C5 | 3.08 | 0.42 |
| 34:BA:1477:A:H2' | 34:BA:1478:G:H5' | 2.01 | 0.42 |
| 34:BA:1538:G:N2 | 34:BA:1539:U:C2 | 2.88 | 0.42 |
| 34:BA:1619:G:H8 | 34:BA:1619:G:O5' | 2.03 | 0.42 |
| 34:BA:1654:A:O2' | 34:BA:1655:A:H5' | 2.20 | 0.42 |
| 34:BA:1726:C:H2' | 34:BA:1727:C:O4' | 2.19 | 0.42 |
| 34:BA:1774:C:O2 | 36:BC:10:PRO:HB2 | 2.19 | 0.42 |
| 34:BA:1818:U:H5" | 36:BC:156:SER:HB2 | 2.01 | 0.42 |
| 34:BA:2060:A:H1' | 34:BA:2502:G:O4' | 2.18 | 0.42 |
| 34:BA:2221:G:C5 | 34:BA:2222:C:C5 | 3.07 | 0.42 |
| 34:BA:2444:G:P | 38:BE:63:LYS:HD2 | 2.59 | 0.42 |
| 34:BA:2452:C:N4 | 34:BA:2453:A:N6 | 2.67 | 0.42 |
| 34:BA:2601:C:H2' | 34:BA:2603:G:C8 | 2.55 | 0.42 |
| 34:BA:2601:C:C2 | 34:BA:2603:G:N7 | 2.88 | 0.42 |
| 34:BA:2783:U:H2' | 34:BA:2784:U:H6 | 1.83 | 0.42 |
| 34:BA:2867:G:O2' | 34:BA:2868:A:H8 | 2.03 | 0.42 |
| 37:BD:13:ARG:HD2 | 50:BT:55:HIS:ND1 | 2.34 | 0.42 |
| 39:BF:146:ASP:O | 39:BF:147:ARG:HB2 | 2.19 | 0.42 |
| 43:BJ:11:VAL:C | 43:BJ:13:ALA:N | 2.73 | 0.42 |
| 43:BK:4:LYS:O | 43:BK:8:ILE:HG12 | 2.19 | 0.42 |
| 46:BP:109:LYS:CG | 46:BP:126:ARG:HB3 | 2.32 | 0.42 |
| 50:BT:47:ILE:HD12 | 50:BT:97:TYR:HD2 | 1.85 | 0.42 |
| 52:BV:64:VAL:O | 52:BV:64:VAL:HG12 | 2.19 | 0.42 |
| 53:BW:36:LEU:HD12 | 53:BW:36:LEU:HA | 1.70 | 0.42 |
| 1:AA:70:U:C2 | 1:AA:94:G:C5 | 3.08 | 0.42 |
| 1:AA:687:A:H4' | 1:AA:688:G:O5' | 2.15 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1069:C:O2' | 1:AA:1192:C:H1' | 2.20 | 0.42 |
| 1:AA:1221:G:O2' | 1:AA:1222:G:H5' | 2.19 | 0.42 |
| 1:AA:1225:A:H4' | 19:AS:77:ARG:NE | 2.35 | 0.42 |
| 1:AA:1280:A:O4' | 10:AJ:43:PRO:HG3 | 2.20 | 0.42 |
| 1:AA:1371:G:OP1 | 9:AI:12:LYS:HG2 | 2.20 | 0.42 |
| 2:AB:86:CYS:HB2 | 2:AB:88:GLN:HG3 | 2.02 | 0.42 |
| 2:AB:90:PHE:N | 2:AB:90:PHE:CD2 | 2.86 | 0.42 |
| 4:AD:160:LEU:HD13 | 4:AD:160:LEU:N | 2.30 | 0.42 |
| 5:AE:147:ASN:O | 5:AE:149:PRO:HD3 | 2.19 | 0.42 |
| 6:AF:71:ILE:O | 6:AF:74:LEU:HB3 | 2.19 | 0.42 |
| 11:AK:107:THR:HG22 | 11:AK:108:ASN:CG | 2.40 | 0.42 |
| 23:AW:264:GLY:HA2 | 23:AW:267:HIS:CE1 | 2.54 | 0.42 |
| 24:AY:4:SER:C | 24:AY:5:UAL:H6 | 2.08 | 0.42 |
| 25:B0:14:ASP:HB3 | 25:B0:15:SER:H | 1.53 | 0.42 |
| 25:B0:23:LYS:O | 25:B0:66:VAL:HB | 2.20 | 0.42 |
| 28:B3:15:ARG:HD2 | 28:B3:15:ARG:H | 1.81 | 0.42 |
| 29:B4:29:VAL:HA | 29:B4:35:GLU:O | 2.20 | 0.42 |
| 34:BA:9:G:N2 | 34:BA:2629:U:C2 | 2.87 | 0.42 |
| 34:BA:201:C:O2 | 34:BA:251:A:C2 | 2.73 | 0.42 |
| 34:BA:278:A:H2' | 34:BA:278:A:N3 | 2.34 | 0.42 |
| 34:BA:345:A:C5' | 34:BA:346:A:OP1 | 2.68 | 0.42 |
| 34:BA:479:A:N3 | 34:BA:481:G:H5" | 2.34 | 0.42 |
| 34:BA:633:A:N3 | 34:BA:2403:C:H4' | 2.35 | 0.42 |
| 34:BA:1086:A:H3' | 34:BA:1086:A:N3 | 2.34 | 0.42 |
| 34:BA:1392:A:C6 | 34:BA:1393:A:C6 | 3.08 | 0.42 |
| 34:BA:1401:G:C6 | 34:BA:1402:U:C4 | 3.08 | 0.42 |
| 34:BA:1499:C:O2' | 34:BA:1500:G:H5' | 2.20 | 0.42 |
| 34:BA:1586:A:N7 | 34:BA:1587:G:N7 | 2.68 | 0.42 |
| 34:BA:1741:C:H2' | 34:BA:1742:U:O4' | 2.20 | 0.42 |
| 34:BA:2058:A:H8 | 34:BA:2058:A:O5' | 2.02 | 0.42 |
| 34:BA:2211:A:OP2 | 34:BA:2211:A:C4' | 2.68 | 0.42 |
| 34:BA:2680:U:OP1 | 37:BD:114:LYS:HG3 | 2.19 | 0.42 |
| 34:BA:2793:C:H2' | 34:BA:2794:C:O4' | 2.20 | 0.42 |
| 37:BD:64:GLU:O | 37:BD:68:PHE:HD1 | 2.02 | 0.42 |
| 38:BE:24:ASN:ND2 | 38:BE:26:ALA:HB3 | 2.34 | 0.42 |
| 39:BF:93:GLU:HG3 | 39:BF:97:GLU:OE1 | 2.20 | 0.42 |
| 39:BF:155:ILE:HD12 | 39:BF:155:ILE:N | 2.34 | 0.42 |
| 41:BH:60:LEU:O | 41:BH:64:VAL:HB | 2.20 | 0.42 |
| 41:BH:69:PHE:O | 41:BH:70:GLU:HB2 | 2.20 | 0.42 |
| 43:BJ:13:ALA:HB1 | 43:BJ:17:MET:CB | 2.50 | 0.42 |
| 47:BQ:17:ASN:O | 47:BQ:38:ARG:NH1 | 2.53 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 48:BR:8:ARG:HB2 | 48:BR:43:GLU:CD | 2.40 | 0.42 |
| 48:BR:97:ILE:HD12 | 48:BR:97:ILE:N | 2.35 | 0.42 |
| 49:BS:72:ALA:HA | 49:BS:106:LEU:HA | 2.01 | 0.42 |
| 52:BV:41:ILE:CD1 | 52:BV:54:VAL:HG21 | 2.47 | 0.42 |
| 56:BZ:30:ILE:O | 56:BZ:37:PRO:HA | 2.20 | 0.42 |
| 1:AA:181:A:H2' | 1:AA:194:C:N4 | 2.35 | 0.42 |
| 1:AA:205:A:H3' | 1:AA:206:C:H6 | 1.85 | 0.42 |
| 1:AA:411:A:C2' | 1:AA:412:A:O5' | 2.68 | 0.42 |
| 1:AA:512:U:H2' | 1:AA:513:C:H6 | 1.85 | 0.42 |
| 1:AA:747:A:C6 | 1:AA:748:G:C5 | 3.07 | 0.42 |
| 1:AA:986:U:H2' | 1:AA:987:G:C8 | 2.54 | 0.42 |
| 1:AA:1032:G:C2 | 1:AA:1033:G:H1' | 2.55 | 0.42 |
| 1:AA:1125:U:C4 | 1:AA:1127:G:C4 | 3.08 | 0.42 |
| 1:AA:1206:G:C6 | 1:AA:1207:G:C5 | 3.07 | 0.42 |
| 1:AA:1301:U:H5" | 1:AA:1302:C:OP2 | 2.18 | 0.42 |
| 1:AA:1346:A:C5 | 7:AG:9:ARG:NH1 | 2.88 | 0.42 |
| 1:AA:1480:A:H2' | 1:AA:1481:U:H6 | 1.83 | 0.42 |
| 2:AB:40:ILE:HG21 | 2:AB:201:GLY:N | 2.33 | 0.42 |
| 2:AB:59:ILE:HG13 | 2:AB:60:ALA:N | 2.35 | 0.42 |
| 3:AC:116:ALA:HB2 | 3:AC:199:VAL:HG12 | 2.01 | 0.42 |
| 4:AD:141:VAL:HG12 | 4:AD:180:THR:OG1 | 2.20 | 0.42 |
| 4:AD:166:LYS:HA | 4:AD:167:PRO:HD3 | 1.88 | 0.42 |
| 5:AE:80:LEU:N | 5:AE:80:LEU:HD22 | 2.34 | 0.42 |
| 7:AG:69:ARG:HD2 | 7:AG:96:ASN:HA | 2.02 | 0.42 |
| 8:AH:54:THR:C | 8:AH:56:PRO:HD3 | 2.40 | 0.42 |
| 9:AI:21:LYS:HB3 | 9:AI:21:LYS:HE3 | 1.62 | 0.42 |
| 10:AJ:73:LEU:HD22 | 10:AJ:73:LEU:HA | 1.88 | 0.42 |
| 12:AL:89:LEU:O | 12:AL:92:VAL:HB | 2.19 | 0.42 |
| 17:AQ:14:ASP:O | 17:AQ:16:MET:HG2 | 2.19 | 0.42 |
| 23:AW:314:ARG:HB2 | 23:AW:369:ASN:HB3 | 2.02 | 0.42 |
| 27:B2:28:LEU:HA | 27:B2:28:LEU:HD23 | 1.75 | 0.42 |
| 29:B4:1:ALA:HB1 | 34:BA:2615:U:O4 | 2.19 | 0.42 |
| 30:B5:27:ARG:O | 30:B5:30:PRO:HD3 | 2.20 | 0.42 |
| 30:B5:28:THR:O | 30:B5:29:LYS:HG2 | 2.20 | 0.42 |
| 33:B8:4:ARG:H | 33:B8:4:ARG:HG2 | 1.49 | 0.42 |
| 34:BA:246:C:H2' | 34:BA:247:G:C5' | 2.45 | 0.42 |
| 34:BA:304:U:H2' | 34:BA:305:C:C6 | 2.54 | 0.42 |
| 34:BA:674:G:H4' | 38:BE:69:ARG:HB3 | 2.02 | 0.42 |
| 34:BA:704:G:C2' | 34:BA:726:G:N2 | 2.82 | 0.42 |
| 34:BA:1383:A:C2 | 34:BA:1405:U:O2 | 2.72 | 0.42 |
| 34:BA:1450:G:C2 | 34:BA:1462:C:C2 | 3.08 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:1509:A:P | 34:BA:1509:A:O4' | 2.78 | 0.42 |
| 34:BA:1576:U:N3 | 34:BA:1577:C:C5 | 2.88 | 0.42 |
| 34:BA:1801:A:OP2 | 36:BC:149:LYS:NZ | 2.46 | 0.42 |
| 34:BA:1841:U:O2 | 36:BC:242:HIS:HE1 | 2.03 | 0.42 |
| 34:BA:1952:A:N3 | 34:BA:2560:A:O2' | 2.47 | 0.42 |
| 34:BA:1957:C:H5' | 34:BA:1984:G:O2' | 2.20 | 0.42 |
| 34:BA:2086:U:C2 | 34:BA:2234:G:C6 | 3.08 | 0.42 |
| 34:BA:2734:A:C2' | 34:BA:2735:G:H5' | 2.50 | 0.42 |
| 34:BA:2798:U:C5' | 34:BA:2799:A:OP1 | 2.61 | 0.42 |
| 36:BC:76:VAL:O | 36:BC:77:VAL:C | 2.57 | 0.42 |
| 36:BC:175:LEU:HD12 | 36:BC:175:LEU:HA | 1.78 | 0.42 |
| 36:BC:239:PHE:HE1 | 36:BC:241:LYS:O | 2.02 | 0.42 |
| 37:BD:26:VAL:HG22 | 37:BD:188:LEU:CD2 | 2.50 | 0.42 |
| 37:BD:92:VAL:O | 37:BD:92:VAL:HG12 | 2.20 | 0.42 |
| 37:BD:114:LYS:HZ2 | 37:BD:116:LYS:HE2 | 1.82 | 0.42 |
| 38:BE:24:ASN:HD21 | 38:BE:26:ALA:HB3 | 1.84 | 0.42 |
| 40:BG:61:TRP:O | 40:BG:65:GLY:N | 2.42 | 0.42 |
| 41:BH:150:LYS:HG2 | 41:BH:154:THR:OG1 | 2.20 | 0.42 |
| 42:BI:23:VAL:HG23 | 42:BI:24:GLY:N | 2.34 | 0.42 |
| 43:BK:7:ILE:HG22 | 43:BK:11:VAL:CG2 | 2.49 | 0.42 |
| 44:BN:9:GLU:O | 44:BN:9:GLU:HG3 | 2.20 | 0.42 |
| 46:BP:81:ASP:O | 46:BP:83:ALA:N | 2.50 | 0.42 |
| 46:BP:110:VAL:HB | 46:BP:127:VAL:HG23 | 2.02 | 0.42 |
| 53:BW:63:GLY:O | 53:BW:64:ALA:CB | 2.67 | 0.42 |
| 53:BW:73:LYS:HB2 | 53:BW:106:VAL:HB | 2.02 | 0.42 |
| 54:BX:24:MET:HG3 | 54:BX:29:THR:CG2 | 2.50 | 0.42 |
| 54:BX:63:VAL:O | 54:BX:79:ASP:HB3 | 2.20 | 0.42 |
| 1:AA:632:U:H5" | 1:AA:633:G:H8 | 1.84 | 0.42 |
| 1:AA:752:G:H8 | 1:AA:752:G:O5' | 2.03 | 0.42 |
| 1:AA:815:A:O2' | 1:AA:1527:U:C1' | 2.68 | 0.42 |
| 1:AA:878:A:H2' | 1:AA:879:C:C6 | 2.55 | 0.42 |
| 1:AA:949:A:C2 | 1:AA:950:U:H1' | 2.55 | 0.42 |
| 1:AA:1317:C:O2' | 14:AN:48:GLN:HG3 | 2.20 | 0.42 |
| 2:AB:95:TRP:CE3 | 2:AB:96:LEU:O | 2.73 | 0.42 |
| 4:AD:54:LEU:HD23 | 4:AD:55:ARG:HA | 2.01 | 0.42 |
| 4:AD:57:LYS:CB | 4:AD:199:ILE:HG12 | 2.50 | 0.42 |
| 4:AD:61:ARG:HG2 | 4:AD:71:PHE:HD2 | 1.82 | 0.42 |
| 4:AD:159:GLU:HB3 | 4:AD:160:LEU:HD13 | 2.02 | 0.42 |
| 8:AH:12:ARG:HH11 | 8:AH:26:MET:HB2 | 1.84 | 0.42 |
| 8:AH:41:GLU:HG3 | 8:AH:41:GLU:O | 2.20 | 0.42 |
| 8:AH:82:LEU:HD22 | 8:AH:84:ILE:CD1 | 2.50 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 10:AJ:26:VAL:O | 10:AJ:30:LYS:HG2 | 2.20 | 0.42 |
| 10:AJ:61:ALA:O | 10:AJ:62:ARG:HB2 | 2.19 | 0.42 |
| 19:AS:69:LYS:HB3 | 19:AS:70:LEU:H | 1.66 | 0.42 |
| 23:AW:22:PRO:HG3 | 23:AW:91:GLY:C | 2.40 | 0.42 |
| 25:B0:71:LYS:HB3 | 25:B0:73:PRO:HD2 | 2.02 | 0.42 |
| 29:B4:32:THR:CB | 29:B4:50:GLY:HA2 | 2.50 | 0.42 |
| 30:B5:47:ILE:H | 30:B5:47:ILE:HD12 | 1.85 | 0.42 |
| 34:BA:269:C:H2' | 34:BA:270:A:C8 | 2.55 | 0.42 |
| 34:BA:528:A:P | 44:BN:116:ARG:HH21 | 2.43 | 0.42 |
| 34:BA:569:U:C4 | 34:BA:570:G:C6 | 3.07 | 0.42 |
| 34:BA:995:C:H6 | 34:BA:995:C:C5' | 2.18 | 0.42 |
| 34:BA:1016:G:C2 | 34:BA:1147:A:C2 | 3.08 | 0.42 |
| 34:BA:1079:C:N4 | 34:BA:1088:A:H2 | 2.18 | 0.42 |
| 34:BA:1079:C:H42 | 34:BA:1088:A:H2 | 1.68 | 0.42 |
| 34:BA:1087:G:C6 | 34:BA:1089:A:C2 | 3.08 | 0.42 |
| 34:BA:1141:U:OP2 | 44:BN:65:THR:HG21 | 2.19 | 0.42 |
| 34:BA:2313:C:H2' | 34:BA:2314:A:C8 | 2.55 | 0.42 |
| 34:BA:2561:U:O2' | 45:BO:23:LYS:HD2 | 2.19 | 0.42 |
| 36:BC:23:LEU:CD1 | 36:BC:82:TYR:N | 2.80 | 0.42 |
| 40:BG:36:LEU:C | 40:BG:37:ASN:OD1 | 2.58 | 0.42 |
| 42:BI:116:MET:SD | 42:BI:124:MET:HB2 | 2.60 | 0.42 |
| 43:BL:11:VAL:HG13 | 43:BM:29:LYS:CE | 2.50 | 0.42 |
| 43:BL:11:VAL:HG13 | 43:BM:29:LYS:NZ | 2.35 | 0.42 |
| 44:BN:93:ILE:HD13 | 44:BN:93:ILE:HA | 1.84 | 0.42 |
| 52:BV:10:LYS:N | 52:BV:10:LYS:CD | 2.82 | 0.42 |
| 1:AA:29:U:H5' | 1:AA:296:U:OP1 | 2.20 | 0.42 |
| 1:AA:168:G:O2' | 1:AA:169:C:H5' | 2.20 | 0.42 |
| 1:AA:405:U:O4 | 4:AD:1:ALA:N | 2.53 | 0.42 |
| 1:AA:537:G:O2' | 1:AA:538:G:H5' | 2.20 | 0.42 |
| 1:AA:556:C:H2' | 1:AA:557:G:H5' | 2.02 | 0.42 |
| 1:AA:660:C:C2 | 1:AA:746:A:H2 | 2.38 | 0.42 |
| 1:AA:769:G:C2' | 1:AA:770:C:H5' | 2.50 | 0.42 |
| 1:AA:858:G:O6 | 1:AA:869:G:C8 | 2.73 | 0.42 |
| 1:AA:978:A:C8 | 1:AA:1319:A:C2 | 3.07 | 0.42 |
| 1:AA:989:U:H2' | 1:AA:990:C:H6 | 1.85 | 0.42 |
| 1:AA:1143:G:H2' | 1:AA:1144:G:C8 | 2.55 | 0.42 |
| 1:AA:1308:U:O3' | 13:AM:90:HIS:CE1 | 2.72 | 0.42 |
| 1:AA:1318:A:O2' | 19:AS:36:ARG:CD | 2.68 | 0.42 |
| 5:AE:140:ILE:C | 5:AE:142:GLY:N | 2.73 | 0.42 |
| 6:AF:7:VAL:O | 6:AF:7:VAL:HG22 | 2.20 | 0.42 |
| 8:AH:71:VAL:O | 8:AH:71:VAL:HG12 | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 9:AI:12:LYS:C | 9:AI:14:SER:H | 2.24 | 0.42 |
| 9:AI:103:VAL:HG23 | 9:AI:104:THR:N | 2.34 | 0.42 |
| 12:AL:43:LYS:NZ | 12:AL:44:PRO:HD3 | 2.35 | 0.42 |
| 14:AN:33:VAL:O | 14:AN:33:VAL:HG12 | 2.20 | 0.42 |
| 15:AO:70:LYS:HB2 | 15:AO:77:TYR:CG | 2.55 | 0.42 |
| 20:AT:2:ASN:O | 20:AT:4:LYS:N | 2.53 | 0.42 |
| 23:AW:101:ARG:NH1 | 23:AW:392:ASN:OD1 | 2.53 | 0.42 |
| 27:B2:21:LEU:O | 27:B2:22:LEU:C | 2.58 | 0.42 |
| 33:B8:30:GLU:HA | 33:B8:31:PRO:HD3 | 1.79 | 0.42 |
| 34:BA:96:C:O2' | 34:BA:97:C:H5' | 2.20 | 0.42 |
| 34:BA:340:A:H2' | 34:BA:341:C:C5' | 2.50 | 0.42 |
| 34:BA:458:G:HO2' | 34:BA:459:U:H6 | 1.66 | 0.42 |
| 34:BA:832:U:O2' | 34:BA:833:A:H5' | 2.20 | 0.42 |
| 34:BA:881:G:H1 | 34:BA:895:U:H3 | 1.67 | 0.42 |
| 34:BA:920:A:C6 | 34:BA:921:C:C4 | 3.08 | 0.42 |
| 34:BA:936:A:H2' | 34:BA:937:C:H6 | 1.83 | 0.42 |
| 34:BA:1628:G:C5 | 34:BA:1629:U:C5 | 3.08 | 0.42 |
| 34:BA:2187:U:C4 | 34:BA:2188:U:O4 | 2.73 | 0.42 |
| 34:BA:2204:G:O5' | 36:BC:149:LYS:HE3 | 2.19 | 0.42 |
| 34:BA:2224:G:H4' | 34:BA:2226:C:C2 | 2.55 | 0.42 |
| 34:BA:2291:U:H5" | 34:BA:2380:C:O2' | 2.19 | 0.42 |
| 34:BA:2331:G:O2' | 34:BA:2336:A:N1 | 2.53 | 0.42 |
| 36:BC:77:VAL:HA | 36:BC:93:VAL:HA | 2.01 | 0.42 |
| 38:BE:13:THR:O | 38:BE:13:THR:HG22 | 2.19 | 0.42 |
| 38:BE:101:TYR:CE2 | 38:BE:105:LEU:HD11 | 2.54 | 0.42 |
| 39:BF:9:ASP:O | 39:BF:10:GLU:CB | 2.67 | 0.42 |
| 39:BF:32:LYS:HD2 | 39:BF:89:THR:CG2 | 2.50 | 0.42 |
| 39:BF:169:LEU:HD23 | 39:BF:174:PHE:CZ | 2.55 | 0.42 |
| 40:BG:37:ASN:HB3 | 40:BG:40:VAL:HG13 | 2.01 | 0.42 |
| 43:BL:3:THR:HB | 43:BM:21:GLU:CG | 2.50 | 0.42 |
| 43:BM:2:ILE:HD13 | 43:BM:3:THR:H | 1.85 | 0.42 |
| 45:BO:8:LEU:N | 45:BO:8:LEU:HD23 | 2.35 | 0.42 |
| 47:BQ:36:VAL:H | 47:BQ:99:GLY:H | 1.68 | 0.42 |
| 47:BQ:66:ARG:HB2 | 47:BQ:101:VAL:O | 2.20 | 0.42 |
| 47:BQ:70:ASP:OD1 | 47:BQ:70:ASP:C | 2.58 | 0.42 |
| 48:BR:36:THR:OG1 | 48:BR:37:THR:N | 2.53 | 0.42 |
| 48:BR:69:ARG:C | 48:BR:71:ARG:H | 2.23 | 0.42 |
| 49:BS:108:ASP:O | 49:BS:112:GLU:HB2 | 2.19 | 0.42 |
| 50:BT:30:TRP:CZ3 | 50:BT:39:LEU:HD11 | 2.55 | 0.42 |
| 52:BV:41:ILE:HG21 | 52:BV:103:ALA:HB2 | 2.02 | 0.42 |
| 52:BV:62:GLU:O | 52:BV:64:VAL:HG23 | 2.20 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 54:BX:11:LEU:HD11 | 54:BX:47:VAL:HG22 | 2.02 | 0.42 |
| 54:BX:25:GLU:C | 54:BX:27:SER:H | 2.23 | 0.42 |
| 1:AA:143:A:H2' | 1:AA:143:A:N3 | 2.33 | 0.41 |
| 1:AA:275:G:C2 | 1:AA:276:G:C4 | 3.08 | 0.41 |
| 1:AA:1202:U:C5 | 10:AJ:55:PRO:HB3 | 2.54 | 0.41 |
| 1:AA:1307:U:OP1 | 13:AM:99:GLN:HG2 | 2.20 | 0.41 |
| 1:AA:1316:G:N2 | 1:AA:1319:A:C8 | 2.88 | 0.41 |
| 1:AA:1333:A:C8 | 1:AA:1334:G:N7 | 2.88 | 0.41 |
| 1:AA:1458:G:O3' | 20:AT:22:SER:CB | 2.67 | 0.41 |
| 5:AE:11:GLN:HG3 | 5:AE:116:VAL:CB | 2.47 | 0.41 |
| 10:AJ:42:LEU:HB2 | 10:AJ:71:LEU:HB3 | 2.02 | 0.41 |
| 13:AM:9:PRO:O | 13:AM:10:ASP:HB2 | 2.20 | 0.41 |
| 13:AM:77:LYS:HA | 13:AM:80:MET:CE | 2.49 | 0.41 |
| 19:AS:48:ILE:HD12 | 19:AS:48:ILE:O | 2.20 | 0.41 |
| 23:AW:61:GLU:HB2 | 23:AW:64:LYS:HG3 | 2.02 | 0.41 |
| 23:AW:285:ASP:OD1 | 23:AW:285:ASP:N | 2.53 | 0.41 |
| 23:AW:401:ILE:HA | 23:AW:462:VAL:O | 2.20 | 0.41 |
| 27:B2:9:LYS:HZ1 | 27:B2:9:LYS:HA | 1.85 | 0.41 |
| 34:BA:89:A:C2 | 34:BA:90:U:C2 | 3.08 | 0.41 |
| 34:BA:341:C:C2' | 34:BA:342:A:H5' | 2.50 | 0.41 |
| 34:BA:1063:G:N2 | 34:BA:1076:C:O2 | 2.53 | 0.41 |
| 34:BA:1505:A:H2' | 34:BA:1506:U:O4' | 2.20 | 0.41 |
| 34:BA:1592:C:H2' | 34:BA:1593:A:C8 | 2.55 | 0.41 |
| 34:BA:1820:U:H3 | 36:BC:197:ALA:HA | 1.85 | 0.41 |
| 34:BA:1894:C:C2 | 34:BA:1895:C:C5 | 3.08 | 0.41 |
| 38:BE:79:ARG:CG | 38:BE:80:SER:H | 2.05 | 0.41 |
| 39:BF:108:PRO:C | 39:BF:110:ILE:H | 2.23 | 0.41 |
| 40:BG:39:ALA:O | 40:BG:54:ARG:HB3 | 2.20 | 0.41 |
| 40:BG:162:ARG:CZ | 40:BG:168:VAL:HG11 | 2.50 | 0.41 |
| 42:BI:27:LEU:HD11 | 42:BI:34:ILE:HA | 2.02 | 0.41 |
| 42:BI:107:GLU:HA | 42:BI:110:GLN:HE21 | 1.85 | 0.41 |
| 43:BJ:29:LYS:HB2 | 43:BJ:30:PHE:CD1 | 2.55 | 0.41 |
| 44:BN:114:LEU:HA | 44:BN:114:LEU:HD23 | 1.66 | 0.41 |
| 47:BQ:33:LEU:HD22 | 47:BQ:128:THR:HB | 2.02 | 0.41 |
| 47:BQ:64:TRP:HH2 | 47:BQ:106:ASP:HB2 | 1.83 | 0.41 |
| 50:BT:96:LEU:C | 50:BT:98:TYR:N | 2.73 | 0.41 |
| 51:BU:80:ASN:O | 51:BU:83:LYS:HB3 | 2.19 | 0.41 |
| 53:BW:45:VAL:CG2 | 53:BW:46:LEU:N | 2.83 | 0.41 |
| 54:BX:85:VAL:O | 54:BX:86:THR:HG23 | 2.20 | 0.41 |
| 1:AA:256:U:C2' | 1:AA:257:G:H5' | 2.50 | 0.41 |
| 1:AA:332:G:OP2 | 20:AT:4:LYS:CB | 2.68 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:374:A:C4 | 1:AA:375:U:C5 | 3.08 | 0.41 |
| 1:AA:464:U:C6 | 1:AA:466:A:OP2 | 2.73 | 0.41 |
| 1:AA:635:A:H2' | 1:AA:636:U:C6 | 2.55 | 0.41 |
| 1:AA:737:C:H2' | 1:AA:738:C:C6 | 2.54 | 0.41 |
| 1:AA:1058:G:N2 | 10:AJ:55:PRO:HG3 | 2.35 | 0.41 |
| 1:AA:1079:G:N2 | 1:AA:1080:A:C2 | 2.88 | 0.41 |
| 1:AA:1119:C:OP1 | 9:AI:84:ARG:NH2 | 2.53 | 0.41 |
| 1:AA:1434:A:C6 | 1:AA:1435:G:C5 | 3.08 | 0.41 |
| 2:AB:88:GLN:HE21 | 2:AB:88:GLN:H | 1.68 | 0.41 |
| 2:AB:136:ARG:CG | 2:AB:136:ARG:NH1 | 2.80 | 0.41 |
| 4:AD:194:ILE:O | 4:AD:194:ILE:HG13 | 2.20 | 0.41 |
| 6:AF:44:ARG:HG3 | 6:AF:58:HIS:ND1 | 2.35 | 0.41 |
| 8:AH:64:TYR:CE2 | 8:AH:69:ALA:HB2 | 2.56 | 0.41 |
| 9:AI:21:LYS:HD2 | 9:AI:21:LYS:C | 2.40 | 0.41 |
| 9:AI:66:VAL:HG22 | 9:AI:67:LYS:N | 2.35 | 0.41 |
| 10:AJ:7:ARG:HD3 | 10:AJ:75:ASP:OD1 | 2.20 | 0.41 |
| 10:AJ:37:ARG:HB2 | 10:AJ:75:ASP:HB3 | 2.02 | 0.41 |
| 11:AK:39:ASN:O | 11:AK:41:LEU:HD23 | 2.20 | 0.41 |
| 15:AO:52:ARG:O | 15:AO:56:LEU:HG | 2.19 | 0.41 |
| 20:AT:68:LYS:HB2 | 20:AT:68:LYS:HZ3 | 1.81 | 0.41 |
| 27:B2:56:LEU:HA | 27:B2:59:GLU:HG2 | 2.03 | 0.41 |
| 31:B6:9:VAL:HG12 | 34:BA:1309:G:OP1 | 2.20 | 0.41 |
| 34:BA:136:G:H1 | 34:BA:143:C:H42 | 1.68 | 0.41 |
| 34:BA:171:U:H2' | 34:BA:172:A:H8 | 1.85 | 0.41 |
| 34:BA:555:G:C2' | 34:BA:556:A:OP2 | 2.68 | 0.41 |
| 34:BA:629:G:H1' | 34:BA:639:U:H1' | 2.02 | 0.41 |
| 34:BA:778:G:C5 | 34:BA:779:U:C4 | 3.08 | 0.41 |
| 34:BA:882:G:N2 | 34:BA:895:U:O2' | 2.53 | 0.41 |
| 34:BA:1056:G:OP1 | 41:BH:34:THR:OG1 | 2.31 | 0.41 |
| 34:BA:1132:U:H3' | 34:BA:1133:A:H5" | 2.02 | 0.41 |
| 34:BA:1205:A:H5" | 34:BA:1206:G:C8 | 2.55 | 0.41 |
| 34:BA:1229:C:H2' | 34:BA:1230:A:H8 | 1.85 | 0.41 |
| 34:BA:1904:G:H1' | 34:BA:1927:A:N1 | 2.34 | 0.41 |
| 34:BA:1935:G:H1 | 34:BA:1962:C:C2' | 2.31 | 0.41 |
| 34:BA:2151:U:N3 | 34:BA:2152:G:C5 | 2.88 | 0.41 |
| 34:BA:2839:G:OP1 | 48:BR:46:ARG:HD2 | 2.20 | 0.41 |
| 36:BC:29:PHE:CD2 | 36:BC:31:PRO:HG2 | 2.54 | 0.41 |
| 37:BD:24:VAL:HA | 37:BD:191:GLY:N | 2.23 | 0.41 |
| 37:BD:133:THR:HG23 | 37:BD:134:HIS:CD2 | 2.55 | 0.41 |
| 38:BE:79:ARG:CG | 38:BE:80:SER:N | 2.73 | 0.41 |
| 39:BF:89:THR:C | 39:BF:90:LEU:HD22 | 2.40 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:BG:6:ALA:CB | 40:BG:68:ARG:NH1 | 2.83 | 0.41 |
| 41:BH:25:ALA:CA | 41:BH:85:SER:HG | 2.34 | 0.41 |
| 41:BH:138:ARG:O | 41:BH:142:THR:HG23 | 2.20 | 0.41 |
| 44:BN:25:LEU:HB2 | 44:BN:62:VAL:CG2 | 2.50 | 0.41 |
| 44:BN:45:THR:HG23 | 44:BN:50:THR:HG21 | 1.98 | 0.41 |
| 45:BO:4:GLU:OE2 | 45:BO:23:LYS:HE2 | 2.20 | 0.41 |
| 45:BO:77:ILE:CD1 | 45:BO:105:ARG:NH1 | 2.83 | 0.41 |
| 46:BP:108:ALA:HB3 | 46:BP:125:LEU:HD22 | 2.01 | 0.41 |
| 48:BR:8:ARG:HB2 | 48:BR:43:GLU:OE1 | 2.20 | 0.41 |
| 48:BR:49:GLU:N | 48:BR:50:PRO:CD | 2.83 | 0.41 |
| 50:BT:57:ALA:CA | 50:BT:75:THR:HG22 | 2.49 | 0.41 |
| 51:BU:79:ILE:HA | 51:BU:79:ILE:HD13 | 1.80 | 0.41 |
| 52:BV:5:PHE:CE2 | 52:BV:35:PHE:CD2 | 3.08 | 0.41 |
| 53:BW:28:LYS:O | 53:BW:29:VAL:C | 2.59 | 0.41 |
| 53:BW:29:VAL:HG22 | 53:BW:51:LEU:HD11 | 2.01 | 0.41 |
| 1:AA:82:G:N2 | 1:AA:84:U:C4 | 2.89 | 0.41 |
| 1:AA:197:A:N3 | 1:AA:198:G:H1' | 2.36 | 0.41 |
| 1:AA:212:G:H2' | 1:AA:213:G:H8 | 1.84 | 0.41 |
| 1:AA:263:A:P | 20:AT:73:ARG:HH11 | 2.43 | 0.41 |
| 1:AA:429:U:H1' | 1:AA:430:A:H5" | 2.02 | 0.41 |
| 1:AA:518:C:C6 | 1:AA:529:G:H2' | 2.55 | 0.41 |
| 1:AA:595:A:H61 | 1:AA:641:U:H2' | 1.85 | 0.41 |
| 1:AA:963:G:C2' | 1:AA:964:A:O5' | 2.68 | 0.41 |
| 1:AA:1085:U:C1' | 1:AA:1094:G:C6 | 3.02 | 0.41 |
| 1:AA:1085:U:C6 | 1:AA:1094:G:N1 | 2.88 | 0.41 |
| 1:AA:1210:C:O4' | 1:AA:1214:C:N4 | 2.52 | 0.41 |
| 1:AA:1277:C:O2' | 1:AA:1279:G:H1' | 2.20 | 0.41 |
| 1:AA:1394:A:N1 | 1:AA:1500:A:O2' | 2.49 | 0.41 |
| 3:AC:6:PRO:HB3 | 3:AC:174:LEU:CD1 | 2.50 | 0.41 |
| 3:AC:122:GLN:HB3 | 3:AC:127:VAL:CG2 | 2.50 | 0.41 |
| 3:AC:159:ALA:HB1 | 3:AC:161:ILE:CD1 | 2.36 | 0.41 |
| 4:AD:57:LYS:HB3 | 4:AD:199:ILE:CG1 | 2.50 | 0.41 |
| 4:AD:166:LYS:HB3 | 4:AD:166:LYS:HZ3 | 1.84 | 0.41 |
| 4:AD:185:PRO:HB2 | 4:AD:190:LEU:CD2 | 2.50 | 0.41 |
| 7:AG:65:LEU:HG | 7:AG:69:ARG:CZ | 2.50 | 0.41 |
| 7:AG:98:LEU:CD2 | 7:AG:101:ARG:HH12 | 2.32 | 0.41 |
| 7:AG:99:ALA:O | 7:AG:103:ILE:HG13 | 2.20 | 0.41 |
| 8:AH:124:ILE:HD13 | 8:AH:124:ILE:N | 2.35 | 0.41 |
| 9:AI:27:ILE:HG12 | 9:AI:62:LEU:HG | 2.01 | 0.41 |
| 9:AI:56:MET:HB3 | 9:AI:60:LEU:HD21 | 2.02 | 0.41 |
| 14:AN:26:LEU:HA | 14:AN:30:ILE:HD13 | 2.02 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 15:AO:86:LEU:C | 15:AO:88:ARG:N | 2.73 | 0.41 |
| 20:AT:26:MET:O | 20:AT:27:MET:C | 2.57 | 0.41 |
| 22:AV:15:A:N3 | 22:AV:15:A:C2' | 2.77 | 0.41 |
| 25:B0:28:GLU:N | 25:B0:31:LEU:HD11 | 2.27 | 0.41 |
| 25:B0:37:VAL:CG1 | 34:BA:2386:A:O2' | 2.69 | 0.41 |
| 27:B2:45:GLN:O | 27:B2:46:VAL:CB | 2.68 | 0.41 |
| 27:B2:45:GLN:O | 27:B2:46:VAL:HB | 2.20 | 0.41 |
| 32:B7:12:ARG:NH1 | 34:BA:250:G:P | 2.94 | 0.41 |
| 34:BA:14:A:H5" | 34:BA:15:G:OP2 | 2.20 | 0.41 |
| 34:BA:197:A:C6 | 34:BA:198:C:C2 | 3.08 | 0.41 |
| 34:BA:293:U:C5 | 34:BA:345:A:N6 | 2.88 | 0.41 |
| 34:BA:426:C:C4 | 34:BA:427:U:C5 | 3.07 | 0.41 |
| 34:BA:633:A:H1' | 34:BA:2403:C:O3' | 2.19 | 0.41 |
| 34:BA:826:U:H2' | 34:BA:828:U:O4' | 2.20 | 0.41 |
| 34:BA:864:G:C6 | 34:BA:865:C:C4 | 3.07 | 0.41 |
| 34:BA:876:C:N4 | 34:BA:900:A:N6 | 2.65 | 0.41 |
| 34:BA:900:A:C2 | 34:BA:902:C:C4 | 3.07 | 0.41 |
| 34:BA:1059:G:C6 | 34:BA:1080:A:C6 | 3.08 | 0.41 |
| 34:BA:1288:G:C5 | 34:BA:1327:A:C2 | 3.08 | 0.41 |
| 34:BA:1302:A:H5' | 34:BA:1608:A:OP2 | 2.20 | 0.41 |
| 34:BA:1378:A:C4 | 34:BA:1380:G:C8 | 3.08 | 0.41 |
| 34:BA:1693:U:H3' | 34:BA:1694:C:C6 | 2.54 | 0.41 |
| 34:BA:2328:A:C5 | 34:BA:2329:U:C4 | 3.07 | 0.41 |
| 34:BA:2567:G:H2' | 34:BA:2568:U:H6 | 1.81 | 0.41 |
| 34:BA:2822:G:P | 37:BD:115:GLY:HA3 | 2.61 | 0.41 |
| 35:BB:94:A:C5 | 35:BB:95:U:C4 | 3.09 | 0.41 |
| 36:BC:33:LEU:O | 36:BC:34:GLU:CB | 2.68 | 0.41 |
| 36:BC:250:GLN:NE2 | 36:BC:250:GLN:H | 2.18 | 0.41 |
| 39:BF:71:LYS:HD3 | 39:BF:71:LYS:HA | 1.90 | 0.41 |
| 39:BF:110:ILE:O | 39:BF:110:ILE:HG22 | 2.19 | 0.41 |
| 41:BH:8:LYS:O | 41:BH:11:ILE:HG12 | 2.19 | 0.41 |
| 41:BH:28:ALA:CB | 41:BH:111:ALA:HB2 | 2.51 | 0.41 |
| 41:BH:132:TYR:OH | 43:BK:19:VAL:HG21 | 2.20 | 0.41 |
| 42:BI:133:ARG:HG2 | 42:BI:133:ARG:O | 2.19 | 0.41 |
| 44:BN:64:VAL:HG13 | 44:BN:68:LYS:HB2 | 2.01 | 0.41 |
| 45:BO:1:MET:HE3 | 45:BO:32:TYR:CE2 | 2.55 | 0.41 |
| 45:BO:64:ARG:NH1 | 45:BO:101:GLY:C | 2.73 | 0.41 |
| 45:BO:70:ARG:HD3 | 45:BO:76:VAL:HG22 | 2.02 | 0.41 |
| 48:BR:116:VAL:O | 48:BR:116:VAL:HG22 | 2.19 | 0.41 |
| 49:BS:103:VAL:O | 49:BS:105:ALA:O | 2.37 | 0.41 |
| 52:BV:74:ILE:HD12 | 52:BV:74:ILE:N | 2.36 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:402:G:C6 | 1:AA:403:C:C4 | 3.09 | 0.41 |
| 1:AA:453:G:C6 | 1:AA:480:U:C2 | 3.08 | 0.41 |
| 1:AA:953:G:C2 | 1:AA:1229:A:C2 | 3.09 | 0.41 |
| 1:AA:956:U:H6 | 1:AA:956:U:O5' | 2.03 | 0.41 |
| 1:AA:1061:G:C5 | 1:AA:1062:U:C4 | 3.08 | 0.41 |
| 1:AA:1167:A:N7 | 1:AA:1169:A:C6 | 2.88 | 0.41 |
| 1:AA:1210:C:H2' | 1:AA:1211:U:H5' | 2.01 | 0.41 |
| 1:AA:1300:G:O2' | 1:AA:1301:U:OP2 | 2.38 | 0.41 |
| 1:AA:1322:C:OP2 | 13:AM:98:GLY:HA2 | 2.20 | 0.41 |
| 2:AB:90:PHE:CE2 | 2:AB:148:GLY:HA3 | 2.55 | 0.41 |
| 2:AB:99:MET:CA | 2:AB:106:VAL:HG21 | 2.36 | 0.41 |
| 3:AC:185:THR:O | 3:AC:186:SER:HB2 | 2.20 | 0.41 |
| 4:AD:131:ILE:O | 4:AD:133:SER:N | 2.48 | 0.41 |
| 5:AE:73:VAL:HG11 | 5:AE:143:LEU:HB3 | 2.03 | 0.41 |
| 6:AF:11:HIS:HA | 6:AF:12:PRO:HD2 | 1.67 | 0.41 |
| 9:AI:80:HIS:HE1 | 9:AI:103:VAL:O | 2.03 | 0.41 |
| 10:AJ:77:VAL:O | 10:AJ:79:PRO:HD3 | 2.20 | 0.41 |
| 11:AK:30:ILE:HA | 11:AK:45:THR:HA | 2.03 | 0.41 |
| 13:AM:82:LEU:CB | 19:AS:73:PHE:HE2 | 2.28 | 0.41 |
| 14:AN:12:ARG:HG2 | 14:AN:53:ASP:CB | 2.50 | 0.41 |
| 15:AO:38:LEU:HD13 | 15:AO:38:LEU:HA | 1.90 | 0.41 |
| 16:AP:30:GLY:O | 16:AP:31:ARG:C | 2.59 | 0.41 |
| 20:AT:78:LEU:HD23 | 20:AT:78:LEU:HA | 1.87 | 0.41 |
| 23:AW:165:GLY:HA3 | 23:AW:251:ILE:HG22 | 2.02 | 0.41 |
| 23:AW:172:PRO:HD3 | 23:AW:256:PHE:CD1 | 2.55 | 0.41 |
| 23:AW:183:TYR:CZ | 23:AW:210:LEU:HD13 | 2.56 | 0.41 |
| 25:B0:17:ALA:HB1 | 25:B0:36:ILE:HA | 2.03 | 0.41 |
| 25:B0:23:LYS:HD2 | 25:B0:24:ARG:H | 1.86 | 0.41 |
| 34:BA:9:G:C6 | 34:BA:2629:U:C6 | 3.08 | 0.41 |
| 34:BA:242:G:N2 | 34:BA:255:A:OP2 | 2.41 | 0.41 |
| 34:BA:547:A:H3' | 34:BA:548:G:H5' | 2.02 | 0.41 |
| 34:BA:570:G:H2' | 34:BA:2030:A:N7 | 2.36 | 0.41 |
| 34:BA:580:U:O2' | 34:BA:581:C:H5' | 2.20 | 0.41 |
| 34:BA:604:G:N2 | 34:BA:657:U:H4' | 2.35 | 0.41 |
| 34:BA:621:A:H2' | 34:BA:622:G:C5' | 2.51 | 0.41 |
| 34:BA:644:A:N1 | 34:BA:2369:A:H1' | 2.36 | 0.41 |
| 34:BA:714:U:H5' | 34:BA:715:A:OP2 | 2.21 | 0.41 |
| 34:BA:1119:U:OP1 | 56:BZ:83:LYS:HD3 | 2.21 | 0.41 |
| 34:BA:1418:G:H8 | 34:BA:1418:G:O5' | 2.03 | 0.41 |
| 34:BA:2228:G:H2' | 34:BA:2229:U:C6 | 2.55 | 0.41 |
| 34:BA:2261:C:C2 | 34:BA:2280:G:N2 | 2.88 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:2357:G:N2 | 34:BA:2360:G:OP2 | 2.45 | 0.41 |
| 34:BA:2866:U:H4' | 34:BA:2867:G:O5' | 2.20 | 0.41 |
| 37:BD:184:ARG:O | 37:BD:186:LEU:HD13 | 2.20 | 0.41 |
| 41:BH:25:ALA:HB2 | 41:BH:96:PHE:HE1 | 1.86 | 0.41 |
| 42:BI:56:VAL:CG2 | 42:BI:68:PHE:HB2 | 2.50 | 0.41 |
| 44:BN:14:ASP:O | 44:BN:52:ASP:HB3 | 2.21 | 0.41 |
| 46:BP:2:ARG:HG2 | 46:BP:5:THR:OG1 | 2.20 | 0.41 |
| 46:BP:47:ARG:CG | 46:BP:50:PHE:HB2 | 2.48 | 0.41 |
| 49:BS:26:LEU:CD1 | 49:BS:39:VAL:HG22 | 2.49 | 0.41 |
| 49:BS:28:VAL:HG12 | 49:BS:93:ASP:O | 2.20 | 0.41 |
| 52:BV:10:LYS:NZ | 52:BV:23:GLU:OE1 | 2.49 | 0.41 |
| 53:BW:72:THR:HG21 | 53:BW:108:SER:OG | 2.20 | 0.41 |
| 54:BX:24:MET:HG3 | 54:BX:29:THR:HG23 | 2.02 | 0.41 |
| 55:BY:53:GLN:N | 55:BY:54:PRO:HD3 | 2.36 | 0.41 |
| 55:BY:82:VAL:HG13 | 55:BY:93:ARG:HB3 | 2.02 | 0.41 |
| 1:AA:95:C:O2 | 1:AA:95:C:C2' | 2.56 | 0.41 |
| 1:AA:205:A:N7 | 1:AA:206:C:C4 | 2.88 | 0.41 |
| 1:AA:341:C:H2' | 1:AA:342:C:C6 | 2.55 | 0.41 |
| 1:AA:373:A:H2' | 1:AA:374:A:H8 | 1.85 | 0.41 |
| 1:AA:414:A:H2' | 1:AA:415:A:C8 | 2.55 | 0.41 |
| 1:AA:433:G:H2' | 1:AA:434:U:H5' | 2.03 | 0.41 |
| 1:AA:745:G:H5" | 1:AA:851:G:O2' | 2.20 | 0.41 |
| 1:AA:1027:C:O5' | 1:AA:1027:C:H6 | 2.04 | 0.41 |
| 1:AA:1050:G:N1 | 1:AA:1051:C:C4 | 2.89 | 0.41 |
| 1:AA:1255:G:H21 | 1:AA:1258:G:N2 | 2.17 | 0.41 |
| 1:AA:1260:G:OP1 | 1:AA:1284:C:H4' | 2.21 | 0.41 |
| 1:AA:1273:C:N4 | 1:AA:1274:A:C2 | 2.87 | 0.41 |
| 3:AC:15:LYS:HA | 3:AC:15:LYS:HD2 | 1.90 | 0.41 |
| 4:AD:32:LYS:O | 4:AD:33:ILE:C | 2.59 | 0.41 |
| 5:AE:14:LEU:HA | 5:AE:36:THR:HG22 | 2.03 | 0.41 |
| 6:AF:79:ARG:HA | 6:AF:79:ARG:NE | 2.36 | 0.41 |
| 8:AH:103:VAL:O | 8:AH:103:VAL:HG23 | 2.20 | 0.41 |
| 14:AN:82:LYS:HA | 14:AN:82:LYS:CE | 2.39 | 0.41 |
| 23:AW:64:LYS:HE2 | 23:AW:70:ILE:H | 1.85 | 0.41 |
| 23:AW:325:TYR:OH | 23:AW:327:LYS:HA | 2.20 | 0.41 |
| 25:B0:31:LEU:HD22 | 34:BA:2354:C:C4' | 2.48 | 0.41 |
| 33:B8:9:LYS:HG3 | 33:B8:16:ILE:CG1 | 2.48 | 0.41 |
| 34:BA:27:G:C2' | 34:BA:28:A:OP2 | 2.68 | 0.41 |
| 34:BA:197:A:N6 | 34:BA:2430:A:H2' | 2.35 | 0.41 |
| 34:BA:313:G:C6 | 34:BA:314:C:C4 | 3.08 | 0.41 |
| 34:BA:647:G:H2' | 34:BA:648:G:O4' | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:653:U:C2' | 34:BA:654:A:OP1 | 2.69 | 0.41 |
| 34:BA:712:G:H2' | 34:BA:713:G:O4' | 2.19 | 0.41 |
| 34:BA:839:U:H2' | 34:BA:840:C:C6 | 2.55 | 0.41 |
| 34:BA:1319:C:C2' | 34:BA:1320:C:H5' | 2.50 | 0.41 |
| 34:BA:1450:G:N2 | 34:BA:1462:C:C2 | 2.88 | 0.41 |
| 34:BA:1589:U:H2' | 34:BA:1590:A:C8 | 2.56 | 0.41 |
| 34:BA:1930:G:N2 | 34:BA:1968:G:H2' | 2.36 | 0.41 |
| 34:BA:2306:C:N4 | 34:BA:2307:G:C6 | 2.88 | 0.41 |
| 34:BA:2418:A:H2' | 34:BA:2419:U:C6 | 2.55 | 0.41 |
| 34:BA:2461:A:H1' | 34:BA:2492:U:C2 | 2.56 | 0.41 |
| 34:BA:2881:U:O2' | 34:BA:2882:A:H5' | 2.20 | 0.41 |
| 35:BB:30:C:C3' | 35:BB:31:C:H5' | 2.50 | 0.41 |
| 35:BB:94:A:C6 | 35:BB:95:U:C4 | 3.09 | 0.41 |
| 37:BD:120:GLY:O | 37:BD:121:THR:C | 2.58 | 0.41 |
| 40:BG:71:LEU:HD13 | 40:BG:74:MET:SD | 2.60 | 0.41 |
| 41:BH:123:ILE:O | 41:BH:124:ASP:CB | 2.68 | 0.41 |
| 45:BO:72:PRO:C | 45:BO:74:GLY:H | 2.23 | 0.41 |
| 47:BQ:53:MET:HB2 | 47:BQ:53:MET:HE2 | 1.36 | 0.41 |
| 49:BS:31:THR:HG23 | 49:BS:34:HIS:O | 2.21 | 0.41 |
| 49:BS:83:LEU:HD21 | 49:BS:114:GLY:O | 2.20 | 0.41 |
| 50:BT:47:ILE:HD12 | 50:BT:97:TYR:CD2 | 2.55 | 0.41 |
| 1:AA:83:C:N3 | 1:AA:86:G:N2 | 2.65 | 0.41 |
| 1:AA:461:A:N3 | 1:AA:461:A:H2' | 2.34 | 0.41 |
| 1:AA:815:A:C2 | 1:AA:1529:G:C4 | 3.08 | 0.41 |
| 1:AA:954:G:N1 | 1:AA:955:U:O2 | 2.54 | 0.41 |
| 1:AA:967:C:H6 | 1:AA:967:C:O5' | 2.04 | 0.41 |
| 1:AA:990:C:H2' | 1:AA:990:C:O2 | 2.19 | 0.41 |
| 1:AA:992:U:C4 | 1:AA:1043:G:H8 | 2.39 | 0.41 |
| 1:AA:1023:U:O5' | 1:AA:1023:U:H6 | 2.03 | 0.41 |
| 1:AA:1250:A:C6 | 1:AA:1251:A:C6 | 3.08 | 0.41 |
| 1:AA:1251:A:O4' | 1:AA:1370:G:H4' | 2.21 | 0.41 |
| 1:AA:1404:C:H2' | 1:AA:1405:G:C8 | 2.56 | 0.41 |
| 1:AA:1463:U:H2' | 1:AA:1464:U:C6 | 2.55 | 0.41 |
| 2:AB:9:LEU:HD12 | 2:AB:42:LEU:CD2 | 2.47 | 0.41 |
| 2:AB:186:VAL:O | 2:AB:186:VAL:HG23 | 2.20 | 0.41 |
| 3:AC:54:ILE:N | 3:AC:54:ILE:CD1 | 2.84 | 0.41 |
| 5:AE:10:LEU:HD23 | 5:AE:10:LEU:N | 2.35 | 0.41 |
| 6:AF:89:VAL:O | 6:AF:90:MET:HG3 | 2.21 | 0.41 |
| 7:AG:72:VAL:HA | 7:AG:89:GLU:HA | 2.03 | 0.41 |
| 10:AJ:80:THR:HG23 | 10:AJ:82:LYS:H | 1.85 | 0.41 |
| 12:AL:8:ARG:HB3 | 12:AL:9:LYS:H | 1.59 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 13:AM:76:ILE:HG22 | 13:AM:80:MET:HE2 | 2.02 | 0.41 |
| 14:AN:68:ARG:NH1 | 14:AN:70:HIS:HB2 | 2.35 | 0.41 |
| 17:AQ:16:MET:HE3 | 17:AQ:20:ILE:HA | 2.02 | 0.41 |
| 17:AQ:43:LEU:HD23 | 17:AQ:43:LEU:HA | 1.91 | 0.41 |
| 21:AU:18:PHE:O | 21:AU:18:PHE:CD2 | 2.74 | 0.41 |
| 28:B3:16:LEU:HD23 | 28:B3:16:LEU:HA | 1.82 | 0.41 |
| 28:B3:43:ILE:C | 28:B3:43:ILE:HD12 | 2.41 | 0.41 |
| 30:B5:34:GLU:OE1 | 30:B5:49:LYS:HG3 | 2.20 | 0.41 |
| 31:B6:34:ARG:NH1 | 31:B6:39:ARG:CG | 2.75 | 0.41 |
| 34:BA:527:C:H2' | 34:BA:2779:U:O2' | 2.20 | 0.41 |
| 34:BA:572:A:OP2 | 52:BV:80:ARG:NH2 | 2.53 | 0.41 |
| 34:BA:793:A:O2' | 34:BA:794:A:P | 2.78 | 0.41 |
| 34:BA:812:C:H1' | 34:BA:1250:G:C2 | 2.56 | 0.41 |
| 34:BA:879:G:N1 | 34:BA:880:G:O6 | 2.53 | 0.41 |
| 34:BA:927:A:N6 | 34:BA:928:A:C6 | 2.88 | 0.41 |
| 34:BA:1380:G:N2 | 34:BA:1570:A:N1 | 2.67 | 0.41 |
| 34:BA:1731:G:C2 | 34:BA:1733:G:C5 | 3.09 | 0.41 |
| 34:BA:1818:U:H2' | 36:BC:152:GLN:O | 2.19 | 0.41 |
| 34:BA:1863:G:H2' | 34:BA:1864:U:O4' | 2.20 | 0.41 |
| 34:BA:2259:U:C6 | 34:BA:2427:C:N4 | 2.88 | 0.41 |
| 34:BA:2425:A:H4' | 34:BA:2426:A:H5" | 2.03 | 0.41 |
| 34:BA:2680:U:H2' | 34:BA:2681:C:C6 | 2.56 | 0.41 |
| 34:BA:2720:U:H5" | 50:BT:52:ARG:NH2 | 2.35 | 0.41 |
| 34:BA:2798:U:H1' | 34:BA:2799:A:C6 | 2.55 | 0.41 |
| 36:BC:92:LEU:HA | 36:BC:92:LEU:HD12 | 1.66 | 0.41 |
| 37:BD:24:VAL:HA | 37:BD:189:VAL:O | 2.21 | 0.41 |
| 39:BF:135:ILE:HD11 | 39:BF:145:VAL:CG1 | 2.49 | 0.41 |
| 40:BG:139:VAL:O | 40:BG:143:VAL:HG23 | 2.21 | 0.41 |
| 41:BH:11:ILE:HG22 | 41:BH:15:VAL:HG21 | 2.02 | 0.41 |
| 41:BH:12:VAL:O | 41:BH:16:SER:HB3 | 2.20 | 0.41 |
| 41:BH:82:ILE:CG2 | 41:BH:83:ALA:N | 2.82 | 0.41 |
| 41:BH:135:ALA:HB1 | 41:BH:138:ARG:HD2 | 2.02 | 0.41 |
| 44:BN:64:VAL:HG11 | 44:BN:69:ARG:N | 2.36 | 0.41 |
