



Full wwPDB X-ray Structure Validation Report ⓘ

Aug 15, 2023 – 07:08 AM EDT

PDB ID : 1VVJ
Title : Crystal Structure of Frameshift Suppressor tRNA SufA6 bound to Codon CCC-G on the Ribosome
Authors : Maehigashi, T.; Dunkle, J.A.; Dunham, C.M.
Deposited on : 2013-05-24
Resolution : 3.44 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.35
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac : 5.8.0158
CCP4 : 7.0.044 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.35

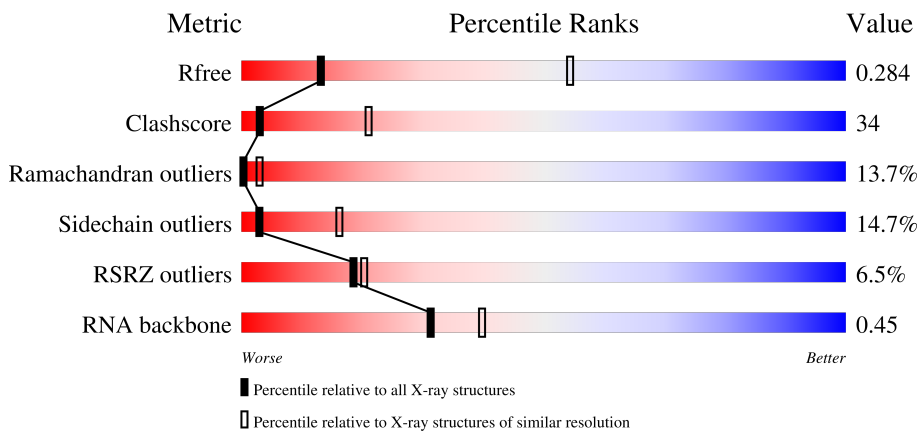
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.44 Å.

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



| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|-----------------------|--------------------------|--|
| R_{free} | 130704 | 1278 (3.50-3.38) |
| Clashscore | 141614 | 1361 (3.50-3.38) |
| Ramachandran outliers | 138981 | 1327 (3.50-3.38) |
| Sidechain outliers | 138945 | 1328 (3.50-3.38) |
| RSRZ outliers | 127900 | 1192 (3.50-3.38) |
| RNA backbone | 3102 | 1024 (3.92-2.96) |

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

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|---|
| 1 | QA | 1522 | <div style="display: flex; align-items: center;"> <div style="width: 4%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 36%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 46%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 15%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> <p style="margin-top: 5px;">4% 36% 46% 15% ..</p> |
| 1 | XA | 1522 | <div style="display: flex; align-items: center;"> <div style="width: 3%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 38%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 45%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 14%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: grey;"></div> </div> <p style="margin-top: 5px;">3% 38% 45% 14% ..</p> |
| 2 | QB | 256 | <div style="display: flex; align-items: center;"> <div style="width: 12%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 16%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 59%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 16%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 7%; height: 10px; background-color: grey;"></div> </div> <p style="margin-top: 5px;">12% 16% 59% 16% • 7%</p> |
| 2 | XB | 256 | <div style="display: flex; align-items: center;"> <div style="width: 9%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 16%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 60%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 16%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 7%; height: 10px; background-color: grey;"></div> </div> <p style="margin-top: 5px;">9% 16% 60% 16% • 7%</p> |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 3 | QC | 239 | |
| 3 | XC | 239 | |
| 4 | QD | 209 | |
| 4 | XD | 209 | |
| 5 | QE | 162 | |
| 5 | XE | 162 | |
| 6 | QF | 101 | |
| 6 | XF | 101 | |
| 7 | QG | 156 | |
| 7 | XG | 156 | |
| 8 | QH | 138 | |
| 8 | XH | 138 | |
| 9 | QI | 128 | |
| 9 | XI | 128 | |
| 10 | QJ | 105 | |
| 10 | XJ | 105 | |
| 11 | QK | 129 | |
| 11 | XK | 129 | |
| 12 | QL | 132 | |
| 12 | XL | 132 | |
| 13 | QM | 126 | |
| 13 | XM | 126 | |
| 14 | QN | 61 | |
| 14 | XN | 61 | |
| 15 | QO | 89 | |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--------------------------|
| 15 | XO | 89 | % 30% 57% 11% . |
| 16 | QP | 88 | % 16% 63% 15% . 5% |
| 16 | XP | 88 | 3% 18% 59% 16% . 5% |
| 17 | QQ | 105 | 2% 37% 47% 11% 5% |
| 17 | XQ | 105 | 6% 33% 50% 11% 5% |
| 18 | QR | 88 | 3% 23% 44% 11% . 20% |
| 18 | XR | 88 | 2% 23% 44% 11% . 20% |
| 19 | QS | 93 | 19% 25% 40% 23% . 10% |
| 19 | XS | 93 | 6% 25% 39% 23% . 10% |
| 20 | QT | 106 | 8% 26% 47% 19% . 7% |
| 20 | XT | 106 | 6% 24% 50% 19% . 7% |
| 21 | QU | 27 | 11% 19% 56% 19% 7% |
| 21 | XU | 27 | 7% 11% 63% 19% 7% |
| 22 | QV | 77 | 6% 27% 56% 16% . |
| 22 | XV | 77 | 3% 29% 53% 17% . |
| 23 | QX | 25 | . . 24% 68% |
| 23 | XX | 25 | 4% . 20% 8% 68% |
| 24 | QY | 18 | 44% 17% 39% 22% 22% |
| 24 | XY | 18 | 33% 22% 33% 22% 22% |
| 25 | RA | 2916 | 6% 40% 43% 15% .. |
| 25 | YA | 2916 | 5% 39% 43% 14% .. |
| 26 | RB | 122 | 2% 45% 34% 18% .. |
| 26 | YB | 122 | 37% 43% 17% .. |
| 27 | RD | 276 | % 29% 52% 15% .. |
| 27 | YD | 276 | 30% 51% 15% .. |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|-----------------------|
| 28 | RE | 206 | 2% 22% 49% 24% 5% |
| 28 | YE | 206 | 3% 24% 47% 24% 5% |
| 29 | RF | 210 | 3% 37% 45% 13% .. |
| 29 | YF | 210 | 2% 33% 49% 13% .. |
| 30 | RG | 182 | 41% 23% 58% 16% .. |
| 30 | YG | 182 | 14% 23% 58% 16% .. |
| 31 | RH | 180 | 21% 23% 45% 19% 8% 6% |
| 31 | YH | 180 | 6% 23% 44% 19% 8% 6% |
| 32 | RI | 148 | 11% 22% 48% 26% .. |
| 32 | YI | 148 | 2% 23% 46% 28% .. |
| 33 | RN | 140 | 2% 17% 54% 26% .. |
| 33 | YN | 140 | 0% 19% 53% 26% .. |
| 34 | RO | 122 | 2% 35% 54% 9% . |
| 34 | YO | 122 | 0% 34% 55% 9% . |
| 35 | RP | 150 | 9% 19% 51% 23% 8% |
| 35 | YP | 150 | 2% 21% 49% 23% 7% |
| 36 | RQ | 141 | 5% 31% 50% 16% . |
| 36 | YQ | 141 | 0% 30% 50% 16% . |
| 37 | RR | 118 | 0% 33% 48% 16% . |
| 37 | YR | 118 | 0% 36% 47% 15% . |
| 38 | RS | 112 | 4% 13% 62% 19% 5% . |
| 38 | YS | 112 | 3% 12% 63% 20% .. |
| 39 | RT | 146 | 7% 23% 49% 19% . 6% |
| 39 | YT | 146 | 3% 23% 49% 19% . 6% |
| 40 | RU | 118 | 4% 33% 53% 12% .. |





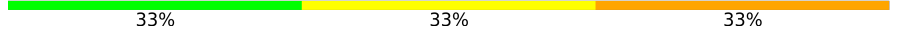
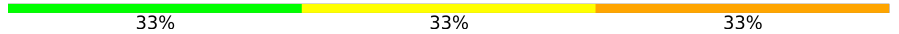
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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------------|
| 40 | YU | 118 | 2% 28% 56% 14% |
| 41 | RV | 101 | 11% 28% 51% 21% |
| 41 | YV | 101 | 4% 28% 51% 21% |
| 42 | RW | 113 | 4% 27% 51% 19% |
| 42 | YW | 113 | 27% 53% 18% |
| 43 | RX | 96 | 38% 44% 15% |
| 43 | YX | 96 | 2% 33% 48% 15% |
| 44 | RY | 110 | 18% 15% 45% 28% 7% |
| 44 | YY | 110 | 6% 18% 43% 28% 7% |
| 45 | RZ | 206 | 20% 17% 43% 18% 6% 17% |
| 45 | YZ | 206 | 12% 17% 42% 19% 5% 17% |
| 46 | R0 | 85 | 39% 47% 9% |
| 46 | Y0 | 85 | 35% 48% 12% |
| 47 | R1 | 98 | 3% 29% 50% 17% |
| 47 | Y1 | 98 | 5% 27% 51% 18% |
| 48 | R2 | 72 | 4% 22% 54% 18% |
| 48 | Y2 | 72 | 3% 22% 54% 18% |
| 49 | R3 | 60 | 2% 33% 50% 15% |
| 49 | Y3 | 60 | 3% 33% 50% 13% |
| 50 | R4 | 71 | 59% 6% 44% 39% 11% |
| 50 | Y4 | 71 | 32% 6% 44% 39% 11% |
| 51 | R5 | 60 | 12% 23% 47% 22% 7% |
| 51 | Y5 | 60 | 5% 23% 47% 22% 7% |
| 52 | R6 | 54 | 61% 7% 46% 31% 6% 9% |
| 52 | Y6 | 54 | 69% 9% 44% 31% 6% 9% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 53 | R7 | 49 |  |
| 53 | Y7 | 49 |  |
| 54 | R8 | 65 |  |
| 54 | Y8 | 65 |  |
| 55 | Z6 | 3 |  |
| 55 | Z8 | 3 |  |

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 |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 56 | MG | QA | 1615 | - | - | - | X |
| 56 | MG | RA | 3176 | - | - | - | X |
| 56 | MG | RA | 3202 | - | - | - | X |
| 56 | MG | XA | 1605 | - | - | - | X |
| 56 | MG | YA | 3012 | - | - | - | X |

2 Entry composition [i](#)

There are 58 unique types of molecules in this entry. The entry contains 291123 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 | QA | 1500 | Total 32247 | C 14353 | N 5981 | O 10414 | P 1499 | 0 | 0 | 0 |
| 1 | XA | 1501 | Total 32269 | C 14363 | N 5986 | O 10420 | P 1500 | 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 | QB | 237 | Total 1924 | C 1228 | N 344 | O 347 | S 5 | 0 | 0 | 0 |
| 2 | XB | 237 | Total 1924 | C 1228 | N 344 | O 347 | S 5 | 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 | QC | 205 | Total 1605 | C 1011 | N 313 | O 280 | S 1 | 0 | 0 | 0 |
| 3 | XC | 205 | Total 1605 | C 1011 | N 313 | O 280 | S 1 | 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 | QD | 208 | Total 1703 | C 1066 | N 339 | O 291 | S 7 | 0 | 0 | 0 |
| 4 | XD | 208 | Total 1703 | C 1066 | N 339 | O 291 | S 7 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 5 | QE | 151 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1155 | 729 | 218 | 204 | 4 | | | |
| 5 | XE | 151 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1155 | 729 | 218 | 204 | 4 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 6 | QF | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 843 | 531 | 155 | 154 | 3 | | | |
| 6 | XF | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 843 | 531 | 155 | 154 | 3 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 7 | QG | 155 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1257 | 781 | 252 | 218 | 6 | | | |
| 7 | XG | 155 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1257 | 781 | 252 | 218 | 6 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 8 | QH | 138 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1116 | 705 | 215 | 193 | 3 | | | |
| 8 | XH | 138 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1116 | 705 | 215 | 193 | 3 | | | |

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

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 9 | QI | 127 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1010 | 639 | 197 | 174 | | | |
| 9 | XI | 127 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1010 | 639 | 197 | 174 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 10 | QJ | 99 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 801 | 504 | 157 | 139 | 1 | | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 10 | XJ | 99 | 801 | 504 | 157 | 139 | 1 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 11 | QK | 119 | 885 | 549 | 168 | 165 | 3 | 0 | 0 | 0 |
| 11 | XK | 119 | 885 | 549 | 168 | 165 | 3 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 12 | QL | 125 | 975 | 614 | 196 | 164 | 1 | 0 | 0 | 0 |
| 12 | XL | 125 | 975 | 614 | 196 | 164 | 1 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 13 | QM | 121 | 964 | 597 | 199 | 166 | 2 | 0 | 0 | 0 |
| 13 | XM | 121 | 964 | 597 | 199 | 166 | 2 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 14 | QN | 60 | 492 | 312 | 104 | 72 | 4 | 0 | 0 | 0 |
| 14 | XN | 60 | 492 | 312 | 104 | 72 | 4 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 15 | QO | 88 | 734 | 459 | 147 | 126 | 2 | 0 | 0 | 0 |
| 15 | XO | 88 | 734 | 459 | 147 | 126 | 2 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 16 | QP | 84 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 705 | 446 | 140 | 118 | 1 | | | |
| 16 | XP | 84 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 705 | 446 | 140 | 118 | 1 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 17 | QQ | 100 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 834 | 534 | 155 | 143 | 2 | | | |
| 17 | XQ | 100 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 834 | 534 | 155 | 143 | 2 | | | |

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

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---------|---------|-------|
| 18 | QR | 70 | Total | C | N | O | 0 | 0 | 0 |
| | | | 574 | 367 | 112 | 95 | | | |
| 18 | XR | 70 | Total | C | N | O | 0 | 0 | 0 |
| | | | 574 | 367 | 112 | 95 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 19 | QS | 84 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 674 | 430 | 126 | 116 | 2 | | | |
| 19 | XS | 84 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 674 | 430 | 126 | 116 | 2 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 20 | QT | 99 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 763 | 470 | 162 | 129 | 2 | | | |
| 20 | XT | 99 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 763 | 470 | 162 | 129 | 2 | | | |

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

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 21 | QU | 25 | Total | C | N | O | 0 | 0 | 0 |
| | | | 217 | 134 | 52 | 31 | | | |
| 21 | XU | 25 | Total | C | N | O | 0 | 0 | 0 |
| | | | 217 | 134 | 52 | 31 | | | |

- Molecule 22 is a RNA chain called P-site tRNA fMet.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|---------|-------|
| 22 | QV | 77 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 1644 | 732 | 297 | 538 | 77 | | | |
| 22 | XV | 77 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 1644 | 732 | 297 | 538 | 77 | | | |

- Molecule 23 is a RNA chain called A-site ASL SufA6.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---|---------|---------|-------|
| 23 | QX | 8 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 170 | 76 | 31 | 55 | 8 | | | |
| 23 | XX | 8 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 170 | 76 | 31 | 55 | 8 | | | |

- Molecule 24 is a RNA chain called messenger RNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|----|---------|---------|-------|
| 24 | QY | 14 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 303 | 135 | 55 | 99 | 14 | | | |
| 24 | XY | 14 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 303 | 135 | 55 | 99 | 14 | | | |

- Molecule 25 is a RNA chain called 23S rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|---------|-------|
| 25 | RA | 2883 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 62091 | 27636 | 11613 | 19960 | 2882 | | | |
| 25 | YA | 2882 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 62071 | 27627 | 11611 | 19952 | 2881 | | | |

- Molecule 26 is a RNA chain called 5S rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|---------|-------|
| 26 | RB | 120 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 2573 | 1146 | 476 | 832 | 119 | | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|---------|-------|
| | | | Total | C | N | O | P | | | |
| 26 | YB | 120 | 2573 | 1146 | 476 | 832 | 119 | 0 | 0 | 0 |

- Molecule 27 is a protein called 50S ribosomal protein L2.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 27 | RD | 272 | 2115 | 1335 | 420 | 357 | 3 | 0 | 0 | 0 |
| 27 | YD | 272 | 2115 | 1335 | 420 | 357 | 3 | 0 | 0 | 0 |

- Molecule 28 is a protein called 50S ribosomal protein L3.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 28 | RE | 205 | 1568 | 991 | 300 | 271 | 6 | 0 | 0 | 0 |
| 28 | YE | 205 | 1568 | 991 | 300 | 271 | 6 | 0 | 0 | 0 |

- Molecule 29 is a protein called 50S ribosomal protein L4.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 29 | RF | 202 | 1585 | 1011 | 297 | 275 | 2 | 0 | 0 | 0 |
| 29 | YF | 202 | 1585 | 1011 | 297 | 275 | 2 | 0 | 0 | 0 |

- Molecule 30 is a protein called 50S ribosomal protein L5.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 30 | RG | 181 | 1474 | 942 | 268 | 260 | 4 | 0 | 0 | 0 |
| 30 | YG | 181 | 1474 | 942 | 268 | 260 | 4 | 0 | 0 | 0 |

- Molecule 31 is a protein called 50S ribosomal protein L6.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 31 | RH | 170 | 1307 | 829 | 245 | 232 | 1 | 0 | 0 | 0 |
| 31 | YH | 170 | 1307 | 829 | 245 | 232 | 1 | 0 | 0 | 0 |

- Molecule 32 is a protein called 50S ribosomal protein L9.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 32 | RI | 146 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1136 | 726 | 201 | 208 | 1 | | | |
| 32 | YI | 146 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1136 | 726 | 201 | 208 | 1 | | | |

- Molecule 33 is a protein called 50S ribosomal protein L13.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 33 | RN | 138 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1104 | 712 | 206 | 182 | 4 | | | |
| 33 | YN | 138 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1104 | 712 | 206 | 182 | 4 | | | |

- Molecule 34 is a protein called 50S ribosomal protein L14.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 34 | RO | 122 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 933 | 588 | 171 | 170 | 4 | | | |
| 34 | YO | 122 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 933 | 588 | 171 | 170 | 4 | | | |

- Molecule 35 is a protein called 50S ribosomal protein L15.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 35 | RP | 150 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1145 | 712 | 232 | 198 | 3 | | | |
| 35 | YP | 150 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1145 | 712 | 232 | 198 | 3 | | | |

- Molecule 36 is a protein called 50S ribosomal protein L16.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 36 | RQ | 141 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1122 | 715 | 212 | 188 | 7 | | | |
| 36 | YQ | 141 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1122 | 715 | 212 | 188 | 7 | | | |

- Molecule 37 is a protein called 50S ribosomal protein L17.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 37 | RR | 118 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 968 | 604 | 203 | 160 | 1 | | | |
| 37 | YR | 118 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 968 | 604 | 203 | 160 | 1 | | | |

- Molecule 38 is a protein called 50S ribosomal protein L18.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 38 | RS | 111 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 882 | 556 | 176 | 150 | | | | |
| 38 | YS | 111 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 882 | 556 | 176 | 150 | | | | |

- Molecule 39 is a protein called 50S ribosomal protein L19.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 39 | RT | 137 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1141 | 710 | 234 | 196 | 1 | | | |
| 39 | YT | 137 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1141 | 710 | 234 | 196 | 1 | | | |

- Molecule 40 is a protein called 50S ribosomal protein L20.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 40 | RU | 117 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 964 | 610 | 202 | 151 | 1 | | | |
| 40 | YU | 117 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 964 | 610 | 202 | 151 | 1 | | | |

- Molecule 41 is a protein called 50S ribosomal protein L21.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 41 | RV | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 779 | 501 | 142 | 135 | 1 | | | |
| 41 | YV | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 779 | 501 | 142 | 135 | 1 | | | |

- Molecule 42 is a protein called 50S ribosomal protein L22.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 42 | RW | 113 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 900 | 566 | 177 | 155 | 2 | | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|----------|--------|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 42 | YW | 113 | Total 900 | C 566 | N 177 | O 155 | S 2 | 0 | 0 | 0 |

- Molecule 43 is a protein called 50S ribosomal protein L23.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|----------|---------|---------|-------|
| | | | Total | C | N | O | | | |
| 43 | RX | 92 | Total 725 | C 471 | N 131 | O 123 | 0 | 0 | 0 |
| 43 | YX | 92 | Total 725 | C 471 | N 131 | O 123 | 0 | 0 | 0 |

- Molecule 44 is a protein called 50S ribosomal protein L24.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|----------|--------|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 44 | RY | 102 | Total 785 | C 505 | N 150 | O 125 | S 5 | 0 | 0 | 0 |
| 44 | YY | 102 | Total 785 | C 505 | N 150 | O 125 | S 5 | 0 | 0 | 0 |

- Molecule 45 is a protein called 50S ribosomal protein L25.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|----------|----------|----------|--------|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 45 | RZ | 172 | Total 1378 | C 879 | N 248 | O 248 | S 3 | 0 | 0 | 0 |
| 45 | YZ | 172 | Total 1378 | C 879 | N 248 | O 248 | S 3 | 0 | 0 | 0 |

- Molecule 46 is a protein called 50S ribosomal protein L27.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|----------|--------|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 46 | R0 | 82 | Total 648 | C 401 | N 138 | O 108 | S 1 | 0 | 0 | 0 |
| 46 | Y0 | 82 | Total 648 | C 401 | N 138 | O 108 | S 1 | 0 | 0 | 0 |

- Molecule 47 is a protein called 50S ribosomal protein L28.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|----------|--------|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 47 | R1 | 97 | Total 763 | C 481 | N 150 | O 131 | S 1 | 0 | 0 | 0 |
| 47 | Y1 | 97 | Total 763 | C 481 | N 150 | O 131 | S 1 | 0 | 0 | 0 |

- Molecule 48 is a protein called 50S ribosomal protein L29.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 48 | R2 | 69 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 581 | 358 | 118 | 104 | 1 | | | |
| 48 | Y2 | 69 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 581 | 358 | 118 | 104 | 1 | | | |

- Molecule 49 is a protein called 50S ribosomal protein L30.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 49 | R3 | 59 | Total | C | N | O | 0 | 0 | 0 |
| | | | 469 | 298 | 90 | 81 | | | |
| 49 | Y3 | 59 | Total | C | N | O | 0 | 0 | 0 |
| | | | 469 | 298 | 90 | 81 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 50 | R4 | 71 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 581 | 364 | 108 | 104 | 5 | | | |
| 50 | Y4 | 71 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 581 | 364 | 108 | 104 | 5 | | | |

- Molecule 51 is a protein called 50S ribosomal protein L33.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 51 | R5 | 59 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 459 | 288 | 90 | 76 | 5 | | | |
| 51 | Y5 | 59 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 459 | 288 | 90 | 76 | 5 | | | |

- Molecule 52 is a protein called 50S ribosomal protein L34.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 52 | R6 | 49 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 424 | 264 | 87 | 69 | 4 | | | |
| 52 | Y6 | 49 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 424 | 264 | 87 | 69 | 4 | | | |

- Molecule 53 is a protein called 50S ribosomal protein L35.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace | |
|-----|-------|----------|-------|-----|-----|----|---------|---------|-------|---|
| 53 | R7 | 49 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 430 | 263 | 108 | 57 | 2 | | | |
| 53 | Y7 | 49 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 430 | 263 | 108 | 57 | 2 | | | |

- Molecule 54 is a protein called tRNA acceptor end mimic.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace | |
|-----|-------|----------|-------|-----|-----|----|---------|---------|-------|---|
| 54 | R8 | 64 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 517 | 331 | 102 | 82 | 2 | | | |
| 54 | Y8 | 64 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 517 | 331 | 102 | 82 | 2 | | | |

- Molecule 55 is a RNA chain called RNA (5'-R(*CP*CP*(PPU))-3').

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace | |
|-----|-------|----------|-------|----|----|----|---------|---------|-------|---|
| 55 | Z6 | 3 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 74 | 40 | 13 | 19 | 2 | | | |
| 55 | Z8 | 3 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 74 | 40 | 13 | 19 | 2 | | | |

- Molecule 56 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

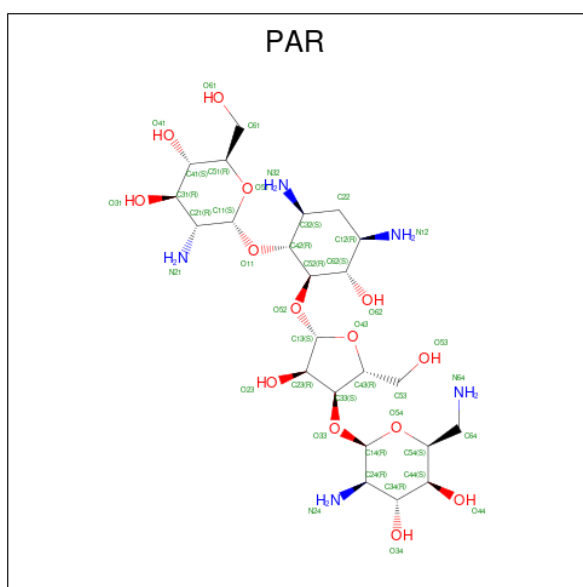
| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 56 | QA | 60 | Total | Mg | 0 | 0 |
| | | | 60 | 60 | | |
| 56 | QF | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 56 | QH | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 56 | QM | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 56 | QV | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 56 | QX | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 56 | RA | 212 | Total | Mg | 0 | 0 |
| | | | 212 | 212 | | |
| 56 | RB | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 56 | RE | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |

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| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|-----|-------|----------|---------------------|---------|---------|
| 56 | RF | 1 | Total Mg 1 1 | 0 | 0 |
| 56 | RP | 1 | Total Mg 1 1 | 0 | 0 |
| 56 | R5 | 1 | Total Mg 1 1 | 0 | 0 |
| 56 | XA | 63 | Total Mg 63 63 | 0 | 0 |
| 56 | XM | 2 | Total Mg 2 2 | 0 | 0 |
| 56 | XV | 2 | Total Mg 2 2 | 0 | 0 |
| 56 | YA | 242 | Total Mg 242 242 | 0 | 0 |
| 56 | YB | 2 | Total Mg 2 2 | 0 | 0 |
| 56 | YE | 2 | Total Mg 2 2 | 0 | 0 |
| 56 | YX | 1 | Total Mg 1 1 | 0 | 0 |
| 56 | Y5 | 1 | Total Mg 1 1 | 0 | 0 |

- Molecule 57 is PAROMOMYCIN (three-letter code: PAR) (formula: C₂₃H₄₅N₅O₁₄).

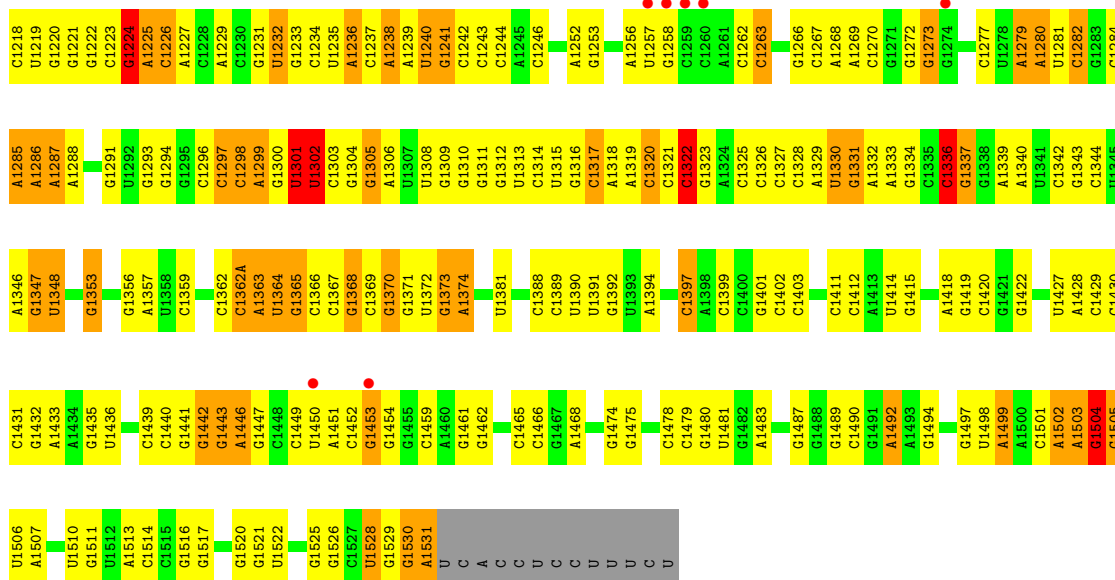


| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|----|---------|---------|
| 57 | QA | 1 | Total | C | N | O | 0 | 0 |
| | | | 42 | 23 | 5 | 14 | | |
| 57 | XA | 1 | Total | C | N | O | 0 | 0 |
| | | | 42 | 23 | 5 | 14 | | |

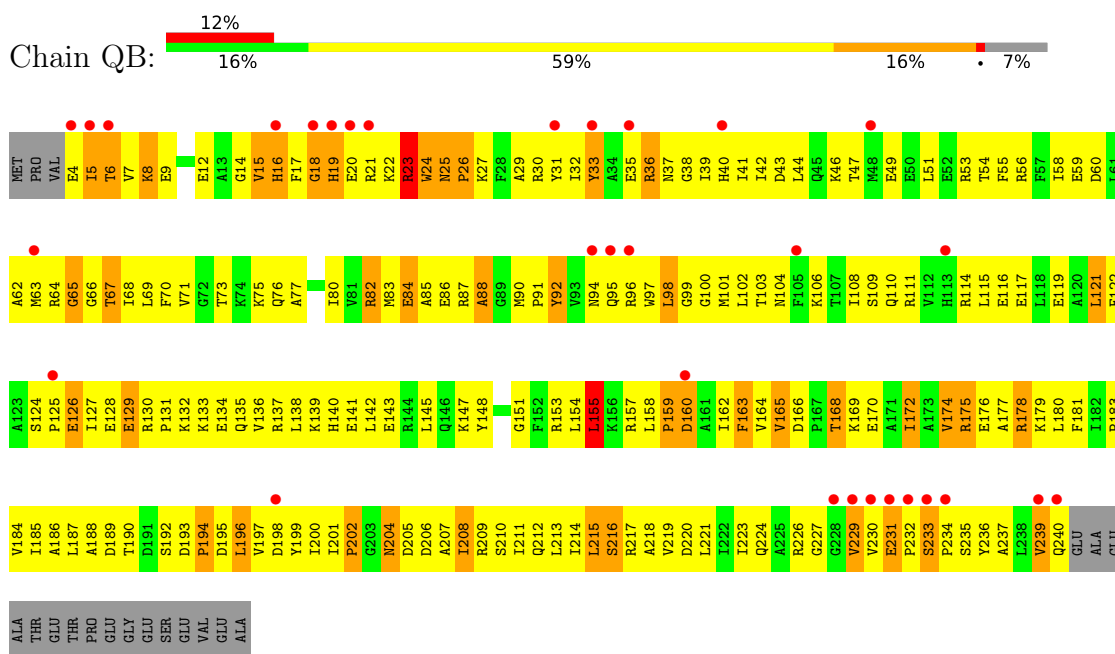
- Molecule 58 is ZINC ION (three-letter code: ZN) (formula: Zn).

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---------|---------|
| 58 | QD | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 58 | QN | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 58 | XD | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 58 | XN | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |

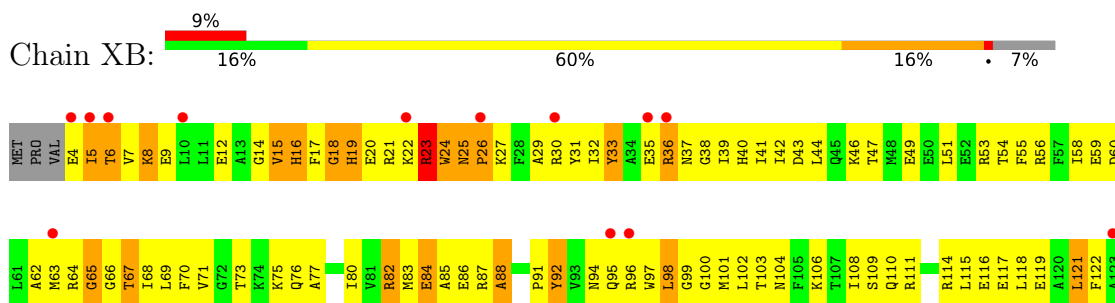
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| C153 | C154 | C155 | C156 | C157 | C158 | C159 | C160 | C161 | C162 | C163 | C164 | C165 | C166 | C167 | C168 | C169 | C170 | C171 | C172 | C173 | C174 | C175 | C176 | C177 | C178 | C179 | C180 | C181 | C182 | C183 | C184 | C185 | C186 | C187 | C188 | C189 | C190 | C191 | C192 | C193 | C194 | C195 | C196 | C197 | C198 | C199 | C200 | C201 | C202 | C203 | C204 | C205 | C206 | C207 | C208 | C209 | C210 | C211 | C212 | C213 | C214 | C215 | C216 | C217 | C218 | C219 | C220 | C221 | C222 | C223 | C224 | C225 | C226 | C227 | C228 | C229 | C230 | C231 | C232 | C233 | C234 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G1078 | G1079 | G1080 | G1081 | G1082 | G1083 | G1084 | G1085 | G1086 | G1087 | G1088 | G1089 | G1090 | G1091 | G1092 | G1093 | G1094 | G1095 | G1096 | G1097 | G1098 | G1099 | G1100 | G1101 | G1102 | G1103 | G1104 | G1105 | G1106 | G1107 | G1108 | G1109 | G1110 | G1111 | G1112 | G1113 | G1114 | G1115 | G1116 | G1117 | G1118 | G1119 | G1120 | G1121 | G1122 | G1123 | G1124 | G1125 | G1126 | G1127 | G1128 | G1129 | G1130 | G1131 | G1132 | G1133 | G1134 | G1135 | G1136 | G1137 | G1138 | G1139 | G1140 | G1141 | G1142 | G1143 | G1144 | G1145 | G1146 | G1147 | G1148 | G1149 | G1150 | G1151 | G1152 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G1014 | G1015 | G1016 | G1017 | G1018 | G1019 | G1020 | G1021 | G1022 | G1023 | G1024 | G1025 | G1026 | G1027 | G1028 | G1029 | G1030 | G1031 | G1032 | G1033 | G1034 | G1035 | G1036 | G1037 | G1038 | G1039 | G1040 | G1041 | G1042 | G1043 | G1044 | G1045 | G1046 | G1047 | G1048 | G1049 | G1050 | G1051 | G1052 | G1053 | G1054 | G1055 | G1056 | G1057 | G1058 | G1059 | G1060 | G1061 | G1062 | G1063 | G1064 | G1065 | G1066 | G1067 | G1068 | G1069 | G1070 | G1071 | G1072 | G1073 | G1074 | G1075 | G1076 | G1077 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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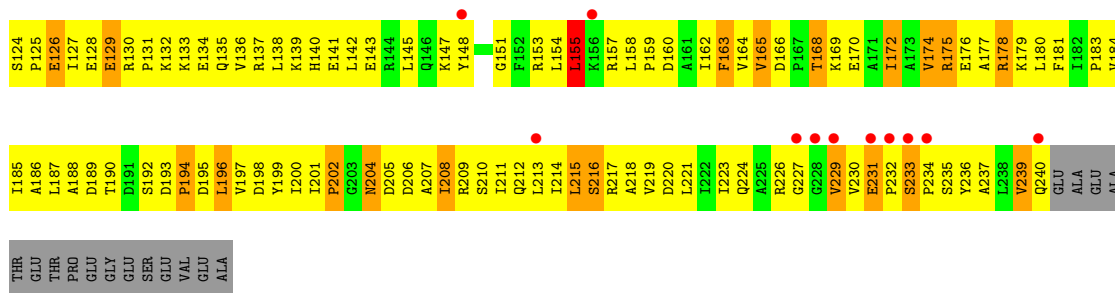


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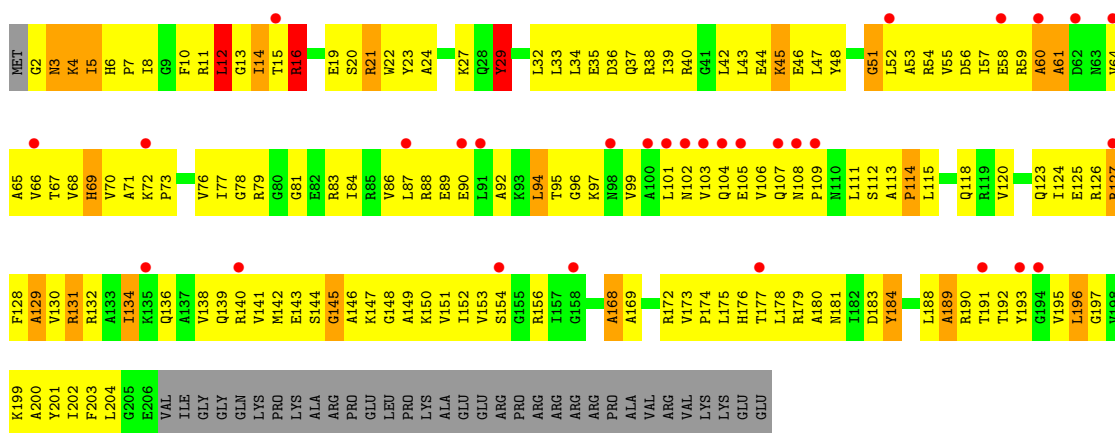
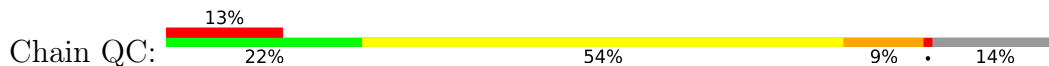


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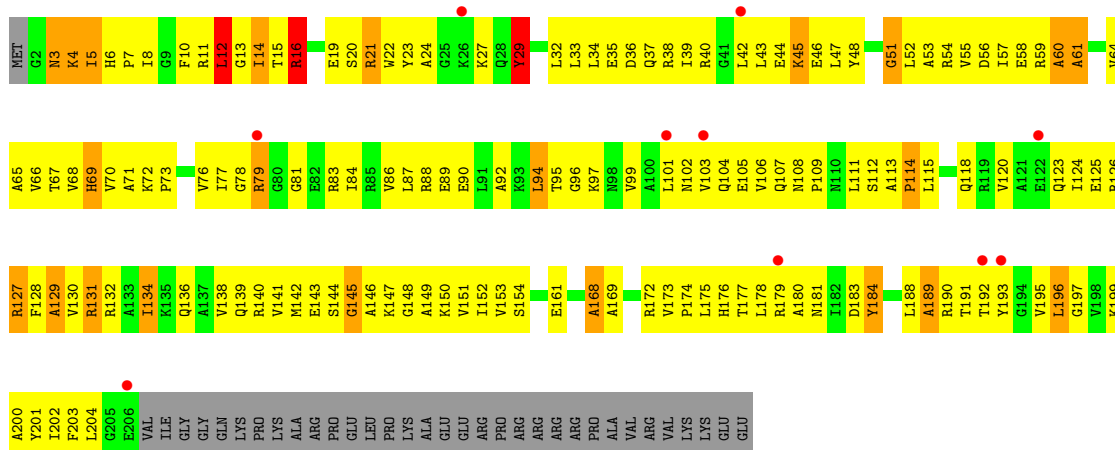




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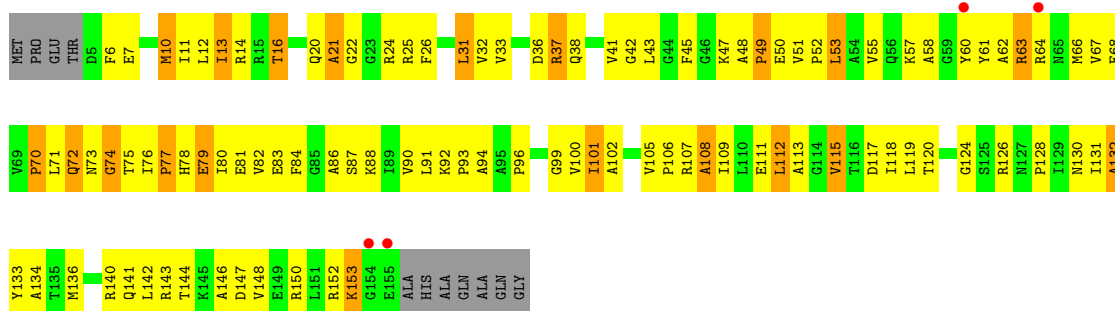


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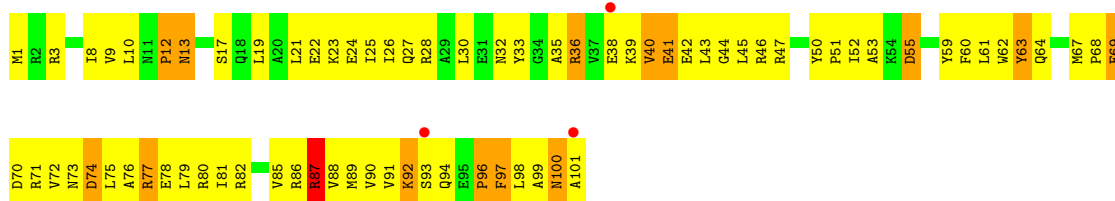


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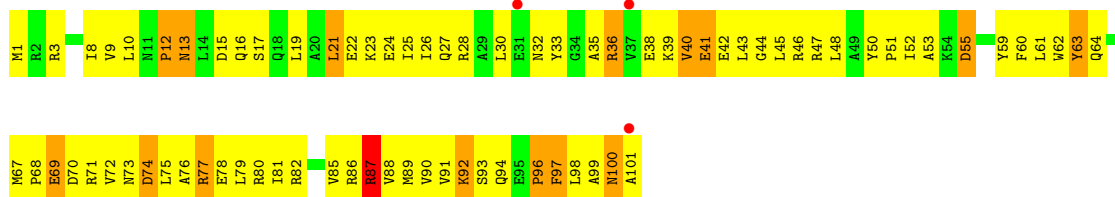




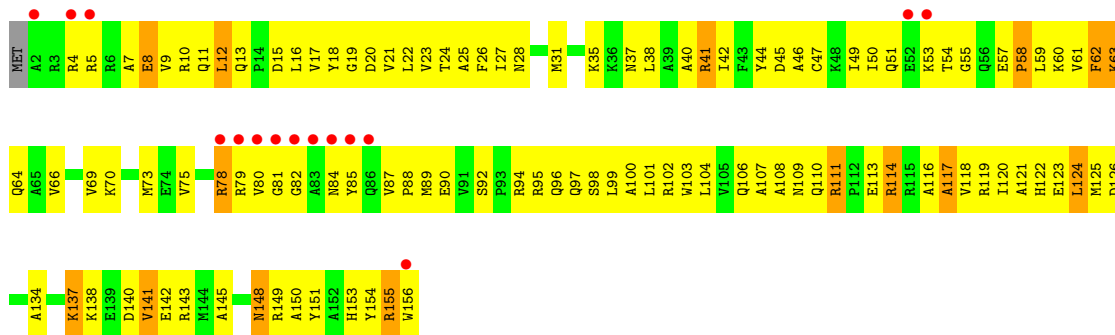
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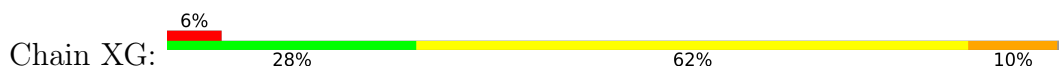
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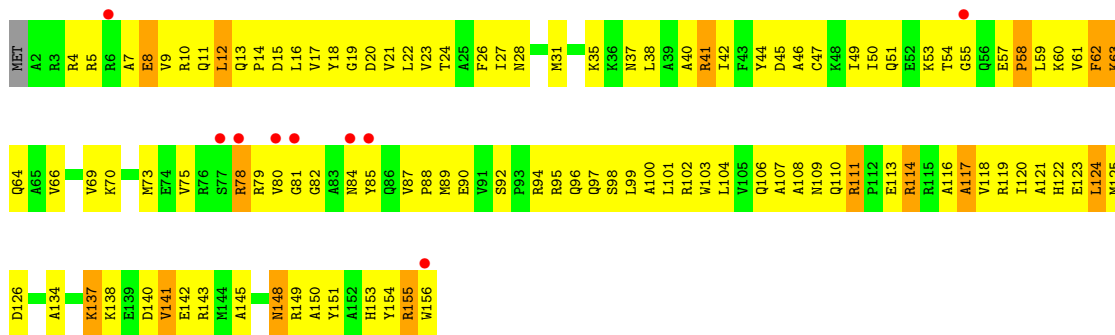


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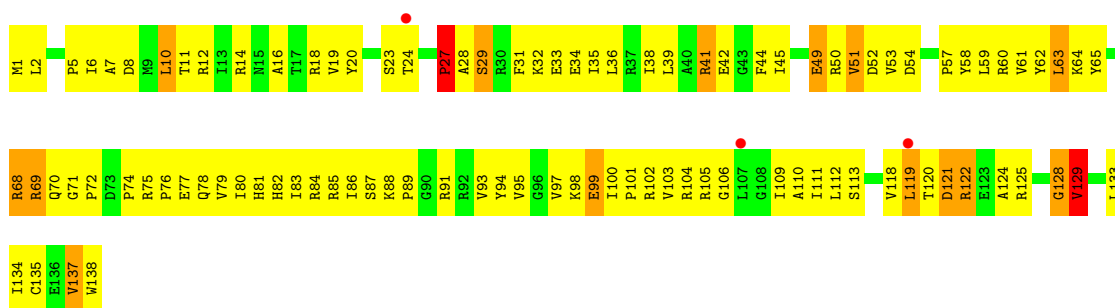
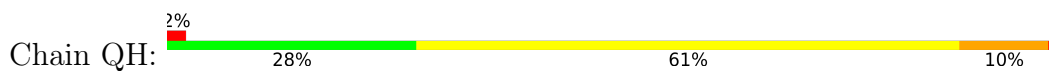


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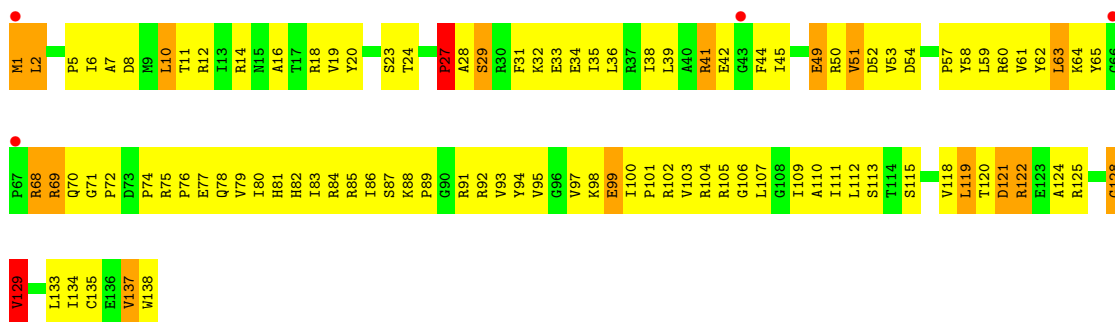




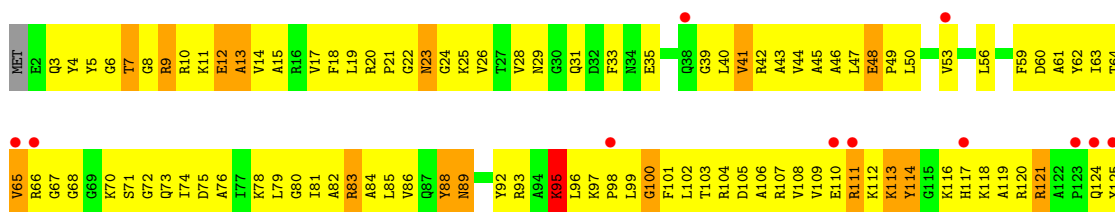
• Molecule 8: 30S ribosomal protein S8



• Molecule 8: 30S ribosomal protein S8



• Molecule 9: 30S ribosomal protein S9



S126
K127
R128

• Molecule 9: 30S ribosomal protein S9

Chain XI: 6% 20% 65% 14%

MET E2 Q3 G68 Y4 Y5 G6 T7 G8 R9 I74 I75 I76 I77 I78 I79 I80 I81 I82 I83 I84 I85 I86 I87 I88 I89 I90 I91 I92 I93 I94 I95 I96 I97 I98 I99 I100 I101 I102 I103 I104 I105 I106 I107 I108 I109 I110 I111 I112 I113 I114 I115 I116 I117 I118 I119 I120 I121 I122 I123 I124 I125 I126 I127 V65

R66 G67 G68 G69 K70 K71 K72 K73 K74 K75 K76 K77 K78 K79 K80 K81 K82 K83 K84 K85 K86 K87 K88 K89 K90 K91 K92 K93 K94 K95 K96 K97 K98 K99 K100 K101 K102 K103 K104 K105 K106 K107 K108 K109 K110 K111 K112 K113 K114 K115 K116 K117 K118 K119 K120 K121 K122 K123 K124 K125 K126 K127

R128

• Molecule 10: 30S ribosomal protein S10

Chain QJ: 23% 17% 64% 12% 6%

MET PRO K3 I4 R5 I6 K7 L8 R9 G10 H13 L16 D17 A18 S19 A20 Q21 K22 I23 V24 Q25 A26 A27 R28 R29 S30 G31 A32 Q33 R34 S35 I36 P37 I38 P39 L40 P41 T42 R43 V44 R45 R46 F47 T48 V49 I50 R51 G52 P53 F54 K55 H56 K57 D58 S59 R60 E61 H62

F63 E64 L65 R66 T67 H68 N69 R70 L71 V72 D73 I74 I75 N76 P77 N78 R79 K80 T81 I82 E83 Q84 L85 M86 T87 L88 D89 L90 P91 G92 T92 V94 E95 I96 E97 I98 K99 T100 V101 GLY GLY GLY ARG

• Molecule 10: 30S ribosomal protein S10

Chain XJ: 19% 18% 64% 11% 6%

MET PRO K3 I4 R5 I6 K7 L8 R9 G10 H13 L16 D17 A18 S19 A20 Q21 K22 I23 V24 Q25 A26 A27 R28 R29 S30 G31 A32 Q33 R34 S35 I36 P37 I38 P39 L40 P41 T42 R43 V44 R45 R46 F47 T48 V49 I50 R51 G52 P53 F54 K55 H56 K57 D58 S59 R60 E61 H62

F63 E64 L65 R66 T67 H68 N69 R70 L71 V72 D73 I74 I75 N76 P77 N78 R79 K80 T81 I82 E83 Q84 L85 M86 D89 L90 P91 G92 T92 V94 E95 I96 E97 I98 K99 T100 V101 GLY GLY GLY ARG

• Molecule 11: 30S ribosomal protein S11

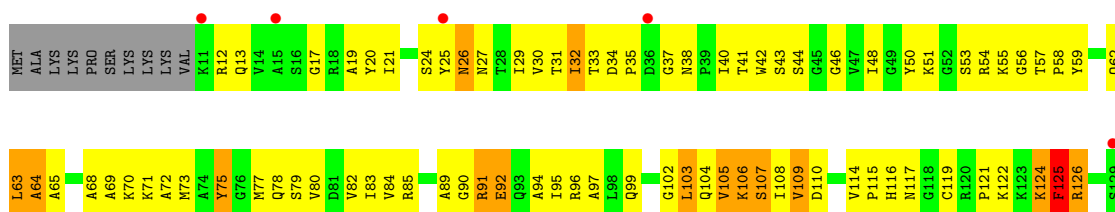
Chain QK: 8% 31% 50% 11% 8%

MET ALA LYS LYS PRO SER LYS LYS VAL K11 R12 Q13 G17 R18 A19 Y20 I21 H22 A23 S24 Y25 N26 N27 T28 I29 V30 T31 I32 T33 D34 P35 D36 G37 N38 K39 P39 I40 T41 W42 S43 S44 G45 G46 V47 I48 G49 Y50 C119 K51 G52 S53 R54 K55 G56 T57 P58 Y59 Q62 L63

A64 A65 A68 A69 K70 K71 K72 Y75 G76 M77 O78 S79 D81 R82 Y83 V84 R85 A89 G90 R91 E92 I95 R96 A97 L98 Q99 G102 L103 Q104 V105 K106 S107 I108 V109 D110 V114 P115 H116 M117 G118 C119 R120 P121 S123 K124 F125 R126 S129

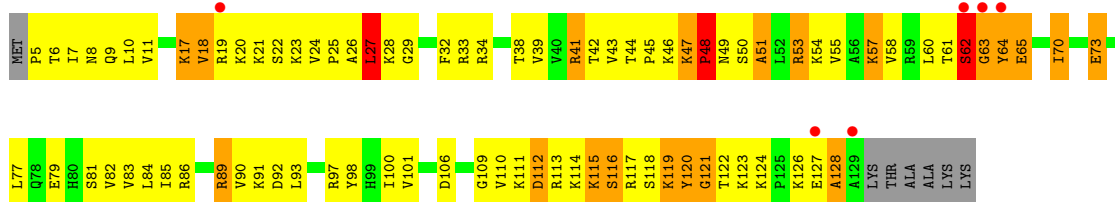
- Molecule 11: 30S ribosomal protein S11

Chain XK: 4% 29% 52% 11% 8%



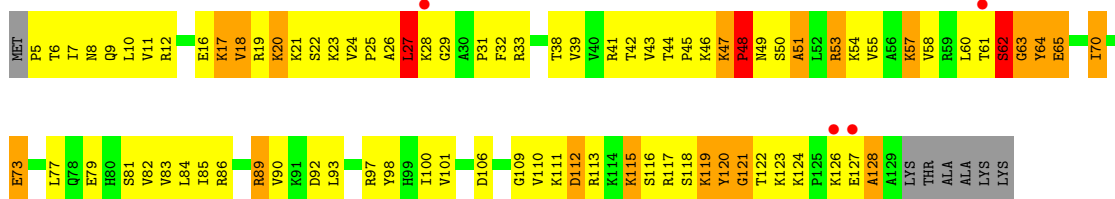
- Molecule 12: 30S ribosomal protein S12

Chain QL: 5% 30% 48% 15% 5%



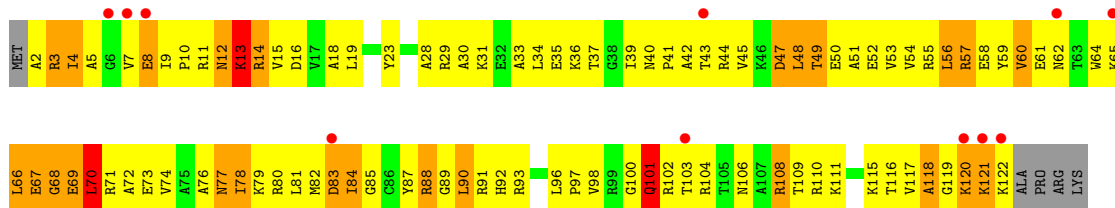
- Molecule 12: 30S ribosomal protein S12

Chain XL: 3% 30% 48% 14% 5%



- Molecule 13: 30S ribosomal protein S13

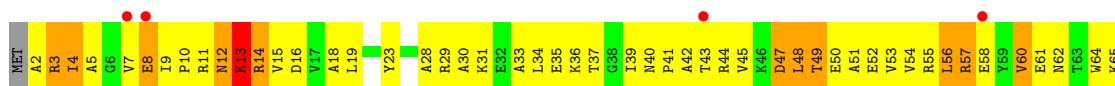
Chain QM: 9% 18% 56% 20% 5%



- Molecule 13: 30S ribosomal protein S13

Chain XM: 4% 19% 55% 19% 5%

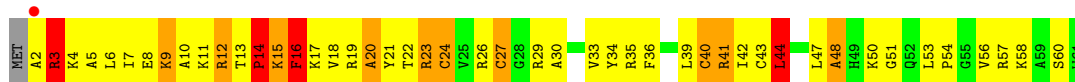




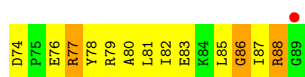
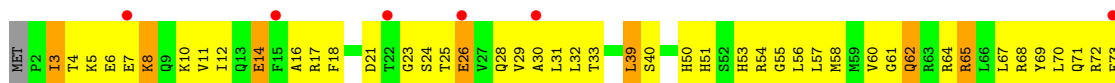
- Molecule 14: 30S ribosomal protein S14



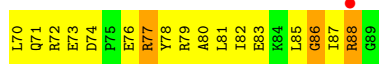
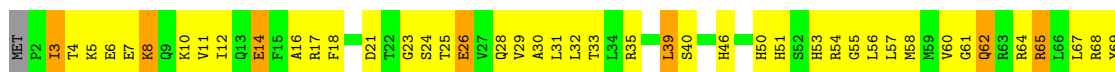
- Molecule 14: 30S ribosomal protein S14



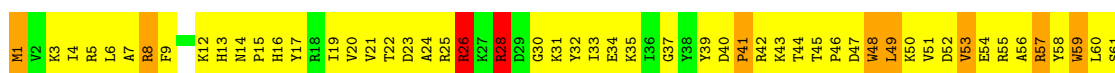
- Molecule 15: 30S ribosomal protein S15

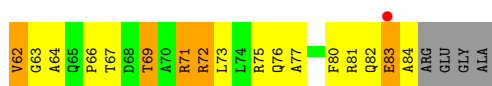


- Molecule 15: 30S ribosomal protein S15

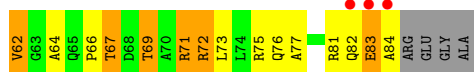
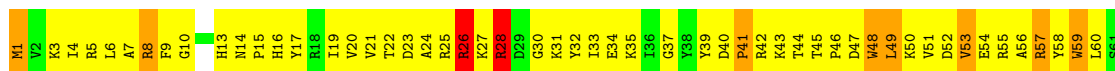


- Molecule 16: 30S ribosomal protein S16

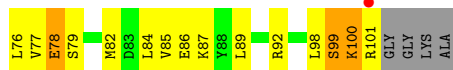
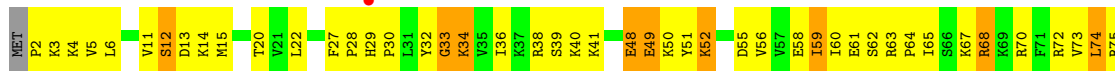




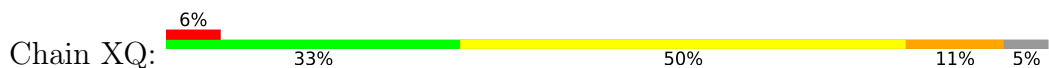
• Molecule 16: 30S ribosomal protein S16



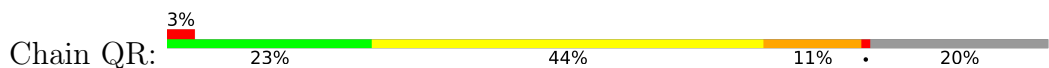
• Molecule 17: 30S ribosomal protein S17



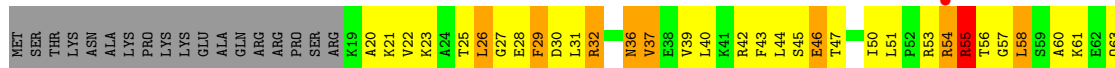
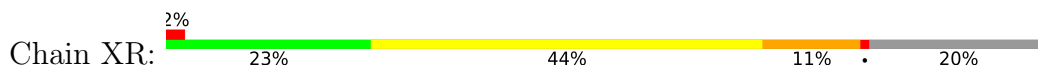
• Molecule 17: 30S ribosomal protein S17



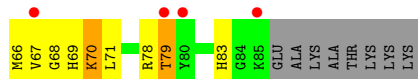
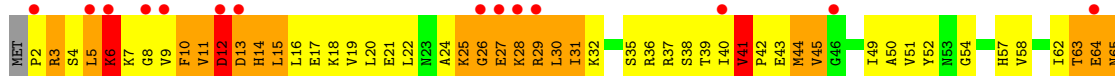
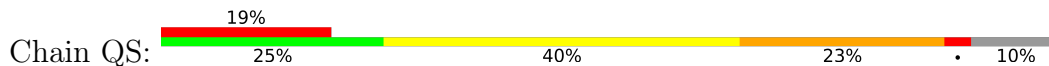
• Molecule 18: 30S ribosomal protein S18



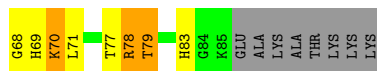
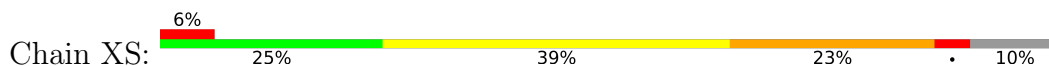
• Molecule 18: 30S ribosomal protein S18



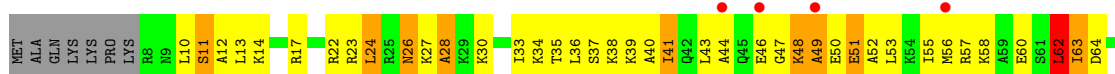
• Molecule 19: 30S ribosomal protein S19



• Molecule 19: 30S ribosomal protein S19



• Molecule 20: 30S ribosomal protein S20

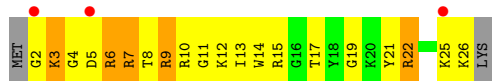


• Molecule 20: 30S ribosomal protein S20

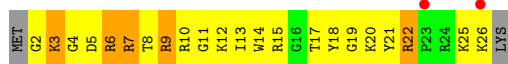
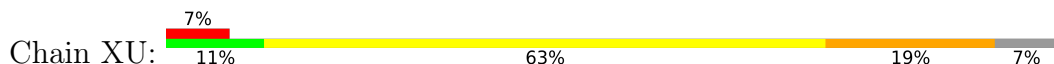




• Molecule 21: 30S ribosomal protein S21



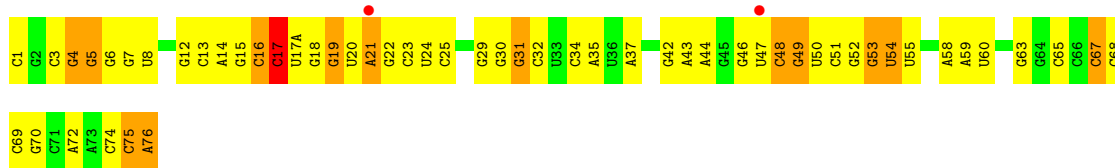
• Molecule 21: 30S ribosomal protein S21



• Molecule 22: P-site tRNA fMet



• Molecule 22: P-site tRNA fMet

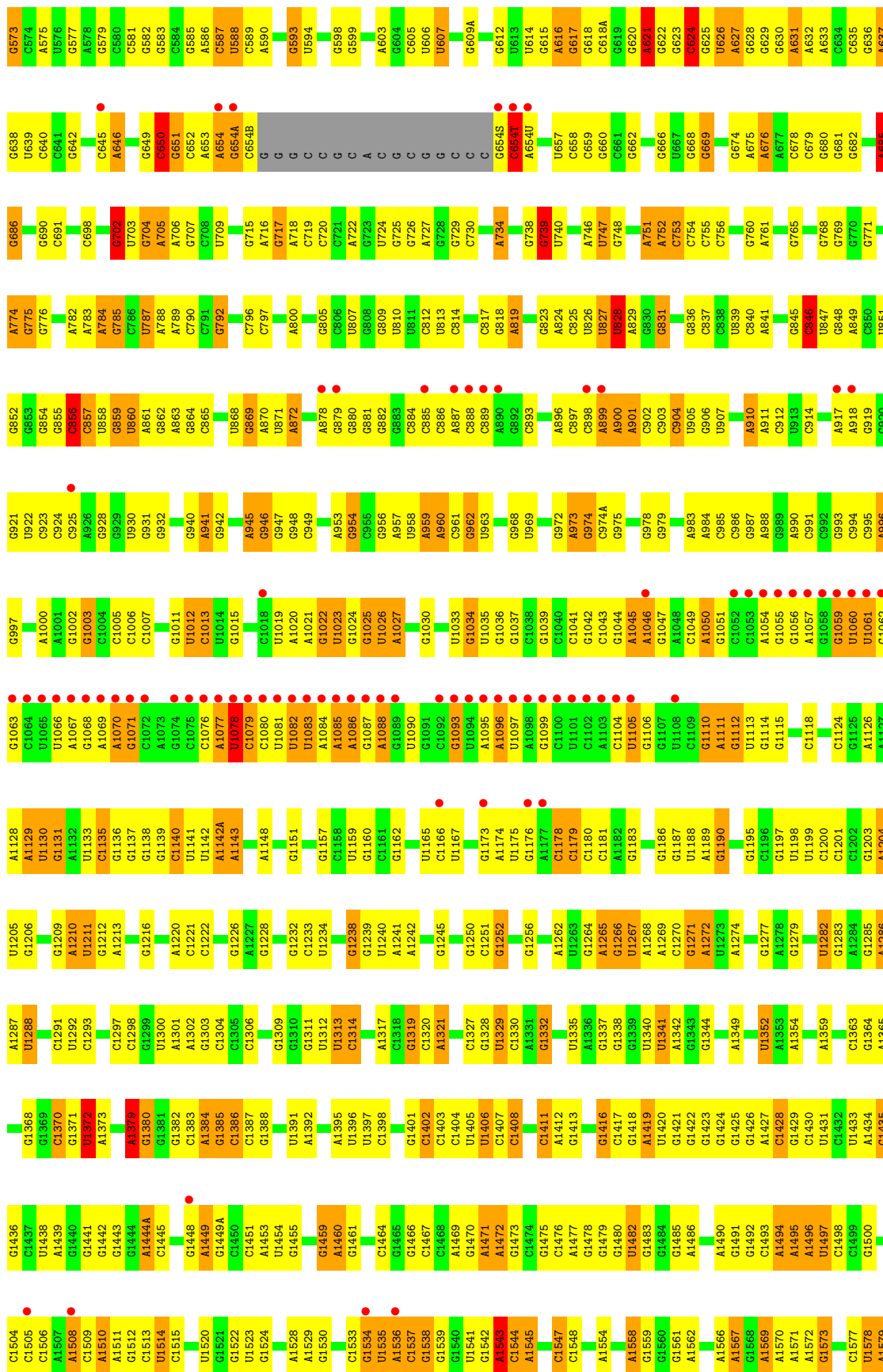


• Molecule 23: A-site ASL SufA6



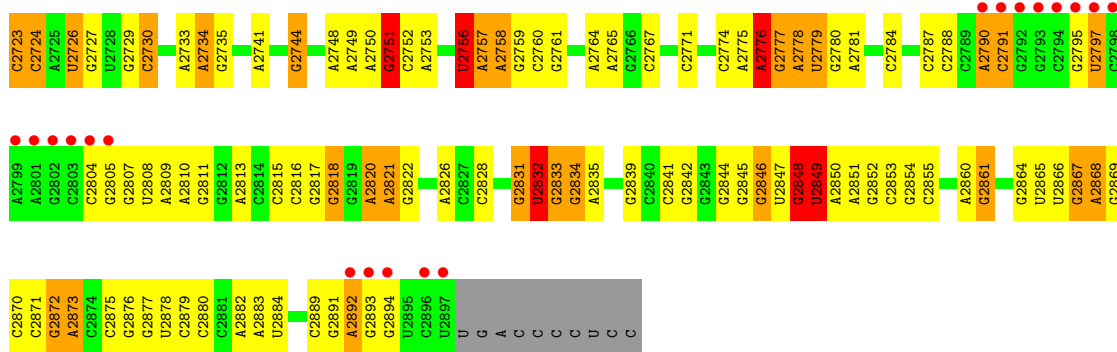
• Molecule 23: A-site ASL SufA6



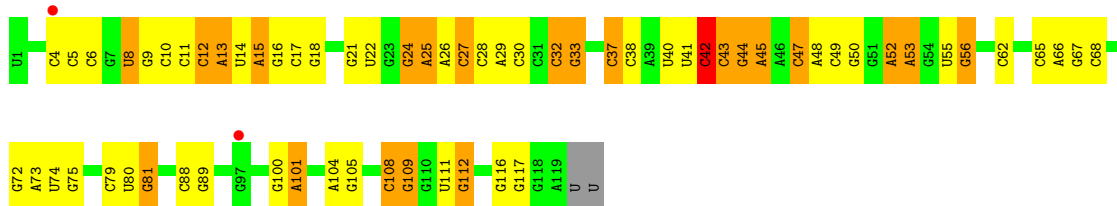


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| G2591 | G2592 | U2693 | G2594 | G2595 | U2596 | G2597 | A2602 | G2603 | U2604 | G2607 | G2608 | U2609 | G2610 | U2611 | G2612 | U2613 | A2614 | G2615 | G2616 | G2617 | G2618 | G2619 | G2623 | G2624 | G2625 | G2626 | G2627 | G2628 | G2629 | G2630 | G2631 | G2632 | G2633 | G2634 | G2635 | U2636 | G2637 | G2638 | G2641 | G2642 | G2643 | G2644 | G2645 | G2646 | U2647 | A2654 | G2655 | U2656 | U2657 | U2658 | G2659 | G2664 | A2665 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G2454 | G2455 | A2448 | U2449 | G2450 | A2451 | U2457 | G2458 | A2459 | U2460 | C2466 | G2467 | G2468 | A2469 | G2470 | G2471 | G2472 | C2475 | U2476 | G2481 | G2482 | G2483 | G2484 | G2485 | G2486 | G2487 | A2488 | G2489 | G2490 | G2494 | G2495 | G2496 | A2497 | G2498 | G2499 | G2502 | A2503 | U2504 | G2505 | U2506 | G2507 | G2508 | U2511 | G2512 | G2513 | G2516 | G2517 | A2518 | U2519 | G2520 | G2521 | G2524 | G2525 | G2526 | G2527 | U2528 | G2529 | A2530 | A2531 | G2532 | A2533 | A2534 | G2535 | G2536 | U2537 | G2538 | G2539 | G2540 | A2541 | A2542 | G2543 | G2544 | G2545 | G2548 | G2549 | G2550 | G2551 | U2552 | G2553 | U2554 | U2555 | C2556 | G2557 | G2558 | G2559 | G2560 | A2561 | U2562 | U2563 | G2566 | G2567 | A2572 | G2573 | G2574 | G2575 | G2576 | G2577 | G2578 | G2579 | U2580 | G2581 | U2582 | G2583 | U2584 | G2585 | U2586 | G2587 | G2588 | G2664 | A2665 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A2378 | G2379 | C2380 | G2381 | G2382 | G2383 | G2384 | C2385 | A2388 | G2391 | G2392 | A2393 | G2394 | G2395 | G2396 | G2397 | U2398 | G2399 | G2400 | U2401 | G2402 | G2403 | G2404 | G2405 | U2406 | G2410 | G2411 | G2414 | G2415 | G2416 | G2417 | A2418 | U2419 | G2420 | G2421 | A2422 | U2423 | G2424 | A2425 | A2426 | G2427 | G2428 | G2429 | A2430 | U2431 | A2432 | A2435 | G2436 | U2437 | U2438 | A2439 | G2440 | U2441 | G2442 | G2443 | G2444 | G2445 | G2446 | G2447 | G2448 | G2449 | G2450 | G2451 | G2452 | G2453 | G2454 | G2455 | G2456 | G2457 | G2458 | G2459 | G2460 | G2461 | G2462 | G2463 | G2464 | G2465 | G2466 | G2467 | G2468 | G2469 | G2470 | G2471 | G2472 | G2473 | G2474 | G2475 | G2476 | G2477 | G2478 | G2479 | G2480 | G2481 | G2482 | G2483 | G2484 | G2485 | G2486 | G2487 | G2488 | G2489 | G2490 | G2491 | G2492 | G2493 | G2494 | G2495 | G2496 | G2497 | G2498 | G2499 | G2500 | G2501 | G2502 | G2503 | G2504 | G2505 | G2506 | G2507 | G2508 | G2509 | G2510 | G2511 | G2512 | G2513 | G2514 | G2515 | G2516 | G2517 | G2518 | G2519 | G2520 | G2521 | G2522 | G2523 | G2524 | G2525 | G2526 | G2527 | G2528 | G2529 | G2530 | G2531 | G2532 | G2533 | G2534 | G2535 | G2536 | G2537 | G2538 | G2539 | G2540 | G2541 | G2542 | G2543 | G2544 | G2545 | G2546 | G2547 | G2548 | G2549 | G2550 | G2551 | G2552 | G2553 | G2554 | G2555 | G2556 | G2557 | G2558 | G2559 | G2560 | G2561 | G2562 | G2563 | G2564 | G2565 | G2566 | G2567 | G2568 | G2569 | G2570 | G2571 | G2572 | G2573 | G2574 | G2575 | G2576 | G2577 | G2578 | G2579 | G2580 | G2581 | G2582 | G2583 | G2584 | G2585 | G2586 | G2587 | G2588 | G2589 | G2590 | G2591 | G2592 | G2593 | G2594 | G2595 | G2596 | G2597 | G2598 | G2599 | G2600 | G2601 | G2602 | G2603 | G2604 | G2605 | G2606 | G2607 | G2608 | G2609 | G2610 | G2611 | G2612 | G2613 | G2614 | G2615 | G2616 | G2617 | G2618 | G2619 | G2620 | G2621 | G2622 | G2623 | G2624 | G2625 | G2626 | G2627 | G2628 | G2629 | G2630 | G2631 | G2632 | G2633 | G2634 | G2635 | G2636 | G2637 | G2638 | G2639 | G2640 | G2641 | G2642 | G2643 | G2644 | G2645 | G2646 | G2647 | G2648 | G2649 | G2650 | G2651 | G2652 | G2653 | G2654 | G2655 | G2656 | G2657 | G2658 | G2659 | G2660 | G2661 | G2662 | G2663 | G2664 | G2665 | G2666 | G2667 | G2668 | G2669 | G2670 | G2671 | G2672 | G2673 | G2674 | G2675 | G2676 | G2677 | G2678 | G2679 | G2680 | G2681 | G2682 | G2683 | G2684 | G2685 | G2686 | G2687 | G2688 | G2689 | G2690 | G2691 | G2692 | G2693 | G2694 | G2695 | G2696 | G2697 | G2698 | G2699 | G2700 | G2701 | G2702 | G2703 | G2704 | G2705 | G2706 | G2707 | G2708 | G2709 | G2710 | G2711 | G2712 | G2713 | G2714 | G2715 | G2716 | G2717 | G2718 | G2719 | G2720 | G2721 | G2722 | G2723 | G2724 | G2725 | G2726 | G2727 | G2728 | G2729 | G2730 | G2731 | G2732 | G2733 | G2734 | G2735 | G2736 | G2737 | G2738 | G2739 | G2740 | G2741 | G2742 | G2743 | G2744 | G2745 | G2746 | G2747 | G2748 | G2749 | G2750 | G2751 | G2752 | G2753 | G2754 | G2755 | G2756 | G2757 | G2758 | G2759 | G2760 | G2761 | G2762 | G2763 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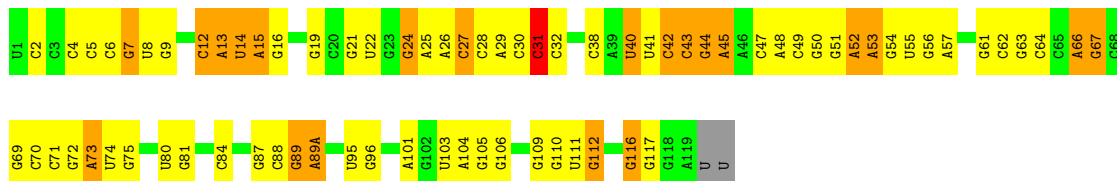
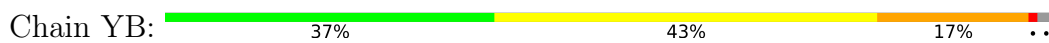
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| U2944 | U2945 | U2946 | U2947 | U2948 | A2499 | C3430 | G2284 | G2217 | C2099 | U2072 | U2000 | G1920 | U1852 | |
| G2949 | G2950 | G2951 | G2952 | G2953 | A2500 | C3431 | G2285 | G2218 | C2099 | U2073 | U2001 | G1921 | U1853 | |
| U2954 | U2955 | U2956 | U2957 | U2958 | A2501 | C3432 | G2286 | G2219 | C2099 | U2074 | U2002 | G1922 | U1854 | |
| G2959 | G2960 | G2961 | G2962 | G2963 | A2502 | C3433 | G2287 | G2220 | C2099 | U2075 | U2003 | G1923 | U1855 | |
| U2964 | U2965 | U2966 | U2967 | U2968 | A2503 | C3434 | G2288 | G2221 | C2099 | U2076 | U2004 | G1924 | U1856 | |
| G2969 | G2970 | G2971 | G2972 | G2973 | A2504 | C3435 | G2289 | G2222 | C2099 | U2077 | U2005 | G1925 | U1857 | |
| U2974 | U2975 | U2976 | U2977 | U2978 | A2505 | C3436 | G2290 | G2223 | C2099 | U2078 | U2006 | G1926 | U1858 | |
| G2979 | G2980 | G2981 | G2982 | G2983 | A2506 | C3437 | G2291 | G2224 | C2099 | U2079 | U2007 | G1927 | U1859 | |
| U2984 | U2985 | U2986 | U2987 | U2988 | A2507 | C3 | | | | | | | | |



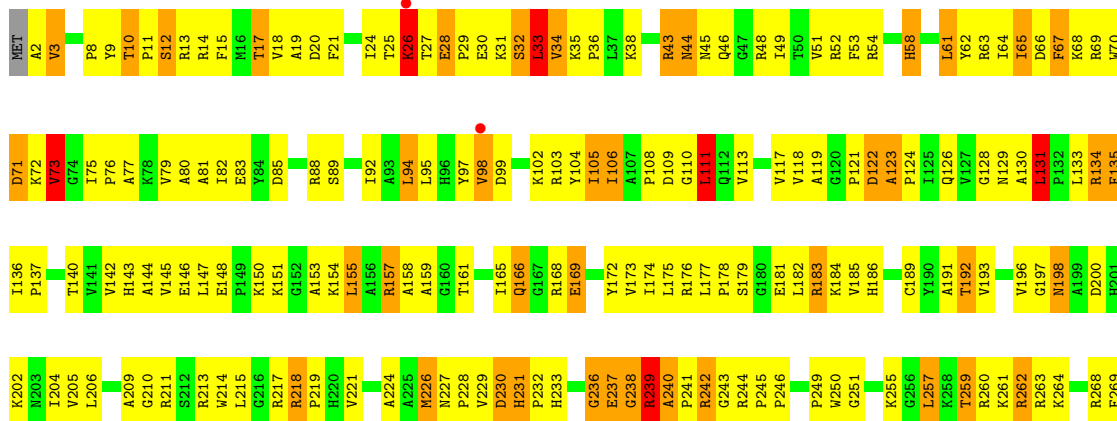
● Molecule 26: 5S rRNA



● Molecule 26: 5S rRNA



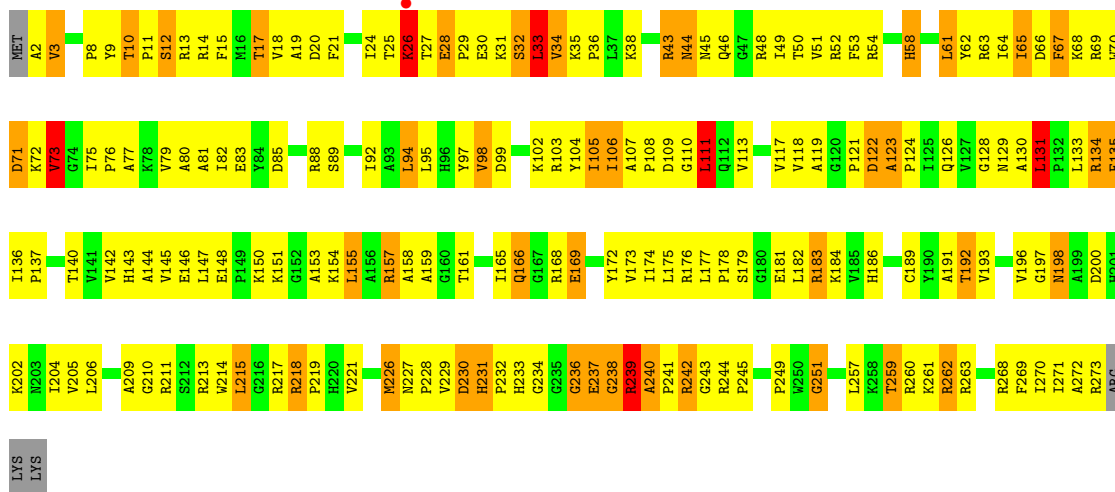
● Molecule 27: 50S ribosomal protein L2



I270
I271
A272
R273
ARG
LYS
LYS

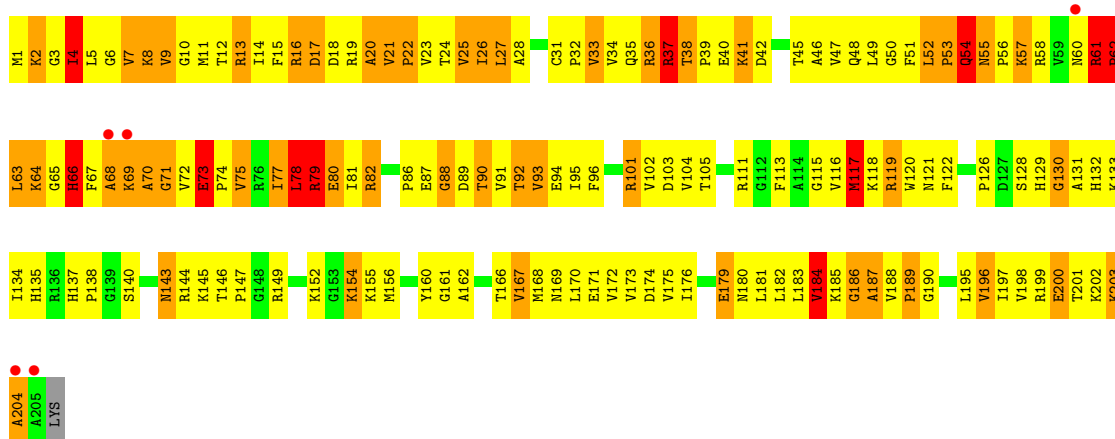
• Molecule 27: 50S ribosomal protein L2

Chain YD: 30% 51% 15% ..



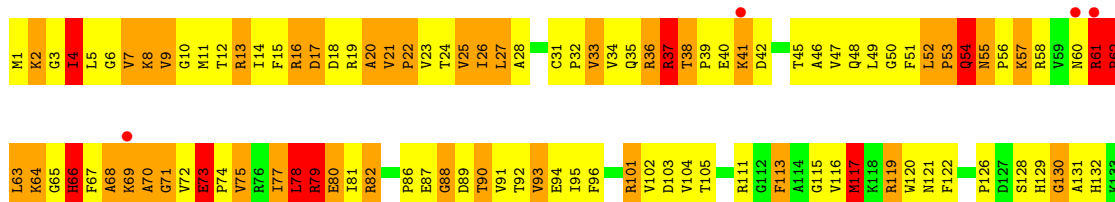
• Molecule 28: 50S ribosomal protein L3

Chain RE: 2% 22% 49% 24% 5%



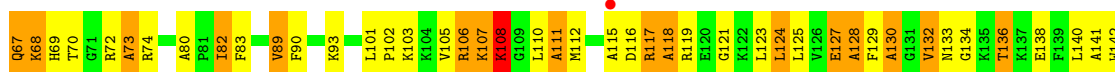
• Molecule 28: 50S ribosomal protein L3

Chain YE: 3% 24% 47% 24% 5%

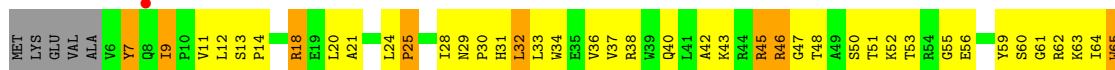




• Molecule 29: 50S ribosomal protein L4

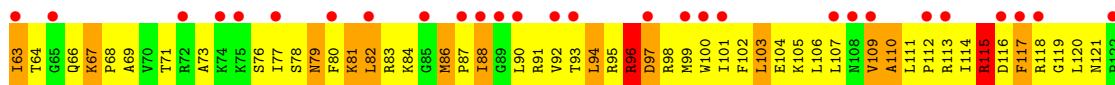
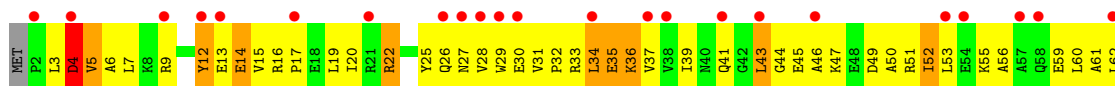
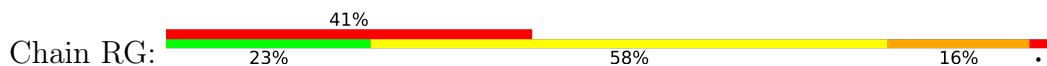


• Molecule 29: 50S ribosomal protein L4

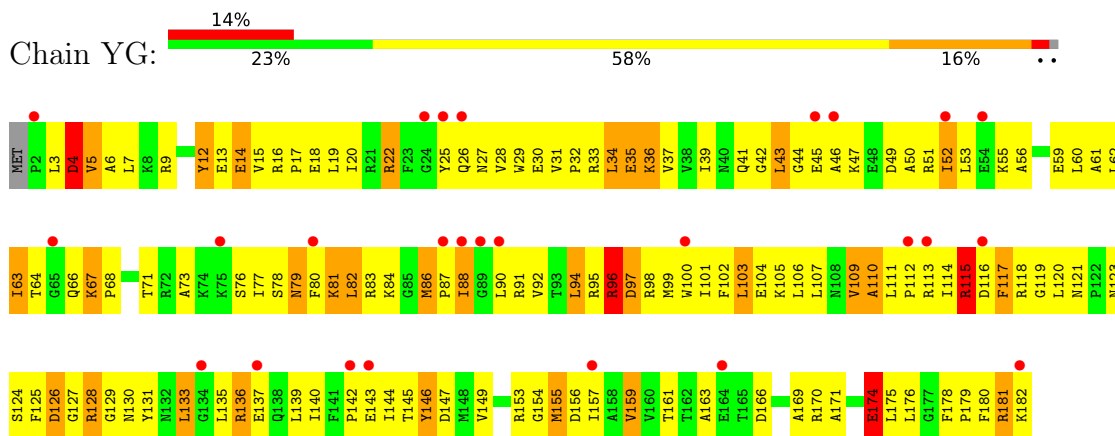


GLU
ALA

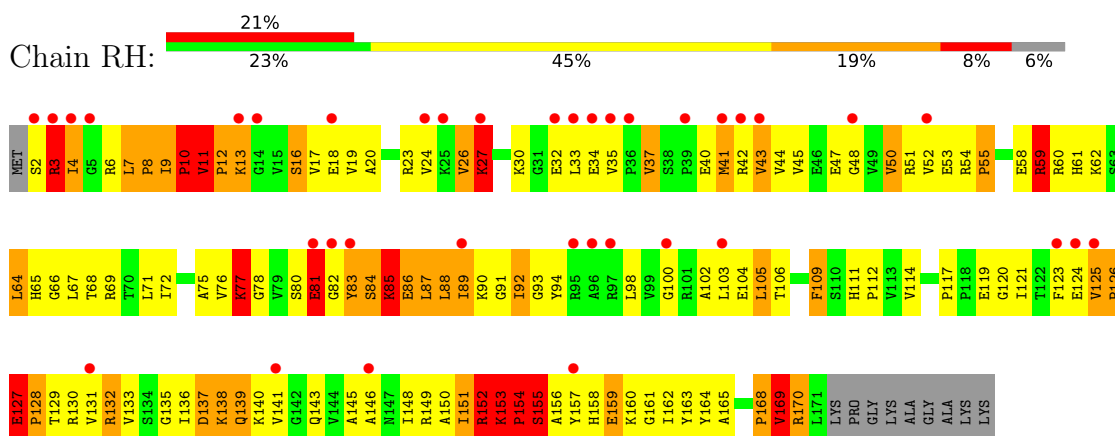
• Molecule 30: 50S ribosomal protein L5



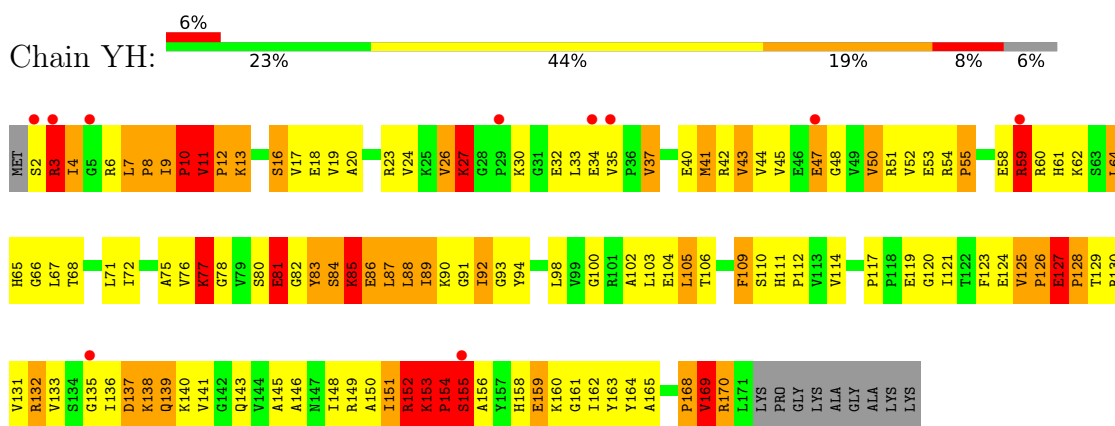
• Molecule 30: 50S ribosomal protein L5



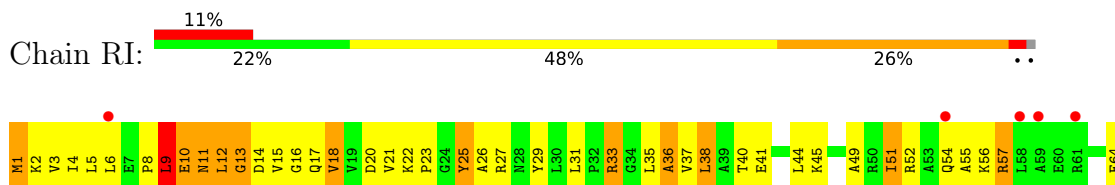
• Molecule 31: 50S ribosomal protein L6

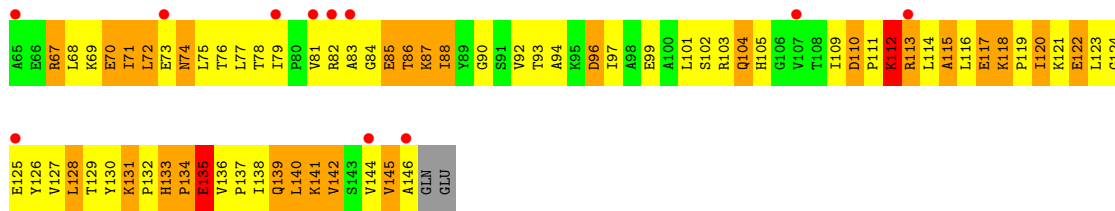


• Molecule 31: 50S ribosomal protein L6

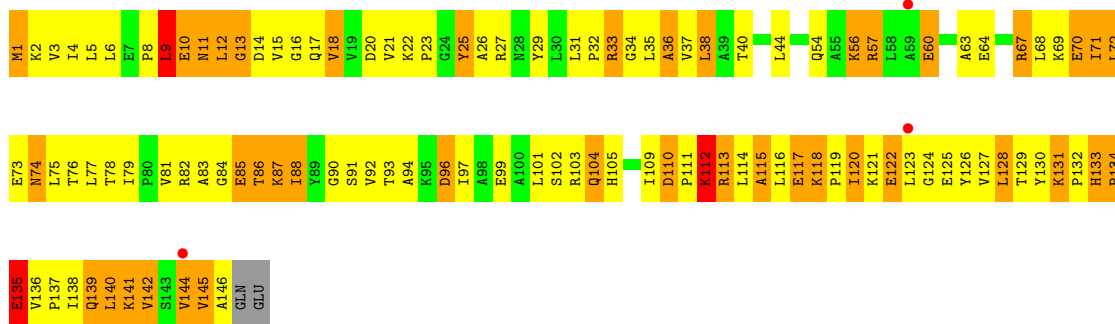
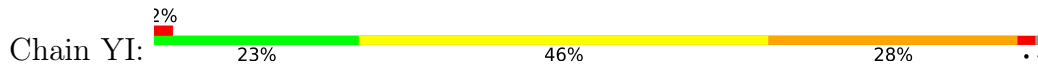


• Molecule 32: 50S ribosomal protein L9

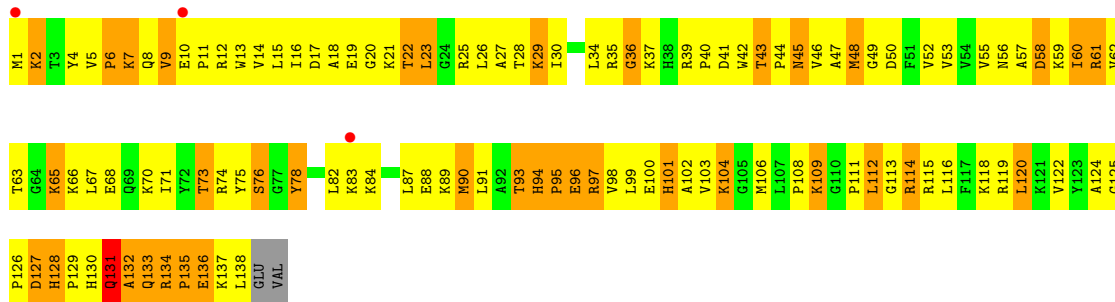
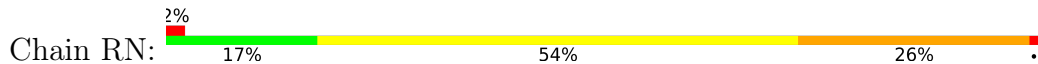




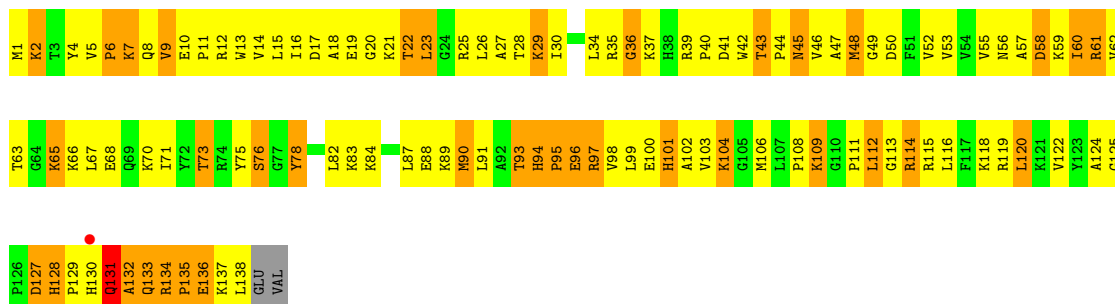
• Molecule 32: 50S ribosomal protein L9



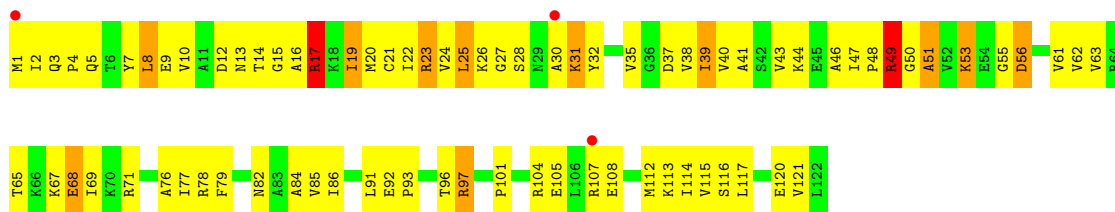
• Molecule 33: 50S ribosomal protein L13



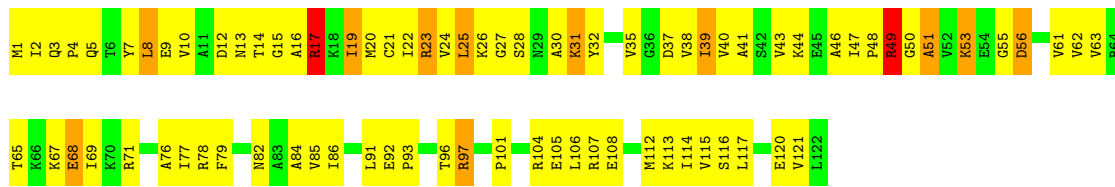
• Molecule 33: 50S ribosomal protein L13



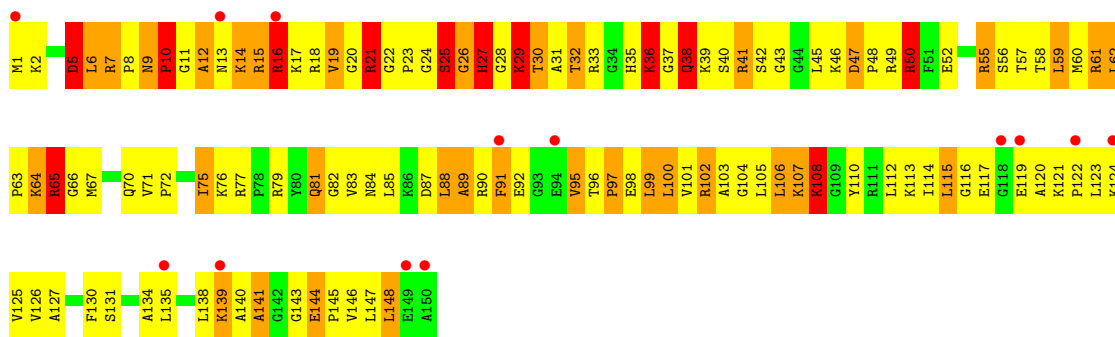
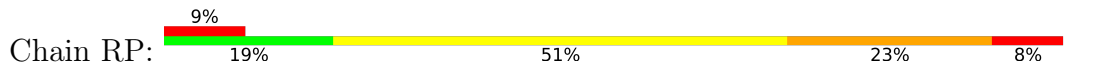
• Molecule 34: 50S ribosomal protein L14



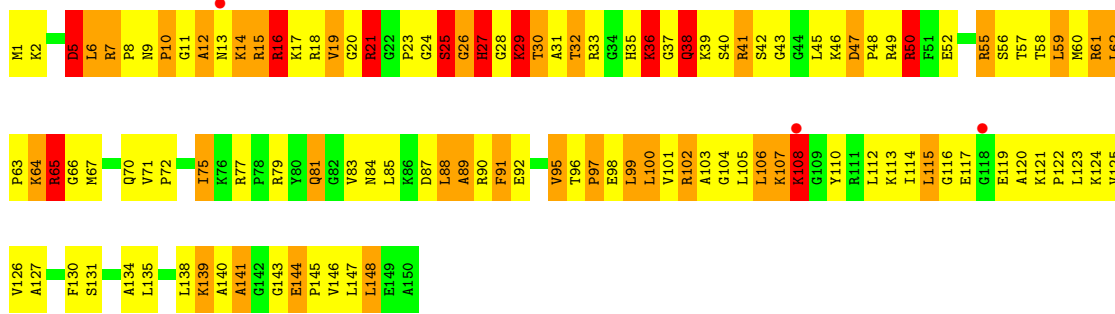
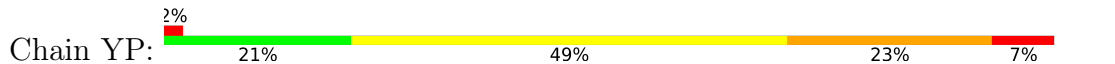
• Molecule 34: 50S ribosomal protein L14



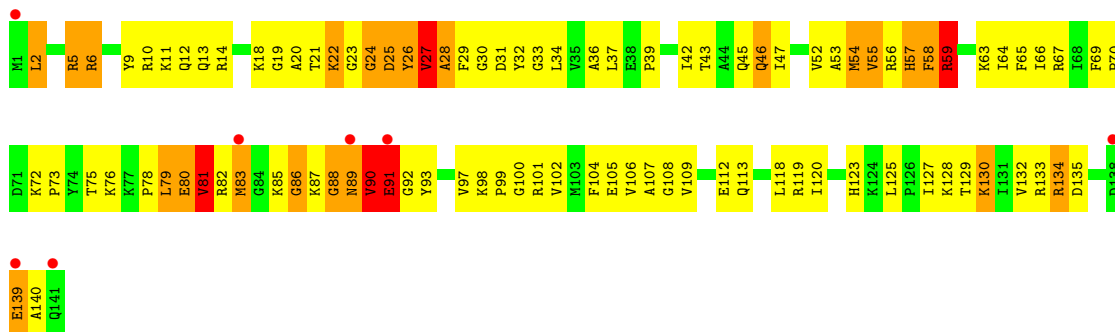
• Molecule 35: 50S ribosomal protein L15



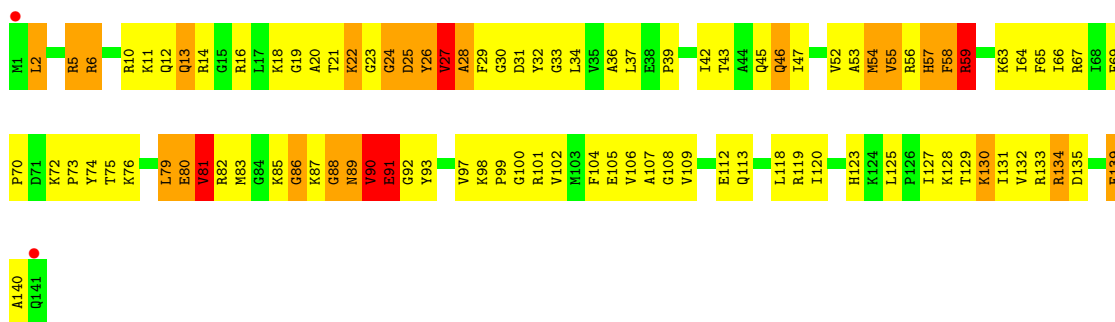
• Molecule 35: 50S ribosomal protein L15



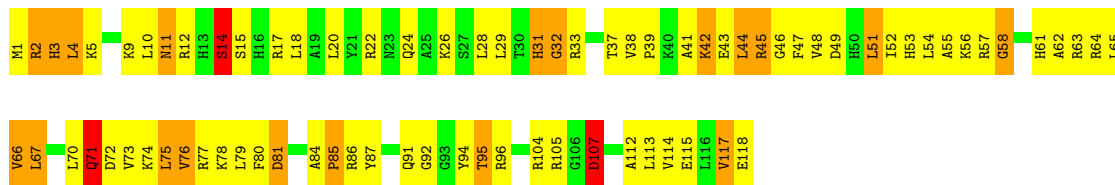
• Molecule 36: 50S ribosomal protein L16



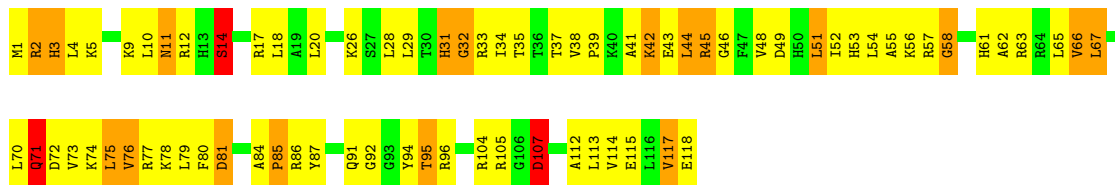
• Molecule 36: 50S ribosomal protein L16



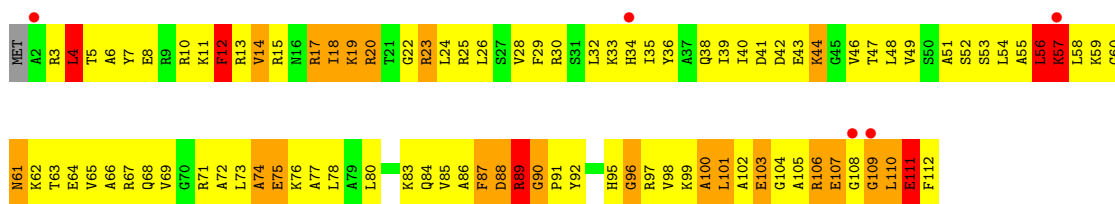
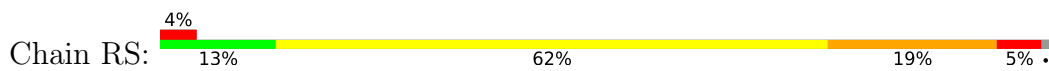
• Molecule 37: 50S ribosomal protein L17



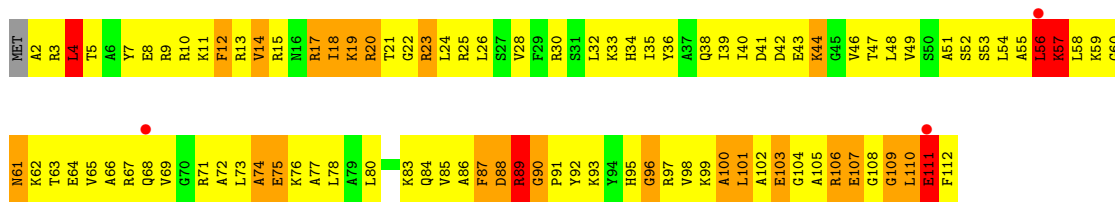
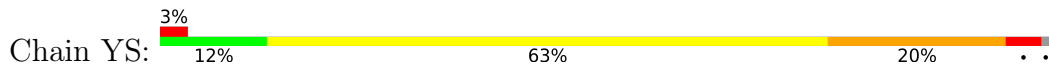
• Molecule 37: 50S ribosomal protein L17



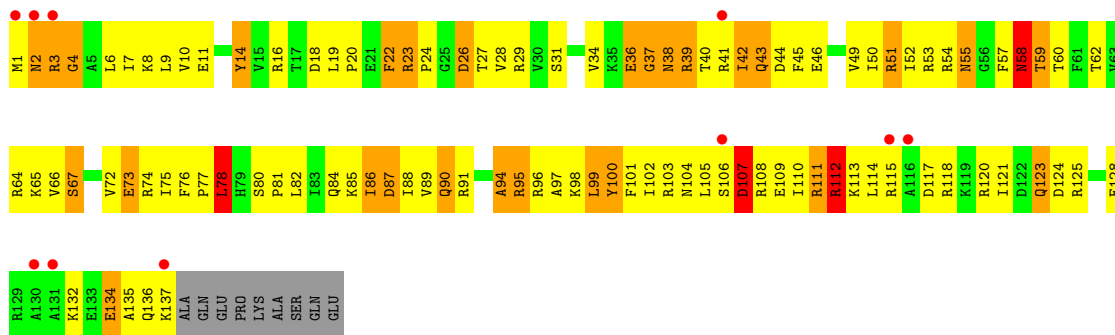
• Molecule 38: 50S ribosomal protein L18



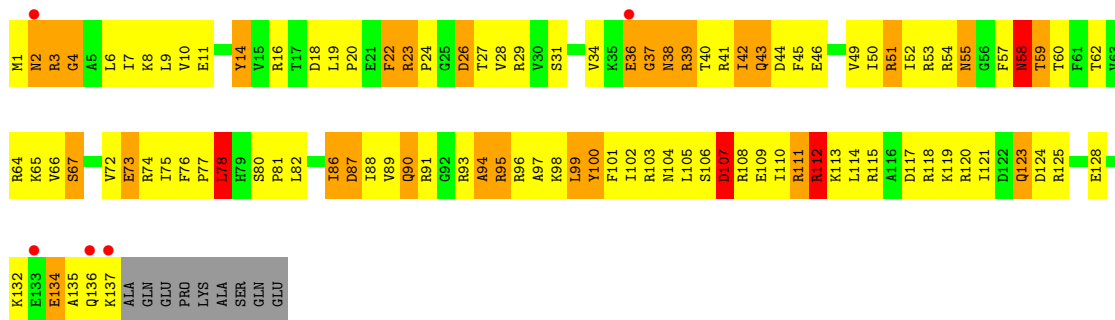
• Molecule 38: 50S ribosomal protein L18



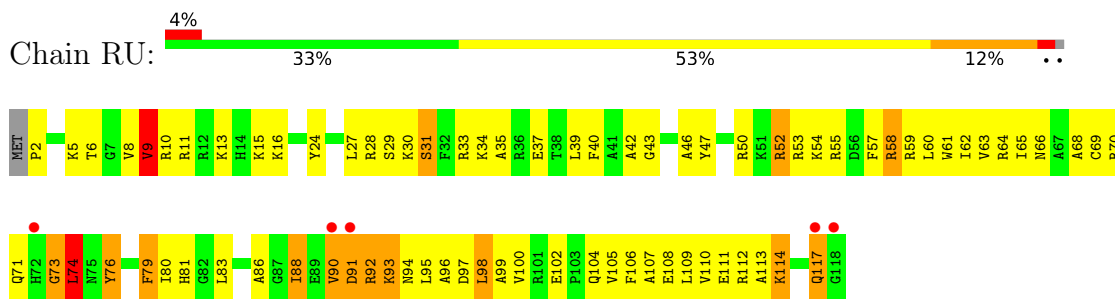
• Molecule 39: 50S ribosomal protein L19



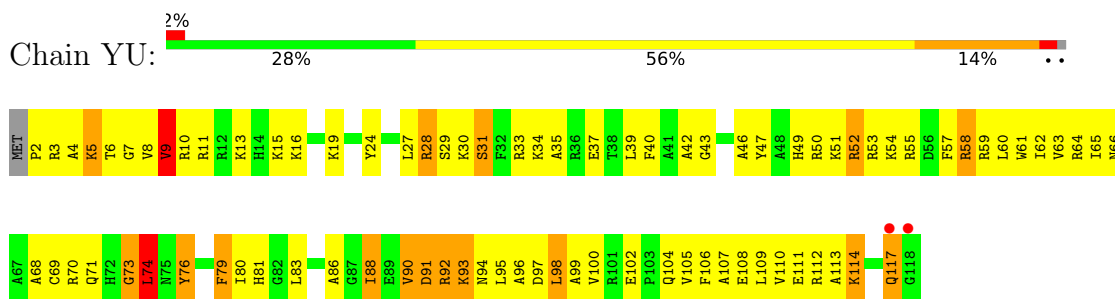
• Molecule 39: 50S ribosomal protein L19



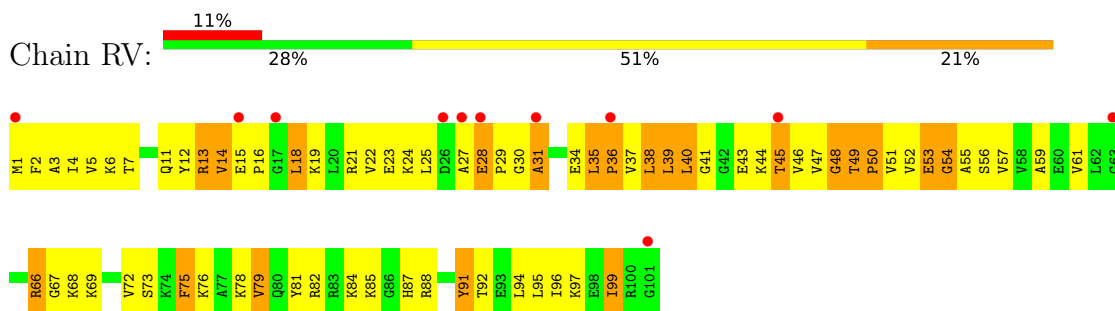
• Molecule 40: 50S ribosomal protein L20



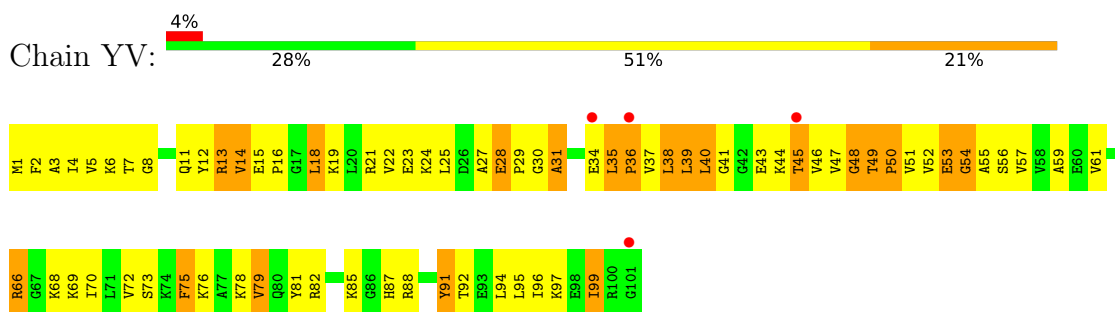
- Molecule 40: 50S ribosomal protein L20



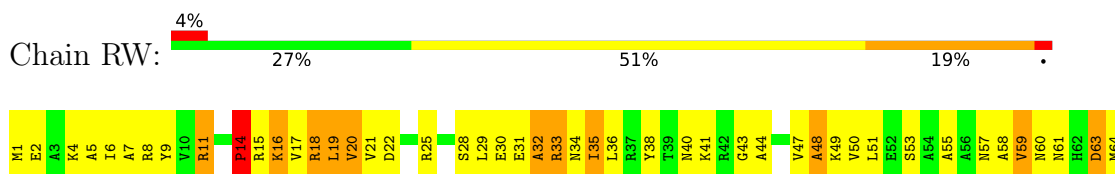
- Molecule 41: 50S ribosomal protein L21

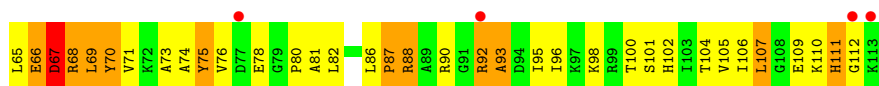


- Molecule 41: 50S ribosomal protein L21

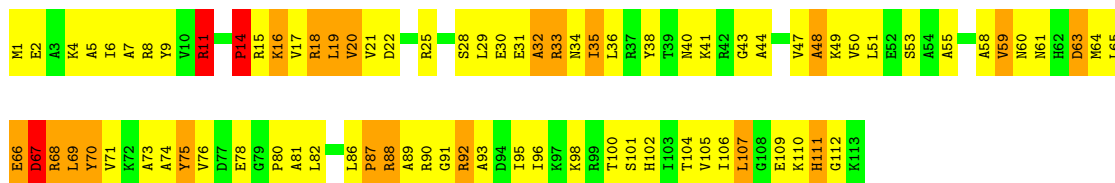


- Molecule 42: 50S ribosomal protein L22

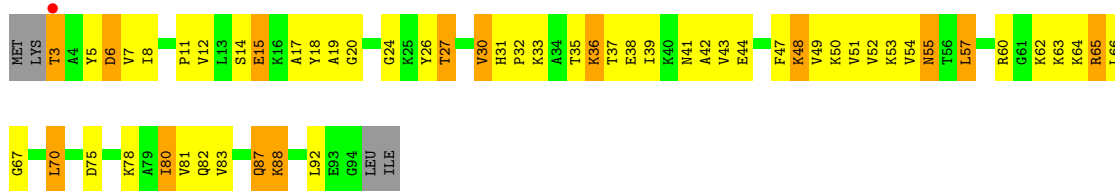




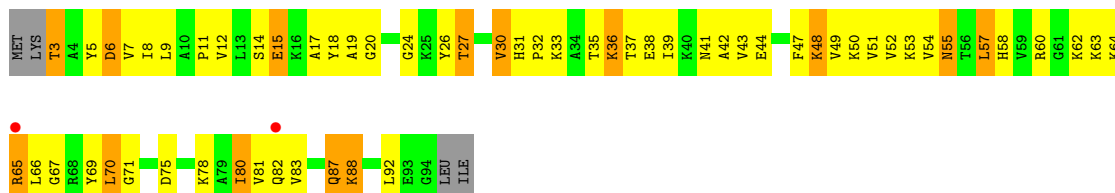
- Molecule 42: 50S ribosomal protein L22



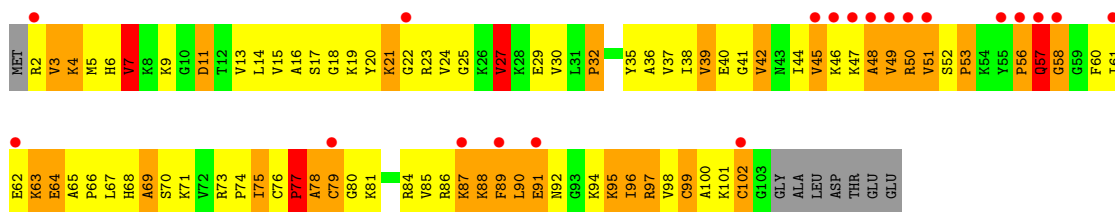
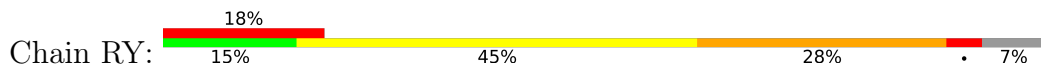
- Molecule 43: 50S ribosomal protein L23



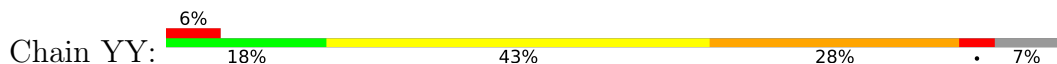
- Molecule 43: 50S ribosomal protein L23

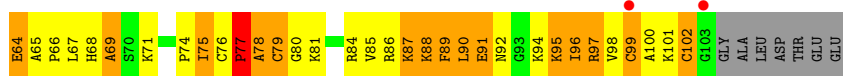
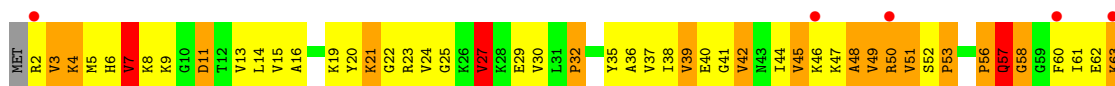


- Molecule 44: 50S ribosomal protein L24

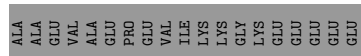
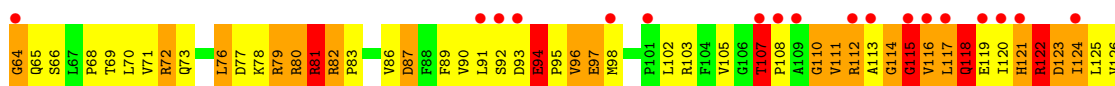
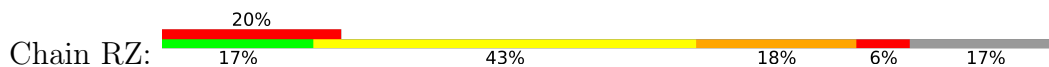


- Molecule 44: 50S ribosomal protein L24

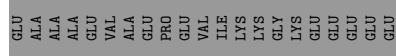
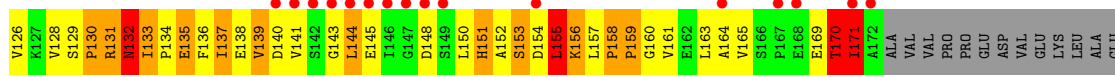
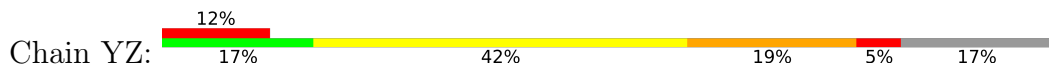




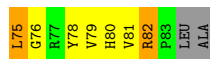
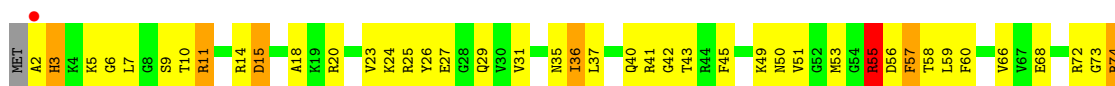
• Molecule 45: 50S ribosomal protein L25



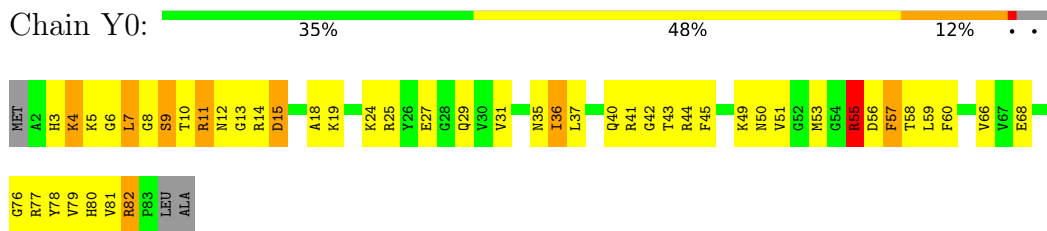
• Molecule 45: 50S ribosomal protein L25



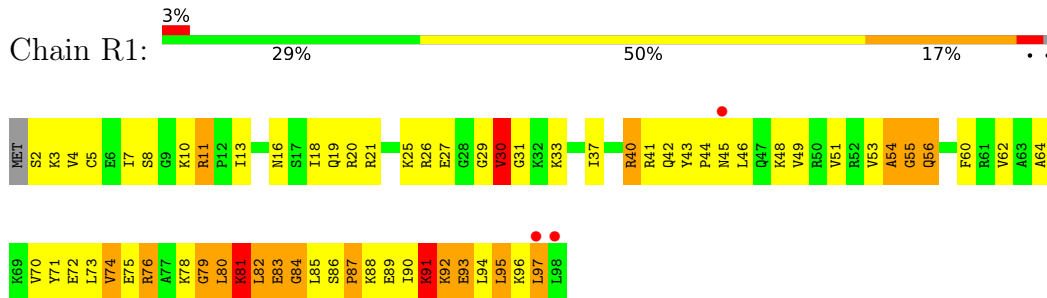
• Molecule 46: 50S ribosomal protein L27



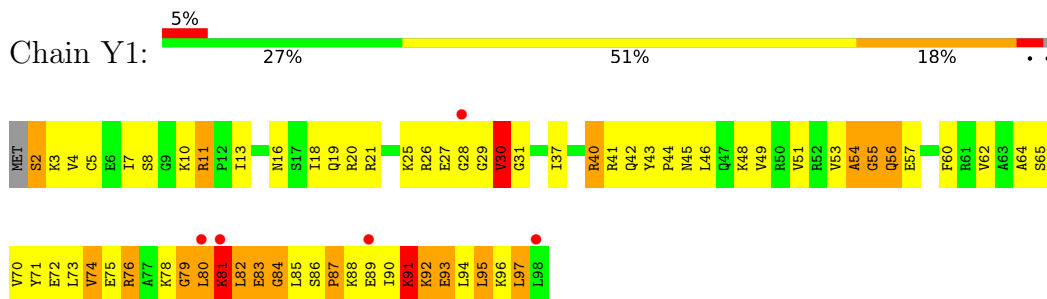
- Molecule 46: 50S ribosomal protein L27



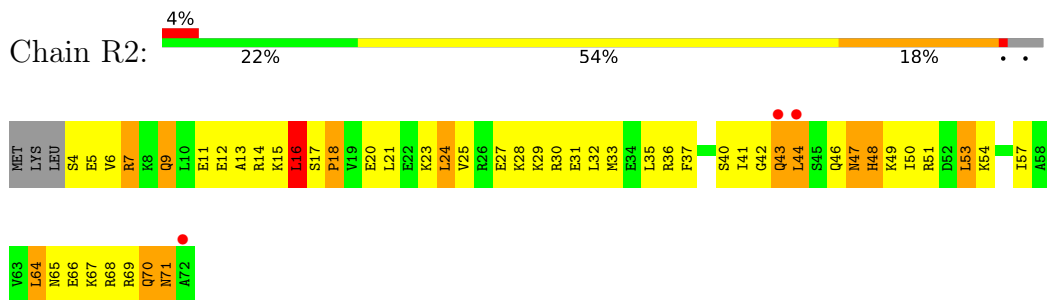
- Molecule 47: 50S ribosomal protein L28



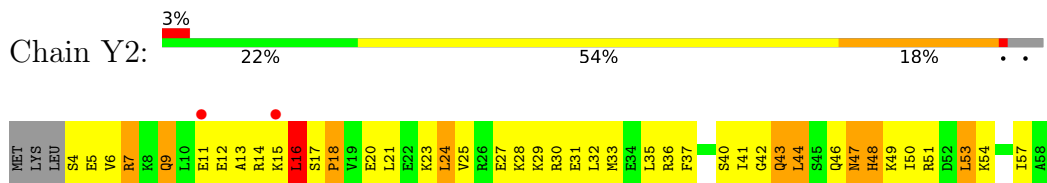
- Molecule 47: 50S ribosomal protein L28

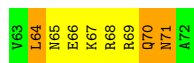


- Molecule 48: 50S ribosomal protein L29



- Molecule 48: 50S ribosomal protein L29

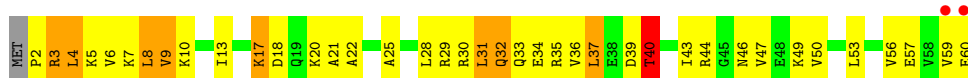




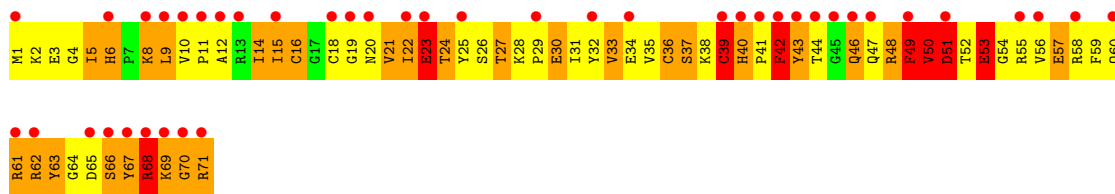
• Molecule 49: 50S ribosomal protein L30



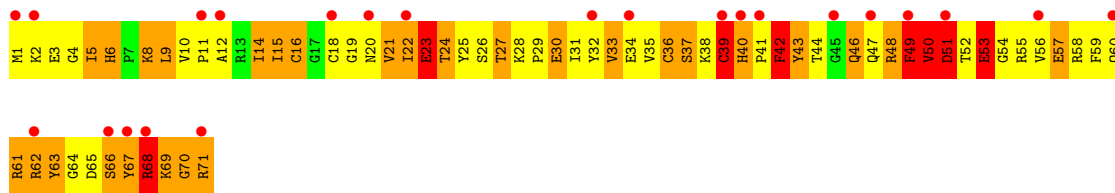
• Molecule 49: 50S ribosomal protein L30



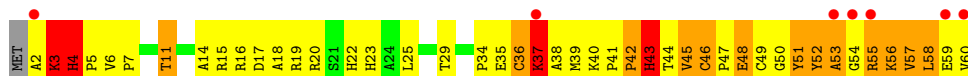
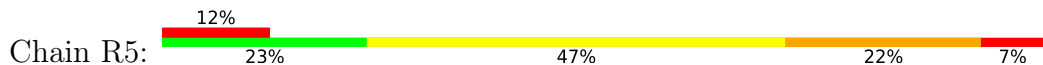
• Molecule 50: 50S ribosomal protein L32



• Molecule 50: 50S ribosomal protein L32

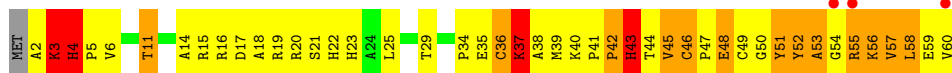


• Molecule 51: 50S ribosomal protein L33

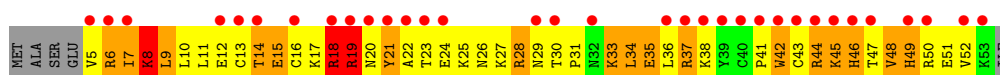


• Molecule 51: 50S ribosomal protein L33

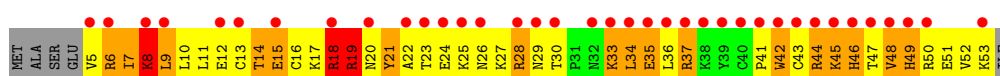




• Molecule 52: 50S ribosomal protein L34



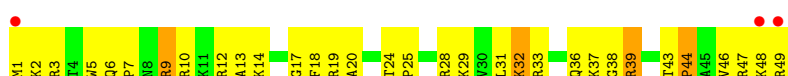
• Molecule 52: 50S ribosomal protein L34



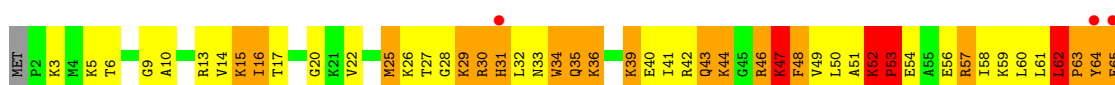
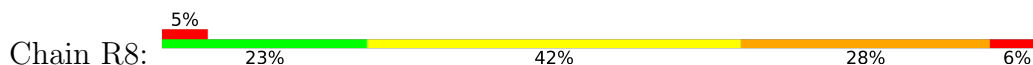
• Molecule 53: 50S ribosomal protein L35



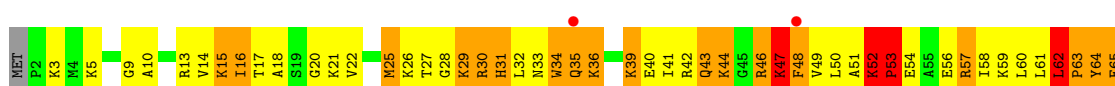
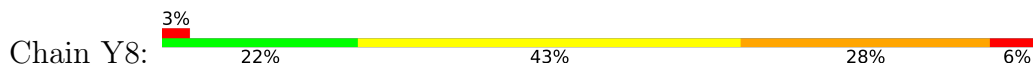
• Molecule 53: 50S ribosomal protein L35



• Molecule 54: tRNA acceptor end mimic



• Molecule 54: tRNA acceptor end mimic



• Molecule 55: RNA (5'-R(*CP*CP*(PPU))-3')





- Molecule 55: RNA (5'-R(*CP*CP*(PPU))-3')

Chain Z8: 



4 Data and refinement statistics

| Property | Value | Source |
|---|---|------------------|
| Space group | P 21 21 21 | Depositor |
| Cell constants a, b, c, α , β , γ | 209.55Å 449.21Å 619.24Å 90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 34.81 – 3.44 34.81 – 3.26 | Depositor EDS |
| % Data completeness (in resolution range) | 98.7 (34.81-3.44) 98.2 (34.81-3.26) | Depositor EDS |
| R_{merge} | 0.20 | Depositor |
| R_{sym} | (Not available) | Depositor |
| $\langle I/\sigma(I) \rangle$ ¹ | 2.44 (at 3.25Å) | Xtrriage |
| Refinement program | PHENIX 1.8.2_1309 | Depositor |
| R, R_{free} | 0.243 , 0.285 0.243 , 0.284 | Depositor DCC |
| R_{free} test set | 40944 reflections (4.64%) | wwPDB-VP |
| Wilson B-factor (Å ²) | 65.0 | Xtrriage |
| Anisotropy | 0.193 | Xtrriage |
| Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²) | 0.24 , 65.2 | EDS |
| L-test for twinning ² | $\langle L \rangle = 0.37$, $\langle L^2 \rangle = 0.19$ | Xtrriage |
| Estimated twinning fraction | No twinning to report. | Xtrriage |
| F_o, F_c correlation | 0.87 | EDS |
| Total number of atoms | 291123 | wwPDB-VP |
| Average B, all atoms (Å ²) | 85.0 | wwPDB-VP |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.41% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: PAR, 1MG, PPU, MG, ZN

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 | QA | 0.42 | 0/36098 | 0.97 | 58/56341 (0.1%) |
| 1 | XA | 0.45 | 0/36123 | 1.00 | 71/56380 (0.1%) |
| 2 | QB | 0.35 | 0/1959 | 0.65 | 0/2642 |
| 2 | XB | 0.35 | 0/1959 | 0.65 | 0/2642 |
| 3 | QC | 0.36 | 0/1629 | 0.60 | 0/2195 |
| 3 | XC | 0.36 | 0/1629 | 0.60 | 0/2195 |
| 4 | QD | 0.42 | 0/1733 | 0.69 | 1/2318 (0.0%) |
| 4 | XD | 0.42 | 0/1733 | 0.70 | 1/2318 (0.0%) |
| 5 | QE | 0.38 | 0/1171 | 0.66 | 0/1576 |
| 5 | XE | 0.38 | 0/1171 | 0.66 | 0/1576 |
| 6 | QF | 0.43 | 0/856 | 0.68 | 0/1154 |
| 6 | XF | 0.43 | 0/856 | 0.68 | 0/1154 |
| 7 | QG | 0.37 | 0/1276 | 0.60 | 0/1709 |
| 7 | XG | 0.37 | 0/1276 | 0.61 | 0/1709 |
| 8 | QH | 0.40 | 0/1136 | 0.69 | 0/1527 |
| 8 | XH | 0.40 | 0/1136 | 0.69 | 0/1527 |
| 9 | QI | 0.36 | 0/1029 | 0.67 | 0/1379 |
| 9 | XI | 0.36 | 0/1029 | 0.67 | 0/1379 |
| 10 | QJ | 0.35 | 0/814 | 0.61 | 0/1095 |
| 10 | XJ | 0.36 | 0/814 | 0.61 | 0/1095 |
| 11 | QK | 0.40 | 0/900 | 0.67 | 0/1213 |
| 11 | XK | 0.40 | 0/900 | 0.67 | 0/1213 |
| 12 | QL | 0.45 | 0/991 | 1.00 | 4/1327 (0.3%) |
| 12 | XL | 0.45 | 0/991 | 1.00 | 4/1327 (0.3%) |
| 13 | QM | 0.34 | 0/974 | 0.66 | 0/1303 |
| 13 | XM | 0.35 | 0/974 | 0.66 | 0/1303 |
| 14 | QN | 0.43 | 0/501 | 0.70 | 1/664 (0.2%) |
| 14 | XN | 0.43 | 0/501 | 0.70 | 1/664 (0.2%) |
| 15 | QO | 0.39 | 0/745 | 0.66 | 0/992 |
| 15 | XO | 0.39 | 0/745 | 0.66 | 0/992 |
| 16 | QP | 0.37 | 0/721 | 0.67 | 0/970 |
| 16 | XP | 0.37 | 0/721 | 0.67 | 0/970 |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|----------------|-------------|-------------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 17 | QQ | 0.38 | 0/847 | 0.68 | 0/1131 |
| 17 | XQ | 0.38 | 0/847 | 0.68 | 0/1131 |
| 18 | QR | 0.39 | 0/579 | 0.72 | 0/768 |
| 18 | XR | 0.39 | 0/579 | 0.73 | 0/768 |
| 19 | QS | 0.36 | 0/689 | 0.84 | 2/926 (0.2%) |
| 19 | XS | 0.36 | 0/689 | 0.84 | 2/926 (0.2%) |
| 20 | QT | 0.34 | 0/765 | 0.69 | 0/1007 |
| 20 | XT | 0.33 | 0/765 | 0.69 | 0/1007 |
| 21 | QU | 0.37 | 0/221 | 0.63 | 0/288 |
| 21 | XU | 0.37 | 0/221 | 0.62 | 0/288 |
| 22 | QV | 0.52 | 0/1836 | 0.99 | 6/2859 (0.2%) |
| 22 | XV | 0.52 | 0/1836 | 0.99 | 6/2859 (0.2%) |
| 23 | QX | 0.40 | 0/189 | 0.75 | 0/292 |
| 23 | XX | 0.66 | 0/189 | 1.09 | 2/292 (0.7%) |
| 24 | QY | 0.51 | 0/311 | 0.88 | 0/483 |
| 24 | XY | 0.52 | 0/311 | 0.89 | 0/483 |
| 25 | RA | 0.52 | 2/69543 (0.0%) | 1.06 | 149/108563 (0.1%) |
| 25 | YA | 0.59 | 2/69521 (0.0%) | 1.10 | 200/108529 (0.2%) |
| 26 | RB | 0.44 | 0/2878 | 1.04 | 7/4490 (0.2%) |
| 26 | YB | 0.46 | 0/2878 | 1.03 | 2/4490 (0.0%) |
| 27 | RD | 0.62 | 2/2165 (0.1%) | 0.90 | 3/2919 (0.1%) |
| 27 | YD | 0.62 | 2/2165 (0.1%) | 0.90 | 3/2919 (0.1%) |
| 28 | RE | 0.52 | 0/1601 | 0.91 | 2/2160 (0.1%) |
| 28 | YE | 0.52 | 0/1601 | 0.91 | 2/2160 (0.1%) |
| 29 | RF | 0.50 | 0/1620 | 0.76 | 0/2194 |
| 29 | YF | 0.50 | 0/1620 | 0.76 | 0/2194 |
| 30 | RG | 0.40 | 0/1499 | 0.66 | 0/2016 |
| 30 | YG | 0.40 | 0/1499 | 0.66 | 0/2016 |
| 31 | RH | 0.45 | 0/1332 | 0.85 | 4/1802 (0.2%) |
| 31 | YH | 0.45 | 0/1332 | 0.85 | 4/1802 (0.2%) |
| 32 | RI | 0.40 | 0/1151 | 0.80 | 1/1558 (0.1%) |
| 32 | YI | 0.40 | 0/1151 | 0.79 | 1/1558 (0.1%) |
| 33 | RN | 0.46 | 0/1131 | 0.78 | 1/1525 (0.1%) |
| 33 | YN | 0.46 | 0/1131 | 0.78 | 1/1525 (0.1%) |
| 34 | RO | 0.53 | 0/943 | 0.71 | 0/1269 |
| 34 | YO | 0.53 | 0/943 | 0.71 | 0/1269 |
| 35 | RP | 0.50 | 0/1162 | 0.94 | 3/1544 (0.2%) |
| 35 | YP | 0.49 | 0/1162 | 0.95 | 3/1544 (0.2%) |
| 36 | RQ | 0.53 | 0/1143 | 0.89 | 3/1527 (0.2%) |
| 36 | YQ | 0.53 | 0/1143 | 0.89 | 3/1527 (0.2%) |
| 37 | RR | 0.45 | 0/982 | 0.80 | 1/1312 (0.1%) |
| 37 | YR | 0.45 | 0/982 | 0.80 | 1/1312 (0.1%) |
| 38 | RS | 0.46 | 0/892 | 0.82 | 1/1187 (0.1%) |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|-----------------|-------------|-------------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 38 | YS | 0.45 | 0/892 | 0.82 | 1/1187 (0.1%) |
| 39 | RT | 0.47 | 0/1155 | 0.73 | 2/1542 (0.1%) |
| 39 | YT | 0.47 | 0/1155 | 0.73 | 2/1542 (0.1%) |
| 40 | RU | 0.48 | 0/982 | 0.78 | 0/1306 |
| 40 | YU | 0.48 | 0/982 | 0.78 | 0/1306 |
| 41 | RV | 0.47 | 0/790 | 0.82 | 0/1057 |
| 41 | YV | 0.47 | 0/790 | 0.82 | 0/1057 |
| 42 | RW | 0.45 | 0/911 | 0.75 | 0/1220 |
| 42 | YW | 0.45 | 0/911 | 0.75 | 0/1220 |
| 43 | RX | 0.56 | 0/739 | 0.78 | 0/993 |
| 43 | YX | 0.56 | 0/739 | 0.77 | 0/993 |
| 44 | RY | 0.52 | 0/798 | 0.80 | 0/1064 |
| 44 | YY | 0.52 | 0/798 | 0.80 | 0/1064 |
| 45 | RZ | 0.47 | 0/1408 | 0.77 | 1/1908 (0.1%) |
| 45 | YZ | 0.47 | 0/1408 | 0.77 | 1/1908 (0.1%) |
| 46 | R0 | 0.57 | 0/657 | 0.80 | 0/874 |
| 46 | Y0 | 0.60 | 0/657 | 0.85 | 0/874 |
| 47 | R1 | 0.49 | 0/770 | 0.85 | 1/1022 (0.1%) |
| 47 | Y1 | 0.49 | 0/770 | 0.85 | 1/1022 (0.1%) |
| 48 | R2 | 0.50 | 0/583 | 0.83 | 1/771 (0.1%) |
| 48 | Y2 | 0.50 | 0/583 | 0.84 | 1/771 (0.1%) |
| 49 | R3 | 0.43 | 0/474 | 0.71 | 0/635 |
| 49 | Y3 | 0.43 | 0/474 | 0.71 | 0/635 |
| 50 | R4 | 0.38 | 0/594 | 0.78 | 1/795 (0.1%) |
| 50 | Y4 | 0.38 | 0/594 | 0.78 | 1/795 (0.1%) |
| 51 | R5 | 0.51 | 0/473 | 0.74 | 0/639 |
| 51 | Y5 | 0.51 | 0/473 | 0.74 | 0/639 |
| 52 | R6 | 0.42 | 0/431 | 0.76 | 0/575 |
| 52 | Y6 | 0.42 | 0/431 | 0.76 | 0/575 |
| 53 | R7 | 0.56 | 0/438 | 0.76 | 0/575 |
| 53 | Y7 | 0.56 | 0/438 | 0.76 | 0/575 |
| 54 | R8 | 0.62 | 0/525 | 0.93 | 1/691 (0.1%) |
| 54 | Y8 | 0.62 | 0/525 | 0.93 | 1/691 (0.1%) |
| 55 | Z6 | 0.82 | 0/40 | 1.81 | 1/60 (1.7%) |
| 55 | Z8 | 0.80 | 0/40 | 1.80 | 1/60 (1.7%) |
| All | All | 0.50 | 8/315563 (0.0%) | 0.98 | 571/471909 (0.1%) |