| 45:BO:18:ARG:N | 45:BO:45:GLU:HB2 | 2.30 | 0.41 |
| 46:BP:57:LEU:HA | 46:BP:57:LEU:HD12 | 1.86 | 0.41 |
| 49:BS:67:ASN:O | 49:BS:69:ASP:N | 2.38 | 0.41 |
| 50:BT:33:GLU:OE1 | 50:BT:33:GLU:C | 2.59 | 0.41 |
| 50:BT:50:ARG:O | 50:BT:51:ASN:HB2 | 2.21 | 0.41 |
| 51:BU:31:TYR:O | 51:BU:32:ARG:C | 2.58 | 0.41 |
| 51:BU:64:ILE:HD12 | 51:BU:95:ALA:CB | 2.51 | 0.41 |
| 51:BU:77:LYS:O | 51:BU:78:PHE:C | 2.59 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:518:C:C2' | 1:AA:530:G:C8 | 2.89 | 0.41 |
| 1:AA:552:U:H2' | 1:AA:553:A:C8 | 2.56 | 0.41 |
| 1:AA:704:A:C6 | 1:AA:705:G:C4 | 3.09 | 0.41 |
| 1:AA:811:C:H4' | 1:AA:900:A:H61 | 1.85 | 0.41 |
| 1:AA:930:C:H2' | 1:AA:931:C:H6 | 1.85 | 0.41 |
| 1:AA:981:U:C2 | 1:AA:982:U:C5 | 3.08 | 0.41 |
| 1:AA:1118:U:H1' | 1:AA:1179:A:C5 | 2.56 | 0.41 |
| 1:AA:1360:A:H2' | 1:AA:1361:G:O4' | 2.20 | 0.41 |
| 1:AA:1401:G:P | 22:AV:19:U:OP1 | 2.78 | 0.41 |
| 1:AA:1505:G:H4' | 1:AA:1506:U:C5' | 2.47 | 0.41 |
| 2:AB:157:PRO:C | 2:AB:159:ALA:H | 2.24 | 0.41 |
| 3:AC:135:ARG:CZ | 3:AC:135:ARG:HA | 2.51 | 0.41 |
| 5:AE:93:VAL:HG22 | 5:AE:94:PHE:H | 1.85 | 0.41 |
| 5:AE:95:MET:HE3 | 5:AE:95:MET:HB3 | 1.94 | 0.41 |
| 8:AH:8:ASP:HA | 8:AH:11:THR:CG2 | 2.51 | 0.41 |
| 8:AH:74:ILE:HA | 8:AH:127:TYR:O | 2.21 | 0.41 |
| 9:AI:10:ARG:HB2 | 9:AI:14:SER:O | 2.21 | 0.41 |
| 10:AJ:51:VAL:HB | 14:AN:80:ARG:HB2 | 2.03 | 0.41 |
| 14:AN:92:ILE:HB | 14:AN:95:LEU:HD23 | 2.02 | 0.41 |
| 21:AU:34:ARG:HD3 | 21:AU:39:LYS:NZ | 2.36 | 0.41 |
| 23:AW:59:TRP:CZ3 | 23:AW:64:LYS:NZ | 2.82 | 0.41 |
| 23:AW:119:VAL:HB | 23:AW:157:GLU:HG2 | 2.03 | 0.41 |
| 23:AW:403:LEU:HA | 23:AW:461:ALA:HA | 2.02 | 0.41 |
| 25:B0:13:ARG:O | 25:B0:14:ASP:C | 2.59 | 0.41 |
| 28:B3:8:GLN:CB | 28:B3:32:GLY:H | 2.33 | 0.41 |
| 34:BA:235:U:H2' | 34:BA:236:C:C6 | 2.53 | 0.41 |
| 34:BA:645:C:O2 | 34:BA:645:C:C2' | 2.61 | 0.41 |
| 34:BA:1199:U:H2' | 34:BA:1200:C:C6 | 2.55 | 0.41 |
| 34:BA:1577:C:H2' | 34:BA:1578:U:C6 | 2.55 | 0.41 |
| 34:BA:1668:A:H4' | 34:BA:1669:A:O5' | 2.20 | 0.41 |
| 34:BA:2563:U:C5' | 45:BO:27:GLY:HA2 | 2.51 | 0.41 |
| 34:BA:2578:G:OP2 | 34:BA:2578:G:H4' | 2.19 | 0.41 |
| 34:BA:2633:G:H2' | 34:BA:2634:A:O4' | 2.21 | 0.41 |
| 34:BA:2664:G:O5' | 34:BA:2664:G:H8 | 2.04 | 0.41 |
| 34:BA:2709:G:H2' | 34:BA:2710:C:H6 | 1.86 | 0.41 |
| 34:BA:2851:A:H2' | 34:BA:2852:G:C8 | 2.55 | 0.41 |
| 34:BA:2880:C:N3 | 34:BA:2881:U:C5 | 2.89 | 0.41 |
| 36:BC:128:THR:HG22 | 36:BC:129:LEU:N | 2.36 | 0.41 |
| 37:BD:11:MET:HE2 | 37:BD:11:MET:HB2 | 1.68 | 0.41 |
| 39:BF:45:ASP:C | 39:BF:47:LYS:H | 2.23 | 0.41 |
| 39:BF:104:THR:O | 39:BF:108:PRO:HG2 | 2.21 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 40:BG:61:TRP:HA | 40:BG:64:ALA:HB3 | 2.03 | 0.41 |
| 42:BI:56:VAL:HG23 | 42:BI:70:THR:HA | 2.02 | 0.41 |
| 44:BN:95:ARG:HG3 | 44:BN:95:ARG:O | 2.20 | 0.41 |
| 44:BN:102:GLU:O | 44:BN:106:LYS:HB2 | 2.21 | 0.41 |
| 46:BP:77:ILE:O | 46:BP:77:ILE:HG22 | 2.20 | 0.41 |
| 47:BQ:63:ILE:HA | 47:BQ:104:GLU:O | 2.21 | 0.41 |
| 1:AA:204:G:C3' | 1:AA:205:A:C5' | 2.95 | 0.41 |
| 1:AA:423:G:N2 | 1:AA:424:G:C4 | 2.89 | 0.41 |
| 1:AA:621:A:C6 | 1:AA:622:A:C6 | 3.09 | 0.41 |
| 1:AA:639:G:H2' | 1:AA:640:A:H5' | 2.03 | 0.41 |
| 1:AA:661:G:C2' | 1:AA:662:U:H5' | 2.51 | 0.41 |
| 1:AA:794:A:C6 | 1:AA:795:C:C4 | 3.08 | 0.41 |
| 1:AA:828:U:H4' | 1:AA:828:U:OP1 | 2.19 | 0.41 |
| 1:AA:1211:U:H4' | 1:AA:1213:A:C1' | 2.50 | 0.41 |
| 1:AA:1284:C:C4 | 1:AA:1285:A:N6 | 2.89 | 0.41 |
| 1:AA:1475:G:C4 | 1:AA:1476:A:C8 | 3.09 | 0.41 |
| 2:AB:9:LEU:HD23 | 2:AB:9:LEU:C | 2.41 | 0.41 |
| 9:AI:49:GLN:C | 9:AI:51:LEU:N | 2.73 | 0.41 |
| 9:AI:114:LYS:N | 9:AI:114:LYS:HD2 | 2.34 | 0.41 |
| 10:AJ:56:HIS:O | 10:AJ:57:VAL:CG1 | 2.65 | 0.41 |
| 10:AJ:57:VAL:HG13 | 10:AJ:58:ASN:N | 2.36 | 0.41 |
| 14:AN:9:GLU:O | 14:AN:13:VAL:HG23 | 2.21 | 0.41 |
| 16:AP:53:ASP:OD1 | 16:AP:56:ARG:HG2 | 2.20 | 0.41 |
| 19:AS:40:PHE:C | 19:AS:42:ASN:H | 2.23 | 0.41 |
| 23:AW:26:LYS:O | 23:AW:29:ILE:HG22 | 2.21 | 0.41 |
| 23:AW:398:PHE:CD1 | 23:AW:399:ARG:N | 2.88 | 0.41 |
| 25:B0:69:GLU:O | 25:B0:77:LYS:O | 2.38 | 0.41 |
| 27:B2:20:ASN:O | 27:B2:24:GLU:HB2 | 2.21 | 0.41 |
| 34:BA:80:G:C5 | 34:BA:81:G:N7 | 2.89 | 0.41 |
| 34:BA:184:C:O2' | 34:BA:217:A:H1' | 2.20 | 0.41 |
| 34:BA:478:A:C6 | 34:BA:480:A:C6 | 3.09 | 0.41 |
| 34:BA:864:G:H2' | 34:BA:865:C:C6 | 2.56 | 0.41 |
| 34:BA:1062:G:C2 | 34:BA:1077:A:C2 | 3.09 | 0.41 |
| 34:BA:1550:C:O2' | 34:BA:1551:A:H5' | 2.21 | 0.41 |
| 34:BA:1789:A:OP2 | 36:BC:220:ARG:NH1 | 2.53 | 0.41 |
| 34:BA:1908:C:C4 | 34:BA:1909:C:C5 | 3.09 | 0.41 |
| 34:BA:2031:A:C6 | 34:BA:2498:C:H1' | 2.56 | 0.41 |
| 34:BA:2080:A:C5 | 34:BA:2081:U:C4 | 3.09 | 0.41 |
| 34:BA:2619:C:OP1 | 37:BD:157:LYS:HE2 | 2.20 | 0.41 |
| 34:BA:2755:C:O2' | 34:BA:2756:U:H2' | 2.20 | 0.41 |
| 37:BD:139:SER:HA | 37:BD:142:VAL:CG1 | 2.50 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 38:BE:35:TYR:O | 38:BE:37:ALA:O | 2.39 | 0.41 |
| 39:BF:39:VAL:HG11 | 39:BF:49:LEU:HD13 | 2.01 | 0.41 |
| 39:BF:72:SER:H | 39:BF:80:GLN:CB | 2.34 | 0.41 |
| 39:BF:107:VAL:HB | 39:BF:108:PRO:HD3 | 2.01 | 0.41 |
| 41:BH:123:ILE:O | 41:BH:124:ASP:CG | 2.59 | 0.41 |
| 42:BI:7:TYR:HA | 42:BI:58:ILE:CB | 2.48 | 0.41 |
| 43:BL:11:VAL:HG21 | 43:BM:28:GLU:OE1 | 2.20 | 0.41 |
| 48:BR:78:LYS:HE2 | 48:BR:83:LEU:HD11 | 2.02 | 0.41 |
| 51:BU:49:ARG:O | 51:BU:53:LYS:HE3 | 2.20 | 0.41 |
| 52:BV:101:ILE:O | 52:BV:101:ILE:HG22 | 2.21 | 0.41 |
| 53:BW:2:GLU:O | 53:BW:3:THR:HG23 | 2.21 | 0.41 |
| 54:BX:24:MET:O | 54:BX:28:ASN:O | 2.38 | 0.41 |
| 54:BX:61:LEU:HD12 | 54:BX:61:LEU:C | 2.41 | 0.41 |
| 56:BZ:2:PHE:HE2 | 56:BZ:55:GLU:O | 2.03 | 0.41 |
| 1:AA:109:A:H2' | 1:AA:326:G:N2 | 2.35 | 0.41 |
| 1:AA:112:G:H4' | 1:AA:389:A:H4' | 2.03 | 0.41 |
| 1:AA:143:A:H5' | 1:AA:144:G:H5' | 2.03 | 0.41 |
| 1:AA:182:A:N7 | 1:AA:184:G:C6 | 2.89 | 0.41 |
| 1:AA:257:G:C2 | 1:AA:270:A:C2 | 3.09 | 0.41 |
| 1:AA:261:U:H2' | 1:AA:263:A:OP2 | 2.20 | 0.41 |
| 1:AA:297:G:H4' | 1:AA:557:G:H4' | 2.03 | 0.41 |
| 1:AA:527:G:O2' | 1:AA:535:A:N1 | 2.32 | 0.41 |
| 1:AA:577:G:C6 | 1:AA:765:G:C2 | 3.09 | 0.41 |
| 1:AA:602:A:C2' | 1:AA:603:U:H5' | 2.50 | 0.41 |
| 1:AA:691:G:H2' | 1:AA:692:U:C6 | 2.56 | 0.41 |
| 1:AA:815:A:H4' | 1:AA:817:C:N4 | 2.34 | 0.41 |
| 1:AA:859:G:H2' | 1:AA:860:A:H8 | 1.86 | 0.41 |
| 1:AA:908:A:C2 | 1:AA:909:A:C4 | 3.09 | 0.41 |
| 1:AA:938:A:H2 | 1:AA:1376:U:O2 | 2.04 | 0.41 |
| 1:AA:979:C:H1' | 1:AA:1317:C:N4 | 2.36 | 0.41 |
| 1:AA:1138:G:C2 | 1:AA:1140:C:C5 | 3.09 | 0.41 |
| 1:AA:1255:G:H21 | 1:AA:1258:G:H22 | 1.68 | 0.41 |
| 1:AA:1343:G:H1' | 9:AI:122:ARG:HH12 | 1.86 | 0.41 |
| 1:AA:1434:A:H2' | 1:AA:1435:G:O4' | 2.20 | 0.41 |
| 2:AB:80:LYS:HD3 | 2:AB:90:PHE:CE1 | 2.50 | 0.41 |
| 2:AB:113:LEU:HD13 | 2:AB:143:LEU:CD1 | 2.48 | 0.41 |
| 4:AD:18:LEU:HB2 | 4:AD:20:LEU:HG | 2.03 | 0.41 |
| 4:AD:29:THR:C | 4:AD:30:LYS:HE2 | 2.41 | 0.41 |
| 4:AD:67:LEU:HD23 | 4:AD:67:LEU:HA | 1.84 | 0.41 |
| 4:AD:114:ARG:C | 4:AD:116:LEU:N | 2.74 | 0.41 |
| 6:AF:88:MET:HG2 | 6:AF:90:MET:HE2 | 2.02 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 8:AH:4:ASP:HA | 8:AH:5:PRO:HD2 | 1.94 | 0.41 |
| 11:AK:81:LEU:CD2 | 11:AK:104:PHE:HB3 | 2.50 | 0.41 |
| 13:AM:38:ILE:CG1 | 13:AM:55:LEU:HD21 | 2.44 | 0.41 |
| 13:AM:76:ILE:HG22 | 13:AM:80:MET:CE | 2.51 | 0.41 |
| 17:AQ:78:VAL:O | 17:AQ:79:GLU:O | 2.39 | 0.41 |
| 20:AT:54:GLN:N | 20:AT:55:PRO:HD2 | 2.36 | 0.41 |
| 23:AW:59:TRP:NE1 | 23:AW:69:SER:HA | 2.36 | 0.41 |
| 23:AW:481:LYS:NZ | 23:AW:520:ASP:HB2 | 2.36 | 0.41 |
| 23:AW:491:SER:CA | 23:AW:492:GLN:HB2 | 2.51 | 0.41 |
| 25:B0:52:CYS:HA | 25:B0:57:THR:O | 2.21 | 0.41 |
| 30:B5:3:GLY:O | 30:B5:4:ILE:HG13 | 2.21 | 0.41 |
| 32:B7:24:LYS:HB3 | 46:BP:62:PRO:HG2 | 2.02 | 0.41 |
| 34:BA:9:G:C2 | 34:BA:2629:U:C2 | 3.09 | 0.41 |
| 34:BA:34:U:H1' | 34:BA:35:G:OP1 | 2.21 | 0.41 |
| 34:BA:162:U:O4 | 34:BA:2218:G:H4' | 2.21 | 0.41 |
| 34:BA:206:U:O2 | 34:BA:206:U:H2' | 2.21 | 0.41 |
| 34:BA:361:G:C8 | 34:BA:361:G:OP2 | 2.73 | 0.41 |
| 34:BA:584:C:H6 | 34:BA:584:C:O5' | 2.04 | 0.41 |
| 34:BA:628:G:H4' | 34:BA:651:G:O2' | 2.20 | 0.41 |
| 34:BA:760:G:H2' | 34:BA:761:A:O4' | 2.21 | 0.41 |
| 34:BA:815:C:OP2 | 52:BV:85:LYS:CE | 2.68 | 0.41 |
| 34:BA:900:A:H2 | 34:BA:902:C:C5 | 2.39 | 0.41 |
| 34:BA:1010:A:H1' | 34:BA:1153:C:O4' | 2.21 | 0.41 |
| 34:BA:1042:G:C2' | 34:BA:1043:C:H5' | 2.50 | 0.41 |
| 34:BA:1042:G:H2' | 34:BA:1043:C:H5' | 2.02 | 0.41 |
| 34:BA:1141:U:C4' | 34:BA:1142:A:O4' | 2.64 | 0.41 |
| 34:BA:1142:A:C5 | 34:BA:1144:A:C5 | 3.09 | 0.41 |
| 34:BA:1199:U:H5' | 51:BU:4:LYS:HG2 | 2.03 | 0.41 |
| 34:BA:1216:G:C6 | 34:BA:1217:U:C4 | 3.09 | 0.41 |
| 34:BA:1307:A:C5 | 34:BA:1308:A:C8 | 3.09 | 0.41 |
| 34:BA:1358:G:C8 | 34:BA:1371:G:C6 | 3.09 | 0.41 |
| 34:BA:1433:A:H5" | 34:BA:1434:A:OP2 | 2.21 | 0.41 |
| 34:BA:1479:G:HO2' | 34:BA:1560:G:HO2' | 1.69 | 0.41 |
| 34:BA:1563:U:H2' | 34:BA:1564:C:H6 | 1.82 | 0.41 |
| 34:BA:1687:G:C2 | 34:BA:1688:U:C2 | 3.09 | 0.41 |
| 34:BA:1724:G:N1 | 34:BA:1737:G:H1' | 2.36 | 0.41 |
| 34:BA:1973:G:C5 | 34:BA:1974:C:C5 | 3.09 | 0.41 |
| 34:BA:2077:A:OP1 | 34:BA:2238:G:N2 | 2.36 | 0.41 |
| 34:BA:2489:U:O2 | 34:BA:2491:U:C4 | 2.73 | 0.41 |
| 34:BA:2563:U:H1' | 34:BA:2566:A:N6 | 2.36 | 0.41 |
| 34:BA:2638:G:H2' | 34:BA:2775:G:H22 | 1.86 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:2700:A:H2' | 34:BA:2701:U:C6 | 2.56 | 0.41 |
| 34:BA:2720:U:H2' | 34:BA:2721:A:H8 | 1.85 | 0.41 |
| 34:BA:2832:U:O4 | 34:BA:2883:A:H5" | 2.21 | 0.41 |
| 35:BB:62:C:O5' | 35:BB:62:C:H6 | 2.04 | 0.41 |
| 36:BC:35:LYS:HB3 | 36:BC:35:LYS:HE3 | 1.83 | 0.41 |
| 36:BC:209:ALA:HA | 36:BC:212:TRP:CE2 | 2.56 | 0.41 |
| 36:BC:239:PHE:HB3 | 36:BC:240:GLY:H | 1.64 | 0.41 |
| 37:BD:109:VAL:HG11 | 37:BD:193:VAL:HB | 2.03 | 0.41 |
| 37:BD:113:SER:C | 37:BD:114:LYS:HE3 | 2.39 | 0.41 |
| 38:BE:101:TYR:HE1 | 38:BE:177:PRO:HG3 | 1.86 | 0.41 |
| 38:BE:147:LEU:HD12 | 38:BE:186:VAL:HG23 | 2.01 | 0.41 |
| 39:BF:11:VAL:HG11 | 39:BF:172:PHE:HE1 | 1.86 | 0.41 |
| 41:BH:25:ALA:HB2 | 41:BH:96:PHE:CE1 | 2.56 | 0.41 |
| 41:BH:60:LEU:O | 41:BH:62:ARG:N | 2.54 | 0.41 |
| 41:BH:77:VAL:O | 41:BH:77:VAL:CG1 | 2.68 | 0.41 |
| 42:BI:48:ILE:HD12 | 42:BI:49:GLU:N | 2.36 | 0.41 |
| 42:BI:58:ILE:O | 42:BI:60:VAL:HG23 | 2.21 | 0.41 |
| 42:BI:71:LYS:HD3 | 42:BI:71:LYS:N | 2.36 | 0.41 |
| 44:BN:103:ILE:HD13 | 44:BN:104:ALA:H | 1.79 | 0.41 |
| 45:BO:22:ILE:O | 45:BO:23:LYS:HB2 | 2.21 | 0.41 |
| 45:BO:64:ARG:O | 45:BO:82:ASN:HA | 2.21 | 0.41 |
| 46:BP:19:LEU:CA | 46:BP:27:LEU:HD13 | 2.48 | 0.41 |
| 46:BP:81:ASP:O | 46:BP:82:LEU:HD23 | 2.21 | 0.41 |
| 47:BQ:73:ILE:O | 47:BQ:73:ILE:HG22 | 2.21 | 0.41 |
| 49:BS:90:VAL:O | 49:BS:117:PHE:HB3 | 2.20 | 0.41 |
| 50:BT:67:GLU:HG3 | 50:BT:68:GLY:N | 2.29 | 0.41 |
| 51:BU:48:ASP:O | 51:BU:52:ARG:N | 2.53 | 0.41 |
| 51:BU:63:ARG:HH21 | 51:BU:64:ILE:HD11 | 1.85 | 0.41 |
| 51:BU:93:ILE:O | 51:BU:96:ASP:HB3 | 2.21 | 0.41 |
| 54:BX:1:MET:C | 54:BX:2:ILE:HG13 | 2.41 | 0.41 |
| 55:BY:25:LYS:HD2 | 55:BY:25:LYS:HA | 1.88 | 0.41 |
| 55:BY:40:LEU:HD23 | 55:BY:40:LEU:HA | 1.84 | 0.41 |
| 1:AA:2:A:C2 | 1:AA:614:C:O4' | 2.74 | 0.41 |
| 1:AA:720:C:H2' | 1:AA:721:G:N7 | 2.36 | 0.41 |
| 1:AA:728:A:C6 | 1:AA:729:A:C6 | 3.09 | 0.41 |
| 1:AA:791:G:C5 | 1:AA:792:A:N7 | 2.89 | 0.41 |
| 1:AA:833:G:C5 | 1:AA:834:U:C5 | 3.09 | 0.41 |
| 1:AA:939:G:N3 | 1:AA:1375:A:H2 | 2.19 | 0.41 |
| 1:AA:949:A:H1' | 1:AA:1364:U:H3 | 1.86 | 0.41 |
| 1:AA:1203:C:H2' | 1:AA:1204:A:C8 | 2.56 | 0.41 |
| 1:AA:1211:U:H4' | 1:AA:1213:A:H1' | 2.02 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AA:1479:C:H2' | 1:AA:1480:A:C8 | 2.56 | 0.41 |
| 1:AA:1521:C:H2' | 1:AA:1522:U:C6 | 2.52 | 0.41 |
| 2:AB:32:GLY:O | 2:AB:33:ALA:HB2 | 2.20 | 0.41 |
| 4:AD:27:ILE:O | 4:AD:28:ASP:C | 2.58 | 0.41 |
| 5:AE:11:GLN:CG | 5:AE:116:VAL:HB | 2.49 | 0.41 |
| 5:AE:59:ILE:HD12 | 5:AE:60:GLN:N | 2.36 | 0.41 |
| 5:AE:153:ALA:O | 5:AE:156:ARG:O | 2.39 | 0.41 |
| 7:AG:68:VAL:HG22 | 7:AG:134:VAL:HG12 | 2.02 | 0.41 |
| 8:AH:79:ARG:HB2 | 8:AH:80:PRO:CD | 2.50 | 0.41 |
| 9:AI:83:THR:HG21 | 9:AI:102:PHE:CB | 2.51 | 0.41 |
| 11:AK:124:LYS:HE3 | 21:AU:34:ARG:CD | 2.51 | 0.41 |
| 12:AL:46:SER:O | 12:AL:47:ALA:HB2 | 2.21 | 0.41 |
| 12:AL:98:ARG:HA | 12:AL:98:ARG:HD2 | 1.55 | 0.41 |
| 16:AP:79:ASN:O | 16:AP:80:LYS:HB2 | 2.21 | 0.41 |
| 20:AT:27:MET:SD | 20:AT:66:ILE:HD12 | 2.61 | 0.41 |
| 21:AU:44:ARG:HD2 | 21:AU:44:ARG:N | 2.36 | 0.41 |
| 23:AW:20:SER:O | 23:AW:122:ARG:NH1 | 2.52 | 0.41 |
| 23:AW:45:THR:HG23 | 23:AW:51:SER:HB2 | 2.02 | 0.41 |
| 23:AW:45:THR:HB | 23:AW:46:VAL:H | 1.50 | 0.41 |
| 25:B0:28:GLU:CG | 25:B0:29:SER:N | 2.84 | 0.41 |
| 25:B0:49:ASN:HB2 | 25:B0:81:ILE:HG13 | 2.03 | 0.41 |
| 25:B0:51:GLY:CA | 25:B0:61:LYS:HE3 | 2.51 | 0.41 |
| 28:B3:29:ARG:N | 28:B3:33:HIS:CD2 | 2.85 | 0.41 |
| 32:B7:29:ARG:HH22 | 46:BP:62:PRO:HB2 | 1.85 | 0.41 |
| 34:BA:420:C:O2 | 34:BA:420:C:H2' | 2.21 | 0.41 |
| 34:BA:434:U:H4' | 34:BA:435:C:OP1 | 2.21 | 0.41 |
| 34:BA:627:A:C6 | 34:BA:637:A:C8 | 3.09 | 0.41 |
| 34:BA:671:C:H2' | 34:BA:672:C:C6 | 2.55 | 0.41 |
| 34:BA:859:G:C2' | 34:BA:860:U:OP2 | 2.69 | 0.41 |
| 34:BA:915:C:C2' | 34:BA:916:G:H5' | 2.51 | 0.41 |
| 34:BA:1676:A:H2' | 34:BA:1677:A:O4' | 2.21 | 0.41 |
| 34:BA:1922:G:C6 | 34:BA:1923:U:C4 | 3.09 | 0.41 |
| 34:BA:1943:U:O2 | 34:BA:1943:U:H2' | 2.21 | 0.41 |
| 34:BA:1973:G:H2' | 34:BA:1974:C:C6 | 2.56 | 0.41 |
| 34:BA:2788:C:O2' | 34:BA:2809:A:N3 | 2.46 | 0.41 |
| 34:BA:2821:A:OP2 | 37:BD:115:GLY:CA | 2.69 | 0.41 |
| 36:BC:262:THR:O | 36:BC:266:ILE:HD13 | 2.21 | 0.41 |
| 37:BD:2:ILE:HG13 | 37:BD:100:LEU:HD21 | 2.03 | 0.41 |
| 37:BD:71:ALA:O | 37:BD:72:GLY:C | 2.59 | 0.41 |
| 38:BE:101:TYR:CE1 | 38:BE:177:PRO:HG3 | 2.55 | 0.41 |
| 38:BE:132:LYS:NZ | 38:BE:132:LYS:HB3 | 2.36 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 39:BF:14:LYS:HD3 | 39:BF:14:LYS:C | 2.42 | 0.41 |
| 39:BF:105:ILE:HD12 | 39:BF:106:ALA:N | 2.36 | 0.41 |
| 40:BG:149:ALA:C | 40:BG:151:ARG:N | 2.74 | 0.41 |
| 41:BH:64:VAL:C | 41:BH:66:GLY:N | 2.74 | 0.41 |
| 49:BS:33:ARG:O | 49:BS:65:THR:O | 2.38 | 0.41 |
| 49:BS:36:TYR:HA | 49:BS:52:SER:CB | 2.51 | 0.41 |
| 50:BT:24:THR:HB | 50:BT:87:ARG:HB3 | 2.03 | 0.41 |
| 51:BU:94:LEU:C | 51:BU:96:ASP:N | 2.73 | 0.41 |
| 56:BZ:36:ALA:HA | 56:BZ:37:PRO:HD3 | 1.81 | 0.41 |
| 1:AA:155:A:H2' | 1:AA:156:C:C6 | 2.57 | 0.40 |
| 1:AA:165:G:N2 | 1:AA:166:U:C2 | 2.89 | 0.40 |
| 1:AA:687:A:C4' | 1:AA:688:G:O5' | 2.68 | 0.40 |
| 1:AA:868:C:N4 | 1:AA:869:G:C2 | 2.89 | 0.40 |
| 1:AA:1026:G:C6 | 1:AA:1027:C:N4 | 2.89 | 0.40 |
| 1:AA:1145:A:HO2' | 1:AA:1146:A:P | 2.44 | 0.40 |
| 1:AA:1222:G:OP1 | 1:AA:1321:U:C2' | 2.70 | 0.40 |
| 1:AA:1294:G:H2' | 1:AA:1295:U:O4' | 2.21 | 0.40 |
| 2:AB:147:LEU:HD22 | 2:AB:150:ILE:HG21 | 2.03 | 0.40 |
| 4:AD:187:ARG:HA | 4:AD:187:ARG:HD2 | 1.92 | 0.40 |
| 5:AE:57:ALA:O | 5:AE:61:LYS:HB2 | 2.21 | 0.40 |
| 8:AH:5:PRO:O | 8:AH:8:ASP:HB3 | 2.21 | 0.40 |
| 11:AK:124:LYS:HE3 | 21:AU:34:ARG:CG | 2.51 | 0.40 |
| 25:B0:39:GLN:NE2 | 25:B0:43:LYS:N | 2.70 | 0.40 |
| 25:B0:66:VAL:HA | 25:B0:81:ILE:HD13 | 2.03 | 0.40 |
| 34:BA:21:A:C6 | 34:BA:22:C:C4 | 3.09 | 0.40 |
| 34:BA:297:G:H2' | 34:BA:298:G:O4' | 2.21 | 0.40 |
| 34:BA:616:A:C2' | 34:BA:617:G:H5' | 2.50 | 0.40 |
| 34:BA:744:U:H2' | 34:BA:745:G:O4' | 2.21 | 0.40 |
| 34:BA:781:A:OP1 | 36:BC:216:ARG:NH2 | 2.55 | 0.40 |
| 34:BA:820:A:H2' | 34:BA:821:A:O4' | 2.21 | 0.40 |
| 34:BA:1067:A:C8 | 34:BA:1068:G:N7 | 2.88 | 0.40 |
| 34:BA:1381:G:C2' | 34:BA:1382:G:H5' | 2.51 | 0.40 |
| 34:BA:1429:G:O2' | 34:BA:1430:G:H5' | 2.22 | 0.40 |
| 34:BA:1520:U:H2' | 34:BA:1521:G:O4' | 2.21 | 0.40 |
| 34:BA:1936:A:H4' | 34:BA:1937:A:O5' | 2.20 | 0.40 |
| 34:BA:2102:G:H2' | 34:BA:2103:C:C6 | 2.57 | 0.40 |
| 34:BA:2194:U:C2' | 34:BA:2195:U:H5' | 2.51 | 0.40 |
| 34:BA:2282:G:C5' | 34:BA:2389:G:H1' | 2.52 | 0.40 |
| 34:BA:2286:G:C4' | 34:BA:2287:A:O4' | 2.68 | 0.40 |
| 34:BA:2325:G:OP1 | 34:BA:2325:G:H3' | 2.21 | 0.40 |
| 36:BC:136:VAL:HG21 | 36:BC:166:ARG:HG2 | 2.03 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 36:BC:193:GLU:H | 36:BC:193:GLU:HG3 | 1.58 | 0.40 |
| 37:BD:112:THR:O | 37:BD:195:GLY:HA2 | 2.20 | 0.40 |
| 40:BG:34:ARG:N | 40:BG:34:ARG:HH11 | 2.20 | 0.40 |
| 41:BH:31:ARG:HH22 | 41:BH:109:LYS:CE | 2.33 | 0.40 |
| 41:BH:126:LEU:HD12 | 41:BH:128:THR:OG1 | 2.21 | 0.40 |
| 42:BI:53:PRO:CD | 42:BI:77:VAL:HG21 | 2.44 | 0.40 |
| 43:BM:15:SER:HA | 43:BM:18:ASP:HB2 | 2.02 | 0.40 |
| 44:BN:7:LYS:HA | 44:BN:8:PRO:HD3 | 1.93 | 0.40 |
| 44:BN:17:VAL:CG1 | 44:BN:57:LEU:HD23 | 2.51 | 0.40 |
| 45:BO:1:MET:CE | 45:BO:32:TYR:CZ | 3.04 | 0.40 |
| 46:BP:102:GLY:O | 46:BP:104:GLN:N | 2.54 | 0.40 |
| 51:BU:63:ARG:NH2 | 51:BU:64:ILE:HD11 | 2.36 | 0.40 |
| 54:BX:29:THR:HB | 54:BX:86:THR:CB | 2.51 | 0.40 |
| 1:AA:151:A:N3 | 1:AA:151:A:H2' | 2.35 | 0.40 |
| 1:AA:606:G:H21 | 1:AA:631:C:H3' | 1.86 | 0.40 |
| 1:AA:717:U:H6 | 1:AA:717:U:OP2 | 2.04 | 0.40 |
| 1:AA:865:A:H2' | 1:AA:866:C:O4' | 2.20 | 0.40 |
| 1:AA:1076:U:H3 | 1:AA:1081:A:H61 | 1.68 | 0.40 |
| 1:AA:1296:C:P | 13:AM:13:HIS:HE2 | 2.44 | 0.40 |
| 1:AA:1309:G:N2 | 1:AA:1329:A:C4 | 2.90 | 0.40 |
| 4:AD:2:ARG:NH2 | 4:AD:114:ARG:CD | 2.85 | 0.40 |
| 4:AD:50:TYR:O | 4:AD:51:GLY:C | 2.60 | 0.40 |
| 4:AD:54:LEU:HD23 | 4:AD:55:ARG:CA | 2.52 | 0.40 |
| 4:AD:58:GLN:O | 4:AD:62:ARG:HG2 | 2.21 | 0.40 |
| 5:AE:15:ILE:CD1 | 5:AE:112:ALA:HB3 | 2.51 | 0.40 |
| 6:AF:70:VAL:CG2 | 6:AF:71:ILE:N | 2.83 | 0.40 |
| 7:AG:34:LYS:O | 7:AG:36:SER:N | 2.55 | 0.40 |
| 8:AH:46:GLU:N | 8:AH:63:LYS:HG3 | 2.36 | 0.40 |
| 12:AL:115:LYS:C | 12:AL:117:GLY:N | 2.75 | 0.40 |
| 14:AN:44:VAL:C | 14:AN:46:LYS:H | 2.25 | 0.40 |
| 16:AP:16:PHE:HD1 | 16:AP:16:PHE:O | 2.03 | 0.40 |
| 16:AP:72:ALA:C | 16:AP:74:LEU:H | 2.24 | 0.40 |
| 19:AS:3:SER:HB2 | 19:AS:4:LEU:CD1 | 2.51 | 0.40 |
| 20:AT:6:ALA:HB1 | 20:AT:9:ARG:HB2 | 2.02 | 0.40 |
| 23:AW:321:VAL:HG21 | 23:AW:387:PHE:CE2 | 2.56 | 0.40 |
| 23:AW:399:ARG:NE | 23:AW:445:GLN:HB3 | 2.36 | 0.40 |
| 27:B2:14:LEU:O | 27:B2:18:LEU:HB2 | 2.22 | 0.40 |
| 32:B7:22:LYS:N | 32:B7:48:MET:HA | 2.37 | 0.40 |
| 34:BA:160:A:C4 | 34:BA:167:A:C2 | 3.09 | 0.40 |
| 34:BA:215:G:C4' | 34:BA:216:A:H4' | 2.51 | 0.40 |
| 34:BA:501:A:N6 | 34:BA:502:A:C6 | 2.89 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:662:G:O2' | 46:BP:14:LYS:HD3 | 2.21 | 0.40 |
| 34:BA:793:A:C2' | 34:BA:794:A:OP2 | 2.70 | 0.40 |
| 34:BA:859:G:H2' | 34:BA:916:G:N1 | 2.36 | 0.40 |
| 34:BA:870:U:O2' | 34:BA:871:U:H5' | 2.21 | 0.40 |
| 34:BA:882:G:N2 | 34:BA:883:G:C2 | 2.89 | 0.40 |
| 34:BA:1026:G:H2' | 34:BA:1027:A:C8 | 2.56 | 0.40 |
| 34:BA:1224:U:H2' | 34:BA:1225:G:C8 | 2.57 | 0.40 |
| 34:BA:1244:A:C2' | 34:BA:1245:G:H5' | 2.51 | 0.40 |
| 34:BA:1483:G:C5 | 34:BA:1484:U:C4 | 3.09 | 0.40 |
| 34:BA:1973:G:H2' | 34:BA:1974:C:H6 | 1.85 | 0.40 |
| 34:BA:2094:A:C2 | 34:BA:2196:C:C2 | 3.09 | 0.40 |
| 34:BA:2201:G:C5 | 34:BA:2202:U:C5 | 3.09 | 0.40 |
| 34:BA:2256:G:H2' | 34:BA:2257:U:H6 | 1.86 | 0.40 |
| 34:BA:2320:U:H4' | 34:BA:2321:U:C6 | 2.57 | 0.40 |
| 34:BA:2424:C:O2 | 34:BA:2429:G:O2' | 2.29 | 0.40 |
| 34:BA:2867:G:O2' | 34:BA:2868:A:C8 | 2.75 | 0.40 |
| 35:BB:68:C:O2' | 35:BB:69:G:H5' | 2.21 | 0.40 |
| 36:BC:229:HIS:CE1 | 36:BC:230:PRO:HD2 | 2.55 | 0.40 |
| 36:BC:245:THR:C | 36:BC:247:TRP:N | 2.74 | 0.40 |
| 37:BD:9:VAL:HG22 | 37:BD:26:VAL:O | 2.21 | 0.40 |
| 38:BE:145:ASP:CG | 38:BE:184:ASP:H | 2.25 | 0.40 |
| 39:BF:100:GLU:C | 39:BF:102:LEU:N | 2.75 | 0.40 |
| 40:BG:84:LYS:CG | 40:BG:132:LEU:N | 2.68 | 0.40 |
| 41:BH:27:VAL:HG21 | 41:BH:99:PHE:CD1 | 2.56 | 0.40 |
| 41:BH:35:VAL:HA | 41:BH:38:MET:HB2 | 2.02 | 0.40 |
| 41:BH:136:ILE:HA | 41:BH:139:LEU:CD1 | 2.51 | 0.40 |
| 45:BO:2:ILE:HG23 | 45:BO:6:THR:HG21 | 2.02 | 0.40 |
| 45:BO:34:GLY:O | 45:BO:35:VAL:C | 2.60 | 0.40 |
| 46:BP:68:SER:O | 46:BP:69:ARG:CB | 2.68 | 0.40 |
| 47:BQ:57:VAL:HG12 | 47:BQ:112:LEU:CD2 | 2.52 | 0.40 |
| 50:BT:50:ARG:N | 50:BT:57:ALA:O | 2.54 | 0.40 |
| 52:BV:51:VAL:HB | 52:BV:52:PRO:HD2 | 2.03 | 0.40 |
| 1:AA:192:A:C5 | 1:AA:193:C:C5 | 3.08 | 0.40 |
| 1:AA:192:A:H2' | 1:AA:192:A:N3 | 2.37 | 0.40 |
| 1:AA:665:A:C8 | 1:AA:725:G:C2 | 3.10 | 0.40 |
| 1:AA:754:C:H3' | 1:AA:755:G:H5' | 2.03 | 0.40 |
| 1:AA:944:G:O6 | 1:AA:1337:G:H8 | 2.03 | 0.40 |
| 1:AA:1224:U:C5' | 1:AA:1225:A:OP2 | 2.69 | 0.40 |
| 1:AA:1290:G:C2 | 1:AA:1291:U:C2 | 3.09 | 0.40 |
| 1:AA:1319:A:N6 | 1:AA:1323:G:C2 | 2.89 | 0.40 |
| 2:AB:170:ILE:H | 2:AB:170:ILE:HG13 | 1.53 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:AC:113:LYS:HB2 | 3:AC:184:ASN:OD1 | 2.22 | 0.40 |
| 3:AC:148:ILE:HD13 | 3:AC:148:ILE:C | 2.41 | 0.40 |
| 3:AC:161:ILE:HD13 | 3:AC:161:ILE:O | 2.21 | 0.40 |
| 3:AC:177:LEU:HD13 | 3:AC:177:LEU:HA | 1.80 | 0.40 |
| 4:AD:56:GLU:CD | 4:AD:195:ASN:H | 2.25 | 0.40 |
| 5:AE:93:VAL:CG2 | 5:AE:110:MET:SD | 3.09 | 0.40 |
| 6:AF:11:HIS:O | 6:AF:13:ASP:N | 2.55 | 0.40 |
| 8:AH:38:VAL:O | 8:AH:39:LEU:C | 2.59 | 0.40 |
| 10:AJ:59:LYS:HD2 | 10:AJ:60:ASP:N | 2.36 | 0.40 |
| 11:AK:115:ILE:HA | 11:AK:116:PRO:HD2 | 1.93 | 0.40 |
| 11:AK:126:ARG:O | 21:AU:33:ARG:NH1 | 2.54 | 0.40 |
| 16:AP:38:PHE:CE2 | 16:AP:51:ARG:HB3 | 2.56 | 0.40 |
| 28:B3:16:LEU:O | 28:B3:19:HIS:HB2 | 2.22 | 0.40 |
| 30:B5:35:LEU:N | 30:B5:35:LEU:HD23 | 2.37 | 0.40 |
| 32:B7:35:LYS:HD3 | 32:B7:39:ARG:HH21 | 1.87 | 0.40 |
| 34:BA:78:U:H2' | 34:BA:79:C:C6 | 2.55 | 0.40 |
| 34:BA:391:A:H2' | 34:BA:392:U:H5' | 2.03 | 0.40 |
| 34:BA:588:U:H2' | 34:BA:589:U:H6 | 1.84 | 0.40 |
| 34:BA:588:U:O5' | 34:BA:588:U:H6 | 2.04 | 0.40 |
| 34:BA:957:C:O2' | 34:BA:958:U:H5" | 2.21 | 0.40 |
| 34:BA:1142:A:HO2' | 34:BA:1143:A:H3' | 1.79 | 0.40 |
| 34:BA:1171:G:C6 | 34:BA:1172:C:C4 | 3.09 | 0.40 |
| 34:BA:1340:U:C5 | 34:BA:1603:A:C8 | 3.09 | 0.40 |
| 34:BA:1996:C:OP1 | 45:BO:31:ARG:NE | 2.54 | 0.40 |
| 34:BA:2079:U:H4' | 34:BA:2433:A:C2 | 2.56 | 0.40 |
| 34:BA:2149:U:C3' | 34:BA:2149:U:C6 | 3.04 | 0.40 |
| 35:BB:69:G:C2' | 35:BB:70:C:H5' | 2.51 | 0.40 |
| 36:BC:211:ARG:HA | 36:BC:211:ARG:HD2 | 1.65 | 0.40 |
| 37:BD:41:ALA:C | 37:BD:43:ASP:N | 2.73 | 0.40 |
| 37:BD:108:ASP:O | 37:BD:109:VAL:HB | 2.21 | 0.40 |
| 37:BD:123:LYS:HE3 | 37:BD:165:MET:HE2 | 2.03 | 0.40 |
| 37:BD:125:TRP:CE3 | 37:BD:160:LYS:HD3 | 2.56 | 0.40 |
| 37:BD:172:VAL:HG11 | 37:BD:175:LEU:HD11 | 2.02 | 0.40 |
| 39:BF:92:GLY:O | 39:BF:95:MET:HB3 | 2.21 | 0.40 |
| 41:BH:144:LYS:HZ1 | 43:BL:30:PHE:HB2 | 1.86 | 0.40 |
| 43:BL:9:GLU:O | 43:BL:13:ALA:CB | 2.70 | 0.40 |
| 44:BN:72:LYS:O | 44:BN:73:VAL:O | 2.39 | 0.40 |
| 46:BP:128:THR:O | 46:BP:129:LYS:C | 2.60 | 0.40 |
| 47:BQ:71:LYS:HA | 47:BQ:72:PRO:HD3 | 1.82 | 0.40 |
| 47:BQ:136:MET:HE1 | 56:BZ:57:TYR:HD2 | 1.85 | 0.40 |
| 49:BS:25:ARG:HG3 | 49:BS:27:VAL:HG23 | 2.02 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 54:BX:40:LYS:H | 54:BX:43:ILE:CG2 | 2.34 | 0.40 |
| 55:BY:60:LYS:HA | 55:BY:60:LYS:HD2 | 1.68 | 0.40 |
| 1:AA:77:A:N6 | 1:AA:90:C:N4 | 2.63 | 0.40 |
| 1:AA:146:G:C2' | 1:AA:147:G:H5' | 2.52 | 0.40 |
| 1:AA:224:U:O2' | 1:AA:225:C:H5' | 2.21 | 0.40 |
| 1:AA:652:U:C4 | 1:AA:752:G:C4 | 3.10 | 0.40 |
| 1:AA:711:G:H2' | 1:AA:712:A:H8 | 1.86 | 0.40 |
| 1:AA:815:A:H5" | 1:AA:817:C:N4 | 2.37 | 0.40 |
| 1:AA:939:G:C5 | 1:AA:940:C:C5 | 3.09 | 0.40 |
| 1:AA:960:U:H2' | 1:AA:1222:G:O2' | 2.22 | 0.40 |
| 1:AA:972:C:H1' | 10:AJ:57:VAL:HG23 | 2.04 | 0.40 |
| 1:AA:974:A:OP2 | 14:AN:68:ARG:NH1 | 2.54 | 0.40 |
| 1:AA:1007:U:C2' | 1:AA:1008:U:H5" | 2.51 | 0.40 |
| 1:AA:1085:U:H1' | 1:AA:1094:G:C5 | 2.56 | 0.40 |
| 1:AA:1157:A:H61 | 1:AA:1178:G:H1' | 1.87 | 0.40 |
| 1:AA:1261:A:C8 | 1:AA:1262:C:C6 | 3.10 | 0.40 |
| 1:AA:1324:A:H4' | 1:AA:1362:A:O3' | 2.22 | 0.40 |
| 2:AB:10:LYS:H | 2:AB:10:LYS:HG3 | 1.66 | 0.40 |
| 2:AB:79:VAL:HG13 | 2:AB:213:LEU:HD21 | 2.02 | 0.40 |
| 2:AB:131:LYS:C | 2:AB:133:ALA:H | 2.25 | 0.40 |
| 3:AC:39:ARG:O | 3:AC:43:THR:HG23 | 2.21 | 0.40 |
| 3:AC:79:LYS:HE3 | 3:AC:79:LYS:CA | 2.51 | 0.40 |
| 3:AC:119:ILE:CG2 | 3:AC:197:VAL:HG21 | 2.51 | 0.40 |
| 4:AD:21:LYS:O | 4:AD:22:SER:C | 2.60 | 0.40 |
| 5:AE:82:HIS:O | 5:AE:82:HIS:ND1 | 2.55 | 0.40 |
| 5:AE:110:MET:CE | 5:AE:124:ALA:HB1 | 2.50 | 0.40 |
| 8:AH:105:THR:HB | 8:AH:120:LEU:HD13 | 2.03 | 0.40 |
| 9:AI:34:LEU:HG | 9:AI:39:GLY:HA3 | 2.04 | 0.40 |
| 9:AI:40:ARG:O | 9:AI:44:ARG:HG2 | 2.21 | 0.40 |
| 9:AI:93:LEU:C | 9:AI:95:SER:N | 2.74 | 0.40 |
| 15:AO:81:ILE:O | 15:AO:85:GLY:N | 2.54 | 0.40 |
| 18:AR:70:THR:OG1 | 18:AR:72:ARG:HG2 | 2.22 | 0.40 |
| 19:AS:43:MET:O | 19:AS:44:ILE:C | 2.60 | 0.40 |
| 21:AU:14:ALA:O | 21:AU:15:LEU:HB2 | 2.22 | 0.40 |
| 23:AW:411:GLN:O | 23:AW:411:GLN:HG2 | 2.21 | 0.40 |
| 25:B0:39:GLN:HE21 | 25:B0:42:THR:HG22 | 1.86 | 0.40 |
| 29:B4:15:ARG:HA | 34:BA:2046:G:H5' | 2.04 | 0.40 |
| 29:B4:54:ILE:O | 29:B4:55:ALA:C | 2.59 | 0.40 |
| 31:B6:19:ARG:NH1 | 34:BA:124:G:C6 | 2.90 | 0.40 |
| 34:BA:169:G:C4 | 34:BA:170:U:C5 | 3.10 | 0.40 |
| 34:BA:366:C:H6 | 34:BA:366:C:O5' | 2.05 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 34:BA:520:G:H2' | 34:BA:521:U:C6 | 2.56 | 0.40 |
| 34:BA:524:G:C6 | 34:BA:525:U:C4 | 3.09 | 0.40 |
| 34:BA:942:G:C4 | 34:BA:943:A:C8 | 3.09 | 0.40 |
| 34:BA:1130:U:O2' | 34:BA:1131:G:H2' | 2.21 | 0.40 |
| 34:BA:1230:A:C6 | 34:BA:1231:U:C4 | 3.10 | 0.40 |
| 34:BA:1314:C:O2 | 34:BA:1314:C:H2' | 2.22 | 0.40 |
| 34:BA:1507:C:C5' | 34:BA:1508:A:OP2 | 2.69 | 0.40 |
| 34:BA:1638:C:H2' | 34:BA:1639:C:O5' | 2.22 | 0.40 |
| 34:BA:2313:C:H2' | 34:BA:2314:A:H8 | 1.85 | 0.40 |
| 34:BA:2561:U:H4' | 45:BO:22:ILE:CD1 | 2.50 | 0.40 |
| 34:BA:2723:C:H2' | 34:BA:2724:U:O4' | 2.21 | 0.40 |
| 35:BB:47:C:C2' | 35:BB:48:U:H5' | 2.51 | 0.40 |
| 35:BB:49:C:OP1 | 49:BS:101:GLY:HA3 | 2.21 | 0.40 |
| 37:BD:109:VAL:HG22 | 37:BD:203:VAL:HB | 2.04 | 0.40 |
| 38:BE:122:GLU:O | 38:BE:123:LYS:O | 2.40 | 0.40 |
| 41:BH:66:GLY:C | 41:BH:68:PRO:CD | 2.89 | 0.40 |
| 42:BI:45:THR:HG22 | 42:BI:50:LYS:HG3 | 2.03 | 0.40 |
| 43:BJ:29:LYS:HD3 | 43:BJ:30:PHE:CD2 | 2.56 | 0.40 |
| 47:BQ:4:PRO:HG3 | 47:BQ:70:ASP:HA | 2.03 | 0.40 |
| 47:BQ:45:GLN:HE22 | 47:BQ:125:PRO:HG3 | 1.85 | 0.40 |
| 49:BS:23:ALA:O | 49:BS:42:PRO:HA | 2.21 | 0.40 |
| 49:BS:106:LEU:HD12 | 49:BS:106:LEU:C | 2.41 | 0.40 |
| 50:BT:105:LYS:CA | 50:BT:108:ARG:HH21 | 2.32 | 0.40 |
| 51:BU:57:ARG:HH22 | 51:BU:92:LYS:NZ | 2.20 | 0.40 |
| 54:BX:2:ILE:N | 54:BX:2:ILE:HD12 | 2.37 | 0.40 |
| 55:BY:21:ARG:NH2 | 55:BY:72:PHE:CE2 | 2.90 | 0.40 |
| 55:BY:65:GLN:O | 55:BY:68:ASN:HB2 | 2.21 | 0.40 |
| 56:BZ:2:PHE:CD2 | 56:BZ:61:LEU:HD23 | 2.57 | 0.40 |
| 56:BZ:21:ARG:HA | 56:BZ:25:LYS:O | 2.21 | 0.40 |
| 1:AA:43:C:P | 16:AP:12:LYS:NZ | 2.94 | 0.40 |
| 1:AA:375:U:C2 | 1:AA:376:G:C8 | 3.10 | 0.40 |
| 1:AA:422:C:C2' | 1:AA:423:G:OP2 | 2.69 | 0.40 |
| 1:AA:504:C:O4' | 1:AA:510:A:C2 | 2.75 | 0.40 |
| 1:AA:692:U:O2' | 1:AA:694:A:N7 | 2.48 | 0.40 |
| 1:AA:718:A:N6 | 18:AR:62:ARG:NH1 | 2.61 | 0.40 |
| 1:AA:1007:U:H3 | 1:AA:1022:A:H61 | 1.69 | 0.40 |
| 1:AA:1101:A:C4' | 1:AA:1102:A:O5' | 2.55 | 0.40 |
| 1:AA:1136:C:H5" | 1:AA:1137:C:P | 2.62 | 0.40 |
| 1:AA:1251:A:C1' | 1:AA:1370:G:H4' | 2.52 | 0.40 |
| 2:AB:165:ALA:O | 2:AB:172:ILE:HD12 | 2.21 | 0.40 |
| 3:AC:106:ARG:O | 3:AC:107:LYS:HB2 | 2.22 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:AD:127:ARG:HD3 | 4:AD:127:ARG:H | 1.87 | 0.40 |
| 5:AE:123:LEU:HD12 | 5:AE:123:LEU:H | 1.87 | 0.40 |
| 11:AK:126:ARG:HB2 | 21:AU:33:ARG:NH1 | 2.37 | 0.40 |
| 13:AM:5:GLY:CA | 13:AM:65:GLU:HG3 | 2.43 | 0.40 |
| 13:AM:77:LYS:HD3 | 13:AM:80:MET:HE3 | 2.04 | 0.40 |
| 15:AO:84:LEU:HD12 | 15:AO:84:LEU:HA | 1.75 | 0.40 |
| 16:AP:5:ARG:O | 16:AP:19:VAL:HA | 2.21 | 0.40 |
| 16:AP:11:ALA:O | 16:AP:12:LYS:C | 2.58 | 0.40 |
| 23:AW:21:HIS:CD2 | 23:AW:122:ARG:H | 2.35 | 0.40 |
| 23:AW:389:GLY:O | 23:AW:390:ILE:HD13 | 2.21 | 0.40 |
| 23:AW:424:ALA:O | 23:AW:441:VAL:HG13 | 2.22 | 0.40 |
| 25:B0:17:ALA:O | 25:B0:18:LYS:HB3 | 2.20 | 0.40 |
| 26:B1:49:ARG:HH12 | 34:BA:1364:G:P | 2.44 | 0.40 |
| 26:B1:70:LEU:O | 26:B1:73:ARG:N | 2.54 | 0.40 |
| 34:BA:78:U:H2' | 34:BA:79:C:H6 | 1.86 | 0.40 |
| 34:BA:195:A:H5" | 46:BP:47:ARG:HH22 | 1.86 | 0.40 |
| 34:BA:563:A:C4 | 34:BA:2018:G:C2 | 3.10 | 0.40 |
| 34:BA:1092:C:H3' | 34:BA:1093:G:C8 | 2.56 | 0.40 |
| 34:BA:1270:C:H6 | 34:BA:1270:C:O5' | 2.05 | 0.40 |
| 34:BA:1477:A:H2' | 34:BA:1478:G:O4' | 2.22 | 0.40 |
| 34:BA:1590:A:H2' | 34:BA:1591:A:C8 | 2.56 | 0.40 |
| 34:BA:1759:A:H4' | 34:BA:2715:C:O4' | 2.21 | 0.40 |
| 34:BA:1813:G:C4 | 36:BC:49:THR:HG21 | 2.56 | 0.40 |
| 34:BA:2312:U:O5' | 34:BA:2312:U:H6 | 2.05 | 0.40 |
| 34:BA:2325:G:OP1 | 34:BA:2326:C:OP2 | 2.39 | 0.40 |
| 34:BA:2592:G:H2' | 34:BA:2593:U:O4' | 2.22 | 0.40 |
| 34:BA:2680:U:O2' | 37:BD:11:MET:HE1 | 2.21 | 0.40 |
| 35:BB:94:A:H2' | 35:BB:95:U:C6 | 2.56 | 0.40 |
| 36:BC:78:GLU:OE1 | 36:BC:100:ARG:NE | 2.50 | 0.40 |
| 36:BC:95:TYR:HE1 | 36:BC:101:ARG:HD2 | 1.84 | 0.40 |
| 36:BC:115:ILE:HD11 | 36:BC:126:GLY:C | 2.41 | 0.40 |
| 38:BE:146:VAL:HB | 38:BE:148:ILE:HG13 | 2.03 | 0.40 |
| 38:BE:147:LEU:O | 38:BE:148:ILE:O | 2.40 | 0.40 |
| 39:BF:110:ILE:HD11 | 39:BF:136:ILE:HD13 | 2.03 | 0.40 |
| 41:BH:67:THR:C | 41:BH:69:PHE:N | 2.74 | 0.40 |
| 41:BH:129:LEU:N | 41:BH:130:PRO:HD2 | 2.36 | 0.40 |
| 41:BH:136:ILE:HA | 41:BH:139:LEU:HG | 2.03 | 0.40 |
| 44:BN:73:VAL:CG2 | 44:BN:74:TYR:H | 2.21 | 0.40 |
| 44:BN:122:LEU:O | 44:BN:122:LEU:HG | 2.22 | 0.40 |
| 45:BO:14:SER:O | 45:BO:52:VAL:HG22 | 2.21 | 0.40 |
| 46:BP:79:LEU:HD21 | 46:BP:135:ILE:HD11 | 2.03 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:BQ:74:THR:HA | 47:BQ:88:ASN:O | 2.22 | 0.40 |
| 50:BT:78:PRO:C | 50:BT:80:VAL:H | 2.25 | 0.40 |
| 50:BT:96:LEU:HB3 | 50:BT:99:LEU:CD2 | 2.46 | 0.40 |
| 52:BV:60:LYS:HB2 | 52:BV:100:GLY:HA3 | 2.03 | 0.40 |
| 54:BX:22:THR:HA | 54:BX:25:GLU:HB2 | 2.03 | 0.40 |
| 54:BX:22:THR:CA | 54:BX:25:GLU:HB3 | 2.47 | 0.40 |
| 54:BX:67:VAL:C | 54:BX:68:LYS:HD2 | 2.42 | 0.40 |
| 55:BY:85:ARG:HA | 55:BY:85:ARG:HD3 | 1.91 | 0.40 |