All (8) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|------|-------------|----------|
| 27 | YD | 236 | GLY | C-N | 8.59 | 1.53 | 1.34 |
| 27 | RD | 236 | GLY | C-N | 8.55 | 1.53 | 1.34 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|--------|------|--------|-------|-------------|----------|
| 27 | YD | 239 | ARG | CA-C | -6.77 | 1.35 | 1.52 |
| 27 | RD | 239 | ARG | CA-C | -6.76 | 1.35 | 1.52 |
| 25 | YA | 783 | A | N7-C5 | -5.95 | 1.35 | 1.39 |
| 25 | RA | 654(T) | C | C1'-N1 | 5.65 | 1.57 | 1.48 |
| 25 | YA | 654(T) | C | C1'-N1 | 5.13 | 1.56 | 1.48 |
| 25 | RA | 751 | A | N9-C4 | -5.01 | 1.34 | 1.37 |

All (571) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 12 | QL | 47 | LYS | C-N-CD | -20.50 | 75.51 | 120.60 |
| 12 | XL | 47 | LYS | C-N-CD | -20.46 | 75.58 | 120.60 |
| 25 | YA | 761 | A | N1-C6-N6 | 12.76 | 126.25 | 118.60 |
| 25 | YA | 945 | A | N9-C1'-C2' | 12.75 | 130.58 | 114.00 |
| 22 | QV | 17 | C | C2-N1-C1' | 11.85 | 131.84 | 118.80 |
| 22 | XV | 17 | C | C2-N1-C1' | 11.84 | 131.82 | 118.80 |
| 1 | QA | 254 | G | O5'-P-OP1 | -10.70 | 96.07 | 105.70 |
| 28 | YE | 21 | VAL | C-N-CD | -10.15 | 98.26 | 120.60 |
| 1 | QA | 960 | U | N1-C2-O2 | 10.14 | 129.90 | 122.80 |
| 28 | RE | 21 | VAL | C-N-CD | -10.13 | 98.32 | 120.60 |
| 25 | YA | 945 | A | P-O3'-C3' | 10.00 | 131.70 | 119.70 |
| 25 | YA | 761 | A | C5-C6-N6 | -9.98 | 115.71 | 123.70 |
| 1 | QA | 960 | U | N3-C2-O2 | -9.72 | 115.40 | 122.20 |
| 23 | XX | 6 | C | O5'-P-OP1 | -9.65 | 97.01 | 105.70 |
| 25 | YA | 945 | A | C4-N9-C1' | 9.32 | 143.08 | 126.30 |
| 25 | YA | 761 | A | C4-C5-N7 | 9.24 | 115.32 | 110.70 |
| 25 | RA | 1929 | G | C6-C5-N7 | -9.20 | 124.88 | 130.40 |
| 25 | YA | 945 | A | C8-N9-C1' | -9.19 | 111.17 | 127.70 |
| 1 | QA | 328 | C | N1-C2-O2 | 8.92 | 124.25 | 118.90 |
| 1 | QA | 328 | C | C2-N1-C1' | 8.83 | 128.51 | 118.80 |
| 22 | XV | 17 | C | C6-N1-C1' | -8.82 | 110.21 | 120.80 |
| 12 | QL | 47 | LYS | C-N-CA | 8.77 | 158.85 | 122.00 |
| 12 | XL | 47 | LYS | C-N-CA | 8.76 | 158.80 | 122.00 |
| 25 | YA | 1253 | A | N1-C6-N6 | 8.74 | 123.84 | 118.60 |
| 25 | RA | 1899 | G | N1-C2-N2 | -8.72 | 108.35 | 116.20 |
| 36 | RQ | 81 | VAL | CB-CA-C | -8.71 | 94.85 | 111.40 |
| 36 | YQ | 81 | VAL | CB-CA-C | -8.70 | 94.88 | 111.40 |
| 22 | QV | 17 | C | C6-N1-C1' | -8.68 | 110.39 | 120.80 |
| 25 | YA | 2681 | C | P-O3'-C3' | 8.64 | 130.06 | 119.70 |
| 25 | YA | 1929 | G | C6-C5-N7 | -8.63 | 125.22 | 130.40 |
| 1 | XA | 1336 | C | C2-N1-C1' | 8.59 | 128.25 | 118.80 |
| 25 | YA | 1950 | G | C4-N9-C1' | 8.55 | 137.62 | 126.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|---------|------|------------|-------|-------------|----------|
| 25 | YA | 761 | A | C5-N7-C8 | -8.53 | 99.64 | 103.90 |
| 45 | YZ | 115 | GLY | N-CA-C | 8.49 | 134.31 | 113.10 |
| 45 | RZ | 115 | GLY | N-CA-C | 8.48 | 134.31 | 113.10 |
| 25 | RA | 1929 | G | C4-C5-N7 | 8.44 | 114.17 | 110.80 |
| 25 | YA | 2506 | U | N3-C2-O2 | -8.39 | 116.33 | 122.20 |
| 25 | YA | 2506 | U | N1-C2-O2 | 8.35 | 128.64 | 122.80 |
| 1 | XA | 1301 | U | C2-N1-C1' | 8.30 | 127.66 | 117.70 |
| 25 | YA | 530 | G | N1-C6-O6 | -8.25 | 114.95 | 119.90 |
| 1 | XA | 1158 | C | C2-N1-C1' | 8.20 | 127.82 | 118.80 |
| 25 | RA | 1929 | G | C5-C6-O6 | -8.14 | 123.71 | 128.60 |
| 1 | XA | 1336 | C | N1-C2-O2 | 8.13 | 123.78 | 118.90 |
| 25 | YA | 1950 | G | N7-C8-N9 | 8.11 | 117.16 | 113.10 |
| 1 | XA | 372 | C | C2-N1-C1' | 8.11 | 127.72 | 118.80 |
| 25 | YA | 783 | A | N7-C8-N9 | 8.10 | 117.85 | 113.80 |
| 25 | YA | 783 | A | N1-C6-N6 | 8.07 | 123.44 | 118.60 |
| 1 | XA | 254 | G | O5'-P-OP1 | -8.04 | 98.46 | 105.70 |
| 1 | QA | 1301 | U | C2-N1-C1' | 8.01 | 127.31 | 117.70 |
| 25 | RA | 2779 | U | O4'-C1'-N1 | 7.95 | 114.56 | 108.20 |
| 25 | YA | 1929 | G | OP1-P-O3' | 7.93 | 122.65 | 105.20 |
| 25 | YA | 783 | A | C6-C5-N7 | -7.90 | 126.77 | 132.30 |
| 25 | YA | 2712(A) | A | N7-C8-N9 | 7.90 | 117.75 | 113.80 |
| 1 | XA | 1064 | G | P-O3'-C3' | 7.89 | 129.17 | 119.70 |
| 47 | R1 | 79 | GLY | N-CA-C | -7.87 | 93.42 | 113.10 |
| 1 | QA | 1322 | C | C2-N1-C1' | 7.87 | 127.46 | 118.80 |
| 25 | YA | 761 | A | C6-C5-N7 | -7.86 | 126.80 | 132.30 |
| 25 | RA | 165 | U | C2-N1-C1' | 7.85 | 127.12 | 117.70 |
| 47 | Y1 | 79 | GLY | N-CA-C | -7.82 | 93.54 | 113.10 |
| 25 | YA | 783 | A | C5-N7-C8 | -7.79 | 100.00 | 103.90 |
| 25 | RA | 685 | A | N1-C6-N6 | -7.77 | 113.94 | 118.60 |
| 1 | QA | 1322 | C | N1-C2-O2 | 7.75 | 123.55 | 118.90 |
| 25 | YA | 1950 | G | O4'-C1'-N9 | 7.72 | 114.37 | 108.20 |
| 1 | QA | 121 | C | C2-N3-C4 | -7.71 | 116.04 | 119.90 |
| 25 | RA | 2426 | A | P-O3'-C3' | 7.69 | 128.93 | 119.70 |
| 25 | YA | 528 | A | N1-C2-N3 | 7.65 | 133.12 | 129.30 |
| 25 | YA | 2584 | U | N3-C2-O2 | -7.58 | 116.89 | 122.20 |
| 25 | RA | 1899 | G | N3-C2-N2 | 7.56 | 125.19 | 119.90 |
| 1 | XA | 1322 | C | C2-N1-C1' | 7.51 | 127.06 | 118.80 |
| 25 | YA | 1396 | U | C2-N1-C1' | 7.50 | 126.71 | 117.70 |
| 25 | RA | 1396 | U | N1-C2-O2 | 7.49 | 128.04 | 122.80 |
| 25 | YA | 2031 | A | O4'-C1'-N9 | 7.45 | 114.16 | 108.20 |
| 22 | XV | 17 | C | N1-C2-O2 | 7.41 | 123.34 | 118.90 |
| 25 | YA | 783 | A | C8-N9-C4 | -7.40 | 102.84 | 105.80 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|---------|------|------------|-------|-------------|----------|
| 1 | XA | 1302 | U | C2-N1-C1' | 7.39 | 126.57 | 117.70 |
| 23 | XX | 7 | G | P-O3'-C3' | -7.38 | 110.85 | 119.70 |
| 1 | QA | 1301 | U | N1-C2-O2 | 7.35 | 127.94 | 122.80 |
| 1 | XA | 713 | G | N1-C6-O6 | -7.34 | 115.50 | 119.90 |
| 25 | RA | 1372 | U | N1-C2-O2 | 7.32 | 127.93 | 122.80 |
| 25 | YA | 1929 | G | C4-C5-N7 | 7.29 | 113.72 | 110.80 |
| 25 | YA | 912 | C | N3-C2-O2 | -7.28 | 116.81 | 121.90 |
| 25 | RA | 2702 | U | N1-C2-O2 | 7.28 | 127.89 | 122.80 |
| 35 | YP | 59 | LEU | N-CA-C | -7.26 | 91.40 | 111.00 |
| 35 | RP | 59 | LEU | N-CA-C | -7.26 | 91.41 | 111.00 |
| 25 | YA | 1950 | G | C8-N9-C4 | -7.25 | 103.50 | 106.40 |
| 25 | YA | 912 | C | N1-C2-O2 | 7.23 | 123.24 | 118.90 |
| 1 | XA | 328 | C | C6-N1-C2 | -7.23 | 117.41 | 120.30 |
| 25 | YA | 242 | G | P-O3'-C3' | 7.22 | 128.36 | 119.70 |
| 25 | RA | 1929 | G | OP1-P-O3' | 7.21 | 121.07 | 105.20 |
| 25 | RA | 2712(A) | A | C8-N9-C4 | -7.21 | 102.92 | 105.80 |
| 25 | YA | 2447 | G | C8-N9-C1' | 7.18 | 136.34 | 127.00 |
| 25 | YA | 761 | A | N9-C4-C5 | -7.16 | 102.94 | 105.80 |
| 22 | QV | 17 | C | N1-C2-O2 | 7.14 | 123.18 | 118.90 |
| 25 | RA | 1929 | G | N1-C6-O6 | 7.12 | 124.17 | 119.90 |
| 25 | YA | 140 | A | C8-N9-C4 | -7.10 | 102.96 | 105.80 |
| 1 | XA | 1322 | C | N1-C2-O2 | 7.09 | 123.15 | 118.90 |
| 1 | QA | 1158 | C | C2-N1-C1' | 7.08 | 126.58 | 118.80 |
| 36 | RQ | 81 | VAL | N-CA-C | 7.08 | 130.11 | 111.00 |
| 25 | YA | 528 | A | C2-N3-C4 | -7.08 | 107.06 | 110.60 |
| 36 | YQ | 81 | VAL | N-CA-C | 7.07 | 130.08 | 111.00 |
| 25 | RA | 1396 | U | C2-N1-C1' | 7.06 | 126.17 | 117.70 |
| 25 | YA | 1396 | U | N1-C2-O2 | 7.05 | 127.74 | 122.80 |
| 25 | RA | 2031 | A | O4'-C1'-N9 | 7.00 | 113.80 | 108.20 |
| 25 | RA | 2712(A) | A | N7-C8-N9 | 6.99 | 117.30 | 113.80 |
| 25 | RA | 1955 | U | P-O3'-C3' | 6.97 | 128.06 | 119.70 |
| 1 | QA | 723 | U | C2-N1-C1' | 6.96 | 126.05 | 117.70 |
| 1 | XA | 1301 | U | N1-C2-O2 | 6.94 | 127.66 | 122.80 |
| 25 | RA | 205 | G | P-O3'-C3' | 6.93 | 128.02 | 119.70 |
| 25 | YA | 2447 | G | N3-C4-N9 | -6.93 | 121.84 | 126.00 |
| 25 | YA | 1130 | U | P-O3'-C3' | 6.92 | 128.00 | 119.70 |
| 25 | YA | 140 | A | N7-C8-N9 | 6.91 | 117.26 | 113.80 |
| 1 | QA | 372 | C | C2-N1-C1' | 6.90 | 126.39 | 118.80 |
| 25 | YA | 1496 | A | C8-N9-C4 | -6.89 | 103.04 | 105.80 |
| 1 | QA | 1301 | U | N3-C2-O2 | -6.87 | 117.39 | 122.20 |
| 25 | YA | 828 | U | N3-C2-O2 | -6.85 | 117.40 | 122.20 |
| 25 | YA | 1929 | G | N9-C4-C5 | -6.84 | 102.67 | 105.40 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|--------|------|------------|-------|-------------|----------|
| 1 | QA | 328 | C | N3-C2-O2 | -6.82 | 117.13 | 121.90 |
| 25 | YA | 2032 | G | N3-C4-C5 | 6.81 | 132.00 | 128.60 |
| 25 | YA | 2060 | A | P-O3'-C3' | 6.80 | 127.87 | 119.70 |
| 25 | YA | 2573 | C | N1-C2-O2 | 6.78 | 122.97 | 118.90 |
| 25 | YA | 1396 | U | N3-C2-O2 | -6.77 | 117.46 | 122.20 |
| 1 | XA | 792 | A | P-O3'-C3' | 6.77 | 127.82 | 119.70 |
| 25 | RA | 2702 | U | C2-N1-C1' | 6.71 | 125.75 | 117.70 |
| 25 | RA | 1786 | A | N7-C8-N9 | 6.71 | 117.15 | 113.80 |
| 25 | RA | 1130 | U | P-O3'-C3' | 6.70 | 127.74 | 119.70 |
| 55 | Z6 | 74 | C | N1-C2-O2 | 6.70 | 122.92 | 118.90 |
| 25 | RA | 165 | U | N1-C2-O2 | 6.69 | 127.48 | 122.80 |
| 25 | RA | 2307 | G | O4'-C1'-N9 | 6.68 | 113.55 | 108.20 |
| 55 | Z8 | 74 | C | N1-C2-O2 | 6.68 | 122.91 | 118.90 |
| 25 | RA | 1396 | U | N3-C2-O2 | -6.65 | 117.55 | 122.20 |
| 25 | YA | 2447 | G | C4-N9-C1' | -6.64 | 117.86 | 126.50 |
| 25 | RA | 676 | A | O4'-C1'-N9 | 6.64 | 113.51 | 108.20 |
| 25 | RA | 512 | G | N3-C4-N9 | -6.61 | 122.03 | 126.00 |
| 25 | RA | 512 | G | C8-N9-C1' | 6.61 | 135.59 | 127.00 |
| 25 | RA | 2681 | C | P-O3'-C3' | 6.60 | 127.62 | 119.70 |
| 1 | XA | 792 | A | N1-C6-N6 | 6.59 | 122.55 | 118.60 |
| 1 | XA | 1053 | G | C4-N9-C1' | -6.59 | 117.94 | 126.50 |
| 25 | YA | 1300 | U | P-O3'-C3' | 6.58 | 127.59 | 119.70 |
| 25 | YA | 1496 | A | N7-C8-N9 | 6.56 | 117.08 | 113.80 |
| 25 | YA | 2779 | U | O4'-C1'-N1 | 6.56 | 113.45 | 108.20 |
| 27 | RD | 131 | LEU | CA-CB-CG | 6.55 | 130.38 | 115.30 |
| 27 | YD | 131 | LEU | CA-CB-CG | 6.53 | 130.32 | 115.30 |
| 25 | YA | 2681 | C | OP2-P-O3' | 6.53 | 119.56 | 105.20 |
| 12 | XL | 48 | PRO | CA-N-CD | -6.53 | 102.36 | 111.50 |
| 1 | QA | 328 | C | C6-N1-C2 | -6.52 | 117.69 | 120.30 |
| 1 | XA | 186(A) | C | C6-N1-C2 | -6.51 | 117.70 | 120.30 |
| 25 | YA | 1554 | A | P-O3'-C3' | 6.51 | 127.51 | 119.70 |
| 25 | YA | 512 | G | O4'-C1'-N9 | 6.48 | 113.39 | 108.20 |
| 12 | QL | 48 | PRO | CA-N-CD | -6.46 | 102.46 | 111.50 |
| 25 | YA | 2375 | G | N1-C6-O6 | 6.45 | 123.77 | 119.90 |
| 1 | XA | 372 | C | C6-N1-C1' | -6.44 | 113.08 | 120.80 |
| 25 | RA | 1795 | C | C6-N1-C2 | -6.43 | 117.73 | 120.30 |
| 25 | RA | 2584 | U | N3-C2-O2 | -6.43 | 117.70 | 122.20 |
| 25 | RA | 1929 | G | N9-C4-C5 | -6.42 | 102.83 | 105.40 |
| 25 | YA | 676 | A | C5-N7-C8 | -6.41 | 100.69 | 103.90 |
| 25 | YA | 530 | G | N3-C2-N2 | 6.40 | 124.38 | 119.90 |
| 1 | XA | 913 | A | P-O3'-C3' | 6.39 | 127.36 | 119.70 |
| 25 | RA | 2490 | G | C4-N9-C1' | 6.38 | 134.79 | 126.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 25 | RA | 1372 | U | N3-C2-O2 | -6.36 | 117.75 | 122.20 |
| 1 | XA | 1301 | U | C6-N1-C1' | -6.36 | 112.30 | 121.20 |
| 25 | YA | 1332 | G | C4-N9-C1' | 6.36 | 134.77 | 126.50 |
| 1 | QA | 328 | C | C5-C6-N1 | 6.36 | 124.18 | 121.00 |
| 25 | YA | 676 | A | C2-N3-C4 | -6.34 | 107.43 | 110.60 |
| 25 | RA | 2584 | U | C6-N1-C2 | -6.33 | 117.20 | 121.00 |
| 1 | XA | 792 | A | C4-C5-N7 | 6.33 | 113.86 | 110.70 |
| 25 | RA | 1332 | G | C6-C5-N7 | -6.32 | 126.61 | 130.40 |
| 22 | QV | 17 | C | C6-N1-C2 | -6.32 | 117.77 | 120.30 |
| 1 | XA | 1336 | C | C6-N1-C1' | -6.30 | 113.24 | 120.80 |
| 25 | YA | 1799 | G | P-O3'-C3' | 6.30 | 127.26 | 119.70 |
| 25 | YA | 2682 | U | OP1-P-OP2 | -6.30 | 110.15 | 119.60 |
| 25 | YA | 2832 | U | P-O3'-C3' | 6.30 | 127.26 | 119.70 |
| 25 | YA | 1950 | G | C8-N9-C1' | -6.29 | 118.82 | 127.00 |
| 1 | XA | 372 | C | N1-C2-O2 | 6.29 | 122.67 | 118.90 |
| 25 | YA | 205 | G | O4'-C1'-N9 | 6.29 | 113.23 | 108.20 |
| 25 | RA | 2688 | U | N3-C2-O2 | -6.29 | 117.80 | 122.20 |
| 25 | RA | 465 | G | C8-N9-C4 | -6.29 | 103.89 | 106.40 |
| 1 | XA | 960 | U | C2-N1-C1' | 6.28 | 125.23 | 117.70 |
| 25 | YA | 2419 | U | OP1-P-O3' | 6.28 | 119.01 | 105.20 |
| 25 | YA | 783 | A | C4-C5-N7 | 6.27 | 113.83 | 110.70 |
| 25 | YA | 2584 | U | C5-C4-O4 | 6.27 | 129.66 | 125.90 |
| 25 | YA | 1332 | G | C8-N9-C1' | -6.27 | 118.85 | 127.00 |
| 1 | XA | 1054 | C | N1-C2-O2 | 6.25 | 122.65 | 118.90 |
| 25 | YA | 2311 | A | C2-N3-C4 | -6.25 | 107.47 | 110.60 |
| 25 | RA | 1543 | A | P-O3'-C3' | 6.25 | 127.19 | 119.70 |
| 1 | XA | 1224 | G | P-O3'-C3' | 6.24 | 127.19 | 119.70 |
| 25 | YA | 1253 | A | C5-C6-N6 | -6.23 | 118.72 | 123.70 |
| 1 | XA | 372 | C | C5-C6-N1 | 6.22 | 124.11 | 121.00 |
| 25 | YA | 1930 | G | C6-C5-N7 | 6.21 | 134.12 | 130.40 |
| 25 | RA | 165 | U | N3-C2-O2 | -6.20 | 117.86 | 122.20 |
| 25 | RA | 828 | U | C2-N1-C1' | 6.20 | 125.14 | 117.70 |
| 25 | RA | 2420 | C | O5'-P-OP1 | -6.19 | 100.13 | 105.70 |
| 25 | YA | 1314 | C | C6-N1-C2 | -6.19 | 117.82 | 120.30 |
| 25 | RA | 2395 | C | C5-C6-N1 | 6.17 | 124.09 | 121.00 |
| 25 | YA | 1253 | A | C4-C5-N7 | 6.17 | 113.79 | 110.70 |
| 25 | RA | 1781 | C | C2-N1-C1' | 6.17 | 125.58 | 118.80 |
| 25 | RA | 372 | G | C4-N9-C1' | -6.16 | 118.49 | 126.50 |
| 1 | XA | 701 | C | P-O3'-C3' | 6.15 | 127.08 | 119.70 |
| 1 | XA | 1158 | C | N1-C2-O2 | 6.15 | 122.59 | 118.90 |
| 1 | XA | 754 | C | C2-N1-C1' | 6.13 | 125.55 | 118.80 |
| 1 | QA | 1530 | G | OP2-P-O3' | 6.12 | 118.67 | 105.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | XA | 1322 | C | C6-N1-C1' | -6.10 | 113.48 | 120.80 |
| 1 | XA | 1158 | C | C6-N1-C2 | -6.09 | 117.86 | 120.30 |
| 25 | RA | 676 | A | N7-C8-N9 | 6.08 | 116.84 | 113.80 |
| 25 | YA | 1332 | G | C6-C5-N7 | -6.08 | 126.75 | 130.40 |
| 25 | RA | 1781 | C | C6-N1-C1' | -6.07 | 113.52 | 120.80 |
| 25 | RA | 1653 | G | P-O3'-C3' | 6.06 | 126.97 | 119.70 |
| 25 | YA | 2702 | U | O4'-C1'-N1 | 6.05 | 113.04 | 108.20 |
| 37 | YR | 9 | LYS | N-CA-C | -6.03 | 94.71 | 111.00 |
| 37 | RR | 9 | LYS | N-CA-C | -6.03 | 94.72 | 111.00 |
| 1 | QA | 1158 | C | N1-C2-O2 | 6.02 | 122.51 | 118.90 |
| 1 | QA | 1322 | C | C6-N1-C1' | -6.02 | 113.58 | 120.80 |
| 25 | RA | 685 | A | C8-N9-C4 | -6.02 | 103.39 | 105.80 |
| 25 | YA | 1247 | A | C8-N9-C4 | 6.01 | 108.20 | 105.80 |
| 25 | RA | 512 | G | C4-N9-C1' | -6.01 | 118.69 | 126.50 |
| 25 | RA | 621 | A | O4'-C1'-N9 | 6.01 | 113.01 | 108.20 |
| 26 | RB | 44 | G | C4-N9-C1' | -6.01 | 118.69 | 126.50 |
| 25 | RA | 2307 | G | C4-N9-C1' | 6.01 | 134.31 | 126.50 |
| 25 | YA | 1786 | A | N7-C8-N9 | 6.00 | 116.80 | 113.80 |
| 1 | XA | 1054 | C | C2-N1-C1' | 5.99 | 125.39 | 118.80 |
| 25 | YA | 1929 | G | N3-C4-N9 | 5.99 | 129.59 | 126.00 |
| 25 | RA | 1929 | G | N3-C4-N9 | 5.99 | 129.59 | 126.00 |
| 25 | YA | 1607 | C | N1-C2-O2 | 5.97 | 122.48 | 118.90 |
| 1 | QA | 871 | U | P-O3'-C3' | 5.97 | 126.86 | 119.70 |
| 25 | YA | 1937 | A | P-O3'-C3' | 5.97 | 126.86 | 119.70 |
| 25 | YA | 2439 | A | P-O3'-C3' | 5.97 | 126.86 | 119.70 |
| 25 | RA | 2584 | U | C2-N1-C1' | 5.96 | 124.85 | 117.70 |
| 1 | XA | 713 | G | C5-C6-O6 | 5.96 | 132.18 | 128.60 |
| 25 | YA | 59 | U | N3-C2-O2 | -5.94 | 118.04 | 122.20 |
| 25 | YA | 912 | C | C2-N1-C1' | 5.94 | 125.33 | 118.80 |
| 1 | QA | 971 | G | O4'-C1'-N9 | 5.93 | 112.94 | 108.20 |
| 25 | RA | 1980 | G | P-O3'-C3' | 5.93 | 126.81 | 119.70 |
| 25 | RA | 856 | C | C5-C6-N1 | 5.93 | 123.96 | 121.00 |
| 25 | YA | 1653 | G | P-O3'-C3' | 5.92 | 126.81 | 119.70 |
| 1 | QA | 1065 | U | P-O3'-C3' | 5.92 | 126.80 | 119.70 |
| 25 | YA | 142 | G | C4-N9-C1' | -5.91 | 118.82 | 126.50 |
| 25 | YA | 2848 | G | P-O3'-C3' | 5.90 | 126.78 | 119.70 |
| 22 | QV | 17 | C | C5-C6-N1 | 5.88 | 123.94 | 121.00 |
| 25 | YA | 652 | C | N1-C2-O2 | 5.87 | 122.42 | 118.90 |
| 31 | YH | 125 | VAL | C-N-CD | -5.87 | 107.68 | 120.60 |
| 25 | YA | 298 | G | C5-N7-C8 | -5.86 | 101.37 | 104.30 |
| 1 | QA | 121 | C | N1-C2-N3 | 5.86 | 123.30 | 119.20 |
| 25 | YA | 2429 | G | OP2-P-O3' | 5.86 | 118.09 | 105.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 25 | RA | 2439 | A | C8-N9-C4 | -5.86 | 103.46 | 105.80 |
| 25 | RA | 2439 | A | P-O3'-C3' | 5.85 | 126.72 | 119.70 |
| 1 | XA | 1054 | C | C6-N1-C1' | -5.85 | 113.78 | 120.80 |
| 12 | QL | 119 | LYS | N-CA-C | -5.84 | 95.22 | 111.00 |
| 28 | RE | 58 | ARG | N-CA-C | -5.84 | 95.23 | 111.00 |
| 25 | RA | 1332 | G | C4-N9-C1' | 5.84 | 134.09 | 126.50 |
| 25 | RA | 2702 | U | N3-C2-O2 | -5.84 | 118.11 | 122.20 |
| 31 | RH | 125 | VAL | C-N-CD | -5.84 | 107.76 | 120.60 |
| 1 | QA | 328 | C | C6-N1-C1' | -5.84 | 113.80 | 120.80 |
| 25 | RA | 624 | C | C2-N1-C1' | 5.83 | 125.22 | 118.80 |
| 25 | RA | 1505 | C | C2-N1-C1' | 5.83 | 125.21 | 118.80 |
| 35 | RP | 26 | GLY | N-CA-C | -5.83 | 98.53 | 113.10 |
| 22 | XV | 17 | C | C6-N1-C2 | -5.83 | 117.97 | 120.30 |
| 26 | YB | 31 | C | N1-C2-O2 | 5.83 | 122.39 | 118.90 |
| 25 | RA | 512 | G | O4'-C1'-N9 | 5.82 | 112.86 | 108.20 |
| 25 | RA | 685 | A | P-O3'-C3' | 5.82 | 126.69 | 119.70 |
| 25 | YA | 1950 | G | C6-C5-N7 | -5.82 | 126.91 | 130.40 |
| 25 | RA | 306 | U | O5'-P-OP1 | 5.82 | 117.68 | 110.70 |
| 28 | YE | 58 | ARG | N-CA-C | -5.82 | 95.29 | 111.00 |
| 25 | RA | 1694 | C | P-O3'-C3' | 5.81 | 126.68 | 119.70 |
| 35 | YP | 26 | GLY | N-CA-C | -5.81 | 98.58 | 113.10 |
| 12 | XL | 119 | LYS | N-CA-C | -5.80 | 95.33 | 111.00 |
| 1 | QA | 1069 | C | C6-N1-C2 | -5.80 | 117.98 | 120.30 |
| 25 | RA | 685 | A | N9-C4-C5 | 5.79 | 108.12 | 105.80 |
| 25 | YA | 2032 | G | C4-C5-N7 | 5.79 | 113.12 | 110.80 |
| 25 | RA | 2032 | G | C5-N7-C8 | -5.79 | 101.41 | 104.30 |
| 25 | RA | 74 | A | N1-C6-N6 | 5.79 | 122.07 | 118.60 |
| 25 | YA | 1359 | A | C5-C6-N6 | -5.78 | 119.07 | 123.70 |
| 25 | YA | 2584 | U | N1-C2-N3 | 5.78 | 118.37 | 114.90 |
| 25 | YA | 2573 | C | C2-N1-C1' | 5.78 | 125.16 | 118.80 |
| 25 | RA | 1929 | G | C5-N7-C8 | -5.78 | 101.41 | 104.30 |
| 25 | RA | 2205 | C | C2-N1-C1' | 5.78 | 125.16 | 118.80 |
| 25 | YA | 2032 | G | N1-C6-O6 | 5.78 | 123.36 | 119.90 |
| 25 | YA | 828 | U | C2-N1-C1' | 5.77 | 124.62 | 117.70 |
| 1 | QA | 687 | A | P-O3'-C3' | 5.76 | 126.61 | 119.70 |
| 25 | RA | 242 | G | P-O3'-C3' | 5.76 | 126.61 | 119.70 |
| 25 | RA | 1505 | C | N1-C2-O2 | 5.76 | 122.36 | 118.90 |
| 1 | QA | 1200 | C | P-O3'-C3' | 5.75 | 126.60 | 119.70 |
| 48 | Y2 | 16 | LEU | N-CA-C | -5.75 | 95.49 | 111.00 |
| 1 | QA | 701 | C | P-O3'-C3' | 5.74 | 126.59 | 119.70 |
| 48 | R2 | 16 | LEU | N-CA-C | -5.74 | 95.50 | 111.00 |
| 1 | QA | 974 | A | O4'-C1'-N9 | 5.73 | 112.79 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|---------|------|------------|-------|-------------|----------|
| 25 | RA | 1786 | A | C5-N7-C8 | -5.73 | 101.03 | 103.90 |
| 1 | QA | 372 | C | C6-N1-C2 | -5.73 | 118.01 | 120.30 |
| 25 | YA | 1929 | G | N1-C6-O6 | 5.72 | 123.33 | 119.90 |
| 25 | YA | 1881 | C | C2-N1-C1' | 5.71 | 125.08 | 118.80 |
| 19 | XS | 6 | LYS | N-CA-C | -5.71 | 95.59 | 111.00 |
| 25 | RA | 856 | C | C6-N1-C2 | -5.71 | 118.02 | 120.30 |
| 25 | YA | 2712(A) | A | C8-N9-C4 | -5.70 | 103.52 | 105.80 |
| 25 | YA | 2406 | U | O5'-P-OP2 | -5.70 | 100.57 | 105.70 |
| 19 | QS | 6 | LYS | N-CA-C | -5.70 | 95.61 | 111.00 |
| 25 | RA | 2326 | C | C6-N1-C2 | -5.69 | 118.02 | 120.30 |
| 1 | XA | 1336 | C | N3-C2-O2 | -5.69 | 117.92 | 121.90 |
| 25 | RA | 1332 | G | C8-N9-C1' | -5.68 | 119.61 | 127.00 |
| 25 | YA | 1359 | A | N9-C4-C5 | -5.68 | 103.53 | 105.80 |
| 25 | RA | 383 | U | N1-C2-O2 | 5.68 | 126.77 | 122.80 |
| 25 | RA | 1372 | U | C2-N1-C1' | 5.67 | 124.51 | 117.70 |
| 1 | XA | 754 | C | N1-C2-O2 | 5.67 | 122.30 | 118.90 |
| 1 | QA | 1200 | C | OP2-P-O3' | 5.67 | 117.66 | 105.20 |
| 1 | XA | 753 | A | P-O3'-C3' | 5.67 | 126.50 | 119.70 |
| 14 | QN | 40 | CYS | CA-CB-SG | 5.66 | 124.18 | 114.00 |
| 25 | RA | 650 | C | C6-N1-C2 | -5.65 | 118.04 | 120.30 |
| 26 | RB | 37 | C | C6-N1-C2 | -5.65 | 118.04 | 120.30 |
| 25 | YA | 2544 | G | N1-C6-O6 | 5.65 | 123.29 | 119.90 |
| 1 | XA | 1094 | G | OP2-P-O3' | 5.65 | 117.62 | 105.20 |
| 25 | RA | 1197 | G | C5-C6-O6 | 5.65 | 131.99 | 128.60 |
| 14 | XN | 40 | CYS | CA-CB-SG | 5.63 | 124.14 | 114.00 |
| 1 | QA | 913 | A | P-O3'-C3' | 5.63 | 126.45 | 119.70 |
| 25 | RA | 752 | A | C8-N9-C4 | -5.63 | 103.55 | 105.80 |
| 25 | YA | 2573 | C | C6-N1-C1' | -5.62 | 114.06 | 120.80 |
| 25 | YA | 512 | G | C8-N9-C1' | 5.62 | 134.30 | 127.00 |
| 25 | YA | 1830 | C | C5-C6-N1 | 5.62 | 123.81 | 121.00 |
| 25 | RA | 1078 | U | P-O3'-C3' | 5.61 | 126.43 | 119.70 |
| 25 | YA | 860 | U | N3-C2-O2 | -5.60 | 118.28 | 122.20 |
| 25 | YA | 828 | U | N1-C2-O2 | 5.60 | 126.72 | 122.80 |
| 1 | XA | 812 | C | P-O3'-C3' | 5.60 | 126.42 | 119.70 |
| 25 | RA | 74 | A | N7-C8-N9 | 5.59 | 116.59 | 113.80 |
| 25 | RA | 372 | G | C8-N9-C1' | 5.59 | 134.26 | 127.00 |
| 25 | RA | 2335 | A | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 1 | XA | 1094 | G | P-O3'-C3' | 5.58 | 126.39 | 119.70 |
| 25 | RA | 1941 | C | C6-N1-C2 | -5.58 | 118.07 | 120.30 |
| 25 | YA | 2198 | A | P-O3'-C3' | 5.58 | 126.39 | 119.70 |
| 25 | YA | 1979 | C | C6-N1-C2 | -5.57 | 118.07 | 120.30 |
| 25 | YA | 792 | G | N3-C4-C5 | -5.57 | 125.81 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|--------|------|-------------|-------|-------------|----------|
| 25 | RA | 205 | G | OP2-P-O3' | 5.57 | 117.44 | 105.20 |
| 25 | YA | 372 | G | OP2-P-O3' | 5.56 | 117.43 | 105.20 |
| 25 | YA | 1193 | G | C8-N9-C4 | 5.56 | 108.62 | 106.40 |
| 50 | R4 | 39 | CYS | N-CA-C | -5.55 | 96.00 | 111.00 |
| 25 | YA | 974(A) | C | P-O3'-C3' | 5.54 | 126.35 | 119.70 |
| 33 | YN | 114 | ARG | N-CA-C | -5.54 | 96.03 | 111.00 |
| 1 | QA | 372 | C | N1-C2-O2 | 5.54 | 122.22 | 118.90 |
| 25 | RA | 2776 | A | C8-N9-C4 | -5.54 | 103.58 | 105.80 |
| 1 | XA | 701 | C | OP2-P-O3' | 5.54 | 117.38 | 105.20 |
| 1 | XA | 792 | A | C6-C5-N7 | -5.54 | 128.43 | 132.30 |
| 1 | QA | 372 | C | C5-C6-N1 | 5.53 | 123.77 | 121.00 |
| 25 | RA | 1914 | C | N1-C2-O2 | 5.53 | 122.22 | 118.90 |
| 25 | RA | 1992 | G | C8-N9-C4 | -5.53 | 104.19 | 106.40 |
| 25 | YA | 2318 | G | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 1 | XA | 1053 | G | C8-N9-C1' | 5.53 | 134.19 | 127.00 |
| 25 | RA | 1411 | C | N1-C2-O2 | 5.53 | 122.22 | 118.90 |
| 25 | YA | 1130 | U | C6-N1-C2 | -5.53 | 117.69 | 121.00 |
| 25 | YA | 796 | C | C6-N1-C2 | 5.52 | 122.51 | 120.30 |
| 1 | QA | 690 | G | O4'-C1'-N9 | 5.52 | 112.62 | 108.20 |
| 33 | RN | 114 | ARG | N-CA-C | -5.52 | 96.09 | 111.00 |
| 50 | Y4 | 39 | CYS | N-CA-C | -5.52 | 96.10 | 111.00 |
| 25 | YA | 1786 | A | C5-N7-C8 | -5.52 | 101.14 | 103.90 |
| 1 | XA | 690 | G | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 25 | RA | 372 | G | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 1 | XA | 328 | C | P-O3'-C3' | 5.50 | 126.30 | 119.70 |
| 1 | QA | 1322 | C | C5-C6-N1 | 5.49 | 123.75 | 121.00 |
| 25 | RA | 475 | U | C2-N1-C1' | 5.49 | 124.29 | 117.70 |
| 25 | YA | 287 | C | C6-N1-C2 | 5.49 | 122.49 | 120.30 |
| 25 | RA | 828 | U | N1-C2-O2 | 5.48 | 126.64 | 122.80 |
| 25 | RA | 2585 | U | P-O3'-C3' | 5.48 | 126.28 | 119.70 |
| 26 | RB | 42 | C | C5-C4-N4 | -5.48 | 116.36 | 120.20 |
| 25 | YA | 1314 | C | C2-N1-C1' | 5.48 | 124.83 | 118.80 |
| 1 | XA | 481 | G | P-O3'-C3' | 5.48 | 126.28 | 119.70 |
| 25 | RA | 1937 | A | C8-N9-C4 | 5.47 | 107.99 | 105.80 |
| 25 | YA | 535 | C | C6-N1-C2 | -5.47 | 118.11 | 120.30 |
| 25 | YA | 1929 | G | O4'-C1'-N9 | -5.47 | 103.82 | 108.20 |
| 25 | YA | 2751 | G | C3'-C2'-C1' | 5.47 | 105.88 | 101.50 |
| 1 | QA | 792 | A | P-O3'-C3' | 5.47 | 126.26 | 119.70 |
| 25 | RA | 912 | C | C6-N1-C2 | -5.47 | 118.11 | 120.30 |
| 26 | YB | 43 | C | C2-N1-C1' | 5.47 | 124.81 | 118.80 |
| 31 | YH | 127 | GLU | N-CA-C | -5.47 | 96.24 | 111.00 |
| 25 | YA | 1929 | G | C5-C6-O6 | -5.46 | 125.32 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|--------|------|------------|-------|-------------|----------|
| 1 | XA | 703 | G | P-O3'-C3' | 5.46 | 126.26 | 119.70 |
| 1 | XA | 871 | U | P-O3'-C3' | 5.46 | 126.25 | 119.70 |
| 1 | QA | 1301 | U | C6-N1-C1' | -5.45 | 113.57 | 121.20 |
| 25 | RA | 1786 | A | C8-N9-C4 | -5.45 | 103.62 | 105.80 |
| 1 | XA | 687 | A | P-O3'-C3' | 5.45 | 126.25 | 119.70 |
| 25 | YA | 1253 | A | N9-C4-C5 | -5.45 | 103.62 | 105.80 |
| 26 | RB | 43 | C | N3-C2-O2 | -5.45 | 118.08 | 121.90 |
| 35 | RP | 25 | SER | N-CA-C | -5.45 | 96.29 | 111.00 |
| 27 | RD | 251 | GLY | N-CA-C | 5.44 | 126.70 | 113.10 |
| 25 | YA | 1050 | A | N7-C8-N9 | 5.44 | 116.52 | 113.80 |
| 4 | QD | 12 | CYS | CA-CB-SG | 5.44 | 123.79 | 114.00 |
| 25 | YA | 2584 | U | C6-N1-C2 | -5.44 | 117.74 | 121.00 |
| 25 | YA | 2588 | G | C4-C5-N7 | 5.44 | 112.97 | 110.80 |
| 25 | YA | 974(A) | C | N3-C2-O2 | -5.43 | 118.10 | 121.90 |
| 27 | YD | 251 | GLY | N-CA-C | 5.43 | 126.67 | 113.10 |
| 25 | RA | 593 | G | O4'-C1'-N9 | 5.43 | 112.54 | 108.20 |
| 25 | YA | 487 | C | N1-C2-O2 | 5.42 | 122.15 | 118.90 |
| 1 | XA | 971 | G | C4-N9-C1' | -5.42 | 119.46 | 126.50 |
| 35 | YP | 25 | SER | N-CA-C | -5.42 | 96.37 | 111.00 |
| 1 | QA | 533 | A | P-O3'-C3' | 5.42 | 126.20 | 119.70 |
| 31 | RH | 127 | GLU | N-CA-C | -5.42 | 96.38 | 111.00 |
| 25 | YA | 676 | A | O4'-C1'-N9 | 5.42 | 112.53 | 108.20 |
| 4 | XD | 12 | CYS | CA-CB-SG | 5.41 | 123.74 | 114.00 |
| 25 | RA | 702 | G | C4-N9-C1' | 5.41 | 133.53 | 126.50 |
| 25 | RA | 2326 | C | C5-C6-N1 | 5.41 | 123.70 | 121.00 |
| 1 | XA | 1158 | C | C6-N1-C1' | -5.41 | 114.31 | 120.80 |
| 25 | RA | 1899 | G | C6-C5-N7 | -5.40 | 127.16 | 130.40 |
| 32 | RI | 135 | GLU | N-CA-C | 5.39 | 125.56 | 111.00 |
| 1 | XA | 792 | A | C2-N3-C4 | -5.39 | 107.90 | 110.60 |
| 32 | YI | 135 | GLU | N-CA-C | 5.39 | 125.56 | 111.00 |
| 25 | RA | 1786 | A | C6-C5-N7 | -5.39 | 128.53 | 132.30 |
| 25 | YA | 1819 | A | P-O3'-C3' | 5.39 | 126.17 | 119.70 |
| 1 | XA | 893 | C | N1-C2-O2 | 5.39 | 122.13 | 118.90 |
| 27 | YD | 111 | LEU | CA-CB-CG | 5.38 | 127.68 | 115.30 |
| 25 | RA | 270(Z) | U | O4'-C1'-N1 | 5.38 | 112.50 | 108.20 |
| 25 | RA | 1899 | G | N3-C4-N9 | 5.38 | 129.23 | 126.00 |
| 31 | RH | 100 | GLY | N-CA-C | -5.38 | 99.66 | 113.10 |
| 31 | YH | 100 | GLY | N-CA-C | -5.37 | 99.67 | 113.10 |
| 25 | RA | 1781 | C | O4'-C1'-N1 | 5.37 | 112.49 | 108.20 |
| 25 | RA | 1496 | A | N7-C8-N9 | 5.36 | 116.48 | 113.80 |
| 1 | XA | 1003 | G | N9-C1'-C2' | -5.36 | 106.11 | 112.00 |
| 1 | XA | 428 | G | P-O3'-C3' | 5.36 | 126.13 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 25 | YA | 265 | A | C5-C6-N1 | 5.36 | 120.38 | 117.70 |
| 25 | RA | 1379 | A | O4'-C1'-N9 | 5.35 | 112.48 | 108.20 |
| 27 | RD | 111 | LEU | CA-CB-CG | 5.35 | 127.61 | 115.30 |
| 25 | RA | 787 | U | O5'-P-OP2 | -5.35 | 100.89 | 105.70 |
| 22 | XV | 17 | C | N3-C2-O2 | -5.35 | 118.16 | 121.90 |
| 25 | YA | 1936 | A | N1-C6-N6 | 5.34 | 121.81 | 118.60 |
| 25 | RA | 27 | G | C4-N9-C1' | -5.34 | 119.56 | 126.50 |
| 25 | RA | 226 | G | P-O3'-C3' | 5.34 | 126.11 | 119.70 |
| 25 | RA | 2689 | U | P-O3'-C3' | 5.34 | 126.11 | 119.70 |
| 1 | XA | 1302 | U | C6-N1-C1' | -5.34 | 113.72 | 121.20 |
| 1 | QA | 882 | C | N1-C2-O2 | 5.34 | 122.10 | 118.90 |
| 1 | XA | 1158 | C | C5-C6-N1 | 5.34 | 123.67 | 121.00 |
| 25 | RA | 74 | A | C8-N9-C4 | -5.33 | 103.67 | 105.80 |
| 25 | YA | 372 | G | P-O3'-C3' | 5.33 | 126.10 | 119.70 |
| 25 | YA | 2032 | G | C5-N7-C8 | -5.33 | 101.63 | 104.30 |
| 1 | XA | 1528 | U | P-O3'-C3' | 5.32 | 126.08 | 119.70 |
| 22 | XV | 17 | C | C5-C6-N1 | 5.32 | 123.66 | 121.00 |
| 25 | YA | 1319 | G | N7-C8-N9 | 5.31 | 115.76 | 113.10 |
| 25 | RA | 2782 | G | N3-C4-N9 | 5.31 | 129.19 | 126.00 |
| 25 | YA | 140 | A | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 25 | YA | 848 | G | N3-C4-N9 | 5.31 | 129.19 | 126.00 |
| 54 | R8 | 36 | LYS | N-CA-C | -5.31 | 96.66 | 111.00 |
| 25 | RA | 1929 | G | N7-C8-N9 | 5.31 | 115.75 | 113.10 |
| 25 | RA | 1992 | G | N3-C4-C5 | -5.31 | 125.95 | 128.60 |
| 1 | XA | 1503 | A | P-O3'-C3' | 5.30 | 126.07 | 119.70 |
| 25 | YA | 1558 | A | P-O3'-C3' | 5.30 | 126.07 | 119.70 |
| 25 | YA | 1694 | C | P-O3'-C3' | 5.30 | 126.06 | 119.70 |
| 54 | Y8 | 36 | LYS | N-CA-C | -5.30 | 96.68 | 111.00 |
| 1 | XA | 1302 | U | N1-C2-O2 | 5.30 | 126.51 | 122.80 |
| 25 | YA | 704 | G | P-O3'-C3' | 5.28 | 126.04 | 119.70 |
| 25 | YA | 1950 | G | C5-N7-C8 | -5.28 | 101.66 | 104.30 |
| 25 | YA | 205 | G | P-O3'-C3' | 5.28 | 126.04 | 119.70 |
| 25 | YA | 1210 | A | N7-C8-N9 | 5.28 | 116.44 | 113.80 |
| 1 | XA | 792 | A | C5-N7-C8 | -5.28 | 101.26 | 103.90 |
| 1 | XA | 1200 | C | P-O3'-C3' | 5.27 | 126.03 | 119.70 |
| 25 | YA | 335 | C | C6-N1-C2 | -5.27 | 118.19 | 120.30 |
| 1 | XA | 1374 | A | O4'-C1'-N9 | 5.27 | 112.41 | 108.20 |
| 25 | YA | 205 | G | OP2-P-O3' | 5.26 | 116.78 | 105.20 |
| 25 | RA | 1558 | A | P-O3'-C3' | 5.26 | 126.02 | 119.70 |
| 25 | YA | 1332 | G | N3-C4-N9 | 5.26 | 129.16 | 126.00 |
| 25 | YA | 2375 | G | C5-C6-O6 | -5.26 | 125.44 | 128.60 |
| 25 | YA | 2779 | U | C2-N1-C1' | 5.26 | 124.01 | 117.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 25 | RA | 372 | G | OP2-P-O3' | 5.25 | 116.76 | 105.20 |
| 25 | YA | 404 | C | P-O3'-C3' | 5.25 | 126.00 | 119.70 |
| 38 | RS | 110 | LEU | CA-CB-CG | 5.25 | 127.38 | 115.30 |
| 25 | YA | 2254 | C | N1-C2-O2 | -5.25 | 115.75 | 118.90 |
| 25 | YA | 1218 | C | N1-C2-O2 | 5.25 | 122.05 | 118.90 |
| 25 | YA | 624 | C | N1-C2-O2 | 5.25 | 122.05 | 118.90 |
| 25 | YA | 1204 | A | O4'-C1'-N9 | 5.24 | 112.39 | 108.20 |
| 25 | YA | 1407 | C | N1-C2-O2 | 5.24 | 122.05 | 118.90 |
| 1 | XA | 1065 | U | P-O3'-C3' | 5.23 | 125.98 | 119.70 |
| 25 | YA | 1936 | A | N9-C4-C5 | -5.23 | 103.71 | 105.80 |
| 25 | YA | 2585 | U | C6-N1-C2 | 5.23 | 124.14 | 121.00 |
| 25 | RA | 1241 | A | O4'-C1'-N9 | 5.23 | 112.38 | 108.20 |
| 25 | YA | 1607 | C | C2-N1-C1' | 5.23 | 124.55 | 118.80 |
| 36 | YQ | 5 | ARG | N-CA-C | -5.22 | 96.90 | 111.00 |
| 1 | QA | 960 | U | C2-N1-C1' | 5.22 | 123.96 | 117.70 |
| 25 | RA | 404 | C | P-O3'-C3' | 5.22 | 125.96 | 119.70 |
| 1 | QA | 703 | G | P-O3'-C3' | 5.21 | 125.96 | 119.70 |
| 25 | RA | 102 | G | C8-N9-C1' | -5.21 | 120.23 | 127.00 |
| 1 | QA | 410 | G | P-O3'-C3' | 5.21 | 125.95 | 119.70 |
| 36 | RQ | 5 | ARG | N-CA-C | -5.21 | 96.94 | 111.00 |
| 25 | RA | 1411 | C | C2-N1-C1' | 5.20 | 124.52 | 118.80 |
| 25 | RA | 2519 | U | O5'-P-OP1 | -5.20 | 101.02 | 105.70 |
| 19 | XS | 79 | THR | N-CA-C | -5.20 | 96.96 | 111.00 |
| 25 | RA | 2205 | C | C6-N1-C2 | -5.20 | 118.22 | 120.30 |
| 25 | RA | 1729 | A | O4'-C1'-N9 | 5.20 | 112.36 | 108.20 |
| 25 | RA | 2848 | G | P-O3'-C3' | 5.19 | 125.93 | 119.70 |
| 26 | RB | 44 | G | N3-C4-N9 | -5.19 | 122.88 | 126.00 |
| 25 | RA | 83 | G | P-O3'-C3' | 5.19 | 125.93 | 119.70 |
| 25 | RA | 475 | U | C6-N1-C2 | -5.19 | 117.89 | 121.00 |
| 25 | RA | 2394 | C | N1-C2-O2 | 5.19 | 122.01 | 118.90 |
| 1 | QA | 1027 | C | OP1-P-O3' | 5.19 | 116.61 | 105.20 |
| 25 | RA | 846 | C | P-O3'-C3' | 5.18 | 125.92 | 119.70 |
| 25 | RA | 828 | U | N3-C2-O2 | -5.18 | 118.57 | 122.20 |
| 25 | RA | 2832 | U | P-O3'-C3' | 5.18 | 125.92 | 119.70 |
| 25 | RA | 265 | A | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 1 | QA | 31 | G | P-O3'-C3' | 5.18 | 125.92 | 119.70 |
| 25 | RA | 624 | C | C5-C6-N1 | 5.18 | 123.59 | 121.00 |
| 25 | YA | 2712 | U | N3-C2-O2 | -5.17 | 118.58 | 122.20 |
| 25 | YA | 1930 | G | C4-N9-C1' | -5.17 | 119.78 | 126.50 |
| 38 | YS | 110 | LEU | CA-CB-CG | 5.17 | 127.19 | 115.30 |
| 1 | QA | 819 | A | N1-C6-N6 | 5.17 | 121.70 | 118.60 |
| 25 | YA | 1313 | U | C5-C6-N1 | 5.17 | 125.28 | 122.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 25 | YA | 2849 | U | O4'-C1'-N1 | 5.17 | 112.33 | 108.20 |
| 25 | YA | 142 | G | C8-N9-C1' | 5.16 | 133.71 | 127.00 |
| 25 | YA | 1699 | G | C5-C6-O6 | 5.16 | 131.69 | 128.60 |
| 19 | QS | 79 | THR | N-CA-C | -5.16 | 97.08 | 111.00 |
| 25 | RA | 2394 | C | N3-C2-O2 | -5.16 | 118.29 | 121.90 |
| 25 | RA | 2634 | G | N1-C6-O6 | 5.15 | 122.99 | 119.90 |
| 25 | YA | 774 | A | N3-C4-N9 | -5.15 | 123.28 | 127.40 |
| 26 | RB | 44 | G | N3-C4-C5 | 5.15 | 131.18 | 128.60 |
| 25 | YA | 1964 | G | N1-C6-O6 | 5.15 | 122.99 | 119.90 |
| 25 | YA | 2311 | A | N1-C2-N3 | 5.15 | 131.87 | 129.30 |
| 25 | YA | 2447 | G | N9-C4-C5 | 5.15 | 107.46 | 105.40 |
| 25 | YA | 604 | G | N3-C4-N9 | 5.14 | 129.09 | 126.00 |
| 25 | YA | 1806 | C | C6-N1-C2 | -5.14 | 118.24 | 120.30 |
| 1 | QA | 328 | C | P-O3'-C3' | 5.14 | 125.87 | 119.70 |
| 26 | RB | 44 | G | C8-N9-C1' | 5.14 | 133.68 | 127.00 |
| 1 | QA | 484 | G | P-O3'-C3' | 5.14 | 125.86 | 119.70 |
| 25 | YA | 910 | A | N1-C6-N6 | 5.14 | 121.68 | 118.60 |
| 25 | RA | 2542 | A | C8-N9-C4 | 5.13 | 107.85 | 105.80 |
| 25 | RA | 395 | U | O4'-C1'-N1 | 5.13 | 112.31 | 108.20 |
| 25 | RA | 1637 | A | C8-N9-C4 | -5.13 | 103.75 | 105.80 |
| 25 | RA | 2634 | G | C4-C5-N7 | 5.13 | 112.85 | 110.80 |
| 25 | YA | 587 | C | P-O3'-C3' | 5.13 | 125.85 | 119.70 |
| 25 | YA | 659 | C | N1-C2-O2 | 5.13 | 121.98 | 118.90 |
| 1 | QA | 1065 | U | OP2-P-O3' | 5.12 | 116.47 | 105.20 |
| 25 | YA | 856 | C | C6-N1-C2 | -5.12 | 118.25 | 120.30 |
| 25 | YA | 2726 | U | O4'-C1'-N1 | 5.12 | 112.30 | 108.20 |
| 25 | YA | 2776 | A | P-O3'-C3' | 5.12 | 125.84 | 119.70 |
| 1 | QA | 906 | G | C5-C6-O6 | -5.11 | 125.53 | 128.60 |
| 25 | YA | 930 | U | N1-C2-O2 | 5.11 | 126.38 | 122.80 |
| 25 | YA | 1359 | A | N1-C6-N6 | 5.11 | 121.66 | 118.60 |
| 25 | YA | 2468 | G | O4'-C1'-N9 | 5.10 | 112.28 | 108.20 |
| 25 | RA | 810 | U | N3-C4-O4 | 5.10 | 122.97 | 119.40 |
| 1 | XA | 971 | G | N3-C4-N9 | -5.10 | 122.94 | 126.00 |
| 1 | XA | 1336 | C | C5-C6-N1 | 5.10 | 123.55 | 121.00 |
| 1 | QA | 1334 | G | C4-N9-C1' | 5.09 | 133.12 | 126.50 |
| 1 | QA | 1151 | A | O4'-C1'-N9 | 5.08 | 112.27 | 108.20 |
| 39 | RT | 123 | GLN | N-CA-C | -5.08 | 97.27 | 111.00 |
| 39 | YT | 123 | GLN | N-CA-C | -5.08 | 97.28 | 111.00 |
| 25 | RA | 1313 | U | C2-N1-C1' | 5.08 | 123.79 | 117.70 |
| 1 | XA | 60 | A | P-O3'-C3' | 5.07 | 125.79 | 119.70 |
| 25 | RA | 2634 | G | C5-C6-O6 | -5.07 | 125.56 | 128.60 |
| 39 | YT | 59 | THR | N-CA-C | -5.07 | 97.31 | 111.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|--------|------|-----------|-------|-------------|----------|
| 25 | RA | 676 | A | C8-N9-C4 | -5.07 | 103.77 | 105.80 |
| 25 | YA | 1698 | A | N1-C2-N3 | 5.06 | 131.83 | 129.30 |
| 25 | YA | 2345 | G | C5-C6-O6 | 5.06 | 131.64 | 128.60 |
| 39 | RT | 59 | THR | N-CA-C | -5.06 | 97.35 | 111.00 |
| 1 | QA | 412 | A | P-O3'-C3' | 5.06 | 125.77 | 119.70 |
| 1 | QA | 992 | U | P-O3'-C3' | 5.06 | 125.77 | 119.70 |
| 25 | YA | 2567 | G | O5'-P-OP1 | -5.06 | 101.15 | 105.70 |
| 25 | YA | 1931 | U | N3-C2-O2 | -5.05 | 118.66 | 122.20 |
| 25 | YA | 2756 | U | OP1-P-O3' | 5.05 | 116.32 | 105.20 |
| 1 | XA | 992 | U | P-O3'-C3' | 5.05 | 125.76 | 119.70 |
| 25 | YA | 1253 | A | C5-N7-C8 | -5.05 | 101.38 | 103.90 |
| 25 | YA | 2439 | A | C8-N9-C4 | -5.05 | 103.78 | 105.80 |
| 1 | QA | 121 | C | C4-C5-C6 | 5.04 | 119.92 | 117.40 |
| 1 | QA | 1285 | A | P-O3'-C3' | 5.04 | 125.75 | 119.70 |
| 1 | XA | 353 | A | OP2-P-O3' | 5.04 | 116.30 | 105.20 |
| 25 | YA | 846 | C | P-O3'-C3' | 5.04 | 125.75 | 119.70 |
| 31 | RH | 127 | GLU | C-N-CD | -5.04 | 109.51 | 120.60 |
| 31 | YH | 127 | GLU | C-N-CD | -5.04 | 109.51 | 120.60 |
| 25 | YA | 1929 | G | P-O3'-C3' | 5.04 | 125.75 | 119.70 |
| 25 | YA | 1130 | U | C5-C6-N1 | 5.03 | 125.22 | 122.70 |
| 25 | YA | 214 | G | N3-C4-C5 | -5.03 | 126.08 | 128.60 |
| 25 | YA | 59 | U | C6-N1-C2 | -5.03 | 117.98 | 121.00 |
| 25 | RA | 2490 | G | C8-N9-C4 | -5.03 | 104.39 | 106.40 |
| 25 | YA | 568 | U | N1-C2-O2 | -5.02 | 119.28 | 122.80 |
| 25 | RA | 2490 | G | N3-C4-C5 | -5.02 | 126.09 | 128.60 |
| 25 | YA | 2430 | A | C8-N9-C4 | -5.02 | 103.79 | 105.80 |
| 1 | QA | 314 | C | C2-N1-C1' | 5.02 | 124.32 | 118.80 |
| 25 | YA | 974(A) | C | N1-C2-O2 | 5.02 | 121.91 | 118.90 |
| 25 | YA | 1253 | A | C6-C5-N7 | -5.02 | 128.79 | 132.30 |
| 22 | QV | 17 | C | N3-C2-O2 | -5.01 | 118.39 | 121.90 |
| 25 | RA | 739 | G | N1-C6-O6 | -5.01 | 116.89 | 119.90 |
| 1 | XA | 1504 | G | N3-C4-C5 | -5.01 | 126.10 | 128.60 |
| 25 | YA | 222 | A | P-O3'-C3' | 5.01 | 125.71 | 119.70 |
| 25 | YA | 1699 | G | C4-C5-N7 | -5.01 | 108.80 | 110.80 |
| 25 | YA | 2610 | C | OP2-P-O3' | 5.00 | 116.21 | 105.20 |

There are no chirality outliers.

There are no planarity outliers.

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 | QA | 32247 | 0 | 16275 | 828 | 0 |
| 1 | XA | 32269 | 0 | 16289 | 816 | 0 |
| 2 | QB | 1924 | 0 | 1975 | 291 | 0 |
| 2 | XB | 1924 | 0 | 1975 | 301 | 0 |
| 3 | QC | 1605 | 0 | 1668 | 208 | 0 |
| 3 | XC | 1605 | 0 | 1668 | 209 | 1 |
| 4 | QD | 1703 | 0 | 1762 | 240 | 0 |
| 4 | XD | 1703 | 0 | 1763 | 215 | 0 |
| 5 | QE | 1155 | 0 | 1213 | 147 | 0 |
| 5 | XE | 1155 | 0 | 1213 | 142 | 0 |
| 6 | QF | 843 | 0 | 857 | 93 | 0 |
| 6 | XF | 843 | 0 | 857 | 99 | 0 |
| 7 | QG | 1257 | 0 | 1296 | 149 | 0 |
| 7 | XG | 1257 | 0 | 1296 | 147 | 0 |
| 8 | QH | 1116 | 0 | 1176 | 155 | 0 |
| 8 | XH | 1116 | 0 | 1177 | 164 | 0 |
| 9 | QI | 1010 | 0 | 1037 | 151 | 0 |
| 9 | XI | 1010 | 0 | 1037 | 160 | 0 |
| 10 | QJ | 801 | 0 | 849 | 138 | 0 |
| 10 | XJ | 801 | 0 | 849 | 136 | 0 |
| 11 | QK | 885 | 0 | 904 | 108 | 1 |
| 11 | XK | 885 | 0 | 904 | 118 | 0 |
| 12 | QL | 975 | 0 | 1062 | 109 | 0 |
| 12 | XL | 975 | 0 | 1062 | 113 | 0 |
| 13 | QM | 964 | 0 | 1034 | 171 | 0 |
| 13 | XM | 964 | 0 | 1034 | 180 | 0 |
| 14 | QN | 492 | 0 | 531 | 89 | 0 |
| 14 | XN | 492 | 0 | 529 | 87 | 0 |
| 15 | QO | 734 | 0 | 771 | 75 | 0 |
| 15 | XO | 734 | 0 | 771 | 74 | 0 |
| 16 | QP | 705 | 0 | 725 | 114 | 0 |
| 16 | XP | 705 | 0 | 725 | 113 | 0 |
| 17 | QQ | 834 | 0 | 904 | 84 | 0 |
| 17 | XQ | 834 | 0 | 904 | 82 | 0 |
| 18 | QR | 574 | 0 | 644 | 68 | 0 |
| 18 | XR | 574 | 0 | 644 | 67 | 0 |
| 19 | QS | 674 | 0 | 699 | 104 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 19 | XS | 674 | 0 | 699 | 143 | 0 |
| 20 | QT | 763 | 0 | 860 | 108 | 0 |
| 20 | XT | 763 | 0 | 861 | 102 | 0 |
| 21 | QU | 217 | 0 | 234 | 30 | 0 |
| 21 | XU | 217 | 0 | 234 | 29 | 0 |
| 22 | QV | 1644 | 0 | 836 | 41 | 0 |
| 22 | XV | 1644 | 0 | 836 | 40 | 0 |
| 23 | QX | 170 | 0 | 87 | 16 | 0 |
| 23 | XX | 170 | 0 | 88 | 10 | 0 |
| 24 | QY | 303 | 0 | 154 | 13 | 0 |
| 24 | XY | 303 | 0 | 154 | 17 | 0 |
| 25 | RA | 62091 | 0 | 31301 | 1401 | 0 |
| 25 | YA | 62071 | 0 | 31286 | 1351 | 0 |
| 26 | RB | 2573 | 0 | 1306 | 70 | 0 |
| 26 | YB | 2573 | 0 | 1306 | 61 | 0 |
| 27 | RD | 2115 | 0 | 2195 | 324 | 0 |
| 27 | YD | 2115 | 0 | 2195 | 350 | 0 |
| 28 | RE | 1568 | 0 | 1634 | 277 | 0 |
| 28 | YE | 1568 | 0 | 1634 | 266 | 0 |
| 29 | RF | 1585 | 0 | 1632 | 174 | 0 |
| 29 | YF | 1585 | 0 | 1632 | 182 | 0 |
| 30 | RG | 1474 | 0 | 1535 | 212 | 0 |
| 30 | YG | 1474 | 0 | 1535 | 206 | 0 |
| 31 | RH | 1307 | 0 | 1382 | 217 | 0 |
| 31 | YH | 1307 | 0 | 1382 | 219 | 1 |
| 32 | RI | 1136 | 0 | 1223 | 179 | 0 |
| 32 | YI | 1136 | 0 | 1223 | 176 | 0 |
| 33 | RN | 1104 | 0 | 1180 | 194 | 0 |
| 33 | YN | 1104 | 0 | 1180 | 186 | 0 |
| 34 | RO | 933 | 0 | 996 | 123 | 0 |
| 34 | YO | 933 | 0 | 996 | 124 | 0 |
| 35 | RP | 1145 | 0 | 1228 | 248 | 0 |
| 35 | YP | 1145 | 0 | 1228 | 247 | 0 |
| 36 | RQ | 1122 | 0 | 1179 | 168 | 0 |
| 36 | YQ | 1122 | 0 | 1179 | 168 | 0 |
| 37 | RR | 968 | 0 | 1033 | 115 | 0 |
| 37 | YR | 968 | 0 | 1033 | 112 | 0 |
| 38 | RS | 882 | 0 | 943 | 158 | 0 |
| 38 | YS | 882 | 0 | 943 | 163 | 0 |
| 39 | RT | 1141 | 0 | 1202 | 152 | 0 |
| 39 | YT | 1141 | 0 | 1202 | 156 | 0 |
| 40 | RU | 964 | 0 | 1022 | 130 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 40 | YU | 964 | 0 | 1022 | 138 | 0 |
| 41 | RV | 779 | 0 | 852 | 132 | 0 |
| 41 | YV | 779 | 0 | 852 | 130 | 1 |
| 42 | RW | 900 | 0 | 964 | 101 | 0 |
| 42 | YW | 900 | 0 | 964 | 108 | 0 |
| 43 | RX | 725 | 0 | 778 | 68 | 0 |
| 43 | YX | 725 | 0 | 778 | 82 | 0 |
| 44 | RY | 785 | 0 | 878 | 163 | 0 |
| 44 | YY | 785 | 0 | 878 | 154 | 1 |
| 45 | RZ | 1378 | 0 | 1407 | 227 | 0 |
| 45 | YZ | 1378 | 0 | 1407 | 227 | 0 |
| 46 | R0 | 648 | 0 | 672 | 88 | 0 |
| 46 | Y0 | 648 | 0 | 672 | 85 | 0 |
| 47 | R1 | 763 | 0 | 848 | 141 | 0 |
| 47 | Y1 | 763 | 0 | 848 | 145 | 0 |
| 48 | R2 | 581 | 0 | 629 | 80 | 0 |
| 48 | Y2 | 581 | 0 | 629 | 75 | 0 |
| 49 | R3 | 469 | 0 | 518 | 40 | 0 |
| 49 | Y3 | 469 | 0 | 518 | 41 | 0 |
| 50 | R4 | 581 | 0 | 574 | 159 | 0 |
| 50 | Y4 | 581 | 0 | 574 | 180 | 0 |
| 51 | R5 | 459 | 0 | 480 | 77 | 0 |
| 51 | Y5 | 459 | 0 | 480 | 75 | 1 |
| 52 | R6 | 424 | 0 | 450 | 93 | 0 |
| 52 | Y6 | 424 | 0 | 450 | 90 | 0 |
| 53 | R7 | 430 | 0 | 480 | 47 | 0 |
| 53 | Y7 | 430 | 0 | 480 | 42 | 0 |
| 54 | R8 | 517 | 0 | 582 | 106 | 0 |
| 54 | Y8 | 517 | 0 | 582 | 100 | 0 |
| 55 | Z6 | 74 | 0 | 51 | 10 | 0 |
| 55 | Z8 | 74 | 0 | 51 | 4 | 0 |
| 56 | QA | 60 | 0 | 0 | 0 | 0 |
| 56 | QF | 1 | 0 | 0 | 0 | 0 |
| 56 | QH | 1 | 0 | 0 | 0 | 0 |
| 56 | QM | 1 | 0 | 0 | 0 | 0 |
| 56 | QV | 2 | 0 | 0 | 0 | 0 |
| 56 | QX | 2 | 0 | 0 | 0 | 0 |
| 56 | R5 | 1 | 0 | 0 | 0 | 0 |
| 56 | RA | 212 | 0 | 0 | 0 | 0 |
| 56 | RB | 2 | 0 | 0 | 0 | 0 |
| 56 | RE | 2 | 0 | 0 | 0 | 0 |
| 56 | RF | 1 | 0 | 0 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 56 | RP | 1 | 0 | 0 | 0 | 0 |
| 56 | XA | 63 | 0 | 0 | 0 | 0 |
| 56 | XM | 2 | 0 | 0 | 0 | 0 |
| 56 | XV | 2 | 0 | 0 | 0 | 0 |
| 56 | Y5 | 1 | 0 | 0 | 0 | 0 |
| 56 | YA | 242 | 0 | 0 | 0 | 0 |
| 56 | YB | 2 | 0 | 0 | 0 | 0 |
| 56 | YE | 2 | 0 | 0 | 0 | 0 |
| 56 | YX | 1 | 0 | 0 | 0 | 0 |
| 57 | QA | 42 | 0 | 45 | 4 | 0 |
| 57 | XA | 42 | 0 | 45 | 1 | 0 |
| 58 | QD | 1 | 0 | 0 | 0 | 0 |
| 58 | QN | 1 | 0 | 0 | 0 | 0 |
| 58 | XD | 1 | 0 | 0 | 0 | 0 |
| 58 | XN | 1 | 0 | 0 | 0 | 0 |
| All | All | 291123 | 0 | 197505 | 16608 | 3 |

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 34.