All (7) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:AC:131:ARG:NH2 | 34:BA:2157:G:P[4_445] | 1.17 | 1.03 |
| 3:AC:131:ARG:CZ | 34:BA:2157:G:OP1[4_445] | 1.23 | 0.97 |
| 3:AC:131:ARG:NH2 | 34:BA:2157:G:OP1[4_445] | 1.40 | 0.80 |
| 3:AC:131:ARG:NH2 | 34:BA:2157:G:O5'[4_445] | 1.48 | 0.72 |
| 3:AC:131:ARG:NE | 34:BA:2157:G:OP1[4_445] | 1.68 | 0.52 |
| 3:AC:131:ARG:NH2 | 34:BA:2156:G:O3'[4_445] | 1.80 | 0.40 |
| 3:AC:131:ARG:CZ | 34:BA:2157:G:P[4_445] | 2.10 | 0.10 |

## 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 | 216/241 (90%) | 130 (60%) | 52 (24%) | 34 (16%) | 0 | 0 |
| 3 | AC | 204/233 (88%) | 156 (76%) | 32 (16%) | 16 (8%) | 1 | 5 |
| 4 | AD | 203/206 (98%) | 134 (66%) | 45 (22%) | 24 (12%) | 0 | 1 |
| 5 | AE | 148/167 (89%) | 97 (66%) | 31 (21%) | 20 (14%) | 0 | 1 |
| 6 | AF | 98/131 (75%) | 66 (67%) | 19 (19%) | 13 (13%) | 0 | 1 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles |
|---|---|---|---|---|---|---|
| 7 | AG | 149/156 (96%) | 112 (75%) | 28 (19%) | 9 (6%) | 1 10 |
| 8 | AH | 127/130 (98%) | 96 (76%) | 27 (21%) | 4 (3%) | 3 22 |
| 9 | AI | 125/130 (96%) | 83 (66%) | 25 (20%) | 17 (14%) | 0 1 |
| 10 | AJ | 96/103 (93%) | 68 (71%) | 18 (19%) | 10 (10%) | 0 2 |
| 11 | AK | 115/129 (89%) | 82 (71%) | 25 (22%) | 8 (7%) | 1 6 |
| 12 | AL | 121/124 (98%) | 89 (74%) | 22 (18%) | 10 (8%) | 0 4 |
| 13 | AM | 112/118 (95%) | 78 (70%) | 27 (24%) | 7 (6%) | 1 8 |
| 14 | AN | 92/101 (91%) | 55 (60%) | 24 (26%) | 13 (14%) | 0 1 |
| 15 | AO | 86/89 (97%) | 68 (79%) | 15 (17%) | 3 (4%) | 3 20 |
| 16 | AP | 80/82 (98%) | 57 (71%) | 16 (20%) | 7 (9%) | 0 3 |
| 17 | AQ | 78/84 (93%) | 57 (73%) | 10 (13%) | 11 (14%) | 0 1 |
| 18 | AR | 53/75 (71%) | 38 (72%) | 12 (23%) | 3 (6%) | 1 11 |
| 19 | AS | 77/92 (84%) | 60 (78%) | 14 (18%) | 3 (4%) | 2 18 |
| 20 | AT | 83/87 (95%) | 59 (71%) | 20 (24%) | 4 (5%) | 2 14 |
| 21 | AU | 49/71 (69%) | 24 (49%) | 19 (39%) | 6 (12%) | 0 1 |
| 23 | AW | 523/529 (99%) | 381 (73%) | 82 (16%) | 60 (12%) | 0 2 |
| 24 | AY | 2/6 (33%) | 1 (50%) | 1 (50%) | 0 | 100 100 |
| 25 | B0 | 77/85 (91%) | 35 (46%) | 18 (23%) | 24 (31%) | 0 0 |
| 26 | B1 | 75/78 (96%) | 56 (75%) | 16 (21%) | 3 (4%) | 2 18 |
| 27 | B2 | 61/63 (97%) | 41 (67%) | 15 (25%) | 5 (8%) | 1 4 |
| 28 | B3 | 56/59 (95%) | 46 (82%) | 5 (9%) | 5 (9%) | 0 3 |
| 29 | B4 | 54/57 (95%) | 43 (80%) | 7 (13%) | 4 (7%) | 1 6 |
| 30 | B5 | 48/55 (87%) | 41 (85%) | 3 (6%) | 4 (8%) | 0 4 |
| 31 | B6 | 44/46 (96%) | 35 (80%) | 7 (16%) | 2 (4%) | 2 15 |
| 32 | B7 | 62/65 (95%) | 53 (86%) | 6 (10%) | 3 (5%) | 2 14 |
| 33 | B8 | 36/38 (95%) | 27 (75%) | 5 (14%) | 4 (11%) | 0 2 |
| 36 | BC | 269/273 (98%) | 212 (79%) | 31 (12%) | 26 (10%) | 0 3 |
| 37 | BD | 207/209 (99%) | 157 (76%) | 23 (11%) | 27 (13%) | 0 1 |
| 38 | BE | 199/201 (99%) | 143 (72%) | 33 (17%) | 23 (12%) | 0 1 |
| 39 | BF | 175/179 (98%) | 117 (67%) | 41 (23%) | 17 (10%) | 0 3 |
| 40 | BG | 174/177 (98%) | 104 (60%) | 44 (25%) | 26 (15%) | 0 1 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 41 | BH | 161/165 (98%) | 98 (61%) | 38 (24%) | 25 (16%) | 0 | 0 |
| 42 | BI | 139/142 (98%) | 83 (60%) | 38 (27%) | 18 (13%) | 0 | 1 |
| 43 | BJ | 28/121 (23%) | 17 (61%) | 6 (21%) | 5 (18%) | 0 | 0 |
| 43 | BK | 28/121 (23%) | 21 (75%) | 5 (18%) | 2 (7%) | 1 | 6 |
| 43 | BL | 28/121 (23%) | 22 (79%) | 4 (14%) | 2 (7%) | 1 | 6 |
| 43 | BM | 28/121 (23%) | 19 (68%) | 7 (25%) | 2 (7%) | 1 | 6 |
| 44 | BN | 140/142 (99%) | 101 (72%) | 24 (17%) | 15 (11%) | 0 | 2 |
| 45 | BO | 120/123 (98%) | 88 (73%) | 19 (16%) | 13 (11%) | 0 | 2 |
| 46 | BP | 141/144 (98%) | 88 (62%) | 34 (24%) | 19 (14%) | 0 | 1 |
| 47 | BQ | 134/136 (98%) | 104 (78%) | 18 (13%) | 12 (9%) | 0 | 3 |
| 48 | BR | 118/127 (93%) | 86 (73%) | 20 (17%) | 12 (10%) | 0 | 2 |
| 49 | BS | 114/117 (97%) | 90 (79%) | 14 (12%) | 10 (9%) | 0 | 3 |
| 50 | BT | 112/115 (97%) | 74 (66%) | 21 (19%) | 17 (15%) | 0 | 0 |
| 51 | BU | 115/118 (98%) | 85 (74%) | 23 (20%) | 7 (6%) | 1 | 9 |
| 52 | BV | 101/103 (98%) | 75 (74%) | 18 (18%) | 8 (8%) | 1 | 5 |
| 53 | BW | 108/116 (93%) | 89 (82%) | 15 (14%) | 4 (4%) | 2 | 19 |
| 54 | BX | 91/100 (91%) | 49 (54%) | 23 (25%) | 19 (21%) | 0 | 0 |
| 55 | BY | 100/104 (96%) | 65 (65%) | 22 (22%) | 13 (13%) | 0 | 1 |
| 56 | BZ | 92/94 (98%) | 72 (78%) | 14 (15%) | 6 (6%) | 1 | 8 |
| All | All | 6272/6999 (90%) | 4427 (71%) | 1181 (19%) | 664 (11%) | 0 | 2 |

All (664) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 2 | AB | 21 | TYR |
| 2 | AB | 22 | TRP |
| 2 | AB | 33 | ALA |
| 2 | AB | 40 | ILE |
| 2 | AB | 75 | ALA |
| 2 | AB | 163 | ILE |
| 2 | AB | 169 | HIS |
| 3 | AC | 14 | VAL |
| 3 | AC | 186 | SER |
| 4 | AD | 24 | VAL |
| 4 | AD | 28 | ASP |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 4 | AD | 34 | GLU |
| 4 | AD | 84 | ASN |
| 4 | AD | 108 | ALA |
| 4 | AD | 147 | LYS |
| 4 | AD | 167 | PRO |
| 4 | AD | 192 | ALA |
| 5 | AE | 44 | ARG |
| 5 | AE | 122 | VAL |
| 5 | AE | 154 | ALA |
| 6 | AF | 14 | GLN |
| 6 | AF | 53 | LYS |
| 6 | AF | 86 | ARG |
| 7 | AG | 112 | ASP |
| 7 | AG | 129 | ASN |
| 8 | AH | 87 | ARG |
| 9 | AI | 32 | ARG |
| 9 | AI | 44 | ARG |
| 9 | AI | 71 | ILE |
| 10 | AJ | 36 | VAL |
| 10 | AJ | 57 | VAL |
| 10 | AJ | 61 | ALA |
| 10 | AJ | 92 | LEU |
| 11 | AK | 125 | LYS |
| 11 | AK | 126 | ARG |
| 12 | AL | 8 | ARG |
| 12 | AL | 24 | GLU |
| 13 | AM | 46 | GLU |
| 14 | AN | 22 | LYS |
| 14 | AN | 33 | VAL |
| 14 | AN | 51 | PRO |
| 14 | AN | 52 | ARG |
| 14 | AN | 91 | GLU |
| 16 | AP | 75 | ILE |
| 17 | AQ | 11 | VAL |
| 17 | AQ | 12 | VAL |
| 17 | AQ | 16 | MET |
| 17 | AQ | 52 | CYS |
| 17 | AQ | 70 | LYS |
| 20 | AT | 3 | ILE |
| 20 | AT | 67 | HIS |
| 23 | AW | 52 | ASN |
| 23 | AW | 61 | GLU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 23 | AW | 69 | SER |
| 23 | AW | 98 | ASP |
| 23 | AW | 301 | PHE |
| 23 | AW | 305 | ALA |
| 23 | AW | 309 | PRO |
| 23 | AW | 313 | ASP |
| 23 | AW | 315 | VAL |
| 23 | AW | 390 | ILE |
| 23 | AW | 398 | PHE |
| 23 | AW | 399 | ARG |
| 23 | AW | 406 | PRO |
| 23 | AW | 434 | ASN |
| 23 | AW | 440 | ALA |
| 23 | AW | 441 | VAL |
| 23 | AW | 521 | VAL |
| 23 | AW | 522 | GLN |
| 25 | B0 | 9 | THR |
| 25 | B0 | 18 | LYS |
| 25 | B0 | 36 | ILE |
| 25 | B0 | 50 | VAL |
| 26 | B1 | 69 | GLU |
| 27 | B2 | 24 | GLU |
| 28 | B3 | 34 | THR |
| 29 | B4 | 23 | ALA |
| 29 | B4 | 35 | GLU |
| 32 | B7 | 31 | ILE |
| 33 | B8 | 8 | LYS |
| 36 | BC | 77 | VAL |
| 36 | BC | 104 | LEU |
| 37 | BD | 73 | VAL |
| 37 | BD | 92 | VAL |
| 37 | BD | 106 | LYS |
| 37 | BD | 122 | VAL |
| 37 | BD | 191 | GLY |
| 37 | BD | 192 | ALA |
| 38 | BE | 79 | ARG |
| 38 | BE | 80 | SER |
| 39 | BF | 8 | LYS |
| 39 | BF | 132 | ARG |
| 39 | BF | 134 | GLN |
| 39 | BF | 160 | LYS |
| 39 | BF | 175 | PRO |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 40 | BG | 9 | VAL |
| 40 | BG | 28 | LYS |
| 40 | BG | 53 | PRO |
| 40 | BG | 84 | LYS |
| 40 | BG | 97 | VAL |
| 40 | BG | 118 | ALA |
| 40 | BG | 168 | VAL |
| 41 | BH | 58 | THR |
| 41 | BH | 80 | THR |
| 41 | BH | 93 | ALA |
| 41 | BH | 106 | PHE |
| 41 | BH | 107 | GLU |
| 41 | BH | 108 | VAL |
| 41 | BH | 118 | ILE |
| 41 | BH | 121 | SER |
| 41 | BH | 124 | ASP |
| 41 | BH | 129 | LEU |
| 41 | BH | 145 | GLU |
| 42 | BI | 92 | PRO |
| 42 | BI | 97 | VAL |
| 43 | BJ | 4 | LYS |
| 43 | BJ | 27 | GLU |
| 43 | BK | 11 | VAL |
| 43 | BK | 28 | GLU |
| 43 | BL | 13 | ALA |
| 43 | BM | 10 | ALA |
| 43 | BM | 14 | MET |
| 44 | BN | 44 | TYR |
| 44 | BN | 45 | THR |
| 44 | BN | 73 | VAL |
| 44 | BN | 81 | ILE |
| 44 | BN | 111 | LYS |
| 45 | BO | 16 | ALA |
| 45 | BO | 71 | ARG |
| 45 | BO | 73 | ASP |
| 45 | BO | 92 | GLU |
| 45 | BO | 93 | GLN |
| 46 | BP | 15 | ALA |
| 46 | BP | 66 | PHE |
| 46 | BP | 93 | ASN |
| 46 | BP | 103 | ILE |
| 47 | BQ | 2 | LEU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | BQ | 13 | HIS |
| 47 | BQ | 60 | GLN |
| 47 | BQ | 69 | PRO |
| 47 | BQ | 77 | PRO |
| 48 | BR | 117 | ASP |
| 49 | BS | 67 | ASN |
| 50 | BT | 19 | PHE |
| 50 | BT | 25 | VAL |
| 50 | BT | 37 | LYS |
| 50 | BT | 50 | ARG |
| 50 | BT | 103 | THR |
| 50 | BT | 105 | LYS |
| 53 | BW | 3 | THR |
| 53 | BW | 14 | ALA |
| 53 | BW | 64 | ALA |
| 54 | BX | 29 | THR |
| 54 | BX | 39 | THR |
| 54 | BX | 49 | LYS |
| 54 | BX | 88 | LYS |
| 55 | BY | 6 | ARG |
| 55 | BY | 16 | LYS |
| 55 | BY | 63 | ALA |
| 55 | BY | 98 | ASN |
| 56 | BZ | 69 | GLU |
| 2 | AB | 20 | ARG |
| 2 | AB | 72 | LYS |
| 2 | AB | 85 | SER |
| 2 | AB | 94 | ARG |
| 2 | AB | 119 | GLN |
| 2 | AB | 123 | GLY |
| 2 | AB | 125 | PHE |
| 2 | AB | 136 | ARG |
| 2 | AB | 150 | ILE |
| 2 | AB | 189 | ASN |
| 2 | AB | 219 | THR |
| 3 | AC | 50 | SER |
| 3 | AC | 60 | ALA |
| 3 | AC | 145 | ALA |
| 3 | AC | 205 | GLU |
| 4 | AD | 22 | SER |
| 4 | AD | 36 | ALA |
| 4 | AD | 125 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 4 | AD | 150 | LYS |
| 4 | AD | 174 | ALA |
| 4 | AD | 191 | SER |
| 5 | AE | 97 | PRO |
| 5 | AE | 110 | MET |
| 5 | AE | 121 | ASN |
| 5 | AE | 133 | ILE |
| 5 | AE | 144 | GLU |
| 5 | AE | 153 | ALA |
| 5 | AE | 157 | GLY |
| 6 | AF | 69 | GLU |
| 7 | AG | 36 | SER |
| 7 | AG | 55 | LYS |
| 9 | AI | 40 | ARG |
| 9 | AI | 128 | LYS |
| 10 | AJ | 75 | ASP |
| 10 | AJ | 101 | SER |
| 11 | AK | 13 | LYS |
| 11 | AK | 76 | TYR |
| 11 | AK | 88 | PRO |
| 11 | AK | 102 | ALA |
| 12 | AL | 33 | CYS |
| 12 | AL | 75 | GLU |
| 12 | AL | 88 | ASP |
| 12 | AL | 122 | LYS |
| 13 | AM | 3 | ILE |
| 13 | AM | 104 | ASN |
| 14 | AN | 44 | VAL |
| 14 | AN | 54 | SER |
| 14 | AN | 61 | ASN |
| 16 | AP | 36 | VAL |
| 16 | AP | 80 | LYS |
| 17 | AQ | 17 | GLU |
| 17 | AQ | 49 | ASN |
| 17 | AQ | 79 | GLU |
| 20 | AT | 5 | SER |
| 21 | AU | 12 | ASP |
| 21 | AU | 23 | GLU |
| 23 | AW | 60 | MET |
| 23 | AW | 68 | ILE |
| 23 | AW | 96 | SER |
| 23 | AW | 300 | VAL |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 23 | AW | 356 | VAL |
| 23 | AW | 410 | LYS |
| 23 | AW | 413 | LEU |
| 23 | AW | 424 | ALA |
| 23 | AW | 433 | ASN |
| 23 | AW | 500 | ASN |
| 23 | AW | 504 | ILE |
| 23 | AW | 524 | HIS |
| 23 | AW | 526 | THR |
| 25 | B0 | 10 | ARG |
| 25 | B0 | 23 | LYS |
| 25 | B0 | 26 | GLY |
| 25 | B0 | 29 | SER |
| 25 | B0 | 40 | ARG |
| 25 | B0 | 47 | GLY |
| 25 | B0 | 51 | GLY |
| 25 | B0 | 52 | CYS |
| 26 | B1 | 17 | ARG |
| 26 | B1 | 70 | LEU |
| 27 | B2 | 25 | GLN |
| 30 | B5 | 15 | GLY |
| 30 | B5 | 51 | ALA |
| 32 | B7 | 22 | LYS |
| 36 | BC | 35 | LYS |
| 36 | BC | 57 | HIS |
| 36 | BC | 140 | VAL |
| 36 | BC | 141 | HIS |
| 36 | BC | 196 | ASN |
| 36 | BC | 232 | GLY |
| 36 | BC | 234 | GLY |
| 36 | BC | 239 | PHE |
| 36 | BC | 260 | LYS |
| 37 | BD | 69 | ALA |
| 37 | BD | 70 | LYS |
| 37 | BD | 72 | GLY |
| 37 | BD | 99 | GLU |
| 37 | BD | 107 | VAL |
| 37 | BD | 118 | PHE |
| 37 | BD | 119 | ALA |
| 37 | BD | 144 | GLY |
| 37 | BD | 170 | VAL |
| 37 | BD | 184 | ARG |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 37 | BD | 190 | LYS |
| 38 | BE | 42 | GLY |
| 38 | BE | 123 | LYS |
| 38 | BE | 148 | ILE |
| 38 | BE | 175 | ILE |
| 39 | BF | 72 | SER |
| 40 | BG | 45 | ALA |
| 40 | BG | 54 | ARG |
| 40 | BG | 60 | GLY |
| 40 | BG | 75 | VAL |
| 40 | BG | 79 | THR |
| 40 | BG | 164 | ALA |
| 41 | BH | 47 | GLU |
| 41 | BH | 54 | VAL |
| 41 | BH | 56 | ARG |
| 41 | BH | 60 | LEU |
| 41 | BH | 88 | HIS |
| 41 | BH | 144 | LYS |
| 42 | BI | 3 | LYS |
| 42 | BI | 6 | ALA |
| 42 | BI | 83 | ALA |
| 42 | BI | 85 | ILE |
| 42 | BI | 90 | GLY |
| 43 | BJ | 26 | MET |
| 43 | BL | 14 | MET |
| 44 | BN | 13 | ARG |
| 45 | BO | 14 | SER |
| 45 | BO | 35 | VAL |
| 45 | BO | 50 | GLY |
| 45 | BO | 108 | ARG |
| 46 | BP | 29 | LYS |
| 46 | BP | 86 | GLU |
| 46 | BP | 111 | ILE |
| 47 | BQ | 35 | ALA |
| 47 | BQ | 36 | VAL |
| 47 | BQ | 55 | ARG |
| 47 | BQ | 73 | ILE |
| 48 | BR | 14 | SER |
| 48 | BR | 91 | ALA |
| 48 | BR | 93 | GLY |
| 48 | BR | 101 | GLY |
| 49 | BS | 22 | GLY |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 49 | BS | 66 | GLY |
| 49 | BS | 89 | ASP |
| 50 | BT | 20 | ARG |
| 50 | BT | 93 | LYS |
| 50 | BT | 100 | ARG |
| 51 | BU | 5 | ARG |
| 51 | BU | 85 | ALA |
| 51 | BU | 86 | SER |
| 51 | BU | 87 | VAL |
| 52 | BV | 55 | ASP |
| 54 | BX | 28 | ASN |
| 54 | BX | 36 | LYS |
| 54 | BX | 73 | ARG |
| 55 | BY | 7 | ASP |
| 55 | BY | 88 | ASP |
| 55 | BY | 92 | VAL |
| 56 | BZ | 2 | PHE |
| 2 | AB | 12 | GLY |
| 2 | AB | 31 | PHE |
| 2 | AB | 32 | GLY |
| 2 | AB | 73 | ARG |
| 2 | AB | 81 | ASP |
| 2 | AB | 148 | GLY |
| 2 | AB | 211 | LEU |
| 3 | AC | 36 | PHE |
| 3 | AC | 88 | LYS |
| 4 | AD | 6 | PRO |
| 4 | AD | 43 | ARG |
| 4 | AD | 115 | GLN |
| 4 | AD | 124 | VAL |
| 4 | AD | 132 | ALA |
| 4 | AD | 166 | LYS |
| 5 | AE | 98 | ALA |
| 5 | AE | 149 | PRO |
| 6 | AF | 7 | VAL |
| 6 | AF | 91 | ARG |
| 7 | AG | 35 | LYS |
| 8 | AH | 41 | GLU |
| 8 | AH | 65 | PHE |
| 9 | AI | 22 | PRO |
| 11 | AK | 107 | THR |
| 13 | AM | 36 | ALA |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 13 | AM | 103 | THR |
| 13 | AM | 113 | LYS |
| 14 | AN | 27 | LYS |
| 14 | AN | 45 | LEU |
| 14 | AN | 67 | GLY |
| 16 | AP | 11 | ALA |
| 16 | AP | 25 | ARG |
| 17 | AQ | 5 | ARG |
| 17 | AQ | 68 | LYS |
| 18 | AR | 48 | ALA |
| 19 | AS | 69 | LYS |
| 21 | AU | 34 | ARG |
| 23 | AW | 18 | ILE |
| 23 | AW | 49 | ARG |
| 23 | AW | 53 | GLN |
| 23 | AW | 54 | HIS |
| 23 | AW | 62 | MET |
| 23 | AW | 92 | HIS |
| 23 | AW | 391 | PRO |
| 23 | AW | 404 | LYS |
| 23 | AW | 405 | ASP |
| 23 | AW | 435 | ASP |
| 23 | AW | 477 | ALA |
| 23 | AW | 492 | GLN |
| 23 | AW | 523 | PHE |
| 25 | B0 | 14 | ASP |
| 25 | B0 | 16 | GLU |
| 25 | B0 | 27 | GLY |
| 25 | B0 | 34 | SER |
| 25 | B0 | 37 | VAL |
| 25 | B0 | 41 | GLY |
| 27 | B2 | 37 | LEU |
| 28 | B3 | 49 | ALA |
| 32 | B7 | 28 | LEU |
| 33 | B8 | 16 | ILE |
| 33 | B8 | 37 | GLN |
| 36 | BC | 23 | LEU |
| 36 | BC | 37 | SER |
| 36 | BC | 64 | VAL |
| 36 | BC | 109 | LEU |
| 36 | BC | 204 | LEU |
| 36 | BC | 231 | HIS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 37 | BD | 43 | ASP |
| 37 | BD | 71 | ALA |
| 38 | BE | 6 | LYS |
| 38 | BE | 9 | GLN |
| 38 | BE | 46 | GLN |
| 38 | BE | 153 | LEU |
| 39 | BF | 20 | ASN |
| 39 | BF | 113 | PHE |
| 39 | BF | 133 | GLU |
| 40 | BG | 31 | GLU |
| 40 | BG | 33 | THR |
| 40 | BG | 44 | HIS |
| 40 | BG | 68 | ARG |
| 40 | BG | 151 | ARG |
| 40 | BG | 170 | THR |
| 41 | BH | 7 | ASP |
| 41 | BH | 61 | ARG |
| 41 | BH | 113 | PHE |
| 41 | BH | 120 | ALA |
| 41 | BH | 151 | LEU |
| 42 | BI | 49 | GLU |
| 44 | BN | 4 | PHE |
| 44 | BN | 25 | LEU |
| 44 | BN | 41 | LYS |
| 44 | BN | 65 | THR |
| 45 | BO | 46 | ALA |
| 45 | BO | 48 | PRO |
| 46 | BP | 36 | LYS |
| 46 | BP | 41 | ARG |
| 46 | BP | 88 | GLY |
| 46 | BP | 115 | GLU |
| 47 | BQ | 43 | ALA |
| 47 | BQ | 56 | ALA |
| 47 | BQ | 134 | THR |
| 48 | BR | 2 | ARG |
| 48 | BR | 3 | HIS |
| 48 | BR | 59 | SER |
| 48 | BR | 60 | VAL |
| 49 | BS | 3 | LYS |
| 50 | BT | 15 | ASP |
| 50 | BT | 65 | ASN |
| 50 | BT | 92 | ARG |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 50 | BT | 104 | GLY |
| 51 | BU | 91 | ARG |
| 52 | BV | 40 | MET |
| 52 | BV | 43 | ASN |
| 52 | BV | 98 | ILE |
| 52 | BV | 100 | GLY |
| 54 | BX | 20 | ALA |
| 54 | BX | 38 | ALA |
| 54 | BX | 57 | VAL |
| 54 | BX | 70 | HIS |
| 55 | BY | 99 | SER |
| 55 | BY | 101 | THR |
| 56 | BZ | 71 | LYS |
| 56 | BZ | 93 | ARG |
| 2 | AB | 18 | GLN |
| 2 | AB | 54 | ALA |
| 2 | AB | 62 | ARG |
| 2 | AB | 67 | LEU |
| 2 | AB | 128 | LEU |
| 2 | AB | 209 | VAL |
| 3 | AC | 35 | ASP |
| 3 | AC | 52 | SER |
| 3 | AC | 65 | VAL |
| 3 | AC | 125 | ARG |
| 3 | AC | 142 | ARG |
| 5 | AE | 75 | LEU |
| 5 | AE | 100 | GLU |
| 5 | AE | 141 | ASP |
| 6 | AF | 12 | PRO |
| 6 | AF | 13 | ASP |
| 6 | AF | 55 | HIS |
| 6 | AF | 63 | ASN |
| 7 | AG | 6 | ILE |
| 7 | AG | 57 | GLU |
| 7 | AG | 95 | ARG |
| 9 | AI | 8 | THR |
| 9 | AI | 56 | MET |
| 9 | AI | 120 | ALA |
| 15 | AO | 3 | SER |
| 15 | AO | 45 | HIS |
| 16 | AP | 49 | GLY |
| 17 | AQ | 50 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 18 | AR | 54 | LEU |
| 18 | AR | 56 | ARG |
| 19 | AS | 5 | LYS |
| 21 | AU | 9 | GLU |
| 21 | AU | 37 | TYR |
| 23 | AW | 20 | SER |
| 23 | AW | 295 | LYS |
| 23 | AW | 403 | LEU |
| 23 | AW | 412 | LEU |
| 23 | AW | 480 | LYS |
| 25 | B0 | 30 | VAL |
| 27 | B2 | 36 | GLN |
| 28 | B3 | 3 | THR |
| 29 | B4 | 51 | ARG |
| 29 | B4 | 54 | ILE |
| 33 | B8 | 20 | ASP |
| 36 | BC | 28 | PRO |
| 36 | BC | 68 | ARG |
| 36 | BC | 255 | LYS |
| 36 | BC | 256 | THR |
| 37 | BD | 121 | THR |
| 37 | BD | 182 | ALA |
| 38 | BE | 10 | SER |
| 38 | BE | 13 | THR |
| 38 | BE | 45 | ALA |
| 38 | BE | 69 | ARG |
| 38 | BE | 151 | GLY |
| 38 | BE | 163 | ASN |
| 39 | BF | 101 | ARG |
| 39 | BF | 128 | SER |
| 39 | BF | 158 | THR |
| 40 | BG | 16 | VAL |
| 40 | BG | 38 | ASP |
| 40 | BG | 113 | ASP |
| 41 | BH | 59 | LEU |
| 42 | BI | 5 | GLN |
| 42 | BI | 31 | GLY |
| 42 | BI | 124 | MET |
| 44 | BN | 14 | ASP |
| 45 | BO | 75 | SER |
| 46 | BP | 3 | LEU |
| 46 | BP | 12 | SER |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 46 | BP | 30 | THR |
| 46 | BP | 81 | ASP |
| 48 | BR | 80 | PHE |
| 49 | BS | 71 | ALA |
| 51 | BU | 76 | SER |
| 52 | BV | 91 | GLN |
| 53 | BW | 96 | ILE |
| 54 | BX | 19 | LYS |
| 54 | BX | 69 | ARG |
| 54 | BX | 86 | THR |
| 55 | BY | 54 | PRO |
| 56 | BZ | 68 | LYS |
| 2 | AB | 86 | CYS |
| 3 | AC | 107 | LYS |
| 5 | AE | 11 | GLN |
| 5 | AE | 23 | THR |
| 6 | AF | 54 | LEU |
| 6 | AF | 62 | MET |
| 6 | AF | 94 | HIS |
| 9 | AI | 31 | GLN |
| 9 | AI | 41 | GLU |
| 9 | AI | 42 | THR |
| 9 | AI | 80 | HIS |
| 9 | AI | 119 | LYS |
| 9 | AI | 122 | ARG |
| 12 | AL | 21 | PRO |
| 12 | AL | 114 | SER |
| 12 | AL | 117 | GLY |
| 14 | AN | 3 | GLN |
| 23 | AW | 93 | GLU |
| 23 | AW | 304 | GLN |
| 23 | AW | 467 | ASN |
| 23 | AW | 473 | TRP |
| 25 | B0 | 28 | GLU |
| 25 | B0 | 74 | LYS |
| 25 | B0 | 76 | ARG |
| 25 | B0 | 78 | PHE |
| 30 | B5 | 50 | GLU |
| 31 | B6 | 44 | VAL |
| 36 | BC | 34 | GLU |
| 36 | BC | 110 | LYS |
| 37 | BD | 86 | GLU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 37 | BD | 94 | GLN |
| 37 | BD | 175 | LEU |
| 38 | BE | 83 | VAL |
| 38 | BE | 96 | VAL |
| 38 | BE | 109 | LEU |
| 38 | BE | 110 | SER |
| 38 | BE | 162 | ARG |
| 39 | BF | 2 | LYS |
| 39 | BF | 77 | LYS |
| 39 | BF | 109 | ARG |
| 39 | BF | 162 | ASP |
| 40 | BG | 85 | LYS |
| 41 | BH | 67 | THR |
| 42 | BI | 20 | SER |
| 42 | BI | 25 | PRO |
| 42 | BI | 30 | GLN |
| 42 | BI | 64 | ARG |
| 42 | BI | 65 | SER |
| 43 | BJ | 25 | ALA |
| 44 | BN | 22 | GLY |
| 44 | BN | 125 | TYR |
| 46 | BP | 19 | LEU |
| 48 | BR | 102 | PHE |
| 48 | BR | 118 | ARG |
| 49 | BS | 37 | ALA |
| 49 | BS | 56 | LYS |
| 49 | BS | 100 | HIS |
| 49 | BS | 113 | ALA |
| 50 | BT | 87 | ARG |
| 51 | BU | 114 | ALA |
| 52 | BV | 53 | PHE |
| 54 | BX | 18 | GLU |
| 54 | BX | 55 | VAL |
| 56 | BZ | 44 | HIS |
| 2 | AB | 63 | LYS |
| 2 | AB | 177 | ASN |
| 4 | AD | 33 | ILE |
| 4 | AD | 56 | GLU |
| 4 | AD | 63 | ILE |
| 5 | AE | 101 | GLY |
| 8 | AH | 40 | LYS |
| 10 | AJ | 35 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 10 | AJ | 62 | ARG |
| 11 | AK | 118 | ASN |
| 12 | AL | 23 | LEU |
| 14 | AN | 87 | ALA |
| 20 | AT | 6 | ALA |
| 23 | AW | 320 | VAL |
| 23 | AW | 407 | LEU |
| 23 | AW | 411 | GLN |
| 28 | B3 | 9 | THR |
| 30 | B5 | 4 | ILE |
| 31 | B6 | 43 | THR |
| 36 | BC | 237 | ARG |
| 36 | BC | 238 | ASN |
| 36 | BC | 267 | VAL |
| 37 | BD | 42 | ASN |
| 37 | BD | 109 | VAL |
| 37 | BD | 145 | SER |
| 38 | BE | 11 | ALA |
| 40 | BG | 8 | VAL |
| 44 | BN | 21 | THR |
| 45 | BO | 3 | GLN |
| 50 | BT | 63 | ILE |
| 55 | BY | 53 | GLN |
| 55 | BY | 85 | ARG |
| 4 | AD | 144 | ILE |
| 5 | AE | 104 | ILE |
| 5 | AE | 136 | VAL |
| 7 | AG | 92 | PRO |
| 9 | AI | 78 | ILE |
| 10 | AJ | 38 | GLY |
| 16 | AP | 42 | ILE |
| 19 | AS | 44 | ILE |
| 21 | AU | 52 | VAL |
| 25 | B0 | 22 | VAL |
| 44 | BN | 124 | VAL |
| 46 | BP | 65 | GLY |
| 46 | BP | 114 | GLY |
| 54 | BX | 2 | ILE |
| 54 | BX | 74 | ILE |
| 3 | AC | 13 | ILE |
| 23 | AW | 518 | TYR |
| 40 | BG | 76 | ILE |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 42 | BI | 88 | GLY |
| 52 | BV | 101 | ILE |
| 3 | AC | 97 | PRO |
| 9 | AI | 9 | GLY |
| 15 | AO | 35 | ILE |
| 40 | BG | 7 | PRO |
| 42 | BI | 118 | GLY |
| 43 | BJ | 2 | ILE |
| 46 | BP | 116 | VAL |
| 50 | BT | 4 | ILE |
| 50 | BT | 34 | GLY |
| 54 | BX | 16 | VAL |
| 13 | AM | 76 | ILE |
| 23 | AW | 78 | PRO |
| 23 | AW | 382 | GLY |
| 27 | B2 | 46 | VAL |
| 38 | BE | 73 | ILE |
| 39 | BF | 135 | ILE |
| 10 | AJ | 41 | PRO |
| 28 | B3 | 31 | ILE |
| 41 | BH | 119 | PRO |
| 55 | BY | 38 | ILE |
| 23 | AW | 519 | PRO |

### 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 | 180/199 (90%) | 145 (81%) | 35 (19%) | 1 6 |
| 3 | AC | 170/190 (90%) | 146 (86%) | 24 (14%) | 3 14 |
| 4 | AD | 172/173 (99%) | 152 (88%) | 20 (12%) | 4 21 |
| 5 | AE | 113/126 (90%) | 95 (84%) | 18 (16%) | 2 10 |
| 6 | AF | 87/112 (78%) | 73 (84%) | 14 (16%) | 2 9 |
| 7 | AG | 124/129 (96%) | 121 (98%) | 3 (2%) | 44 71 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles |
|---|---|---|---|---|---|
| 8 | AH | 104/105 (99%) | 94 (90%) | 10 (10%) | 7 28 |
| 9 | AI | 105/107 (98%) | 92 (88%) | 13 (12%) | 4 18 |
| 10 | AJ | 86/90 (96%) | 70 (81%) | 16 (19%) | 1 7 |
| 11 | AK | 90/99 (91%) | 74 (82%) | 16 (18%) | 1 7 |
| 12 | AL | 103/104 (99%) | 89 (86%) | 14 (14%) | 3 15 |
| 13 | AM | 92/96 (96%) | 87 (95%) | 5 (5%) | 18 51 |
| 14 | AN | 79/84 (94%) | 71 (90%) | 8 (10%) | 6 26 |
| 15 | AO | 76/77 (99%) | 66 (87%) | 10 (13%) | 3 16 |
| 16 | AP | 65/65 (100%) | 57 (88%) | 8 (12%) | 4 19 |
| 17 | AQ | 74/78 (95%) | 61 (82%) | 13 (18%) | 1 8 |
| 18 | AR | 48/65 (74%) | 44 (92%) | 4 (8%) | 9 35 |
| 19 | AS | 70/79 (89%) | 64 (91%) | 6 (9%) | 8 33 |
| 20 | AT | 65/66 (98%) | 60 (92%) | 5 (8%) | 10 39 |
| 21 | AU | 44/61 (72%) | 37 (84%) | 7 (16%) | 2 10 |
| 23 | AW | 447/453 (99%) | 381 (85%) | 66 (15%) | 2 12 |
| 24 | AY | 2/2 (100%) | 2 (100%) | 0 | 100 100 |
| 25 | B0 | 59/63 (94%) | 42 (71%) | 17 (29%) | 0 1 |
| 26 | B1 | 67/68 (98%) | 56 (84%) | 11 (16%) | 2 9 |
| 27 | B2 | 55/55 (100%) | 46 (84%) | 9 (16%) | 2 9 |
| 28 | B3 | 48/49 (98%) | 39 (81%) | 9 (19%) | 1 6 |
| 29 | B4 | 47/48 (98%) | 40 (85%) | 7 (15%) | 2 12 |
| 30 | B5 | 45/49 (92%) | 42 (93%) | 3 (7%) | 13 44 |
| 31 | B6 | 38/38 (100%) | 34 (90%) | 4 (10%) | 5 24 |
| 32 | B7 | 51/52 (98%) | 48 (94%) | 3 (6%) | 16 48 |
| 33 | B8 | 34/34 (100%) | 32 (94%) | 2 (6%) | 16 48 |
| 36 | BC | 216/218 (99%) | 177 (82%) | 39 (18%) | 1 7 |
| 37 | BD | 164/164 (100%) | 143 (87%) | 21 (13%) | 3 17 |
| 38 | BE | 165/165 (100%) | 138 (84%) | 27 (16%) | 2 9 |
| 39 | BF | 148/150 (99%) | 136 (92%) | 12 (8%) | 9 36 |
| 40 | BG | 137/138 (99%) | 116 (85%) | 21 (15%) | 2 11 |
| 41 | BH | 123/123 (100%) | 109 (89%) | 14 (11%) | 4 21 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles |
|---|---|---|---|---|---|
| 42 | BI | 109/110 (99%) | 101 (93%) | 8 (7%) | 11 41 |
| 43 | BJ | 26/85 (31%) | 23 (88%) | 3 (12%) | 4 21 |
| 43 | BK | 26/85 (31%) | 26 (100%) | 0 | 100 100 |
| 43 | BL | 26/85 (31%) | 25 (96%) | 1 (4%) | 28 60 |
| 43 | BM | 26/85 (31%) | 24 (92%) | 2 (8%) | 10 39 |
| 44 | BN | 116/116 (100%) | 94 (81%) | 22 (19%) | 1 6 |
| 45 | BO | 103/104 (99%) | 80 (78%) | 23 (22%) | 1 4 |
| 46 | BP | 102/103 (99%) | 85 (83%) | 17 (17%) | 2 9 |
| 47 | BQ | 109/109 (100%) | 91 (84%) | 18 (16%) | 2 9 |
| 48 | BR | 100/103 (97%) | 88 (88%) | 12 (12%) | 4 19 |
| 49 | BS | 86/87 (99%) | 76 (88%) | 10 (12%) | 4 21 |
| 50 | BT | 99/100 (99%) | 81 (82%) | 18 (18%) | 1 7 |
| 51 | BU | 89/90 (99%) | 77 (86%) | 12 (14%) | 3 15 |
| 52 | BV | 84/84 (100%) | 74 (88%) | 10 (12%) | 4 19 |
| 53 | BW | 93/99 (94%) | 73 (78%) | 20 (22%) | 1 4 |
| 54 | BX | 80/84 (95%) | 66 (82%) | 14 (18%) | 1 8 |
| 55 | BY | 83/85 (98%) | 74 (89%) | 9 (11%) | 5 23 |
| 56 | BZ | 78/78 (100%) | 74 (95%) | 4 (5%) | 20 53 |
| All | All | 5228/5666 (92%) | 4511 (86%) | 717 (14%) | 3 14 |