All (16608) 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) |
|-------------------|--------------------|--------------------------|-------------------|
| 14:QN:39:LEU:HD22 | 14:QN:43:CYS:SG | 1.33 | 1.63 |
| 36:YQ:81:VAL:HG23 | 46:Y0:7:LEU:CD2 | 1.21 | 1.60 |
| 31:RH:127:GLU:CG | 31:RH:128:PRO:HD3 | 1.35 | 1.54 |
| 31:YH:127:GLU:CG | 31:YH:128:PRO:HD3 | 1.35 | 1.52 |
| 19:QS:5:LEU:HD22 | 50:R4:67:TYR:CE2 | 1.45 | 1.51 |
| 36:YQ:81:VAL:CG2 | 46:Y0:7:LEU:HD21 | 0.94 | 1.42 |
| 47:R1:81:LYS:HA | 47:R1:81:LYS:NZ | 1.42 | 1.34 |
| 47:Y1:81:LYS:HA | 47:Y1:81:LYS:NZ | 1.43 | 1.33 |
| 19:QS:5:LEU:CD2 | 50:R4:67:TYR:CE2 | 2.11 | 1.31 |
| 13:QM:121:LYS:NZ | 24:QY:40:G:OP1 | 1.65 | 1.28 |
| 47:R1:81:LYS:HE2 | 47:R1:81:LYS:N | 1.50 | 1.26 |
| 36:YQ:81:VAL:CG2 | 46:Y0:7:LEU:CD2 | 1.85 | 1.26 |
| 47:Y1:81:LYS:HE2 | 47:Y1:81:LYS:N | 1.50 | 1.26 |
| 32:RI:144:VAL:O | 32:RI:145:VAL:HG12 | 1.31 | 1.25 |
| 36:RQ:80:GLU:CG | 46:R0:5:LYS:HB3 | 1.66 | 1.25 |
| 14:QN:39:LEU:CD2 | 14:QN:43:CYS:SG | 2.27 | 1.23 |
| 36:YQ:80:GLU:OE1 | 46:Y0:5:LYS:HD2 | 1.09 | 1.22 |
| 46:Y0:3:HIS:CD2 | 46:Y0:4:LYS:O | 1.93 | 1.22 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 31:YH:127:GLU:HG2 | 31:YH:128:PRO:CD | 1.69 | 1.21 |
| 14:QN:26:ARG:HB3 | 14:QN:43:CYS:SG | 1.81 | 1.21 |
| 31:RH:127:GLU:HG2 | 31:RH:128:PRO:CD | 1.69 | 1.21 |
| 31:YH:127:GLU:CB | 31:YH:128:PRO:HD3 | 1.69 | 1.20 |
| 31:RH:127:GLU:CB | 31:RH:128:PRO:HD3 | 1.69 | 1.19 |
| 44:RY:95:LYS:HB3 | 44:RY:100:ALA:HA | 1.20 | 1.17 |
| 2:QB:101:MET:HA | 2:QB:108:ILE:HG13 | 1.25 | 1.16 |
| 47:Y1:82:LEU:HD12 | 47:Y1:82:LEU:C | 1.66 | 1.16 |
| 13:XM:121:LYS:NZ | 24:XY:40:G:OP1 | 1.76 | 1.16 |
| 44:YY:76:CYS:HB3 | 44:YY:96:ILE:HD13 | 1.17 | 1.16 |
| 31:RH:132:ARG:HB2 | 31:RH:132:ARG:HH11 | 1.10 | 1.16 |
| 44:YY:95:LYS:HB3 | 44:YY:100:ALA:HA | 1.20 | 1.16 |
| 35:RP:50:ARG:HH21 | 35:RP:50:ARG:HB3 | 1.13 | 1.14 |
| 2:XB:101:MET:HA | 2:XB:108:ILE:HG13 | 1.25 | 1.14 |
| 19:QS:41:VAL:HB | 19:QS:42:PRO:HA | 1.26 | 1.14 |
| 47:R1:82:LEU:C | 47:R1:82:LEU:HD12 | 1.66 | 1.13 |
| 10:QJ:6:ILE:HG22 | 10:QJ:98:ILE:HG13 | 1.30 | 1.13 |
| 47:Y1:82:LEU:CD1 | 47:Y1:83:GLU:O | 1.97 | 1.12 |
| 13:XM:121:LYS:NZ | 24:XY:39:C:O2' | 1.82 | 1.12 |
| 35:YP:50:ARG:HH21 | 35:YP:50:ARG:HB3 | 1.13 | 1.12 |
| 45:RZ:152:ALA:HB2 | 45:RZ:169:GLU:HB3 | 1.15 | 1.12 |
| 40:RU:8:VAL:HG23 | 40:RU:11:ARG:HH21 | 1.14 | 1.11 |
| 47:R1:82:LEU:CD1 | 47:R1:83:GLU:O | 1.97 | 1.11 |
| 40:YU:8:VAL:HG23 | 40:YU:11:ARG:HH21 | 1.14 | 1.11 |
| 45:YZ:152:ALA:HB2 | 45:YZ:169:GLU:HB3 | 1.15 | 1.11 |
| 28:RE:179:GLU:HB3 | 28:RE:181:LEU:HD23 | 1.31 | 1.11 |
| 27:YD:44:ASN:HB2 | 27:YD:48:ARG:O | 1.50 | 1.11 |
| 28:YE:179:GLU:HB3 | 28:YE:181:LEU:HD23 | 1.32 | 1.11 |
| 29:RF:101:LEU:HD12 | 29:RF:102:PRO:HD2 | 1.21 | 1.11 |
| 19:XS:5:LEU:CD1 | 50:Y4:66:SER:HB2 | 1.80 | 1.11 |
| 29:YF:101:LEU:HD12 | 29:YF:102:PRO:HD2 | 1.21 | 1.11 |
| 32:YI:92:VAL:HG13 | 32:YI:120:ILE:HG23 | 1.32 | 1.11 |
| 47:Y1:82:LEU:HD12 | 47:Y1:83:GLU:N | 1.66 | 1.11 |
| 27:RD:44:ASN:HB2 | 27:RD:48:ARG:O | 1.50 | 1.10 |
| 31:RH:86:GLU:HG3 | 31:RH:165:ALA:H | 1.06 | 1.10 |
| 31:YH:132:ARG:HB2 | 31:YH:132:ARG:HH11 | 1.10 | 1.10 |
| 4:QD:170:VAL:O | 6:XF:21:LEU:HD21 | 1.48 | 1.10 |
| 47:R1:82:LEU:HD12 | 47:R1:83:GLU:N | 1.66 | 1.10 |
| 44:RY:76:CYS:HB3 | 44:RY:96:ILE:HD13 | 1.17 | 1.10 |
| 28:YE:50:GLY:HA2 | 28:YE:77:ILE:HA | 1.31 | 1.10 |
| 2:XB:178:ARG:HH21 | 8:XH:74:PRO:HB3 | 1.15 | 1.09 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 33:YN:134:ARG:H | 33:YN:135:PRO:HD3 | 1.11 | 1.09 |
| 25:RA:270(T):G:H5'' | 47:R1:97:LEU:HD22 | 1.34 | 1.08 |
| 32:RI:92:VAL:HG13 | 32:RI:120:ILE:HG23 | 1.32 | 1.08 |
| 31:YH:152:ARG:HG3 | 31:YH:153:LYS:HE2 | 1.33 | 1.08 |
| 3:QC:15:THR:HG23 | 3:QC:181:ASN:HA | 1.35 | 1.08 |
| 2:XB:80:ILE:HD11 | 2:XB:208:ILE:HG23 | 1.33 | 1.08 |
| 10:XJ:6:ILE:HG22 | 10:XJ:98:ILE:HG13 | 1.30 | 1.08 |
| 15:XO:87:ILE:HG22 | 15:XO:88:ARG:H | 1.18 | 1.08 |
| 11:QK:79:SER:HB2 | 11:QK:106:LYS:HD2 | 1.35 | 1.08 |
| 35:RP:19:VAL:HG22 | 35:RP:20:GLY:H | 1.15 | 1.08 |
| 19:XS:41:VAL:HB | 19:XS:42:PRO:HA | 1.26 | 1.08 |
| 27:YD:131:LEU:HB2 | 27:YD:136:ILE:HD11 | 1.35 | 1.08 |
| 3:XC:15:THR:HG23 | 3:XC:181:ASN:HA | 1.35 | 1.08 |
| 31:YH:86:GLU:HG3 | 31:YH:165:ALA:H | 1.05 | 1.08 |
| 27:RD:131:LEU:HB2 | 27:RD:136:ILE:HD11 | 1.35 | 1.08 |
| 36:YQ:81:VAL:HG22 | 46:Y0:7:LEU:HD21 | 1.15 | 1.08 |
| 13:XM:8:GLU:OE2 | 30:YG:115:ARG:NH1 | 1.85 | 1.07 |
| 35:YP:126:VAL:HG12 | 35:YP:147:LEU:HD21 | 1.30 | 1.07 |
| 36:YQ:81:VAL:HG23 | 46:Y0:7:LEU:HD22 | 1.35 | 1.07 |
| 2:QB:178:ARG:HH21 | 8:QH:74:PRO:HB3 | 1.02 | 1.07 |
| 35:RP:126:VAL:HG12 | 35:RP:147:LEU:HD21 | 1.30 | 1.07 |
| 36:YQ:81:VAL:HG21 | 46:Y0:7:LEU:HD21 | 1.33 | 1.07 |
| 47:Y1:81:LYS:HZ3 | 47:Y1:81:LYS:CA | 1.65 | 1.07 |
| 31:RH:152:ARG:HG3 | 31:RH:153:LYS:HE2 | 1.34 | 1.07 |
| 15:QO:87:ILE:HG22 | 15:QO:88:ARG:H | 1.18 | 1.07 |
| 50:R4:71:ARG:HH11 | 50:R4:71:ARG:HG3 | 1.13 | 1.07 |
| 25:YA:1050:A:H8 | 25:YA:2751:G:H2' | 1.14 | 1.07 |
| 19:XS:5:LEU:HD22 | 50:Y4:67:TYR:CZ | 1.90 | 1.06 |
| 28:RE:50:GLY:HA2 | 28:RE:77:ILE:HA | 1.31 | 1.06 |
| 35:RP:59:LEU:HA | 35:RP:61:ARG:NH2 | 1.69 | 1.06 |
| 35:YP:59:LEU:HA | 35:YP:61:ARG:NH2 | 1.69 | 1.06 |
| 47:Y1:82:LEU:CD1 | 47:Y1:83:GLU:N | 2.18 | 1.06 |
| 50:Y4:71:ARG:HG3 | 50:Y4:71:ARG:HH11 | 1.13 | 1.06 |
| 28:RE:21:VAL:HB | 28:RE:22:PRO:HB3 | 1.37 | 1.06 |
| 31:YH:153:LYS:HB3 | 31:YH:154:PRO:HD2 | 1.06 | 1.06 |
| 54:Y8:52:LYS:H | 54:Y8:53:PRO:CD | 1.69 | 1.06 |
| 1:QA:1531:A:H5'' | 1:QA:1531:A:H8 | 1.19 | 1.06 |
| 4:QD:166:LYS:HD2 | 27:YD:134:ARG:NH1 | 1.71 | 1.06 |
| 28:RE:63:LEU:HD12 | 28:RE:64:LYS:H | 1.18 | 1.06 |
| 29:RF:46:ARG:HH11 | 29:RF:46:ARG:HG2 | 1.20 | 1.06 |
| 47:R1:82:LEU:CD1 | 47:R1:83:GLU:N | 2.18 | 1.06 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:QK:51:LYS:HA | 11:QK:55:LYS:HD3 | 1.36 | 1.05 |
| 28:YE:21:VAL:HB | 28:YE:22:PRO:HB3 | 1.37 | 1.05 |
| 28:YE:63:LEU:HD12 | 28:YE:64:LYS:H | 1.18 | 1.05 |
| 13:QM:88:ARG:HH11 | 13:QM:88:ARG:HB3 | 1.19 | 1.05 |
| 33:RN:134:ARG:H | 33:RN:135:PRO:HD3 | 1.11 | 1.05 |
| 13:XM:88:ARG:HH11 | 13:XM:88:ARG:HB3 | 1.19 | 1.05 |
| 35:YP:19:VAL:HG22 | 35:YP:20:GLY:H | 1.15 | 1.05 |
| 13:QM:3:ARG:HA | 13:QM:9:ILE:HG21 | 1.34 | 1.05 |
| 13:QM:49:THR:HG22 | 13:QM:51:ALA:H | 1.22 | 1.05 |
| 32:RI:4:ILE:HG12 | 32:RI:18:VAL:HG22 | 1.38 | 1.05 |
| 13:XM:3:ARG:HA | 13:XM:9:ILE:HG21 | 1.35 | 1.05 |
| 19:XS:5:LEU:HD11 | 50:Y4:66:SER:CB | 1.86 | 1.05 |
| 5:QE:11:ILE:HD11 | 5:QE:31:LEU:HD12 | 1.38 | 1.05 |
| 40:RU:90:VAL:HG12 | 40:RU:91:ASP:H | 1.18 | 1.05 |
| 36:YQ:80:GLU:OE1 | 46:Y0:5:LYS:CD | 2.05 | 1.05 |
| 31:RH:127:GLU:CB | 31:RH:128:PRO:CD | 2.35 | 1.04 |
| 11:XK:51:LYS:HA | 11:XK:55:LYS:HD3 | 1.36 | 1.04 |
| 11:XK:79:SER:HB2 | 11:XK:106:LYS:HD2 | 1.35 | 1.04 |
| 25:RA:518:G:H4' | 42:RW:18:ARG:HH12 | 1.21 | 1.04 |
| 45:YZ:138:GLU:O | 45:YZ:156:LYS:HD3 | 1.56 | 1.04 |
| 41:YV:49:THR:HB | 41:YV:50:PRO:HD2 | 1.39 | 1.04 |
| 2:QB:80:ILE:HD11 | 2:QB:208:ILE:HG23 | 1.34 | 1.04 |
| 38:RS:106:ARG:HA | 38:RS:110:LEU:HD11 | 1.39 | 1.04 |
| 13:QM:62:ASN:ND2 | 50:R4:49:PHE:HD2 | 1.56 | 1.04 |
| 36:RQ:81:VAL:O | 36:RQ:82:ARG:CD | 2.06 | 1.04 |
| 37:RR:67:LEU:HD13 | 37:RR:76:VAL:HG21 | 1.39 | 1.04 |
| 38:RS:83:LYS:O | 38:RS:109:GLY:HA3 | 1.57 | 1.04 |
| 45:RZ:138:GLU:O | 45:RZ:156:LYS:HD3 | 1.56 | 1.04 |
| 31:YH:127:GLU:CG | 31:YH:128:PRO:CD | 2.31 | 1.04 |
| 40:YU:90:VAL:HG12 | 40:YU:91:ASP:H | 1.18 | 1.04 |
| 2:QB:4:GLU:HG2 | 2:QB:5:ILE:H | 1.19 | 1.03 |
| 38:YS:106:ARG:HA | 38:YS:110:LEU:HD11 | 1.39 | 1.03 |
| 2:QB:18:GLY:H | 2:QB:42:ILE:HG22 | 1.21 | 1.03 |
| 38:YS:83:LYS:O | 38:YS:109:GLY:HA3 | 1.57 | 1.03 |
| 32:RI:78:THR:HG22 | 32:RI:141:LYS:HD2 | 1.41 | 1.03 |
| 2:XB:4:GLU:HG2 | 2:XB:5:ILE:H | 1.19 | 1.03 |
| 8:XH:29:SER:HB3 | 8:XH:32:LYS:HG3 | 1.39 | 1.03 |
| 31:YH:127:GLU:CB | 31:YH:128:PRO:CD | 2.35 | 1.03 |
| 32:YI:4:ILE:HG12 | 32:YI:18:VAL:HG22 | 1.38 | 1.03 |
| 27:RD:35:LYS:HG2 | 27:RD:64:ILE:N | 1.72 | 1.03 |
| 54:R8:52:LYS:H | 54:R8:53:PRO:CD | 1.69 | 1.03 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:YO:53:LYS:HD2 | 34:YO:53:LYS:H | 1.23 | 1.02 |
| 29:RF:67:GLN:O | 29:RF:67:GLN:HG3 | 1.58 | 1.02 |
| 36:RQ:80:GLU:O | 36:RQ:81:VAL:HG13 | 1.59 | 1.02 |
| 27:YD:35:LYS:HG2 | 27:YD:64:ILE:N | 1.73 | 1.02 |
| 29:YF:67:GLN:O | 29:YF:68:LYS:HB2 | 1.56 | 1.02 |
| 36:YQ:81:VAL:O | 36:YQ:82:ARG:CD | 2.06 | 1.02 |
| 1:QA:1498:U:O2' | 1:QA:1499:A:OP2 | 1.76 | 1.02 |
| 29:RF:67:GLN:O | 29:RF:68:LYS:HB2 | 1.56 | 1.02 |
| 36:YQ:12:GLN:HG2 | 36:YQ:73:PRO:HD2 | 1.42 | 1.02 |
| 36:YQ:65:PHE:O | 36:YQ:66:ILE:HG12 | 1.59 | 1.02 |
| 36:RQ:12:GLN:HG2 | 36:RQ:73:PRO:HD2 | 1.42 | 1.02 |
| 2:XB:18:GLY:H | 2:XB:42:ILE:HG22 | 1.22 | 1.02 |
| 5:XE:11:ILE:HD11 | 5:XE:31:LEU:HD12 | 1.38 | 1.02 |
| 29:YF:46:ARG:HH11 | 29:YF:46:ARG:HG2 | 1.20 | 1.02 |
| 31:RH:153:LYS:HB3 | 31:RH:154:PRO:HD2 | 1.06 | 1.02 |
| 44:YY:97:ARG:HH21 | 44:YY:98:VAL:HB | 1.25 | 1.02 |
| 46:Y0:3:HIS:HD2 | 46:Y0:4:LYS:N | 1.56 | 1.02 |
| 29:RF:185:ASP:HA | 29:RF:188:ARG:HD3 | 1.40 | 1.01 |
| 34:RO:53:LYS:HD2 | 34:RO:53:LYS:H | 1.23 | 1.01 |
| 19:XS:5:LEU:HD11 | 50:Y4:66:SER:HB2 | 1.02 | 1.01 |
| 30:YG:13:GLU:O | 30:YG:14:GLU:HB2 | 1.60 | 1.01 |
| 38:RS:26:LEU:HD12 | 38:RS:39:ILE:HD11 | 1.40 | 1.01 |
| 13:XM:49:THR:HG22 | 13:XM:51:ALA:H | 1.22 | 1.01 |
| 32:YI:78:THR:HG22 | 32:YI:141:LYS:HD2 | 1.41 | 1.01 |
| 7:QG:78:ARG:HG3 | 7:QG:79:ARG:H | 1.24 | 1.01 |
| 13:QM:50:GLU:OE1 | 50:R4:32:TYR:CE2 | 2.13 | 1.01 |
| 19:QS:41:VAL:HB | 19:QS:42:PRO:CA | 1.91 | 1.01 |
| 25:RA:2701:C:H3' | 25:RA:2702:U:H5'' | 1.42 | 1.01 |
| 12:QL:8:ASN:OD1 | 17:QQ:34:LYS:HE2 | 1.61 | 1.01 |
| 26:RB:42:C:H42 | 30:RG:91:ARG:HH21 | 1.06 | 1.01 |
| 41:RV:49:THR:HB | 41:RV:50:PRO:HD2 | 1.39 | 1.01 |
| 44:RY:97:ARG:HH21 | 44:RY:98:VAL:HB | 1.25 | 1.01 |
| 37:YR:67:LEU:HD13 | 37:YR:76:VAL:HG21 | 1.39 | 1.01 |
| 27:RD:227:ASN:HB3 | 27:RD:228:PRO:HD2 | 1.43 | 1.00 |
| 36:RQ:79:LEU:HD13 | 36:RQ:80:GLU:OE1 | 1.61 | 1.00 |
| 19:XS:41:VAL:HB | 19:XS:42:PRO:CA | 1.91 | 1.00 |
| 29:YF:67:GLN:O | 29:YF:67:GLN:HG3 | 1.58 | 1.00 |
| 32:YI:144:VAL:HG22 | 32:YI:145:VAL:H | 1.22 | 1.00 |
| 25:YA:518:G:H4' | 42:YW:18:ARG:HH12 | 1.24 | 1.00 |
| 33:YN:96:GLU:HG2 | 33:YN:97:ARG:H | 1.26 | 1.00 |
| 36:RQ:65:PHE:O | 36:RQ:66:ILE:HG12 | 1.59 | 1.00 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 36:RQ:81:VAL:O | 36:RQ:82:ARG:NE | 1.94 | 1.00 |
| 50:R4:56:VAL:HA | 50:R4:60:GLN:HB2 | 1.43 | 1.00 |
| 36:YQ:79:LEU:HD13 | 36:YQ:80:GLU:OE1 | 1.61 | 1.00 |
| 52:Y6:7:ILE:HG13 | 52:Y6:8:LYS:H | 1.25 | 1.00 |
| 48:R2:50:ILE:HD12 | 48:R2:51:ARG:N | 1.76 | 1.00 |
| 36:YQ:80:GLU:O | 36:YQ:81:VAL:HG13 | 1.60 | 1.00 |
| 37:YR:54:LEU:HD23 | 37:YR:66:VAL:HG23 | 1.44 | 1.00 |
| 29:YF:185:ASP:HA | 29:YF:188:ARG:HD3 | 1.41 | 1.00 |
| 1:QA:686:U:H1' | 11:QK:42:TRP:HE1 | 1.27 | 0.99 |
| 8:QH:29:SER:HB3 | 8:QH:32:LYS:HG3 | 1.39 | 0.99 |
| 31:RH:153:LYS:HB3 | 31:RH:154:PRO:CD | 1.92 | 0.99 |
| 46:R0:2:ALA:HB1 | 46:R0:3:HIS:CD2 | 1.97 | 0.99 |
| 31:YH:153:LYS:HB3 | 31:YH:154:PRO:CD | 1.92 | 0.99 |
| 45:YZ:152:ALA:CB | 45:YZ:169:GLU:HB3 | 1.92 | 0.99 |
| 31:RH:77:LYS:HZ3 | 31:RH:77:LYS:HB3 | 1.22 | 0.99 |
| 38:YS:26:LEU:HD12 | 38:YS:39:ILE:HD11 | 1.40 | 0.99 |
| 28:RE:201:THR:HG22 | 28:RE:203:LYS:H | 1.26 | 0.99 |
| 31:RH:127:GLU:CG | 31:RH:128:PRO:CD | 2.30 | 0.99 |
| 45:RZ:152:ALA:CB | 45:RZ:169:GLU:HB3 | 1.92 | 0.99 |
| 28:YE:201:THR:HG22 | 28:YE:203:LYS:H | 1.26 | 0.99 |
| 5:QE:79:GLU:OE2 | 8:QH:104:ARG:HA | 1.63 | 0.99 |
| 38:RS:83:LYS:NZ | 38:RS:109:GLY:HA2 | 1.78 | 0.99 |
| 8:QH:23:SER:HA | 8:QH:63:LEU:HD22 | 1.45 | 0.99 |
| 48:Y2:50:ILE:HD12 | 48:Y2:51:ARG:N | 1.76 | 0.99 |
| 35:YP:105:LEU:O | 35:YP:106:LEU:HB2 | 1.60 | 0.99 |
| 8:QH:84:ARG:HH12 | 8:QH:86:ILE:HD13 | 1.28 | 0.99 |
| 10:XJ:6:ILE:HD11 | 10:XJ:72:VAL:HB | 1.44 | 0.99 |
| 3:QC:95:THR:HG22 | 3:QC:96:GLY:H | 1.27 | 0.99 |
| 35:RP:105:LEU:O | 35:RP:106:LEU:HB2 | 1.60 | 0.99 |
| 10:QJ:6:ILE:HD11 | 10:QJ:72:VAL:HB | 1.44 | 0.98 |
| 35:RP:50:ARG:HH21 | 35:RP:50:ARG:CB | 1.76 | 0.98 |
| 45:RZ:120:ILE:HB | 45:RZ:171:ILE:HA | 1.45 | 0.98 |
| 36:YQ:81:VAL:O | 36:YQ:82:ARG:NE | 1.94 | 0.98 |
| 3:QC:181:ASN:HD21 | 3:QC:204:LEU:HD12 | 1.27 | 0.98 |
| 25:YA:2015:A:H1' | 51:Y5:2:ALA:HA | 1.43 | 0.98 |
| 35:YP:50:ARG:HH21 | 35:YP:50:ARG:CB | 1.76 | 0.98 |
| 42:RW:86:LEU:HD12 | 42:RW:87:PRO:HD2 | 1.45 | 0.98 |
| 32:RI:144:VAL:O | 32:RI:145:VAL:CG1 | 2.11 | 0.98 |
| 25:YA:2562:U:O2' | 34:YO:23:ARG:NH1 | 1.97 | 0.98 |
| 46:Y0:3:HIS:CD2 | 46:Y0:4:LYS:N | 2.31 | 0.98 |
| 27:RD:44:ASN:HB3 | 27:RD:49:ILE:HA | 1.45 | 0.98 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:QB:196:LEU:HD12 | 2:QB:197:VAL:HG23 | 1.45 | 0.98 |
| 30:RG:13:GLU:O | 30:RG:14:GLU:HB2 | 1.60 | 0.98 |
| 14:QN:24:CYS:SG | 14:QN:39:LEU:HA | 2.03 | 0.98 |
| 36:RQ:79:LEU:O | 36:RQ:79:LEU:HD22 | 1.64 | 0.98 |
| 3:QC:19:GLU:HA | 3:QC:54:ARG:HH12 | 1.29 | 0.98 |
| 4:QD:94:LEU:H | 4:QD:94:LEU:HD12 | 1.28 | 0.98 |
| 8:XH:84:ARG:HH12 | 8:XH:86:ILE:HD13 | 1.28 | 0.98 |
| 31:YH:86:GLU:HG3 | 31:YH:165:ALA:N | 1.79 | 0.98 |
| 4:QD:30:LYS:C | 4:QD:32:ALA:H | 1.62 | 0.98 |
| 39:YT:62:THR:HG22 | 39:YT:75:ILE:HG12 | 1.46 | 0.98 |
| 7:XG:78:ARG:HG3 | 7:XG:79:ARG:H | 1.24 | 0.97 |
| 28:RE:20:ALA:O | 28:RE:21:VAL:HG22 | 1.64 | 0.97 |
| 52:Y6:41:PRO:HG2 | 52:Y6:45:LYS:H | 1.29 | 0.97 |
| 3:QC:16:ARG:HD2 | 3:QC:54:ARG:HH21 | 1.28 | 0.97 |
| 47:R1:81:LYS:HA | 47:R1:81:LYS:HZ3 | 0.82 | 0.97 |
| 48:R2:50:ILE:HD12 | 48:R2:51:ARG:H | 1.24 | 0.97 |
| 36:YQ:79:LEU:HD13 | 36:YQ:79:LEU:O | 1.63 | 0.97 |
| 48:Y2:50:ILE:HD12 | 48:Y2:51:ARG:H | 1.24 | 0.97 |
| 36:RQ:80:GLU:HG3 | 46:R0:5:LYS:HB3 | 1.43 | 0.97 |
| 7:XG:62:PHE:HA | 7:XG:124:LEU:HD21 | 1.47 | 0.97 |
| 27:YD:44:ASN:HB3 | 27:YD:49:ILE:HA | 1.45 | 0.97 |
| 3:XC:16:ARG:HB2 | 3:XC:16:ARG:HH11 | 1.30 | 0.97 |
| 4:QD:166:LYS:HG3 | 27:YD:135:PHE:HZ | 1.28 | 0.97 |
| 38:YS:83:LYS:NZ | 38:YS:109:GLY:HA2 | 1.78 | 0.97 |
| 32:YI:38:LEU:H | 32:YI:38:LEU:HD12 | 1.30 | 0.97 |
| 36:YQ:79:LEU:O | 36:YQ:79:LEU:HD22 | 1.64 | 0.97 |
| 5:QE:78:HIS:CD2 | 8:QH:104:ARG:HG2 | 1.99 | 0.97 |
| 36:RQ:79:LEU:HD13 | 36:RQ:79:LEU:O | 1.63 | 0.97 |
| 52:R6:7:ILE:HG13 | 52:R6:8:LYS:H | 1.25 | 0.97 |
| 3:XC:181:ASN:HD21 | 3:XC:204:LEU:HD12 | 1.27 | 0.97 |
| 42:YW:86:LEU:HD12 | 42:YW:87:PRO:HD2 | 1.45 | 0.97 |
| 12:QL:10:LEU:HD13 | 17:QQ:32:TYR:CE2 | 2.00 | 0.96 |
| 25:RA:2298:A:H62 | 25:RA:2318:G:H8 | 1.09 | 0.96 |
| 51:Y5:58:LEU:HD13 | 51:Y5:60:VAL:HG12 | 1.47 | 0.96 |
| 1:QA:343:U:HO2' | 1:QA:346:G:H1 | 1.00 | 0.96 |
| 1:QA:1049:U:HO2' | 14:QN:2:ALA:N | 1.61 | 0.96 |
| 2:XB:7:VAL:HG21 | 2:XB:217:ARG:HH11 | 1.31 | 0.96 |
| 4:XD:30:LYS:C | 4:XD:32:ALA:H | 1.62 | 0.96 |
| 2:QB:178:ARG:NH2 | 8:QH:74:PRO:HB3 | 1.79 | 0.96 |
| 33:RN:96:GLU:HG2 | 33:RN:97:ARG:H | 1.26 | 0.96 |
| 8:XH:23:SER:HA | 8:XH:63:LEU:HD22 | 1.45 | 0.96 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:QB:7:VAL:HG21 | 2:QB:217:ARG:HH11 | 1.30 | 0.96 |
| 30:RG:112:PRO:HB3 | 50:R4:37:SER:HB2 | 1.47 | 0.96 |
| 10:XJ:32:ALA:HB3 | 10:XJ:76:ASN:HB2 | 1.47 | 0.96 |
| 30:YG:112:PRO:HB3 | 50:Y4:37:SER:HB2 | 1.47 | 0.96 |
| 45:YZ:120:ILE:HB | 45:YZ:171:ILE:HA | 1.44 | 0.96 |
| 52:R6:47:THR:HG22 | 52:R6:48:VAL:HG12 | 1.45 | 0.96 |
| 28:YE:20:ALA:O | 28:YE:21:VAL:HG22 | 1.64 | 0.96 |
| 44:YY:84:ARG:HH12 | 44:YY:97:ARG:HB2 | 1.28 | 0.96 |
| 7:QG:62:PHE:HA | 7:QG:124:LEU:HD21 | 1.47 | 0.96 |
| 19:XS:9:VAL:HG12 | 50:Y4:66:SER:O | 1.64 | 0.96 |
| 4:QD:166:LYS:CD | 27:YD:134:ARG:NH1 | 2.27 | 0.96 |
| 3:XC:19:GLU:HA | 3:XC:54:ARG:HH12 | 1.29 | 0.96 |
| 3:XC:95:THR:HG22 | 3:XC:96:GLY:H | 1.27 | 0.96 |
| 2:QB:8:LYS:HD3 | 2:QB:8:LYS:H | 1.31 | 0.95 |
| 12:QL:6:THR:H | 12:QL:9:GLN:HE21 | 1.14 | 0.95 |
| 3:XC:16:ARG:HD2 | 3:XC:54:ARG:HH21 | 1.28 | 0.95 |
| 29:YF:101:LEU:HD12 | 29:YF:102:PRO:CD | 1.96 | 0.95 |
| 50:Y4:56:VAL:HA | 50:Y4:60:GLN:HB2 | 1.43 | 0.95 |
| 10:QJ:32:ALA:HB3 | 10:QJ:76:ASN:HB2 | 1.47 | 0.95 |
| 19:QS:5:LEU:HD22 | 50:R4:67:TYR:HE2 | 1.19 | 0.95 |
| 25:RA:2712:U:HO2' | 25:RA:2712(A):A:H8 | 1.11 | 0.95 |
| 51:Y5:56:LYS:H | 51:Y5:56:LYS:HD2 | 1.31 | 0.95 |
| 10:QJ:75:ILE:HG13 | 10:QJ:76:ASN:H | 1.31 | 0.95 |
| 27:YD:227:ASN:HB3 | 27:YD:228:PRO:HD2 | 1.44 | 0.95 |
| 16:QP:4:ILE:HD11 | 16:QP:64:ALA:HB1 | 1.46 | 0.95 |
| 44:RY:84:ARG:HH12 | 44:RY:97:ARG:HB2 | 1.28 | 0.95 |
| 13:XM:57:ARG:HB2 | 13:XM:57:ARG:HH11 | 1.32 | 0.95 |
| 29:YF:103:LYS:HA | 29:YF:106:ARG:HG3 | 1.49 | 0.95 |
| 41:YV:99:ILE:HD13 | 41:YV:99:ILE:H | 1.32 | 0.95 |
| 29:RF:101:LEU:HD12 | 29:RF:102:PRO:CD | 1.96 | 0.95 |
| 37:RR:54:LEU:HD23 | 37:RR:66:VAL:HG23 | 1.44 | 0.95 |
| 6:XF:86:ARG:O | 6:XF:87:ARG:HG2 | 1.66 | 0.95 |
| 46:Y0:10:THR:HG22 | 46:Y0:11:ARG:H | 1.27 | 0.95 |
| 31:RH:86:GLU:HG3 | 31:RH:165:ALA:N | 1.79 | 0.95 |
| 32:RI:38:LEU:H | 32:RI:38:LEU:HD12 | 1.30 | 0.95 |
| 48:R2:13:ALA:HA | 48:R2:16:LEU:HD23 | 1.48 | 0.95 |
| 2:XB:196:LEU:HD12 | 2:XB:197:VAL:HG23 | 1.45 | 0.95 |
| 4:XD:94:LEU:H | 4:XD:94:LEU:HD12 | 1.28 | 0.95 |
| 28:YE:78:LEU:HG | 28:YE:79:ARG:HE | 1.30 | 0.95 |
| 31:YH:153:LYS:CB | 31:YH:154:PRO:HD2 | 1.97 | 0.95 |
| 35:YP:62:LEU:N | 35:YP:62:LEU:HD22 | 1.82 | 0.95 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 16:XP:4:ILE:HD11 | 16:XP:64:ALA:HB1 | 1.46 | 0.94 |
| 47:Y1:81:LYS:N | 47:Y1:81:LYS:CE | 2.30 | 0.94 |
| 48:Y2:13:ALA:HA | 48:Y2:16:LEU:HD23 | 1.48 | 0.94 |
| 45:RZ:120:ILE:CD1 | 45:RZ:169:GLU:HG3 | 1.97 | 0.94 |
| 47:R1:81:LYS:CA | 47:R1:81:LYS:CE | 2.45 | 0.94 |
| 25:RA:1371:G:HO2' | 25:RA:1372:U:H5 | 1.14 | 0.94 |
| 35:RP:62:LEU:N | 35:RP:62:LEU:HD22 | 1.82 | 0.94 |
| 41:YV:35:LEU:HD21 | 41:YV:57:VAL:HG22 | 1.47 | 0.94 |
| 47:Y1:81:LYS:CA | 47:Y1:81:LYS:CE | 2.45 | 0.94 |
| 34:RO:2:ILE:HD11 | 34:RO:82:ASN:HD22 | 1.33 | 0.94 |
| 44:RY:51:VAL:HG13 | 44:RY:52:SER:H | 1.31 | 0.94 |
| 3:QC:16:ARG:HB2 | 3:QC:16:ARG:HH11 | 1.29 | 0.94 |
| 6:QF:86:ARG:O | 6:QF:87:ARG:HG2 | 1.66 | 0.94 |
| 25:YA:958:U:OP2 | 36:YQ:14:ARG:NH1 | 2.00 | 0.94 |
| 44:YY:51:VAL:HG13 | 44:YY:52:SER:H | 1.31 | 0.94 |
| 45:YZ:120:ILE:CD1 | 45:YZ:169:GLU:HG3 | 1.97 | 0.94 |
| 27:RD:28:GLU:HB2 | 27:RD:29:PRO:CD | 1.98 | 0.94 |
| 3:XC:11:ARG:HB3 | 3:XC:15:THR:HB | 1.48 | 0.94 |
| 27:RD:108:PRO:HB3 | 27:RD:143:HIS:HE1 | 1.32 | 0.94 |
| 38:RS:59:LYS:HG2 | 38:RS:60:GLY:H | 1.31 | 0.94 |
| 10:XJ:75:ILE:HG13 | 10:XJ:76:ASN:H | 1.31 | 0.94 |
| 25:YA:138:G:N2 | 43:YX:44:GLU:OE2 | 1.99 | 0.94 |
| 28:RE:78:LEU:HG | 28:RE:79:ARG:HE | 1.31 | 0.94 |
| 41:RV:35:LEU:HD21 | 41:RV:57:VAL:HG22 | 1.47 | 0.94 |
| 47:R1:81:LYS:N | 47:R1:81:LYS:CE | 2.30 | 0.94 |
| 31:YH:77:LYS:HB3 | 31:YH:77:LYS:NZ | 1.82 | 0.94 |
| 25:RA:2645:G:H3' | 25:RA:2646:C:H5' | 1.47 | 0.94 |
| 39:RT:62:THR:HG22 | 39:RT:75:ILE:HG12 | 1.46 | 0.94 |
| 25:YA:1496:A:H8 | 25:YA:1577:C:HO2' | 1.00 | 0.94 |
| 27:YD:28:GLU:HB2 | 27:YD:29:PRO:CD | 1.98 | 0.94 |
| 52:Y6:47:THR:HG22 | 52:Y6:48:VAL:HG12 | 1.45 | 0.94 |
| 39:RT:11:GLU:CD | 39:RT:11:GLU:H | 1.71 | 0.93 |
| 43:RX:57:LEU:CD1 | 43:RX:78:LYS:HB2 | 1.98 | 0.93 |
| 51:R5:56:LYS:H | 51:R5:56:LYS:HD2 | 1.31 | 0.93 |
| 2:XB:8:LYS:HD3 | 2:XB:8:LYS:H | 1.31 | 0.93 |
| 12:XL:10:LEU:HD13 | 17:XQ:32:TYR:CE2 | 2.03 | 0.93 |
| 33:RN:134:ARG:H | 33:RN:135:PRO:CD | 1.81 | 0.93 |
| 31:YH:77:LYS:HB3 | 31:YH:77:LYS:HZ3 | 1.31 | 0.93 |
| 7:QG:15:ASP:HB3 | 7:QG:20:ASP:H | 1.31 | 0.93 |
| 31:YH:127:GLU:HB3 | 31:YH:128:PRO:CD | 1.99 | 0.93 |
| 52:R6:41:PRO:HG2 | 52:R6:45:LYS:H | 1.30 | 0.93 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:XC:70:VAL:HG12 | 3:XC:72:LYS:H | 1.34 | 0.93 |
| 33:YN:134:ARG:H | 33:YN:135:PRO:CD | 1.81 | 0.93 |
| 39:YT:11:GLU:CD | 39:YT:11:GLU:H | 1.71 | 0.93 |
| 13:QM:90:LEU:HA | 13:QM:93:ARG:HD2 | 1.50 | 0.93 |
| 19:QS:40:ILE:HG12 | 19:QS:41:VAL:HG22 | 1.51 | 0.93 |
| 25:YA:859:G:O2' | 25:YA:860:U:O2 | 1.87 | 0.93 |
| 13:QM:57:ARG:HB2 | 13:QM:57:ARG:HH11 | 1.32 | 0.93 |
| 35:RP:1:MET:HE2 | 35:RP:5:ASP:HB3 | 1.51 | 0.93 |
| 51:R5:58:LEU:HD13 | 51:R5:60:VAL:HG12 | 1.47 | 0.93 |
| 31:RH:127:GLU:HB3 | 31:RH:128:PRO:CD | 1.99 | 0.93 |
| 27:YD:108:PRO:HB3 | 27:YD:143:HIS:CE1 | 2.04 | 0.93 |
| 43:YX:57:LEU:CD1 | 43:YX:78:LYS:HB2 | 1.98 | 0.93 |
| 20:QT:49:ALA:HB1 | 20:QT:99:LEU:HB2 | 1.51 | 0.93 |
| 27:RD:147:LEU:HD13 | 27:RD:155:LEU:HD11 | 1.51 | 0.93 |
| 41:RV:99:ILE:HD13 | 41:RV:99:ILE:H | 1.32 | 0.93 |
| 6:XF:24:GLU:HA | 6:XF:27:GLN:HG3 | 1.49 | 0.93 |
| 25:YA:71:A:H2 | 43:YX:31:HIS:HE1 | 1.16 | 0.93 |
| 27:YD:108:PRO:HB3 | 27:YD:143:HIS:HE1 | 1.32 | 0.93 |
| 36:RQ:34:LEU:HD11 | 36:RQ:129:THR:HB | 1.50 | 0.92 |
| 15:XO:82:ILE:HD11 | 15:XO:88:ARG:HG3 | 1.51 | 0.92 |
| 10:XJ:8:LEU:HD11 | 10:XJ:23:ILE:HD12 | 1.49 | 0.92 |
| 37:YR:33:ARG:NH2 | 51:Y5:55:ARG:HG2 | 1.85 | 0.92 |
| 45:RZ:18:LEU:H | 45:RZ:18:LEU:HD12 | 1.33 | 0.92 |
| 28:YE:14:ILE:HG12 | 28:YE:15:PHE:H | 1.33 | 0.92 |
| 35:YP:65:ARG:HG3 | 35:YP:65:ARG:HH11 | 1.35 | 0.92 |
| 5:QE:53:LEU:H | 5:QE:53:LEU:HD12 | 1.34 | 0.92 |
| 29:RF:103:LYS:HA | 29:RF:106:ARG:HG3 | 1.48 | 0.92 |
| 19:XS:40:ILE:HG12 | 19:XS:41:VAL:HG22 | 1.51 | 0.92 |
| 25:YA:1050:A:C8 | 25:YA:2751:G:H2' | 2.04 | 0.92 |
| 38:YS:59:LYS:HG2 | 38:YS:60:GLY:H | 1.31 | 0.92 |
| 25:RA:1454:U:OP1 | 37:RR:77:ARG:NH1 | 2.03 | 0.92 |
| 32:RI:115:ALA:HB3 | 32:RI:128:LEU:HD11 | 1.50 | 0.92 |
| 47:R1:81:LYS:NZ | 47:R1:81:LYS:CA | 2.31 | 0.92 |
| 5:XE:79:GLU:OE2 | 8:XH:104:ARG:HA | 1.69 | 0.92 |
| 17:XQ:4:LYS:HE3 | 17:XQ:6:LEU:HD21 | 1.51 | 0.92 |
| 32:YI:144:VAL:HG13 | 32:YI:145:VAL:HG13 | 1.52 | 0.92 |
| 27:RD:183:ARG:HH11 | 27:RD:183:ARG:HG2 | 1.34 | 0.92 |
| 45:RZ:107:THR:HB | 45:RZ:144:LEU:HB2 | 1.52 | 0.92 |
| 45:YZ:18:LEU:H | 45:YZ:18:LEU:HD12 | 1.33 | 0.92 |
| 8:QH:6:ILE:HB | 8:QH:85:ARG:NH1 | 1.85 | 0.92 |
| 8:XH:6:ILE:HB | 8:XH:85:ARG:NH1 | 1.85 | 0.92 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:RG:37:VAL:HG22 | 30:RG:159:VAL:HA | 1.52 | 0.92 |
| 31:RH:153:LYS:CB | 31:RH:154:PRO:HD2 | 1.97 | 0.92 |
| 47:R1:81:LYS:HA | 47:R1:81:LYS:CE | 2.00 | 0.92 |
| 5:XE:53:LEU:H | 5:XE:53:LEU:HD12 | 1.34 | 0.92 |
| 2:QB:32:ILE:HD11 | 2:QB:40:HIS:HB3 | 1.52 | 0.92 |
| 3:QC:11:ARG:HB3 | 3:QC:15:THR:HB | 1.48 | 0.92 |
| 6:QF:24:GLU:HA | 6:QF:27:GLN:HG3 | 1.49 | 0.92 |
| 17:QQ:4:LYS:HE3 | 17:QQ:6:LEU:HD21 | 1.51 | 0.92 |
| 27:RD:108:PRO:HB3 | 27:RD:143:HIS:CE1 | 2.05 | 0.92 |
| 36:RQ:80:GLU:HG2 | 46:R0:5:LYS:HD3 | 1.50 | 0.92 |
| 4:QD:166:LYS:CG | 27:YD:135:PHE:HZ | 1.83 | 0.91 |
| 41:RV:24:LYS:HA | 41:RV:92:THR:HG23 | 1.52 | 0.91 |
| 5:QE:101:ILE:HD11 | 5:QE:119:LEU:HD23 | 1.51 | 0.91 |
| 7:XG:15:ASP:HB3 | 7:XG:20:ASP:H | 1.31 | 0.91 |
| 36:YQ:34:LEU:HD11 | 36:YQ:129:THR:HB | 1.50 | 0.91 |
| 4:QD:166:LYS:HD2 | 27:YD:134:ARG:HH12 | 1.35 | 0.91 |
| 8:QH:6:ILE:HD12 | 8:QH:6:ILE:H | 1.34 | 0.91 |
| 3:XC:20:SER:HB2 | 3:XC:40:ARG:HH22 | 1.34 | 0.91 |
| 22:QV:1:C:C4' | 46:R0:5:LYS:HE2 | 2.00 | 0.91 |
| 47:Y1:81:LYS:HA | 47:Y1:81:LYS:CE | 2.01 | 0.91 |
| 3:QC:70:VAL:HG12 | 3:QC:72:LYS:H | 1.34 | 0.91 |
| 4:QD:166:LYS:HG3 | 27:YD:135:PHE:CZ | 2.05 | 0.91 |
| 30:RG:101:ILE:HG13 | 30:RG:102:PHE:N | 1.86 | 0.91 |
| 31:RH:77:LYS:HB3 | 31:RH:77:LYS:NZ | 1.82 | 0.91 |
| 2:XB:33:TYR:HB2 | 2:XB:43:ASP:HB2 | 1.53 | 0.91 |
| 30:YG:37:VAL:HG22 | 30:YG:159:VAL:HA | 1.52 | 0.91 |
| 38:YS:67:ARG:NH1 | 38:YS:67:ARG:HB2 | 1.85 | 0.91 |
| 40:YU:92:ARG:HG2 | 40:YU:92:ARG:O | 1.69 | 0.91 |
| 44:YY:30:VAL:HG22 | 44:YY:37:VAL:HG12 | 1.53 | 0.91 |
| 3:QC:20:SER:HB2 | 3:QC:40:ARG:HH22 | 1.33 | 0.91 |
| 10:QJ:8:LEU:HD11 | 10:QJ:23:ILE:HD12 | 1.50 | 0.91 |
| 37:RR:33:ARG:NH2 | 51:R5:55:ARG:HG2 | 1.85 | 0.91 |
| 5:XE:101:ILE:HD11 | 5:XE:119:LEU:HD23 | 1.51 | 0.91 |
| 35:YP:1:MET:HE2 | 35:YP:5:ASP:HB3 | 1.50 | 0.91 |
| 2:QB:33:TYR:HB2 | 2:QB:43:ASP:HB2 | 1.53 | 0.91 |
| 29:RF:7:TYR:HB3 | 29:RF:21:ALA:HB1 | 1.53 | 0.91 |
| 15:QO:82:ILE:HD11 | 15:QO:88:ARG:HG3 | 1.51 | 0.91 |
| 27:YD:10:THR:HG23 | 27:YD:13:ARG:HB3 | 1.51 | 0.91 |
| 13:QM:77:ASN:HA | 50:R4:71:ARG:NH2 | 1.86 | 0.91 |
| 28:RE:14:ILE:HG12 | 28:RE:15:PHE:H | 1.33 | 0.91 |
| 36:RQ:81:VAL:HG23 | 46:R0:7:LEU:HD11 | 1.51 | 0.91 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:RS:67:ARG:NH1 | 38:RS:67:ARG:HB2 | 1.85 | 0.90 |
| 11:XK:99:GLN:HG2 | 11:XK:105:VAL:HG21 | 1.53 | 0.90 |
| 34:YO:2:ILE:HD11 | 34:YO:82:ASN:HD22 | 1.33 | 0.90 |
| 47:Y1:80:LEU:O | 47:Y1:81:LYS:HB2 | 1.71 | 0.90 |
| 2:QB:77:ALA:HB2 | 2:QB:211:ILE:HD13 | 1.53 | 0.90 |
| 5:QE:100:VAL:HG22 | 5:QE:118:ILE:HG22 | 1.52 | 0.90 |
| 20:XT:49:ALA:HB1 | 20:XT:99:LEU:HB2 | 1.51 | 0.90 |
| 44:YY:38:ILE:HG22 | 44:YY:66:PRO:HA | 1.54 | 0.90 |
| 4:QD:170:VAL:HG22 | 4:QD:171:GLY:H | 1.34 | 0.90 |
| 1:XA:523:A:H61 | 12:XL:92:ASP:HB2 | 1.34 | 0.90 |
| 4:XD:170:VAL:HG22 | 4:XD:171:GLY:H | 1.35 | 0.90 |
| 36:YQ:80:GLU:CD | 46:Y0:5:LYS:HD2 | 1.92 | 0.90 |
| 25:RA:676:A:H8 | 25:RA:2069:G:H21 | 1.18 | 0.90 |
| 13:XM:90:LEU:HA | 13:XM:93:ARG:HD2 | 1.50 | 0.90 |
| 41:YV:24:LYS:HA | 41:YV:92:THR:HG23 | 1.52 | 0.90 |
| 13:QM:50:GLU:OE1 | 50:R4:32:TYR:HE2 | 1.51 | 0.90 |
| 27:RD:10:THR:HG23 | 27:RD:13:ARG:HB3 | 1.51 | 0.90 |
| 31:RH:4:ILE:HG13 | 31:RH:6:ARG:CZ | 2.01 | 0.90 |
| 1:QA:1071:C:H5'' | 5:QE:49:PRO:HG2 | 1.53 | 0.90 |
| 5:XE:100:VAL:HG22 | 5:XE:118:ILE:HG22 | 1.52 | 0.90 |
| 27:YD:44:ASN:HD22 | 27:YD:44:ASN:H | 1.19 | 0.90 |
| 27:YD:147:LEU:HD13 | 27:YD:155:LEU:HD11 | 1.51 | 0.90 |
| 35:YP:106:LEU:O | 35:YP:107:LYS:HB2 | 1.71 | 0.90 |
| 41:YV:44:LYS:O | 41:YV:46:VAL:HG12 | 1.72 | 0.90 |
| 48:Y2:65:ASN:HB3 | 48:Y2:69:ARG:HH12 | 1.34 | 0.90 |
| 22:QV:1:C:O4' | 46:R0:5:LYS:CE | 2.20 | 0.90 |
| 25:RA:859:G:O2' | 25:RA:860:U:O2 | 1.88 | 0.90 |
| 1:XA:186(E):C:H42 | 1:XA:191(B):G:H1 | 1.19 | 0.90 |
| 8:XH:6:ILE:H | 8:XH:6:ILE:HD12 | 1.35 | 0.90 |
| 25:YA:483:A:H4' | 44:YY:49:VAL:HA | 1.50 | 0.90 |
| 51:Y5:3:LYS:HA | 51:Y5:3:LYS:HE3 | 1.54 | 0.90 |
| 35:RP:58:THR:O | 35:RP:61:ARG:NE | 2.05 | 0.90 |
| 48:R2:65:ASN:HB3 | 48:R2:69:ARG:HH12 | 1.34 | 0.90 |
| 32:YI:115:ALA:HB3 | 32:YI:128:LEU:HD11 | 1.50 | 0.90 |
| 45:YZ:107:THR:HB | 45:YZ:144:LEU:HB2 | 1.52 | 0.90 |
| 13:QM:77:ASN:HA | 50:R4:71:ARG:HH22 | 1.36 | 0.90 |
| 25:RA:819:A:OP2 | 25:RA:1187:G:N2 | 2.03 | 0.90 |
| 31:YH:4:ILE:HG13 | 31:YH:6:ARG:CZ | 2.01 | 0.90 |
| 14:QN:26:ARG:CB | 14:QN:43:CYS:SG | 2.60 | 0.89 |
| 31:RH:26:VAL:HG13 | 31:RH:27:LYS:H | 1.35 | 0.89 |
| 19:XS:64:GLU:O | 19:XS:67:VAL:HG23 | 1.72 | 0.89 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:YA:270(R):G:N3 | 47:Y1:78:LYS:NZ | 2.20 | 0.89 |
| 27:YD:183:ARG:HH11 | 27:YD:183:ARG:HG2 | 1.34 | 0.89 |
| 31:YH:26:VAL:HG13 | 31:YH:27:LYS:H | 1.35 | 0.89 |
| 2:QB:7:VAL:HG21 | 2:QB:217:ARG:NH1 | 1.87 | 0.89 |
| 2:XB:7:VAL:HG21 | 2:XB:217:ARG:NH1 | 1.87 | 0.89 |
| 42:YW:65:LEU:HD12 | 42:YW:68:ARG:HH11 | 1.36 | 0.89 |
| 31:RH:10:PRO:HD2 | 31:RH:50:VAL:O | 1.72 | 0.89 |
| 36:RQ:80:GLU:CG | 46:R0:5:LYS:CB | 2.50 | 0.89 |
| 2:XB:126:GLU:HG3 | 2:XB:129:GLU:HG3 | 1.54 | 0.89 |
| 1:QA:1106:G:H5'' | 3:QC:172:ARG:HG2 | 1.55 | 0.89 |
| 25:RA:242:G:H5' | 54:R8:62:LEU:HD22 | 1.52 | 0.89 |
| 19:XS:5:LEU:HD22 | 50:Y4:67:TYR:CE2 | 2.06 | 0.89 |
| 25:YA:1952:A:OP1 | 34:YO:44:LYS:NZ | 2.05 | 0.89 |
| 27:YD:69:ARG:HH21 | 27:YD:130:ALA:HB2 | 1.37 | 0.89 |
| 35:YP:88:LEU:HD12 | 35:YP:95:VAL:HG11 | 1.52 | 0.89 |
| 46:Y0:3:HIS:HD2 | 46:Y0:4:LYS:O | 1.53 | 0.89 |
| 51:Y5:40:LYS:HZ1 | 51:Y5:48:GLU:HB2 | 1.36 | 0.89 |
| 27:RD:69:ARG:HH21 | 27:RD:130:ALA:HB2 | 1.37 | 0.89 |
| 19:QS:64:GLU:O | 19:QS:67:VAL:HG23 | 1.73 | 0.89 |
| 40:RU:92:ARG:HG2 | 40:RU:92:ARG:O | 1.69 | 0.89 |
| 30:YG:116:ASP:O | 30:YG:117:PHE:HB3 | 1.72 | 0.89 |
| 25:RA:2729:G:H1' | 28:RE:187:ALA:HB2 | 1.53 | 0.89 |
| 51:R5:3:LYS:HA | 51:R5:3:LYS:HE3 | 1.54 | 0.89 |
| 12:XL:6:THR:H | 12:XL:9:GLN:HE21 | 1.15 | 0.89 |
| 28:YE:63:LEU:HD12 | 28:YE:64:LYS:N | 1.88 | 0.89 |
| 54:Y8:52:LYS:H | 54:Y8:53:PRO:HD3 | 1.35 | 0.89 |
| 41:RV:44:LYS:O | 41:RV:46:VAL:HG12 | 1.72 | 0.89 |
| 44:RY:76:CYS:SG | 44:RY:77:PRO:HD2 | 2.13 | 0.89 |
| 54:R8:52:LYS:H | 54:R8:53:PRO:HD3 | 1.35 | 0.89 |
| 54:Y8:59:LYS:HB2 | 54:Y8:59:LYS:NZ | 1.88 | 0.89 |
| 35:RP:88:LEU:HD12 | 35:RP:95:VAL:HG11 | 1.52 | 0.89 |
| 35:YP:58:THR:O | 35:YP:61:ARG:NE | 2.05 | 0.89 |
| 1:QA:677:U:H3 | 1:QA:713:G:H1 | 1.20 | 0.89 |
| 10:QJ:74:ILE:H | 10:QJ:74:ILE:HD13 | 1.38 | 0.89 |
| 35:RP:65:ARG:HG3 | 35:RP:65:ARG:HH11 | 1.35 | 0.89 |
| 27:RD:27:THR:HG23 | 27:RD:28:GLU:H | 1.38 | 0.88 |
| 31:YH:10:PRO:HD2 | 31:YH:50:VAL:O | 1.72 | 0.88 |
| 2:XB:18:GLY:N | 2:XB:42:ILE:HG22 | 1.87 | 0.88 |
| 2:XB:32:ILE:HD11 | 2:XB:40:HIS:HB3 | 1.52 | 0.88 |
| 2:XB:178:ARG:HH21 | 8:XH:74:PRO:CB | 1.86 | 0.88 |
| 5:XE:71:LEU:O | 5:XE:72:GLN:HG3 | 1.73 | 0.88 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:QB:126:GLU:HG3 | 2:QB:129:GLU:HG3 | 1.54 | 0.88 |
| 25:RA:2015:A:H1' | 51:R5:2:ALA:HA | 1.53 | 0.88 |
| 30:RG:88:ILE:HD13 | 30:RG:88:ILE:O | 1.72 | 0.88 |
| 30:YG:88:ILE:O | 30:YG:88:ILE:HD13 | 1.72 | 0.88 |
| 2:QB:18:GLY:N | 2:QB:42:ILE:HG22 | 1.87 | 0.88 |
| 32:RI:75:LEU:HB3 | 32:RI:105:HIS:CE1 | 2.08 | 0.88 |
| 51:R5:40:LYS:HZ1 | 51:R5:48:GLU:HB2 | 1.38 | 0.88 |
| 35:YP:64:LYS:O | 35:YP:66:GLY:N | 2.07 | 0.88 |
| 14:QN:24:CYS:SG | 14:QN:40:CYS:N | 2.46 | 0.88 |
| 28:RE:63:LEU:HD12 | 28:RE:64:LYS:N | 1.88 | 0.88 |
| 33:RN:22:THR:HG22 | 33:RN:23:LEU:N | 1.88 | 0.88 |
| 47:R1:80:LEU:O | 47:R1:81:LYS:HB2 | 1.71 | 0.88 |
| 25:YA:2701:C:H3' | 25:YA:2702:U:H5'' | 1.55 | 0.88 |
| 44:YY:76:CYS:SG | 44:YY:77:PRO:HD2 | 2.13 | 0.88 |
| 5:QE:41:VAL:HG11 | 5:QE:113:ALA:HB2 | 1.54 | 0.88 |
| 25:RA:631:A:OP2 | 54:R8:46:ARG:NH2 | 2.06 | 0.88 |
| 35:RP:106:LEU:O | 35:RP:107:LYS:HB2 | 1.71 | 0.88 |
| 44:RY:30:VAL:HG22 | 44:RY:37:VAL:HG12 | 1.53 | 0.88 |
| 1:XA:1286:A:H5'' | 21:XU:26:LYS:HD2 | 1.56 | 0.88 |
| 2:XB:77:ALA:HB2 | 2:XB:211:ILE:HD13 | 1.53 | 0.88 |
| 25:YA:1689:A:H62 | 25:YA:1698:A:H2 | 1.21 | 0.88 |
| 46:Y0:3:HIS:NE2 | 46:Y0:4:LYS:O | 2.05 | 0.88 |
| 5:XE:152:ARG:O | 8:XH:64:LYS:NZ | 2.07 | 0.88 |
| 20:XT:23:ARG:HA | 20:XT:26:ASN:HD21 | 1.36 | 0.88 |
| 13:XM:8:GLU:OE1 | 30:YG:115:ARG:CZ | 2.22 | 0.88 |
| 33:YN:22:THR:HG22 | 33:YN:23:LEU:N | 1.88 | 0.88 |
| 20:QT:23:ARG:HA | 20:QT:26:ASN:HD21 | 1.36 | 0.88 |
| 42:RW:65:LEU:HD12 | 42:RW:68:ARG:HH11 | 1.36 | 0.88 |
| 54:R8:59:LYS:HB2 | 54:R8:59:LYS:NZ | 1.88 | 0.88 |
| 35:YP:49:ARG:HD2 | 54:Y8:58:ILE:HG22 | 1.54 | 0.88 |
| 38:YS:106:ARG:NH1 | 38:YS:106:ARG:HB2 | 1.89 | 0.88 |
| 13:QM:97:PRO:HB2 | 13:QM:101:GLN:NE2 | 1.89 | 0.88 |
| 27:RD:28:GLU:HB2 | 27:RD:29:PRO:HD2 | 1.56 | 0.88 |
| 21:XU:6:ARG:HE | 21:XU:15:ARG:CZ | 1.87 | 0.88 |
| 23:XX:2:U:O2' | 23:XX:3:G:H5' | 1.74 | 0.88 |
| 28:YE:77:ILE:HD12 | 28:YE:78:LEU:N | 1.89 | 0.88 |
| 28:RE:77:ILE:HD12 | 28:RE:78:LEU:N | 1.89 | 0.87 |
| 32:RI:88:ILE:HG12 | 32:RI:122:GLU:H | 1.39 | 0.87 |
| 35:RP:49:ARG:HD2 | 54:R8:58:ILE:HG22 | 1.54 | 0.87 |
| 5:XE:41:VAL:HG11 | 5:XE:113:ALA:HB2 | 1.54 | 0.87 |
| 46:Y0:25:ARG:HD2 | 46:Y0:29:GLN:NE2 | 1.90 | 0.87 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 47:Y1:82:LEU:HD13 | 47:Y1:83:GLU:O | 1.74 | 0.87 |
| 46:R0:25:ARG:HD2 | 46:R0:29:GLN:NE2 | 1.90 | 0.87 |
| 4:XD:114:ARG:HH11 | 4:XD:114:ARG:HG3 | 1.39 | 0.87 |
| 19:XS:8:GLY:O | 19:XS:9:VAL:HG22 | 1.74 | 0.87 |
| 27:YD:44:ASN:CB | 27:YD:49:ILE:HA | 2.05 | 0.87 |
| 32:YI:9:LEU:O | 32:YI:10:GLU:HG3 | 1.74 | 0.87 |
| 36:YQ:64:ILE:HA | 36:YQ:106:VAL:HG12 | 1.54 | 0.87 |
| 8:QH:51:VAL:HG21 | 8:QH:60:ARG:HG2 | 1.55 | 0.87 |
| 27:RD:181:GLU:HA | 27:RD:272:ALA:HB3 | 1.57 | 0.87 |
| 38:RS:106:ARG:NH1 | 38:RS:106:ARG:HB2 | 1.88 | 0.87 |
| 44:RY:38:ILE:HG22 | 44:RY:66:PRO:HA | 1.54 | 0.87 |
| 13:XM:97:PRO:HB2 | 13:XM:101:GLN:NE2 | 1.89 | 0.87 |
| 2:QB:96:ARG:H | 2:QB:96:ARG:HD2 | 1.38 | 0.87 |
| 11:QK:99:GLN:HG2 | 11:QK:105:VAL:HG21 | 1.53 | 0.87 |
| 21:QU:6:ARG:HE | 21:QU:15:ARG:CZ | 1.87 | 0.87 |
| 41:RV:19:LYS:HD2 | 41:RV:95:LEU:HD23 | 1.55 | 0.87 |
| 13:XM:8:GLU:OE1 | 30:YG:115:ARG:NH2 | 2.07 | 0.87 |
| 47:Y1:82:LEU:HD11 | 47:Y1:83:GLU:O | 1.75 | 0.87 |
| 1:QA:339:C:OP2 | 34:RO:97:ARG:NH1 | 2.08 | 0.87 |
| 19:QS:41:VAL:HG13 | 19:QS:44:MET:HB2 | 1.57 | 0.87 |
| 27:RD:44:ASN:HD22 | 27:RD:44:ASN:H | 1.19 | 0.87 |
| 27:YD:27:THR:HG23 | 27:YD:28:GLU:H | 1.38 | 0.87 |
| 4:QD:166:LYS:CG | 27:YD:135:PHE:CZ | 2.58 | 0.87 |
| 15:QO:56:LEU:O | 15:QO:60:VAL:HG23 | 1.75 | 0.87 |
| 8:XH:51:VAL:HG21 | 8:XH:60:ARG:HG2 | 1.55 | 0.87 |
| 11:XK:32:ILE:HD12 | 11:XK:72:ALA:HB2 | 1.56 | 0.87 |
| 5:QE:152:ARG:O | 8:QH:64:LYS:NZ | 2.06 | 0.87 |
| 10:QJ:47:PHE:HE1 | 10:QJ:63:PHE:HB2 | 1.40 | 0.87 |
| 19:QS:8:GLY:O | 19:QS:9:VAL:HG22 | 1.74 | 0.87 |
| 10:XJ:74:ILE:H | 10:XJ:74:ILE:HD13 | 1.38 | 0.87 |
| 1:QA:1286:A:H5'' | 21:QU:26:LYS:HD2 | 1.56 | 0.87 |
| 23:QX:2:U:O2' | 23:QX:3:G:H5' | 1.74 | 0.87 |
| 35:RP:64:LYS:O | 35:RP:66:GLY:N | 2.07 | 0.87 |
| 25:YA:270(T):G:H5'' | 47:Y1:97:LEU:HD22 | 1.55 | 0.87 |
| 35:YP:18:ARG:O | 35:YP:19:VAL:HB | 1.75 | 0.87 |
| 45:YZ:24:LEU:HD11 | 45:YZ:86:VAL:HG23 | 1.57 | 0.87 |
| 36:RQ:64:ILE:HA | 36:RQ:106:VAL:HG12 | 1.54 | 0.86 |
| 47:R1:92:LYS:HG3 | 47:R1:96:LYS:HB2 | 1.57 | 0.86 |
| 27:YD:181:GLU:HA | 27:YD:272:ALA:HB3 | 1.57 | 0.86 |
| 32:YI:75:LEU:HB3 | 32:YI:105:HIS:CE1 | 2.08 | 0.86 |
| 1:QA:343:U:O2' | 1:QA:346:G:N1 | 2.07 | 0.86 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:QS:27:GLU:O | 19:QS:28:LYS:HG2 | 1.74 | 0.86 |
| 13:XM:4:ILE:H | 13:XM:9:ILE:CG2 | 1.88 | 0.86 |
| 29:YF:29:ASN:H | 29:YF:112:MET:HE3 | 1.40 | 0.86 |
| 30:YG:145:THR:HG23 | 50:Y4:28:LYS:HZ1 | 1.38 | 0.86 |
| 25:RA:1542:G:O6 | 25:RA:1543:A:N6 | 2.08 | 0.86 |
| 1:XA:1123:A:H4' | 10:XJ:36:GLY:HA3 | 1.55 | 0.86 |
| 30:YG:101:ILE:HG13 | 30:YG:102:PHE:N | 1.86 | 0.86 |
| 30:YG:161:THR:HG22 | 30:YG:163:ALA:H | 1.39 | 0.86 |
| 40:YU:92:ARG:HD2 | 41:YV:11:GLN:NE2 | 1.90 | 0.86 |
| 11:QK:32:ILE:HD12 | 11:QK:72:ALA:HB2 | 1.56 | 0.86 |
| 29:RF:29:ASN:H | 29:RF:112:MET:HE3 | 1.40 | 0.86 |
| 30:RG:116:ASP:O | 30:RG:117:PHE:HB3 | 1.72 | 0.86 |
| 38:RS:106:ARG:HB2 | 38:RS:106:ARG:HH11 | 1.40 | 0.86 |
| 19:XS:27:GLU:O | 19:XS:28:LYS:HG2 | 1.74 | 0.86 |
| 5:QE:71:LEU:O | 5:QE:72:GLN:HG3 | 1.73 | 0.86 |
| 25:RA:138:G:N2 | 43:RX:44:GLU:OE2 | 2.07 | 0.86 |
| 30:RG:161:THR:HG22 | 30:RG:163:ALA:H | 1.39 | 0.86 |
| 10:XJ:7:LYS:HB2 | 10:XJ:97:GLU:HB2 | 1.57 | 0.86 |
| 25:YA:2494:G:OP1 | 46:Y0:3:HIS:HB3 | 1.74 | 0.86 |
| 29:YF:7:TYR:HB3 | 29:YF:21:ALA:HB1 | 1.54 | 0.86 |
| 32:YI:109:ILE:HB | 32:YI:130:TYR:OH | 1.75 | 0.86 |
| 1:QA:1223:C:H5'' | 1:QA:1224:G:H5'' | 1.57 | 0.86 |
| 2:QB:67:THR:HG21 | 2:QB:155:LEU:HD21 | 1.57 | 0.86 |
| 27:RD:44:ASN:CB | 27:RD:49:ILE:HA | 2.04 | 0.86 |
| 29:RF:82:ILE:O | 29:RF:82:ILE:HG13 | 1.73 | 0.86 |
| 45:YZ:53:ILE:HG22 | 45:YZ:71:VAL:O | 1.76 | 0.86 |
| 31:YH:127:GLU:HG2 | 31:YH:128:PRO:HD3 | 0.86 | 0.86 |
| 32:RI:109:ILE:HB | 32:RI:130:TYR:OH | 1.75 | 0.86 |
| 22:XV:74:C:O2 | 25:YA:2252:G:N2 | 2.09 | 0.86 |
| 27:YD:35:LYS:HG2 | 27:YD:64:ILE:H | 1.41 | 0.86 |
| 41:YV:19:LYS:HD2 | 41:YV:95:LEU:HD23 | 1.55 | 0.86 |
| 13:QM:4:ILE:H | 13:QM:9:ILE:CG2 | 1.88 | 0.86 |
| 26:RB:42:C:H42 | 30:RG:91:ARG:NH2 | 1.74 | 0.86 |
| 32:RI:51:ILE:O | 32:RI:55:ALA:N | 2.09 | 0.86 |
| 35:RP:75:ILE:HD13 | 35:RP:75:ILE:H | 1.39 | 0.86 |
| 36:RQ:75:THR:HA | 36:RQ:88:GLY:O | 1.75 | 0.86 |
| 44:RY:51:VAL:O | 44:RY:56:PRO:HA | 1.76 | 0.86 |
| 1:XA:448:A:OP2 | 1:XA:485:G:N2 | 2.09 | 0.86 |
| 1:QA:559:A:H4' | 1:QA:560:U:H3' | 1.56 | 0.85 |
| 13:QM:14:ARG:H | 13:QM:44:ARG:HD3 | 1.41 | 0.85 |
| 2:XB:67:THR:HG21 | 2:XB:155:LEU:HD21 | 1.56 | 0.85 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:XS:41:VAL:HG13 | 19:XS:44:MET:HB2 | 1.57 | 0.85 |
| 28:RE:61:ARG:O | 28:RE:63:LEU:HG | 1.77 | 0.85 |
| 40:RU:92:ARG:HD2 | 41:RV:11:GLN:NE2 | 1.90 | 0.85 |
| 2:XB:96:ARG:H | 2:XB:96:ARG:HD2 | 1.39 | 0.85 |
| 45:YZ:72:ARG:HB2 | 45:YZ:72:ARG:HH11 | 1.42 | 0.85 |
| 4:QD:114:ARG:HH11 | 4:QD:114:ARG:HG3 | 1.39 | 0.85 |
| 36:RQ:80:GLU:HG2 | 46:R0:5:LYS:HB3 | 1.56 | 0.85 |
| 15:XO:56:LEU:O | 15:XO:60:VAL:HG23 | 1.75 | 0.85 |
| 45:YZ:5:LEU:HD11 | 45:YZ:39:VAL:HB | 1.56 | 0.85 |
| 47:R1:82:LEU:HD13 | 47:R1:83:GLU:O | 1.74 | 0.85 |
| 51:R5:39:MET:O | 51:R5:40:LYS:HG3 | 1.77 | 0.85 |
| 20:XT:36:LEU:HD13 | 20:XT:39:LYS:HD3 | 1.57 | 0.85 |
| 45:RZ:59:LEU:O | 45:RZ:60:GLU:HG2 | 1.75 | 0.85 |
| 5:XE:78:HIS:CD2 | 8:XH:104:ARG:HG2 | 2.10 | 0.85 |
| 24:XY:29:U:H2' | 24:XY:30:C:C6 | 2.11 | 0.85 |
| 36:YQ:75:THR:HA | 36:YQ:88:GLY:O | 1.76 | 0.85 |
| 38:YS:106:ARG:HB2 | 38:YS:106:ARG:HH11 | 1.40 | 0.85 |
| 39:YT:111:ARG:O | 39:YT:112:ARG:HG3 | 1.76 | 0.85 |
| 30:YG:67:LYS:HE2 | 50:Y4:6:HIS:NE2 | 1.91 | 0.85 |
| 44:YY:51:VAL:O | 44:YY:56:PRO:HA | 1.76 | 0.85 |
| 20:QT:36:LEU:HD13 | 20:QT:39:LYS:HD3 | 1.57 | 0.85 |
| 22:QV:1:C:O4' | 46:R0:5:LYS:HE2 | 1.77 | 0.85 |
| 29:RF:32:LEU:HD13 | 29:RF:105:VAL:HG13 | 1.59 | 0.85 |
| 32:RI:9:LEU:O | 32:RI:10:GLU:HG3 | 1.74 | 0.85 |
| 40:RU:64:ARG:HG2 | 40:RU:64:ARG:HH21 | 1.42 | 0.85 |
| 35:YP:101:VAL:HG23 | 35:YP:107:LYS:H | 1.41 | 0.85 |
| 45:YZ:59:LEU:O | 45:YZ:60:GLU:HG2 | 1.76 | 0.85 |
| 27:RD:17:THR:HG22 | 27:RD:205:VAL:H | 1.41 | 0.85 |
| 30:RG:67:LYS:HE2 | 50:R4:6:HIS:NE2 | 1.91 | 0.85 |
| 45:RZ:5:LEU:HD11 | 45:RZ:39:VAL:HB | 1.57 | 0.85 |
| 31:YH:89:ILE:HD11 | 31:YH:129:THR:HB | 1.58 | 0.85 |
| 32:YI:88:ILE:HG12 | 32:YI:122:GLU:H | 1.39 | 0.85 |
| 35:YP:75:ILE:H | 35:YP:75:ILE:HD13 | 1.39 | 0.85 |
| 7:XG:44:TYR:HA | 7:XG:47:CYS:SG | 2.17 | 0.85 |
| 15:XO:3:ILE:HD13 | 15:XO:3:ILE:H | 1.40 | 0.85 |
| 27:YD:28:GLU:HB2 | 27:YD:29:PRO:HD2 | 1.56 | 0.85 |
| 29:YF:82:ILE:O | 29:YF:82:ILE:HG13 | 1.73 | 0.85 |
| 28:RE:81:ILE:O | 28:RE:82:ARG:HB2 | 1.76 | 0.85 |
| 5:XE:51:VAL:HB | 5:XE:52:PRO:HD3 | 1.59 | 0.85 |
| 13:XM:57:ARG:HH21 | 50:Y4:34:GLU:HA | 1.42 | 0.85 |
| 24:QY:29:U:H2' | 24:QY:30:C:C6 | 2.11 | 0.84 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:RA:2056:G:N2 | 51:R5:4:HIS:O | 2.10 | 0.84 |
| 31:RH:89:ILE:HD11 | 31:RH:129:THR:HB | 1.58 | 0.84 |
| 31:RH:127:GLU:HG2 | 31:RH:128:PRO:HD3 | 0.86 | 0.84 |
| 35:RP:18:ARG:O | 35:RP:19:VAL:HB | 1.75 | 0.84 |
| 45:RZ:53:ILE:HG22 | 45:RZ:71:VAL:O | 1.76 | 0.84 |
| 54:R8:59:LYS:NZ | 54:R8:59:LYS:CB | 2.39 | 0.84 |
| 41:YV:49:THR:HB | 41:YV:50:PRO:CD | 2.07 | 0.84 |
| 10:QJ:7:LYS:HB2 | 10:QJ:97:GLU:HB2 | 1.57 | 0.84 |
| 28:RE:95:ILE:H | 28:RE:95:ILE:HD12 | 1.41 | 0.84 |
| 47:R1:81:LYS:HZ3 | 47:R1:81:LYS:CA | 1.79 | 0.84 |
| 27:YD:17:THR:HG22 | 27:YD:205:VAL:H | 1.41 | 0.84 |
| 13:XM:14:ARG:H | 13:XM:44:ARG:HD3 | 1.41 | 0.84 |
| 28:YE:95:ILE:HD12 | 28:YE:95:ILE:H | 1.42 | 0.84 |
| 34:YO:26:LYS:HB2 | 34:YO:30:ALA:HB2 | 1.59 | 0.84 |
| 38:YS:106:ARG:HA | 38:YS:110:LEU:CD1 | 2.07 | 0.84 |
| 19:QS:5:LEU:CD2 | 50:R4:67:TYR:CZ | 2.60 | 0.84 |
| 1:XA:345:C:H5' | 1:XA:346:G:H5' | 1.59 | 0.84 |
| 28:YE:81:ILE:O | 28:YE:82:ARG:HB2 | 1.75 | 0.84 |
| 31:YH:54:ARG:NH1 | 31:YH:62:LYS:HG2 | 1.92 | 0.84 |
| 7:QG:44:TYR:HA | 7:QG:47:CYS:SG | 2.17 | 0.84 |
| 15:QO:82:ILE:HD11 | 15:QO:88:ARG:CG | 2.07 | 0.84 |
| 17:QQ:59:ILE:HG22 | 17:QQ:73:VAL:HA | 1.60 | 0.84 |
| 28:RE:24:THR:HG21 | 28:RE:188:VAL:HG11 | 1.59 | 0.84 |
| 28:YE:61:ARG:O | 28:YE:63:LEU:HG | 1.77 | 0.84 |
| 25:RA:1043:C:N3 | 25:RA:1112:G:N2 | 2.25 | 0.84 |
| 25:RA:2810:A:O3' | 28:RE:61:ARG:HG3 | 1.77 | 0.84 |
| 35:RP:62:LEU:CD2 | 54:R8:25:MET:HB2 | 2.08 | 0.84 |
| 45:RZ:108:PRO:HB2 | 45:RZ:112:ARG:HB2 | 1.60 | 0.84 |
| 30:YG:98:ARG:HA | 30:YG:101:ILE:HG12 | 1.59 | 0.84 |
| 35:YP:62:LEU:CD2 | 54:Y8:25:MET:HB2 | 2.08 | 0.84 |
| 38:YS:83:LYS:HG2 | 38:YS:109:GLY:CA | 2.07 | 0.84 |
| 44:YY:57:GLN:NE2 | 44:YY:58:GLY:H | 1.76 | 0.84 |
| 5:QE:81:GLU:HB3 | 5:QE:90:VAL:HG22 | 1.60 | 0.84 |
| 14:QN:21:TYR:HE2 | 14:QN:23:ARG:HH21 | 1.24 | 0.84 |
| 27:RD:35:LYS:HG2 | 27:RD:64:ILE:H | 1.40 | 0.84 |
| 30:RG:98:ARG:HA | 30:RG:101:ILE:HG12 | 1.59 | 0.84 |
| 34:RO:26:LYS:HB2 | 34:RO:30:ALA:HB2 | 1.59 | 0.84 |
| 38:RS:89:ARG:HD2 | 38:RS:92:TYR:O | 1.78 | 0.84 |
| 41:RV:49:THR:HB | 41:RV:50:PRO:CD | 2.07 | 0.84 |
| 29:YF:53:THR:HG23 | 29:YF:56:GLU:OE1 | 1.77 | 0.84 |
| 36:YQ:30:GLY:HA2 | 36:YQ:107:ALA:HB2 | 1.60 | 0.84 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 51:Y5:40:LYS:HD3 | 51:Y5:46:CYS:HB3 | 1.60 | 0.84 |
| 4:QD:96:LEU:HD22 | 4:QD:96:LEU:H | 1.43 | 0.84 |
| 14:QN:24:CYS:SG | 14:QN:43:CYS:CB | 2.65 | 0.84 |
| 19:QS:5:LEU:HD21 | 50:R4:67:TYR:CE2 | 2.10 | 0.84 |
| 38:RS:83:LYS:HG2 | 38:RS:109:GLY:CA | 2.07 | 0.84 |
| 47:R1:82:LEU:HD11 | 47:R1:83:GLU:O | 1.75 | 0.84 |
| 13:QM:23:TYR:HB3 | 13:QM:67:GLU:HG2 | 1.59 | 0.84 |
| 14:QN:8:GLU:OE2 | 14:QN:11:LYS:HD2 | 1.78 | 0.84 |
| 31:RH:54:ARG:NH1 | 31:RH:62:LYS:HG2 | 1.92 | 0.84 |
| 39:RT:111:ARG:O | 39:RT:112:ARG:HG3 | 1.76 | 0.84 |
| 10:XJ:4:ILE:HB | 10:XJ:74:ILE:HD11 | 1.60 | 0.84 |
| 15:XO:82:ILE:HD11 | 15:XO:88:ARG:CG | 2.07 | 0.84 |
| 38:YS:89:ARG:HD2 | 38:YS:92:TYR:O | 1.78 | 0.84 |
| 39:YT:3:ARG:HG3 | 39:YT:7:ILE:HG12 | 1.60 | 0.84 |
| 13:XM:23:TYR:HB3 | 13:XM:67:GLU:HG2 | 1.60 | 0.84 |
| 25:YA:2563:U:H4' | 34:YO:28:SER:HA | 1.59 | 0.84 |
| 1:QA:1531:A:H5'' | 1:QA:1531:A:C8 | 2.10 | 0.83 |
| 5:QE:51:VAL:HB | 5:QE:52:PRO:HD3 | 1.59 | 0.83 |
| 31:RH:105:LEU:HD13 | 31:RH:105:LEU:H | 1.42 | 0.83 |
| 44:RY:81:LYS:HD3 | 44:RY:97:ARG:HE | 1.43 | 0.83 |
| 45:RZ:24:LEU:HD11 | 45:RZ:86:VAL:HG23 | 1.57 | 0.83 |
| 1:XA:973:G:H3' | 1:XA:974:A:H5'' | 1.59 | 0.83 |
| 10:XJ:47:PHE:HE1 | 10:XJ:63:PHE:HB2 | 1.40 | 0.83 |
| 19:XS:64:GLU:HB2 | 50:Y4:55:ARG:HH12 | 1.42 | 0.83 |
| 29:YF:32:LEU:HD13 | 29:YF:105:VAL:HG13 | 1.59 | 0.83 |
| 32:YI:74:ASN:HD22 | 32:YI:74:ASN:H | 1.25 | 0.83 |
| 35:YP:126:VAL:HG22 | 35:YP:145:PRO:HG2 | 1.60 | 0.83 |
| 45:YZ:108:PRO:HB2 | 45:YZ:112:ARG:HB2 | 1.60 | 0.83 |
| 47:Y1:92:LYS:HG3 | 47:Y1:96:LYS:HB2 | 1.57 | 0.83 |
| 37:RR:117:VAL:HG22 | 37:RR:118:GLU:H | 1.43 | 0.83 |
| 39:RT:24:PRO:HA | 39:RT:49:VAL:HG13 | 1.59 | 0.83 |
| 10:XJ:37:PRO:HA | 10:XJ:72:VAL:HG22 | 1.59 | 0.83 |
| 25:YA:571:A:O2' | 41:YV:78:LYS:NZ | 2.11 | 0.83 |
| 31:YH:13:LYS:HE2 | 31:YH:13:LYS:HA | 1.60 | 0.83 |
| 37:YR:117:VAL:HG22 | 37:YR:118:GLU:H | 1.43 | 0.83 |
| 52:Y6:27:LYS:HB2 | 52:Y6:27:LYS:NZ | 1.93 | 0.83 |
| 25:RA:2451:A:C6 | 55:Z6:76:PPU:HE2 | 2.12 | 0.83 |
| 51:R5:40:LYS:HD3 | 51:R5:46:CYS:HB3 | 1.60 | 0.83 |
| 3:XC:15:THR:CG2 | 3:XC:181:ASN:HA | 2.08 | 0.83 |
| 14:YN:12:ARG:C | 14:YN:14:PRO:HD2 | 1.98 | 0.83 |
| 14:YN:21:TYR:HE2 | 14:YN:23:ARG:HH21 | 1.24 | 0.83 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 19:QS:50:ALA:HB1 | 19:QS:57:HIS:HB3 | 1.60 | 0.83 |
| 25:RA:571:A:O2' | 41:RV:78:LYS:NZ | 2.10 | 0.83 |
| 32:RI:74:ASN:H | 32:RI:74:ASN:HD22 | 1.25 | 0.83 |
| 25:YA:1490:A:O2' | 27:YD:99:ASP:OD2 | 1.95 | 0.83 |
| 1:QA:1139:G:N2 | 1:QA:1143:G:O6 | 2.12 | 0.83 |
| 35:RP:65:ARG:HG3 | 35:RP:65:ARG:NH1 | 1.90 | 0.83 |
| 45:RZ:94:GLU:HB2 | 45:RZ:130:PRO:HD3 | 1.61 | 0.83 |
| 51:Y5:39:MET:O | 51:Y5:40:LYS:HG3 | 1.77 | 0.83 |
| 14:QN:12:ARG:C | 14:QN:14:PRO:HD2 | 1.98 | 0.83 |
| 28:RE:35:GLN:HG2 | 28:RE:37:ARG:HE | 1.44 | 0.83 |
| 39:RT:3:ARG:HG3 | 39:RT:7:ILE:HG12 | 1.60 | 0.83 |
| 1:XA:1189:C:OP1 | 10:XJ:51:ARG:NH2 | 2.12 | 0.83 |
| 14:XN:8:GLU:OE2 | 14:XN:11:LYS:HD2 | 1.78 | 0.83 |
| 25:YA:1190:G:OP1 | 35:YP:30:THR:OG1 | 1.96 | 0.83 |
| 28:YE:7:VAL:HG23 | 28:YE:8:LYS:H | 1.44 | 0.83 |
| 10:QJ:37:PRO:HA | 10:QJ:72:VAL:HG22 | 1.59 | 0.83 |
| 25:RA:674:G:H1' | 29:RF:74:ARG:HD3 | 1.58 | 0.83 |
| 33:RN:133:GLN:HB2 | 33:RN:135:PRO:HD3 | 1.59 | 0.83 |
| 44:RY:57:GLN:NE2 | 44:RY:58:GLY:H | 1.76 | 0.83 |
| 1:XA:686:U:H1' | 11:XK:42:TRP:HE1 | 1.43 | 0.83 |
| 25:YA:674:G:H1' | 29:YF:74:ARG:HD3 | 1.60 | 0.83 |
| 32:YI:79:ILE:HB | 32:YI:142:VAL:HA | 1.61 | 0.83 |
| 33:YN:131:GLN:NE2 | 33:YN:132:ALA:H | 1.75 | 0.83 |
| 35:YP:59:LEU:HA | 35:YP:61:ARG:HH21 | 1.44 | 0.83 |
| 1:QA:595:G:H1 | 1:QA:641:U:HO2' | 1.21 | 0.83 |
| 2:QB:193:ASP:OD2 | 2:QB:196:LEU:HG | 1.78 | 0.83 |
| 15:QO:3:ILE:H | 15:QO:3:ILE:HD13 | 1.40 | 0.83 |
| 25:RA:2093:G:H21 | 25:RA:2198:A:H62 | 1.27 | 0.83 |
| 38:RS:88:ASP:O | 38:RS:89:ARG:HB3 | 1.78 | 0.83 |
| 1:XA:1298:C:OP2 | 7:XG:114:ARG:NH2 | 2.11 | 0.83 |
| 1:XA:1313:U:OP2 | 50:Y4:67:TYR:OH | 1.97 | 0.83 |
| 39:YT:24:PRO:HA | 39:YT:49:VAL:HG13 | 1.59 | 0.83 |
| 39:YT:53:ARG:O | 39:YT:59:THR:HG23 | 1.78 | 0.83 |
| 29:RF:53:THR:HG23 | 29:RF:56:GLU:OE1 | 1.77 | 0.83 |
| 32:RI:145:VAL:HG22 | 32:RI:146:ALA:H | 1.41 | 0.83 |
| 33:RN:131:GLN:NE2 | 33:RN:132:ALA:H | 1.75 | 0.83 |
| 39:RT:53:ARG:O | 39:RT:59:THR:HG23 | 1.78 | 0.83 |
| 41:RV:66:ARG:NH1 | 41:RV:88:ARG:HD3 | 1.94 | 0.83 |
| 2:XB:204:ASN:ND2 | 2:XB:206:ASP:H | 1.77 | 0.83 |
| 7:XG:78:ARG:HG3 | 7:XG:79:ARG:N | 1.93 | 0.83 |
| 22:XV:1:C:O2' | 46:Y0:6:GLY:O | 1.95 | 0.83 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 45:YZ:108:PRO:CG | 45:YZ:112:ARG:H | 1.92 | 0.83 |
| 38:RS:106:ARG:HA | 38:RS:110:LEU:CD1 | 2.07 | 0.82 |
| 50:R4:36:CYS:O | 50:R4:39:CYS:HB2 | 1.79 | 0.82 |
| 52:R6:27:LYS:HB2 | 52:R6:27:LYS:NZ | 1.93 | 0.82 |
| 2:XB:185:ILE:HG22 | 2:XB:199:TYR:HB2 | 1.60 | 0.82 |
| 2:XB:193:ASP:OD2 | 2:XB:196:LEU:HG | 1.78 | 0.82 |
| 2:QB:178:ARG:HH21 | 8:QH:74:PRO:CB | 1.89 | 0.82 |
| 2:QB:204:ASN:ND2 | 2:QB:206:ASP:H | 1.77 | 0.82 |
| 7:QG:78:ARG:HG3 | 7:QG:79:ARG:N | 1.93 | 0.82 |
| 12:QL:38:THR:HG23 | 12:QL:39:VAL:HG23 | 1.60 | 0.82 |
| 28:RE:15:PHE:CE1 | 28:RE:20:ALA:HB2 | 2.14 | 0.82 |
| 36:RQ:30:GLY:HA2 | 36:RQ:107:ALA:HB2 | 1.60 | 0.82 |
| 19:XS:50:ALA:HB1 | 19:XS:57:HIS:HB3 | 1.60 | 0.82 |
| 25:YA:1899:G:H21 | 25:YA:1902:C:H41 | 1.26 | 0.82 |
| 31:YH:105:LEU:HD13 | 31:YH:105:LEU:H | 1.42 | 0.82 |
| 23:QX:6:C:O2' | 23:QX:7:G:OP1 | 1.96 | 0.82 |
| 25:RA:1496:A:H8 | 25:RA:1577:C:HO2' | 1.27 | 0.82 |
| 27:YD:25:THR:CG2 | 27:YD:82:ILE:H | 1.93 | 0.82 |
| 33:YN:133:GLN:HB2 | 33:YN:135:PRO:HD3 | 1.59 | 0.82 |
| 44:YY:81:LYS:HD3 | 44:YY:97:ARG:HE | 1.43 | 0.82 |
| 35:RP:101:VAL:HG23 | 35:RP:107:LYS:H | 1.41 | 0.82 |
| 11:XK:124:LYS:HD2 | 11:XK:125:PHE:HE1 | 1.45 | 0.82 |
| 12:XL:38:THR:HG23 | 12:XL:39:VAL:HG23 | 1.60 | 0.82 |
| 28:YE:15:PHE:CE1 | 28:YE:20:ALA:HB2 | 2.14 | 0.82 |
| 40:YU:64:ARG:HG2 | 40:YU:64:ARG:HH21 | 1.42 | 0.82 |
| 3:QC:113:ALA:HB3 | 3:QC:114:PRO:HD3 | 1.62 | 0.82 |
| 28:RE:7:VAL:HG23 | 28:RE:8:LYS:H | 1.44 | 0.82 |
| 1:XA:346:G:H4' | 39:YT:41:ARG:HH11 | 1.44 | 0.82 |
| 17:XQ:59:ILE:HG22 | 17:XQ:73:VAL:HA | 1.60 | 0.82 |
| 25:YA:1322:A:N6 | 25:YA:1333:C:O2 | 2.12 | 0.82 |
| 31:YH:153:LYS:HG2 | 31:YH:162:ILE:HG13 | 1.61 | 0.82 |
| 40:YU:88:ILE:HD13 | 40:YU:88:ILE:H | 1.44 | 0.82 |
| 13:QM:62:ASN:ND2 | 50:R4:49:PHE:CD2 | 2.45 | 0.82 |
| 1:XA:708:C:OP1 | 11:XK:85:ARG:NH2 | 2.10 | 0.82 |
| 4:XD:96:LEU:H | 4:XD:96:LEU:HD22 | 1.43 | 0.82 |
| 2:QB:185:ILE:HG22 | 2:QB:199:TYR:HB2 | 1.61 | 0.82 |
| 27:RD:35:LYS:NZ | 27:RD:104:TYR:HB2 | 1.93 | 0.82 |
| 33:RN:22:THR:HG22 | 33:RN:23:LEU:H | 1.44 | 0.82 |
| 40:RU:88:ILE:HD13 | 40:RU:88:ILE:H | 1.44 | 0.82 |
| 27:YD:35:LYS:NZ | 27:YD:104:TYR:HB2 | 1.93 | 0.82 |
| 30:YG:179:PRO:HG3 | 50:Y4:38:LYS:NZ | 1.95 | 0.82 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:YN:22:THR:HG22 | 33:YN:23:LEU:H | 1.45 | 0.82 |
| 35:YP:39:LYS:HA | 35:YP:45:LEU:CD1 | 2.10 | 0.82 |
| 39:YT:102:ILE:HA | 39:YT:105:LEU:HD21 | 1.62 | 0.82 |
| 50:Y4:36:CYS:O | 50:Y4:39:CYS:HB2 | 1.79 | 0.82 |
| 50:Y4:71:ARG:HG3 | 50:Y4:71:ARG:NH1 | 1.90 | 0.82 |
| 26:RB:65:C:H41 | 26:RB:108:C:H2' | 1.45 | 0.82 |
| 45:RZ:108:PRO:CG | 45:RZ:112:ARG:H | 1.92 | 0.82 |
| 50:R4:33:VAL:HG12 | 50:R4:34:GLU:H | 1.44 | 0.82 |
| 5:XE:81:GLU:HB3 | 5:XE:90:VAL:HG22 | 1.60 | 0.82 |
| 48:Y2:16:LEU:O | 48:Y2:16:LEU:HG | 1.78 | 0.82 |
| 10:QJ:63:PHE:HD1 | 14:QN:58:LYS:HA | 1.43 | 0.82 |
| 12:QL:86:ARG:HB2 | 12:QL:101:VAL:HG22 | 1.62 | 0.82 |
| 30:RG:179:PRO:HG3 | 50:R4:38:LYS:NZ | 1.95 | 0.82 |
| 2:XB:84:GLU:OE1 | 2:XB:216:SER:HA | 1.80 | 0.82 |
| 13:XM:11:ARG:HH21 | 30:YG:146:TYR:HD2 | 1.28 | 0.82 |
| 34:YO:14:THR:HG21 | 34:YO:86:ILE:HB | 1.62 | 0.82 |
| 2:QB:196:LEU:CD1 | 2:QB:197:VAL:HG23 | 2.10 | 0.82 |
| 29:RF:155:LEU:HD13 | 29:RF:174:VAL:HG13 | 1.62 | 0.82 |
| 45:RZ:72:ARG:HB2 | 45:RZ:72:ARG:HH11 | 1.42 | 0.82 |
| 16:XP:4:ILE:CD1 | 16:XP:64:ALA:HB1 | 2.09 | 0.82 |
| 38:YS:19:LYS:O | 38:YS:20:ARG:HB3 | 1.80 | 0.82 |
| 2:QB:84:GLU:OE1 | 2:QB:216:SER:HA | 1.80 | 0.81 |
| 45:YZ:94:GLU:HB2 | 45:YZ:130:PRO:HD3 | 1.61 | 0.81 |
| 1:QA:17:U:O2 | 1:QA:1079:G:N2 | 2.13 | 0.81 |
| 25:RA:1454:U:H5' | 37:RR:63:ARG:HE | 1.45 | 0.81 |
| 31:RH:8:PRO:C | 31:RH:9:ILE:HG12 | 2.00 | 0.81 |
| 30:YG:67:LYS:HE2 | 50:Y4:6:HIS:CE1 | 2.14 | 0.81 |
| 38:YS:88:ASP:O | 38:YS:89:ARG:HB3 | 1.78 | 0.81 |
| 10:QJ:4:ILE:HB | 10:QJ:74:ILE:HD11 | 1.60 | 0.81 |
| 16:QP:4:ILE:CD1 | 16:QP:64:ALA:HB1 | 2.08 | 0.81 |
| 31:RH:132:ARG:HB2 | 31:RH:132:ARG:NH1 | 1.94 | 0.81 |
| 31:RH:153:LYS:HG2 | 31:RH:162:ILE:HG13 | 1.61 | 0.81 |
| 34:RO:53:LYS:HD2 | 34:RO:53:LYS:N | 1.96 | 0.81 |
| 36:RQ:90:VAL:HG13 | 36:RQ:91:GLU:N | 1.95 | 0.81 |
| 39:RT:102:ILE:HA | 39:RT:105:LEU:HD21 | 1.62 | 0.81 |
| 48:R2:16:LEU:O | 48:R2:16:LEU:HG | 1.78 | 0.81 |
| 48:R2:43:GLN:O | 48:R2:44:LEU:HG | 1.81 | 0.81 |
| 54:R8:52:LYS:N | 54:R8:53:PRO:CD | 2.43 | 0.81 |
| 1:XA:1071:C:H5'' | 5:XE:49:PRO:HG2 | 1.62 | 0.81 |
| 13:XM:8:GLU:OE2 | 30:YG:115:ARG:CZ | 2.28 | 0.81 |
| 28:YE:24:THR:HG21 | 28:YE:188:VAL:HG11 | 1.59 | 0.81 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 41:YV:66:ARG:NH1 | 41:YV:88:ARG:HD3 | 1.94 | 0.81 |
| 4:QD:108:LEU:HD11 | 4:QD:174:LEU:HD22 | 1.60 | 0.81 |
| 31:RH:152:ARG:O | 31:RH:153:LYS:HB2 | 1.80 | 0.81 |
| 10:XJ:6:ILE:O | 10:XJ:6:ILE:HD12 | 1.81 | 0.81 |
| 10:XJ:63:PHE:HD1 | 14:YN:58:LYS:HA | 1.43 | 0.81 |
| 31:YH:10:PRO:O | 31:YH:11:VAL:HG13 | 1.80 | 0.81 |
| 53:Y7:48:LYS:HG2 | 53:Y7:49:ARG:H | 1.46 | 0.81 |
| 31:RH:26:VAL:HG13 | 31:RH:27:LYS:N | 1.96 | 0.81 |
| 35:RP:39:LYS:HA | 35:RP:45:LEU:CD1 | 2.10 | 0.81 |
| 38:RS:106:ARG:CA | 38:RS:110:LEU:HD21 | 2.10 | 0.81 |
| 4:XD:108:LEU:HD11 | 4:XD:174:LEU:HD22 | 1.60 | 0.81 |
| 36:YQ:90:VAL:HG13 | 36:YQ:91:GLU:N | 1.95 | 0.81 |
| 3:QC:15:THR:CG2 | 3:QC:181:ASN:HA | 2.08 | 0.81 |
| 13:QM:7:VAL:CG1 | 30:RG:115:ARG:HH12 | 1.94 | 0.81 |
| 16:QP:51:VAL:HG12 | 16:QP:52:ASP:H | 1.46 | 0.81 |
| 27:RD:27:THR:HG23 | 27:RD:28:GLU:N | 1.96 | 0.81 |
| 35:RP:126:VAL:HG22 | 35:RP:145:PRO:HG2 | 1.61 | 0.81 |
| 28:YE:116:VAL:HG21 | 28:YE:122:PHE:CD2 | 2.16 | 0.81 |
| 30:YG:47:LYS:HD3 | 30:YG:81:LYS:HB2 | 1.63 | 0.81 |
| 10:QJ:6:ILE:HD12 | 10:QJ:6:ILE:O | 1.80 | 0.81 |
| 25:RA:1728:G:H3' | 25:RA:1729:A:H5'' | 1.61 | 0.81 |
| 30:RG:47:LYS:HD3 | 30:RG:81:LYS:HB2 | 1.63 | 0.81 |
| 30:RG:67:LYS:HE2 | 50:R4:6:HIS:CE1 | 2.14 | 0.81 |
| 2:XB:122:PHE:HD1 | 2:XB:139:LYS:HZ1 | 1.29 | 0.81 |
| 7:QG:111:ARG:HH11 | 7:QG:111:ARG:HB3 | 1.46 | 0.81 |
| 28:RE:3:GLY:O | 28:RE:4:ILE:HB | 1.81 | 0.81 |
| 33:RN:35:ARG:HG3 | 33:RN:37:LYS:HG3 | 1.63 | 0.81 |
| 38:RS:36:TYR:HD2 | 38:RS:52:SER:HB3 | 1.46 | 0.81 |
| 51:R5:4:HIS:HB3 | 51:R5:5:PRO:CD | 2.11 | 0.81 |
| 53:R7:48:LYS:HG2 | 53:R7:49:ARG:H | 1.46 | 0.81 |
| 28:YE:50:GLY:CA | 28:YE:77:ILE:HA | 2.10 | 0.81 |
| 33:YN:43:THR:HB | 33:YN:46:VAL:HG12 | 1.63 | 0.81 |
| 54:Y8:59:LYS:NZ | 54:Y8:59:LYS:CB | 2.39 | 0.81 |
| 25:YA:1359:A:N6 | 25:YA:1372:U:O4 | 2.14 | 0.81 |
| 29:YF:155:LEU:HD13 | 29:YF:174:VAL:HG13 | 1.62 | 0.81 |
| 33:YN:35:ARG:HG3 | 33:YN:37:LYS:HG3 | 1.63 | 0.81 |
| 3:QC:47:LEU:HD11 | 3:QC:76:VAL:HG12 | 1.62 | 0.81 |
| 3:QC:52:LEU:H | 3:QC:52:LEU:HD23 | 1.46 | 0.81 |
| 5:QE:50:GLU:HB3 | 5:QE:53:LEU:HD13 | 1.61 | 0.81 |
| 23:QX:4:C:C2' | 23:QX:5:C:H5' | 2.11 | 0.81 |
| 28:RE:116:VAL:HG21 | 28:RE:122:PHE:CD2 | 2.16 | 0.81 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:RT:39:ARG:HG2 | 39:RT:40:THR:H | 1.46 | 0.81 |
| 48:Y2:43:GLN:O | 48:Y2:44:LEU:HG | 1.81 | 0.81 |
| 2:QB:4:GLU:HG2 | 2:QB:5:ILE:N | 1.94 | 0.80 |
| 28:RE:52:LEU:HB2 | 28:RE:75:VAL:HG23 | 1.62 | 0.80 |
| 31:RH:13:LYS:HE2 | 31:RH:13:LYS:HA | 1.60 | 0.80 |
| 39:RT:62:THR:CG2 | 39:RT:75:ILE:HG12 | 2.11 | 0.80 |
| 44:RY:76:CYS:HB3 | 44:RY:96:ILE:CD1 | 2.07 | 0.80 |
| 2:XB:181:PHE:HE1 | 8:XH:70:GLN:O | 1.64 | 0.80 |
| 3:XC:47:LEU:HD11 | 3:XC:76:VAL:HG12 | 1.62 | 0.80 |
| 3:XC:113:ALA:HB3 | 3:XC:114:PRO:HD3 | 1.62 | 0.80 |
| 25:YA:631:A:OP2 | 54:Y8:46:ARG:NH2 | 2.14 | 0.80 |
| 45:YZ:137:ILE:HB | 45:YZ:156:LYS:HD2 | 1.62 | 0.80 |
| 44:RY:6:HIS:O | 44:RY:7:VAL:HG13 | 1.81 | 0.80 |
| 3:XC:52:LEU:HD23 | 3:XC:52:LEU:H | 1.46 | 0.80 |
| 39:YT:39:ARG:HG2 | 39:YT:40:THR:H | 1.46 | 0.80 |
| 38:YS:36:TYR:HD2 | 38:YS:52:SER:HB3 | 1.46 | 0.80 |
| 28:RE:50:GLY:CA | 28:RE:77:ILE:HA | 2.10 | 0.80 |
| 16:XP:51:VAL:HG12 | 16:XP:52:ASP:H | 1.46 | 0.80 |
| 27:YD:27:THR:HG23 | 27:YD:28:GLU:N | 1.96 | 0.80 |
| 28:YE:35:GLN:HG2 | 28:YE:37:ARG:HE | 1.44 | 0.80 |
| 44:YY:76:CYS:HB3 | 44:YY:96:ILE:CD1 | 2.07 | 0.80 |
| 4:QD:28:SER:HB3 | 4:QD:29:PRO:CD | 2.12 | 0.80 |
| 38:RS:19:LYS:O | 38:RS:20:ARG:HB3 | 1.80 | 0.80 |
| 3:XC:20:SER:HB2 | 3:XC:40:ARG:NH2 | 1.96 | 0.80 |
| 31:YH:8:PRO:C | 31:YH:9:ILE:HG12 | 2.00 | 0.80 |
| 44:YY:6:HIS:O | 44:YY:7:VAL:HG13 | 1.81 | 0.80 |
| 3:QC:20:SER:HB2 | 3:QC:40:ARG:NH2 | 1.95 | 0.80 |
| 27:RD:27:THR:HG21 | 27:RD:83:GLU:HB3 | 1.63 | 0.80 |
| 29:YF:198:ALA:HA | 29:YF:201:VAL:HG12 | 1.62 | 0.80 |
| 50:Y4:33:VAL:HG12 | 50:Y4:34:GLU:H | 1.44 | 0.80 |
| 3:QC:138:VAL:HG13 | 3:QC:149:ALA:HB1 | 1.64 | 0.80 |
| 16:QP:51:VAL:HG12 | 16:QP:52:ASP:N | 1.97 | 0.80 |
| 28:RE:201:THR:CG2 | 28:RE:203:LYS:HB3 | 2.12 | 0.80 |
| 32:RI:79:ILE:HB | 32:RI:142:VAL:HA | 1.61 | 0.80 |
| 5:XE:50:GLU:HB3 | 5:XE:53:LEU:HD13 | 1.61 | 0.80 |
| 28:YE:201:THR:CG2 | 28:YE:203:LYS:HB3 | 2.11 | 0.80 |
| 36:YQ:80:GLU:O | 36:YQ:81:VAL:CG1 | 2.30 | 0.80 |
| 54:Y8:52:LYS:N | 54:Y8:53:PRO:CD | 2.43 | 0.80 |
| 1:QA:973:G:H3' | 1:QA:974:A:H5'' | 1.64 | 0.80 |
| 5:QE:126:ARG:HH11 | 5:QE:126:ARG:HG3 | 1.47 | 0.80 |
| 27:RD:121:PRO:HB3 | 27:RD:135:PHE:HE1 | 1.46 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:RP:47:ASP:OD2 | 35:RP:49:ARG:HG2 | 1.82 | 0.80 |
| 2:XB:196:LEU:CD1 | 2:XB:197:VAL:HG23 | 2.10 | 0.80 |
| 2:XB:212:GLN:CD | 2:XB:235:SER:HB2 | 2.03 | 0.80 |
| 4:XD:28:SER:HB3 | 4:XD:29:PRO:CD | 2.12 | 0.80 |
| 25:YA:1454:U:H5' | 37:YR:63:ARG:HE | 1.46 | 0.80 |
| 1:QA:1239:A:H62 | 1:QA:1299:A:H62 | 1.26 | 0.80 |
| 27:RD:25:THR:HG22 | 27:RD:82:ILE:H | 1.47 | 0.80 |
| 29:RF:198:ALA:HA | 29:RF:201:VAL:HG12 | 1.62 | 0.80 |
| 41:RV:99:ILE:HD13 | 41:RV:99:ILE:N | 1.95 | 0.80 |
| 5:XE:126:ARG:HG3 | 5:XE:126:ARG:HH11 | 1.47 | 0.80 |
| 7:XG:111:ARG:HH11 | 7:XG:111:ARG:HB3 | 1.46 | 0.80 |
| 8:XH:84:ARG:HG3 | 8:XH:84:ARG:HH11 | 1.45 | 0.80 |
| 25:YA:2208:U:H1' | 27:YD:151:LYS:HE2 | 1.64 | 0.80 |
| 27:YD:121:PRO:HB3 | 27:YD:135:PHE:HE1 | 1.46 | 0.80 |
| 28:YE:3:GLY:O | 28:YE:4:ILE:HB | 1.81 | 0.80 |
| 30:YG:61:ALA:HB2 | 30:YG:68:PRO:CD | 2.12 | 0.80 |
| 34:YO:31:LYS:HG3 | 34:YO:32:TYR:CE2 | 2.17 | 0.80 |
| 38:YS:106:ARG:CA | 38:YS:110:LEU:HD21 | 2.10 | 0.80 |
| 51:Y5:4:HIS:HB3 | 51:Y5:5:PRO:CD | 2.11 | 0.80 |
| 14:QN:39:LEU:HB3 | 14:QN:43:CYS:HB3 | 1.64 | 0.80 |
| 29:RF:145:GLU:HG3 | 29:RF:145:GLU:O | 1.81 | 0.80 |
| 34:RO:14:THR:HG21 | 34:RO:86:ILE:HB | 1.62 | 0.80 |
| 9:XI:19:LEU:HD23 | 9:XI:61:ALA:HB2 | 1.63 | 0.80 |
| 16:XP:4:ILE:HG13 | 16:XP:21:VAL:HG12 | 1.64 | 0.80 |
| 28:YE:52:LEU:HB2 | 28:YE:75:VAL:HG23 | 1.62 | 0.80 |
| 41:YV:99:ILE:HD13 | 41:YV:99:ILE:N | 1.95 | 0.80 |
| 16:QP:4:ILE:HG13 | 16:QP:21:VAL:HG12 | 1.64 | 0.79 |
| 2:XB:4:GLU:HG2 | 2:XB:5:ILE:N | 1.94 | 0.79 |
| 16:XP:51:VAL:HG12 | 16:XP:52:ASP:N | 1.97 | 0.79 |
| 27:YD:34:VAL:O | 27:YD:34:VAL:HG13 | 1.80 | 0.79 |
| 27:YD:68:LYS:HB2 | 27:YD:70:TRP:CH2 | 2.17 | 0.79 |
| 31:YH:152:ARG:O | 31:YH:153:LYS:HB2 | 1.80 | 0.79 |
| 45:YZ:158:PRO:HB3 | 45:YZ:159:PRO:HD2 | 1.63 | 0.79 |
| 2:QB:35:GLU:O | 2:QB:36:ARG:HD3 | 1.82 | 0.79 |
| 27:RD:34:VAL:O | 27:RD:34:VAL:HG13 | 1.81 | 0.79 |
| 12:XL:48:PRO:HD2 | 12:XL:49:ASN:N | 1.97 | 0.79 |
| 25:YA:918:A:N3 | 26:YB:80:U:O2' | 2.16 | 0.79 |
| 25:YA:2056:G:N2 | 51:Y5:4:HIS:O | 2.15 | 0.79 |
| 39:YT:62:THR:CG2 | 39:YT:75:ILE:HG12 | 2.11 | 0.79 |
| 2:QB:212:GLN:CD | 2:QB:235:SER:HB2 | 2.02 | 0.79 |
| 27:RD:25:THR:CG2 | 27:RD:82:ILE:H | 1.93 | 0.79 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------------------|-----------------------------|--------------------------|-------------------|
| 30:RG:77:ILE:HD13 | 30:RG:82:LEU:HD12 | 1.64 | 0.79 |
| 31:RH:126:PRO:CG | 31:RH:127:GLU:H | 1.95 | 0.79 |
| 36:RQ:81:VAL:O | 36:RQ:82:ARG:CG | 2.31 | 0.79 |
| 2:XB:35:GLU:O | 2:XB:36:ARG:HD3 | 1.82 | 0.79 |
| 2:XB:178:ARG:NH2 | 8:XH:74:PRO:HB3 | 1.96 | 0.79 |
| 5:XE:10:MET:HB3 | 5:XE:32:VAL:HG22 | 1.63 | 0.79 |
| 11:XK:32:ILE:CD1 | 11:XK:72:ALA:HB2 | 2.12 | 0.79 |
| 20:XT:50:GLU:HG3 | 20:XT:51:GLU:N | 1.98 | 0.79 |
| 30:YG:77:ILE:HD13 | 30:YG:82:LEU:HD12 | 1.64 | 0.79 |
| 31:YH:126:PRO:CG | 31:YH:127:GLU:H | 1.95 | 0.79 |
| 31:YH:169:VAL:HG22 | 31:YH:170:ARG:H | 1.48 | 0.79 |
| 8:QH:84:ARG:HH11 | 8:QH:84:ARG:HG3 | 1.45 | 0.79 |
| 28:RE:137:HIS:HB3 | 28:RE:138:PRO:HD2 | 1.65 | 0.79 |
| 29:RF:11:VAL:HB | 29:RF:18:ARG:HG3 | 1.64 | 0.79 |
| 30:RG:61:ALA:HB2 | 30:RG:68:PRO:CD | 2.12 | 0.79 |
| 2:XB:18:GLY:H | 2:XB:42:ILE:CG2 | 1.95 | 0.79 |
| 2:XB:187:LEU:HA | 2:XB:201:ILE:HB | 1.65 | 0.79 |
| 8:XH:100:ILE:HB | 8:XH:125:ARG:HH12 | 1.47 | 0.79 |
| 9:QI:19:LEU:HD23 | 9:QI:61:ALA:HB2 | 1.64 | 0.79 |
| 12:QL:48:PRO:HD2 | 12:QL:49:ASN:N | 1.97 | 0.79 |
| 32:RI:2:LYS:CA | 32:RI:20:ASP:HB3 | 2.13 | 0.79 |
| 35:RP:14:LYS:O | 35:RP:16:ARG:HG2 | 1.83 | 0.79 |
| 39:RT:102:ILE:HA | 39:RT:105:LEU:CD2 | 2.13 | 0.79 |
| 45:RZ:137:ILE:HB | 45:RZ:156:LYS:HD2 | 1.63 | 0.79 |
| 35:YP:14:LYS:O | 35:YP:16:ARG:HG2 | 1.83 | 0.79 |
| 36:YQ:81:VAL:O | 36:YQ:82:ARG:CG | 2.31 | 0.79 |
| 25:RA:583:G:H5 ⁷ | 40:RU:10:ARG:HH12 | 1.46 | 0.79 |
| 27:RD:54:ARG:NH1 | 27:RD:54:ARG:HG3 | 1.98 | 0.79 |
| 31:RH:10:PRO:O | 31:RH:11:VAL:HG13 | 1.80 | 0.79 |
| 8:XH:20:TYR:HA | 8:XH:65:TYR:CE2 | 2.18 | 0.79 |
| 9:XI:15:ALA:HB2 | 9:XI:65:VAL:HG23 | 1.65 | 0.79 |
| 12:XL:86:ARG:HB2 | 12:XL:101:VAL:HG22 | 1.62 | 0.79 |
| 14:XN:39:LEU:HB3 | 14:XN:43:CYS:HB2 | 1.63 | 0.79 |
| 35:YP:65:ARG:HG3 | 35:YP:65:ARG:NH1 | 1.90 | 0.79 |
| 27:RD:68:LYS:HB2 | 27:RD:70:TRP:CH2 | 2.17 | 0.79 |
| 28:RE:111:ARG:HE | 28:RE:160:TYR:HE1 | 1.31 | 0.79 |
| 31:RH:86:GLU:CG | 31:RH:165:ALA:H | 1.94 | 0.79 |
| 32:RI:93:THR:HG22 | 32:RI:119:PRO:HB3 | 1.65 | 0.79 |
| 1:XA:951:G:OP2 | 13:XM:102:ARG:NH2 | 2.15 | 0.79 |
| 1:XA:1053:G:H5 ⁷ | 1:XA:1054:C:H5 ⁷ | 1.64 | 0.79 |
| 4:XD:28:SER:HB3 | 4:XD:29:PRO:HD2 | 1.65 | 0.79 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 12:XL:6:THR:N | 12:XL:9:GLN:HE21 | 1.80 | 0.79 |
| 13:XM:4:ILE:H | 13:XM:9:ILE:HG21 | 1.47 | 0.79 |
| 27:YD:17:THR:CG2 | 27:YD:205:VAL:H | 1.96 | 0.79 |
| 28:YE:24:THR:HG21 | 28:YE:188:VAL:CG1 | 2.13 | 0.79 |
| 40:YU:105:VAL:HG22 | 41:YV:44:LYS:HD2 | 1.65 | 0.79 |
| 11:QK:124:LYS:HD2 | 11:QK:125:PHE:HE1 | 1.45 | 0.79 |
| 19:QS:41:VAL:HG12 | 19:QS:44:MET:N | 1.98 | 0.79 |
| 20:QT:89:ARG:HH21 | 20:QT:104:LEU:HD21 | 1.47 | 0.79 |
| 35:RP:59:LEU:HA | 35:RP:61:ARG:HH21 | 1.44 | 0.79 |
| 39:YT:102:ILE:HA | 39:YT:105:LEU:CD2 | 2.13 | 0.79 |
| 1:QA:1077:G:N2 | 1:QA:1080:A:OP2 | 2.14 | 0.79 |
| 1:QA:1189:C:OP1 | 10:QJ:51:ARG:NH2 | 2.15 | 0.79 |
| 33:RN:71:ILE:HG21 | 33:RN:84:LYS:HB3 | 1.65 | 0.79 |
| 13:XM:3:ARG:HH21 | 30:YG:139:LEU:HD13 | 1.46 | 0.79 |
| 18:XR:43:PHE:HE2 | 18:XR:58:LEU:HD11 | 1.47 | 0.79 |
| 20:XT:100:ILE:HG13 | 20:XT:102:GLY:H | 1.48 | 0.79 |
| 25:YA:1021:A:OP2 | 33:YN:65:LYS:NZ | 2.15 | 0.79 |
| 31:YH:26:VAL:HG13 | 31:YH:27:LYS:N | 1.96 | 0.79 |
| 44:YY:86:ARG:HB2 | 44:YY:95:LYS:HD2 | 1.64 | 0.79 |
| 49:Y3:56:VAL:HG12 | 49:Y3:57:GLU:H | 1.48 | 0.79 |
| 30:RG:145:THR:HG23 | 50:R4:28:LYS:HZ1 | 1.48 | 0.79 |
| 34:RO:31:LYS:HG3 | 34:RO:32:TYR:CE2 | 2.17 | 0.79 |
| 35:RP:97:PRO:O | 35:RP:98:GLU:HB3 | 1.83 | 0.79 |
| 45:RZ:158:PRO:HB3 | 45:RZ:159:PRO:HD2 | 1.63 | 0.79 |
| 1:XA:1077:G:N2 | 1:XA:1080:A:OP2 | 2.14 | 0.79 |
| 18:XR:56:THR:HB | 18:XR:58:LEU:CD1 | 2.13 | 0.79 |
| 27:YD:27:THR:HG21 | 27:YD:83:GLU:HB3 | 1.63 | 0.79 |
| 31:YH:153:LYS:CG | 31:YH:162:ILE:H | 1.96 | 0.79 |
| 32:YI:11:ASN:O | 32:YI:12:LEU:HB2 | 1.83 | 0.79 |
| 45:YZ:30:ASN:O | 45:YZ:32:HIS:N | 2.16 | 0.79 |
| 47:Y1:11:ARG:HB3 | 47:Y1:11:ARG:NH1 | 1.98 | 0.79 |
| 7:QG:113:GLU:HB2 | 7:QG:119:ARG:HG2 | 1.65 | 0.78 |
| 8:QH:20:TYR:HA | 8:QH:65:TYR:CE2 | 2.18 | 0.78 |
| 33:RN:43:THR:HB | 33:RN:46:VAL:HG12 | 1.63 | 0.78 |
| 33:RN:62:VAL:HG12 | 33:RN:66:LYS:HD2 | 1.65 | 0.78 |
| 9:XI:83:ARG:O | 9:XI:86:VAL:HG12 | 1.84 | 0.78 |
| 31:YH:150:ALA:O | 31:YH:152:ARG:N | 2.14 | 0.78 |
| 4:QD:28:SER:HB3 | 4:QD:29:PRO:HD2 | 1.65 | 0.78 |
| 12:QL:6:THR:N | 12:QL:9:GLN:HE21 | 1.80 | 0.78 |
| 18:QR:56:THR:HB | 18:QR:58:LEU:CD1 | 2.13 | 0.78 |
| 40:RU:105:VAL:HG22 | 41:RV:44:LYS:HD2 | 1.65 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 47:R1:11:ARG:NH1 | 47:R1:11:ARG:HB3 | 1.98 | 0.78 |
| 1:XA:642:A:N3 | 8:XH:113:SER:OG | 2.16 | 0.78 |
| 19:XS:41:VAL:HG12 | 19:XS:44:MET:N | 1.98 | 0.78 |
| 32:YI:93:THR:HG22 | 32:YI:119:PRO:HB3 | 1.65 | 0.78 |
| 34:YO:53:LYS:HD2 | 34:YO:53:LYS:N | 1.96 | 0.78 |
| 35:YP:47:ASP:OD2 | 35:YP:49:ARG:HG2 | 1.82 | 0.78 |
| 43:YX:70:LEU:HD23 | 43:YX:70:LEU:N | 1.98 | 0.78 |
| 2:QB:84:GLU:HB3 | 2:QB:219:VAL:HG21 | 1.65 | 0.78 |
| 5:QE:10:MET:HB3 | 5:QE:32:VAL:HG22 | 1.63 | 0.78 |
| 20:QT:50:GLU:HG3 | 20:QT:51:GLU:N | 1.97 | 0.78 |
| 25:RA:265:A:N6 | 25:RA:427:U:O2' | 2.16 | 0.78 |
| 25:RA:1803:A:H4' | 27:RD:259:THR:CG2 | 2.14 | 0.78 |
| 25:RA:1803:A:H4' | 27:RD:259:THR:HG21 | 1.65 | 0.78 |
| 35:RP:138:LEU:C | 35:RP:140:ALA:H | 1.85 | 0.78 |
| 45:RZ:130:PRO:HA | 45:RZ:133:ILE:HD11 | 1.65 | 0.78 |
| 13:XM:3:ARG:CA | 13:XM:9:ILE:HG21 | 2.13 | 0.78 |
| 25:YA:1607:C:N4 | 25:YA:1622:G:OP2 | 2.15 | 0.78 |
| 27:YD:54:ARG:HG3 | 27:YD:54:ARG:NH1 | 1.98 | 0.78 |
| 30:YG:128:ARG:HH21 | 30:YG:128:ARG:HG3 | 1.48 | 0.78 |
| 32:YI:2:LYS:CA | 32:YI:20:ASP:HB3 | 2.13 | 0.78 |
| 34:YO:97:ARG:H | 34:YO:117:LEU:HD22 | 1.48 | 0.78 |
| 40:YU:90:VAL:HG12 | 40:YU:91:ASP:N | 1.98 | 0.78 |
| 50:Y4:58:ARG:O | 50:Y4:63:TYR:HB2 | 1.84 | 0.78 |
| 9:QI:15:ALA:HB2 | 9:QI:65:VAL:HG23 | 1.65 | 0.78 |
| 10:QJ:40:LEU:HB2 | 10:QJ:69:ASN:HB3 | 1.65 | 0.78 |
| 11:QK:32:ILE:CD1 | 11:QK:72:ALA:HB2 | 2.12 | 0.78 |
| 13:QM:4:ILE:H | 13:QM:9:ILE:HG21 | 1.47 | 0.78 |
| 30:RG:61:ALA:HB2 | 30:RG:68:PRO:HD3 | 1.65 | 0.78 |
| 36:RQ:80:GLU:O | 36:RQ:81:VAL:CG1 | 2.30 | 0.78 |
| 38:RS:106:ARG:HA | 38:RS:110:LEU:HD21 | 1.64 | 0.78 |
| 49:R3:56:VAL:HG12 | 49:R3:57:GLU:H | 1.47 | 0.78 |
| 3:XC:138:VAL:HG13 | 3:XC:149:ALA:HB1 | 1.64 | 0.78 |
| 26:YB:40:U:O2 | 26:YB:45:A:N6 | 2.16 | 0.78 |
| 41:YV:47:VAL:HG13 | 41:YV:48:GLY:H | 1.49 | 0.78 |
| 36:RQ:119:ARG:HH11 | 36:RQ:119:ARG:HG2 | 1.48 | 0.78 |
| 43:RX:70:LEU:HD23 | 43:RX:70:LEU:N | 1.99 | 0.78 |
| 10:XJ:16:LEU:HD23 | 10:XJ:94:VAL:HG13 | 1.66 | 0.78 |
| 28:YE:137:HIS:HB3 | 28:YE:138:PRO:HD2 | 1.64 | 0.78 |
| 18:QR:43:PHE:HE2 | 18:QR:58:LEU:HD11 | 1.47 | 0.78 |
| 25:RA:307:G:H21 | 25:RA:330:A:H62 | 1.32 | 0.78 |
| 27:RD:54:ARG:HG3 | 27:RD:54:ARG:HH11 | 1.49 | 0.78 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 45:YZ:28:MET:O | 45:YZ:34:ASN:HA | 1.84 | 0.78 |
| 3:QC:181:ASN:ND2 | 3:QC:204:LEU:HD12 | 1.99 | 0.78 |
| 20:QT:100:ILE:HG13 | 20:QT:102:GLY:H | 1.48 | 0.78 |
| 40:RU:90:VAL:HG12 | 40:RU:91:ASP:N | 1.97 | 0.78 |
| 25:YA:2287:A:H62 | 25:YA:2344:U:H3 | 1.32 | 0.78 |
| 28:YE:4:ILE:HD12 | 28:YE:28:ALA:HB1 | 1.66 | 0.78 |
| 34:YO:47:ILE:HD12 | 34:YO:48:PRO:HD2 | 1.66 | 0.78 |
| 27:RD:142:VAL:HG23 | 27:RD:193:VAL:HA | 1.66 | 0.78 |
| 29:RF:20:LEU:HD12 | 29:RF:21:ALA:H | 1.49 | 0.78 |
| 36:RQ:20:ALA:HB1 | 36:RQ:99:PRO:HB2 | 1.65 | 0.78 |
| 1:XA:346:G:H4' | 39:YT:41:ARG:NH1 | 1.98 | 0.78 |
| 25:YA:352:G:H3' | 25:YA:353:G:H8 | 1.47 | 0.78 |
| 27:YD:94:LEU:HD22 | 27:YD:95:LEU:N | 1.98 | 0.78 |
| 30:YG:97:ASP:H | 30:YG:100:TRP:HD1 | 1.31 | 0.78 |
| 1:QA:1342:C:H4' | 9:QI:125:TYR:HB3 | 1.64 | 0.78 |
| 31:RH:153:LYS:CG | 31:RH:162:ILE:H | 1.96 | 0.78 |
| 1:XA:1327:C:OP2 | 21:XU:12:LYS:NZ | 2.17 | 0.78 |
| 13:XM:88:ARG:HH11 | 13:XM:88:ARG:CB | 1.96 | 0.78 |
| 27:YD:34:VAL:HG21 | 27:YD:103:ARG:HA | 1.66 | 0.78 |
| 29:YF:145:GLU:O | 29:YF:145:GLU:HG3 | 1.81 | 0.78 |
| 2:QB:122:PHE:HD1 | 2:QB:139:LYS:HZ1 | 1.30 | 0.78 |
| 6:QF:23:LYS:O | 6:QF:27:GLN:HG2 | 1.84 | 0.78 |
| 27:RD:94:LEU:HD22 | 27:RD:95:LEU:N | 1.98 | 0.78 |
| 28:RE:4:ILE:HD12 | 28:RE:28:ALA:HB1 | 1.66 | 0.78 |
| 28:RE:24:THR:HG21 | 28:RE:188:VAL:CG1 | 2.13 | 0.78 |
| 30:RG:128:ARG:HH21 | 30:RG:128:ARG:HG3 | 1.48 | 0.78 |
| 34:RO:47:ILE:HD12 | 34:RO:48:PRO:HD2 | 1.66 | 0.78 |
| 35:RP:19:VAL:HG22 | 35:RP:20:GLY:N | 1.97 | 0.78 |
| 44:RY:86:ARG:HB2 | 44:RY:95:LYS:HD2 | 1.64 | 0.78 |
| 1:XA:1226:C:O2' | 13:XM:103:THR:O | 2.02 | 0.78 |
| 6:XF:24:GLU:HA | 6:XF:27:GLN:CG | 2.14 | 0.78 |
| 25:YA:1899:G:H21 | 25:YA:1902:C:N4 | 1.81 | 0.78 |
| 2:QB:18:GLY:H | 2:QB:42:ILE:CG2 | 1.95 | 0.77 |
| 10:QJ:16:LEU:HD23 | 10:QJ:94:VAL:HG13 | 1.66 | 0.77 |
| 27:RD:25:THR:O | 27:RD:27:THR:N | 2.17 | 0.77 |
| 52:R6:15:GLU:CD | 52:R6:41:PRO:HB3 | 2.04 | 0.77 |
| 2:XB:21:ARG:HG3 | 2:XB:38:GLY:C | 2.05 | 0.77 |
| 40:YU:66:ASN:O | 40:YU:70:ARG:HB2 | 1.84 | 0.77 |
| 2:QB:21:ARG:HG3 | 2:QB:38:GLY:C | 2.05 | 0.77 |
| 2:QB:178:ARG:NE | 8:QH:71:GLY:O | 2.17 | 0.77 |
| 27:RD:35:LYS:HZ1 | 27:RD:104:TYR:HB2 | 1.48 | 0.77 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:RF:29:ASN:H | 29:RF:112:MET:CE | 1.97 | 0.77 |
| 35:RP:84:ASN:ND2 | 35:RP:116:GLY:HA3 | 1.99 | 0.77 |
| 2:XB:239:VAL:HG12 | 2:XB:240:GLN:NE2 | 1.99 | 0.77 |
| 13:XM:15:VAL:HG23 | 13:XM:43:THR:O | 1.84 | 0.77 |
| 19:XS:5:LEU:CD2 | 50:Y4:67:TYR:CZ | 2.66 | 0.77 |
| 31:YH:132:ARG:HB2 | 31:YH:132:ARG:NH1 | 1.94 | 0.77 |
| 1:QA:186:C:H5' | 20:QT:78:ALA:HB1 | 1.64 | 0.77 |
| 5:QE:11:ILE:CD1 | 5:QE:31:LEU:HD12 | 2.13 | 0.77 |
| 6:QF:24:GLU:HA | 6:QF:27:GLN:CG | 2.14 | 0.77 |
| 23:QX:5:C:H2' | 23:QX:6:C:H6 | 1.49 | 0.77 |
| 25:RA:878:A:N6 | 25:RA:899:A:O2' | 2.16 | 0.77 |
| 27:RD:17:THR:CG2 | 27:RD:205:VAL:H | 1.96 | 0.77 |
| 35:RP:62:LEU:N | 35:RP:62:LEU:CD2 | 2.46 | 0.77 |
| 35:RP:75:ILE:HD13 | 35:RP:75:ILE:N | 2.00 | 0.77 |
| 39:RT:43:GLN:HG2 | 39:RT:44:ASP:N | 1.99 | 0.77 |
| 40:RU:66:ASN:O | 40:RU:70:ARG:HB2 | 1.84 | 0.77 |
| 42:RW:65:LEU:CD1 | 42:RW:68:ARG:HH11 | 1.97 | 0.77 |
| 44:RY:97:ARG:HH21 | 44:RY:98:VAL:CB | 1.98 | 0.77 |
| 2:XB:84:GLU:HB3 | 2:XB:219:VAL:HG21 | 1.65 | 0.77 |
| 25:YA:1728:G:N1 | 25:YA:1730:U:OP2 | 2.18 | 0.77 |
| 27:YD:25:THR:HG22 | 27:YD:82:ILE:H | 1.46 | 0.77 |
| 31:YH:152:ARG:HG3 | 31:YH:153:LYS:CE | 2.13 | 0.77 |
| 2:QB:101:MET:CA | 2:QB:108:ILE:HG13 | 2.11 | 0.77 |
| 14:QN:39:LEU:HD22 | 14:QN:43:CYS:HG | 1.46 | 0.77 |
| 22:QV:1:C:H4' | 46:R0:5:LYS:HE2 | 1.65 | 0.77 |
| 30:RG:127:GLY:HA2 | 30:RG:166:ASP:CG | 2.05 | 0.77 |
| 45:RZ:28:MET:O | 45:RZ:34:ASN:HA | 1.84 | 0.77 |
| 45:RZ:30:ASN:O | 45:RZ:32:HIS:N | 2.16 | 0.77 |
| 4:XD:30:LYS:C | 4:XD:32:ALA:N | 2.36 | 0.77 |
| 30:YG:127:GLY:HA2 | 30:YG:166:ASP:CG | 2.05 | 0.77 |
| 35:YP:84:ASN:ND2 | 35:YP:116:GLY:HA3 | 1.99 | 0.77 |
| 37:YR:74:LYS:O | 37:YR:75:LEU:HB3 | 1.84 | 0.77 |
| 45:YZ:130:PRO:HA | 45:YZ:133:ILE:HD11 | 1.66 | 0.77 |
| 52:Y6:15:GLU:CD | 52:Y6:41:PRO:HB3 | 2.04 | 0.77 |
| 25:RA:1689:A:H62 | 25:RA:1698:A:H2 | 1.29 | 0.77 |
| 25:RA:2311:A:H1' | 30:RG:82:LEU:HD11 | 1.67 | 0.77 |
| 31:RH:150:ALA:O | 31:RH:152:ARG:N | 2.14 | 0.77 |
| 35:RP:114:ILE:HD11 | 35:RP:130:PHE:CE1 | 2.19 | 0.77 |
| 38:RS:60:GLY:O | 38:RS:61:ASN:HB3 | 1.84 | 0.77 |
| 50:R4:22:ILE:O | 50:R4:24:THR:HG23 | 1.84 | 0.77 |
| 7:XG:113:GLU:HB2 | 7:XG:119:ARG:HG2 | 1.65 | 0.77 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 22:XV:74:C:N3 | 25:YA:2252:G:N1 | 2.30 | 0.77 |
| 25:YA:84:A:N1 | 25:YA:98:G:O2' | 2.17 | 0.77 |
| 29:YF:11:VAL:HB | 29:YF:18:ARG:HG3 | 1.64 | 0.77 |
| 29:YF:20:LEU:HD12 | 29:YF:21:ALA:H | 1.49 | 0.77 |
| 33:YN:71:ILE:HG21 | 33:YN:84:LYS:HB3 | 1.65 | 0.77 |
| 47:Y1:13:ILE:HD11 | 47:Y1:42:GLN:OE1 | 1.84 | 0.77 |
| 17:QQ:41:LYS:NZ | 17:QQ:92:ARG:HH22 | 1.82 | 0.77 |
| 17:QQ:59:ILE:H | 17:QQ:59:ILE:HD13 | 1.50 | 0.77 |
| 36:RQ:66:ILE:HG13 | 36:RQ:67:ARG:N | 1.99 | 0.77 |
| 44:RY:44:ILE:HG13 | 44:RY:45:VAL:N | 2.00 | 0.77 |
| 1:XA:1002:G:H2' | 1:XA:1003:G:H8 | 1.49 | 0.77 |
| 9:XI:53:VAL:HB | 9:XI:95:LYS:HE3 | 1.67 | 0.77 |
| 25:YA:498:G:N3 | 44:YY:47:LYS:NZ | 2.32 | 0.77 |
| 27:YD:44:ASN:HD22 | 27:YD:44:ASN:N | 1.78 | 0.77 |
| 44:YY:79:CYS:SG | 44:YY:80:GLY:N | 2.57 | 0.77 |
| 1:QA:642:A:N3 | 8:QH:113:SER:OG | 2.18 | 0.77 |
| 2:QB:239:VAL:HG12 | 2:QB:240:GLN:NE2 | 1.99 | 0.77 |
| 8:QH:100:ILE:HB | 8:QH:125:ARG:HH12 | 1.47 | 0.77 |
| 47:R1:86:SER:N | 47:R1:87:PRO:CD | 2.48 | 0.77 |
| 4:XD:76:ARG:HD2 | 4:XD:207:TYR:CE2 | 2.20 | 0.77 |
| 36:YQ:20:ALA:CB | 36:YQ:99:PRO:HD2 | 2.14 | 0.77 |
| 50:Y4:22:ILE:O | 50:Y4:24:THR:HG23 | 1.84 | 0.77 |
| 50:R4:58:ARG:O | 50:R4:63:TYR:HB2 | 1.84 | 0.77 |
| 2:XB:44:LEU:H | 2:XB:44:LEU:HD12 | 1.48 | 0.77 |
| 25:YA:330:A:HO2' | 25:YA:331:A:H8 | 1.31 | 0.77 |
| 42:YW:18:ARG:HG3 | 42:YW:76:VAL:CG1 | 2.15 | 0.77 |
| 42:YW:65:LEU:CD1 | 42:YW:68:ARG:HH11 | 1.97 | 0.77 |
| 54:Y8:59:LYS:CB | 54:Y8:59:LYS:HZ3 | 1.96 | 0.77 |
| 7:QG:148:ASN:HD22 | 7:QG:148:ASN:N | 1.82 | 0.77 |
| 25:RA:2580:U:H4' | 28:RE:130:GLY:HA3 | 1.67 | 0.77 |
| 27:RD:146:GLU:HB2 | 27:RD:189:CYS:HB3 | 1.67 | 0.77 |
| 32:RI:11:ASN:O | 32:RI:12:LEU:HB2 | 1.83 | 0.77 |
| 34:RO:97:ARG:H | 34:RO:117:LEU:HD22 | 1.48 | 0.77 |
| 44:RY:79:CYS:SG | 44:RY:80:GLY:N | 2.57 | 0.77 |
| 47:R1:13:ILE:HD11 | 47:R1:42:GLN:OE1 | 1.84 | 0.77 |
| 7:XG:150:ALA:HA | 11:XK:59:TYR:CD2 | 2.19 | 0.77 |
| 20:XT:89:ARG:HH21 | 20:XT:104:LEU:HD21 | 1.47 | 0.77 |
| 45:YZ:108:PRO:HG2 | 45:YZ:112:ARG:H | 1.49 | 0.77 |
| 13:QM:7:VAL:HB | 30:RG:115:ARG:NH1 | 2.00 | 0.77 |
| 20:QT:26:ASN:O | 20:QT:30:LYS:HB2 | 1.85 | 0.77 |
| 25:RA:2314:C:OP1 | 30:RG:91:ARG:NH1 | 2.18 | 0.77 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:RR:33:ARG:HH22 | 51:R5:55:ARG:HG2 | 1.50 | 0.77 |
| 1:XA:1342:C:H4' | 9:XI:125:TYR:HB3 | 1.66 | 0.77 |
| 5:XE:11:ILE:CD1 | 5:XE:31:LEU:HD12 | 2.13 | 0.77 |
| 5:XE:42:GLY:HA3 | 5:XE:66:MET:HG2 | 1.67 | 0.77 |
| 6:XF:23:LYS:O | 6:XF:27:GLN:HG2 | 1.84 | 0.77 |
| 20:XT:13:LEU:HD12 | 20:XT:14:LYS:N | 2.00 | 0.77 |
| 27:YD:25:THR:O | 27:YD:27:THR:N | 2.17 | 0.77 |
| 27:YD:153:ALA:O | 27:YD:154:LYS:HG3 | 1.85 | 0.77 |
| 29:YF:183:VAL:O | 29:YF:187:VAL:HG23 | 1.85 | 0.77 |
| 38:YS:60:GLY:O | 38:YS:61:ASN:HB3 | 1.83 | 0.77 |
| 49:Y3:35:ARG:HB3 | 49:Y3:37:LEU:HD21 | 1.66 | 0.77 |
| 50:Y4:1:MET:HB2 | 50:Y4:6:HIS:NE2 | 2.00 | 0.77 |
| 2:QB:44:LEU:HD12 | 2:QB:44:LEU:H | 1.49 | 0.76 |
| 2:QB:187:LEU:HA | 2:QB:201:ILE:HB | 1.65 | 0.76 |
| 4:QD:76:ARG:HD2 | 4:QD:207:TYR:CE2 | 2.20 | 0.76 |
| 5:QE:12:LEU:HD23 | 5:QE:13:ILE:N | 2.00 | 0.76 |
| 13:QM:3:ARG:NH2 | 30:RG:139:LEU:HD13 | 1.99 | 0.76 |
| 29:RF:183:VAL:O | 29:RF:187:VAL:HG23 | 1.85 | 0.76 |
| 31:RH:153:LYS:HA | 31:RH:153:LYS:NZ | 1.99 | 0.76 |
| 36:RQ:20:ALA:CB | 36:RQ:99:PRO:HD2 | 2.14 | 0.76 |
| 1:XA:973:G:OP1 | 10:XJ:57:LYS:NZ | 2.17 | 0.76 |
| 7:XG:79:ARG:HH22 | 7:XG:82:GLY:HA2 | 1.51 | 0.76 |
| 25:YA:957:A:H5' | 36:YQ:76:LYS:HD2 | 1.66 | 0.76 |
| 13:QM:88:ARG:HH11 | 13:QM:88:ARG:CB | 1.96 | 0.76 |
| 30:RG:101:ILE:HG13 | 30:RG:102:PHE:H | 1.48 | 0.76 |
| 40:RU:88:ILE:HG22 | 40:RU:90:VAL:HG23 | 1.67 | 0.76 |
| 44:RY:97:ARG:NH2 | 44:RY:98:VAL:HB | 2.00 | 0.76 |
| 54:R8:59:LYS:CB | 54:R8:59:LYS:HZ3 | 1.96 | 0.76 |
| 19:XS:39:THR:HG22 | 19:XS:40:ILE:H | 1.50 | 0.76 |
| 31:YH:153:LYS:HA | 31:YH:153:LYS:NZ | 1.99 | 0.76 |
| 34:YO:104:ARG:HH11 | 34:YO:104:ARG:HG2 | 1.50 | 0.76 |
| 35:YP:114:ILE:HD11 | 35:YP:130:PHE:CE1 | 2.19 | 0.76 |
| 36:YQ:119:ARG:HH11 | 36:YQ:119:ARG:HG2 | 1.48 | 0.76 |
| 38:YS:106:ARG:HA | 38:YS:110:LEU:HD21 | 1.64 | 0.76 |
| 51:Y5:40:LYS:CD | 51:Y5:46:CYS:HB3 | 2.15 | 0.76 |
| 2:QB:178:ARG:HD2 | 8:QH:71:GLY:CA | 2.16 | 0.76 |
| 16:QP:6:LEU:HB3 | 16:QP:17:TYR:HD2 | 1.50 | 0.76 |
| 50:R4:1:MET:HB2 | 50:R4:6:HIS:NE2 | 2.00 | 0.76 |
| 52:R6:34:LEU:HD13 | 52:R6:34:LEU:H | 1.50 | 0.76 |
| 54:R8:59:LYS:HB2 | 54:R8:59:LYS:HZ2 | 1.49 | 0.76 |
| 25:YA:819:A:OP2 | 25:YA:1187:G:N2 | 2.17 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:YA:2729:G:H1' | 28:YE:187:ALA:HB2 | 1.67 | 0.76 |
| 33:YN:62:VAL:HG12 | 33:YN:66:LYS:HD2 | 1.65 | 0.76 |
| 36:YQ:20:ALA:HB1 | 36:YQ:99:PRO:HB2 | 1.65 | 0.76 |
| 36:YQ:66:ILE:HG13 | 36:YQ:67:ARG:N | 2.00 | 0.76 |
| 44:YY:94:LYS:O | 44:YY:101:LYS:HB3 | 1.85 | 0.76 |
| 13:QM:15:VAL:HG23 | 13:QM:43:THR:O | 1.84 | 0.76 |
| 16:QP:22:THR:HA | 16:QP:33:ILE:HG12 | 1.66 | 0.76 |
| 27:RD:44:ASN:HD22 | 27:RD:44:ASN:N | 1.79 | 0.76 |
| 27:RD:153:ALA:O | 27:RD:154:LYS:HG3 | 1.85 | 0.76 |
| 36:RQ:90:VAL:HG13 | 36:RQ:91:GLU:H | 1.49 | 0.76 |
| 44:RY:81:LYS:HD3 | 44:RY:97:ARG:NE | 2.00 | 0.76 |
| 45:RZ:7:ALA:HB2 | 45:RZ:59:LEU:HD22 | 1.67 | 0.76 |
| 28:YE:111:ARG:HE | 28:YE:160:TYR:HE1 | 1.31 | 0.76 |
| 30:YG:61:ALA:HB2 | 30:YG:68:PRO:HD3 | 1.65 | 0.76 |
| 30:YG:142:PRO:HB2 | 50:Y4:31:ILE:HD13 | 1.68 | 0.76 |
| 35:YP:138:LEU:C | 35:YP:140:ALA:H | 1.85 | 0.76 |
| 44:YY:95:LYS:HB3 | 44:YY:100:ALA:CA | 2.10 | 0.76 |
| 9:QI:83:ARG:O | 9:QI:86:VAL:HG12 | 1.84 | 0.76 |
| 21:QU:10:ARG:HG2 | 21:QU:13:ILE:HD12 | 1.68 | 0.76 |
| 25:RA:2112:G:O6 | 25:RA:2169:A:N6 | 2.19 | 0.76 |
| 27:RD:34:VAL:HG21 | 27:RD:103:ARG:HA | 1.66 | 0.76 |
| 1:XA:1152:A:H5'' | 10:XJ:13:HIS:HD2 | 1.51 | 0.76 |
| 5:XE:12:LEU:HD23 | 5:XE:13:ILE:N | 2.00 | 0.76 |
| 19:QS:5:LEU:CD2 | 50:R4:67:TYR:CD2 | 2.68 | 0.76 |
| 22:QV:1:C:O4' | 46:R0:5:LYS:HE3 | 1.84 | 0.76 |
| 25:RA:2308:G:H22 | 25:RA:2311:A:H2 | 1.33 | 0.76 |
| 30:RG:127:GLY:O | 30:RG:128:ARG:HG2 | 1.85 | 0.76 |
| 31:RH:169:VAL:HG22 | 31:RH:170:ARG:H | 1.47 | 0.76 |
| 49:R3:35:ARG:HB3 | 49:R3:37:LEU:HD21 | 1.66 | 0.76 |
| 1:XA:1226:C:O2' | 13:XM:111:LYS:NZ | 2.19 | 0.76 |
| 7:XG:37:ASN:ND2 | 9:XI:40:LEU:HD23 | 2.00 | 0.76 |
| 25:YA:583:G:H5'' | 40:YU:10:ARG:HH12 | 1.51 | 0.76 |
| 25:YA:2655:G:N2 | 25:YA:2665:A:OP2 | 2.18 | 0.76 |
| 30:YG:76:SER:OG | 30:YG:83:ARG:HA | 1.85 | 0.76 |
| 30:YG:127:GLY:O | 30:YG:128:ARG:HG2 | 1.85 | 0.76 |
| 8:QH:5:PRO:O | 8:QH:8:ASP:HB3 | 1.85 | 0.76 |
| 20:QT:13:LEU:HD12 | 20:QT:14:LYS:N | 2.00 | 0.76 |
| 51:R5:47:PRO:O | 51:R5:48:GLU:HG3 | 1.85 | 0.76 |
| 3:XC:59:ARG:HH22 | 3:XC:97:LYS:HE3 | 1.51 | 0.76 |
| 5:XE:53:LEU:H | 5:XE:53:LEU:CD1 | 1.99 | 0.76 |
| 29:YF:29:ASN:H | 29:YF:112:MET:CE | 1.98 | 0.76 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 31:YH:125:VAL:HA | 31:YH:126:PRO:HB3 | 1.68 | 0.76 |
| 36:YQ:90:VAL:HG13 | 36:YQ:91:GLU:H | 1.49 | 0.76 |
| 5:XE:36:ASP:OD2 | 5:XE:38:GLN:HB2 | 1.86 | 0.76 |
| 9:XI:113:LYS:HD2 | 9:XI:113:LYS:H | 1.51 | 0.76 |
| 16:XP:6:LEU:HB3 | 16:XP:17:TYR:HD2 | 1.50 | 0.76 |
| 29:YF:101:LEU:CD1 | 29:YF:102:PRO:HD2 | 2.11 | 0.76 |
| 39:YT:111:ARG:O | 39:YT:113:LYS:N | 2.17 | 0.76 |
| 42:YW:73:ALA:HB3 | 42:YW:106:ILE:HG12 | 1.68 | 0.76 |
| 44:YY:81:LYS:HD3 | 44:YY:97:ARG:NE | 2.00 | 0.76 |
| 1:QA:452:A:N6 | 1:QA:480:U:O2 | 2.19 | 0.76 |
| 3:QC:59:ARG:HH22 | 3:QC:97:LYS:HE3 | 1.50 | 0.76 |
| 5:QE:53:LEU:H | 5:QE:53:LEU:CD1 | 1.99 | 0.76 |
| 9:QI:53:VAL:HB | 9:QI:95:LYS:HE3 | 1.67 | 0.76 |
| 25:RA:518:G:H4' | 42:RW:18:ARG:NH1 | 2.00 | 0.76 |
| 25:YA:2392:A:H8 | 35:YP:60:MET:HG3 | 1.49 | 0.76 |
| 29:YF:29:ASN:HB3 | 29:YF:112:MET:HE1 | 1.68 | 0.76 |
| 39:YT:50:ILE:HD12 | 39:YT:102:ILE:HD11 | 1.68 | 0.76 |
| 47:Y1:86:SER:N | 47:Y1:87:PRO:CD | 2.48 | 0.76 |
| 50:Y4:34:GLU:HG3 | 50:Y4:35:VAL:H | 1.51 | 0.76 |
| 4:QD:153:ARG:NH1 | 4:QD:181:MET:HG3 | 2.01 | 0.76 |
| 5:QE:72:GLN:NE2 | 5:QE:144:THR:HG22 | 2.01 | 0.76 |
| 8:QH:91:ARG:HH11 | 8:QH:91:ARG:HG2 | 1.51 | 0.76 |
| 14:QN:22:THR:O | 14:QN:23:ARG:HB2 | 1.85 | 0.76 |
| 27:RD:69:ARG:HH21 | 27:RD:130:ALA:CB | 1.99 | 0.76 |
| 32:RI:2:LYS:HA | 32:RI:20:ASP:HB3 | 1.68 | 0.76 |
| 47:R1:56:GLN:NE2 | 47:R1:56:GLN:N | 2.34 | 0.76 |
| 50:R4:34:GLU:HG3 | 50:R4:35:VAL:H | 1.51 | 0.76 |
| 1:XA:688:G:H2' | 1:XA:689:C:H6 | 1.48 | 0.76 |
| 1:XA:963:G:N3 | 10:XJ:55:LYS:NZ | 2.32 | 0.76 |
| 2:XB:117:GLU:O | 2:XB:121:LEU:HB2 | 1.86 | 0.76 |
| 10:XJ:38:ILE:HG12 | 10:XJ:71:LEU:O | 1.86 | 0.76 |
| 30:YG:3:LEU:HD12 | 30:YG:4:ASP:H | 1.51 | 0.76 |
| 35:YP:97:PRO:O | 35:YP:98:GLU:HB3 | 1.83 | 0.76 |
| 52:Y6:34:LEU:H | 52:Y6:34:LEU:HD13 | 1.50 | 0.76 |
| 6:QF:91:VAL:HG13 | 18:QR:72:ARG:HH12 | 1.51 | 0.75 |
| 25:RA:654:A:O2' | 25:RA:654(A):G:N7 | 2.19 | 0.75 |
| 37:RR:74:LYS:O | 37:RR:75:LEU:HB3 | 1.84 | 0.75 |
| 1:XA:411:A:H62 | 1:XA:413:G:H21 | 1.32 | 0.75 |
| 17:XQ:41:LYS:NZ | 17:XQ:92:ARG:HH22 | 1.82 | 0.75 |
| 28:YE:63:LEU:CD1 | 28:YE:65:GLY:H | 1.99 | 0.75 |
| 30:YG:101:ILE:HG13 | 30:YG:102:PHE:H | 1.49 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:YO:47:ILE:CD1 | 34:YO:48:PRO:HD2 | 2.16 | 0.75 |
| 35:YP:62:LEU:N | 35:YP:62:LEU:CD2 | 2.47 | 0.75 |
| 10:QJ:38:ILE:HG12 | 10:QJ:71:LEU:O | 1.86 | 0.75 |
| 25:RA:2562:U:O2' | 34:RO:23:ARG:NH1 | 2.20 | 0.75 |
| 26:RB:56:G:OP1 | 30:RG:27:ASN:ND2 | 2.18 | 0.75 |
| 34:RO:104:ARG:HH11 | 34:RO:104:ARG:HG2 | 1.50 | 0.75 |
| 51:R5:40:LYS:CD | 51:R5:46:CYS:HB3 | 2.15 | 0.75 |
| 16:XP:22:THR:HA | 16:XP:33:ILE:HG12 | 1.66 | 0.75 |
| 18:XR:53:ARG:HH21 | 18:XR:60:ALA:N | 1.84 | 0.75 |
| 27:YD:69:ARG:HH21 | 27:YD:130:ALA:CB | 1.99 | 0.75 |
| 28:YE:36:ARG:HH21 | 28:YE:88:GLY:HA2 | 1.51 | 0.75 |