All (717) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 2 | AB | 8 | MET |
| 2 | AB | 10 | LYS |
| 2 | AB | 14 | HIS |
| 2 | AB | 15 | PHE |
| 2 | AB | 19 | THR |
| 2 | AB | 20 | ARG |
| 2 | AB | 22 | TRP |
| 2 | AB | 26 | MET |
| 2 | AB | 36 | LYS |
| 2 | AB | 38 | HIS |
| 2 | AB | 40 | ILE |
| 2 | AB | 41 | ASN |
| 2 | AB | 49 | PHE |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 2 | AB | 57 | ASN |
| 2 | AB | 71 | THR |
| 2 | AB | 86 | CYS |
| 2 | AB | 88 | GLN |
| 2 | AB | 90 | PHE |
| 2 | AB | 93 | HIS |
| 2 | AB | 100 | LEU |
| 2 | AB | 102 | ASN |
| 2 | AB | 108 | GLN |
| 2 | AB | 113 | LEU |
| 2 | AB | 115 | ASP |
| 2 | AB | 119 | GLN |
| 2 | AB | 122 | ASP |
| 2 | AB | 125 | PHE |
| 2 | AB | 128 | LEU |
| 2 | AB | 130 | LYS |
| 2 | AB | 136 | ARG |
| 2 | AB | 138 | ARG |
| 2 | AB | 143 | LEU |
| 2 | AB | 174 | GLU |
| 2 | AB | 212 | TYR |
| 2 | AB | 221 | ARG |
| 3 | AC | 2 | GLN |
| 3 | AC | 14 | VAL |
| 3 | AC | 15 | LYS |
| 3 | AC | 26 | LYS |
| 3 | AC | 36 | PHE |
| 3 | AC | 41 | TYR |
| 3 | AC | 54 | ILE |
| 3 | AC | 57 | GLU |
| 3 | AC | 79 | LYS |
| 3 | AC | 100 | ILE |
| 3 | AC | 102 | ILE |
| 3 | AC | 106 | ARG |
| 3 | AC | 135 | ARG |
| 3 | AC | 139 | ASN |
| 3 | AC | 143 | LEU |
| 3 | AC | 148 | ILE |
| 3 | AC | 149 | LYS |
| 3 | AC | 161 | ILE |
| 3 | AC | 166 | TRP |
| 3 | AC | 167 | TYR |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | AC | 177 | LEU |
| 3 | AC | 183 | TYR |
| 3 | AC | 184 | ASN |
| 3 | AC | 205 | GLU |
| 4 | AD | 21 | LYS |
| 4 | AD | 25 | ARG |
| 4 | AD | 32 | LYS |
| 4 | AD | 39 | GLN |
| 4 | AD | 54 | LEU |
| 4 | AD | 55 | ARG |
| 4 | AD | 57 | LYS |
| 4 | AD | 58 | GLN |
| 4 | AD | 115 | GLN |
| 4 | AD | 123 | MET |
| 4 | AD | 127 | ARG |
| 4 | AD | 131 | ILE |
| 4 | AD | 143 | SER |
| 4 | AD | 151 | GLN |
| 4 | AD | 160 | LEU |
| 4 | AD | 162 | GLU |
| 4 | AD | 166 | LYS |
| 4 | AD | 193 | ASP |
| 4 | AD | 199 | ILE |
| 4 | AD | 205 | LYS |
| 5 | AE | 9 | GLU |
| 5 | AE | 14 | LEU |
| 5 | AE | 29 | ILE |
| 5 | AE | 31 | SER |
| 5 | AE | 42 | ASN |
| 5 | AE | 51 | LYS |
| 5 | AE | 71 | ILE |
| 5 | AE | 92 | ARG |
| 5 | AE | 95 | MET |
| 5 | AE | 96 | GLN |
| 5 | AE | 100 | GLU |
| 5 | AE | 114 | LEU |
| 5 | AE | 121 | ASN |
| 5 | AE | 123 | LEU |
| 5 | AE | 125 | LYS |
| 5 | AE | 135 | VAL |
| 5 | AE | 155 | LYS |
| 5 | AE | 156 | ARG |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 6 | AF | 7 | VAL |
| 6 | AF | 14 | GLN |
| 6 | AF | 24 | ARG |
| 6 | AF | 36 | ILE |
| 6 | AF | 38 | ARG |
| 6 | AF | 46 | GLN |
| 6 | AF | 51 | ILE |
| 6 | AF | 68 | GLN |
| 6 | AF | 69 | GLU |
| 6 | AF | 77 | THR |
| 6 | AF | 79 | ARG |
| 6 | AF | 86 | ARG |
| 6 | AF | 93 | LYS |
| 6 | AF | 96 | VAL |
| 7 | AG | 6 | ILE |
| 7 | AG | 11 | ILE |
| 7 | AG | 62 | GLU |
| 8 | AH | 2 | MET |
| 8 | AH | 11 | THR |
| 8 | AH | 21 | LYS |
| 8 | AH | 55 | LYS |
| 8 | AH | 72 | GLU |
| 8 | AH | 74 | ILE |
| 8 | AH | 76 | ARG |
| 8 | AH | 111 | THR |
| 8 | AH | 112 | ASP |
| 8 | AH | 124 | ILE |
| 9 | AI | 13 | SER |
| 9 | AI | 21 | LYS |
| 9 | AI | 35 | GLU |
| 9 | AI | 37 | TYR |
| 9 | AI | 48 | ARG |
| 9 | AI | 64 | ILE |
| 9 | AI | 67 | LYS |
| 9 | AI | 87 | MET |
| 9 | AI | 89 | TYR |
| 9 | AI | 105 | ARG |
| 9 | AI | 106 | ASP |
| 9 | AI | 115 | VAL |
| 9 | AI | 128 | LYS |
| 10 | AJ | 7 | ARG |
| 10 | AJ | 18 | ILE |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 10 | AJ | 32 | THR |
| 10 | AJ | 35 | GLN |
| 10 | AJ | 44 | THR |
| 10 | AJ | 48 | ARG |
| 10 | AJ | 59 | LYS |
| 10 | AJ | 63 | ASP |
| 10 | AJ | 71 | LEU |
| 10 | AJ | 73 | LEU |
| 10 | AJ | 78 | GLU |
| 10 | AJ | 80 | THR |
| 10 | AJ | 83 | THR |
| 10 | AJ | 89 | ARG |
| 10 | AJ | 92 | LEU |
| 10 | AJ | 96 | VAL |
| 11 | AK | 17 | ASP |
| 11 | AK | 22 | ILE |
| 11 | AK | 30 | ILE |
| 11 | AK | 41 | LEU |
| 11 | AK | 51 | PHE |
| 11 | AK | 55 | ARG |
| 11 | AK | 69 | CYS |
| 11 | AK | 76 | TYR |
| 11 | AK | 78 | ILE |
| 11 | AK | 81 | LEU |
| 11 | AK | 100 | ASN |
| 11 | AK | 117 | HIS |
| 11 | AK | 118 | ASN |
| 11 | AK | 124 | LYS |
| 11 | AK | 125 | LYS |
| 11 | AK | 128 | VAL |
| 12 | AL | 9 | LYS |
| 12 | AL | 17 | LYS |
| 12 | AL | 28 | GLN |
| 12 | AL | 33 | CYS |
| 12 | AL | 43 | LYS |
| 12 | AL | 49 | ARG |
| 12 | AL | 57 | THR |
| 12 | AL | 73 | LEU |
| 12 | AL | 81 | ILE |
| 12 | AL | 87 | LYS |
| 12 | AL | 88 | ASP |
| 12 | AL | 101 | LEU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 12 | AL | 102 | ASP |
| 12 | AL | 109 | ARG |
| 13 | AM | 7 | ASN |
| 13 | AM | 71 | GLU |
| 13 | AM | 81 | ASP |
| 13 | AM | 100 | ARG |
| 13 | AM | 103 | THR |
| 14 | AN | 3 | GLN |
| 14 | AN | 20 | PHE |
| 14 | AN | 27 | LYS |
| 14 | AN | 59 | GLN |
| 14 | AN | 61 | ASN |
| 14 | AN | 72 | PHE |
| 14 | AN | 82 | LYS |
| 14 | AN | 99 | SER |
| 15 | AO | 21 | THR |
| 15 | AO | 24 | THR |
| 15 | AO | 25 | GLU |
| 15 | AO | 38 | LEU |
| 15 | AO | 39 | GLN |
| 15 | AO | 47 | LYS |
| 15 | AO | 60 | SER |
| 15 | AO | 63 | ARG |
| 15 | AO | 65 | LEU |
| 15 | AO | 81 | ILE |
| 16 | AP | 2 | VAL |
| 16 | AP | 6 | LEU |
| 16 | AP | 19 | VAL |
| 16 | AP | 26 | ASN |
| 16 | AP | 46 | LYS |
| 16 | AP | 53 | ASP |
| 16 | AP | 54 | LEU |
| 16 | AP | 63 | GLN |
| 17 | AQ | 3 | LYS |
| 17 | AQ | 8 | GLN |
| 17 | AQ | 16 | MET |
| 17 | AQ | 21 | VAL |
| 17 | AQ | 24 | ILE |
| 17 | AQ | 47 | ASP |
| 17 | AQ | 49 | ASN |
| 17 | AQ | 51 | GLU |
| 17 | AQ | 54 | ILE |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 17 | AQ | 64 | ARG |
| 17 | AQ | 74 | LEU |
| 17 | AQ | 78 | VAL |
| 17 | AQ | 80 | LYS |
| 18 | AR | 24 | ASP |
| 18 | AR | 25 | ILE |
| 18 | AR | 35 | SER |
| 18 | AR | 71 | ASP |
| 19 | AS | 36 | ARG |
| 19 | AS | 42 | ASN |
| 19 | AS | 55 | GLN |
| 19 | AS | 60 | PHE |
| 19 | AS | 61 | VAL |
| 19 | AS | 64 | GLU |
| 20 | AT | 4 | LYS |
| 20 | AT | 35 | TYR |
| 20 | AT | 69 | ASN |
| 20 | AT | 75 | LYS |
| 20 | AT | 77 | ASN |
| 21 | AU | 4 | LYS |
| 21 | AU | 9 | GLU |
| 21 | AU | 19 | LYS |
| 21 | AU | 27 | VAL |
| 21 | AU | 33 | ARG |
| 21 | AU | 37 | TYR |
| 21 | AU | 45 | LYS |
| 23 | AW | 3 | LEU |
| 23 | AW | 14 | ARG |
| 23 | AW | 31 | GLU |
| 23 | AW | 35 | LEU |
| 23 | AW | 42 | THR |
| 23 | AW | 45 | THR |
| 23 | AW | 46 | VAL |
| 23 | AW | 49 | ARG |
| 23 | AW | 51 | SER |
| 23 | AW | 59 | TRP |
| 23 | AW | 60 | MET |
| 23 | AW | 70 | ILE |
| 23 | AW | 72 | THR |
| 23 | AW | 73 | SER |
| 23 | AW | 94 | ASP |
| 23 | AW | 97 | GLU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 23 | AW | 108 | CYS |
| 23 | AW | 110 | LEU |
| 23 | AW | 117 | LYS |
| 23 | AW | 127 | MET |
| 23 | AW | 145 | ASP |
| 23 | AW | 155 | LEU |
| 23 | AW | 178 | LEU |
| 23 | AW | 202 | GLN |
| 23 | AW | 204 | VAL |
| 23 | AW | 216 | ASP |
| 23 | AW | 231 | LEU |
| 23 | AW | 238 | SER |
| 23 | AW | 258 | THR |
| 23 | AW | 268 | MET |
| 23 | AW | 304 | GLN |
| 23 | AW | 307 | MET |
| 23 | AW | 310 | LYS |
| 23 | AW | 311 | HIS |
| 23 | AW | 332 | ARG |
| 23 | AW | 343 | SER |
| 23 | AW | 344 | ASP |
| 23 | AW | 353 | ARG |
| 23 | AW | 355 | HIS |
| 23 | AW | 356 | VAL |
| 23 | AW | 358 | GLU |
| 23 | AW | 369 | ASN |
| 23 | AW | 390 | ILE |
| 23 | AW | 397 | LEU |
| 23 | AW | 398 | PHE |
| 23 | AW | 400 | ARG |
| 23 | AW | 401 | ILE |
| 23 | AW | 403 | LEU |
| 23 | AW | 404 | LYS |
| 23 | AW | 410 | LYS |
| 23 | AW | 411 | GLN |
| 23 | AW | 412 | LEU |
| 23 | AW | 433 | ASN |
| 23 | AW | 441 | VAL |
| 23 | AW | 447 | ASP |
| 23 | AW | 452 | ARG |
| 23 | AW | 453 | LEU |
| 23 | AW | 454 | LYS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 23 | AW | 458 | ASN |
| 23 | AW | 459 | VAL |
| 23 | AW | 462 | VAL |
| 23 | AW | 499 | ASP |
| 23 | AW | 501 | LEU |
| 23 | AW | 518 | TYR |
| 23 | AW | 521 | VAL |
| 23 | AW | 525 | GLN |
| 25 | B0 | 14 | ASP |
| 25 | B0 | 19 | ARG |
| 25 | B0 | 23 | LYS |
| 25 | B0 | 24 | ARG |
| 25 | B0 | 25 | PHE |
| 25 | B0 | 35 | ILE |
| 25 | B0 | 36 | ILE |
| 25 | B0 | 38 | ARG |
| 25 | B0 | 40 | ARG |
| 25 | B0 | 42 | THR |
| 25 | B0 | 45 | HIS |
| 25 | B0 | 49 | ASN |
| 25 | B0 | 54 | ARG |
| 25 | B0 | 63 | ASP |
| 25 | B0 | 67 | LYS |
| 25 | B0 | 76 | ARG |
| 25 | B0 | 79 | ILE |
| 26 | B1 | 6 | VAL |
| 26 | B1 | 10 | ARG |
| 26 | B1 | 17 | ARG |
| 26 | B1 | 24 | THR |
| 26 | B1 | 26 | ARG |
| 26 | B1 | 45 | PHE |
| 26 | B1 | 47 | THR |
| 26 | B1 | 53 | LYS |
| 26 | B1 | 67 | LEU |
| 26 | B1 | 70 | LEU |
| 26 | B1 | 77 | TYR |
| 27 | B2 | 9 | LYS |
| 27 | B2 | 13 | GLU |
| 27 | B2 | 18 | LEU |
| 27 | B2 | 20 | ASN |
| 27 | B2 | 39 | GLN |
| 27 | B2 | 41 | HIS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 27 | B2 | 42 | LEU |
| 27 | B2 | 57 | LEU |
| 27 | B2 | 59 | GLU |
| 28 | B3 | 4 | ILE |
| 28 | B3 | 6 | ILE |
| 28 | B3 | 8 | GLN |
| 28 | B3 | 15 | ARG |
| 28 | B3 | 23 | LEU |
| 28 | B3 | 30 | ARG |
| 28 | B3 | 31 | ILE |
| 28 | B3 | 37 | ARG |
| 28 | B3 | 40 | THR |
| 29 | B4 | 2 | VAL |
| 29 | B4 | 3 | GLN |
| 29 | B4 | 9 | ARG |
| 29 | B4 | 27 | LEU |
| 29 | B4 | 28 | SER |
| 29 | B4 | 37 | HIS |
| 29 | B4 | 45 | ASP |
| 30 | B5 | 4 | ILE |
| 30 | B5 | 9 | LYS |
| 30 | B5 | 19 | PHE |
| 31 | B6 | 3 | ARG |
| 31 | B6 | 24 | THR |
| 31 | B6 | 39 | ARG |
| 31 | B6 | 42 | LEU |
| 32 | B7 | 7 | ARG |
| 32 | B7 | 22 | LYS |
| 32 | B7 | 34 | LYS |
| 33 | B8 | 4 | ARG |
| 33 | B8 | 9 | LYS |
| 36 | BC | 2 | VAL |
| 36 | BC | 12 | ARG |
| 36 | BC | 20 | ASN |
| 36 | BC | 23 | LEU |
| 36 | BC | 27 | LYS |
| 36 | BC | 35 | LYS |
| 36 | BC | 43 | ASN |
| 36 | BC | 49 | THR |
| 36 | BC | 52 | HIS |
| 36 | BC | 73 | ILE |
| 36 | BC | 76 | VAL |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 36 | BC | 87 | SER |
| 36 | BC | 103 | ILE |
| 36 | BC | 104 | LEU |
| 36 | BC | 109 | LEU |
| 36 | BC | 110 | LYS |
| 36 | BC | 114 | GLN |
| 36 | BC | 117 | SER |
| 36 | BC | 132 | ARG |
| 36 | BC | 142 | ASN |
| 36 | BC | 155 | ARG |
| 36 | BC | 173 | LEU |
| 36 | BC | 175 | LEU |
| 36 | BC | 176 | ARG |
| 36 | BC | 191 | LEU |
| 36 | BC | 193 | GLU |
| 36 | BC | 202 | ARG |
| 36 | BC | 212 | TRP |
| 36 | BC | 215 | VAL |
| 36 | BC | 224 | MET |
| 36 | BC | 241 | LYS |
| 36 | BC | 250 | GLN |
| 36 | BC | 251 | THR |
| 36 | BC | 252 | LYS |
| 36 | BC | 254 | LYS |
| 36 | BC | 257 | ARG |
| 36 | BC | 268 | ARG |
| 36 | BC | 269 | ARG |
| 36 | BC | 270 | ARG |
| 37 | BD | 9 | VAL |
| 37 | BD | 11 | MET |
| 37 | BD | 12 | THR |
| 37 | BD | 14 | ILE |
| 37 | BD | 16 | THR |
| 37 | BD | 21 | SER |
| 37 | BD | 33 | ARG |
| 37 | BD | 40 | LEU |
| 37 | BD | 73 | VAL |
| 37 | BD | 90 | PHE |
| 37 | BD | 91 | THR |
| 37 | BD | 114 | LYS |
| 37 | BD | 118 | PHE |
| 37 | BD | 124 | ARG |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 37 | BD | 129 | THR |
| 37 | BD | 133 | THR |
| 37 | BD | 159 | LYS |
| 37 | BD | 170 | VAL |
| 37 | BD | 171 | THR |
| 37 | BD | 186 | LEU |
| 37 | BD | 201 | LEU |
| 38 | BE | 12 | LEU |
| 38 | BE | 24 | ASN |
| 38 | BE | 41 | GLN |
| 38 | BE | 44 | ARG |
| 38 | BE | 46 | GLN |
| 38 | BE | 51 | GLU |
| 38 | BE | 62 | GLN |
| 38 | BE | 63 | LYS |
| 38 | BE | 70 | SER |
| 38 | BE | 72 | SER |
| 38 | BE | 77 | ILE |
| 38 | BE | 78 | TRP |
| 38 | BE | 90 | GLN |
| 38 | BE | 93 | SER |
| 38 | BE | 108 | ILE |
| 38 | BE | 109 | LEU |
| 38 | BE | 116 | ASP |
| 38 | BE | 118 | LEU |
| 38 | BE | 119 | ILE |
| 38 | BE | 123 | LYS |
| 38 | BE | 146 | VAL |
| 38 | BE | 150 | THR |
| 38 | BE | 153 | LEU |
| 38 | BE | 170 | ARG |
| 38 | BE | 180 | LEU |
| 38 | BE | 189 | THR |
| 38 | BE | 200 | LEU |
| 39 | BF | 9 | ASP |
| 39 | BF | 24 | VAL |
| 39 | BF | 35 | LEU |
| 39 | BF | 46 | LYS |
| 39 | BF | 50 | ASP |
| 39 | BF | 66 | ILE |
| 39 | BF | 82 | TYR |
| 39 | BF | 91 | ARG |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 39 | BF | 109 | ARG |
| 39 | BF | 114 | ARG |
| 39 | BF | 134 | GLN |
| 39 | BF | 154 | THR |
| 40 | BG | 8 | VAL |
| 40 | BG | 15 | ASP |
| 40 | BG | 34 | ARG |
| 40 | BG | 37 | ASN |
| 40 | BG | 40 | VAL |
| 40 | BG | 55 | ASP |
| 40 | BG | 59 | ASP |
| 40 | BG | 68 | ARG |
| 40 | BG | 72 | ASN |
| 40 | BG | 76 | ILE |
| 40 | BG | 78 | VAL |
| 40 | BG | 84 | LYS |
| 40 | BG | 94 | ARG |
| 40 | BG | 97 | VAL |
| 40 | BG | 100 | ASN |
| 40 | BG | 131 | VAL |
| 40 | BG | 132 | LEU |
| 40 | BG | 138 | GLN |
| 40 | BG | 140 | ILE |
| 40 | BG | 151 | ARG |
| 40 | BG | 166 | GLU |
| 41 | BH | 3 | LEU |
| 41 | BH | 11 | ILE |
| 41 | BH | 26 | VAL |
| 41 | BH | 31 | ARG |
| 41 | BH | 54 | VAL |
| 41 | BH | 58 | THR |
| 41 | BH | 59 | LEU |
| 41 | BH | 81 | LEU |
| 41 | BH | 106 | PHE |
| 41 | BH | 107 | GLU |
| 41 | BH | 123 | ILE |
| 41 | BH | 126 | LEU |
| 41 | BH | 143 | MET |
| 41 | BH | 154 | THR |
| 42 | BI | 2 | LYS |
| 42 | BI | 10 | LEU |
| 42 | BI | 11 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 42 | BI | 37 | PHE |
| 42 | BI | 39 | LYS |
| 42 | BI | 71 | LYS |
| 42 | BI | 126 | ARG |
| 42 | BI | 135 | MET |
| 43 | BJ | 14 | MET |
| 43 | BJ | 29 | LYS |
| 43 | BJ | 30 | PHE |
| 43 | BL | 18 | ASP |
| 43 | BM | 2 | ILE |
| 43 | BM | 18 | ASP |
| 44 | BN | 1 | MET |
| 44 | BN | 2 | LYS |
| 44 | BN | 18 | VAL |
| 44 | BN | 25 | LEU |
| 44 | BN | 30 | THR |
| 44 | BN | 31 | GLU |
| 44 | BN | 36 | LEU |
| 44 | BN | 41 | LYS |
| 44 | BN | 44 | TYR |
| 44 | BN | 54 | ILE |
| 44 | BN | 55 | ILE |
| 44 | BN | 57 | LEU |
| 44 | BN | 64 | VAL |
| 44 | BN | 65 | THR |
| 44 | BN | 69 | ARG |
| 44 | BN | 72 | LYS |
| 44 | BN | 85 | LYS |
| 44 | BN | 103 | ILE |
| 44 | BN | 111 | LYS |
| 44 | BN | 129 | GLU |
| 44 | BN | 135 | GLN |
| 44 | BN | 140 | LEU |
| 45 | BO | 8 | LEU |
| 45 | BO | 13 | ASN |
| 45 | BO | 21 | CYS |
| 45 | BO | 23 | LYS |
| 45 | BO | 25 | LEU |
| 45 | BO | 28 | SER |
| 45 | BO | 30 | ARG |
| 45 | BO | 41 | ILE |
| 45 | BO | 47 | ILE |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | BO | 51 | LYS |
| 45 | BO | 54 | LYS |
| 45 | BO | 58 | LEU |
| 45 | BO | 61 | VAL |
| 45 | BO | 70 | ARG |
| 45 | BO | 73 | ASP |
| 45 | BO | 82 | ASN |
| 45 | BO | 89 | ASN |
| 45 | BO | 92 | GLU |
| 45 | BO | 93 | GLN |
| 45 | BO | 95 | ILE |
| 45 | BO | 105 | ARG |
| 45 | BO | 111 | LYS |
| 45 | BO | 114 | LYS |
| 46 | BP | 2 | ARG |
| 46 | BP | 3 | LEU |
| 46 | BP | 6 | LEU |
| 46 | BP | 19 | LEU |
| 46 | BP | 21 | ARG |
| 46 | BP | 25 | SER |
| 46 | BP | 27 | LEU |
| 46 | BP | 39 | LYS |
| 46 | BP | 46 | VAL |
| 46 | BP | 47 | ARG |
| 46 | BP | 55 | MET |
| 46 | BP | 59 | ARG |
| 46 | BP | 61 | LEU |
| 46 | BP | 82 | LEU |
| 46 | BP | 95 | LEU |
| 46 | BP | 120 | VAL |
| 46 | BP | 121 | THR |
| 47 | BQ | 8 | LYS |
| 47 | BQ | 10 | ARG |
| 47 | BQ | 11 | LYS |
| 47 | BQ | 24 | THR |
| 47 | BQ | 25 | ASP |
| 47 | BQ | 27 | SER |
| 47 | BQ | 33 | LEU |
| 47 | BQ | 70 | ASP |
| 47 | BQ | 73 | ILE |
| 47 | BQ | 75 | GLU |
| 47 | BQ | 78 | LEU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | BQ | 81 | ARG |
| 47 | BQ | 95 | LEU |
| 47 | BQ | 96 | ILE |
| 47 | BQ | 97 | GLN |
| 47 | BQ | 100 | LYS |
| 47 | BQ | 102 | LEU |
| 47 | BQ | 134 | THR |
| 48 | BR | 2 | ARG |
| 48 | BR | 8 | ARG |
| 48 | BR | 10 | LEU |
| 48 | BR | 14 | SER |
| 48 | BR | 27 | SER |
| 48 | BR | 33 | ILE |
| 48 | BR | 36 | THR |
| 48 | BR | 69 | ARG |
| 48 | BR | 71 | ARG |
| 48 | BR | 75 | ILE |
| 48 | BR | 95 | THR |
| 48 | BR | 113 | ILE |
| 49 | BS | 9 | ARG |
| 49 | BS | 15 | ARG |
| 49 | BS | 17 | LYS |
| 49 | BS | 21 | LEU |
| 49 | BS | 31 | THR |
| 49 | BS | 35 | ILE |
| 49 | BS | 94 | ARG |
| 49 | BS | 106 | LEU |
| 49 | BS | 111 | ARG |
| 49 | BS | 112 | GLU |
| 50 | BT | 6 | GLN |
| 50 | BT | 7 | LEU |
| 50 | BT | 16 | VAL |
| 50 | BT | 18 | SER |
| 50 | BT | 24 | THR |
| 50 | BT | 28 | LYS |
| 50 | BT | 36 | LYS |
| 50 | BT | 37 | LYS |
| 50 | BT | 38 | ARG |
| 50 | BT | 47 | ILE |
| 50 | BT | 50 | ARG |
| 50 | BT | 61 | ARG |
| 50 | BT | 75 | THR |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 50 | BT | 83 | ILE |
| 50 | BT | 91 | VAL |
| 50 | BT | 93 | LYS |
| 50 | BT | 99 | LEU |
| 50 | BT | 109 | ILE |
| 51 | BU | 10 | ARG |
| 51 | BU | 17 | LEU |
| 51 | BU | 50 | ARG |
| 51 | BU | 53 | LYS |
| 51 | BU | 59 | LEU |
| 51 | BU | 63 | ARG |
| 51 | BU | 65 | ASN |
| 51 | BU | 69 | ARG |
| 51 | BU | 88 | GLU |
| 51 | BU | 93 | ILE |
| 51 | BU | 94 | LEU |
| 51 | BU | 96 | ASP |
| 52 | BV | 10 | LYS |
| 52 | BV | 22 | LEU |
| 52 | BV | 37 | GLU |
| 52 | BV | 38 | VAL |
| 52 | BV | 39 | LEU |
| 52 | BV | 46 | GLU |
| 52 | BV | 48 | LYS |
| 52 | BV | 49 | ILE |
| 52 | BV | 63 | VAL |
| 52 | BV | 87 | GLN |
| 53 | BW | 3 | THR |
| 53 | BW | 4 | ILE |
| 53 | BW | 7 | HIS |
| 53 | BW | 19 | LEU |
| 53 | BW | 24 | ILE |
| 53 | BW | 36 | LEU |
| 53 | BW | 45 | VAL |
| 53 | BW | 48 | LYS |
| 53 | BW | 68 | ASP |
| 53 | BW | 69 | LEU |
| 53 | BW | 75 | PHE |
| 53 | BW | 76 | VAL |
| 53 | BW | 81 | SER |
| 53 | BW | 82 | MET |
| 53 | BW | 83 | LYS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 53 | BW | 88 | ARG |
| 53 | BW | 96 | ILE |
| 53 | BW | 97 | LEU |
| 53 | BW | 101 | SER |
| 53 | BW | 107 | VAL |
| 54 | BX | 2 | ILE |
| 54 | BX | 3 | ARG |
| 54 | BX | 4 | GLU |
| 54 | BX | 12 | ARG |
| 54 | BX | 31 | VAL |
| 54 | BX | 32 | LEU |
| 54 | BX | 37 | ASP |
| 54 | BX | 43 | ILE |
| 54 | BX | 48 | GLN |
| 54 | BX | 49 | LYS |
| 54 | BX | 50 | LEU |
| 54 | BX | 64 | LYS |
| 54 | BX | 68 | LYS |
| 54 | BX | 86 | THR |
| 55 | BY | 18 | LYS |
| 55 | BY | 26 | ASN |
| 55 | BY | 27 | VAL |
| 55 | BY | 32 | LYS |
| 55 | BY | 42 | LYS |
| 55 | BY | 43 | LYS |
| 55 | BY | 61 | GLU |
| 55 | BY | 67 | SER |
| 55 | BY | 102 | ILE |
| 56 | BZ | 10 | LYS |
| 56 | BZ | 51 | GLN |
| 56 | BZ | 61 | LEU |
| 56 | BZ | 66 | ASP |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (184) such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 2 | AB | 17 | HIS |
| 2 | AB | 38 | HIS |
| 2 | AB | 41 | ASN |
| 2 | AB | 57 | ASN |
| 2 | AB | 88 | GLN |
| 2 | AB | 102 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 2 | AB | 108 | GLN |
| 2 | AB | 119 | GLN |
| 2 | AB | 167 | HIS |
| 2 | AB | 189 | ASN |
| 3 | AC | 31 | ASN |
| 3 | AC | 139 | ASN |
| 4 | AD | 39 | GLN |
| 4 | AD | 53 | GLN |
| 4 | AD | 58 | GLN |
| 4 | AD | 70 | GLN |
| 4 | AD | 73 | ASN |
| 4 | AD | 163 | GLN |
| 5 | AE | 42 | ASN |
| 5 | AE | 69 | ASN |
| 5 | AE | 72 | ASN |
| 5 | AE | 81 | GLN |
| 5 | AE | 96 | GLN |
| 5 | AE | 121 | ASN |
| 6 | AF | 11 | HIS |
| 6 | AF | 46 | GLN |
| 6 | AF | 52 | ASN |
| 6 | AF | 68 | GLN |
| 7 | AG | 67 | ASN |
| 7 | AG | 141 | HIS |
| 8 | AH | 3 | GLN |
| 8 | AH | 17 | GLN |
| 8 | AH | 117 | GLN |
| 9 | AI | 3 | ASN |
| 9 | AI | 4 | GLN |
| 9 | AI | 24 | ASN |
| 9 | AI | 49 | GLN |
| 9 | AI | 80 | HIS |
| 9 | AI | 125 | GLN |
| 10 | AJ | 20 | GLN |
| 10 | AJ | 35 | GLN |
| 10 | AJ | 56 | HIS |
| 10 | AJ | 58 | ASN |
| 10 | AJ | 64 | GLN |
| 10 | AJ | 99 | GLN |
| 11 | AK | 14 | GLN |
| 11 | AK | 21 | HIS |
| 11 | AK | 108 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 11 | AK | 118 | ASN |
| 12 | AL | 45 | ASN |
| 12 | AL | 95 | HIS |
| 13 | AM | 7 | ASN |
| 14 | AN | 48 | GLN |
| 14 | AN | 59 | GLN |
| 14 | AN | 61 | ASN |
| 15 | AO | 37 | HIS |
| 15 | AO | 45 | HIS |
| 15 | AO | 61 | GLN |
| 16 | AP | 18 | GLN |
| 16 | AP | 26 | ASN |
| 16 | AP | 59 | HIS |
| 17 | AQ | 8 | GLN |
| 17 | AQ | 44 | HIS |
| 17 | AQ | 49 | ASN |
| 18 | AR | 30 | ASN |
| 18 | AR | 53 | GLN |
| 19 | AS | 42 | ASN |
| 20 | AT | 12 | GLN |
| 20 | AT | 20 | ASN |
| 20 | AT | 54 | GLN |
| 20 | AT | 60 | GLN |
| 20 | AT | 77 | ASN |
| 21 | AU | 8 | ASN |
| 23 | AW | 21 | HIS |
| 23 | AW | 76 | GLN |
| 23 | AW | 306 | ASN |
| 23 | AW | 369 | ASN |
| 23 | AW | 525 | GLN |
| 25 | B0 | 39 | GLN |
| 25 | B0 | 49 | ASN |
| 26 | B1 | 5 | GLN |
| 26 | B1 | 22 | ASN |
| 27 | B2 | 15 | ASN |
| 27 | B2 | 20 | ASN |
| 27 | B2 | 31 | GLN |
| 27 | B2 | 41 | HIS |
| 27 | B2 | 45 | GLN |
| 27 | B2 | 58 | ASN |
| 28 | B3 | 19 | HIS |
| 28 | B3 | 33 | HIS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 29 | B4 | 3 | GLN |
| 29 | B4 | 4 | GLN |
| 31 | B6 | 6 | GLN |
| 31 | B6 | 13 | ASN |
| 31 | B6 | 16 | HIS |
| 32 | B7 | 27 | ASN |
| 32 | B7 | 30 | HIS |
| 33 | B8 | 35 | GLN |
| 33 | B8 | 37 | GLN |
| 36 | BC | 14 | HIS |
| 36 | BC | 20 | ASN |
| 36 | BC | 24 | HIS |
| 36 | BC | 43 | ASN |
| 36 | BC | 59 | GLN |
| 36 | BC | 85 | ASN |
| 36 | BC | 89 | ASN |
| 36 | BC | 114 | GLN |
| 36 | BC | 116 | GLN |
| 36 | BC | 152 | GLN |
| 36 | BC | 238 | ASN |
| 36 | BC | 250 | GLN |
| 36 | BC | 259 | ASN |
| 37 | BD | 32 | ASN |
| 37 | BD | 42 | ASN |
| 37 | BD | 49 | GLN |
| 37 | BD | 67 | HIS |
| 37 | BD | 126 | ASN |
| 37 | BD | 130 | GLN |
| 37 | BD | 136 | ASN |
| 38 | BE | 24 | ASN |
| 38 | BE | 30 | GLN |
| 38 | BE | 41 | GLN |
| 38 | BE | 62 | GLN |
| 38 | BE | 92 | HIS |
| 38 | BE | 136 | GLN |
| 39 | BF | 22 | ASN |
| 39 | BF | 26 | GLN |
| 39 | BF | 80 | GLN |
| 39 | BF | 134 | GLN |
| 40 | BG | 100 | ASN |
| 41 | BH | 103 | ASN |
| 42 | BI | 5 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 42 | BI | 11 | GLN |
| 42 | BI | 110 | GLN |
| 43 | BL | 6 | GLN |
| 44 | BN | 40 | HIS |
| 44 | BN | 76 | HIS |
| 44 | BN | 77 | HIS |
| 44 | BN | 80 | HIS |
| 44 | BN | 130 | HIS |
| 45 | BO | 88 | ASN |
| 45 | BO | 89 | ASN |
| 46 | BP | 54 | GLN |
| 46 | BP | 93 | ASN |
| 46 | BP | 104 | GLN |
| 48 | BR | 3 | HIS |
| 48 | BR | 9 | GLN |
| 48 | BR | 11 | ASN |
| 48 | BR | 23 | ASN |
| 48 | BR | 62 | ASN |
| 48 | BR | 73 | ASN |
| 48 | BR | 107 | ASN |
| 49 | BS | 19 | GLN |
| 49 | BS | 34 | HIS |
| 49 | BS | 38 | GLN |
| 50 | BT | 6 | GLN |
| 50 | BT | 9 | GLN |
| 50 | BT | 11 | GLN |
| 50 | BT | 65 | ASN |
| 50 | BT | 74 | GLN |
| 51 | BU | 51 | GLN |
| 51 | BU | 65 | ASN |
| 51 | BU | 80 | ASN |
| 52 | BV | 43 | ASN |
| 52 | BV | 66 | HIS |
| 52 | BV | 82 | HIS |
| 52 | BV | 87 | GLN |
| 53 | BW | 40 | ASN |
| 53 | BW | 57 | ASN |
| 53 | BW | 61 | ASN |
| 54 | BX | 48 | GLN |
| 54 | BX | 70 | HIS |
| 54 | BX | 72 | GLN |
| 54 | BX | 91 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 55 | BY | 26 | ASN |
| 55 | BY | 52 | ASN |
| 55 | BY | 65 | GLN |
| 55 | BY | 68 | ASN |
| 55 | BY | 73 | ASN |
| 56 | BZ | 44 | HIS |
| 56 | BZ | 51 | GLN |
| 56 | BZ | 78 | GLN |
| 56 | BZ | 80 | HIS |
| 56 | BZ | 88 | HIS |

### 5.3.3 RNA (i)

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|---|---|---|---|---|
| 1 | AA | 1531/1533 (99%) | 298 (19%) | 45 (2%) |
| 22 | AV | 5/27 (18%) | 3 (60%) | 0 |
| 34 | BA | 2849/2903 (98%) | 570 (20%) | 95 (3%) |
| 35 | BB | 117/118 (99%) | 22 (18%) | 3 (2%) |
| All | All | 4502/4581 (98%) | 893 (19%) | 143 (3%) |

All (893) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AA | 5 | U |
| 1 | AA | 9 | G |
| 1 | AA | 19 | A |
| 1 | AA | 22 | G |
| 1 | AA | 31 | G |
| 1 | AA | 32 | 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 | 63 | C |
| 1 | AA | 65 | A |
| 1 | AA | 66 | A |
| 1 | AA | 70 | U |
| 1 | AA | 71 | A |
| 1 | AA | 75 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AA | 76 | G |
| 1 | AA | 78 | A |
| 1 | AA | 81 | A |
| 1 | AA | 82 | G |
| 1 | AA | 83 | C |
| 1 | AA | 84 | U |
| 1 | AA | 85 | U |
| 1 | AA | 86 | G |
| 1 | AA | 89 | U |
| 1 | AA | 92 | U |
| 1 | AA | 95 | C |
| 1 | AA | 115 | G |
| 1 | AA | 116 | A |
| 1 | AA | 119 | A |
| 1 | AA | 121 | U |
| 1 | AA | 122 | G |
| 1 | AA | 141 | G |
| 1 | AA | 143 | A |
| 1 | AA | 146 | G |
| 1 | AA | 151 | A |
| 1 | AA | 159 | G |
| 1 | AA | 163 | C |
| 1 | AA | 166 | U |
| 1 | AA | 173 | U |
| 1 | AA | 182 | A |
| 1 | AA | 183 | C |
| 1 | AA | 193 | C |
| 1 | AA | 197 | A |
| 1 | AA | 205 | A |
| 1 | AA | 209 | U |
| 1 | AA | 210 | C |
| 1 | AA | 219 | U |
| 1 | AA | 245 | U |
| 1 | AA | 247 | G |
| 1 | AA | 250 | A |
| 1 | AA | 251 | G |
| 1 | AA | 266 | G |
| 1 | AA | 267 | C |
| 1 | AA | 273 | U |
| 1 | AA | 274 | A |
| 1 | AA | 275 | G |
| 1 | AA | 280 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AA | 281 | G |
| 1 | AA | 285 | C |
| 1 | AA | 289 | G |
| 1 | AA | 305 | G |
| 1 | AA | 306 | A |
| 1 | AA | 316 | C |
| 1 | AA | 321 | A |
| 1 | AA | 328 | C |
| 1 | AA | 329 | A |
| 1 | AA | 330 | C |
| 1 | AA | 332 | G |
| 1 | AA | 345 | C |
| 1 | AA | 346 | G |
| 1 | AA | 347 | G |
| 1 | AA | 352 | C |
| 1 | AA | 354 | G |
| 1 | AA | 367 | U |
| 1 | AA | 372 | C |
| 1 | AA | 373 | A |
| 1 | AA | 384 | G |
| 1 | AA | 389 | A |
| 1 | AA | 398 | U |
| 1 | AA | 406 | G |
| 1 | AA | 411 | A |
| 1 | AA | 412 | A |
| 1 | AA | 413 | G |
| 1 | AA | 421 | U |
| 1 | AA | 423 | G |
| 1 | AA | 424 | G |
| 1 | AA | 428 | G |
| 1 | AA | 429 | U |
| 1 | AA | 430 | A |
| 1 | AA | 448 | A |
| 1 | AA | 452 | A |
| 1 | AA | 459 | A |
| 1 | AA | 461 | A |
| 1 | AA | 462 | G |
| 1 | AA | 463 | U |
| 1 | AA | 465 | A |
| 1 | AA | 467 | U |
| 1 | AA | 468 | A |
| 1 | AA | 481 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AA | 485 | U |
| 1 | AA | 486 | U |
| 1 | AA | 496 | A |
| 1 | AA | 500 | G |
| 1 | AA | 505 | G |
| 1 | AA | 508 | U |
| 1 | AA | 511 | C |
| 1 | AA | 518 | C |
| 1 | AA | 527 | G |
| 1 | AA | 531 | U |
| 1 | AA | 532 | A |
| 1 | AA | 533 | A |
| 1 | AA | 536 | C |
| 1 | AA | 547 | A |
| 1 | AA | 559 | A |
| 1 | AA | 560 | A |
| 1 | AA | 562 | U |
| 1 | AA | 564 | C |
| 1 | AA | 572 | A |
| 1 | AA | 573 | A |
| 1 | AA | 575 | G |
| 1 | AA | 576 | C |
| 1 | AA | 577 | G |
| 1 | AA | 588 | G |
| 1 | AA | 595 | A |
| 1 | AA | 633 | G |
| 1 | AA | 653 | U |
| 1 | AA | 662 | U |
| 1 | AA | 665 | A |
| 1 | AA | 687 | A |
| 1 | AA | 688 | G |
| 1 | AA | 701 | U |
| 1 | AA | 702 | A |
| 1 | AA | 703 | G |
| 1 | AA | 704 | A |
| 1 | AA | 721 | G |
| 1 | AA | 722 | G |
| 1 | AA | 723 | U |
| 1 | AA | 724 | G |
| 1 | AA | 725 | G |
| 1 | AA | 731 | G |
| 1 | AA | 733 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AA | 735 | C |
| 1 | AA | 748 | G |
| 1 | AA | 753 | A |
| 1 | AA | 758 | C |
| 1 | AA | 777 | A |
| 1 | AA | 792 | A |
| 1 | AA | 794 | A |
| 1 | AA | 799 | G |
| 1 | AA | 804 | U |
| 1 | AA | 809 | G |
| 1 | AA | 812 | G |
| 1 | AA | 813 | U |
| 1 | AA | 814 | A |
| 1 | AA | 815 | A |
| 1 | AA | 817 | C |
| 1 | AA | 828 | U |
| 1 | AA | 841 | C |
| 1 | AA | 843 | U |
| 1 | AA | 845 | A |
| 1 | AA | 846 | G |
| 1 | AA | 859 | G |
| 1 | AA | 885 | G |
| 1 | AA | 890 | G |
| 1 | AA | 891 | U |
| 1 | AA | 913 | A |
| 1 | AA | 914 | A |
| 1 | AA | 926 | G |
| 1 | AA | 927 | G |
| 1 | AA | 934 | C |
| 1 | AA | 935 | A |
| 1 | AA | 960 | U |
| 1 | AA | 961 | U |
| 1 | AA | 964 | A |
| 1 | AA | 966 | G |
| 1 | AA | 969 | A |
| 1 | AA | 972 | C |
| 1 | AA | 974 | A |
| 1 | AA | 975 | A |
| 1 | AA | 976 | G |
| 1 | AA | 977 | A |
| 1 | AA | 983 | A |
| 1 | AA | 992 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AA | 993 | G |
| 1 | AA | 994 | A |
| 1 | AA | 1003 | G |
| 1 | AA | 1004 | A |
| 1 | AA | 1008 | U |
| 1 | AA | 1018 | G |
| 1 | AA | 1022 | A |
| 1 | AA | 1025 | U |
| 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 | 1049 | U |
| 1 | AA | 1050 | G |
| 1 | AA | 1053 | G |
| 1 | AA | 1054 | C |
| 1 | AA | 1064 | G |
| 1 | AA | 1065 | U |
| 1 | AA | 1085 | U |
| 1 | AA | 1086 | U |
| 1 | AA | 1087 | G |
| 1 | AA | 1094 | G |
| 1 | AA | 1095 | U |
| 1 | AA | 1101 | A |
| 1 | AA | 1102 | A |
| 1 | AA | 1124 | G |
| 1 | AA | 1127 | G |
| 1 | AA | 1130 | A |
| 1 | AA | 1133 | G |
| 1 | AA | 1136 | C |
| 1 | AA | 1137 | C |
| 1 | AA | 1138 | G |
| 1 | AA | 1139 | G |
| 1 | AA | 1145 | A |
| 1 | AA | 1146 | A |
| 1 | AA | 1159 | U |
| 1 | AA | 1160 | G |
| 1 | AA | 1167 | A |
| 1 | AA | 1168 | U |
| 1 | AA | 1169 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AA | 1181 | G |
| 1 | AA | 1182 | G |
| 1 | AA | 1183 | U |
| 1 | AA | 1184 | G |
| 1 | AA | 1196 | A |
| 1 | AA | 1200 | C |
| 1 | AA | 1201 | A |
| 1 | AA | 1202 | U |
| 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 | 1240 | U |
| 1 | AA | 1241 | G |
| 1 | AA | 1257 | A |
| 1 | AA | 1258 | G |
| 1 | AA | 1261 | A |
| 1 | AA | 1278 | G |
| 1 | AA | 1279 | G |
| 1 | AA | 1280 | A |
| 1 | AA | 1281 | C |
| 1 | AA | 1285 | A |
| 1 | AA | 1286 | U |
| 1 | AA | 1287 | A |
| 1 | AA | 1297 | G |
| 1 | AA | 1298 | U |
| 1 | AA | 1300 | G |
| 1 | AA | 1301 | U |
| 1 | AA | 1303 | C |
| 1 | AA | 1305 | G |
| 1 | AA | 1317 | C |
| 1 | AA | 1320 | C |
| 1 | AA | 1321 | U |
| 1 | AA | 1323 | G |
| 1 | AA | 1336 | C |
| 1 | AA | 1337 | G |
| 1 | AA | 1347 | G |
| 1 | AA | 1348 | U |
| 1 | AA | 1353 | G |
| 1 | AA | 1362 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AA | 1364 | U |
| 1 | AA | 1365 | G |
| 1 | AA | 1380 | U |
| 1 | AA | 1381 | U |
| 1 | AA | 1397 | C |
| 1 | AA | 1398 | A |
| 1 | AA | 1413 | A |
| 1 | AA | 1419 | G |
| 1 | AA | 1432 | G |
| 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 | 1469 | C |
| 1 | AA | 1475 | G |
| 1 | AA | 1487 | G |
| 1 | AA | 1492 | A |
| 1 | AA | 1493 | A |
| 1 | AA | 1494 | G |
| 1 | AA | 1497 | G |
| 1 | AA | 1503 | A |
| 1 | AA | 1506 | U |
| 1 | AA | 1517 | G |
| 1 | AA | 1519 | A |
| 1 | AA | 1529 | G |
| 1 | AA | 1530 | G |
| 22 | AV | 18 | G |
| 22 | AV | 19 | U |
| 22 | AV | 20 | A |
| 34 | BA | 10 | A |
| 34 | BA | 12 | U |
| 34 | BA | 13 | A |
| 34 | BA | 15 | G |
| 34 | BA | 28 | A |
| 34 | BA | 35 | G |
| 34 | BA | 43 | G |
| 34 | BA | 46 | G |
| 34 | BA | 49 | A |
| 34 | BA | 51 | G |
| 34 | BA | 52 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 61 | C |
| 34 | BA | 63 | A |
| 34 | BA | 71 | A |
| 34 | BA | 72 | U |
| 34 | BA | 74 | A |
| 34 | BA | 75 | G |
| 34 | BA | 82 | U |
| 34 | BA | 83 | A |
| 34 | BA | 84 | A |
| 34 | BA | 91 | A |
| 34 | BA | 100 | U |
| 34 | BA | 101 | A |
| 34 | BA | 103 | A |
| 34 | BA | 118 | A |
| 34 | BA | 120 | U |
| 34 | BA | 125 | A |
| 34 | BA | 126 | A |
| 34 | BA | 135 | U |
| 34 | BA | 137 | U |
| 34 | BA | 138 | U |
| 34 | BA | 139 | U |
| 34 | BA | 140 | C |
| 34 | BA | 141 | G |
| 34 | BA | 142 | A |
| 34 | BA | 162 | U |
| 34 | BA | 163 | C |
| 34 | BA | 164 | C |
| 34 | BA | 181 | A |
| 34 | BA | 188 | G |
| 34 | BA | 196 | A |
| 34 | BA | 199 | A |
| 34 | BA | 205 | G |
| 34 | BA | 206 | U |
| 34 | BA | 215 | G |
| 34 | BA | 216 | A |
| 34 | BA | 221 | A |
| 34 | BA | 222 | A |
| 34 | BA | 229 | C |
| 34 | BA | 230 | G |
| 34 | BA | 233 | A |
| 34 | BA | 248 | G |
| 34 | BA | 249 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 250 | G |
| 34 | BA | 255 | A |
| 34 | BA | 265 | A |
| 34 | BA | 266 | G |
| 34 | BA | 267 | C |
| 34 | BA | 268 | C |
| 34 | BA | 271 | G |
| 34 | BA | 272 | A |
| 34 | BA | 276 | U |
| 34 | BA | 285 | G |
| 34 | BA | 294 | A |
| 34 | BA | 302 | C |
| 34 | BA | 311 | A |
| 34 | BA | 325 | G |
| 34 | BA | 329 | G |
| 34 | BA | 330 | A |
| 34 | BA | 331 | C |
| 34 | BA | 335 | C |
| 34 | BA | 344 | A |
| 34 | BA | 346 | A |
| 34 | BA | 353 | C |
| 34 | BA | 359 | G |
| 34 | BA | 361 | G |
| 34 | BA | 371 | A |
| 34 | BA | 372 | G |
| 34 | BA | 373 | U |
| 34 | BA | 382 | A |
| 34 | BA | 383 | C |
| 34 | BA | 386 | G |
| 34 | BA | 396 | G |
| 34 | BA | 403 | U |
| 34 | BA | 404 | A |
| 34 | BA | 405 | U |
| 34 | BA | 411 | G |
| 34 | BA | 424 | G |
| 34 | BA | 442 | G |
| 34 | BA | 443 | A |
| 34 | BA | 455 | C |
| 34 | BA | 458 | G |
| 34 | BA | 459 | U |
| 34 | BA | 460 | A |
| 34 | BA | 461 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 479 | A |
| 34 | BA | 480 | A |
| 34 | BA | 481 | G |
| 34 | BA | 490 | C |
| 34 | BA | 491 | G |
| 34 | BA | 496 | G |
| 34 | BA | 504 | A |
| 34 | BA | 505 | A |
| 34 | BA | 509 | C |
| 34 | BA | 510 | C |
| 34 | BA | 518 | G |
| 34 | BA | 527 | C |
| 34 | BA | 528 | A |
| 34 | BA | 531 | C |
| 34 | BA | 532 | A |
| 34 | BA | 533 | G |
| 34 | BA | 544 | C |
| 34 | BA | 546 | U |
| 34 | BA | 547 | A |
| 34 | BA | 548 | G |
| 34 | BA | 549 | G |
| 34 | BA | 550 | C |
| 34 | BA | 557 | C |
| 34 | BA | 563 | A |
| 34 | BA | 573 | U |
| 34 | BA | 575 | A |
| 34 | BA | 586 | A |
| 34 | BA | 588 | U |
| 34 | BA | 603 | A |
| 34 | BA | 604 | G |
| 34 | BA | 613 | A |
| 34 | BA | 614 | A |
| 34 | BA | 615 | U |
| 34 | BA | 627 | A |
| 34 | BA | 628 | G |
| 34 | BA | 637 | A |
| 34 | BA | 645 | C |
| 34 | BA | 646 | U |
| 34 | BA | 647 | G |
| 34 | BA | 654 | A |
| 34 | BA | 655 | A |
| 34 | BA | 656 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 668 | A |
| 34 | BA | 669 | G |
| 34 | BA | 670 | A |
| 34 | BA | 685 | A |
| 34 | BA | 686 | U |
| 34 | BA | 702 | U |
| 34 | BA | 705 | A |
| 34 | BA | 715 | A |
| 34 | BA | 717 | C |
| 34 | BA | 726 | G |
| 34 | BA | 730 | A |
| 34 | BA | 747 | U |
| 34 | BA | 764 | A |
| 34 | BA | 775 | G |
| 34 | BA | 776 | G |
| 34 | BA | 782 | A |
| 34 | BA | 784 | G |
| 34 | BA | 785 | G |
| 34 | BA | 789 | A |
| 34 | BA | 794 | A |
| 34 | BA | 801 | G |
| 34 | BA | 805 | G |
| 34 | BA | 812 | C |
| 34 | BA | 819 | A |
| 34 | BA | 827 | U |
| 34 | BA | 828 | U |
| 34 | BA | 829 | A |
| 34 | BA | 831 | G |
| 34 | BA | 845 | A |
| 34 | BA | 846 | U |
| 34 | BA | 847 | U |
| 34 | BA | 859 | G |
| 34 | BA | 860 | U |
| 34 | BA | 876 | C |
| 34 | BA | 877 | A |
| 34 | BA | 896 | A |
| 34 | BA | 897 | C |
| 34 | BA | 900 | A |
| 34 | BA | 901 | C |
| 34 | BA | 902 | C |
| 34 | BA | 907 | G |
| 34 | BA | 910 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 914 | G |
| 34 | BA | 915 | C |
| 34 | BA | 931 | U |
| 34 | BA | 932 | U |
| 34 | BA | 941 | A |
| 34 | BA | 946 | C |
| 34 | BA | 957 | C |
| 34 | BA | 958 | U |
| 34 | BA | 961 | C |
| 34 | BA | 974 | G |
| 34 | BA | 983 | A |
| 34 | BA | 989 | G |
| 34 | BA | 995 | C |
| 34 | BA | 996 | A |
| 34 | BA | 1012 | U |
| 34 | BA | 1013 | C |
| 34 | BA | 1020 | A |
| 34 | BA | 1021 | A |
| 34 | BA | 1022 | G |
| 34 | BA | 1023 | U |
| 34 | BA | 1025 | G |
| 34 | BA | 1026 | G |
| 34 | BA | 1033 | U |
| 34 | BA | 1046 | A |
| 34 | BA | 1060 | U |
| 34 | BA | 1061 | U |
| 34 | BA | 1066 | U |
| 34 | BA | 1070 | A |
| 34 | BA | 1071 | G |
| 34 | BA | 1074 | G |
| 34 | BA | 1078 | U |
| 34 | BA | 1083 | U |
| 34 | BA | 1084 | A |
| 34 | BA | 1088 | A |
| 34 | BA | 1098 | A |
| 34 | BA | 1102 | C |
| 34 | BA | 1103 | A |
| 34 | BA | 1110 | G |
| 34 | BA | 1112 | G |
| 34 | BA | 1130 | U |
| 34 | BA | 1132 | U |
| 34 | BA | 1133 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 1134 | A |
| 34 | BA | 1135 | C |
| 34 | BA | 1136 | G |
| 34 | BA | 1139 | G |
| 34 | BA | 1142 | A |
| 34 | BA | 1143 | A |
| 34 | BA | 1151 | A |
| 34 | BA | 1156 | A |
| 34 | BA | 1157 | G |
| 34 | BA | 1168 | G |
| 34 | BA | 1169 | A |
| 34 | BA | 1174 | U |
| 34 | BA | 1175 | A |
| 34 | BA | 1176 | U |
| 34 | BA | 1180 | U |
| 34 | BA | 1186 | G |
| 34 | BA | 1206 | G |
| 34 | BA | 1211 | C |
| 34 | BA | 1212 | G |
| 34 | BA | 1213 | A |
| 34 | BA | 1219 | U |
| 34 | BA | 1236 | G |
| 34 | BA | 1237 | A |
| 34 | BA | 1238 | G |
| 34 | BA | 1248 | G |
| 34 | BA | 1250 | G |
| 34 | BA | 1252 | G |
| 34 | BA | 1253 | A |
| 34 | BA | 1256 | G |
| 34 | BA | 1259 | G |
| 34 | BA | 1266 | G |
| 34 | BA | 1267 | U |
| 34 | BA | 1271 | G |
| 34 | BA | 1272 | A |
| 34 | BA | 1273 | U |
| 34 | BA | 1276 | A |
| 34 | BA | 1300 | G |
| 34 | BA | 1301 | A |
| 34 | BA | 1306 | C |
| 34 | BA | 1313 | U |
| 34 | BA | 1317 | G |
| 34 | BA | 1321 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 1328 | A |
| 34 | BA | 1329 | U |
| 34 | BA | 1332 | G |
| 34 | BA | 1336 | A |
| 34 | BA | 1341 | G |
| 34 | BA | 1344 | U |
| 34 | BA | 1345 | C |
| 34 | BA | 1346 | G |
| 34 | BA | 1352 | U |
| 34 | BA | 1365 | A |
| 34 | BA | 1368 | G |
| 34 | BA | 1378 | A |
| 34 | BA | 1379 | U |
| 34 | BA | 1383 | A |
| 34 | BA | 1386 | C |
| 34 | BA | 1390 | U |
| 34 | BA | 1395 | A |
| 34 | BA | 1397 | U |
| 34 | BA | 1416 | G |
| 34 | BA | 1419 | A |
| 34 | BA | 1420 | A |
| 34 | BA | 1421 | G |
| 34 | BA | 1428 | C |
| 34 | BA | 1435 | G |
| 34 | BA | 1437 | C |
| 34 | BA | 1451 | C |
| 34 | BA | 1453 | A |
| 34 | BA | 1454 | C |
| 34 | BA | 1458 | U |
| 34 | BA | 1459 | G |
| 34 | BA | 1461 | C |
| 34 | BA | 1475 | G |
| 34 | BA | 1476 | U |
| 34 | BA | 1482 | G |
| 34 | BA | 1490 | A |
| 34 | BA | 1493 | C |
| 34 | BA | 1497 | U |
| 34 | BA | 1502 | A |
| 34 | BA | 1504 | A |
| 34 | BA | 1507 | C |
| 34 | BA | 1508 | A |
| 34 | BA | 1509 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 1515 | A |
| 34 | BA | 1522 | A |
| 34 | BA | 1523 | U |
| 34 | BA | 1524 | G |
| 34 | BA | 1530 | G |
| 34 | BA | 1531 | C |
| 34 | BA | 1532 | A |
| 34 | BA | 1533 | C |
| 34 | BA | 1534 | U |
| 34 | BA | 1536 | C |
| 34 | BA | 1540 | G |
| 34 | BA | 1560 | G |
| 34 | BA | 1565 | C |
| 34 | BA | 1569 | A |
| 34 | BA | 1578 | U |
| 34 | BA | 1581 | G |
| 34 | BA | 1584 | U |
| 34 | BA | 1585 | C |
| 34 | BA | 1608 | A |
| 34 | BA | 1609 | A |
| 34 | BA | 1610 | A |
| 34 | BA | 1613 | G |
| 34 | BA | 1616 | A |
| 34 | BA | 1622 | G |
| 34 | BA | 1647 | U |
| 34 | BA | 1648 | U |
| 34 | BA | 1649 | G |
| 34 | BA | 1651 | G |
| 34 | BA | 1652 | A |
| 34 | BA | 1674 | G |
| 34 | BA | 1688 | U |
| 34 | BA | 1707 | G |
| 34 | BA | 1714 | U |
| 34 | BA | 1715 | G |
| 34 | BA | 1716 | U |
| 34 | BA | 1729 | U |
| 34 | BA | 1730 | C |
| 34 | BA | 1732 | C |
| 34 | BA | 1738 | G |
| 34 | BA | 1744 | A |
| 34 | BA | 1758 | U |
| 34 | BA | 1759 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 1764 | C |
| 34 | BA | 1773 | A |
| 34 | BA | 1781 | U |
| 34 | BA | 1782 | U |
| 34 | BA | 1791 | A |
| 34 | BA | 1800 | C |
| 34 | BA | 1801 | A |
| 34 | BA | 1808 | A |
| 34 | BA | 1816 | C |
| 34 | BA | 1819 | A |
| 34 | BA | 1822 | C |
| 34 | BA | 1829 | A |
| 34 | BA | 1839 | G |
| 34 | BA | 1858 | A |
| 34 | BA | 1869 | G |
| 34 | BA | 1871 | A |
| 34 | BA | 1884 | G |
| 34 | BA | 1906 | G |
| 34 | BA | 1907 | G |
| 34 | BA | 1912 | A |
| 34 | BA | 1913 | A |
| 34 | BA | 1914 | C |
| 34 | BA | 1918 | A |
| 34 | BA | 1919 | A |
| 34 | BA | 1927 | A |
| 34 | BA | 1929 | G |
| 34 | BA | 1930 | G |
| 34 | BA | 1931 | U |
| 34 | BA | 1936 | A |
| 34 | BA | 1937 | A |
| 34 | BA | 1938 | A |
| 34 | BA | 1955 | U |
| 34 | BA | 1962 | C |
| 34 | BA | 1963 | U |
| 34 | BA | 1964 | G |
| 34 | BA | 1965 | C |
| 34 | BA | 1967 | C |
| 34 | BA | 1971 | U |
| 34 | BA | 1972 | G |
| 34 | BA | 1986 | C |
| 34 | BA | 1991 | U |
| 34 | BA | 1993 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 1996 | C |
| 34 | BA | 1997 | C |
| 34 | BA | 2017 | U |
| 34 | BA | 2018 | G |
| 34 | BA | 2020 | A |
| 34 | BA | 2022 | U |
| 34 | BA | 2023 | C |
| 34 | BA | 2027 | G |
| 34 | BA | 2031 | A |
| 34 | BA | 2033 | A |
| 34 | BA | 2034 | U |
| 34 | BA | 2035 | G |
| 34 | BA | 2043 | C |
| 34 | BA | 2049 | G |
| 34 | BA | 2051 | A |
| 34 | BA | 2055 | C |
| 34 | BA | 2056 | G |
| 34 | BA | 2060 | A |
| 34 | BA | 2061 | G |
| 34 | BA | 2062 | A |
| 34 | BA | 2069 | G |
| 34 | BA | 2072 | C |
| 34 | BA | 2093 | G |
| 34 | BA | 2104 | C |
| 34 | BA | 2107 | G |
| 34 | BA | 2109 | U |
| 34 | BA | 2110 | G |
| 34 | BA | 2134 | A |
| 34 | BA | 2135 | A |
| 34 | BA | 2136 | G |
| 34 | BA | 2137 | U |
| 34 | BA | 2139 | U |
| 34 | BA | 2140 | G |
| 34 | BA | 2143 | C |
| 34 | BA | 2144 | G |
| 34 | BA | 2145 | C |
| 34 | BA | 2146 | C |
| 34 | BA | 2147 | A |
| 34 | BA | 2148 | G |
| 34 | BA | 2149 | U |
| 34 | BA | 2150 | C |
| 34 | BA | 2151 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 2155 | U |
| 34 | BA | 2156 | G |
| 34 | BA | 2180 | U |
| 34 | BA | 2181 | U |
| 34 | BA | 2183 | A |
| 34 | BA | 2184 | A |
| 34 | BA | 2185 | U |
| 34 | BA | 2187 | U |
| 34 | BA | 2194 | U |
| 34 | BA | 2198 | A |
| 34 | BA | 2199 | A |
| 34 | BA | 2203 | U |
| 34 | BA | 2204 | G |
| 34 | BA | 2210 | U |
| 34 | BA | 2211 | A |
| 34 | BA | 2212 | A |
| 34 | BA | 2213 | U |
| 34 | BA | 2225 | A |
| 34 | BA | 2226 | C |
| 34 | BA | 2238 | G |
| 34 | BA | 2239 | G |
| 34 | BA | 2248 | C |
| 34 | BA | 2250 | G |
| 34 | BA | 2268 | A |
| 34 | BA | 2273 | A |
| 34 | BA | 2278 | A |
| 34 | BA | 2282 | G |
| 34 | BA | 2283 | C |
| 34 | BA | 2297 | A |
| 34 | BA | 2305 | U |
| 34 | BA | 2307 | G |
| 34 | BA | 2309 | A |
| 34 | BA | 2311 | A |
| 34 | BA | 2325 | G |
| 34 | BA | 2326 | C |
| 34 | BA | 2327 | A |
| 34 | BA | 2333 | A |
| 34 | BA | 2334 | U |
| 34 | BA | 2336 | A |
| 34 | BA | 2347 | C |
| 34 | BA | 2350 | C |
| 34 | BA | 2353 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 2361 | G |
| 34 | BA | 2382 | G |
| 34 | BA | 2383 | G |
| 34 | BA | 2385 | C |
| 34 | BA | 2402 | U |
| 34 | BA | 2403 | C |
| 34 | BA | 2406 | A |
| 34 | BA | 2407 | A |
| 34 | BA | 2423 | U |
| 34 | BA | 2424 | C |
| 34 | BA | 2425 | A |
| 34 | BA | 2426 | A |
| 34 | BA | 2429 | G |
| 34 | BA | 2430 | A |
| 34 | BA | 2435 | A |
| 34 | BA | 2441 | U |
| 34 | BA | 2448 | A |
| 34 | BA | 2450 | A |
| 34 | BA | 2458 | G |
| 34 | BA | 2459 | A |
| 34 | BA | 2474 | U |
| 34 | BA | 2476 | A |
| 34 | BA | 2478 | A |
| 34 | BA | 2491 | U |
| 34 | BA | 2494 | G |
| 34 | BA | 2497 | A |
| 34 | BA | 2502 | G |
| 34 | BA | 2503 | A |
| 34 | BA | 2505 | G |
| 34 | BA | 2506 | U |
| 34 | BA | 2507 | C |
| 34 | BA | 2517 | C |
| 34 | BA | 2518 | A |
| 34 | BA | 2520 | C |
| 34 | BA | 2529 | G |
| 34 | BA | 2554 | U |
| 34 | BA | 2562 | U |
| 34 | BA | 2566 | A |
| 34 | BA | 2567 | G |
| 34 | BA | 2569 | G |
| 34 | BA | 2585 | U |
| 34 | BA | 2586 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 2602 | A |
| 34 | BA | 2603 | G |
| 34 | BA | 2609 | U |
| 34 | BA | 2613 | U |
| 34 | BA | 2614 | A |
| 34 | BA | 2615 | U |
| 34 | BA | 2617 | U |
| 34 | BA | 2629 | U |
| 34 | BA | 2632 | A |
| 34 | BA | 2638 | G |
| 34 | BA | 2639 | A |
| 34 | BA | 2640 | G |
| 34 | BA | 2642 | G |
| 34 | BA | 2645 | G |
| 34 | BA | 2655 | G |
| 34 | BA | 2661 | G |
| 34 | BA | 2663 | G |
| 34 | BA | 2689 | U |
| 34 | BA | 2690 | U |
| 34 | BA | 2714 | G |
| 34 | BA | 2716 | C |
| 34 | BA | 2725 | A |
| 34 | BA | 2726 | A |
| 34 | BA | 2727 | A |
| 34 | BA | 2729 | G |
| 34 | BA | 2731 | G |
| 34 | BA | 2732 | G |
| 34 | BA | 2748 | A |
| 34 | BA | 2757 | A |
| 34 | BA | 2762 | C |
| 34 | BA | 2765 | A |
| 34 | BA | 2769 | U |
| 34 | BA | 2778 | A |
| 34 | BA | 2780 | G |
| 34 | BA | 2790 | U |
| 34 | BA | 2791 | G |
| 34 | BA | 2798 | U |
| 34 | BA | 2799 | A |
| 34 | BA | 2800 | A |
| 34 | BA | 2818 | U |
| 34 | BA | 2820 | A |
| 34 | BA | 2821 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 2833 | U |
| 34 | BA | 2848 | G |
| 34 | BA | 2849 | U |
| 34 | BA | 2861 | U |
| 34 | BA | 2866 | U |
| 34 | BA | 2867 | G |
| 34 | BA | 2868 | A |
| 34 | BA | 2873 | A |
| 34 | BA | 2879 | A |
| 34 | BA | 2883 | A |
| 34 | BA | 2884 | U |
| 34 | BA | 2886 | A |
| 34 | BA | 2887 | A |
| 35 | BB | 3 | C |
| 35 | BB | 9 | G |
| 35 | BB | 15 | A |
| 35 | BB | 16 | G |
| 35 | BB | 25 | U |
| 35 | BB | 30 | C |
| 35 | BB | 35 | C |
| 35 | BB | 41 | G |
| 35 | BB | 44 | G |
| 35 | BB | 53 | A |
| 35 | BB | 57 | A |
| 35 | BB | 58 | A |
| 35 | BB | 66 | A |
| 35 | BB | 67 | G |
| 35 | BB | 87 | U |
| 35 | BB | 88 | C |
| 35 | BB | 89 | U |
| 35 | BB | 90 | C |
| 35 | BB | 99 | A |
| 35 | BB | 107 | G |
| 35 | BB | 108 | A |
| 35 | BB | 109 | A |