| 40:YU:88:ILE:HG22 | 40:YU:90:VAL:HG23 | 1.67 | 0.75 |
| 46:Y0:3:HIS:CD2 | 46:Y0:4:LYS:H | 2.04 | 0.75 |
| 4:QD:30:LYS:C | 4:QD:32:ALA:N | 2.36 | 0.75 |
| 18:QR:53:ARG:HH21 | 18:QR:60:ALA:N | 1.84 | 0.75 |
| 25:RA:102:G:OP2 | 48:R2:7:ARG:NH2 | 2.19 | 0.75 |
| 29:RF:129:PHE:HA | 29:RF:142:TRP:NE1 | 2.02 | 0.75 |
| 30:RG:76:SER:OG | 30:RG:83:ARG:HA | 1.85 | 0.75 |
| 31:RH:150:ALA:C | 31:RH:152:ARG:H | 1.88 | 0.75 |
| 31:RH:152:ARG:HG3 | 31:RH:153:LYS:CE | 2.14 | 0.75 |
| 8:XH:5:PRO:O | 8:XH:8:ASP:HB3 | 1.85 | 0.75 |
| 10:XJ:40:LEU:HB2 | 10:XJ:69:ASN:HB3 | 1.65 | 0.75 |
| 25:YA:1187:G:H5'' | 41:YV:81:TYR:CE2 | 2.21 | 0.75 |
| 28:YE:23:VAL:HG21 | 28:YE:183:LEU:HD23 | 1.69 | 0.75 |
| 40:YU:92:ARG:HH11 | 40:YU:95:LEU:CD1 | 2.00 | 0.75 |
| 44:YY:44:ILE:HG13 | 44:YY:45:VAL:N | 2.00 | 0.75 |
| 2:QB:117:GLU:O | 2:QB:121:LEU:HB2 | 1.86 | 0.75 |
| 12:QL:11:VAL:HG13 | 17:QQ:29:HIS:HD2 | 1.51 | 0.75 |
| 30:RG:3:LEU:HD12 | 30:RG:4:ASP:H | 1.52 | 0.75 |
| 35:RP:62:LEU:HD21 | 54:R8:25:MET:HB2 | 1.69 | 0.75 |
| 40:RU:52:ARG:HH11 | 40:RU:52:ARG:HG2 | 1.51 | 0.75 |
| 41:RV:47:VAL:HG13 | 41:RV:48:GLY:H | 1.49 | 0.75 |
| 45:RZ:108:PRO:HG2 | 45:RZ:112:ARG:H | 1.49 | 0.75 |
| 4:XD:153:ARG:NH1 | 4:XD:181:MET:HG3 | 2.00 | 0.75 |
| 5:XE:11:ILE:HD11 | 5:XE:31:LEU:CD1 | 2.17 | 0.75 |
| 25:YA:2198:A:O2' | 25:YA:2199:A:O5' | 2.04 | 0.75 |
| 27:YD:142:VAL:HG23 | 27:YD:193:VAL:HA | 1.67 | 0.75 |
| 35:YP:62:LEU:HD21 | 54:Y8:25:MET:HB2 | 1.69 | 0.75 |
| 43:YX:57:LEU:HD11 | 43:YX:78:LYS:HB2 | 1.68 | 0.75 |
| 44:YY:97:ARG:HH21 | 44:YY:98:VAL:CB | 1.98 | 0.75 |
| 2:QB:178:ARG:HD2 | 8:QH:71:GLY:C | 2.07 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:QE:42:GLY:HA3 | 5:QE:66:MET:HG2 | 1.68 | 0.75 |
| 7:QG:37:ASN:ND2 | 9:QI:40:LEU:HD23 | 2.00 | 0.75 |
| 11:QK:48:ILE:HD11 | 11:QK:64:ALA:HA | 1.67 | 0.75 |
| 12:QL:48:PRO:HD2 | 12:QL:49:ASN:H | 1.52 | 0.75 |
| 13:QM:3:ARG:CA | 13:QM:9:ILE:HG21 | 2.13 | 0.75 |
| 25:RA:1814:G:H4' | 27:RD:51:VAL:HG21 | 1.68 | 0.75 |
| 36:RQ:81:VAL:CG2 | 46:R0:7:LEU:HD11 | 2.16 | 0.75 |
| 45:RZ:76:LEU:HD23 | 45:RZ:76:LEU:H | 1.51 | 0.75 |
| 13:XM:49:THR:HG22 | 13:XM:51:ALA:N | 2.01 | 0.75 |
| 16:XP:43:LYS:HG2 | 16:XP:48:TRP:CE3 | 2.22 | 0.75 |
| 41:YV:52:VAL:HG21 | 41:YV:55:ALA:HB3 | 1.68 | 0.75 |
| 45:YZ:76:LEU:HD23 | 45:YZ:76:LEU:H | 1.51 | 0.75 |
| 5:QE:45:PHE:CE2 | 5:QE:47:LYS:HD2 | 2.22 | 0.75 |
| 20:QT:58:LYS:HE3 | 20:QT:62:LEU:HD11 | 1.69 | 0.75 |
| 30:RG:142:PRO:HB2 | 50:R4:31:ILE:HD13 | 1.68 | 0.75 |
| 45:RZ:5:LEU:HD23 | 45:RZ:47:VAL:HG21 | 1.68 | 0.75 |
| 1:XA:486:U:H2' | 1:XA:487:A:H8 | 1.51 | 0.75 |
| 7:XG:23:VAL:HG12 | 7:XG:27:ILE:HD11 | 1.69 | 0.75 |
| 14:YN:22:THR:O | 14:YN:23:ARG:HB2 | 1.85 | 0.75 |
| 44:YY:90:LEU:HD22 | 44:YY:90:LEU:N | 2.01 | 0.75 |
| 47:Y1:56:GLN:NE2 | 47:Y1:56:GLN:N | 2.34 | 0.75 |
| 54:Y8:59:LYS:HB2 | 54:Y8:59:LYS:HZ2 | 1.49 | 0.75 |
| 5:QE:11:ILE:HD11 | 5:QE:31:LEU:CD1 | 2.17 | 0.75 |
| 10:QJ:27:ALA:HB1 | 10:QJ:34:VAL:HG21 | 1.69 | 0.75 |
| 19:QS:41:VAL:HG12 | 19:QS:44:MET:H | 1.50 | 0.75 |
| 47:R1:3:LYS:HD3 | 47:R1:43:TYR:HD2 | 1.52 | 0.75 |
| 4:XD:11:LEU:C | 4:XD:13:ARG:N | 2.36 | 0.75 |
| 7:XG:148:ASN:HD22 | 7:XG:148:ASN:N | 1.82 | 0.75 |
| 25:YA:530:G:C2 | 25:YA:2022:U:OP1 | 2.40 | 0.75 |
| 39:YT:43:GLN:HG2 | 39:YT:44:ASP:N | 1.99 | 0.75 |
| 41:YV:35:LEU:H | 41:YV:35:LEU:HD22 | 1.51 | 0.75 |
| 41:YV:51:VAL:HG12 | 41:YV:52:VAL:H | 1.52 | 0.75 |
| 45:YZ:5:LEU:HD23 | 45:YZ:47:VAL:HG21 | 1.68 | 0.75 |
| 19:QS:39:THR:HG22 | 19:QS:40:ILE:H | 1.50 | 0.75 |
| 23:QX:2:U:C2' | 23:QX:3:G:H5' | 2.17 | 0.75 |
| 37:RR:73:VAL:O | 37:RR:76:VAL:HG12 | 1.87 | 0.75 |
| 44:RY:94:LYS:O | 44:RY:101:LYS:HB3 | 1.85 | 0.75 |
| 1:XA:1403:C:O2 | 1:XA:1499:A:N6 | 2.19 | 0.75 |
| 20:XT:58:LYS:HE3 | 20:XT:62:LEU:HD11 | 1.69 | 0.75 |
| 25:YA:1287:A:N7 | 37:YR:107:ASP:HB2 | 2.01 | 0.75 |
| 27:YD:146:GLU:HB2 | 27:YD:189:CYS:HB3 | 1.67 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:YP:75:ILE:HD13 | 35:YP:75:ILE:N | 2.00 | 0.75 |
| 37:YR:33:ARG:HH22 | 51:Y5:55:ARG:HG2 | 1.51 | 0.75 |
| 44:YY:97:ARG:NH2 | 44:YY:98:VAL:HB | 2.01 | 0.75 |
| 1:QA:1049:U:O2' | 14:QN:2:ALA:N | 2.20 | 0.75 |
| 15:QO:87:ILE:HG22 | 15:QO:88:ARG:N | 2.00 | 0.75 |
| 20:QT:35:THR:O | 20:QT:39:LYS:HG3 | 1.87 | 0.75 |
| 25:RA:25:U:H5'' | 42:RW:80:PRO:HD3 | 1.69 | 0.75 |
| 28:RE:63:LEU:CD1 | 28:RE:65:GLY:H | 2.00 | 0.75 |
| 30:RG:97:ASP:H | 30:RG:100:TRP:HD1 | 1.31 | 0.75 |
| 41:RV:15:GLU:O | 41:RV:18:LEU:HB2 | 1.87 | 0.75 |
| 44:RY:90:LEU:N | 44:RY:90:LEU:HD22 | 2.02 | 0.75 |
| 5:XE:72:GLN:NE2 | 5:XE:144:THR:HG22 | 2.00 | 0.75 |
| 7:XG:9:VAL:HG13 | 7:XG:94:ARG:HE | 1.52 | 0.75 |
| 8:XH:91:ARG:HH11 | 8:XH:91:ARG:HG2 | 1.51 | 0.75 |
| 11:XK:48:ILE:HD11 | 11:XK:64:ALA:HA | 1.67 | 0.75 |
| 13:XM:8:GLU:CD | 30:YG:115:ARG:CZ | 2.56 | 0.75 |
| 29:YF:7:TYR:HB3 | 29:YF:21:ALA:CB | 2.16 | 0.75 |
| 47:Y1:80:LEU:O | 47:Y1:81:LYS:CB | 2.35 | 0.75 |
| 47:Y1:81:LYS:NZ | 47:Y1:81:LYS:CA | 2.31 | 0.75 |
| 51:Y5:47:PRO:O | 51:Y5:48:GLU:HG3 | 1.86 | 0.75 |
| 1:QA:19:C:OP1 | 5:QE:125:SER:OG | 2.04 | 0.74 |
| 1:QA:448:A:OP2 | 1:QA:485:G:N2 | 2.18 | 0.74 |
| 1:QA:864:A:H5' | 5:QE:86:ALA:HB2 | 1.69 | 0.74 |
| 4:QD:25:ARG:HH12 | 4:QD:30:LYS:HG3 | 1.52 | 0.74 |
| 25:RA:1021:A:N6 | 25:RA:1141:U:O2 | 2.20 | 0.74 |
| 25:RA:1379:A:O2' | 25:RA:1380:G:OP1 | 2.05 | 0.74 |
| 28:RE:36:ARG:HH21 | 28:RE:88:GLY:HA2 | 1.51 | 0.74 |
| 31:RH:153:LYS:HG2 | 31:RH:162:ILE:H | 1.52 | 0.74 |
| 38:RS:62:LYS:HB3 | 38:RS:97:ARG:HD3 | 1.69 | 0.74 |
| 39:RT:111:ARG:O | 39:RT:113:LYS:N | 2.17 | 0.74 |
| 42:RW:40:ASN:O | 42:RW:41:LYS:HG2 | 1.86 | 0.74 |
| 21:XU:10:ARG:HG2 | 21:XU:13:ILE:HD12 | 1.68 | 0.74 |
| 42:YW:40:ASN:O | 42:YW:41:LYS:HG2 | 1.86 | 0.74 |
| 1:QA:1298:C:OP2 | 7:QG:114:ARG:NH2 | 2.20 | 0.74 |
| 13:QM:37:THR:HG21 | 13:QM:39:ILE:HD11 | 1.68 | 0.74 |
| 16:QP:43:LYS:HG2 | 16:QP:48:TRP:CE3 | 2.22 | 0.74 |
| 25:RA:768:G:O2' | 25:RA:1379:A:N6 | 2.20 | 0.74 |
| 32:RI:3:VAL:HG12 | 32:RI:38:LEU:HA | 1.69 | 0.74 |
| 32:RI:5:LEU:HD12 | 32:RI:5:LEU:H | 1.51 | 0.74 |
| 40:RU:92:ARG:HH11 | 40:RU:95:LEU:CD1 | 2.00 | 0.74 |
| 41:RV:52:VAL:HG21 | 41:RV:55:ALA:HB3 | 1.68 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 17:XQ:59:ILE:H | 17:XQ:59:ILE:HD13 | 1.50 | 0.74 |
| 20:XT:26:ASN:O | 20:XT:30:LYS:HB2 | 1.85 | 0.74 |
| 27:YD:54:ARG:HG3 | 27:YD:54:ARG:HH11 | 1.49 | 0.74 |
| 28:YE:61:ARG:HB2 | 28:YE:62:PRO:HD3 | 1.69 | 0.74 |
| 31:YH:150:ALA:C | 31:YH:152:ARG:H | 1.88 | 0.74 |
| 37:YR:73:VAL:O | 37:YR:76:VAL:HG12 | 1.87 | 0.74 |
| 25:RA:141:A:H8 | 25:RA:1595:G:H21 | 1.35 | 0.74 |
| 25:RA:392:C:H5'' | 25:RA:409:C:H5'' | 1.70 | 0.74 |
| 32:RI:145:VAL:HG22 | 32:RI:146:ALA:N | 2.03 | 0.74 |
| 42:RW:18:ARG:HG3 | 42:RW:76:VAL:CG1 | 2.15 | 0.74 |
| 1:XA:1312:G:OP1 | 50:Y4:58:ARG:NH1 | 2.17 | 0.74 |
| 19:XS:3:ARG:HG3 | 19:XS:4:SER:H | 1.52 | 0.74 |
| 19:XS:41:VAL:HG12 | 19:XS:44:MET:H | 1.50 | 0.74 |
| 32:YI:2:LYS:HA | 32:YI:20:ASP:HB3 | 1.68 | 0.74 |
| 45:YZ:60:GLU:HA | 45:YZ:66:SER:HA | 1.69 | 0.74 |
| 9:QI:113:LYS:HD2 | 9:QI:113:LYS:H | 1.51 | 0.74 |
| 29:RF:7:TYR:HB3 | 29:RF:21:ALA:CB | 2.16 | 0.74 |
| 29:RF:136:THR:HG22 | 29:RF:166:ALA:O | 1.87 | 0.74 |
| 43:RX:57:LEU:HD11 | 43:RX:78:LYS:HB2 | 1.68 | 0.74 |
| 45:RZ:63:ASP:O | 45:RZ:65:GLN:HG2 | 1.88 | 0.74 |
| 47:R1:26:ARG:O | 47:R1:26:ARG:HD2 | 1.86 | 0.74 |
| 2:XB:101:MET:CA | 2:XB:108:ILE:HG13 | 2.11 | 0.74 |
| 13:XM:57:ARG:HH21 | 50:Y4:34:GLU:CA | 2.00 | 0.74 |
| 27:YD:30:GLU:HG3 | 27:YD:63:ARG:CZ | 2.17 | 0.74 |
| 39:YT:78:LEU:HD13 | 39:YT:78:LEU:O | 1.88 | 0.74 |
| 45:YZ:103:ARG:HB2 | 45:YZ:138:GLU:HA | 1.69 | 0.74 |
| 7:QG:9:VAL:HG13 | 7:QG:94:ARG:HE | 1.52 | 0.74 |
| 25:RA:363(B):G:H2' | 25:RA:363(C):G:H8 | 1.51 | 0.74 |
| 25:RA:807:U:OP2 | 35:RP:41:ARG:NH1 | 2.21 | 0.74 |
| 34:RO:26:LYS:HB2 | 34:RO:30:ALA:CB | 2.18 | 0.74 |
| 1:XA:527:G:O6 | 12:XL:49:ASN:ND2 | 2.20 | 0.74 |
| 4:XD:25:ARG:HH12 | 4:XD:30:LYS:HG3 | 1.52 | 0.74 |
| 16:XP:43:LYS:O | 16:XP:45:THR:N | 2.21 | 0.74 |
| 23:XX:2:U:C2' | 23:XX:3:G:H5' | 2.17 | 0.74 |
| 40:YU:52:ARG:HH11 | 40:YU:52:ARG:HG2 | 1.51 | 0.74 |
| 45:YZ:7:ALA:HB2 | 45:YZ:59:LEU:HD22 | 1.67 | 0.74 |
| 49:Y3:7:LYS:HB2 | 49:Y3:34:GLU:HG2 | 1.69 | 0.74 |
| 1:QA:451:A:N7 | 1:QA:481:G:N2 | 2.36 | 0.74 |
| 2:QB:168:THR:HB | 2:QB:192:SER:HB2 | 1.70 | 0.74 |
| 28:RE:201:THR:HG22 | 28:RE:203:LYS:HB3 | 1.70 | 0.74 |
| 38:RS:83:LYS:HZ2 | 38:RS:109:GLY:HA2 | 1.49 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 50:R4:71:ARG:HG3 | 50:R4:71:ARG:NH1 | 1.90 | 0.74 |
| 3:XC:181:ASN:ND2 | 3:XC:204:LEU:HD12 | 1.99 | 0.74 |
| 5:XE:10:MET:CB | 5:XE:32:VAL:HG22 | 2.18 | 0.74 |
| 6:XF:91:VAL:HG13 | 18:XR:72:ARG:HH12 | 1.51 | 0.74 |
| 10:XJ:33:GLN:O | 10:XJ:75:ILE:HG12 | 1.87 | 0.74 |
| 20:XT:35:THR:O | 20:XT:39:LYS:HG3 | 1.87 | 0.74 |
| 29:YF:136:THR:HG22 | 29:YF:166:ALA:O | 1.87 | 0.74 |
| 33:YN:96:GLU:HG2 | 33:YN:97:ARG:N | 2.01 | 0.74 |
| 36:YQ:79:LEU:O | 36:YQ:79:LEU:CD2 | 2.36 | 0.74 |
| 40:YU:64:ARG:HH21 | 40:YU:64:ARG:CG | 2.00 | 0.74 |
| 44:YY:51:VAL:HG13 | 44:YY:52:SER:N | 2.03 | 0.74 |
| 1:QA:973:G:OP1 | 10:QJ:57:LYS:NZ | 2.20 | 0.74 |
| 15:QO:70:LEU:HD12 | 15:QO:70:LEU:O | 1.88 | 0.74 |
| 25:RA:1667:G:O2' | 25:RA:1669:A:N6 | 2.20 | 0.74 |
| 27:RD:77:ALA:CB | 27:RD:97:TYR:HA | 2.18 | 0.74 |
| 45:RZ:154:ASP:CG | 45:RZ:155:LEU:H | 1.91 | 0.74 |
| 48:R2:47:ASN:HD22 | 48:R2:47:ASN:H | 1.33 | 0.74 |
| 29:YF:129:PHE:HA | 29:YF:142:TRP:NE1 | 2.02 | 0.74 |
| 39:YT:26:ASP:HB3 | 39:YT:91:ARG:HA | 1.69 | 0.74 |
| 47:Y1:26:ARG:O | 47:Y1:26:ARG:HD2 | 1.86 | 0.74 |
| 49:Y3:29:ARG:HB2 | 49:Y3:29:ARG:HH11 | 1.52 | 0.74 |
| 1:QA:446:G:H1 | 1:QA:488:C:H42 | 1.35 | 0.74 |
| 5:QE:78:HIS:CG | 8:QH:104:ARG:HG2 | 2.22 | 0.74 |
| 7:QG:23:VAL:HG12 | 7:QG:27:ILE:HD11 | 1.69 | 0.74 |
| 10:QJ:33:GLN:O | 10:QJ:75:ILE:HG12 | 1.88 | 0.74 |
| 25:RA:1043:C:H42 | 25:RA:1112:G:H1 | 1.32 | 0.74 |
| 36:RQ:20:ALA:HB3 | 45:RZ:79:ARG:NH1 | 2.03 | 0.74 |
| 41:RV:35:LEU:H | 41:RV:35:LEU:HD22 | 1.51 | 0.74 |
| 1:XA:1178:G:N2 | 1:XA:1181:G:N7 | 2.36 | 0.74 |
| 7:XG:78:ARG:HH12 | 7:XG:80:VAL:HG23 | 1.53 | 0.74 |
| 25:YA:1068:G:O2' | 25:YA:1096:A:N3 | 2.20 | 0.74 |
| 31:YH:153:LYS:HG2 | 31:YH:162:ILE:H | 1.52 | 0.74 |
| 32:YI:3:VAL:HG12 | 32:YI:38:LEU:HA | 1.69 | 0.74 |
| 38:YS:36:TYR:CD2 | 38:YS:52:SER:HB3 | 2.23 | 0.74 |
| 39:YT:54:ARG:HG2 | 39:YT:54:ARG:HH11 | 1.52 | 0.74 |
| 45:YZ:154:ASP:CG | 45:YZ:155:LEU:H | 1.91 | 0.74 |
| 5:QE:72:GLN:HE21 | 5:QE:144:THR:HG22 | 1.53 | 0.74 |
| 25:RA:1754:C:OP1 | 39:RT:96:ARG:NH1 | 2.21 | 0.74 |
| 39:RT:50:ILE:HD12 | 39:RT:102:ILE:HD11 | 1.68 | 0.74 |
| 6:XF:19:LEU:O | 6:XF:19:LEU:HD23 | 1.88 | 0.74 |
| 10:XJ:27:ALA:HB1 | 10:XJ:34:VAL:HG21 | 1.69 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 15:XO:70:LEU:HD12 | 15:XO:70:LEU:O | 1.88 | 0.74 |
| 25:YA:2467:C:H4' | 36:YQ:123:HIS:ND1 | 2.01 | 0.74 |
| 33:YN:1:MET:HE1 | 40:YU:95:LEU:HD21 | 1.70 | 0.74 |
| 41:YV:15:GLU:O | 41:YV:18:LEU:HB2 | 1.86 | 0.74 |
| 45:YZ:63:ASP:O | 45:YZ:65:GLN:HG2 | 1.88 | 0.74 |
| 2:QB:115:LEU:HD13 | 2:QB:145:LEU:HB3 | 1.69 | 0.74 |
| 4:QD:91:SER:HA | 4:QD:94:LEU:HD13 | 1.70 | 0.74 |
| 6:QF:19:LEU:HD23 | 6:QF:19:LEU:O | 1.88 | 0.74 |
| 10:QJ:3:LYS:HD2 | 10:QJ:77:PRO:HD3 | 1.70 | 0.74 |
| 35:RP:50:ARG:HB3 | 35:RP:50:ARG:NH2 | 1.97 | 0.74 |
| 35:RP:62:LEU:HD22 | 35:RP:62:LEU:H | 1.53 | 0.74 |
| 36:RQ:80:GLU:CD | 46:R0:5:LYS:CB | 2.56 | 0.74 |
| 41:RV:51:VAL:HG12 | 41:RV:52:VAL:H | 1.51 | 0.74 |
| 42:RW:73:ALA:HB3 | 42:RW:106:ILE:HG12 | 1.68 | 0.74 |
| 44:RY:52:SER:OG | 44:RY:53:PRO:HD3 | 1.88 | 0.74 |
| 51:R5:2:ALA:O | 51:R5:3:LYS:HB2 | 1.88 | 0.74 |
| 1:XA:1152:A:H5'' | 10:XJ:13:HIS:CD2 | 2.22 | 0.74 |
| 2:XB:47:THR:O | 2:XB:51:LEU:HG | 1.87 | 0.74 |
| 5:XE:45:PHE:CE2 | 5:XE:47:LYS:HD2 | 2.22 | 0.74 |
| 5:XE:72:GLN:HE21 | 5:XE:144:THR:HG22 | 1.53 | 0.74 |
| 27:YD:131:LEU:HB2 | 27:YD:136:ILE:CD1 | 2.17 | 0.74 |
| 28:YE:78:LEU:HG | 28:YE:79:ARG:NE | 2.03 | 0.74 |
| 50:Y4:41:PRO:O | 50:Y4:42:PHE:HB3 | 1.87 | 0.74 |
| 2:QB:47:THR:O | 2:QB:51:LEU:HG | 1.87 | 0.73 |
| 3:QC:86:VAL:O | 3:QC:89:GLU:HB3 | 1.88 | 0.73 |
| 33:RN:58:ASP:H | 33:RN:60:ILE:HD11 | 1.53 | 0.73 |
| 36:RQ:79:LEU:O | 36:RQ:79:LEU:CD1 | 2.35 | 0.73 |
| 38:RS:36:TYR:CD2 | 38:RS:52:SER:HB3 | 2.23 | 0.73 |
| 42:RW:70:TYR:HD2 | 42:RW:70:TYR:H | 1.36 | 0.73 |
| 44:RY:95:LYS:HB3 | 44:RY:100:ALA:CA | 2.10 | 0.73 |
| 45:RZ:103:ARG:HB2 | 45:RZ:138:GLU:HA | 1.69 | 0.73 |
| 47:R1:76:ARG:HH11 | 47:R1:76:ARG:HG2 | 1.53 | 0.73 |
| 47:R1:80:LEU:O | 47:R1:81:LYS:CB | 2.35 | 0.73 |
| 25:YA:2014:A:O2' | 51:Y5:2:ALA:HB2 | 1.88 | 0.73 |
| 25:YA:2051:A:H2 | 25:YA:2052:G:O6 | 1.71 | 0.73 |
| 34:YO:26:LYS:HB2 | 34:YO:30:ALA:CB | 2.17 | 0.73 |
| 1:QA:108:G:H5'' | 1:QA:109:A:H5'' | 1.70 | 0.73 |
| 3:QC:134:ILE:HD11 | 3:QC:153:VAL:HG21 | 1.70 | 0.73 |
| 29:RF:9:ILE:HD11 | 29:RF:125:LEU:HG | 1.70 | 0.73 |
| 29:RF:29:ASN:HB3 | 29:RF:112:MET:HE1 | 1.68 | 0.73 |
| 34:RO:47:ILE:CD1 | 34:RO:48:PRO:HD2 | 2.16 | 0.73 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 45:RZ:9:TYR:HE2 | 45:RZ:61:LEU:HD13 | 1.53 | 0.73 |
| 49:R3:29:ARG:HH11 | 49:R3:29:ARG:HB2 | 1.53 | 0.73 |
| 13:XM:37:THR:HG21 | 13:XM:39:ILE:HD11 | 1.68 | 0.73 |
| 32:YI:5:LEU:H | 32:YI:5:LEU:HD12 | 1.51 | 0.73 |
| 39:YT:102:ILE:HB | 39:YT:110:ILE:CD1 | 2.18 | 0.73 |
| 4:QD:11:LEU:C | 4:QD:13:ARG:N | 2.36 | 0.73 |
| 13:QM:11:ARG:NH2 | 30:RG:146:TYR:CD2 | 2.57 | 0.73 |
| 28:RE:203:LYS:O | 28:RE:203:LYS:HD2 | 1.88 | 0.73 |
| 45:RZ:60:GLU:HA | 45:RZ:66:SER:HA | 1.69 | 0.73 |
| 15:XO:87:ILE:HG22 | 15:XO:88:ARG:N | 2.00 | 0.73 |
| 25:YA:2306:C:H3' | 25:YA:2307:G:H5'' | 1.71 | 0.73 |
| 31:YH:153:LYS:HG3 | 31:YH:161:GLY:CA | 2.18 | 0.73 |
| 1:QA:1104:G:H4' | 2:QB:111:ARG:NH1 | 2.04 | 0.73 |
| 28:RE:77:ILE:HD12 | 28:RE:78:LEU:H | 1.52 | 0.73 |
| 40:RU:64:ARG:HH21 | 40:RU:64:ARG:CG | 2.00 | 0.73 |
| 25:RA:483:A:H4' | 44:RY:49:VAL:HA | 1.70 | 0.73 |
| 1:XA:765:G:N2 | 1:XA:813:U:OP2 | 2.21 | 0.73 |
| 25:YA:71:A:H2 | 43:YX:31:HIS:CE1 | 2.05 | 0.73 |
| 27:RD:30:GLU:HG3 | 27:RD:63:ARG:CZ | 2.18 | 0.73 |
| 28:RE:23:VAL:HG21 | 28:RE:183:LEU:HD23 | 1.68 | 0.73 |
| 28:RE:61:ARG:HB2 | 28:RE:62:PRO:HD3 | 1.69 | 0.73 |
| 31:RH:153:LYS:HG3 | 31:RH:161:GLY:CA | 2.18 | 0.73 |
| 39:RT:23:ARG:HB2 | 39:RT:24:PRO:HD2 | 1.70 | 0.73 |
| 3:XC:134:ILE:HD11 | 3:XC:153:VAL:HG21 | 1.70 | 0.73 |
| 4:XD:146:ILE:HD12 | 4:XD:146:ILE:N | 2.04 | 0.73 |
| 16:XP:60:LEU:HA | 16:XP:64:ALA:HB3 | 1.71 | 0.73 |
| 25:YA:2469:A:H2 | 25:YA:2481:G:H21 | 1.36 | 0.73 |
| 54:Y8:61:LEU:O | 54:Y8:62:LEU:HB2 | 1.88 | 0.73 |
| 2:QB:132:LYS:HA | 2:QB:135:GLN:HB2 | 1.71 | 0.73 |
| 5:QE:10:MET:CB | 5:QE:32:VAL:HG22 | 2.17 | 0.73 |
| 7:QG:79:ARG:HH22 | 7:QG:82:GLY:HA2 | 1.51 | 0.73 |
| 16:QP:43:LYS:O | 16:QP:45:THR:N | 2.21 | 0.73 |
| 27:RD:131:LEU:HB2 | 27:RD:136:ILE:CD1 | 2.17 | 0.73 |
| 39:RT:26:ASP:HB3 | 39:RT:91:ARG:HA | 1.69 | 0.73 |
| 50:R4:41:PRO:O | 50:R4:42:PHE:HB3 | 1.87 | 0.73 |
| 2:XB:8:LYS:HD3 | 2:XB:8:LYS:N | 2.03 | 0.73 |
| 2:XB:115:LEU:HD13 | 2:XB:145:LEU:HB3 | 1.68 | 0.73 |
| 18:XR:56:THR:HB | 18:XR:58:LEU:HD12 | 1.71 | 0.73 |
| 25:YA:352:G:H3' | 25:YA:353:G:C8 | 2.24 | 0.73 |
| 25:YA:593:G:O3' | 54:Y8:61:LEU:HD22 | 1.89 | 0.73 |
| 25:YA:1998:G:OP2 | 28:YE:136:ARG:NH2 | 2.21 | 0.73 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 30:YG:7:LEU:HD21 | 30:YG:176:LEU:HD22 | 1.70 | 0.73 |
| 38:YS:62:LYS:HB3 | 38:YS:97:ARG:HD3 | 1.69 | 0.73 |
| 1:QA:1318:A:H4' | 19:QS:11:VAL:HG11 | 1.70 | 0.73 |
| 13:QM:121:LYS:HE2 | 13:QM:121:LYS:HA | 1.71 | 0.73 |
| 16:QP:45:THR:HG23 | 16:QP:46:PRO:HD2 | 1.70 | 0.73 |
| 28:RE:55:ASN:C | 28:RE:57:LYS:H | 1.91 | 0.73 |
| 31:RH:84:SER:O | 31:RH:85:LYS:HB2 | 1.89 | 0.73 |
| 31:RH:125:VAL:HA | 31:RH:126:PRO:HB3 | 1.68 | 0.73 |
| 33:RN:96:GLU:HG2 | 33:RN:97:ARG:N | 2.01 | 0.73 |
| 49:R3:7:LYS:HB2 | 49:R3:34:GLU:HG2 | 1.69 | 0.73 |
| 3:XC:86:VAL:O | 3:XC:89:GLU:HB3 | 1.88 | 0.73 |
| 8:XH:20:TYR:HD1 | 8:XH:65:TYR:CD2 | 2.07 | 0.73 |
| 27:YD:77:ALA:CB | 27:YD:97:TYR:HA | 2.18 | 0.73 |
| 36:YQ:79:LEU:O | 36:YQ:79:LEU:CD1 | 2.35 | 0.73 |
| 50:Y4:29:PRO:O | 50:Y4:30:GLU:HB2 | 1.89 | 0.73 |
| 5:QE:36:ASP:OD2 | 5:QE:38:GLN:HB2 | 1.86 | 0.73 |
| 14:QN:24:CYS:SG | 14:QN:43:CYS:HB2 | 2.28 | 0.73 |
| 19:QS:3:ARG:HG3 | 19:QS:4:SER:H | 1.52 | 0.73 |
| 36:RQ:90:VAL:CG1 | 36:RQ:91:GLU:H | 2.02 | 0.73 |
| 3:XC:13:GLY:HA3 | 14:YN:57:ARG:NH2 | 2.04 | 0.73 |
| 25:YA:518:G:H4' | 42:YW:18:ARG:NH1 | 2.02 | 0.73 |
| 25:YA:569:U:OP1 | 25:YA:945:A:C4 | 2.42 | 0.73 |
| 28:YE:55:ASN:C | 28:YE:57:LYS:H | 1.91 | 0.73 |
| 33:YN:58:ASP:H | 33:YN:60:ILE:HD11 | 1.53 | 0.73 |
| 36:YQ:20:ALA:HB3 | 45:YZ:79:ARG:NH1 | 2.03 | 0.73 |
| 51:Y5:40:LYS:CE | 51:Y5:46:CYS:HB3 | 2.19 | 0.73 |
| 52:Y6:13:CYS:HA | 52:Y6:50:ARG:O | 1.89 | 0.73 |
| 4:QD:146:ILE:HD12 | 4:QD:146:ILE:N | 2.04 | 0.73 |
| 13:QM:3:ARG:HG2 | 50:R4:34:GLU:OE1 | 1.88 | 0.73 |
| 29:RF:101:LEU:CD1 | 29:RF:102:PRO:HD2 | 2.11 | 0.73 |
| 29:RF:157:VAL:HB | 29:RF:194:MET:HB3 | 1.70 | 0.73 |
| 40:RU:34:LYS:HE2 | 40:RU:34:LYS:HA | 1.70 | 0.73 |
| 28:YE:77:ILE:HD12 | 28:YE:78:LEU:H | 1.52 | 0.73 |
| 28:YE:203:LYS:O | 28:YE:203:LYS:HD2 | 1.88 | 0.73 |
| 48:Y2:29:LYS:HD3 | 48:Y2:57:ILE:HD13 | 1.71 | 0.73 |
| 1:QA:414:A:OP2 | 1:QA:428:G:N2 | 2.22 | 0.72 |
| 3:QC:13:GLY:HA3 | 14:QN:57:ARG:NH2 | 2.04 | 0.72 |
| 7:QG:78:ARG:HH12 | 7:QG:80:VAL:HG23 | 1.52 | 0.72 |
| 20:QT:50:GLU:HG3 | 20:QT:51:GLU:H | 1.55 | 0.72 |
| 25:RA:1138:G:H21 | 33:RN:106:MET:HE3 | 1.54 | 0.72 |
| 28:RE:56:PRO:O | 28:RE:57:LYS:HB2 | 1.89 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 31:RH:80:SER:O | 31:RH:81:GLU:HB2 | 1.89 | 0.72 |
| 33:RN:1:MET:HE1 | 40:RU:95:LEU:HD21 | 1.71 | 0.72 |
| 48:R2:27:GLU:OE1 | 48:R2:27:GLU:N | 2.19 | 0.72 |
| 6:XF:77:ARG:HB2 | 6:XF:77:ARG:HH11 | 1.53 | 0.72 |
| 25:YA:2112:G:O6 | 25:YA:2169:A:N6 | 2.22 | 0.72 |
| 27:YD:35:LYS:HZ1 | 27:YD:65:ILE:HA | 1.52 | 0.72 |
| 32:YI:131:LYS:HB3 | 32:YI:132:PRO:HA | 1.71 | 0.72 |
| 37:YR:3:HIS:O | 37:YR:5:LYS:N | 2.22 | 0.72 |
| 38:YS:83:LYS:HZ2 | 38:YS:109:GLY:HA2 | 1.53 | 0.72 |
| 54:Y8:16:ILE:HD11 | 54:Y8:57:ARG:HG2 | 1.70 | 0.72 |
| 1:QA:67:C:O2' | 1:QA:171:A:N3 | 2.20 | 0.72 |
| 6:QF:25:ILE:HD13 | 6:QF:28:ARG:NH1 | 2.05 | 0.72 |
| 19:QS:5:LEU:HD21 | 50:R4:67:TYR:CD2 | 2.24 | 0.72 |
| 25:RA:1279:G:H4' | 37:RR:31:HIS:HD2 | 1.52 | 0.72 |
| 32:RI:133:HIS:CD2 | 32:RI:134:PRO:HD2 | 2.24 | 0.72 |
| 2:XB:75:LYS:O | 2:XB:75:LYS:HD3 | 1.89 | 0.72 |
| 8:XH:41:ARG:HH11 | 8:XH:41:ARG:CB | 2.03 | 0.72 |
| 25:YA:297:C:H5'' | 44:YY:85:VAL:HG21 | 1.70 | 0.72 |
| 30:YG:146:TYR:O | 30:YG:149:VAL:HG22 | 1.89 | 0.72 |
| 31:YH:54:ARG:HH12 | 31:YH:62:LYS:HG2 | 1.54 | 0.72 |
| 31:YH:125:VAL:HG12 | 31:YH:126:PRO:HG3 | 1.71 | 0.72 |
| 35:YP:88:LEU:C | 35:YP:90:ARG:H | 1.92 | 0.72 |
| 36:YQ:79:LEU:HD22 | 36:YQ:79:LEU:C | 2.07 | 0.72 |
| 38:YS:83:LYS:HG2 | 38:YS:109:GLY:N | 2.04 | 0.72 |
| 40:YU:98:LEU:HD23 | 40:YU:99:ALA:N | 2.04 | 0.72 |
| 46:Y0:10:THR:HG22 | 46:Y0:11:ARG:N | 1.98 | 0.72 |
| 51:Y5:58:LEU:CD1 | 51:Y5:60:VAL:HG12 | 2.18 | 0.72 |
| 25:RA:2781:A:H5'' | 25:RA:2782:G:H5' | 1.71 | 0.72 |
| 28:RE:13:ARG:HA | 28:RE:22:PRO:HA | 1.71 | 0.72 |
| 31:RH:54:ARG:HH12 | 31:RH:62:LYS:HG2 | 1.54 | 0.72 |
| 34:RO:113:LYS:HG2 | 34:RO:117:LEU:HD11 | 1.71 | 0.72 |
| 53:R7:10:ARG:O | 53:R7:14:LYS:HB2 | 1.89 | 0.72 |
| 1:XA:971:G:N2 | 1:XA:1363:A:OP2 | 2.20 | 0.72 |
| 25:YA:1013:C:H42 | 25:YA:1149:G:H1 | 1.36 | 0.72 |
| 35:YP:126:VAL:CG1 | 35:YP:147:LEU:HD21 | 2.17 | 0.72 |
| 38:YS:26:LEU:O | 38:YS:26:LEU:HD23 | 1.90 | 0.72 |
| 44:YY:52:SER:OG | 44:YY:53:PRO:HD3 | 1.88 | 0.72 |
| 11:QK:48:ILE:HD12 | 11:QK:63:LEU:HB3 | 1.71 | 0.72 |
| 16:QP:72:ARG:HD3 | 16:QP:72:ARG:C | 2.10 | 0.72 |
| 23:QX:5:C:H2' | 23:QX:6:C:C6 | 2.24 | 0.72 |
| 28:RE:78:LEU:HG | 28:RE:79:ARG:NE | 2.03 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 31:RH:26:VAL:CG1 | 31:RH:27:LYS:H | 2.02 | 0.72 |
| 32:RI:131:LYS:HB3 | 32:RI:132:PRO:HA | 1.70 | 0.72 |
| 35:RP:88:LEU:C | 35:RP:90:ARG:H | 1.92 | 0.72 |
| 35:RP:127:ALA:C | 35:RP:147:LEU:HD23 | 2.10 | 0.72 |
| 38:RS:42:ASP:O | 38:RS:43:GLU:HB2 | 1.90 | 0.72 |
| 39:RT:54:ARG:HH11 | 39:RT:54:ARG:HG2 | 1.52 | 0.72 |
| 39:RT:117:ASP:O | 39:RT:121:ILE:HG13 | 1.89 | 0.72 |
| 12:XL:10:LEU:HD13 | 17:XQ:32:TYR:HE2 | 1.52 | 0.72 |
| 16:XP:20:VAL:HG21 | 16:XP:32:TYR:CG | 2.24 | 0.72 |
| 20:XT:47:GLY:O | 20:XT:49:ALA:N | 2.19 | 0.72 |
| 36:YQ:90:VAL:CG1 | 36:YQ:91:GLU:H | 2.02 | 0.72 |
| 41:YV:39:LEU:O | 41:YV:40:LEU:HD23 | 1.90 | 0.72 |
| 54:Y8:29:LYS:HD3 | 54:Y8:44:LYS:HB2 | 1.71 | 0.72 |
| 6:QF:77:ARG:HB2 | 6:QF:77:ARG:HH11 | 1.53 | 0.72 |
| 12:QL:126:LYS:HB2 | 12:QL:126:LYS:NZ | 2.04 | 0.72 |
| 31:RH:30:LYS:HD2 | 31:RH:81:GLU:H | 1.54 | 0.72 |
| 51:R5:40:LYS:CE | 51:R5:46:CYS:HB3 | 2.19 | 0.72 |
| 28:YE:21:VAL:HB | 28:YE:22:PRO:CB | 2.18 | 0.72 |
| 29:YF:124:LEU:HD12 | 29:YF:125:LEU:N | 2.04 | 0.72 |
| 32:YI:130:TYR:C | 32:YI:131:LYS:HD2 | 2.10 | 0.72 |
| 33:YN:89:LYS:O | 33:YN:93:THR:HG22 | 1.90 | 0.72 |
| 37:YR:117:VAL:HG22 | 37:YR:118:GLU:N | 2.05 | 0.72 |
| 38:YS:83:LYS:C | 38:YS:109:GLY:HA3 | 2.10 | 0.72 |
| 45:YZ:9:TYR:HE2 | 45:YZ:61:LEU:HD13 | 1.53 | 0.72 |
| 49:Y3:56:VAL:HG12 | 49:Y3:57:GLU:N | 2.04 | 0.72 |
| 1:QA:377:G:H1 | 1:QA:386:C:H42 | 1.37 | 0.72 |
| 1:QA:757:U:O2' | 1:QA:879:C:O2 | 2.07 | 0.72 |
| 15:QO:71:GLN:HB2 | 15:QO:78:TYR:CD1 | 2.25 | 0.72 |
| 20:QT:97:ALA:O | 20:QT:99:LEU:HD13 | 1.89 | 0.72 |
| 29:RF:124:LEU:HD12 | 29:RF:125:LEU:N | 2.04 | 0.72 |
| 32:RI:99:GLU:HG2 | 32:RI:103:ARG:HH21 | 1.55 | 0.72 |
| 39:RT:78:LEU:HD13 | 39:RT:78:LEU:O | 1.87 | 0.72 |
| 49:R3:56:VAL:HG12 | 49:R3:57:GLU:N | 2.04 | 0.72 |
| 52:R6:13:CYS:HA | 52:R6:50:ARG:O | 1.89 | 0.72 |
| 1:XA:1494:G:N7 | 57:XA:1664:PAR:N32 | 2.37 | 0.72 |
| 2:XB:21:ARG:O | 2:XB:23:ARG:HD3 | 1.90 | 0.72 |
| 3:XC:16:ARG:HB2 | 3:XC:16:ARG:NH1 | 2.04 | 0.72 |
| 12:XL:48:PRO:HD2 | 12:XL:49:ASN:H | 1.52 | 0.72 |
| 16:XP:72:ARG:HD3 | 16:XP:72:ARG:C | 2.10 | 0.72 |
| 20:XT:97:ALA:O | 20:XT:99:LEU:HD13 | 1.89 | 0.72 |
| 25:YA:64:A:C5 | 43:YX:66:LEU:HD13 | 2.23 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:2502:G:H5'' | 25:YA:2503:A:H5'' | 1.72 | 0.72 |
| 31:YH:152:ARG:O | 31:YH:153:LYS:HD2 | 1.90 | 0.72 |
| 32:YI:133:HIS:CD2 | 32:YI:134:PRO:HD2 | 2.25 | 0.72 |
| 2:QB:21:ARG:O | 2:QB:23:ARG:HD3 | 1.89 | 0.72 |
| 6:QF:72:VAL:CG2 | 6:QF:90:VAL:HG11 | 2.20 | 0.72 |
| 15:QO:79:ARG:O | 15:QO:82:ILE:HG22 | 1.89 | 0.72 |
| 25:RA:1190:G:H5' | 35:RP:32:THR:HA | 1.72 | 0.72 |
| 28:RE:28:ALA:HB3 | 28:RE:93:VAL:HG22 | 1.72 | 0.72 |
| 30:RG:146:TYR:O | 30:RG:149:VAL:HG22 | 1.89 | 0.72 |
| 36:RQ:79:LEU:HD22 | 36:RQ:79:LEU:C | 2.07 | 0.72 |
| 36:RQ:80:GLU:HG2 | 46:R0:5:LYS:CD | 2.19 | 0.72 |
| 47:R1:80:LEU:HB2 | 47:R1:81:LYS:HE2 | 1.71 | 0.72 |
| 51:R5:58:LEU:CD1 | 51:R5:60:VAL:HG12 | 2.19 | 0.72 |
| 14:YN:24:CYS:HB2 | 14:YN:40:CYS:N | 2.03 | 0.72 |
| 25:YA:2683:C:OP1 | 39:YT:53:ARG:NH2 | 2.22 | 0.72 |
| 28:YE:14:ILE:HD11 | 39:YT:14:TYR:OH | 1.90 | 0.72 |
| 28:YE:201:THR:HG22 | 28:YE:203:LYS:HB3 | 1.69 | 0.72 |
| 29:YF:157:VAL:HB | 29:YF:194:MET:HB3 | 1.70 | 0.72 |
| 31:YH:128:PRO:HD2 | 31:YH:129:THR:H | 1.55 | 0.72 |
| 31:YH:132:ARG:HH11 | 31:YH:132:ARG:CB | 1.97 | 0.72 |
| 37:YR:85:PRO:O | 37:YR:87:TYR:N | 2.22 | 0.72 |
| 47:Y1:3:LYS:HD3 | 47:Y1:43:TYR:HD2 | 1.52 | 0.72 |
| 10:QJ:75:ILE:HG13 | 10:QJ:76:ASN:N | 2.05 | 0.72 |
| 20:QT:83:ARG:HA | 20:QT:86:ARG:HB3 | 1.71 | 0.72 |
| 29:RF:32:LEU:O | 29:RF:32:LEU:HD12 | 1.90 | 0.72 |
| 30:RG:7:LEU:HD21 | 30:RG:176:LEU:HD22 | 1.70 | 0.72 |
| 35:RP:29:LYS:HD2 | 35:RP:30:THR:HG22 | 1.72 | 0.72 |
| 35:RP:114:ILE:HD13 | 35:RP:125:VAL:HG21 | 1.72 | 0.72 |
| 39:RT:57:PHE:C | 39:RT:58:ASN:HD22 | 1.93 | 0.72 |
| 40:RU:69:CYS:HB3 | 40:RU:106:PHE:HZ | 1.55 | 0.72 |
| 40:RU:98:LEU:HD23 | 40:RU:99:ALA:N | 2.04 | 0.72 |
| 1:XA:1238:A:H62 | 1:XA:1301:U:H3 | 1.37 | 0.72 |
| 4:XD:91:SER:HA | 4:XD:94:LEU:HD13 | 1.70 | 0.72 |
| 10:XJ:3:LYS:HD2 | 10:XJ:77:PRO:HD3 | 1.70 | 0.72 |
| 12:XL:8:ASN:OD1 | 17:XQ:34:LYS:HE2 | 1.89 | 0.72 |
| 28:YE:13:ARG:HA | 28:YE:22:PRO:HA | 1.71 | 0.72 |
| 29:YF:32:LEU:O | 29:YF:32:LEU:HD12 | 1.90 | 0.72 |
| 32:YI:99:GLU:HG2 | 32:YI:103:ARG:HH21 | 1.54 | 0.72 |
| 53:Y7:10:ARG:O | 53:Y7:14:LYS:HB2 | 1.89 | 0.72 |
| 8:QH:20:TYR:HD1 | 8:QH:65:TYR:CD2 | 2.07 | 0.72 |
| 12:QL:10:LEU:HD13 | 17:QQ:32:TYR:CD2 | 2.25 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:QN:24:CYS:SG | 14:QN:39:LEU:CA | 2.78 | 0.72 |
| 25:RA:49:A:H5'' | 25:RA:50:U:H3' | 1.70 | 0.72 |
| 28:RE:93:VAL:H | 28:RE:95:ILE:HD12 | 1.54 | 0.72 |
| 38:RS:103:GLU:O | 38:RS:106:ARG:HG3 | 1.90 | 0.72 |
| 39:RT:102:ILE:HB | 39:RT:110:ILE:CD1 | 2.19 | 0.72 |
| 40:RU:66:ASN:HB2 | 40:RU:76:TYR:HB2 | 1.72 | 0.72 |
| 44:RY:51:VAL:HG13 | 44:RY:52:SER:N | 2.03 | 0.72 |
| 54:R8:60:LEU:O | 54:R8:63:PRO:HD2 | 1.90 | 0.72 |
| 1:XA:1199:U:H4' | 10:XJ:54:PHE:CZ | 2.24 | 0.72 |
| 12:XL:126:LYS:HB2 | 12:XL:126:LYS:NZ | 2.04 | 0.72 |
| 32:YI:27:ARG:HD3 | 47:Y1:71:TYR:HE1 | 1.55 | 0.72 |
| 32:YI:144:VAL:HG22 | 32:YI:145:VAL:N | 2.02 | 0.72 |
| 35:YP:127:ALA:C | 35:YP:147:LEU:HD23 | 2.10 | 0.72 |
| 44:YY:57:GLN:HE21 | 44:YY:58:GLY:H | 1.37 | 0.72 |
| 48:Y2:27:GLU:OE1 | 48:Y2:27:GLU:N | 2.19 | 0.72 |
| 10:QJ:98:ILE:H | 10:QJ:98:ILE:HD12 | 1.55 | 0.72 |
| 20:QT:27:LYS:O | 20:QT:30:LYS:HB3 | 1.89 | 0.72 |
| 25:RA:987:G:O2' | 25:RA:1000:A:N3 | 2.22 | 0.72 |
| 31:RH:89:ILE:CD1 | 31:RH:129:THR:HB | 2.20 | 0.72 |
| 32:RI:130:TYR:C | 32:RI:131:LYS:HD2 | 2.10 | 0.72 |
| 36:RQ:79:LEU:O | 36:RQ:79:LEU:CD2 | 2.36 | 0.72 |
| 37:RR:117:VAL:HG22 | 37:RR:118:GLU:N | 2.05 | 0.72 |
| 54:R8:16:ILE:HD11 | 54:R8:57:ARG:HG2 | 1.70 | 0.72 |
| 54:R8:61:LEU:O | 54:R8:62:LEU:HB2 | 1.88 | 0.72 |
| 8:XH:10:LEU:HD23 | 8:XH:10:LEU:N | 2.04 | 0.72 |
| 15:XO:79:ARG:O | 15:XO:82:ILE:HG22 | 1.90 | 0.72 |
| 42:YW:70:TYR:H | 42:YW:70:TYR:HD2 | 1.37 | 0.72 |
| 47:Y1:76:ARG:HH11 | 47:Y1:76:ARG:HG2 | 1.53 | 0.72 |
| 47:Y1:80:LEU:HB2 | 47:Y1:81:LYS:HE2 | 1.71 | 0.72 |
| 54:Y8:60:LEU:C | 54:Y8:63:PRO:HD2 | 2.11 | 0.72 |
| 23:QX:4:C:H2' | 23:QX:5:C:H5' | 1.72 | 0.71 |
| 25:RA:637:A:H2' | 35:RP:117:GLU:OE2 | 1.89 | 0.71 |
| 25:RA:2832:U:H4' | 25:RA:2833:G:H5'' | 1.71 | 0.71 |
| 26:RB:45:A:O4' | 30:RG:95:ARG:NH1 | 2.23 | 0.71 |
| 29:RF:32:LEU:HD12 | 29:RF:32:LEU:C | 2.10 | 0.71 |
| 31:RH:152:ARG:O | 31:RH:153:LYS:HD2 | 1.90 | 0.71 |
| 38:RS:26:LEU:O | 38:RS:26:LEU:HD23 | 1.90 | 0.71 |
| 40:RU:8:VAL:HG23 | 40:RU:11:ARG:NH2 | 1.99 | 0.71 |
| 53:R7:5:TRP:NE1 | 53:R7:7:PRO:HG3 | 2.04 | 0.71 |
| 1:XA:1318:A:H4' | 19:XS:11:VAL:HG11 | 1.70 | 0.71 |
| 5:XE:76:ILE:HB | 5:XE:77:PRO:HD2 | 1.72 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 20:XT:83:ARG:HA | 20:XT:86:ARG:HB3 | 1.71 | 0.71 |
| 25:YA:1138:G:H21 | 33:YN:106:MET:HE3 | 1.55 | 0.71 |
| 25:YA:1903:G:OP2 | 27:YD:241:PRO:HB2 | 1.90 | 0.71 |
| 25:YA:2327:A:H2' | 25:YA:2328:A:C8 | 2.25 | 0.71 |
| 28:YE:56:PRO:O | 28:YE:57:LYS:HB2 | 1.89 | 0.71 |
| 28:YE:197:ILE:HD11 | 28:YE:199:ARG:HH12 | 1.55 | 0.71 |
| 29:YF:9:ILE:HD11 | 29:YF:125:LEU:HG | 1.70 | 0.71 |
| 29:YF:32:LEU:HD12 | 29:YF:32:LEU:C | 2.10 | 0.71 |
| 31:YH:26:VAL:CG1 | 31:YH:27:LYS:H | 2.02 | 0.71 |
| 31:YH:30:LYS:HD2 | 31:YH:81:GLU:H | 1.54 | 0.71 |
| 31:YH:84:SER:O | 31:YH:85:LYS:HB2 | 1.88 | 0.71 |
| 34:YO:3:GLN:HB2 | 34:YO:4:PRO:HD2 | 1.72 | 0.71 |
| 38:YS:67:ARG:O | 38:YS:71:ARG:HG3 | 1.89 | 0.71 |
| 39:YT:117:ASP:O | 39:YT:121:ILE:HG13 | 1.89 | 0.71 |
| 40:YU:34:LYS:HE2 | 40:YU:34:LYS:HA | 1.70 | 0.71 |
| 46:Y0:43:THR:HG23 | 46:Y0:43:THR:O | 1.90 | 0.71 |
| 52:Y6:28:ARG:HB3 | 52:Y6:30:THR:H | 1.55 | 0.71 |
| 1:QA:842:C:O2' | 1:QA:848:C:N4 | 2.23 | 0.71 |
| 13:QM:49:THR:HG22 | 13:QM:51:ALA:N | 2.02 | 0.71 |
| 28:RE:21:VAL:HB | 28:RE:22:PRO:CB | 2.18 | 0.71 |
| 28:RE:197:ILE:HD11 | 28:RE:199:ARG:HH12 | 1.55 | 0.71 |
| 34:RO:3:GLN:HB2 | 34:RO:4:PRO:HD2 | 1.72 | 0.71 |
| 35:RP:85:LEU:HA | 35:RP:88:LEU:HD22 | 1.71 | 0.71 |
| 37:RR:85:PRO:O | 37:RR:87:TYR:N | 2.22 | 0.71 |
| 42:RW:1:MET:HE2 | 42:RW:2:GLU:H | 1.55 | 0.71 |
| 1:XA:960:U:O2' | 1:XA:961:U:OP2 | 2.06 | 0.71 |
| 10:XJ:5:ARG:HG3 | 10:XJ:71:LEU:HD11 | 1.72 | 0.71 |
| 10:XJ:98:ILE:H | 10:XJ:98:ILE:HD12 | 1.55 | 0.71 |
| 16:XP:45:THR:HG23 | 16:XP:46:PRO:HD2 | 1.70 | 0.71 |
| 25:YA:607:U:H3 | 25:YA:621:A:H2 | 1.38 | 0.71 |
| 25:YA:1221:C:OP1 | 41:YV:68:LYS:HE2 | 1.90 | 0.71 |
| 48:Y2:41:ILE:C | 48:Y2:41:ILE:HD12 | 2.10 | 0.71 |
| 2:QB:187:LEU:HD11 | 2:QB:204:ASN:O | 1.91 | 0.71 |
| 8:QH:10:LEU:N | 8:QH:10:LEU:HD23 | 2.05 | 0.71 |
| 10:QJ:49:VAL:O | 10:QJ:60:ARG:HB3 | 1.90 | 0.71 |
| 16:QP:20:VAL:HG21 | 16:QP:32:TYR:CG | 2.24 | 0.71 |
| 19:QS:40:ILE:HG13 | 19:QS:44:MET:SD | 2.30 | 0.71 |
| 20:QT:57:ARG:HD3 | 20:QT:102:GLY:O | 1.90 | 0.71 |
| 32:RI:92:VAL:CG1 | 32:RI:120:ILE:HG23 | 2.18 | 0.71 |
| 37:RR:3:HIS:O | 37:RR:5:LYS:N | 2.22 | 0.71 |
| 45:RZ:140:ASP:OD2 | 45:RZ:156:LYS:N | 2.24 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:XA:986:A:H1' | 19:XS:54:GLY:O | 1.90 | 0.71 |
| 1:XA:1151:A:H1' | 10:XJ:39:PRO:HB2 | 1.70 | 0.71 |
| 40:YU:69:CYS:HB3 | 40:YU:106:PHE:HZ | 1.55 | 0.71 |
| 45:YZ:138:GLU:C | 45:YZ:156:LYS:HD3 | 2.11 | 0.71 |
| 47:Y1:80:LEU:C | 47:Y1:81:LYS:HE2 | 2.10 | 0.71 |
| 53:Y7:5:TRP:NE1 | 53:Y7:7:PRO:HG3 | 2.04 | 0.71 |
| 54:Y8:58:ILE:HD13 | 54:Y8:61:LEU:HD11 | 1.72 | 0.71 |
| 1:QA:1054:C:OP2 | 1:QA:1197:G:P | 2.48 | 0.71 |
| 25:RA:1826:G:H4' | 27:RD:242:ARG:HH21 | 1.55 | 0.71 |
| 33:RN:1:MET:CE | 40:RU:95:LEU:HD21 | 2.20 | 0.71 |
| 48:R2:29:LYS:HD3 | 48:R2:57:ILE:HD13 | 1.71 | 0.71 |
| 2:XB:168:THR:HB | 2:XB:192:SER:HB2 | 1.70 | 0.71 |
| 6:XF:25:ILE:HD13 | 6:XF:28:ARG:NH1 | 2.05 | 0.71 |
| 11:XK:124:LYS:HD2 | 11:XK:125:PHE:CE1 | 2.25 | 0.71 |
| 19:XS:40:ILE:HG13 | 19:XS:44:MET:SD | 2.31 | 0.71 |
| 20:XT:63:ILE:HG22 | 20:XT:77:ALA:HB1 | 1.73 | 0.71 |
| 29:YF:185:ASP:HA | 29:YF:188:ARG:CD | 2.20 | 0.71 |
| 29:YF:185:ASP:OD1 | 29:YF:188:ARG:NH1 | 2.23 | 0.71 |
| 32:YI:73:GLU:HG3 | 32:YI:136:VAL:HG23 | 1.72 | 0.71 |
| 35:YP:85:LEU:HA | 35:YP:88:LEU:HD22 | 1.71 | 0.71 |
| 38:YS:103:GLU:O | 38:YS:106:ARG:HG3 | 1.90 | 0.71 |
| 51:Y5:2:ALA:O | 51:Y5:3:LYS:HB2 | 1.88 | 0.71 |
| 54:Y8:60:LEU:O | 54:Y8:63:PRO:HD2 | 1.90 | 0.71 |
| 2:QB:75:LYS:O | 2:QB:75:LYS:HD3 | 1.89 | 0.71 |
| 16:QP:60:LEU:HA | 16:QP:64:ALA:HB3 | 1.71 | 0.71 |
| 26:RB:56:G:H5' | 30:RG:27:ASN:ND2 | 2.05 | 0.71 |
| 27:RD:244:ARG:HB2 | 27:RD:245:PRO:HD2 | 1.72 | 0.71 |
| 43:RX:12:VAL:HG12 | 43:RX:27:THR:O | 1.91 | 0.71 |
| 13:XM:121:LYS:NZ | 24:XY:40:G:P | 2.62 | 0.71 |
| 25:YA:185:U:H4' | 25:YA:218:A:H4' | 1.72 | 0.71 |
| 25:YA:637:A:H2' | 35:YP:117:GLU:OE2 | 1.88 | 0.71 |
| 33:YN:1:MET:CE | 40:YU:95:LEU:HD21 | 2.21 | 0.71 |
| 35:YP:58:THR:O | 35:YP:61:ARG:CZ | 2.38 | 0.71 |
| 43:YX:12:VAL:HG12 | 43:YX:27:THR:O | 1.90 | 0.71 |
| 45:YZ:140:ASP:OD2 | 45:YZ:156:LYS:N | 2.24 | 0.71 |
| 2:QB:59:GLU:O | 2:QB:62:ALA:HB3 | 1.90 | 0.71 |
| 25:RA:1939:U:OP1 | 25:RA:2604:U:O2' | 2.08 | 0.71 |
| 35:RP:49:ARG:HD2 | 54:R8:58:ILE:CG2 | 2.20 | 0.71 |
| 38:RS:67:ARG:O | 38:RS:71:ARG:HG3 | 1.90 | 0.71 |
| 38:RS:83:LYS:HG2 | 38:RS:109:GLY:N | 2.04 | 0.71 |
| 41:RV:39:LEU:O | 41:RV:40:LEU:HD23 | 1.90 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 52:R6:25:LYS:HD2 | 54:R8:34:TRP:HZ2 | 1.56 | 0.71 |
| 2:XB:126:GLU:CG | 2:XB:129:GLU:HG3 | 2.20 | 0.71 |
| 20:XT:27:LYS:O | 20:XT:30:LYS:HB3 | 1.89 | 0.71 |
| 25:YA:1814:G:H4' | 27:YD:51:VAL:HG21 | 1.73 | 0.71 |
| 27:YD:263:ARG:HB2 | 27:YD:263:ARG:NH1 | 2.06 | 0.71 |
| 8:QH:41:ARG:HH11 | 8:QH:41:ARG:CB | 2.03 | 0.71 |
| 10:QJ:5:ARG:HG3 | 10:QJ:71:LEU:HD11 | 1.72 | 0.71 |
| 10:QJ:49:VAL:CG2 | 14:QN:41:ARG:HB2 | 2.21 | 0.71 |
| 11:QK:17:GLY:HA3 | 11:QK:77:MET:CE | 2.21 | 0.71 |
| 25:RA:1403:C:H5'' | 25:RA:1471:A:H1' | 1.73 | 0.71 |
| 25:RA:2563:U:H4' | 34:RO:28:SER:HA | 1.72 | 0.71 |
| 25:RA:2635:C:H5'' | 28:RE:78:LEU:HA | 1.72 | 0.71 |
| 38:RS:106:ARG:CA | 38:RS:110:LEU:HD11 | 2.19 | 0.71 |
| 46:R0:25:ARG:HD2 | 46:R0:29:GLN:HE22 | 1.55 | 0.71 |
| 50:R4:29:PRO:O | 50:R4:30:GLU:HB2 | 1.89 | 0.71 |
| 54:R8:58:ILE:HD13 | 54:R8:61:LEU:HD11 | 1.72 | 0.71 |
| 2:XB:59:GLU:O | 2:XB:62:ALA:HB3 | 1.90 | 0.71 |
| 3:XC:123:GLN:O | 3:XC:128:PHE:HB2 | 1.90 | 0.71 |
| 7:XG:78:ARG:HH12 | 7:XG:80:VAL:CG2 | 2.04 | 0.71 |
| 11:XK:48:ILE:HD12 | 11:XK:63:LEU:HB3 | 1.71 | 0.71 |
| 25:YA:64:A:C4 | 43:YX:66:LEU:HD13 | 2.25 | 0.71 |
| 28:YE:93:VAL:H | 28:YE:95:ILE:HD12 | 1.54 | 0.71 |
| 38:YS:83:LYS:HZ1 | 38:YS:109:GLY:HA2 | 1.52 | 0.71 |
| 39:YT:23:ARG:HB2 | 39:YT:24:PRO:HD2 | 1.71 | 0.71 |
| 1:QA:474:G:H5' | 16:QP:81:ARG:HG3 | 1.71 | 0.71 |
| 1:QA:971:G:H5'' | 1:QA:972:C:H5'' | 1.73 | 0.71 |
| 3:QC:16:ARG:HB2 | 3:QC:16:ARG:NH1 | 2.04 | 0.71 |
| 8:QH:84:ARG:HH12 | 8:QH:86:ILE:CD1 | 2.02 | 0.71 |
| 32:RI:73:GLU:HG3 | 32:RI:136:VAL:HG23 | 1.72 | 0.71 |
| 38:RS:83:LYS:C | 38:RS:109:GLY:HA3 | 2.10 | 0.71 |
| 54:R8:60:LEU:C | 54:R8:63:PRO:HD2 | 2.11 | 0.71 |
| 2:XB:214:ILE:HA | 2:XB:217:ARG:HH21 | 1.55 | 0.71 |
| 15:XO:65:ARG:HB2 | 15:XO:65:ARG:HH11 | 1.56 | 0.71 |
| 20:XT:57:ARG:HD3 | 20:XT:102:GLY:O | 1.90 | 0.71 |
| 25:YA:1286:A:O2' | 25:YA:1288:U:OP2 | 2.06 | 0.71 |
| 25:YA:2131:G:H4' | 25:YA:2132:U:H4' | 1.73 | 0.71 |
| 35:YP:49:ARG:HD2 | 54:Y8:58:ILE:CG2 | 2.20 | 0.71 |
| 42:YW:6:ILE:HG12 | 42:YW:104:THR:HG23 | 1.73 | 0.71 |
| 51:Y5:40:LYS:HE2 | 51:Y5:47:PRO:HD2 | 1.73 | 0.71 |
| 52:Y6:29:ASN:OD1 | 52:Y6:30:THR:HG22 | 1.90 | 0.71 |
| 52:Y6:36:LEU:HD13 | 52:Y6:50:ARG:NH1 | 2.05 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:1285:G:N2 | 25:RA:1329:U:OP1 | 2.19 | 0.71 |
| 25:RA:2392:A:OP2 | 25:RA:2422:A:N6 | 2.24 | 0.71 |
| 28:RE:14:ILE:HD11 | 39:RT:14:TYR:OH | 1.90 | 0.71 |
| 29:RF:185:ASP:OD1 | 29:RF:188:ARG:NH1 | 2.24 | 0.71 |
| 35:RP:83:VAL:CG1 | 35:RP:112:LEU:HD21 | 2.21 | 0.71 |
| 46:R0:27:GLU:HG3 | 46:R0:68:GLU:HA | 1.72 | 0.71 |
| 1:XA:243:A:H4' | 1:XA:244:U:H3' | 1.72 | 0.71 |
| 1:XA:537:G:H5'' | 12:XL:113:ARG:HH12 | 1.55 | 0.71 |
| 3:XC:152:ILE:HB | 3:XC:199:LYS:HB2 | 1.72 | 0.71 |
| 9:XI:62:TYR:C | 9:XI:63:ILE:HD12 | 2.12 | 0.71 |
| 15:XO:71:GLN:HB2 | 15:XO:78:TYR:CD1 | 2.25 | 0.71 |
| 25:YA:26:G:H1' | 25:YA:515:A:H61 | 1.56 | 0.71 |
| 48:Y2:7:ARG:HG3 | 48:Y2:7:ARG:HH11 | 1.55 | 0.71 |
| 13:QM:121:LYS:HE2 | 13:QM:121:LYS:CA | 2.21 | 0.71 |
| 18:QR:56:THR:HB | 18:QR:58:LEU:HD12 | 1.71 | 0.71 |
| 20:QT:23:ARG:CA | 20:QT:26:ASN:HD21 | 2.04 | 0.71 |
| 25:RA:579:G:O2' | 25:RA:2019:A:OP1 | 2.09 | 0.71 |
| 27:RD:43:ARG:HB3 | 27:RD:54:ARG:HB2 | 1.73 | 0.71 |
| 27:RD:263:ARG:HB2 | 27:RD:263:ARG:NH1 | 2.05 | 0.71 |
| 29:RF:101:LEU:O | 29:RF:106:ARG:NH1 | 2.23 | 0.71 |
| 41:RV:51:VAL:HG12 | 41:RV:52:VAL:N | 2.06 | 0.71 |
| 2:XB:172:ILE:H | 2:XB:172:ILE:HD12 | 1.56 | 0.71 |
| 12:XL:24:VAL:HG12 | 12:XL:24:VAL:O | 1.90 | 0.71 |
| 25:YA:137(A):G:H1' | 43:YX:41:ASN:ND2 | 2.06 | 0.71 |
| 25:YA:363:G:H2' | 25:YA:363(A):A:H8 | 1.56 | 0.71 |
| 25:YA:2713:A:OP1 | 37:YR:14:SER:OG | 2.08 | 0.71 |
| 29:YF:66:PRO:O | 29:YF:67:GLN:HB3 | 1.89 | 0.71 |
| 47:Y1:81:LYS:HE2 | 47:Y1:81:LYS:CA | 2.13 | 0.71 |
| 2:QB:126:GLU:CG | 2:QB:129:GLU:HG3 | 2.20 | 0.70 |
| 4:QD:170:VAL:O | 6:XF:21:LEU:CD2 | 2.34 | 0.70 |
| 4:QD:190:ASP:HB3 | 4:QD:193:ASP:OD1 | 1.91 | 0.70 |
| 5:QE:78:HIS:HE1 | 5:QE:143:ARG:H | 1.38 | 0.70 |
| 5:QE:79:GLU:OE2 | 8:QH:104:ARG:CA | 2.37 | 0.70 |
| 29:RF:178:PRO:HB2 | 29:RF:201:VAL:HG11 | 1.73 | 0.70 |
| 48:R2:41:ILE:C | 48:R2:41:ILE:HD12 | 2.10 | 0.70 |
| 52:R6:36:LEU:HD13 | 52:R6:50:ARG:NH1 | 2.05 | 0.70 |
| 2:XB:132:LYS:HA | 2:XB:135:GLN:HB2 | 1.71 | 0.70 |
| 11:XK:17:GLY:HA3 | 11:XK:77:MET:CE | 2.21 | 0.70 |
| 31:YH:80:SER:O | 31:YH:81:GLU:HB2 | 1.89 | 0.70 |
| 46:Y0:25:ARG:HD2 | 46:Y0:29:GLN:HE22 | 1.55 | 0.70 |
| 9:QI:15:ALA:HA | 9:QI:64:THR:O | 1.91 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:1080:C:N4 | 25:RA:1088:A:OP2 | 2.24 | 0.70 |
| 31:RH:125:VAL:HG12 | 31:RH:126:PRO:HG3 | 1.71 | 0.70 |
| 36:RQ:79:LEU:CD1 | 36:RQ:80:GLU:OE1 | 2.38 | 0.70 |
| 54:R8:29:LYS:HD3 | 54:R8:44:LYS:HB2 | 1.71 | 0.70 |
| 9:XI:15:ALA:HA | 9:XI:64:THR:O | 1.91 | 0.70 |
| 20:XT:23:ARG:CA | 20:XT:26:ASN:HD21 | 2.04 | 0.70 |
| 25:YA:1403:C:H5'' | 25:YA:1471:A:H1' | 1.72 | 0.70 |
| 27:YD:244:ARG:HB2 | 27:YD:245:PRO:HD2 | 1.72 | 0.70 |
| 31:YH:59:ARG:HH11 | 31:YH:59:ARG:HG3 | 1.56 | 0.70 |
| 35:YP:20:GLY:HA2 | 35:YP:27:HIS:O | 1.91 | 0.70 |
| 36:YQ:134:ARG:CZ | 45:YZ:122:ARG:NH2 | 2.55 | 0.70 |
| 1:QA:1152:A:OP1 | 10:QJ:68:HIS:NE2 | 2.23 | 0.70 |
| 11:QK:124:LYS:HD2 | 11:QK:125:PHE:CE1 | 2.25 | 0.70 |
| 20:QT:63:ILE:HG22 | 20:QT:77:ALA:HB1 | 1.73 | 0.70 |
| 25:RA:227:A:O2' | 25:RA:228:A:O5' | 2.08 | 0.70 |
| 25:RA:1012:U:H3 | 33:RN:25:ARG:HH11 | 1.37 | 0.70 |
| 25:RA:2392:A:H8 | 35:RP:60:MET:HG3 | 1.56 | 0.70 |
| 29:RF:66:PRO:O | 29:RF:67:GLN:HB3 | 1.90 | 0.70 |
| 29:RF:164:ARG:HG3 | 29:RF:175:THR:OG1 | 1.92 | 0.70 |
| 31:RH:132:ARG:HH11 | 31:RH:132:ARG:CB | 1.97 | 0.70 |
| 2:XB:187:LEU:HD11 | 2:XB:204:ASN:O | 1.90 | 0.70 |
| 5:XE:82:VAL:HG12 | 5:XE:83:GLU:N | 2.06 | 0.70 |
| 6:XF:72:VAL:CG2 | 6:XF:90:VAL:HG11 | 2.20 | 0.70 |
| 10:XJ:6:ILE:HG13 | 10:XJ:72:VAL:O | 1.91 | 0.70 |
| 25:YA:558:G:P | 33:YN:111:PRO:HD2 | 2.31 | 0.70 |
| 31:YH:89:ILE:CD1 | 31:YH:129:THR:HB | 2.20 | 0.70 |
| 34:YO:113:LYS:HG2 | 34:YO:117:LEU:HD11 | 1.71 | 0.70 |
| 47:Y1:80:LEU:C | 47:Y1:81:LYS:HD2 | 2.12 | 0.70 |
| 2:QB:8:LYS:HD3 | 2:QB:8:LYS:N | 2.03 | 0.70 |
| 36:RQ:32:TYR:CD1 | 36:RQ:133:ARG:HA | 2.27 | 0.70 |
| 36:RQ:134:ARG:CZ | 45:RZ:122:ARG:NH2 | 2.54 | 0.70 |
| 47:R1:80:LEU:C | 47:R1:81:LYS:HE2 | 2.10 | 0.70 |
| 28:YE:14:ILE:HG12 | 28:YE:15:PHE:N | 2.06 | 0.70 |
| 29:YF:178:PRO:HG2 | 29:YF:179:GLU:OE2 | 1.90 | 0.70 |
| 31:YH:103:LEU:HD12 | 31:YH:131:VAL:HG21 | 1.73 | 0.70 |
| 6:QF:60:PHE:C | 6:QF:61:LEU:HD12 | 2.12 | 0.70 |
| 10:QJ:6:ILE:HG13 | 10:QJ:72:VAL:O | 1.91 | 0.70 |
| 31:RH:154:PRO:O | 31:RH:155:SER:HB2 | 1.91 | 0.70 |
| 35:RP:58:THR:O | 35:RP:61:ARG:CZ | 2.38 | 0.70 |
| 38:RS:54:LEU:HD13 | 38:RS:54:LEU:O | 1.91 | 0.70 |
| 44:RY:48:ALA:O | 44:RY:49:VAL:C | 2.30 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 52:R6:29:ASN:OD1 | 52:R6:30:THR:HG22 | 1.91 | 0.70 |
| 1:XA:827:U:O2 | 1:XA:874:G:N2 | 2.24 | 0.70 |
| 1:XA:842:C:O2' | 1:XA:848:C:N4 | 2.24 | 0.70 |
| 13:XM:4:ILE:N | 13:XM:9:ILE:HG21 | 2.06 | 0.70 |
| 13:XM:121:LYS:HE2 | 13:XM:121:LYS:HA | 1.71 | 0.70 |
| 26:YB:15:A:H5' | 26:YB:16:G:C8 | 2.26 | 0.70 |
| 26:YB:42:C:N4 | 30:YG:91:ARG:HH21 | 1.89 | 0.70 |
| 27:YD:43:ARG:HB3 | 27:YD:54:ARG:HB2 | 1.73 | 0.70 |
| 1:QA:1305:G:H5' | 21:QU:4:GLY:HA3 | 1.73 | 0.70 |
| 25:RA:607:U:OP1 | 29:RF:102:PRO:HA | 1.92 | 0.70 |
| 26:RB:80:U:H2' | 26:RB:81:G:H21 | 1.55 | 0.70 |
| 29:RF:178:PRO:HG2 | 29:RF:179:GLU:OE2 | 1.90 | 0.70 |
| 33:RN:89:LYS:O | 33:RN:93:THR:HG22 | 1.90 | 0.70 |
| 4:XD:190:ASP:HB3 | 4:XD:193:ASP:OD1 | 1.91 | 0.70 |
| 8:XH:87:SER:HB2 | 8:XH:93:VAL:HB | 1.73 | 0.70 |
| 13:XM:121:LYS:HE2 | 13:XM:121:LYS:CA | 2.21 | 0.70 |
| 29:YF:101:LEU:O | 29:YF:106:ARG:NH1 | 2.23 | 0.70 |
| 31:YH:86:GLU:CG | 31:YH:165:ALA:H | 1.94 | 0.70 |
| 31:YH:152:ARG:O | 31:YH:153:LYS:CB | 2.39 | 0.70 |
| 38:YS:42:ASP:O | 38:YS:43:GLU:HB2 | 1.90 | 0.70 |
| 39:YT:41:ARG:NH2 | 39:YT:43:GLN:HB2 | 2.06 | 0.70 |
| 40:YU:65:ILE:HG12 | 40:YU:96:ALA:HB1 | 1.73 | 0.70 |
| 41:YV:22:VAL:HG12 | 41:YV:23:GLU:N | 2.06 | 0.70 |
| 42:YW:29:LEU:HD21 | 42:YW:33:ARG:CZ | 2.22 | 0.70 |
| 47:Y1:7:ILE:CD1 | 47:Y1:70:VAL:HG22 | 2.22 | 0.70 |
| 52:Y6:25:LYS:HD2 | 54:Y8:34:TRP:HZ2 | 1.56 | 0.70 |
| 2:QB:214:ILE:HA | 2:QB:217:ARG:HH21 | 1.55 | 0.70 |
| 15:QO:74:ASP:CG | 15:QO:77:ARG:HG2 | 2.12 | 0.70 |
| 27:RD:65:ILE:HD13 | 27:RD:65:ILE:O | 1.91 | 0.70 |
| 29:RF:65:TRP:HZ3 | 29:RF:73:ALA:O | 1.74 | 0.70 |
| 31:RH:152:ARG:O | 31:RH:153:LYS:CB | 2.39 | 0.70 |
| 32:RI:6:LEU:HD13 | 32:RI:36:ALA:HA | 1.74 | 0.70 |
| 44:RY:45:VAL:HG12 | 44:RY:60:PHE:CD1 | 2.27 | 0.70 |
| 44:RY:57:GLN:HE21 | 44:RY:58:GLY:H | 1.37 | 0.70 |
| 48:R2:7:ARG:HH11 | 48:R2:7:ARG:HG3 | 1.55 | 0.70 |
| 2:XB:101:MET:HA | 2:XB:108:ILE:CG1 | 2.14 | 0.70 |
| 10:XJ:49:VAL:O | 10:XJ:60:ARG:HB3 | 1.90 | 0.70 |
| 15:XO:74:ASP:CG | 15:XO:77:ARG:HG2 | 2.12 | 0.70 |
| 25:YA:265:A:N6 | 25:YA:427:U:O2' | 2.22 | 0.70 |
| 28:YE:28:ALA:HB3 | 28:YE:93:VAL:HG22 | 1.72 | 0.70 |
| 29:YF:164:ARG:HG3 | 29:YF:175:THR:OG1 | 1.92 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:YF:178:PRO:HB2 | 29:YF:201:VAL:HG11 | 1.73 | 0.70 |
| 36:YQ:32:TYR:CD1 | 36:YQ:133:ARG:HA | 2.27 | 0.70 |
| 51:Y5:40:LYS:HE2 | 51:Y5:47:PRO:CD | 2.21 | 0.70 |
| 1:QA:922:G:H4' | 5:QE:20:GLN:HA | 1.74 | 0.70 |
| 5:QE:76:ILE:HB | 5:QE:77:PRO:HD2 | 1.72 | 0.70 |
| 31:RH:154:PRO:HG2 | 31:RH:162:ILE:O | 1.92 | 0.70 |
| 32:RI:27:ARG:HD3 | 47:R1:71:TYR:HE1 | 1.55 | 0.70 |
| 36:RQ:80:GLU:CD | 46:R0:5:LYS:HB3 | 2.12 | 0.70 |
| 38:RS:83:LYS:HZ1 | 38:RS:109:GLY:HA2 | 1.56 | 0.70 |
| 38:RS:106:ARG:N | 38:RS:110:LEU:HD21 | 2.07 | 0.70 |
| 47:R1:82:LEU:HD13 | 47:R1:83:GLU:N | 2.05 | 0.70 |
| 8:XH:49:GLU:HG3 | 8:XH:51:VAL:HG13 | 1.74 | 0.70 |
| 17:XQ:4:LYS:CE | 17:XQ:6:LEU:HD21 | 2.21 | 0.70 |
| 25:YA:2111:C:N3 | 25:YA:2118:U:O2' | 2.25 | 0.70 |
| 30:YG:131:TYR:O | 30:YG:159:VAL:HG13 | 1.92 | 0.70 |
| 31:YH:154:PRO:HG2 | 31:YH:162:ILE:O | 1.92 | 0.70 |
| 32:YI:92:VAL:HG13 | 32:YI:120:ILE:CG2 | 2.16 | 0.70 |
| 36:YQ:43:THR:OG1 | 36:YQ:46:GLN:HB2 | 1.91 | 0.70 |
| 39:YT:57:PHE:C | 39:YT:58:ASN:HD22 | 1.93 | 0.70 |
| 40:YU:66:ASN:HB2 | 40:YU:76:TYR:HB2 | 1.73 | 0.70 |
| 1:QA:542:G:OP1 | 4:QD:10:ARG:NH2 | 2.25 | 0.70 |
| 8:QH:87:SER:HB2 | 8:QH:93:VAL:HB | 1.74 | 0.70 |
| 13:QM:7:VAL:CB | 30:RG:115:ARG:HH12 | 2.05 | 0.70 |
| 27:RD:65:ILE:HD11 | 27:RD:67:PHE:CD1 | 2.27 | 0.70 |
| 30:RG:131:TYR:O | 30:RG:159:VAL:HG13 | 1.92 | 0.70 |
| 40:RU:65:ILE:HG12 | 40:RU:96:ALA:HB1 | 1.73 | 0.70 |
| 42:RW:29:LEU:HD21 | 42:RW:33:ARG:CZ | 2.22 | 0.70 |
| 48:R2:47:ASN:O | 48:R2:49:LYS:N | 2.25 | 0.70 |
| 51:R5:40:LYS:HE2 | 51:R5:47:PRO:HD2 | 1.73 | 0.70 |
| 1:XA:437:U:H2' | 1:XA:438:G:O4' | 1.92 | 0.70 |
| 2:XB:162:ILE:HD11 | 2:XB:184:VAL:HG13 | 1.74 | 0.70 |
| 10:XJ:49:VAL:CG2 | 14:YN:41:ARG:HB2 | 2.21 | 0.70 |
| 25:YA:1820:U:C2 | 27:YD:202:LYS:HB3 | 2.27 | 0.70 |
| 28:YE:103:ASP:OD1 | 28:YE:201:THR:HA | 1.92 | 0.70 |
| 34:YO:63:VAL:HG13 | 34:YO:84:ALA:HA | 1.73 | 0.70 |
| 38:YS:54:LEU:HD13 | 38:YS:54:LEU:O | 1.91 | 0.70 |
| 9:QI:62:TYR:C | 9:QI:63:ILE:HD12 | 2.11 | 0.70 |
| 13:QM:93:ARG:NH1 | 25:RA:887:A:OP1 | 2.25 | 0.70 |
| 16:QP:14:ASN:N | 16:QP:15:PRO:HD3 | 2.07 | 0.70 |
| 17:QQ:52:LYS:HD2 | 17:QQ:55:ASP:OD1 | 1.91 | 0.70 |
| 19:QS:51:VAL:O | 19:QS:57:HIS:HA | 1.92 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:RI:21:VAL:HG22 | 32:RI:22:LYS:H | 1.57 | 0.70 |
| 1:XA:201:C:N4 | 1:XA:209:U:O2 | 2.25 | 0.70 |
| 25:YA:2404:C:H1' | 35:YP:67:MET:CE | 2.20 | 0.70 |
| 27:YD:65:ILE:HD13 | 27:YD:65:ILE:O | 1.91 | 0.70 |
| 35:YP:64:LYS:C | 35:YP:66:GLY:H | 1.94 | 0.70 |
| 35:YP:83:VAL:CG1 | 35:YP:112:LEU:HD21 | 2.21 | 0.70 |
| 35:YP:114:ILE:HD13 | 35:YP:125:VAL:HG21 | 1.72 | 0.70 |
| 42:YW:1:MET:HA | 42:YW:1:MET:HE3 | 1.72 | 0.70 |
| 43:YX:57:LEU:HD11 | 43:YX:78:LYS:HD2 | 1.73 | 0.70 |
| 1:QA:1348:U:H4' | 9:QI:120:ARG:HD2 | 1.72 | 0.69 |
| 13:QM:4:ILE:N | 13:QM:9:ILE:HG21 | 2.06 | 0.69 |
| 22:QV:1:C:C4' | 46:R0:5:LYS:CE | 2.70 | 0.69 |
| 25:RA:2485:G:OP1 | 36:RQ:46:GLN:NE2 | 2.24 | 0.69 |
| 43:RX:57:LEU:HD11 | 43:RX:78:LYS:HD2 | 1.73 | 0.69 |
| 47:R1:7:ILE:CD1 | 47:R1:70:VAL:HG22 | 2.22 | 0.69 |
| 47:R1:7:ILE:HD12 | 47:R1:70:VAL:HG22 | 1.73 | 0.69 |
| 1:XA:130:A:N3 | 1:XA:263:A:O2' | 2.23 | 0.69 |
| 1:XA:941:G:H1 | 1:XA:1342:C:H42 | 1.38 | 0.69 |
| 1:XA:1226:C:H2' | 13:XM:103:THR:HB | 1.74 | 0.69 |
| 1:XA:1446:A:N3 | 39:YT:118:ARG:HD2 | 2.06 | 0.69 |
| 13:XM:7:VAL:HG21 | 30:YG:113:ARG:O | 1.92 | 0.69 |
| 25:YA:482:A:H4' | 44:YY:47:LYS:HD2 | 1.74 | 0.69 |
| 25:YA:956:G:N2 | 25:YA:960:A:OP2 | 2.24 | 0.69 |
| 25:YA:2734:A:H3' | 25:YA:2735:G:H8 | 1.57 | 0.69 |
| 1:QA:793:U:H3' | 1:QA:794:A:H5'' | 1.74 | 0.69 |
| 2:QB:95:GLN:HE21 | 2:QB:147:LYS:HE2 | 1.56 | 0.69 |
| 3:QC:147:LYS:O | 3:QC:203:PHE:HB3 | 1.92 | 0.69 |
| 3:QC:152:ILE:HB | 3:QC:199:LYS:HB2 | 1.73 | 0.69 |
| 4:QD:120:LEU:HD22 | 4:QD:125:HIS:HB2 | 1.73 | 0.69 |
| 7:QG:78:ARG:HH12 | 7:QG:80:VAL:CG2 | 2.04 | 0.69 |
| 9:QI:113:LYS:HD2 | 9:QI:113:LYS:N | 2.07 | 0.69 |
| 25:RA:1971:A:C4 | 27:RD:241:PRO:HD3 | 2.27 | 0.69 |
| 30:RG:56:ALA:HB2 | 30:RG:153:ARG:HE | 1.57 | 0.69 |
| 31:RH:128:PRO:HD2 | 31:RH:129:THR:H | 1.55 | 0.69 |
| 45:RZ:138:GLU:C | 45:RZ:156:LYS:HD3 | 2.11 | 0.69 |
| 1:XA:356:A:N3 | 1:XA:368:U:O2' | 2.25 | 0.69 |
| 2:XB:95:GLN:HE21 | 2:XB:147:LYS:HE2 | 1.56 | 0.69 |
| 2:XB:162:ILE:O | 2:XB:162:ILE:HG13 | 1.92 | 0.69 |
| 10:XJ:38:ILE:O | 10:XJ:38:ILE:HG13 | 1.92 | 0.69 |
| 17:XQ:52:LYS:HD2 | 17:XQ:55:ASP:OD1 | 1.91 | 0.69 |
| 19:XS:51:VAL:O | 19:XS:57:HIS:HA | 1.92 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:YI:6:LEU:HD13 | 32:YI:36:ALA:HA | 1.74 | 0.69 |
| 35:YP:19:VAL:HG22 | 35:YP:20:GLY:N | 1.97 | 0.69 |
| 41:YV:41:GLY:HA3 | 41:YV:46:VAL:HG11 | 1.74 | 0.69 |
| 41:YV:51:VAL:HG12 | 41:YV:52:VAL:N | 2.06 | 0.69 |
| 45:YZ:121:HIS:O | 45:YZ:122:ARG:HB2 | 1.92 | 0.69 |
| 46:Y0:27:GLU:HG3 | 46:Y0:68:GLU:HA | 1.72 | 0.69 |
| 47:Y1:7:ILE:HD12 | 47:Y1:70:VAL:HG22 | 1.73 | 0.69 |
| 47:Y1:82:LEU:HD12 | 47:Y1:83:GLU:CA | 2.22 | 0.69 |
| 2:QB:162:ILE:O | 2:QB:162:ILE:HG13 | 1.92 | 0.69 |
| 3:QC:16:ARG:HD2 | 3:QC:54:ARG:NH2 | 2.03 | 0.69 |
| 10:QJ:38:ILE:O | 10:QJ:38:ILE:HG13 | 1.92 | 0.69 |
| 21:QU:6:ARG:HE | 21:QU:15:ARG:NE | 1.90 | 0.69 |
| 25:RA:2849:U:O4 | 39:RT:23:ARG:NH2 | 2.24 | 0.69 |
| 27:RD:76:PRO:O | 27:RD:98:VAL:HG23 | 1.91 | 0.69 |
| 29:RF:103:LYS:HA | 29:RF:106:ARG:CG | 2.21 | 0.69 |
| 31:RH:103:LEU:HD12 | 31:RH:131:VAL:HG21 | 1.73 | 0.69 |
| 35:RP:20:GLY:HA2 | 35:RP:27:HIS:O | 1.92 | 0.69 |
| 35:RP:64:LYS:C | 35:RP:66:GLY:H | 1.94 | 0.69 |
| 46:R0:6:GLY:C | 46:R0:7:LEU:HD22 | 2.12 | 0.69 |
| 47:R1:82:LEU:HD12 | 47:R1:83:GLU:CA | 2.21 | 0.69 |
| 1:XA:677:U:H3 | 1:XA:713:G:H1 | 1.39 | 0.69 |
| 1:XA:895:G:H1 | 1:XA:904:C:H42 | 1.37 | 0.69 |
| 1:XA:1322:C:H5' | 13:XM:100:GLY:HA2 | 1.73 | 0.69 |
| 6:XF:67:MET:HB2 | 6:XF:68:PRO:HD2 | 1.75 | 0.69 |
| 10:XJ:48:THR:HA | 10:XJ:62:HIS:HB3 | 1.75 | 0.69 |
| 14:YN:6:LEU:O | 14:YN:6:LEU:HD23 | 1.92 | 0.69 |
| 25:YA:768:G:O2' | 25:YA:1379:A:N6 | 2.22 | 0.69 |
| 25:YA:1499:C:H2' | 25:YA:1500:G:C8 | 2.27 | 0.69 |
| 27:YD:89:SER:HB2 | 27:YD:159:ALA:HB2 | 1.75 | 0.69 |
| 35:YP:50:ARG:HB3 | 35:YP:50:ARG:NH2 | 1.97 | 0.69 |
| 47:Y1:53:VAL:HG22 | 47:Y1:74:VAL:HG13 | 1.74 | 0.69 |
| 5:QE:82:VAL:HG12 | 5:QE:83:GLU:N | 2.06 | 0.69 |
| 17:QQ:4:LYS:CE | 17:QQ:6:LEU:HD21 | 2.21 | 0.69 |
| 25:RA:1490:A:O2' | 27:RD:99:ASP:OD2 | 2.10 | 0.69 |
| 28:RE:103:ASP:OD1 | 28:RE:201:THR:HA | 1.92 | 0.69 |
| 31:RH:59:ARG:HH11 | 31:RH:59:ARG:HG3 | 1.56 | 0.69 |
| 33:RN:120:LEU:HD11 | 33:RN:122:VAL:HG23 | 1.74 | 0.69 |
| 44:RY:2:ARG:HH11 | 44:RY:2:ARG:HG2 | 1.57 | 0.69 |
| 47:R1:74:VAL:HG12 | 47:R1:74:VAL:O | 1.93 | 0.69 |
| 51:R5:4:HIS:HB3 | 51:R5:5:PRO:HD3 | 1.75 | 0.69 |
| 1:XA:1219:U:OP1 | 14:YN:19:ARG:NH2 | 2.19 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:XA:1414:U:H2' | 1:XA:1415:G:H8 | 1.58 | 0.69 |
| 3:XC:16:ARG:HD2 | 3:XC:54:ARG:NH2 | 2.03 | 0.69 |
| 16:XP:1:MET:O | 16:XP:24:ALA:HB2 | 1.92 | 0.69 |
| 16:XP:14:ASN:N | 16:XP:15:PRO:HD3 | 2.07 | 0.69 |
| 20:XT:50:GLU:HG3 | 20:XT:51:GLU:H | 1.54 | 0.69 |
| 25:YA:2393:A:H4' | 35:YP:61:ARG:O | 1.92 | 0.69 |
| 27:YD:65:ILE:HD11 | 27:YD:67:PHE:CD1 | 2.27 | 0.69 |
| 34:YO:8:LEU:HD22 | 34:YO:8:LEU:N | 2.07 | 0.69 |
| 35:YP:64:LYS:HB2 | 54:Y8:25:MET:CG | 2.22 | 0.69 |
| 1:QA:280:C:N3 | 17:QQ:39:SER:N | 2.38 | 0.69 |
| 2:QB:212:GLN:NE2 | 2:QB:216:SER:HB2 | 2.08 | 0.69 |
| 3:QC:123:GLN:O | 3:QC:128:PHE:HB2 | 1.91 | 0.69 |
| 4:QD:30:LYS:HA | 4:QD:34:GLU:HB2 | 1.75 | 0.69 |
| 12:QL:24:VAL:HG12 | 12:QL:24:VAL:O | 1.90 | 0.69 |
| 15:QO:65:ARG:HB2 | 15:QO:65:ARG:HH11 | 1.57 | 0.69 |
| 26:RB:15:A:H5' | 26:RB:16:G:C8 | 2.26 | 0.69 |
| 28:RE:7:VAL:HG23 | 28:RE:8:LYS:N | 2.07 | 0.69 |
| 31:RH:4:ILE:HG13 | 31:RH:6:ARG:NE | 2.08 | 0.69 |
| 35:RP:126:VAL:CG1 | 35:RP:147:LEU:HD21 | 2.16 | 0.69 |
| 45:RZ:121:HIS:O | 45:RZ:122:ARG:HB2 | 1.92 | 0.69 |
| 45:RZ:129:SER:HB3 | 45:RZ:132:ASN:OD1 | 1.92 | 0.69 |
| 6:XF:60:PHE:C | 6:XF:61:LEU:HD12 | 2.13 | 0.69 |
| 25:YA:192:C:O2' | 25:YA:802:A:N3 | 2.25 | 0.69 |
| 25:YA:1077:A:H5' | 25:YA:1078:U:H5'' | 1.75 | 0.69 |
| 27:YD:76:PRO:O | 27:YD:98:VAL:HG23 | 1.91 | 0.69 |
| 42:YW:86:LEU:HD12 | 42:YW:87:PRO:CD | 2.23 | 0.69 |
| 48:Y2:47:ASN:O | 48:Y2:49:LYS:N | 2.25 | 0.69 |
| 1:QA:1531:A:H8 | 1:QA:1531:A:C5' | 2.01 | 0.69 |
| 4:QD:188:LEU:HD23 | 4:QD:189:PRO:HD2 | 1.75 | 0.69 |
| 8:QH:6:ILE:HD12 | 8:QH:6:ILE:N | 2.08 | 0.69 |
| 25:RA:307:G:N2 | 25:RA:310:A:OP2 | 2.25 | 0.69 |
| 28:RE:65:GLY:HA2 | 28:RE:70:ALA:CB | 2.23 | 0.69 |
| 33:RN:46:VAL:O | 33:RN:47:ALA:HB3 | 1.92 | 0.69 |
| 36:RQ:43:THR:OG1 | 36:RQ:46:GLN:HB2 | 1.91 | 0.69 |
| 44:RY:29:GLU:HB3 | 44:RY:38:ILE:HG12 | 1.74 | 0.69 |
| 3:XC:105:GLU:HG2 | 3:XC:106:VAL:H | 1.58 | 0.69 |
| 29:YF:65:TRP:HZ3 | 29:YF:73:ALA:O | 1.74 | 0.69 |
| 33:YN:68:GLU:HG2 | 33:YN:88:GLU:OE1 | 1.92 | 0.69 |
| 33:YN:120:LEU:HD11 | 33:YN:122:VAL:HG23 | 1.74 | 0.69 |
| 35:YP:61:ARG:H | 35:YP:61:ARG:HD2 | 1.58 | 0.69 |
| 41:YV:66:ARG:HH12 | 41:YV:88:ARG:NH1 | 1.90 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 44:YY:45:VAL:HG12 | 44:YY:60:PHE:CD1 | 2.27 | 0.69 |
| 47:Y1:64:ALA:HA | 47:Y1:67:ILE:HG13 | 1.75 | 0.69 |
| 1:QA:45:U:H2' | 1:QA:46:G:C8 | 2.27 | 0.69 |
| 1:QA:280:C:C2 | 17:QQ:38:ARG:HG3 | 2.27 | 0.69 |
| 1:QA:380:G:N2 | 1:QA:383:A:OP2 | 2.26 | 0.69 |
| 1:QA:592:G:H1 | 1:QA:647:C:H42 | 1.39 | 0.69 |
| 3:QC:105:GLU:HG2 | 3:QC:106:VAL:H | 1.58 | 0.69 |
| 8:QH:31:PHE:CE2 | 8:QH:35:ILE:HD11 | 2.27 | 0.69 |
| 25:RA:498:G:N3 | 44:RY:47:LYS:NZ | 2.36 | 0.69 |
| 25:RA:586:A:N1 | 25:RA:809:G:O2' | 2.22 | 0.69 |
| 25:RA:1142(A):A:H4' | 33:RN:25:ARG:HH22 | 1.58 | 0.69 |
| 25:RA:2392:A:C8 | 35:RP:60:MET:HG3 | 2.27 | 0.69 |
| 33:RN:68:GLU:HG2 | 33:RN:88:GLU:OE1 | 1.92 | 0.69 |
| 35:RP:39:LYS:CA | 35:RP:45:LEU:HD11 | 2.23 | 0.69 |
| 41:RV:41:GLY:HA3 | 41:RV:46:VAL:HG11 | 1.74 | 0.69 |
| 41:RV:66:ARG:HH12 | 41:RV:88:ARG:NH1 | 1.90 | 0.69 |
| 47:R1:4:VAL:HG23 | 47:R1:10:LYS:O | 1.93 | 0.69 |
| 47:R1:81:LYS:HE2 | 47:R1:81:LYS:CA | 2.13 | 0.69 |
| 8:XH:84:ARG:HH12 | 8:XH:86:ILE:CD1 | 2.02 | 0.69 |
| 25:YA:1318:C:H2' | 25:YA:1319:G:H5'' | 1.74 | 0.69 |
| 25:YA:2401:U:H2' | 25:YA:2402:C:H5'' | 1.74 | 0.69 |
| 30:YG:16:ARG:HH21 | 30:YG:31:VAL:CG1 | 2.05 | 0.69 |
| 1:QA:713:G:H2' | 1:QA:714:G:C8 | 2.28 | 0.69 |
| 2:QB:126:GLU:HG2 | 2:QB:126:GLU:O | 1.92 | 0.69 |
| 2:QB:172:ILE:H | 2:QB:172:ILE:HD12 | 1.56 | 0.69 |
| 5:QE:78:HIS:HA | 8:QH:105:ARG:HB2 | 1.73 | 0.69 |
| 16:QP:1:MET:O | 16:QP:24:ALA:HB2 | 1.92 | 0.69 |
| 25:RA:2602:A:C2 | 55:Z6:76:PPU:H8 | 2.28 | 0.69 |
| 30:RG:28:VAL:HG23 | 30:RG:29:TRP:CD1 | 2.28 | 0.69 |
| 30:RG:171:ALA:O | 30:RG:175:LEU:HG | 1.93 | 0.69 |
| 32:RI:13:GLY:HA3 | 32:RI:17:GLN:OE1 | 1.93 | 0.69 |
| 34:RO:63:VAL:HG13 | 34:RO:84:ALA:HA | 1.72 | 0.69 |
| 35:RP:64:LYS:HB2 | 54:R8:25:MET:CG | 2.22 | 0.69 |
| 39:RT:41:ARG:NH2 | 39:RT:43:GLN:HB2 | 2.06 | 0.69 |
| 40:RU:90:VAL:O | 40:RU:92:ARG:N | 2.26 | 0.69 |
| 41:RV:22:VAL:HG12 | 41:RV:23:GLU:N | 2.05 | 0.69 |
| 45:RZ:53:ILE:HG22 | 45:RZ:71:VAL:HG13 | 1.74 | 0.69 |
| 46:R0:43:THR:O | 46:R0:43:THR:HG23 | 1.90 | 0.69 |
| 47:R1:80:LEU:C | 47:R1:81:LYS:HD2 | 2.12 | 0.69 |
| 51:R5:40:LYS:HG2 | 51:R5:47:PRO:HD2 | 1.75 | 0.69 |
| 52:R6:28:ARG:HB3 | 52:R6:30:THR:H | 1.55 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 2:XB:178:ARG:NH2 | 8:XH:68:ARG:HH22 | 1.90 | 0.69 |
| 2:XB:212:GLN:NE2 | 2:XB:216:SER:HB2 | 2.08 | 0.69 |
| 7:XG:8:GLU:CD | 7:XG:8:GLU:H | 1.96 | 0.69 |
| 8:XH:31:PHE:CE2 | 8:XH:35:ILE:HD11 | 2.27 | 0.69 |
| 19:XS:5:LEU:CD1 | 50:Y4:66:SER:CB | 2.59 | 0.69 |
| 19:XS:5:LEU:CG | 50:Y4:66:SER:HB2 | 2.23 | 0.69 |
| 25:YA:380:U:H2' | 25:YA:381:G:H8 | 1.57 | 0.69 |
| 25:YA:2343:C:HO2' | 25:YA:2373:G:HO2' | 1.38 | 0.69 |
| 27:YD:17:THR:HG22 | 27:YD:205:VAL:N | 2.08 | 0.69 |
| 27:YD:17:THR:CG2 | 27:YD:204:ILE:HA | 2.23 | 0.69 |
| 28:YE:7:VAL:HG23 | 28:YE:8:LYS:N | 2.07 | 0.69 |
| 30:YG:28:VAL:HG23 | 30:YG:29:TRP:CD1 | 2.28 | 0.69 |
| 31:YH:89:ILE:HG12 | 31:YH:89:ILE:O | 1.92 | 0.69 |
| 31:YH:150:ALA:C | 31:YH:152:ARG:N | 2.44 | 0.69 |
| 31:YH:154:PRO:O | 31:YH:155:SER:HB2 | 1.91 | 0.69 |
| 33:YN:56:ASN:HD22 | 33:YN:125:GLY:C | 1.96 | 0.69 |
| 35:YP:29:LYS:HD2 | 35:YP:30:THR:HG22 | 1.72 | 0.69 |
| 35:YP:62:LEU:HD22 | 35:YP:62:LEU:H | 1.53 | 0.69 |
| 35:YP:62:LEU:HD23 | 54:Y8:25:MET:HB2 | 1.74 | 0.69 |
| 38:YS:106:ARG:N | 38:YS:110:LEU:HD21 | 2.07 | 0.69 |
| 47:Y1:82:LEU:HD13 | 47:Y1:83:GLU:N | 2.05 | 0.69 |
| 51:Y5:40:LYS:HG2 | 51:Y5:47:PRO:HD2 | 1.75 | 0.69 |
| 52:Y6:14:THR:HG21 | 52:Y6:19:ARG:HH21 | 1.58 | 0.69 |
| 6:QF:3:ARG:HB3 | 6:QF:93:SER:HB2 | 1.75 | 0.69 |
| 8:QH:49:GLU:HG3 | 8:QH:51:VAL:HG13 | 1.74 | 0.69 |
| 33:RN:7:LYS:HD3 | 33:RN:9:VAL:HA | 1.75 | 0.69 |
| 48:R2:23:LYS:O | 48:R2:27:GLU:OE1 | 2.11 | 0.69 |
| 6:XF:100:ASN:ND2 | 18:XR:23:LYS:HE3 | 2.08 | 0.69 |
| 9:XI:113:LYS:HD2 | 9:XI:113:LYS:N | 2.07 | 0.69 |
| 33:YN:7:LYS:HD3 | 33:YN:9:VAL:HA | 1.75 | 0.69 |
| 34:YO:1:MET:HE3 | 34:YO:67:LYS:HE2 | 1.75 | 0.69 |
| 37:YR:29:LEU:HD23 | 37:YR:79:LEU:HD12 | 1.75 | 0.69 |
| 2:QB:101:MET:HA | 2:QB:108:ILE:CG1 | 2.15 | 0.69 |
| 6:QF:100:ASN:ND2 | 18:QR:23:LYS:HE3 | 2.08 | 0.69 |
| 10:QJ:54:PHE:CZ | 10:QJ:55:LYS:NZ | 2.61 | 0.69 |
| 27:RD:35:LYS:HB3 | 27:RD:63:ARG:HA | 1.75 | 0.69 |
| 27:RD:89:SER:HB2 | 27:RD:159:ALA:HB2 | 1.75 | 0.69 |
| 35:RP:61:ARG:HD2 | 35:RP:61:ARG:H | 1.58 | 0.69 |
| 42:RW:6:ILE:HG12 | 42:RW:104:THR:HG23 | 1.73 | 0.69 |
| 51:R5:40:LYS:HE2 | 51:R5:47:PRO:CD | 2.21 | 0.69 |
| 7:XG:155:ARG:HD3 | 7:XG:155:ARG:N | 2.07 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:XS:31:ILE:HG23 | 19:XS:49:ILE:HA | 1.75 | 0.69 |
| 20:XT:64:ASP:HA | 20:XT:67:ALA:HB3 | 1.74 | 0.69 |
| 25:YA:242:G:H5' | 54:Y8:3:LYS:HE3 | 1.73 | 0.69 |
| 25:YA:654:A:O2' | 25:YA:654(A):G:N7 | 2.26 | 0.69 |
| 27:YD:35:LYS:HB3 | 27:YD:63:ARG:HA | 1.75 | 0.69 |
| 28:YE:65:GLY:HA2 | 28:YE:70:ALA:CB | 2.23 | 0.69 |
| 40:YU:8:VAL:HG23 | 40:YU:11:ARG:NH2 | 1.99 | 0.69 |
| 40:YU:65:ILE:HD11 | 40:YU:93:LYS:HA | 1.74 | 0.69 |
| 43:YX:12:VAL:HG11 | 43:YX:27:THR:OG1 | 1.93 | 0.69 |
| 45:YZ:53:ILE:HG22 | 45:YZ:71:VAL:HG13 | 1.74 | 0.69 |
| 1:QA:243:A:H4' | 1:QA:244:U:H3' | 1.75 | 0.68 |
| 3:QC:195:VAL:HG12 | 3:QC:196:LEU:N | 2.08 | 0.68 |
| 7:QG:155:ARG:N | 7:QG:155:ARG:HD3 | 2.07 | 0.68 |
| 9:QI:46:ALA:HA | 9:QI:78:LYS:HB2 | 1.75 | 0.68 |
| 20:QT:64:ASP:HA | 20:QT:67:ALA:HB3 | 1.74 | 0.68 |
| 25:RA:270(T):G:OP1 | 47:R1:97:LEU:HD13 | 1.93 | 0.68 |
| 25:RA:2014:A:O2' | 51:R5:2:ALA:HB2 | 1.92 | 0.68 |
| 29:RF:185:ASP:HA | 29:RF:188:ARG:CD | 2.20 | 0.68 |
| 30:RG:16:ARG:HH21 | 30:RG:31:VAL:CG1 | 2.05 | 0.68 |
| 38:RS:52:SER:O | 38:RS:56:LEU:HD22 | 1.94 | 0.68 |
| 13:XM:57:ARG:NH2 | 50:Y4:34:GLU:HA | 2.07 | 0.68 |
| 25:YA:568:U:H5' | 25:YA:945:A:C2 | 2.27 | 0.68 |
| 30:YG:56:ALA:HB2 | 30:YG:153:ARG:HE | 1.57 | 0.68 |
| 38:YS:106:ARG:CA | 38:YS:110:LEU:HD11 | 2.19 | 0.68 |
| 52:Y6:41:PRO:CG | 52:Y6:45:LYS:H | 2.05 | 0.68 |
| 1:QA:1048:G:H1 | 1:QA:1209:C:H42 | 1.39 | 0.68 |
| 1:QA:1288:A:N3 | 1:QA:1352:C:O2' | 2.25 | 0.68 |
| 8:QH:112:LEU:HA | 8:QH:134:ILE:HG12 | 1.75 | 0.68 |
| 10:QJ:48:THR:HA | 10:QJ:62:HIS:HB3 | 1.74 | 0.68 |
| 13:QM:90:LEU:CA | 13:QM:93:ARG:HD2 | 2.23 | 0.68 |
| 13:QM:119:GLY:HA3 | 22:QV:29:G:OP1 | 1.93 | 0.68 |
| 27:RD:17:THR:HG22 | 27:RD:205:VAL:N | 2.08 | 0.68 |
| 30:RG:112:PRO:CB | 50:R4:37:SER:HB2 | 2.22 | 0.68 |
| 35:RP:62:LEU:HD23 | 54:R8:25:MET:HB2 | 1.74 | 0.68 |
| 44:RY:40:GLU:HA | 44:RY:64:GLU:OE1 | 1.94 | 0.68 |
| 52:R6:14:THR:HG21 | 52:R6:19:ARG:HH21 | 1.58 | 0.68 |
| 3:XC:107:GLN:CD | 3:XC:107:GLN:H | 1.97 | 0.68 |
| 4:XD:188:LEU:HD23 | 4:XD:189:PRO:HD2 | 1.74 | 0.68 |
| 5:XE:78:HIS:HE1 | 5:XE:143:ARG:H | 1.38 | 0.68 |
| 25:YA:2068:U:H3 | 25:YA:2430:A:H2 | 1.42 | 0.68 |
| 32:YI:5:LEU:HD12 | 32:YI:5:LEU:N | 2.08 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 44:YY:2:ARG:HH11 | 44:YY:2:ARG:HG2 | 1.57 | 0.68 |
| 1:QA:475:G:H2' | 1:QA:476:G:H8 | 1.58 | 0.68 |
| 1:QA:1349:A:OP2 | 9:QI:118:LYS:NZ | 2.23 | 0.68 |
| 2:QB:162:ILE:HD11 | 2:QB:184:VAL:HG13 | 1.74 | 0.68 |
| 25:RA:526:A:OP1 | 25:RA:527:C:OP1 | 2.11 | 0.68 |
| 25:RA:630:G:N2 | 25:RA:633:A:OP2 | 2.26 | 0.68 |
| 35:RP:26:GLY:O | 35:RP:28:GLY:N | 2.26 | 0.68 |
| 47:R1:53:VAL:HG22 | 47:R1:74:VAL:HG13 | 1.74 | 0.68 |
| 1:XA:1014:A:H4' | 19:XS:14:HIS:HE2 | 1.58 | 0.68 |
| 4:XD:96:LEU:HD22 | 4:XD:96:LEU:N | 2.08 | 0.68 |
| 10:XJ:75:ILE:HG13 | 10:XJ:76:ASN:N | 2.05 | 0.68 |
| 13:XM:117:VAL:HG22 | 13:XM:118:ALA:H | 1.59 | 0.68 |
| 25:YA:852:G:H1 | 25:YA:925:C:H42 | 1.42 | 0.68 |
| 25:YA:1803:A:H4' | 27:YD:259:THR:CG2 | 2.23 | 0.68 |
| 30:YG:112:PRO:CB | 50:Y4:37:SER:HB2 | 2.22 | 0.68 |
| 44:YY:48:ALA:O | 44:YY:49:VAL:C | 2.30 | 0.68 |
| 44:YY:61:ILE:CG2 | 44:YY:62:GLU:N | 2.56 | 0.68 |
| 1:QA:765:G:H1 | 1:QA:812:C:H2' | 1.57 | 0.68 |
| 2:QB:165:VAL:HG23 | 2:QB:166:ASP:H | 1.57 | 0.68 |
| 3:QC:107:GLN:CD | 3:QC:107:GLN:H | 1.97 | 0.68 |
| 3:QC:150:LYS:HB3 | 3:QC:201:TYR:HB2 | 1.75 | 0.68 |
| 25:RA:774:A:H2 | 25:RA:787:U:HO2' | 1.40 | 0.68 |
| 25:RA:2208:U:H1' | 27:RD:151:LYS:HE2 | 1.75 | 0.68 |
| 34:RO:8:LEU:HD22 | 34:RO:8:LEU:N | 2.08 | 0.68 |
| 40:RU:65:ILE:HD11 | 40:RU:93:LYS:HA | 1.74 | 0.68 |
| 52:R6:7:ILE:HG13 | 52:R6:8:LYS:N | 2.06 | 0.68 |
| 52:R6:41:PRO:CG | 52:R6:45:LYS:H | 2.05 | 0.68 |
| 1:XA:673:G:H2' | 1:XA:674:G:C8 | 2.29 | 0.68 |
| 4:XD:30:LYS:HA | 4:XD:34:GLU:HB2 | 1.75 | 0.68 |
| 10:XJ:96:ILE:N | 10:XJ:96:ILE:HD13 | 2.09 | 0.68 |
| 25:YA:2233:U:H2' | 25:YA:2234:G:C8 | 2.28 | 0.68 |
| 25:YA:2361:A:O5' | 54:Y8:27:THR:OG1 | 2.11 | 0.68 |
| 32:YI:92:VAL:CG1 | 32:YI:120:ILE:HG23 | 2.18 | 0.68 |
| 33:YN:46:VAL:O | 33:YN:47:ALA:HB3 | 1.92 | 0.68 |
| 39:YT:109:GLU:O | 39:YT:113:LYS:HB2 | 1.94 | 0.68 |
| 4:QD:198:VAL:HG12 | 4:QD:199:ASN:N | 2.09 | 0.68 |
| 5:QE:53:LEU:HD12 | 5:QE:53:LEU:N | 2.09 | 0.68 |
| 16:QP:3:LYS:C | 16:QP:4:ILE:HD12 | 2.14 | 0.68 |
| 20:QT:47:GLY:O | 20:QT:49:ALA:N | 2.19 | 0.68 |
| 31:RH:126:PRO:HG2 | 31:RH:127:GLU:H | 1.59 | 0.68 |
| 39:RT:109:GLU:O | 39:RT:113:LYS:HB2 | 1.94 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 41:RV:18:LEU:O | 41:RV:95:LEU:HA | 1.93 | 0.68 |
| 47:R1:83:GLU:HG2 | 47:R1:84:GLY:N | 2.09 | 0.68 |
| 50:R4:15:ILE:N | 50:R4:15:ILE:HD13 | 2.09 | 0.68 |
| 8:XH:6:ILE:H | 8:XH:6:ILE:CD1 | 2.07 | 0.68 |
| 9:XI:48:GLU:N | 9:XI:49:PRO:HD2 | 2.09 | 0.68 |
| 25:YA:780:G:H21 | 25:YA:783:A:H62 | 1.42 | 0.68 |
| 25:YA:1279:G:H4' | 37:YR:31:HIS:HD2 | 1.58 | 0.68 |
| 25:YA:1509:C:H3' | 25:YA:1510:A:H5'' | 1.75 | 0.68 |
| 31:YH:126:PRO:HG2 | 31:YH:127:GLU:H | 1.58 | 0.68 |
| 38:YS:57:LYS:HD3 | 38:YS:57:LYS:H | 1.59 | 0.68 |
| 44:YY:29:GLU:HB3 | 44:YY:38:ILE:HG12 | 1.74 | 0.68 |
| 1:QA:1123:A:H4' | 10:QJ:36:GLY:HA3 | 1.76 | 0.68 |
| 4:QD:96:LEU:HD22 | 4:QD:96:LEU:N | 2.07 | 0.68 |
| 20:QT:89:ARG:NH2 | 20:QT:104:LEU:HD21 | 2.09 | 0.68 |
| 20:QT:97:ALA:O | 20:QT:99:LEU:N | 2.27 | 0.68 |
| 25:RA:581:C:N4 | 25:RA:582:G:O6 | 2.27 | 0.68 |
| 25:RA:1203:G:O2' | 25:RA:1242:A:N6 | 2.26 | 0.68 |
| 27:RD:17:THR:CG2 | 27:RD:204:ILE:HA | 2.23 | 0.68 |
| 31:RH:126:PRO:HB2 | 31:RH:130:ARG:O | 1.93 | 0.68 |
| 35:RP:15:ARG:O | 35:RP:16:ARG:C | 2.32 | 0.68 |
| 51:R5:20:ARG:HA | 51:R5:23:HIS:ND1 | 2.09 | 0.68 |
| 17:XQ:41:LYS:HZ1 | 17:XQ:92:ARG:HH22 | 1.41 | 0.68 |
| 17:XQ:59:ILE:HD13 | 17:XQ:59:ILE:N | 2.08 | 0.68 |
| 41:YV:18:LEU:O | 41:YV:95:LEU:HA | 1.94 | 0.68 |
| 42:YW:29:LEU:HD21 | 42:YW:33:ARG:NE | 2.09 | 0.68 |
| 1:QA:1053:G:H5' | 1:QA:1054:C:H5' | 1.74 | 0.68 |
| 9:QI:28:VAL:HG13 | 9:QI:63:ILE:CG2 | 2.24 | 0.68 |
| 25:RA:372:G:H5'' | 47:R1:66:HIS:CD2 | 2.28 | 0.68 |
| 33:RN:134:ARG:N | 33:RN:135:PRO:HD3 | 1.97 | 0.68 |
| 34:RO:25:LEU:HB2 | 34:RO:38:VAL:HG13 | 1.74 | 0.68 |
| 36:RQ:12:GLN:CG | 36:RQ:73:PRO:HD2 | 2.21 | 0.68 |
| 37:RR:29:LEU:HD23 | 37:RR:79:LEU:HD12 | 1.75 | 0.68 |
| 39:RT:108:ARG:HA | 39:RT:111:ARG:CZ | 2.24 | 0.68 |
| 43:RX:12:VAL:HG11 | 43:RX:27:THR:OG1 | 1.93 | 0.68 |
| 47:R1:64:ALA:HA | 47:R1:67:ILE:HG13 | 1.75 | 0.68 |
| 1:XA:880:C:OP1 | 12:XL:8:ASN:ND2 | 2.25 | 0.68 |
| 2:XB:126:GLU:HG2 | 2:XB:126:GLU:O | 1.92 | 0.68 |
| 6:XF:3:ARG:HB3 | 6:XF:93:SER:HB2 | 1.75 | 0.68 |
| 10:XJ:6:ILE:HG22 | 10:XJ:98:ILE:CG1 | 2.16 | 0.68 |
| 11:XK:124:LYS:HB3 | 11:XK:125:PHE:HD1 | 1.58 | 0.68 |
| 13:XM:68:GLY:CA | 30:YG:116:ASP:OD2 | 2.41 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 16:XP:3:LYS:C | 16:XP:4:ILE:HD12 | 2.14 | 0.68 |
| 28:YE:9:VAL:HB | 28:YE:25:VAL:HG23 | 1.76 | 0.68 |
| 28:YE:16:ARG:O | 28:YE:16:ARG:HG3 | 1.93 | 0.68 |
| 31:YH:4:ILE:HG13 | 31:YH:6:ARG:NE | 2.08 | 0.68 |
| 32:YI:13:GLY:HA3 | 32:YI:17:GLN:OE1 | 1.93 | 0.68 |
| 38:YS:100:ALA:HA | 38:YS:103:GLU:HG2 | 1.75 | 0.68 |
| 39:YT:50:ILE:HG22 | 39:YT:62:THR:OG1 | 1.94 | 0.68 |
| 47:Y1:4:VAL:HG23 | 47:Y1:10:LYS:O | 1.93 | 0.68 |
| 48:Y2:23:LYS:O | 48:Y2:27:GLU:OE1 | 2.11 | 0.68 |
| 2:QB:215:LEU:O | 2:QB:219:VAL:HG23 | 1.94 | 0.68 |
| 14:QN:6:LEU:O | 14:QN:6:LEU:HD23 | 1.93 | 0.68 |
| 17:QQ:59:ILE:HD13 | 17:QQ:59:ILE:N | 2.09 | 0.68 |
| 17:QQ:74:LEU:HD12 | 17:QQ:75:ARG:HG2 | 1.76 | 0.68 |
| 25:RA:2199:A:H3' | 25:RA:2205:C:H6 | 1.59 | 0.68 |
| 38:RS:100:ALA:HA | 38:RS:103:GLU:HG2 | 1.75 | 0.68 |
| 39:RT:50:ILE:HG22 | 39:RT:62:THR:OG1 | 1.94 | 0.68 |
| 1:XA:291:C:H42 | 1:XA:309:G:H1 | 1.42 | 0.68 |
| 4:XD:198:VAL:HG12 | 4:XD:199:ASN:N | 2.09 | 0.68 |
| 8:XH:6:ILE:HD12 | 8:XH:6:ILE:N | 2.08 | 0.68 |
| 8:XH:112:LEU:HA | 8:XH:134:ILE:HG12 | 1.75 | 0.68 |
| 13:XM:78:ILE:HG23 | 13:XM:92:HIS:ND1 | 2.09 | 0.68 |
| 21:XU:6:ARG:HE | 21:XU:15:ARG:NE | 1.91 | 0.68 |
| 32:YI:8:PRO:HG3 | 32:YI:14:ASP:HB2 | 1.76 | 0.68 |
| 35:YP:15:ARG:O | 35:YP:16:ARG:C | 2.32 | 0.68 |
| 36:YQ:79:LEU:CD1 | 36:YQ:80:GLU:OE1 | 2.38 | 0.68 |
| 45:YZ:18:LEU:H | 45:YZ:18:LEU:CD1 | 2.06 | 0.68 |
| 45:YZ:129:SER:HB3 | 45:YZ:132:ASN:OD1 | 1.92 | 0.68 |
| 47:Y1:74:VAL:HG12 | 47:Y1:74:VAL:O | 1.93 | 0.68 |
| 25:RA:558:G:P | 33:RN:111:PRO:HD2 | 2.34 | 0.68 |
| 25:RA:587:C:OP2 | 35:RP:21:ARG:NH2 | 2.27 | 0.68 |
| 25:RA:1265:A:H1' | 25:RA:1267:U:C6 | 2.28 | 0.68 |
| 25:RA:2134:A:OP2 | 25:RA:2157:G:N2 | 2.26 | 0.68 |
| 25:RA:2746:U:H5'' | 31:RH:138:LYS:HE2 | 1.76 | 0.68 |
| 33:RN:56:ASN:HD22 | 33:RN:125:GLY:C | 1.96 | 0.68 |
| 36:RQ:104:PHE:HE1 | 36:RQ:125:LEU:HD11 | 1.59 | 0.68 |
| 45:RZ:18:LEU:H | 45:RZ:18:LEU:CD1 | 2.06 | 0.68 |
| 1:XA:954:G:H4' | 13:XM:121:LYS:HG3 | 1.75 | 0.68 |
| 1:XA:1128:C:H42 | 1:XA:1144:G:H1 | 1.40 | 0.68 |
| 3:XC:147:LYS:O | 3:XC:203:PHE:HB3 | 1.92 | 0.68 |
| 7:XG:79:ARG:NH2 | 7:XG:82:GLY:HA2 | 2.09 | 0.68 |
| 7:XG:138:LYS:HE2 | 7:XG:142:GLU:OE2 | 1.94 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:YA:1364:G:N2 | 25:YA:1367:A:OP2 | 2.17 | 0.68 |
| 25:YA:2680:C:H5' | 28:YE:189:PRO:HA | 1.75 | 0.68 |
| 25:YA:2832:U:H4' | 25:YA:2833:G:H5'' | 1.76 | 0.68 |
| 30:YG:171:ALA:O | 30:YG:175:LEU:HG | 1.93 | 0.68 |
| 31:YH:4:ILE:HG13 | 31:YH:6:ARG:NH1 | 2.09 | 0.68 |
| 31:YH:126:PRO:CD | 31:YH:127:GLU:H | 2.07 | 0.68 |
| 32:YI:74:ASN:CG | 32:YI:75:LEU:H | 1.97 | 0.68 |
| 35:YP:39:LYS:CA | 35:YP:45:LEU:HD11 | 2.23 | 0.68 |
| 36:YQ:66:ILE:HG13 | 36:YQ:67:ARG:H | 1.58 | 0.68 |
| 51:Y5:20:ARG:HA | 51:Y5:23:HIS:ND1 | 2.09 | 0.68 |
| 1:QA:1074:G:H4' | 2:QB:104:ASN:HB2 | 1.75 | 0.68 |
| 2:QB:7:VAL:HG22 | 2:QB:8:LYS:HD3 | 1.76 | 0.68 |
| 16:QP:66:PRO:HG2 | 16:QP:71:ARG:NH1 | 2.09 | 0.68 |
| 25:RA:1187:G:H5'' | 41:RV:81:TYR:CE2 | 2.29 | 0.68 |
| 28:RE:13:ARG:HH11 | 28:RE:13:ARG:CB | 2.07 | 0.68 |
| 29:RF:67:GLN:O | 29:RF:67:GLN:CG | 2.32 | 0.68 |
| 31:RH:88:LEU:H | 31:RH:88:LEU:HD22 | 1.58 | 0.68 |
| 32:RI:115:ALA:HB3 | 32:RI:128:LEU:CD1 | 2.23 | 0.68 |
| 36:RQ:90:VAL:CG1 | 36:RQ:91:GLU:N | 2.57 | 0.68 |
| 1:XA:1192:C:O2 | 5:XE:25:ARG:NH2 | 2.27 | 0.68 |
| 13:XM:90:LEU:CA | 13:XM:93:ARG:HD2 | 2.23 | 0.68 |
| 25:YA:2392:A:C8 | 35:YP:60:MET:HG3 | 2.27 | 0.68 |
| 27:YD:35:LYS:HZ1 | 27:YD:104:TYR:HB2 | 1.57 | 0.68 |
| 31:YH:126:PRO:HB2 | 31:YH:130:ARG:O | 1.94 | 0.68 |
| 32:YI:21:VAL:HG22 | 32:YI:22:LYS:H | 1.57 | 0.68 |
| 32:YI:99:GLU:CG | 32:YI:103:ARG:HH21 | 2.07 | 0.68 |
| 36:YQ:133:ARG:O | 36:YQ:134:ARG:HB2 | 1.94 | 0.68 |
| 44:YY:40:GLU:HA | 44:YY:64:GLU:OE1 | 1.94 | 0.68 |
| 45:YZ:125:LEU:O | 45:YZ:164:ALA:HB3 | 1.94 | 0.68 |
| 48:Y2:64:LEU:HD22 | 48:Y2:68:ARG:HD2 | 1.76 | 0.68 |
| 50:Y4:15:ILE:N | 50:Y4:15:ILE:HD13 | 2.09 | 0.68 |
| 1:QA:745:C:OP1 | 1:QA:851:G:O2' | 2.13 | 0.67 |
| 7:QG:8:GLU:CD | 7:QG:8:GLU:H | 1.96 | 0.67 |
| 9:QI:48:GLU:N | 9:QI:49:PRO:HD2 | 2.10 | 0.67 |
| 11:QK:124:LYS:HB3 | 11:QK:125:PHE:HD1 | 1.58 | 0.67 |
| 12:QL:11:VAL:HG13 | 17:QQ:29:HIS:CD2 | 2.28 | 0.67 |
| 25:RA:1337:G:H2' | 25:RA:1338:G:H8 | 1.58 | 0.67 |
| 44:RY:49:VAL:O | 44:RY:51:VAL:N | 2.27 | 0.67 |
| 45:RZ:125:LEU:O | 45:RZ:164:ALA:HB3 | 1.94 | 0.67 |
| 47:R1:20:ARG:HH11 | 47:R1:20:ARG:HG2 | 1.58 | 0.67 |
| 1:XA:1175:G:H2' | 1:XA:1176:A:C8 | 2.30 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:XD:29:PRO:O | 4:XD:30:LYS:HD3 | 1.94 | 0.67 |
| 7:XG:50:ILE:HB | 7:XG:58:PRO:HB3 | 1.75 | 0.67 |
| 8:XH:20:TYR:HE2 | 8:XH:75:ARG:HD2 | 1.60 | 0.67 |
| 25:YA:2037:G:H2' | 25:YA:2038:G:C8 | 2.28 | 0.67 |
| 32:YI:127:VAL:HA | 32:YI:139:GLN:HA | 1.76 | 0.67 |
| 36:YQ:90:VAL:CG1 | 36:YQ:91:GLU:N | 2.57 | 0.67 |
| 4:QD:29:PRO:O | 4:QD:30:LYS:HD3 | 1.94 | 0.67 |
| 4:QD:173:TRP:CD2 | 4:QD:189:PRO:HB3 | 2.29 | 0.67 |
| 8:QH:100:ILE:HB | 8:QH:125:ARG:NH1 | 2.09 | 0.67 |
| 10:QJ:96:ILE:HD13 | 10:QJ:96:ILE:N | 2.09 | 0.67 |
| 13:QM:23:TYR:CB | 13:QM:67:GLU:HG2 | 2.25 | 0.67 |
| 25:RA:1286:A:O2' | 25:RA:1288:U:OP2 | 2.10 | 0.67 |
| 28:RE:116:VAL:O | 28:RE:117:MET:HB3 | 1.94 | 0.67 |
| 29:RF:184:TYR:O | 29:RF:188:ARG:HG3 | 1.94 | 0.67 |
| 25:YA:27:G:N2 | 25:YA:513:A:OP2 | 2.27 | 0.67 |
| 31:YH:77:LYS:HG2 | 31:YH:77:LYS:O | 1.94 | 0.67 |
| 34:YO:14:THR:O | 34:YO:51:ALA:HB3 | 1.95 | 0.67 |
| 36:YQ:104:PHE:CE1 | 36:YQ:125:LEU:HD11 | 2.29 | 0.67 |
| 38:YS:35:ILE:HD13 | 38:YS:101:LEU:HD23 | 1.76 | 0.67 |
| 39:YT:50:ILE:CD1 | 39:YT:102:ILE:HD11 | 2.25 | 0.67 |
| 44:YY:21:LYS:HG3 | 44:YY:22:GLY:N | 2.09 | 0.67 |
| 47:Y1:20:ARG:HH11 | 47:Y1:20:ARG:HG2 | 1.58 | 0.67 |
| 1:QA:411:A:C5 | 1:QA:413:G:H1' | 2.29 | 0.67 |
| 2:QB:24:TRP:H | 2:QB:24:TRP:HD1 | 1.43 | 0.67 |
| 6:QF:67:MET:HB2 | 6:QF:68:PRO:HD2 | 1.75 | 0.67 |
| 7:QG:79:ARG:NH2 | 7:QG:82:GLY:HA2 | 2.09 | 0.67 |
| 27:RD:135:PHE:CD2 | 27:RD:135:PHE:N | 2.62 | 0.67 |
| 31:RH:89:ILE:HG12 | 31:RH:89:ILE:O | 1.92 | 0.67 |
| 36:RQ:80:GLU:OE2 | 36:RQ:80:GLU:HA | 1.94 | 0.67 |
| 36:RQ:133:ARG:O | 36:RQ:134:ARG:HB2 | 1.94 | 0.67 |
| 38:RS:57:LYS:HD3 | 38:RS:57:LYS:H | 1.59 | 0.67 |
| 52:R6:48:VAL:HG13 | 52:R6:49:HIS:H | 1.60 | 0.67 |
| 3:XC:195:VAL:HG12 | 3:XC:196:LEU:N | 2.07 | 0.67 |
| 4:XD:120:LEU:HD22 | 4:XD:125:HIS:HB2 | 1.74 | 0.67 |
| 7:XG:120:ILE:O | 7:XG:124:LEU:HB2 | 1.95 | 0.67 |
| 27:YD:44:ASN:N | 27:YD:44:ASN:ND2 | 2.41 | 0.67 |
| 33:YN:96:GLU:CG | 33:YN:97:ARG:H | 2.00 | 0.67 |
| 35:YP:65:ARG:HH11 | 35:YP:65:ARG:CG | 2.06 | 0.67 |
| 36:YQ:33:GLY:HA2 | 36:YQ:105:GLU:HA | 1.76 | 0.67 |
| 8:QH:14:ARG:O | 8:QH:18:ARG:HD3 | 1.94 | 0.67 |
| 9:QI:112:LYS:HA | 9:QI:119:ALA:HB2 | 1.77 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:RA:95:G:O2' | 48:R2:48:HIS:ND1 | 2.26 | 0.67 |
| 25:RA:323:G:H2' | 29:RF:169:ASN:OD1 | 1.93 | 0.67 |
| 34:RO:13:ASN:ND2 | 34:RO:96:THR:O | 2.27 | 0.67 |
| 36:RQ:20:ALA:HB1 | 36:RQ:99:PRO:HD2 | 1.77 | 0.67 |
| 38:RS:35:ILE:HD13 | 38:RS:101:LEU:HD23 | 1.76 | 0.67 |
| 40:RU:92:ARG:O | 40:RU:94:ASN:N | 2.25 | 0.67 |
| 1:XA:1014:A:H4' | 19:XS:14:HIS:NE2 | 2.10 | 0.67 |
| 2:XB:71:VAL:CG2 | 2:XB:164:VAL:HG22 | 2.24 | 0.67 |
| 11:XK:95:ILE:HD12 | 11:XK:108:ILE:HD13 | 1.76 | 0.67 |
| 25:YA:2576:G:O2' | 25:YA:2579:C:OP2 | 2.10 | 0.67 |
| 35:YP:26:GLY:O | 35:YP:28:GLY:N | 2.26 | 0.67 |
| 36:YQ:90:VAL:O | 36:YQ:92:GLY:N | 2.25 | 0.67 |
| 41:YV:25:LEU:H | 41:YV:92:THR:HG21 | 1.60 | 0.67 |
| 44:YY:14:LEU:HD23 | 44:YY:15:VAL:N | 2.09 | 0.67 |
| 6:QF:96:PRO:HB3 | 18:QR:30:ASP:OD2 | 1.95 | 0.67 |
| 7:QG:28:ASN:O | 7:QG:31:MET:HB3 | 1.95 | 0.67 |
| 7:QG:50:ILE:HB | 7:QG:58:PRO:HB3 | 1.75 | 0.67 |
| 7:QG:120:ILE:O | 7:QG:124:LEU:HB2 | 1.95 | 0.67 |
| 7:QG:141:VAL:O | 7:QG:141:VAL:HG12 | 1.95 | 0.67 |
| 10:QJ:6:ILE:HG22 | 10:QJ:98:ILE:CG1 | 2.16 | 0.67 |
| 11:QK:95:ILE:HD12 | 11:QK:108:ILE:HD13 | 1.77 | 0.67 |
| 28:RE:10:GLY:H | 28:RE:25:VAL:HG23 | 1.59 | 0.67 |
| 36:RQ:104:PHE:CE1 | 36:RQ:125:LEU:HD11 | 2.30 | 0.67 |
| 42:RW:29:LEU:HD21 | 42:RW:33:ARG:NE | 2.09 | 0.67 |
| 52:R6:43:CYS:SG | 52:R6:44:ARG:HD3 | 2.35 | 0.67 |
| 3:XC:150:LYS:HB3 | 3:XC:201:TYR:HB2 | 1.75 | 0.67 |
| 4:XD:173:TRP:CD2 | 4:XD:189:PRO:HB3 | 2.29 | 0.67 |
| 8:XH:14:ARG:O | 8:XH:18:ARG:HD3 | 1.94 | 0.67 |
| 9:XI:28:VAL:HG13 | 9:XI:63:ILE:CG2 | 2.24 | 0.67 |
| 16:XP:66:PRO:HG2 | 16:XP:71:ARG:NH1 | 2.09 | 0.67 |
| 20:XT:83:ARG:HA | 20:XT:86:ARG:HD3 | 1.77 | 0.67 |
| 25:YA:1434:A:H61 | 25:YA:1558:A:N6 | 1.93 | 0.67 |
| 28:YE:116:VAL:O | 28:YE:117:MET:HB3 | 1.94 | 0.67 |
| 32:YI:13:GLY:HA3 | 32:YI:17:GLN:CD | 2.15 | 0.67 |
| 36:YQ:12:GLN:CG | 36:YQ:73:PRO:HD2 | 2.21 | 0.67 |
| 44:YY:49:VAL:O | 44:YY:51:VAL:N | 2.27 | 0.67 |
| 50:Y4:33:VAL:HG12 | 50:Y4:34:GLU:N | 2.10 | 0.67 |
| 8:QH:20:TYR:HE2 | 8:QH:75:ARG:HD2 | 1.59 | 0.67 |
| 25:RA:565:C:OP1 | 41:RV:82:ARG:NH2 | 2.27 | 0.67 |
| 25:RA:1007:C:OP1 | 33:RN:35:ARG:NH1 | 2.27 | 0.67 |
| 25:RA:2690:C:N4 | 25:RA:2713:A:O2' | 2.28 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 28:RE:14:ILE:HG12 | 28:RE:15:PHE:N | 2.06 | 0.67 |
| 50:R4:33:VAL:HG12 | 50:R4:34:GLU:N | 2.10 | 0.67 |
| 9:XI:33:PHE:CZ | 9:XI:47:LEU:HD21 | 2.30 | 0.67 |
| 9:XI:46:ALA:HA | 9:XI:78:LYS:HB2 | 1.75 | 0.67 |
| 25:YA:443:A:N7 | 29:YF:45:ARG:HD2 | 2.10 | 0.67 |
| 25:YA:1309:G:H4' | 53:Y7:7:PRO:HB2 | 1.75 | 0.67 |
| 28:YE:13:ARG:HH11 | 28:YE:13:ARG:CB | 2.07 | 0.67 |
| 38:YS:52:SER:O | 38:YS:56:LEU:HD22 | 1.93 | 0.67 |
| 38:YS:67:ARG:HB2 | 38:YS:67:ARG:CZ | 2.24 | 0.67 |
| 39:YT:108:ARG:HA | 39:YT:111:ARG:CZ | 2.23 | 0.67 |
| 47:Y1:51:VAL:HG11 | 47:Y1:74:VAL:HG21 | 1.76 | 0.67 |
| 5:QE:78:HIS:CD2 | 8:QH:104:ARG:CG | 2.76 | 0.67 |
| 13:QM:78:ILE:HG23 | 13:QM:92:HIS:ND1 | 2.09 | 0.67 |
| 31:RH:4:ILE:HG13 | 31:RH:6:ARG:NH1 | 2.09 | 0.67 |
| 32:RI:5:LEU:HD12 | 32:RI:5:LEU:N | 2.08 | 0.67 |
| 36:RQ:32:TYR:HD1 | 36:RQ:133:ARG:HA | 1.60 | 0.67 |
| 37:RR:26:LYS:HE2 | 37:RR:70:LEU:O | 1.95 | 0.67 |
| 41:RV:25:LEU:H | 41:RV:92:THR:HG21 | 1.60 | 0.67 |
| 44:RY:61:ILE:CG2 | 44:RY:62:GLU:N | 2.56 | 0.67 |
| 48:R2:47:ASN:H | 48:R2:47:ASN:ND2 | 1.92 | 0.67 |
| 52:R6:7:ILE:C | 52:R6:9:LEU:H | 1.98 | 0.67 |
| 1:XA:148:G:H1 | 1:XA:174:C:H42 | 1.43 | 0.67 |
| 16:XP:21:VAL:HG11 | 16:XP:59:TRP:CD1 | 2.30 | 0.67 |
| 25:YA:141:A:H8 | 25:YA:1595:G:H21 | 1.41 | 0.67 |
| 28:YE:26:ILE:HD13 | 28:YE:27:LEU:N | 2.10 | 0.67 |
| 29:YF:184:TYR:O | 29:YF:188:ARG:HG3 | 1.94 | 0.67 |
| 31:YH:88:LEU:H | 31:YH:88:LEU:HD22 | 1.58 | 0.67 |
| 36:YQ:81:VAL:C | 36:YQ:82:ARG:HG2 | 2.15 | 0.67 |
| 36:YQ:104:PHE:HE1 | 36:YQ:125:LEU:HD11 | 1.58 | 0.67 |
| 45:YZ:27:VAL:HG22 | 45:YZ:28:MET:N | 2.10 | 0.67 |
| 51:Y5:4:HIS:HB3 | 51:Y5:5:PRO:HD3 | 1.75 | 0.67 |
| 52:Y6:48:VAL:HG13 | 52:Y6:49:HIS:H | 1.60 | 0.67 |
| 1:QA:1002:G:H2' | 1:QA:1003:G:H8 | 1.60 | 0.67 |
| 25:RA:27:G:HO2' | 25:RA:28:A:H8 | 1.43 | 0.67 |
| 25:RA:2655:G:N2 | 25:RA:2665:A:OP2 | 2.28 | 0.67 |
| 31:RH:126:PRO:CD | 31:RH:127:GLU:H | 2.07 | 0.67 |
| 35:RP:90:ARG:NE | 35:RP:91:PHE:HD1 | 1.93 | 0.67 |
| 36:RQ:66:ILE:HG13 | 36:RQ:67:ARG:H | 1.57 | 0.67 |
| 36:RQ:81:VAL:C | 36:RQ:82:ARG:HG2 | 2.14 | 0.67 |
| 2:XB:164:VAL:HB | 2:XB:186:ALA:CB | 2.25 | 0.67 |
| 7:XG:28:ASN:O | 7:XG:31:MET:HB3 | 1.95 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 10:XJ:6:ILE:HD11 | 10:XJ:72:VAL:CB | 2.24 | 0.67 |
| 10:XJ:54:PHE:CZ | 10:XJ:55:LYS:NZ | 2.61 | 0.67 |
| 25:YA:1030:G:OP2 | 36:YQ:128:LYS:HE2 | 1.94 | 0.67 |
| 25:YA:1190:G:H5' | 35:YP:32:THR:HA | 1.77 | 0.67 |
| 28:YE:62:PRO:O | 28:YE:64:LYS:N | 2.28 | 0.67 |
| 29:YF:34:TRP:HA | 35:YP:6:LEU:HD12 | 1.77 | 0.67 |
| 34:YO:13:ASN:ND2 | 34:YO:96:THR:O | 2.27 | 0.67 |
| 47:Y1:86:SER:N | 47:Y1:87:PRO:HD2 | 2.10 | 0.67 |
| 50:Y4:16:CYS:SG | 50:Y4:33:VAL:HB | 2.35 | 0.67 |
| 2:QB:164:VAL:HB | 2:QB:186:ALA:CB | 2.25 | 0.67 |
| 7:QG:138:LYS:HE2 | 7:QG:142:GLU:OE2 | 1.94 | 0.67 |
| 9:QI:33:PHE:CZ | 9:QI:47:LEU:HD21 | 2.30 | 0.67 |
| 18:QR:70:ILE:O | 18:QR:74:ARG:HG3 | 1.95 | 0.67 |
| 19:QS:31:ILE:HG23 | 19:QS:49:ILE:HA | 1.75 | 0.67 |
| 31:RH:124:GLU:HB3 | 31:RH:132:ARG:HD2 | 1.77 | 0.67 |
| 36:RQ:90:VAL:O | 36:RQ:92:GLY:N | 2.25 | 0.67 |
| 44:RY:21:LYS:HG3 | 44:RY:22:GLY:N | 2.09 | 0.67 |
| 1:XA:320:C:HO2' | 1:XA:1435:G:HO2' | 1.43 | 0.67 |
| 2:XB:165:VAL:HG23 | 2:XB:166:ASP:H | 1.58 | 0.67 |
| 25:YA:102:G:O2' | 25:YA:103:A:OP2 | 2.13 | 0.67 |
| 25:YA:353:G:H2' | 25:YA:354:G:H8 | 1.60 | 0.67 |
| 27:YD:241:PRO:O | 27:YD:243:GLY:N | 2.28 | 0.67 |
| 34:YO:25:LEU:HB2 | 34:YO:38:VAL:HG13 | 1.74 | 0.67 |
| 40:YU:90:VAL:O | 40:YU:92:ARG:N | 2.26 | 0.67 |
| 41:YV:44:LYS:O | 41:YV:46:VAL:N | 2.28 | 0.67 |
| 49:Y3:29:ARG:HB2 | 49:Y3:29:ARG:NH1 | 2.10 | 0.67 |
| 2:QB:71:VAL:CG2 | 2:QB:164:VAL:HG22 | 2.25 | 0.67 |
| 8:QH:6:ILE:H | 8:QH:6:ILE:CD1 | 2.06 | 0.67 |
| 13:QM:3:ARG:HD2 | 13:QM:9:ILE:HG12 | 1.77 | 0.67 |
| 20:QT:83:ARG:HA | 20:QT:86:ARG:HD3 | 1.76 | 0.67 |
| 28:RE:16:ARG:O | 28:RE:16:ARG:HG3 | 1.93 | 0.67 |
| 38:RS:107:GLU:H | 38:RS:110:LEU:HD11 | 1.60 | 0.67 |
| 1:XA:1450:U:O2' | 1:XA:1451:A:N7 | 2.27 | 0.67 |
| 10:XJ:34:VAL:HG22 | 10:XJ:74:ILE:HG22 | 1.77 | 0.67 |
| 17:XQ:56:VAL:HB | 17:XQ:78:GLU:HB3 | 1.76 | 0.67 |
| 25:YA:2051:A:C2 | 25:YA:2052:G:O6 | 2.48 | 0.67 |
| 29:YF:46:ARG:HH11 | 29:YF:46:ARG:CG | 2.04 | 0.67 |
| 29:YF:103:LYS:HA | 29:YF:106:ARG:CG | 2.21 | 0.67 |
| 30:YG:179:PRO:HG3 | 50:Y4:38:LYS:HZ2 | 1.59 | 0.67 |
| 36:YQ:80:GLU:OE2 | 36:YQ:80:GLU:HA | 1.94 | 0.67 |
| 42:YW:18:ARG:HG3 | 42:YW:76:VAL:HG13 | 1.77 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 44:YY:89:PHE:C | 44:YY:90:LEU:HD13 | 2.15 | 0.67 |
| 1:QA:160:A:H61 | 1:QA:347:G:H1' | 1.60 | 0.66 |
| 1:QA:377:G:OP1 | 16:QP:5:ARG:NH1 | 2.23 | 0.66 |
| 13:QM:117:VAL:HG22 | 13:QM:118:ALA:H | 1.59 | 0.66 |
| 20:QT:36:LEU:HD12 | 20:QT:55:ILE:HG23 | 1.76 | 0.66 |
| 25:RA:2197:U:H1' | 25:RA:2198:A:C8 | 2.29 | 0.66 |
| 27:RD:35:LYS:CG | 27:RD:64:ILE:N | 2.56 | 0.66 |
| 31:RH:77:LYS:HG2 | 31:RH:77:LYS:O | 1.94 | 0.66 |
| 32:RI:127:VAL:HA | 32:RI:139:GLN:HA | 1.76 | 0.66 |
| 34:RO:14:THR:O | 34:RO:51:ALA:HB3 | 1.94 | 0.66 |
| 38:RS:67:ARG:HB2 | 38:RS:67:ARG:CZ | 2.24 | 0.66 |
| 47:R1:80:LEU:HD23 | 47:R1:80:LEU:N | 2.10 | 0.66 |
| 2:XB:215:LEU:O | 2:XB:219:VAL:HG23 | 1.94 | 0.66 |
| 3:XC:73:PRO:O | 3:XC:76:VAL:HG22 | 1.95 | 0.66 |
| 25:YA:1026:U:H4' | 25:YA:1027:A:OP1 | 1.95 | 0.66 |
| 27:YD:35:LYS:CA | 27:YD:64:ILE:HG22 | 2.25 | 0.66 |
| 35:YP:61:ARG:H | 35:YP:61:ARG:CD | 2.09 | 0.66 |
| 36:YQ:88:GLY:C | 36:YQ:90:VAL:N | 2.47 | 0.66 |
| 44:YY:60:PHE:O | 44:YY:61:ILE:HD12 | 1.95 | 0.66 |
| 1:QA:1152:A:H2' | 1:QA:1153:C:C6 | 2.31 | 0.66 |
| 1:QA:1226:C:O2' | 13:QM:103:THR:O | 2.08 | 0.66 |
| 4:QD:52:SER:HB3 | 4:QD:55:ALA:HB2 | 1.77 | 0.66 |
| 16:QP:21:VAL:HG11 | 16:QP:59:TRP:CD1 | 2.30 | 0.66 |
| 25:RA:562:U:O2' | 25:RA:572:A:O4' | 2.12 | 0.66 |
| 25:RA:1266:G:N7 | 42:RW:15:ARG:NH1 | 2.44 | 0.66 |
| 28:RE:36:ARG:HH11 | 28:RE:36:ARG:HB3 | 1.60 | 0.66 |
| 31:RH:125:VAL:CG1 | 31:RH:126:PRO:HG3 | 2.25 | 0.66 |
| 35:RP:122:PRO:HA | 35:RP:141:ALA:O | 1.95 | 0.66 |
| 45:RZ:33:LEU:HD21 | 45:RZ:35:ARG:HD2 | 1.78 | 0.66 |
| 18:XR:70:ILE:O | 18:XR:74:ARG:HG3 | 1.95 | 0.66 |
| 47:Y1:56:GLN:N | 47:Y1:56:GLN:HE21 | 1.93 | 0.66 |
| 52:Y6:43:CYS:SG | 52:Y6:44:ARG:HD3 | 2.35 | 0.66 |
| 1:QA:188:U:H2' | 1:QA:189:U:H5'' | 1.76 | 0.66 |
| 1:QA:1050:G:H1 | 1:QA:1208:C:H42 | 1.43 | 0.66 |
| 13:QM:13:LYS:HA | 13:QM:44:ARG:HD2 | 1.78 | 0.66 |
| 17:QQ:41:LYS:HZ1 | 17:QQ:92:ARG:HH22 | 1.42 | 0.66 |
| 17:QQ:56:VAL:HB | 17:QQ:78:GLU:HB3 | 1.76 | 0.66 |
| 25:RA:1899:G:H21 | 25:RA:1902:C:N4 | 1.93 | 0.66 |
| 27:RD:68:LYS:HB2 | 27:RD:70:TRP:CZ3 | 2.30 | 0.66 |
| 29:RF:34:TRP:HA | 35:RP:6:LEU:HD12 | 1.77 | 0.66 |
| 32:RI:55:ALA:O | 32:RI:57:ARG:N | 2.27 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 35:RP:66:GLY:O | 35:RP:67:MET:HB3 | 1.94 | 0.66 |
| 36:RQ:88:GLY:C | 36:RQ:90:VAL:N | 2.47 | 0.66 |
| 43:RX:57:LEU:HD12 | 43:RX:78:LYS:HB2 | 1.77 | 0.66 |
| 44:RY:42:VAL:CG1 | 44:RY:65:ALA:HB3 | 2.25 | 0.66 |
| 44:RY:89:PHE:C | 44:RY:90:LEU:HD13 | 2.15 | 0.66 |
| 50:R4:37:SER:C | 50:R4:39:CYS:H | 1.98 | 0.66 |
| 8:XH:100:ILE:HB | 8:XH:125:ARG:NH1 | 2.09 | 0.66 |
| 20:XT:89:ARG:NH2 | 20:XT:104:LEU:HD21 | 2.09 | 0.66 |
| 20:XT:97:ALA:O | 20:XT:99:LEU:N | 2.27 | 0.66 |
| 25:YA:1024:G:OP2 | 25:YA:1025:G:H3' | 1.95 | 0.66 |
| 25:YA:2818:G:OP2 | 37:YR:42:LYS:NZ | 2.28 | 0.66 |
| 28:YE:28:ALA:O | 28:YE:93:VAL:HG23 | 1.96 | 0.66 |
| 33:YN:58:ASP:H | 33:YN:60:ILE:CD1 | 2.09 | 0.66 |
| 36:YQ:32:TYR:HD1 | 36:YQ:133:ARG:HA | 1.60 | 0.66 |
| 44:YY:75:ILE:HG12 | 44:YY:76:CYS:N | 2.10 | 0.66 |
| 51:Y5:56:LYS:H | 51:Y5:56:LYS:CD | 2.07 | 0.66 |