All (143) RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AA | 4 | U |
| 1 | AA | 8 | A |
| 1 | AA | 51 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | AA | 64 | G |
| 1 | AA | 115 | G |
| 1 | AA | 119 | A |
| 1 | AA | 181 | A |
| 1 | AA | 246 | A |
| 1 | AA | 250 | A |
| 1 | AA | 274 | A |
| 1 | AA | 305 | G |
| 1 | AA | 344 | A |
| 1 | AA | 345 | C |
| 1 | AA | 351 | G |
| 1 | AA | 388 | G |
| 1 | AA | 412 | A |
| 1 | AA | 428 | G |
| 1 | AA | 429 | U |
| 1 | AA | 451 | A |
| 1 | AA | 484 | G |
| 1 | AA | 495 | A |
| 1 | AA | 559 | A |
| 1 | AA | 687 | A |
| 1 | AA | 702 | A |
| 1 | AA | 721 | G |
| 1 | AA | 812 | G |
| 1 | AA | 815 | A |
| 1 | AA | 890 | G |
| 1 | AA | 913 | A |
| 1 | AA | 965 | U |
| 1 | AA | 982 | U |
| 1 | AA | 1036 | A |
| 1 | AA | 1049 | U |
| 1 | AA | 1094 | G |
| 1 | AA | 1101 | A |
| 1 | AA | 1136 | C |
| 1 | AA | 1145 | A |
| 1 | AA | 1201 | A |
| 1 | AA | 1224 | U |
| 1 | AA | 1239 | A |
| 1 | AA | 1257 | A |
| 1 | AA | 1297 | G |
| 1 | AA | 1300 | G |
| 1 | AA | 1336 | C |
| 1 | AA | 1347 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 27 | G |
| 34 | BA | 34 | U |
| 34 | BA | 51 | G |
| 34 | BA | 60 | G |
| 34 | BA | 71 | A |
| 34 | BA | 74 | A |
| 34 | BA | 100 | U |
| 34 | BA | 119 | A |
| 34 | BA | 125 | A |
| 34 | BA | 205 | G |
| 34 | BA | 215 | G |
| 34 | BA | 221 | A |
| 34 | BA | 232 | G |
| 34 | BA | 265 | A |
| 34 | BA | 271 | G |
| 34 | BA | 345 | A |
| 34 | BA | 370 | G |
| 34 | BA | 372 | G |
| 34 | BA | 404 | A |
| 34 | BA | 442 | G |
| 34 | BA | 458 | G |
| 34 | BA | 479 | A |
| 34 | BA | 503 | A |
| 34 | BA | 504 | A |
| 34 | BA | 527 | C |
| 34 | BA | 603 | A |
| 34 | BA | 614 | A |
| 34 | BA | 627 | A |
| 34 | BA | 655 | A |
| 34 | BA | 669 | G |
| 34 | BA | 685 | A |
| 34 | BA | 704 | G |
| 34 | BA | 764 | A |
| 34 | BA | 793 | A |
| 34 | BA | 800 | A |
| 34 | BA | 859 | G |
| 34 | BA | 900 | A |
| 34 | BA | 957 | C |
| 34 | BA | 995 | C |
| 34 | BA | 1020 | A |
| 34 | BA | 1025 | G |
| 34 | BA | 1060 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 1141 | U |
| 34 | BA | 1142 | A |
| 34 | BA | 1205 | A |
| 34 | BA | 1212 | G |
| 34 | BA | 1236 | G |
| 34 | BA | 1247 | A |
| 34 | BA | 1253 | A |
| 34 | BA | 1266 | G |
| 34 | BA | 1275 | A |
| 34 | BA | 1340 | U |
| 34 | BA | 1378 | A |
| 34 | BA | 1454 | C |
| 34 | BA | 1458 | U |
| 34 | BA | 1475 | G |
| 34 | BA | 1559 | U |
| 34 | BA | 1565 | C |
| 34 | BA | 1608 | A |
| 34 | BA | 1647 | U |
| 34 | BA | 1706 | C |
| 34 | BA | 1715 | G |
| 34 | BA | 1758 | U |
| 34 | BA | 1818 | U |
| 34 | BA | 1857 | G |
| 34 | BA | 1870 | C |
| 34 | BA | 1912 | A |
| 34 | BA | 1913 | A |
| 34 | BA | 1918 | A |
| 34 | BA | 1929 | G |
| 34 | BA | 1930 | G |
| 34 | BA | 1936 | A |
| 34 | BA | 1970 | A |
| 34 | BA | 2017 | U |
| 34 | BA | 2033 | A |
| 34 | BA | 2092 | U |
| 34 | BA | 2103 | C |
| 34 | BA | 2146 | C |
| 34 | BA | 2149 | U |
| 34 | BA | 2150 | C |
| 34 | BA | 2211 | A |
| 34 | BA | 2225 | A |
| 34 | BA | 2326 | C |
| 34 | BA | 2423 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 34 | BA | 2602 | A |
| 34 | BA | 2638 | G |
| 34 | BA | 2725 | A |
| 34 | BA | 2726 | A |
| 34 | BA | 2756 | U |
| 34 | BA | 2790 | U |
| 34 | BA | 2798 | U |
| 34 | BA | 2820 | A |
| 34 | BA | 2848 | G |
| 34 | BA | 2867 | G |
| 34 | BA | 2873 | A |
| 35 | BB | 52 | A |
| 35 | BB | 66 | A |
| 35 | BB | 87 | U |

## 5.4 Non-standard residues in protein, DNA, RNA chains (i)

4 non-standard protein/DNA/RNA residues are modelled in this entry.

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 | $\#\|Z\| > 2$ |
| 24 | UAL | AY | 5 | 24 | 6,8,9 | 2.53 | 2 (33%) | 4,9,11 | 1.30 | 1 (25%) |
| 24 | DPP | AY | 2 | 24 | 4,5,6 | 1.10 | 1 (25%) | 1,5,7 | 0.18 | 0 |
| 24 | 5OH | AY | 6 | 24 | 7,12,13 | 0.53 | 0 | 4,16,18 | 0.72 | 0 |
| 24 | KBE | AY | 1 | 24 | 8,8,9 | 0.57 | 0 | 6,8,10 | 1.30 | 1 (16%) |

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 |
|---|---|---|---|---|---|---|---|
| 24 | UAL | AY | 5 | 24 | - | 0/3/7/9 | - |
| 24 | DPP | AY | 2 | 24 | - | 0/2/4/6 | - |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|---|---|---|---|---|---|---|---|
| 24 | 5OH | AY | 6 | 24 | - | 0/2/18/20 | 0/1/1/1 |
| 24 | KBE | AY | 1 | 24 | - | 1/7/7/8 | - |

All (3) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 24 | AY | 5 | UAL | C-CA | 4.89 | 1.53 | 1.45 |
| 24 | AY | 5 | UAL | C1-N1 | -3.17 | 1.35 | 1.40 |
| 24 | AY | 2 | DPP | O-C | 2.15 | 1.28 | 1.20 |

All (2) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 24 | AY | 1 | KBE | CB-CA-C | 2.61 | 116.38 | 112.17 |
| 24 | AY | 5 | UAL | O-C-CA | -2.37 | 122.42 | 125.39 |

There are no chirality outliers.

All (1) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 24 | AY | 1 | KBE | C-CA-CB-N |

There are no ring outliers.

4 monomers are involved in 28 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 24 | AY | 5 | UAL | 4 | 0 |
| 24 | AY | 2 | DPP | 1 | 0 |
| 24 | AY | 6 | 5OH | 7 | 0 |
| 24 | AY | 1 | KBE | 17 | 0 |

## 5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry (i)

Of 494 ligands modelled in this entry, 493 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 | $\#\|Z\| > 2$ |
| 58 | GNP | AW | 602 | 57 | 29,34,34 | 1.80 | 7 (24%) | 33,54,54 | 2.80 | 14 (42%) |

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 |
|---|---|---|---|---|---|---|---|
| 58 | GNP | AW | 602 | 57 | - | 7/14/38/38 | 0/3/3/3 |

All (7) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 58 | AW | 602 | GNP | PG-O1G | 5.02 | 1.53 | 1.46 |
| 58 | AW | 602 | GNP | PA-O3A | -4.25 | 1.54 | 1.59 |
| 58 | AW | 602 | GNP | C6-N1 | 3.64 | 1.39 | 1.33 |
| 58 | AW | 602 | GNP | PB-O3A | -2.48 | 1.56 | 1.59 |
| 58 | AW | 602 | GNP | PA-O2A | -2.15 | 1.45 | 1.55 |
| 58 | AW | 602 | GNP | C1'-N9 | -2.08 | 1.44 | 1.49 |
| 58 | AW | 602 | GNP | PB-O2B | -2.02 | 1.51 | 1.56 |

All (14) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 58 | AW | 602 | GNP | C5-C6-N1 | -8.77 | 111.69 | 123.42 |
| 58 | AW | 602 | GNP | C2-N1-C6 | 6.60 | 125.14 | 115.96 |
| 58 | AW | 602 | GNP | C2-N3-C4 | -5.23 | 109.85 | 115.48 |
| 58 | AW | 602 | GNP | C4'-O4'-C1' | -4.54 | 105.77 | 109.92 |
| 58 | AW | 602 | GNP | O2B-PB-O1B | 3.44 | 117.24 | 109.87 |
| 58 | AW | 602 | GNP | O2G-PG-O3G | 3.31 | 116.48 | 107.59 |
| 58 | AW | 602 | GNP | C4-C5-N7 | 3.06 | 112.57 | 109.34 |
| 58 | AW | 602 | GNP | O3G-PG-O1G | -2.98 | 105.98 | 113.45 |
| 58 | AW | 602 | GNP | O1B-PB-N3B | 2.83 | 115.94 | 111.77 |
| 58 | AW | 602 | GNP | N3-C2-N1 | -2.35 | 124.22 | 127.21 |
| 58 | AW | 602 | GNP | C5'-C4'-C3' | -2.31 | 106.90 | 115.21 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 58 | AW | 602 | GNP | O2A-PA-O3A | 2.26 | 113.38 | 107.27 |
| 58 | AW | 602 | GNP | O3A-PA-O1A | -2.25 | 103.94 | 110.70 |
| 58 | AW | 602 | GNP | O1G-PG-N3B | -2.20 | 108.53 | 111.77 |

There are no chirality outliers.

All (7) torsion outliers are listed below:

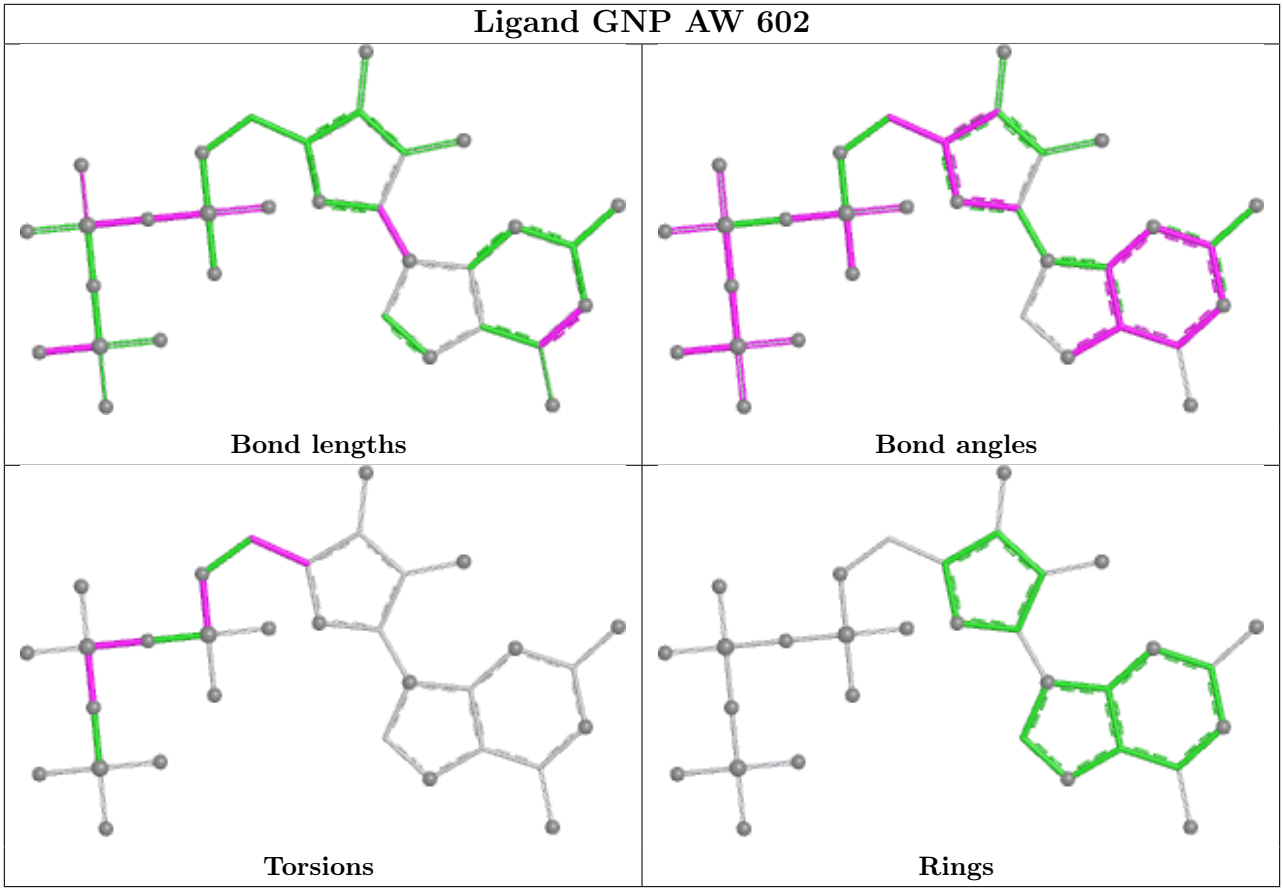
| Mol | Chain | Res | Type | Atoms |
|---|---|---|---|---|
| 58 | AW | 602 | GNP | PG-N3B-PB-O1B |
| 58 | AW | 602 | GNP | PG-N3B-PB-O3A |
| 58 | AW | 602 | GNP | PA-O3A-PB-O2B |
| 58 | AW | 602 | GNP | C5'-O5'-PA-O3A |
| 58 | AW | 602 | GNP | C5'-O5'-PA-O1A |
| 58 | AW | 602 | GNP | C3'-C4'-C5'-O5' |
| 58 | AW | 602 | GNP | PA-O3A-PB-O1B |

There are no ring outliers.

1 monomer is involved in 6 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|---|---|---|---|---|---|
| 58 | AW | 602 | GNP | 6 | 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 then 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

There are no such residues in this entry.

## 5.8 Polymer linkage issues

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|---|---|---|
| 34 | BA | 2 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|---|---|---|---|---|---|---|
| 1 | BA | 2106:U | O3' | 2107:G | P | 1.86 |
| 1 | BA | 2183:A | O3' | 2184:A | P | 1.80 |

# 6 Fit of model and data

## 6.1 Protein, DNA and RNA chains

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, $95^{th}$ 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 | 1532/1533 (99%) | 0.29 | 49 (3%) 50 35 | 51, 102, 197, 245 | 0 |
| 2 | AB | 218/241 (90%) | 0.73 | 19 (8%) 17 12 | 91, 120, 142, 158 | 0 |
| 3 | AC | 206/233 (88%) | 0.47 | 11 (5%) 33 22 | 75, 114, 132, 139 | 0 |
| 4 | AD | 205/206 (99%) | 0.98 | 31 (15%) 6 5 | 86, 110, 132, 147 | 0 |
| 5 | AE | 150/167 (89%) | 0.60 | 9 (6%) 29 19 | 73, 94, 129, 143 | 0 |
| 6 | AF | 100/131 (76%) | 0.48 | 5 (5%) 35 24 | 98, 122, 135, 145 | 0 |
| 7 | AG | 151/156 (96%) | 1.16 | 26 (17%) 5 4 | 107, 144, 159, 163 | 0 |
| 8 | AH | 129/130 (99%) | 0.51 | 10 (7%) 20 14 | 77, 97, 121, 139 | 0 |
| 9 | AI | 127/130 (97%) | 0.83 | 8 (6%) 27 18 | 77, 122, 148, 159 | 0 |
| 10 | AJ | 98/103 (95%) | 1.18 | 14 (14%) 7 5 | 89, 106, 143, 156 | 0 |
| 11 | AK | 117/129 (90%) | 0.71 | 7 (5%) 29 19 | 73, 105, 133, 150 | 0 |
| 12 | AL | 123/124 (99%) | 0.44 | 7 (5%) 30 20 | 55, 74, 111, 142 | 0 |
| 13 | AM | 114/118 (96%) | 1.53 | 34 (29%) 1 1 | 137, 149, 163, 165 | 0 |
| 14 | AN | 96/101 (95%) | 1.55 | 32 (33%) 1 1 | 79, 128, 152, 160 | 0 |
| 15 | AO | 88/89 (98%) | 0.35 | 2 (2%) 61 44 | 79, 101, 131, 142 | 0 |
| 16 | AP | 82/82 (100%) | 0.63 | 5 (6%) 28 19 | 72, 95, 131, 147 | 0 |
| 17 | AQ | 80/84 (95%) | 1.07 | 7 (8%) 17 12 | 78, 111, 136, 147 | 0 |
| 18 | AR | 55/75 (73%) | 0.85 | 8 (14%) 7 5 | 77, 100, 126, 165 | 0 |
| 19 | AS | 79/92 (85%) | 1.43 | 17 (21%) 3 2 | 131, 153, 159, 164 | 0 |
| 20 | AT | 85/87 (97%) | 0.98 | 12 (14%) 7 5 | 80, 105, 126, 142 | 0 |
| 21 | AU | 51/71 (71%) | 1.46 | 14 (27%) 2 1 | 106, 132, 153, 157 | 0 |
| 22 | AV | 6/27 (22%) | 2.19 | 3 (50%) 0 1 | 181, 198, 202, 206 | 0 |
| 23 | AW | 525/529 (99%) | 0.80 | 67 (12%) 9 7 | 47, 99, 188, 267 | 0 |
| 24 | AY | 2/6 (33%) | 1.24 | 0 100 100 | 85, 85, 85, 88 | 0 |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|
| 25 | B0 | 79/85 (92%) | 1.23 | 18 (22%) 2 2 | 62, 87, 115, 129 | 0 |
| 26 | B1 | 77/78 (98%) | 0.23 | 1 (1%) 74 60 | 55, 71, 124, 126 | 0 |
| 27 | B2 | 63/63 (100%) | 0.55 | 5 (7%) 20 14 | 69, 101, 126, 140 | 0 |
| 28 | B3 | 58/59 (98%) | 0.14 | 0 100 100 | 63, 75, 121, 129 | 0 |
| 29 | B4 | 56/57 (98%) | 0.12 | 4 (7%) 23 16 | 42, 63, 97, 125 | 0 |
| 30 | B5 | 50/55 (90%) | 1.07 | 6 (12%) 10 7 | 114, 128, 137, 151 | 0 |
| 31 | B6 | 46/46 (100%) | 0.14 | 3 (6%) 26 18 | 43, 56, 77, 114 | 0 |
| 32 | B7 | 64/65 (98%) | 0.22 | 1 (1%) 70 55 | 57, 68, 83, 90 | 0 |
| 33 | B8 | 38/38 (100%) | 0.55 | 1 (2%) 57 41 | 61, 78, 90, 105 | 0 |
| 34 | BA | 2853/2903 (98%) | -0.27 | 41 (1%) 73 58 | 35, 67, 195, 445 | 0 |
| 35 | BB | 118/118 (100%) | 0.04 | 0 100 100 | 61, 106, 152, 188 | 0 |
| 36 | BC | 271/273 (99%) | 0.11 | 11 (4%) 42 28 | 36, 66, 83, 108 | 0 |
| 37 | BD | 209/209 (100%) | -0.09 | 4 (1%) 66 50 | 37, 57, 89, 99 | 0 |
| 38 | BE | 201/201 (100%) | 0.14 | 6 (2%) 52 37 | 37, 76, 109, 131 | 0 |
| 39 | BF | 177/179 (98%) | 0.79 | 9 (5%) 34 23 | 106, 128, 152, 165 | 0 |
| 40 | BG | 176/177 (99%) | 0.28 | 6 (3%) 48 34 | 54, 80, 116, 131 | 0 |
| 41 | BH | 163/165 (98%) | 1.80 | 56 (34%) 1 1 | 55, 145, 163, 185 | 1 (0%) |
| 42 | BI | 141/142 (99%) | 1.67 | 47 (33%) 1 1 | 135, 157, 169, 176 | 0 |
| 43 | BJ | 30/121 (24%) | 1.12 | 4 (13%) 8 6 | 126, 137, 143, 145 | 0 |
| 43 | BK | 30/121 (24%) | 1.24 | 6 (20%) 3 3 | 133, 146, 152, 156 | 0 |
| 43 | BL | 30/121 (24%) | 2.01 | 14 (46%) 0 1 | 132, 148, 158, 163 | 0 |
| 43 | BM | 30/121 (24%) | 1.06 | 4 (13%) 8 6 | 128, 142, 149, 151 | 0 |
| 44 | BN | 142/142 (100%) | 0.15 | 10 (7%) 24 17 | 45, 65, 91, 117 | 0 |
| 45 | BO | 122/123 (99%) | 0.04 | 4 (3%) 49 34 | 41, 61, 84, 104 | 0 |
| 46 | BP | 143/144 (99%) | 0.44 | 5 (3%) 47 33 | 41, 84, 112, 132 | 0 |
| 47 | BQ | 136/136 (100%) | -0.03 | 2 (1%) 71 56 | 47, 70, 100, 126 | 0 |
| 48 | BR | 120/127 (94%) | -0.24 | 1 (0%) 82 70 | 40, 56, 72, 138 | 0 |
| 49 | BS | 116/117 (99%) | 0.54 | 4 (3%) 48 34 | 81, 100, 121, 128 | 0 |
| 50 | BT | 114/115 (99%) | 0.12 | 3 (2%) 57 41 | 48, 71, 112, 121 | 0 |
| 51 | BU | 117/118 (99%) | 0.02 | 4 (3%) 48 34 | 37, 59, 94, 108 | 0 |
| 52 | BV | 103/103 (100%) | 0.28 | 3 (2%) 54 38 | 43, 86, 111, 119 | 0 |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|
| 53 | BW | 110/116 (94%) | -0.25 | 0 100 100 | 41, 54, 82, 127 | 0 |
| 54 | BX | 93/100 (93%) | 0.41 | 5 (5%) 32 22 | 50, 81, 134, 144 | 0 |
| 55 | BY | 102/104 (98%) | 0.52 | 7 (6%) 24 17 | 63, 84, 126, 141 | 0 |
| 56 | BZ | 94/94 (100%) | 0.17 | 2 (2%) 63 47 | 68, 94, 113, 126 | 0 |
| All | All | 10891/11580 (94%) | 0.32 | 694 (6%) 27 18 | 35, 89, 165, 445 | 1 (0%) |