| 3:QC:73:PRO:O | 3:QC:76:VAL:HG22 | 1.95 | 0.66 |
| 4:QD:165:MET:HA | 4:QD:165:MET:HE3 | 1.78 | 0.66 |
| 13:QM:7:VAL:HB | 30:RG:115:ARG:HH12 | 1.56 | 0.66 |
| 19:QS:65:ASN:N | 19:QS:65:ASN:HD22 | 1.94 | 0.66 |
| 27:RD:80:ALA:HB3 | 27:RD:94:LEU:CD1 | 2.26 | 0.66 |
| 28:RE:9:VAL:HB | 28:RE:25:VAL:HG23 | 1.75 | 0.66 |
| 35:RP:81:GLN:NE2 | 35:RP:106:LEU:O | 2.29 | 0.66 |
| 41:RV:44:LYS:O | 41:RV:46:VAL:N | 2.28 | 0.66 |
| 49:R3:29:ARG:HB2 | 49:R3:29:ARG:NH1 | 2.10 | 0.66 |
| 3:XC:140:ARG:CZ | 3:XC:140:ARG:HB2 | 2.25 | 0.66 |
| 8:XH:84:ARG:HG3 | 8:XH:84:ARG:NH1 | 2.10 | 0.66 |
| 13:XM:3:ARG:HD2 | 13:XM:9:ILE:HG12 | 1.77 | 0.66 |
| 25:YA:392:C:H5'' | 25:YA:409:C:H5'' | 1.76 | 0.66 |
| 27:YD:172:TYR:HB3 | 27:YD:184:LYS:HG2 | 1.77 | 0.66 |
| 35:YP:66:GLY:O | 35:YP:67:MET:HB3 | 1.94 | 0.66 |
| 47:Y1:83:GLU:HG2 | 47:Y1:84:GLY:N | 2.09 | 0.66 |
| 48:Y2:65:ASN:HB3 | 48:Y2:69:ARG:NH1 | 2.10 | 0.66 |
| 2:QB:25:ASN:O | 2:QB:27:LYS:N | 2.27 | 0.66 |
| 8:QH:23:SER:HA | 8:QH:63:LEU:CD2 | 2.24 | 0.66 |
| 25:RA:128:C:O3' | 53:R7:49:ARG:NH2 | 2.29 | 0.66 |
| 31:RH:168:PRO:O | 31:RH:169:VAL:HG12 | 1.96 | 0.66 |
| 36:RQ:33:GLY:HA2 | 36:RQ:105:GLU:HA | 1.76 | 0.66 |
| 38:RS:106:ARG:HA | 38:RS:110:LEU:CD2 | 2.25 | 0.66 |
| 40:RU:88:ILE:HD13 | 40:RU:88:ILE:N | 2.10 | 0.66 |
| 47:R1:86:SER:N | 47:R1:87:PRO:HD2 | 2.10 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:XA:27:G:H4' | 4:XD:209:ARG:HG3 | 1.75 | 0.66 |
| 1:XA:67:C:O2' | 1:XA:171:A:N3 | 2.26 | 0.66 |
| 7:XG:69:VAL:HG12 | 7:XG:69:VAL:O | 1.95 | 0.66 |
| 19:XS:64:GLU:CD | 50:Y4:55:ARG:HH22 | 1.99 | 0.66 |
| 25:YA:1754:C:OP1 | 39:YT:96:ARG:NH1 | 2.27 | 0.66 |
| 33:YN:57:ALA:HA | 33:YN:60:ILE:HD11 | 1.78 | 0.66 |
| 35:YP:81:GLN:NE2 | 35:YP:106:LEU:O | 2.29 | 0.66 |
| 35:YP:122:PRO:HA | 35:YP:141:ALA:O | 1.95 | 0.66 |
| 40:YU:88:ILE:HD13 | 40:YU:88:ILE:N | 2.10 | 0.66 |
| 41:YV:53:GLU:HG2 | 41:YV:53:GLU:O | 1.94 | 0.66 |
| 43:YX:11:PRO:HB3 | 43:YX:92:LEU:HD21 | 1.78 | 0.66 |
| 45:YZ:112:ARG:NH2 | 45:YZ:145:GLU:HA | 2.10 | 0.66 |
| 51:Y5:40:LYS:NZ | 51:Y5:48:GLU:HB2 | 2.10 | 0.66 |
| 54:Y8:30:ARG:O | 54:Y8:31:HIS:HB2 | 1.96 | 0.66 |
| 1:QA:191:G:C4 | 20:QT:105:SER:HB3 | 2.31 | 0.66 |
| 2:QB:87:ARG:HH11 | 2:QB:223:ILE:CD1 | 2.09 | 0.66 |
| 25:RA:2602:A:H2 | 55:Z6:76:PPU:C8 | 2.09 | 0.66 |
| 27:RD:44:ASN:HB3 | 27:RD:49:ILE:HG22 | 1.78 | 0.66 |
| 27:RD:145:VAL:HG12 | 27:RD:146:GLU:O | 1.96 | 0.66 |
| 27:RD:241:PRO:O | 27:RD:243:GLY:N | 2.28 | 0.66 |
| 28:RE:62:PRO:O | 28:RE:64:LYS:N | 2.28 | 0.66 |
| 28:RE:174:ASP:CG | 28:RE:175:VAL:H | 1.98 | 0.66 |
| 32:RI:13:GLY:HA3 | 32:RI:17:GLN:CD | 2.15 | 0.66 |
| 39:RT:50:ILE:CD1 | 39:RT:102:ILE:HD11 | 2.25 | 0.66 |
| 44:RY:14:LEU:HD23 | 44:RY:15:VAL:N | 2.10 | 0.66 |
| 44:RY:94:LYS:HE3 | 44:RY:101:LYS:NZ | 2.11 | 0.66 |
| 47:R1:51:VAL:HG11 | 47:R1:74:VAL:HG21 | 1.76 | 0.66 |
| 1:XA:1443:G:N2 | 25:YA:2864:G:OP1 | 2.28 | 0.66 |
| 5:XE:75:THR:HG23 | 5:XE:76:ILE:N | 2.11 | 0.66 |
| 19:XS:64:GLU:CB | 50:Y4:55:ARG:HH12 | 2.08 | 0.66 |
| 25:YA:1354:A:OP1 | 27:YD:38:LYS:HE2 | 1.96 | 0.66 |
| 27:YD:68:LYS:HB2 | 27:YD:70:TRP:CZ3 | 2.31 | 0.66 |
| 28:YE:174:ASP:CG | 28:YE:175:VAL:H | 1.98 | 0.66 |
| 35:YP:61:ARG:NH2 | 54:Y8:13:ARG:HD2 | 2.10 | 0.66 |
| 46:Y0:3:HIS:HD2 | 46:Y0:4:LYS:C | 1.99 | 0.66 |
| 50:Y4:71:ARG:HH11 | 50:Y4:71:ARG:CG | 1.98 | 0.66 |
| 1:QA:1128:C:H42 | 1:QA:1144:G:H1 | 1.43 | 0.66 |
| 3:QC:101:LEU:HD23 | 3:QC:102:ASN:N | 2.11 | 0.66 |
| 7:QG:78:ARG:NH1 | 7:QG:80:VAL:HG23 | 2.11 | 0.66 |
| 13:QM:81:LEU:O | 13:QM:84:ILE:HG22 | 1.95 | 0.66 |
| 17:QQ:27:PHE:CZ | 17:QQ:36:ILE:HD11 | 2.31 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:320:A:N3 | 29:RF:169:ASN:ND2 | 2.43 | 0.66 |
| 28:RE:26:ILE:HD13 | 28:RE:27:LEU:N | 2.10 | 0.66 |
| 28:RE:101:ARG:CZ | 28:RE:171:GLU:HB2 | 2.25 | 0.66 |
| 32:RI:68:LEU:HA | 32:RI:71:ILE:CG2 | 2.26 | 0.66 |
| 32:RI:99:GLU:CG | 32:RI:103:ARG:HH21 | 2.07 | 0.66 |
| 34:RO:86:ILE:H | 34:RO:86:ILE:HD12 | 1.61 | 0.66 |
| 35:RP:1:MET:CE | 35:RP:5:ASP:HB3 | 2.25 | 0.66 |
| 39:RT:11:GLU:CD | 39:RT:11:GLU:N | 2.47 | 0.66 |
| 44:RY:47:LYS:HG2 | 44:RY:60:PHE:CE1 | 2.31 | 0.66 |
| 44:RY:75:ILE:HG12 | 44:RY:76:CYS:N | 2.10 | 0.66 |
| 1:XA:1348:U:H3 | 1:XA:1374:A:H2 | 1.43 | 0.66 |
| 4:XD:52:SER:O | 4:XD:56:VAL:HG23 | 1.96 | 0.66 |
| 7:XG:141:VAL:HG12 | 7:XG:141:VAL:O | 1.95 | 0.66 |
| 8:XH:29:SER:HB3 | 8:XH:32:LYS:CG | 2.22 | 0.66 |
| 13:XM:74:VAL:O | 13:XM:78:ILE:HG13 | 1.96 | 0.66 |
| 25:YA:910:A:C5 | 36:YQ:13:GLN:HG3 | 2.31 | 0.66 |
| 25:YA:2392:A:H2 | 25:YA:2424:C:H42 | 1.43 | 0.66 |
| 27:YD:135:PHE:CD2 | 27:YD:135:PHE:N | 2.62 | 0.66 |
| 28:YE:37:ARG:NE | 28:YE:37:ARG:HA | 2.11 | 0.66 |
| 32:YI:115:ALA:HB3 | 32:YI:128:LEU:CD1 | 2.22 | 0.66 |
| 36:YQ:20:ALA:HB1 | 36:YQ:99:PRO:HD2 | 1.76 | 0.66 |
| 1:QA:1002:G:H2' | 1:QA:1003:G:C8 | 2.30 | 0.66 |
| 5:QE:75:THR:HG23 | 5:QE:76:ILE:N | 2.11 | 0.66 |
| 25:RA:2115:G:N2 | 25:RA:2165:G:N7 | 2.40 | 0.66 |
| 27:RD:35:LYS:CA | 27:RD:64:ILE:HG22 | 2.26 | 0.66 |
| 29:RF:175:THR:O | 29:RF:176:LEU:HB2 | 1.96 | 0.66 |
| 32:RI:74:ASN:CG | 32:RI:75:LEU:H | 1.97 | 0.66 |
| 32:RI:79:ILE:HG21 | 32:RI:142:VAL:HG12 | 1.77 | 0.66 |
| 33:RN:58:ASP:H | 33:RN:60:ILE:CD1 | 2.08 | 0.66 |
| 35:RP:61:ARG:NH2 | 54:R8:13:ARG:HD2 | 2.10 | 0.66 |
| 38:RS:88:ASP:OD2 | 38:RS:90:GLY:N | 2.28 | 0.66 |
| 10:XJ:39:PRO:HB3 | 10:XJ:70:ARG:HH12 | 1.60 | 0.66 |
| 10:XJ:81:THR:C | 10:XJ:83:GLU:H | 2.00 | 0.66 |
| 25:YA:489:G:N7 | 42:YW:49:LYS:NZ | 2.42 | 0.66 |
| 25:YA:559:G:H22 | 40:YU:49:HIS:CE1 | 2.12 | 0.66 |
| 25:YA:602:G:O2' | 25:YA:604:G:O2' | 2.13 | 0.66 |
| 30:YG:136:ARG:O | 30:YG:154:GLY:HA3 | 1.95 | 0.66 |
| 30:YG:145:THR:HG23 | 50:Y4:28:LYS:NZ | 2.11 | 0.66 |
| 44:YY:94:LYS:HE3 | 44:YY:101:LYS:NZ | 2.11 | 0.66 |
| 27:RD:35:LYS:HZ1 | 27:RD:65:ILE:HA | 1.60 | 0.66 |
| 30:RG:136:ARG:O | 30:RG:154:GLY:HA3 | 1.95 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:RI:8:PRO:HG3 | 32:RI:14:ASP:HB2 | 1.76 | 0.66 |
| 1:XA:272:C:H2' | 1:XA:273:A:H8 | 1.61 | 0.66 |
| 8:XH:20:TYR:HA | 8:XH:65:TYR:HE2 | 1.60 | 0.66 |
| 12:XL:26:ALA:O | 12:XL:27:LEU:O | 2.14 | 0.66 |
| 19:XS:15:LEU:O | 19:XS:19:VAL:N | 2.26 | 0.66 |
| 19:XS:35:SER:O | 19:XS:71:LEU:HD12 | 1.96 | 0.66 |
| 27:YD:183:ARG:HH11 | 27:YD:183:ARG:CG | 2.07 | 0.66 |
| 31:YH:125:VAL:CG1 | 31:YH:126:PRO:HG3 | 2.25 | 0.66 |
| 33:YN:134:ARG:N | 33:YN:135:PRO:HD3 | 1.97 | 0.66 |
| 38:YS:107:GLU:H | 38:YS:110:LEU:HD11 | 1.60 | 0.66 |
| 44:YY:42:VAL:CG1 | 44:YY:65:ALA:HB3 | 2.25 | 0.66 |
| 45:YZ:102:LEU:HD22 | 45:YZ:156:LYS:NZ | 2.11 | 0.66 |
| 47:Y1:80:LEU:HD23 | 47:Y1:80:LEU:N | 2.10 | 0.66 |
| 1:QA:748:C:H1' | 1:QA:749:C:H5 | 1.60 | 0.66 |
| 1:QA:1238:A:H62 | 1:QA:1301:U:H3 | 1.44 | 0.66 |
| 1:QA:1239:A:H62 | 1:QA:1299:A:N6 | 1.92 | 0.66 |
| 3:QC:140:ARG:CZ | 3:QC:140:ARG:HB2 | 2.25 | 0.66 |
| 6:QF:41:GLU:O | 6:QF:43:LEU:HD12 | 1.96 | 0.66 |
| 8:QH:10:LEU:HD23 | 8:QH:10:LEU:H | 1.60 | 0.66 |
| 27:RD:121:PRO:HB3 | 27:RD:135:PHE:CE1 | 2.30 | 0.66 |
| 32:RI:51:ILE:HA | 32:RI:54:GLN:HB2 | 1.77 | 0.66 |
| 34:RO:113:LYS:O | 34:RO:117:LEU:HD12 | 1.96 | 0.66 |
| 41:RV:53:GLU:HG2 | 41:RV:53:GLU:O | 1.94 | 0.66 |
| 1:XA:1049:U:HO2' | 14:YN:2:ALA:N | 1.94 | 0.66 |
| 2:XB:24:TRP:HD1 | 2:XB:24:TRP:H | 1.43 | 0.66 |
| 4:XD:11:LEU:HD22 | 4:XD:66:ARG:HD3 | 1.78 | 0.66 |
| 12:XL:48:PRO:CD | 12:XL:49:ASN:N | 2.57 | 0.66 |
| 13:XM:81:LEU:O | 13:XM:84:ILE:HG22 | 1.95 | 0.66 |
| 25:YA:458:G:O2' | 25:YA:469:G:O6 | 2.13 | 0.66 |
| 25:YA:543:C:H42 | 25:YA:550:G:H1 | 1.43 | 0.66 |
| 28:YE:36:ARG:HH11 | 28:YE:36:ARG:HB3 | 1.60 | 0.66 |
| 34:YO:71:ARG:NH1 | 39:YT:74:ARG:HH21 | 1.94 | 0.66 |
| 34:YO:86:ILE:H | 34:YO:86:ILE:HD12 | 1.61 | 0.66 |
| 34:YO:113:LYS:O | 34:YO:117:LEU:HD12 | 1.96 | 0.66 |
| 40:YU:65:ILE:HG12 | 40:YU:96:ALA:CB | 2.26 | 0.66 |
| 44:YY:35:TYR:CE1 | 44:YY:69:ALA:HB3 | 2.31 | 0.66 |
| 47:Y1:11:ARG:HB3 | 47:Y1:11:ARG:HH11 | 1.61 | 0.66 |
| 2:QB:164:VAL:HB | 2:QB:186:ALA:HB2 | 1.78 | 0.65 |
| 7:QG:69:VAL:O | 7:QG:69:VAL:HG12 | 1.95 | 0.65 |
| 10:QJ:99:LYS:O | 10:QJ:100:THR:HG23 | 1.96 | 0.65 |
| 16:QP:45:THR:HG22 | 16:QP:47:ASP:H | 1.60 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:RD:237:GLU:N | 27:RD:237:GLU:OE1 | 2.29 | 0.65 |
| 32:RI:75:LEU:HB3 | 32:RI:105:HIS:HE1 | 1.60 | 0.65 |
| 32:RI:92:VAL:HG13 | 32:RI:120:ILE:CG2 | 2.16 | 0.65 |
| 39:RT:22:PHE:CD2 | 39:RT:22:PHE:N | 2.63 | 0.65 |
| 48:R2:64:LEU:HD22 | 48:R2:68:ARG:HD2 | 1.76 | 0.65 |
| 50:R4:16:CYS:SG | 50:R4:33:VAL:HB | 2.35 | 0.65 |
| 1:XA:971:G:H5'' | 1:XA:972:C:H5'' | 1.77 | 0.65 |
| 8:XH:10:LEU:HD23 | 8:XH:10:LEU:H | 1.60 | 0.65 |
| 25:YA:890:A:HO2' | 25:YA:892:G:H8 | 1.45 | 0.65 |
| 27:YD:121:PRO:HB3 | 27:YD:135:PHE:CE1 | 2.30 | 0.65 |
| 44:YY:47:LYS:HG2 | 44:YY:60:PHE:CE1 | 2.31 | 0.65 |
| 1:QA:1459:C:OP1 | 20:QT:27:LYS:NZ | 2.29 | 0.65 |
| 2:QB:87:ARG:O | 2:QB:87:ARG:HD2 | 1.95 | 0.65 |
| 12:QL:115:LYS:O | 12:QL:117:ARG:HG3 | 1.96 | 0.65 |
| 19:QS:3:ARG:CZ | 19:QS:8:GLY:HA2 | 2.26 | 0.65 |
| 25:RA:863:A:H2' | 25:RA:864:G:C8 | 2.32 | 0.65 |
| 25:RA:957:A:H5' | 36:RQ:76:LYS:HD2 | 1.77 | 0.65 |
| 27:RD:183:ARG:HH11 | 27:RD:183:ARG:CG | 2.07 | 0.65 |
| 36:RQ:134:ARG:NE | 45:RZ:122:ARG:HH22 | 1.94 | 0.65 |
| 41:RV:76:LYS:HB2 | 41:RV:81:TYR:HB3 | 1.79 | 0.65 |
| 44:RY:99:CYS:SG | 44:RY:100:ALA:N | 2.69 | 0.65 |
| 45:RZ:112:ARG:NH2 | 45:RZ:145:GLU:HA | 2.10 | 0.65 |
| 4:XD:52:SER:HB3 | 4:XD:55:ALA:HB2 | 1.77 | 0.65 |
| 7:XG:78:ARG:NH1 | 7:XG:80:VAL:HG23 | 2.11 | 0.65 |
| 10:XJ:99:LYS:O | 10:XJ:100:THR:HG23 | 1.96 | 0.65 |
| 25:YA:928:G:O2' | 49:Y3:43:ILE:HD11 | 1.96 | 0.65 |
| 28:YE:13:ARG:NH1 | 28:YE:21:VAL:HG12 | 2.11 | 0.65 |
| 28:YE:101:ARG:CZ | 28:YE:171:GLU:HB2 | 2.25 | 0.65 |
| 35:YP:90:ARG:NE | 35:YP:91:PHE:HD1 | 1.93 | 0.65 |
| 38:YS:88:ASP:OD2 | 38:YS:90:GLY:N | 2.28 | 0.65 |
| 38:YS:106:ARG:HA | 38:YS:110:LEU:CD2 | 2.26 | 0.65 |
| 52:Y6:7:ILE:C | 52:Y6:9:LEU:H | 1.98 | 0.65 |
| 12:QL:25:PRO:C | 12:QL:27:LEU:H | 1.98 | 0.65 |
| 15:QO:25:THR:HG21 | 15:QO:70:LEU:HB2 | 1.77 | 0.65 |
| 25:RA:942:G:O2' | 25:RA:1189:A:N3 | 2.28 | 0.65 |
| 25:RA:2286:A:H4' | 25:RA:2287:A:O4' | 1.94 | 0.65 |
| 27:RD:27:THR:CG2 | 27:RD:28:GLU:H | 2.09 | 0.65 |
| 31:RH:150:ALA:C | 31:RH:152:ARG:N | 2.44 | 0.65 |
| 42:RW:25:ARG:NH1 | 42:RW:25:ARG:HB2 | 2.11 | 0.65 |
| 44:RY:60:PHE:O | 44:RY:61:ILE:HD12 | 1.96 | 0.65 |
| 54:R8:30:ARG:O | 54:R8:31:HIS:HB2 | 1.96 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:XA:130:A:H1' | 1:XA:264:U:H5' | 1.77 | 0.65 |
| 1:XA:227:G:N2 | 16:XP:62:VAL:O | 2.25 | 0.65 |
| 2:XB:14:GLY:O | 2:XB:15:VAL:HG13 | 1.96 | 0.65 |
| 3:XC:70:VAL:HG12 | 3:XC:71:ALA:N | 2.10 | 0.65 |
| 6:XF:41:GLU:O | 6:XF:43:LEU:HD12 | 1.96 | 0.65 |
| 16:XP:45:THR:HG22 | 16:XP:47:ASP:H | 1.60 | 0.65 |
| 20:XT:36:LEU:HD12 | 20:XT:55:ILE:HG23 | 1.76 | 0.65 |
| 25:YA:2293:C:H5'' | 38:YS:89:ARG:NH2 | 2.11 | 0.65 |
| 27:YD:145:VAL:HG12 | 27:YD:146:GLU:O | 1.95 | 0.65 |
| 31:YH:124:GLU:HB3 | 31:YH:132:ARG:HD2 | 1.77 | 0.65 |
| 31:YH:168:PRO:O | 31:YH:169:VAL:HG12 | 1.96 | 0.65 |
| 32:YI:79:ILE:HG21 | 32:YI:142:VAL:HG12 | 1.77 | 0.65 |
| 32:YI:116:LEU:O | 32:YI:118:LYS:N | 2.29 | 0.65 |
| 35:YP:39:LYS:HA | 35:YP:45:LEU:HD13 | 1.79 | 0.65 |
| 36:YQ:80:GLU:CG | 46:Y0:5:LYS:HB3 | 2.26 | 0.65 |
| 37:YR:26:LYS:HE2 | 37:YR:70:LEU:O | 1.95 | 0.65 |
| 42:YW:65:LEU:HD12 | 42:YW:68:ARG:NH1 | 2.11 | 0.65 |
| 45:YZ:33:LEU:HD21 | 45:YZ:35:ARG:HD2 | 1.77 | 0.65 |
| 4:QD:94:LEU:H | 4:QD:94:LEU:CD1 | 2.08 | 0.65 |
| 10:QJ:38:ILE:HD11 | 10:QJ:71:LEU:HB3 | 1.78 | 0.65 |
| 13:QM:74:VAL:O | 13:QM:78:ILE:HG13 | 1.96 | 0.65 |
| 21:QU:25:LYS:HE2 | 21:QU:26:LYS:O | 1.96 | 0.65 |
| 25:RA:2208:U:O2' | 27:RD:151:LYS:HG2 | 1.95 | 0.65 |
| 26:RB:50:G:OP1 | 38:RS:63:THR:HG23 | 1.97 | 0.65 |
| 43:RX:65:ARG:HD3 | 43:RX:65:ARG:N | 2.12 | 0.65 |
| 45:RZ:27:VAL:HG22 | 45:RZ:28:MET:N | 2.10 | 0.65 |
| 45:RZ:72:ARG:HH11 | 45:RZ:72:ARG:CB | 2.09 | 0.65 |
| 50:R4:49:PHE:O | 50:R4:50:VAL:HG23 | 1.97 | 0.65 |
| 1:XA:376:G:OP1 | 16:XP:5:ARG:HB2 | 1.96 | 0.65 |
| 7:XG:21:VAL:HG23 | 7:XG:22:LEU:H | 1.61 | 0.65 |
| 10:XJ:38:ILE:HD11 | 10:XJ:71:LEU:HB3 | 1.78 | 0.65 |
| 17:XQ:27:PHE:CZ | 17:XQ:36:ILE:HD11 | 2.31 | 0.65 |
| 19:XS:10:PHE:CG | 19:XS:11:VAL:N | 2.64 | 0.65 |
| 25:YA:583:G:OP2 | 40:YU:10:ARG:NH1 | 2.29 | 0.65 |
| 25:YA:1499:C:H2' | 25:YA:1500:G:H8 | 1.61 | 0.65 |
| 27:YD:27:THR:CG2 | 27:YD:28:GLU:H | 2.09 | 0.65 |
| 43:YX:65:ARG:HD3 | 43:YX:65:ARG:N | 2.12 | 0.65 |
| 1:QA:375:U:H4' | 16:QP:17:TYR:HE2 | 1.62 | 0.65 |
| 2:QB:17:PHE:HD2 | 2:QB:44:LEU:HD21 | 1.61 | 0.65 |
| 4:QD:122:ARG:O | 4:QD:122:ARG:HD3 | 1.97 | 0.65 |
| 5:QE:83:GLU:HG2 | 5:QE:88:LYS:HG3 | 1.78 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:QG:11:GLN:O | 7:QG:12:LEU:HD13 | 1.97 | 0.65 |
| 9:QI:28:VAL:HA | 9:QI:63:ILE:HB | 1.79 | 0.65 |
| 15:QO:8:LYS:O | 15:QO:12:ILE:HG13 | 1.96 | 0.65 |
| 16:QP:6:LEU:HD23 | 16:QP:17:TYR:CD2 | 2.32 | 0.65 |
| 19:QS:21:GLU:O | 19:QS:25:LYS:HB3 | 1.97 | 0.65 |
| 20:QT:44:ALA:HB2 | 20:QT:88:VAL:HG13 | 1.78 | 0.65 |
| 25:RA:1510:A:O2' | 25:RA:1511:A:N7 | 2.29 | 0.65 |
| 27:RD:176:ARG:HH11 | 27:RD:176:ARG:HG2 | 1.60 | 0.65 |
| 28:RE:28:ALA:O | 28:RE:93:VAL:HG23 | 1.95 | 0.65 |
| 29:RF:155:LEU:HD13 | 29:RF:174:VAL:CG1 | 2.27 | 0.65 |
| 32:RI:116:LEU:O | 32:RI:118:LYS:N | 2.28 | 0.65 |
| 35:RP:138:LEU:HD11 | 35:RP:144:GLU:HG3 | 1.78 | 0.65 |
| 45:RZ:102:LEU:HD22 | 45:RZ:156:LYS:NZ | 2.11 | 0.65 |
| 9:XI:53:VAL:HG21 | 9:XI:92:TYR:CE1 | 2.32 | 0.65 |
| 9:XI:112:LYS:HA | 9:XI:119:ALA:HB2 | 1.77 | 0.65 |
| 25:YA:860:U:H1' | 25:YA:2268:A:H5' | 1.78 | 0.65 |
| 27:YD:80:ALA:HB3 | 27:YD:94:LEU:CD1 | 2.26 | 0.65 |
| 48:Y2:42:GLY:O | 48:Y2:44:LEU:N | 2.30 | 0.65 |
| 1:QA:871:U:O2' | 1:QA:872:A:O5' | 2.11 | 0.65 |
| 1:QA:1060:C:H2' | 1:QA:1061:G:H8 | 1.62 | 0.65 |
| 6:QF:98:LEU:HB3 | 18:QR:30:ASP:HA | 1.79 | 0.65 |
| 8:QH:20:TYR:HA | 8:QH:65:TYR:HE2 | 1.60 | 0.65 |
| 8:QH:20:TYR:CE2 | 8:QH:75:ARG:HD2 | 2.32 | 0.65 |
| 10:QJ:34:VAL:HG22 | 10:QJ:74:ILE:HG22 | 1.77 | 0.65 |
| 25:RA:2096:U:H3 | 25:RA:2193:G:H1 | 1.44 | 0.65 |
| 32:RI:125:GLU:HA | 32:RI:125:GLU:OE1 | 1.96 | 0.65 |
| 34:RO:12:ASP:OD1 | 34:RO:14:THR:HG23 | 1.97 | 0.65 |
| 40:RU:74:LEU:HD23 | 40:RU:114:LYS:HD3 | 1.77 | 0.65 |
| 41:RV:43:GLU:OE2 | 41:RV:43:GLU:HA | 1.95 | 0.65 |
| 42:RW:18:ARG:HG3 | 42:RW:76:VAL:HG13 | 1.77 | 0.65 |
| 1:XA:235:C:H5' | 17:XQ:70:ARG:HG2 | 1.78 | 0.65 |
| 1:XA:1397:C:H1' | 23:XX:8:A:N6 | 2.12 | 0.65 |
| 2:XB:67:THR:HG21 | 2:XB:155:LEU:CD2 | 2.27 | 0.65 |
| 2:XB:87:ARG:HH11 | 2:XB:223:ILE:CD1 | 2.09 | 0.65 |
| 3:XC:101:LEU:HD23 | 3:XC:102:ASN:N | 2.11 | 0.65 |
| 11:XK:103:LEU:HD22 | 11:XK:103:LEU:H | 1.62 | 0.65 |
| 15:XO:8:LYS:O | 15:XO:12:ILE:HG13 | 1.96 | 0.65 |
| 17:XQ:74:LEU:HD12 | 17:XQ:75:ARG:HG2 | 1.76 | 0.65 |
| 20:XT:83:ARG:CA | 20:XT:86:ARG:HB3 | 2.27 | 0.65 |
| 25:YA:1826:G:H4' | 27:YD:242:ARG:HH21 | 1.61 | 0.65 |
| 25:YA:2304:G:H1 | 25:YA:2312:U:H3 | 1.43 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 28:YE:10:GLY:H | 28:YE:25:VAL:HG23 | 1.60 | 0.65 |
| 31:YH:128:PRO:CD | 31:YH:129:THR:H | 2.09 | 0.65 |
| 35:YP:6:LEU:O | 35:YP:7:ARG:HG2 | 1.96 | 0.65 |
| 44:YY:99:CYS:SG | 44:YY:100:ALA:N | 2.69 | 0.65 |
| 3:QC:70:VAL:HG12 | 3:QC:71:ALA:N | 2.10 | 0.65 |
| 4:QD:52:SER:O | 4:QD:56:VAL:HG23 | 1.96 | 0.65 |
| 10:QJ:27:ALA:CB | 10:QJ:34:VAL:HG21 | 2.26 | 0.65 |
| 10:QJ:81:THR:C | 10:QJ:83:GLU:H | 1.99 | 0.65 |
| 12:QL:39:VAL:HB | 12:QL:57:LYS:HB2 | 1.79 | 0.65 |
| 19:QS:10:PHE:CG | 19:QS:11:VAL:N | 2.64 | 0.65 |
| 20:QT:83:ARG:CA | 20:QT:86:ARG:HB3 | 2.27 | 0.65 |
| 25:RA:483:A:H3' | 25:RA:484:C:C6 | 2.31 | 0.65 |
| 25:RA:483:A:H3' | 25:RA:484:C:H6 | 1.61 | 0.65 |
| 25:RA:2086:U:H2' | 25:RA:2087:G:C8 | 2.32 | 0.65 |
| 27:RD:122:ASP:CG | 27:RD:123:ALA:H | 2.00 | 0.65 |
| 31:RH:128:PRO:CD | 31:RH:129:THR:H | 2.09 | 0.65 |
| 34:RO:7:TYR:CE1 | 34:RO:20:MET:HB2 | 2.32 | 0.65 |
| 34:RO:71:ARG:NH1 | 39:RT:74:ARG:HH21 | 1.94 | 0.65 |
| 35:RP:6:LEU:O | 35:RP:7:ARG:HG2 | 1.97 | 0.65 |
| 40:RU:90:VAL:CG1 | 40:RU:91:ASP:H | 2.00 | 0.65 |
| 47:R1:29:GLY:O | 47:R1:30:VAL:HG23 | 1.97 | 0.65 |
| 2:XB:87:ARG:O | 2:XB:87:ARG:HD2 | 1.95 | 0.65 |
| 4:XD:52:SER:HB3 | 4:XD:55:ALA:CB | 2.27 | 0.65 |
| 7:XG:11:GLN:O | 7:XG:12:LEU:HD13 | 1.97 | 0.65 |
| 12:XL:25:PRO:C | 12:XL:27:LEU:H | 1.99 | 0.65 |
| 12:XL:39:VAL:HB | 12:XL:57:LYS:HB2 | 1.79 | 0.65 |
| 19:XS:21:GLU:HG3 | 19:XS:22:LEU:N | 2.11 | 0.65 |
| 25:YA:2712:U:HO2' | 25:YA:2712(A):A:H8 | 1.42 | 0.65 |
| 26:YB:28:C:OP1 | 38:YS:36:TYR:OH | 2.11 | 0.65 |
| 32:YI:68:LEU:HA | 32:YI:71:ILE:CG2 | 2.26 | 0.65 |
| 35:YP:97:PRO:HD3 | 35:YP:126:VAL:O | 1.97 | 0.65 |
| 45:YZ:72:ARG:HH11 | 45:YZ:72:ARG:CB | 2.09 | 0.65 |
| 48:Y2:69:ARG:NH1 | 48:Y2:69:ARG:HB2 | 2.11 | 0.65 |
| 1:QA:966:G:O2' | 9:QI:127:LYS:O | 2.15 | 0.65 |
| 1:QA:1015:A:H1' | 1:QA:1219:U:H5' | 1.77 | 0.65 |
| 1:QA:1177:G:OP2 | 9:QI:97:LYS:NZ | 2.30 | 0.65 |
| 12:QL:21:LYS:HD2 | 12:QL:21:LYS:N | 2.11 | 0.65 |
| 19:QS:15:LEU:O | 19:QS:19:VAL:N | 2.26 | 0.65 |
| 24:QY:29:U:H2' | 24:QY:30:C:H6 | 1.61 | 0.65 |
| 26:RB:42:C:C6 | 30:RG:69:ALA:HB2 | 2.31 | 0.65 |
| 29:RF:45:ARG:CG | 29:RF:45:ARG:HH11 | 2.09 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:RP:39:LYS:HA | 35:RP:45:LEU:HD13 | 1.79 | 0.65 |
| 35:RP:97:PRO:HD3 | 35:RP:126:VAL:O | 1.97 | 0.65 |
| 44:RY:35:TYR:CE1 | 44:RY:69:ALA:HB3 | 2.31 | 0.65 |
| 47:R1:11:ARG:HB3 | 47:R1:11:ARG:HH11 | 1.61 | 0.65 |
| 51:R5:56:LYS:H | 51:R5:56:LYS:CD | 2.07 | 0.65 |
| 2:XB:17:PHE:HD2 | 2:XB:44:LEU:HD21 | 1.62 | 0.65 |
| 5:XE:41:VAL:HG12 | 5:XE:112:LEU:O | 1.97 | 0.65 |
| 6:XF:96:PRO:HB3 | 18:XR:30:ASP:OD2 | 1.95 | 0.65 |
| 12:XL:48:PRO:CD | 12:XL:49:ASN:H | 2.10 | 0.65 |
| 12:XL:115:LYS:O | 12:XL:117:ARG:HG3 | 1.97 | 0.65 |
| 13:XM:51:ALA:O | 13:XM:55:ARG:HG3 | 1.97 | 0.65 |
| 18:XR:73:ALA:HB3 | 18:XR:79:LEU:HD12 | 1.78 | 0.65 |
| 25:YA:69:C:O2 | 25:YA:73:A:O2' | 2.12 | 0.65 |
| 25:YA:1971:A:C4 | 27:YD:241:PRO:HD3 | 2.32 | 0.65 |
| 27:YD:176:ARG:HH11 | 27:YD:176:ARG:HG2 | 1.60 | 0.65 |
| 28:YE:201:THR:HG22 | 28:YE:203:LYS:N | 2.07 | 0.65 |
| 32:YI:77:LEU:HD11 | 32:YI:140:LEU:HD12 | 1.79 | 0.65 |
| 32:YI:99:GLU:HG2 | 32:YI:103:ARG:NH2 | 2.11 | 0.65 |
| 32:YI:125:GLU:HA | 32:YI:125:GLU:OE1 | 1.96 | 0.65 |
| 33:YN:43:THR:HB | 33:YN:46:VAL:CG1 | 2.27 | 0.65 |
| 39:YT:11:GLU:N | 39:YT:11:GLU:OE1 | 2.27 | 0.65 |
| 45:YZ:45:ASP:O | 45:YZ:49:ARG:HG2 | 1.97 | 0.65 |
| 1:QA:1023:G:H3' | 1:QA:1024:G:H5'' | 1.79 | 0.65 |
| 4:QD:52:SER:HB3 | 4:QD:55:ALA:CB | 2.27 | 0.65 |
| 7:QG:21:VAL:HG23 | 7:QG:22:LEU:H | 1.60 | 0.65 |
| 10:QJ:6:ILE:HD11 | 10:QJ:72:VAL:CB | 2.24 | 0.65 |
| 18:QR:43:PHE:CE2 | 18:QR:58:LEU:HD11 | 2.31 | 0.65 |
| 25:RA:184:C:H2' | 25:RA:185:U:C6 | 2.32 | 0.65 |
| 30:RG:145:THR:HG23 | 50:R4:28:LYS:NZ | 2.11 | 0.65 |
| 32:RI:99:GLU:HG2 | 32:RI:103:ARG:NH2 | 2.12 | 0.65 |
| 45:RZ:9:TYR:CE2 | 45:RZ:61:LEU:HD13 | 2.32 | 0.65 |
| 45:RZ:45:ASP:O | 45:RZ:49:ARG:HG2 | 1.97 | 0.65 |
| 45:RZ:103:ARG:CB | 45:RZ:138:GLU:HA | 2.27 | 0.65 |
| 47:R1:82:LEU:CD1 | 47:R1:83:GLU:C | 2.64 | 0.65 |
| 48:R2:69:ARG:HB2 | 48:R2:69:ARG:NH1 | 2.11 | 0.65 |
| 50:R4:36:CYS:O | 50:R4:37:SER:O | 2.14 | 0.65 |
| 1:XA:1340:A:HO2' | 22:XV:31:G:HO2' | 1.31 | 0.65 |
| 2:XB:7:VAL:HG22 | 2:XB:8:LYS:HD3 | 1.77 | 0.65 |
| 2:XB:164:VAL:HB | 2:XB:186:ALA:HB2 | 1.78 | 0.65 |
| 19:XS:3:ARG:CZ | 19:XS:8:GLY:HA2 | 2.26 | 0.65 |
| 20:XT:44:ALA:HB2 | 20:XT:88:VAL:HG13 | 1.77 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:YA:1678:G:N2 | 25:YA:1989:G:H22 | 1.94 | 0.65 |
| 27:YD:44:ASN:HB3 | 27:YD:49:ILE:HG22 | 1.78 | 0.65 |
| 35:YP:113:LYS:HG2 | 35:YP:115:LEU:HD23 | 1.79 | 0.65 |
| 37:YR:28:LEU:HD21 | 37:YR:114:VAL:HG12 | 1.79 | 0.65 |
| 47:Y1:82:LEU:CD1 | 47:Y1:83:GLU:C | 2.64 | 0.65 |
| 54:Y8:52:LYS:O | 54:Y8:52:LYS:HG3 | 1.97 | 0.65 |
| 54:Y8:56:GLU:N | 54:Y8:56:GLU:OE1 | 2.30 | 0.65 |
| 2:QB:14:GLY:O | 2:QB:15:VAL:HG13 | 1.96 | 0.65 |
| 15:QO:74:ASP:OD1 | 15:QO:77:ARG:N | 2.30 | 0.65 |
| 16:QP:51:VAL:HG21 | 16:QP:77:ALA:HB2 | 1.78 | 0.65 |
| 25:RA:1798:U:H5' | 27:RD:259:THR:HG22 | 1.78 | 0.65 |
| 27:RD:172:TYR:HB3 | 27:RD:184:LYS:HG2 | 1.77 | 0.65 |
| 28:RE:13:ARG:NH1 | 28:RE:21:VAL:HG12 | 2.11 | 0.65 |
| 4:XD:13:ARG:HH22 | 4:XD:36:ARG:NH2 | 1.94 | 0.65 |
| 5:XE:79:GLU:OE2 | 8:XH:104:ARG:CA | 2.45 | 0.65 |
| 10:XJ:54:PHE:C | 10:XJ:55:LYS:HG3 | 2.17 | 0.65 |
| 16:XP:21:VAL:HG23 | 16:XP:33:ILE:HB | 1.78 | 0.65 |
| 25:YA:1663:C:HO2' | 25:YA:1664:A:H8 | 1.43 | 0.65 |
| 26:YB:12:C:H2' | 46:Y0:73:GLY:HA3 | 1.79 | 0.65 |
| 27:YD:237:GLU:N | 27:YD:237:GLU:OE1 | 2.29 | 0.65 |
| 39:YT:22:PHE:N | 39:YT:22:PHE:CD2 | 2.63 | 0.65 |
| 40:YU:74:LEU:HD23 | 40:YU:114:LYS:HD3 | 1.78 | 0.65 |
| 42:YW:25:ARG:HB2 | 42:YW:25:ARG:NH1 | 2.11 | 0.65 |
| 1:QA:503:C:OP2 | 12:QL:116:SER:HB3 | 1.97 | 0.64 |
| 6:QF:50:TYR:CE1 | 18:QR:77:GLY:HA2 | 2.33 | 0.64 |
| 25:RA:1266:G:C5 | 42:RW:15:ARG:NH1 | 2.65 | 0.64 |
| 28:RE:35:GLN:CG | 28:RE:37:ARG:HE | 2.10 | 0.64 |
| 30:RG:81:LYS:O | 30:RG:82:LEU:HB2 | 1.95 | 0.64 |
| 31:RH:105:LEU:H | 31:RH:105:LEU:CD1 | 2.09 | 0.64 |
| 47:R1:56:GLN:N | 47:R1:56:GLN:HE21 | 1.93 | 0.64 |
| 1:XA:272:C:H2' | 1:XA:273:A:C8 | 2.32 | 0.64 |
| 1:XA:674:G:H2' | 1:XA:675:A:H8 | 1.60 | 0.64 |
| 1:XA:828:A:H2' | 1:XA:829:G:O4' | 1.98 | 0.64 |
| 1:XA:1364:U:O2' | 1:XA:1365:G:OP1 | 2.15 | 0.64 |
| 3:XC:34:LEU:HD21 | 3:XC:38:ARG:HD2 | 1.79 | 0.64 |
| 6:XF:98:LEU:HB3 | 18:XR:30:ASP:HA | 1.79 | 0.64 |
| 12:XL:21:LYS:N | 12:XL:21:LYS:HD2 | 2.11 | 0.64 |
| 15:XO:74:ASP:OD1 | 15:XO:77:ARG:N | 2.30 | 0.64 |
| 19:XS:21:GLU:O | 19:XS:25:LYS:HB3 | 1.97 | 0.64 |
| 19:XS:65:ASN:N | 19:XS:65:ASN:HD22 | 1.94 | 0.64 |
| 25:YA:221:A:H4' | 25:YA:222:A:O5' | 1.95 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:507:A:H5'' | 25:YA:508:G:H5' | 1.79 | 0.64 |
| 25:YA:1048:A:OP2 | 25:YA:1110:G:N2 | 2.30 | 0.64 |
| 25:YA:1509:C:N3 | 25:YA:1511:A:N6 | 2.45 | 0.64 |
| 35:YP:138:LEU:HD11 | 35:YP:144:GLU:HG3 | 1.79 | 0.64 |
| 36:YQ:23:GLY:HA3 | 36:YQ:101:ARG:NH1 | 2.12 | 0.64 |
| 38:YS:78:LEU:HD11 | 38:YS:107:GLU:O | 1.97 | 0.64 |
| 42:YW:59:VAL:HG12 | 42:YW:60:ASN:N | 2.11 | 0.64 |
| 48:Y2:40:SER:C | 48:Y2:42:GLY:H | 2.00 | 0.64 |
| 1:QA:924:C:O2' | 1:QA:1502:A:N6 | 2.31 | 0.64 |
| 2:QB:155:LEU:HD12 | 2:QB:157:ARG:O | 1.98 | 0.64 |
| 2:QB:158:LEU:O | 2:QB:158:LEU:HD12 | 1.97 | 0.64 |
| 3:QC:34:LEU:HD21 | 3:QC:38:ARG:HD2 | 1.79 | 0.64 |
| 4:QD:13:ARG:HH22 | 4:QD:36:ARG:NH2 | 1.94 | 0.64 |
| 4:QD:79:PHE:C | 4:QD:79:PHE:HD2 | 1.99 | 0.64 |
| 10:QJ:39:PRO:HB3 | 10:QJ:70:ARG:HH12 | 1.61 | 0.64 |
| 25:RA:2294:C:OP2 | 38:RS:89:ARG:NH2 | 2.31 | 0.64 |
| 28:RE:37:ARG:HA | 28:RE:37:ARG:NE | 2.11 | 0.64 |
| 31:RH:51:ARG:HH11 | 31:RH:51:ARG:HG3 | 1.62 | 0.64 |
| 36:RQ:81:VAL:O | 36:RQ:82:ARG:HG2 | 1.97 | 0.64 |
| 39:RT:11:GLU:N | 39:RT:11:GLU:OE1 | 2.27 | 0.64 |
| 40:RU:65:ILE:HG12 | 40:RU:96:ALA:CB | 2.26 | 0.64 |
| 51:R5:40:LYS:HD3 | 51:R5:46:CYS:CB | 2.26 | 0.64 |
| 54:R8:52:LYS:O | 54:R8:52:LYS:HG3 | 1.97 | 0.64 |
| 1:XA:1314:C:OP1 | 19:XS:6:LYS:HE3 | 1.97 | 0.64 |
| 4:XD:61:LYS:HD2 | 4:XD:206:PHE:CE2 | 2.32 | 0.64 |
| 15:XO:25:THR:HG21 | 15:XO:70:LEU:HB2 | 1.77 | 0.64 |
| 16:XP:6:LEU:HD23 | 16:XP:17:TYR:CD2 | 2.32 | 0.64 |
| 25:YA:1590:U:H2' | 25:YA:1591:G:C8 | 2.32 | 0.64 |
| 27:YD:77:ALA:HB2 | 27:YD:97:TYR:HA | 1.77 | 0.64 |
| 31:YH:105:LEU:H | 31:YH:105:LEU:CD1 | 2.09 | 0.64 |
| 35:YP:98:GLU:O | 35:YP:101:VAL:HG12 | 1.98 | 0.64 |
| 36:YQ:81:VAL:O | 36:YQ:82:ARG:HG2 | 1.97 | 0.64 |
| 41:YV:76:LYS:HB2 | 41:YV:81:TYR:HB3 | 1.79 | 0.64 |
| 1:QA:971:G:C5 | 1:QA:1365:G:H5' | 2.32 | 0.64 |
| 1:QA:1055:A:H61 | 1:QA:1205:U:H3 | 1.45 | 0.64 |
| 1:QA:1306:A:N6 | 1:QA:1331:G:H1' | 2.13 | 0.64 |
| 2:QB:67:THR:HG21 | 2:QB:155:LEU:CD2 | 2.27 | 0.64 |
| 3:QC:138:VAL:HG13 | 3:QC:149:ALA:CB | 2.27 | 0.64 |
| 19:QS:35:SER:O | 19:QS:71:LEU:HD12 | 1.96 | 0.64 |
| 22:QV:6:G:H1 | 22:QV:67:C:H42 | 1.45 | 0.64 |
| 25:RA:1187:G:H5'' | 41:RV:81:TYR:HE2 | 1.60 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:2361:A:O5' | 54:R8:27:THR:OG1 | 2.14 | 0.64 |
| 31:RH:148:ILE:O | 31:RH:151:ILE:HG12 | 1.98 | 0.64 |
| 32:RI:77:LEU:HD11 | 32:RI:140:LEU:HD12 | 1.79 | 0.64 |
| 45:RZ:5:LEU:O | 45:RZ:6:LYS:HB2 | 1.98 | 0.64 |
| 1:XA:537:G:H5'' | 12:XL:113:ARG:NH1 | 2.12 | 0.64 |
| 1:XA:1002:G:H2' | 1:XA:1003:G:C8 | 2.31 | 0.64 |
| 4:XD:122:ARG:HD3 | 4:XD:122:ARG:O | 1.97 | 0.64 |
| 5:XE:50:GLU:HG3 | 5:XE:52:PRO:HD2 | 1.79 | 0.64 |
| 13:XM:13:LYS:HA | 13:XM:44:ARG:HD2 | 1.77 | 0.64 |
| 13:XM:23:TYR:CB | 13:XM:67:GLU:HG2 | 2.25 | 0.64 |
| 14:YN:24:CYS:SG | 14:YN:27:CYS:N | 2.69 | 0.64 |
| 25:YA:372:G:HO2' | 25:YA:400:G:H1 | 1.38 | 0.64 |
| 25:YA:372:G:N2 | 25:YA:401:A:OP2 | 2.22 | 0.64 |
| 40:YU:102:GLU:HG3 | 41:YV:2:PHE:HE2 | 1.62 | 0.64 |
| 51:Y5:40:LYS:HD3 | 51:Y5:46:CYS:CB | 2.26 | 0.64 |
| 3:QC:58:GLU:O | 3:QC:64:VAL:HA | 1.98 | 0.64 |
| 4:QD:11:LEU:HD22 | 4:QD:66:ARG:HD3 | 1.78 | 0.64 |
| 5:QE:41:VAL:CG1 | 5:QE:113:ALA:HB2 | 2.25 | 0.64 |
| 11:QK:103:LEU:H | 11:QK:103:LEU:HD22 | 1.61 | 0.64 |
| 12:QL:26:ALA:O | 12:QL:27:LEU:O | 2.14 | 0.64 |
| 14:QN:7:ILE:HG13 | 14:QN:8:GLU:N | 2.11 | 0.64 |
| 16:QP:58:TYR:O | 16:QP:62:VAL:HG22 | 1.96 | 0.64 |
| 25:RA:593:G:H2' | 25:RA:594:U:H6 | 1.63 | 0.64 |
| 27:RD:77:ALA:HB2 | 27:RD:97:TYR:HA | 1.77 | 0.64 |
| 28:RE:104:VAL:HG11 | 28:RE:188:VAL:CG2 | 2.27 | 0.64 |
| 32:RI:88:ILE:HG12 | 32:RI:122:GLU:N | 2.13 | 0.64 |
| 36:RQ:80:GLU:CD | 46:R0:5:LYS:HB2 | 2.16 | 0.64 |
| 44:RY:56:PRO:HG2 | 44:RY:57:GLN:OE1 | 1.98 | 0.64 |
| 47:R1:80:LEU:HD12 | 47:R1:81:LYS:HE3 | 1.78 | 0.64 |
| 51:R5:40:LYS:NZ | 51:R5:48:GLU:HB2 | 2.10 | 0.64 |
| 1:XA:186:C:H5' | 20:XT:78:ALA:HB1 | 1.78 | 0.64 |
| 8:XH:42:GLU:HG3 | 8:XH:109:ILE:HD12 | 1.80 | 0.64 |
| 17:XQ:11:VAL:HG23 | 17:XQ:20:THR:HB | 1.79 | 0.64 |
| 21:XU:25:LYS:HE2 | 21:XU:26:LYS:O | 1.96 | 0.64 |
| 25:YA:24:G:O2' | 42:YW:78:GLU:O | 2.15 | 0.64 |
| 25:YA:2469:A:H5'' | 25:YA:2470:G:H8 | 1.63 | 0.64 |
| 30:YG:82:LEU:HA | 30:YG:86:MET:SD | 2.38 | 0.64 |
| 47:Y1:29:GLY:O | 47:Y1:30:VAL:HG23 | 1.97 | 0.64 |
| 50:Y4:36:CYS:O | 50:Y4:37:SER:O | 2.14 | 0.64 |
| 50:Y4:37:SER:C | 50:Y4:39:CYS:H | 1.98 | 0.64 |
| 1:QA:1074:G:O2' | 1:QA:1101:A:N1 | 2.27 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 4:QD:61:LYS:HD2 | 4:QD:206:PHE:CE2 | 2.32 | 0.64 |
| 5:QE:41:VAL:HG12 | 5:QE:112:LEU:O | 1.97 | 0.64 |
| 9:QI:53:VAL:HG21 | 9:QI:92:TYR:CE1 | 2.32 | 0.64 |
| 10:QJ:54:PHE:C | 10:QJ:55:LYS:HG3 | 2.18 | 0.64 |
| 13:QM:4:ILE:H | 13:QM:9:ILE:HG22 | 1.62 | 0.64 |
| 28:RE:50:GLY:HA3 | 28:RE:74:PRO:HG3 | 1.79 | 0.64 |
| 32:RI:120:ILE:HD11 | 32:RI:126:TYR:CZ | 2.32 | 0.64 |
| 36:RQ:10:ARG:O | 36:RQ:11:LYS:HB2 | 1.98 | 0.64 |
| 36:RQ:23:GLY:HA3 | 36:RQ:101:ARG:NH1 | 2.12 | 0.64 |
| 37:RR:2:ARG:HG2 | 37:RR:5:LYS:NZ | 2.13 | 0.64 |
| 5:XE:83:GLU:HG2 | 5:XE:88:LYS:HG3 | 1.78 | 0.64 |
| 8:XH:20:TYR:CE2 | 8:XH:75:ARG:HD2 | 2.32 | 0.64 |
| 14:XN:7:ILE:HG13 | 14:XN:8:GLU:N | 2.12 | 0.64 |
| 14:XN:26:ARG:NE | 14:XN:47:LEU:HD21 | 2.13 | 0.64 |
| 25:YA:575:A:OP1 | 25:YA:2499:C:O2' | 2.15 | 0.64 |
| 25:YA:1678:G:H22 | 25:YA:1989:G:H22 | 1.45 | 0.64 |
| 25:YA:2415:G:H4' | 35:YP:67:MET:N | 2.12 | 0.64 |
| 27:YD:122:ASP:CG | 27:YD:123:ALA:H | 2.00 | 0.64 |
| 30:YG:114:ILE:CG2 | 30:YG:117:PHE:HB2 | 2.28 | 0.64 |
| 31:YH:117:PRO:HB3 | 31:YH:123:PHE:CE1 | 2.33 | 0.64 |
| 44:YY:56:PRO:HG2 | 44:YY:57:GLN:OE1 | 1.98 | 0.64 |
| 50:Y4:35:VAL:O | 50:Y4:37:SER:N | 2.26 | 0.64 |
| 1:QA:1124:G:H3' | 1:QA:1145:C:N4 | 2.13 | 0.64 |
| 2:QB:60:ASP:HB3 | 2:QB:64:ARG:NH1 | 2.13 | 0.64 |
| 9:QI:128:ARG:HD3 | 22:QV:32:C:OP2 | 1.96 | 0.64 |
| 16:QP:21:VAL:HG23 | 16:QP:33:ILE:HB | 1.77 | 0.64 |
| 18:QR:73:ALA:HB3 | 18:QR:79:LEU:HD12 | 1.78 | 0.64 |
| 33:RN:57:ALA:HA | 33:RN:60:ILE:HD11 | 1.78 | 0.64 |
| 47:R1:91:LYS:HG3 | 47:R1:92:LYS:H | 1.62 | 0.64 |
| 50:R4:71:ARG:HH11 | 50:R4:71:ARG:CG | 1.98 | 0.64 |
| 54:R8:59:LYS:HZ3 | 54:R8:59:LYS:HB3 | 1.62 | 0.64 |
| 5:XE:41:VAL:CG1 | 5:XE:113:ALA:HB2 | 2.25 | 0.64 |
| 11:XK:19:ALA:HA | 11:XK:32:ILE:HG22 | 1.80 | 0.64 |
| 25:YA:848:G:H2' | 25:YA:849:A:C8 | 2.32 | 0.64 |
| 28:YE:104:VAL:HG11 | 28:YE:188:VAL:CG2 | 2.27 | 0.64 |
| 29:YF:155:LEU:HD13 | 29:YF:174:VAL:CG1 | 2.27 | 0.64 |
| 30:YG:81:LYS:O | 30:YG:82:LEU:HB2 | 1.96 | 0.64 |
| 31:YH:51:ARG:HG3 | 31:YH:51:ARG:HH11 | 1.62 | 0.64 |
| 33:YN:15:LEU:HD12 | 33:YN:136:GLU:HB2 | 1.79 | 0.64 |
| 36:YQ:81:VAL:O | 36:YQ:82:ARG:HD3 | 1.98 | 0.64 |
| 39:YT:11:GLU:CD | 39:YT:11:GLU:N | 2.47 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 41:YV:43:GLU:HA | 41:YV:43:GLU:OE2 | 1.95 | 0.64 |
| 44:YY:86:ARG:O | 44:YY:92:ASN:HB2 | 1.97 | 0.64 |
| 1:QA:1124:G:H5'' | 1:QA:1145:C:H41 | 1.60 | 0.64 |
| 21:QU:15:ARG:HH11 | 21:QU:15:ARG:HG2 | 1.63 | 0.64 |
| 25:RA:994:C:H3' | 40:RU:54:LYS:HE3 | 1.78 | 0.64 |
| 25:RA:2790:A:O2' | 25:RA:2893:G:N3 | 2.30 | 0.64 |
| 27:RD:182:LEU:H | 27:RD:272:ALA:HB3 | 1.63 | 0.64 |
| 32:RI:67:ARG:O | 32:RI:71:ILE:HG22 | 1.98 | 0.64 |
| 32:RI:74:ASN:OD1 | 32:RI:75:LEU:HD13 | 1.97 | 0.64 |
| 33:RN:15:LEU:HD12 | 33:RN:136:GLU:HB2 | 1.79 | 0.64 |
| 42:RW:86:LEU:HD12 | 42:RW:87:PRO:CD | 2.23 | 0.64 |
| 45:RZ:120:ILE:HD13 | 45:RZ:169:GLU:HG3 | 1.79 | 0.64 |
| 1:XA:542:G:OP1 | 4:XD:10:ARG:NH2 | 2.31 | 0.64 |
| 1:XA:1502:A:H2 | 1:XA:1505:G:H1 | 1.46 | 0.64 |
| 2:XB:187:LEU:HD12 | 2:XB:205:ASP:HA | 1.79 | 0.64 |
| 3:XC:58:GLU:O | 3:XC:64:VAL:HA | 1.97 | 0.64 |
| 3:XC:181:ASN:ND2 | 3:XC:204:LEU:HB2 | 2.13 | 0.64 |
| 9:XI:28:VAL:HA | 9:XI:63:ILE:HB | 1.79 | 0.64 |
| 10:XJ:27:ALA:CB | 10:XJ:34:VAL:HG21 | 2.26 | 0.64 |
| 16:XP:58:TYR:O | 16:XP:62:VAL:HG22 | 1.96 | 0.64 |
| 25:YA:2227:A:H5'' | 27:YD:263:ARG:NH1 | 2.12 | 0.64 |
| 25:YA:2593:U:H2' | 25:YA:2594:C:H6 | 1.62 | 0.64 |
| 27:YD:135:PHE:N | 27:YD:135:PHE:HD2 | 1.96 | 0.64 |
| 29:YF:11:VAL:HG12 | 29:YF:12:LEU:N | 2.13 | 0.64 |
| 29:YF:45:ARG:CG | 29:YF:45:ARG:HH11 | 2.09 | 0.64 |
| 29:YF:175:THR:O | 29:YF:176:LEU:HB2 | 1.96 | 0.64 |
| 34:YO:12:ASP:OD1 | 34:YO:14:THR:HG23 | 1.97 | 0.64 |
| 2:QB:134:GLU:HA | 2:QB:137:ARG:HB3 | 1.80 | 0.64 |
| 12:QL:10:LEU:HD13 | 17:QQ:32:TYR:HE2 | 1.55 | 0.64 |
| 20:QT:26:ASN:HB2 | 20:QT:71:THR:HG23 | 1.79 | 0.64 |
| 25:RA:389:G:H1 | 35:RP:70:GLN:HB3 | 1.61 | 0.64 |
| 26:RB:12:C:H2' | 46:R0:73:GLY:HA3 | 1.80 | 0.64 |
| 35:RP:98:GLU:O | 35:RP:101:VAL:HG12 | 1.97 | 0.64 |
| 40:RU:102:GLU:HG3 | 41:RV:2:PHE:HE2 | 1.62 | 0.64 |
| 42:RW:59:VAL:HG12 | 42:RW:60:ASN:N | 2.11 | 0.64 |
| 54:R8:56:GLU:N | 54:R8:56:GLU:OE1 | 2.31 | 0.64 |
| 1:XA:276:G:O3' | 17:XQ:68:ARG:NH1 | 2.31 | 0.64 |
| 3:XC:138:VAL:HG13 | 3:XC:149:ALA:CB | 2.28 | 0.64 |
| 8:XH:97:VAL:HG13 | 8:XH:98:LYS:N | 2.13 | 0.64 |
| 16:XP:51:VAL:HG21 | 16:XP:77:ALA:HB2 | 1.78 | 0.64 |
| 25:YA:1113:U:OP1 | 31:YH:2:SER:N | 2.30 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 28:YE:69:LYS:O | 28:YE:71:GLY:N | 2.27 | 0.64 |
| 31:YH:92:ILE:HD12 | 31:YH:92:ILE:H | 1.63 | 0.64 |
| 32:YI:120:ILE:HD11 | 32:YI:126:TYR:CZ | 2.33 | 0.64 |
| 37:YR:2:ARG:HG2 | 37:YR:5:LYS:NZ | 2.13 | 0.64 |
| 46:Y0:68:GLU:HG2 | 46:Y0:80:HIS:HB2 | 1.79 | 0.64 |
| 50:Y4:49:PHE:O | 50:Y4:50:VAL:HG23 | 1.97 | 0.64 |
| 7:QG:148:ASN:N | 7:QG:148:ASN:ND2 | 2.46 | 0.64 |
| 9:QI:5:TYR:O | 9:QI:84:ALA:HA | 1.98 | 0.64 |
| 10:QJ:42:THR:HG23 | 10:QJ:68:HIS:HA | 1.80 | 0.64 |
| 25:RA:327:G:N2 | 44:RY:70:SER:OG | 2.31 | 0.64 |
| 25:RA:507:A:H5'' | 25:RA:508:G:H5' | 1.79 | 0.64 |
| 25:RA:2131:G:H4' | 25:RA:2132:U:H4' | 1.80 | 0.64 |
| 35:RP:105:LEU:O | 35:RP:106:LEU:CB | 2.42 | 0.64 |
| 43:RX:11:PRO:HB3 | 43:RX:92:LEU:HD21 | 1.78 | 0.64 |
| 2:XB:134:GLU:HA | 2:XB:137:ARG:HB3 | 1.80 | 0.64 |
| 6:XF:12:PRO:HG2 | 6:XF:13:ASN:H | 1.62 | 0.64 |
| 11:XK:48:ILE:HD11 | 11:XK:64:ALA:CA | 2.28 | 0.64 |
| 14:YN:18:VAL:HG23 | 14:YN:19:ARG:H | 1.63 | 0.64 |
| 15:XO:87:ILE:CG2 | 15:XO:88:ARG:H | 2.00 | 0.64 |
| 27:YD:239:ARG:O | 27:YD:240:ALA:HB2 | 1.97 | 0.64 |
| 29:YF:46:ARG:HG2 | 29:YF:46:ARG:NH1 | 2.00 | 0.64 |
| 31:YH:3:ARG:HA | 31:YH:3:ARG:NE | 2.12 | 0.64 |
| 31:YH:148:ILE:O | 31:YH:151:ILE:HG12 | 1.98 | 0.64 |
| 34:YO:7:TYR:CE1 | 34:YO:20:MET:HB2 | 2.32 | 0.64 |
| 34:YO:104:ARG:HG2 | 34:YO:104:ARG:NH1 | 2.13 | 0.64 |
| 36:YQ:134:ARG:NE | 45:YZ:122:ARG:HH22 | 1.94 | 0.64 |
| 41:YV:36:PRO:HA | 41:YV:56:SER:OG | 1.98 | 0.64 |
| 43:YX:57:LEU:HD12 | 43:YX:78:LYS:HB2 | 1.77 | 0.64 |
| 47:Y1:80:LEU:HD12 | 47:Y1:81:LYS:HE3 | 1.78 | 0.64 |
| 6:QF:12:PRO:HG2 | 6:QF:13:ASN:H | 1.63 | 0.64 |
| 12:QL:18:VAL:HG23 | 12:QL:19:ARG:H | 1.63 | 0.64 |
| 14:QN:53:LEU:HB3 | 14:QN:56:VAL:HG21 | 1.80 | 0.64 |
| 19:QS:21:GLU:HG3 | 19:QS:22:LEU:N | 2.11 | 0.64 |
| 25:RA:1026:U:H4' | 25:RA:1027:A:OP1 | 1.97 | 0.64 |
| 31:RH:92:ILE:H | 31:RH:92:ILE:HD12 | 1.63 | 0.64 |
| 36:RQ:30:GLY:HA3 | 36:RQ:106:VAL:O | 1.98 | 0.64 |
| 46:R0:11:ARG:CG | 46:R0:11:ARG:HH11 | 2.11 | 0.64 |
| 1:XA:1284:C:H3' | 1:XA:1285:A:H8 | 1.63 | 0.64 |
| 2:XB:8:LYS:H | 2:XB:8:LYS:CD | 2.09 | 0.64 |
| 4:XD:79:PHE:C | 4:XD:79:PHE:HD2 | 2.00 | 0.64 |
| 4:XD:165:MET:HA | 4:XD:165:MET:HE3 | 1.80 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 5:XE:78:HIS:CG | 8:XH:104:ARG:HG2 | 2.32 | 0.64 |
| 8:XH:28:ALA:HB3 | 8:XH:57:PRO:HB2 | 1.79 | 0.64 |
| 20:XT:26:ASN:HB2 | 20:XT:71:THR:HG23 | 1.79 | 0.64 |
| 25:YA:127:A:H5'' | 25:YA:128:C:C6 | 2.32 | 0.64 |
| 25:YA:273(C):C:H42 | 25:YA:363(C):G:H1 | 1.45 | 0.64 |
| 25:YA:2580:U:H4' | 28:YE:130:GLY:HA3 | 1.78 | 0.64 |
| 32:YI:74:ASN:OD1 | 32:YI:75:LEU:HD13 | 1.97 | 0.64 |
| 36:YQ:104:PHE:O | 36:YQ:105:GLU:HB3 | 1.98 | 0.64 |
| 54:Y8:48:PHE:N | 54:Y8:48:PHE:CD1 | 2.66 | 0.64 |
| 1:QA:664:G:H22 | 1:QA:741:G:H1 | 1.46 | 0.63 |
| 9:QI:47:LEU:N | 9:QI:47:LEU:HD22 | 2.14 | 0.63 |
| 9:QI:97:LYS:HB3 | 9:QI:98:PRO:HD3 | 1.79 | 0.63 |
| 16:QP:51:VAL:CG1 | 16:QP:52:ASP:H | 2.11 | 0.63 |
| 25:RA:686:G:N2 | 25:RA:788:A:H61 | 1.95 | 0.63 |
| 25:RA:817:C:O2' | 25:RA:839:U:H5'' | 1.98 | 0.63 |
| 25:RA:997:G:OP1 | 40:RU:93:LYS:HD3 | 1.98 | 0.63 |
| 25:RA:1359:A:N6 | 25:RA:1372:U:H3 | 1.95 | 0.63 |
| 25:RA:1927:A:H2' | 25:RA:1928:A:C8 | 2.33 | 0.63 |
| 26:RB:6:C:HO2' | 38:RS:29:PHE:HE1 | 1.44 | 0.63 |
| 30:RG:82:LEU:HA | 30:RG:86:MET:SD | 2.38 | 0.63 |
| 30:RG:114:ILE:CG2 | 30:RG:117:PHE:HB2 | 2.28 | 0.63 |
| 33:RN:43:THR:HB | 33:RN:46:VAL:CG1 | 2.27 | 0.63 |
| 41:RV:52:VAL:CG2 | 41:RV:55:ALA:HB3 | 2.28 | 0.63 |
| 1:XA:67:C:H2' | 1:XA:68:G:C8 | 2.32 | 0.63 |
| 2:XB:21:ARG:HB2 | 2:XB:39:ILE:HA | 1.80 | 0.63 |
| 6:XF:50:TYR:CE1 | 18:XR:77:GLY:HA2 | 2.32 | 0.63 |
| 7:XG:113:GLU:CG | 7:XG:119:ARG:HG2 | 2.28 | 0.63 |
| 9:XI:5:TYR:O | 9:XI:84:ALA:HA | 1.98 | 0.63 |
| 9:XI:62:TYR:O | 9:XI:63:ILE:HD12 | 1.98 | 0.63 |
| 11:XK:12:ARG:HG2 | 11:XK:13:GLN:H | 1.63 | 0.63 |
| 25:YA:1055:G:H1 | 25:YA:1104:C:H42 | 1.44 | 0.63 |
| 28:YE:201:THR:HG21 | 28:YE:203:LYS:HB3 | 1.80 | 0.63 |
| 33:YN:39:ARG:HB3 | 33:YN:41:ASP:OD1 | 1.98 | 0.63 |
| 36:YQ:80:GLU:CD | 46:Y0:5:LYS:HB3 | 2.18 | 0.63 |
| 38:YS:26:LEU:HD22 | 38:YS:87:PHE:HD1 | 1.63 | 0.63 |
| 45:YZ:120:ILE:HD13 | 45:YZ:169:GLU:HG3 | 1.79 | 0.63 |
| 1:QA:1347:G:N2 | 1:QA:1374:A:OP2 | 2.28 | 0.63 |
| 3:QC:181:ASN:ND2 | 3:QC:204:LEU:HB2 | 2.13 | 0.63 |
| 8:QH:97:VAL:HG13 | 8:QH:98:LYS:N | 2.13 | 0.63 |
| 9:QI:62:TYR:O | 9:QI:63:ILE:HD12 | 1.99 | 0.63 |
| 14:QN:40:CYS:SG | 14:QN:43:CYS:HB2 | 2.38 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 15:QO:8:LYS:HB2 | 15:QO:8:LYS:NZ | 2.13 | 0.63 |
| 25:RA:299:A:H5' | 44:RY:84:ARG:HH21 | 1.63 | 0.63 |
| 25:RA:2637:U:H5'' | 28:RE:82:ARG:HH21 | 1.63 | 0.63 |
| 26:RB:116:G:H4' | 38:RS:54:LEU:HD13 | 1.79 | 0.63 |
| 27:RD:147:LEU:CD1 | 27:RD:155:LEU:HD11 | 2.26 | 0.63 |
| 31:RH:117:PRO:HB3 | 31:RH:123:PHE:CE1 | 2.33 | 0.63 |
| 34:RO:86:ILE:HD12 | 34:RO:86:ILE:N | 2.13 | 0.63 |
| 35:RP:113:LYS:HG2 | 35:RP:115:LEU:HD23 | 1.79 | 0.63 |
| 36:RQ:81:VAL:O | 36:RQ:82:ARG:HD3 | 1.97 | 0.63 |
| 43:RX:63:LYS:O | 43:RX:64:LYS:HD2 | 1.98 | 0.63 |
| 5:XE:53:LEU:HD12 | 5:XE:53:LEU:N | 2.09 | 0.63 |
| 7:XG:150:ALA:HA | 11:XK:59:TYR:HD2 | 1.61 | 0.63 |
| 12:XL:18:VAL:HG23 | 12:XL:19:ARG:H | 1.62 | 0.63 |
| 26:YB:42:C:H42 | 30:YG:91:ARG:HH21 | 1.46 | 0.63 |
| 40:YU:92:ARG:O | 40:YU:94:ASN:N | 2.25 | 0.63 |
| 47:Y1:82:LEU:CD1 | 47:Y1:83:GLU:CA | 2.76 | 0.63 |
| 1:QA:1187:G:H21 | 14:QN:60:SER:HB3 | 1.64 | 0.63 |
| 4:QD:197:PRO:HD3 | 6:XF:16:GLN:HG3 | 1.80 | 0.63 |
| 13:QM:51:ALA:O | 13:QM:55:ARG:HG3 | 1.97 | 0.63 |
| 14:QN:18:VAL:HG23 | 14:QN:19:ARG:H | 1.63 | 0.63 |
| 19:QS:39:THR:HG22 | 19:QS:40:ILE:N | 2.14 | 0.63 |
| 25:RA:451:C:H41 | 25:RA:454:A:H5' | 1.64 | 0.63 |
| 25:RA:959:A:N3 | 25:RA:2457:U:O2' | 2.25 | 0.63 |
| 25:RA:1007:C:O3' | 33:RN:108:PRO:HB3 | 1.98 | 0.63 |
| 25:RA:1062:G:H2' | 25:RA:1063:G:H8 | 1.63 | 0.63 |
| 27:RD:135:PHE:N | 27:RD:135:PHE:HD2 | 1.96 | 0.63 |
| 27:RD:230:ASP:O | 27:RD:231:HIS:HB2 | 1.98 | 0.63 |
| 28:RE:201:THR:HG21 | 28:RE:203:LYS:HB3 | 1.80 | 0.63 |
| 29:RF:11:VAL:HG12 | 29:RF:12:LEU:N | 2.13 | 0.63 |
| 33:RN:61:ARG:HA | 33:RN:61:ARG:HE | 1.63 | 0.63 |
| 33:RN:131:GLN:CD | 33:RN:132:ALA:H | 2.01 | 0.63 |
| 35:RP:112:LEU:HD11 | 35:RP:114:ILE:HG23 | 1.80 | 0.63 |
| 37:RR:28:LEU:HD21 | 37:RR:114:VAL:HG12 | 1.79 | 0.63 |
| 2:XB:158:LEU:O | 2:XB:158:LEU:HD12 | 1.97 | 0.63 |
| 10:XJ:42:THR:HG23 | 10:XJ:68:HIS:HA | 1.80 | 0.63 |
| 15:XO:8:LYS:HB2 | 15:XO:8:LYS:NZ | 2.13 | 0.63 |
| 25:YA:601:C:O2' | 25:YA:605:C:OP1 | 2.16 | 0.63 |
| 25:YA:1639:U:H2' | 25:YA:1640:C:H5'' | 1.80 | 0.63 |
| 28:YE:14:ILE:CG1 | 28:YE:15:PHE:H | 2.08 | 0.63 |
| 37:YR:117:VAL:O | 37:YR:118:GLU:HB3 | 1.99 | 0.63 |
| 1:QA:439:A:OP2 | 1:QA:493:G:N1 | 2.31 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:QC:34:LEU:CD2 | 3:QC:38:ARG:HD2 | 2.28 | 0.63 |
| 19:QS:15:LEU:O | 19:QS:19:VAL:HG23 | 1.98 | 0.63 |
| 27:RD:239:ARG:O | 27:RD:240:ALA:HB2 | 1.97 | 0.63 |
| 31:RH:3:ARG:HA | 31:RH:3:ARG:NE | 2.12 | 0.63 |
| 36:RQ:104:PHE:O | 36:RQ:105:GLU:HB3 | 1.98 | 0.63 |
| 42:RW:74:ALA:O | 42:RW:75:TYR:HB3 | 1.98 | 0.63 |
| 1:XA:1129:C:H4' | 1:XA:1130:A:H5' | 1.81 | 0.63 |
| 2:XB:25:ASN:O | 2:XB:27:LYS:N | 2.28 | 0.63 |
| 11:XK:50:TYR:HH | 11:XK:59:TYR:HE2 | 1.47 | 0.63 |
| 12:XL:62:SER:O | 12:XL:64:TYR:HD1 | 1.82 | 0.63 |
| 25:YA:910:A:H62 | 36:YQ:12:GLN:HA | 1.62 | 0.63 |
| 25:YA:2810:A:O3' | 28:YE:61:ARG:HG3 | 1.98 | 0.63 |
| 27:YD:18:VAL:HG12 | 27:YD:19:ALA:O | 1.99 | 0.63 |
| 27:YD:230:ASP:O | 27:YD:231:HIS:HB2 | 1.98 | 0.63 |
| 28:YE:50:GLY:HA3 | 28:YE:74:PRO:HG3 | 1.80 | 0.63 |
| 35:YP:106:LEU:O | 35:YP:107:LYS:CB | 2.46 | 0.63 |
| 43:YX:18:TYR:C | 43:YX:20:GLY:H | 2.02 | 0.63 |
| 47:Y1:91:LYS:HG3 | 47:Y1:92:LYS:H | 1.63 | 0.63 |
| 1:QA:954:G:H4' | 13:QM:121:LYS:HG3 | 1.79 | 0.63 |
| 2:QB:20:GLU:HB2 | 2:QB:190:THR:OG1 | 1.98 | 0.63 |
| 3:QC:95:THR:HG22 | 3:QC:96:GLY:N | 2.07 | 0.63 |
| 4:QD:11:LEU:C | 4:QD:13:ARG:H | 2.00 | 0.63 |
| 4:QD:22:LYS:HG3 | 4:QD:26:CYS:SG | 2.38 | 0.63 |
| 7:QG:9:VAL:CG1 | 7:QG:94:ARG:HE | 2.12 | 0.63 |
| 8:QH:6:ILE:HB | 8:QH:85:ARG:HH12 | 1.62 | 0.63 |
| 11:QK:48:ILE:HD11 | 11:QK:64:ALA:CA | 2.28 | 0.63 |
| 20:QT:14:LYS:HA | 20:QT:17:ARG:NH1 | 2.14 | 0.63 |
| 25:RA:1037:G:H1 | 25:RA:1118:C:H42 | 1.44 | 0.63 |
| 25:RA:2306:C:H3' | 25:RA:2307:G:H5'' | 1.79 | 0.63 |
| 26:RB:42:C:N4 | 30:RG:91:ARG:HH21 | 1.88 | 0.63 |
| 28:RE:131:ALA:HB1 | 28:RE:135:HIS:CE1 | 2.34 | 0.63 |
| 29:RF:28:ILE:HG22 | 29:RF:112:MET:HB3 | 1.80 | 0.63 |
| 33:RN:22:THR:CG2 | 33:RN:23:LEU:N | 2.61 | 0.63 |
| 39:RT:49:VAL:HG13 | 39:RT:49:VAL:O | 1.99 | 0.63 |
| 43:RX:18:TYR:C | 43:RX:20:GLY:H | 2.02 | 0.63 |
| 43:RX:49:VAL:HG13 | 43:RX:83:VAL:HG13 | 1.80 | 0.63 |
| 52:R6:27:LYS:HB2 | 52:R6:27:LYS:HZ3 | 1.61 | 0.63 |
| 1:XA:375:U:H4' | 16:XP:17:TYR:HE2 | 1.62 | 0.63 |
| 4:XD:153:ARG:HD3 | 4:XD:181:MET:SD | 2.39 | 0.63 |
| 18:XR:43:PHE:CE2 | 18:XR:58:LEU:HD11 | 2.31 | 0.63 |
| 19:XS:42:PRO:HB3 | 50:Y4:60:GLN:OE1 | 1.97 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:1203:G:H3' | 25:YA:1204:A:H5'' | 1.79 | 0.63 |
| 25:YA:2015:A:N3 | 51:Y5:2:ALA:N | 2.47 | 0.63 |
| 25:YA:2439:A:C8 | 25:YA:2439:A:H5' | 2.33 | 0.63 |
| 26:YB:75:G:H21 | 45:YZ:85:HIS:CE1 | 2.16 | 0.63 |
| 32:YI:86:THR:HG22 | 32:YI:86:THR:O | 1.98 | 0.63 |
| 33:YN:131:GLN:CD | 33:YN:132:ALA:H | 2.01 | 0.63 |
| 39:YT:111:ARG:C | 39:YT:113:LYS:H | 2.01 | 0.63 |
| 42:YW:110:LYS:HG3 | 42:YW:111:HIS:ND1 | 2.13 | 0.63 |
| 1:QA:235:C:H5' | 17:QQ:70:ARG:HG2 | 1.78 | 0.63 |
| 1:QA:690:G:H22 | 11:QK:55:LYS:NZ | 1.97 | 0.63 |
| 1:QA:1135:U:H4' | 1:QA:1136:U:H5 | 1.64 | 0.63 |
| 8:QH:28:ALA:HB3 | 8:QH:57:PRO:HB2 | 1.79 | 0.63 |
| 8:QH:112:LEU:HD12 | 8:QH:112:LEU:O | 1.98 | 0.63 |
| 11:QK:17:GLY:HA3 | 11:QK:77:MET:HE3 | 1.78 | 0.63 |
| 12:QL:62:SER:O | 12:QL:64:TYR:HD1 | 1.82 | 0.63 |
| 27:RD:18:VAL:HG12 | 27:RD:19:ALA:O | 1.99 | 0.63 |
| 29:RF:132:VAL:HG23 | 29:RF:133:ASN:N | 2.14 | 0.63 |
| 32:RI:144:VAL:C | 32:RI:145:VAL:HG12 | 2.15 | 0.63 |
| 33:RN:39:ARG:HB3 | 33:RN:41:ASP:OD1 | 1.99 | 0.63 |
| 35:RP:108:LYS:HD2 | 35:RP:108:LYS:H | 1.63 | 0.63 |
| 38:RS:78:LEU:HD11 | 38:RS:107:GLU:O | 1.98 | 0.63 |
| 44:RY:95:LYS:CB | 44:RY:100:ALA:HA | 2.13 | 0.63 |
| 48:R2:40:SER:C | 48:R2:42:GLY:H | 2.00 | 0.63 |
| 3:XC:95:THR:HG22 | 3:XC:96:GLY:N | 2.07 | 0.63 |
| 12:XL:86:ARG:HB2 | 12:XL:101:VAL:CG2 | 2.28 | 0.63 |
| 30:YG:68:PRO:HB2 | 30:YG:90:LEU:HD12 | 1.80 | 0.63 |
| 32:YI:88:ILE:HG12 | 32:YI:122:GLU:N | 2.13 | 0.63 |
| 32:YI:133:HIS:HD2 | 32:YI:134:PRO:HD2 | 1.63 | 0.63 |
| 33:YN:87:LEU:O | 33:YN:87:LEU:HD23 | 1.99 | 0.63 |
| 34:YO:86:ILE:HD12 | 34:YO:86:ILE:N | 2.13 | 0.63 |
| 36:YQ:30:GLY:HA3 | 36:YQ:106:VAL:O | 1.98 | 0.63 |
| 38:YS:22:GLY:O | 38:YS:23:ARG:O | 2.17 | 0.63 |
| 39:YT:60:THR:HG22 | 39:YT:77:PRO:HA | 1.80 | 0.63 |
| 42:YW:74:ALA:O | 42:YW:75:TYR:HB3 | 1.98 | 0.63 |
| 45:YZ:4:ARG:HH11 | 45:YZ:4:ARG:HG2 | 1.64 | 0.63 |
| 48:Y2:40:SER:C | 48:Y2:42:GLY:N | 2.51 | 0.63 |
| 54:Y8:59:LYS:HZ3 | 54:Y8:59:LYS:HB3 | 1.62 | 0.63 |
| 1:QA:1410:G:H1 | 1:QA:1490:C:H42 | 1.45 | 0.63 |
| 2:QB:8:LYS:H | 2:QB:8:LYS:CD | 2.09 | 0.63 |
| 4:QD:79:PHE:C | 4:QD:79:PHE:CD2 | 2.71 | 0.63 |
| 15:QO:61:GLY:C | 15:QO:65:ARG:HH12 | 2.02 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:RA:1252:G:N3 | 40:RU:33:ARG:HD2 | 2.14 | 0.63 |
| 25:RA:1509:C:H3' | 25:RA:1510:A:H5'' | 1.79 | 0.63 |
| 25:RA:1792:G:H2' | 25:RA:1793:C:H6 | 1.63 | 0.63 |
| 25:RA:2219:G:OP1 | 27:RD:172:TYR:OH | 2.13 | 0.63 |
| 25:RA:2636:U:OP1 | 28:RE:79:ARG:HA | 1.99 | 0.63 |
| 29:RF:119:ARG:HH11 | 29:RF:119:ARG:HG2 | 1.64 | 0.63 |
| 31:RH:153:LYS:HG3 | 31:RH:161:GLY:HA3 | 1.81 | 0.63 |
| 36:RQ:20:ALA:HB1 | 36:RQ:99:PRO:CB | 2.29 | 0.63 |
| 36:RQ:66:ILE:CG1 | 36:RQ:67:ARG:H | 2.12 | 0.63 |
| 39:RT:16:ARG:HE | 39:RT:19:LEU:HD21 | 1.62 | 0.63 |
| 48:R2:42:GLY:O | 48:R2:44:LEU:N | 2.30 | 0.63 |
| 48:R2:46:GLN:HA | 48:R2:46:GLN:OE1 | 1.98 | 0.63 |
| 1:XA:591:U:H2' | 1:XA:592:G:H8 | 1.64 | 0.63 |
| 2:XB:155:LEU:HD12 | 2:XB:157:ARG:O | 1.97 | 0.63 |
| 5:XE:91:LEU:HA | 5:XE:120:THR:HG22 | 1.81 | 0.63 |
| 9:XI:17:VAL:HG21 | 9:XI:81:ILE:N | 2.14 | 0.63 |
| 9:XI:118:LYS:O | 9:XI:119:ALA:HB3 | 1.99 | 0.63 |
| 19:XS:15:LEU:O | 19:XS:19:VAL:HG23 | 1.98 | 0.63 |
| 25:YA:222:A:H3' | 25:YA:421:U:H5' | 1.79 | 0.63 |
| 25:YA:1026:U:H1' | 25:YA:1027:A:H5'' | 1.80 | 0.63 |
| 25:YA:2224:G:OP1 | 27:YD:268:ARG:HD3 | 1.98 | 0.63 |
| 28:YE:35:GLN:CG | 28:YE:37:ARG:NE | 2.62 | 0.63 |
| 30:YG:61:ALA:HB2 | 30:YG:68:PRO:HD2 | 1.81 | 0.63 |
| 36:YQ:10:ARG:O | 36:YQ:11:LYS:HB2 | 1.98 | 0.63 |
| 36:YQ:20:ALA:HB1 | 36:YQ:99:PRO:CB | 2.28 | 0.63 |
| 39:YT:16:ARG:HE | 39:YT:19:LEU:HD21 | 1.62 | 0.63 |
| 48:Y2:46:GLN:OE1 | 48:Y2:46:GLN:HA | 1.97 | 0.63 |
| 2:QB:187:LEU:HD12 | 2:QB:205:ASP:HA | 1.79 | 0.63 |
| 3:QC:70:VAL:HG12 | 3:QC:72:LYS:N | 2.10 | 0.63 |
| 9:QI:118:LYS:O | 9:QI:119:ALA:HB3 | 1.99 | 0.63 |
| 11:QK:19:ALA:HA | 11:QK:32:ILE:HG22 | 1.80 | 0.63 |
| 12:QL:86:ARG:HB2 | 12:QL:101:VAL:CG2 | 2.28 | 0.63 |
| 13:QM:40:ASN:HD21 | 13:QM:42:ALA:HB3 | 1.64 | 0.63 |
| 25:RA:249:C:H4' | 25:RA:250:G:O5' | 1.99 | 0.63 |
| 25:RA:1266:G:O5' | 42:RW:15:ARG:NH2 | 2.32 | 0.63 |
| 25:RA:2344:U:C2 | 52:R6:37:ARG:HD3 | 2.33 | 0.63 |
| 25:RA:2404:C:O3' | 35:RP:77:ARG:NH2 | 2.32 | 0.63 |
| 27:RD:44:ASN:HB3 | 27:RD:49:ILE:CA | 2.27 | 0.63 |
| 27:RD:44:ASN:N | 27:RD:44:ASN:ND2 | 2.42 | 0.63 |
| 32:RI:86:THR:HG22 | 32:RI:86:THR:O | 1.99 | 0.63 |
| 37:RR:63:ARG:NH1 | 37:RR:80:PHE:CD1 | 2.67 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:RU:102:GLU:HG3 | 41:RV:2:PHE:CE2 | 2.34 | 0.63 |
| 42:RW:110:LYS:HG3 | 42:RW:111:HIS:ND1 | 2.12 | 0.63 |
| 47:R1:82:LEU:CD1 | 47:R1:83:GLU:CA | 2.76 | 0.63 |
| 52:R6:13:CYS:HB2 | 52:R6:22:ALA:HB3 | 1.80 | 0.63 |
| 1:XA:1073:U:O2' | 2:XB:104:ASN:OD1 | 2.17 | 0.63 |
| 2:XB:60:ASP:HB3 | 2:XB:64:ARG:NH1 | 2.13 | 0.63 |
| 2:XB:214:ILE:HD13 | 2:XB:217:ARG:NH2 | 2.14 | 0.63 |
| 3:XC:34:LEU:CD2 | 3:XC:38:ARG:HD2 | 2.29 | 0.63 |
| 5:XE:51:VAL:O | 5:XE:55:VAL:HG23 | 1.99 | 0.63 |
| 9:XI:97:LYS:HB3 | 9:XI:98:PRO:HD3 | 1.79 | 0.63 |
| 25:YA:310:A:O2' | 25:YA:311:A:H2' | 1.98 | 0.63 |
| 25:YA:2287:A:O2' | 25:YA:2288:A:O5' | 2.15 | 0.63 |
| 27:YD:72:LYS:HG2 | 27:YD:103:ARG:NH2 | 2.13 | 0.63 |
| 29:YF:67:GLN:O | 29:YF:67:GLN:CG | 2.32 | 0.63 |
| 29:YF:132:VAL:HG23 | 29:YF:133:ASN:N | 2.14 | 0.63 |
| 31:YH:86:GLU:O | 31:YH:87:LEU:HB2 | 1.99 | 0.63 |
| 31:YH:153:LYS:HG3 | 31:YH:161:GLY:HA3 | 1.80 | 0.63 |
| 35:YP:83:VAL:HG12 | 35:YP:112:LEU:HD21 | 1.81 | 0.63 |
| 39:YT:49:VAL:HG13 | 39:YT:49:VAL:O | 1.99 | 0.63 |
| 47:Y1:18:ILE:HG12 | 47:Y1:37:ILE:HG12 | 1.81 | 0.63 |
| 1:QA:920:U:H2' | 1:QA:921:U:C6 | 2.34 | 0.63 |
| 1:QA:1402:C:N4 | 23:QX:3:G:OP1 | 2.32 | 0.63 |
| 2:QB:21:ARG:HB2 | 2:QB:39:ILE:HA | 1.80 | 0.63 |
| 2:QB:23:ARG:HD3 | 2:QB:23:ARG:H | 1.64 | 0.63 |
| 3:QC:3:ASN:N | 3:QC:3:ASN:HD22 | 1.97 | 0.63 |
| 3:QC:189:ALA:O | 3:QC:191:THR:HG23 | 1.99 | 0.63 |
| 27:RD:133:LEU:HD21 | 27:RD:191:ALA:CB | 2.29 | 0.63 |
| 39:RT:111:ARG:C | 39:RT:113:LYS:H | 2.01 | 0.63 |
| 40:RU:34:LYS:HA | 40:RU:34:LYS:CE | 2.29 | 0.63 |
| 44:RY:86:ARG:O | 44:RY:92:ASN:HB2 | 1.97 | 0.63 |
| 47:R1:76:ARG:HD2 | 47:R1:76:ARG:H | 1.64 | 0.63 |
| 47:R1:87:PRO:O | 47:R1:88:LYS:C | 2.37 | 0.63 |
| 54:R8:48:PHE:N | 54:R8:48:PHE:CD1 | 2.66 | 0.63 |
| 2:XB:236:TYR:CD2 | 2:XB:239:VAL:HG21 | 2.34 | 0.63 |
| 14:XN:18:VAL:HG23 | 14:XN:19:ARG:N | 2.14 | 0.63 |
| 16:XP:66:PRO:HG2 | 16:XP:71:ARG:HH12 | 1.64 | 0.63 |
| 19:XS:5:LEU:CG | 50:Y4:66:SER:CB | 2.77 | 0.63 |
| 22:XV:6:G:H1 | 22:XV:67:C:H42 | 1.45 | 0.63 |
| 23:XX:8:A:H8 | 23:XX:8:A:O5' | 1.81 | 0.63 |
| 33:YN:61:ARG:HA | 33:YN:61:ARG:HE | 1.63 | 0.63 |
| 35:YP:64:LYS:HB2 | 54:Y8:25:MET:HG3 | 1.81 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:YP:114:ILE:HD11 | 35:YP:130:PHE:CD1 | 2.34 | 0.63 |
| 43:YX:49:VAL:HG13 | 43:YX:83:VAL:HG13 | 1.80 | 0.63 |
| 45:YZ:5:LEU:O | 45:YZ:6:LYS:HB2 | 1.97 | 0.63 |
| 5:QE:51:VAL:O | 5:QE:55:VAL:HG23 | 1.99 | 0.62 |
| 9:QI:59:PHE:HZ | 9:QI:88:TYR:CE1 | 2.17 | 0.62 |
| 12:QL:85:ILE:HD11 | 12:QL:98:TYR:HB2 | 1.81 | 0.62 |
| 29:RF:107:LYS:O | 29:RF:108:LYS:C | 2.37 | 0.62 |
| 31:RH:136:ILE:H | 31:RH:136:ILE:HD12 | 1.64 | 0.62 |
| 32:RI:133:HIS:HD2 | 32:RI:134:PRO:HD2 | 1.63 | 0.62 |
| 36:RQ:20:ALA:HB1 | 36:RQ:99:PRO:CD | 2.29 | 0.62 |
| 48:R2:65:ASN:HB3 | 48:R2:69:ARG:NH1 | 2.10 | 0.62 |
| 2:XB:66:GLY:O | 2:XB:67:THR:HG23 | 1.99 | 0.62 |
| 7:XG:9:VAL:CG1 | 7:XG:94:ARG:HE | 2.12 | 0.62 |
| 11:XK:12:ARG:HG2 | 11:XK:13:GLN:N | 2.14 | 0.62 |
| 11:XK:57:THR:HG22 | 11:XK:59:TYR:H | 1.64 | 0.62 |
| 11:XK:99:GLN:HG2 | 11:XK:105:VAL:CG2 | 2.28 | 0.62 |
| 16:XP:8:ARG:HH11 | 16:XP:8:ARG:HG2 | 1.64 | 0.62 |
| 25:YA:226:G:O2' | 25:YA:228:A:N6 | 2.32 | 0.62 |
| 25:YA:2396:G:H1' | 47:Y1:30:VAL:HG13 | 1.81 | 0.62 |
| 28:YE:4:ILE:CD1 | 28:YE:28:ALA:HB1 | 2.29 | 0.62 |
| 28:YE:13:ARG:HH12 | 28:YE:21:VAL:HG12 | 1.64 | 0.62 |
| 32:YI:11:ASN:ND2 | 32:YI:12:LEU:HD13 | 2.14 | 0.62 |
| 33:YN:7:LYS:H | 33:YN:7:LYS:HD2 | 1.64 | 0.62 |
| 39:YT:22:PHE:N | 39:YT:22:PHE:HD2 | 1.97 | 0.62 |
| 43:YX:63:LYS:O | 43:YX:64:LYS:HD2 | 1.98 | 0.62 |
| 44:YY:87:LYS:O | 44:YY:88:LYS:NZ | 2.32 | 0.62 |
| 45:YZ:9:TYR:CE2 | 45:YZ:61:LEU:HD13 | 2.32 | 0.62 |
| 1:QA:192:U:H4' | 20:QT:102:GLY:O | 1.99 | 0.62 |
| 1:QA:514:C:H2' | 1:QA:515:G:C8 | 2.34 | 0.62 |
| 1:QA:1226:C:O2' | 13:QM:111:LYS:NZ | 2.31 | 0.62 |
| 2:QB:214:ILE:HD13 | 2:QB:217:ARG:NH2 | 2.14 | 0.62 |
| 5:QE:50:GLU:HG3 | 5:QE:52:PRO:HD2 | 1.79 | 0.62 |
| 6:QF:8:ILE:HD11 | 6:QF:79:LEU:HD13 | 1.81 | 0.62 |
| 7:QG:113:GLU:CG | 7:QG:119:ARG:HG2 | 2.28 | 0.62 |
| 8:QH:42:GLU:HG3 | 8:QH:109:ILE:HD12 | 1.80 | 0.62 |
| 11:QK:12:ARG:HG2 | 11:QK:13:GLN:N | 2.14 | 0.62 |
| 11:QK:58:PRO:HD3 | 11:QK:89:ALA:HB1 | 1.81 | 0.62 |
| 14:QN:26:ARG:NE | 14:QN:47:LEU:HD21 | 2.13 | 0.62 |
| 39:RT:24:PRO:O | 39:RT:94:ALA:HB2 | 2.00 | 0.62 |
| 46:R0:68:GLU:HG2 | 46:R0:80:HIS:HB2 | 1.79 | 0.62 |
| 1:XA:690:G:H22 | 11:XK:55:LYS:NZ | 1.95 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:XA:816:A:OP1 | 1:XA:1526:G:O2' | 2.13 | 0.62 |
| 3:XC:3:ASN:HD22 | 3:XC:3:ASN:N | 1.96 | 0.62 |
| 4:XD:29:PRO:C | 4:XD:30:LYS:HD3 | 2.19 | 0.62 |
| 9:XI:47:LEU:HD22 | 9:XI:47:LEU:N | 2.14 | 0.62 |
| 13:XM:36:LYS:HD3 | 13:XM:36:LYS:C | 2.20 | 0.62 |
| 25:YA:49:A:N7 | 25:YA:120:U:H5 | 1.97 | 0.62 |
| 25:YA:227:A:O2' | 25:YA:228:A:O5' | 2.16 | 0.62 |
| 25:YA:1446:C:H42 | 25:YA:1465:G:H1 | 1.46 | 0.62 |
| 30:YG:94:LEU:H | 30:YG:94:LEU:HD23 | 1.64 | 0.62 |
| 32:YI:75:LEU:HB3 | 32:YI:105:HIS:HE1 | 1.60 | 0.62 |
| 35:YP:1:MET:CE | 35:YP:5:ASP:HB3 | 2.24 | 0.62 |
| 45:YZ:94:GLU:HB2 | 45:YZ:95:PRO:HA | 1.80 | 0.62 |
| 45:YZ:103:ARG:CB | 45:YZ:138:GLU:HA | 2.27 | 0.62 |
| 45:YZ:132:ASN:O | 45:YZ:134:PRO:HD3 | 1.99 | 0.62 |
| 1:QA:1226:C:OP2 | 13:QM:103:THR:OG1 | 2.10 | 0.62 |
| 2:QB:236:TYR:CD2 | 2:QB:239:VAL:HG21 | 2.34 | 0.62 |
| 4:QD:153:ARG:HD3 | 4:QD:181:MET:SD | 2.38 | 0.62 |
| 7:QG:140:ASP:C | 7:QG:142:GLU:H | 2.03 | 0.62 |
| 9:QI:13:ALA:HB2 | 9:QI:67:GLY:O | 1.99 | 0.62 |
| 25:RA:476:G:N1 | 25:RA:479:A:OP2 | 2.27 | 0.62 |
| 26:RB:48:A:OP2 | 38:RS:30:ARG:NH2 | 2.31 | 0.62 |
| 35:RP:65:ARG:HH11 | 35:RP:65:ARG:CG | 2.06 | 0.62 |
| 36:RQ:81:VAL:HG23 | 46:R0:7:LEU:CD1 | 2.29 | 0.62 |
| 37:RR:117:VAL:O | 37:RR:118:GLU:HB3 | 1.99 | 0.62 |
| 39:RT:60:THR:HG22 | 39:RT:77:PRO:HA | 1.80 | 0.62 |
| 39:RT:96:ARG:NH1 | 39:RT:96:ARG:HB2 | 2.14 | 0.62 |
| 1:XA:292:G:H21 | 1:XA:608:A:H61 | 1.47 | 0.62 |
| 1:XA:312:C:H2' | 1:XA:313:A:C8 | 2.34 | 0.62 |
| 1:XA:560:U:O2' | 1:XA:561:U:OP2 | 2.14 | 0.62 |
| 2:XB:20:GLU:HB2 | 2:XB:190:THR:OG1 | 1.98 | 0.62 |
| 2:XB:178:ARG:NH2 | 8:XH:74:PRO:CB | 2.58 | 0.62 |
| 14:XN:23:ARG:NH1 | 14:XN:30:ALA:HB2 | 2.14 | 0.62 |
| 25:YA:234:C:H2' | 25:YA:235:U:C6 | 2.34 | 0.62 |
| 25:YA:993:G:OP1 | 40:YU:50:ARG:NH2 | 2.30 | 0.62 |
| 25:YA:1266:G:O5' | 42:YW:15:ARG:NH2 | 2.33 | 0.62 |
| 25:YA:2372:G:H4' | 52:Y6:46:HIS:NE2 | 2.15 | 0.62 |
| 33:YN:26:LEU:O | 33:YN:30:ILE:HG13 | 1.99 | 0.62 |
| 33:YN:133:GLN:O | 33:YN:134:ARG:HB3 | 1.99 | 0.62 |
| 37:YR:63:ARG:NH1 | 37:YR:80:PHE:CD1 | 2.67 | 0.62 |
| 40:YU:34:LYS:HA | 40:YU:34:LYS:CE | 2.29 | 0.62 |
| 52:Y6:27:LYS:HB2 | 52:Y6:27:LYS:HZ3 | 1.64 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 2:QB:66:GLY:O | 2:QB:67:THR:HG23 | 2.00 | 0.62 |
| 18:QR:82:THR:HG22 | 18:QR:83:GLU:N | 2.15 | 0.62 |
| 25:RA:1600:C:H4' | 53:R7:49:ARG:HE | 1.64 | 0.62 |
| 27:RD:72:LYS:HG2 | 27:RD:103:ARG:NH2 | 2.13 | 0.62 |
| 28:RE:35:GLN:CG | 28:RE:37:ARG:NE | 2.62 | 0.62 |
| 30:RG:77:ILE:HD13 | 30:RG:82:LEU:CD1 | 2.29 | 0.62 |
| 34:RO:8:LEU:HB2 | 34:RO:19:ILE:HD11 | 1.81 | 0.62 |
| 45:RZ:97:GLU:HB3 | 45:RZ:125:LEU:HD11 | 1.81 | 0.62 |
| 7:XG:140:ASP:HA | 7:XG:143:ARG:NH1 | 2.14 | 0.62 |
| 11:XK:58:PRO:HD3 | 11:XK:89:ALA:HB1 | 1.81 | 0.62 |
| 14:YN:53:LEU:HB3 | 14:YN:56:VAL:HG21 | 1.80 | 0.62 |
| 16:XP:51:VAL:CG1 | 16:XP:52:ASP:H | 2.10 | 0.62 |
| 18:XR:82:THR:HG22 | 18:XR:83:GLU:N | 2.15 | 0.62 |
| 25:YA:568:U:H5' | 25:YA:945:A:N1 | 2.14 | 0.62 |
| 25:YA:2250:G:C6 | 36:YQ:82:ARG:HD2 | 2.35 | 0.62 |
| 25:YA:2788:C:O2' | 25:YA:2809:A:N3 | 2.31 | 0.62 |
| 29:YF:129:PHE:O | 29:YF:130:ALA:HB3 | 1.99 | 0.62 |
| 30:YG:112:PRO:HB3 | 50:Y4:37:SER:CB | 2.25 | 0.62 |
| 39:YT:96:ARG:NH1 | 39:YT:96:ARG:HB2 | 2.14 | 0.62 |
| 41:YV:52:VAL:CG2 | 41:YV:55:ALA:HB3 | 2.28 | 0.62 |
| 45:YZ:97:GLU:HB3 | 45:YZ:125:LEU:HD11 | 1.81 | 0.62 |
| 52:Y6:13:CYS:HB2 | 52:Y6:22:ALA:HB3 | 1.81 | 0.62 |
| 52:Y6:44:ARG:O | 52:Y6:45:LYS:HB2 | 2.00 | 0.62 |
| 1:QA:113:G:N3 | 1:QA:353:A:O2' | 2.32 | 0.62 |
| 1:QA:606:G:H22 | 1:QA:631:G:H5' | 1.64 | 0.62 |
| 1:QA:1304:G:N1 | 1:QA:1332:A:OP2 | 2.33 | 0.62 |
| 1:QA:1347:G:C8 | 9:QI:107:ARG:HB3 | 2.34 | 0.62 |
| 3:QC:127:ARG:HH11 | 3:QC:127:ARG:HG2 | 1.64 | 0.62 |
| 4:QD:29:PRO:C | 4:QD:30:LYS:HD3 | 2.19 | 0.62 |
| 7:QG:140:ASP:HA | 7:QG:143:ARG:NH1 | 2.14 | 0.62 |
| 9:QI:17:VAL:HG21 | 9:QI:81:ILE:N | 2.15 | 0.62 |
| 29:RF:28:ILE:HD13 | 29:RF:30:PRO:HD3 | 1.80 | 0.62 |
| 30:RG:94:LEU:HD23 | 30:RG:94:LEU:N | 2.14 | 0.62 |
| 31:RH:137:ASP:HB3 | 31:RH:140:LYS:HB2 | 1.81 | 0.62 |
| 32:RI:11:ASN:ND2 | 32:RI:12:LEU:HD13 | 2.14 | 0.62 |
| 35:RP:61:ARG:H | 35:RP:61:ARG:CD | 2.09 | 0.62 |
| 38:RS:22:GLY:O | 38:RS:23:ARG:O | 2.17 | 0.62 |
| 38:RS:48:LEU:N | 38:RS:48:LEU:HD12 | 2.15 | 0.62 |
| 39:RT:108:ARG:O | 39:RT:111:ARG:HG3 | 1.99 | 0.62 |
| 41:RV:36:PRO:HA | 41:RV:56:SER:OG | 1.98 | 0.62 |
| 42:RW:60:ASN:C | 42:RW:61:ASN:HD22 | 2.03 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 48:R2:40:SER:C | 48:R2:42:GLY:N | 2.51 | 0.62 |
| 52:R6:41:PRO:HG2 | 52:R6:45:LYS:N | 2.10 | 0.62 |
| 1:XA:644:G:H4' | 8:XH:92:ARG:HH21 | 1.63 | 0.62 |
| 1:XA:1014:A:H4' | 19:XS:14:HIS:CD2 | 2.35 | 0.62 |
| 1:XA:1297:C:H4' | 1:XA:1298:C:H5' | 1.82 | 0.62 |
| 1:XA:1320:C:N4 | 19:XS:36:ARG:HG3 | 2.14 | 0.62 |
| 1:XA:1461:G:H2' | 1:XA:1462:G:H8 | 1.64 | 0.62 |
| 2:XB:115:LEU:CD2 | 2:XB:153:ARG:HD3 | 2.30 | 0.62 |
| 4:XD:11:LEU:C | 4:XD:13:ARG:H | 2.00 | 0.62 |
| 8:XH:112:LEU:O | 8:XH:112:LEU:HD12 | 1.98 | 0.62 |
| 25:YA:587:C:OP2 | 35:YP:21:ARG:NH2 | 2.31 | 0.62 |
| 25:YA:1590:U:H2' | 25:YA:1591:G:H8 | 1.64 | 0.62 |
| 25:YA:2415:G:O3' | 35:YP:66:GLY:HA3 | 1.99 | 0.62 |
| 27:YD:133:LEU:HD21 | 27:YD:191:ALA:CB | 2.29 | 0.62 |
| 30:YG:94:LEU:HD23 | 30:YG:94:LEU:N | 2.14 | 0.62 |
| 35:YP:105:LEU:O | 35:YP:106:LEU:CB | 2.42 | 0.62 |
| 39:YT:108:ARG:O | 39:YT:111:ARG:HG3 | 1.99 | 0.62 |
| 44:YY:48:ALA:HB2 | 44:YY:61:ILE:HD13 | 1.82 | 0.62 |
| 48:Y2:41:ILE:HG12 | 48:Y2:44:LEU:HD12 | 1.82 | 0.62 |
| 6:QF:77:ARG:HB2 | 6:QF:77:ARG:NH1 | 2.15 | 0.62 |
| 9:QI:65:VAL:HG21 | 9:QI:73:GLN:HB3 | 1.81 | 0.62 |
| 9:QI:116:LYS:O | 9:QI:118:LYS:N | 2.33 | 0.62 |
| 17:QQ:11:VAL:HG23 | 17:QQ:20:THR:HB | 1.79 | 0.62 |
| 23:QX:8:A:H8 | 23:QX:8:A:O5' | 1.82 | 0.62 |
| 25:RA:686:G:H21 | 25:RA:788:A:H61 | 1.47 | 0.62 |
| 25:RA:2424:C:O2 | 25:RA:2429:G:O2' | 2.16 | 0.62 |
| 29:RF:129:PHE:O | 29:RF:130:ALA:HB3 | 1.99 | 0.62 |
| 30:RG:68:PRO:HB2 | 30:RG:90:LEU:HD12 | 1.80 | 0.62 |
| 33:RN:7:LYS:HD2 | 33:RN:7:LYS:H | 1.64 | 0.62 |
| 33:RN:26:LEU:O | 33:RN:30:ILE:HG13 | 1.99 | 0.62 |
| 33:RN:96:GLU:O | 33:RN:98:VAL:N | 2.33 | 0.62 |
| 35:RP:83:VAL:HG12 | 35:RP:112:LEU:HD21 | 1.81 | 0.62 |
| 36:RQ:86:GLY:C | 36:RQ:88:GLY:H | 2.03 | 0.62 |
| 38:RS:26:LEU:HD22 | 38:RS:87:PHE:HD1 | 1.63 | 0.62 |
| 45:RZ:4:ARG:HH11 | 45:RZ:4:ARG:HG2 | 1.64 | 0.62 |
| 45:RZ:94:GLU:HB2 | 45:RZ:95:PRO:HA | 1.80 | 0.62 |
| 45:RZ:124:ILE:HD11 | 45:RZ:165:VAL:HG21 | 1.82 | 0.62 |
| 47:R1:91:LYS:HA | 47:R1:91:LYS:HE3 | 1.81 | 0.62 |
| 1:XA:939:G:H5'' | 7:XG:102:ARG:HH22 | 1.64 | 0.62 |
| 2:XB:23:ARG:HD3 | 2:XB:23:ARG:H | 1.64 | 0.62 |
| 4:XD:96:LEU:H | 4:XD:96:LEU:CD2 | 2.12 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:XD:170:VAL:HG22 | 4:XD:171:GLY:N | 2.12 | 0.62 |
| 25:YA:1266:G:C5 | 42:YW:15:ARG:NH1 | 2.67 | 0.62 |
| 25:YA:2404:C:H1' | 35:YP:67:MET:HE1 | 1.81 | 0.62 |
| 29:YF:28:ILE:HD13 | 29:YF:30:PRO:HD3 | 1.80 | 0.62 |
| 31:YH:136:ILE:HD12 | 31:YH:136:ILE:H | 1.64 | 0.62 |
| 35:YP:65:ARG:HE | 54:Y8:15:LYS:HB2 | 1.65 | 0.62 |
| 38:YS:100:ALA:HA | 38:YS:103:GLU:CG | 2.30 | 0.62 |
| 47:Y1:91:LYS:HA | 47:Y1:91:LYS:HE3 | 1.82 | 0.62 |
| 48:Y2:69:ARG:HB2 | 48:Y2:69:ARG:CZ | 2.29 | 0.62 |
| 1:QA:545:C:H5'' | 4:QD:72:GLU:HG2 | 1.82 | 0.62 |
| 1:QA:1305:G:H22 | 1:QA:1331:G:H2' | 1.65 | 0.62 |
| 4:QD:196:LEU:C | 4:QD:198:VAL:H | 2.02 | 0.62 |
| 8:QH:16:ALA:HB2 | 8:QH:24:THR:HG21 | 1.82 | 0.62 |
| 13:QM:97:PRO:HB2 | 13:QM:101:GLN:HE22 | 1.65 | 0.62 |
| 14:QN:23:ARG:NH1 | 14:QN:30:ALA:HB2 | 2.14 | 0.62 |
| 18:QR:25:THR:HG22 | 18:QR:25:THR:O | 2.00 | 0.62 |
| 27:RD:134:ARG:HD3 | 27:RD:135:PHE:CE2 | 2.35 | 0.62 |
| 28:RE:13:ARG:HH12 | 28:RE:21:VAL:HG12 | 1.64 | 0.62 |
| 32:RI:8:PRO:O | 32:RI:9:LEU:HB3 | 1.99 | 0.62 |
| 32:RI:116:LEU:O | 32:RI:116:LEU:HG | 2.00 | 0.62 |
| 32:RI:124:GLY:H | 32:RI:142:VAL:HG23 | 1.65 | 0.62 |
| 33:RN:87:LEU:O | 33:RN:87:LEU:HD23 | 1.99 | 0.62 |
| 39:RT:57:PHE:CD2 | 39:RT:58:ASN:N | 2.66 | 0.62 |
| 45:RZ:158:PRO:CB | 45:RZ:159:PRO:HD2 | 2.29 | 0.62 |
| 1:XA:674:G:H2' | 1:XA:675:A:C8 | 2.35 | 0.62 |
| 6:XF:8:ILE:HD11 | 6:XF:79:LEU:HD13 | 1.81 | 0.62 |
| 8:XH:16:ALA:HB2 | 8:XH:24:THR:HG21 | 1.82 | 0.62 |
| 10:XJ:29:ARG:HG2 | 10:XJ:29:ARG:O | 2.00 | 0.62 |
| 13:XM:69:GLU:O | 13:XM:72:ALA:N | 2.32 | 0.62 |
| 20:XT:14:LYS:HA | 20:XT:17:ARG:NH1 | 2.14 | 0.62 |
| 25:YA:557:U:H2' | 25:YA:558:G:H8 | 1.65 | 0.62 |
| 25:YA:666:G:H4' | 35:YP:49:ARG:NH1 | 2.15 | 0.62 |
| 25:YA:2030:A:H4' | 25:YA:2031:A:H8 | 1.65 | 0.62 |
| 25:YA:2756:U:H4' | 25:YA:2757:A:OP1 | 1.99 | 0.62 |
| 27:YD:35:LYS:HA | 27:YD:64:ILE:HG22 | 1.81 | 0.62 |
| 29:YF:107:LYS:O | 29:YF:108:LYS:C | 2.37 | 0.62 |
| 30:YG:170:ARG:O | 30:YG:174:GLU:HB2 | 2.00 | 0.62 |
| 34:YO:104:ARG:CZ | 39:YT:34:VAL:HG11 | 2.29 | 0.62 |
| 45:YZ:94:GLU:HB2 | 45:YZ:130:PRO:CD | 2.30 | 0.62 |
| 48:Y2:70:GLN:O | 48:Y2:71:ASN:HB2 | 2.00 | 0.62 |
| 1:QA:646:U:H2' | 1:QA:647:C:C6 | 2.35 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:QB:178:ARG:NH2 | 8:QH:74:PRO:CB | 2.54 | 0.62 |
| 15:QO:26:GLU:CD | 15:QO:77:ARG:HH12 | 2.02 | 0.62 |
| 25:RA:443:A:HO2' | 25:RA:1200:C:HO2' | 1.47 | 0.62 |
| 25:RA:1441:G:H2' | 25:RA:1442:G:H8 | 1.64 | 0.62 |
| 25:RA:1495:A:H2' | 25:RA:1496:A:N3 | 2.14 | 0.62 |
| 25:RA:2723:C:H5'' | 37:RR:1:MET:HG2 | 1.81 | 0.62 |
| 29:RF:32:LEU:CD1 | 29:RF:105:VAL:HG13 | 2.29 | 0.62 |
| 30:RG:6:ALA:HB2 | 50:R4:23:GLU:OE2 | 1.99 | 0.62 |
| 32:RI:33:ARG:HH11 | 32:RI:33:ARG:HG3 | 1.63 | 0.62 |
| 38:RS:17:ARG:HG3 | 38:RS:18:ILE:N | 2.14 | 0.62 |
| 45:RZ:132:ASN:O | 45:RZ:134:PRO:HD3 | 1.99 | 0.62 |
| 48:R2:69:ARG:HB2 | 48:R2:69:ARG:CZ | 2.30 | 0.62 |
| 1:XA:191(F):U:H2' | 1:XA:191:G:H8 | 1.63 | 0.62 |
| 3:XC:111:LEU:HD21 | 3:XC:144:SER:O | 2.00 | 0.62 |
| 8:XH:58:TYR:O | 8:XH:59:LEU:HD23 | 2.00 | 0.62 |
| 9:XI:116:LYS:O | 9:XI:118:LYS:N | 2.33 | 0.62 |
| 11:XK:51:LYS:CA | 11:XK:55:LYS:HD3 | 2.21 | 0.62 |
| 19:XS:12:ASP:OD1 | 19:XS:37:ARG:HD2 | 2.00 | 0.62 |
| 25:YA:1693:U:H1' | 27:YD:14:ARG:NH2 | 2.14 | 0.62 |
| 25:YA:1803:A:H4' | 27:YD:259:THR:HG21 | 1.81 | 0.62 |
| 25:YA:2152:G:H2' | 25:YA:2153:G:H8 | 1.64 | 0.62 |
| 27:YD:182:LEU:H | 27:YD:272:ALA:HB3 | 1.62 | 0.62 |
| 28:YE:131:ALA:HB1 | 28:YE:135:HIS:CE1 | 2.34 | 0.62 |
| 35:YP:112:LEU:HD11 | 35:YP:114:ILE:HG23 | 1.80 | 0.62 |
| 1:QA:34:C:H2' | 1:QA:35:G:H8 | 1.64 | 0.62 |
| 1:QA:1199:U:H4' | 10:QJ:54:PHE:CZ | 2.35 | 0.62 |
| 4:QD:106:TYR:HE1 | 4:QD:112:VAL:O | 1.82 | 0.62 |
| 8:QH:84:ARG:HG3 | 8:QH:84:ARG:NH1 | 2.10 | 0.62 |
| 13:QM:117:VAL:HG22 | 13:QM:118:ALA:N | 2.15 | 0.62 |
| 25:RA:83:G:N2 | 25:RA:103:A:OP2 | 2.31 | 0.62 |
| 25:RA:558:G:OP1 | 33:RN:111:PRO:HD2 | 2.00 | 0.62 |
| 25:RA:1567:A:H5' | 27:RD:58:HIS:ND1 | 2.14 | 0.62 |
| 25:RA:1791:A:N6 | 25:RA:1828:G:O2' | 2.32 | 0.62 |
| 25:RA:1849:G:H2' | 25:RA:1850:G:H8 | 1.65 | 0.62 |
| 28:RE:35:GLN:HG2 | 28:RE:37:ARG:NE | 2.14 | 0.62 |
| 30:RG:111:LEU:HB2 | 30:RG:112:PRO:HD3 | 1.82 | 0.62 |
| 38:RS:100:ALA:HA | 38:RS:103:GLU:CG | 2.30 | 0.62 |
| 39:RT:22:PHE:N | 39:RT:22:PHE:HD2 | 1.97 | 0.62 |
| 39:RT:31:SER:HA | 39:RT:44:ASP:OD2 | 2.00 | 0.62 |
| 43:RX:31:HIS:CE1 | 43:RX:33:LYS:HB2 | 2.34 | 0.62 |
| 45:RZ:94:GLU:HB2 | 45:RZ:130:PRO:CD | 2.30 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 47:R1:3:LYS:HD3 | 47:R1:43:TYR:CD2 | 2.35 | 0.62 |
| 47:R1:18:ILE:HG12 | 47:R1:37:ILE:HG12 | 1.81 | 0.62 |
| 52:R6:18:ARG:O | 52:R6:18:ARG:HD2 | 2.00 | 0.62 |
| 3:XC:127:ARG:HH11 | 3:XC:127:ARG:HG2 | 1.64 | 0.62 |
| 9:XI:65:VAL:HG21 | 9:XI:73:GLN:HB3 | 1.81 | 0.62 |
| 13:XM:66:LEU:HA | 13:XM:70:LEU:HD23 | 1.81 | 0.62 |
| 25:YA:1782:C:H1' | 25:YA:2609:U:H5'' | 1.81 | 0.62 |
| 27:YD:134:ARG:HD3 | 27:YD:135:PHE:CE2 | 2.35 | 0.62 |
| 28:YE:51:PHE:O | 28:YE:52:LEU:C | 2.38 | 0.62 |
| 28:YE:104:VAL:HG11 | 28:YE:188:VAL:HG23 | 1.82 | 0.62 |
| 32:YI:33:ARG:HH11 | 32:YI:33:ARG:HG3 | 1.64 | 0.62 |
| 38:YS:48:LEU:HD12 | 38:YS:48:LEU:N | 2.15 | 0.62 |
| 50:Y4:61:ARG:O | 50:Y4:63:TYR:N | 2.33 | 0.62 |
| 1:QA:254:G:H2' | 1:QA:255:G:H8 | 1.64 | 0.62 |
| 5:QE:51:VAL:HB | 5:QE:52:PRO:CD | 2.30 | 0.62 |
| 6:QF:10:LEU:HD13 | 6:QF:61:LEU:CD1 | 2.30 | 0.62 |
| 11:QK:57:THR:HG22 | 11:QK:59:TYR:H | 1.64 | 0.62 |
| 25:RA:573:G:N1 | 25:RA:2031:A:OP2 | 2.24 | 0.62 |
| 25:RA:1309:G:H4' | 53:R7:7:PRO:HB2 | 1.81 | 0.62 |
| 25:RA:2131:G:N2 | 25:RA:2158:A:N7 | 2.48 | 0.62 |
| 27:RD:70:TRP:CH2 | 27:RD:150:LYS:HA | 2.35 | 0.62 |
| 27:RD:137:PRO:HB2 | 27:RD:140:THR:HG23 | 1.81 | 0.62 |
| 31:RH:86:GLU:O | 31:RH:87:LEU:HB2 | 1.99 | 0.62 |
| 34:RO:78:ARG:HH21 | 39:RT:103:ARG:NH2 | 1.98 | 0.62 |
| 35:RP:114:ILE:HD11 | 35:RP:130:PHE:CD1 | 2.34 | 0.62 |
| 48:R2:17:SER:HB2 | 48:R2:18:PRO:CA | 2.30 | 0.62 |
| 50:R4:61:ARG:O | 50:R4:63:TYR:N | 2.33 | 0.62 |
| 5:XE:42:GLY:HA2 | 5:XE:136:MET:HE1 | 1.82 | 0.62 |
| 17:XQ:65:ILE:HD12 | 17:XQ:65:ILE:N | 2.15 | 0.62 |
| 19:XS:39:THR:HG22 | 19:XS:40:ILE:N | 2.14 | 0.62 |
| 24:XY:29:U:H2' | 24:XY:30:C:H6 | 1.60 | 0.62 |
| 25:YA:675:A:OP1 | 29:YF:63:LYS:NZ | 2.32 | 0.62 |
| 29:YF:28:ILE:HG22 | 29:YF:112:MET:HB3 | 1.80 | 0.62 |
| 30:YG:142:PRO:HB2 | 50:Y4:31:ILE:CD1 | 2.30 | 0.62 |
| 35:YP:50:ARG:CB | 35:YP:50:ARG:NH2 | 2.57 | 0.62 |
| 42:YW:60:ASN:C | 42:YW:61:ASN:HD22 | 2.03 | 0.62 |
| 47:Y1:87:PRO:O | 47:Y1:88:LYS:C | 2.37 | 0.62 |
| 48:Y2:17:SER:HB2 | 48:Y2:18:PRO:CA | 2.30 | 0.62 |
| 3:QC:111:LEU:HD21 | 3:QC:144:SER:O | 2.00 | 0.61 |
| 5:QE:91:LEU:HA | 5:QE:120:THR:HG22 | 1.81 | 0.61 |
| 8:QH:29:SER:HB3 | 8:QH:32:LYS:CG | 2.22 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:QJ:29:ARG:HG2 | 10:QJ:29:ARG:O | 2.00 | 0.61 |
| 13:QM:66:LEU:HA | 13:QM:70:LEU:HD23 | 1.81 | 0.61 |
| 14:QN:18:VAL:HG23 | 14:QN:19:ARG:N | 2.14 | 0.61 |
| 16:QP:66:PRO:HG2 | 16:QP:71:ARG:HH12 | 1.64 | 0.61 |
| 19:QS:11:VAL:O | 19:QS:12:ASP:HB2 | 1.99 | 0.61 |
| 25:RA:128:C:H4' | 53:R7:49:ARG:HH12 | 1.65 | 0.61 |
| 25:RA:319:C:H2' | 25:RA:320:A:C8 | 2.35 | 0.61 |
| 25:RA:363(B):G:H2' | 25:RA:363(C):G:C8 | 2.33 | 0.61 |
| 25:RA:1022:G:H22 | 25:RA:1142(A):A:H2 | 1.46 | 0.61 |
| 25:RA:1639:U:H2' | 25:RA:1640:C:H5'' | 1.81 | 0.61 |
| 27:RD:27:THR:O | 27:RD:29:PRO:HD2 | 1.99 | 0.61 |
| 27:RD:72:LYS:HE3 | 27:RD:75:ILE:HD12 | 1.82 | 0.61 |
| 27:RD:237:GLU:OE1 | 27:RD:237:GLU:CA | 2.48 | 0.61 |
| 30:RG:9:ARG:HG2 | 30:RG:13:GLU:OE1 | 2.00 | 0.61 |
| 35:RP:50:ARG:CB | 35:RP:50:ARG:NH2 | 2.57 | 0.61 |
| 37:RR:38:VAL:HB | 37:RR:39:PRO:HD3 | 1.81 | 0.61 |
| 38:RS:26:LEU:HD12 | 38:RS:39:ILE:CD1 | 2.23 | 0.61 |
| 44:RY:87:LYS:O | 44:RY:88:LYS:NZ | 2.32 | 0.61 |
| 52:R6:44:ARG:O | 52:R6:45:LYS:HB2 | 2.00 | 0.61 |
| 1:XA:1347:G:N2 | 1:XA:1373:G:H2' | 2.15 | 0.61 |
| 2:XB:194:PRO:HG2 | 2:XB:195:ASP:H | 1.64 | 0.61 |
| 3:XC:3:ASN:N | 3:XC:3:ASN:ND2 | 2.47 | 0.61 |
| 4:XD:79:PHE:C | 4:XD:79:PHE:CD2 | 2.71 | 0.61 |
| 9:XI:59:PHE:HZ | 9:XI:88:TYR:CE1 | 2.17 | 0.61 |
| 16:XP:4:ILE:HG13 | 16:XP:21:VAL:CG1 | 2.29 | 0.61 |
| 16:XP:20:VAL:HG21 | 16:XP:32:TYR:CD2 | 2.35 | 0.61 |
| 25:YA:946:G:H2' | 25:YA:947:G:O4' | 2.00 | 0.61 |
| 28:YE:35:GLN:HG2 | 28:YE:37:ARG:NE | 2.14 | 0.61 |
| 35:YP:108:LYS:HD2 | 35:YP:108:LYS:H | 1.64 | 0.61 |
| 36:YQ:88:GLY:C | 36:YQ:90:VAL:H | 2.02 | 0.61 |
| 40:YU:102:GLU:HG3 | 41:YV:2:PHE:CE2 | 2.34 | 0.61 |
| 11:QK:121:PRO:HD2 | 11:QK:126:ARG:HD3 | 1.82 | 0.61 |
| 13:QM:69:GLU:O | 13:QM:72:ALA:N | 2.32 | 0.61 |
| 19:QS:2:PRO:HB2 | 50:R4:68:ARG:HH22 | 1.65 | 0.61 |
| 25:RA:2277:G:H5' | 36:RQ:85:LYS:HG3 | 1.81 | 0.61 |
| 28:RE:201:THR:HG22 | 28:RE:203:LYS:N | 2.07 | 0.61 |
| 30:RG:170:ARG:O | 30:RG:174:GLU:HB2 | 2.00 | 0.61 |
| 32:RI:71:ILE:HG12 | 32:RI:71:ILE:O | 2.00 | 0.61 |
| 33:RN:62:VAL:CG1 | 33:RN:66:LYS:HD2 | 2.29 | 0.61 |
| 35:RP:64:LYS:HB2 | 54:R8:25:MET:HG3 | 1.81 | 0.61 |
| 44:RY:101:LYS:HE3 | 44:RY:102:CYS:SG | 2.40 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:XA:58:C:O2' | 1:XA:388:G:N7 | 2.29 | 0.61 |
| 5:XE:51:VAL:HB | 5:XE:52:PRO:CD | 2.31 | 0.61 |
| 7:XG:15:ASP:O | 7:XG:19:GLY:HA2 | 2.00 | 0.61 |
| 26:YB:111:U:H2' | 26:YB:112:G:C8 | 2.35 | 0.61 |
| 29:YF:32:LEU:CD1 | 29:YF:105:VAL:HG13 | 2.29 | 0.61 |
| 47:Y1:73:LEU:C | 47:Y1:75:GLU:H | 2.03 | 0.61 |
| 47:Y1:76:ARG:HD2 | 47:Y1:76:ARG:H | 1.64 | 0.61 |
| 54:Y8:22:VAL:HG21 | 54:Y8:53:PRO:HB2 | 1.82 | 0.61 |
| 1:QA:328:C:H4' | 1:QA:329:A:H5' | 1.81 | 0.61 |
| 1:QA:1202:G:H1' | 14:QN:29:ARG:HD2 | 1.81 | 0.61 |
| 2:QB:108:ILE:O | 2:QB:111:ARG:HB2 | 2.01 | 0.61 |
| 4:QD:162:LEU:CD1 | 4:QD:181:MET:HB3 | 2.31 | 0.61 |
| 12:QL:48:PRO:CD | 12:QL:49:ASN:H | 2.10 | 0.61 |
| 31:RH:152:ARG:O | 31:RH:153:LYS:CD | 2.48 | 0.61 |
| 34:RO:97:ARG:N | 34:RO:117:LEU:HD22 | 2.15 | 0.61 |
| 44:RY:48:ALA:HB2 | 44:RY:61:ILE:HD13 | 1.82 | 0.61 |
| 47:R1:80:LEU:O | 47:R1:81:LYS:HD2 | 2.00 | 0.61 |
| 50:R4:23:GLU:O | 50:R4:25:TYR:N | 2.33 | 0.61 |
| 50:R4:71:ARG:NH1 | 50:R4:71:ARG:CG | 2.61 | 0.61 |
| 27:YD:70:TRP:CH2 | 27:YD:150:LYS:HA | 2.35 | 0.61 |
| 30:YG:6:ALA:HB2 | 50:Y4:23:GLU:OE2 | 1.99 | 0.61 |
| 36:YQ:2:LEU:HD23 | 36:YQ:2:LEU:H | 1.65 | 0.61 |
| 36:YQ:54:MET:O | 36:YQ:57:HIS:HB3 | 2.00 | 0.61 |
| 36:YQ:66:ILE:CG1 | 36:YQ:67:ARG:H | 2.12 | 0.61 |
| 36:YQ:86:GLY:C | 36:YQ:88:GLY:N | 2.52 | 0.61 |
| 39:YT:24:PRO:O | 39:YT:94:ALA:HB2 | 1.99 | 0.61 |
| 39:YT:31:SER:HA | 39:YT:44:ASP:OD2 | 2.00 | 0.61 |
| 45:YZ:132:ASN:HB2 | 45:YZ:160:GLY:HA3 | 1.83 | 0.61 |
| 7:QG:15:ASP:O | 7:QG:19:GLY:HA2 | 2.00 | 0.61 |
| 25:RA:530:G:C5 | 25:RA:2022:U:H5'' | 2.35 | 0.61 |
| 25:RA:871:U:H4' | 36:RQ:69:PHE:CE2 | 2.35 | 0.61 |
| 25:RA:2397:G:H2' | 25:RA:2398:U:H6 | 1.66 | 0.61 |
| 27:RD:35:LYS:HA | 27:RD:64:ILE:HG22 | 1.81 | 0.61 |
| 36:RQ:80:GLU:HG2 | 46:R0:5:LYS:CB | 2.23 | 0.61 |
| 45:RZ:154:ASP:O | 45:RZ:155:LEU:HD22 | 2.01 | 0.61 |
| 1:XA:501:C:H2' | 1:XA:502:G:H8 | 1.65 | 0.61 |
| 1:XA:1213:A:N6 | 1:XA:1215:G:N3 | 2.48 | 0.61 |
| 1:XA:1286:A:H2' | 1:XA:1287:A:H4' | 1.81 | 0.61 |
| 1:XA:1391:U:H2' | 1:XA:1392:G:C8 | 2.35 | 0.61 |
| 2:XB:108:ILE:O | 2:XB:111:ARG:HB2 | 2.00 | 0.61 |
| 3:XC:189:ALA:O | 3:XC:191:THR:HG23 | 1.99 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 5:XE:131:ILE:O | 5:XE:134:ALA:HB3 | 2.01 | 0.61 |
| 6:XF:77:ARG:HB2 | 6:XF:77:ARG:NH1 | 2.15 | 0.61 |
| 9:XI:28:VAL:HG13 | 9:XI:63:ILE:HG22 | 1.83 | 0.61 |
| 15:XO:61:GLY:C | 15:XO:65:ARG:HH12 | 2.02 | 0.61 |
| 15:XO:74:ASP:OD1 | 15:XO:77:ARG:HG2 | 2.00 | 0.61 |
| 19:XS:11:VAL:O | 19:XS:12:ASP:HB2 | 1.99 | 0.61 |
| 20:XT:34:LYS:O | 20:XT:38:LYS:HB2 | 2.01 | 0.61 |
| 21:XU:15:ARG:HH11 | 21:XU:15:ARG:HG2 | 1.63 | 0.61 |
| 25:YA:628:G:HO2' | 25:YA:651:G:HO2' | 1.47 | 0.61 |
| 25:YA:1228:G:OP2 | 40:YU:16:LYS:NZ | 2.26 | 0.61 |
| 25:YA:2086:U:H2' | 25:YA:2087:G:C8 | 2.35 | 0.61 |
| 25:YA:2134:A:OP2 | 25:YA:2157:G:N2 | 2.33 | 0.61 |
| 27:YD:2:ALA:HB3 | 27:YD:20:ASP:HB3 | 1.83 | 0.61 |
| 31:YH:6:ARG:HG3 | 31:YH:7:LEU:N | 2.15 | 0.61 |
| 33:YN:62:VAL:CG1 | 33:YN:66:LYS:HD2 | 2.29 | 0.61 |
| 38:YS:17:ARG:HG3 | 38:YS:18:ILE:N | 2.14 | 0.61 |
| 38:YS:49:VAL:HG22 | 38:YS:80:LEU:HD12 | 1.82 | 0.61 |
| 41:YV:46:VAL:O | 41:YV:46:VAL:HG13 | 2.01 | 0.61 |
| 43:YX:15:GLU:N | 43:YX:15:GLU:OE1 | 2.34 | 0.61 |
| 44:YY:44:ILE:HG13 | 44:YY:45:VAL:H | 1.64 | 0.61 |
| 50:Y4:23:GLU:O | 50:Y4:25:TYR:N | 2.33 | 0.61 |
| 1:QA:34:C:H2' | 1:QA:35:G:C8 | 2.35 | 0.61 |
| 7:QG:113:GLU:CB | 7:QG:119:ARG:HG2 | 2.29 | 0.61 |
| 15:QO:68:ARG:O | 15:QO:72:ARG:HB2 | 2.01 | 0.61 |
| 25:RA:1359:A:H61 | 25:RA:1372:U:H3 | 1.49 | 0.61 |
| 27:RD:133:LEU:HD21 | 27:RD:191:ALA:HB2 | 1.82 | 0.61 |
| 32:RI:115:ALA:CB | 32:RI:128:LEU:HD11 | 2.29 | 0.61 |
| 35:RP:106:LEU:O | 35:RP:107:LYS:CB | 2.46 | 0.61 |
| 38:RS:88:ASP:O | 38:RS:89:ARG:CB | 2.49 | 0.61 |
| 40:RU:92:ARG:HD3 | 40:RU:94:ASN:HB3 | 1.83 | 0.61 |
| 42:RW:5:ALA:O | 42:RW:50:VAL:HG13 | 2.00 | 0.61 |
| 48:R2:41:ILE:HD11 | 48:R2:44:LEU:HG | 1.82 | 0.61 |
| 52:R6:25:LYS:HD2 | 54:R8:34:TRP:CZ2 | 2.36 | 0.61 |
| 1:XA:491:G:H2' | 1:XA:492:G:H8 | 1.64 | 0.61 |
| 1:XA:501:C:H2' | 1:XA:502:G:C8 | 2.35 | 0.61 |
| 2:XB:17:PHE:CD2 | 2:XB:44:LEU:HD11 | 2.36 | 0.61 |
| 15:XO:68:ARG:O | 15:XO:72:ARG:HB2 | 2.00 | 0.61 |
| 25:YA:27:G:N2 | 25:YA:512:G:H2' | 2.14 | 0.61 |
| 25:YA:581:C:H2' | 25:YA:582:G:C8 | 2.36 | 0.61 |
| 25:YA:2023:G:H5' | 25:YA:2617:C:H4' | 1.83 | 0.61 |
| 27:YD:27:THR:O | 27:YD:29:PRO:HD2 | 1.99 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:YD:137:PRO:HB2 | 27:YD:140:THR:HG23 | 1.81 | 0.61 |
| 27:YD:227:ASN:CB | 27:YD:228:PRO:HD2 | 2.24 | 0.61 |
| 42:YW:5:ALA:O | 42:YW:50:VAL:HG13 | 2.00 | 0.61 |
| 1:QA:500:G:H2' | 1:QA:501:C:C6 | 2.36 | 0.61 |
| 10:QJ:34:VAL:CG2 | 10:QJ:74:ILE:HG22 | 2.30 | 0.61 |
| 11:QK:12:ARG:HG2 | 11:QK:13:GLN:H | 1.64 | 0.61 |
| 13:QM:36:LYS:HD3 | 13:QM:36:LYS:C | 2.20 | 0.61 |
| 25:RA:153:C:P | 47:R1:88:LYS:HE2 | 2.40 | 0.61 |
| 25:RA:660:G:O3' | 29:RF:38:ARG:NH2 | 2.33 | 0.61 |
| 25:RA:2822:G:O2' | 25:RA:2825:C:N4 | 2.31 | 0.61 |
| 26:RB:65:C:N4 | 26:RB:108:C:H2' | 2.15 | 0.61 |
| 30:RG:142:PRO:HB2 | 50:R4:31:ILE:CD1 | 2.30 | 0.61 |
| 32:RI:77:LEU:C | 32:RI:77:LEU:HD12 | 2.21 | 0.61 |
| 33:RN:7:LYS:CD | 33:RN:9:VAL:H | 2.14 | 0.61 |
| 33:RN:96:GLU:CG | 33:RN:97:ARG:H | 2.00 | 0.61 |
| 42:RW:82:LEU:HB2 | 42:RW:98:LYS:HB2 | 1.82 | 0.61 |
| 43:RX:66:LEU:O | 43:RX:66:LEU:HD23 | 2.01 | 0.61 |
| 49:R3:29:ARG:HH11 | 49:R3:29:ARG:CB | 2.13 | 0.61 |
| 54:R8:29:LYS:HD3 | 54:R8:44:LYS:CB | 2.30 | 0.61 |
| 1:XA:1023:G:H3' | 1:XA:1024:G:H5'' | 1.82 | 0.61 |
| 6:XF:10:LEU:HD13 | 6:XF:61:LEU:CD1 | 2.30 | 0.61 |
| 7:XG:140:ASP:C | 7:XG:142:GLU:H | 2.03 | 0.61 |
| 11:XK:121:PRO:HD2 | 11:XK:126:ARG:HD3 | 1.82 | 0.61 |
| 12:XL:126:LYS:C | 12:XL:128:ALA:H | 2.04 | 0.61 |
| 13:XM:121:LYS:NZ | 24:XY:39:C:HO2' | 1.98 | 0.61 |
| 30:YG:77:ILE:HD13 | 30:YG:82:LEU:CD1 | 2.29 | 0.61 |
| 32:YI:116:LEU:O | 32:YI:116:LEU:HG | 2.00 | 0.61 |
| 33:YN:96:GLU:O | 33:YN:98:VAL:N | 2.33 | 0.61 |
| 37:YR:44:LEU:HD22 | 37:YR:48:VAL:HG23 | 1.82 | 0.61 |
| 48:Y2:41:ILE:HD11 | 48:Y2:44:LEU:HG | 1.82 | 0.61 |
| 8:QH:39:LEU:O | 8:QH:45:ILE:HG12 | 2.01 | 0.61 |
| 10:QJ:98:ILE:HD12 | 10:QJ:98:ILE:N | 2.16 | 0.61 |
| 25:RA:345:A:O2' | 25:RA:346:A:N7 | 2.30 | 0.61 |
| 25:RA:698:C:O2' | 25:RA:734:A:N6 | 2.34 | 0.61 |
| 25:RA:2418:A:H2' | 25:RA:2419:U:C6 | 2.36 | 0.61 |
| 34:RO:104:ARG:CZ | 39:RT:34:VAL:HG11 | 2.29 | 0.61 |
| 35:RP:65:ARG:HE | 54:R8:15:LYS:HB2 | 1.65 | 0.61 |
| 41:RV:46:VAL:O | 41:RV:46:VAL:HG13 | 2.01 | 0.61 |
| 42:RW:65:LEU:HD12 | 42:RW:68:ARG:NH1 | 2.10 | 0.61 |
| 50:R4:35:VAL:O | 50:R4:37:SER:N | 2.26 | 0.61 |
| 52:R6:41:PRO:HD2 | 52:R6:46:HIS:N | 2.16 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:XA:598:U:H4' | 8:XH:94:TYR:CD2 | 2.35 | 0.61 |
| 4:XD:12:CYS:HB2 | 4:XD:31:CYS:O | 2.01 | 0.61 |
| 4:XD:149:ALA:HB3 | 4:XD:152:SER:HB2 | 1.82 | 0.61 |
| 6:XF:69:GLU:O | 6:XF:72:VAL:HG12 | 2.01 | 0.61 |
| 10:XJ:34:VAL:CG2 | 10:XJ:74:ILE:HG22 | 2.30 | 0.61 |
| 13:XM:117:VAL:HG22 | 13:XM:118:ALA:N | 2.15 | 0.61 |
| 13:XM:121:LYS:CE | 24:XY:40:G:OP1 | 2.49 | 0.61 |
| 16:XP:20:VAL:HG22 | 16:XP:21:VAL:N | 2.16 | 0.61 |
| 25:YA:747:U:C4 | 51:Y5:2:ALA:N | 2.69 | 0.61 |
| 25:YA:2311:A:C8 | 30:YG:82:LEU:HD11 | 2.35 | 0.61 |
| 27:YD:25:THR:HG21 | 27:YD:81:ALA:CA | 2.31 | 0.61 |
| 27:YD:35:LYS:HE3 | 27:YD:64:ILE:C | 2.21 | 0.61 |
| 28:YE:95:ILE:HD12 | 28:YE:95:ILE:N | 2.15 | 0.61 |
| 29:YF:164:ARG:HH11 | 29:YF:164:ARG:HG2 | 1.66 | 0.61 |
| 32:YI:77:LEU:C | 32:YI:77:LEU:HD12 | 2.21 | 0.61 |
| 33:YN:7:LYS:CD | 33:YN:9:VAL:H | 2.13 | 0.61 |
| 34:YO:8:LEU:HB2 | 34:YO:19:ILE:HD11 | 1.81 | 0.61 |
| 34:YO:78:ARG:HH21 | 39:YT:103:ARG:NH2 | 1.98 | 0.61 |
| 34:YO:91:LEU:N | 34:YO:91:LEU:HD22 | 2.16 | 0.61 |
| 35:YP:96:THR:HG22 | 35:YP:126:VAL:HB | 1.82 | 0.61 |
| 38:YS:89:ARG:O | 38:YS:90:GLY:O | 2.19 | 0.61 |
| 45:YZ:73:GLN:HB3 | 45:YZ:87:ASP:OD1 | 2.01 | 0.61 |
| 49:Y3:5:LYS:HB2 | 49:Y3:36:VAL:HG12 | 1.82 | 0.61 |
| 52:Y6:7:ILE:HG13 | 52:Y6:8:LYS:N | 2.06 | 0.61 |
| 52:Y6:18:ARG:O | 52:Y6:18:ARG:HD2 | 2.00 | 0.61 |
| 54:Y8:29:LYS:HD3 | 54:Y8:44:LYS:CB | 2.30 | 0.61 |
| 1:QA:475:G:H2' | 1:QA:476:G:C8 | 2.35 | 0.61 |
| 4:QD:90:GLY:CA | 4:QD:204:ILE:HD11 | 2.30 | 0.61 |
| 4:QD:129:ASN:HA | 4:QD:145:GLU:HB2 | 1.82 | 0.61 |
| 16:QP:4:ILE:HG13 | 16:QP:21:VAL:CG1 | 2.29 | 0.61 |
| 17:QQ:65:ILE:HD12 | 17:QQ:65:ILE:N | 2.15 | 0.61 |
| 17:QQ:67:LYS:HA | 17:QQ:70:ARG:NH1 | 2.15 | 0.61 |
| 20:QT:84:LEU:O | 20:QT:88:VAL:HG23 | 2.01 | 0.61 |
| 25:RA:291:C:H42 | 25:RA:349:G:H1 | 1.47 | 0.61 |
| 25:RA:985:C:H2' | 25:RA:986:C:H6 | 1.66 | 0.61 |
| 25:RA:1497:U:H5'' | 25:RA:1498:C:H5 | 1.66 | 0.61 |
| 25:RA:2227:A:H5'' | 27:RD:263:ARG:NH1 | 2.15 | 0.61 |
| 27:RD:35:LYS:HG2 | 27:RD:64:ILE:CG2 | 2.31 | 0.61 |
| 27:RD:174:ILE:N | 27:RD:174:ILE:HD12 | 2.16 | 0.61 |
| 29:RF:63:LYS:HE2 | 29:RF:67:GLN:HB3 | 1.83 | 0.61 |
| 36:RQ:2:LEU:HD23 | 36:RQ:2:LEU:H | 1.65 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 36:RQ:88:GLY:C | 36:RQ:90:VAL:H | 2.02 | 0.61 |
| 40:RU:69:CYS:HB3 | 40:RU:106:PHE:CZ | 2.36 | 0.61 |
| 2:XB:178:ARG:NH2 | 8:XH:74:PRO:HG3 | 2.16 | 0.61 |
| 3:XC:13:GLY:HA3 | 14:YN:57:ARG:CZ | 2.31 | 0.61 |
| 3:XC:88:ARG:NH1 | 3:XC:101:LEU:H | 1.98 | 0.61 |
| 4:XD:196:LEU:C | 4:XD:198:VAL:H | 2.02 | 0.61 |
| 8:XH:102:ARG:HH11 | 8:XH:105:ARG:NH2 | 1.99 | 0.61 |
| 12:XL:85:ILE:HD11 | 12:XL:98:TYR:HB2 | 1.81 | 0.61 |
| 13:XM:77:ASN:HA | 50:Y4:71:ARG:NH2 | 2.15 | 0.61 |
| 13:XM:96:LEU:HB3 | 13:XM:97:PRO:HD2 | 1.83 | 0.61 |
| 15:XO:26:GLU:CD | 15:XO:77:ARG:HH12 | 2.03 | 0.61 |
| 25:YA:714:U:O2' | 25:YA:716:A:N7 | 2.29 | 0.61 |
| 27:YD:133:LEU:HD21 | 27:YD:191:ALA:HB2 | 1.82 | 0.61 |
| 28:YE:35:GLN:CG | 28:YE:37:ARG:HE | 2.11 | 0.61 |
| 31:YH:137:ASP:HB3 | 31:YH:140:LYS:HB2 | 1.81 | 0.61 |
| 31:YH:152:ARG:O | 31:YH:153:LYS:CD | 2.48 | 0.61 |
| 32:YI:67:ARG:O | 32:YI:71:ILE:HG22 | 2.01 | 0.61 |
| 36:YQ:20:ALA:HB1 | 36:YQ:99:PRO:CD | 2.29 | 0.61 |
| 37:YR:38:VAL:HB | 37:YR:39:PRO:HD3 | 1.81 | 0.61 |
| 43:YX:14:SER:O | 43:YX:17:ALA:N | 2.34 | 0.61 |
| 43:YX:66:LEU:O | 43:YX:66:LEU:HD23 | 2.01 | 0.61 |
| 49:Y3:59:VAL:HG12 | 49:Y3:60:GLU:N | 2.16 | 0.61 |
| 2:QB:115:LEU:CD2 | 2:QB:153:ARG:HD3 | 2.30 | 0.61 |
| 3:QC:70:VAL:O | 3:QC:106:VAL:HG23 | 2.01 | 0.61 |
| 4:QD:149:ALA:HB3 | 4:QD:152:SER:HB2 | 1.82 | 0.61 |
| 6:QF:98:LEU:HD12 | 6:QF:98:LEU:O | 2.01 | 0.61 |
| 13:QM:9:ILE:HD12 | 13:QM:9:ILE:O | 2.01 | 0.61 |
| 16:QP:8:ARG:HH11 | 16:QP:8:ARG:HG2 | 1.64 | 0.61 |
| 25:RA:1385:G:H4' | 25:RA:1386:C:OP1 | 2.01 | 0.61 |
| 25:RA:2051:A:OP1 | 28:RE:137:HIS:ND1 | 2.30 | 0.61 |
| 27:RD:21:PHE:HB3 | 27:RD:24:ILE:HG13 | 1.83 | 0.61 |
| 30:RG:28:VAL:O | 30:RG:31:VAL:HG12 | 2.01 | 0.61 |
| 31:RH:6:ARG:HG3 | 31:RH:7:LEU:N | 2.15 | 0.61 |
| 32:RI:74:ASN:H | 32:RI:74:ASN:ND2 | 1.97 | 0.61 |
| 33:RN:23:LEU:HD12 | 33:RN:99:LEU:HD23 | 1.82 | 0.61 |
| 37:RR:52:ILE:O | 37:RR:55:ALA:HB3 | 2.01 | 0.61 |
| 38:RS:49:VAL:HG22 | 38:RS:80:LEU:HD12 | 1.82 | 0.61 |
| 49:R3:59:VAL:HG12 | 49:R3:60:GLU:N | 2.16 | 0.61 |
| 2:XB:21:ARG:HG3 | 2:XB:38:GLY:O | 2.01 | 0.61 |
| 3:XC:141:VAL:O | 3:XC:146:ALA:HB3 | 2.01 | 0.61 |
| 4:XD:106:TYR:HE1 | 4:XD:112:VAL:O | 1.82 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:XD:162:LEU:CD1 | 4:XD:181:MET:HB3 | 2.31 | 0.61 |
| 7:XG:79:ARG:HH11 | 7:XG:79:ARG:HG2 | 1.66 | 0.61 |
| 9:XI:13:ALA:HB2 | 9:XI:67:GLY:O | 1.99 | 0.61 |
| 25:YA:27:G:H22 | 25:YA:512:G:H2' | 1.65 | 0.61 |
| 25:YA:674:G:C1' | 29:YF:74:ARG:HD3 | 2.28 | 0.61 |
| 25:YA:2637:U:H5'' | 28:YE:82:ARG:HH21 | 1.65 | 0.61 |
| 27:YD:147:LEU:CD1 | 27:YD:155:LEU:HD11 | 2.26 | 0.61 |
| 28:YE:52:LEU:HB3 | 28:YE:54:GLN:OE1 | 2.00 | 0.61 |
| 30:YG:44:GLY:HA2 | 30:YG:88:ILE:CG1 | 2.30 | 0.61 |
| 32:YI:8:PRO:O | 32:YI:9:LEU:HB3 | 1.99 | 0.61 |
| 33:YN:17:ASP:O | 33:YN:18:ALA:HB3 | 2.01 | 0.61 |
| 40:YU:88:ILE:H | 40:YU:88:ILE:CD1 | 2.05 | 0.61 |
| 42:YW:28:SER:O | 42:YW:31:GLU:N | 2.34 | 0.61 |
| 44:YY:19:LYS:O | 44:YY:19:LYS:HG3 | 2.01 | 0.61 |
| 52:Y6:41:PRO:HD2 | 52:Y6:46:HIS:N | 2.16 | 0.61 |
| 1:QA:701:C:H4' | 1:QA:702:A:H5'' | 1.83 | 0.61 |
| 2:QB:60:ASP:O | 2:QB:64:ARG:HG2 | 2.01 | 0.61 |
| 4:QD:146:ILE:HD12 | 4:QD:146:ILE:H | 1.66 | 0.61 |
| 11:QK:41:THR:HG21 | 11:QK:71:LYS:HB2 | 1.83 | 0.61 |
| 11:QK:78:GLN:O | 11:QK:103:LEU:HA | 2.00 | 0.61 |
| 12:QL:126:LYS:C | 12:QL:128:ALA:H | 2.04 | 0.61 |
| 20:QT:101:GLY:O | 20:QT:103:GLY:N | 2.34 | 0.61 |
| 25:RA:1030:G:OP2 | 36:RQ:128:LYS:HE2 | 2.00 | 0.61 |
| 25:RA:1056:G:O2' | 25:RA:1086:A:O2' | 2.18 | 0.61 |
| 33:RN:6:PRO:HG3 | 33:RN:41:ASP:HB2 | 1.83 | 0.61 |
| 34:RO:91:LEU:HD22 | 34:RO:91:LEU:N | 2.16 | 0.61 |
| 35:RP:96:THR:HG22 | 35:RP:126:VAL:HB | 1.82 | 0.61 |
| 49:R3:5:LYS:HB2 | 49:R3:36:VAL:HG12 | 1.82 | 0.61 |
| 51:R5:52:TYR:O | 51:R5:53:ALA:HB3 | 2.01 | 0.61 |
| 4:XD:196:LEU:HD12 | 4:XD:196:LEU:N | 2.15 | 0.61 |
| 8:XH:118:VAL:C | 8:XH:119:LEU:HD23 | 2.21 | 0.61 |
| 17:XQ:67:LYS:HA | 17:XQ:70:ARG:NH1 | 2.15 | 0.61 |
| 25:YA:617:G:OP1 | 29:YF:40:GLN:NE2 | 2.34 | 0.61 |
| 25:YA:900:A:H5' | 25:YA:901:A:OP2 | 2.01 | 0.61 |
| 27:YD:237:GLU:OE1 | 27:YD:237:GLU:CA | 2.48 | 0.61 |
| 29:YF:119:ARG:HH11 | 29:YF:119:ARG:HG2 | 1.64 | 0.61 |
| 45:YZ:124:ILE:HD11 | 45:YZ:165:VAL:HG21 | 1.82 | 0.61 |
| 50:Y4:71:ARG:NH1 | 50:Y4:71:ARG:CG | 2.61 | 0.61 |
| 1:QA:15:G:H4' | 5:QE:24:ARG:NH1 | 2.16 | 0.60 |
| 2:QB:17:PHE:CD2 | 2:QB:44:LEU:HD11 | 2.36 | 0.60 |
| 2:QB:80:ILE:CD1 | 2:QB:208:ILE:HG23 | 2.22 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:QB:141:GLU:O | 2:QB:145:LEU:HD23 | 2.01 | 0.60 |
| 2:QB:194:PRO:HG2 | 2:QB:195:ASP:H | 1.64 | 0.60 |
| 3:QC:47:LEU:O | 3:QC:52:LEU:HD22 | 2.01 | 0.60 |
| 6:QF:69:GLU:O | 6:QF:72:VAL:HG12 | 2.01 | 0.60 |
| 11:QK:99:GLN:HG2 | 11:QK:105:VAL:CG2 | 2.29 | 0.60 |
| 16:QP:20:VAL:HG21 | 16:QP:32:TYR:CD2 | 2.35 | 0.60 |
| 19:QS:5:LEU:HD21 | 50:R4:66:SER:HB2 | 1.83 | 0.60 |
| 25:RA:993:G:OP1 | 40:RU:50:ARG:NH1 | 2.34 | 0.60 |
| 25:RA:2427:C:H5'' | 25:RA:2429:G:H5' | 1.83 | 0.60 |
| 28:RE:52:LEU:HB3 | 28:RE:54:GLN:OE1 | 2.00 | 0.60 |
| 33:RN:58:ASP:N | 33:RN:60:ILE:HD11 | 2.16 | 0.60 |
| 41:RV:35:LEU:O | 41:RV:35:LEU:HD23 | 2.01 | 0.60 |
| 42:RW:28:SER:O | 42:RW:31:GLU:N | 2.34 | 0.60 |
| 43:RX:14:SER:O | 43:RX:17:ALA:N | 2.34 | 0.60 |
| 47:R1:80:LEU:C | 47:R1:81:LYS:CD | 2.69 | 0.60 |
| 1:XA:177:C:H5'' | 20:XT:65:LYS:NZ | 2.16 | 0.60 |
| 1:XA:1147:C:O2 | 9:XI:16:ARG:NH1 | 2.33 | 0.60 |
| 4:XD:146:ILE:HD12 | 4:XD:146:ILE:H | 1.66 | 0.60 |
| 6:XF:45:LEU:HD12 | 6:XF:59:TYR:HD1 | 1.66 | 0.60 |
| 13:XM:97:PRO:HB2 | 13:XM:101:GLN:HE22 | 1.65 | 0.60 |
| 14:XN:42:ILE:O | 14:XN:43:CYS:C | 2.39 | 0.60 |
| 18:XR:25:THR:HG22 | 18:XR:25:THR:O | 2.00 | 0.60 |
| 25:YA:565:C:H2' | 25:YA:566:U:O4' | 2.00 | 0.60 |
| 25:YA:1992:G:H5' | 25:YA:1994:C:H41 | 1.66 | 0.60 |
| 27:YD:35:LYS:NZ | 27:YD:65:ILE:HA | 2.15 | 0.60 |
| 27:YD:54:ARG:HH11 | 27:YD:54:ARG:CG | 2.14 | 0.60 |
| 27:YD:263:ARG:HH11 | 27:YD:263:ARG:CB | 2.14 | 0.60 |
| 28:YE:53:PRO:HG2 | 28:YE:54:GLN:NE2 | 2.16 | 0.60 |
| 28:YE:131:ALA:HB1 | 28:YE:135:HIS:HE1 | 1.65 | 0.60 |
| 32:YI:21:VAL:HG22 | 32:YI:22:LYS:N | 2.16 | 0.60 |
| 32:YI:124:GLY:H | 32:YI:142:VAL:HG23 | 1.65 | 0.60 |
| 33:YN:99:LEU:O | 33:YN:103:VAL:HG23 | 2.01 | 0.60 |
| 35:YP:27:HIS:ND1 | 35:YP:27:HIS:N | 2.49 | 0.60 |
| 36:YQ:66:ILE:CG1 | 36:YQ:67:ARG:N | 2.64 | 0.60 |
| 39:YT:34:VAL:HG12 | 39:YT:36:GLU:HG2 | 1.83 | 0.60 |
| 41:YV:41:GLY:H | 41:YV:46:VAL:HG13 | 1.66 | 0.60 |
| 42:YW:82:LEU:HB2 | 42:YW:98:LYS:HB2 | 1.82 | 0.60 |
| 1:QA:538:G:OP1 | 12:QL:113:ARG:HD2 | 2.01 | 0.60 |
| 2:QB:132:LYS:HA | 2:QB:135:GLN:CD | 2.22 | 0.60 |
| 3:QC:3:ASN:N | 3:QC:3:ASN:ND2 | 2.48 | 0.60 |
| 3:QC:88:ARG:NH1 | 3:QC:101:LEU:H | 1.98 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:QC:88:ARG:O | 3:QC:99:VAL:HG21 | 2.01 | 0.60 |
| 4:QD:96:LEU:H | 4:QD:96:LEU:CD2 | 2.11 | 0.60 |
| 8:QH:49:GLU:O | 8:QH:51:VAL:HG13 | 2.02 | 0.60 |
| 12:QL:11:VAL:HG21 | 17:QQ:34:LYS:HD3 | 1.84 | 0.60 |
| 15:QO:74:ASP:OD1 | 15:QO:77:ARG:HG2 | 2.00 | 0.60 |
| 19:QS:12:ASP:OD1 | 19:QS:37:ARG:HD2 | 2.00 | 0.60 |
| 20:QT:34:LYS:O | 20:QT:38:LYS:HB2 | 2.01 | 0.60 |
| 25:RA:83:G:O2' | 25:RA:84:A:O5' | 2.19 | 0.60 |
| 25:RA:247:G:H4' | 25:RA:386:G:C5 | 2.37 | 0.60 |
| 25:RA:310:A:O2' | 25:RA:311:A:H2' | 2.01 | 0.60 |
| 25:RA:1050:A:H2' | 25:RA:1051:G:O4' | 2.01 | 0.60 |
| 25:RA:2343:C:H2' | 25:RA:2344:U:H6 | 1.65 | 0.60 |
| 29:RF:175:THR:O | 29:RF:176:LEU:CB | 2.49 | 0.60 |
| 31:RH:44:VAL:HG22 | 31:RH:44:VAL:O | 2.01 | 0.60 |
| 36:RQ:66:ILE:CG1 | 36:RQ:67:ARG:N | 2.64 | 0.60 |
| 41:RV:15:GLU:HG3 | 41:RV:16:PRO:HD2 | 1.83 | 0.60 |
| 1:XA:677:U:H1' | 11:XK:119:CYS:SG | 2.41 | 0.60 |
| 1:XA:1106:G:H5'' | 3:XC:172:ARG:HG2 | 1.82 | 0.60 |
| 3:XC:47:LEU:O | 3:XC:52:LEU:HD22 | 2.01 | 0.60 |
| 4:XD:12:CYS:HA | 4:XD:19:LEU:CD2 | 2.31 | 0.60 |
| 5:XE:43:LEU:HD21 | 5:XE:132:ALA:HB1 | 1.82 | 0.60 |
| 8:XH:23:SER:HA | 8:XH:63:LEU:CD2 | 2.24 | 0.60 |
| 11:XK:78:GLN:O | 11:XK:103:LEU:HA | 2.00 | 0.60 |
| 19:XS:16:LEU:O | 19:XS:20:LEU:HG | 2.01 | 0.60 |
| 25:YA:137(A):G:N3 | 43:YX:41:ASN:ND2 | 2.47 | 0.60 |
| 25:YA:451:C:H4' | 29:YF:52:LYS:NZ | 2.16 | 0.60 |
| 28:YE:37:ARG:NE | 28:YE:37:ARG:CA | 2.64 | 0.60 |
| 29:YF:34:TRP:CZ3 | 35:YP:8:PRO:HB3 | 2.36 | 0.60 |
| 32:YI:74:ASN:H | 32:YI:74:ASN:ND2 | 1.97 | 0.60 |
| 44:YY:101:LYS:HE3 | 44:YY:102:CYS:SG | 2.40 | 0.60 |
| 46:Y0:3:HIS:HD2 | 46:Y0:4:LYS:CA | 2.13 | 0.60 |
| 1:QA:939:G:H5'' | 7:QG:102:ARG:HH22 | 1.66 | 0.60 |
| 1:QA:960:U:O2 | 1:QA:960:U:H2' | 2.00 | 0.60 |
| 4:QD:90:GLY:HA2 | 4:QD:204:ILE:HD11 | 1.83 | 0.60 |
| 4:QD:196:LEU:N | 4:QD:196:LEU:HD12 | 2.15 | 0.60 |
| 13:QM:62:ASN:CG | 50:R4:49:PHE:HD2 | 2.03 | 0.60 |
| 16:QP:40:ASP:OD2 | 16:QP:42:ARG:HB2 | 2.02 | 0.60 |
| 25:RA:593:G:H2' | 25:RA:594:U:C6 | 2.37 | 0.60 |
| 25:RA:2439:A:H8 | 25:RA:2439:A:H5' | 1.65 | 0.60 |
| 25:RA:2790:A:H2' | 25:RA:2791:C:H5'' | 1.83 | 0.60 |
| 27:RD:35:LYS:NZ | 27:RD:65:ILE:HA | 2.15 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:RN:17:ASP:O | 33:RN:18:ALA:HB3 | 2.01 | 0.60 |
| 41:RV:66:ARG:HH12 | 41:RV:88:ARG:HH11 | 1.49 | 0.60 |
| 45:RZ:144:LEU:HD21 | 45:RZ:150:LEU:HD22 | 1.83 | 0.60 |
| 48:R2:70:GLN:O | 48:R2:71:ASN:HB2 | 2.00 | 0.60 |
| 3:XC:70:VAL:HG12 | 3:XC:72:LYS:N | 2.11 | 0.60 |
| 6:XF:98:LEU:HD12 | 6:XF:98:LEU:O | 2.01 | 0.60 |
| 8:XH:6:ILE:HB | 8:XH:85:ARG:HH12 | 1.62 | 0.60 |
| 8:XH:49:GLU:O | 8:XH:51:VAL:HG13 | 2.02 | 0.60 |
| 25:YA:330:A:O2' | 25:YA:331:A:H8 | 1.83 | 0.60 |
| 32:YI:35:LEU:O | 32:YI:36:ALA:HB2 | 2.01 | 0.60 |
| 45:YZ:113:ALA:O | 45:YZ:114:GLY:C | 2.40 | 0.60 |
| 1:QA:1120:G:H2' | 1:QA:1121:U:C6 | 2.36 | 0.60 |
| 1:QA:1305:G:N2 | 1:QA:1331:G:H2' | 2.16 | 0.60 |
| 1:QA:1348:U:H3 | 1:QA:1374:A:H2 | 1.50 | 0.60 |
| 5:QE:43:LEU:HD21 | 5:QE:132:ALA:HB1 | 1.82 | 0.60 |
| 8:QH:118:VAL:C | 8:QH:119:LEU:HD23 | 2.22 | 0.60 |
| 9:QI:3:GLN:HB3 | 9:QI:20:ARG:HG2 | 1.82 | 0.60 |
| 10:QJ:32:ALA:H | 10:QJ:78:ASN:HD21 | 1.49 | 0.60 |
| 14:QN:39:LEU:CD2 | 14:QN:43:CYS:HG | 2.02 | 0.60 |
| 16:QP:20:VAL:HG22 | 16:QP:21:VAL:N | 2.16 | 0.60 |
| 25:RA:262:A:H2' | 25:RA:263:C:O4' | 2.01 | 0.60 |
| 25:RA:910:A:N3 | 25:RA:2264:C:O2' | 2.33 | 0.60 |
| 25:RA:2392:A:H2 | 25:RA:2424:C:H42 | 1.48 | 0.60 |
| 28:RE:4:ILE:CD1 | 28:RE:28:ALA:HB1 | 2.29 | 0.60 |
| 31:RH:126:PRO:CD | 31:RH:127:GLU:N | 2.65 | 0.60 |
| 32:RI:2:LYS:HB3 | 32:RI:20:ASP:HB3 | 1.82 | 0.60 |
| 34:RO:104:ARG:HG2 | 34:RO:104:ARG:NH1 | 2.14 | 0.60 |
| 36:RQ:54:MET:O | 36:RQ:57:HIS:HB3 | 2.00 | 0.60 |
| 36:RQ:80:GLU:C | 36:RQ:81:VAL:HG13 | 2.22 | 0.60 |
| 36:RQ:86:GLY:C | 36:RQ:88:GLY:N | 2.52 | 0.60 |
| 44:RY:19:LYS:O | 44:RY:19:LYS:HG3 | 2.01 | 0.60 |
| 44:RY:44:ILE:HG13 | 44:RY:45:VAL:H | 1.65 | 0.60 |
| 1:XA:538:G:OP1 | 12:XL:113:ARG:HD2 | 2.01 | 0.60 |
| 2:XB:132:LYS:HA | 2:XB:135:GLN:CD | 2.22 | 0.60 |
| 2:XB:221:LEU:HD13 | 2:XB:221:LEU:O | 2.02 | 0.60 |
| 4:XD:90:GLY:CA | 4:XD:204:ILE:HD11 | 2.31 | 0.60 |
| 5:XE:79:GLU:HB3 | 5:XE:92:LYS:HA | 1.84 | 0.60 |
| 6:XF:61:LEU:HB3 | 6:XF:63:TYR:HE2 | 1.67 | 0.60 |
| 25:YA:784:A:N7 | 27:YD:229:VAL:HG21 | 2.16 | 0.60 |
| 25:YA:1914:C:H2' | 25:YA:1915:U:O4' | 2.00 | 0.60 |
| 25:YA:2011:U:OP2 | 42:YW:16:LYS:NZ | 2.34 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 27:YD:35:LYS:NZ | 27:YD:64:ILE:O | 2.32 | 0.60 |
| 30:YG:28:VAL:O | 30:YG:31:VAL:HG12 | 2.01 | 0.60 |
| 31:YH:44:VAL:HG22 | 31:YH:44:VAL:O | 2.01 | 0.60 |
| 32:YI:110:ASP:HB3 | 32:YI:112:LYS:N | 2.16 | 0.60 |
| 33:YN:16:ILE:O | 33:YN:55:VAL:HG22 | 2.01 | 0.60 |
| 35:YP:13:ASN:O | 35:YP:15:ARG:N | 2.34 | 0.60 |
| 38:YS:99:LYS:O | 38:YS:102:ALA:N | 2.34 | 0.60 |
| 40:YU:69:CYS:HB3 | 40:YU:106:PHE:CZ | 2.36 | 0.60 |
| 42:YW:36:LEU:HD11 | 42:YW:47:VAL:HG12 | 1.83 | 0.60 |
| 45:YZ:113:ALA:O | 45:YZ:115:GLY:N | 2.34 | 0.60 |
| 45:YZ:158:PRO:CB | 45:YZ:159:PRO:HD2 | 2.29 | 0.60 |
| 47:Y1:3:LYS:HD3 | 47:Y1:43:TYR:CD2 | 2.35 | 0.60 |
| 51:Y5:52:TYR:O | 51:Y5:53:ALA:HB3 | 2.02 | 0.60 |
| 52:Y6:13:CYS:O | 52:Y6:21:TYR:HA | 2.02 | 0.60 |
| 1:QA:191:G:O2' | 20:QT:101:GLY:O | 2.19 | 0.60 |
| 1:QA:1175:G:H2' | 1:QA:1176:A:C8 | 2.36 | 0.60 |
| 2:QB:114:ARG:O | 2:QB:117:GLU:HB2 | 2.01 | 0.60 |
| 2:QB:221:LEU:HD13 | 2:QB:221:LEU:O | 2.02 | 0.60 |
| 3:QC:130:VAL:O | 3:QC:134:ILE:HG12 | 2.01 | 0.60 |
| 6:QF:61:LEU:HB3 | 6:QF:63:TYR:HE2 | 1.67 | 0.60 |
| 8:QH:58:TYR:O | 8:QH:59:LEU:HD23 | 2.00 | 0.60 |
| 9:QI:28:VAL:HG13 | 9:QI:63:ILE:HG22 | 1.83 | 0.60 |
| 9:QI:114:TYR:O | 9:QI:114:TYR:HD2 | 1.85 | 0.60 |
| 25:RA:486:C:H4' | 42:RW:60:ASN:OD1 | 2.02 | 0.60 |
| 25:RA:586:A:H5' | 29:RF:89:VAL:HG21 | 1.82 | 0.60 |
| 25:RA:2183:C:H2' | 25:RA:2184:G:H8 | 1.67 | 0.60 |
| 27:RD:263:ARG:HH11 | 27:RD:263:ARG:CB | 2.14 | 0.60 |
| 30:RG:50:ALA:O | 30:RG:53:LEU:HB3 | 2.01 | 0.60 |
| 35:RP:55:ARG:HD2 | 35:RP:56:SER:O | 2.01 | 0.60 |
| 40:RU:96:ALA:C | 40:RU:98:LEU:H | 2.04 | 0.60 |
| 43:RX:43:VAL:CG1 | 43:RX:51:VAL:HG21 | 2.32 | 0.60 |
| 45:RZ:113:ALA:O | 45:RZ:115:GLY:N | 2.34 | 0.60 |
| 46:R0:2:ALA:HB1 | 46:R0:3:HIS:HD2 | 1.59 | 0.60 |
| 47:R1:73:LEU:C | 47:R1:75:GLU:H | 2.03 | 0.60 |
| 1:XA:369:C:OP2 | 1:XA:388:G:N2 | 2.34 | 0.60 |
| 4:XD:90:GLY:HA2 | 4:XD:204:ILE:HD11 | 1.83 | 0.60 |
| 9:XI:3:GLN:HB3 | 9:XI:20:ARG:HG2 | 1.82 | 0.60 |
| 12:XL:5:PRO:HA | 12:XL:9:GLN:NE2 | 2.16 | 0.60 |
| 13:XM:4:ILE:H | 13:XM:9:ILE:HG22 | 1.62 | 0.60 |
| 13:XM:37:THR:CG2 | 13:XM:39:ILE:HD11 | 2.32 | 0.60 |
| 13:XM:40:ASN:HD21 | 13:XM:42:ALA:HB3 | 1.64 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:XP:40:ASP:OD2 | 16:XP:42:ARG:HB2 | 2.02 | 0.60 |
| 26:YB:40:U:H3 | 26:YB:43:C:H5'' | 1.66 | 0.60 |
| 27:YD:35:LYS:HG2 | 27:YD:64:ILE:CG2 | 2.31 | 0.60 |
| 28:YE:63:LEU:CD1 | 28:YE:64:LYS:H | 2.04 | 0.60 |
| 32:YI:71:ILE:HG12 | 32:YI:71:ILE:O | 2.00 | 0.60 |
| 32:YI:114:LEU:O | 32:YI:115:ALA:CB | 2.49 | 0.60 |
| 33:YN:23:LEU:HD12 | 33:YN:99:LEU:HD23 | 1.82 | 0.60 |
| 34:YO:97:ARG:N | 34:YO:117:LEU:HD22 | 2.15 | 0.60 |
| 38:YS:11:LYS:HB2 | 38:YS:91:PRO:HD3 | 1.84 | 0.60 |
| 47:Y1:80:LEU:O | 47:Y1:81:LYS:HD2 | 2.00 | 0.60 |
| 1:QA:1314:C:OP1 | 19:QS:6:LYS:HE3 | 2.02 | 0.60 |
| 3:QC:141:VAL:O | 3:QC:146:ALA:HB3 | 2.01 | 0.60 |
| 5:QE:74:GLY:O | 5:QE:115:VAL:HA | 2.01 | 0.60 |
| 8:QH:86:ILE:HG22 | 8:QH:93:VAL:HG21 | 1.84 | 0.60 |
| 9:QI:9:ARG:CB | 9:QI:14:VAL:HG22 | 2.31 | 0.60 |
| 13:QM:121:LYS:NZ | 24:QY:39:C:O2' | 2.35 | 0.60 |
| 15:QO:5:LYS:O | 15:QO:8:LYS:HG2 | 2.02 | 0.60 |
| 25:RA:1178:C:H2' | 25:RA:1179:C:C6 | 2.37 | 0.60 |
| 25:RA:2451:A:N1 | 55:Z6:76:PPU:HE2 | 2.15 | 0.60 |
| 25:RA:2469:A:H2 | 25:RA:2481:G:H21 | 1.47 | 0.60 |
| 27:RD:2:ALA:HB3 | 27:RD:20:ASP:HB3 | 1.82 | 0.60 |
| 28:RE:51:PHE:O | 28:RE:52:LEU:C | 2.38 | 0.60 |
| 28:RE:104:VAL:HG11 | 28:RE:188:VAL:HG23 | 1.82 | 0.60 |
| 29:RF:46:ARG:HH11 | 29:RF:46:ARG:CG | 2.04 | 0.60 |
| 29:RF:164:ARG:HH11 | 29:RF:164:ARG:HG2 | 1.66 | 0.60 |
| 30:RG:94:LEU:HD23 | 30:RG:94:LEU:H | 1.64 | 0.60 |
| 33:RN:99:LEU:O | 33:RN:103:VAL:HG23 | 2.01 | 0.60 |
| 33:RN:133:GLN:O | 33:RN:134:ARG:HB3 | 2.00 | 0.60 |
| 1:XA:1446:A:OP1 | 1:XA:1446:A:H4' | 2.01 | 0.60 |
| 2:XB:181:PHE:CE1 | 8:XH:70:GLN:O | 2.52 | 0.60 |
| 3:XC:130:VAL:O | 3:XC:134:ILE:HG12 | 2.01 | 0.60 |
| 6:XF:1:MET:HA | 6:XF:67:MET:O | 2.02 | 0.60 |
| 6:XF:97:PHE:HD2 | 6:XF:97:PHE:C | 2.05 | 0.60 |
| 8:XH:39:LEU:O | 8:XH:45:ILE:HG12 | 2.01 | 0.60 |
| 13:XM:9:ILE:HD12 | 13:XM:9:ILE:O | 2.02 | 0.60 |
| 13:XM:121:LYS:HZ3 | 24:XY:39:C:HO2' | 1.50 | 0.60 |
| 25:YA:528:A:C2 | 25:YA:2042:A:H2' | 2.37 | 0.60 |
| 25:YA:558:G:OP1 | 33:YN:111:PRO:HD2 | 2.00 | 0.60 |
| 25:YA:1372:U:H2' | 25:YA:1373:A:H5' | 1.84 | 0.60 |
| 25:YA:2688:U:OP1 | 25:YA:2713:A:N6 | 2.35 | 0.60 |
| 25:YA:2716:U:H2' | 25:YA:2717:G:H8 | 1.65 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 27:YD:236:GLY:C | 27:YD:237:GLU:OE1 | 2.39 | 0.60 |
| 28:YE:93:VAL:N | 28:YE:95:ILE:HD12 | 2.17 | 0.60 |
| 36:YQ:63:LYS:HE2 | 36:YQ:65:PHE:CE1 | 2.37 | 0.60 |
| 37:YR:52:ILE:O | 37:YR:55:ALA:HB3 | 2.01 | 0.60 |
| 41:YV:35:LEU:HD23 | 41:YV:35:LEU:O | 2.01 | 0.60 |
| 41:YV:99:ILE:N | 41:YV:99:ILE:CD1 | 2.65 | 0.60 |
| 2:QB:4:GLU:CG | 2:QB:5:ILE:H | 1.99 | 0.60 |
| 4:QD:12:CYS:HB2 | 4:QD:31:CYS:O | 2.01 | 0.60 |
| 4:QD:76:ARG:HD2 | 4:QD:207:TYR:HE2 | 1.66 | 0.60 |
| 6:QF:1:MET:HA | 6:QF:67:MET:O | 2.02 | 0.60 |
| 6:QF:97:PHE:C | 6:QF:97:PHE:HD2 | 2.05 | 0.60 |
| 12:QL:54:LYS:CD | 12:QL:54:LYS:N | 2.64 | 0.60 |
| 19:QS:25:LYS:O | 19:QS:26:GLY:O | 2.20 | 0.60 |
| 20:QT:104:LEU:HD12 | 20:QT:105:SER:H | 1.66 | 0.60 |
| 25:RA:1833:U:O2' | 25:RA:1969:A:N1 | 2.27 | 0.60 |
| 27:RD:35:LYS:HD3 | 27:RD:63:ARG:CB | 2.32 | 0.60 |
| 30:RG:61:ALA:HB2 | 30:RG:68:PRO:HD2 | 1.81 | 0.60 |
| 30:RG:112:PRO:HB3 | 50:R4:37:SER:CB | 2.25 | 0.60 |
| 30:RG:128:ARG:HG3 | 30:RG:128:ARG:NH2 | 2.17 | 0.60 |
| 30:RG:179:PRO:HG3 | 50:R4:38:LYS:HZ2 | 1.66 | 0.60 |
| 43:RX:15:GLU:N | 43:RX:15:GLU:OE1 | 2.34 | 0.60 |
| 48:R2:32:LEU:HD11 | 48:R2:54:LYS:HG3 | 1.84 | 0.60 |
| 1:XA:210:U:O2' | 1:XA:216:G:N7 | 2.35 | 0.60 |
| 1:XA:312:C:H2' | 1:XA:313:A:H8 | 1.66 | 0.60 |
| 1:XA:941:G:H1 | 1:XA:1342:C:N4 | 1.99 | 0.60 |
| 1:XA:1200:C:H4' | 1:XA:1201:A:C5' | 2.31 | 0.60 |
| 2:XB:141:GLU:O | 2:XB:145:LEU:HD23 | 2.01 | 0.60 |
| 3:XC:70:VAL:O | 3:XC:106:VAL:HG23 | 2.01 | 0.60 |
| 5:XE:33:VAL:HG11 | 5:XE:109:ILE:HA | 1.83 | 0.60 |
| 9:XI:96:LEU:HD23 | 9:XI:102:LEU:HD12 | 1.84 | 0.60 |
| 9:XI:111:ARG:HG2 | 9:XI:112:LYS:N | 2.16 | 0.60 |
| 27:YD:147:LEU:HD13 | 27:YD:155:LEU:CD1 | 2.29 | 0.60 |
| 27:YD:166:GLN:HE21 | 27:YD:166:GLN:CA | 2.14 | 0.60 |
| 40:YU:92:ARG:HD3 | 40:YU:94:ASN:HB3 | 1.82 | 0.60 |
| 40:YU:92:ARG:NH1 | 40:YU:95:LEU:CD1 | 2.65 | 0.60 |
| 43:YX:43:VAL:CG1 | 43:YX:51:VAL:HG21 | 2.31 | 0.60 |
| 1:QA:948:C:H2' | 1:QA:949:A:H8 | 1.67 | 0.60 |
| 9:QI:85:LEU:O | 9:QI:85:LEU:HD12 | 2.02 | 0.60 |
| 10:QJ:49:VAL:HG22 | 14:QN:41:ARG:HB2 | 1.83 | 0.60 |
| 25:RA:270(U):C:H2' | 25:RA:270(V):G:H8 | 1.66 | 0.60 |
| 25:RA:2404:C:H2' | 25:RA:2405:G:O4' | 2.02 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:RD:25:THR:HG21 | 27:RD:81:ALA:CA | 2.31 | 0.60 |
| 27:RD:165:ILE:HA | 27:RD:175:LEU:HD23 | 1.83 | 0.60 |
| 28:RE:4:ILE:C | 28:RE:5:LEU:HD23 | 2.22 | 0.60 |
| 29:RF:34:TRP:CZ3 | 35:RP:8:PRO:HB3 | 2.36 | 0.60 |
| 30:RG:64:THR:HG23 | 30:RG:66:GLN:H | 1.67 | 0.60 |
| 32:RI:21:VAL:HG22 | 32:RI:22:LYS:N | 2.16 | 0.60 |
| 32:RI:114:LEU:O | 32:RI:115:ALA:CB | 2.49 | 0.60 |
| 35:RP:138:LEU:C | 35:RP:140:ALA:N | 2.55 | 0.60 |
| 41:RV:18:LEU:HB3 | 41:RV:96:ILE:HG12 | 1.83 | 0.60 |
| 45:RZ:48:PHE:HA | 45:RZ:51:ALA:HB3 | 1.84 | 0.60 |
| 48:R2:41:ILE:HG12 | 48:R2:44:LEU:HD12 | 1.82 | 0.60 |
| 1:XA:701:C:H1' | 1:XA:703:G:C6 | 2.37 | 0.60 |
| 2:XB:60:ASP:O | 2:XB:64:ARG:HG2 | 2.01 | 0.60 |
| 2:XB:69:LEU:O | 2:XB:162:ILE:HA | 2.02 | 0.60 |
| 4:XD:129:ASN:HA | 4:XD:145:GLU:HB2 | 1.82 | 0.60 |
| 7:XG:148:ASN:N | 7:XG:148:ASN:ND2 | 2.46 | 0.60 |
| 9:XI:85:LEU:HD12 | 9:XI:85:LEU:O | 2.02 | 0.60 |
| 10:XJ:5:ARG:O | 10:XJ:98:ILE:HA | 2.02 | 0.60 |
| 25:YA:1918:A:O2' | 25:YA:1920:C:N4 | 2.35 | 0.60 |
| 25:YA:2318:G:H22 | 38:YS:2:ALA:HA | 1.66 | 0.60 |
| 27:YD:25:THR:HG21 | 27:YD:81:ALA:HA | 1.84 | 0.60 |
| 27:YD:72:LYS:HE3 | 27:YD:75:ILE:HD12 | 1.82 | 0.60 |
| 28:YE:93:VAL:N | 28:YE:95:ILE:CD1 | 2.65 | 0.60 |
| 32:YI:99:GLU:CD | 32:YI:103:ARG:HH21 | 2.05 | 0.60 |
| 35:YP:79:ARG:HD3 | 35:YP:110:TYR:HE1 | 1.67 | 0.60 |
| 47:Y1:81:LYS:HA | 47:Y1:81:LYS:HZ3 | 0.70 | 0.60 |
| 1:QA:1190:G:H5'' | 3:QC:176:HIS:NE2 | 2.17 | 0.60 |
| 1:QA:1239:A:O2' | 1:QA:1298:C:N4 | 2.35 | 0.60 |
| 4:QD:12:CYS:HA | 4:QD:19:LEU:CD2 | 2.31 | 0.60 |
| 10:QJ:5:ARG:O | 10:QJ:98:ILE:HA | 2.01 | 0.60 |
| 11:QK:91:ARG:HH22 | 18:QR:88:LYS:HZ3 | 1.49 | 0.60 |
| 13:QM:37:THR:CG2 | 13:QM:39:ILE:HD11 | 2.31 | 0.60 |
| 14:QN:15:LYS:HD2 | 14:QN:16:PHE:CZ | 2.37 | 0.60 |
| 14:QN:42:ILE:O | 14:QN:43:CYS:C | 2.39 | 0.60 |
| 15:QO:4:THR:HB | 15:QO:6:GLU:OE2 | 2.02 | 0.60 |
| 20:QT:96:GLY:O | 20:QT:97:ALA:HB3 | 2.02 | 0.60 |
| 25:RA:443:A:H1' | 25:RA:1201:C:O4' | 2.02 | 0.60 |
| 25:RA:2287:A:O2' | 25:RA:2288:A:O5' | 2.18 | 0.60 |
| 25:RA:2688:U:H6 | 25:RA:2721:A:H62 | 1.49 | 0.60 |
| 26:RB:33:G:H8 | 26:RB:33:G:H5'' | 1.67 | 0.60 |
| 28:RE:53:PRO:HG2 | 28:RE:54:GLN:NE2 | 2.16 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:RG:44:GLY:HA2 | 30:RG:88:ILE:CG1 | 2.30 | 0.60 |
| 31:RH:89:ILE:O | 31:RH:91:GLY:N | 2.35 | 0.60 |
| 31:RH:117:PRO:HB3 | 31:RH:123:PHE:CD1 | 2.37 | 0.60 |
| 35:RP:13:ASN:O | 35:RP:15:ARG:N | 2.34 | 0.60 |
| 37:RR:44:LEU:HD22 | 37:RR:48:VAL:HG23 | 1.82 | 0.60 |
| 37:RR:92:GLY:H | 37:RR:94:TYR:HE2 | 1.49 | 0.60 |
| 40:RU:76:TYR:CZ | 40:RU:80:ILE:HG13 | 2.37 | 0.60 |
| 47:R1:91:LYS:CG | 47:R1:92:LYS:H | 2.15 | 0.60 |
| 1:XA:1297:C:O2' | 1:XA:1298:C:O5' | 2.20 | 0.60 |
| 2:XB:114:ARG:O | 2:XB:117:GLU:HB2 | 2.02 | 0.60 |
| 9:XI:9:ARG:CB | 9:XI:14:VAL:HG22 | 2.32 | 0.60 |
| 14:YN:19:ARG:O | 14:YN:20:ALA:C | 2.40 | 0.60 |
| 14:YN:44:LEU:HD12 | 14:YN:48:ALA:HB2 | 1.84 | 0.60 |
| 16:XP:51:VAL:CG1 | 16:XP:52:ASP:N | 2.65 | 0.60 |
| 19:XS:25:LYS:O | 19:XS:26:GLY:O | 2.20 | 0.60 |
| 20:XT:104:LEU:HD12 | 20:XT:105:SER:H | 1.66 | 0.60 |
| 22:XV:35:A:C2 | 23:XX:3:G:C2 | 2.89 | 0.60 |
| 25:YA:503:A:H4' | 25:YA:504:U:H5' | 1.84 | 0.60 |
| 25:YA:2419:U:H5' | 52:Y6:23:THR:HG22 | 1.84 | 0.60 |
| 25:YA:2619:C:H1' | 28:YE:156:MET:HE1 | 1.84 | 0.60 |
| 26:YB:74:U:H2' | 26:YB:75:G:O4' | 2.02 | 0.60 |
| 27:YD:21:PHE:HB3 | 27:YD:24:ILE:HG13 | 1.83 | 0.60 |
| 27:YD:35:LYS:HD3 | 27:YD:63:ARG:CB | 2.32 | 0.60 |
| 29:YF:175:THR:O | 29:YF:176:LEU:CB | 2.49 | 0.60 |
| 30:YG:9:ARG:HG2 | 30:YG:13:GLU:OE1 | 2.00 | 0.60 |
| 30:YG:50:ALA:O | 30:YG:53:LEU:HB3 | 2.01 | 0.60 |
| 32:YI:2:LYS:HB3 | 32:YI:20:ASP:HB3 | 1.83 | 0.60 |
| 34:YO:7:TYR:HE1 | 34:YO:20:MET:HE3 | 1.67 | 0.60 |
| 35:YP:138:LEU:C | 35:YP:140:ALA:N | 2.55 | 0.60 |
| 39:YT:107:ASP:O | 39:YT:110:ILE:HG22 | 2.02 | 0.60 |
| 54:Y8:53:PRO:CD | 54:Y8:54:GLU:H | 2.15 | 0.60 |
| 1:QA:1312:G:H5'' | 50:R4:67:TYR:OH | 2.01 | 0.60 |
| 5:QE:42:GLY:HA2 | 5:QE:136:MET:HE1 | 1.82 | 0.60 |
| 5:QE:72:GLN:O | 5:QE:73:ASN:HB3 | 2.02 | 0.60 |
| 25:RA:227:A:OP1 | 35:RP:76:LYS:HE3 | 2.01 | 0.60 |
| 25:RA:286:C:H2' | 25:RA:287:C:H6 | 1.65 | 0.60 |
| 25:RA:2012:G:H4' | 42:RW:96:ILE:HD11 | 1.84 | 0.60 |
| 28:RE:37:ARG:NE | 28:RE:37:ARG:CA | 2.64 | 0.60 |
| 28:RE:63:LEU:CD1 | 28:RE:64:LYS:H | 2.04 | 0.60 |
| 30:RG:126:ASP:OD1 | 30:RG:130:ASN:HB2 | 2.02 | 0.60 |
| 32:RI:29:TYR:O | 32:RI:33:ARG:HB2 | 2.02 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:RP:27:HIS:N | 35:RP:27:HIS:ND1 | 2.49 | 0.60 |
| 38:RS:11:LYS:HB2 | 38:RS:91:PRO:HD3 | 1.84 | 0.60 |
| 38:RS:99:LYS:O | 38:RS:102:ALA:N | 2.34 | 0.60 |
| 41:RV:35:LEU:HB2 | 41:RV:37:VAL:HG23 | 1.84 | 0.60 |
| 45:RZ:73:GLN:HB3 | 45:RZ:87:ASP:OD1 | 2.01 | 0.60 |
| 46:R0:51:VAL:HG23 | 46:R0:81:VAL:HG23 | 1.83 | 0.60 |
| 9:XI:66:ARG:HH11 | 9:XI:66:ARG:HG2 | 1.67 | 0.60 |
| 13:XM:3:ARG:HA | 13:XM:9:ILE:CG2 | 2.21 | 0.60 |
| 19:XS:2:PRO:HB2 | 50:Y4:68:ARG:HH22 | 1.67 | 0.60 |
| 25:YA:242:G:C5' | 54:Y8:3:LYS:HE3 | 2.32 | 0.60 |
| 28:YE:68:ALA:O | 28:YE:69:LYS:HG3 | 2.02 | 0.60 |
| 38:YS:59:LYS:HG2 | 38:YS:60:GLY:N | 2.12 | 0.60 |
| 39:YT:57:PHE:CD2 | 39:YT:58:ASN:N | 2.66 | 0.60 |
| 40:YU:90:VAL:CG1 | 40:YU:91:ASP:H | 2.01 | 0.60 |
| 41:YV:1:MET:CE | 41:YV:43:GLU:HG2 | 2.32 | 0.60 |
| 45:YZ:48:PHE:HA | 45:YZ:51:ALA:HB3 | 1.84 | 0.60 |
| 47:Y1:80:LEU:C | 47:Y1:81:LYS:CD | 2.69 | 0.60 |
| 52:Y6:41:PRO:HG2 | 52:Y6:45:LYS:N | 2.10 | 0.60 |
| 54:Y8:22:VAL:CG2 | 54:Y8:53:PRO:HB2 | 2.32 | 0.60 |
| 1:QA:1014:A:H4' | 19:QS:14:HIS:NE2 | 2.17 | 0.59 |
| 4:QD:114:ARG:HG3 | 4:QD:114:ARG:NH1 | 2.13 | 0.59 |
| 13:QM:77:ASN:CG | 50:R4:71:ARG:NH1 | 2.55 | 0.59 |
| 17:QQ:76:LEU:HD12 | 17:QQ:77:VAL:H | 1.67 | 0.59 |
| 22:QV:75:C:OP1 | 25:RA:2602:A:O5' | 2.20 | 0.59 |
| 25:RA:2853:C:H2' | 25:RA:2854:G:H8 | 1.66 | 0.59 |
| 27:RD:35:LYS:HE3 | 27:RD:64:ILE:C | 2.21 | 0.59 |
| 28:RE:116:VAL:O | 28:RE:117:MET:CB | 2.49 | 0.59 |
| 28:RE:131:ALA:HB1 | 28:RE:135:HIS:HE1 | 1.65 | 0.59 |
| 37:RR:75:LEU:HD13 | 37:RR:75:LEU:C | 2.22 | 0.59 |
| 39:RT:34:VAL:HG12 | 39:RT:36:GLU:HG2 | 1.83 | 0.59 |
| 1:XA:411:A:N6 | 1:XA:413:G:H21 | 1.97 | 0.59 |
| 1:XA:458:C:H2' | 1:XA:464:G:H8 | 1.67 | 0.59 |
| 1:XA:953:G:N7 | 13:XM:104:ARG:NH2 | 2.47 | 0.59 |
| 1:XA:1182:G:H4' | 1:XA:1183:A:H5'' | 1.84 | 0.59 |
| 3:XC:88:ARG:O | 3:XC:99:VAL:HG21 | 2.01 | 0.59 |
| 5:XE:72:GLN:O | 5:XE:73:ASN:HB3 | 2.02 | 0.59 |
| 5:XE:74:GLY:O | 5:XE:115:VAL:HA | 2.02 | 0.59 |
| 7:XG:113:GLU:CB | 7:XG:119:ARG:HG2 | 2.30 | 0.59 |
| 10:XJ:32:ALA:H | 10:XJ:78:ASN:HD21 | 1.49 | 0.59 |
| 10:XJ:98:ILE:HD12 | 10:XJ:98:ILE:N | 2.15 | 0.59 |
| 12:XL:54:LYS:CD | 12:XL:54:LYS:N | 2.64 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:270(U):C:H2' | 25:YA:270(V):G:H8 | 1.67 | 0.59 |
| 27:YD:35:LYS:CG | 27:YD:64:ILE:N | 2.56 | 0.59 |
| 30:YG:111:LEU:HB2 | 30:YG:112:PRO:HD3 | 1.82 | 0.59 |
| 31:YH:30:LYS:CD | 31:YH:81:GLU:H | 2.15 | 0.59 |
| 32:YI:144:VAL:CG2 | 32:YI:145:VAL:H | 2.06 | 0.59 |
| 37:YR:75:LEU:HD13 | 37:YR:75:LEU:C | 2.22 | 0.59 |
| 40:YU:76:TYR:CZ | 40:YU:80:ILE:HG13 | 2.37 | 0.59 |
| 40:YU:96:ALA:C | 40:YU:98:LEU:H | 2.04 | 0.59 |
| 1:QA:1446:A:O2' | 1:QA:1447:G:O5' | 2.18 | 0.59 |
| 3:QC:13:GLY:HA3 | 14:QN:57:ARG:CZ | 2.31 | 0.59 |
| 5:QE:33:VAL:HG11 | 5:QE:109:ILE:HA | 1.83 | 0.59 |
| 5:QE:131:ILE:O | 5:QE:134:ALA:HB3 | 2.01 | 0.59 |
| 13:QM:45:VAL:HG22 | 13:QM:45:VAL:O | 2.02 | 0.59 |
| 13:QM:96:LEU:HB3 | 13:QM:97:PRO:HD2 | 1.83 | 0.59 |
| 26:RB:52:A:O2' | 26:RB:53:A:N7 | 2.35 | 0.59 |
| 27:RD:25:THR:HG21 | 27:RD:81:ALA:HA | 1.83 | 0.59 |
| 27:RD:166:GLN:CA | 27:RD:166:GLN:HE21 | 2.14 | 0.59 |
| 29:RF:155:LEU:CD1 | 29:RF:174:VAL:HG13 | 2.32 | 0.59 |
| 31:RH:4:ILE:N | 31:RH:4:ILE:HD13 | 2.17 | 0.59 |
| 31:RH:30:LYS:CD | 31:RH:81:GLU:H | 2.15 | 0.59 |
| 33:RN:16:ILE:O | 33:RN:55:VAL:HG22 | 2.01 | 0.59 |
| 35:RP:37:GLY:HA2 | 35:RP:41:ARG:HE | 1.67 | 0.59 |
| 36:RQ:81:VAL:HG23 | 36:RQ:82:ARG:H | 1.67 | 0.59 |
| 37:RR:44:LEU:O | 37:RR:48:VAL:HG23 | 2.02 | 0.59 |
| 39:RT:102:ILE:HB | 39:RT:110:ILE:HD13 | 1.84 | 0.59 |
| 39:RT:107:ASP:O | 39:RT:110:ILE:HG22 | 2.02 | 0.59 |
| 40:RU:58:ARG:HA | 40:RU:61:TRP:CE3 | 2.37 | 0.59 |
| 44:RY:4:LYS:O | 44:RY:5:MET:HB2 | 2.01 | 0.59 |
| 6:XF:44:GLY:HA2 | 6:XF:59:TYR:CZ | 2.37 | 0.59 |
| 8:XH:86:ILE:HG22 | 8:XH:93:VAL:HG21 | 1.84 | 0.59 |
| 11:XK:41:THR:HG21 | 11:XK:71:LYS:HB2 | 1.83 | 0.59 |
| 16:XP:43:LYS:HA | 16:XP:48:TRP:HB2 | 1.83 | 0.59 |
| 20:XT:58:LYS:O | 20:XT:62:LEU:HD12 | 2.02 | 0.59 |
| 25:YA:1693:U:H1' | 27:YD:14:ARG:HH22 | 1.67 | 0.59 |
| 27:YD:172:TYR:CD1 | 27:YD:186:HIS:HA | 2.37 | 0.59 |
| 29:YF:63:LYS:HE2 | 29:YF:67:GLN:HB3 | 1.83 | 0.59 |
| 29:YF:123:LEU:HD12 | 29:YF:124:LEU:N | 2.17 | 0.59 |
| 31:YH:4:ILE:N | 31:YH:4:ILE:HD13 | 2.17 | 0.59 |
| 32:YI:29:TYR:O | 32:YI:33:ARG:HB2 | 2.02 | 0.59 |
| 32:YI:38:LEU:HD12 | 32:YI:38:LEU:N | 2.11 | 0.59 |
| 33:YN:6:PRO:HG3 | 33:YN:41:ASP:HB2 | 1.83 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:YT:102:ILE:HB | 39:YT:110:ILE:HD13 | 1.83 | 0.59 |
| 41:YV:35:LEU:HB2 | 41:YV:37:VAL:HG23 | 1.84 | 0.59 |
| 41:YV:66:ARG:HH12 | 41:YV:88:ARG:HH11 | 1.49 | 0.59 |
| 44:YY:4:LYS:O | 44:YY:5:MET:HB2 | 2.01 | 0.59 |
| 45:YZ:154:ASP:O | 45:YZ:155:LEU:HD22 | 2.01 | 0.59 |
| 52:Y6:25:LYS:HD2 | 54:Y8:34:TRP:CZ2 | 2.36 | 0.59 |
| 54:Y8:56:GLU:O | 54:Y8:59:LYS:N | 2.35 | 0.59 |
| 8:QH:86:ILE:HG13 | 8:QH:133:LEU:HD22 | 1.84 | 0.59 |
| 9:QI:111:ARG:HG2 | 9:QI:112:LYS:N | 2.16 | 0.59 |
| 11:QK:34:ASP:HB3 | 11:QK:40:ILE:HD11 | 1.83 | 0.59 |
| 20:QT:58:LYS:O | 20:QT:62:LEU:HD12 | 2.02 | 0.59 |
| 25:RA:38:A:H2' | 25:RA:39:C:C6 | 2.37 | 0.59 |
| 25:RA:198:C:H5' | 25:RA:2244:U:OP1 | 2.02 | 0.59 |
| 25:RA:1496:A:H8 | 25:RA:1577:C:O2' | 1.86 | 0.59 |
| 25:RA:2419:U:O4 | 54:R8:30:ARG:NE | 2.35 | 0.59 |
| 28:RE:61:ARG:HB2 | 28:RE:62:PRO:CD | 2.32 | 0.59 |
| 28:RE:95:ILE:HD12 | 28:RE:95:ILE:N | 2.15 | 0.59 |
| 35:RP:95:VAL:HG13 | 35:RP:100:LEU:HD21 | 1.84 | 0.59 |
| 45:RZ:132:ASN:HB2 | 45:RZ:160:GLY:HA3 | 1.83 | 0.59 |
| 1:XA:15:G:H4' | 5:XE:24:ARG:NH1 | 2.16 | 0.59 |
| 1:XA:246:A:N6 | 1:XA:281:G:H1' | 2.17 | 0.59 |
| 2:XB:124:SER:HB2 | 2:XB:125:PRO:HD2 | 1.85 | 0.59 |
| 7:XG:85:TYR:HE1 | 7:XG:154:TYR:CE1 | 2.21 | 0.59 |
| 18:XR:31:LEU:HD23 | 18:XR:31:LEU:H | 1.67 | 0.59 |
| 27:YD:174:ILE:HD12 | 27:YD:174:ILE:N | 2.16 | 0.59 |
| 31:YH:55:PRO:HG2 | 31:YH:61:HIS:CE1 | 2.37 | 0.59 |
| 33:YN:18:ALA:HB3 | 33:YN:55:VAL:O | 2.03 | 0.59 |
| 33:YN:42:TRP:O | 40:YU:64:ARG:NH2 | 2.35 | 0.59 |
| 35:YP:55:ARG:HD2 | 35:YP:56:SER:O | 2.01 | 0.59 |
| 35:YP:95:VAL:HG13 | 35:YP:100:LEU:HD21 | 1.83 | 0.59 |
| 35:YP:121:LYS:HG3 | 35:YP:122:PRO:HD2 | 1.84 | 0.59 |
| 35:YP:127:ALA:O | 35:YP:147:LEU:HD23 | 2.02 | 0.59 |
| 36:YQ:86:GLY:C | 36:YQ:88:GLY:H | 2.03 | 0.59 |
| 41:YV:15:GLU:HG3 | 41:YV:16:PRO:HD2 | 1.83 | 0.59 |
| 1:QA:345:C:H4' | 1:QA:346:G:C2 | 2.37 | 0.59 |
| 2:QB:69:LEU:O | 2:QB:162:ILE:HA | 2.01 | 0.59 |
| 3:QC:127:ARG:HH11 | 3:QC:127:ARG:CG | 2.15 | 0.59 |
| 3:QC:189:ALA:HB3 | 3:QC:196:LEU:HB2 | 1.84 | 0.59 |
| 6:QF:44:GLY:HA2 | 6:QF:59:TYR:CZ | 2.37 | 0.59 |
| 7:QG:23:VAL:HG12 | 7:QG:27:ILE:CD1 | 2.32 | 0.59 |
| 7:QG:66:VAL:O | 7:QG:70:LYS:HG3 | 2.02 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 7:QG:79:ARG:HH11 | 7:QG:79:ARG:HG2 | 1.66 | 0.59 |
| 8:QH:41:ARG:HH11 | 8:QH:41:ARG:HB3 | 1.66 | 0.59 |
| 19:QS:16:LEU:O | 19:QS:20:LEU:HG | 2.01 | 0.59 |
| 27:RD:172:TYR:CD1 | 27:RD:186:HIS:HA | 2.37 | 0.59 |
| 27:RD:236:GLY:C | 27:RD:237:GLU:OE1 | 2.40 | 0.59 |
| 28:RE:68:ALA:O | 28:RE:69:LYS:HG3 | 2.02 | 0.59 |
| 31:RH:82:GLY:O | 31:RH:135:GLY:O | 2.20 | 0.59 |
| 33:RN:41:ASP:O | 33:RN:48:MET:HE3 | 2.01 | 0.59 |
| 54:R8:22:VAL:CG2 | 54:R8:53:PRO:HB2 | 2.32 | 0.59 |
| 1:XA:17:U:H2' | 1:XA:18:C:C6 | 2.37 | 0.59 |
| 7:XG:23:VAL:HG12 | 7:XG:27:ILE:CD1 | 2.32 | 0.59 |
| 8:XH:41:ARG:HH11 | 8:XH:41:ARG:HB3 | 1.66 | 0.59 |
| 20:XT:96:GLY:O | 20:XT:97:ALA:HB3 | 2.02 | 0.59 |
| 25:YA:747:U:C4 | 25:YA:2613:U:C4 | 2.90 | 0.59 |
| 25:YA:1291:C:H5' | 25:YA:1536:A:H5' | 1.83 | 0.59 |
| 27:YD:12:SER:C | 27:YD:14:ARG:H | 2.06 | 0.59 |
| 28:YE:51:PHE:HD1 | 28:YE:52:LEU:HG | 1.68 | 0.59 |
| 36:YQ:80:GLU:C | 36:YQ:81:VAL:HG13 | 2.22 | 0.59 |
| 37:YR:92:GLY:H | 37:YR:94:TYR:HE2 | 1.49 | 0.59 |
| 40:YU:58:ARG:HA | 40:YU:61:TRP:CE3 | 2.37 | 0.59 |
| 40:YU:92:ARG:HH11 | 40:YU:95:LEU:HD12 | 1.67 | 0.59 |
| 44:YY:96:ILE:CD1 | 44:YY:98:VAL:HG12 | 2.32 | 0.59 |
| 46:Y0:51:VAL:HG23 | 46:Y0:81:VAL:HG23 | 1.83 | 0.59 |
| 49:Y3:29:ARG:HH11 | 49:Y3:29:ARG:CB | 2.13 | 0.59 |
| 2:QB:124:SER:HB2 | 2:QB:125:PRO:HD2 | 1.85 | 0.59 |
| 3:QC:60:ALA:O | 3:QC:61:ALA:CB | 2.50 | 0.59 |
| 9:QI:9:ARG:HB3 | 9:QI:14:VAL:HG13 | 1.85 | 0.59 |
| 9:QI:96:LEU:HD23 | 9:QI:102:LEU:HD12 | 1.84 | 0.59 |
| 12:QL:46:LYS:HG2 | 12:QL:47:LYS:H | 1.67 | 0.59 |
| 12:QL:70:ILE:HD13 | 12:QL:77:LEU:HD12 | 1.83 | 0.59 |
| 16:QP:43:LYS:HA | 16:QP:48:TRP:HB2 | 1.84 | 0.59 |
| 25:RA:2543:G:H2' | 25:RA:2544:G:C8 | 2.38 | 0.59 |
| 25:RA:2681:C:O2' | 25:RA:2682:U:O5' | 2.16 | 0.59 |
| 27:RD:137:PRO:HB2 | 27:RD:140:THR:CG2 | 2.33 | 0.59 |
| 28:RE:36:ARG:H | 28:RE:37:ARG:HH21 | 1.49 | 0.59 |
| 28:RE:69:LYS:O | 28:RE:71:GLY:N | 2.27 | 0.59 |
| 28:RE:116:VAL:CG2 | 28:RE:122:PHE:CD2 | 2.86 | 0.59 |
| 30:RG:13:GLU:O | 30:RG:14:GLU:CB | 2.44 | 0.59 |
| 31:RH:153:LYS:HA | 31:RH:153:LYS:HZ2 | 1.67 | 0.59 |
| 32:RI:99:GLU:CD | 32:RI:103:ARG:HH21 | 2.05 | 0.59 |
| 36:RQ:63:LYS:HE2 | 36:RQ:65:PHE:CE1 | 2.37 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 45:RZ:30:ASN:HB3 | 45:RZ:89:PHE:HE2 | 1.68 | 0.59 |
| 45:RZ:113:ALA:O | 45:RZ:114:GLY:C | 2.40 | 0.59 |
| 46:R0:29:GLN:O | 46:R0:31:VAL:HG13 | 2.03 | 0.59 |
| 47:R1:87:PRO:O | 47:R1:91:LYS:N | 2.31 | 0.59 |
| 52:R6:13:CYS:O | 52:R6:21:TYR:HA | 2.02 | 0.59 |
| 2:XB:188:ALA:HB3 | 2:XB:200:ILE:HG23 | 1.84 | 0.59 |
| 3:XC:127:ARG:HH11 | 3:XC:127:ARG:CG | 2.15 | 0.59 |
| 6:XF:26:ILE:O | 6:XF:30:LEU:HG | 2.02 | 0.59 |
| 17:XQ:92:ARG:HH11 | 17:XQ:92:ARG:HG3 | 1.68 | 0.59 |
| 20:XT:84:LEU:O | 20:XT:88:VAL:HG23 | 2.01 | 0.59 |
| 20:XT:101:GLY:O | 20:XT:103:GLY:N | 2.35 | 0.59 |
| 20:XT:104:LEU:HD12 | 20:XT:105:SER:N | 2.18 | 0.59 |
| 25:YA:530:G:N1 | 25:YA:2022:U:OP1 | 2.35 | 0.59 |
| 25:YA:898:C:H2' | 25:YA:899:A:H5' | 1.83 | 0.59 |
| 25:YA:1951:U:O2' | 25:YA:1953:A:N7 | 2.33 | 0.59 |
| 28:YE:116:VAL:O | 28:YE:117:MET:CB | 2.49 | 0.59 |
| 29:YF:11:VAL:HG11 | 29:YF:18:ARG:HE | 1.67 | 0.59 |
| 31:YH:86:GLU:O | 31:YH:131:VAL:O | 2.20 | 0.59 |
| 33:YN:58:ASP:N | 33:YN:60:ILE:HD11 | 2.16 | 0.59 |
| 40:YU:92:ARG:C | 40:YU:94:ASN:H | 2.05 | 0.59 |
| 45:YZ:20:ARG:O | 45:YZ:20:ARG:HD3 | 2.03 | 0.59 |
| 1:QA:1502:A:H2 | 1:QA:1505:G:H1 | 1.50 | 0.59 |
| 5:QE:68:GLU:O | 5:QE:68:GLU:HG3 | 2.03 | 0.59 |
| 6:QF:26:ILE:O | 6:QF:30:LEU:HG | 2.02 | 0.59 |
| 12:QL:48:PRO:CD | 12:QL:49:ASN:N | 2.57 | 0.59 |
| 14:QN:19:ARG:O | 14:QN:20:ALA:C | 2.40 | 0.59 |
| 20:QT:104:LEU:HD12 | 20:QT:105:SER:N | 2.18 | 0.59 |
| 25:RA:256:A:H2' | 25:RA:257:A:H8 | 1.68 | 0.59 |
| 25:RA:1019:U:H2' | 25:RA:1020:A:C8 | 2.36 | 0.59 |
| 25:RA:1190:G:OP1 | 35:RP:30:THR:OG1 | 2.14 | 0.59 |
| 25:RA:1291:C:H5' | 25:RA:1536:A:H5' | 1.85 | 0.59 |
| 33:RN:78:TYR:N | 33:RN:78:TYR:CD1 | 2.70 | 0.59 |
| 35:RP:79:ARG:HD3 | 35:RP:110:TYR:HE1 | 1.67 | 0.59 |
| 46:R0:6:GLY:O | 46:R0:7:LEU:HD22 | 2.03 | 0.59 |
| 54:R8:22:VAL:HG21 | 54:R8:53:PRO:HB2 | 1.83 | 0.59 |
| 1:XA:258:G:H2' | 1:XA:259:G:H8 | 1.67 | 0.59 |
| 1:XA:1510:U:H2' | 1:XA:1511:G:C8 | 2.38 | 0.59 |
| 3:XC:60:ALA:O | 3:XC:61:ALA:CB | 2.51 | 0.59 |
| 8:XH:12:ARG:HH12 | 8:XH:27:PRO:HD2 | 1.67 | 0.59 |
| 8:XH:41:ARG:HH11 | 8:XH:41:ARG:CG | 2.15 | 0.59 |
| 14:YN:15:LYS:HD2 | 14:YN:16:PHE:CZ | 2.36 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 15:XO:5:LYS:O | 15:XO:8:LYS:HG2 | 2.02 | 0.59 |
| 25:YA:2749:A:O2' | 31:YH:59:ARG:NE | 2.35 | 0.59 |
| 27:YD:177:LEU:HD11 | 27:YD:183:ARG:HB2 | 1.85 | 0.59 |
| 28:YE:4:ILE:C | 28:YE:5:LEU:HD23 | 2.22 | 0.59 |
| 30:YG:16:ARG:NH2 | 30:YG:31:VAL:HG11 | 2.17 | 0.59 |
| 35:YP:39:LYS:CA | 35:YP:45:LEU:CD1 | 2.80 | 0.59 |
| 38:YS:88:ASP:O | 38:YS:89:ARG:CB | 2.49 | 0.59 |
| 50:Y4:48:ARG:NH1 | 50:Y4:52:THR:H | 2.01 | 0.59 |
| 1:QA:527:G:O6 | 12:QL:49:ASN:ND2 | 2.28 | 0.59 |
| 1:QA:923:A:H2' | 1:QA:924:C:C6 | 2.38 | 0.59 |
| 2:QB:19:HIS:NE2 | 2:QB:206:ASP:HB2 | 2.18 | 0.59 |
| 2:QB:115:LEU:HD23 | 2:QB:153:ARG:HD3 | 1.84 | 0.59 |
| 2:QB:178:ARG:HD2 | 8:QH:71:GLY:HA2 | 1.83 | 0.59 |
| 2:QB:188:ALA:HB3 | 2:QB:200:ILE:HG23 | 1.84 | 0.59 |
| 4:QD:163:GLU:C | 4:QD:165:MET:H | 2.03 | 0.59 |
| 5:QE:79:GLU:HB3 | 5:QE:92:LYS:HA | 1.84 | 0.59 |
| 8:QH:41:ARG:HH11 | 8:QH:41:ARG:CG | 2.16 | 0.59 |
| 10:QJ:13:HIS:HB3 | 10:QJ:68:HIS:CE1 | 2.37 | 0.59 |
| 12:QL:5:PRO:HA | 12:QL:9:GLN:NE2 | 2.16 | 0.59 |
| 25:RA:674:G:C1' | 29:RF:74:ARG:HD3 | 2.30 | 0.59 |
| 25:RA:1297:C:H2' | 25:RA:1298:C:H6 | 1.68 | 0.59 |
| 25:RA:2425:A:OP2 | 25:RA:2426:A:O2' | 2.12 | 0.59 |
| 25:RA:2689:U:H4' | 25:RA:2690:C:O5' | 2.01 | 0.59 |
| 31:RH:127:GLU:HG2 | 31:RH:128:PRO:CG | 2.32 | 0.59 |
| 32:RI:35:LEU:O | 32:RI:36:ALA:HB2 | 2.01 | 0.59 |
| 32:RI:110:ASP:HB3 | 32:RI:112:LYS:N | 2.16 | 0.59 |
| 37:RR:79:LEU:HD23 | 37:RR:79:LEU:C | 2.23 | 0.59 |
| 38:RS:89:ARG:O | 38:RS:90:GLY:O | 2.19 | 0.59 |
| 42:RW:66:GLU:O | 42:RW:68:ARG:N | 2.33 | 0.59 |
| 44:RY:51:VAL:CG1 | 44:RY:52:SER:H | 2.11 | 0.59 |
| 45:RZ:58:VAL:O | 45:RZ:60:GLU:N | 2.36 | 0.59 |
| 1:XA:523:A:N6 | 12:XL:92:ASP:HB2 | 2.12 | 0.59 |
| 4:XD:22:LYS:O | 4:XD:113:SER:HB3 | 2.03 | 0.59 |
| 7:XG:66:VAL:O | 7:XG:70:LYS:HG3 | 2.02 | 0.59 |
| 9:XI:127:LYS:CE | 22:XV:34:C:OP2 | 2.51 | 0.59 |
| 12:XL:46:LYS:HG2 | 12:XL:47:LYS:H | 1.67 | 0.59 |
| 14:XN:23:ARG:CZ | 14:XN:30:ALA:HB2 | 2.33 | 0.59 |
| 25:YA:71:A:C2 | 43:YX:31:HIS:HE1 | 2.08 | 0.59 |
| 25:YA:740:U:H2' | 25:YA:741:G:C8 | 2.37 | 0.59 |
| 25:YA:1057:A:H62 | 25:YA:1086:A:H2' | 1.68 | 0.59 |
| 27:YD:27:THR:CG2 | 27:YD:83:GLU:HB3 | 2.33 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 31:YH:159:GLU:O | 31:YH:160:LYS:HG2 | 2.03 | 0.59 |
| 33:YN:78:TYR:N | 33:YN:78:TYR:CD1 | 2.70 | 0.59 |
| 41:YV:18:LEU:HB3 | 41:YV:96:ILE:HG12 | 1.84 | 0.59 |
| 50:Y4:22:ILE:HG22 | 50:Y4:23:GLU:N | 2.18 | 0.59 |
| 1:QA:300:A:O2' | 1:QA:564:C:N3 | 2.31 | 0.59 |
| 1:QA:1498:U:HO2' | 1:QA:1499:A:P | 2.19 | 0.59 |
| 3:QC:36:ASP:HB3 | 3:QC:40:ARG:HH12 | 1.68 | 0.59 |
| 3:QC:149:ALA:O | 3:QC:169:ALA:HA | 2.02 | 0.59 |
| 4:QD:173:TRP:O | 4:QD:186:LEU:HB2 | 2.02 | 0.59 |
| 8:QH:12:ARG:HH12 | 8:QH:27:PRO:HD2 | 1.67 | 0.59 |
| 9:QI:66:ARG:HH11 | 9:QI:66:ARG:HG2 | 1.68 | 0.59 |
| 12:QL:54:LYS:N | 12:QL:54:LYS:HD2 | 2.18 | 0.59 |
| 25:RA:520:G:H2' | 25:RA:521:G:H8 | 1.66 | 0.59 |
| 27:RD:12:SER:C | 27:RD:14:ARG:H | 2.06 | 0.59 |
| 27:RD:54:ARG:HH11 | 27:RD:54:ARG:CG | 2.14 | 0.59 |
| 28:RE:93:VAL:N | 28:RE:95:ILE:CD1 | 2.65 | 0.59 |
| 29:RF:89:VAL:HG12 | 29:RF:90:PHE:N | 2.18 | 0.59 |
| 29:RF:123:LEU:HD12 | 29:RF:124:LEU:N | 2.17 | 0.59 |
| 33:RN:9:VAL:HG21 | 33:RN:48:MET:HB3 | 1.85 | 0.59 |
| 33:RN:18:ALA:HB3 | 33:RN:55:VAL:O | 2.03 | 0.59 |
| 35:RP:71:VAL:HG13 | 35:RP:72:PRO:HD3 | 1.85 | 0.59 |
| 35:RP:138:LEU:O | 35:RP:140:ALA:N | 2.33 | 0.59 |
| 42:RW:36:LEU:HD11 | 42:RW:47:VAL:HG12 | 1.83 | 0.59 |
| 51:R5:40:LYS:NZ | 51:R5:46:CYS:HB3 | 2.18 | 0.59 |
| 1:XA:539:A:H2' | 1:XA:540:G:C8 | 2.37 | 0.59 |
| 4:XD:173:TRP:O | 4:XD:186:LEU:HB2 | 2.02 | 0.59 |
| 17:XQ:76:LEU:HD12 | 17:XQ:77:VAL:H | 1.67 | 0.59 |
| 19:XS:40:ILE:HD11 | 19:XS:62:ILE:HG21 | 1.85 | 0.59 |
| 31:YH:124:GLU:HB3 | 31:YH:132:ARG:HG3 | 1.85 | 0.59 |
| 37:YR:63:ARG:HH11 | 37:YR:63:ARG:HG3 | 1.68 | 0.59 |
| 37:YR:72:ASP:O | 37:YR:76:VAL:HB | 2.03 | 0.59 |
| 39:YT:102:ILE:HB | 39:YT:110:ILE:HD11 | 1.84 | 0.59 |
| 43:YX:49:VAL:CG1 | 43:YX:83:VAL:HG13 | 2.33 | 0.59 |
| 44:YY:95:LYS:HD3 | 44:YY:95:LYS:H | 1.67 | 0.59 |
| 45:YZ:18:LEU:HD12 | 45:YZ:18:LEU:N | 2.12 | 0.59 |
| 48:Y2:64:LEU:CD2 | 48:Y2:68:ARG:HD2 | 2.33 | 0.59 |
| 2:QB:47:THR:HG22 | 2:QB:51:LEU:HG | 1.85 | 0.59 |
| 6:QF:45:LEU:HD12 | 6:QF:59:TYR:HD1 | 1.66 | 0.59 |
| 10:QJ:31:GLY:HA3 | 10:QJ:78:ASN:ND2 | 2.18 | 0.59 |
| 11:QK:51:LYS:CA | 11:QK:55:LYS:HD3 | 2.21 | 0.59 |
| 18:QR:31:LEU:HD23 | 18:QR:31:LEU:H | 1.67 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:QV:53:G:H4' | 22:QV:54:U:OP1 | 2.02 | 0.59 |
| 25:RA:1226:G:H4' | 41:RV:84:LYS:HG2 | 1.84 | 0.59 |
| 31:RH:55:PRO:HG2 | 31:RH:61:HIS:CE1 | 2.37 | 0.59 |
| 40:RU:52:ARG:HG2 | 40:RU:52:ARG:NH1 | 2.18 | 0.59 |
| 41:RV:1:MET:CE | 41:RV:43:GLU:HG2 | 2.32 | 0.59 |
| 43:RX:49:VAL:CG1 | 43:RX:83:VAL:HG13 | 2.33 | 0.59 |
| 50:R4:63:TYR:C | 50:R4:65:ASP:H | 2.05 | 0.59 |
| 1:XA:558:G:H5'' | 1:XA:559:A:OP2 | 2.03 | 0.59 |
| 1:XA:954:G:H21 | 1:XA:1227:A:H62 | 1.51 | 0.59 |
| 1:XA:1126:U:H1' | 1:XA:1280:A:C5 | 2.37 | 0.59 |
| 3:XC:149:ALA:O | 3:XC:169:ALA:HA | 2.02 | 0.59 |
| 5:XE:153:LYS:HB2 | 5:XE:153:LYS:NZ | 2.18 | 0.59 |
| 6:XF:97:PHE:C | 6:XF:97:PHE:CD2 | 2.76 | 0.59 |
| 9:XI:9:ARG:HB3 | 9:XI:14:VAL:HG13 | 1.85 | 0.59 |
| 10:XJ:31:GLY:HA3 | 10:XJ:78:ASN:ND2 | 2.18 | 0.59 |
| 12:XL:70:ILE:HD13 | 12:XL:77:LEU:HD12 | 1.83 | 0.59 |
| 25:YA:1815:A:OP2 | 27:YD:54:ARG:NH2 | 2.36 | 0.59 |
| 25:YA:2841:C:H2' | 25:YA:2842:G:C8 | 2.37 | 0.59 |
| 27:YD:137:PRO:HB2 | 27:YD:140:THR:CG2 | 2.33 | 0.59 |
| 31:YH:82:GLY:O | 31:YH:135:GLY:O | 2.20 | 0.59 |
| 35:YP:138:LEU:O | 35:YP:140:ALA:N | 2.33 | 0.59 |
| 36:YQ:81:VAL:HG23 | 36:YQ:82:ARG:H | 1.67 | 0.59 |
| 46:Y0:55:ARG:HG3 | 46:Y0:55:ARG:HH11 | 1.67 | 0.59 |
| 50:Y4:39:CYS:O | 50:Y4:40:HIS:HB2 | 2.03 | 0.59 |
| 1:QA:1524:C:H2' | 1:QA:1525:G:C8 | 2.38 | 0.59 |
| 2:QB:187:LEU:CD1 | 2:QB:205:ASP:HA | 2.33 | 0.59 |
| 4:QD:166:LYS:HD3 | 27:YD:134:ARG:NH1 | 2.18 | 0.59 |
| 13:QM:77:ASN:ND2 | 50:R4:71:ARG:NH1 | 2.50 | 0.59 |
| 25:RA:443:A:N7 | 29:RF:45:ARG:HD2 | 2.18 | 0.59 |
| 25:RA:946:G:H2' | 25:RA:947:G:H8 | 1.68 | 0.59 |
| 25:RA:1268:A:H2' | 25:RA:1269:A:O4' | 2.03 | 0.59 |
| 25:RA:1657:C:H2' | 25:RA:1658:C:H6 | 1.68 | 0.59 |
| 25:RA:1795:C:O2 | 27:RD:255:LYS:HE2 | 2.02 | 0.59 |
| 28:RE:93:VAL:N | 28:RE:95:ILE:HD12 | 2.17 | 0.59 |
| 39:RT:66:VAL:HG12 | 39:RT:67:SER:H | 1.67 | 0.59 |
| 41:RV:41:GLY:H | 41:RV:46:VAL:HG13 | 1.66 | 0.59 |
| 46:R0:55:ARG:HH11 | 46:R0:55:ARG:HG3 | 1.67 | 0.59 |
| 1:XA:438:G:H4' | 4:XD:123:HIS:CE1 | 2.37 | 0.59 |
| 1:XA:1104:G:H4' | 2:XB:111:ARG:NH1 | 2.18 | 0.59 |
| 4:XD:163:GLU:C | 4:XD:165:MET:H | 2.03 | 0.59 |
| 5:XE:42:GLY:CA | 5:XE:66:MET:HG2 | 2.32 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 11:XK:69:ALA:HB1 | 11:XK:103:LEU:HD21 | 1.85 | 0.59 |
| 25:YA:1858:G:O2' | 25:YA:1884:A:N6 | 2.35 | 0.59 |
| 25:YA:2474:C:H5'' | 25:YA:2475:C:C5 | 2.38 | 0.59 |
| 28:YE:36:ARG:H | 28:YE:37:ARG:HH21 | 1.50 | 0.59 |
| 28:YE:61:ARG:HB2 | 28:YE:62:PRO:CD | 2.33 | 0.59 |
| 29:YF:174:VAL:HG13 | 29:YF:174:VAL:O | 2.03 | 0.59 |
| 31:YH:4:ILE:HG13 | 31:YH:6:ARG:CD | 2.33 | 0.59 |
| 31:YH:89:ILE:O | 31:YH:91:GLY:N | 2.35 | 0.59 |
| 31:YH:126:PRO:CD | 31:YH:127:GLU:N | 2.65 | 0.59 |
| 35:YP:37:GLY:HA2 | 35:YP:41:ARG:HE | 1.67 | 0.59 |
| 42:YW:80:PRO:O | 42:YW:100:THR:HG22 | 2.03 | 0.59 |
| 45:YZ:144:LEU:HD21 | 45:YZ:150:LEU:HD22 | 1.83 | 0.59 |
| 50:Y4:15:ILE:HG22 | 50:Y4:19:GLY:O | 2.03 | 0.59 |
| 1:QA:184:G:H2' | 1:QA:185:A:H8 | 1.67 | 0.58 |
| 1:QA:1120:G:O6 | 1:QA:1152:A:N6 | 2.36 | 0.58 |
| 1:QA:1372:U:OP1 | 9:QI:71:SER:HB3 | 2.02 | 0.58 |
| 4:QD:13:ARG:CD | 4:QD:38:TYR:O | 2.51 | 0.58 |
| 9:QI:40:LEU:HD11 | 9:QI:70:LYS:HG2 | 1.84 | 0.58 |
| 24:QY:39:C:O2' | 24:QY:40:G:OP1 | 2.21 | 0.58 |
| 25:RA:1815:A:OP2 | 27:RD:54:ARG:NH2 | 2.36 | 0.58 |
| 25:RA:2394:C:OP1 | 35:RP:63:PRO:HD2 | 2.03 | 0.58 |
| 27:RD:71:ASP:HB3 | 27:RD:103:ARG:HH22 | 1.68 | 0.58 |
| 27:RD:242:ARG:HD2 | 27:RD:242:ARG:N | 2.18 | 0.58 |
| 31:RH:86:GLU:O | 31:RH:131:VAL:O | 2.20 | 0.58 |
| 33:RN:14:VAL:HG12 | 33:RN:15:LEU:N | 2.18 | 0.58 |
| 35:RP:121:LYS:HG3 | 35:RP:122:PRO:HD2 | 1.84 | 0.58 |
| 38:RS:42:ASP:C | 38:RS:44:LYS:H | 2.06 | 0.58 |
| 39:RT:36:GLU:HG3 | 39:RT:41:ARG:HD3 | 1.85 | 0.58 |
| 44:RY:81:LYS:HD3 | 44:RY:97:ARG:CD | 2.33 | 0.58 |
| 46:R0:51:VAL:HG21 | 46:R0:79:VAL:O | 2.03 | 0.58 |
| 1:XA:560:U:H4' | 1:XA:561:U:H5'' | 1.85 | 0.58 |
| 2:XB:47:THR:HG22 | 2:XB:51:LEU:HG | 1.85 | 0.58 |
| 9:XI:40:LEU:HD11 | 9:XI:70:LYS:HG2 | 1.84 | 0.58 |
| 10:XJ:13:HIS:HB3 | 10:XJ:68:HIS:CE1 | 2.37 | 0.58 |
| 11:XK:30:VAL:HG21 | 11:XK:65:ALA:HA | 1.85 | 0.58 |
| 26:YB:42:C:H42 | 30:YG:91:ARG:NH2 | 2.00 | 0.58 |
| 27:YD:27:THR:CG2 | 27:YD:28:GLU:N | 2.66 | 0.58 |
| 30:YG:126:ASP:OD1 | 30:YG:130:ASN:HB2 | 2.02 | 0.58 |
| 32:YI:127:VAL:HG22 | 32:YI:139:GLN:HB3 | 1.84 | 0.58 |
| 34:YO:107:ARG:O | 34:YO:112:MET:HE3 | 2.03 | 0.58 |
| 48:Y2:32:LEU:HD11 | 48:Y2:54:LYS:HG3 | 1.84 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 50:Y4:3:GLU:HG3 | 50:Y4:4:GLY:N | 2.19 | 0.58 |
| 50:Y4:63:TYR:C | 50:Y4:65:ASP:H | 2.05 | 0.58 |
| 51:Y5:40:LYS:NZ | 51:Y5:46:CYS:HB3 | 2.18 | 0.58 |
| 1:QA:620:C:H2' | 1:QA:621:A:O4' | 2.03 | 0.58 |
| 1:QA:1056:U:H2' | 1:QA:1057:G:H8 | 1.67 | 0.58 |
| 1:QA:1348:U:N3 | 1:QA:1374:A:H2 | 2.01 | 0.58 |
| 4:QD:11:LEU:O | 4:QD:13:ARG:N | 2.36 | 0.58 |
| 16:QP:53:VAL:HG23 | 16:QP:54:GLU:N | 2.18 | 0.58 |
| 20:QT:37:SER:HB3 | 20:QT:84:LEU:HD23 | 1.85 | 0.58 |
| 26:RB:55:U:C4' | 30:RG:29:TRP:HE1 | 2.17 | 0.58 |
| 28:RE:72:VAL:O | 28:RE:73:GLU:O | 2.21 | 0.58 |
| 31:RH:92:ILE:HG22 | 31:RH:93:GLY:N | 2.18 | 0.58 |
| 34:RO:71:ARG:HH11 | 34:RO:71:ARG:HG3 | 1.69 | 0.58 |
| 38:RS:88:ASP:CG | 38:RS:90:GLY:H | 2.06 | 0.58 |
| 39:RT:102:ILE:HB | 39:RT:110:ILE:HD11 | 1.84 | 0.58 |
| 48:R2:16:LEU:O | 48:R2:17:SER:HB3 | 2.04 | 0.58 |
| 48:R2:64:LEU:CD2 | 48:R2:68:ARG:HD2 | 2.33 | 0.58 |
| 50:R4:12:ALA:CB | 50:R4:29:PRO:HA | 2.33 | 0.58 |
| 50:R4:48:ARG:NH1 | 50:R4:52:THR:H | 2.01 | 0.58 |
| 51:R5:60:VAL:HG13 | 51:R5:60:VAL:OXT | 2.03 | 0.58 |
| 1:XA:188:U:H2' | 1:XA:189:U:H5'' | 1.84 | 0.58 |
| 1:XA:714:G:H2' | 1:XA:715:A:C8 | 2.38 | 0.58 |
| 1:XA:752:G:H1' | 1:XA:754:C:H41 | 1.68 | 0.58 |
| 9:XI:114:TYR:O | 9:XI:114:TYR:HD2 | 1.85 | 0.58 |
| 25:YA:2712:U:O2' | 25:YA:2712(A):A:H8 | 1.84 | 0.58 |
| 25:YA:2774:C:H2' | 25:YA:2775:A:O4' | 2.03 | 0.58 |
| 29:YF:63:LYS:HE2 | 29:YF:67:GLN:CB | 2.32 | 0.58 |
| 30:YG:16:ARG:HB3 | 30:YG:17:PRO:CD | 2.33 | 0.58 |
| 32:YI:133:HIS:HB2 | 32:YI:134:PRO:CD | 2.34 | 0.58 |
| 39:YT:66:VAL:HG12 | 39:YT:67:SER:H | 1.67 | 0.58 |
| 1:QA:1126:U:OP2 | 1:QA:1281:U:H1' | 2.03 | 0.58 |
| 1:QA:1392:G:H21 | 1:QA:1502:A:H8 | 1.51 | 0.58 |
| 2:QB:178:ARG:CD | 8:QH:71:GLY:O | 2.51 | 0.58 |
| 4:QD:170:VAL:HG22 | 4:QD:171:GLY:N | 2.12 | 0.58 |
| 5:QE:111:GLU:C | 5:QE:113:ALA:H | 2.07 | 0.58 |
| 6:QF:62:TRP:C | 6:QF:63:TYR:HD2 | 2.06 | 0.58 |
| 7:QG:49:ILE:O | 7:QG:53:LYS:HB3 | 2.04 | 0.58 |
| 9:QI:17:VAL:HG13 | 9:QI:81:ILE:HD13 | 1.85 | 0.58 |
| 12:QL:126:LYS:HB2 | 12:QL:126:LYS:HZ3 | 1.68 | 0.58 |
| 17:QQ:92:ARG:HG3 | 17:QQ:92:ARG:HH11 | 1.68 | 0.58 |
| 25:RA:389:G:N1 | 35:RP:70:GLN:HB3 | 2.18 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:RA:1021:A:OP2 | 33:RN:65:LYS:NZ | 2.37 | 0.58 |
| 25:RA:2356:C:O3' | 46:R0:20:ARG:HD3 | 2.02 | 0.58 |
| 29:RF:63:LYS:HE2 | 29:RF:67:GLN:CB | 2.32 | 0.58 |
| 37:RR:72:ASP:O | 37:RR:76:VAL:HB | 2.03 | 0.58 |
| 45:RZ:20:ARG:O | 45:RZ:20:ARG:HD3 | 2.03 | 0.58 |
| 48:R2:17:SER:CB | 48:R2:18:PRO:HA | 2.33 | 0.58 |
| 50:R4:42:PHE:CG | 50:R4:43:TYR:N | 2.72 | 0.58 |
| 50:R4:65:ASP:O | 50:R4:66:SER:CB | 2.51 | 0.58 |
| 1:XA:1442:G:O6 | 1:XA:1446:A:N6 | 2.36 | 0.58 |
| 2:XB:212:GLN:NE2 | 2:XB:235:SER:HB2 | 2.18 | 0.58 |
| 3:XC:181:ASN:HD22 | 3:XC:204:LEU:HB2 | 1.68 | 0.58 |
| 9:XI:79:LEU:O | 9:XI:82:ALA:HB3 | 2.02 | 0.58 |
| 12:XL:18:VAL:O | 12:XL:19:ARG:HB2 | 2.03 | 0.58 |
| 12:XL:45:PRO:HD3 | 12:XL:51:ALA:O | 2.03 | 0.58 |
| 12:XL:82:VAL:HG23 | 12:XL:106:ASP:OD2 | 2.04 | 0.58 |
| 13:XM:19:LEU:HD22 | 13:XM:19:LEU:H | 1.68 | 0.58 |
| 25:YA:747:U:N1 | 51:Y5:2:ALA:HB3 | 2.18 | 0.58 |
| 25:YA:2208:U:O2' | 27:YD:151:LYS:HG2 | 2.03 | 0.58 |
| 30:YG:64:THR:HG23 | 30:YG:66:GLN:H | 1.67 | 0.58 |
| 31:YH:92:ILE:HG22 | 31:YH:93:GLY:N | 2.18 | 0.58 |
| 36:YQ:66:ILE:HA | 36:YQ:104:PHE:HA | 1.85 | 0.58 |
| 37:YR:44:LEU:O | 37:YR:48:VAL:HG23 | 2.02 | 0.58 |
| 39:YT:36:GLU:HG3 | 39:YT:41:ARG:HD3 | 1.85 | 0.58 |
| 41:YV:49:THR:CB | 41:YV:50:PRO:HD2 | 2.25 | 0.58 |
| 45:YZ:52:SER:O | 45:YZ:53:ILE:HG13 | 2.04 | 0.58 |
| 52:Y6:27:LYS:HB2 | 52:Y6:27:LYS:HZ2 | 1.66 | 0.58 |
| 1:QA:1513:A:H2' | 1:QA:1514:C:C6 | 2.37 | 0.58 |
| 2:QB:80:ILE:HD11 | 2:QB:208:ILE:CG2 | 2.23 | 0.58 |
| 4:QD:196:LEU:O | 4:QD:198:VAL:N | 2.31 | 0.58 |
| 5:QE:78:HIS:CE1 | 5:QE:143:ARG:H | 2.20 | 0.58 |
| 5:QE:102:ALA:HB2 | 5:QE:120:THR:OG1 | 2.03 | 0.58 |
| 6:QF:97:PHE:O | 18:QR:31:LEU:HD23 | 2.04 | 0.58 |
| 13:QM:84:ILE:HG23 | 13:QM:85:GLY:N | 2.18 | 0.58 |
| 14:QN:23:ARG:H | 14:QN:33:VAL:HG11 | 1.67 | 0.58 |
| 14:QN:23:ARG:CZ | 14:QN:30:ALA:HB2 | 2.32 | 0.58 |
| 18:QR:36:ASN:O | 18:QR:36:ASN:ND2 | 2.32 | 0.58 |
| 25:RA:442:G:H1' | 29:RF:48:THR:HG21 | 1.84 | 0.58 |
| 25:RA:1061:U:H3' | 25:RA:1062:G:H5'' | 1.86 | 0.58 |
| 25:RA:1264:G:H5' | 51:R5:11:THR:HG21 | 1.84 | 0.58 |
| 25:RA:2015:A:C1' | 51:R5:2:ALA:HA | 2.31 | 0.58 |
| 25:RA:2517:C:C2 | 25:RA:2542:A:N6 | 2.71 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:RD:92:ILE:HD12 | 27:RD:104:TYR:CD2 | 2.39 | 0.58 |
| 28:RE:6:GLY:HA3 | 28:RE:26:ILE:HD11 | 1.85 | 0.58 |
| 29:RF:174:VAL:HG13 | 29:RF:174:VAL:O | 2.03 | 0.58 |
| 31:RH:4:ILE:HG13 | 31:RH:6:ARG:CD | 2.33 | 0.58 |
| 33:RN:114:ARG:O | 33:RN:115:ARG:HB3 | 2.03 | 0.58 |
| 35:RP:127:ALA:O | 35:RP:147:LEU:HD23 | 2.02 | 0.58 |
| 36:RQ:80:GLU:OE1 | 46:R0:5:LYS:HB2 | 2.03 | 0.58 |
| 40:RU:92:ARG:NH1 | 40:RU:95:LEU:CD1 | 2.65 | 0.58 |
| 48:R2:69:ARG:NH1 | 48:R2:69:ARG:CB | 2.67 | 0.58 |
| 1:XA:191:G:C4 | 20:XT:105:SER:HB3 | 2.39 | 0.58 |
| 2:XB:37:ASN:C | 2:XB:39:ILE:H | 2.07 | 0.58 |
| 2:XB:80:ILE:HG21 | 2:XB:212:GLN:HA | 1.84 | 0.58 |
| 5:XE:78:HIS:HA | 8:XH:105:ARG:HB2 | 1.85 | 0.58 |
| 13:XM:45:VAL:HG22 | 13:XM:45:VAL:O | 2.02 | 0.58 |
| 16:XP:53:VAL:HG23 | 16:XP:54:GLU:N | 2.17 | 0.58 |
| 25:YA:598:G:H1 | 25:YA:659:C:H42 | 1.52 | 0.58 |
| 25:YA:1266:G:N7 | 42:YW:15:ARG:NH1 | 2.51 | 0.58 |
| 25:YA:1689:A:N6 | 25:YA:1698:A:H2 | 1.99 | 0.58 |
| 25:YA:2151:G:H2' | 25:YA:2152:G:C8 | 2.39 | 0.58 |
| 27:YD:44:ASN:HB3 | 27:YD:49:ILE:CA | 2.27 | 0.58 |
| 32:YI:115:ALA:CB | 32:YI:128:LEU:HD11 | 2.29 | 0.58 |
| 36:YQ:55:VAL:HG22 | 36:YQ:56:ARG:N | 2.18 | 0.58 |
| 37:YR:2:ARG:HG2 | 37:YR:5:LYS:HZ1 | 1.68 | 0.58 |
| 51:Y5:50:GLY:O | 51:Y5:51:TYR:HB2 | 2.03 | 0.58 |
| 1:QA:817:C:H1' | 1:QA:819:A:H5' | 1.83 | 0.58 |
| 1:QA:1053:G:N7 | 1:QA:1199:U:H3' | 2.18 | 0.58 |
| 2:QB:21:ARG:HG3 | 2:QB:38:GLY:O | 2.01 | 0.58 |
| 4:QD:12:CYS:HA | 4:QD:19:LEU:HD23 | 1.85 | 0.58 |
| 7:QG:85:TYR:HE1 | 7:QG:154:TYR:CE1 | 2.21 | 0.58 |
| 9:QI:79:LEU:O | 9:QI:82:ALA:HB3 | 2.02 | 0.58 |
| 13:QM:3:ARG:HH21 | 30:RG:139:LEU:HD13 | 1.65 | 0.58 |
| 19:QS:40:ILE:HD11 | 19:QS:62:ILE:HG21 | 1.85 | 0.58 |
| 25:RA:1342:A:OP1 | 43:RX:36:LYS:NZ | 2.33 | 0.58 |
| 25:RA:2159:G:H2' | 25:RA:2160:G:H8 | 1.68 | 0.58 |
| 25:RA:2602:A:C2 | 55:Z6:76:PPU:C8 | 2.86 | 0.58 |
| 27:RD:27:THR:CG2 | 27:RD:28:GLU:N | 2.66 | 0.58 |
| 27:RD:35:LYS:CG | 27:RD:64:ILE:H | 2.14 | 0.58 |
| 30:RG:16:ARG:NH2 | 30:RG:31:VAL:HG11 | 2.17 | 0.58 |
| 32:RI:4:ILE:HG12 | 32:RI:18:VAL:CG2 | 2.25 | 0.58 |
| 32:RI:133:HIS:HB2 | 32:RI:134:PRO:CD | 2.34 | 0.58 |
| 33:RN:13:TRP:O | 33:RN:135:PRO:HD2 | 2.04 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 44:RY:95:LYS:HD3 | 44:RY:95:LYS:H | 1.67 | 0.58 |
| 44:RY:96:ILE:CD1 | 44:RY:98:VAL:HG12 | 2.33 | 0.58 |
| 48:R2:16:LEU:O | 48:R2:16:LEU:CG | 2.49 | 0.58 |
| 1:XA:372:C:H42 | 1:XA:389:A:H62 | 1.50 | 0.58 |
| 1:XA:939:G:H5'' | 7:XG:102:ARG:NH2 | 2.18 | 0.58 |
| 2:XB:115:LEU:HD23 | 2:XB:153:ARG:HD3 | 1.84 | 0.58 |
| 3:XC:77:ILE:O | 3:XC:84:ILE:HG22 | 2.02 | 0.58 |
| 11:XK:34:ASP:HB3 | 11:XK:40:ILE:HD11 | 1.84 | 0.58 |
| 16:XP:28:ARG:HH11 | 16:XP:28:ARG:HG2 | 1.68 | 0.58 |
| 19:XS:5:LEU:HG | 50:Y4:66:SER:HB3 | 1.84 | 0.58 |
| 25:YA:288:C:H2' | 25:YA:289:A:H8 | 1.69 | 0.58 |
| 25:YA:573:G:N1 | 25:YA:2031:A:OP2 | 2.34 | 0.58 |
| 25:YA:593:G:O2' | 54:Y8:61:LEU:HD13 | 2.03 | 0.58 |
| 25:YA:748:G:O6 | 42:YW:90:ARG:NH1 | 2.37 | 0.58 |
| 25:YA:2405:G:O2' | 25:YA:2406:U:OP2 | 2.16 | 0.58 |
| 25:YA:2877:G:H2' | 25:YA:2878:U:O4' | 2.03 | 0.58 |
| 27:YD:165:ILE:HA | 27:YD:175:LEU:HD23 | 1.83 | 0.58 |
| 29:YF:89:VAL:HG12 | 29:YF:90:PHE:N | 2.18 | 0.58 |
| 31:YH:85:LYS:HA | 31:YH:86:GLU:OE1 | 2.03 | 0.58 |
| 35:YP:65:ARG:HH21 | 54:Y8:15:LYS:CB | 2.17 | 0.58 |
| 36:YQ:90:VAL:C | 36:YQ:92:GLY:H | 2.07 | 0.58 |
| 43:YX:36:LYS:HE3 | 43:YX:54:VAL:O | 2.04 | 0.58 |
| 46:Y0:51:VAL:HG21 | 46:Y0:79:VAL:O | 2.03 | 0.58 |
| 48:Y2:17:SER:CB | 48:Y2:18:PRO:HA | 2.33 | 0.58 |
| 1:QA:677:U:H2' | 1:QA:678:U:C6 | 2.37 | 0.58 |
| 4:QD:156:GLU:O | 4:QD:160:GLN:HG3 | 2.03 | 0.58 |
| 5:QE:42:GLY:CA | 5:QE:66:MET:HG2 | 2.33 | 0.58 |
| 13:QM:77:ASN:OD1 | 50:R4:71:ARG:CZ | 2.51 | 0.58 |
| 17:QQ:32:TYR:O | 17:QQ:34:LYS:N | 2.37 | 0.58 |
| 29:RF:11:VAL:HG11 | 29:RF:18:ARG:HE | 1.67 | 0.58 |
| 29:RF:160:ASN:OD1 | 29:RF:162:LEU:HB2 | 2.04 | 0.58 |
| 34:RO:7:TYR:HE1 | 34:RO:20:MET:HE3 | 1.68 | 0.58 |
| 34:RO:20:MET:O | 34:RO:41:ALA:HB1 | 2.04 | 0.58 |
| 38:RS:67:ARG:HB2 | 38:RS:67:ARG:HH11 | 1.65 | 0.58 |
| 40:RU:92:ARG:HH11 | 40:RU:95:LEU:HD12 | 1.67 | 0.58 |
| 42:RW:95:ILE:HD12 | 42:RW:95:ILE:O | 2.04 | 0.58 |
| 50:R4:3:GLU:HG3 | 50:R4:4:GLY:N | 2.18 | 0.58 |
| 1:XA:745:C:OP1 | 1:XA:851:G:O2' | 2.20 | 0.58 |
| 1:XA:864:A:H5' | 5:XE:86:ALA:HB2 | 1.84 | 0.58 |
| 4:XD:114:ARG:HG3 | 4:XD:114:ARG:NH1 | 2.13 | 0.58 |
| 5:XE:102:ALA:HB2 | 5:XE:120:THR:OG1 | 2.03 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:YN:23:ARG:H | 14:YN:33:VAL:HG11 | 1.67 | 0.58 |
| 14:YN:44:LEU:HD12 | 14:YN:44:LEU:C | 2.24 | 0.58 |
| 16:XP:14:ASN:N | 16:XP:15:PRO:CD | 2.67 | 0.58 |
| 25:YA:1292:U:H2' | 25:YA:1293:C:C6 | 2.39 | 0.58 |
| 25:YA:1950:G:N2 | 25:YA:1951:U:O4 | 2.37 | 0.58 |
| 31:YH:4:ILE:HD13 | 31:YH:4:ILE:H | 1.68 | 0.58 |
| 32:YI:116:LEU:HD11 | 32:YI:119:PRO:HG3 | 1.85 | 0.58 |
| 33:YN:9:VAL:HG21 | 33:YN:48:MET:HB3 | 1.85 | 0.58 |
| 38:YS:42:ASP:C | 38:YS:44:LYS:H | 2.06 | 0.58 |
| 41:YV:38:LEU:HD23 | 41:YV:39:LEU:N | 2.19 | 0.58 |
| 42:YW:66:GLU:O | 42:YW:68:ARG:N | 2.33 | 0.58 |
| 44:YY:81:LYS:HD3 | 44:YY:97:ARG:CD | 2.33 | 0.58 |
| 48:Y2:51:ARG:HA | 48:Y2:54:LYS:HB2 | 1.86 | 0.58 |
| 48:Y2:69:ARG:NH1 | 48:Y2:69:ARG:CB | 2.67 | 0.58 |
| 49:Y3:22:ALA:O | 49:Y3:25:ALA:HB3 | 2.04 | 0.58 |
| 1:QA:1314:C:OP2 | 19:QS:4:SER:OG | 2.22 | 0.58 |
| 2:QB:111:ARG:HA | 2:QB:111:ARG:NE | 2.18 | 0.58 |
| 2:QB:178:ARG:O | 8:QH:71:GLY:HA2 | 2.03 | 0.58 |
| 10:QJ:3:LYS:O | 10:QJ:100:THR:HG22 | 2.04 | 0.58 |
| 13:QM:19:LEU:HD22 | 13:QM:19:LEU:H | 1.68 | 0.58 |
| 16:QP:28:ARG:HH11 | 16:QP:28:ARG:HG2 | 1.68 | 0.58 |
| 19:QS:9:VAL:HG23 | 19:QS:9:VAL:O | 2.04 | 0.58 |
| 25:RA:1728:G:N1 | 25:RA:1730:U:OP2 | 2.37 | 0.58 |
| 28:RE:51:PHE:CD1 | 28:RE:52:LEU:HG | 2.38 | 0.58 |
| 32:RI:1:MET:HG3 | 32:RI:23:PRO:HB3 | 1.85 | 0.58 |
| 32:RI:2:LYS:CB | 32:RI:20:ASP:HB3 | 2.33 | 0.58 |
| 37:RR:117:VAL:CG2 | 37:RR:118:GLU:H | 2.15 | 0.58 |
| 43:RX:7:VAL:O | 43:RX:30:VAL:HG12 | 2.03 | 0.58 |
| 45:RZ:154:ASP:O | 45:RZ:157:LEU:HD13 | 2.03 | 0.58 |
| 50:R4:15:ILE:HG22 | 50:R4:19:GLY:O | 2.03 | 0.58 |
| 54:R8:46:ARG:O | 54:R8:47:LYS:HB3 | 2.03 | 0.58 |
| 1:XA:737:A:H2' | 1:XA:738:C:H6 | 1.69 | 0.58 |
| 2:XB:19:HIS:NE2 | 2:XB:206:ASP:HB2 | 2.18 | 0.58 |
| 3:XC:36:ASP:HB3 | 3:XC:40:ARG:HH12 | 1.68 | 0.58 |
| 4:XD:12:CYS:HA | 4:XD:19:LEU:HD23 | 1.85 | 0.58 |
| 5:XE:68:GLU:O | 5:XE:68:GLU:HG3 | 2.02 | 0.58 |
| 6:XF:62:TRP:C | 6:XF:63:TYR:HD2 | 2.06 | 0.58 |
| 7:XG:49:ILE:O | 7:XG:53:LYS:HB3 | 2.03 | 0.58 |
| 8:XH:84:ARG:NH1 | 8:XH:86:ILE:HD13 | 2.11 | 0.58 |
| 8:XH:86:ILE:HG13 | 8:XH:133:LEU:HD22 | 1.84 | 0.58 |
| 12:XL:54:LYS:N | 12:XL:54:LYS:HD2 | 2.18 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:XM:121:LYS:HZ1 | 24:XY:40:G:P | 2.17 | 0.58 |
| 25:YA:859:G:H2' | 25:YA:916:G:O6 | 2.03 | 0.58 |
| 28:YE:51:PHE:CD1 | 28:YE:52:LEU:HG | 2.39 | 0.58 |
| 28:YE:72:VAL:O | 28:YE:73:GLU:O | 2.21 | 0.58 |
| 31:YH:117:PRO:HB3 | 31:YH:123:PHE:CD1 | 2.37 | 0.58 |
| 32:YI:73:GLU:OE1 | 32:YI:137:PRO:HD2 | 2.04 | 0.58 |
| 33:YN:41:ASP:O | 33:YN:48:MET:HE3 | 2.03 | 0.58 |
| 34:YO:40:VAL:HG12 | 34:YO:41:ALA:N | 2.19 | 0.58 |
| 35:YP:71:VAL:HG13 | 35:YP:72:PRO:HD3 | 1.85 | 0.58 |
| 42:YW:95:ILE:HD12 | 42:YW:95:ILE:O | 2.04 | 0.58 |
| 45:YZ:30:ASN:HB3 | 45:YZ:89:PHE:HE2 | 1.68 | 0.58 |
| 46:Y0:29:GLN:O | 46:Y0:31:VAL:HG13 | 2.03 | 0.58 |
| 50:Y4:65:ASP:O | 50:Y4:66:SER:CB | 2.51 | 0.58 |
| 1:QA:25:C:H2' | 1:QA:26:A:C8 | 2.39 | 0.58 |
| 2:QB:212:GLN:NE2 | 2:QB:235:SER:HB2 | 2.18 | 0.58 |
| 3:QC:105:GLU:HG2 | 3:QC:106:VAL:N | 2.18 | 0.58 |
| 5:QE:153:LYS:HB2 | 5:QE:153:LYS:NZ | 2.18 | 0.58 |
| 12:QL:33:ARG:O | 12:QL:85:ILE:HG22 | 2.03 | 0.58 |
| 25:RA:414:C:H2' | 25:RA:415:A:H8 | 1.68 | 0.58 |
| 25:RA:662:G:H5'' | 35:RP:15:ARG:O | 2.04 | 0.58 |
| 25:RA:2232:U:P | 47:R1:40:ARG:HH12 | 2.27 | 0.58 |
| 29:RF:138:GLU:O | 29:RF:141:ALA:HB3 | 2.03 | 0.58 |
| 31:RH:159:GLU:O | 31:RH:160:LYS:HG2 | 2.03 | 0.58 |
| 35:RP:71:VAL:CG1 | 35:RP:72:PRO:HD3 | 2.33 | 0.58 |
| 36:RQ:47:ILE:CD1 | 36:RQ:70:PRO:HD3 | 2.34 | 0.58 |
| 51:R5:50:GLY:O | 51:R5:51:TYR:HB2 | 2.03 | 0.58 |
| 3:XC:33:LEU:O | 3:XC:37:GLN:HG2 | 2.04 | 0.58 |
| 10:XJ:49:VAL:HG22 | 14:YN:41:ARG:HB2 | 1.84 | 0.58 |
| 15:XO:4:THR:HB | 15:XO:6:GLU:OE2 | 2.02 | 0.58 |
| 25:YA:821:A:H2' | 25:YA:946:G:H5'' | 1.85 | 0.58 |
| 25:YA:1200:C:H1' | 40:YU:2:PRO:HG2 | 1.86 | 0.58 |
| 25:YA:1805:U:O2 | 27:YD:50:THR:HB | 2.04 | 0.58 |
| 25:YA:2293:C:H5'' | 38:YS:89:ARG:HH22 | 1.68 | 0.58 |
| 25:YA:2351:G:H8 | 25:YA:2351:G:O5' | 1.87 | 0.58 |
| 25:YA:2543:G:H2' | 25:YA:2544:G:C8 | 2.39 | 0.58 |
| 27:YD:242:ARG:HD2 | 27:YD:242:ARG:N | 2.18 | 0.58 |
| 29:YF:138:GLU:O | 29:YF:141:ALA:HB3 | 2.03 | 0.58 |
| 35:YP:13:ASN:C | 35:YP:15:ARG:N | 2.54 | 0.58 |
| 35:YP:71:VAL:CG1 | 35:YP:72:PRO:HD3 | 2.33 | 0.58 |
| 38:YS:88:ASP:CG | 38:YS:90:GLY:H | 2.06 | 0.58 |
| 50:Y4:12:ALA:CB | 50:Y4:29:PRO:HA | 2.33 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 1:QA:411:A:H62 | 1:QA:413:G:H21 | 1.51 | 0.58 |
| 1:QA:592:G:H1 | 1:QA:647:C:N4 | 2.01 | 0.58 |
| 1:QA:1073:U:OP2 | 5:QE:57:LYS:NZ | 2.32 | 0.58 |
| 2:QB:37:ASN:C | 2:QB:39:ILE:H | 2.07 | 0.58 |
| 2:QB:140:HIS:HA | 2:QB:143:GLU:OE1 | 2.04 | 0.58 |
| 3:QC:77:ILE:O | 3:QC:84:ILE:HG22 | 2.03 | 0.58 |
| 11:QK:21:ILE:HG13 | 11:QK:30:VAL:HG12 | 1.86 | 0.58 |
| 13:QM:56:LEU:HD13 | 13:QM:60:VAL:HG23 | 1.86 | 0.58 |
| 15:QO:26:GLU:CD | 15:QO:77:ARG:NH1 | 2.57 | 0.58 |
| 27:RD:27:THR:CG2 | 27:RD:83:GLU:HB3 | 2.33 | 0.58 |
| 31:RH:85:LYS:HA | 31:RH:86:GLU:OE1 | 2.03 | 0.58 |
| 32:RI:127:VAL:HG22 | 32:RI:139:GLN:HB3 | 1.84 | 0.58 |
| 41:RV:35:LEU:HD21 | 41:RV:57:VAL:CG2 | 2.30 | 0.58 |
| 46:R0:36:ILE:HD13 | 46:R0:36:ILE:O | 2.03 | 0.58 |
| 50:R4:27:THR:O | 50:R4:28:LYS:HB3 | 2.04 | 0.58 |
| 54:R8:56:GLU:O | 54:R8:59:LYS:N | 2.35 | 0.58 |
| 3:XC:189:ALA:HB3 | 3:XC:196:LEU:HB2 | 1.84 | 0.58 |
| 4:XD:13:ARG:CD | 4:XD:38:TYR:O | 2.51 | 0.58 |
| 4:XD:191:ARG:NH1 | 4:XD:200:GLU:OE1 | 2.37 | 0.58 |
| 7:XG:69:VAL:HG11 | 7:XG:104:LEU:CD2 | 2.33 | 0.58 |
| 13:XM:4:ILE:HG22 | 13:XM:5:ALA:N | 2.19 | 0.58 |
| 25:YA:2009:G:OP1 | 42:YW:41:LYS:HE2 | 2.04 | 0.58 |
| 28:YE:63:LEU:HD13 | 28:YE:65:GLY:H | 1.68 | 0.58 |
| 28:YE:78:LEU:HD23 | 28:YE:79:ARG:HD2 | 1.86 | 0.58 |
| 32:YI:99:GLU:OE2 | 32:YI:103:ARG:NH2 | 2.36 | 0.58 |
| 33:YN:35:ARG:O | 33:YN:37:LYS:N | 2.37 | 0.58 |
| 36:YQ:134:ARG:NE | 45:YZ:122:ARG:NH2 | 2.52 | 0.58 |
| 38:YS:95:HIS:CG | 38:YS:96:GLY:H | 2.21 | 0.58 |
| 43:YX:7:VAL:O | 43:YX:30:VAL:HG12 | 2.04 | 0.58 |
| 44:YY:51:VAL:CG1 | 44:YY:52:SER:H | 2.11 | 0.58 |
| 45:YZ:27:VAL:HG22 | 45:YZ:28:MET:H | 1.69 | 0.58 |
| 45:YZ:154:ASP:O | 45:YZ:155:LEU:O | 2.22 | 0.58 |
| 48:Y2:15:LYS:H | 48:Y2:67:LYS:CE | 2.17 | 0.58 |
| 1:QA:1004:A:O5' | 1:QA:1025:U:N3 | 2.36 | 0.58 |
| 7:QG:69:VAL:HG11 | 7:QG:104:LEU:CD2 | 2.34 | 0.58 |
| 25:RA:76:C:O2' | 48:R2:62:THR:HG21 | 2.03 | 0.58 |
| 25:RA:1444(A):A:H4' | 25:RA:1460:A:O2' | 2.04 | 0.58 |
| 25:RA:1695:G:H1' | 27:RD:8:PRO:O | 2.04 | 0.58 |
| 25:RA:2273:A:H2' | 25:RA:2274:A:C8 | 2.39 | 0.58 |
| 25:RA:2695:C:H2' | 25:RA:2696:U:C6 | 2.38 | 0.58 |
| 27:RD:147:LEU:HD13 | 27:RD:155:LEU:CD1 | 2.29 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 32:RI:116:LEU:HD11 | 32:RI:119:PRO:HG3 | 1.85 | 0.58 |
| 38:RS:26:LEU:CD2 | 38:RS:87:PHE:HD1 | 2.17 | 0.58 |
| 43:RX:27:THR:HB | 43:RX:80:ILE:HB | 1.85 | 0.58 |
| 45:RZ:27:VAL:HG22 | 45:RZ:28:MET:H | 1.69 | 0.58 |
| 48:R2:15:LYS:H | 48:R2:67:LYS:NZ | 2.02 | 0.58 |
| 50:R4:15:ILE:HG22 | 50:R4:20:ASN:HA | 1.86 | 0.58 |
| 50:R4:38:LYS:C | 50:R4:40:HIS:N | 2.52 | 0.58 |
| 51:R5:55:ARG:NH1 | 51:R5:58:LEU:HD11 | 2.19 | 0.58 |
| 2:XB:111:ARG:HA | 2:XB:111:ARG:NE | 2.19 | 0.58 |
| 3:XC:76:VAL:HG21 | 3:XC:103:VAL:CG1 | 2.34 | 0.58 |
| 9:XI:17:VAL:HG13 | 9:XI:81:ILE:HD13 | 1.85 | 0.58 |
| 19:XS:68:GLY:N | 50:Y4:59:PHE:CE1 | 2.71 | 0.58 |
| 20:XT:37:SER:HB3 | 20:XT:84:LEU:HD23 | 1.85 | 0.58 |
| 25:YA:747:U:C2 | 51:Y5:2:ALA:HB3 | 2.38 | 0.58 |
| 25:YA:807:U:OP2 | 35:YP:41:ARG:NH1 | 2.37 | 0.58 |
| 25:YA:1019:U:H3 | 25:YA:1142(A):A:H62 | 1.52 | 0.58 |
| 25:YA:2252:G:H2' | 25:YA:2253:G:O4' | 2.04 | 0.58 |
| 26:YB:6:C:H2' | 26:YB:7:G:H5'' | 1.85 | 0.58 |
| 27:YD:71:ASP:HB3 | 27:YD:103:ARG:HH22 | 1.68 | 0.58 |
| 32:YI:2:LYS:CB | 32:YI:20:ASP:HB3 | 2.34 | 0.58 |
| 33:YN:13:TRP:O | 33:YN:135:PRO:HD2 | 2.04 | 0.58 |
| 36:YQ:47:ILE:CD1 | 36:YQ:70:PRO:HD3 | 2.34 | 0.58 |
| 43:YX:27:THR:HB | 43:YX:80:ILE:HB | 1.84 | 0.58 |
| 48:Y2:21:LEU:O | 48:Y2:25:VAL:HG23 | 2.04 | 0.58 |
| 1:QA:294:U:OP1 | 1:QA:610:G:O2' | 2.15 | 0.57 |
| 4:QD:22:LYS:O | 4:QD:113:SER:HB3 | 2.03 | 0.57 |
| 13:QM:81:LEU:HB3 | 13:QM:89:GLY:CA | 2.34 | 0.57 |
| 16:QP:51:VAL:CG1 | 16:QP:52:ASP:N | 2.65 | 0.57 |
| 19:QS:17:GLU:HA | 19:QS:20:LEU:HD12 | 1.86 | 0.57 |
| 25:RA:530:G:C6 | 25:RA:2022:U:H5'' | 2.39 | 0.57 |
| 25:RA:947:G:H2' | 25:RA:948:G:C8 | 2.39 | 0.57 |
| 25:RA:2853:C:H2' | 25:RA:2854:G:C8 | 2.39 | 0.57 |
| 30:RG:53:LEU:C | 30:RG:53:LEU:HD23 | 2.25 | 0.57 |
| 31:RH:4:ILE:HD13 | 31:RH:4:ILE:H | 1.68 | 0.57 |
| 35:RP:59:LEU:HA | 35:RP:61:ARG:CZ | 2.34 | 0.57 |
| 36:RQ:90:VAL:C | 36:RQ:92:GLY:H | 2.07 | 0.57 |
| 38:RS:106:ARG:O | 38:RS:107:GLU:HB2 | 2.04 | 0.57 |
| 40:RU:24:TYR:HE1 | 40:RU:39:LEU:HD23 | 1.69 | 0.57 |
| 45:RZ:33:LEU:HG | 45:RZ:34:ASN:N | 2.19 | 0.57 |
| 50:R4:22:ILE:HG22 | 50:R4:23:GLU:N | 2.18 | 0.57 |
| 1:XA:1065:U:OP2 | 1:XA:1190:G:N2 | 2.27 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:XA:1116:C:O2' | 9:XI:108:VAL:HG11 | 2.03 | 0.57 |
| 2:XB:12:GLU:O | 2:XB:16:HIS:ND1 | 2.36 | 0.57 |
| 2:XB:140:HIS:HA | 2:XB:143:GLU:OE1 | 2.04 | 0.57 |
| 12:XL:83:VAL:HG22 | 12:XL:84:LEU:H | 1.69 | 0.57 |
| 25:YA:207:A:H2' | 25:YA:208:C:O4' | 2.03 | 0.57 |
| 25:YA:573:G:O2' | 25:YA:574:C:H3' | 2.04 | 0.57 |
| 25:YA:1567:A:H5' | 27:YD:58:HIS:ND1 | 2.19 | 0.57 |
| 25:YA:2451:A:C6 | 55:Z8:76:PPU:HE2 | 2.39 | 0.57 |
| 28:YE:6:GLY:HA3 | 28:YE:26:ILE:HD11 | 1.85 | 0.57 |
| 28:YE:111:ARG:NE | 28:YE:160:TYR:HE1 | 2.01 | 0.57 |
| 29:YF:160:ASN:OD1 | 29:YF:162:LEU:HB2 | 2.04 | 0.57 |
| 30:YG:39:ILE:HG23 | 30:YG:155:MET:HG3 | 1.86 | 0.57 |
| 31:YH:127:GLU:HG2 | 31:YH:128:PRO:CG | 2.32 | 0.57 |
| 37:YR:117:VAL:CG2 | 37:YR:118:GLU:H | 2.15 | 0.57 |
| 51:Y5:60:VAL:HG13 | 51:Y5:60:VAL:OXT | 2.03 | 0.57 |
| 1:QA:514:C:H2' | 1:QA:515:G:H8 | 1.68 | 0.57 |
| 1:QA:707:C:H5'' | 11:QK:85:ARG:HH11 | 1.70 | 0.57 |
| 1:QA:757:U:H2' | 1:QA:758:G:O4' | 2.03 | 0.57 |
| 1:QA:1226:C:H2' | 13:QM:103:THR:HB | 1.86 | 0.57 |
| 1:QA:1399:C:C2 | 1:QA:1502:A:N6 | 2.72 | 0.57 |
| 2:QB:12:GLU:O | 2:QB:16:HIS:ND1 | 2.36 | 0.57 |
| 2:QB:80:ILE:HG21 | 2:QB:212:GLN:HA | 1.84 | 0.57 |
| 11:QK:30:VAL:HG21 | 11:QK:65:ALA:HA | 1.85 | 0.57 |
| 27:RD:25:THR:HG21 | 27:RD:81:ALA:HB1 | 1.85 | 0.57 |
| 28:RE:51:PHE:HD1 | 28:RE:52:LEU:HG | 1.67 | 0.57 |
| 28:RE:111:ARG:NE | 28:RE:160:TYR:HE1 | 2.01 | 0.57 |
| 31:RH:41:MET:HE1 | 31:RH:64:LEU:HB3 | 1.85 | 0.57 |
| 34:RO:20:MET:HG2 | 34:RO:21:CYS:N | 2.19 | 0.57 |
| 36:RQ:66:ILE:HA | 36:RQ:104:PHE:HA | 1.85 | 0.57 |
| 37:RR:2:ARG:HG2 | 37:RR:5:LYS:HZ1 | 1.68 | 0.57 |
| 42:RW:1:MET:HA | 42:RW:1:MET:HE3 | 1.85 | 0.57 |
| 2:XB:77:ALA:CB | 2:XB:211:ILE:HG21 | 2.34 | 0.57 |
| 4:XD:156:GLU:O | 4:XD:160:GLN:HG3 | 2.03 | 0.57 |
| 4:XD:196:LEU:O | 4:XD:198:VAL:N | 2.31 | 0.57 |
| 6:XF:39:LYS:HD2 | 6:XF:64:GLN:NE2 | 2.19 | 0.57 |
| 8:XH:19:VAL:O | 8:XH:20:TYR:HB2 | 2.04 | 0.57 |
| 13:XM:84:ILE:HG23 | 13:XM:85:GLY:N | 2.17 | 0.57 |
| 22:XV:53:G:H4' | 22:XV:54:U:OP1 | 2.02 | 0.57 |
| 24:XY:39:C:O2' | 24:XY:40:G:OP1 | 2.21 | 0.57 |
| 25:YA:1790:C:H2' | 25:YA:1791:A:C4 | 2.39 | 0.57 |
| 28:YE:41:LYS:HE2 | 28:YE:41:LYS:HA | 1.86 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 28:YE:63:LEU:HD12 | 28:YE:65:GLY:H | 1.69 | 0.57 |
| 28:YE:116:VAL:CG2 | 28:YE:122:PHE:CD2 | 2.86 | 0.57 |
| 32:YI:11:ASN:O | 32:YI:12:LEU:CB | 2.51 | 0.57 |
| 33:YN:14:VAL:HG12 | 33:YN:15:LEU:N | 2.18 | 0.57 |
| 33:YN:114:ARG:O | 33:YN:115:ARG:HB3 | 2.03 | 0.57 |
| 39:YT:82:LEU:HD12 | 39:YT:82:LEU:N | 2.19 | 0.57 |
| 40:YU:24:TYR:HE1 | 40:YU:39:LEU:HD23 | 1.69 | 0.57 |
| 48:Y2:16:LEU:O | 48:Y2:17:SER:HB3 | 2.04 | 0.57 |
| 50:Y4:37:SER:HB3 | 50:Y4:42:PHE:CE1 | 2.38 | 0.57 |
| 1:QA:236:G:OP1 | 17:QQ:40:LYS:NZ | 2.35 | 0.57 |
| 1:QA:343:U:H2' | 1:QA:345:C:H1' | 1.85 | 0.57 |
| 2:QB:178:ARG:CD | 8:QH:71:GLY:C | 2.73 | 0.57 |
| 7:QG:16:LEU:CD1 | 9:QI:45:ALA:HB2 | 2.33 | 0.57 |
| 12:QL:10:LEU:HB3 | 17:QQ:32:TYR:CE2 | 2.38 | 0.57 |
| 13:QM:82:MET:O | 13:QM:84:ILE:N | 2.38 | 0.57 |
| 16:QP:21:VAL:HG22 | 16:QP:34:GLU:O | 2.05 | 0.57 |
| 30:RG:39:ILE:HG23 | 30:RG:155:MET:HG3 | 1.86 | 0.57 |
| 31:RH:84:SER:O | 31:RH:133:VAL:O | 2.22 | 0.57 |
| 31:RH:125:VAL:HA | 31:RH:126:PRO:CB | 2.29 | 0.57 |
| 38:RS:95:HIS:CG | 38:RS:96:GLY:H | 2.21 | 0.57 |
| 39:RT:82:LEU:HD12 | 39:RT:82:LEU:N | 2.19 | 0.57 |
| 41:RV:78:LYS:O | 41:RV:79:VAL:HB | 2.04 | 0.57 |
| 50:R4:39:CYS:O | 50:R4:40:HIS:HB2 | 2.03 | 0.57 |
| 2:XB:97:TRP:HH2 | 2:XB:176:GLU:HB2 | 1.69 | 0.57 |
| 2:XB:106:LYS:O | 2:XB:110:GLN:HG3 | 2.05 | 0.57 |
| 10:XJ:94:VAL:HG12 | 10:XJ:95:GLU:N | 2.20 | 0.57 |
| 11:XK:29:ILE:HG13 | 11:XK:43:SER:O | 2.04 | 0.57 |
| 25:YA:469:G:O6 | 53:Y7:37:LYS:HE2 | 2.03 | 0.57 |
| 25:YA:1530:G:O6 | 25:YA:1542:G:N2 | 2.37 | 0.57 |
| 27:YD:35:LYS:HG2 | 27:YD:64:ILE:CA | 2.34 | 0.57 |
| 29:YF:192:LEU:HD21 | 29:YF:194:MET:CE | 2.35 | 0.57 |
| 30:YG:53:LEU:C | 30:YG:53:LEU:HD23 | 2.24 | 0.57 |
| 32:YI:4:ILE:HG12 | 32:YI:18:VAL:CG2 | 2.25 | 0.57 |
| 38:YS:26:LEU:CD2 | 38:YS:87:PHE:HD1 | 2.17 | 0.57 |
| 38:YS:67:ARG:NH1 | 38:YS:67:ARG:CB | 2.64 | 0.57 |
| 47:Y1:86:SER:H | 47:Y1:87:PRO:CD | 2.16 | 0.57 |
| 49:Y3:4:LEU:O | 49:Y3:36:VAL:HA | 2.04 | 0.57 |
| 2:QB:97:TRP:HH2 | 2:QB:176:GLU:HB2 | 1.69 | 0.57 |
| 3:QC:57:ILE:HG23 | 3:QC:64:VAL:HG13 | 1.86 | 0.57 |
| 4:QD:119:GLN:HG3 | 4:QD:123:HIS:CD2 | 2.39 | 0.57 |
| 5:QE:140:ARG:HB2 | 5:QE:140:ARG:HH11 | 1.69 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:QJ:49:VAL:HG21 | 14:QN:41:ARG:HB2 | 1.87 | 0.57 |
| 10:QJ:64:GLU:OE2 | 10:QJ:66:ARG:HD2 | 2.05 | 0.57 |
| 27:RD:35:LYS:HG2 | 27:RD:64:ILE:CA | 2.34 | 0.57 |
| 27:RD:177:LEU:HD11 | 27:RD:183:ARG:HB2 | 1.85 | 0.57 |
| 27:RD:263:ARG:HB2 | 27:RD:263:ARG:HH11 | 1.67 | 0.57 |
| 33:RN:35:ARG:O | 33:RN:37:LYS:N | 2.37 | 0.57 |
| 36:RQ:55:VAL:HG22 | 36:RQ:56:ARG:N | 2.18 | 0.57 |
| 37:RR:63:ARG:HH11 | 37:RR:63:ARG:HG3 | 1.68 | 0.57 |
| 38:RS:67:ARG:HH11 | 38:RS:67:ARG:CB | 2.18 | 0.57 |
| 40:RU:92:ARG:C | 40:RU:94:ASN:H | 2.05 | 0.57 |
| 47:R1:81:LYS:HE2 | 47:R1:81:LYS:H | 1.62 | 0.57 |
| 48:R2:21:LEU:O | 48:R2:25:VAL:HG23 | 2.04 | 0.57 |
| 1:XA:491:G:H2' | 1:XA:492:G:C8 | 2.39 | 0.57 |
| 1:XA:690:G:H22 | 11:XK:55:LYS:HZ1 | 1.51 | 0.57 |
| 1:XA:924:C:O2' | 1:XA:1502:A:N6 | 2.37 | 0.57 |
| 6:XF:99:ALA:O | 6:XF:100:ASN:HB2 | 2.04 | 0.57 |
| 7:XG:62:PHE:HA | 7:XG:124:LEU:CD2 | 2.27 | 0.57 |
| 10:XJ:3:LYS:O | 10:XJ:100:THR:HG22 | 2.04 | 0.57 |
| 11:XK:21:ILE:HD12 | 11:XK:21:ILE:N | 2.20 | 0.57 |
| 12:XL:33:ARG:O | 12:XL:85:ILE:HG22 | 2.03 | 0.57 |
| 16:XP:76:GLN:O | 16:XP:76:GLN:HG2 | 2.05 | 0.57 |
| 19:XS:15:LEU:HD23 | 19:XS:15:LEU:N | 2.19 | 0.57 |
| 25:YA:1309:G:OP1 | 53:Y7:9:ARG:HD3 | 2.04 | 0.57 |
| 25:YA:1430:C:H2' | 25:YA:1431:U:C6 | 2.40 | 0.57 |
| 25:YA:1824:G:O3' | 27:YD:249:PRO:HD3 | 2.04 | 0.57 |
| 32:YI:1:MET:HG3 | 32:YI:23:PRO:HB3 | 1.85 | 0.57 |
| 33:YN:14:VAL:HG12 | 33:YN:15:LEU:H | 1.69 | 0.57 |
| 37:YR:79:LEU:HD23 | 37:YR:79:LEU:C | 2.23 | 0.57 |
| 45:YZ:152:ALA:HB2 | 45:YZ:170:THR:H | 1.69 | 0.57 |
| 1:QA:458:C:H2' | 1:QA:464:G:H8 | 1.70 | 0.57 |
| 6:QF:99:ALA:O | 6:QF:100:ASN:HB2 | 2.04 | 0.57 |
| 10:QJ:22:LYS:HD2 | 10:QJ:22:LYS:C | 2.25 | 0.57 |
| 11:QK:69:ALA:HB1 | 11:QK:103:LEU:HD21 | 1.85 | 0.57 |
| 19:QS:65:ASN:N | 19:QS:65:ASN:ND2 | 2.52 | 0.57 |
| 25:RA:676:A:H8 | 25:RA:2069:G:N2 | 1.97 | 0.57 |
| 25:RA:878:A:N6 | 25:RA:899:A:HO2' | 2.02 | 0.57 |
| 25:RA:1543:A:C2 | 25:RA:1545:A:C8 | 2.92 | 0.57 |
| 25:RA:1678:G:H22 | 25:RA:1989:G:H1 | 1.53 | 0.57 |
| 25:RA:1820:U:C2 | 27:RD:202:LYS:HB3 | 2.40 | 0.57 |
| 25:RA:2393:A:H4' | 35:RP:61:ARG:O | 2.05 | 0.57 |
| 25:RA:2692:C:H2' | 25:RA:2693:A:O4' | 2.04 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:RG:16:ARG:HB3 | 30:RG:17:PRO:CD | 2.33 | 0.57 |
| 30:RG:39:ILE:CG2 | 30:RG:155:MET:HG3 | 2.35 | 0.57 |
| 31:RH:125:VAL:HG12 | 31:RH:126:PRO:CG | 2.34 | 0.57 |
| 32:RI:6:LEU:HD13 | 32:RI:36:ALA:CA | 2.34 | 0.57 |
| 32:RI:73:GLU:OE1 | 32:RI:137:PRO:HD2 | 2.04 | 0.57 |
| 33:RN:14:VAL:HG12 | 33:RN:15:LEU:H | 1.69 | 0.57 |
| 33:RN:42:TRP:O | 40:RU:64:ARG:NH2 | 2.35 | 0.57 |
| 34:RO:40:VAL:HG12 | 34:RO:41:ALA:N | 2.19 | 0.57 |
| 42:RW:80:PRO:O | 42:RW:100:THR:HG22 | 2.03 | 0.57 |
| 46:R0:24:LYS:O | 46:R0:25:ARG:HD3 | 2.05 | 0.57 |
| 47:R1:86:SER:H | 47:R1:87:PRO:CD | 2.16 | 0.57 |
| 50:R4:37:SER:HB3 | 50:R4:42:PHE:CE1 | 2.38 | 0.57 |
| 52:R6:6:ARG:O | 52:R6:8:LYS:HD2 | 2.05 | 0.57 |
| 2:XB:30:ARG:HH21 | 2:XB:194:PRO:CG | 2.17 | 0.57 |
| 13:XM:81:LEU:HB3 | 13:XM:89:GLY:CA | 2.34 | 0.57 |
| 25:YA:1130:U:O5' | 25:YA:1130:U:H6 | 1.87 | 0.57 |
| 25:YA:1297:C:H2' | 25:YA:1298:C:H6 | 1.69 | 0.57 |
| 25:YA:1600:C:OP1 | 43:YX:58:HIS:NE2 | 2.30 | 0.57 |
| 28:YE:7:VAL:HG11 | 39:YT:1:MET:HE3 | 1.85 | 0.57 |
| 28:YE:152:LYS:HG2 | 33:YN:78:TYR:CE1 | 2.39 | 0.57 |
| 28:YE:203:LYS:HE3 | 28:YE:204:ALA:HB2 | 1.87 | 0.57 |
| 30:YG:63:ILE:HD11 | 30:YG:102:PHE:HE2 | 1.69 | 0.57 |
| 30:YG:107:LEU:HD11 | 30:YG:178:PHE:CE1 | 2.40 | 0.57 |
| 31:YH:3:ARG:HA | 31:YH:3:ARG:HE | 1.69 | 0.57 |
| 33:YN:7:LYS:HG2 | 33:YN:8:GLN:N | 2.20 | 0.57 |
| 33:YN:63:THR:HG22 | 33:YN:66:LYS:NZ | 2.20 | 0.57 |
| 33:YN:133:GLN:O | 33:YN:134:ARG:CB | 2.53 | 0.57 |
| 34:YO:20:MET:O | 34:YO:41:ALA:HB1 | 2.04 | 0.57 |
| 38:YS:26:LEU:HD12 | 38:YS:39:ILE:CD1 | 2.23 | 0.57 |
| 38:YS:106:ARG:O | 38:YS:107:GLU:HB2 | 2.04 | 0.57 |
| 41:YV:78:LYS:O | 41:YV:79:VAL:HB | 2.04 | 0.57 |
| 49:Y3:31:LEU:O | 49:Y3:32:GLN:HB2 | 2.04 | 0.57 |
| 54:Y8:46:ARG:O | 54:Y8:47:LYS:HB3 | 2.03 | 0.57 |
| 1:QA:1346:A:N6 | 7:QG:10:ARG:HD2 | 2.20 | 0.57 |
| 3:QC:77:ILE:O | 3:QC:83:ARG:HB3 | 2.05 | 0.57 |
| 3:QC:181:ASN:HD22 | 3:QC:204:LEU:HB2 | 1.68 | 0.57 |
| 4:QD:50:ARG:O | 4:QD:50:ARG:HD2 | 2.05 | 0.57 |
| 4:QD:100:ARG:HH22 | 4:QD:137:SER:HB3 | 1.70 | 0.57 |
| 6:QF:39:LYS:HD2 | 6:QF:64:GLN:NE2 | 2.19 | 0.57 |
| 7:QG:113:GLU:HB2 | 7:QG:119:ARG:CG | 2.35 | 0.57 |
| 11:QK:32:ILE:O | 11:QK:40:ILE:HG12 | 2.05 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:QN:13:THR:N | 14:QN:14:PRO:CD | 2.68 | 0.57 |
| 25:RA:443:A:O2' | 25:RA:1200:C:O2' | 2.19 | 0.57 |
| 26:RB:52:A:H62 | 38:RS:33:LYS:HG3 | 1.70 | 0.57 |
| 28:RE:41:LYS:HA | 28:RE:41:LYS:HE2 | 1.86 | 0.57 |
| 28:RE:63:LEU:HD13 | 28:RE:65:GLY:H | 1.68 | 0.57 |
| 28:RE:74:PRO:HG2 | 28:RE:77:ILE:HG23 | 1.87 | 0.57 |
| 30:RG:107:LEU:HD11 | 30:RG:178:PHE:CE1 | 2.39 | 0.57 |
| 33:RN:133:GLN:O | 33:RN:134:ARG:CB | 2.53 | 0.57 |
| 37:RR:32:GLY:O | 37:RR:115:GLU:HA | 2.04 | 0.57 |
| 38:RS:103:GLU:O | 38:RS:106:ARG:CG | 2.53 | 0.57 |
| 45:RZ:152:ALA:HB2 | 45:RZ:170:THR:H | 1.69 | 0.57 |
| 45:RZ:157:LEU:N | 45:RZ:158:PRO:HD3 | 2.20 | 0.57 |
| 1:XA:1239:A:H4' | 1:XA:1240:U:H5'' | 1.86 | 0.57 |
| 3:XC:14:ILE:HG12 | 3:XC:15:THR:N | 2.19 | 0.57 |
| 5:XE:140:ARG:HH11 | 5:XE:140:ARG:HB2 | 1.69 | 0.57 |
| 7:XG:121:ALA:O | 7:XG:125:MET:N | 2.37 | 0.57 |
| 25:YA:1003:G:O2' | 25:YA:1010:A:N1 | 2.35 | 0.57 |
| 25:YA:1359:A:N6 | 25:YA:1372:U:C4 | 2.71 | 0.57 |
| 25:YA:2121:G:O6 | 25:YA:2176:A:N6 | 2.37 | 0.57 |
| 25:YA:2777:G:OP2 | 25:YA:2781:A:O2' | 2.18 | 0.57 |
| 32:YI:6:LEU:HD13 | 32:YI:36:ALA:CA | 2.34 | 0.57 |
| 34:YO:71:ARG:HG3 | 34:YO:71:ARG:HH11 | 1.69 | 0.57 |
| 37:YR:32:GLY:O | 37:YR:115:GLU:HA | 2.04 | 0.57 |
| 46:Y0:14:ARG:O | 46:Y0:15:ASP:HB2 | 2.05 | 0.57 |
| 46:Y0:36:ILE:HD13 | 46:Y0:36:ILE:O | 2.03 | 0.57 |
| 51:Y5:55:ARG:NH1 | 51:Y5:58:LEU:HD11 | 2.19 | 0.57 |
| 1:QA:865:A:N3 | 1:QA:918:A:O2' | 2.34 | 0.57 |
| 1:QA:935:A:H1' | 1:QA:1384:C:N3 | 2.20 | 0.57 |
| 2:QB:106:LYS:O | 2:QB:110:GLN:HG3 | 2.04 | 0.57 |
| 3:QC:14:ILE:HG12 | 3:QC:15:THR:N | 2.19 | 0.57 |
| 3:QC:90:GLU:O | 3:QC:94:LEU:HG | 2.05 | 0.57 |
| 20:QT:10:LEU:HG | 20:QT:12:ALA:H | 1.70 | 0.57 |
| 25:RA:180:G:N2 | 25:RA:215:G:O6 | 2.37 | 0.57 |
| 25:RA:443:A:C5 | 29:RF:45:ARG:HD2 | 2.39 | 0.57 |
| 25:RA:654(A):G:H22 | 25:RA:654(U):A:H1' | 1.69 | 0.57 |
| 25:RA:2015:A:N3 | 51:R5:2:ALA:N | 2.52 | 0.57 |
| 25:RA:2839:G:H21 | 37:RR:92:GLY:HA3 | 1.70 | 0.57 |
| 26:RB:11:C:H3' | 26:RB:12:C:C6 | 2.40 | 0.57 |
| 31:RH:126:PRO:CG | 31:RH:127:GLU:N | 2.65 | 0.57 |
| 33:RN:40:PRO:HB3 | 40:RU:68:ALA:HB2 | 1.87 | 0.57 |
| 44:RY:89:PHE:O | 44:RY:90:LEU:HD13 | 2.05 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 45:RZ:52:SER:O | 45:RZ:53:ILE:HG13 | 2.03 | 0.57 |
| 45:RZ:154:ASP:O | 45:RZ:155:LEU:O | 2.22 | 0.57 |
| 48:R2:15:LYS:H | 48:R2:67:LYS:CE | 2.17 | 0.57 |
| 48:R2:17:SER:HB2 | 48:R2:18:PRO:HA | 1.86 | 0.57 |
| 54:R8:53:PRO:CD | 54:R8:54:GLU:H | 2.15 | 0.57 |
| 1:XA:1112:C:H1' | 3:XC:179:ARG:HH11 | 1.69 | 0.57 |
| 4:XD:100:ARG:HH22 | 4:XD:137:SER:HB3 | 1.70 | 0.57 |
| 5:XE:111:GLU:C | 5:XE:113:ALA:H | 2.07 | 0.57 |
| 15:XO:26:GLU:CD | 15:XO:77:ARG:NH1 | 2.58 | 0.57 |
| 17:XQ:32:TYR:O | 17:XQ:34:LYS:N | 2.37 | 0.57 |
| 25:YA:1695:G:H1' | 27:YD:8:PRO:O | 2.03 | 0.57 |
| 27:YD:25:THR:HG21 | 27:YD:81:ALA:HB1 | 1.85 | 0.57 |
| 27:YD:34:VAL:O | 27:YD:34:VAL:CG1 | 2.50 | 0.57 |
| 27:YD:36:PRO:HB2 | 27:YD:61:LEU:HG | 1.87 | 0.57 |
| 38:YS:67:ARG:CB | 38:YS:67:ARG:HH11 | 2.17 | 0.57 |
| 1:QA:1259:C:HO2' | 1:QA:1283:G:H21 | 1.51 | 0.57 |
| 3:QC:76:VAL:HG21 | 3:QC:103:VAL:CG1 | 2.34 | 0.57 |
| 7:QG:121:ALA:O | 7:QG:125:MET:N | 2.37 | 0.57 |
| 11:QK:29:ILE:HG13 | 11:QK:43:SER:O | 2.04 | 0.57 |
| 12:QL:18:VAL:O | 12:QL:19:ARG:HB2 | 2.03 | 0.57 |
| 16:QP:76:GLN:HG2 | 16:QP:76:GLN:O | 2.05 | 0.57 |
| 18:QR:85:LEU:HD23 | 18:QR:88:LYS:HD2 | 1.86 | 0.57 |
| 20:QT:53:LEU:HA | 20:QT:56:MET:HB3 | 1.87 | 0.57 |
| 25:RA:620:G:H4' | 25:RA:621:A:H5'' | 1.86 | 0.57 |
| 25:RA:1292:U:H2' | 25:RA:1293:C:C6 | 2.40 | 0.57 |
| 25:RA:1655:A:O3' | 28:RE:115:GLY:HA3 | 2.03 | 0.57 |
| 25:RA:2735:G:H2' | 25:RA:2736:G:H8 | 1.70 | 0.57 |
| 26:RB:80:U:H2' | 26:RB:81:G:N2 | 2.18 | 0.57 |
| 43:RX:36:LYS:HE3 | 43:RX:54:VAL:O | 2.04 | 0.57 |
| 45:RZ:30:ASN:HB3 | 45:RZ:89:PHE:CE2 | 2.40 | 0.57 |
| 48:R2:31:GLU:O | 48:R2:35:LEU:HG | 2.05 | 0.57 |
| 49:R3:22:ALA:O | 49:R3:25:ALA:HB3 | 2.04 | 0.57 |
| 52:R6:11:LEU:HD23 | 52:R6:26:ASN:HB3 | 1.87 | 0.57 |
| 52:R6:48:VAL:HG13 | 52:R6:49:HIS:N | 2.20 | 0.57 |
| 54:R8:33:ASN:O | 54:R8:34:TRP:C | 2.42 | 0.57 |
| 1:XA:1321:C:H5'' | 1:XA:1322:C:H5'' | 1.86 | 0.57 |
| 2:XB:178:ARG:NH2 | 8:XH:68:ARG:NH2 | 2.52 | 0.57 |
| 4:XD:50:ARG:O | 4:XD:50:ARG:HD2 | 2.05 | 0.57 |
| 5:XE:140:ARG:HH11 | 5:XE:140:ARG:CB | 2.18 | 0.57 |
| 7:XG:16:LEU:CD1 | 9:XI:45:ALA:HB2 | 2.34 | 0.57 |
| 7:XG:37:ASN:HD21 | 9:XI:40:LEU:HD23 | 1.69 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:518:G:C4' | 42:YW:18:ARG:HH12 | 2.08 | 0.57 |
| 25:YA:994:C:H3' | 40:YU:54:LYS:HE3 | 1.87 | 0.57 |
| 25:YA:1553:A:C6 | 25:YA:1555:G:H1' | 2.40 | 0.57 |
| 25:YA:2115:G:N2 | 25:YA:2165:G:N7 | 2.46 | 0.57 |
| 28:YE:102:VAL:HG13 | 28:YE:172:VAL:CG2 | 2.34 | 0.57 |
| 29:YF:32:LEU:HD13 | 29:YF:105:VAL:CG1 | 2.33 | 0.57 |
| 34:YO:96:THR:O | 34:YO:97:ARG:HB3 | 2.04 | 0.57 |
| 35:YP:64:LYS:C | 35:YP:66:GLY:N | 2.56 | 0.57 |
| 44:YY:97:ARG:HG2 | 44:YY:97:ARG:O | 2.05 | 0.57 |
| 45:YZ:33:LEU:HG | 45:YZ:34:ASN:N | 2.20 | 0.57 |
| 45:YZ:154:ASP:O | 45:YZ:157:LEU:HD13 | 2.03 | 0.57 |
| 50:Y4:42:PHE:CG | 50:Y4:43:TYR:N | 2.72 | 0.57 |
| 1:QA:1158:C:H4' | 2:QB:133:LYS:NZ | 2.20 | 0.57 |
| 1:QA:1291:G:H4' | 9:QI:39:GLY:HA3 | 1.87 | 0.57 |
| 2:QB:30:ARG:HH21 | 2:QB:194:PRO:CG | 2.17 | 0.57 |
| 3:QC:7:PRO:O | 3:QC:11:ARG:HG2 | 2.05 | 0.57 |
| 4:QD:191:ARG:NH1 | 4:QD:200:GLU:OE1 | 2.37 | 0.57 |
| 10:QJ:74:ILE:HD13 | 10:QJ:74:ILE:N | 2.16 | 0.57 |
| 10:QJ:94:VAL:HG12 | 10:QJ:95:GLU:N | 2.19 | 0.57 |
| 13:QM:69:GLU:O | 13:QM:71:ARG:N | 2.38 | 0.57 |
| 18:QR:57:GLY:O | 18:QR:58:LEU:C | 2.43 | 0.57 |
| 25:RA:74:A:H4' | 25:RA:75:G:O5' | 2.05 | 0.57 |
| 25:RA:507:A:C5' | 25:RA:508:G:H5' | 2.33 | 0.57 |
| 25:RA:1426:G:O2' | 25:RA:1572:A:N6 | 2.37 | 0.57 |
| 25:RA:2548:G:H2' | 25:RA:2549:G:O4' | 2.04 | 0.57 |
| 28:RE:102:VAL:HG13 | 28:RE:172:VAL:CG2 | 2.34 | 0.57 |
| 33:RN:112:LEU:O | 33:RN:114:ARG:O | 2.23 | 0.57 |
| 40:RU:96:ALA:O | 40:RU:100:VAL:HG23 | 2.05 | 0.57 |
| 47:R1:70:VAL:O | 47:R1:74:VAL:HG23 | 2.05 | 0.57 |
| 47:R1:89:GLU:O | 47:R1:93:GLU:HB2 | 2.05 | 0.57 |
| 49:R3:31:LEU:O | 49:R3:32:GLN:HB2 | 2.04 | 0.57 |
| 1:XA:606:G:H1 | 1:XA:631:G:H5'' | 1.70 | 0.57 |
| 1:XA:1513:A:H2' | 1:XA:1514:C:C6 | 2.39 | 0.57 |
| 2:XB:187:LEU:CD1 | 2:XB:205:ASP:HA | 2.34 | 0.57 |
| 10:XJ:64:GLU:OE2 | 10:XJ:66:ARG:HD2 | 2.05 | 0.57 |
| 13:XM:49:THR:HB | 13:XM:52:GLU:HG3 | 1.86 | 0.57 |
| 13:XM:82:MET:O | 13:XM:84:ILE:N | 2.38 | 0.57 |
| 14:XN:13:THR:N | 14:XN:14:PRO:CD | 2.68 | 0.57 |
| 26:YB:55:U:O2' | 26:YB:57:A:N7 | 2.37 | 0.57 |
| 27:YD:69:ARG:C | 27:YD:71:ASP:H | 2.08 | 0.57 |
| 27:YD:92:ILE:HD12 | 27:YD:104:TYR:CD2 | 2.39 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 38:YS:5:THR:HG23 | 38:YS:8:GLU:OE2 | 2.05 | 0.57 |
| 38:YS:72:ALA:O | 38:YS:76:LYS:HG3 | 2.04 | 0.57 |
| 40:YU:52:ARG:HG2 | 40:YU:52:ARG:NH1 | 2.18 | 0.57 |
| 44:YY:21:LYS:HG3 | 44:YY:22:GLY:H | 1.69 | 0.57 |
| 1:QA:579:G:H5' | 1:QA:728:A:H1' | 1.87 | 0.57 |
| 1:QA:797:C:OP1 | 11:QK:124:LYS:HE2 | 2.05 | 0.57 |
| 1:QA:939:G:H5'' | 7:QG:102:ARG:NH2 | 2.20 | 0.57 |
| 1:QA:1298:C:O2' | 1:QA:1299:A:OP2 | 2.21 | 0.57 |
| 1:QA:1305:G:C5' | 21:QU:4:GLY:HA3 | 2.33 | 0.57 |
| 3:QC:59:ARG:NH2 | 3:QC:97:LYS:HE3 | 2.20 | 0.57 |
| 8:QH:84:ARG:NH1 | 8:QH:86:ILE:HD13 | 2.11 | 0.57 |
| 11:QK:69:ALA:HB1 | 11:QK:103:LEU:CD2 | 2.35 | 0.57 |
| 12:QL:45:PRO:HD3 | 12:QL:51:ALA:O | 2.03 | 0.57 |
| 25:RA:76:C:H2' | 25:RA:77:C:H6 | 1.69 | 0.57 |
| 25:RA:2286:A:H3' | 52:R6:31:PRO:HG2 | 1.86 | 0.57 |
| 25:RA:2342:C:O2 | 25:RA:2374:C:H4' | 2.04 | 0.57 |
| 25:RA:2445:G:OP1 | 29:RF:74:ARG:NH2 | 2.38 | 0.57 |
| 28:RE:63:LEU:HD12 | 28:RE:65:GLY:H | 1.69 | 0.57 |
| 28:RE:152:LYS:HG2 | 33:RN:78:TYR:CE1 | 2.39 | 0.57 |
| 30:RG:63:ILE:HD11 | 30:RG:102:PHE:HE2 | 1.70 | 0.57 |
| 31:RH:124:GLU:HB3 | 31:RH:132:ARG:HG3 | 1.85 | 0.57 |
| 33:RN:7:LYS:HG2 | 33:RN:8:GLN:N | 2.20 | 0.57 |
| 33:RN:131:GLN:CG | 33:RN:132:ALA:N | 2.68 | 0.57 |
| 34:RO:96:THR:O | 34:RO:97:ARG:HB3 | 2.04 | 0.57 |
| 38:RS:32:LEU:O | 38:RS:62:LYS:HE2 | 2.05 | 0.57 |
| 46:R0:14:ARG:O | 46:R0:15:ASP:HB2 | 2.05 | 0.57 |
| 53:R7:13:ALA:O | 53:R7:17:GLY:HA3 | 2.05 | 0.57 |
| 1:XA:328:C:H4' | 1:XA:329:A:H5' | 1.87 | 0.57 |
| 1:XA:891:U:OP2 | 1:XA:906:G:N2 | 2.28 | 0.57 |
| 3:XC:11:ARG:HH21 | 3:XC:180:ALA:HB3 | 1.70 | 0.57 |
| 4:XD:76:ARG:HD2 | 4:XD:207:TYR:HE2 | 1.66 | 0.57 |
| 19:XS:9:VAL:O | 19:XS:9:VAL:HG23 | 2.04 | 0.57 |
| 21:XU:7:ARG:O | 21:XU:8:THR:HG23 | 2.05 | 0.57 |
| 25:YA:26:G:H1' | 25:YA:515:A:N6 | 2.20 | 0.57 |
| 25:YA:133:C:H42 | 25:YA:146:G:H1 | 1.50 | 0.57 |
| 25:YA:1859:A:N6 | 25:YA:1883:G:O2' | 2.36 | 0.57 |
| 25:YA:2331:G:O2' | 25:YA:2336:A:N1 | 2.27 | 0.57 |
| 27:YD:25:THR:HG21 | 27:YD:82:ILE:H | 1.70 | 0.57 |
| 31:YH:41:MET:HE1 | 31:YH:64:LEU:HB3 | 1.87 | 0.57 |
| 31:YH:84:SER:O | 31:YH:133:VAL:O | 2.22 | 0.57 |
| 37:YR:45:ARG:HA | 37:YR:95:THR:HG21 | 1.87 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 39:YT:134:GLU:O | 39:YT:135:ALA:HB3 | 2.04 | 0.57 |
| 45:YZ:157:LEU:N | 45:YZ:158:PRO:HD3 | 2.20 | 0.57 |
| 47:Y1:70:VAL:O | 47:Y1:74:VAL:HG23 | 2.05 | 0.57 |
| 49:Y3:7:LYS:NZ | 49:Y3:32:GLN:HE21 | 2.03 | 0.57 |
| 50:Y4:27:THR:O | 50:Y4:28:LYS:HB3 | 2.03 | 0.57 |
| 52:Y6:14:THR:O | 52:Y6:49:HIS:HA | 2.05 | 0.57 |
| 1:QA:1152:A:H5' | 10:QJ:13:HIS:CD2 | 2.40 | 0.56 |
| 2:QB:60:ASP:HB3 | 2:QB:64:ARG:CZ | 2.34 | 0.56 |
| 16:QP:14:ASN:N | 16:QP:15:PRO:CD | 2.67 | 0.56 |
| 25:RA:1543:A:H2 | 25:RA:1545:A:C4 | 2.22 | 0.56 |
| 25:RA:2438:U:O3' | 25:RA:2439:A:H3' | 2.05 | 0.56 |
| 26:RB:48:A:H2' | 26:RB:49:C:C6 | 2.39 | 0.56 |
| 32:RI:70:GLU:HA | 32:RI:70:GLU:OE1 | 2.05 | 0.56 |
| 33:RN:82:LEU:HD12 | 33:RN:83:LYS:H | 1.70 | 0.56 |
| 38:RS:72:ALA:O | 38:RS:76:LYS:HG3 | 2.04 | 0.56 |
| 40:RU:68:ALA:O | 40:RU:71:GLN:HB2 | 2.05 | 0.56 |
| 40:RU:79:PHE:CD2 | 40:RU:79:PHE:C | 2.78 | 0.56 |
| 49:R3:4:LEU:O | 49:R3:36:VAL:HA | 2.04 | 0.56 |
| 1:XA:198:G:H1 | 1:XA:219:C:H42 | 1.52 | 0.56 |
| 1:XA:1094:G:O2' | 1:XA:1095:U:OP2 | 2.19 | 0.56 |
| 5:XE:78:HIS:CE1 | 5:XE:143:ARG:H | 2.20 | 0.56 |
| 8:XH:49:GLU:HG3 | 8:XH:51:VAL:CG1 | 2.35 | 0.56 |
| 13:XM:68:GLY:HA3 | 30:YG:116:ASP:OD2 | 2.04 | 0.56 |
| 16:XP:7:ALA:O | 16:XP:9:PHE:CD2 | 2.58 | 0.56 |
| 16:XP:21:VAL:HG22 | 16:XP:34:GLU:O | 2.04 | 0.56 |
| 21:XU:6:ARG:HH21 | 21:XU:15:ARG:HE | 1.52 | 0.56 |
| 25:YA:307:G:N2 | 25:YA:310:A:OP2 | 2.35 | 0.56 |
| 25:YA:784:A:HO2' | 25:YA:785:G:H8 | 1.52 | 0.56 |
| 25:YA:2892:A:H2' | 25:YA:2893:G:O4' | 2.05 | 0.56 |
| 29:YF:118:ALA:O | 29:YF:121:GLY:N | 2.33 | 0.56 |
| 30:YG:39:ILE:CG2 | 30:YG:155:MET:HG3 | 2.35 | 0.56 |
| 30:YG:60:LEU:O | 30:YG:64:THR:HG22 | 2.05 | 0.56 |
| 32:YI:126:TYR:O | 32:YI:140:LEU:HD23 | 2.05 | 0.56 |
| 35:YP:59:LEU:HA | 35:YP:61:ARG:CZ | 2.35 | 0.56 |
| 39:YT:105:LEU:C | 39:YT:107:ASP:H | 2.08 | 0.56 |
| 40:YU:79:PHE:CD2 | 40:YU:79:PHE:C | 2.78 | 0.56 |
| 40:YU:83:LEU:HD12 | 40:YU:113:ALA:HB2 | 1.86 | 0.56 |
| 40:YU:104:GLN:OE1 | 40:YU:104:GLN:N | 2.35 | 0.56 |