All (694) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 11 | AK | 125 | LYS | 9.6 |
| 43 | BL | 22 | LEU | 9.6 |
| 23 | AW | 424 | ALA | 7.2 |
| 4 | AD | 24 | VAL | 6.8 |
| 2 | AB | 150 | ILE | 6.7 |
| 17 | AQ | 19 | SER | 6.5 |
| 8 | AH | 1 | SER | 6.4 |
| 1 | AA | 1086 | U | 6.4 |
| 44 | BN | 9 | GLU | 6.3 |
| 23 | AW | 16 | PHE | 6.3 |
| 18 | AR | 19 | GLU | 6.2 |
| 41 | BH | 62 | ARG | 6.1 |
| 41 | BH | 113 | PHE | 6.1 |
| 4 | AD | 23 | GLY | 6.1 |
| 23 | AW | 423 | GLY | 6.1 |
| 41 | BH | 84 | TYR | 6.1 |
| 25 | B0 | 51 | GLY | 6.0 |
| 17 | AQ | 13 | SER | 6.0 |
| 41 | BH | 85 | SER | 5.9 |
| 23 | AW | 304 | GLN | 5.9 |
| 23 | AW | 45 | THR | 5.9 |
| 23 | AW | 305 | ALA | 5.9 |
| 23 | AW | 456 | GLU | 5.7 |
| 41 | BH | 14 | GLU | 5.7 |
| 29 | B4 | 26 | SER | 5.7 |
| 7 | AG | 1 | PRO | 5.6 |
| 36 | BC | 250 | GLN | 5.5 |
| 1 | AA | 1362 | A | 5.2 |
| 7 | AG | 4 | ARG | 5.2 |
| 13 | AM | 3 | ILE | 5.1 |
| 41 | BH | 145 | GLU | 5.1 |
| 43 | BL | 16 | VAL | 5.1 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 9 | AI | 124 | PRO | 5.0 |
| 23 | AW | 42 | THR | 5.0 |
| 14 | AN | 13 | VAL | 5.0 |
| 43 | BK | 9 | GLU | 5.0 |
| 12 | AL | 24 | GLU | 5.0 |
| 42 | BI | 75 | ALA | 4.9 |
| 4 | AD | 62 | ARG | 4.9 |
| 52 | BV | 50 | GLY | 4.9 |
| 4 | AD | 28 | ASP | 4.9 |
| 56 | BZ | 94 | ALA | 4.9 |
| 14 | AN | 51 | PRO | 4.9 |
| 14 | AN | 7 | ALA | 4.8 |
| 23 | AW | 399 | ARG | 4.8 |
| 19 | AS | 32 | THR | 4.8 |
| 21 | AU | 37 | TYR | 4.8 |
| 14 | AN | 56 | PRO | 4.7 |
| 23 | AW | 50 | GLY | 4.7 |
| 41 | BH | 36 | ASP | 4.6 |
| 41 | BH | 56 | ARG | 4.6 |
| 6 | AF | 89 | VAL | 4.5 |
| 20 | AT | 67 | HIS | 4.5 |
| 42 | BI | 131 | THR | 4.5 |
| 14 | AN | 1 | ALA | 4.5 |
| 8 | AH | 2 | MET | 4.5 |
| 19 | AS | 50 | VAL | 4.5 |
| 25 | B0 | 50 | VAL | 4.4 |
| 42 | BI | 10 | LEU | 4.4 |
| 20 | AT | 52 | GLU | 4.4 |
| 23 | AW | 307 | MET | 4.4 |
| 14 | AN | 6 | LYS | 4.4 |
| 34 | BA | 2151 | U | 4.3 |
| 14 | AN | 21 | ALA | 4.3 |
| 42 | BI | 12 | VAL | 4.3 |
| 14 | AN | 4 | SER | 4.3 |
| 13 | AM | 105 | ALA | 4.3 |
| 14 | AN | 53 | ASP | 4.3 |
| 41 | BH | 3 | LEU | 4.3 |
| 23 | AW | 58 | ASP | 4.2 |
| 42 | BI | 128 | ILE | 4.2 |
| 23 | AW | 455 | SER | 4.2 |
| 8 | AH | 67 | GLY | 4.1 |
| 51 | BU | 87 | VAL | 4.1 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 21 | AU | 34 | ARG | 4.1 |
| 23 | AW | 314 | ARG | 4.1 |
| 23 | AW | 452 | ARG | 4.0 |
| 14 | AN | 11 | LYS | 4.0 |
| 42 | BI | 79 | LEU | 4.0 |
| 42 | BI | 78 | LEU | 4.0 |
| 23 | AW | 91 | GLY | 4.0 |
| 17 | AQ | 82 | VAL | 3.9 |
| 34 | BA | 504 | A | 3.9 |
| 34 | BA | 881 | G | 3.9 |
| 41 | BH | 35 | VAL | 3.9 |
| 41 | BH | 2 | ALA | 3.9 |
| 49 | BS | 58 | ILE | 3.9 |
| 49 | BS | 3 | LYS | 3.9 |
| 2 | AB | 138 | ARG | 3.9 |
| 19 | AS | 49 | ALA | 3.9 |
| 23 | AW | 122 | ARG | 3.9 |
| 41 | BH | 116 | GLU | 3.9 |
| 43 | BJ | 21 | GLU | 3.9 |
| 10 | AJ | 86 | ALA | 3.9 |
| 42 | BI | 109 | ALA | 3.9 |
| 9 | AI | 129 | ARG | 3.9 |
| 30 | B5 | 22 | THR | 3.8 |
| 34 | BA | 2402 | U | 3.8 |
| 10 | AJ | 34 | ALA | 3.8 |
| 21 | AU | 36 | PHE | 3.8 |
| 51 | BU | 86 | SER | 3.7 |
| 7 | AG | 87 | PRO | 3.7 |
| 42 | BI | 53 | PRO | 3.7 |
| 4 | AD | 34 | GLU | 3.7 |
| 14 | AN | 29 | ILE | 3.7 |
| 4 | AD | 1 | ALA | 3.7 |
| 21 | AU | 31 | VAL | 3.7 |
| 2 | AB | 220 | VAL | 3.7 |
| 2 | AB | 142 | LYS | 3.7 |
| 41 | BH | 154 | THR | 3.7 |
| 23 | AW | 303 | ILE | 3.7 |
| 41 | BH | 112 | ALA | 3.7 |
| 18 | AR | 73 | HIS | 3.7 |
| 55 | BY | 86 | PHE | 3.7 |
| 2 | AB | 134 | LEU | 3.7 |
| 34 | BA | 2152 | G | 3.7 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 13 | AM | 18 | LEU | 3.6 |
| 13 | AM | 100 | ARG | 3.6 |
| 23 | AW | 309 | PRO | 3.6 |
| 42 | BI | 112 | LYS | 3.6 |
| 41 | BH | 99 | PHE | 3.6 |
| 41 | BH | 25 | ALA | 3.6 |
| 37 | BD | 209 | ALA | 3.5 |
| 17 | AQ | 12 | VAL | 3.5 |
| 43 | BJ | 24 | SER | 3.5 |
| 21 | AU | 35 | GLU | 3.5 |
| 36 | BC | 251 | THR | 3.5 |
| 25 | B0 | 40 | ARG | 3.5 |
| 37 | BD | 92 | VAL | 3.5 |
| 44 | BN | 81 | ILE | 3.5 |
| 42 | BI | 105 | LEU | 3.5 |
| 10 | AJ | 90 | LEU | 3.5 |
| 13 | AM | 104 | ASN | 3.5 |
| 42 | BI | 111 | THR | 3.5 |
| 41 | BH | 86 | MET | 3.5 |
| 23 | AW | 221 | GLU | 3.4 |
| 25 | B0 | 49 | ASN | 3.4 |
| 13 | AM | 15 | VAL | 3.4 |
| 14 | AN | 15 | LEU | 3.4 |
| 41 | BH | 160 | ASP | 3.4 |
| 19 | AS | 75 | PRO | 3.4 |
| 55 | BY | 1 | ALA | 3.4 |
| 17 | AQ | 69 | THR | 3.4 |
| 22 | AV | 20 | A | 3.4 |
| 1 | AA | 1323 | G | 3.4 |
| 9 | AI | 120 | ALA | 3.4 |
| 17 | AQ | 20 | ILE | 3.4 |
| 1 | AA | 995 | C | 3.4 |
| 34 | BA | 2901 | C | 3.4 |
| 34 | BA | 2107 | G | 3.4 |
| 39 | BF | 153 | ILE | 3.4 |
| 43 | BM | 1 | SER | 3.4 |
| 7 | AG | 74 | VAL | 3.4 |
| 34 | BA | 2903 | U | 3.4 |
| 20 | AT | 3 | ILE | 3.4 |
| 10 | AJ | 35 | GLN | 3.3 |
| 34 | BA | 883 | G | 3.3 |
| 42 | BI | 22 | PRO | 3.3 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 42 | BI | 77 | VAL | 3.3 |
| 37 | BD | 43 | ASP | 3.3 |
| 43 | BL | 1 | SER | 3.3 |
| 34 | BA | 2108 | A | 3.3 |
| 12 | AL | 123 | ALA | 3.3 |
| 23 | AW | 496 | ASP | 3.3 |
| 23 | AW | 57 | SER | 3.3 |
| 36 | BC | 271 | SER | 3.3 |
| 1 | AA | 1224 | U | 3.3 |
| 23 | AW | 70 | ILE | 3.3 |
| 13 | AM | 79 | LEU | 3.3 |
| 10 | AJ | 30 | LYS | 3.3 |
| 43 | BL | 12 | ALA | 3.3 |
| 31 | B6 | 1 | MET | 3.2 |
| 38 | BE | 201 | ALA | 3.2 |
| 3 | AC | 154 | GLY | 3.2 |
| 13 | AM | 98 | GLY | 3.2 |
| 34 | BA | 2585 | U | 3.2 |
| 4 | AD | 148 | ALA | 3.2 |
| 13 | AM | 4 | ALA | 3.2 |
| 23 | AW | 39 | ALA | 3.2 |
| 3 | AC | 206 | ILE | 3.2 |
| 42 | BI | 58 | ILE | 3.2 |
| 41 | BH | 4 | ASN | 3.2 |
| 7 | AG | 5 | VAL | 3.2 |
| 5 | AE | 102 | THR | 3.2 |
| 42 | BI | 54 | ILE | 3.2 |
| 54 | BX | 74 | ILE | 3.2 |
| 42 | BI | 92 | PRO | 3.2 |
| 43 | BL | 6 | GLN | 3.2 |
| 25 | B0 | 12 | GLY | 3.1 |
| 27 | B2 | 5 | GLU | 3.1 |
| 36 | BC | 235 | GLU | 3.1 |
| 1 | AA | 1319 | A | 3.1 |
| 23 | AW | 41 | GLN | 3.1 |
| 34 | BA | 880 | G | 3.1 |
| 1 | AA | 1364 | U | 3.1 |
| 4 | AD | 205 | LYS | 3.1 |
| 41 | BH | 33 | VAL | 3.1 |
| 45 | BO | 122 | VAL | 3.1 |
| 23 | AW | 348 | PHE | 3.1 |
| 25 | B0 | 17 | ALA | 3.1 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 46 | BP | 92 | LEU | 3.1 |
| 30 | B5 | 21 | THR | 3.1 |
| 1 | AA | 1214 | C | 3.1 |
| 1 | AA | 1325 | C | 3.1 |
| 42 | BI | 19 | PRO | 3.1 |
| 13 | AM | 63 | VAL | 3.1 |
| 23 | AW | 46 | VAL | 3.1 |
| 23 | AW | 51 | SER | 3.1 |
| 34 | BA | 884 | U | 3.1 |
| 7 | AG | 79 | VAL | 3.1 |
| 10 | AJ | 84 | VAL | 3.1 |
| 25 | B0 | 45 | HIS | 3.1 |
| 14 | AN | 43 | ALA | 3.1 |
| 23 | AW | 344 | ASP | 3.1 |
| 39 | BF | 127 | TYR | 3.1 |
| 52 | BV | 62 | GLU | 3.1 |
| 1 | AA | 121 | U | 3.1 |
| 34 | BA | 2148 | G | 3.1 |
| 43 | BL | 29 | LYS | 3.1 |
| 14 | AN | 45 | LEU | 3.1 |
| 14 | AN | 62 | ARG | 3.1 |
| 34 | BA | 2150 | C | 3.1 |
| 38 | BE | 7 | ASP | 3.0 |
| 4 | AD | 118 | SER | 3.0 |
| 3 | AC | 12 | GLY | 3.0 |
| 42 | BI | 108 | ILE | 3.0 |
| 4 | AD | 7 | LYS | 3.0 |
| 20 | AT | 15 | LYS | 3.0 |
| 40 | BG | 83 | THR | 3.0 |
| 41 | BH | 81 | LEU | 3.0 |
| 42 | BI | 52 | LEU | 3.0 |
| 18 | AR | 20 | ILE | 3.0 |
| 18 | AR | 63 | TYR | 3.0 |
| 2 | AB | 87 | ASP | 3.0 |
| 13 | AM | 64 | VAL | 3.0 |
| 42 | BI | 60 | VAL | 3.0 |
| 41 | BH | 117 | LEU | 3.0 |
| 20 | AT | 11 | ILE | 3.0 |
| 49 | BS | 50 | ALA | 3.0 |
| 47 | BQ | 1 | MET | 3.0 |
| 23 | AW | 447 | ASP | 3.0 |
| 42 | BI | 66 | PHE | 3.0 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 42 | BI | 76 | ALA | 3.0 |
| 5 | AE | 25 | LYS | 3.0 |
| 14 | AN | 2 | LYS | 3.0 |
| 14 | AN | 50 | LEU | 3.0 |
| 41 | BH | 129 | LEU | 3.0 |
| 18 | AR | 70 | THR | 3.0 |
| 41 | BH | 103 | ASN | 3.0 |
| 43 | BM | 8 | ILE | 3.0 |
| 44 | BN | 44 | TYR | 2.9 |
| 8 | AH | 98 | LEU | 2.9 |
| 41 | BH | 50 | VAL | 2.9 |
| 55 | BY | 80 | ASP | 2.9 |
| 7 | AG | 104 | VAL | 2.9 |
| 21 | AU | 14 | ALA | 2.9 |
| 8 | AH | 129 | ALA | 2.9 |
| 42 | BI | 132 | ALA | 2.9 |
| 4 | AD | 18 | LEU | 2.9 |
| 22 | AV | 18 | G | 2.9 |
| 23 | AW | 493 | LEU | 2.9 |
| 34 | BA | 1062 | G | 2.9 |
| 23 | AW | 441 | VAL | 2.9 |
| 40 | BG | 30 | GLY | 2.9 |
| 42 | BI | 91 | LYS | 2.9 |
| 26 | B1 | 75 | GLU | 2.9 |
| 37 | BD | 118 | PHE | 2.9 |
| 16 | AP | 69 | ASP | 2.9 |
| 2 | AB | 64 | GLY | 2.9 |
| 1 | AA | 723 | U | 2.9 |
| 34 | BA | 1509 | A | 2.9 |
| 34 | BA | 879 | G | 2.8 |
| 14 | AN | 52 | ARG | 2.8 |
| 7 | AG | 46 | LEU | 2.8 |
| 8 | AH | 9 | MET | 2.8 |
| 44 | BN | 80 | HIS | 2.8 |
| 54 | BX | 24 | MET | 2.8 |
| 20 | AT | 68 | LYS | 2.8 |
| 41 | BH | 88 | HIS | 2.8 |
| 23 | AW | 431 | ILE | 2.8 |
| 1 | AA | 4 | U | 2.8 |
| 34 | BA | 2109 | U | 2.8 |
| 19 | AS | 78 | THR | 2.8 |
| 29 | B4 | 25 | THR | 2.8 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 1 | AA | 631 | C | 2.8 |
| 34 | BA | 900 | A | 2.8 |
| 44 | BN | 142 | ILE | 2.8 |
| 54 | BX | 73 | ARG | 2.8 |
| 14 | AN | 9 | GLU | 2.8 |
| 41 | BH | 40 | GLU | 2.8 |
| 39 | BF | 90 | LEU | 2.8 |
| 41 | BH | 37 | LYS | 2.8 |
| 42 | BI | 4 | VAL | 2.8 |
| 42 | BI | 69 | VAL | 2.8 |
| 45 | BO | 35 | VAL | 2.8 |
| 7 | AG | 6 | ILE | 2.8 |
| 25 | B0 | 73 | PRO | 2.8 |
| 23 | AW | 472 | ARG | 2.8 |
| 7 | AG | 76 | SER | 2.8 |
| 36 | BC | 167 | ASP | 2.8 |
| 43 | BK | 10 | ALA | 2.8 |
| 1 | AA | 1235 | U | 2.7 |
| 2 | AB | 21 | TYR | 2.7 |
| 20 | AT | 4 | LYS | 2.7 |
| 44 | BN | 111 | LYS | 2.7 |
| 34 | BA | 885 | C | 2.7 |
| 46 | BP | 115 | GLU | 2.7 |
| 19 | AS | 31 | ARG | 2.7 |
| 41 | BH | 78 | GLY | 2.7 |
| 42 | BI | 37 | PHE | 2.7 |
| 2 | AB | 131 | LYS | 2.7 |
| 14 | AN | 47 | LEU | 2.7 |
| 39 | BF | 173 | ASP | 2.7 |
| 5 | AE | 136 | VAL | 2.7 |
| 39 | BF | 24 | VAL | 2.7 |
| 1 | AA | 1201 | A | 2.7 |
| 20 | AT | 65 | LEU | 2.7 |
| 23 | AW | 94 | ASP | 2.7 |
| 42 | BI | 57 | VAL | 2.7 |
| 25 | B0 | 13 | ARG | 2.7 |
| 5 | AE | 30 | PHE | 2.7 |
| 13 | AM | 95 | PRO | 2.7 |
| 23 | AW | 409 | GLN | 2.7 |
| 21 | AU | 5 | VAL | 2.7 |
| 23 | AW | 308 | ASP | 2.7 |
| 9 | AI | 71 | ILE | 2.7 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 42 | BI | 118 | GLY | 2.7 |
| 42 | BI | 27 | LEU | 2.7 |
| 34 | BA | 2211 | A | 2.7 |
| 41 | BH | 38 | MET | 2.7 |
| 41 | BH | 114 | GLU | 2.6 |
| 43 | BL | 30 | PHE | 2.6 |
| 6 | AF | 54 | LEU | 2.6 |
| 19 | AS | 12 | LEU | 2.6 |
| 22 | AV | 17 | U | 2.6 |
| 23 | AW | 411 | GLN | 2.6 |
| 12 | AL | 37 | TYR | 2.6 |
| 13 | AM | 21 | ILE | 2.6 |
| 20 | AT | 66 | ILE | 2.6 |
| 43 | BL | 2 | ILE | 2.6 |
| 17 | AQ | 27 | PHE | 2.6 |
| 42 | BI | 23 | VAL | 2.6 |
| 3 | AC | 36 | PHE | 2.6 |
| 7 | AG | 25 | PHE | 2.6 |
| 23 | AW | 63 | GLU | 2.6 |
| 19 | AS | 15 | LEU | 2.6 |
| 48 | BR | 119 | SER | 2.6 |
| 13 | AM | 97 | ARG | 2.6 |
| 34 | BA | 2902 | C | 2.6 |
| 41 | BH | 39 | THR | 2.6 |
| 3 | AC | 166 | TRP | 2.6 |
| 14 | AN | 18 | LYS | 2.6 |
| 13 | AM | 44 | ILE | 2.6 |
| 46 | BP | 28 | GLY | 2.6 |
| 31 | B6 | 44 | VAL | 2.6 |
| 41 | BH | 6 | GLN | 2.5 |
| 1 | AA | 1324 | A | 2.5 |
| 18 | AR | 50 | TYR | 2.5 |
| 42 | BI | 136 | GLY | 2.5 |
| 2 | AB | 11 | ALA | 2.5 |
| 13 | AM | 84 | CYS | 2.5 |
| 25 | B0 | 21 | GLY | 2.5 |
| 2 | AB | 82 | ALA | 2.5 |
| 14 | AN | 5 | MET | 2.5 |
| 13 | AM | 42 | VAL | 2.5 |
| 14 | AN | 10 | VAL | 2.5 |
| 30 | B5 | 41 | VAL | 2.5 |
| 1 | AA | 469 | C | 2.5 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 1 | AA | 962 | C | 2.5 |
| 1 | AA | 1370 | G | 2.5 |
| 23 | AW | 3 | LEU | 2.5 |
| 32 | B7 | 64 | ALA | 2.5 |
| 42 | BI | 25 | PRO | 2.5 |
| 41 | BH | 17 | GLU | 2.5 |
| 34 | BA | 1508 | A | 2.5 |
| 34 | BA | 2406 | A | 2.5 |
| 7 | AG | 123 | LEU | 2.5 |
| 1 | AA | 1226 | C | 2.5 |
| 13 | AM | 28 | ARG | 2.5 |
| 23 | AW | 96 | SER | 2.5 |
| 23 | AW | 48 | GLY | 2.5 |
| 7 | AG | 60 | ALA | 2.5 |
| 21 | AU | 13 | VAL | 2.5 |
| 42 | BI | 74 | PRO | 2.5 |
| 44 | BN | 90 | GLU | 2.5 |
| 29 | B4 | 54 | ILE | 2.5 |
| 7 | AG | 61 | PHE | 2.5 |
| 36 | BC | 268 | ARG | 2.5 |
| 1 | AA | 205 | A | 2.5 |
| 29 | B4 | 56 | LYS | 2.5 |
| 19 | AS | 79 | TYR | 2.5 |
| 1 | AA | 1296 | C | 2.5 |
| 7 | AG | 68 | VAL | 2.5 |
| 23 | AW | 417 | VAL | 2.5 |
| 41 | BH | 54 | VAL | 2.5 |
| 2 | AB | 141 | GLU | 2.5 |
| 4 | AD | 27 | ILE | 2.4 |
| 19 | AS | 48 | ILE | 2.4 |
| 42 | BI | 34 | ILE | 2.4 |
| 40 | BG | 32 | LEU | 2.4 |
| 54 | BX | 93 | LEU | 2.4 |
| 12 | AL | 13 | ARG | 2.4 |
| 36 | BC | 202 | ARG | 2.4 |
| 36 | BC | 114 | GLN | 2.4 |
| 42 | BI | 130 | GLY | 2.4 |
| 38 | BE | 188 | MET | 2.4 |
| 41 | BH | 51 | TYR | 2.4 |
| 18 | AR | 39 | VAL | 2.4 |
| 21 | AU | 27 | VAL | 2.4 |
| 41 | BH | 89 | PRO | 2.4 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 2 | AB | 59 | ILE | 2.4 |
| 7 | AG | 77 | ARG | 2.4 |
| 7 | AG | 108 | ARG | 2.4 |
| 9 | AI | 118 | ARG | 2.4 |
| 12 | AL | 23 | LEU | 2.4 |
| 27 | B2 | 22 | LEU | 2.4 |
| 23 | AW | 473 | TRP | 2.4 |
| 23 | AW | 349 | MET | 2.4 |
| 13 | AM | 85 | TYR | 2.4 |
| 14 | AN | 33 | VAL | 2.4 |
| 34 | BA | 548 | G | 2.4 |
| 25 | B0 | 11 | ASN | 2.4 |
| 38 | BE | 91 | ASP | 2.4 |
| 38 | BE | 97 | ASN | 2.4 |
| 45 | BO | 71 | ARG | 2.4 |
| 11 | AK | 53 | GLY | 2.4 |
| 41 | BH | 58 | THR | 2.4 |
| 4 | AD | 156 | ALA | 2.4 |
| 43 | BM | 12 | ALA | 2.4 |
| 10 | AJ | 74 | VAL | 2.4 |
| 42 | BI | 73 | PRO | 2.4 |
| 19 | AS | 14 | LEU | 2.4 |
| 25 | B0 | 38 | ARG | 2.4 |
| 30 | B5 | 47 | ILE | 2.4 |
| 55 | BY | 102 | ILE | 2.4 |
| 34 | BA | 2138 | G | 2.4 |
| 1 | AA | 996 | A | 2.4 |
| 1 | AA | 1363 | A | 2.4 |
| 4 | AD | 113 | ALA | 2.4 |
| 13 | AM | 101 | THR | 2.4 |
| 14 | AN | 49 | THR | 2.4 |
| 41 | BH | 75 | ALA | 2.4 |
| 9 | AI | 127 | SER | 2.4 |
| 4 | AD | 150 | LYS | 2.4 |
| 25 | B0 | 14 | ASP | 2.4 |
| 41 | BH | 43 | LYS | 2.4 |
| 46 | BP | 91 | ASP | 2.4 |
| 14 | AN | 70 | HIS | 2.4 |
| 12 | AL | 22 | ALA | 2.4 |
| 23 | AW | 72 | THR | 2.4 |
| 41 | BH | 77 | VAL | 2.4 |
| 34 | BA | 1084 | A | 2.4 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 3 | AC | 74 | ILE | 2.3 |
| 3 | AC | 102 | ILE | 2.3 |
| 13 | AM | 16 | ILE | 2.3 |
| 23 | AW | 87 | LEU | 2.3 |
| 23 | AW | 47 | LYS | 2.3 |
| 41 | BH | 79 | PRO | 2.3 |
| 41 | BH | 136 | ILE | 2.3 |
| 43 | BK | 4 | LYS | 2.3 |
| 4 | AD | 26 | ALA | 2.3 |
| 43 | BL | 13 | ALA | 2.3 |
| 8 | AH | 54 | THR | 2.3 |
| 3 | AC | 123 | LEU | 2.3 |
| 4 | AD | 33 | ILE | 2.3 |
| 4 | AD | 63 | ILE | 2.3 |
| 5 | AE | 104 | ILE | 2.3 |
| 23 | AW | 480 | LYS | 2.3 |
| 7 | AG | 84 | TYR | 2.3 |
| 1 | AA | 1305 | G | 2.3 |
| 34 | BA | 2144 | G | 2.3 |
| 4 | AD | 98 | ASP | 2.3 |
| 10 | AJ | 85 | ASP | 2.3 |
| 20 | AT | 58 | ASP | 2.3 |
| 43 | BL | 14 | MET | 2.3 |
| 25 | B0 | 72 | GLY | 2.3 |
| 34 | BA | 897 | C | 2.3 |
| 4 | AD | 147 | LYS | 2.3 |
| 41 | BH | 60 | LEU | 2.3 |
| 51 | BU | 4 | LYS | 2.3 |
| 2 | AB | 212 | TYR | 2.3 |
| 14 | AN | 19 | TYR | 2.3 |
| 23 | AW | 69 | SER | 2.3 |
| 34 | BA | 1094 | U | 2.3 |
| 34 | BA | 2149 | U | 2.3 |
| 25 | B0 | 28 | GLU | 2.3 |
| 34 | BA | 547 | A | 2.3 |
| 39 | BF | 45 | ASP | 2.3 |
| 20 | AT | 6 | ALA | 2.3 |
| 41 | BH | 64 | VAL | 2.3 |
| 50 | BT | 50 | ARG | 2.3 |
| 1 | AA | 1361 | G | 2.3 |
| 6 | AF | 58 | HIS | 2.3 |
| 4 | AD | 10 | LEU | 2.3 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 23 | AW | 109 | CYS | 2.3 |
| 13 | AM | 6 | ILE | 2.3 |
| 25 | B0 | 35 | ILE | 2.3 |
| 13 | AM | 114 | PRO | 2.3 |
| 18 | AR | 53 | GLN | 2.3 |
| 8 | AH | 48 | PHE | 2.3 |
| 16 | AP | 16 | PHE | 2.3 |
| 19 | AS | 40 | PHE | 2.3 |
| 51 | BU | 91 | ARG | 2.3 |
| 7 | AG | 82 | SER | 2.3 |
| 9 | AI | 43 | ALA | 2.3 |
| 10 | AJ | 66 | GLU | 2.3 |
| 23 | AW | 438 | VAL | 2.3 |
| 23 | AW | 327 | LYS | 2.3 |
| 41 | BH | 63 | ALA | 2.3 |
| 42 | BI | 90 | GLY | 2.3 |
| 55 | BY | 87 | GLU | 2.3 |
| 1 | AA | 1240 | U | 2.3 |
| 40 | BG | 59 | ASP | 2.3 |
| 19 | AS | 68 | HIS | 2.3 |
| 1 | AA | 994 | A | 2.3 |
| 10 | AJ | 53 | ILE | 2.3 |
| 11 | AK | 26 | PHE | 2.3 |
| 1 | AA | 971 | G | 2.3 |
| 42 | BI | 7 | TYR | 2.3 |
| 44 | BN | 95 | ARG | 2.3 |
| 4 | AD | 111 | ALA | 2.3 |
| 7 | AG | 88 | VAL | 2.3 |
| 7 | AG | 111 | GLY | 2.3 |
| 27 | B2 | 63 | ALA | 2.3 |
| 41 | BH | 92 | ALA | 2.3 |
| 41 | BH | 5 | LEU | 2.3 |
| 45 | BO | 109 | SER | 2.3 |
| 11 | AK | 23 | HIS | 2.2 |
| 10 | AJ | 32 | THR | 2.2 |
| 19 | AS | 55 | GLN | 2.2 |
| 36 | BC | 254 | LYS | 2.2 |
| 4 | AD | 116 | LEU | 2.2 |
| 5 | AE | 101 | GLY | 2.2 |
| 23 | AW | 442 | GLY | 2.2 |
| 33 | B8 | 38 | GLY | 2.2 |
| 41 | BH | 141 | ALA | 2.2 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 34 | BA | 1063 | G | 2.2 |
| 13 | AM | 29 | SER | 2.2 |
| 19 | AS | 51 | HIS | 2.2 |
| 46 | BP | 68 | SER | 2.2 |
| 30 | B5 | 40 | PRO | 2.2 |
| 4 | AD | 109 | THR | 2.2 |
| 41 | BH | 128 | THR | 2.2 |
| 1 | AA | 84 | U | 2.2 |
| 1 | AA | 1049 | U | 2.2 |
| 1 | AA | 1202 | U | 2.2 |
| 49 | BS | 98 | GLN | 2.2 |
| 4 | AD | 124 | VAL | 2.2 |
| 1 | AA | 77 | A | 2.2 |
| 10 | AJ | 102 | LEU | 2.2 |
| 39 | BF | 35 | LEU | 2.2 |
| 42 | BI | 82 | ALA | 2.2 |
| 27 | B2 | 62 | GLY | 2.2 |
| 43 | BL | 8 | ILE | 2.2 |
| 3 | AC | 205 | GLU | 2.2 |
| 9 | AI | 91 | GLU | 2.2 |
| 4 | AD | 152 | SER | 2.2 |
| 6 | AF | 100 | SER | 2.2 |
| 1 | AA | 470 | C | 2.2 |
| 1 | AA | 1302 | C | 2.2 |
| 1 | AA | 94 | G | 2.2 |
| 55 | BY | 45 | GLN | 2.2 |
| 38 | BE | 96 | VAL | 2.2 |
| 42 | BI | 138 | VAL | 2.2 |
| 1 | AA | 1167 | A | 2.2 |
| 1 | AA | 1238 | A | 2.2 |
| 40 | BG | 172 | GLU | 2.2 |
| 13 | AM | 86 | ARG | 2.2 |
| 36 | BC | 4 | LYS | 2.2 |
| 42 | BI | 70 | THR | 2.2 |
| 1 | AA | 990 | C | 2.2 |
| 21 | AU | 52 | VAL | 2.2 |
| 44 | BN | 73 | VAL | 2.2 |
| 54 | BX | 16 | VAL | 2.2 |
| 16 | AP | 22 | ALA | 2.2 |
| 23 | AW | 43 | ALA | 2.2 |
| 1 | AA | 1316 | G | 2.2 |
| 34 | BA | 1729 | U | 2.2 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 10 | AJ | 81 | GLU | 2.2 |
| 1 | AA | 81 | A | 2.2 |
| 1 | AA | 1332 | A | 2.2 |
| 16 | AP | 40 | ASN | 2.2 |
| 5 | AE | 126 | ALA | 2.1 |
| 42 | BI | 26 | ALA | 2.1 |
| 3 | AC | 161 | ILE | 2.1 |
| 23 | AW | 504 | ILE | 2.1 |
| 4 | AD | 69 | ARG | 2.1 |
| 41 | BH | 76 | PHE | 2.1 |
| 34 | BA | 1180 | U | 2.1 |
| 1 | AA | 973 | G | 2.1 |
| 30 | B5 | 33 | LEU | 2.1 |
| 41 | BH | 152 | VAL | 2.1 |
| 43 | BK | 11 | VAL | 2.1 |
| 47 | BQ | 78 | LEU | 2.1 |
| 23 | AW | 467 | ASN | 2.1 |
| 5 | AE | 141 | ASP | 2.1 |
| 14 | AN | 48 | GLN | 2.1 |
| 21 | AU | 25 | ALA | 2.1 |
| 11 | AK | 18 | GLY | 2.1 |
| 14 | AN | 30 | ILE | 2.1 |
| 4 | AD | 145 | ARG | 2.1 |
| 21 | AU | 16 | ARG | 2.1 |
| 23 | AW | 357 | GLU | 2.1 |
| 12 | AL | 121 | PRO | 2.1 |
| 34 | BA | 490 | C | 2.1 |
| 6 | AF | 9 | MET | 2.1 |
| 21 | AU | 15 | LEU | 2.1 |
| 23 | AW | 62 | MET | 2.1 |
| 7 | AG | 36 | SER | 2.1 |
| 3 | AC | 190 | THR | 2.1 |
| 14 | AN | 71 | GLY | 2.1 |
| 16 | AP | 30 | GLY | 2.1 |
| 39 | BF | 84 | ILE | 2.1 |
| 43 | BK | 8 | ILE | 2.1 |
| 1 | AA | 958 | A | 2.1 |
| 1 | AA | 1236 | A | 2.1 |
| 23 | AW | 482 | PHE | 2.1 |
| 14 | AN | 63 | CYS | 2.1 |
| 42 | BI | 137 | LEU | 2.1 |
| 39 | BF | 1 | ALA | 2.1 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 41 | BH | 83 | ALA | 2.1 |
| 44 | BN | 42 | ALA | 2.1 |
| 43 | BM | 7 | ILE | 2.1 |
| 1 | AA | 961 | U | 2.1 |
| 13 | AM | 102 | LYS | 2.1 |
| 25 | B0 | 24 | ARG | 2.1 |
| 31 | B6 | 46 | LYS | 2.1 |
| 34 | BA | 895 | U | 2.1 |
| 19 | AS | 73 | PHE | 2.1 |
| 7 | AG | 117 | LEU | 2.1 |
| 2 | AB | 198 | VAL | 2.1 |
| 23 | AW | 31 | GLU | 2.1 |
| 43 | BL | 20 | VAL | 2.1 |
| 13 | AM | 1 | ALA | 2.1 |
| 41 | BH | 157 | ALA | 2.1 |
| 42 | BI | 123 | ALA | 2.1 |
| 2 | AB | 72 | LYS | 2.1 |
| 11 | AK | 124 | LYS | 2.1 |
| 13 | AM | 12 | LYS | 2.1 |
| 15 | AO | 57 | ARG | 2.1 |
| 36 | BC | 264 | LYS | 2.1 |
| 7 | AG | 83 | THR | 2.1 |
| 21 | AU | 42 | THR | 2.1 |
| 50 | BT | 98 | TYR | 2.1 |
| 8 | AH | 3 | GLN | 2.1 |
| 56 | BZ | 12 | GLN | 2.1 |
| 2 | AB | 158 | ASP | 2.1 |
| 10 | AJ | 60 | ASP | 2.1 |
| 13 | AM | 67 | ASP | 2.1 |
| 34 | BA | 1075 | C | 2.1 |
| 50 | BT | 19 | PHE | 2.1 |
| 43 | BJ | 11 | VAL | 2.1 |
| 13 | AM | 58 | GLU | 2.1 |
| 23 | AW | 421 | GLU | 2.1 |
| 7 | AG | 3 | ARG | 2.0 |
| 4 | AD | 122 | ILE | 2.0 |
| 7 | AG | 64 | ALA | 2.0 |
| 23 | AW | 514 | ALA | 2.0 |
| 40 | BG | 171 | LYS | 2.0 |
| 43 | BJ | 25 | ALA | 2.0 |
| 55 | BY | 50 | ALA | 2.0 |
| 1 | AA | 975 | A | 2.0 |

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| Mol | Chain | Res | Type | RSRZ |
|---|---|---|---|---|
| 5 | AE | 26 | GLY | 2.0 |
| 23 | AW | 376 | GLY | 2.0 |
| 34 | BA | 613 | A | 2.0 |
| 41 | BH | 115 | GLY | 2.0 |
| 52 | BV | 57 | GLY | 2.0 |
| 13 | AM | 107 | THR | 2.0 |
| 2 | AB | 135 | MET | 2.0 |
| 13 | AM | 80 | MET | 2.0 |
| 27 | B2 | 13 | GLU | 2.0 |
| 42 | BI | 94 | LYS | 2.0 |
| 4 | AD | 131 | ILE | 2.0 |
| 11 | AK | 72 | ALA | 2.0 |
| 20 | AT | 56 | ILE | 2.0 |
| 25 | B0 | 36 | ILE | 2.0 |
| 43 | BK | 7 | ILE | 2.0 |
| 43 | BL | 25 | ALA | 2.0 |
| 4 | AD | 35 | GLN | 2.0 |
| 13 | AM | 62 | PHE | 2.0 |
| 1 | AA | 412 | A | 2.0 |
| 19 | AS | 30 | LEU | 2.0 |
| 23 | AW | 306 | ASN | 2.0 |
| 23 | AW | 369 | ASN | 2.0 |
| 1 | AA | 413 | G | 2.0 |
| 34 | BA | 2157 | G | 2.0 |
| 43 | BL | 19 | VAL | 2.0 |
| 14 | AN | 46 | LYS | 2.0 |
| 41 | BH | 150 | LYS | 2.0 |
| 8 | AH | 57 | GLU | 2.0 |
| 13 | AM | 14 | ALA | 2.0 |
| 15 | AO | 25 | GLU | 2.0 |
| 23 | AW | 350 | ALA | 2.0 |
| 2 | AB | 149 | GLY | 2.0 |

## 6.2 Non-standard residues in protein, DNA, RNA chains (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, $95^{th}$ 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 |
|---|---|---|---|---|---|---|---|---|
| 24 | UAL | AY | 5 | 9/10 | 0.66 | 0.16 | 81,82,83,84 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 24 | KBE | AY | 1 | 9/10 | 0.69 | 0.25 | 78,79,82,82 | 0 |
| 24 | 5OH | AY | 6 | 12/13 | 0.75 | 0.20 | 84,89,92,94 | 0 |
| 24 | DPP | AY | 2 | 6/7 | 0.85 | 0.18 | 79,82,82,84 | 0 |