| 53:Y7:31:LEU:O | 53:Y7:32:LYS:C | 2.43 | 0.56 |
| 1:QA:1326:C:OP1 | 21:QU:17:THR:OG1 | 2.20 | 0.56 |
| 8:QH:77:GLU:HG2 | 8:QH:78:GLN:H | 1.70 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 8:QH:119:LEU:HD12 | 8:QH:124:ALA:HA | 1.87 | 0.56 |
| 9:QI:17:VAL:CG1 | 9:QI:81:ILE:HD13 | 2.36 | 0.56 |
| 11:QK:21:ILE:HD12 | 11:QK:21:ILE:N | 2.19 | 0.56 |
| 13:QM:4:ILE:HG22 | 13:QM:5:ALA:N | 2.19 | 0.56 |
| 19:QS:40:ILE:HG12 | 19:QS:41:VAL:N | 2.20 | 0.56 |
| 25:RA:857:C:H4' | 46:R0:23:VAL:HG21 | 1.87 | 0.56 |
| 25:RA:2372:G:H4' | 52:R6:46:HIS:NE2 | 2.19 | 0.56 |
| 27:RD:35:LYS:CE | 27:RD:104:TYR:HB2 | 2.35 | 0.56 |
| 28:RE:78:LEU:HD23 | 28:RE:79:ARG:HD2 | 1.86 | 0.56 |
| 29:RF:24:LEU:HB3 | 29:RF:115:ALA:HB2 | 1.87 | 0.56 |
| 31:RH:3:ARG:HA | 31:RH:3:ARG:HE | 1.69 | 0.56 |
| 32:RI:11:ASN:O | 32:RI:12:LEU:CB | 2.51 | 0.56 |
| 35:RP:31:ALA:O | 35:RP:32:THR:HG23 | 2.05 | 0.56 |
| 48:R2:51:ARG:HA | 48:R2:54:LYS:HB2 | 1.86 | 0.56 |
| 51:R5:55:ARG:HD3 | 51:R5:56:LYS:N | 2.20 | 0.56 |
| 52:R6:42:TRP:N | 52:R6:42:TRP:CD1 | 2.73 | 0.56 |
| 1:XA:1305:G:H21 | 1:XA:1331:G:H2' | 1.70 | 0.56 |
| 1:XA:1492:A:H4' | 12:XL:47:LYS:HD3 | 1.87 | 0.56 |
| 2:XB:60:ASP:HB3 | 2:XB:64:ARG:CZ | 2.34 | 0.56 |
| 2:XB:80:ILE:CG2 | 2:XB:212:GLN:HA | 2.35 | 0.56 |
| 3:XC:57:ILE:HG23 | 3:XC:64:VAL:HG13 | 1.86 | 0.56 |
| 4:XD:11:LEU:O | 4:XD:13:ARG:N | 2.36 | 0.56 |
| 6:XF:91:VAL:CG1 | 18:XR:72:ARG:HH12 | 2.18 | 0.56 |
| 13:XM:69:GLU:O | 13:XM:71:ARG:N | 2.38 | 0.56 |
| 25:YA:227:A:H1' | 25:YA:228:A:C2 | 2.41 | 0.56 |
| 25:YA:443:A:C5 | 29:YF:45:ARG:HD2 | 2.40 | 0.56 |
| 25:YA:2469:A:H5'' | 25:YA:2470:G:C8 | 2.39 | 0.56 |
| 25:YA:2716:U:H2' | 25:YA:2717:G:C8 | 2.40 | 0.56 |
| 27:YD:69:ARG:HD3 | 27:YD:105:ILE:HD11 | 1.87 | 0.56 |
| 31:YH:77:LYS:HZ3 | 31:YH:77:LYS:CB | 2.11 | 0.56 |
| 33:YN:82:LEU:HD12 | 33:YN:83:LYS:H | 1.70 | 0.56 |
| 38:YS:32:LEU:O | 38:YS:62:LYS:HE2 | 2.05 | 0.56 |
| 41:YV:76:LYS:O | 41:YV:79:VAL:HG12 | 2.05 | 0.56 |
| 46:Y0:24:LYS:O | 46:Y0:25:ARG:HD3 | 2.05 | 0.56 |
| 48:Y2:31:GLU:O | 48:Y2:35:LEU:HG | 2.05 | 0.56 |
| 50:Y4:15:ILE:HG22 | 50:Y4:20:ASN:HA | 1.86 | 0.56 |
| 53:Y7:48:LYS:HG2 | 53:Y7:49:ARG:N | 2.19 | 0.56 |
| 54:Y8:33:ASN:O | 54:Y8:34:TRP:C | 2.42 | 0.56 |
| 1:QA:186(A):C:H2' | 1:QA:186(B):C:C6 | 2.41 | 0.56 |
| 2:QB:77:ALA:CB | 2:QB:211:ILE:HG21 | 2.35 | 0.56 |
| 3:QC:59:ARG:HH12 | 3:QC:97:LYS:HE3 | 1.71 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:QD:42:GLN:HG2 | 4:QD:42:GLN:O | 2.05 | 0.56 |
| 5:QE:93:PRO:HG3 | 8:QH:105:ARG:HG3 | 1.86 | 0.56 |
| 5:QE:99:GLY:O | 5:QE:117:ASP:HA | 2.06 | 0.56 |
| 6:QF:97:PHE:C | 6:QF:97:PHE:CD2 | 2.76 | 0.56 |
| 7:QG:18:TYR:HD2 | 7:QG:59:LEU:HD22 | 1.70 | 0.56 |
| 9:QI:10:ARG:CD | 9:QI:105:ASP:HB2 | 2.35 | 0.56 |
| 12:QL:58:VAL:O | 12:QL:65:GLU:HA | 2.06 | 0.56 |
| 13:QM:7:VAL:HG11 | 30:RG:115:ARG:HH12 | 1.68 | 0.56 |
| 13:QM:73:GLU:O | 13:QM:77:ASN:N | 2.33 | 0.56 |
| 15:QO:53:HIS:CE1 | 15:QO:57:LEU:HD11 | 2.40 | 0.56 |
| 16:QP:7:ALA:O | 16:QP:9:PHE:CD2 | 2.58 | 0.56 |
| 20:QT:82:SER:O | 20:QT:86:ARG:HB2 | 2.05 | 0.56 |
| 25:RA:310:A:H5' | 44:RY:17:SER:HB2 | 1.87 | 0.56 |
| 25:RA:666:G:H4' | 35:RP:49:ARG:NH1 | 2.21 | 0.56 |
| 25:RA:1428:C:N4 | 25:RA:1570:A:OP2 | 2.33 | 0.56 |
| 25:RA:1478:G:H2' | 25:RA:1479:G:H8 | 1.70 | 0.56 |
| 25:RA:1800:C:OP1 | 27:RD:264:LYS:NZ | 2.28 | 0.56 |
| 25:RA:1824:G:O3' | 27:RD:249:PRO:HD3 | 2.05 | 0.56 |
| 25:RA:1826:G:H2' | 25:RA:1827:C:C6 | 2.39 | 0.56 |
| 25:RA:2451:A:C2 | 55:Z6:76:PPU:HD2 | 2.40 | 0.56 |
| 27:RD:236:GLY:O | 27:RD:237:GLU:OE1 | 2.24 | 0.56 |
| 28:RE:37:ARG:NE | 28:RE:37:ARG:N | 2.53 | 0.56 |
| 28:RE:69:LYS:C | 28:RE:71:GLY:H | 2.09 | 0.56 |
| 28:RE:174:ASP:CG | 28:RE:175:VAL:N | 2.58 | 0.56 |
| 29:RF:46:ARG:HG2 | 29:RF:46:ARG:NH1 | 2.00 | 0.56 |
| 29:RF:192:LEU:HD21 | 29:RF:194:MET:CE | 2.34 | 0.56 |
| 29:RF:198:ALA:CA | 29:RF:201:VAL:HG12 | 2.35 | 0.56 |
| 31:RH:77:LYS:HZ3 | 31:RH:77:LYS:CB | 2.03 | 0.56 |
| 33:RN:56:ASN:N | 33:RN:125:GLY:O | 2.35 | 0.56 |
| 33:RN:63:THR:HG22 | 33:RN:66:LYS:NZ | 2.20 | 0.56 |
| 36:RQ:134:ARG:NE | 45:RZ:122:ARG:NH2 | 2.52 | 0.56 |
| 37:RR:70:LEU:HD13 | 37:RR:75:LEU:HD11 | 1.88 | 0.56 |
| 41:RV:1:MET:HE2 | 41:RV:43:GLU:HG2 | 1.87 | 0.56 |
| 41:RV:38:LEU:HD23 | 41:RV:39:LEU:N | 2.19 | 0.56 |
| 45:RZ:18:LEU:HD12 | 45:RZ:18:LEU:N | 2.12 | 0.56 |
| 47:R1:53:VAL:HG12 | 47:R1:54:ALA:N | 2.21 | 0.56 |
| 50:R4:48:ARG:O | 50:R4:50:VAL:N | 2.38 | 0.56 |
| 50:R4:64:GLY:C | 50:R4:66:SER:H | 2.07 | 0.56 |
| 53:R7:19:ARG:HH11 | 53:R7:19:ARG:HG2 | 1.71 | 0.56 |
| 54:R8:52:LYS:H | 54:R8:53:PRO:HD2 | 1.66 | 0.56 |
| 1:XA:95:G:H2' | 1:XA:96:G:C8 | 2.39 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:XA:267:C:OP2 | 17:XQ:67:LYS:HD2 | 2.05 | 0.56 |
| 1:XA:316:G:OP2 | 1:XA:351:G:O2' | 2.24 | 0.56 |
| 1:XA:376:G:H2' | 1:XA:377:G:H8 | 1.69 | 0.56 |
| 1:XA:498:A:O2' | 1:XA:546:G:N2 | 2.38 | 0.56 |
| 1:XA:688:G:H2' | 1:XA:689:C:C6 | 2.35 | 0.56 |
| 4:XD:42:GLN:HG2 | 4:XD:42:GLN:O | 2.05 | 0.56 |
| 6:XF:97:PHE:O | 18:XR:31:LEU:HD23 | 2.04 | 0.56 |
| 7:XG:18:TYR:HD2 | 7:XG:59:LEU:HD22 | 1.70 | 0.56 |
| 7:XG:148:ASN:C | 7:XG:150:ALA:H | 2.08 | 0.56 |
| 8:XH:38:ILE:HD12 | 8:XH:118:VAL:HG12 | 1.87 | 0.56 |
| 9:XI:10:ARG:CD | 9:XI:105:ASP:HB2 | 2.35 | 0.56 |
| 10:XJ:22:LYS:HD2 | 10:XJ:22:LYS:C | 2.25 | 0.56 |
| 10:XJ:49:VAL:HG21 | 14:YN:41:ARG:HB2 | 1.87 | 0.56 |
| 14:YN:29:ARG:HH11 | 14:YN:29:ARG:HG3 | 1.70 | 0.56 |
| 15:XO:53:HIS:CE1 | 15:XO:57:LEU:HD11 | 2.40 | 0.56 |
| 16:XP:4:ILE:HA | 16:XP:20:VAL:O | 2.05 | 0.56 |
| 25:YA:210:C:OP2 | 53:Y7:29:LYS:NZ | 2.38 | 0.56 |
| 25:YA:270(R):G:H1' | 47:Y1:78:LYS:HZ1 | 1.69 | 0.56 |
| 25:YA:530:G:C5 | 25:YA:2022:U:H5'' | 2.39 | 0.56 |
| 25:YA:1006:C:H5' | 33:YN:28:THR:HG23 | 1.88 | 0.56 |
| 25:YA:1062:G:H2' | 25:YA:1063:G:C8 | 2.40 | 0.56 |
| 25:YA:1171:G:O6 | 25:YA:1174:A:N6 | 2.38 | 0.56 |
| 25:YA:1608:A:H1' | 25:YA:1610:A:OP2 | 2.05 | 0.56 |
| 25:YA:2637:U:H2' | 25:YA:2638:G:O4' | 2.05 | 0.56 |
| 25:YA:2820:A:O2' | 25:YA:2821:A:OP1 | 2.22 | 0.56 |
| 27:YD:2:ALA:O | 27:YD:3:VAL:HB | 2.06 | 0.56 |
| 27:YD:183:ARG:HD2 | 27:YD:270:ILE:HG12 | 1.88 | 0.56 |
| 27:YD:236:GLY:O | 27:YD:237:GLU:OE1 | 2.23 | 0.56 |
| 28:YE:69:LYS:C | 28:YE:71:GLY:H | 2.08 | 0.56 |
| 30:YG:128:ARG:HG3 | 30:YG:128:ARG:NH2 | 2.17 | 0.56 |
| 31:YH:125:VAL:HG12 | 31:YH:126:PRO:CG | 2.34 | 0.56 |
| 32:YI:74:ASN:HD22 | 32:YI:74:ASN:N | 1.94 | 0.56 |
| 34:YO:3:GLN:CB | 34:YO:4:PRO:HD2 | 2.35 | 0.56 |
| 36:YQ:37:LEU:HD21 | 36:YQ:130:LYS:HE3 | 1.87 | 0.56 |
| 36:YQ:79:LEU:O | 36:YQ:79:LEU:CG | 2.52 | 0.56 |
| 40:YU:68:ALA:O | 40:YU:71:GLN:HB2 | 2.05 | 0.56 |
| 43:YX:35:THR:HG22 | 43:YX:38:GLU:OE1 | 2.05 | 0.56 |
| 45:YZ:58:VAL:O | 45:YZ:60:GLU:N | 2.36 | 0.56 |
| 46:Y0:74:ARG:C | 46:Y0:76:GLY:H | 2.08 | 0.56 |
| 47:Y1:89:GLU:O | 47:Y1:93:GLU:HB2 | 2.04 | 0.56 |
| 48:Y2:17:SER:HB2 | 48:Y2:18:PRO:HA | 1.86 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 53:Y7:12:ARG:NH2 | 53:Y7:44:PRO:HB3 | 2.21 | 0.56 |
| 1:QA:814:A:O2' | 1:QA:815:A:H3' | 2.05 | 0.56 |
| 1:QA:1259:C:O2' | 1:QA:1283:G:N2 | 2.34 | 0.56 |
| 3:QC:77:ILE:C | 3:QC:83:ARG:HB3 | 2.26 | 0.56 |
| 3:QC:114:PRO:O | 3:QC:118:GLN:HG3 | 2.06 | 0.56 |
| 3:QC:188:LEU:O | 3:QC:189:ALA:HB2 | 2.05 | 0.56 |
| 8:QH:38:ILE:HD12 | 8:QH:118:VAL:HG12 | 1.87 | 0.56 |
| 12:QL:82:VAL:HG23 | 12:QL:106:ASP:OD2 | 2.04 | 0.56 |
| 12:QL:83:VAL:HG22 | 12:QL:84:LEU:H | 1.70 | 0.56 |
| 25:RA:928:G:O2' | 49:R3:43:ILE:HD11 | 2.04 | 0.56 |
| 25:RA:2134:A:H62 | 25:RA:2157:G:H1' | 1.69 | 0.56 |
| 28:RE:183:LEU:HD12 | 28:RE:183:LEU:N | 2.20 | 0.56 |
| 30:RG:41:GLN:HB3 | 30:RG:43:LEU:HD13 | 1.87 | 0.56 |
| 30:RG:179:PRO:HG3 | 50:R4:38:LYS:HZ1 | 1.67 | 0.56 |
| 35:RP:65:ARG:HH21 | 54:R8:15:LYS:CB | 2.17 | 0.56 |
| 37:RR:84:ALA:HB3 | 37:RR:85:PRO:HD3 | 1.87 | 0.56 |
| 38:RS:5:THR:HG23 | 38:RS:8:GLU:OE2 | 2.05 | 0.56 |
| 52:R6:14:THR:O | 52:R6:49:HIS:HA | 2.06 | 0.56 |
| 1:XA:1001:G:H2' | 1:XA:1002:G:O4' | 2.06 | 0.56 |
| 3:XC:7:PRO:O | 3:XC:11:ARG:HG2 | 2.05 | 0.56 |
| 3:XC:59:ARG:HH12 | 3:XC:97:LYS:HE3 | 1.70 | 0.56 |
| 7:XG:42:ILE:O | 7:XG:117:ALA:HB2 | 2.06 | 0.56 |
| 11:XK:32:ILE:O | 11:XK:40:ILE:HG12 | 2.05 | 0.56 |
| 25:YA:1495:A:H1' | 25:YA:1579:A:H5'' | 1.87 | 0.56 |
| 28:YE:32:PRO:O | 28:YE:34:VAL:HG13 | 2.06 | 0.56 |
| 33:YN:112:LEU:O | 33:YN:114:ARG:O | 2.22 | 0.56 |
| 38:YS:5:THR:OG1 | 38:YS:7:TYR:HB3 | 2.06 | 0.56 |
| 47:Y1:76:ARG:HG2 | 47:Y1:76:ARG:NH1 | 2.19 | 0.56 |
| 52:Y6:6:ARG:O | 52:Y6:8:LYS:HD2 | 2.05 | 0.56 |
| 54:Y8:50:LEU:HD12 | 54:Y8:51:ALA:H | 1.70 | 0.56 |
| 5:QE:140:ARG:HH11 | 5:QE:140:ARG:CB | 2.18 | 0.56 |
| 9:QI:33:PHE:CE2 | 9:QI:47:LEU:HD21 | 2.40 | 0.56 |
| 10:QJ:24:VAL:HG21 | 10:QJ:37:PRO:HG3 | 1.86 | 0.56 |
| 13:QM:84:ILE:CG2 | 13:QM:85:GLY:N | 2.68 | 0.56 |
| 16:QP:4:ILE:HA | 16:QP:20:VAL:O | 2.05 | 0.56 |
| 17:QQ:6:LEU:O | 17:QQ:58:GLU:HA | 2.05 | 0.56 |
| 17:QQ:50:LYS:HG3 | 17:QQ:51:TYR:CE1 | 2.41 | 0.56 |
| 19:QS:15:LEU:HD23 | 19:QS:15:LEU:N | 2.19 | 0.56 |
| 20:QT:47:GLY:C | 20:QT:49:ALA:H | 2.08 | 0.56 |
| 21:QU:7:ARG:O | 21:QU:8:THR:HG23 | 2.05 | 0.56 |
| 25:RA:135:G:H1 | 25:RA:144:C:H42 | 1.52 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:RA:898:C:H2' | 25:RA:899:A:H5' | 1.88 | 0.56 |
| 25:RA:1678:G:N2 | 25:RA:1989:G:H22 | 2.02 | 0.56 |
| 25:RA:2370:G:N3 | 52:R6:45:LYS:NZ | 2.54 | 0.56 |
| 25:RA:2867:G:O2' | 25:RA:2868:A:H8 | 1.87 | 0.56 |
| 27:RD:183:ARG:HD2 | 27:RD:270:ILE:HG12 | 1.88 | 0.56 |
| 32:RI:126:TYR:O | 32:RI:140:LEU:HD23 | 2.05 | 0.56 |
| 36:RQ:79:LEU:O | 36:RQ:79:LEU:CG | 2.52 | 0.56 |
| 42:RW:65:LEU:O | 42:RW:66:GLU:C | 2.43 | 0.56 |
| 44:RY:97:ARG:O | 44:RY:97:ARG:HG2 | 2.05 | 0.56 |
| 50:R4:41:PRO:O | 50:R4:42:PHE:CB | 2.53 | 0.56 |
| 1:XA:191(D):U:H2' | 1:XA:191(E):G:C8 | 2.40 | 0.56 |
| 1:XA:1158:C:H4' | 2:XB:133:LYS:NZ | 2.20 | 0.56 |
| 1:XA:1239:A:H62 | 1:XA:1299:A:N6 | 2.03 | 0.56 |
| 2:XB:102:LEU:HB3 | 2:XB:180:LEU:CD1 | 2.36 | 0.56 |
| 9:XI:33:PHE:CE2 | 9:XI:47:LEU:HD21 | 2.40 | 0.56 |
| 11:XK:21:ILE:HG13 | 11:XK:30:VAL:HG12 | 1.86 | 0.56 |
| 11:XK:34:ASP:N | 11:XK:40:ILE:HD11 | 2.21 | 0.56 |
| 13:XM:89:GLY:O | 13:XM:92:HIS:HB2 | 2.06 | 0.56 |
| 25:YA:2636:U:OP1 | 28:YE:79:ARG:HA | 2.06 | 0.56 |
| 28:YE:37:ARG:NE | 28:YE:37:ARG:N | 2.53 | 0.56 |
| 28:YE:74:PRO:HG2 | 28:YE:77:ILE:HG23 | 1.86 | 0.56 |
| 31:YH:126:PRO:CG | 31:YH:127:GLU:N | 2.65 | 0.56 |
| 33:YN:56:ASN:N | 33:YN:125:GLY:O | 2.35 | 0.56 |
| 35:YP:59:LEU:O | 35:YP:59:LEU:HD23 | 2.06 | 0.56 |
| 38:YS:103:GLU:O | 38:YS:106:ARG:CG | 2.53 | 0.56 |
| 50:Y4:64:GLY:C | 50:Y4:66:SER:H | 2.08 | 0.56 |
| 1:QA:368:U:OP1 | 32:YI:91:SER:OG | 2.23 | 0.56 |
| 2:QB:102:LEU:HB3 | 2:QB:180:LEU:CD1 | 2.36 | 0.56 |
| 3:QC:33:LEU:O | 3:QC:37:GLN:HG2 | 2.04 | 0.56 |
| 3:QC:134:ILE:CD1 | 3:QC:153:VAL:HG21 | 2.35 | 0.56 |
| 9:QI:9:ARG:HB2 | 9:QI:14:VAL:HG22 | 1.88 | 0.56 |
| 10:QJ:35:SER:O | 10:QJ:72:VAL:HG13 | 2.05 | 0.56 |
| 13:QM:49:THR:HB | 13:QM:52:GLU:HG3 | 1.86 | 0.56 |
| 13:QM:89:GLY:O | 13:QM:92:HIS:HB2 | 2.06 | 0.56 |
| 17:QQ:84:LEU:C | 17:QQ:86:GLU:H | 2.08 | 0.56 |
| 25:RA:276:A:H4' | 25:RA:276:A:OP1 | 2.06 | 0.56 |
| 25:RA:984:A:H5'' | 25:RA:985:C:H5 | 1.69 | 0.56 |
| 25:RA:1494:A:C2 | 25:RA:1495:A:C4 | 2.93 | 0.56 |
| 25:RA:1693:U:O4 | 25:RA:1976:U:O2' | 2.14 | 0.56 |
| 25:RA:1952:A:OP1 | 34:RO:44:LYS:NZ | 2.30 | 0.56 |
| 30:RG:60:LEU:O | 30:RG:64:THR:HG22 | 2.05 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 30:RG:180:PHE:C | 30:RG:182:LYS:H | 2.09 | 0.56 |
| 34:RO:19:ILE:HD13 | 34:RO:19:ILE:O | 2.06 | 0.56 |
| 35:RP:14:LYS:O | 35:RP:16:ARG:N | 2.39 | 0.56 |
| 38:RS:5:THR:OG1 | 38:RS:7:TYR:HB3 | 2.06 | 0.56 |
| 39:RT:26:ASP:CB | 39:RT:91:ARG:HA | 2.36 | 0.56 |
| 39:RT:134:GLU:O | 39:RT:135:ALA:HB3 | 2.05 | 0.56 |
| 41:RV:76:LYS:O | 41:RV:79:VAL:HG12 | 2.05 | 0.56 |
| 45:RZ:5:LEU:HB3 | 45:RZ:59:LEU:HD23 | 1.87 | 0.56 |
| 45:RZ:53:ILE:CG2 | 45:RZ:71:VAL:HG13 | 2.36 | 0.56 |
| 53:R7:12:ARG:NH2 | 53:R7:44:PRO:HB3 | 2.21 | 0.56 |
| 1:XA:156:G:H1 | 1:XA:165:C:H42 | 1.52 | 0.56 |
| 1:XA:735:C:H2' | 1:XA:736:C:H6 | 1.71 | 0.56 |
| 3:XC:180:ALA:O | 3:XC:181:ASN:HB3 | 2.06 | 0.56 |
| 3:XC:188:LEU:O | 3:XC:189:ALA:HB2 | 2.05 | 0.56 |
| 4:XD:25:ARG:NH1 | 4:XD:30:LYS:HG3 | 2.20 | 0.56 |
| 4:XD:119:GLN:HG3 | 4:XD:123:HIS:CD2 | 2.40 | 0.56 |
| 8:XH:7:ALA:HB2 | 8:XH:85:ARG:HD3 | 1.87 | 0.56 |
| 8:XH:77:GLU:HG2 | 8:XH:78:GLN:H | 1.70 | 0.56 |
| 10:XJ:35:SER:O | 10:XJ:72:VAL:HG13 | 2.05 | 0.56 |
| 13:XM:62:ASN:HA | 50:Y4:49:PHE:CD2 | 2.40 | 0.56 |
| 18:XR:85:LEU:HD23 | 18:XR:88:LYS:HD2 | 1.86 | 0.56 |
| 20:XT:82:SER:O | 20:XT:86:ARG:HB2 | 2.06 | 0.56 |
| 25:YA:909:A:H2' | 25:YA:912:C:H5 | 1.70 | 0.56 |
| 25:YA:1201:C:H2' | 25:YA:1202:C:C6 | 2.41 | 0.56 |
| 25:YA:1264:G:H5' | 51:Y5:11:THR:HG21 | 1.87 | 0.56 |
| 25:YA:1533:C:H2' | 25:YA:1534:G:N7 | 2.21 | 0.56 |
| 25:YA:1826:G:O2' | 27:YD:242:ARG:NH2 | 2.38 | 0.56 |
| 25:YA:2151:G:H2' | 25:YA:2152:G:H8 | 1.70 | 0.56 |
| 33:YN:40:PRO:HB3 | 40:YU:68:ALA:HB2 | 1.86 | 0.56 |
| 38:YS:14:VAL:HG13 | 38:YS:15:ARG:N | 2.21 | 0.56 |
| 44:YY:95:LYS:HE3 | 44:YY:95:LYS:O | 2.06 | 0.56 |
| 48:Y2:41:ILE:HD11 | 48:Y2:44:LEU:CG | 2.36 | 0.56 |
| 53:Y7:13:ALA:O | 53:Y7:17:GLY:HA3 | 2.05 | 0.56 |
| 1:QA:429:U:H3 | 1:QA:431:A:H62 | 1.51 | 0.56 |
| 1:QA:560:U:H5' | 1:QA:566:G:H22 | 1.71 | 0.56 |
| 4:QD:33:MET:HE2 | 4:QD:37:PRO:HA | 1.87 | 0.56 |
| 4:QD:165:MET:HA | 4:QD:165:MET:CE | 2.36 | 0.56 |
| 9:QI:114:TYR:O | 9:QI:114:TYR:CD2 | 2.58 | 0.56 |
| 14:QN:29:ARG:HH11 | 14:QN:29:ARG:HG3 | 1.70 | 0.56 |
| 15:QO:24:SER:O | 15:QO:28:GLN:HG3 | 2.06 | 0.56 |
| 15:QO:76:GLU:C | 15:QO:78:TYR:H | 2.08 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:753:C:H2' | 25:RA:754:C:H6 | 1.69 | 0.56 |
| 26:RB:56:G:P | 30:RG:27:ASN:HD21 | 2.28 | 0.56 |
| 28:RE:117:MET:O | 28:RE:117:MET:HG3 | 2.06 | 0.56 |
| 29:RF:9:ILE:HD11 | 29:RF:125:LEU:CG | 2.36 | 0.56 |
| 29:RF:32:LEU:HD13 | 29:RF:105:VAL:CG1 | 2.33 | 0.56 |
| 31:RH:153:LYS:CB | 31:RH:154:PRO:CD | 2.69 | 0.56 |
| 32:RI:99:GLU:OE2 | 32:RI:103:ARG:NH2 | 2.36 | 0.56 |
| 41:RV:27:ALA:O | 41:RV:28:GLU:O | 2.24 | 0.56 |
| 43:RX:35:THR:HG22 | 43:RX:38:GLU:OE1 | 2.05 | 0.56 |
| 48:R2:50:ILE:CD1 | 48:R2:51:ARG:N | 2.61 | 0.56 |
| 1:XA:452:A:H62 | 1:XA:480:U:H3 | 1.54 | 0.56 |
| 1:XA:881:G:P | 12:XL:12:ARG:HH22 | 2.28 | 0.56 |
| 1:XA:1034:G:H2' | 1:XA:1035:A:C8 | 2.40 | 0.56 |
| 2:XB:169:LYS:HD3 | 2:XB:169:LYS:O | 2.05 | 0.56 |
| 3:XC:105:GLU:HG2 | 3:XC:106:VAL:N | 2.19 | 0.56 |
| 4:XD:110:PHE:CE2 | 4:XD:148:VAL:HG23 | 2.41 | 0.56 |
| 5:XE:82:VAL:CG1 | 5:XE:83:GLU:N | 2.68 | 0.56 |
| 10:XJ:24:VAL:HG21 | 10:XJ:37:PRO:HG3 | 1.86 | 0.56 |
| 12:XL:111:LYS:O | 12:XL:112:ASP:HB2 | 2.06 | 0.56 |
| 13:XM:56:LEU:HD13 | 13:XM:60:VAL:HG23 | 1.86 | 0.56 |
| 16:XP:53:VAL:HG23 | 16:XP:54:GLU:H | 1.70 | 0.56 |
| 19:XS:17:GLU:HA | 19:XS:20:LEU:HD12 | 1.86 | 0.56 |
| 19:XS:65:ASN:N | 19:XS:65:ASN:ND2 | 2.52 | 0.56 |
| 25:YA:752:A:H4' | 25:YA:753:C:O5' | 2.05 | 0.56 |
| 25:YA:1454:U:P | 37:YR:77:ARG:NH1 | 2.79 | 0.56 |
| 25:YA:2391:G:O2' | 25:YA:2422:A:N7 | 2.38 | 0.56 |
| 27:YD:35:LYS:CE | 27:YD:104:TYR:HB2 | 2.35 | 0.56 |
| 28:YE:183:LEU:HD12 | 28:YE:183:LEU:N | 2.20 | 0.56 |
| 29:YF:155:LEU:CD1 | 29:YF:174:VAL:HG13 | 2.32 | 0.56 |
| 29:YF:197:ASP:O | 29:YF:199:TRP:N | 2.38 | 0.56 |
| 35:YP:115:LEU:HD12 | 35:YP:116:GLY:N | 2.21 | 0.56 |
| 39:YT:26:ASP:CB | 39:YT:91:ARG:HA | 2.36 | 0.56 |
| 45:YZ:53:ILE:CG2 | 45:YZ:71:VAL:HG13 | 2.36 | 0.56 |
| 45:YZ:123:ASP:N | 45:YZ:123:ASP:OD2 | 2.39 | 0.56 |
| 50:Y4:38:LYS:C | 50:Y4:40:HIS:N | 2.52 | 0.56 |
| 1:QA:302:G:O3' | 12:QL:17:LYS:HE2 | 2.06 | 0.56 |
| 1:QA:637:G:H2' | 1:QA:638:G:H8 | 1.70 | 0.56 |
| 3:QC:6:HIS:CD2 | 3:QC:7:PRO:HD2 | 2.41 | 0.56 |
| 4:QD:110:PHE:CE2 | 4:QD:148:VAL:HG23 | 2.41 | 0.56 |
| 5:QE:82:VAL:CG1 | 5:QE:83:GLU:N | 2.68 | 0.56 |
| 6:QF:33:TYR:HE2 | 6:QF:74:ASP:HB3 | 1.71 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:QG:73:MET:HG2 | 7:QG:90:GLU:HA | 1.87 | 0.56 |
| 10:QJ:89:ASP:C | 10:QJ:90:LEU:HD12 | 2.26 | 0.56 |
| 14:QN:15:LYS:O | 14:QN:16:PHE:O | 2.24 | 0.56 |
| 25:RA:582:G:H2' | 25:RA:583:G:H8 | 1.71 | 0.56 |
| 25:RA:2181:G:H2' | 25:RA:2182:G:H8 | 1.70 | 0.56 |
| 25:RA:2537:U:H2' | 25:RA:2538:C:C6 | 2.40 | 0.56 |
| 25:RA:2702:U:H2' | 25:RA:2702:U:O2 | 2.06 | 0.56 |
| 27:RD:80:ALA:HB3 | 27:RD:94:LEU:HD13 | 1.88 | 0.56 |
| 27:RD:221:VAL:HG22 | 27:RD:226:MET:HE2 | 1.88 | 0.56 |
| 28:RE:32:PRO:O | 28:RE:34:VAL:HG13 | 2.06 | 0.56 |
| 34:RO:107:ARG:O | 34:RO:112:MET:HE3 | 2.05 | 0.56 |
| 36:RQ:12:GLN:OE1 | 36:RQ:72:LYS:HD2 | 2.06 | 0.56 |
| 39:RT:105:LEU:C | 39:RT:107:ASP:H | 2.07 | 0.56 |
| 43:RX:65:ARG:HD3 | 43:RX:65:ARG:H | 1.70 | 0.56 |
| 44:RY:95:LYS:O | 44:RY:95:LYS:HE3 | 2.06 | 0.56 |
| 49:R3:7:LYS:NZ | 49:R3:32:GLN:HE21 | 2.03 | 0.56 |
| 49:R3:59:VAL:CG1 | 49:R3:60:GLU:N | 2.69 | 0.56 |
| 1:XA:346:G:H5'' | 39:YT:41:ARG:HD2 | 1.88 | 0.56 |
| 1:XA:966:G:O2' | 9:XI:127:LYS:O | 2.22 | 0.56 |
| 2:XB:68:ILE:HD12 | 2:XB:68:ILE:N | 2.21 | 0.56 |
| 3:XC:77:ILE:C | 3:XC:83:ARG:HB3 | 2.26 | 0.56 |
| 7:XG:62:PHE:O | 7:XG:66:VAL:HG23 | 2.06 | 0.56 |
| 8:XH:82:HIS:HD2 | 8:XH:83:ILE:N | 2.04 | 0.56 |
| 9:XI:17:VAL:CG1 | 9:XI:81:ILE:HD13 | 2.35 | 0.56 |
| 13:XM:84:ILE:CG2 | 13:XM:85:GLY:N | 2.68 | 0.56 |
| 15:XO:76:GLU:C | 15:XO:78:TYR:H | 2.08 | 0.56 |
| 25:YA:177:G:H3' | 25:YA:178:G:H8 | 1.71 | 0.56 |
| 32:YI:64:GLU:HG3 | 32:YI:67:ARG:NH2 | 2.21 | 0.56 |
| 45:YZ:5:LEU:C | 45:YZ:5:LEU:HD13 | 2.26 | 0.56 |
| 1:QA:500:G:H2' | 1:QA:501:C:H6 | 1.71 | 0.56 |
| 57:QA:1661:PAR:N21 | 57:QA:1661:PAR:O43 | 2.39 | 0.56 |
| 2:QB:7:VAL:HG22 | 2:QB:8:LYS:N | 2.21 | 0.56 |
| 3:QC:45:LYS:HD2 | 3:QC:46:GLU:HG3 | 1.87 | 0.56 |
| 5:QE:7:GLU:HG2 | 5:QE:112:LEU:HD22 | 1.87 | 0.56 |
| 5:QE:126:ARG:HG3 | 5:QE:126:ARG:NH1 | 2.19 | 0.56 |
| 8:QH:7:ALA:HB2 | 8:QH:85:ARG:HD3 | 1.87 | 0.56 |
| 8:QH:19:VAL:O | 8:QH:20:TYR:HB2 | 2.04 | 0.56 |
| 8:QH:49:GLU:HG3 | 8:QH:51:VAL:CG1 | 2.35 | 0.56 |
| 11:QK:41:THR:HG21 | 11:QK:71:LYS:CB | 2.36 | 0.56 |
| 17:QQ:84:LEU:C | 17:QQ:86:GLU:N | 2.60 | 0.56 |
| 20:QT:94:ALA:O | 20:QT:95:ALA:CB | 2.54 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:270:A:OP2 | 25:RA:270(Y):G:N2 | 2.39 | 0.56 |
| 25:RA:1077:A:H5' | 25:RA:1078:U:H5'' | 1.88 | 0.56 |
| 27:RD:155:LEU:HD23 | 27:RD:177:LEU:CD2 | 2.36 | 0.56 |
| 30:RG:83:ARG:HG3 | 30:RG:86:MET:HE1 | 1.88 | 0.56 |
| 30:RG:120:LEU:HB3 | 30:RG:131:TYR:OH | 2.05 | 0.56 |
| 34:RO:3:GLN:CB | 34:RO:4:PRO:HD2 | 2.35 | 0.56 |
| 40:RU:105:VAL:HA | 41:RV:44:LYS:HE3 | 1.88 | 0.56 |
| 44:RY:62:GLU:O | 44:RY:63:LYS:O | 2.24 | 0.56 |
| 45:RZ:33:LEU:HD12 | 45:RZ:34:ASN:H | 1.70 | 0.56 |
| 46:R0:74:ARG:C | 46:R0:76:GLY:H | 2.08 | 0.56 |
| 50:R4:48:ARG:HH12 | 50:R4:52:THR:HG22 | 1.71 | 0.56 |
| 54:R8:50:LEU:HD12 | 54:R8:51:ALA:H | 1.70 | 0.56 |
| 1:XA:686:U:O4 | 1:XA:703:G:H1' | 2.06 | 0.56 |
| 2:XB:55:PHE:HA | 2:XB:58:ILE:HB | 1.88 | 0.56 |
| 2:XB:217:ARG:HA | 2:XB:220:ASP:OD2 | 2.06 | 0.56 |
| 3:XC:90:GLU:O | 3:XC:94:LEU:HG | 2.05 | 0.56 |
| 3:XC:112:SER:OG | 3:XC:115:LEU:HG | 2.06 | 0.56 |
| 7:XG:20:ASP:HB3 | 7:XG:23:VAL:HG23 | 1.88 | 0.56 |
| 17:XQ:84:LEU:C | 17:XQ:86:GLU:H | 2.08 | 0.56 |
| 25:YA:2262:U:H4' | 25:YA:2328:A:C2 | 2.41 | 0.56 |
| 28:YE:195:LEU:HD12 | 28:YE:196:VAL:H | 1.71 | 0.56 |
| 32:YI:144:VAL:O | 32:YI:145:VAL:HG22 | 2.06 | 0.56 |
| 44:YY:62:GLU:O | 44:YY:63:LYS:O | 2.24 | 0.56 |
| 44:YY:84:ARG:NH1 | 44:YY:97:ARG:HB2 | 2.11 | 0.56 |
| 45:YZ:44:PHE:CE2 | 45:YZ:86:VAL:HG11 | 2.41 | 0.56 |
| 45:YZ:107:THR:CB | 45:YZ:144:LEU:HB2 | 2.32 | 0.56 |
| 50:Y4:41:PRO:O | 50:Y4:42:PHE:CB | 2.54 | 0.56 |
| 52:Y6:11:LEU:HD23 | 52:Y6:26:ASN:HB3 | 1.87 | 0.56 |
| 52:Y6:48:VAL:HG13 | 52:Y6:49:HIS:N | 2.20 | 0.56 |
| 1:QA:939:G:H5'' | 7:QG:102:ARG:HH12 | 1.71 | 0.56 |
| 1:QA:1321:C:H3' | 1:QA:1322:C:H5'' | 1.86 | 0.56 |
| 7:QG:42:ILE:O | 7:QG:117:ALA:HB2 | 2.05 | 0.56 |
| 14:QN:41:ARG:HH11 | 14:QN:41:ARG:HG2 | 1.71 | 0.56 |
| 16:QP:48:TRP:O | 16:QP:49:LEU:HB2 | 2.06 | 0.56 |
| 25:RA:1755:A:N6 | 25:RA:2694:G:O2' | 2.39 | 0.56 |
| 25:RA:2776:A:OP1 | 25:RA:2776:A:H3' | 2.05 | 0.56 |
| 27:RD:94:LEU:HD22 | 27:RD:95:LEU:H | 1.70 | 0.56 |
| 29:RF:108:LYS:HZ3 | 29:RF:108:LYS:HA | 1.71 | 0.56 |
| 35:RP:15:ARG:O | 35:RP:17:LYS:N | 2.39 | 0.56 |
| 36:RQ:37:LEU:HD21 | 36:RQ:130:LYS:HE3 | 1.87 | 0.56 |
| 38:RS:14:VAL:HG13 | 38:RS:15:ARG:N | 2.21 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 45:RZ:16:SER:O | 45:RZ:20:ARG:HB2 | 2.06 | 0.56 |
| 45:RZ:93:ASP:O | 45:RZ:94:GLU:CD | 2.44 | 0.56 |
| 1:XA:486:U:H2' | 1:XA:487:A:C8 | 2.38 | 0.56 |
| 1:XA:1158:C:H4' | 2:XB:133:LYS:HZ1 | 1.71 | 0.56 |
| 3:XC:77:ILE:O | 3:XC:83:ARG:HB3 | 2.05 | 0.56 |
| 5:XE:92:LYS:O | 5:XE:118:ILE:HD12 | 2.06 | 0.56 |
| 6:XF:41:GLU:HG2 | 6:XF:43:LEU:HD11 | 1.89 | 0.56 |
| 8:XH:49:GLU:O | 8:XH:51:VAL:N | 2.39 | 0.56 |
| 11:XK:69:ALA:HB1 | 11:XK:103:LEU:CD2 | 2.35 | 0.56 |
| 13:XM:119:GLY:HA3 | 22:XV:29:G:OP1 | 2.06 | 0.56 |
| 25:YA:242:G:N2 | 25:YA:255:A:OP2 | 2.30 | 0.56 |
| 25:YA:1338:G:N7 | 43:YX:62:LYS:NZ | 2.47 | 0.56 |
| 25:YA:1525:G:H2' | 25:YA:1526:G:C8 | 2.40 | 0.56 |
| 25:YA:2394:C:OP1 | 35:YP:63:PRO:HD2 | 2.05 | 0.56 |
| 25:YA:2582:G:N2 | 25:YA:2583:G:H1' | 2.20 | 0.56 |
| 40:YU:96:ALA:O | 40:YU:100:VAL:HG23 | 2.05 | 0.56 |
| 40:YU:105:VAL:HA | 41:YV:44:LYS:HE3 | 1.88 | 0.56 |
| 42:YW:1:MET:C | 42:YW:64:MET:HE1 | 2.26 | 0.56 |
| 45:YZ:27:VAL:HG12 | 45:YZ:87:ASP:HB3 | 1.87 | 0.56 |
| 48:Y2:15:LYS:H | 48:Y2:67:LYS:NZ | 2.02 | 0.56 |
| 49:Y3:59:VAL:CG1 | 49:Y3:60:GLU:N | 2.69 | 0.56 |
| 50:Y4:48:ARG:O | 50:Y4:50:VAL:N | 2.38 | 0.56 |
| 1:QA:184:G:H2' | 1:QA:185:A:C8 | 2.40 | 0.55 |
| 1:QA:560:U:H5' | 1:QA:566:G:N2 | 2.21 | 0.55 |
| 3:QC:20:SER:CB | 3:QC:40:ARG:HH22 | 2.14 | 0.55 |
| 4:QD:13:ARG:NH2 | 4:QD:36:ARG:NH2 | 2.53 | 0.55 |
| 7:QG:62:PHE:HA | 7:QG:124:LEU:CD2 | 2.27 | 0.55 |
| 7:QG:148:ASN:C | 7:QG:150:ALA:H | 2.08 | 0.55 |
| 11:QK:125:PHE:N | 11:QK:125:PHE:CD1 | 2.74 | 0.55 |
| 13:QM:80:ARG:O | 13:QM:84:ILE:HB | 2.06 | 0.55 |
| 25:RA:2698:U:H2' | 25:RA:2699:C:C6 | 2.41 | 0.55 |
| 25:RA:2815:C:H5' | 51:R5:29:THR:HG21 | 1.86 | 0.55 |
| 27:RD:69:ARG:C | 27:RD:71:ASP:H | 2.08 | 0.55 |
| 29:RF:28:ILE:HD12 | 29:RF:28:ILE:O | 2.06 | 0.55 |
| 40:RU:83:LEU:HD12 | 40:RU:113:ALA:HB2 | 1.86 | 0.55 |
| 42:RW:14:PRO:HG2 | 42:RW:78:GLU:OE2 | 2.07 | 0.55 |
| 45:RZ:37:VAL:O | 45:RZ:38:TYR:HB3 | 2.06 | 0.55 |
| 46:R0:11:ARG:HH11 | 46:R0:11:ARG:HG3 | 1.70 | 0.55 |
| 54:R8:30:ARG:O | 54:R8:31:HIS:CB | 2.54 | 0.55 |
| 1:XA:417:C:H2' | 1:XA:418:C:H6 | 1.70 | 0.55 |
| 1:XA:430:A:H4' | 4:XD:7:PRO:HG3 | 1.88 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:XA:690:G:H2' | 1:XA:691:G:O4' | 2.06 | 0.55 |
| 1:XA:947:G:O3' | 13:XM:109:THR:OG1 | 2.22 | 0.55 |
| 1:XA:1336:C:H1' | 1:XA:1337:G:C2 | 2.41 | 0.55 |
| 1:XA:1356:G:H2' | 1:XA:1357:A:C8 | 2.42 | 0.55 |
| 2:XB:7:VAL:HG22 | 2:XB:8:LYS:N | 2.21 | 0.55 |
| 4:XD:13:ARG:NH2 | 4:XD:36:ARG:NH2 | 2.53 | 0.55 |
| 4:XD:165:MET:HA | 4:XD:165:MET:CE | 2.36 | 0.55 |
| 8:XH:102:ARG:NH1 | 8:XH:105:ARG:NH2 | 2.54 | 0.55 |
| 10:XJ:26:ALA:HA | 10:XJ:29:ARG:NH2 | 2.21 | 0.55 |
| 11:XK:41:THR:HG21 | 11:XK:71:LYS:CB | 2.36 | 0.55 |
| 12:XL:83:VAL:HG22 | 12:XL:84:LEU:N | 2.21 | 0.55 |
| 16:XP:47:ASP:C | 16:XP:49:LEU:H | 2.09 | 0.55 |
| 17:XQ:6:LEU:O | 17:XQ:58:GLU:HA | 2.05 | 0.55 |
| 25:YA:1061:U:H3' | 25:YA:1062:G:H5'' | 1.87 | 0.55 |
| 28:YE:117:MET:O | 28:YE:117:MET:HG3 | 2.06 | 0.55 |
| 28:YE:174:ASP:CG | 28:YE:175:VAL:N | 2.58 | 0.55 |
| 30:YG:120:LEU:HB3 | 30:YG:131:TYR:OH | 2.05 | 0.55 |
| 30:YG:135:LEU:HD12 | 30:YG:135:LEU:N | 2.21 | 0.55 |
| 35:YP:15:ARG:O | 35:YP:17:LYS:N | 2.39 | 0.55 |
| 35:YP:19:VAL:CG2 | 35:YP:20:GLY:H | 1.98 | 0.55 |
| 36:YQ:12:GLN:OE1 | 36:YQ:72:LYS:HD2 | 2.06 | 0.55 |
| 42:YW:20:VAL:C | 42:YW:22:ASP:N | 2.59 | 0.55 |
| 45:YZ:93:ASP:O | 45:YZ:94:GLU:CD | 2.44 | 0.55 |
| 45:YZ:120:ILE:HD11 | 45:YZ:169:GLU:HG3 | 1.85 | 0.55 |
| 49:Y3:4:LEU:HD21 | 49:Y3:39:ASP:OD1 | 2.06 | 0.55 |
| 1:QA:321:A:H62 | 1:QA:328:C:H1' | 1.70 | 0.55 |
| 1:QA:581:G:N2 | 1:QA:760:G:N7 | 2.54 | 0.55 |
| 1:QA:980:C:H5' | 1:QA:981:U:OP2 | 2.06 | 0.55 |
| 3:QC:95:THR:CG2 | 3:QC:96:GLY:H | 2.10 | 0.55 |
| 3:QC:180:ALA:O | 3:QC:181:ASN:HB3 | 2.06 | 0.55 |
| 8:QH:49:GLU:O | 8:QH:51:VAL:N | 2.39 | 0.55 |
| 8:QH:82:HIS:HD2 | 8:QH:83:ILE:N | 2.03 | 0.55 |
| 8:QH:128:GLY:O | 8:QH:129:VAL:HG13 | 2.06 | 0.55 |
| 10:QJ:6:ILE:CG2 | 10:QJ:98:ILE:HG13 | 2.21 | 0.55 |
| 10:QJ:26:ALA:HA | 10:QJ:29:ARG:NH2 | 2.21 | 0.55 |
| 11:QK:50:TYR:HH | 11:QK:59:TYR:HE2 | 1.54 | 0.55 |
| 16:QP:47:ASP:C | 16:QP:49:LEU:H | 2.09 | 0.55 |
| 20:QT:74:LYS:C | 20:QT:76:ALA:H | 2.10 | 0.55 |
| 23:QX:5:C:O2' | 23:QX:6:C:H5' | 2.06 | 0.55 |
| 25:RA:407:G:H2' | 25:RA:408:G:C8 | 2.41 | 0.55 |
| 25:RA:566:U:OP1 | 35:RP:29:LYS:HE2 | 2.06 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:1062:G:H2' | 25:RA:1063:G:C8 | 2.40 | 0.55 |
| 25:RA:1078:U:O2' | 25:RA:1079:C:OP2 | 2.22 | 0.55 |
| 25:RA:1508:A:O2' | 25:RA:1509:C:O4' | 2.24 | 0.55 |
| 25:RA:1543:A:N3 | 25:RA:1545:A:O4' | 2.40 | 0.55 |
| 25:RA:1794:U:H2' | 25:RA:1795:C:H6 | 1.71 | 0.55 |
| 27:RD:31:LYS:O | 27:RD:35:LYS:O | 2.24 | 0.55 |
| 27:RD:36:PRO:HB2 | 27:RD:61:LEU:HG | 1.87 | 0.55 |
| 28:RE:203:LYS:HE3 | 28:RE:204:ALA:HB2 | 1.87 | 0.55 |
| 31:RH:59:ARG:HH11 | 31:RH:59:ARG:CG | 2.20 | 0.55 |
| 35:RP:13:ASN:C | 35:RP:15:ARG:N | 2.54 | 0.55 |
| 38:RS:18:ILE:C | 38:RS:19:LYS:O | 2.44 | 0.55 |
| 44:RY:21:LYS:HG3 | 44:RY:22:GLY:H | 1.69 | 0.55 |
| 1:XA:1095:U:P | 1:XA:1108:G:H1 | 2.29 | 0.55 |
| 1:XA:1262:C:H42 | 1:XA:1273:G:H1 | 1.55 | 0.55 |
| 11:XK:17:GLY:HA3 | 11:XK:77:MET:HE3 | 1.88 | 0.55 |
| 11:XK:125:PHE:HD1 | 11:XK:125:PHE:H | 1.54 | 0.55 |
| 12:XL:79:GLU:O | 12:XL:79:GLU:HG2 | 2.06 | 0.55 |
| 16:XP:48:TRP:O | 16:XP:49:LEU:HB2 | 2.06 | 0.55 |
| 25:YA:609(A):G:H2' | 25:YA:610:C:H6 | 1.71 | 0.55 |
| 25:YA:1407:C:H42 | 25:YA:1595:G:H1 | 1.55 | 0.55 |
| 25:YA:2404:C:H1' | 35:YP:67:MET:HE2 | 1.87 | 0.55 |
| 28:YE:20:ALA:O | 28:YE:21:VAL:CG2 | 2.48 | 0.55 |
| 29:YF:198:ALA:CA | 29:YF:201:VAL:HG12 | 2.35 | 0.55 |
| 33:YN:101:HIS:CD2 | 33:YN:101:HIS:C | 2.79 | 0.55 |
| 35:YP:14:LYS:O | 35:YP:16:ARG:N | 2.39 | 0.55 |
| 36:YQ:25:ASP:N | 36:YQ:102:VAL:HG23 | 2.22 | 0.55 |
| 36:YQ:79:LEU:O | 36:YQ:80:GLU:CD | 2.44 | 0.55 |
| 40:YU:73:GLY:O | 40:YU:74:LEU:HB3 | 2.07 | 0.55 |
| 40:YU:92:ARG:NH1 | 41:YV:11:GLN:HB2 | 2.22 | 0.55 |
| 45:YZ:38:TYR:O | 45:YZ:38:TYR:CG | 2.59 | 0.55 |
| 45:YZ:76:LEU:HD23 | 45:YZ:76:LEU:N | 2.20 | 0.55 |
| 48:Y2:43:GLN:O | 48:Y2:44:LEU:CG | 2.54 | 0.55 |
| 49:Y3:35:ARG:HB3 | 49:Y3:37:LEU:CD2 | 2.37 | 0.55 |
| 1:QA:458:C:H2' | 1:QA:464:G:C8 | 2.41 | 0.55 |
| 1:QA:1252:A:H2' | 1:QA:1253:G:O4' | 2.07 | 0.55 |
| 2:QB:217:ARG:HA | 2:QB:220:ASP:OD2 | 2.06 | 0.55 |
| 3:QC:112:SER:OG | 3:QC:115:LEU:HG | 2.06 | 0.55 |
| 11:QK:125:PHE:HD1 | 11:QK:125:PHE:H | 1.54 | 0.55 |
| 19:QS:18:LYS:O | 19:QS:22:LEU:HD13 | 2.07 | 0.55 |
| 25:RA:483:A:H4' | 44:RY:49:VAL:HG13 | 1.87 | 0.55 |
| 25:RA:512:G:HO2' | 25:RA:513:A:P | 2.29 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:RA:1277:G:O2' | 37:RR:24:GLN:OE1 | 2.24 | 0.55 |
| 25:RA:1693:U:H1' | 27:RD:14:ARG:NH2 | 2.21 | 0.55 |
| 25:RA:1903:G:OP2 | 27:RD:241:PRO:HB2 | 2.06 | 0.55 |
| 25:RA:2009:G:H1' | 37:RR:107:ASP:O | 2.06 | 0.55 |
| 26:RB:21:G:H1 | 26:RB:62:C:H42 | 1.55 | 0.55 |
| 28:RE:4:ILE:HD13 | 28:RE:5:LEU:H | 1.71 | 0.55 |
| 36:RQ:79:LEU:O | 36:RQ:80:GLU:CD | 2.44 | 0.55 |
| 45:RZ:38:TYR:O | 45:RZ:38:TYR:CG | 2.59 | 0.55 |
| 48:R2:41:ILE:HD11 | 48:R2:44:LEU:CG | 2.36 | 0.55 |
| 50:R4:9:LEU:H | 50:R4:27:THR:HG22 | 1.71 | 0.55 |
| 1:XA:692:U:H5 | 11:XK:26:ASN:OD1 | 1.90 | 0.55 |
| 1:XA:1129:C:N4 | 1:XA:1133:G:O6 | 2.39 | 0.55 |
| 4:XD:28:SER:CB | 4:XD:29:PRO:CD | 2.84 | 0.55 |
| 5:XE:99:GLY:O | 5:XE:117:ASP:HA | 2.06 | 0.55 |
| 7:XG:73:MET:HG2 | 7:XG:90:GLU:HA | 1.87 | 0.55 |
| 10:XJ:89:ASP:C | 10:XJ:90:LEU:HD12 | 2.26 | 0.55 |
| 14:XN:44:LEU:CD1 | 14:XN:48:ALA:HB2 | 2.36 | 0.55 |
| 17:XQ:50:LYS:HG3 | 17:XQ:51:TYR:CE1 | 2.41 | 0.55 |
| 19:XS:18:LYS:O | 19:XS:22:LEU:HD13 | 2.07 | 0.55 |
| 20:XT:74:LYS:C | 20:XT:76:ALA:H | 2.10 | 0.55 |
| 25:YA:508:G:HO2' | 25:YA:509:C:P | 2.29 | 0.55 |
| 25:YA:1092:C:O2' | 31:YH:170:ARG:NE | 2.40 | 0.55 |
| 30:YG:180:PHE:C | 30:YG:182:LYS:H | 2.09 | 0.55 |
| 35:YP:31:ALA:O | 35:YP:32:THR:HG23 | 2.05 | 0.55 |
| 35:YP:39:LYS:N | 35:YP:45:LEU:HD11 | 2.21 | 0.55 |
| 37:YR:84:ALA:HB3 | 37:YR:85:PRO:HD3 | 1.87 | 0.55 |
| 38:YS:59:LYS:CG | 38:YS:60:GLY:H | 2.12 | 0.55 |
| 38:YS:111:GLU:HA | 38:YS:111:GLU:OE1 | 2.07 | 0.55 |
| 39:YT:107:ASP:O | 39:YT:111:ARG:NH1 | 2.39 | 0.55 |
| 42:YW:65:LEU:O | 42:YW:66:GLU:C | 2.43 | 0.55 |
| 44:YY:48:ALA:H | 44:YY:60:PHE:HA | 1.72 | 0.55 |
| 44:YY:89:PHE:O | 44:YY:90:LEU:HD13 | 2.05 | 0.55 |
| 44:YY:95:LYS:CB | 44:YY:100:ALA:HA | 2.13 | 0.55 |
| 45:YZ:30:ASN:HB3 | 45:YZ:89:PHE:CE2 | 2.40 | 0.55 |
| 45:YZ:33:LEU:HD12 | 45:YZ:34:ASN:H | 1.70 | 0.55 |
| 1:QA:6:G:O2' | 1:QA:7:G:H5'' | 2.07 | 0.55 |
| 1:QA:1034:G:H2' | 1:QA:1035:A:C8 | 2.41 | 0.55 |
| 2:QB:46:LYS:HA | 2:QB:49:GLU:OE1 | 2.06 | 0.55 |
| 2:QB:169:LYS:HD3 | 2:QB:169:LYS:O | 2.05 | 0.55 |
| 2:QB:204:ASN:HD22 | 2:QB:205:ASP:N | 2.04 | 0.55 |
| 13:QM:81:LEU:HB3 | 13:QM:89:GLY:HA2 | 1.89 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:QP:59:TRP:HA | 16:QP:59:TRP:CE3 | 2.42 | 0.55 |
| 25:RA:298:G:H8 | 25:RA:298:G:O5' | 1.89 | 0.55 |
| 25:RA:464:U:H4' | 53:R7:5:TRP:CZ3 | 2.40 | 0.55 |
| 25:RA:1929:G:H8 | 25:RA:1929:G:O5' | 1.90 | 0.55 |
| 25:RA:2404:C:H1' | 35:RP:67:MET:CE | 2.36 | 0.55 |
| 25:RA:2531:A:H3' | 25:RA:2532:G:H8 | 1.72 | 0.55 |
| 27:RD:28:GLU:O | 27:RD:29:PRO:C | 2.45 | 0.55 |
| 27:RD:69:ARG:HD3 | 27:RD:105:ILE:HD11 | 1.87 | 0.55 |
| 35:RP:115:LEU:HD12 | 35:RP:116:GLY:N | 2.21 | 0.55 |
| 41:RV:52:VAL:O | 41:RV:54:GLY:N | 2.39 | 0.55 |
| 42:RW:88:ARG:HB3 | 42:RW:92:ARG:HB3 | 1.88 | 0.55 |
| 45:RZ:22:GLY:C | 45:RZ:23:LYS:HD3 | 2.27 | 0.55 |
| 1:XA:908:A:H2' | 1:XA:909:A:C8 | 2.42 | 0.55 |
| 1:XA:1200:C:H4' | 1:XA:1201:A:H5' | 1.88 | 0.55 |
| 3:XC:45:LYS:HD2 | 3:XC:46:GLU:HG3 | 1.87 | 0.55 |
| 11:XK:125:PHE:N | 11:XK:125:PHE:CD1 | 2.73 | 0.55 |
| 18:XR:57:GLY:O | 18:XR:58:LEU:C | 2.43 | 0.55 |
| 20:XT:47:GLY:C | 20:XT:49:ALA:H | 2.07 | 0.55 |
| 20:XT:94:ALA:O | 20:XT:95:ALA:CB | 2.54 | 0.55 |
| 21:XU:6:ARG:O | 21:XU:8:THR:N | 2.39 | 0.55 |
| 21:XU:21:TYR:O | 21:XU:22:ARG:HB2 | 2.05 | 0.55 |
| 25:YA:363(F):A:H4' | 25:YA:364:C:H5' | 1.89 | 0.55 |
| 25:YA:612:G:H2' | 25:YA:613:U:O2 | 2.06 | 0.55 |
| 25:YA:1430:C:H2' | 25:YA:1431:U:H6 | 1.71 | 0.55 |
| 26:YB:103:U:O3' | 45:YZ:72:ARG:HD3 | 2.06 | 0.55 |
| 28:YE:53:PRO:O | 28:YE:74:PRO:HA | 2.07 | 0.55 |
| 29:YF:24:LEU:HB3 | 29:YF:115:ALA:HB2 | 1.87 | 0.55 |
| 42:YW:14:PRO:HG2 | 42:YW:78:GLU:OE2 | 2.07 | 0.55 |
| 47:Y1:91:LYS:CG | 47:Y1:92:LYS:H | 2.15 | 0.55 |
| 49:Y3:8:LEU:HD22 | 49:Y3:31:LEU:CD2 | 2.37 | 0.55 |
| 53:Y7:19:ARG:HH11 | 53:Y7:19:ARG:HG2 | 1.70 | 0.55 |
| 1:QA:690:G:H2' | 1:QA:691:G:O4' | 2.07 | 0.55 |
| 3:QC:188:LEU:N | 3:QC:188:LEU:HD22 | 2.21 | 0.55 |
| 5:QE:144:THR:O | 5:QE:148:VAL:HG23 | 2.06 | 0.55 |
| 7:QG:20:ASP:HB3 | 7:QG:23:VAL:HG23 | 1.88 | 0.55 |
| 7:QG:46:ALA:HB2 | 7:QG:117:ALA:HB1 | 1.88 | 0.55 |
| 15:QO:65:ARG:HB2 | 15:QO:65:ARG:NH1 | 2.20 | 0.55 |
| 16:QP:53:VAL:HG23 | 16:QP:54:GLU:H | 1.71 | 0.55 |
| 21:QU:6:ARG:HH21 | 21:QU:15:ARG:HE | 1.53 | 0.55 |
| 25:RA:1266:G:OP2 | 51:R5:20:ARG:NH2 | 2.39 | 0.55 |
| 25:RA:1332:G:H21 | 25:RA:1610:A:H8 | 1.49 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:RA:1792:G:H2' | 25:RA:1793:C:C6 | 2.42 | 0.55 |
| 25:RA:2439:A:H5' | 25:RA:2439:A:C8 | 2.41 | 0.55 |
| 27:RD:35:LYS:NZ | 27:RD:64:ILE:O | 2.32 | 0.55 |
| 28:RE:26:ILE:HD13 | 28:RE:26:ILE:C | 2.26 | 0.55 |
| 29:RF:129:PHE:O | 29:RF:130:ALA:CB | 2.55 | 0.55 |
| 35:RP:39:LYS:CA | 35:RP:45:LEU:CD1 | 2.80 | 0.55 |
| 37:RR:12:ARG:HH11 | 37:RR:12:ARG:HG3 | 1.71 | 0.55 |
| 40:RU:27:LEU:O | 40:RU:29:SER:N | 2.40 | 0.55 |
| 41:RV:49:THR:CB | 41:RV:50:PRO:HD2 | 2.25 | 0.55 |
| 42:RW:1:MET:C | 42:RW:64:MET:HE1 | 2.27 | 0.55 |
| 44:RY:95:LYS:HB2 | 44:RY:95:LYS:NZ | 2.21 | 0.55 |
| 49:R3:4:LEU:HD21 | 49:R3:39:ASP:OD1 | 2.06 | 0.55 |
| 1:XA:950:U:H2' | 1:XA:951:G:C8 | 2.41 | 0.55 |
| 1:XA:1139:G:N2 | 1:XA:1143:G:O6 | 2.40 | 0.55 |
| 2:XB:96:ARG:H | 2:XB:96:ARG:CD | 2.17 | 0.55 |
| 2:XB:204:ASN:HD22 | 2:XB:205:ASP:N | 2.04 | 0.55 |
| 3:XC:59:ARG:NH2 | 3:XC:97:LYS:HE3 | 2.20 | 0.55 |
| 3:XC:188:LEU:N | 3:XC:188:LEU:HD22 | 2.22 | 0.55 |
| 5:XE:144:THR:O | 5:XE:148:VAL:HG23 | 2.06 | 0.55 |
| 9:XI:126:SER:O | 9:XI:128:ARG:N | 2.35 | 0.55 |
| 12:XL:58:VAL:O | 12:XL:65:GLU:HA | 2.06 | 0.55 |
| 15:XO:24:SER:O | 15:XO:28:GLN:HG3 | 2.06 | 0.55 |
| 16:XP:59:TRP:HA | 16:XP:59:TRP:CE3 | 2.41 | 0.55 |
| 20:XT:53:LEU:HA | 20:XT:56:MET:HB3 | 1.87 | 0.55 |
| 25:YA:1007:C:O3' | 33:YN:108:PRO:HB3 | 2.07 | 0.55 |
| 25:YA:2152:G:H2' | 25:YA:2153:G:C8 | 2.41 | 0.55 |
| 25:YA:2318:G:N2 | 38:YS:2:ALA:HA | 2.22 | 0.55 |
| 25:YA:2438:U:O3' | 25:YA:2439:A:H3' | 2.06 | 0.55 |
| 25:YA:2841:C:H2' | 25:YA:2842:G:H8 | 1.70 | 0.55 |
| 1:QA:186:C:O3' | 20:QT:82:SER:HB3 | 2.06 | 0.55 |
| 1:QA:498:A:H4' | 1:QA:500:G:OP1 | 2.06 | 0.55 |
| 1:QA:898:G:N2 | 1:QA:901:A:OP2 | 2.39 | 0.55 |
| 8:QH:23:SER:HB2 | 8:QH:61:VAL:O | 2.07 | 0.55 |
| 9:QI:82:ALA:O | 9:QI:86:VAL:HB | 2.06 | 0.55 |
| 11:QK:34:ASP:N | 11:QK:40:ILE:HD11 | 2.21 | 0.55 |
| 12:QL:79:GLU:HG2 | 12:QL:79:GLU:O | 2.06 | 0.55 |
| 12:QL:111:LYS:O | 12:QL:112:ASP:HB2 | 2.06 | 0.55 |
| 25:RA:1128:A:O2' | 25:RA:1129:A:OP2 | 2.21 | 0.55 |
| 25:RA:1448:G:H2' | 25:RA:1449:A:C8 | 2.42 | 0.55 |
| 25:RA:1657:C:H2' | 25:RA:1658:C:C6 | 2.41 | 0.55 |
| 25:RA:1914:C:H2' | 25:RA:1915:U:O4' | 2.06 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 25:RA:2114:A:N6 | 25:RA:2119:A:N7 | 2.54 | 0.55 |
| 25:RA:2322:A:H2' | 25:RA:2323:G:O4' | 2.06 | 0.55 |
| 25:RA:2633:G:H2' | 25:RA:2634:G:O4' | 2.07 | 0.55 |
| 26:RB:55:U:H4' | 30:RG:29:TRP:HE1 | 1.71 | 0.55 |
| 27:RD:2:ALA:O | 27:RD:3:VAL:HB | 2.05 | 0.55 |
| 28:RE:14:ILE:HD11 | 39:RT:14:TYR:CZ | 2.42 | 0.55 |
| 28:RE:67:PHE:O | 28:RE:69:LYS:N | 2.39 | 0.55 |
| 30:RG:7:LEU:HD12 | 30:RG:104:GLU:HA | 1.88 | 0.55 |
| 30:RG:114:ILE:HD11 | 30:RG:140:ILE:HD12 | 1.89 | 0.55 |
| 33:RN:109:LYS:N | 33:RN:109:LYS:HD2 | 2.22 | 0.55 |
| 34:RO:79:PHE:HD2 | 39:RT:72:VAL:HG22 | 1.72 | 0.55 |
| 35:RP:88:LEU:C | 35:RP:90:ARG:N | 2.60 | 0.55 |
| 40:RU:74:LEU:HD13 | 40:RU:79:PHE:HB2 | 1.89 | 0.55 |
| 44:RY:48:ALA:H | 44:RY:60:PHE:HA | 1.71 | 0.55 |
| 45:RZ:44:PHE:CE2 | 45:RZ:86:VAL:HG11 | 2.41 | 0.55 |
| 52:R6:20:ASN:CG | 52:R6:21:TYR:H | 2.09 | 0.55 |
| 52:R6:27:LYS:HB2 | 52:R6:27:LYS:HZ2 | 1.69 | 0.55 |
| 1:XA:236:G:OP1 | 17:XQ:40:LYS:NZ | 2.32 | 0.55 |
| 1:XA:1346:A:N1 | 1:XA:1374:A:H5'' | 2.22 | 0.55 |
| 2:XB:46:LYS:HA | 2:XB:49:GLU:OE1 | 2.06 | 0.55 |
| 3:XC:114:PRO:O | 3:XC:118:GLN:HG3 | 2.06 | 0.55 |
| 4:XD:126:ILE:HG22 | 4:XD:127:THR:N | 2.22 | 0.55 |
| 6:XF:33:TYR:HE2 | 6:XF:74:ASP:HB3 | 1.71 | 0.55 |
| 8:XH:102:ARG:NH1 | 8:XH:105:ARG:NH1 | 2.55 | 0.55 |
| 8:XH:128:GLY:O | 8:XH:129:VAL:HG13 | 2.06 | 0.55 |
| 10:XJ:16:LEU:HD13 | 10:XJ:16:LEU:O | 2.07 | 0.55 |
| 14:XN:41:ARG:HH11 | 14:XN:41:ARG:HG2 | 1.71 | 0.55 |
| 15:XO:65:ARG:HB2 | 15:XO:65:ARG:NH1 | 2.19 | 0.55 |
| 16:XP:21:VAL:O | 16:XP:33:ILE:N | 2.39 | 0.55 |
| 16:XP:43:LYS:HA | 16:XP:48:TRP:CB | 2.37 | 0.55 |
| 19:XS:40:ILE:HG12 | 19:XS:41:VAL:N | 2.21 | 0.55 |
| 25:YA:568:U:N3 | 25:YA:571:A:OP2 | 2.24 | 0.55 |
| 25:YA:593:G:H2' | 25:YA:594:U:C6 | 2.41 | 0.55 |
| 25:YA:1142(A):A:H4' | 33:YN:25:ARG:HH22 | 1.70 | 0.55 |
| 25:YA:1728:G:H3' | 25:YA:1729:A:H5'' | 1.89 | 0.55 |
| 25:YA:1993:U:H4' | 28:YE:128:SER:OG | 2.07 | 0.55 |
| 27:YD:94:LEU:HD22 | 27:YD:95:LEU:H | 1.69 | 0.55 |
| 27:YD:221:VAL:HG22 | 27:YD:226:MET:HE2 | 1.88 | 0.55 |
| 28:YE:3:GLY:HA3 | 28:YE:81:ILE:HD12 | 1.88 | 0.55 |
| 33:YN:131:GLN:CG | 33:YN:132:ALA:N | 2.68 | 0.55 |
| 34:YO:20:MET:HG2 | 34:YO:21:CYS:N | 2.19 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 44:YY:61:ILE:HG23 | 44:YY:62:GLU:H | 1.71 | 0.55 |
| 45:YZ:5:LEU:HB3 | 45:YZ:59:LEU:HD23 | 1.88 | 0.55 |
| 45:YZ:16:SER:O | 45:YZ:20:ARG:HB2 | 2.06 | 0.55 |
| 45:YZ:37:VAL:O | 45:YZ:38:TYR:HB3 | 2.07 | 0.55 |
| 45:YZ:94:GLU:CB | 45:YZ:95:PRO:HA | 2.37 | 0.55 |
| 1:QA:126:G:H1 | 1:QA:235:C:H42 | 1.54 | 0.55 |
| 4:QD:25:ARG:NH1 | 4:QD:30:LYS:HG3 | 2.20 | 0.55 |
| 5:QE:92:LYS:O | 5:QE:118:ILE:HD12 | 2.06 | 0.55 |
| 10:QJ:16:LEU:HD13 | 10:QJ:16:LEU:O | 2.07 | 0.55 |
| 19:QS:7:LYS:HG3 | 19:QS:8:GLY:N | 2.22 | 0.55 |
| 19:QS:41:VAL:CB | 19:QS:42:PRO:CA | 2.76 | 0.55 |
| 25:RA:814:C:H41 | 35:RP:25:SER:HA | 1.70 | 0.55 |
| 25:RA:1384:A:N3 | 25:RA:1405:U:H1' | 2.22 | 0.55 |
| 25:RA:2502:G:H5'' | 25:RA:2503:A:H5'' | 1.89 | 0.55 |
| 25:RA:2712:U:OP1 | 25:RA:2714:G:H4' | 2.07 | 0.55 |
| 28:RE:3:GLY:HA3 | 28:RE:81:ILE:HD12 | 1.88 | 0.55 |
| 34:RO:68:GLU:HA | 34:RO:78:ARG:HB3 | 1.89 | 0.55 |
| 40:RU:92:ARG:NH1 | 41:RV:11:GLN:HB2 | 2.22 | 0.55 |
| 45:RZ:5:LEU:C | 45:RZ:5:LEU:HD13 | 2.26 | 0.55 |
| 45:RZ:136:PHE:HD1 | 45:RZ:137:ILE:N | 2.05 | 0.55 |
| 1:XA:110:C:O2' | 16:XP:25:ARG:O | 2.24 | 0.55 |
| 1:XA:436:C:H2' | 1:XA:437:U:O4' | 2.06 | 0.55 |
| 1:XA:715:A:H1' | 1:XA:777:A:N1 | 2.20 | 0.55 |
| 2:XB:142:LEU:HD23 | 2:XB:142:LEU:C | 2.27 | 0.55 |
| 2:XB:214:ILE:HA | 2:XB:217:ARG:NH2 | 2.22 | 0.55 |
| 5:XE:7:GLU:HG2 | 5:XE:112:LEU:HD22 | 1.88 | 0.55 |
| 7:XG:50:ILE:CB | 7:XG:58:PRO:HB3 | 2.37 | 0.55 |
| 8:XH:23:SER:HB2 | 8:XH:61:VAL:O | 2.07 | 0.55 |
| 11:XK:20:TYR:HB2 | 11:XK:31:THR:O | 2.07 | 0.55 |
| 25:YA:581:C:H2' | 25:YA:582:G:H8 | 1.71 | 0.55 |
| 25:YA:664:C:OP1 | 35:YP:18:ARG:NH2 | 2.28 | 0.55 |
| 25:YA:743:G:O2' | 25:YA:1659:U:OP1 | 2.24 | 0.55 |
| 25:YA:852:G:H1 | 25:YA:925:C:N4 | 2.03 | 0.55 |
| 25:YA:1020:A:N6 | 25:YA:1141:U:O2' | 2.40 | 0.55 |
| 26:YB:50:G:OP1 | 38:YS:63:THR:HG23 | 2.06 | 0.55 |
| 27:YD:43:ARG:CB | 27:YD:54:ARG:HB2 | 2.37 | 0.55 |
| 28:YE:4:ILE:HD13 | 28:YE:5:LEU:H | 1.71 | 0.55 |
| 28:YE:67:PHE:O | 28:YE:69:LYS:N | 2.39 | 0.55 |
| 33:YN:109:LYS:N | 33:YN:109:LYS:HD2 | 2.22 | 0.55 |
| 35:YP:49:ARG:NE | 54:Y8:59:LYS:HG2 | 2.22 | 0.55 |
| 39:YT:29:ARG:HH11 | 39:YT:29:ARG:HB2 | 1.72 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 40:YU:6:THR:O | 40:YU:9:VAL:HG23 | 2.07 | 0.55 |
| 41:YV:29:PRO:HA | 41:YV:61:VAL:CG2 | 2.37 | 0.55 |
| 42:YW:25:ARG:HH11 | 42:YW:25:ARG:CB | 2.20 | 0.55 |
| 51:Y5:55:ARG:HD3 | 51:Y5:56:LYS:N | 2.21 | 0.55 |
| 52:Y6:42:TRP:N | 52:Y6:42:TRP:CD1 | 2.74 | 0.55 |
| 1:QA:192:U:H2' | 1:QA:193:C:C6 | 2.42 | 0.55 |
| 1:QA:444:C:H2' | 1:QA:445:G:H8 | 1.72 | 0.55 |
| 1:QA:489:C:OP1 | 4:QD:132:ARG:NH2 | 2.40 | 0.55 |
| 4:QD:126:ILE:HG22 | 4:QD:127:THR:N | 2.22 | 0.55 |
| 7:QG:37:ASN:HD21 | 9:QI:40:LEU:HD23 | 1.69 | 0.55 |
| 8:QH:102:ARG:HH11 | 8:QH:105:ARG:CZ | 2.19 | 0.55 |
| 9:QI:45:ALA:O | 9:QI:48:GLU:HG2 | 2.07 | 0.55 |
| 12:QL:83:VAL:HG22 | 12:QL:84:LEU:N | 2.21 | 0.55 |
| 15:QO:77:ARG:HA | 15:QO:80:ALA:CB | 2.36 | 0.55 |
| 25:RA:414:C:O2 | 25:RA:1864:U:O2' | 2.25 | 0.55 |
| 25:RA:571:A:N6 | 25:RA:2499:C:O3' | 2.40 | 0.55 |
| 25:RA:1272:A:OP2 | 25:RA:1647:G:OP1 | 2.25 | 0.55 |
| 25:RA:2360:A:H2' | 25:RA:2361:A:O4' | 2.07 | 0.55 |
| 25:RA:2656:U:OP2 | 25:RA:2664:G:N1 | 2.28 | 0.55 |
| 25:RA:2783:G:H2' | 25:RA:2784:C:C6 | 2.41 | 0.55 |
| 27:RD:118:VAL:HG22 | 27:RD:119:ALA:H | 1.72 | 0.55 |
| 28:RE:195:LEU:HD12 | 28:RE:196:VAL:H | 1.71 | 0.55 |
| 31:RH:12:PRO:O | 31:RH:13:LYS:HB2 | 2.07 | 0.55 |
| 38:RS:13:ARG:O | 38:RS:13:ARG:HD2 | 2.06 | 0.55 |
| 38:RS:36:TYR:HD2 | 38:RS:52:SER:CB | 2.18 | 0.55 |
| 39:RT:6:LEU:O | 39:RT:7:ILE:C | 2.44 | 0.55 |
| 40:RU:104:GLN:OE1 | 40:RU:104:GLN:N | 2.35 | 0.55 |
| 45:RZ:70:LEU:HD11 | 45:RZ:98:MET:HE1 | 1.89 | 0.55 |
| 54:R8:63:PRO:O | 54:R8:64:TYR:HB2 | 2.07 | 0.55 |
| 1:XA:343:U:O2' | 1:XA:346:G:O6 | 2.25 | 0.55 |
| 1:XA:640:A:H1' | 8:XH:115:SER:HB3 | 1.89 | 0.55 |
| 3:XC:6:HIS:CD2 | 3:XC:7:PRO:HD2 | 2.41 | 0.55 |
| 3:XC:43:LEU:O | 3:XC:47:LEU:HB3 | 2.07 | 0.55 |
| 4:XD:31:CYS:O | 4:XD:32:ALA:HB3 | 2.07 | 0.55 |
| 6:XF:52:ILE:O | 6:XF:53:ALA:HB3 | 2.07 | 0.55 |
| 6:XF:92:LYS:HB2 | 6:XF:92:LYS:HZ2 | 1.72 | 0.55 |
| 9:XI:82:ALA:O | 9:XI:86:VAL:HB | 2.07 | 0.55 |
| 10:XJ:4:ILE:CB | 10:XJ:74:ILE:HD11 | 2.36 | 0.55 |
| 10:XJ:19:SER:O | 10:XJ:23:ILE:HG13 | 2.07 | 0.55 |
| 13:XM:80:ARG:O | 13:XM:84:ILE:HB | 2.06 | 0.55 |
| 18:XR:58:LEU:HD12 | 18:XR:58:LEU:H | 1.72 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 20:XT:43:LEU:HA | 20:XT:46:GLU:HB3 | 1.89 | 0.55 |
| 25:YA:1062:G:H2' | 25:YA:1063:G:H8 | 1.70 | 0.55 |
| 25:YA:1103:A:H5' | 25:YA:1104:C:C5 | 2.41 | 0.55 |
| 28:YE:21:VAL:HG23 | 28:YE:22:PRO:HD3 | 1.89 | 0.55 |
| 32:YI:2:LYS:HA | 32:YI:20:ASP:CB | 2.35 | 0.55 |
| 33:YN:44:PRO:HG2 | 33:YN:45:ASN:H | 1.71 | 0.55 |
| 34:YO:19:ILE:O | 34:YO:19:ILE:HD13 | 2.06 | 0.55 |
| 34:YO:79:PHE:HD2 | 39:YT:72:VAL:HG22 | 1.72 | 0.55 |
| 35:YP:88:LEU:C | 35:YP:90:ARG:N | 2.60 | 0.55 |
| 36:YQ:21:THR:O | 36:YQ:22:LYS:O | 2.25 | 0.55 |
| 39:YT:16:ARG:HG2 | 39:YT:18:ASP:OD1 | 2.06 | 0.55 |
| 39:YT:123:GLN:O | 39:YT:125:ARG:N | 2.40 | 0.55 |
| 42:YW:20:VAL:C | 42:YW:22:ASP:H | 2.10 | 0.55 |
| 44:YY:91:GLU:HG3 | 44:YY:92:ASN:H | 1.72 | 0.55 |
| 1:QA:1081:G:OP1 | 5:QE:16:THR:OG1 | 2.25 | 0.55 |
| 1:QA:1450:U:O2' | 1:QA:1451:A:N7 | 2.40 | 0.55 |
| 7:QG:50:ILE:CB | 7:QG:58:PRO:HB3 | 2.37 | 0.55 |
| 10:QJ:32:ALA:O | 10:QJ:33:GLN:O | 2.25 | 0.55 |
| 25:RA:1203:G:H3' | 25:RA:1204:A:H5'' | 1.87 | 0.55 |
| 25:RA:1494:A:H3' | 25:RA:1495:A:H8 | 1.72 | 0.55 |
| 25:RA:1897:G:H2' | 25:RA:1898:U:C6 | 2.42 | 0.55 |
| 25:RA:2111:C:N3 | 25:RA:2118:U:O2' | 2.40 | 0.55 |
| 25:RA:2245:U:H5' | 25:RA:2246:G:H5' | 1.88 | 0.55 |
| 25:RA:2795:G:H3' | 25:RA:2797:U:H5' | 1.89 | 0.55 |
| 29:RF:118:ALA:O | 29:RF:121:GLY:N | 2.33 | 0.55 |
| 29:RF:147:GLY:O | 29:RF:148:LEU:HD23 | 2.07 | 0.55 |
| 30:RG:3:LEU:HD12 | 30:RG:4:ASP:N | 2.19 | 0.55 |
| 33:RN:101:HIS:CD2 | 33:RN:101:HIS:C | 2.79 | 0.55 |
| 35:RP:39:LYS:N | 35:RP:45:LEU:HD11 | 2.21 | 0.55 |
| 35:RP:106:LEU:O | 35:RP:107:LYS:HD3 | 2.07 | 0.55 |
| 36:RQ:25:ASP:N | 36:RQ:102:VAL:HG23 | 2.22 | 0.55 |
| 42:RW:25:ARG:HH11 | 42:RW:25:ARG:CB | 2.20 | 0.55 |
| 45:RZ:27:VAL:HG12 | 45:RZ:87:ASP:HB3 | 1.87 | 0.55 |
| 45:RZ:76:LEU:HD23 | 45:RZ:76:LEU:N | 2.20 | 0.55 |
| 50:R4:65:ASP:O | 50:R4:66:SER:HB3 | 2.07 | 0.55 |
| 1:XA:413:G:H2' | 1:XA:428:G:H22 | 1.71 | 0.55 |
| 1:XA:946:A:H2' | 1:XA:947:G:C8 | 2.41 | 0.55 |
| 2:XB:187:LEU:HD22 | 2:XB:201:ILE:O | 2.07 | 0.55 |
| 6:XF:92:LYS:HB2 | 6:XF:92:LYS:NZ | 2.22 | 0.55 |
| 9:XI:114:TYR:O | 9:XI:114:TYR:CD2 | 2.58 | 0.55 |
| 25:YA:1114:G:H2' | 25:YA:1115:G:H8 | 1.71 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:1252:G:H1' | 40:YU:33:ARG:CD | 2.37 | 0.55 |
| 25:YA:1798:U:H5'' | 27:YD:259:THR:HG22 | 1.89 | 0.55 |
| 25:YA:2212:A:N3 | 25:YA:2215:G:N1 | 2.54 | 0.55 |
| 25:YA:2283:C:P | 52:Y6:5:VAL:HG13 | 2.47 | 0.55 |
| 25:YA:2689:U:OP2 | 25:YA:2872:G:N2 | 2.31 | 0.55 |
| 25:YA:2815:C:H5' | 51:Y5:29:THR:HG21 | 1.88 | 0.55 |
| 28:YE:26:ILE:HD13 | 28:YE:26:ILE:C | 2.27 | 0.55 |
| 30:YG:114:ILE:HD11 | 30:YG:140:ILE:HD12 | 1.89 | 0.55 |
| 35:YP:2:LYS:O | 35:YP:5:ASP:HB2 | 2.06 | 0.55 |
| 36:YQ:64:ILE:HA | 36:YQ:106:VAL:CG1 | 2.33 | 0.55 |
| 38:YS:107:GLU:N | 38:YS:110:LEU:HD11 | 2.22 | 0.55 |
| 40:YU:58:ARG:O | 40:YU:62:ILE:HG13 | 2.07 | 0.55 |
| 48:Y2:31:GLU:HB2 | 48:Y2:53:LEU:HD11 | 1.89 | 0.55 |
| 50:Y4:9:LEU:H | 50:Y4:27:THR:HG22 | 1.71 | 0.55 |
| 50:Y4:48:ARG:HH12 | 50:Y4:52:THR:HG22 | 1.71 | 0.55 |
| 50:Y4:51:ASP:OD1 | 50:Y4:51:ASP:O | 2.25 | 0.55 |
| 54:Y8:30:ARG:O | 54:Y8:31:HIS:CB | 2.54 | 0.55 |
| 1:QA:377:G:H1 | 1:QA:386:C:N4 | 2.05 | 0.55 |
| 1:QA:1179:A:O3' | 9:QI:103:THR:HG23 | 2.06 | 0.55 |
| 1:QA:1231:G:O3' | 9:QI:126:SER:OG | 2.25 | 0.55 |
| 3:QC:43:LEU:O | 3:QC:47:LEU:HB3 | 2.07 | 0.55 |
| 4:QD:27:TYR:HE2 | 6:XF:15:ASP:HB3 | 1.72 | 0.55 |
| 9:QI:70:LYS:O | 9:QI:74:ILE:HG13 | 2.07 | 0.55 |
| 13:QM:65:LYS:HZ3 | 50:R4:52:THR:HG21 | 1.71 | 0.55 |
| 15:QO:29:VAL:HG11 | 15:QO:67:LEU:HD21 | 1.89 | 0.55 |
| 17:QQ:62:SER:HB3 | 17:QQ:72:ARG:HH21 | 1.72 | 0.55 |
| 25:RA:311:A:HO2' | 25:RA:331:A:HO2' | 1.54 | 0.55 |
| 25:RA:389:G:H1 | 35:RP:71:VAL:HG12 | 1.70 | 0.55 |
| 25:RA:857:C:H1' | 46:R0:26:TYR:CE2 | 2.42 | 0.55 |
| 25:RA:922:U:H2' | 25:RA:923:C:C6 | 2.41 | 0.55 |
| 25:RA:956:G:N2 | 25:RA:960:A:OP2 | 2.36 | 0.55 |
| 25:RA:1198:U:H2' | 25:RA:1199:U:C6 | 2.42 | 0.55 |
| 25:RA:2638:G:OP2 | 28:RE:82:ARG:NH2 | 2.40 | 0.55 |
| 25:RA:2642:G:H5'' | 33:RN:78:TYR:CD2 | 2.42 | 0.55 |
| 25:RA:2688:U:H1' | 25:RA:2721:A:H61 | 1.71 | 0.55 |
| 27:RD:43:ARG:CB | 27:RD:54:ARG:HB2 | 2.37 | 0.55 |
| 30:RG:135:LEU:HD12 | 30:RG:135:LEU:N | 2.21 | 0.55 |
| 34:RO:1:MET:HE2 | 34:RO:67:LYS:HG2 | 1.89 | 0.55 |
| 35:RP:2:LYS:O | 35:RP:5:ASP:HB2 | 2.06 | 0.55 |
| 35:RP:84:ASN:ND2 | 35:RP:115:LEU:HD12 | 2.22 | 0.55 |
| 38:RS:74:ALA:HB1 | 38:RS:107:GLU:HB3 | 1.89 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:RU:58:ARG:O | 40:RU:62:ILE:HG13 | 2.06 | 0.55 |
| 40:RU:73:GLY:O | 40:RU:74:LEU:HB3 | 2.07 | 0.55 |
| 41:RV:49:THR:CB | 41:RV:50:PRO:CD | 2.83 | 0.55 |
| 48:R2:47:ASN:ND2 | 48:R2:47:ASN:N | 2.54 | 0.55 |
| 53:R7:48:LYS:HG2 | 53:R7:49:ARG:N | 2.19 | 0.55 |
| 1:XA:719:C:O2' | 18:XR:50:ILE:O | 2.21 | 0.55 |
| 1:XA:753:A:H4' | 1:XA:754:C:O5' | 2.06 | 0.55 |
| 2:XB:16:HIS:CE1 | 2:XB:209:ARG:HH21 | 2.25 | 0.55 |
| 2:XB:41:ILE:HD12 | 2:XB:41:ILE:N | 2.22 | 0.55 |
| 2:XB:134:GLU:O | 2:XB:138:LEU:HD12 | 2.07 | 0.55 |
| 8:XH:102:ARG:HH11 | 8:XH:105:ARG:CZ | 2.19 | 0.55 |
| 9:XI:40:LEU:HD11 | 9:XI:70:LYS:CG | 2.37 | 0.55 |
| 9:XI:45:ALA:O | 9:XI:48:GLU:HG2 | 2.07 | 0.55 |
| 12:XL:10:LEU:HD13 | 17:XQ:32:TYR:CD2 | 2.42 | 0.55 |
| 13:XM:11:ARG:NH2 | 30:YG:146:TYR:CD2 | 2.71 | 0.55 |
| 19:XS:68:GLY:N | 50:Y4:59:PHE:CZ | 2.74 | 0.55 |
| 25:YA:1102:C:H2' | 25:YA:1103:A:H5'' | 1.88 | 0.55 |
| 25:YA:2468:G:H5'' | 36:YQ:120:ILE:HD12 | 1.89 | 0.55 |
| 25:YA:2839:G:H5' | 37:YR:46:GLY:CA | 2.37 | 0.55 |
| 25:YA:2845:G:H2' | 25:YA:2846:G:C8 | 2.41 | 0.55 |
| 27:YD:155:LEU:HD23 | 27:YD:177:LEU:CD2 | 2.36 | 0.55 |
| 30:YG:41:GLN:HB3 | 30:YG:43:LEU:HD13 | 1.87 | 0.55 |
| 30:YG:83:ARG:HG3 | 30:YG:86:MET:HE1 | 1.89 | 0.55 |
| 34:YO:4:PRO:O | 34:YO:5:GLN:HB2 | 2.06 | 0.55 |
| 37:YR:12:ARG:HH11 | 37:YR:12:ARG:HG3 | 1.71 | 0.55 |
| 40:YU:27:LEU:O | 40:YU:29:SER:N | 2.40 | 0.55 |
| 45:YZ:22:GLY:C | 45:YZ:23:LYS:HD3 | 2.27 | 0.55 |
| 47:Y1:83:GLU:OE1 | 47:Y1:85:LEU:HD23 | 2.07 | 0.55 |
| 1:QA:1207:G:H2' | 1:QA:1208:C:C6 | 2.42 | 0.54 |
| 2:QB:80:ILE:CG2 | 2:QB:212:GLN:HA | 2.35 | 0.54 |
| 2:QB:214:ILE:HA | 2:QB:217:ARG:NH2 | 2.21 | 0.54 |
| 3:QC:11:ARG:HH21 | 3:QC:180:ALA:HB3 | 1.70 | 0.54 |
| 7:QG:50:ILE:HG22 | 7:QG:50:ILE:O | 2.07 | 0.54 |
| 9:QI:40:LEU:HD11 | 9:QI:70:LYS:CG | 2.37 | 0.54 |
| 9:QI:66:ARG:HG2 | 9:QI:66:ARG:NH1 | 2.22 | 0.54 |
| 14:QN:22:THR:HB | 14:QN:33:VAL:HG11 | 1.89 | 0.54 |
| 16:QP:43:LYS:HA | 16:QP:48:TRP:CB | 2.37 | 0.54 |
| 25:RA:141:A:N6 | 25:RA:1595:G:O2' | 2.37 | 0.54 |
| 25:RA:310:A:O2' | 25:RA:311:A:O5' | 2.25 | 0.54 |
| 25:RA:958:U:OP2 | 36:RQ:14:ARG:NH1 | 2.33 | 0.54 |
| 25:RA:1651:G:N7 | 37:RR:11:ASN:ND2 | 2.54 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:RA:2415:G:H4' | 35:RP:67:MET:N | 2.23 | 0.54 |
| 25:RA:2420:C:N4 | 54:R8:30:ARG:HD2 | 2.22 | 0.54 |
| 25:RA:2562:U:H1' | 34:RO:23:ARG:NH1 | 2.22 | 0.54 |
| 29:RF:62:ARG:HB3 | 29:RF:62:ARG:NH1 | 2.22 | 0.54 |
| 29:RF:197:ASP:O | 29:RF:198:ALA:HB3 | 2.06 | 0.54 |
| 32:RI:110:ASP:CB | 32:RI:111:PRO:C | 2.75 | 0.54 |
| 35:RP:24:GLY:O | 35:RP:25:SER:HB3 | 2.06 | 0.54 |
| 35:RP:49:ARG:NE | 54:R8:59:LYS:HG2 | 2.22 | 0.54 |
| 35:RP:59:LEU:O | 35:RP:59:LEU:HD23 | 2.06 | 0.54 |
| 39:RT:107:ASP:O | 39:RT:111:ARG:NH1 | 2.39 | 0.54 |
| 41:RV:99:ILE:N | 41:RV:99:ILE:CD1 | 2.65 | 0.54 |
| 42:RW:70:TYR:CD2 | 42:RW:70:TYR:N | 2.75 | 0.54 |
| 44:RY:95:LYS:HD3 | 44:RY:95:LYS:N | 2.22 | 0.54 |
| 47:R1:91:LYS:HA | 47:R1:91:LYS:CE | 2.37 | 0.54 |
| 1:XA:44:G:C2 | 1:XA:45:U:H1' | 2.41 | 0.54 |
| 1:XA:667:G:H4' | 15:XO:51:HIS:CE1 | 2.41 | 0.54 |
| 3:XC:107:GLN:CD | 3:XC:107:GLN:N | 2.61 | 0.54 |
| 4:XD:19:LEU:HD23 | 4:XD:19:LEU:N | 2.23 | 0.54 |
| 4:XD:94:LEU:H | 4:XD:94:LEU:CD1 | 2.08 | 0.54 |
| 9:XI:9:ARG:HB2 | 9:XI:14:VAL:HG22 | 1.88 | 0.54 |
| 13:XM:7:VAL:HB | 30:YG:115:ARG:HH12 | 1.71 | 0.54 |
| 13:XM:121:LYS:HE2 | 13:XM:121:LYS:N | 2.22 | 0.54 |
| 17:XQ:84:LEU:C | 17:XQ:86:GLU:N | 2.60 | 0.54 |
| 20:XT:10:LEU:HG | 20:XT:12:ALA:H | 1.70 | 0.54 |
| 25:YA:2207:C:O2 | 27:YD:151:LYS:NZ | 2.25 | 0.54 |
| 27:YD:31:LYS:O | 27:YD:35:LYS:O | 2.24 | 0.54 |
| 29:YF:28:ILE:HD12 | 29:YF:28:ILE:O | 2.06 | 0.54 |
| 29:YF:32:LEU:HD12 | 29:YF:36:VAL:HG23 | 1.89 | 0.54 |
| 31:YH:26:VAL:CG1 | 31:YH:27:LYS:N | 2.64 | 0.54 |
| 40:YU:58:ARG:NH1 | 40:YU:93:LYS:HE2 | 2.22 | 0.54 |
| 40:YU:95:LEU:HD12 | 41:YV:11:GLN:HE21 | 1.72 | 0.54 |
| 42:YW:88:ARG:HB3 | 42:YW:92:ARG:HB3 | 1.89 | 0.54 |
| 44:YY:95:LYS:HA | 44:YY:101:LYS:H | 1.72 | 0.54 |
| 46:Y0:56:ASP:O | 46:Y0:57:PHE:HB2 | 2.06 | 0.54 |
| 1:QA:179:A:H2' | 1:QA:180:U:C6 | 2.41 | 0.54 |
| 1:QA:555:C:H2' | 1:QA:556:C:C6 | 2.42 | 0.54 |
| 1:QA:818:G:O2' | 1:QA:819:A:H5'' | 2.07 | 0.54 |
| 3:QC:107:GLN:CD | 3:QC:107:GLN:N | 2.60 | 0.54 |
| 25:RA:139:G:N2 | 25:RA:1596:A:H4' | 2.22 | 0.54 |
| 25:RA:242:G:C8 | 54:R8:5:LYS:HG2 | 2.42 | 0.54 |
| 25:RA:2450:A:OP1 | 25:RA:2497:A:O2' | 2.17 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 26:RB:42:C:N1 | 30:RG:69:ALA:HB2 | 2.22 | 0.54 |
| 27:RD:25:THR:HG21 | 27:RD:81:ALA:CB | 2.38 | 0.54 |
| 29:RF:197:ASP:O | 29:RF:199:TRP:N | 2.38 | 0.54 |
| 39:RT:3:ARG:HG3 | 39:RT:7:ILE:CG1 | 2.36 | 0.54 |
| 39:RT:16:ARG:HG2 | 39:RT:18:ASP:OD1 | 2.06 | 0.54 |
| 45:RZ:107:THR:CB | 45:RZ:144:LEU:HB2 | 2.32 | 0.54 |
| 47:R1:53:VAL:O | 47:R1:54:ALA:C | 2.45 | 0.54 |
| 53:R7:18:PHE:C | 53:R7:18:PHE:CD2 | 2.81 | 0.54 |
| 1:XA:237:C:H2' | 1:XA:238:G:H8 | 1.71 | 0.54 |
| 1:XA:442:C:H5' | 1:XA:443:C:OP2 | 2.08 | 0.54 |
| 1:XA:973:G:O4' | 10:XJ:55:LYS:HG2 | 2.07 | 0.54 |
| 1:XA:1246:C:H42 | 1:XA:1291:G:H1 | 1.55 | 0.54 |
| 1:XA:1297:C:O2' | 7:XG:114:ARG:NH2 | 2.40 | 0.54 |
| 4:XD:11:LEU:O | 4:XD:12:CYS:C | 2.45 | 0.54 |
| 9:XI:128:ARG:HH21 | 22:XV:35:A:P | 2.29 | 0.54 |
| 10:XJ:32:ALA:O | 10:XJ:33:GLN:O | 2.25 | 0.54 |
| 14:YN:15:LYS:O | 14:YN:16:PHE:O | 2.24 | 0.54 |
| 16:XP:28:ARG:HG2 | 16:XP:28:ARG:NH1 | 2.22 | 0.54 |
| 22:XV:68:C:H2' | 22:XV:69:C:C6 | 2.42 | 0.54 |
| 25:YA:330:A:C2 | 25:YA:1210:A:H2' | 2.42 | 0.54 |
| 28:YE:54:GLN:NE2 | 28:YE:54:GLN:N | 2.56 | 0.54 |
| 32:YI:70:GLU:HA | 32:YI:70:GLU:OE1 | 2.05 | 0.54 |
| 38:YS:13:ARG:O | 38:YS:13:ARG:HD2 | 2.06 | 0.54 |
| 38:YS:36:TYR:HD2 | 38:YS:52:SER:CB | 2.19 | 0.54 |
| 39:YT:98:LYS:HB3 | 39:YT:100:TYR:CE1 | 2.43 | 0.54 |
| 41:YV:27:ALA:O | 41:YV:28:GLU:O | 2.24 | 0.54 |
| 41:YV:49:THR:CB | 41:YV:50:PRO:CD | 2.83 | 0.54 |
| 44:YY:2:ARG:HG2 | 44:YY:2:ARG:NH1 | 2.22 | 0.54 |
| 44:YY:97:ARG:NH2 | 44:YY:98:VAL:CB | 2.65 | 0.54 |
| 52:Y6:20:ASN:CG | 52:Y6:21:TYR:H | 2.09 | 0.54 |
| 1:QA:234:C:H2' | 1:QA:235:C:C6 | 2.42 | 0.54 |
| 1:QA:754:C:H5' | 15:QO:72:ARG:HH22 | 1.72 | 0.54 |
| 2:QB:55:PHE:HA | 2:QB:58:ILE:HB | 1.88 | 0.54 |
| 2:QB:83:MET:O | 2:QB:85:ALA:N | 2.41 | 0.54 |
| 3:QC:181:ASN:HD21 | 3:QC:204:LEU:CD1 | 2.12 | 0.54 |
| 10:QJ:101:VAL:HG22 | 10:QJ:101:VAL:O | 2.07 | 0.54 |
| 17:QQ:33:GLY:O | 17:QQ:34:LYS:O | 2.26 | 0.54 |
| 25:RA:67:U:H2' | 25:RA:68:G:C8 | 2.42 | 0.54 |
| 25:RA:919:G:N2 | 25:RA:2269:A:OP2 | 2.40 | 0.54 |
| 25:RA:1403:C:H5'' | 25:RA:1471:A:C1' | 2.37 | 0.54 |
| 25:RA:2357:U:OP1 | 46:R0:20:ARG:NE | 2.31 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:RA:2887:U:H2' | 25:RA:2888:C:H6 | 1.71 | 0.54 |
| 28:RE:21:VAL:HG23 | 28:RE:22:PRO:HD3 | 1.89 | 0.54 |
| 29:RF:67:GLN:O | 29:RF:68:LYS:CB | 2.39 | 0.54 |
| 31:RH:8:PRO:O | 31:RH:9:ILE:HG23 | 2.08 | 0.54 |
| 31:RH:86:GLU:HG3 | 31:RH:165:ALA:CB | 2.38 | 0.54 |
| 31:RH:128:PRO:CD | 31:RH:129:THR:N | 2.71 | 0.54 |
| 33:RN:44:PRO:HG2 | 33:RN:45:ASN:H | 1.71 | 0.54 |
| 36:RQ:39:PRO:HB3 | 36:RQ:99:PRO:HD3 | 1.89 | 0.54 |
| 36:RQ:83:MET:HB2 | 46:R0:7:LEU:HB3 | 1.89 | 0.54 |
| 39:RT:123:GLN:O | 39:RT:125:ARG:N | 2.40 | 0.54 |
| 40:RU:6:THR:O | 40:RU:9:VAL:HG23 | 2.07 | 0.54 |
| 40:RU:58:ARG:NH1 | 40:RU:93:LYS:HE2 | 2.22 | 0.54 |
| 41:RV:29:PRO:HA | 41:RV:61:VAL:CG2 | 2.37 | 0.54 |
| 42:RW:9:TYR:H | 42:RW:102:HIS:CE1 | 2.26 | 0.54 |
| 42:RW:80:PRO:O | 42:RW:100:THR:CG2 | 2.55 | 0.54 |
| 43:RX:5:TYR:HE2 | 48:R2:30:ARG:HH11 | 1.56 | 0.54 |
| 45:RZ:94:GLU:CB | 45:RZ:95:PRO:HA | 2.37 | 0.54 |
| 47:R1:60:PHE:HE2 | 47:R1:91:LYS:HZ1 | 1.54 | 0.54 |
| 49:R3:8:LEU:HD22 | 49:R3:31:LEU:CD2 | 2.37 | 0.54 |
| 1:XA:662:G:H2' | 1:XA:663:A:C8 | 2.42 | 0.54 |
| 8:XH:77:GLU:HG2 | 8:XH:78:GLN:N | 2.22 | 0.54 |
| 8:XH:97:VAL:CG1 | 8:XH:98:LYS:N | 2.70 | 0.54 |
| 8:XH:119:LEU:HD12 | 8:XH:124:ALA:HA | 1.88 | 0.54 |
| 9:XI:66:ARG:HG2 | 9:XI:66:ARG:NH1 | 2.21 | 0.54 |
| 9:XI:70:LYS:O | 9:XI:74:ILE:HG13 | 2.07 | 0.54 |
| 13:XM:81:LEU:HB3 | 13:XM:89:GLY:HA2 | 1.89 | 0.54 |
| 19:XS:15:LEU:CD2 | 19:XS:15:LEU:H | 2.21 | 0.54 |
| 25:YA:38:A:N6 | 25:YA:440:G:O6 | 2.40 | 0.54 |
| 25:YA:823:G:H2' | 25:YA:824:A:C8 | 2.43 | 0.54 |
| 25:YA:1402:C:H2' | 25:YA:1403:C:H5' | 1.89 | 0.54 |
| 28:YE:176:ILE:HG22 | 28:YE:179:GLU:H | 1.72 | 0.54 |
| 31:YH:8:PRO:O | 31:YH:9:ILE:HG23 | 2.08 | 0.54 |
| 35:YP:65:ARG:HH21 | 54:Y8:15:LYS:HB2 | 1.72 | 0.54 |
| 39:YT:6:LEU:O | 39:YT:7:ILE:C | 2.45 | 0.54 |
| 42:YW:80:PRO:O | 42:YW:100:THR:CG2 | 2.55 | 0.54 |
| 44:YY:95:LYS:HD3 | 44:YY:95:LYS:N | 2.23 | 0.54 |
| 46:Y0:49:LYS:O | 46:Y0:50:ASN:HB2 | 2.07 | 0.54 |
| 47:Y1:92:LYS:O | 47:Y1:94:LEU:N | 2.41 | 0.54 |
| 51:Y5:55:ARG:HD3 | 51:Y5:56:LYS:H | 1.73 | 0.54 |
| 1:QA:1158:C:H4' | 2:QB:133:LYS:HZ1 | 1.71 | 0.54 |
| 2:QB:41:ILE:HD12 | 2:QB:41:ILE:N | 2.22 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:QB:68:ILE:HD12 | 2:QB:68:ILE:N | 2.21 | 0.54 |
| 3:QC:134:ILE:HG21 | 3:QC:168:ALA:HB3 | 1.90 | 0.54 |
| 4:QD:11:LEU:O | 4:QD:12:CYS:C | 2.46 | 0.54 |
| 4:QD:12:CYS:CB | 4:QD:31:CYS:O | 2.56 | 0.54 |
| 10:QJ:19:SER:O | 10:QJ:23:ILE:HG13 | 2.07 | 0.54 |
| 11:QK:125:PHE:HD1 | 11:QK:125:PHE:N | 2.05 | 0.54 |
| 15:QO:21:ASP:OD1 | 15:QO:24:SER:HB2 | 2.07 | 0.54 |
| 25:RA:946:G:H2' | 25:RA:947:G:C8 | 2.42 | 0.54 |
| 25:RA:2233:U:H2' | 25:RA:2234:G:C8 | 2.43 | 0.54 |
| 26:RB:11:C:H3' | 26:RB:12:C:H6 | 1.72 | 0.54 |
| 30:RG:116:ASP:O | 30:RG:117:PHE:CB | 2.51 | 0.54 |
| 34:RO:53:LYS:HD2 | 34:RO:56:ASP:OD1 | 2.08 | 0.54 |
| 36:RQ:21:THR:O | 36:RQ:22:LYS:O | 2.25 | 0.54 |
| 38:RS:107:GLU:N | 38:RS:110:LEU:HD11 | 2.22 | 0.54 |
| 41:RV:22:VAL:CG1 | 41:RV:23:GLU:N | 2.71 | 0.54 |
| 44:RY:47:LYS:O | 44:RY:49:VAL:HG23 | 2.07 | 0.54 |
| 45:RZ:139:VAL:HA | 45:RZ:156:LYS:HE2 | 1.90 | 0.54 |
| 1:XA:1429:C:H2' | 1:XA:1430:C:C6 | 2.41 | 0.54 |
| 8:XH:101:PRO:HG2 | 8:XH:133:LEU:HD11 | 1.89 | 0.54 |
| 14:YN:13:THR:N | 14:YN:14:PRO:HD2 | 2.22 | 0.54 |
| 25:YA:508:G:O2' | 25:YA:509:C:P | 2.65 | 0.54 |
| 25:YA:1212:G:O2' | 25:YA:1236:G:N2 | 2.38 | 0.54 |
| 27:YD:118:VAL:HG22 | 27:YD:119:ALA:H | 1.72 | 0.54 |
| 31:YH:86:GLU:HG3 | 31:YH:165:ALA:CB | 2.38 | 0.54 |
| 31:YH:153:LYS:CE | 31:YH:153:LYS:HA | 2.38 | 0.54 |
| 35:YP:106:LEU:O | 35:YP:107:LYS:HD3 | 2.07 | 0.54 |
| 41:YV:52:VAL:O | 41:YV:54:GLY:N | 2.39 | 0.54 |
| 42:YW:9:TYR:H | 42:YW:102:HIS:CE1 | 2.25 | 0.54 |
| 44:YY:95:LYS:HB2 | 44:YY:95:LYS:NZ | 2.21 | 0.54 |
| 45:YZ:5:LEU:O | 45:YZ:6:LYS:CB | 2.56 | 0.54 |
| 45:YZ:124:ILE:O | 45:YZ:126:VAL:HG13 | 2.07 | 0.54 |
| 47:Y1:53:VAL:HG12 | 47:Y1:54:ALA:N | 2.21 | 0.54 |
| 47:Y1:53:VAL:O | 47:Y1:54:ALA:C | 2.45 | 0.54 |
| 50:Y4:47:GLN:O | 50:Y4:48:ARG:HB2 | 2.07 | 0.54 |
| 1:QA:192:U:H4' | 20:QT:103:GLY:HA2 | 1.90 | 0.54 |
| 1:QA:546:G:P | 4:QD:72:GLU:HB3 | 2.47 | 0.54 |
| 1:QA:707:C:H5'' | 11:QK:85:ARG:NH1 | 2.22 | 0.54 |
| 1:QA:1446:A:C5 | 39:RT:118:ARG:NH1 | 2.76 | 0.54 |
| 2:QB:142:LEU:C | 2:QB:142:LEU:HD23 | 2.27 | 0.54 |
| 2:QB:170:GLU:HA | 2:QB:172:ILE:HD12 | 1.90 | 0.54 |
| 4:QD:19:LEU:HD23 | 4:QD:19:LEU:N | 2.23 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:QD:166:LYS:CD | 27:YD:134:ARG:HH11 | 2.18 | 0.54 |
| 6:QF:52:ILE:O | 6:QF:53:ALA:HB3 | 2.07 | 0.54 |
| 6:QF:92:LYS:HB2 | 6:QF:92:LYS:NZ | 2.22 | 0.54 |
| 7:QG:62:PHE:O | 7:QG:66:VAL:HG23 | 2.06 | 0.54 |
| 8:QH:97:VAL:CG1 | 8:QH:98:LYS:N | 2.70 | 0.54 |
| 12:QL:83:VAL:CG2 | 12:QL:100:ILE:HG23 | 2.38 | 0.54 |
| 13:QM:50:GLU:HB3 | 50:R4:32:TYR:OH | 2.07 | 0.54 |
| 13:QM:121:LYS:HE2 | 13:QM:121:LYS:N | 2.23 | 0.54 |
| 16:QP:4:ILE:HD12 | 16:QP:4:ILE:N | 2.23 | 0.54 |
| 16:QP:21:VAL:O | 16:QP:33:ILE:N | 2.39 | 0.54 |
| 16:QP:28:ARG:HG2 | 16:QP:28:ARG:NH1 | 2.22 | 0.54 |
| 25:RA:729:G:H2' | 25:RA:1775:U:H1' | 1.88 | 0.54 |
| 25:RA:1245:G:OP1 | 35:RP:13:ASN:ND2 | 2.33 | 0.54 |
| 25:RA:1416:G:H2' | 25:RA:1417:C:C6 | 2.42 | 0.54 |
| 25:RA:1588:C:H2' | 25:RA:1589:C:H6 | 1.73 | 0.54 |
| 25:RA:1991:U:H2' | 25:RA:1992:G:H5'' | 1.90 | 0.54 |
| 25:RA:2197:U:H1' | 25:RA:2198:A:N7 | 2.23 | 0.54 |
| 25:RA:2506:U:OP2 | 25:RA:2576:G:N1 | 2.26 | 0.54 |
| 25:RA:2525:G:H1 | 25:RA:2538:C:H42 | 1.55 | 0.54 |
| 27:RD:227:ASN:HB3 | 27:RD:228:PRO:CD | 2.30 | 0.54 |
| 28:RE:186:GLY:O | 28:RE:188:VAL:N | 2.41 | 0.54 |
| 31:RH:91:GLY:O | 31:RH:94:TYR:HB2 | 2.08 | 0.54 |
| 32:RI:2:LYS:HA | 32:RI:20:ASP:CB | 2.36 | 0.54 |
| 32:RI:94:ALA:HB1 | 32:RI:111:PRO:HB2 | 1.89 | 0.54 |
| 39:RT:29:ARG:HB2 | 39:RT:29:ARG:HH11 | 1.72 | 0.54 |
| 42:RW:20:VAL:C | 42:RW:22:ASP:H | 2.10 | 0.54 |
| 42:RW:38:TYR:OH | 51:R5:47:PRO:HG3 | 2.08 | 0.54 |
| 44:RY:61:ILE:HG23 | 44:RY:62:GLU:H | 1.71 | 0.54 |
| 45:RZ:5:LEU:O | 45:RZ:6:LYS:CB | 2.56 | 0.54 |
| 45:RZ:124:ILE:O | 45:RZ:126:VAL:HG13 | 2.07 | 0.54 |
| 47:R1:83:GLU:CG | 47:R1:84:GLY:N | 2.71 | 0.54 |
| 50:R4:37:SER:HB3 | 50:R4:42:PHE:CD1 | 2.43 | 0.54 |
| 51:R5:55:ARG:HD3 | 51:R5:56:LYS:H | 1.73 | 0.54 |
| 11:XK:24:SER:HB3 | 11:XK:27:ASN:O | 2.08 | 0.54 |
| 11:XK:91:ARG:NH2 | 18:XR:88:LYS:HZ1 | 2.06 | 0.54 |
| 12:XL:6:THR:OG1 | 12:XL:9:GLN:HG3 | 2.08 | 0.54 |
| 13:XM:73:GLU:O | 13:XM:77:ASN:N | 2.33 | 0.54 |
| 19:XS:68:GLY:HA3 | 50:Y4:68:ARG:HB2 | 1.90 | 0.54 |
| 25:YA:184:C:H2' | 25:YA:185:U:C6 | 2.43 | 0.54 |
| 25:YA:264:C:C2' | 25:YA:265:A:H5'' | 2.38 | 0.54 |
| 25:YA:2723:C:OP1 | 25:YA:2820:A:H8 | 1.91 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 28:YE:14:ILE:HG23 | 28:YE:15:PHE:N | 2.23 | 0.54 |
| 29:YF:129:PHE:O | 29:YF:130:ALA:CB | 2.55 | 0.54 |
| 33:YN:42:TRP:CD1 | 40:YU:63:VAL:HG11 | 2.42 | 0.54 |
| 34:YO:53:LYS:HD2 | 34:YO:56:ASP:OD1 | 2.08 | 0.54 |
| 35:YP:114:ILE:HD11 | 35:YP:130:PHE:HE1 | 1.70 | 0.54 |
| 37:YR:28:LEU:HD13 | 37:YR:28:LEU:O | 2.08 | 0.54 |
| 43:YX:65:ARG:HD3 | 43:YX:65:ARG:H | 1.70 | 0.54 |
| 45:YZ:136:PHE:HD1 | 45:YZ:137:ILE:N | 2.05 | 0.54 |
| 45:YZ:139:VAL:HA | 45:YZ:156:LYS:HE2 | 1.89 | 0.54 |
| 51:Y5:44:THR:O | 51:Y5:46:CYS:N | 2.41 | 0.54 |
| 53:Y7:18:PHE:CD2 | 53:Y7:18:PHE:C | 2.81 | 0.54 |
| 54:Y8:32:LEU:O | 54:Y8:36:LYS:HE3 | 2.07 | 0.54 |
| 1:QA:316:G:OP2 | 1:QA:351:G:O2' | 2.25 | 0.54 |
| 1:QA:1327:C:H2' | 1:QA:1328:C:H6 | 1.72 | 0.54 |
| 3:QC:109:PRO:O | 3:QC:115:LEU:HD12 | 2.08 | 0.54 |
| 6:QF:91:VAL:CG1 | 18:QR:72:ARG:HH12 | 2.19 | 0.54 |
| 8:QH:102:ARG:NH1 | 8:QH:105:ARG:NH1 | 2.55 | 0.54 |
| 9:QI:118:LYS:HZ2 | 9:QI:118:LYS:HB2 | 1.72 | 0.54 |
| 15:QO:87:ILE:CG2 | 15:QO:88:ARG:H | 2.00 | 0.54 |
| 25:RA:298:G:P | 44:RY:85:VAL:HG22 | 2.47 | 0.54 |
| 25:RA:1812:A:O2' | 27:RD:45:ASN:HB2 | 2.08 | 0.54 |
| 28:RE:101:ARG:HB3 | 28:RE:201:THR:OG1 | 2.08 | 0.54 |
| 29:RF:179:GLU:CD | 29:RF:179:GLU:H | 2.11 | 0.54 |
| 35:RP:65:ARG:HH21 | 54:R8:15:LYS:HB2 | 1.72 | 0.54 |
| 44:RY:91:GLU:HG3 | 44:RY:92:ASN:H | 1.72 | 0.54 |
| 52:R6:12:GLU:HG2 | 52:R6:52:VAL:O | 2.07 | 0.54 |
| 53:R7:31:LEU:O | 53:R7:32:LYS:C | 2.43 | 0.54 |
| 54:R8:32:LEU:O | 54:R8:36:LYS:HE3 | 2.07 | 0.54 |
| 1:XA:167:G:H2' | 1:XA:168:G:H8 | 1.73 | 0.54 |
| 1:XA:1223:C:OP1 | 1:XA:1224:G:H3' | 2.07 | 0.54 |
| 1:XA:1366:C:H2' | 1:XA:1367:C:H6 | 1.73 | 0.54 |
| 2:XB:83:MET:O | 2:XB:85:ALA:N | 2.41 | 0.54 |
| 2:XB:170:GLU:HA | 2:XB:172:ILE:HD12 | 1.90 | 0.54 |
| 2:XB:178:ARG:NH2 | 8:XH:74:PRO:CG | 2.70 | 0.54 |
| 3:XC:109:PRO:O | 3:XC:115:LEU:HD12 | 2.08 | 0.54 |
| 3:XC:195:VAL:CG1 | 3:XC:196:LEU:N | 2.71 | 0.54 |
| 4:XD:153:ARG:NH1 | 4:XD:181:MET:CG | 2.71 | 0.54 |
| 10:XJ:61:GLU:HG3 | 14:XN:58:LYS:HE2 | 1.90 | 0.54 |
| 15:XO:21:ASP:OD1 | 15:XO:24:SER:HB2 | 2.07 | 0.54 |
| 16:XP:3:LYS:O | 16:XP:21:VAL:HA | 2.08 | 0.54 |
| 25:YA:155:C:H5' | 25:YA:161:U:OP2 | 2.08 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:YA:353:G:H2' | 25:YA:354:G:C8 | 2.42 | 0.54 |
| 25:YA:363(B):G:H2' | 25:YA:363(C):G:C8 | 2.43 | 0.54 |
| 25:YA:2306:C:N4 | 30:YG:42:GLY:O | 2.35 | 0.54 |
| 25:YA:2630:G:H2' | 25:YA:2631:G:H8 | 1.72 | 0.54 |
| 27:YD:124:PRO:HB2 | 27:YD:126:GLN:NE2 | 2.22 | 0.54 |
| 27:YD:206:LEU:O | 27:YD:211:ARG:NH1 | 2.38 | 0.54 |
| 30:YG:3:LEU:HD12 | 30:YG:4:ASP:N | 2.19 | 0.54 |
| 30:YG:7:LEU:HD12 | 30:YG:104:GLU:HA | 1.88 | 0.54 |
| 35:YP:124:LYS:HA | 35:YP:143:GLY:O | 2.08 | 0.54 |
| 44:YY:47:LYS:O | 44:YY:49:VAL:HG23 | 2.08 | 0.54 |
| 45:YZ:7:ALA:O | 45:YZ:8:TYR:CD2 | 2.61 | 0.54 |
| 49:Y3:2:PRO:O | 49:Y3:3:ARG:O | 2.25 | 0.54 |
| 52:Y6:17:LYS:O | 52:Y6:18:ARG:HB2 | 2.08 | 0.54 |
| 1:QA:1012:U:H2' | 1:QA:1013:G:C8 | 2.43 | 0.54 |
| 2:QB:24:TRP:CE2 | 2:QB:26:PRO:HD3 | 2.43 | 0.54 |
| 7:QG:13:GLN:O | 7:QG:24:THR:HG21 | 2.08 | 0.54 |
| 12:QL:10:LEU:CD1 | 17:QQ:32:TYR:CD2 | 2.90 | 0.54 |
| 13:QM:34:LEU:CD1 | 13:QM:41:PRO:HG3 | 2.38 | 0.54 |
| 18:QR:39:VAL:HA | 18:QR:42:ARG:NH1 | 2.23 | 0.54 |
| 20:QT:43:LEU:HA | 20:QT:46:GLU:HB3 | 1.88 | 0.54 |
| 21:QU:6:ARG:O | 21:QU:8:THR:N | 2.39 | 0.54 |
| 21:QU:21:TYR:O | 21:QU:22:ARG:HB2 | 2.06 | 0.54 |
| 25:RA:481:G:O2' | 25:RA:507:A:N1 | 2.37 | 0.54 |
| 25:RA:583:G:H5'' | 40:RU:10:ARG:NH1 | 2.21 | 0.54 |
| 25:RA:987:G:C2 | 25:RA:988:A:H1' | 2.42 | 0.54 |
| 25:RA:1352:U:O2' | 25:RA:1570:A:N3 | 2.35 | 0.54 |
| 25:RA:1636:C:H2' | 25:RA:1637:A:C8 | 2.42 | 0.54 |
| 25:RA:2641:G:OP2 | 33:RN:74:ARG:NH2 | 2.34 | 0.54 |
| 27:RD:233:HIS:CD2 | 27:RD:233:HIS:N | 2.75 | 0.54 |
| 30:RG:111:LEU:HB2 | 50:R4:38:LYS:HZ3 | 1.72 | 0.54 |
| 30:RG:139:LEU:HD22 | 30:RG:146:TYR:HD1 | 1.73 | 0.54 |
| 31:RH:26:VAL:CG1 | 31:RH:27:LYS:N | 2.63 | 0.54 |
| 37:RR:1:MET:O | 37:RR:2:ARG:HG3 | 2.08 | 0.54 |
| 46:R0:56:ASP:O | 46:R0:57:PHE:HB2 | 2.06 | 0.54 |
| 47:R1:83:GLU:OE1 | 47:R1:85:LEU:HD23 | 2.07 | 0.54 |
| 48:R2:43:GLN:O | 48:R2:44:LEU:CG | 2.54 | 0.54 |
| 1:XA:192:U:H4' | 20:XT:102:GLY:O | 2.07 | 0.54 |
| 1:XA:372:C:N4 | 1:XA:389:A:H62 | 2.05 | 0.54 |
| 1:XA:1055:A:O2' | 3:XC:161:GLU:OE2 | 2.15 | 0.54 |
| 1:XA:1267:C:O2 | 21:XU:20:LYS:HD2 | 2.08 | 0.54 |
| 1:XA:1439:C:H42 | 1:XA:1462:G:H1 | 1.56 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 7:XG:46:ALA:HB2 | 7:XG:117:ALA:HB1 | 1.88 | 0.54 |
| 8:XH:51:VAL:HG11 | 8:XH:60:ARG:CG | 2.37 | 0.54 |
| 13:XM:66:LEU:O | 13:XM:67:GLU:C | 2.46 | 0.54 |
| 25:YA:442:G:H1' | 29:YF:48:THR:HG21 | 1.89 | 0.54 |
| 25:YA:1043:C:H42 | 25:YA:1112:G:H1 | 1.55 | 0.54 |
| 25:YA:1600:C:H4' | 53:Y7:49:ARG:HE | 1.71 | 0.54 |
| 25:YA:1851:U:H2' | 25:YA:1852:C:O4' | 2.07 | 0.54 |
| 25:YA:2334:G:C6 | 46:Y0:75:LEU:HD21 | 2.43 | 0.54 |
| 25:YA:2517:C:C2 | 25:YA:2542:A:N6 | 2.75 | 0.54 |
| 27:YD:25:THR:O | 27:YD:25:THR:HG23 | 2.07 | 0.54 |
| 27:YD:158:ALA:HB3 | 27:YD:161:THR:HG21 | 1.90 | 0.54 |
| 27:YD:211:ARG:HD2 | 27:YD:214:TRP:CZ3 | 2.43 | 0.54 |
| 29:YF:62:ARG:HB3 | 29:YF:62:ARG:NH1 | 2.22 | 0.54 |
| 36:YQ:39:PRO:HB3 | 36:YQ:99:PRO:HD3 | 1.89 | 0.54 |
| 1:QA:45:U:H2' | 1:QA:46:G:H8 | 1.73 | 0.54 |
| 1:QA:191(F):U:O2 | 20:QT:105:SER:HB2 | 2.08 | 0.54 |
| 1:QA:937:A:N6 | 1:QA:1345:U:O4 | 2.38 | 0.54 |
| 1:QA:978:A:O2' | 1:QA:1322:C:N3 | 2.39 | 0.54 |
| 2:QB:16:HIS:CE1 | 2:QB:209:ARG:HH21 | 2.25 | 0.54 |
| 4:QD:23:GLY:HA3 | 4:QD:112:VAL:CG2 | 2.38 | 0.54 |
| 6:QF:78:GLU:OE2 | 6:QF:81:ILE:HD12 | 2.08 | 0.54 |
| 8:QH:51:VAL:HG11 | 8:QH:60:ARG:CG | 2.38 | 0.54 |
| 8:QH:101:PRO:HG2 | 8:QH:133:LEU:HD11 | 1.89 | 0.54 |
| 11:QK:20:TYR:HB2 | 11:QK:31:THR:O | 2.07 | 0.54 |
| 25:RA:1936:A:H4' | 25:RA:1937:A:O5' | 2.08 | 0.54 |
| 25:RA:2795:G:H3' | 25:RA:2797:U:C5' | 2.38 | 0.54 |
| 27:RD:25:THR:CG2 | 27:RD:81:ALA:HB1 | 2.38 | 0.54 |
| 28:RE:176:ILE:HG22 | 28:RE:179:GLU:H | 1.72 | 0.54 |
| 34:RO:113:LYS:HG2 | 34:RO:117:LEU:CD1 | 2.38 | 0.54 |
| 35:RP:125:VAL:O | 35:RP:145:PRO:HD2 | 2.08 | 0.54 |
| 37:RR:45:ARG:HA | 37:RR:95:THR:HG21 | 1.87 | 0.54 |
| 38:RS:67:ARG:NH1 | 38:RS:67:ARG:CB | 2.64 | 0.54 |
| 40:RU:95:LEU:HD12 | 41:RV:11:GLN:HE21 | 1.72 | 0.54 |
| 41:RV:45:THR:HG22 | 41:RV:45:THR:O | 2.08 | 0.54 |
| 51:R5:60:VAL:OXT | 51:R5:60:VAL:CG1 | 2.56 | 0.54 |
| 3:XC:92:ALA:HB2 | 3:XC:99:VAL:CG1 | 2.38 | 0.54 |
| 3:XC:134:ILE:CD1 | 3:XC:153:VAL:HG21 | 2.35 | 0.54 |
| 7:XG:13:GLN:O | 7:XG:24:THR:HG21 | 2.08 | 0.54 |
| 7:XG:50:ILE:HG22 | 7:XG:50:ILE:O | 2.07 | 0.54 |
| 7:XG:137:LYS:O | 7:XG:141:VAL:HG23 | 2.08 | 0.54 |
| 9:XI:13:ALA:HB2 | 9:XI:67:GLY:C | 2.28 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:XJ:101:VAL:HG22 | 10:XJ:101:VAL:O | 2.07 | 0.54 |
| 15:XO:77:ARG:HA | 15:XO:80:ALA:CB | 2.36 | 0.54 |
| 17:XQ:65:ILE:HD12 | 17:XQ:65:ILE:H | 1.73 | 0.54 |
| 18:XR:29:PHE:CD2 | 18:XR:29:PHE:N | 2.76 | 0.54 |
| 18:XR:39:VAL:HA | 18:XR:42:ARG:NH1 | 2.23 | 0.54 |
| 18:XR:51:LEU:HD22 | 18:XR:55:ARG:HD2 | 1.89 | 0.54 |
| 25:YA:526:A:OP1 | 25:YA:527:C:OP1 | 2.25 | 0.54 |
| 25:YA:586:A:H5' | 29:YF:89:VAL:HG21 | 1.89 | 0.54 |
| 25:YA:2485:G:OP1 | 36:YQ:46:GLN:NE2 | 2.39 | 0.54 |
| 28:YE:51:PHE:O | 28:YE:74:PRO:HB3 | 2.08 | 0.54 |
| 28:YE:101:ARG:HB3 | 28:YE:201:THR:OG1 | 2.08 | 0.54 |
| 28:YE:134:ILE:C | 28:YE:134:ILE:HD12 | 2.28 | 0.54 |
| 29:YF:127:GLU:O | 29:YF:129:PHE:N | 2.40 | 0.54 |
| 29:YF:147:GLY:O | 29:YF:148:LEU:HD23 | 2.07 | 0.54 |
| 30:YG:81:LYS:O | 30:YG:82:LEU:CB | 2.56 | 0.54 |
| 33:YN:7:LYS:HD3 | 33:YN:9:VAL:CA | 2.38 | 0.54 |
| 34:YO:68:GLU:HA | 34:YO:78:ARG:HB3 | 1.88 | 0.54 |
| 35:YP:84:ASN:ND2 | 35:YP:115:LEU:HD12 | 2.22 | 0.54 |
| 35:YP:140:ALA:O | 35:YP:141:ALA:HB2 | 2.08 | 0.54 |
| 41:YV:45:THR:HG22 | 41:YV:45:THR:O | 2.08 | 0.54 |
| 43:YX:5:TYR:HE2 | 48:Y2:30:ARG:HH11 | 1.55 | 0.54 |
| 44:YY:87:LYS:HB2 | 44:YY:87:LYS:NZ | 2.23 | 0.54 |
| 1:QA:108:G:H5'' | 1:QA:109:A:C5' | 2.38 | 0.54 |
| 1:QA:583:A:H2' | 1:QA:584:G:O4' | 2.08 | 0.54 |
| 1:QA:1397:C:H1' | 23:QX:8:A:N6 | 2.22 | 0.54 |
| 1:QA:1435:G:H2' | 1:QA:1436:U:C6 | 2.43 | 0.54 |
| 3:QC:53:ALA:HB2 | 3:QC:115:LEU:HD21 | 1.90 | 0.54 |
| 3:QC:92:ALA:HB2 | 3:QC:99:VAL:CG1 | 2.37 | 0.54 |
| 4:QD:13:ARG:HD2 | 4:QD:38:TYR:O | 2.08 | 0.54 |
| 7:QG:102:ARG:O | 7:QG:106:GLN:HG3 | 2.08 | 0.54 |
| 10:QJ:61:GLU:HG3 | 14:QN:58:LYS:HE2 | 1.89 | 0.54 |
| 14:QN:13:THR:N | 14:QN:14:PRO:HD2 | 2.21 | 0.54 |
| 16:QP:3:LYS:O | 16:QP:21:VAL:HA | 2.08 | 0.54 |
| 25:RA:612:G:O2' | 25:RA:616:A:N1 | 2.33 | 0.54 |
| 25:RA:848:G:H2' | 25:RA:849:A:C8 | 2.43 | 0.54 |
| 25:RA:1451:C:H42 | 25:RA:1459:G:H1 | 1.55 | 0.54 |
| 27:RD:183:ARG:HG2 | 27:RD:183:ARG:NH1 | 2.12 | 0.54 |
| 33:RN:109:LYS:HD2 | 33:RN:109:LYS:H | 1.73 | 0.54 |
| 34:RO:4:PRO:O | 34:RO:5:GLN:HB2 | 2.06 | 0.54 |
| 35:RP:37:GLY:HA2 | 35:RP:41:ARG:NE | 2.23 | 0.54 |
| 35:RP:112:LEU:HD13 | 35:RP:112:LEU:C | 2.29 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:RP:124:LYS:HA | 35:RP:143:GLY:O | 2.08 | 0.54 |
| 45:RZ:57:ILE:HD12 | 45:RZ:57:ILE:N | 2.23 | 0.54 |
| 46:R0:53:MET:HA | 46:R0:58:THR:O | 2.08 | 0.54 |
| 50:R4:51:ASP:O | 50:R4:51:ASP:OD1 | 2.25 | 0.54 |
| 52:R6:17:LYS:O | 52:R6:18:ARG:HB2 | 2.08 | 0.54 |
| 1:XA:439:A:OP2 | 1:XA:493:G:N1 | 2.41 | 0.54 |
| 1:XA:1148:U:OP1 | 9:XI:7:THR:HG21 | 2.08 | 0.54 |
| 5:XE:101:ILE:HG12 | 5:XE:101:ILE:O | 2.08 | 0.54 |
| 25:YA:242:G:C8 | 54:Y8:5:LYS:HG2 | 2.43 | 0.54 |
| 25:YA:993:G:OP1 | 40:YU:50:ARG:NH1 | 2.40 | 0.54 |
| 25:YA:2232:U:P | 47:Y1:40:ARG:HH12 | 2.30 | 0.54 |
| 27:YD:80:ALA:HB3 | 27:YD:94:LEU:HD13 | 1.88 | 0.54 |
| 31:YH:91:GLY:O | 31:YH:94:TYR:HB2 | 2.08 | 0.54 |
| 32:YI:94:ALA:HB1 | 32:YI:111:PRO:HB2 | 1.89 | 0.54 |
| 34:YO:78:ARG:O | 39:YT:73:GLU:HG3 | 2.08 | 0.54 |
| 35:YP:24:GLY:O | 35:YP:25:SER:HB3 | 2.06 | 0.54 |
| 35:YP:92:GLU:HA | 35:YP:123:LEU:CD2 | 2.38 | 0.54 |
| 35:YP:112:LEU:HD13 | 35:YP:112:LEU:C | 2.29 | 0.54 |
| 37:YR:38:VAL:HG22 | 37:YR:112:ALA:HB2 | 1.90 | 0.54 |
| 39:YT:55:ASN:O | 39:YT:57:PHE:O | 2.26 | 0.54 |
| 40:YU:24:TYR:O | 40:YU:29:SER:HB3 | 2.08 | 0.54 |
| 40:YU:86:ALA:HB1 | 40:YU:88:ILE:HD11 | 1.90 | 0.54 |
| 47:Y1:91:LYS:HA | 47:Y1:91:LYS:CE | 2.37 | 0.54 |
| 50:Y4:65:ASP:O | 50:Y4:66:SER:HB3 | 2.07 | 0.54 |
| 3:QC:195:VAL:CG1 | 3:QC:196:LEU:N | 2.71 | 0.54 |
| 13:QM:3:ARG:HA | 13:QM:9:ILE:CG2 | 2.21 | 0.54 |
| 22:QV:68:C:H2' | 22:QV:69:C:C6 | 2.42 | 0.54 |
| 25:RA:222:A:O2' | 25:RA:223:A:O5' | 2.22 | 0.54 |
| 25:RA:2308:G:N2 | 25:RA:2311:A:H2 | 2.03 | 0.54 |
| 25:RA:2680:C:H5' | 28:RE:189:PRO:HA | 1.90 | 0.54 |
| 25:RA:2696:U:H2' | 25:RA:2697:G:C8 | 2.43 | 0.54 |
| 27:RD:227:ASN:CB | 27:RD:228:PRO:HD2 | 2.24 | 0.54 |
| 28:RE:51:PHE:O | 28:RE:74:PRO:HB3 | 2.08 | 0.54 |
| 28:RE:54:GLN:NE2 | 28:RE:54:GLN:N | 2.55 | 0.54 |
| 37:RR:38:VAL:HG22 | 37:RR:112:ALA:HB2 | 1.90 | 0.54 |
| 37:RR:53:HIS:HA | 37:RR:56:LYS:HD3 | 1.90 | 0.54 |
| 38:RS:111:GLU:OE1 | 38:RS:111:GLU:HA | 2.07 | 0.54 |
| 44:RY:87:LYS:NZ | 44:RY:87:LYS:HB2 | 2.23 | 0.54 |
| 45:RZ:52:SER:C | 45:RZ:53:ILE:HG13 | 2.29 | 0.54 |
| 45:RZ:110:GLY:O | 45:RZ:117:LEU:HD21 | 2.08 | 0.54 |
| 47:R1:92:LYS:O | 47:R1:94:LEU:N | 2.41 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 48:R2:31:GLU:HB2 | 48:R2:53:LEU:HD11 | 1.89 | 0.54 |
| 1:XA:34:C:H2' | 1:XA:35:G:C8 | 2.42 | 0.54 |
| 1:XA:160:A:H1' | 1:XA:344:A:N7 | 2.23 | 0.54 |
| 1:XA:1298:C:P | 7:XG:114:ARG:HH22 | 2.29 | 0.54 |
| 3:XC:134:ILE:HG21 | 3:XC:168:ALA:HB3 | 1.89 | 0.54 |
| 7:XG:12:LEU:N | 7:XG:12:LEU:HD22 | 2.23 | 0.54 |
| 7:XG:102:ARG:O | 7:XG:106:GLN:HG3 | 2.08 | 0.54 |
| 8:XH:20:TYR:HD1 | 8:XH:65:TYR:HD2 | 1.55 | 0.54 |
| 17:XQ:33:GLY:O | 17:XQ:34:LYS:O | 2.25 | 0.54 |
| 27:YD:34:VAL:C | 27:YD:35:LYS:HG3 | 2.28 | 0.54 |
| 27:YD:183:ARG:HG2 | 27:YD:183:ARG:NH1 | 2.12 | 0.54 |
| 28:YE:186:GLY:O | 28:YE:188:VAL:N | 2.40 | 0.54 |
| 29:YF:53:THR:C | 29:YF:55:GLY:H | 2.11 | 0.54 |
| 31:YH:126:PRO:HD2 | 31:YH:127:GLU:H | 1.73 | 0.54 |
| 32:YI:110:ASP:CB | 32:YI:111:PRO:C | 2.76 | 0.54 |
| 34:YO:49:ARG:HB3 | 34:YO:49:ARG:NH1 | 2.23 | 0.54 |
| 39:YT:105:LEU:O | 39:YT:107:ASP:N | 2.41 | 0.54 |
| 40:YU:47:TYR:C | 40:YU:47:TYR:CD2 | 2.81 | 0.54 |
| 41:YV:66:ARG:HH11 | 41:YV:66:ARG:CB | 2.20 | 0.54 |
| 44:YY:5:MET:HE1 | 44:YY:32:PRO:HB3 | 1.90 | 0.54 |
| 50:Y4:63:TYR:C | 50:Y4:65:ASP:N | 2.61 | 0.54 |
| 52:Y6:12:GLU:HG2 | 52:Y6:52:VAL:O | 2.07 | 0.54 |
| 53:Y7:10:ARG:NH1 | 53:Y7:14:LYS:HE3 | 2.23 | 0.54 |
| 1:QA:342:C:H2' | 1:QA:343:U:O4' | 2.07 | 0.53 |
| 2:QB:75:LYS:HD3 | 2:QB:75:LYS:C | 2.28 | 0.53 |
| 4:QD:31:CYS:O | 4:QD:32:ALA:HB3 | 2.08 | 0.53 |
| 4:QD:79:PHE:CE2 | 4:QD:83:SER:HB2 | 2.44 | 0.53 |
| 4:QD:173:TRP:CD1 | 4:QD:174:LEU:HG | 2.44 | 0.53 |
| 8:QH:77:GLU:HG2 | 8:QH:78:GLN:N | 2.22 | 0.53 |
| 9:QI:99:LEU:O | 9:QI:101:PHE:N | 2.41 | 0.53 |
| 12:QL:6:THR:OG1 | 12:QL:9:GLN:HG3 | 2.08 | 0.53 |
| 13:QM:66:LEU:O | 13:QM:67:GLU:C | 2.46 | 0.53 |
| 17:QQ:5:VAL:O | 17:QQ:6:LEU:HD23 | 2.08 | 0.53 |
| 18:QR:25:THR:C | 18:QR:26:LEU:HD23 | 2.29 | 0.53 |
| 25:RA:818:G:N1 | 25:RA:1188:U:OP2 | 2.41 | 0.53 |
| 25:RA:1287:A:N7 | 37:RR:107:ASP:HB2 | 2.22 | 0.53 |
| 25:RA:1405:U:H2' | 25:RA:1406:U:C6 | 2.44 | 0.53 |
| 25:RA:2540:C:O2' | 25:RA:2740:A:N3 | 2.40 | 0.53 |
| 27:RD:85:ASP:OD2 | 27:RD:88:ARG:HG2 | 2.07 | 0.53 |
| 27:RD:158:ALA:HB3 | 27:RD:161:THR:HG21 | 1.90 | 0.53 |
| 28:RE:14:ILE:CG1 | 28:RE:15:PHE:H | 2.08 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 28:RE:53:PRO:O | 28:RE:74:PRO:HA | 2.07 | 0.53 |
| 29:RF:53:THR:C | 29:RF:55:GLY:H | 2.10 | 0.53 |
| 29:RF:116:ASP:OD1 | 29:RF:119:ARG:NH2 | 2.41 | 0.53 |
| 30:RG:81:LYS:O | 30:RG:82:LEU:CB | 2.56 | 0.53 |
| 31:RH:139:GLN:O | 31:RH:143:GLN:HB2 | 2.09 | 0.53 |
| 32:RI:110:ASP:HB3 | 32:RI:111:PRO:C | 2.29 | 0.53 |
| 33:RN:42:TRP:CD1 | 40:RU:63:VAL:HG11 | 2.42 | 0.53 |
| 33:RN:70:LYS:C | 33:RN:71:ILE:HD13 | 2.28 | 0.53 |
| 35:RP:37:GLY:C | 35:RP:41:ARG:HD3 | 2.29 | 0.53 |
| 36:RQ:81:VAL:C | 36:RQ:82:ARG:CG | 2.76 | 0.53 |
| 39:RT:14:TYR:H | 39:RT:14:TYR:HD1 | 1.56 | 0.53 |
| 40:RU:24:TYR:O | 40:RU:29:SER:HB3 | 2.08 | 0.53 |
| 45:RZ:94:GLU:CB | 45:RZ:130:PRO:CD | 2.86 | 0.53 |
| 1:XA:711:G:H2' | 1:XA:712:A:H8 | 1.73 | 0.53 |
| 1:XA:791:G:H2' | 1:XA:792:A:H5' | 1.90 | 0.53 |
| 1:XA:1114:C:H1' | 14:XN:60:SER:HB2 | 1.89 | 0.53 |
| 1:XA:1216:G:H5'' | 14:XN:5:ALA:CB | 2.37 | 0.53 |
| 4:XD:120:LEU:HD22 | 4:XD:125:HIS:CB | 2.38 | 0.53 |
| 9:XI:99:LEU:O | 9:XI:101:PHE:N | 2.41 | 0.53 |
| 14:XN:22:THR:HB | 14:XN:33:VAL:HG11 | 1.88 | 0.53 |
| 14:XN:40:CYS:H | 14:XN:43:CYS:HB2 | 1.73 | 0.53 |
| 25:YA:870:A:H5'' | 36:YQ:6:ARG:O | 2.08 | 0.53 |
| 25:YA:1440:G:H2' | 25:YA:1441:G:H8 | 1.73 | 0.53 |
| 25:YA:1525:G:H2' | 25:YA:1526:G:H8 | 1.74 | 0.53 |
| 25:YA:2688:U:O2' | 25:YA:2721:A:N6 | 2.41 | 0.53 |
| 27:YD:85:ASP:OD2 | 27:YD:88:ARG:HG2 | 2.07 | 0.53 |
| 28:YE:14:ILE:HD11 | 39:YT:14:TYR:CZ | 2.42 | 0.53 |
| 28:YE:25:VAL:HG11 | 39:YT:11:GLU:HG2 | 1.90 | 0.53 |
| 29:YF:51:THR:O | 29:YF:93:LYS:NZ | 2.38 | 0.53 |
| 31:YH:12:PRO:O | 31:YH:13:LYS:HB2 | 2.07 | 0.53 |
| 31:YH:125:VAL:HA | 31:YH:126:PRO:CB | 2.29 | 0.53 |
| 34:YO:12:ASP:OD1 | 34:YO:85:VAL:HG13 | 2.08 | 0.53 |
| 35:YP:37:GLY:C | 35:YP:41:ARG:HD3 | 2.29 | 0.53 |
| 37:YR:91:GLN:HG2 | 37:YR:91:GLN:O | 2.08 | 0.53 |
| 39:YT:88:ILE:C | 39:YT:88:ILE:HD12 | 2.29 | 0.53 |
| 40:YU:74:LEU:HD13 | 40:YU:79:PHE:HB2 | 1.89 | 0.53 |
| 45:YZ:125:LEU:C | 45:YZ:164:ALA:HB3 | 2.29 | 0.53 |
| 46:Y0:53:MET:HA | 46:Y0:58:THR:O | 2.08 | 0.53 |
| 49:Y3:56:VAL:CG1 | 49:Y3:57:GLU:H | 2.20 | 0.53 |
| 54:Y8:63:PRO:O | 54:Y8:64:TYR:HB2 | 2.07 | 0.53 |
| 1:QA:46:G:H2' | 1:QA:366:C:C5 | 2.43 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:QA:1129:C:H4' | 1:QA:1130:A:O5' | 2.07 | 0.53 |
| 1:QA:1286:A:C8 | 1:QA:1287:A:H4' | 2.43 | 0.53 |
| 6:QF:41:GLU:HG2 | 6:QF:43:LEU:HD11 | 1.89 | 0.53 |
| 11:QK:24:SER:HB3 | 11:QK:27:ASN:O | 2.08 | 0.53 |
| 16:QP:75:ARG:C | 16:QP:77:ALA:H | 2.11 | 0.53 |
| 19:QS:15:LEU:CD2 | 19:QS:15:LEU:H | 2.21 | 0.53 |
| 25:RA:527:C:N4 | 25:RA:2779:U:H5'' | 2.22 | 0.53 |
| 25:RA:2630:G:H2' | 25:RA:2631:G:C8 | 2.43 | 0.53 |
| 27:RD:211:ARG:HD2 | 27:RD:214:TRP:CZ3 | 2.43 | 0.53 |
| 31:RH:153:LYS:HA | 31:RH:153:LYS:CE | 2.37 | 0.53 |
| 33:RN:137:LYS:HG3 | 33:RN:138:LEU:N | 2.23 | 0.53 |
| 34:RO:78:ARG:O | 39:RT:73:GLU:HG3 | 2.08 | 0.53 |
| 35:RP:64:LYS:HG3 | 54:R8:25:MET:SD | 2.48 | 0.53 |
| 39:RT:88:ILE:C | 39:RT:88:ILE:HD12 | 2.29 | 0.53 |
| 40:RU:47:TYR:C | 40:RU:47:TYR:CD2 | 2.81 | 0.53 |
| 44:RY:44:ILE:CG1 | 44:RY:45:VAL:N | 2.70 | 0.53 |
| 49:R3:35:ARG:HB3 | 49:R3:37:LEU:CD2 | 2.37 | 0.53 |
| 1:XA:1111:A:N1 | 3:XC:177:THR:HG23 | 2.24 | 0.53 |
| 2:XB:102:LEU:HB3 | 2:XB:180:LEU:HD12 | 1.90 | 0.53 |
| 3:XC:3:ASN:ND2 | 3:XC:3:ASN:H | 2.05 | 0.53 |
| 9:XI:13:ALA:HA | 9:XI:66:ARG:O | 2.08 | 0.53 |
| 9:XI:53:VAL:CB | 9:XI:95:LYS:HE3 | 2.36 | 0.53 |
| 25:YA:297:C:H2' | 25:YA:298:G:O4' | 2.08 | 0.53 |
| 25:YA:1705:G:C6 | 25:YA:1706:U:C4 | 2.97 | 0.53 |
| 25:YA:2839:G:H5' | 37:YR:46:GLY:HA2 | 1.89 | 0.53 |
| 32:YI:76:THR:HG23 | 32:YI:139:GLN:O | 2.08 | 0.53 |
| 34:YO:12:ASP:CG | 34:YO:14:THR:HG23 | 2.29 | 0.53 |
| 45:YZ:52:SER:C | 45:YZ:53:ILE:HG13 | 2.29 | 0.53 |
| 52:Y6:11:LEU:CD1 | 52:Y6:51:GLU:HG3 | 2.38 | 0.53 |
| 1:QA:126:G:OP1 | 1:QA:605:U:O2' | 2.25 | 0.53 |
| 2:QB:134:GLU:O | 2:QB:138:LEU:HD12 | 2.07 | 0.53 |
| 3:QC:51:GLY:O | 3:QC:70:VAL:HG13 | 2.09 | 0.53 |
| 3:QC:173:VAL:HG12 | 3:QC:173:VAL:O | 2.08 | 0.53 |
| 7:QG:12:LEU:HD22 | 7:QG:12:LEU:N | 2.23 | 0.53 |
| 9:QI:13:ALA:HA | 9:QI:66:ARG:O | 2.08 | 0.53 |
| 13:QM:76:ALA:O | 13:QM:79:LYS:HB3 | 2.09 | 0.53 |
| 25:RA:513:A:H5' | 25:RA:1216:G:O2' | 2.08 | 0.53 |
| 25:RA:2150:U:H2' | 25:RA:2151:G:C8 | 2.44 | 0.53 |
| 25:RA:2415:G:O3' | 35:RP:66:GLY:HA3 | 2.08 | 0.53 |
| 25:RA:2636:U:OP2 | 28:RE:79:ARG:NH1 | 2.42 | 0.53 |
| 27:RD:206:LEU:O | 27:RD:211:ARG:NH1 | 2.38 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 43:RX:53:LYS:NZ | 43:RX:55:ASN:HD21 | 2.06 | 0.53 |
| 45:RZ:7:ALA:O | 45:RZ:8:TYR:CD2 | 2.61 | 0.53 |
| 46:R0:49:LYS:O | 46:R0:50:ASN:HB2 | 2.07 | 0.53 |
| 50:R4:37:SER:C | 50:R4:39:CYS:N | 2.62 | 0.53 |
| 51:R5:16:ARG:NH1 | 51:R5:17:ASP:OD1 | 2.41 | 0.53 |
| 51:R5:44:THR:O | 51:R5:46:CYS:N | 2.41 | 0.53 |
| 53:R7:10:ARG:NH1 | 53:R7:14:LYS:HE3 | 2.23 | 0.53 |
| 54:R8:58:ILE:O | 54:R8:61:LEU:HG | 2.08 | 0.53 |
| 1:XA:407:G:H1 | 1:XA:435:C:H42 | 1.57 | 0.53 |
| 1:XA:518:C:H2' | 1:XA:530:G:C4 | 2.43 | 0.53 |
| 1:XA:737:A:H2' | 1:XA:738:C:C6 | 2.43 | 0.53 |
| 2:XB:24:TRP:CE2 | 2:XB:26:PRO:HD3 | 2.43 | 0.53 |
| 6:XF:89:MET:HG2 | 6:XF:89:MET:O | 2.09 | 0.53 |
| 7:XG:85:TYR:HE1 | 7:XG:154:TYR:HE1 | 1.56 | 0.53 |
| 7:XG:113:GLU:HB2 | 7:XG:119:ARG:CG | 2.35 | 0.53 |
| 10:XJ:16:LEU:O | 10:XJ:20:ALA:HB2 | 2.08 | 0.53 |