## 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, $95^{th}$ 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 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3281 | 1/1 | 0.59 | 0.24 | 73,73,73,73 | 0 |
| 57 | MG | BA | 3141 | 1/1 | 0.62 | 0.24 | 54,54,54,54 | 0 |
| 57 | MG | BA | 3242 | 1/1 | 0.65 | 0.18 | 72,72,72,72 | 0 |
| 57 | MG | BA | 3350 | 1/1 | 0.66 | 0.22 | 80,80,80,80 | 0 |
| 57 | MG | BA | 3317 | 1/1 | 0.67 | 0.34 | 88,88,88,88 | 0 |
| 57 | MG | BA | 3306 | 1/1 | 0.67 | 0.21 | 67,67,67,67 | 0 |
| 57 | MG | BA | 3349 | 1/1 | 0.68 | 0.41 | 79,79,79,79 | 0 |
| 57 | MG | AA | 1700 | 1/1 | 0.71 | 0.30 | 65,65,65,65 | 0 |
| 57 | MG | AA | 1680 | 1/1 | 0.71 | 0.20 | 55,55,55,55 | 0 |
| 57 | MG | BA | 3346 | 1/1 | 0.72 | 0.28 | 83,83,83,83 | 0 |
| 57 | MG | AA | 1701 | 1/1 | 0.72 | 0.19 | 79,79,79,79 | 0 |
| 57 | MG | BA | 3343 | 1/1 | 0.72 | 0.16 | 71,71,71,71 | 0 |
| 57 | MG | AA | 1687 | 1/1 | 0.73 | 0.21 | 81,81,81,81 | 0 |
| 57 | MG | BA | 3330 | 1/1 | 0.73 | 0.17 | 83,83,83,83 | 0 |
| 57 | MG | BA | 3357 | 1/1 | 0.74 | 0.18 | 81,81,81,81 | 0 |
| 57 | MG | AA | 1696 | 1/1 | 0.75 | 0.19 | 89,89,89,89 | 0 |
| 57 | MG | BA | 3305 | 1/1 | 0.77 | 0.23 | 71,71,71,71 | 0 |
| 57 | MG | B0 | 103 | 1/1 | 0.77 | 0.13 | 54,54,54,54 | 0 |
| 57 | MG | BA | 3214 | 1/1 | 0.77 | 0.13 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3298 | 1/1 | 0.77 | 0.23 | 76,76,76,76 | 0 |
| 57 | MG | BA | 3355 | 1/1 | 0.77 | 0.21 | 69,69,69,69 | 0 |
| 57 | MG | BA | 3334 | 1/1 | 0.77 | 0.16 | 56,56,56,56 | 0 |
| 57 | MG | BA | 3348 | 1/1 | 0.78 | 0.10 | 67,67,67,67 | 0 |
| 57 | MG | AA | 1686 | 1/1 | 0.78 | 0.17 | 93,93,93,93 | 0 |
| 57 | MG | BA | 3270 | 1/1 | 0.78 | 0.24 | 59,59,59,59 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3352 | 1/1 | 0.78 | 0.17 | 61,61,61,61 | 0 |
| 57 | MG | AA | 1659 | 1/1 | 0.78 | 0.08 | 55,55,55,55 | 0 |
| 57 | MG | BA | 3284 | 1/1 | 0.78 | 0.20 | 73,73,73,73 | 0 |
| 57 | MG | BA | 3311 | 1/1 | 0.79 | 0.13 | 48,48,48,48 | 0 |
| 57 | MG | BA | 3065 | 1/1 | 0.79 | 0.28 | 46,46,46,46 | 0 |
| 57 | MG | AA | 1679 | 1/1 | 0.80 | 0.23 | 62,62,62,62 | 0 |
| 57 | MG | BA | 3232 | 1/1 | 0.80 | 0.20 | 54,54,54,54 | 0 |
| 57 | MG | BA | 3333 | 1/1 | 0.80 | 0.30 | 77,77,77,77 | 0 |
| 57 | MG | BA | 3104 | 1/1 | 0.80 | 0.18 | 45,45,45,45 | 0 |
| 57 | MG | AA | 1662 | 1/1 | 0.80 | 0.25 | 57,57,57,57 | 0 |
| 57 | MG | BA | 3205 | 1/1 | 0.80 | 0.16 | 50,50,50,50 | 0 |
| 57 | MG | BB | 205 | 1/1 | 0.80 | 0.34 | 79,79,79,79 | 0 |
| 57 | MG | BA | 3321 | 1/1 | 0.81 | 0.15 | 73,73,73,73 | 0 |
| 57 | MG | AW | 601 | 1/1 | 0.81 | 0.10 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3332 | 1/1 | 0.81 | 0.15 | 96,96,96,96 | 0 |
| 57 | MG | BA | 3177 | 1/1 | 0.81 | 0.28 | 59,59,59,59 | 0 |
| 57 | MG | AA | 1649 | 1/1 | 0.81 | 0.25 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3312 | 1/1 | 0.81 | 0.15 | 56,56,56,56 | 0 |
| 57 | MG | BB | 203 | 1/1 | 0.81 | 0.10 | 51,51,51,51 | 0 |
| 57 | MG | BA | 3262 | 1/1 | 0.81 | 0.42 | 85,85,85,85 | 0 |
| 57 | MG | BD | 303 | 1/1 | 0.81 | 0.07 | 57,57,57,57 | 0 |
| 57 | MG | AA | 1621 | 1/1 | 0.82 | 0.26 | 57,57,57,57 | 0 |
| 57 | MG | AA | 1668 | 1/1 | 0.82 | 0.12 | 51,51,51,51 | 0 |
| 57 | MG | BA | 3001 | 1/1 | 0.82 | 0.33 | 42,42,42,42 | 0 |
| 57 | MG | AA | 1689 | 1/1 | 0.82 | 0.40 | 69,69,69,69 | 0 |
| 57 | MG | BA | 3216 | 1/1 | 0.82 | 0.22 | 63,63,63,63 | 0 |
| 57 | MG | BA | 3299 | 1/1 | 0.82 | 0.20 | 64,64,64,64 | 0 |
| 57 | MG | BA | 3219 | 1/1 | 0.82 | 0.29 | 69,69,69,69 | 0 |
| 57 | MG | AM | 201 | 1/1 | 0.82 | 0.10 | 80,80,80,80 | 0 |
| 57 | MG | BA | 3105 | 1/1 | 0.82 | 0.25 | 49,49,49,49 | 0 |
| 57 | MG | AA | 1632 | 1/1 | 0.83 | 0.21 | 40,40,40,40 | 0 |
| 57 | MG | AA | 1671 | 1/1 | 0.83 | 0.13 | 53,53,53,53 | 0 |
| 57 | MG | BA | 3243 | 1/1 | 0.83 | 0.17 | 62,62,62,62 | 0 |
| 57 | MG | BA | 3244 | 1/1 | 0.83 | 0.26 | 76,76,76,76 | 0 |
| 57 | MG | BA | 3117 | 1/1 | 0.83 | 0.19 | 46,46,46,46 | 0 |
| 57 | MG | AA | 1651 | 1/1 | 0.83 | 0.13 | 51,51,51,51 | 0 |
| 57 | MG | BA | 3152 | 1/1 | 0.83 | 0.09 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3174 | 1/1 | 0.83 | 0.15 | 49,49,49,49 | 0 |
| 57 | MG | AA | 1657 | 1/1 | 0.83 | 0.11 | 83,83,83,83 | 0 |
| 57 | MG | BA | 3184 | 1/1 | 0.83 | 0.09 | 37,37,37,37 | 0 |
| 57 | MG | AA | 1633 | 1/1 | 0.83 | 0.26 | 53,53,53,53 | 0 |
| 57 | MG | AA | 1638 | 1/1 | 0.83 | 0.12 | 55,55,55,55 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | AA | 1667 | 1/1 | 0.83 | 0.11 | 87,87,87,87 | 0 |
| 57 | MG | AA | 1694 | 1/1 | 0.83 | 0.14 | 75,75,75,75 | 0 |
| 57 | MG | BA | 3316 | 1/1 | 0.83 | 0.18 | 61,61,61,61 | 0 |
| 57 | MG | BA | 3223 | 1/1 | 0.83 | 0.39 | 75,75,75,75 | 0 |
| 57 | MG | AA | 1645 | 1/1 | 0.84 | 0.15 | 62,62,62,62 | 0 |
| 57 | MG | BA | 3170 | 1/1 | 0.84 | 0.15 | 52,52,52,52 | 0 |
| 57 | MG | AA | 1646 | 1/1 | 0.84 | 0.17 | 50,50,50,50 | 0 |
| 57 | MG | AA | 1639 | 1/1 | 0.84 | 0.13 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3335 | 1/1 | 0.84 | 0.14 | 58,58,58,58 | 0 |
| 57 | MG | AA | 1683 | 1/1 | 0.84 | 0.08 | 63,63,63,63 | 0 |
| 57 | MG | BA | 3148 | 1/1 | 0.84 | 0.17 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3211 | 1/1 | 0.84 | 0.19 | 48,48,48,48 | 0 |
| 57 | MG | BO | 201 | 1/1 | 0.84 | 0.14 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3354 | 1/1 | 0.85 | 0.08 | 62,62,62,62 | 0 |
| 57 | MG | BA | 3075 | 1/1 | 0.85 | 0.09 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3201 | 1/1 | 0.85 | 0.20 | 47,47,47,47 | 0 |
| 57 | MG | BA | 3125 | 1/1 | 0.85 | 0.31 | 53,53,53,53 | 0 |
| 57 | MG | AA | 1672 | 1/1 | 0.85 | 0.07 | 52,52,52,52 | 0 |
| 57 | MG | BB | 208 | 1/1 | 0.85 | 0.13 | 59,59,59,59 | 0 |
| 57 | MG | AA | 1658 | 1/1 | 0.85 | 0.26 | 61,61,61,61 | 0 |
| 57 | MG | BA | 3179 | 1/1 | 0.85 | 0.18 | 46,46,46,46 | 0 |
| 57 | MG | BA | 3169 | 1/1 | 0.86 | 0.17 | 39,39,39,39 | 0 |
| 57 | MG | AA | 1656 | 1/1 | 0.86 | 0.21 | 73,73,73,73 | 0 |
| 57 | MG | BA | 3172 | 1/1 | 0.86 | 0.14 | 53,53,53,53 | 0 |
| 57 | MG | BA | 3096 | 1/1 | 0.86 | 0.18 | 44,44,44,44 | 0 |
| 57 | MG | AA | 1688 | 1/1 | 0.86 | 0.15 | 77,77,77,77 | 0 |
| 57 | MG | AA | 1648 | 1/1 | 0.86 | 0.07 | 54,54,54,54 | 0 |
| 57 | MG | AA | 1635 | 1/1 | 0.86 | 0.19 | 58,58,58,58 | 0 |
| 57 | MG | BA | 3253 | 1/1 | 0.86 | 0.17 | 65,65,65,65 | 0 |
| 57 | MG | BA | 3198 | 1/1 | 0.86 | 0.16 | 60,60,60,60 | 0 |
| 57 | MG | BA | 3331 | 1/1 | 0.86 | 0.16 | 64,64,64,64 | 0 |
| 57 | MG | AA | 1669 | 1/1 | 0.86 | 0.07 | 71,71,71,71 | 0 |
| 57 | MG | BA | 3016 | 1/1 | 0.86 | 0.30 | 39,39,39,39 | 0 |
| 57 | MG | BC | 301 | 1/1 | 0.86 | 0.14 | 53,53,53,53 | 0 |
| 57 | MG | BA | 3032 | 1/1 | 0.86 | 0.32 | 38,38,38,38 | 0 |
| 57 | MG | BE | 301 | 1/1 | 0.86 | 0.12 | 67,67,67,67 | 0 |
| 57 | MG | AA | 1647 | 1/1 | 0.86 | 0.14 | 60,60,60,60 | 0 |
| 57 | MG | AA | 1652 | 1/1 | 0.87 | 0.17 | 60,60,60,60 | 0 |
| 57 | MG | BA | 3261 | 1/1 | 0.87 | 0.17 | 63,63,63,63 | 0 |
| 57 | MG | BA | 3154 | 1/1 | 0.87 | 0.35 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3160 | 1/1 | 0.87 | 0.19 | 49,49,49,49 | 0 |
| 57 | MG | AA | 1675 | 1/1 | 0.87 | 0.11 | 57,57,57,57 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3215 | 1/1 | 0.87 | 0.08 | 53,53,53,53 | 0 |
| 57 | MG | BA | 3287 | 1/1 | 0.87 | 0.15 | 83,83,83,83 | 0 |
| 57 | MG | BA | 3294 | 1/1 | 0.87 | 0.12 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3295 | 1/1 | 0.87 | 0.19 | 57,57,57,57 | 0 |
| 57 | MG | B0 | 102 | 1/1 | 0.87 | 0.14 | 33,33,33,33 | 0 |
| 57 | MG | AA | 1613 | 1/1 | 0.87 | 0.25 | 58,58,58,58 | 0 |
| 57 | MG | BA | 3303 | 1/1 | 0.87 | 0.08 | 56,56,56,56 | 0 |
| 57 | MG | AA | 1610 | 1/1 | 0.87 | 0.17 | 45,45,45,45 | 0 |
| 57 | MG | BA | 3356 | 1/1 | 0.87 | 0.17 | 61,61,61,61 | 0 |
| 57 | MG | BA | 3225 | 1/1 | 0.87 | 0.29 | 60,60,60,60 | 0 |
| 57 | MG | BA | 3231 | 1/1 | 0.87 | 0.14 | 56,56,56,56 | 0 |
| 57 | MG | AA | 1650 | 1/1 | 0.87 | 0.20 | 67,67,67,67 | 0 |
| 57 | MG | BB | 207 | 1/1 | 0.87 | 0.08 | 47,47,47,47 | 0 |
| 57 | MG | BA | 3313 | 1/1 | 0.87 | 0.22 | 67,67,67,67 | 0 |
| 57 | MG | BA | 3136 | 1/1 | 0.87 | 0.28 | 53,53,53,53 | 0 |
| 57 | MG | AA | 1685 | 1/1 | 0.87 | 0.08 | 64,64,64,64 | 0 |
| 57 | MG | AA | 1634 | 1/1 | 0.87 | 0.19 | 55,55,55,55 | 0 |
| 57 | MG | BA | 3247 | 1/1 | 0.87 | 0.19 | 61,61,61,61 | 0 |
| 57 | MG | BA | 3144 | 1/1 | 0.88 | 0.12 | 68,68,68,68 | 0 |
| 57 | MG | BA | 3187 | 1/1 | 0.88 | 0.23 | 56,56,56,56 | 0 |
| 57 | MG | BA | 3197 | 1/1 | 0.88 | 0.08 | 38,38,38,38 | 0 |
| 57 | MG | AA | 1670 | 1/1 | 0.88 | 0.12 | 62,62,62,62 | 0 |
| 57 | MG | AA | 1654 | 1/1 | 0.88 | 0.23 | 58,58,58,58 | 0 |
| 57 | MG | BA | 3353 | 1/1 | 0.88 | 0.26 | 73,73,73,73 | 0 |
| 57 | MG | AA | 1603 | 1/1 | 0.88 | 0.35 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3207 | 1/1 | 0.88 | 0.30 | 54,54,54,54 | 0 |
| 57 | MG | BA | 3157 | 1/1 | 0.88 | 0.26 | 46,46,46,46 | 0 |
| 57 | MG | AA | 1674 | 1/1 | 0.88 | 0.15 | 55,55,55,55 | 0 |
| 57 | MG | BB | 201 | 1/1 | 0.88 | 0.28 | 54,54,54,54 | 0 |
| 57 | MG | BA | 3107 | 1/1 | 0.88 | 0.17 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3037 | 1/1 | 0.88 | 0.25 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3048 | 1/1 | 0.88 | 0.29 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3288 | 1/1 | 0.88 | 0.15 | 95,95,95,95 | 0 |
| 57 | MG | BA | 3131 | 1/1 | 0.88 | 0.14 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3061 | 1/1 | 0.88 | 0.30 | 48,48,48,48 | 0 |
| 57 | MG | BA | 3296 | 1/1 | 0.88 | 0.17 | 60,60,60,60 | 0 |
| 57 | MG | AA | 1636 | 1/1 | 0.88 | 0.08 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3098 | 1/1 | 0.89 | 0.13 | 47,47,47,47 | 0 |
| 57 | MG | BA | 3338 | 1/1 | 0.89 | 0.08 | 61,61,61,61 | 0 |
| 57 | MG | AA | 1663 | 1/1 | 0.89 | 0.15 | 74,74,74,74 | 0 |
| 57 | MG | BA | 3045 | 1/1 | 0.89 | 0.32 | 35,35,35,35 | 0 |
| 57 | MG | AA | 1677 | 1/1 | 0.89 | 0.16 | 57,57,57,57 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3202 | 1/1 | 0.89 | 0.18 | 57,57,57,57 | 0 |
| 57 | MG | BA | 3304 | 1/1 | 0.89 | 0.19 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3351 | 1/1 | 0.89 | 0.17 | 58,58,58,58 | 0 |
| 57 | MG | BA | 3109 | 1/1 | 0.89 | 0.15 | 38,38,38,38 | 0 |
| 57 | MG | BA | 3161 | 1/1 | 0.89 | 0.13 | 42,42,42,42 | 0 |
| 57 | MG | AA | 1666 | 1/1 | 0.89 | 0.17 | 62,62,62,62 | 0 |
| 57 | MG | BA | 3124 | 1/1 | 0.89 | 0.24 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3268 | 1/1 | 0.89 | 0.08 | 52,52,52,52 | 0 |
| 57 | MG | AA | 1673 | 1/1 | 0.89 | 0.16 | 84,84,84,84 | 0 |
| 57 | MG | BA | 3274 | 1/1 | 0.89 | 0.24 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3318 | 1/1 | 0.89 | 0.28 | 57,57,57,57 | 0 |
| 57 | MG | BA | 3319 | 1/1 | 0.89 | 0.12 | 68,68,68,68 | 0 |
| 57 | MG | BA | 3276 | 1/1 | 0.89 | 0.26 | 58,58,58,58 | 0 |
| 57 | MG | BA | 3068 | 1/1 | 0.89 | 0.24 | 28,28,28,28 | 0 |
| 57 | MG | AF | 201 | 1/1 | 0.89 | 0.17 | 65,65,65,65 | 0 |
| 57 | MG | BD | 302 | 1/1 | 0.89 | 0.27 | 53,53,53,53 | 0 |
| 57 | MG | BA | 3222 | 1/1 | 0.89 | 0.10 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3095 | 1/1 | 0.89 | 0.21 | 42,42,42,42 | 0 |
| 57 | MG | AA | 1606 | 1/1 | 0.89 | 0.25 | 45,45,45,45 | 0 |
| 57 | MG | BA | 3115 | 1/1 | 0.90 | 0.15 | 37,37,37,37 | 0 |
| 57 | MG | AA | 1625 | 1/1 | 0.90 | 0.09 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3278 | 1/1 | 0.90 | 0.20 | 48,48,48,48 | 0 |
| 57 | MG | BA | 3280 | 1/1 | 0.90 | 0.23 | 73,73,73,73 | 0 |
| 57 | MG | AA | 1628 | 1/1 | 0.90 | 0.15 | 44,44,44,44 | 0 |
| 57 | MG | AA | 1692 | 1/1 | 0.90 | 0.14 | 67,67,67,67 | 0 |
| 57 | MG | BA | 3286 | 1/1 | 0.90 | 0.12 | 48,48,48,48 | 0 |
| 57 | MG | AA | 1682 | 1/1 | 0.90 | 0.05 | 76,76,76,76 | 0 |
| 57 | MG | BA | 3347 | 1/1 | 0.90 | 0.16 | 76,76,76,76 | 0 |
| 57 | MG | BA | 3134 | 1/1 | 0.90 | 0.24 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3291 | 1/1 | 0.90 | 0.20 | 58,58,58,58 | 0 |
| 57 | MG | AA | 1631 | 1/1 | 0.90 | 0.13 | 60,60,60,60 | 0 |
| 57 | MG | AA | 1699 | 1/1 | 0.90 | 0.37 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3186 | 1/1 | 0.90 | 0.13 | 47,47,47,47 | 0 |
| 57 | MG | BA | 3023 | 1/1 | 0.90 | 0.32 | 39,39,39,39 | 0 |
| 57 | MG | BA | 3235 | 1/1 | 0.90 | 0.14 | 64,64,64,64 | 0 |
| 57 | MG | BA | 3237 | 1/1 | 0.90 | 0.10 | 51,51,51,51 | 0 |
| 57 | MG | BA | 3238 | 1/1 | 0.90 | 0.14 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3189 | 1/1 | 0.90 | 0.12 | 51,51,51,51 | 0 |
| 57 | MG | BA | 3030 | 1/1 | 0.90 | 0.24 | 38,38,38,38 | 0 |
| 57 | MG | AA | 1608 | 1/1 | 0.90 | 0.21 | 59,59,59,59 | 0 |
| 57 | MG | BA | 3153 | 1/1 | 0.90 | 0.18 | 59,59,59,59 | 0 |
| 57 | MG | BB | 206 | 1/1 | 0.90 | 0.09 | 65,65,65,65 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3248 | 1/1 | 0.90 | 0.23 | 52,52,52,52 | 0 |
| 57 | MG | AA | 1605 | 1/1 | 0.90 | 0.19 | 38,38,38,38 | 0 |
| 57 | MG | BA | 3256 | 1/1 | 0.90 | 0.12 | 56,56,56,56 | 0 |
| 57 | MG | BA | 3203 | 1/1 | 0.90 | 0.18 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3204 | 1/1 | 0.90 | 0.21 | 72,72,72,72 | 0 |
| 57 | MG | AA | 1624 | 1/1 | 0.90 | 0.21 | 51,51,51,51 | 0 |
| 57 | MG | BA | 3046 | 1/1 | 0.90 | 0.29 | 27,27,27,27 | 0 |
| 58 | GNP | AW | 602 | 32/32 | 0.90 | 0.10 | 58,71,81,83 | 0 |
| 57 | MG | BA | 3323 | 1/1 | 0.91 | 0.08 | 64,64,64,64 | 0 |
| 57 | MG | BA | 3326 | 1/1 | 0.91 | 0.10 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3327 | 1/1 | 0.91 | 0.12 | 64,64,64,64 | 0 |
| 57 | MG | BA | 3138 | 1/1 | 0.91 | 0.25 | 58,58,58,58 | 0 |
| 57 | MG | BA | 3140 | 1/1 | 0.91 | 0.23 | 46,46,46,46 | 0 |
| 57 | MG | BA | 3218 | 1/1 | 0.91 | 0.16 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3181 | 1/1 | 0.91 | 0.11 | 44,44,44,44 | 0 |
| 57 | MG | AA | 1616 | 1/1 | 0.91 | 0.14 | 37,37,37,37 | 0 |
| 57 | MG | BA | 3279 | 1/1 | 0.91 | 0.13 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3185 | 1/1 | 0.91 | 0.19 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3339 | 1/1 | 0.91 | 0.18 | 76,76,76,76 | 0 |
| 57 | MG | BA | 3100 | 1/1 | 0.91 | 0.26 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3345 | 1/1 | 0.91 | 0.24 | 67,67,67,67 | 0 |
| 57 | MG | BA | 3227 | 1/1 | 0.91 | 0.18 | 63,63,63,63 | 0 |
| 57 | MG | BA | 3145 | 1/1 | 0.91 | 0.24 | 55,55,55,55 | 0 |
| 57 | MG | AA | 1641 | 1/1 | 0.91 | 0.09 | 67,67,67,67 | 0 |
| 57 | MG | BA | 3233 | 1/1 | 0.91 | 0.15 | 46,46,46,46 | 0 |
| 57 | MG | BA | 3195 | 1/1 | 0.91 | 0.06 | 47,47,47,47 | 0 |
| 57 | MG | AA | 1665 | 1/1 | 0.91 | 0.17 | 56,56,56,56 | 0 |
| 57 | MG | AL | 201 | 1/1 | 0.91 | 0.28 | 54,54,54,54 | 0 |
| 57 | MG | BA | 3029 | 1/1 | 0.91 | 0.20 | 28,28,28,28 | 0 |
| 57 | MG | AA | 1643 | 1/1 | 0.91 | 0.14 | 56,56,56,56 | 0 |
| 57 | MG | BA | 3070 | 1/1 | 0.91 | 0.15 | 44,44,44,44 | 0 |
| 57 | MG | BA | 3301 | 1/1 | 0.91 | 0.28 | 64,64,64,64 | 0 |
| 57 | MG | BA | 3246 | 1/1 | 0.91 | 0.08 | 48,48,48,48 | 0 |
| 57 | MG | AA | 1678 | 1/1 | 0.91 | 0.17 | 65,65,65,65 | 0 |
| 57 | MG | BA | 3079 | 1/1 | 0.91 | 0.24 | 44,44,44,44 | 0 |
| 57 | MG | BA | 3250 | 1/1 | 0.91 | 0.34 | 66,66,66,66 | 0 |
| 57 | MG | BA | 3206 | 1/1 | 0.91 | 0.09 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3254 | 1/1 | 0.91 | 0.15 | 59,59,59,59 | 0 |
| 57 | MG | BA | 3255 | 1/1 | 0.91 | 0.09 | 66,66,66,66 | 0 |
| 57 | MG | BA | 3034 | 1/1 | 0.91 | 0.24 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3257 | 1/1 | 0.91 | 0.08 | 48,48,48,48 | 0 |
| 57 | MG | AA | 1655 | 1/1 | 0.91 | 0.17 | 60,60,60,60 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3097 | 1/1 | 0.91 | 0.20 | 48,48,48,48 | 0 |
| 57 | MG | BA | 3264 | 1/1 | 0.91 | 0.10 | 67,67,67,67 | 0 |
| 57 | MG | BA | 3322 | 1/1 | 0.91 | 0.12 | 62,62,62,62 | 0 |
| 57 | MG | BA | 3188 | 1/1 | 0.92 | 0.25 | 51,51,51,51 | 0 |
| 57 | MG | AA | 1612 | 1/1 | 0.92 | 0.20 | 29,29,29,29 | 0 |
| 57 | MG | BA | 3193 | 1/1 | 0.92 | 0.18 | 61,61,61,61 | 0 |
| 57 | MG | BA | 3150 | 1/1 | 0.92 | 0.18 | 53,53,53,53 | 0 |
| 57 | MG | BA | 3069 | 1/1 | 0.92 | 0.19 | 39,39,39,39 | 0 |
| 57 | MG | BA | 3336 | 1/1 | 0.92 | 0.07 | 86,86,86,86 | 0 |
| 57 | MG | AA | 1622 | 1/1 | 0.92 | 0.16 | 42,42,42,42 | 0 |
| 57 | MG | B4 | 101 | 1/1 | 0.92 | 0.26 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3039 | 1/1 | 0.92 | 0.23 | 31,31,31,31 | 0 |
| 57 | MG | BA | 3344 | 1/1 | 0.92 | 0.10 | 71,71,71,71 | 0 |
| 57 | MG | BA | 3158 | 1/1 | 0.92 | 0.13 | 35,35,35,35 | 0 |
| 57 | MG | BA | 3089 | 1/1 | 0.92 | 0.17 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3297 | 1/1 | 0.92 | 0.12 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3130 | 1/1 | 0.92 | 0.14 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3164 | 1/1 | 0.92 | 0.10 | 45,45,45,45 | 0 |
| 57 | MG | BA | 3251 | 1/1 | 0.92 | 0.15 | 49,49,49,49 | 0 |
| 57 | MG | AA | 1676 | 1/1 | 0.92 | 0.13 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3210 | 1/1 | 0.92 | 0.23 | 73,73,73,73 | 0 |
| 57 | MG | BA | 3132 | 1/1 | 0.92 | 0.26 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3171 | 1/1 | 0.92 | 0.12 | 57,57,57,57 | 0 |
| 57 | MG | AA | 1660 | 1/1 | 0.92 | 0.09 | 46,46,46,46 | 0 |
| 57 | MG | BA | 3258 | 1/1 | 0.92 | 0.09 | 50,50,50,50 | 0 |
| 57 | MG | AL | 202 | 1/1 | 0.92 | 0.25 | 73,73,73,73 | 0 |
| 57 | MG | BA | 3314 | 1/1 | 0.92 | 0.14 | 56,56,56,56 | 0 |
| 57 | MG | BA | 3315 | 1/1 | 0.92 | 0.20 | 63,63,63,63 | 0 |
| 57 | MG | BA | 3137 | 1/1 | 0.92 | 0.19 | 42,42,42,42 | 0 |
| 57 | MG | AA | 1661 | 1/1 | 0.92 | 0.12 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3063 | 1/1 | 0.92 | 0.17 | 32,32,32,32 | 0 |
| 57 | MG | BA | 3269 | 1/1 | 0.92 | 0.11 | 51,51,51,51 | 0 |
| 57 | MG | BA | 3102 | 1/1 | 0.92 | 0.20 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3143 | 1/1 | 0.92 | 0.08 | 32,32,32,32 | 0 |
| 57 | MG | BA | 3275 | 1/1 | 0.92 | 0.08 | 59,59,59,59 | 0 |
| 57 | MG | BA | 3064 | 1/1 | 0.92 | 0.14 | 24,24,24,24 | 0 |
| 57 | MG | BA | 3229 | 1/1 | 0.92 | 0.10 | 46,46,46,46 | 0 |
| 57 | MG | BT | 201 | 1/1 | 0.92 | 0.12 | 40,40,40,40 | 0 |
| 57 | MG | BX | 201 | 1/1 | 0.92 | 0.07 | 47,47,47,47 | 0 |
| 57 | MG | AA | 1617 | 1/1 | 0.92 | 0.15 | 47,47,47,47 | 0 |
| 57 | MG | BA | 3285 | 1/1 | 0.93 | 0.27 | 75,75,75,75 | 0 |
| 57 | MG | BA | 3239 | 1/1 | 0.93 | 0.07 | 71,71,71,71 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3111 | 1/1 | 0.93 | 0.13 | 29,29,29,29 | 0 |
| 57 | MG | BA | 3199 | 1/1 | 0.93 | 0.18 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3112 | 1/1 | 0.93 | 0.09 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3292 | 1/1 | 0.93 | 0.13 | 54,54,54,54 | 0 |
| 57 | MG | BA | 3337 | 1/1 | 0.93 | 0.09 | 55,55,55,55 | 0 |
| 57 | MG | BA | 3076 | 1/1 | 0.93 | 0.21 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3116 | 1/1 | 0.93 | 0.18 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3078 | 1/1 | 0.93 | 0.23 | 32,32,32,32 | 0 |
| 57 | MG | BA | 3120 | 1/1 | 0.93 | 0.06 | 31,31,31,31 | 0 |
| 57 | MG | BA | 3122 | 1/1 | 0.93 | 0.11 | 38,38,38,38 | 0 |
| 57 | MG | BA | 3052 | 1/1 | 0.93 | 0.40 | 39,39,39,39 | 0 |
| 57 | MG | BA | 3300 | 1/1 | 0.93 | 0.21 | 69,69,69,69 | 0 |
| 57 | MG | BA | 3058 | 1/1 | 0.93 | 0.21 | 35,35,35,35 | 0 |
| 57 | MG | BA | 3129 | 1/1 | 0.93 | 0.14 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3090 | 1/1 | 0.93 | 0.21 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3094 | 1/1 | 0.93 | 0.18 | 47,47,47,47 | 0 |
| 57 | MG | AA | 1615 | 1/1 | 0.93 | 0.13 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3307 | 1/1 | 0.93 | 0.08 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3308 | 1/1 | 0.93 | 0.12 | 82,82,82,82 | 0 |
| 57 | MG | BA | 3310 | 1/1 | 0.93 | 0.10 | 75,75,75,75 | 0 |
| 57 | MG | BA | 3260 | 1/1 | 0.93 | 0.17 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3175 | 1/1 | 0.93 | 0.11 | 44,44,44,44 | 0 |
| 57 | MG | BA | 3062 | 1/1 | 0.93 | 0.14 | 42,42,42,42 | 0 |
| 57 | MG | AA | 1637 | 1/1 | 0.93 | 0.07 | 54,54,54,54 | 0 |
| 57 | MG | AA | 1618 | 1/1 | 0.93 | 0.17 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3017 | 1/1 | 0.93 | 0.15 | 30,30,30,30 | 0 |
| 57 | MG | BA | 3226 | 1/1 | 0.93 | 0.16 | 51,51,51,51 | 0 |
| 57 | MG | AA | 1627 | 1/1 | 0.93 | 0.17 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3103 | 1/1 | 0.93 | 0.16 | 28,28,28,28 | 0 |
| 57 | MG | BD | 301 | 1/1 | 0.93 | 0.11 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3142 | 1/1 | 0.93 | 0.19 | 50,50,50,50 | 0 |
| 57 | MG | AA | 1623 | 1/1 | 0.93 | 0.11 | 42,42,42,42 | 0 |
| 57 | MG | AA | 1629 | 1/1 | 0.93 | 0.17 | 41,41,41,41 | 0 |
| 57 | MG | BN | 201 | 1/1 | 0.93 | 0.16 | 51,51,51,51 | 0 |
| 57 | MG | BA | 3073 | 1/1 | 0.93 | 0.26 | 42,42,42,42 | 0 |
| 57 | MG | BQ | 201 | 1/1 | 0.93 | 0.07 | 44,44,44,44 | 0 |
| 57 | MG | BA | 3051 | 1/1 | 0.93 | 0.15 | 33,33,33,33 | 0 |
| 57 | MG | BA | 3328 | 1/1 | 0.93 | 0.10 | 71,71,71,71 | 0 |
| 57 | MG | BA | 3110 | 1/1 | 0.93 | 0.10 | 38,38,38,38 | 0 |
| 57 | MG | BA | 3209 | 1/1 | 0.94 | 0.14 | 42,42,42,42 | 0 |
| 57 | MG | AA | 1601 | 1/1 | 0.94 | 0.14 | 22,22,22,22 | 0 |
| 57 | MG | AA | 1684 | 1/1 | 0.94 | 0.24 | 60,60,60,60 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3077 | 1/1 | 0.94 | 0.18 | 41,41,41,41 | 0 |
| 57 | MG | AA | 1630 | 1/1 | 0.94 | 0.24 | 48,48,48,48 | 0 |
| 57 | MG | BA | 3178 | 1/1 | 0.94 | 0.22 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3302 | 1/1 | 0.94 | 0.17 | 68,68,68,68 | 0 |
| 57 | MG | BA | 3056 | 1/1 | 0.94 | 0.16 | 26,26,26,26 | 0 |
| 57 | MG | BA | 3081 | 1/1 | 0.94 | 0.20 | 35,35,35,35 | 0 |
| 57 | MG | BA | 3220 | 1/1 | 0.94 | 0.16 | 56,56,56,56 | 0 |
| 57 | MG | AA | 1690 | 1/1 | 0.94 | 0.09 | 83,83,83,83 | 0 |
| 57 | MG | BA | 3263 | 1/1 | 0.94 | 0.18 | 53,53,53,53 | 0 |
| 57 | MG | AA | 1691 | 1/1 | 0.94 | 0.08 | 63,63,63,63 | 0 |
| 57 | MG | BA | 3224 | 1/1 | 0.94 | 0.12 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3092 | 1/1 | 0.94 | 0.31 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3151 | 1/1 | 0.94 | 0.19 | 47,47,47,47 | 0 |
| 57 | MG | BA | 3272 | 1/1 | 0.94 | 0.14 | 55,55,55,55 | 0 |
| 57 | MG | BA | 3121 | 1/1 | 0.94 | 0.23 | 39,39,39,39 | 0 |
| 57 | MG | AA | 1702 | 1/1 | 0.94 | 0.19 | 58,58,58,58 | 0 |
| 57 | MG | BA | 3192 | 1/1 | 0.94 | 0.26 | 59,59,59,59 | 0 |
| 57 | MG | BA | 3036 | 1/1 | 0.94 | 0.16 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3194 | 1/1 | 0.94 | 0.11 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3155 | 1/1 | 0.94 | 0.21 | 51,51,51,51 | 0 |
| 57 | MG | BA | 3156 | 1/1 | 0.94 | 0.13 | 41,41,41,41 | 0 |
| 57 | MG | AA | 1602 | 1/1 | 0.94 | 0.22 | 37,37,37,37 | 0 |
| 57 | MG | BA | 3038 | 1/1 | 0.94 | 0.10 | 21,21,21,21 | 0 |
| 57 | MG | BA | 3324 | 1/1 | 0.94 | 0.10 | 59,59,59,59 | 0 |
| 57 | MG | BA | 3325 | 1/1 | 0.94 | 0.22 | 59,59,59,59 | 0 |
| 57 | MG | BA | 3066 | 1/1 | 0.94 | 0.26 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3012 | 1/1 | 0.94 | 0.23 | 18,18,18,18 | 0 |
| 57 | MG | BA | 3042 | 1/1 | 0.94 | 0.13 | 27,27,27,27 | 0 |
| 57 | MG | BA | 3329 | 1/1 | 0.94 | 0.13 | 58,58,58,58 | 0 |
| 57 | MG | BA | 3289 | 1/1 | 0.94 | 0.06 | 62,62,62,62 | 0 |
| 57 | MG | BA | 3165 | 1/1 | 0.94 | 0.20 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3014 | 1/1 | 0.94 | 0.20 | 27,27,27,27 | 0 |
| 57 | MG | AA | 1693 | 1/1 | 0.94 | 0.13 | 56,56,56,56 | 0 |
| 57 | MG | BA | 3074 | 1/1 | 0.94 | 0.18 | 44,44,44,44 | 0 |
| 57 | MG | AA | 1604 | 1/1 | 0.95 | 0.26 | 42,42,42,42 | 0 |
| 57 | MG | B0 | 101 | 1/1 | 0.95 | 0.05 | 23,23,23,23 | 0 |
| 57 | MG | BA | 3040 | 1/1 | 0.95 | 0.24 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3041 | 1/1 | 0.95 | 0.10 | 27,27,27,27 | 0 |
| 57 | MG | BA | 3228 | 1/1 | 0.95 | 0.10 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3020 | 1/1 | 0.95 | 0.25 | 29,29,29,29 | 0 |
| 57 | MG | BA | 3106 | 1/1 | 0.95 | 0.18 | 37,37,37,37 | 0 |
| 57 | MG | BA | 3071 | 1/1 | 0.95 | 0.24 | 35,35,35,35 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3146 | 1/1 | 0.95 | 0.20 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3190 | 1/1 | 0.95 | 0.15 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3147 | 1/1 | 0.95 | 0.12 | 46,46,46,46 | 0 |
| 57 | MG | BA | 3044 | 1/1 | 0.95 | 0.27 | 37,37,37,37 | 0 |
| 57 | MG | BA | 3149 | 1/1 | 0.95 | 0.23 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3340 | 1/1 | 0.95 | 0.10 | 61,61,61,61 | 0 |
| 57 | MG | BA | 3240 | 1/1 | 0.95 | 0.19 | 56,56,56,56 | 0 |
| 57 | MG | BA | 3022 | 1/1 | 0.95 | 0.15 | 28,28,28,28 | 0 |
| 57 | MG | BA | 3196 | 1/1 | 0.95 | 0.23 | 46,46,46,46 | 0 |
| 57 | MG | AA | 1619 | 1/1 | 0.95 | 0.11 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3245 | 1/1 | 0.95 | 0.11 | 46,46,46,46 | 0 |
| 57 | MG | BA | 3047 | 1/1 | 0.95 | 0.22 | 51,51,51,51 | 0 |
| 57 | MG | BA | 3026 | 1/1 | 0.95 | 0.13 | 24,24,24,24 | 0 |
| 57 | MG | BA | 3027 | 1/1 | 0.95 | 0.30 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3249 | 1/1 | 0.95 | 0.07 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3028 | 1/1 | 0.95 | 0.19 | 26,26,26,26 | 0 |
| 57 | MG | BA | 3053 | 1/1 | 0.95 | 0.28 | 31,31,31,31 | 0 |
| 57 | MG | BA | 3088 | 1/1 | 0.95 | 0.14 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3054 | 1/1 | 0.95 | 0.23 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3123 | 1/1 | 0.95 | 0.12 | 36,36,36,36 | 0 |
| 57 | MG | AA | 1681 | 1/1 | 0.95 | 0.05 | 38,38,38,38 | 0 |
| 57 | MG | BA | 3208 | 1/1 | 0.95 | 0.16 | 62,62,62,62 | 0 |
| 57 | MG | BB | 202 | 1/1 | 0.95 | 0.21 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3091 | 1/1 | 0.95 | 0.29 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3259 | 1/1 | 0.95 | 0.06 | 69,69,69,69 | 0 |
| 57 | MG | AA | 1644 | 1/1 | 0.95 | 0.05 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3059 | 1/1 | 0.95 | 0.12 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3213 | 1/1 | 0.95 | 0.11 | 46,46,46,46 | 0 |
| 57 | MG | BB | 209 | 1/1 | 0.95 | 0.25 | 36,36,36,36 | 0 |
| 57 | MG | AA | 1695 | 1/1 | 0.95 | 0.09 | 62,62,62,62 | 0 |
| 57 | MG | AA | 1620 | 1/1 | 0.95 | 0.14 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3267 | 1/1 | 0.95 | 0.12 | 52,52,52,52 | 0 |
| 57 | MG | BA | 3133 | 1/1 | 0.95 | 0.12 | 45,45,45,45 | 0 |
| 57 | MG | BA | 3320 | 1/1 | 0.95 | 0.13 | 52,52,52,52 | 0 |
| 57 | MG | AA | 1640 | 1/1 | 0.95 | 0.06 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3135 | 1/1 | 0.95 | 0.15 | 45,45,45,45 | 0 |
| 57 | MG | BA | 3271 | 1/1 | 0.95 | 0.17 | 53,53,53,53 | 0 |
| 57 | MG | BA | 3176 | 1/1 | 0.95 | 0.12 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3015 | 1/1 | 0.95 | 0.29 | 38,38,38,38 | 0 |
| 57 | MG | BA | 3099 | 1/1 | 0.95 | 0.33 | 44,44,44,44 | 0 |
| 57 | MG | BA | 3200 | 1/1 | 0.96 | 0.10 | 44,44,44,44 | 0 |
| 57 | MG | BA | 3033 | 1/1 | 0.96 | 0.19 | 25,25,25,25 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3265 | 1/1 | 0.96 | 0.22 | 45,45,45,45 | 0 |
| 57 | MG | BA | 3341 | 1/1 | 0.96 | 0.11 | 57,57,57,57 | 0 |
| 57 | MG | AA | 1697 | 1/1 | 0.96 | 0.04 | 64,64,64,64 | 0 |
| 57 | MG | BA | 3234 | 1/1 | 0.96 | 0.11 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3002 | 1/1 | 0.96 | 0.14 | 13,13,13,13 | 0 |
| 57 | MG | BA | 3080 | 1/1 | 0.96 | 0.25 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3127 | 1/1 | 0.96 | 0.15 | 38,38,38,38 | 0 |
| 57 | MG | BA | 3309 | 1/1 | 0.96 | 0.04 | 62,62,62,62 | 0 |
| 57 | MG | BA | 3050 | 1/1 | 0.96 | 0.19 | 33,33,33,33 | 0 |
| 57 | MG | BA | 3273 | 1/1 | 0.96 | 0.13 | 72,72,72,72 | 0 |
| 57 | MG | BA | 3083 | 1/1 | 0.96 | 0.30 | 47,47,47,47 | 0 |
| 57 | MG | BA | 3180 | 1/1 | 0.96 | 0.05 | 45,45,45,45 | 0 |
| 57 | MG | BA | 3087 | 1/1 | 0.96 | 0.18 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3277 | 1/1 | 0.96 | 0.08 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3183 | 1/1 | 0.96 | 0.05 | 48,48,48,48 | 0 |
| 57 | MG | BA | 3010 | 1/1 | 0.96 | 0.14 | 33,33,33,33 | 0 |
| 57 | MG | BA | 3108 | 1/1 | 0.96 | 0.18 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3024 | 1/1 | 0.96 | 0.27 | 32,32,32,32 | 0 |
| 57 | MG | BA | 3282 | 1/1 | 0.96 | 0.14 | 55,55,55,55 | 0 |
| 57 | MG | AA | 1698 | 1/1 | 0.96 | 0.05 | 51,51,51,51 | 0 |
| 57 | MG | BB | 204 | 1/1 | 0.96 | 0.24 | 53,53,53,53 | 0 |
| 57 | MG | AA | 1611 | 1/1 | 0.96 | 0.21 | 44,44,44,44 | 0 |
| 57 | MG | BA | 3217 | 1/1 | 0.96 | 0.12 | 56,56,56,56 | 0 |
| 57 | MG | AA | 1614 | 1/1 | 0.96 | 0.18 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3252 | 1/1 | 0.96 | 0.19 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3114 | 1/1 | 0.96 | 0.16 | 32,32,32,32 | 0 |
| 57 | MG | BA | 3290 | 1/1 | 0.96 | 0.06 | 56,56,56,56 | 0 |
| 57 | MG | BA | 3191 | 1/1 | 0.96 | 0.07 | 57,57,57,57 | 0 |
| 57 | MG | BA | 3139 | 1/1 | 0.96 | 0.16 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3293 | 1/1 | 0.96 | 0.09 | 53,53,53,53 | 0 |
| 57 | MG | BD | 304 | 1/1 | 0.96 | 0.21 | 28,28,28,28 | 0 |
| 57 | MG | BA | 3072 | 1/1 | 0.96 | 0.18 | 36,36,36,36 | 0 |
| 57 | MG | B2 | 101 | 1/1 | 0.96 | 0.04 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3166 | 1/1 | 0.96 | 0.06 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3167 | 1/1 | 0.96 | 0.28 | 48,48,48,48 | 0 |
| 57 | MG | BR | 201 | 1/1 | 0.96 | 0.13 | 69,69,69,69 | 0 |
| 57 | MG | BR | 202 | 1/1 | 0.96 | 0.10 | 51,51,51,51 | 0 |
| 57 | MG | AA | 1653 | 1/1 | 0.96 | 0.13 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3060 | 1/1 | 0.96 | 0.27 | 27,27,27,27 | 0 |
| 57 | MG | BA | 3019 | 1/1 | 0.96 | 0.15 | 15,15,15,15 | 0 |
| 57 | MG | BA | 3035 | 1/1 | 0.97 | 0.19 | 26,26,26,26 | 0 |
| 57 | MG | BA | 3212 | 1/1 | 0.97 | 0.24 | 45,45,45,45 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3084 | 1/1 | 0.97 | 0.20 | 21,21,21,21 | 0 |
| 57 | MG | BA | 3086 | 1/1 | 0.97 | 0.24 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3067 | 1/1 | 0.97 | 0.16 | 35,35,35,35 | 0 |
| 57 | MG | BA | 3021 | 1/1 | 0.97 | 0.14 | 18,18,18,18 | 0 |
| 57 | MG | BA | 3283 | 1/1 | 0.97 | 0.22 | 25,25,25,25 | 0 |
| 57 | MG | BA | 3008 | 1/1 | 0.97 | 0.14 | 22,22,22,22 | 0 |
| 57 | MG | BA | 3009 | 1/1 | 0.97 | 0.18 | 14,14,14,14 | 0 |
| 57 | MG | AH | 201 | 1/1 | 0.97 | 0.12 | 50,50,50,50 | 0 |
| 57 | MG | BA | 3162 | 1/1 | 0.97 | 0.07 | 56,56,56,56 | 0 |
| 57 | MG | BA | 3221 | 1/1 | 0.97 | 0.23 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3011 | 1/1 | 0.97 | 0.30 | 23,23,23,23 | 0 |
| 57 | MG | BA | 3113 | 1/1 | 0.97 | 0.17 | 34,34,34,34 | 0 |
| 57 | MG | BA | 3093 | 1/1 | 0.97 | 0.15 | 42,42,42,42 | 0 |
| 57 | MG | BA | 3057 | 1/1 | 0.97 | 0.22 | 33,33,33,33 | 0 |
| 57 | MG | BA | 3168 | 1/1 | 0.97 | 0.03 | 32,32,32,32 | 0 |
| 57 | MG | AA | 1609 | 1/1 | 0.97 | 0.28 | 40,40,40,40 | 0 |
| 57 | MG | AA | 1607 | 1/1 | 0.97 | 0.20 | 33,33,33,33 | 0 |
| 57 | MG | BA | 3118 | 1/1 | 0.97 | 0.23 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3230 | 1/1 | 0.97 | 0.09 | 46,46,46,46 | 0 |
| 57 | MG | BA | 3119 | 1/1 | 0.97 | 0.11 | 29,29,29,29 | 0 |
| 57 | MG | BA | 3173 | 1/1 | 0.97 | 0.06 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3266 | 1/1 | 0.97 | 0.05 | 56,56,56,56 | 0 |
| 57 | MG | BA | 3043 | 1/1 | 0.97 | 0.23 | 26,26,26,26 | 0 |
| 57 | MG | BA | 3003 | 1/1 | 0.97 | 0.25 | 18,18,18,18 | 0 |
| 57 | MG | BD | 305 | 1/1 | 0.97 | 0.08 | 16,16,16,16 | 0 |
| 57 | MG | BA | 3004 | 1/1 | 0.97 | 0.18 | 21,21,21,21 | 0 |
| 57 | MG | BA | 3236 | 1/1 | 0.97 | 0.07 | 46,46,46,46 | 0 |
| 57 | MG | BA | 3005 | 1/1 | 0.97 | 0.11 | 20,20,20,20 | 0 |
| 57 | MG | BA | 3101 | 1/1 | 0.97 | 0.10 | 43,43,43,43 | 0 |
| 57 | MG | BA | 3006 | 1/1 | 0.97 | 0.18 | 22,22,22,22 | 0 |
| 57 | MG | BA | 3342 | 1/1 | 0.97 | 0.09 | 54,54,54,54 | 0 |
| 57 | MG | BA | 3007 | 1/1 | 0.97 | 0.18 | 17,17,17,17 | 0 |
| 57 | MG | BA | 3128 | 1/1 | 0.97 | 0.10 | 33,33,33,33 | 0 |
| 57 | MG | BA | 3182 | 1/1 | 0.97 | 0.19 | 48,48,48,48 | 0 |
| 57 | MG | BA | 3013 | 1/1 | 0.98 | 0.18 | 20,20,20,20 | 0 |
| 57 | MG | BA | 3085 | 1/1 | 0.98 | 0.15 | 40,40,40,40 | 0 |
| 57 | MG | BA | 3163 | 1/1 | 0.98 | 0.14 | 49,49,49,49 | 0 |
| 57 | MG | BA | 3241 | 1/1 | 0.98 | 0.08 | 57,57,57,57 | 0 |
| 57 | MG | BA | 3126 | 1/1 | 0.98 | 0.14 | 31,31,31,31 | 0 |
| 57 | MG | BA | 3018 | 1/1 | 0.98 | 0.16 | 16,16,16,16 | 0 |
| 57 | MG | BA | 3049 | 1/1 | 0.98 | 0.14 | 31,31,31,31 | 0 |
| 57 | MG | AA | 1626 | 1/1 | 0.98 | 0.25 | 45,45,45,45 | 0 |

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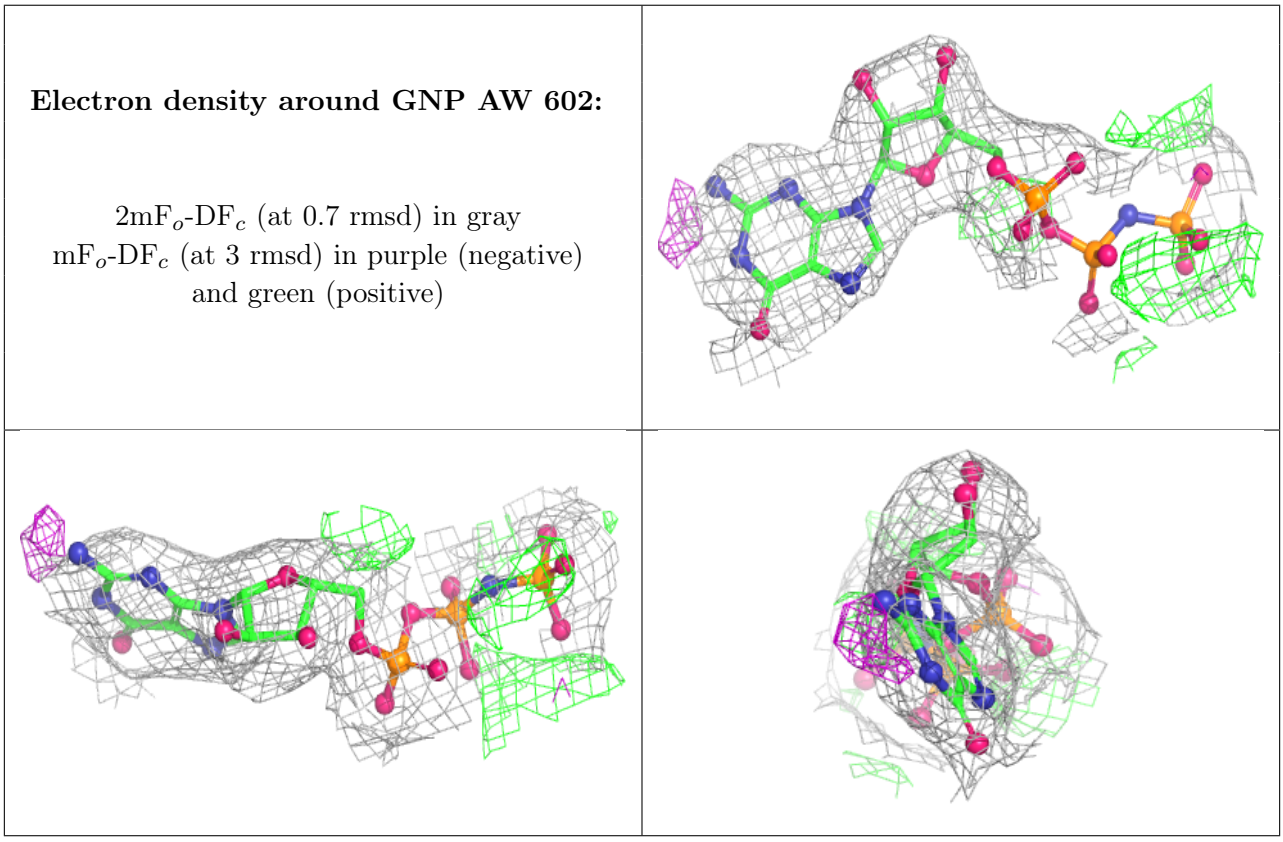
| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å$^2$) | Q<0.9 |
|---|---|---|---|---|---|---|---|---|
| 57 | MG | BA | 3025 | 1/1 | 0.98 | 0.17 | 32,32,32,32 | 0 |
| 57 | MG | AA | 1664 | 1/1 | 0.98 | 0.05 | 41,41,41,41 | 0 |
| 57 | MG | BA | 3159 | 1/1 | 0.98 | 0.17 | 49,49,49,49 | 0 |
| 57 | MG | AA | 1642 | 1/1 | 0.98 | 0.08 | 53,53,53,53 | 0 |
| 57 | MG | BA | 3082 | 1/1 | 0.99 | 0.27 | 36,36,36,36 | 0 |
| 57 | MG | BA | 3031 | 1/1 | 0.99 | 0.18 | 25,25,25,25 | 0 |
| 57 | MG | BA | 3055 | 1/1 | 0.99 | 0.19 | 24,24,24,24 | 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.

**Electron density around GNP AW 602:**

$2mF_o$-$DF_c$ (at 0.7 rmsd) in gray
$mF_o$-$DF_c$ (at 3 rmsd) in purple (negative) and green (positive)



## 6.5 Other polymers (i)

There are no such residues in this entry.