| 11:XK:125:PHE:HD1 | 11:XK:125:PHE:N | 2.05 | 0.53 |
| 12:XL:83:VAL:CG2 | 12:XL:100:ILE:HG23 | 2.38 | 0.53 |
| 13:XM:11:ARG:NH2 | 30:YG:146:TYR:HD2 | 2.03 | 0.53 |
| 25:YA:482:A:O2' | 44:YY:47:LYS:NZ | 2.38 | 0.53 |
| 25:YA:1434:A:H61 | 25:YA:1558:A:H62 | 1.55 | 0.53 |
| 25:YA:1754:C:H2' | 25:YA:1755:A:C8 | 2.42 | 0.53 |
| 25:YA:2469:A:H2 | 25:YA:2481:G:N2 | 2.04 | 0.53 |
| 25:YA:2723:C:O3' | 37:YR:1:MET:HE2 | 2.08 | 0.53 |
| 26:YB:111:U:H2' | 26:YB:112:G:H8 | 1.73 | 0.53 |
| 27:YD:25:THR:HG21 | 27:YD:81:ALA:CB | 2.38 | 0.53 |
| 27:YD:263:ARG:HB2 | 27:YD:263:ARG:HH11 | 1.67 | 0.53 |
| 29:YF:197:ASP:O | 29:YF:198:ALA:HB3 | 2.07 | 0.53 |
| 30:YG:139:LEU:HD22 | 30:YG:146:TYR:HD1 | 1.73 | 0.53 |
| 35:YP:88:LEU:HD23 | 35:YP:89:ALA:N | 2.24 | 0.53 |
| 37:YR:70:LEU:HD13 | 37:YR:75:LEU:HD11 | 1.88 | 0.53 |
| 38:YS:74:ALA:HB1 | 38:YS:107:GLU:HB3 | 1.89 | 0.53 |
| 41:YV:35:LEU:HD22 | 41:YV:35:LEU:N | 2.23 | 0.53 |
| 42:YW:28:SER:HB3 | 42:YW:31:GLU:HB2 | 1.90 | 0.53 |
| 44:YY:90:LEU:HD22 | 44:YY:90:LEU:H | 1.73 | 0.53 |
| 45:YZ:94:GLU:CB | 45:YZ:130:PRO:CD | 2.86 | 0.53 |
| 48:Y2:16:LEU:O | 48:Y2:16:LEU:CG | 2.49 | 0.53 |
| 48:Y2:41:ILE:HD11 | 48:Y2:44:LEU:HB2 | 1.90 | 0.53 |
| 52:Y6:13:CYS:O | 52:Y6:14:THR:HB | 2.08 | 0.53 |
| 1:QA:407:G:OP1 | 4:QD:3:ARG:NH1 | 2.41 | 0.53 |
| 1:QA:1422:G:H5'' | 34:RO:48:PRO:HG3 | 1.90 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 5:QE:12:LEU:O | 5:QE:13:ILE:HD12 | 2.08 | 0.53 |
| 5:QE:140:ARG:HB2 | 5:QE:140:ARG:NH1 | 2.24 | 0.53 |
| 14:QN:40:CYS:H | 14:QN:43:CYS:HB3 | 1.72 | 0.53 |
| 15:QO:7:GLU:O | 15:QO:11:VAL:HG23 | 2.08 | 0.53 |
| 25:RA:270(S):G:O4' | 47:R1:78:LYS:HD2 | 2.08 | 0.53 |
| 25:RA:338:G:OP1 | 44:RY:4:LYS:NZ | 2.37 | 0.53 |
| 25:RA:2292:C:H2' | 25:RA:2293:C:C6 | 2.43 | 0.53 |
| 25:RA:2503:A:O2' | 25:RA:2505:G:OP2 | 2.25 | 0.53 |
| 27:RD:124:PRO:HB2 | 27:RD:126:GLN:NE2 | 2.23 | 0.53 |
| 29:RF:34:TRP:CH2 | 35:RP:8:PRO:HB3 | 2.43 | 0.53 |
| 32:RI:38:LEU:HD12 | 32:RI:38:LEU:N | 2.11 | 0.53 |
| 34:RO:12:ASP:CG | 34:RO:14:THR:HG23 | 2.29 | 0.53 |
| 35:RP:140:ALA:O | 35:RP:141:ALA:HB2 | 2.08 | 0.53 |
| 37:RR:28:LEU:HD13 | 37:RR:28:LEU:O | 2.08 | 0.53 |
| 37:RR:91:GLN:O | 37:RR:91:GLN:HG2 | 2.08 | 0.53 |
| 39:RT:105:LEU:O | 39:RT:107:ASP:N | 2.41 | 0.53 |
| 41:RV:66:ARG:HH11 | 41:RV:66:ARG:CB | 2.20 | 0.53 |
| 44:RY:95:LYS:HA | 44:RY:101:LYS:H | 1.72 | 0.53 |
| 49:R3:2:PRO:O | 49:R3:3:ARG:O | 2.25 | 0.53 |
| 50:R4:15:ILE:HD13 | 50:R4:15:ILE:H | 1.74 | 0.53 |
| 1:XA:418:C:H2' | 1:XA:419:C:C6 | 2.44 | 0.53 |
| 1:XA:1184:G:H2' | 1:XA:1185:G:C8 | 2.44 | 0.53 |
| 1:XA:1320:C:H5' | 19:XS:70:LYS:HG3 | 1.89 | 0.53 |
| 3:XC:53:ALA:HB2 | 3:XC:115:LEU:HD21 | 1.90 | 0.53 |
| 9:XI:47:LEU:HB3 | 9:XI:50:LEU:HD12 | 1.90 | 0.53 |
| 12:XL:42:THR:HA | 12:XL:53:ARG:O | 2.08 | 0.53 |
| 19:XS:63:THR:O | 19:XS:66:MET:HG2 | 2.09 | 0.53 |
| 21:XU:14:TRP:CZ3 | 21:XU:15:ARG:HD3 | 2.43 | 0.53 |
| 25:YA:1300:U:H4' | 25:YA:1301:A:O5' | 2.09 | 0.53 |
| 25:YA:1686:C:H2' | 25:YA:1687:G:O4' | 2.07 | 0.53 |
| 25:YA:2250:G:C8 | 25:YA:2496:C:H5'' | 2.43 | 0.53 |
| 25:YA:2853:C:H42 | 25:YA:2864:G:H1 | 1.56 | 0.53 |
| 31:YH:59:ARG:HH11 | 31:YH:59:ARG:CG | 2.20 | 0.53 |
| 33:YN:70:LYS:C | 33:YN:71:ILE:HD13 | 2.28 | 0.53 |
| 34:YO:7:TYR:C | 34:YO:8:LEU:HD22 | 2.29 | 0.53 |
| 50:Y4:37:SER:C | 50:Y4:39:CYS:N | 2.62 | 0.53 |
| 1:QA:487:A:C2 | 1:QA:488:C:H1' | 2.43 | 0.53 |
| 1:QA:872:A:C5 | 1:QA:874:G:C8 | 2.96 | 0.53 |
| 1:QA:1053:G:O6 | 1:QA:1199:U:H2' | 2.08 | 0.53 |
| 1:QA:1205:U:H1' | 3:QC:195:VAL:CG2 | 2.39 | 0.53 |
| 1:QA:1235:U:O2' | 1:QA:1305:G:O5' | 2.26 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:QA:1412:C:H2' | 1:QA:1413:A:C8 | 2.44 | 0.53 |
| 2:QB:134:GLU:HB3 | 2:QB:138:LEU:CD1 | 2.39 | 0.53 |
| 2:QB:187:LEU:HD22 | 2:QB:201:ILE:O | 2.08 | 0.53 |
| 3:QC:78:GLY:HA3 | 3:QC:83:ARG:CB | 2.38 | 0.53 |
| 4:QD:147:ALA:HA | 4:QD:182:LYS:HA | 1.91 | 0.53 |
| 4:QD:198:VAL:HG12 | 4:QD:199:ASN:H | 1.74 | 0.53 |
| 17:QQ:11:VAL:HG22 | 17:QQ:20:THR:O | 2.09 | 0.53 |
| 25:RA:177:G:H5' | 25:RA:178:G:C8 | 2.43 | 0.53 |
| 25:RA:279:C:H42 | 25:RA:361:G:H1 | 1.57 | 0.53 |
| 25:RA:304:G:H2' | 25:RA:305:U:C6 | 2.44 | 0.53 |
| 25:RA:336:C:O2' | 44:RY:35:TYR:OH | 2.23 | 0.53 |
| 25:RA:784:A:O2' | 25:RA:785:G:H5'' | 2.09 | 0.53 |
| 25:RA:1297:C:H2' | 25:RA:1298:C:C6 | 2.43 | 0.53 |
| 25:RA:2351:G:O6 | 54:R8:39:LYS:HG2 | 2.09 | 0.53 |
| 28:RE:14:ILE:HG23 | 28:RE:15:PHE:N | 2.22 | 0.53 |
| 29:RF:32:LEU:HD12 | 29:RF:36:VAL:HG23 | 1.89 | 0.53 |
| 33:RN:120:LEU:CD1 | 33:RN:122:VAL:HG23 | 2.38 | 0.53 |
| 34:RO:49:ARG:HB3 | 34:RO:49:ARG:NH1 | 2.23 | 0.53 |
| 36:RQ:119:ARG:HG2 | 36:RQ:119:ARG:NH1 | 2.20 | 0.53 |
| 36:RQ:134:ARG:CZ | 45:RZ:122:ARG:HH22 | 2.22 | 0.53 |
| 43:RX:60:ARG:NH1 | 53:R7:47:ARG:HH22 | 2.07 | 0.53 |
| 44:RY:84:ARG:NH1 | 44:RY:97:ARG:HB2 | 2.11 | 0.53 |
| 44:RY:97:ARG:NH2 | 44:RY:98:VAL:CB | 2.65 | 0.53 |
| 52:R6:11:LEU:CD1 | 52:R6:51:GLU:HG3 | 2.39 | 0.53 |
| 52:R6:13:CYS:O | 52:R6:14:THR:HB | 2.08 | 0.53 |
| 54:R8:29:LYS:HB2 | 54:R8:44:LYS:HG2 | 1.91 | 0.53 |
| 1:XA:713:G:H2' | 1:XA:714:G:C8 | 2.43 | 0.53 |
| 1:XA:811:C:H4' | 1:XA:900:A:N6 | 2.23 | 0.53 |
| 1:XA:1050:G:N2 | 1:XA:1209:C:H1' | 2.24 | 0.53 |
| 1:XA:1233:G:O2' | 1:XA:1365:G:OP1 | 2.21 | 0.53 |
| 4:XD:12:CYS:CB | 4:XD:31:CYS:O | 2.56 | 0.53 |
| 4:XD:79:PHE:CE2 | 4:XD:83:SER:HB2 | 2.43 | 0.53 |
| 4:XD:173:TRP:CD1 | 4:XD:174:LEU:HG | 2.44 | 0.53 |
| 7:XG:95:ARG:CZ | 7:XG:99:LEU:HD11 | 2.38 | 0.53 |
| 13:XM:39:ILE:HD11 | 13:XM:56:LEU:HB2 | 1.90 | 0.53 |
| 15:XO:8:LYS:HB2 | 15:XO:8:LYS:HZ2 | 1.73 | 0.53 |
| 17:XQ:11:VAL:HG22 | 17:XQ:20:THR:O | 2.09 | 0.53 |
| 19:XS:7:LYS:HG3 | 19:XS:8:GLY:N | 2.22 | 0.53 |
| 25:YA:587:C:H4' | 25:YA:588:U:O5' | 2.08 | 0.53 |
| 25:YA:1020:A:N1 | 25:YA:1141:U:H2' | 2.23 | 0.53 |
| 25:YA:1127:A:N1 | 25:YA:2463:C:O2' | 2.41 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:YA:1204:A:HO2' | 25:YA:1205:U:P | 2.30 | 0.53 |
| 25:YA:1428:C:O2' | 25:YA:1569:A:OP2 | 2.18 | 0.53 |
| 25:YA:2341:G:H2' | 25:YA:2342:C:C6 | 2.43 | 0.53 |
| 25:YA:2584:U:H2' | 25:YA:2585:U:H2' | 1.91 | 0.53 |
| 25:YA:2758:A:C2 | 25:YA:2759:G:H1' | 2.44 | 0.53 |
| 26:YB:14:U:OP2 | 26:YB:70:C:O2' | 2.26 | 0.53 |
| 27:YD:25:THR:CG2 | 27:YD:81:ALA:HB1 | 2.38 | 0.53 |
| 33:YN:134:ARG:N | 33:YN:135:PRO:CD | 2.58 | 0.53 |
| 35:YP:125:VAL:O | 35:YP:145:PRO:HD2 | 2.08 | 0.53 |
| 37:YR:1:MET:O | 37:YR:2:ARG:HG3 | 2.07 | 0.53 |
| 39:YT:110:ILE:HG23 | 39:YT:111:ARG:N | 2.24 | 0.53 |
| 41:YV:81:TYR:C | 41:YV:82:ARG:HG3 | 2.28 | 0.53 |
| 47:Y1:87:PRO:O | 47:Y1:91:LYS:N | 2.32 | 0.53 |
| 51:Y5:16:ARG:NH1 | 51:Y5:17:ASP:OD1 | 2.41 | 0.53 |
| 1:QA:37:U:O2' | 1:QA:500:G:H4' | 2.08 | 0.53 |
| 1:QA:1022:G:H2' | 1:QA:1023:G:C8 | 2.43 | 0.53 |
| 2:QB:233:SER:OG | 2:QB:234:PRO:HD2 | 2.09 | 0.53 |
| 4:QD:108:LEU:HD11 | 4:QD:174:LEU:CD2 | 2.37 | 0.53 |
| 4:QD:120:LEU:HD22 | 4:QD:125:HIS:CB | 2.37 | 0.53 |
| 4:QD:153:ARG:NH1 | 4:QD:181:MET:CG | 2.71 | 0.53 |
| 10:QJ:16:LEU:O | 10:QJ:20:ALA:HB2 | 2.08 | 0.53 |
| 17:QQ:65:ILE:HD12 | 17:QQ:65:ILE:H | 1.73 | 0.53 |
| 18:QR:58:LEU:HD12 | 18:QR:58:LEU:H | 1.72 | 0.53 |
| 25:RA:1693:U:H1' | 27:RD:14:ARG:HH22 | 1.72 | 0.53 |
| 25:RA:2335:A:HO2' | 25:RA:2336:A:P | 2.30 | 0.53 |
| 27:RD:25:THR:O | 27:RD:25:THR:HG23 | 2.07 | 0.53 |
| 27:RD:34:VAL:C | 27:RD:35:LYS:HG3 | 2.28 | 0.53 |
| 28:RE:25:VAL:HG11 | 39:RT:11:GLU:HG2 | 1.90 | 0.53 |
| 33:RN:78:TYR:N | 33:RN:78:TYR:HD1 | 2.07 | 0.53 |
| 34:RO:7:TYR:C | 34:RO:8:LEU:HD22 | 2.29 | 0.53 |
| 34:RO:12:ASP:OD1 | 34:RO:85:VAL:HG13 | 2.08 | 0.53 |
| 34:RO:14:THR:HG21 | 34:RO:86:ILE:HD13 | 1.91 | 0.53 |
| 41:RV:7:THR:CG2 | 41:RV:22:VAL:HG11 | 2.39 | 0.53 |
| 41:RV:48:GLY:O | 41:RV:49:THR:O | 2.26 | 0.53 |
| 45:RZ:51:ALA:O | 45:RZ:52:SER:HB3 | 2.08 | 0.53 |
| 48:R2:41:ILE:HD11 | 48:R2:44:LEU:HB2 | 1.89 | 0.53 |
| 52:R6:9:LEU:HD13 | 52:R6:26:ASN:ND2 | 2.24 | 0.53 |
| 1:XA:793:U:O2 | 1:XA:1516:G:H4' | 2.09 | 0.53 |
| 1:XA:1028:C:H42 | 1:XA:1033:G:H1 | 1.57 | 0.53 |
| 1:XA:1241:G:H2' | 1:XA:1242:C:C6 | 2.44 | 0.53 |
| 2:XB:80:ILE:CD1 | 2:XB:208:ILE:HG23 | 2.21 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:XD:14:ARG:O | 4:XD:14:ARG:HD3 | 2.09 | 0.53 |
| 4:XD:172:PRO:HB2 | 4:XD:193:ASP:OD2 | 2.08 | 0.53 |
| 13:XM:3:ARG:NH2 | 30:YG:139:LEU:HD13 | 2.20 | 0.53 |
| 13:XM:34:LEU:CD1 | 13:XM:41:PRO:HG3 | 2.38 | 0.53 |
| 15:XO:62:GLN:N | 15:XO:65:ARG:HH12 | 2.06 | 0.53 |
| 25:YA:1871:A:H2' | 25:YA:1872:A:C8 | 2.43 | 0.53 |
| 25:YA:2292:C:P | 38:YS:17:ARG:HH22 | 2.30 | 0.53 |
| 25:YA:2698:U:H2' | 25:YA:2699:C:C6 | 2.43 | 0.53 |
| 29:YF:179:GLU:CD | 29:YF:179:GLU:H | 2.11 | 0.53 |
| 31:YH:40:GLU:O | 31:YH:41:MET:HB2 | 2.08 | 0.53 |
| 31:YH:128:PRO:CD | 31:YH:129:THR:N | 2.70 | 0.53 |
| 38:YS:56:LEU:O | 38:YS:58:LEU:HD22 | 2.09 | 0.53 |
| 41:YV:22:VAL:CG1 | 41:YV:23:GLU:N | 2.71 | 0.53 |
| 41:YV:41:GLY:HA3 | 41:YV:46:VAL:CG1 | 2.38 | 0.53 |
| 43:YX:60:ARG:NH1 | 53:Y7:47:ARG:HH22 | 2.07 | 0.53 |
| 50:Y4:37:SER:HB3 | 50:Y4:42:PHE:CD1 | 2.43 | 0.53 |
| 50:Y4:49:PHE:N | 50:Y4:49:PHE:CD1 | 2.76 | 0.53 |
| 50:Y4:56:VAL:HA | 50:Y4:60:GLN:CB | 2.28 | 0.53 |
| 54:Y8:58:ILE:O | 54:Y8:61:LEU:HG | 2.08 | 0.53 |
| 1:QA:444:C:H2' | 1:QA:445:G:C8 | 2.43 | 0.53 |
| 1:QA:455:C:H42 | 1:QA:477:G:H1 | 1.56 | 0.53 |
| 1:QA:1175:G:H2' | 1:QA:1176:A:H8 | 1.74 | 0.53 |
| 1:QA:1200:C:O2' | 1:QA:1201:A:OP2 | 2.18 | 0.53 |
| 2:QB:96:ARG:H | 2:QB:96:ARG:CD | 2.16 | 0.53 |
| 2:QB:102:LEU:HB3 | 2:QB:180:LEU:HD12 | 1.90 | 0.53 |
| 3:QC:3:ASN:ND2 | 3:QC:3:ASN:H | 2.06 | 0.53 |
| 3:QC:29:TYR:OH | 14:QN:54:PRO:HD2 | 2.09 | 0.53 |
| 7:QG:137:LYS:O | 7:QG:141:VAL:HG23 | 2.07 | 0.53 |
| 7:QG:150:ALA:HA | 11:QK:59:TYR:CD2 | 2.43 | 0.53 |
| 12:QL:42:THR:HA | 12:QL:53:ARG:O | 2.08 | 0.53 |
| 15:QO:6:GLU:CD | 15:QO:6:GLU:H | 2.12 | 0.53 |
| 18:QR:51:LEU:HD22 | 18:QR:55:ARG:HD2 | 1.89 | 0.53 |
| 25:RA:492:A:H2' | 25:RA:493:G:O4' | 2.09 | 0.53 |
| 25:RA:1050:A:O2' | 25:RA:2752:C:O2 | 2.27 | 0.53 |
| 25:RA:1491:G:H2' | 25:RA:1492:G:H8 | 1.73 | 0.53 |
| 25:RA:2198:A:C2 | 32:RI:29:TYR:HB2 | 2.44 | 0.53 |
| 28:RE:134:ILE:C | 28:RE:134:ILE:HD12 | 2.28 | 0.53 |
| 29:RF:129:PHE:O | 29:RF:142:TRP:CD1 | 2.62 | 0.53 |
| 32:RI:76:THR:HG23 | 32:RI:139:GLN:O | 2.08 | 0.53 |
| 32:RI:77:LEU:HD12 | 32:RI:77:LEU:O | 2.09 | 0.53 |
| 41:RV:51:VAL:CG1 | 41:RV:52:VAL:H | 2.22 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:RV:81:TYR:C | 41:RV:82:ARG:HG3 | 2.28 | 0.53 |
| 42:RW:43:GLY:O | 42:RW:44:ALA:C | 2.46 | 0.53 |
| 46:R0:56:ASP:C | 46:R0:56:ASP:OD2 | 2.47 | 0.53 |
| 54:R8:52:LYS:N | 54:R8:53:PRO:HD2 | 2.22 | 0.53 |
| 1:XA:165:C:H2' | 1:XA:166:G:H8 | 1.73 | 0.53 |
| 1:XA:186(E):C:N4 | 1:XA:191(B):G:H1 | 2.00 | 0.53 |
| 1:XA:1002:G:H1 | 1:XA:1038:C:H42 | 1.56 | 0.53 |
| 1:XA:1218:C:H2' | 1:XA:1219:U:C6 | 2.43 | 0.53 |
| 4:XD:13:ARG:HD2 | 4:XD:38:TYR:O | 2.09 | 0.53 |
| 4:XD:23:GLY:HA3 | 4:XD:112:VAL:CG2 | 2.38 | 0.53 |
| 6:XF:78:GLU:OE2 | 6:XF:81:ILE:HD12 | 2.08 | 0.53 |
| 9:XI:4:TYR:CE2 | 9:XI:88:TYR:HB2 | 2.44 | 0.53 |
| 9:XI:28:VAL:HG13 | 9:XI:63:ILE:HG21 | 1.90 | 0.53 |
| 10:XJ:74:ILE:HD13 | 10:XJ:74:ILE:N | 2.16 | 0.53 |
| 12:XL:32:PHE:HE1 | 12:XL:86:ARG:HG3 | 1.73 | 0.53 |
| 13:XM:76:ALA:O | 13:XM:79:LYS:HB3 | 2.09 | 0.53 |
| 17:XQ:5:VAL:O | 17:XQ:6:LEU:HD23 | 2.08 | 0.53 |
| 25:YA:288:C:H2' | 25:YA:289:A:C8 | 2.44 | 0.53 |
| 25:YA:1002:G:H2' | 25:YA:1003:G:O4' | 2.09 | 0.53 |
| 25:YA:1219:G:OP2 | 40:YU:19:LYS:HD2 | 2.08 | 0.53 |
| 25:YA:2721:A:H2' | 25:YA:2722:G:O4' | 2.09 | 0.53 |
| 25:YA:2831:G:O2' | 25:YA:2884:U:OP1 | 2.19 | 0.53 |
| 27:YD:35:LYS:CG | 27:YD:64:ILE:H | 2.15 | 0.53 |
| 27:YD:77:ALA:HB2 | 27:YD:97:TYR:CG | 2.44 | 0.53 |
| 29:YF:116:ASP:OD1 | 29:YF:119:ARG:NH2 | 2.41 | 0.53 |
| 30:YG:125:PHE:C | 30:YG:127:GLY:H | 2.12 | 0.53 |
| 32:YI:109:ILE:HB | 32:YI:130:TYR:CZ | 2.43 | 0.53 |
| 33:YN:137:LYS:HG3 | 33:YN:138:LEU:N | 2.23 | 0.53 |
| 34:YO:2:ILE:HD12 | 34:YO:2:ILE:N | 2.23 | 0.53 |
| 35:YP:79:ARG:HD3 | 35:YP:110:TYR:CE1 | 2.43 | 0.53 |
| 38:YS:10:ARG:O | 38:YS:14:VAL:HG12 | 2.09 | 0.53 |
| 40:YU:39:LEU:O | 40:YU:40:PHE:C | 2.47 | 0.53 |
| 41:YV:48:GLY:O | 41:YV:49:THR:O | 2.26 | 0.53 |
| 42:YW:43:GLY:O | 42:YW:44:ALA:C | 2.46 | 0.53 |
| 45:YZ:4:ARG:HG2 | 45:YZ:4:ARG:NH1 | 2.24 | 0.53 |
| 45:YZ:57:ILE:HD12 | 45:YZ:57:ILE:N | 2.23 | 0.53 |
| 52:Y6:7:ILE:CG1 | 52:Y6:8:LYS:H | 2.07 | 0.53 |
| 52:Y6:9:LEU:HD13 | 52:Y6:26:ASN:ND2 | 2.24 | 0.53 |
| 52:Y6:25:LYS:HE2 | 52:Y6:27:LYS:HE3 | 1.90 | 0.53 |
| 1:QA:198:G:H2' | 1:QA:199:G:C8 | 2.44 | 0.53 |
| 1:QA:1069:C:O3' | 5:QE:25:ARG:NH1 | 2.41 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:QA:1152:A:H5'' | 10:QJ:13:HIS:HD2 | 1.71 | 0.53 |
| 1:QA:1376:U:H2' | 1:QA:1377:A:C8 | 2.44 | 0.53 |
| 2:QB:87:ARG:HH11 | 2:QB:223:ILE:HD12 | 1.73 | 0.53 |
| 4:QD:28:SER:CB | 4:QD:29:PRO:CD | 2.84 | 0.53 |
| 9:QI:53:VAL:CB | 9:QI:95:LYS:HE3 | 2.36 | 0.53 |
| 13:QM:39:ILE:HD11 | 13:QM:56:LEU:HB2 | 1.90 | 0.53 |
| 13:QM:92:HIS:CD2 | 13:QM:98:VAL:HG21 | 2.43 | 0.53 |
| 16:QP:72:ARG:HD3 | 16:QP:73:LEU:HD23 | 1.91 | 0.53 |
| 25:RA:900:A:H3' | 25:RA:901:A:H8 | 1.73 | 0.53 |
| 25:RA:1085:A:O2' | 25:RA:1086:A:OP1 | 2.25 | 0.53 |
| 25:RA:2298:A:N6 | 25:RA:2318:G:H8 | 1.92 | 0.53 |
| 25:RA:2395:C:H2' | 25:RA:2396:G:O4' | 2.08 | 0.53 |
| 25:RA:2705:A:H2' | 25:RA:2706:G:O4' | 2.08 | 0.53 |
| 25:RA:2728:U:O2' | 25:RA:2729:G:H5' | 2.09 | 0.53 |
| 25:RA:2847:U:H2' | 25:RA:2848:G:H5' | 1.90 | 0.53 |
| 27:RD:36:PRO:HA | 27:RD:62:TYR:O | 2.09 | 0.53 |
| 28:RE:20:ALA:O | 28:RE:21:VAL:CG2 | 2.48 | 0.53 |
| 39:RT:98:LYS:HB3 | 39:RT:100:TYR:CE1 | 2.43 | 0.53 |
| 40:RU:86:ALA:HB1 | 40:RU:88:ILE:HD11 | 1.90 | 0.53 |
| 42:RW:14:PRO:O | 42:RW:17:VAL:N | 2.42 | 0.53 |
| 43:RX:36:LYS:HA | 43:RX:39:ILE:HD12 | 1.91 | 0.53 |
| 45:RZ:123:ASP:N | 45:RZ:123:ASP:OD2 | 2.39 | 0.53 |
| 52:R6:25:LYS:HE2 | 52:R6:27:LYS:HE3 | 1.91 | 0.53 |
| 1:XA:89:U:O2' | 1:XA:90:C:OP1 | 2.24 | 0.53 |
| 1:XA:240:C:H2' | 1:XA:241:C:C6 | 2.44 | 0.53 |
| 1:XA:679:C:H2' | 1:XA:680:C:C6 | 2.44 | 0.53 |
| 1:XA:892:A:N6 | 1:XA:906:G:O2' | 2.41 | 0.53 |
| 2:XB:75:LYS:HD3 | 2:XB:75:LYS:C | 2.28 | 0.53 |
| 3:XC:78:GLY:HA3 | 3:XC:83:ARG:CB | 2.38 | 0.53 |
| 3:XC:134:ILE:CG2 | 3:XC:168:ALA:HB3 | 2.39 | 0.53 |
| 6:XF:75:LEU:HD21 | 6:XF:79:LEU:HD11 | 1.91 | 0.53 |
| 13:XM:81:LEU:HD13 | 13:XM:88:ARG:HD2 | 1.91 | 0.53 |
| 14:XN:40:CYS:H | 14:XN:43:CYS:CB | 2.22 | 0.53 |
| 18:XR:25:THR:C | 18:XR:26:LEU:HD23 | 2.29 | 0.53 |
| 25:YA:1729:A:H2' | 25:YA:1730:U:H5'' | 1.91 | 0.53 |
| 25:YA:1782:C:O2 | 25:YA:2608:G:O2' | 2.24 | 0.53 |
| 25:YA:2406:U:N3 | 35:YP:72:PRO:HB2 | 2.23 | 0.53 |
| 29:YF:34:TRP:CH2 | 35:YP:8:PRO:HB3 | 2.43 | 0.53 |
| 30:YG:179:PRO:HG3 | 50:Y4:38:LYS:HZ1 | 1.74 | 0.53 |
| 31:YH:12:PRO:HG3 | 31:YH:48:GLY:O | 2.09 | 0.53 |
| 31:YH:139:GLN:O | 31:YH:143:GLN:HB2 | 2.08 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:YQ:76:LYS:O | 36:YQ:88:GLY:HA3 | 2.09 | 0.53 |
| 36:YQ:134:ARG:CZ | 45:YZ:122:ARG:HH22 | 2.22 | 0.53 |
| 39:YT:3:ARG:HG3 | 39:YT:7:ILE:CG1 | 2.36 | 0.53 |
| 39:YT:34:VAL:CG1 | 39:YT:36:GLU:HG2 | 2.39 | 0.53 |
| 41:YV:38:LEU:HD13 | 41:YV:55:ALA:HB3 | 1.91 | 0.53 |
| 47:Y1:20:ARG:HG2 | 47:Y1:20:ARG:NH1 | 2.24 | 0.53 |
| 51:Y5:60:VAL:OXT | 51:Y5:60:VAL:CG1 | 2.56 | 0.53 |
| 1:QA:309:G:O2' | 1:QA:607:A:N1 | 2.37 | 0.53 |
| 1:QA:358:U:H2' | 1:QA:359:U:C6 | 2.43 | 0.53 |
| 1:QA:1292:U:H2' | 1:QA:1293:G:C8 | 2.44 | 0.53 |
| 2:QB:5:ILE:N | 2:QB:5:ILE:HD13 | 2.24 | 0.53 |
| 2:QB:206:ASP:O | 2:QB:207:ALA:HB3 | 2.08 | 0.53 |
| 5:QE:36:ASP:OD1 | 5:QE:37:ARG:N | 2.42 | 0.53 |
| 9:QI:4:TYR:CE2 | 9:QI:88:TYR:HB2 | 2.44 | 0.53 |
| 9:QI:28:VAL:HG13 | 9:QI:63:ILE:HG21 | 1.90 | 0.53 |
| 14:QN:40:CYS:H | 14:QN:43:CYS:CB | 2.22 | 0.53 |
| 16:QP:1:MET:SD | 16:QP:3:LYS:HE3 | 2.49 | 0.53 |
| 19:QS:29:ARG:HD3 | 19:QS:30:LEU:HD13 | 1.91 | 0.53 |
| 25:RA:518:G:C4' | 42:RW:18:ARG:HH12 | 2.09 | 0.53 |
| 25:RA:828:U:H4' | 25:RA:831:G:N1 | 2.24 | 0.53 |
| 25:RA:2404:C:H1' | 35:RP:67:MET:HE1 | 1.90 | 0.53 |
| 30:RG:125:PHE:C | 30:RG:127:GLY:H | 2.12 | 0.53 |
| 32:RI:109:ILE:HB | 32:RI:130:TYR:CZ | 2.43 | 0.53 |
| 33:RN:19:GLU:HA | 33:RN:59:LYS:HB2 | 1.91 | 0.53 |
| 37:RR:33:ARG:NH2 | 51:R5:55:ARG:CG | 2.66 | 0.53 |
| 38:RS:10:ARG:O | 38:RS:14:VAL:HG12 | 2.09 | 0.53 |
| 38:RS:25:ARG:HH11 | 38:RS:25:ARG:CB | 2.22 | 0.53 |
| 38:RS:89:ARG:HH11 | 38:RS:89:ARG:HG2 | 1.74 | 0.53 |
| 38:RS:106:ARG:HA | 38:RS:110:LEU:CG | 2.39 | 0.53 |
| 42:RW:8:ARG:HH11 | 42:RW:8:ARG:HG3 | 1.73 | 0.53 |
| 50:R4:54:GLY:O | 50:R4:71:ARG:HA | 2.08 | 0.53 |
| 1:XA:1297:C:HO2' | 1:XA:1298:C:C5' | 2.21 | 0.53 |
| 1:XA:1435:G:H2' | 1:XA:1436:U:C6 | 2.44 | 0.53 |
| 5:XE:87:SER:HB3 | 5:XE:131:ILE:CD1 | 2.39 | 0.53 |
| 19:XS:11:VAL:O | 19:XS:11:VAL:HG13 | 2.09 | 0.53 |
| 19:XS:29:ARG:HD3 | 19:XS:30:LEU:HD13 | 1.91 | 0.53 |
| 25:YA:287:C:O2' | 25:YA:288:C:O4' | 2.26 | 0.53 |
| 25:YA:738:G:O6 | 25:YA:739:G:N1 | 2.41 | 0.53 |
| 25:YA:1078:U:O2' | 25:YA:1079:C:OP2 | 2.24 | 0.53 |
| 25:YA:2844:G:H5' | 25:YA:2845:G:OP2 | 2.08 | 0.53 |
| 26:YB:116:G:H2' | 26:YB:117:G:C8 | 2.44 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 28:YE:119:ARG:HD3 | 28:YE:160:TYR:HB2 | 1.91 | 0.53 |
| 29:YF:129:PHE:O | 29:YF:142:TRP:CD1 | 2.62 | 0.53 |
| 33:YN:19:GLU:HA | 33:YN:59:LYS:HB2 | 1.91 | 0.53 |
| 33:YN:22:THR:CG2 | 33:YN:23:LEU:N | 2.61 | 0.53 |
| 33:YN:109:LYS:HD2 | 33:YN:109:LYS:H | 1.73 | 0.53 |
| 35:YP:64:LYS:HG3 | 54:Y8:25:MET:SD | 2.48 | 0.53 |
| 43:YX:53:LYS:NZ | 43:YX:55:ASN:HD21 | 2.06 | 0.53 |
| 1:QA:127:G:H4' | 17:QQ:2:PRO:HD2 | 1.91 | 0.53 |
| 1:QA:222:U:H2' | 1:QA:223:U:H6 | 1.72 | 0.53 |
| 1:QA:677:U:H1' | 11:QK:119:CYS:SG | 2.49 | 0.53 |
| 1:QA:983:A:N1 | 1:QA:1222:G:N2 | 2.55 | 0.53 |
| 2:QB:200:ILE:HG22 | 2:QB:201:ILE:N | 2.24 | 0.53 |
| 4:QD:206:PHE:HD2 | 4:QD:207:TYR:CD1 | 2.27 | 0.53 |
| 21:QU:14:TRP:CZ3 | 21:QU:15:ARG:HD3 | 2.43 | 0.53 |
| 25:RA:747:U:N3 | 51:R5:2:ALA:N | 2.57 | 0.53 |
| 25:RA:1436:G:H1' | 25:RA:1477:A:O2' | 2.07 | 0.53 |
| 25:RA:1798:U:H5' | 27:RD:259:THR:CG2 | 2.39 | 0.53 |
| 27:RD:25:THR:HG21 | 27:RD:82:ILE:H | 1.70 | 0.53 |
| 27:RD:43:ARG:NH1 | 27:RD:44:ASN:OD1 | 2.42 | 0.53 |
| 27:RD:155:LEU:CD1 | 27:RD:155:LEU:N | 2.71 | 0.53 |
| 31:RH:76:VAL:C | 31:RH:78:GLY:H | 2.13 | 0.53 |
| 45:RZ:154:ASP:CG | 45:RZ:155:LEU:N | 2.61 | 0.53 |
| 50:R4:47:GLN:O | 50:R4:48:ARG:HB2 | 2.07 | 0.53 |
| 1:XA:1184:G:H2' | 1:XA:1185:G:H8 | 1.74 | 0.53 |
| 5:XE:12:LEU:O | 5:XE:13:ILE:HD12 | 2.08 | 0.53 |
| 5:XE:36:ASP:OD1 | 5:XE:37:ARG:N | 2.42 | 0.53 |
| 9:XI:113:LYS:HD3 | 9:XI:119:ALA:O | 2.09 | 0.53 |
| 10:XJ:39:PRO:HB3 | 10:XJ:70:ARG:NH1 | 2.23 | 0.53 |
| 15:XO:7:GLU:O | 15:XO:11:VAL:HG23 | 2.08 | 0.53 |
| 15:XO:26:GLU:HA | 15:XO:81:LEU:HD22 | 1.91 | 0.53 |
| 20:XT:30:LYS:HE2 | 20:XT:72:LEU:HD12 | 1.91 | 0.53 |
| 25:YA:380:U:H2' | 25:YA:381:G:C8 | 2.42 | 0.53 |
| 28:YE:64:LYS:C | 28:YE:66:HIS:H | 2.12 | 0.53 |
| 29:YF:140:LEU:O | 29:YF:143:ALA:HB3 | 2.09 | 0.53 |
| 32:YI:114:LEU:O | 32:YI:115:ALA:HB3 | 2.09 | 0.53 |
| 35:YP:125:VAL:O | 35:YP:125:VAL:HG13 | 2.09 | 0.53 |
| 37:YR:56:LYS:C | 37:YR:58:GLY:N | 2.62 | 0.53 |
| 37:YR:67:LEU:HD13 | 37:YR:76:VAL:CG2 | 2.27 | 0.53 |
| 40:YU:92:ARG:NH2 | 40:YU:94:ASN:HD22 | 2.07 | 0.53 |
| 41:YV:7:THR:CG2 | 41:YV:22:VAL:HG11 | 2.39 | 0.53 |
| 42:YW:1:MET:HE2 | 42:YW:2:GLU:H | 1.74 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:QD:172:PRO:HB2 | 4:QD:193:ASP:OD2 | 2.08 | 0.52 |
| 6:QF:75:LEU:HD23 | 6:QF:79:LEU:HG | 1.91 | 0.52 |
| 7:QG:95:ARG:CZ | 7:QG:99:LEU:HD11 | 2.38 | 0.52 |
| 9:QI:47:LEU:HB3 | 9:QI:50:LEU:HD12 | 1.90 | 0.52 |
| 13:QM:65:LYS:NZ | 50:R4:52:THR:HG21 | 2.24 | 0.52 |
| 18:QR:29:PHE:CD2 | 18:QR:29:PHE:N | 2.76 | 0.52 |
| 19:QS:11:VAL:O | 19:QS:11:VAL:HG13 | 2.09 | 0.52 |
| 22:QV:4:G:HO2' | 22:QV:5:G:H8 | 1.56 | 0.52 |
| 22:QV:15:G:H22 | 22:QV:48:C:H42 | 1.57 | 0.52 |
| 25:RA:273:G:H1 | 25:RA:364:C:H42 | 1.56 | 0.52 |
| 25:RA:1337:G:H2' | 25:RA:1338:G:C8 | 2.41 | 0.52 |
| 25:RA:1509:C:N3 | 25:RA:1511:A:N6 | 2.58 | 0.52 |
| 25:RA:1667:G:H2' | 25:RA:1991:U:O4 | 2.08 | 0.52 |
| 25:RA:1674:G:H1' | 25:RA:1676:A:N6 | 2.25 | 0.52 |
| 25:RA:2070:G:H2' | 25:RA:2071:A:C8 | 2.44 | 0.52 |
| 25:RA:2159:G:H2' | 25:RA:2160:G:C8 | 2.43 | 0.52 |
| 25:RA:2313:C:H2' | 25:RA:2314:C:C6 | 2.44 | 0.52 |
| 27:RD:34:VAL:O | 27:RD:34:VAL:CG1 | 2.51 | 0.52 |
| 31:RH:12:PRO:HG3 | 31:RH:48:GLY:O | 2.09 | 0.52 |
| 31:RH:126:PRO:HD2 | 31:RH:127:GLU:H | 1.72 | 0.52 |
| 32:RI:85:GLU:HA | 32:RI:85:GLU:OE2 | 2.08 | 0.52 |
| 32:RI:120:ILE:HD11 | 32:RI:126:TYR:OH | 2.10 | 0.52 |
| 35:RP:79:ARG:HD3 | 35:RP:110:TYR:CE1 | 2.43 | 0.52 |
| 35:RP:125:VAL:O | 35:RP:125:VAL:HG13 | 2.09 | 0.52 |
| 36:RQ:76:LYS:O | 36:RQ:88:GLY:HA3 | 2.09 | 0.52 |
| 38:RS:86:ALA:O | 38:RS:87:PHE:HB3 | 2.10 | 0.52 |
| 45:RZ:120:ILE:HD12 | 45:RZ:171:ILE:H | 1.74 | 0.52 |
| 45:RZ:169:GLU:O | 45:RZ:170:THR:HG23 | 2.09 | 0.52 |
| 47:R1:85:LEU:HA | 47:R1:87:PRO:HD2 | 1.91 | 0.52 |
| 1:XA:947:G:H2' | 1:XA:948:C:C6 | 2.44 | 0.52 |
| 1:XA:1219:U:H2' | 1:XA:1220:G:C8 | 2.44 | 0.52 |
| 2:XB:188:ALA:HB3 | 2:XB:200:ILE:CG2 | 2.40 | 0.52 |
| 2:XB:206:ASP:O | 2:XB:207:ALA:HB3 | 2.08 | 0.52 |
| 3:XC:51:GLY:O | 3:XC:70:VAL:HG13 | 2.09 | 0.52 |
| 8:XH:87:SER:HA | 8:XH:93:VAL:HG23 | 1.91 | 0.52 |
| 8:XH:100:ILE:CB | 8:XH:125:ARG:HH12 | 2.20 | 0.52 |
| 13:XM:87:TYR:CE1 | 13:XM:91:ARG:HD3 | 2.44 | 0.52 |
| 15:XO:6:GLU:CD | 15:XO:6:GLU:H | 2.12 | 0.52 |
| 25:YA:205:G:O2' | 25:YA:206:U:P | 2.68 | 0.52 |
| 25:YA:1161:C:O2' | 41:YV:8:GLY:HA2 | 2.09 | 0.52 |
| 25:YA:1332:G:N2 | 25:YA:1610:A:N7 | 2.53 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 28:YE:137:HIS:HB3 | 28:YE:138:PRO:CD | 2.37 | 0.52 |
| 30:YG:16:ARG:HH11 | 30:YG:16:ARG:HG2 | 1.74 | 0.52 |
| 31:YH:44:VAL:O | 31:YH:44:VAL:CG2 | 2.58 | 0.52 |
| 31:YH:121:ILE:HG12 | 31:YH:135:GLY:HA3 | 1.91 | 0.52 |
| 32:YI:85:GLU:HA | 32:YI:85:GLU:OE2 | 2.08 | 0.52 |
| 35:YP:37:GLY:HA2 | 35:YP:41:ARG:NE | 2.23 | 0.52 |
| 37:YR:70:LEU:O | 37:YR:72:ASP:N | 2.43 | 0.52 |
| 41:YV:35:LEU:HD21 | 41:YV:57:VAL:CG2 | 2.30 | 0.52 |
| 45:YZ:6:LYS:O | 45:YZ:7:ALA:HB3 | 2.09 | 0.52 |
| 1:QA:167:G:H2' | 1:QA:168:G:H8 | 1.73 | 0.52 |
| 4:QD:166:LYS:HG2 | 27:YD:135:PHE:CZ | 2.42 | 0.52 |
| 5:QE:101:ILE:O | 5:QE:101:ILE:HG12 | 2.08 | 0.52 |
| 11:QK:91:ARG:NH2 | 18:QR:88:LYS:NZ | 2.57 | 0.52 |
| 13:QM:73:GLU:O | 13:QM:76:ALA:N | 2.42 | 0.52 |
| 13:QM:87:TYR:CE1 | 13:QM:91:ARG:HD3 | 2.44 | 0.52 |
| 18:QR:44:LEU:HD12 | 18:QR:44:LEU:N | 2.24 | 0.52 |
| 20:QT:30:LYS:HE2 | 20:QT:72:LEU:HD12 | 1.92 | 0.52 |
| 25:RA:49:A:H61 | 25:RA:177:G:H2' | 1.74 | 0.52 |
| 25:RA:1081:U:H3' | 25:RA:1082:U:H4' | 1.91 | 0.52 |
| 25:RA:2286:A:H3' | 52:R6:31:PRO:CG | 2.39 | 0.52 |
| 25:RA:2566:A:H4' | 25:RA:2567:G:O5' | 2.08 | 0.52 |
| 27:RD:77:ALA:HB2 | 27:RD:97:TYR:CG | 2.44 | 0.52 |
| 28:RE:61:ARG:O | 28:RE:63:LEU:N | 2.42 | 0.52 |
| 31:RH:40:GLU:O | 31:RH:41:MET:HB2 | 2.09 | 0.52 |
| 31:RH:44:VAL:O | 31:RH:44:VAL:CG2 | 2.57 | 0.52 |
| 36:RQ:29:PHE:HB3 | 36:RQ:65:PHE:CZ | 2.44 | 0.52 |
| 38:RS:83:LYS:O | 38:RS:109:GLY:CA | 2.46 | 0.52 |
| 39:RT:55:ASN:O | 39:RT:57:PHE:O | 2.26 | 0.52 |
| 39:RT:100:TYR:HB3 | 39:RT:103:ARG:NH1 | 2.25 | 0.52 |
| 39:RT:110:ILE:HG23 | 39:RT:111:ARG:N | 2.24 | 0.52 |
| 49:R3:9:VAL:HG12 | 49:R3:32:GLN:HE22 | 1.74 | 0.52 |
| 51:R5:55:ARG:HG3 | 51:R5:57:VAL:H | 1.74 | 0.52 |
| 1:XA:574:A:N3 | 1:XA:883:C:H1' | 2.24 | 0.52 |
| 1:XA:661:G:H1 | 1:XA:744:C:H42 | 1.57 | 0.52 |
| 1:XA:895:G:H1 | 1:XA:904:C:N4 | 2.06 | 0.52 |
| 1:XA:1308:U:H2' | 1:XA:1309:G:C8 | 2.45 | 0.52 |
| 2:XB:9:GLU:OE2 | 2:XB:9:GLU:N | 2.42 | 0.52 |
| 2:XB:80:ILE:HD11 | 2:XB:208:ILE:CG2 | 2.22 | 0.52 |
| 2:XB:233:SER:OG | 2:XB:234:PRO:HD2 | 2.09 | 0.52 |
| 7:XG:106:GLN:O | 7:XG:110:GLN:HG3 | 2.09 | 0.52 |
| 11:XK:77:MET:HE3 | 11:XK:80:VAL:HG12 | 1.90 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 19:XS:27:GLU:O | 19:XS:28:LYS:CG | 2.53 | 0.52 |
| 19:XS:65:ASN:ND2 | 19:XS:65:ASN:H | 2.08 | 0.52 |
| 25:YA:2531:A:H61 | 25:YA:2662:A:H61 | 1.56 | 0.52 |
| 27:YD:233:HIS:N | 27:YD:233:HIS:CD2 | 2.75 | 0.52 |
| 28:YE:7:VAL:O | 28:YE:196:VAL:HG13 | 2.09 | 0.52 |
| 28:YE:39:PRO:HG2 | 28:YE:40:GLU:OE1 | 2.09 | 0.52 |
| 29:YF:9:ILE:HD11 | 29:YF:125:LEU:CG | 2.36 | 0.52 |
| 29:YF:192:LEU:HD21 | 29:YF:194:MET:HE2 | 1.91 | 0.52 |
| 30:YG:111:LEU:HB2 | 50:Y4:38:LYS:HZ3 | 1.73 | 0.52 |
| 31:YH:2:SER:O | 31:YH:3:ARG:C | 2.47 | 0.52 |
| 31:YH:76:VAL:C | 31:YH:78:GLY:H | 2.13 | 0.52 |
| 31:YH:89:ILE:O | 31:YH:89:ILE:CG1 | 2.57 | 0.52 |
| 35:YP:147:LEU:O | 35:YP:148:LEU:CB | 2.57 | 0.52 |
| 36:YQ:29:PHE:HB3 | 36:YQ:65:PHE:CZ | 2.44 | 0.52 |
| 38:YS:25:ARG:HH11 | 38:YS:25:ARG:CB | 2.22 | 0.52 |
| 42:YW:8:ARG:HG3 | 42:YW:8:ARG:HH11 | 1.73 | 0.52 |
| 42:YW:25:ARG:HB2 | 42:YW:25:ARG:HH11 | 1.74 | 0.52 |
| 45:YZ:59:LEU:O | 45:YZ:60:GLU:CG | 2.54 | 0.52 |
| 45:YZ:105:VAL:CG1 | 45:YZ:138:GLU:HG2 | 2.39 | 0.52 |
| 45:YZ:120:ILE:HD12 | 45:YZ:171:ILE:H | 1.74 | 0.52 |
| 45:YZ:169:GLU:O | 45:YZ:170:THR:HG23 | 2.10 | 0.52 |
| 48:Y2:50:ILE:CD1 | 48:Y2:51:ARG:N | 2.61 | 0.52 |
| 49:Y3:6:VAL:HG12 | 49:Y3:56:VAL:HG22 | 1.92 | 0.52 |
| 52:Y6:14:THR:OG1 | 52:Y6:19:ARG:NE | 2.41 | 0.52 |
| 1:QA:376:G:H1 | 1:QA:387:U:H3 | 1.57 | 0.52 |
| 1:QA:446:G:H1 | 1:QA:488:C:N4 | 2.04 | 0.52 |
| 1:QA:1028(A):C:H42 | 1:QA:1032(B):G:H1 | 1.57 | 0.52 |
| 2:QB:92:TYR:CE1 | 2:QB:151:GLY:HA3 | 2.44 | 0.52 |
| 3:QC:140:ARG:HG3 | 3:QC:140:ARG:HH11 | 1.75 | 0.52 |
| 4:QD:176:LEU:HD12 | 4:QD:182:LYS:O | 2.10 | 0.52 |
| 5:QE:87:SER:HB3 | 5:QE:131:ILE:CD1 | 2.38 | 0.52 |
| 6:QF:89:MET:HG2 | 6:QF:89:MET:O | 2.09 | 0.52 |
| 7:QG:89:MET:CE | 7:QG:156:TRP:H | 2.22 | 0.52 |
| 10:QJ:4:ILE:HB | 10:QJ:74:ILE:CD1 | 2.37 | 0.52 |
| 19:QS:50:ALA:CB | 19:QS:57:HIS:HB3 | 2.37 | 0.52 |
| 19:QS:65:ASN:ND2 | 19:QS:65:ASN:H | 2.08 | 0.52 |
| 25:RA:685:A:H3' | 25:RA:685:A:P | 2.49 | 0.52 |
| 25:RA:1228:G:OP1 | 40:RU:13:LYS:HG2 | 2.10 | 0.52 |
| 25:RA:1251:C:OP1 | 40:RU:10:ARG:HG3 | 2.09 | 0.52 |
| 25:RA:2524:G:C2 | 25:RA:2540:C:C2 | 2.98 | 0.52 |
| 27:RD:134:ARG:HB2 | 27:RD:135:PHE:HD2 | 1.75 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 29:RF:125:LEU:HA | 29:RF:194:MET:O | 2.10 | 0.52 |
| 29:RF:192:LEU:HD21 | 29:RF:194:MET:HE2 | 1.91 | 0.52 |
| 32:RI:25:TYR:CE2 | 32:RI:29:TYR:CD2 | 2.97 | 0.52 |
| 32:RI:145:VAL:CG2 | 32:RI:146:ALA:H | 2.16 | 0.52 |
| 33:RN:12:ARG:NH1 | 33:RN:50:ASP:OD2 | 2.40 | 0.52 |
| 35:RP:92:GLU:HA | 35:RP:123:LEU:CD2 | 2.39 | 0.52 |
| 38:RS:56:LEU:O | 38:RS:58:LEU:HD22 | 2.09 | 0.52 |
| 39:RT:14:TYR:CD1 | 39:RT:14:TYR:N | 2.77 | 0.52 |
| 45:RZ:125:LEU:C | 45:RZ:164:ALA:HB3 | 2.29 | 0.52 |
| 47:R1:4:VAL:HG22 | 47:R1:5:CYS:N | 2.24 | 0.52 |
| 47:R1:20:ARG:HG2 | 47:R1:20:ARG:NH1 | 2.24 | 0.52 |
| 50:R4:49:PHE:N | 50:R4:49:PHE:CD1 | 2.76 | 0.52 |
| 1:XA:64:G:H5'' | 1:XA:65:U:OP1 | 2.09 | 0.52 |
| 3:XC:48:TYR:O | 3:XC:51:GLY:N | 2.41 | 0.52 |
| 3:XC:140:ARG:HG3 | 3:XC:140:ARG:HH11 | 1.75 | 0.52 |
| 3:XC:173:VAL:HG12 | 3:XC:173:VAL:O | 2.08 | 0.52 |
| 5:XE:140:ARG:HB2 | 5:XE:140:ARG:NH1 | 2.23 | 0.52 |
| 13:XM:73:GLU:O | 13:XM:76:ALA:N | 2.42 | 0.52 |
| 15:XO:29:VAL:HG11 | 15:XO:67:LEU:HD21 | 1.90 | 0.52 |
| 16:XP:75:ARG:C | 16:XP:77:ALA:H | 2.12 | 0.52 |
| 18:XR:36:ASN:O | 18:XR:36:ASN:ND2 | 2.32 | 0.52 |
| 25:YA:270(T):G:H5'' | 47:Y1:97:LEU:CD2 | 2.32 | 0.52 |
| 25:YA:557:U:H2' | 25:YA:558:G:C8 | 2.44 | 0.52 |
| 25:YA:2345:G:N3 | 25:YA:2381:C:H2' | 2.23 | 0.52 |
| 25:YA:2648:C:H2' | 25:YA:2649:U:H6 | 1.74 | 0.52 |
| 27:YD:35:LYS:HD3 | 27:YD:63:ARG:CA | 2.39 | 0.52 |
| 27:YD:155:LEU:CD1 | 27:YD:155:LEU:N | 2.71 | 0.52 |
| 28:YE:7:VAL:CG2 | 28:YE:8:LYS:H | 2.11 | 0.52 |
| 32:YI:120:ILE:HD11 | 32:YI:126:TYR:OH | 2.10 | 0.52 |
| 33:YN:57:ALA:O | 33:YN:58:ASP:HB3 | 2.09 | 0.52 |
| 33:YN:131:GLN:CG | 33:YN:132:ALA:H | 2.21 | 0.52 |
| 41:YV:34:GLU:O | 41:YV:36:PRO:HD3 | 2.09 | 0.52 |
| 42:YW:7:ALA:HB2 | 42:YW:50:VAL:CG2 | 2.40 | 0.52 |
| 42:YW:38:TYR:OH | 51:Y5:47:PRO:HG3 | 2.08 | 0.52 |
| 44:YY:61:ILE:HG23 | 44:YY:62:GLU:N | 2.24 | 0.52 |
| 50:Y4:40:HIS:N | 50:Y4:41:PRO:CD | 2.73 | 0.52 |
| 1:QA:243:A:H4' | 1:QA:244:U:O5' | 2.10 | 0.52 |
| 3:QC:134:ILE:CG2 | 3:QC:168:ALA:HB3 | 2.40 | 0.52 |
| 9:QI:118:LYS:HZ2 | 9:QI:118:LYS:CB | 2.23 | 0.52 |
| 15:QO:26:GLU:HA | 15:QO:81:LEU:HD22 | 1.90 | 0.52 |
| 25:RA:7:G:H2' | 25:RA:8:A:O4' | 2.09 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:RA:34:C:H41 | 25:RA:447:A:N6 | 2.07 | 0.52 |
| 25:RA:389:G:H22 | 35:RP:72:PRO:HD3 | 1.74 | 0.52 |
| 25:RA:796:C:H2' | 25:RA:797:C:C6 | 2.44 | 0.52 |
| 25:RA:1412:A:H2' | 25:RA:1413:G:O4' | 2.10 | 0.52 |
| 25:RA:1416:G:H2' | 25:RA:1417:C:H6 | 1.75 | 0.52 |
| 25:RA:1794:U:H2' | 25:RA:1795:C:C6 | 2.44 | 0.52 |
| 25:RA:1810:A:H2' | 25:RA:1811:G:O4' | 2.10 | 0.52 |
| 25:RA:2343:C:H2' | 25:RA:2344:U:C6 | 2.44 | 0.52 |
| 25:RA:2790:A:O3' | 25:RA:2893:G:N2 | 2.42 | 0.52 |
| 28:RE:7:VAL:O | 28:RE:196:VAL:HG13 | 2.09 | 0.52 |
| 28:RE:170:LEU:CD2 | 28:RE:185:LYS:HB2 | 2.40 | 0.52 |
| 29:RF:140:LEU:O | 29:RF:143:ALA:HB3 | 2.09 | 0.52 |
| 31:RH:24:VAL:O | 31:RH:24:VAL:HG23 | 2.09 | 0.52 |
| 33:RN:7:LYS:HD3 | 33:RN:9:VAL:CA | 2.38 | 0.52 |
| 33:RN:94:HIS:O | 33:RN:95:PRO:O | 2.27 | 0.52 |
| 39:RT:94:ALA:O | 39:RT:95:ARG:HB3 | 2.09 | 0.52 |
| 45:RZ:105:VAL:CG1 | 45:RZ:138:GLU:HG2 | 2.40 | 0.52 |
| 49:R3:21:ALA:O | 49:R3:25:ALA:N | 2.41 | 0.52 |
| 49:R3:56:VAL:CG1 | 49:R3:57:GLU:H | 2.19 | 0.52 |
| 50:R4:48:ARG:CZ | 50:R4:51:ASP:HA | 2.40 | 0.52 |
| 1:XA:532:A:HO2' | 1:XA:533:A:P | 2.32 | 0.52 |
| 1:XA:963:G:H21 | 10:XJ:55:LYS:HD3 | 1.74 | 0.52 |
| 2:XB:232:PRO:O | 2:XB:233:SER:O | 2.27 | 0.52 |
| 10:XJ:6:ILE:CG2 | 10:XJ:98:ILE:HG13 | 2.21 | 0.52 |
| 11:XK:91:ARG:NH2 | 18:XR:88:LYS:NZ | 2.57 | 0.52 |
| 13:XM:92:HIS:CD2 | 13:XM:98:VAL:HG21 | 2.43 | 0.52 |
| 14:YN:7:ILE:CG1 | 14:YN:8:GLU:N | 2.73 | 0.52 |
| 16:XP:34:GLU:OE1 | 16:XP:55:ARG:HD3 | 2.10 | 0.52 |
| 25:YA:48:G:H22 | 25:YA:177:G:H5' | 1.74 | 0.52 |
| 25:YA:878:A:H61 | 25:YA:899:A:H1' | 1.74 | 0.52 |
| 25:YA:1266:G:C8 | 42:YW:15:ARG:NH1 | 2.78 | 0.52 |
| 25:YA:1440:G:H2' | 25:YA:1441:G:C8 | 2.44 | 0.52 |
| 25:YA:1494:A:C2' | 25:YA:1495:A:H5' | 2.39 | 0.52 |
| 25:YA:1528:A:H2 | 25:YA:1542:G:C2 | 2.27 | 0.52 |
| 25:YA:1819:A:H4' | 25:YA:1820:U:O5' | 2.08 | 0.52 |
| 27:YD:28:GLU:O | 27:YD:29:PRO:C | 2.45 | 0.52 |
| 27:YD:66:ASP:OD2 | 27:YD:69:ARG:HG2 | 2.09 | 0.52 |
| 32:YI:25:TYR:CE2 | 32:YI:29:TYR:CD2 | 2.97 | 0.52 |
| 37:YR:53:HIS:HA | 37:YR:56:LYS:HD3 | 1.90 | 0.52 |
| 39:YT:94:ALA:O | 39:YT:95:ARG:HB3 | 2.09 | 0.52 |
| 47:Y1:4:VAL:HG22 | 47:Y1:5:CYS:N | 2.25 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 50:Y4:48:ARG:CZ | 50:Y4:51:ASP:HA | 2.40 | 0.52 |
| 50:Y4:54:GLY:O | 50:Y4:71:ARG:HA | 2.08 | 0.52 |
| 52:Y6:30:THR:O | 52:Y6:30:THR:HG23 | 2.09 | 0.52 |
| 54:Y8:61:LEU:O | 54:Y8:62:LEU:CB | 2.57 | 0.52 |
| 1:QA:520:A:N1 | 1:QA:536:C:H1' | 2.25 | 0.52 |
| 1:QA:558:G:H2' | 1:QA:559:A:H2 | 1.75 | 0.52 |
| 1:QA:604:G:H2' | 1:QA:605:U:O4' | 2.09 | 0.52 |
| 2:QB:9:GLU:N | 2:QB:9:GLU:OE2 | 2.42 | 0.52 |
| 2:QB:188:ALA:HB3 | 2:QB:200:ILE:CG2 | 2.40 | 0.52 |
| 9:QI:113:LYS:HD3 | 9:QI:119:ALA:O | 2.09 | 0.52 |
| 12:QL:32:PHE:HE1 | 12:QL:86:ARG:HG3 | 1.73 | 0.52 |
| 25:RA:556:G:H2' | 25:RA:557:U:C6 | 2.45 | 0.52 |
| 25:RA:724:U:H2' | 25:RA:725:G:O4' | 2.09 | 0.52 |
| 25:RA:1105:U:H2' | 25:RA:1106:G:H8 | 1.73 | 0.52 |
| 25:RA:1133:U:O2 | 25:RA:1137:G:H5'' | 2.10 | 0.52 |
| 25:RA:1317:A:H61 | 25:RA:1335:U:H3 | 1.56 | 0.52 |
| 25:RA:2105:C:H2' | 25:RA:2106:G:C8 | 2.44 | 0.52 |
| 25:RA:2818:G:OP2 | 37:RR:42:LYS:NZ | 2.42 | 0.52 |
| 27:RD:35:LYS:HG2 | 27:RD:64:ILE:HG22 | 1.91 | 0.52 |
| 27:RD:210:GLY:O | 27:RD:213:ARG:N | 2.43 | 0.52 |
| 28:RE:39:PRO:HG2 | 28:RE:40:GLU:OE1 | 2.09 | 0.52 |
| 28:RE:179:GLU:HA | 28:RE:179:GLU:OE1 | 2.10 | 0.52 |
| 30:RG:16:ARG:HH11 | 30:RG:16:ARG:HG2 | 1.74 | 0.52 |
| 30:RG:124:SER:HB2 | 30:RG:131:TYR:CE1 | 2.44 | 0.52 |
| 32:RI:114:LEU:O | 32:RI:115:ALA:HB3 | 2.08 | 0.52 |
| 32:RI:131:LYS:HB3 | 32:RI:132:PRO:CA | 2.38 | 0.52 |
| 33:RN:103:VAL:O | 33:RN:106:MET:N | 2.42 | 0.52 |
| 33:RN:112:LEU:C | 33:RN:112:LEU:HD23 | 2.30 | 0.52 |
| 36:RQ:78:PRO:HB2 | 46:R0:5:LYS:NZ | 2.24 | 0.52 |
| 37:RR:56:LYS:C | 37:RR:58:GLY:N | 2.61 | 0.52 |
| 41:RV:34:GLU:O | 41:RV:36:PRO:HD3 | 2.09 | 0.52 |
| 45:RZ:4:ARG:HG2 | 45:RZ:4:ARG:NH1 | 2.24 | 0.52 |
| 45:RZ:120:ILE:HD11 | 45:RZ:169:GLU:HG3 | 1.85 | 0.52 |
| 49:R3:7:LYS:HE2 | 49:R3:32:GLN:NE2 | 2.25 | 0.52 |
| 2:XB:5:ILE:N | 2:XB:5:ILE:HD13 | 2.24 | 0.52 |
| 2:XB:92:TYR:CE1 | 2:XB:151:GLY:HA3 | 2.45 | 0.52 |
| 6:XF:69:GLU:C | 6:XF:71:ARG:H | 2.13 | 0.52 |
| 6:XF:86:ARG:O | 6:XF:87:ARG:CG | 2.50 | 0.52 |
| 9:XI:13:ALA:HB2 | 9:XI:68:GLY:HA3 | 1.91 | 0.52 |
| 14:XN:24:CYS:HB2 | 14:XN:39:LEU:C | 2.29 | 0.52 |
| 16:XP:4:ILE:HD12 | 16:XP:4:ILE:N | 2.23 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:270(J):G:H2' | 25:YA:270(K):C:O4' | 2.10 | 0.52 |
| 27:YD:36:PRO:HA | 27:YD:62:TYR:O | 2.09 | 0.52 |
| 29:YF:162:LEU:HD23 | 29:YF:165:ARG:NH2 | 2.25 | 0.52 |
| 30:YG:124:SER:HB2 | 30:YG:131:TYR:CE1 | 2.44 | 0.52 |
| 31:YH:24:VAL:HG23 | 31:YH:24:VAL:O | 2.09 | 0.52 |
| 33:YN:114:ARG:C | 33:YN:116:LEU:H | 2.13 | 0.52 |
| 34:YO:79:PHE:CD2 | 39:YT:72:VAL:HG22 | 2.45 | 0.52 |
| 37:YR:52:ILE:CG2 | 37:YR:94:TYR:HD1 | 2.22 | 0.52 |
| 39:YT:100:TYR:HB3 | 39:YT:103:ARG:NH1 | 2.25 | 0.52 |
| 45:YZ:154:ASP:CG | 45:YZ:155:LEU:N | 2.61 | 0.52 |
| 46:Y0:7:LEU:H | 46:Y0:7:LEU:HD12 | 1.73 | 0.52 |
| 46:Y0:56:ASP:C | 46:Y0:56:ASP:OD2 | 2.47 | 0.52 |
| 48:Y2:7:ARG:HG3 | 48:Y2:7:ARG:NH1 | 2.25 | 0.52 |
| 50:Y4:15:ILE:HD13 | 50:Y4:15:ILE:H | 1.73 | 0.52 |
| 1:QA:346:G:H5' | 39:RT:41:ARG:HH12 | 1.73 | 0.52 |
| 1:QA:445:G:H2' | 1:QA:446:G:C8 | 2.45 | 0.52 |
| 1:QA:545:C:OP2 | 4:QD:62:GLN:NE2 | 2.42 | 0.52 |
| 1:QA:939:G:H5'' | 7:QG:102:ARG:NH1 | 2.24 | 0.52 |
| 1:QA:1321:C:H5'' | 1:QA:1322:C:H5'' | 1.91 | 0.52 |
| 1:QA:1494:G:N7 | 57:QA:1661:PAR:N32 | 2.57 | 0.52 |
| 6:QF:10:LEU:HD13 | 6:QF:61:LEU:HD11 | 1.92 | 0.52 |
| 8:QH:87:SER:HA | 8:QH:93:VAL:HG23 | 1.91 | 0.52 |
| 8:QH:100:ILE:CB | 8:QH:125:ARG:HH12 | 2.21 | 0.52 |
| 15:QO:62:GLN:N | 15:QO:65:ARG:HH12 | 2.06 | 0.52 |
| 25:RA:92:G:H2' | 25:RA:93:C:C6 | 2.45 | 0.52 |
| 25:RA:1543:A:H2 | 25:RA:1545:A:C5 | 2.28 | 0.52 |
| 25:RA:1579:A:H2' | 25:RA:1580:A:C8 | 2.44 | 0.52 |
| 25:RA:1790:C:H2' | 25:RA:1791:A:C4 | 2.44 | 0.52 |
| 27:RD:35:LYS:HD3 | 27:RD:63:ARG:CA | 2.39 | 0.52 |
| 27:RD:66:ASP:OD2 | 27:RD:69:ARG:HG2 | 2.09 | 0.52 |
| 27:RD:133:LEU:HG | 27:RD:189:CYS:O | 2.10 | 0.52 |
| 28:RE:55:ASN:C | 28:RE:57:LYS:N | 2.62 | 0.52 |
| 28:RE:116:VAL:HG22 | 28:RE:122:PHE:HB2 | 1.91 | 0.52 |
| 39:RT:23:ARG:HG2 | 39:RT:120:ARG:HH12 | 1.75 | 0.52 |
| 40:RU:88:ILE:H | 40:RU:88:ILE:CD1 | 2.05 | 0.52 |
| 45:RZ:108:PRO:C | 45:RZ:110:GLY:H | 2.13 | 0.52 |
| 50:R4:63:TYR:C | 50:R4:65:ASP:N | 2.62 | 0.52 |
| 1:XA:191(F):U:H2' | 1:XA:191:G:C8 | 2.43 | 0.52 |
| 1:XA:881:G:OP2 | 12:XL:12:ARG:NH2 | 2.42 | 0.52 |
| 1:XA:1004:A:N1 | 1:XA:1024:G:H2' | 2.25 | 0.52 |
| 1:XA:1049:U:OP1 | 14:XN:3:ARG:HB2 | 2.10 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:XA:1368:G:OP1 | 9:XI:111:ARG:NH2 | 2.39 | 0.52 |
| 13:XM:65:LYS:NZ | 50:Y4:52:THR:HG21 | 2.25 | 0.52 |
| 16:XP:1:MET:SD | 16:XP:3:LYS:HE3 | 2.49 | 0.52 |
| 19:XS:3:ARG:HG3 | 19:XS:4:SER:N | 2.24 | 0.52 |
| 25:YA:1697:G:OP2 | 25:YA:1698:A:O2' | 2.16 | 0.52 |
| 27:YD:174:ILE:N | 27:YD:174:ILE:CD1 | 2.73 | 0.52 |
| 32:YI:69:LYS:O | 32:YI:73:GLU:HB2 | 2.10 | 0.52 |
| 33:YN:12:ARG:NH1 | 33:YN:50:ASP:OD1 | 2.43 | 0.52 |
| 33:YN:103:VAL:O | 33:YN:106:MET:N | 2.42 | 0.52 |
| 38:YS:67:ARG:HB2 | 38:YS:67:ARG:HH11 | 1.65 | 0.52 |
| 38:YS:83:LYS:O | 38:YS:109:GLY:CA | 2.46 | 0.52 |
| 38:YS:89:ARG:HG2 | 38:YS:89:ARG:HH11 | 1.74 | 0.52 |
| 39:YT:99:LEU:HB2 | 39:YT:101:PHE:CE1 | 2.45 | 0.52 |
| 45:YZ:110:GLY:O | 45:YZ:117:LEU:HD21 | 2.08 | 0.52 |
| 51:Y5:55:ARG:HG3 | 51:Y5:57:VAL:H | 1.74 | 0.52 |
| 1:QA:447:G:O6 | 1:QA:485:G:H2' | 2.09 | 0.52 |
| 1:QA:595:G:N1 | 1:QA:641:U:O2' | 2.36 | 0.52 |
| 1:QA:923:A:H2' | 1:QA:924:C:H6 | 1.73 | 0.52 |
| 1:QA:1394:A:OP1 | 1:QA:1394:A:H8 | 1.92 | 0.52 |
| 3:QC:35:GLU:OE2 | 3:QC:95:THR:HG23 | 2.10 | 0.52 |
| 12:QL:127:GLU:O | 12:QL:128:ALA:HB3 | 2.10 | 0.52 |
| 13:QM:34:LEU:HD12 | 13:QM:41:PRO:HG3 | 1.92 | 0.52 |
| 13:QM:81:LEU:HD13 | 13:QM:88:ARG:HD2 | 1.90 | 0.52 |
| 14:QN:7:ILE:CG1 | 14:QN:8:GLU:N | 2.72 | 0.52 |
| 25:RA:1614:A:H62 | 42:RW:93:ALA:HB2 | 1.74 | 0.52 |
| 31:RH:4:ILE:O | 31:RH:6:ARG:N | 2.43 | 0.52 |
| 31:RH:121:ILE:HG12 | 31:RH:135:GLY:HA3 | 1.91 | 0.52 |
| 35:RP:88:LEU:HD23 | 35:RP:89:ALA:N | 2.24 | 0.52 |
| 37:RR:41:ALA:O | 37:RR:43:GLU:N | 2.43 | 0.52 |
| 40:RU:92:ARG:NH2 | 40:RU:94:ASN:HD22 | 2.07 | 0.52 |
| 41:RV:41:GLY:HA3 | 41:RV:46:VAL:CG1 | 2.38 | 0.52 |
| 1:XA:730:G:C5 | 1:XA:731:G:H1' | 2.45 | 0.52 |
| 1:XA:1152:A:OP1 | 10:XJ:68:HIS:NE2 | 2.43 | 0.52 |
| 1:XA:1288:A:N1 | 1:XA:1371:G:H1' | 2.23 | 0.52 |
| 2:XB:87:ARG:HH11 | 2:XB:223:ILE:HD12 | 1.73 | 0.52 |
| 2:XB:200:ILE:HG22 | 2:XB:201:ILE:N | 2.24 | 0.52 |
| 3:XC:112:SER:HB3 | 3:XC:115:LEU:HD12 | 1.92 | 0.52 |
| 4:XD:155:LEU:O | 4:XD:159:ARG:HG2 | 2.10 | 0.52 |
| 4:XD:176:LEU:HD12 | 4:XD:182:LYS:O | 2.10 | 0.52 |
| 7:XG:89:MET:CE | 7:XG:156:TRP:H | 2.22 | 0.52 |
| 8:XH:102:ARG:NH1 | 8:XH:105:ARG:HH22 | 2.08 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 19:XS:15:LEU:HD23 | 19:XS:15:LEU:H | 1.74 | 0.52 |
| 25:YA:844:C:H3' | 25:YA:845:G:H8 | 1.74 | 0.52 |
| 25:YA:871:U:H4' | 36:YQ:69:PHE:CE2 | 2.45 | 0.52 |
| 25:YA:2022:U:O2' | 25:YA:2617:C:H5' | 2.10 | 0.52 |
| 25:YA:2334:G:O6 | 46:Y0:75:LEU:HD21 | 2.10 | 0.52 |
| 25:YA:2489:G:O2' | 25:YA:2518:A:N6 | 2.43 | 0.52 |
| 28:YE:55:ASN:C | 28:YE:57:LYS:N | 2.62 | 0.52 |
| 28:YE:176:ILE:HG22 | 28:YE:176:ILE:O | 2.10 | 0.52 |
| 32:YI:77:LEU:HD12 | 32:YI:77:LEU:O | 2.09 | 0.52 |
| 33:YN:7:LYS:HD3 | 33:YN:9:VAL:N | 2.25 | 0.52 |
| 39:YT:42:ILE:HD12 | 39:YT:42:ILE:N | 2.25 | 0.52 |
| 42:YW:9:TYR:CD2 | 42:YW:102:HIS:HE1 | 2.28 | 0.52 |
| 44:YY:91:GLU:HG3 | 44:YY:92:ASN:N | 2.25 | 0.52 |
| 45:YZ:107:THR:CG2 | 45:YZ:108:PRO:HA | 2.40 | 0.52 |
| 49:Y3:9:VAL:HG12 | 49:Y3:32:GLN:HE22 | 1.74 | 0.52 |
| 1:QA:112:G:H4' | 1:QA:389:A:H4' | 1.91 | 0.52 |
| 1:QA:539:A:H2' | 1:QA:540:G:H8 | 1.75 | 0.52 |
| 1:QA:922:G:H1' | 5:QE:19:MET:HB3 | 1.92 | 0.52 |
| 1:QA:1050:G:H1 | 1:QA:1208:C:N4 | 2.07 | 0.52 |
| 1:QA:1316:G:H5'' | 14:QN:17:LYS:CE | 2.40 | 0.52 |
| 4:QD:106:TYR:CE1 | 4:QD:112:VAL:O | 2.62 | 0.52 |
| 5:QE:60:TYR:CE1 | 5:QE:64:ARG:NH2 | 2.77 | 0.52 |
| 9:QI:13:ALA:HB2 | 9:QI:67:GLY:C | 2.28 | 0.52 |
| 9:QI:13:ALA:HB2 | 9:QI:68:GLY:HA3 | 1.92 | 0.52 |
| 9:QI:128:ARG:CD | 22:QV:32:C:OP2 | 2.57 | 0.52 |
| 19:QS:63:THR:O | 19:QS:66:MET:HG2 | 2.09 | 0.52 |
| 25:RA:27:G:H22 | 25:RA:512:G:H2' | 1.75 | 0.52 |
| 25:RA:389:G:N1 | 35:RP:71:VAL:HG12 | 2.25 | 0.52 |
| 25:RA:669:G:H2' | 25:RA:669:G:N3 | 2.25 | 0.52 |
| 25:RA:1264:G:H3' | 25:RA:1265:A:H5'' | 1.91 | 0.52 |
| 25:RA:2724:C:OP1 | 28:RE:118:LYS:NZ | 2.39 | 0.52 |
| 25:RA:2831:G:OP1 | 25:RA:2834:G:H4' | 2.09 | 0.52 |
| 30:RG:97:ASP:N | 30:RG:100:TRP:HD1 | 2.05 | 0.52 |
| 33:RN:114:ARG:C | 33:RN:116:LEU:H | 2.13 | 0.52 |
| 37:RR:52:ILE:CG2 | 37:RR:94:TYR:HD1 | 2.22 | 0.52 |
| 42:RW:28:SER:HB3 | 42:RW:31:GLU:HB2 | 1.90 | 0.52 |
| 44:RY:91:GLU:HG3 | 44:RY:92:ASN:N | 2.25 | 0.52 |
| 46:R0:7:LEU:CD2 | 46:R0:7:LEU:N | 2.73 | 0.52 |
| 49:R3:6:VAL:HG12 | 49:R3:56:VAL:HG22 | 1.92 | 0.52 |
| 50:R4:50:VAL:O | 50:R4:51:ASP:C | 2.48 | 0.52 |
| 50:R4:54:GLY:HA2 | 50:R4:57:GLU:HG2 | 1.92 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:R7:38:GLY:O | 53:R7:39:ARG:C | 2.48 | 0.52 |
| 1:XA:555:C:OP1 | 12:XL:20:LYS:NZ | 2.42 | 0.52 |
| 10:XJ:4:ILE:HB | 10:XJ:74:ILE:CD1 | 2.37 | 0.52 |
| 11:XK:46:GLY:HA2 | 11:XK:50:TYR:O | 2.10 | 0.52 |
| 12:XL:11:VAL:HG13 | 17:XQ:29:HIS:HD2 | 1.75 | 0.52 |
| 13:XM:66:LEU:O | 13:XM:68:GLY:N | 2.43 | 0.52 |
| 16:XP:45:THR:HG23 | 16:XP:46:PRO:CD | 2.39 | 0.52 |
| 18:XR:44:LEU:HD12 | 18:XR:44:LEU:N | 2.24 | 0.52 |
| 25:YA:1218:C:H42 | 25:YA:1231:G:H1 | 1.56 | 0.52 |
| 25:YA:1297:C:H2' | 25:YA:1298:C:C6 | 2.45 | 0.52 |
| 25:YA:1853:A:N1 | 25:YA:2087:G:H1' | 2.25 | 0.52 |
| 25:YA:2481:G:O2' | 25:YA:2482:G:OP2 | 2.20 | 0.52 |
| 25:YA:2695:C:H2' | 25:YA:2696:U:C6 | 2.45 | 0.52 |
| 28:YE:54:GLN:O | 28:YE:55:ASN:HB2 | 2.09 | 0.52 |
| 28:YE:61:ARG:O | 28:YE:63:LEU:N | 2.42 | 0.52 |
| 29:YF:108:LYS:O | 29:YF:112:MET:HG3 | 2.10 | 0.52 |
| 32:YI:83:ALA:O | 32:YI:84:GLY:C | 2.48 | 0.52 |
| 32:YI:131:LYS:HB3 | 32:YI:132:PRO:CA | 2.38 | 0.52 |
| 34:YO:2:ILE:CD1 | 34:YO:82:ASN:HD22 | 2.14 | 0.52 |
| 34:YO:14:THR:HG21 | 34:YO:86:ILE:HD13 | 1.90 | 0.52 |
| 34:YO:43:VAL:HG23 | 34:YO:56:ASP:O | 2.10 | 0.52 |
| 34:YO:113:LYS:HG2 | 34:YO:117:LEU:CD1 | 2.38 | 0.52 |
| 39:YT:23:ARG:HG2 | 39:YT:120:ARG:HH12 | 1.75 | 0.52 |
| 44:YY:9:LYS:HG2 | 44:YY:9:LYS:O | 2.10 | 0.52 |
| 45:YZ:51:ALA:O | 45:YZ:52:SER:HB3 | 2.09 | 0.52 |
| 1:QA:408:A:H5' | 4:QD:116:GLN:HB2 | 1.92 | 0.52 |
| 1:QA:673:G:H2' | 1:QA:674:G:C8 | 2.45 | 0.52 |
| 1:QA:762:C:H2' | 1:QA:763:G:C8 | 2.44 | 0.52 |
| 1:QA:778:G:H2' | 1:QA:779:C:O4' | 2.10 | 0.52 |
| 1:QA:986:A:H1' | 19:QS:54:GLY:O | 2.09 | 0.52 |
| 3:QC:22:TRP:CZ3 | 3:QC:32:LEU:HD12 | 2.45 | 0.52 |
| 3:QC:150:LYS:HG3 | 3:QC:169:ALA:HB2 | 1.92 | 0.52 |
| 6:QF:99:ALA:HB1 | 18:QR:23:LYS:NZ | 2.25 | 0.52 |
| 7:QG:85:TYR:HE1 | 7:QG:154:TYR:HE1 | 1.56 | 0.52 |
| 7:QG:151:TYR:HA | 7:QG:153:HIS:CE1 | 2.45 | 0.52 |
| 10:QJ:39:PRO:HB3 | 10:QJ:70:ARG:NH1 | 2.23 | 0.52 |
| 12:QL:10:LEU:CD1 | 17:QQ:32:TYR:CE2 | 2.86 | 0.52 |
| 20:QT:89:ARG:HH22 | 20:QT:106:ALA:HB2 | 1.75 | 0.52 |
| 25:RA:76:C:H2' | 25:RA:77:C:C6 | 2.45 | 0.52 |
| 25:RA:541:C:H2' | 25:RA:542:C:H6 | 1.75 | 0.52 |
| 25:RA:1814:G:H2' | 25:RA:1815:A:C8 | 2.44 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:RA:2467:C:H4' | 36:RQ:123:HIS:ND1 | 2.25 | 0.52 |
| 28:RE:54:GLN:O | 28:RE:55:ASN:HB2 | 2.09 | 0.52 |
| 29:RF:108:LYS:O | 29:RF:112:MET:HG3 | 2.10 | 0.52 |
| 31:RH:2:SER:O | 31:RH:3:ARG:C | 2.47 | 0.52 |
| 33:RN:57:ALA:O | 33:RN:58:ASP:HB3 | 2.09 | 0.52 |
| 34:RO:4:PRO:O | 34:RO:5:GLN:CB | 2.58 | 0.52 |
| 35:RP:13:ASN:O | 35:RP:14:LYS:C | 2.49 | 0.52 |
| 35:RP:112:LEU:HD11 | 35:RP:114:ILE:CG2 | 2.39 | 0.52 |
| 40:RU:39:LEU:O | 40:RU:40:PHE:C | 2.48 | 0.52 |
| 41:RV:3:ALA:HB3 | 41:RV:14:VAL:HG23 | 1.92 | 0.52 |
| 47:R1:76:ARG:HG2 | 47:R1:76:ARG:NH1 | 2.19 | 0.52 |
| 48:R2:9:GLN:O | 48:R2:12:GLU:HB3 | 2.10 | 0.52 |
| 1:XA:363:A:C4 | 12:XL:31:PRO:HD2 | 2.43 | 0.52 |
| 2:XB:53:ARG:O | 2:XB:56:ARG:HB2 | 2.10 | 0.52 |
| 4:XD:65:ARG:NH1 | 4:XD:70:ILE:O | 2.43 | 0.52 |
| 4:XD:106:TYR:CE1 | 4:XD:112:VAL:O | 2.62 | 0.52 |
| 4:XD:206:PHE:HD2 | 4:XD:207:TYR:CD1 | 2.27 | 0.52 |
| 6:XF:30:LEU:O | 6:XF:35:ALA:HB3 | 2.10 | 0.52 |
| 6:XF:99:ALA:HB1 | 18:XR:23:LYS:NZ | 2.25 | 0.52 |
| 9:XI:3:GLN:HB3 | 9:XI:20:ARG:CG | 2.40 | 0.52 |
| 13:XM:98:VAL:O | 13:XM:98:VAL:HG12 | 2.10 | 0.52 |
| 15:XO:26:GLU:OE2 | 15:XO:77:ARG:NH1 | 2.43 | 0.52 |
| 17:XQ:62:SER:HB3 | 17:XQ:72:ARG:HH21 | 1.73 | 0.52 |
| 25:YA:1210:A:H4' | 25:YA:1211:U:O5' | 2.09 | 0.52 |
| 25:YA:2474:C:H5'' | 25:YA:2475:C:H5 | 1.73 | 0.52 |
| 25:YA:2677:G:H2' | 25:YA:2678:C:C6 | 2.45 | 0.52 |
| 25:YA:2721:A:H1' | 25:YA:2873:A:O2' | 2.09 | 0.52 |
| 25:YA:2832:U:H1' | 25:YA:2834:G:C5 | 2.44 | 0.52 |
| 27:YD:43:ARG:NH1 | 27:YD:44:ASN:OD1 | 2.42 | 0.52 |
| 27:YD:133:LEU:HG | 27:YD:189:CYS:O | 2.10 | 0.52 |
| 28:YE:170:LEU:CD2 | 28:YE:185:LYS:HB2 | 2.40 | 0.52 |
| 33:YN:112:LEU:HD23 | 33:YN:112:LEU:C | 2.30 | 0.52 |
| 38:YS:62:LYS:HB3 | 38:YS:97:ARG:CD | 2.39 | 0.52 |
| 40:YU:59:ARG:O | 40:YU:63:VAL:HG23 | 2.10 | 0.52 |
| 40:YU:107:ALA:O | 40:YU:111:GLU:OE1 | 2.28 | 0.52 |
| 41:YV:35:LEU:CD2 | 41:YV:57:VAL:HG22 | 2.32 | 0.52 |
| 45:YZ:170:THR:O | 45:YZ:171:ILE:HB | 2.10 | 0.52 |
| 49:Y3:49:LYS:HG2 | 49:Y3:49:LYS:O | 2.10 | 0.52 |
| 53:Y7:38:GLY:O | 53:Y7:39:ARG:C | 2.48 | 0.52 |
| 1:QA:276:G:O3' | 17:QQ:68:ARG:NH1 | 2.41 | 0.52 |
| 1:QA:575:G:O2' | 1:QA:821:G:H5' | 2.09 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:QA:1329:A:P | 13:QM:28:ALA:HB3 | 2.49 | 0.52 |
| 3:QC:40:ARG:O | 3:QC:44:GLU:HG3 | 2.10 | 0.52 |
| 7:QG:106:GLN:O | 7:QG:110:GLN:HG3 | 2.10 | 0.52 |
| 13:QM:66:LEU:O | 13:QM:68:GLY:N | 2.43 | 0.52 |
| 13:QM:98:VAL:O | 13:QM:98:VAL:HG12 | 2.10 | 0.52 |
| 14:QN:40:CYS:SG | 14:QN:43:CYS:N | 2.75 | 0.52 |
| 16:QP:34:GLU:OE1 | 16:QP:55:ARG:HD3 | 2.10 | 0.52 |
| 25:RA:629:G:H5' | 25:RA:650:C:O2' | 2.10 | 0.52 |
| 25:RA:1417:C:H1' | 25:RA:1586:A:H62 | 1.75 | 0.52 |
| 25:RA:1496:A:H5' | 25:RA:1497:U:OP1 | 2.10 | 0.52 |
| 28:RE:54:GLN:NE2 | 28:RE:54:GLN:H | 2.08 | 0.52 |
| 33:RN:16:ILE:HG22 | 33:RN:17:ASP:N | 2.25 | 0.52 |
| 34:RO:23:ARG:O | 34:RO:39:ILE:HB | 2.10 | 0.52 |
| 38:RS:95:HIS:CG | 38:RS:96:GLY:N | 2.77 | 0.52 |
| 43:RX:52:VAL:O | 43:RX:52:VAL:HG12 | 2.09 | 0.52 |
| 45:RZ:61:LEU:HB3 | 45:RZ:62:PRO:CD | 2.40 | 0.52 |
| 45:RZ:107:THR:CG2 | 45:RZ:108:PRO:HA | 2.40 | 0.52 |
| 45:RZ:136:PHE:O | 45:RZ:137:ILE:HG23 | 2.10 | 0.52 |
| 49:R3:49:LYS:O | 49:R3:49:LYS:HG2 | 2.10 | 0.52 |
| 52:R6:30:THR:O | 52:R6:30:THR:HG23 | 2.09 | 0.52 |
| 1:XA:292:G:N2 | 1:XA:608:A:H61 | 2.07 | 0.52 |
| 1:XA:1130:A:O2' | 9:XI:3:GLN:NE2 | 2.42 | 0.52 |
| 3:XC:20:SER:CB | 3:XC:40:ARG:HH22 | 2.14 | 0.52 |
| 3:XC:40:ARG:O | 3:XC:44:GLU:HG3 | 2.10 | 0.52 |
| 4:XD:127:THR:CG2 | 4:XD:128:VAL:N | 2.73 | 0.52 |
| 4:XD:147:ALA:HA | 4:XD:182:LYS:HA | 1.91 | 0.52 |
| 5:XE:101:ILE:N | 5:XE:101:ILE:HD13 | 2.25 | 0.52 |
| 7:XG:153:HIS:CE1 | 11:XK:58:PRO:HD2 | 2.44 | 0.52 |
| 20:XT:83:ARG:O | 20:XT:86:ARG:HB3 | 2.09 | 0.52 |
| 25:YA:888:C:H3' | 25:YA:889:C:H4' | 1.92 | 0.52 |
| 25:YA:1318:C:C2' | 25:YA:1319:G:H5'' | 2.39 | 0.52 |
| 25:YA:1824:G:OP1 | 27:YD:52:ARG:HD3 | 2.10 | 0.52 |
| 25:YA:2445:G:OP1 | 29:YF:74:ARG:NH2 | 2.43 | 0.52 |
| 25:YA:2712:U:OP1 | 25:YA:2714:G:H4' | 2.10 | 0.52 |
| 29:YF:67:GLN:O | 29:YF:68:LYS:CB | 2.39 | 0.52 |
| 30:YG:34:LEU:HD13 | 30:YG:34:LEU:C | 2.30 | 0.52 |
| 37:YR:41:ALA:O | 37:YR:43:GLU:N | 2.43 | 0.52 |
| 39:YT:16:ARG:HD3 | 39:YT:19:LEU:HG | 1.92 | 0.52 |
| 42:YW:14:PRO:O | 42:YW:17:VAL:N | 2.42 | 0.52 |
| 44:YY:75:ILE:C | 44:YY:75:ILE:HD13 | 2.30 | 0.52 |
| 50:Y4:68:ARG:HD3 | 50:Y4:69:LYS:HG2 | 1.92 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:QA:585:G:O3' | 17:QQ:34:LYS:NZ | 2.42 | 0.51 |
| 1:QA:669:U:H2' | 1:QA:670:G:H8 | 1.76 | 0.51 |
| 1:QA:954:G:H21 | 1:QA:1227:A:H62 | 1.55 | 0.51 |
| 1:QA:1443:G:N2 | 25:RA:2864:G:OP1 | 2.41 | 0.51 |
| 2:QB:53:ARG:O | 2:QB:56:ARG:HB2 | 2.10 | 0.51 |
| 2:QB:232:PRO:O | 2:QB:233:SER:O | 2.27 | 0.51 |
| 4:QD:13:ARG:HD3 | 4:QD:38:TYR:O | 2.10 | 0.51 |
| 4:QD:14:ARG:O | 4:QD:14:ARG:HD3 | 2.09 | 0.51 |
| 4:QD:163:GLU:OE1 | 27:YD:134:ARG:NH2 | 2.43 | 0.51 |
| 4:QD:196:LEU:HD12 | 4:QD:196:LEU:H | 1.75 | 0.51 |
| 13:QM:90:LEU:CB | 13:QM:93:ARG:HD2 | 2.40 | 0.51 |
| 15:QO:16:ALA:HB1 | 15:QO:21:ASP:HB3 | 1.92 | 0.51 |
| 16:QP:21:VAL:O | 16:QP:33:ILE:HG12 | 2.11 | 0.51 |
| 19:QS:40:ILE:HG23 | 19:QS:67:VAL:O | 2.11 | 0.51 |
| 25:RA:272:G:H1 | 25:RA:365:C:H42 | 1.59 | 0.51 |
| 25:RA:792:G:O2' | 25:RA:2440:C:N3 | 2.36 | 0.51 |
| 25:RA:1796:U:H2' | 25:RA:1797:C:C6 | 2.45 | 0.51 |
| 25:RA:2518:A:H4' | 25:RA:2519:U:OP1 | 2.09 | 0.51 |
| 26:RB:40:U:H1' | 26:RB:45:A:H61 | 1.75 | 0.51 |
| 27:RD:174:ILE:N | 27:RD:174:ILE:CD1 | 2.73 | 0.51 |
| 29:RF:162:LEU:HD23 | 29:RF:165:ARG:NH2 | 2.25 | 0.51 |
| 30:RG:34:LEU:HD13 | 30:RG:34:LEU:C | 2.30 | 0.51 |
| 30:RG:97:ASP:O | 30:RG:101:ILE:HG23 | 2.10 | 0.51 |
| 31:RH:89:ILE:O | 31:RH:89:ILE:CG1 | 2.57 | 0.51 |
| 33:RN:108:PRO:O | 33:RN:113:GLY:HA3 | 2.10 | 0.51 |
| 34:RO:2:ILE:HD12 | 34:RO:2:ILE:N | 2.24 | 0.51 |
| 39:RT:16:ARG:HD3 | 39:RT:19:LEU:HG | 1.92 | 0.51 |
| 39:RT:99:LEU:HB2 | 39:RT:101:PHE:CE1 | 2.45 | 0.51 |
| 40:RU:59:ARG:O | 40:RU:63:VAL:HG23 | 2.10 | 0.51 |
| 40:RU:107:ALA:O | 40:RU:111:GLU:OE1 | 2.28 | 0.51 |
| 49:R3:17:LYS:HA | 49:R3:20:LYS:HD2 | 1.92 | 0.51 |
| 50:R4:40:HIS:N | 50:R4:41:PRO:CD | 2.73 | 0.51 |
| 1:XA:261:U:O2' | 1:XA:263:A:N7 | 2.34 | 0.51 |
| 1:XA:965:A:H4' | 1:XA:966:G:OP1 | 2.09 | 0.51 |
| 1:XA:1159:U:O2' | 1:XA:1160:G:N7 | 2.35 | 0.51 |
| 1:XA:1190:G:H5' | 3:XC:176:HIS:NE2 | 2.24 | 0.51 |
| 1:XA:1370:G:O3' | 9:XI:12:GLU:HG3 | 2.09 | 0.51 |
| 1:XA:1414:U:H2' | 1:XA:1415:G:C8 | 2.43 | 0.51 |
| 3:XC:22:TRP:CZ3 | 3:XC:32:LEU:HD12 | 2.45 | 0.51 |
| 6:XF:101:ALA:HA | 18:XR:28:GLU:OE1 | 2.10 | 0.51 |
| 8:XH:51:VAL:HG11 | 8:XH:60:ARG:HG3 | 1.92 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:XM:90:LEU:CB | 13:XM:93:ARG:HD2 | 2.40 | 0.51 |
| 16:XP:21:VAL:O | 16:XP:33:ILE:HG12 | 2.11 | 0.51 |
| 25:YA:350:U:H2' | 25:YA:351:G:O4' | 2.10 | 0.51 |
| 25:YA:1022:G:H22 | 25:YA:1142(A):A:H2 | 1.58 | 0.51 |
| 25:YA:1245:G:OP1 | 35:YP:13:ASN:ND2 | 2.33 | 0.51 |
| 25:YA:1417:C:H2' | 25:YA:1418:G:O4' | 2.11 | 0.51 |
| 25:YA:1803:A:N1 | 25:YA:1822:G:O2' | 2.29 | 0.51 |
| 25:YA:2244:U:H2' | 25:YA:2245:U:O4' | 2.10 | 0.51 |
| 27:YD:35:LYS:HD2 | 27:YD:104:TYR:CD1 | 2.45 | 0.51 |
| 29:YF:125:LEU:HA | 29:YF:194:MET:O | 2.10 | 0.51 |
| 30:YG:44:GLY:CA | 30:YG:88:ILE:HD11 | 2.40 | 0.51 |
| 43:YX:52:VAL:HG12 | 43:YX:52:VAL:O | 2.09 | 0.51 |
| 44:YY:74:PRO:O | 44:YY:80:GLY:HA2 | 2.10 | 0.51 |
| 44:YY:101:LYS:O | 44:YY:102:CYS:SG | 2.66 | 0.51 |
| 47:Y1:83:GLU:CG | 47:Y1:84:GLY:N | 2.71 | 0.51 |
| 47:Y1:91:LYS:HE3 | 47:Y1:91:LYS:CA | 2.40 | 0.51 |
| 1:QA:376:G:OP1 | 16:QP:5:ARG:HB2 | 2.10 | 0.51 |
| 1:QA:1219:U:OP1 | 14:QN:19:ARG:NH2 | 2.35 | 0.51 |
| 6:QF:75:LEU:HD21 | 6:QF:79:LEU:HD11 | 1.91 | 0.51 |
| 25:RA:993:G:OP1 | 40:RU:50:ARG:NH2 | 2.43 | 0.51 |
| 25:RA:1418:G:H8 | 25:RA:1418:G:O5' | 1.93 | 0.51 |
| 29:RF:127:GLU:O | 29:RF:129:PHE:N | 2.39 | 0.51 |
| 31:RH:55:PRO:HG2 | 31:RH:61:HIS:ND1 | 2.26 | 0.51 |
| 32:RI:69:LYS:O | 32:RI:73:GLU:HB2 | 2.10 | 0.51 |
| 35:RP:147:LEU:O | 35:RP:148:LEU:CB | 2.57 | 0.51 |
| 39:RT:42:ILE:HD12 | 39:RT:42:ILE:N | 2.24 | 0.51 |
| 43:RX:47:PHE:N | 43:RX:47:PHE:CD1 | 2.78 | 0.51 |
| 44:RY:75:ILE:C | 44:RY:75:ILE:HD13 | 2.30 | 0.51 |
| 45:RZ:59:LEU:O | 45:RZ:60:GLU:CG | 2.54 | 0.51 |
| 50:R4:14:ILE:HG23 | 50:R4:14:ILE:O | 2.10 | 0.51 |
| 1:XA:1229:A:O2' | 22:XV:30:G:OP1 | 2.25 | 0.51 |
| 1:XA:1365:G:H2' | 1:XA:1366:C:C6 | 2.45 | 0.51 |
| 4:XD:162:LEU:HD11 | 4:XD:181:MET:HB3 | 1.92 | 0.51 |
| 7:XG:16:LEU:HD11 | 9:XI:45:ALA:HB2 | 1.92 | 0.51 |
| 7:XG:151:TYR:HA | 7:XG:153:HIS:CE1 | 2.45 | 0.51 |
| 9:XI:88:TYR:O | 9:XI:89:ASN:CB | 2.58 | 0.51 |
| 12:XL:23:LYS:O | 12:XL:24:VAL:HG23 | 2.10 | 0.51 |
| 12:XL:127:GLU:O | 12:XL:128:ALA:HB3 | 2.10 | 0.51 |
| 25:YA:14:A:N1 | 25:YA:2044:C:O2' | 2.28 | 0.51 |
| 25:YA:331:A:N6 | 25:YA:1210:A:OP2 | 2.34 | 0.51 |
| 25:YA:1403:C:H5'' | 25:YA:1471:A:C1' | 2.40 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:YA:1409:C:H2' | 25:YA:1410:G:O4' | 2.10 | 0.51 |
| 25:YA:1657:C:H2' | 25:YA:1658:C:C6 | 2.45 | 0.51 |
| 25:YA:2307:G:H1' | 25:YA:2308:G:N2 | 2.25 | 0.51 |
| 25:YA:2556:C:H2' | 25:YA:2557:G:O4' | 2.10 | 0.51 |
| 27:YD:67:PHE:CE1 | 27:YD:157:ARG:NH2 | 2.79 | 0.51 |
| 30:YG:37:VAL:HG22 | 30:YG:159:VAL:CA | 2.34 | 0.51 |
| 31:YH:6:ARG:C | 31:YH:8:PRO:HD2 | 2.30 | 0.51 |
| 31:YH:153:LYS:HG3 | 31:YH:161:GLY:HA2 | 1.91 | 0.51 |
| 32:YI:12:LEU:O | 32:YI:13:GLY:O | 2.28 | 0.51 |
| 32:YI:110:ASP:HB3 | 32:YI:111:PRO:C | 2.29 | 0.51 |
| 33:YN:94:HIS:O | 33:YN:95:PRO:O | 2.28 | 0.51 |
| 33:YN:134:ARG:O | 33:YN:136:GLU:N | 2.43 | 0.51 |
| 34:YO:16:ALA:HA | 34:YO:46:ALA:HB2 | 1.92 | 0.51 |
| 35:YP:112:LEU:HD11 | 35:YP:114:ILE:CG2 | 2.40 | 0.51 |
| 36:YQ:119:ARG:HG2 | 36:YQ:119:ARG:NH1 | 2.20 | 0.51 |
| 39:YT:111:ARG:O | 39:YT:112:ARG:CG | 2.55 | 0.51 |
| 41:YV:75:PHE:C | 41:YV:75:PHE:CD1 | 2.83 | 0.51 |
| 48:Y2:15:LYS:H | 48:Y2:67:LYS:HE2 | 1.73 | 0.51 |
| 50:Y4:14:ILE:O | 50:Y4:14:ILE:HG23 | 2.10 | 0.51 |
| 1:QA:145:G:H1 | 1:QA:177:C:H42 | 1.58 | 0.51 |
| 3:QC:11:ARG:O | 3:QC:13:GLY:N | 2.43 | 0.51 |
| 3:QC:195:VAL:HG12 | 3:QC:196:LEU:H | 1.75 | 0.51 |
| 6:QF:10:LEU:HD13 | 6:QF:61:LEU:HD13 | 1.93 | 0.51 |
| 7:QG:15:ASP:CB | 7:QG:20:ASP:H | 2.13 | 0.51 |
| 8:QH:102:ARG:NH1 | 8:QH:105:ARG:HH12 | 2.09 | 0.51 |
| 13:QM:87:TYR:C | 13:QM:89:GLY:N | 2.64 | 0.51 |
| 20:QT:83:ARG:O | 20:QT:86:ARG:HB3 | 2.10 | 0.51 |
| 25:RA:270(U):C:H2' | 25:RA:270(V):G:C8 | 2.46 | 0.51 |
| 25:RA:1113:U:H2' | 25:RA:1114:G:C8 | 2.46 | 0.51 |
| 25:RA:1727:U:H2' | 25:RA:1728:G:O4' | 2.10 | 0.51 |
| 25:RA:2563:U:H1' | 25:RA:2566:A:N6 | 2.25 | 0.51 |
| 25:RA:2688:U:H1' | 25:RA:2721:A:N6 | 2.25 | 0.51 |
| 28:RE:64:LYS:C | 28:RE:66:HIS:H | 2.12 | 0.51 |
| 29:RF:127:GLU:OE1 | 29:RF:127:GLU:HA | 2.07 | 0.51 |
| 31:RH:126:PRO:HD2 | 31:RH:127:GLU:N | 2.26 | 0.51 |
| 32:RI:12:LEU:O | 32:RI:13:GLY:O | 2.28 | 0.51 |
| 32:RI:129:THR:HA | 32:RI:137:PRO:HA | 1.92 | 0.51 |
| 33:RN:12:ARG:NH1 | 33:RN:50:ASP:OD1 | 2.43 | 0.51 |
| 35:RP:31:ALA:C | 35:RP:32:THR:HG23 | 2.31 | 0.51 |
| 35:RP:112:LEU:HD22 | 35:RP:113:LYS:H | 1.74 | 0.51 |
| 35:RP:112:LEU:HD22 | 35:RP:113:LYS:N | 2.26 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 39:RT:20:PRO:HD2 | 39:RT:86:ILE:HG23 | 1.92 | 0.51 |
| 41:RV:29:PRO:O | 41:RV:61:VAL:O | 2.29 | 0.51 |
| 41:RV:75:PHE:C | 41:RV:75:PHE:CD1 | 2.83 | 0.51 |
| 42:RW:25:ARG:HB2 | 42:RW:25:ARG:HH11 | 1.74 | 0.51 |
| 43:RX:65:ARG:H | 43:RX:65:ARG:CD | 2.24 | 0.51 |
| 51:R5:40:LYS:HD3 | 51:R5:46:CYS:SG | 2.50 | 0.51 |
| 1:XA:200:G:H1 | 1:XA:217:C:H42 | 1.58 | 0.51 |
| 1:XA:269:C:H2' | 1:XA:270:A:H8 | 1.75 | 0.51 |
| 1:XA:1022:G:H2' | 1:XA:1023:G:C8 | 2.45 | 0.51 |
| 1:XA:1126:U:H5 | 1:XA:1127:G:C4 | 2.28 | 0.51 |
| 1:XA:1306:A:N6 | 1:XA:1331:G:H1' | 2.25 | 0.51 |
| 1:XA:1521:G:C2 | 1:XA:1522:U:C2 | 2.99 | 0.51 |
| 3:XC:22:TRP:CH2 | 3:XC:32:LEU:HB2 | 2.45 | 0.51 |
| 3:XC:29:TYR:OH | 14:YN:54:PRO:HD2 | 2.09 | 0.51 |
| 3:XC:35:GLU:OE2 | 3:XC:95:THR:HG23 | 2.10 | 0.51 |
| 3:XC:113:ALA:C | 3:XC:115:LEU:H | 2.14 | 0.51 |
| 3:XC:175:LEU:HD12 | 3:XC:175:LEU:H | 1.76 | 0.51 |
| 9:XI:127:LYS:NZ | 22:XV:34:C:OP2 | 2.44 | 0.51 |
| 13:XM:4:ILE:HG22 | 13:XM:5:ALA:H | 1.75 | 0.51 |
| 25:YA:1081:U:H3' | 25:YA:1082:U:H4' | 1.91 | 0.51 |
| 27:YD:35:LYS:HG2 | 27:YD:64:ILE:HG22 | 1.92 | 0.51 |
| 28:YE:95:ILE:H | 28:YE:95:ILE:CD1 | 2.19 | 0.51 |
| 29:YF:65:TRP:HZ2 | 29:YF:72:ARG:NH2 | 2.08 | 0.51 |
| 30:YG:97:ASP:O | 30:YG:101:ILE:HG23 | 2.10 | 0.51 |
| 33:YN:12:ARG:NH1 | 33:YN:50:ASP:OD2 | 2.40 | 0.51 |
| 33:YN:120:LEU:CD1 | 33:YN:122:VAL:HG23 | 2.38 | 0.51 |
| 34:YO:23:ARG:O | 34:YO:39:ILE:HB | 2.10 | 0.51 |
| 35:YP:112:LEU:HD22 | 35:YP:113:LYS:H | 1.75 | 0.51 |
| 38:YS:106:ARG:HA | 38:YS:110:LEU:CG | 2.39 | 0.51 |
| 45:YZ:136:PHE:O | 45:YZ:137:ILE:HG23 | 2.11 | 0.51 |
| 51:Y5:40:LYS:HD3 | 51:Y5:46:CYS:SG | 2.50 | 0.51 |
| 52:Y6:34:LEU:HD23 | 52:Y6:36:LEU:HD22 | 1.93 | 0.51 |
| 54:Y8:52:LYS:N | 54:Y8:53:PRO:HD2 | 2.22 | 0.51 |
| 1:QA:376:G:N2 | 1:QA:387:U:O2 | 2.37 | 0.51 |
| 1:QA:1346:A:H5'' | 9:QI:120:ARG:HH12 | 1.75 | 0.51 |
| 3:QC:22:TRP:CH2 | 3:QC:32:LEU:HB2 | 2.45 | 0.51 |
| 3:QC:112:SER:HB3 | 3:QC:115:LEU:HD12 | 1.92 | 0.51 |
| 3:QC:113:ALA:C | 3:QC:115:LEU:H | 2.14 | 0.51 |
| 4:QD:65:ARG:NH1 | 4:QD:70:ILE:O | 2.43 | 0.51 |
| 4:QD:162:LEU:HD11 | 4:QD:181:MET:HB3 | 1.92 | 0.51 |
| 5:QE:107:ARG:O | 5:QE:108:ALA:C | 2.49 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 6:QF:69:GLU:C | 6:QF:71:ARG:H | 2.13 | 0.51 |
| 9:QI:126:SER:O | 9:QI:128:ARG:N | 2.35 | 0.51 |
| 17:QQ:48:GLU:O | 17:QQ:49:GLU:C | 2.48 | 0.51 |
| 18:QR:64:ARG:O | 18:QR:66:LEU:N | 2.43 | 0.51 |
| 22:QV:76:A:O2' | 55:Z6:76:PPU:N | 2.38 | 0.51 |
| 25:RA:299:A:OP2 | 25:RA:299:A:H8 | 1.94 | 0.51 |
| 25:RA:747:U:N1 | 51:R5:2:ALA:HB3 | 2.25 | 0.51 |
| 25:RA:2224:G:OP1 | 27:RD:268:ARG:HD3 | 2.10 | 0.51 |
| 28:RE:105:THR:HB | 28:RE:197:ILE:HG12 | 1.93 | 0.51 |
| 30:RG:114:ILE:CG2 | 30:RG:115:ARG:N | 2.73 | 0.51 |
| 34:RO:24:VAL:HG21 | 34:RO:32:TYR:O | 2.10 | 0.51 |
| 34:RO:43:VAL:HG23 | 34:RO:56:ASP:O | 2.10 | 0.51 |
| 36:RQ:25:ASP:HA | 36:RQ:100:GLY:O | 2.11 | 0.51 |
| 36:RQ:80:GLU:HG2 | 46:R0:5:LYS:CG | 2.40 | 0.51 |
| 37:RR:28:LEU:CD2 | 37:RR:114:VAL:HG12 | 2.41 | 0.51 |
| 37:RR:117:VAL:CG2 | 37:RR:118:GLU:N | 2.74 | 0.51 |
| 38:RS:87:PHE:O | 38:RS:88:ASP:O | 2.28 | 0.51 |
| 39:RT:34:VAL:CG1 | 39:RT:36:GLU:HG2 | 2.39 | 0.51 |
| 44:RY:9:LYS:HG2 | 44:RY:9:LYS:O | 2.11 | 0.51 |
| 44:RY:61:ILE:HG23 | 44:RY:62:GLU:N | 2.24 | 0.51 |
| 45:RZ:6:LYS:O | 45:RZ:7:ALA:HB3 | 2.09 | 0.51 |
| 45:RZ:94:GLU:CB | 45:RZ:130:PRO:HD3 | 2.38 | 0.51 |
| 1:XA:980:C:H5'' | 1:XA:981:U:C5 | 2.44 | 0.51 |
| 1:XA:1316:G:N2 | 1:XA:1318:A:H3' | 2.25 | 0.51 |
| 1:XA:1330:U:H4' | 13:XM:23:TYR:CZ | 2.45 | 0.51 |
| 2:XB:170:GLU:HA | 2:XB:172:ILE:CD1 | 2.41 | 0.51 |
| 3:XC:11:ARG:O | 3:XC:13:GLY:N | 2.43 | 0.51 |
| 3:XC:181:ASN:HD21 | 3:XC:204:LEU:CD1 | 2.12 | 0.51 |
| 4:XD:83:SER:HA | 4:XD:89:THR:HG23 | 1.92 | 0.51 |
| 8:XH:12:ARG:NH1 | 8:XH:27:PRO:HD2 | 2.25 | 0.51 |
| 10:XJ:17:ASP:HA | 10:XJ:20:ALA:HB3 | 1.93 | 0.51 |
| 13:XM:34:LEU:HD12 | 13:XM:41:PRO:HG3 | 1.93 | 0.51 |
| 18:XR:64:ARG:O | 18:XR:66:LEU:N | 2.43 | 0.51 |
| 19:XS:40:ILE:HG23 | 19:XS:67:VAL:O | 2.11 | 0.51 |
| 21:XU:3:LYS:HB3 | 21:XU:14:TRP:CD1 | 2.46 | 0.51 |
| 21:XU:6:ARG:HE | 21:XU:15:ARG:NH2 | 2.08 | 0.51 |
| 25:YA:311:A:HO2' | 25:YA:331:A:HO2' | 1.57 | 0.51 |
| 25:YA:662:G:H5'' | 35:YP:17:LYS:HG2 | 1.92 | 0.51 |
| 25:YA:747:U:N3 | 51:Y5:2:ALA:N | 2.58 | 0.51 |
| 25:YA:844:C:H3' | 25:YA:845:G:C8 | 2.45 | 0.51 |
| 25:YA:942:G:O2' | 25:YA:1189:A:N3 | 2.32 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:YA:1204:A:H1' | 25:YA:1206:G:N9 | 2.26 | 0.51 |
| 25:YA:2365:G:OP1 | 46:Y0:55:ARG:HG2 | 2.10 | 0.51 |
| 27:YD:30:GLU:HG3 | 27:YD:63:ARG:NH2 | 2.26 | 0.51 |
| 27:YD:134:ARG:HB2 | 27:YD:135:PHE:HD2 | 1.75 | 0.51 |
| 41:YV:14:VAL:HA | 41:YV:18:LEU:HD12 | 1.93 | 0.51 |
| 44:YY:77:PRO:O | 44:YY:78:ALA:HB2 | 2.10 | 0.51 |
| 44:YY:94:LYS:HE3 | 44:YY:101:LYS:HZ1 | 1.75 | 0.51 |
| 45:YZ:80:ARG:HH21 | 45:YZ:82:ARG:HH12 | 1.58 | 0.51 |
| 50:Y4:42:PHE:O | 50:Y4:44:THR:N | 2.44 | 0.51 |
| 1:QA:972:C:H4' | 10:QJ:57:LYS:HG3 | 1.92 | 0.51 |
| 2:QB:24:TRP:CE3 | 2:QB:26:PRO:HA | 2.45 | 0.51 |
| 4:QD:127:THR:CG2 | 4:QD:128:VAL:N | 2.73 | 0.51 |
| 4:QD:166:LYS:HG2 | 27:YD:135:PHE:CE2 | 2.45 | 0.51 |
| 6:QF:86:ARG:O | 6:QF:87:ARG:CG | 2.50 | 0.51 |
| 6:QF:101:ALA:HA | 18:QR:28:GLU:OE1 | 2.10 | 0.51 |
| 7:QG:16:LEU:HD11 | 9:QI:45:ALA:HB2 | 1.92 | 0.51 |
| 10:QJ:54:PHE:O | 10:QJ:55:LYS:HG3 | 2.10 | 0.51 |
| 13:QM:2:ALA:O | 13:QM:9:ILE:HB | 2.11 | 0.51 |
| 13:QM:9:ILE:HD12 | 13:QM:9:ILE:C | 2.31 | 0.51 |
| 19:QS:15:LEU:HD23 | 19:QS:15:LEU:H | 1.75 | 0.51 |
| 25:RA:222:A:H3' | 25:RA:421:U:H5'' | 1.93 | 0.51 |
| 25:RA:1226:G:O3' | 41:RV:84:LYS:HD3 | 2.10 | 0.51 |
| 25:RA:1902:C:H5' | 27:RD:246:PRO:HD3 | 1.91 | 0.51 |
| 25:RA:2395:C:H42 | 25:RA:2421:G:H1 | 1.57 | 0.51 |
| 25:RA:2816:C:O2 | 25:RA:2883:A:O2' | 2.27 | 0.51 |
| 27:RD:259:THR:O | 27:RD:260:ARG:C | 2.49 | 0.51 |
| 28:RE:105:THR:HG23 | 28:RE:166:THR:OG1 | 2.10 | 0.51 |
| 29:RF:32:LEU:O | 29:RF:36:VAL:HG23 | 2.11 | 0.51 |
| 29:RF:198:ALA:C | 29:RF:200:GLU:N | 2.62 | 0.51 |
| 33:RN:26:LEU:HG | 33:RN:30:ILE:HD11 | 1.92 | 0.51 |
| 34:RO:79:PHE:CD2 | 39:RT:72:VAL:HG22 | 2.45 | 0.51 |
| 36:RQ:64:ILE:HA | 36:RQ:106:VAL:CG1 | 2.33 | 0.51 |
| 44:RY:75:ILE:CG1 | 44:RY:76:CYS:N | 2.73 | 0.51 |
| 44:RY:95:LYS:O | 44:RY:96:ILE:O | 2.28 | 0.51 |
| 45:RZ:48:PHE:CZ | 45:RZ:52:SER:HA | 2.46 | 0.51 |
| 45:RZ:80:ARG:HH21 | 45:RZ:82:ARG:HH12 | 1.58 | 0.51 |
| 45:RZ:170:THR:O | 45:RZ:171:ILE:HB | 2.10 | 0.51 |
| 47:R1:87:PRO:O | 47:R1:91:LYS:HB2 | 2.10 | 0.51 |
| 48:R2:15:LYS:H | 48:R2:67:LYS:HE2 | 1.73 | 0.51 |
| 50:R4:36:CYS:O | 50:R4:39:CYS:CB | 2.55 | 0.51 |
| 53:R7:36:GLN:HG2 | 53:R7:36:GLN:O | 2.09 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:XA:38:G:N2 | 1:XA:397:A:OP1 | 2.40 | 0.51 |
| 1:XA:244:U:H4' | 1:XA:245:C:O5' | 2.10 | 0.51 |
| 1:XA:676:A:O2' | 11:XK:115:PRO:HB3 | 2.11 | 0.51 |
| 1:XA:692:U:O2' | 1:XA:694:A:N7 | 2.38 | 0.51 |
| 1:XA:784:C:H2' | 1:XA:785:G:O4' | 2.10 | 0.51 |
| 1:XA:950:U:H2' | 1:XA:951:G:H8 | 1.75 | 0.51 |
| 1:XA:1422:G:H5'' | 34:YO:48:PRO:HG3 | 1.93 | 0.51 |
| 6:XF:10:LEU:HD13 | 6:XF:61:LEU:HD13 | 1.92 | 0.51 |
| 11:XK:29:ILE:HG13 | 11:XK:44:SER:HB3 | 1.92 | 0.51 |
| 12:XL:24:VAL:O | 12:XL:24:VAL:CG1 | 2.58 | 0.51 |
| 25:YA:180:G:N2 | 25:YA:215:G:O6 | 2.43 | 0.51 |
| 25:YA:1870:C:H2' | 25:YA:1871:A:O4' | 2.09 | 0.51 |
| 25:YA:2216:G:H2' | 25:YA:2217:G:H8 | 1.75 | 0.51 |
| 25:YA:2839:G:O2' | 37:YR:49:ASP:OD2 | 2.22 | 0.51 |
| 27:YD:210:GLY:O | 27:YD:213:ARG:N | 2.43 | 0.51 |
| 27:YD:259:THR:O | 27:YD:260:ARG:C | 2.49 | 0.51 |
| 28:YE:51:PHE:CD1 | 28:YE:52:LEU:N | 2.76 | 0.51 |
| 28:YE:203:LYS:HE3 | 28:YE:204:ALA:CB | 2.40 | 0.51 |
| 33:YN:131:GLN:HE21 | 33:YN:132:ALA:H | 1.57 | 0.51 |
| 34:YO:4:PRO:O | 34:YO:5:GLN:CB | 2.58 | 0.51 |
| 34:YO:24:VAL:HG21 | 34:YO:32:TYR:O | 2.10 | 0.51 |
| 37:YR:118:GLU:OXT | 37:YR:118:GLU:HG3 | 2.11 | 0.51 |
| 41:YV:1:MET:HE2 | 41:YV:43:GLU:HG2 | 1.92 | 0.51 |
| 43:YX:36:LYS:HA | 43:YX:39:ILE:HD12 | 1.90 | 0.51 |
| 45:YZ:108:PRO:C | 45:YZ:110:GLY:H | 2.13 | 0.51 |
| 46:Y0:8:GLY:O | 46:Y0:9:SER:O | 2.29 | 0.51 |
| 1:QA:160:A:H2' | 1:QA:161:A:O4' | 2.10 | 0.51 |
| 1:QA:339:C:H2' | 1:QA:340:U:C6 | 2.45 | 0.51 |
| 1:QA:378:G:H2' | 1:QA:379:C:C6 | 2.46 | 0.51 |
| 1:QA:713:G:H21 | 1:QA:777:A:H1' | 1.75 | 0.51 |
| 1:QA:1074:G:C4' | 2:QB:104:ASN:HB2 | 2.41 | 0.51 |
| 3:QC:36:ASP:HB3 | 3:QC:40:ARG:NH1 | 2.26 | 0.51 |
| 4:QD:54:TYR:CE1 | 4:QD:206:PHE:HE1 | 2.29 | 0.51 |
| 9:QI:3:GLN:HB3 | 9:QI:20:ARG:CG | 2.40 | 0.51 |
| 10:QJ:17:ASP:HA | 10:QJ:20:ALA:HB3 | 1.93 | 0.51 |
| 25:RA:878:A:H3' | 25:RA:879:G:H8 | 1.76 | 0.51 |
| 25:RA:878:A:H3' | 25:RA:879:G:C8 | 2.46 | 0.51 |
| 25:RA:1239:G:H2' | 25:RA:1240:U:O4' | 2.10 | 0.51 |
| 25:RA:1667:G:N1 | 25:RA:1992:G:OP2 | 2.31 | 0.51 |
| 26:RB:5:C:O2' | 26:RB:27:C:O2 | 2.28 | 0.51 |
| 28:RE:77:ILE:O | 28:RE:78:LEU:C | 2.48 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 33:RN:134:ARG:O | 33:RN:136:GLU:N | 2.43 | 0.51 |
| 41:RV:5:VAL:HG22 | 41:RV:14:VAL:HG22 | 1.93 | 0.51 |
| 42:RW:20:VAL:C | 42:RW:22:ASP:N | 2.60 | 0.51 |
| 44:RY:46:LYS:HE3 | 44:RY:63:LYS:HB3 | 1.93 | 0.51 |
| 50:R4:61:ARG:C | 50:R4:63:TYR:H | 2.14 | 0.51 |
| 54:R8:10:ALA:O | 54:R8:14:VAL:HG12 | 2.11 | 0.51 |
| 1:XA:31:G:O2' | 1:XA:48:C:N4 | 2.43 | 0.51 |
| 1:XA:234:C:H2' | 1:XA:235:C:C6 | 2.46 | 0.51 |
| 1:XA:243:A:H4' | 1:XA:244:U:O5' | 2.10 | 0.51 |
| 1:XA:518:C:H5' | 1:XA:530:G:O4' | 2.10 | 0.51 |
| 1:XA:1347:G:H22 | 1:XA:1374:A:P | 2.34 | 0.51 |
| 2:XB:134:GLU:HB3 | 2:XB:138:LEU:CD1 | 2.39 | 0.51 |
| 3:XC:21:ARG:CD | 3:XC:21:ARG:N | 2.74 | 0.51 |
| 4:XD:52:SER:O | 4:XD:53:ASP:C | 2.49 | 0.51 |
| 6:XF:63:TYR:HD2 | 6:XF:63:TYR:N | 2.08 | 0.51 |
| 6:XF:63:TYR:CD2 | 6:XF:63:TYR:N | 2.79 | 0.51 |
| 6:XF:75:LEU:HD23 | 6:XF:79:LEU:HG | 1.91 | 0.51 |
| 7:XG:11:GLN:C | 7:XG:12:LEU:HD22 | 2.31 | 0.51 |
| 13:XM:87:TYR:C | 13:XM:89:GLY:N | 2.64 | 0.51 |
| 20:XT:89:ARG:HH22 | 20:XT:106:ALA:HB2 | 1.75 | 0.51 |
| 25:YA:184:C:H2' | 25:YA:185:U:H6 | 1.76 | 0.51 |
| 25:YA:1178:C:H2' | 25:YA:1179:C:C6 | 2.45 | 0.51 |
| 25:YA:1199:U:H1' | 40:YU:4:ALA:HB2 | 1.91 | 0.51 |
| 28:YE:77:ILE:O | 28:YE:78:LEU:C | 2.48 | 0.51 |
| 30:YG:114:ILE:CG2 | 30:YG:115:ARG:N | 2.73 | 0.51 |
| 32:YI:4:ILE:N | 32:YI:37:VAL:O | 2.41 | 0.51 |
| 35:YP:31:ALA:C | 35:YP:32:THR:HG23 | 2.31 | 0.51 |
| 42:YW:70:TYR:HD2 | 42:YW:70:TYR:N | 2.06 | 0.51 |
| 43:YX:18:TYR:C | 43:YX:20:GLY:N | 2.63 | 0.51 |
| 45:YZ:61:LEU:HB3 | 45:YZ:62:PRO:CD | 2.40 | 0.51 |
| 50:Y4:50:VAL:O | 50:Y4:51:ASP:C | 2.48 | 0.51 |
| 54:Y8:29:LYS:HB2 | 54:Y8:44:LYS:HG2 | 1.91 | 0.51 |
| 1:QA:522:C:H41 | 12:QL:53:ARG:HH22 | 1.58 | 0.51 |
| 1:QA:920:U:H5' | 1:QA:1080:A:C6 | 2.46 | 0.51 |
| 1:QA:1095:U:P | 1:QA:1108:G:H1 | 2.34 | 0.51 |
| 2:QB:134:GLU:HB3 | 2:QB:138:LEU:HD12 | 1.93 | 0.51 |
| 4:QD:52:SER:O | 4:QD:53:ASP:C | 2.49 | 0.51 |
| 6:QF:30:LEU:O | 6:QF:35:ALA:HB3 | 2.10 | 0.51 |
| 6:QF:63:TYR:HD2 | 6:QF:63:TYR:N | 2.09 | 0.51 |
| 13:QM:57:ARG:HH11 | 13:QM:57:ARG:CB | 2.14 | 0.51 |
| 15:QO:17:ARG:NH1 | 15:QO:77:ARG:NH1 | 2.59 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:RA:67:U:H2' | 25:RA:68:G:H8 | 1.75 | 0.51 |
| 25:RA:631:A:H2' | 25:RA:632:A:O4' | 2.10 | 0.51 |
| 25:RA:789:A:O3' | 25:RA:1781:C:N4 | 2.44 | 0.51 |
| 25:RA:1459:G:H2' | 25:RA:1460:A:H5'' | 1.93 | 0.51 |
| 25:RA:1779:U:OP2 | 25:RA:1784:A:N6 | 2.38 | 0.51 |
| 25:RA:2556:C:H2' | 25:RA:2557:G:O4' | 2.11 | 0.51 |
| 25:RA:2701:C:H3' | 25:RA:2702:U:C5' | 2.26 | 0.51 |
| 27:RD:67:PHE:CE1 | 27:RD:157:ARG:NH2 | 2.79 | 0.51 |
| 28:RE:7:VAL:HG11 | 39:RT:1:MET:HE3 | 1.93 | 0.51 |
| 32:RI:14:ASP:O | 32:RI:16:GLY:N | 2.44 | 0.51 |
| 34:RO:16:ALA:HA | 34:RO:46:ALA:HB2 | 1.92 | 0.51 |
| 34:RO:23:ARG:HH11 | 34:RO:23:ARG:HG2 | 1.76 | 0.51 |
| 36:RQ:36:ALA:HB1 | 36:RQ:127:ILE:HD12 | 1.93 | 0.51 |
| 41:RV:38:LEU:HD13 | 41:RV:55:ALA:HB3 | 1.91 | 0.51 |
| 42:RW:7:ALA:HB2 | 42:RW:50:VAL:CG2 | 2.40 | 0.51 |
| 42:RW:9:TYR:CD2 | 42:RW:102:HIS:HE1 | 2.28 | 0.51 |
| 47:R1:94:LEU:O | 47:R1:95:LEU:HG | 2.11 | 0.51 |
| 48:R2:36:ARG:O | 48:R2:40:SER:HB2 | 2.10 | 0.51 |
| 1:XA:156:G:H1 | 1:XA:165:C:N4 | 2.08 | 0.51 |
| 1:XA:262:A:H2' | 1:XA:263:A:C8 | 2.46 | 0.51 |
| 1:XA:264:U:H2' | 1:XA:265:G:O4' | 2.11 | 0.51 |
| 1:XA:926:G:H22 | 23:XX:1:A:P | 2.34 | 0.51 |
| 1:XA:1359:C:H3' | 14:XN:35:ARG:HH12 | 1.75 | 0.51 |
| 1:XA:1504:G:H4' | 1:XA:1505:G:O5' | 2.10 | 0.51 |
| 3:XC:70:VAL:CG1 | 3:XC:71:ALA:N | 2.73 | 0.51 |
| 4:XD:196:LEU:HD12 | 4:XD:196:LEU:H | 1.75 | 0.51 |
| 7:XG:15:ASP:CB | 7:XG:20:ASP:H | 2.13 | 0.51 |
| 16:XP:72:ARG:HD3 | 16:XP:73:LEU:HD23 | 1.91 | 0.51 |
| 22:XV:4:G:HO2' | 22:XV:5:G:H8 | 1.58 | 0.51 |
| 25:YA:142:G:O3' | 43:YX:35:THR:HG21 | 2.10 | 0.51 |
| 25:YA:1077:A:H2 | 25:YA:1079:C:H5'' | 1.75 | 0.51 |
| 25:YA:1270:C:H5'' | 25:YA:1271:G:O5' | 2.11 | 0.51 |
| 25:YA:1400:G:H2' | 25:YA:1401:G:C8 | 2.46 | 0.51 |
| 25:YA:1547:C:O2' | 25:YA:1548:C:H5' | 2.11 | 0.51 |
| 25:YA:1688:U:H1' | 25:YA:1701:A:C6 | 2.46 | 0.51 |
| 25:YA:1929:G:O5' | 25:YA:1929:G:C8 | 2.64 | 0.51 |
| 28:YE:37:ARG:HE | 28:YE:37:ARG:N | 2.09 | 0.51 |
| 32:YI:14:ASP:O | 32:YI:16:GLY:N | 2.44 | 0.51 |
| 32:YI:129:THR:HA | 32:YI:137:PRO:HA | 1.93 | 0.51 |
| 32:YI:130:TYR:HB3 | 32:YI:136:VAL:HG13 | 1.93 | 0.51 |
| 35:YP:95:VAL:HG13 | 35:YP:100:LEU:CD2 | 2.40 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:YP:101:VAL:HA | 35:YP:105:LEU:O | 2.10 | 0.51 |
| 39:YT:14:TYR:N | 39:YT:14:TYR:CD1 | 2.77 | 0.51 |
| 43:YX:47:PHE:CD1 | 43:YX:47:PHE:N | 2.78 | 0.51 |
| 43:YX:65:ARG:H | 43:YX:65:ARG:CD | 2.24 | 0.51 |
| 45:YZ:48:PHE:CZ | 45:YZ:52:SER:HA | 2.46 | 0.51 |
| 45:YZ:70:LEU:HD11 | 45:YZ:98:MET:HE1 | 1.91 | 0.51 |
| 47:Y1:92:LYS:C | 47:Y1:94:LEU:N | 2.62 | 0.51 |
| 50:Y4:54:GLY:HA2 | 50:Y4:57:GLU:HG2 | 1.92 | 0.51 |
| 51:Y5:20:ARG:C | 51:Y5:22:HIS:H | 2.14 | 0.51 |
| 1:QA:509:A:H5' | 4:QD:55:ALA:HB2 | 1.93 | 0.51 |
| 1:QA:539:A:H2' | 1:QA:540:G:C8 | 2.45 | 0.51 |
| 1:QA:646:U:H2' | 1:QA:647:C:H6 | 1.72 | 0.51 |
| 1:QA:765:G:N1 | 1:QA:812:C:H2' | 2.25 | 0.51 |
| 1:QA:1131:G:H2' | 1:QA:1132:C:H6 | 1.75 | 0.51 |
| 2:QB:82:ARG:HA | 2:QB:92:TYR:CE2 | 2.45 | 0.51 |
| 2:QB:187:LEU:HD13 | 2:QB:187:LEU:O | 2.11 | 0.51 |
| 3:QC:21:ARG:CD | 3:QC:21:ARG:N | 2.74 | 0.51 |
| 3:QC:48:TYR:O | 3:QC:51:GLY:N | 2.41 | 0.51 |
| 4:QD:112:VAL:HG12 | 4:QD:116:GLN:OE1 | 2.11 | 0.51 |
| 8:QH:104:ARG:HD2 | 8:QH:138:TRP:CD2 | 2.45 | 0.51 |
| 9:QI:79:LEU:HD22 | 9:QI:101:PHE:O | 2.10 | 0.51 |
| 9:QI:88:TYR:O | 9:QI:89:ASN:CB | 2.58 | 0.51 |
| 11:QK:46:GLY:HA2 | 11:QK:50:TYR:O | 2.10 | 0.51 |
| 21:QU:3:LYS:HB3 | 21:QU:14:TRP:CD1 | 2.46 | 0.51 |
| 25:RA:307:G:N2 | 25:RA:330:A:H62 | 2.04 | 0.51 |
| 25:RA:1370:C:H2' | 25:RA:1371:G:O4' | 2.11 | 0.51 |
| 31:RH:131:VAL:CG1 | 31:RH:132:ARG:N | 2.74 | 0.51 |
| 34:RO:15:GLY:O | 34:RO:46:ALA:HB1 | 2.10 | 0.51 |
| 34:RO:113:LYS:O | 34:RO:116:SER:HB3 | 2.11 | 0.51 |
| 38:RS:89:ARG:HD2 | 38:RS:89:ARG:O | 2.11 | 0.51 |
| 43:RX:5:TYR:CE2 | 48:R2:30:ARG:HG3 | 2.45 | 0.51 |
| 52:R6:9:LEU:HB3 | 52:R6:26:ASN:O | 2.11 | 0.51 |
| 1:XA:939:G:H2' | 1:XA:940:C:C6 | 2.46 | 0.51 |
| 4:XD:13:ARG:HD3 | 4:XD:38:TYR:O | 2.10 | 0.51 |
| 4:XD:178:VAL:O | 4:XD:180:GLY:N | 2.44 | 0.51 |
| 5:XE:107:ARG:O | 5:XE:108:ALA:C | 2.49 | 0.51 |
| 15:XO:16:ALA:HB1 | 15:XO:21:ASP:HB3 | 1.92 | 0.51 |
| 21:XU:10:ARG:HH11 | 21:XU:10:ARG:HG3 | 1.75 | 0.51 |
| 25:YA:43:G:H2' | 25:YA:44:A:O4' | 2.10 | 0.51 |
| 25:YA:890:A:O2' | 25:YA:892:G:H8 | 1.93 | 0.51 |
| 25:YA:1184:G:OP1 | 49:Y3:29:ARG:NH1 | 2.44 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:1654:A:O2' | 28:YE:113:PHE:O | 2.21 | 0.51 |
| 25:YA:1688:U:O2 | 25:YA:1700:A:H5'' | 2.11 | 0.51 |
| 25:YA:2308:G:N1 | 25:YA:2311:A:C2 | 2.77 | 0.51 |
| 30:YG:51:ARG:HH11 | 30:YG:51:ARG:HB3 | 1.76 | 0.51 |
| 31:YH:19:VAL:HG13 | 31:YH:43:VAL:CG2 | 2.41 | 0.51 |
| 31:YH:55:PRO:HG2 | 31:YH:61:HIS:ND1 | 2.26 | 0.51 |
| 36:YQ:25:ASP:HA | 36:YQ:100:GLY:O | 2.11 | 0.51 |
| 36:YQ:133:ARG:HG2 | 36:YQ:134:ARG:N | 2.26 | 0.51 |
| 43:YX:5:TYR:CE2 | 48:Y2:30:ARG:HG3 | 2.45 | 0.51 |
| 45:YZ:124:ILE:HD11 | 45:YZ:165:VAL:CG2 | 2.41 | 0.51 |
| 1:QA:109:A:C6 | 1:QA:326:G:C6 | 2.98 | 0.51 |
| 1:QA:410:G:OP2 | 4:QD:25:ARG:HG3 | 2.10 | 0.51 |
| 1:QA:1131:G:H2' | 1:QA:1132:C:C6 | 2.46 | 0.51 |
| 1:QA:1207:G:H2' | 1:QA:1208:C:H6 | 1.76 | 0.51 |
| 2:QB:23:ARG:HH11 | 2:QB:23:ARG:HG2 | 1.76 | 0.51 |
| 3:QC:99:VAL:O | 3:QC:99:VAL:HG23 | 2.11 | 0.51 |
| 10:QJ:81:THR:C | 10:QJ:83:GLU:N | 2.64 | 0.51 |
| 13:QM:16:ASP:HB3 | 13:QM:34:LEU:HD11 | 1.93 | 0.51 |
| 21:QU:10:ARG:HH11 | 21:QU:10:ARG:HG3 | 1.76 | 0.51 |
| 25:RA:482:A:O2' | 25:RA:497:A:N1 | 2.38 | 0.51 |
| 25:RA:1049:C:H2' | 25:RA:1050:A:H5'' | 1.93 | 0.51 |
| 25:RA:1283:G:O2' | 25:RA:1285:G:N7 | 2.34 | 0.51 |
| 25:RA:1464:C:HO2' | 25:RA:1528:A:H8 | 1.58 | 0.51 |
| 25:RA:1930:G:O2' | 25:RA:1931:U:O5' | 2.27 | 0.51 |
| 25:RA:2027:G:H2' | 25:RA:2028:U:O4' | 2.10 | 0.51 |
| 27:RD:76:PRO:HA | 27:RD:118:VAL:HG23 | 1.93 | 0.51 |
| 27:RD:94:LEU:HD13 | 27:RD:94:LEU:C | 2.31 | 0.51 |
| 30:RG:44:GLY:CA | 30:RG:88:ILE:HD11 | 2.40 | 0.51 |
| 30:RG:51:ARG:HH11 | 30:RG:51:ARG:HB3 | 1.76 | 0.51 |
| 32:RI:83:ALA:O | 32:RI:84:GLY:C | 2.48 | 0.51 |
| 33:RN:6:PRO:HG2 | 33:RN:43:THR:OG1 | 2.11 | 0.51 |
| 33:RN:7:LYS:HD3 | 33:RN:9:VAL:N | 2.25 | 0.51 |
| 33:RN:131:GLN:CG | 33:RN:132:ALA:H | 2.21 | 0.51 |
| 34:RO:35:VAL:O | 34:RO:35:VAL:HG23 | 2.11 | 0.51 |
| 44:RY:2:ARG:HG2 | 44:RY:2:ARG:NH1 | 2.22 | 0.51 |
| 47:R1:91:LYS:HE3 | 47:R1:91:LYS:CA | 2.39 | 0.51 |
| 50:R4:12:ALA:HB1 | 50:R4:30:GLU:H | 1.76 | 0.51 |
| 50:R4:42:PHE:O | 50:R4:44:THR:N | 2.44 | 0.51 |
| 1:XA:232:G:H1' | 1:XA:262:A:N1 | 2.26 | 0.51 |
| 1:XA:292:G:H21 | 1:XA:608:A:N6 | 2.09 | 0.51 |
| 1:XA:496:A:H2' | 1:XA:496:A:N3 | 2.25 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:XA:659:U:H2' | 1:XA:660:G:C8 | 2.46 | 0.51 |
| 1:XA:918:A:H2' | 1:XA:919:A:C8 | 2.45 | 0.51 |
| 2:XB:15:VAL:H | 2:XB:16:HIS:HD1 | 1.59 | 0.51 |
| 2:XB:187:LEU:HD13 | 2:XB:187:LEU:O | 2.11 | 0.51 |
| 3:XC:99:VAL:O | 3:XC:99:VAL:HG23 | 2.11 | 0.51 |
| 3:XC:139:GLN:O | 3:XC:143:GLU:HB2 | 2.11 | 0.51 |
| 6:XF:10:LEU:HD13 | 6:XF:61:LEU:HD11 | 1.92 | 0.51 |
| 8:XH:104:ARG:HD2 | 8:XH:138:TRP:CD2 | 2.46 | 0.51 |
| 9:XI:48:GLU:N | 9:XI:49:PRO:CD | 2.74 | 0.51 |
| 12:XL:27:LEU:C | 12:XL:29:GLY:N | 2.64 | 0.51 |
| 16:XP:20:VAL:HG23 | 16:XP:34:GLU:O | 2.11 | 0.51 |
| 16:XP:39:TYR:OH | 16:XP:41:PRO:HB3 | 2.11 | 0.51 |
| 19:XS:41:VAL:CG1 | 19:XS:45:VAL:N | 2.74 | 0.51 |
| 21:XU:14:TRP:CE3 | 21:XU:15:ARG:HD3 | 2.46 | 0.51 |
| 22:XV:58:A:O2' | 22:XV:60:U:OP2 | 2.16 | 0.51 |
| 25:YA:323:G:O2' | 25:YA:1205:U:N3 | 2.38 | 0.51 |
| 25:YA:630:G:H4' | 25:YA:640:C:H4' | 1.92 | 0.51 |
| 25:YA:2581:G:H2' | 25:YA:2581:G:N3 | 2.26 | 0.51 |
| 25:YA:2710:C:H2' | 25:YA:2711:A:O4' | 2.11 | 0.51 |
| 26:YB:48:A:H2' | 26:YB:49:C:C6 | 2.46 | 0.51 |
| 27:YD:28:GLU:OE1 | 27:YD:29:PRO:HD2 | 2.11 | 0.51 |
| 27:YD:94:LEU:HD13 | 27:YD:94:LEU:C | 2.31 | 0.51 |
| 30:YG:109:VAL:O | 30:YG:113:ARG:HG3 | 2.10 | 0.51 |
| 31:YH:4:ILE:O | 31:YH:6:ARG:N | 2.43 | 0.51 |
| 31:YH:72:ILE:O | 31:YH:75:ALA:HB3 | 2.11 | 0.51 |
| 33:YN:16:ILE:HG22 | 33:YN:17:ASP:N | 2.25 | 0.51 |
| 33:YN:108:PRO:O | 33:YN:113:GLY:HA3 | 2.10 | 0.51 |
| 37:YR:92:GLY:N | 37:YR:94:TYR:HE2 | 2.09 | 0.51 |
| 39:YT:14:TYR:H | 39:YT:14:TYR:HD1 | 1.56 | 0.51 |
| 39:YT:51:ARG:HG3 | 39:YT:98:LYS:HG3 | 1.93 | 0.51 |
| 41:YV:41:GLY:N | 41:YV:46:VAL:HG13 | 2.26 | 0.51 |
| 48:Y2:36:ARG:O | 48:Y2:40:SER:HB2 | 2.10 | 0.51 |
| 52:Y6:20:ASN:O | 52:Y6:21:TYR:CB | 2.59 | 0.51 |
| 53:Y7:36:GLN:HG2 | 53:Y7:36:GLN:O | 2.09 | 0.51 |
| 1:QA:362:G:N2 | 1:QA:365:U:OP2 | 2.42 | 0.51 |
| 1:QA:648:A:H2' | 1:QA:649:G:H8 | 1.76 | 0.51 |
| 1:QA:871:U:HO2' | 1:QA:872:A:C5' | 2.22 | 0.51 |
| 1:QA:1190:G:OP2 | 3:QC:5:ILE:HG23 | 2.11 | 0.51 |
| 1:QA:1268:A:H2' | 1:QA:1269:A:C8 | 2.46 | 0.51 |
| 1:QA:1333:A:H2' | 1:QA:1334:G:O4' | 2.10 | 0.51 |
| 1:QA:1471:G:H2' | 1:QA:1472:U:C6 | 2.46 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:QC:132:ARG:O | 3:QC:136:GLN:HB2 | 2.11 | 0.51 |
| 3:QC:175:LEU:HD12 | 3:QC:175:LEU:H | 1.75 | 0.51 |
| 4:QD:83:SER:HA | 4:QD:89:THR:HG23 | 1.92 | 0.51 |
| 4:QD:155:LEU:O | 4:QD:159:ARG:HG2 | 2.10 | 0.51 |
| 4:QD:162:LEU:HD13 | 4:QD:181:MET:HB3 | 1.92 | 0.51 |
| 5:QE:101:ILE:N | 5:QE:101:ILE:HD13 | 2.25 | 0.51 |
| 11:QK:91:ARG:HH22 | 18:QR:88:LYS:NZ | 2.09 | 0.51 |
| 13:QM:120:LYS:O | 13:QM:121:LYS:HB2 | 2.11 | 0.51 |
| 14:QN:8:GLU:C | 14:QN:10:ALA:H | 2.13 | 0.51 |
| 16:QP:1:MET:O | 16:QP:3:LYS:HG3 | 2.11 | 0.51 |
| 16:QP:20:VAL:HG23 | 16:QP:34:GLU:O | 2.11 | 0.51 |
| 25:RA:127:A:H5'' | 25:RA:128:C:C6 | 2.47 | 0.51 |
| 25:RA:747:U:C4 | 25:RA:2613:U:C4 | 2.98 | 0.51 |
| 25:RA:973:A:H5' | 25:RA:1188:U:H1' | 1.93 | 0.51 |
| 25:RA:1162:G:H1' | 41:RV:23:GLU:OE2 | 2.11 | 0.51 |
| 28:RE:37:ARG:HE | 28:RE:37:ARG:N | 2.09 | 0.51 |
| 28:RE:119:ARG:HD3 | 28:RE:160:TYR:HB2 | 1.92 | 0.51 |
| 28:RE:137:HIS:HB3 | 28:RE:138:PRO:CD | 2.37 | 0.51 |
| 31:RH:6:ARG:C | 31:RH:8:PRO:HD2 | 2.30 | 0.51 |
| 31:RH:72:ILE:O | 31:RH:75:ALA:HB3 | 2.11 | 0.51 |
| 34:RO:2:ILE:CD1 | 34:RO:82:ASN:HD22 | 2.14 | 0.51 |
| 39:RT:54:ARG:HG2 | 39:RT:54:ARG:NH1 | 2.23 | 0.51 |
| 39:RT:57:PHE:CG | 39:RT:58:ASN:N | 2.79 | 0.51 |
| 44:RY:44:ILE:CG1 | 44:RY:45:VAL:H | 2.24 | 0.51 |
| 47:R1:8:SER:HB3 | 47:R1:66:HIS:CE1 | 2.46 | 0.51 |
| 47:R1:92:LYS:C | 47:R1:94:LEU:N | 2.62 | 0.51 |
| 54:R8:61:LEU:O | 54:R8:62:LEU:CB | 2.57 | 0.51 |
| 1:XA:10:A:HO2' | 1:XA:507:C:HO2' | 1.58 | 0.51 |
| 1:XA:321:A:H61 | 1:XA:332:G:H1 | 1.58 | 0.51 |
| 1:XA:1126:U:H1' | 1:XA:1280:A:N7 | 2.26 | 0.51 |
| 1:XA:1369:C:H2' | 1:XA:1370:G:C8 | 2.45 | 0.51 |
| 4:XD:206:PHE:CD2 | 4:XD:207:TYR:CD1 | 2.99 | 0.51 |
| 5:XE:78:HIS:CD2 | 8:XH:104:ARG:CG | 2.87 | 0.51 |
| 13:XM:2:ALA:O | 13:XM:9:ILE:HB | 2.10 | 0.51 |
| 13:XM:9:ILE:HD12 | 13:XM:9:ILE:C | 2.31 | 0.51 |
| 22:XV:15:G:H22 | 22:XV:48:C:H42 | 1.57 | 0.51 |
| 22:XV:35:A:C4 | 23:XX:3:G:N2 | 2.79 | 0.51 |
| 25:YA:1218:C:N4 | 25:YA:1231:G:H1 | 2.09 | 0.51 |
| 25:YA:2055:C:H4' | 25:YA:2056:G:H5'' | 1.92 | 0.51 |
| 26:YB:13:A:N6 | 26:YB:70:C:H5' | 2.25 | 0.51 |
| 26:YB:42:C:N4 | 30:YG:91:ARG:NH2 | 2.58 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 27:YD:10:THR:CG2 | 27:YD:13:ARG:HB3 | 2.35 | 0.51 |
| 29:YF:32:LEU:O | 29:YF:36:VAL:HG23 | 2.11 | 0.51 |
| 29:YF:198:ALA:C | 29:YF:200:GLU:N | 2.62 | 0.51 |
| 33:YN:78:TYR:N | 33:YN:78:TYR:HD1 | 2.07 | 0.51 |
| 33:YN:118:LYS:O | 33:YN:120:LEU:N | 2.43 | 0.51 |
| 34:YO:24:VAL:O | 34:YO:24:VAL:HG13 | 2.11 | 0.51 |
| 34:YO:113:LYS:O | 34:YO:116:SER:HB3 | 2.11 | 0.51 |
| 38:YS:83:LYS:HG2 | 38:YS:109:GLY:H | 1.76 | 0.51 |
| 1:QA:266:G:O2' | 1:QA:267:C:OP2 | 2.20 | 0.50 |
| 1:QA:889:A:H5' | 1:QA:891:U:H1' | 1.93 | 0.50 |
| 1:QA:1178:G:H5'' | 9:QI:93:ARG:HH21 | 1.76 | 0.50 |
| 1:QA:1305:G:O2' | 1:QA:1306:A:H8 | 1.94 | 0.50 |
| 2:QB:53:ARG:HA | 2:QB:56:ARG:HG3 | 1.93 | 0.50 |
| 5:QE:45:PHE:CD2 | 5:QE:47:LYS:HD2 | 2.47 | 0.50 |
| 9:QI:29:ASN:OD1 | 9:QI:64:THR:HA | 2.11 | 0.50 |
| 21:QU:14:TRP:CE3 | 21:QU:15:ARG:HD3 | 2.46 | 0.50 |
| 25:RA:587:C:H4' | 25:RA:588:U:O5' | 2.11 | 0.50 |
| 25:RA:690:G:H2' | 25:RA:691:C:C6 | 2.46 | 0.50 |
| 25:RA:1019:U:H2' | 25:RA:1020:A:H8 | 1.76 | 0.50 |
| 25:RA:1232:G:H2' | 25:RA:1233:C:C6 | 2.45 | 0.50 |
| 25:RA:1314:C:OP1 | 25:RA:1332:G:OP1 | 2.30 | 0.50 |
| 25:RA:1910:G:H1 | 25:RA:1920:C:H42 | 1.60 | 0.50 |
| 25:RA:2049:G:H1 | 25:RA:2619:C:H42 | 1.58 | 0.50 |
| 29:RF:65:TRP:HZ2 | 29:RF:72:ARG:NH2 | 2.09 | 0.50 |
| 29:RF:108:LYS:HA | 29:RF:108:LYS:NZ | 2.26 | 0.50 |
| 30:RG:92:VAL:O | 30:RG:92:VAL:HG13 | 2.12 | 0.50 |
| 33:RN:112:LEU:HD23 | 33:RN:113:GLY:N | 2.26 | 0.50 |
| 36:RQ:133:ARG:HG2 | 36:RQ:134:ARG:N | 2.26 | 0.50 |
| 37:RR:1:MET:O | 37:RR:2:ARG:CB | 2.59 | 0.50 |
| 39:RT:51:ARG:HG3 | 39:RT:98:LYS:HG3 | 1.93 | 0.50 |
| 41:RV:14:VAL:HA | 41:RV:18:LEU:HD12 | 1.93 | 0.50 |
| 41:RV:35:LEU:CD2 | 41:RV:57:VAL:HG22 | 2.32 | 0.50 |
| 42:RW:88:ARG:HB3 | 42:RW:92:ARG:CB | 2.41 | 0.50 |
| 46:R0:11:ARG:CG | 46:R0:11:ARG:NH1 | 2.73 | 0.50 |
| 1:XA:163:C:H2' | 1:XA:164:U:C6 | 2.46 | 0.50 |
| 3:XC:150:LYS:HG3 | 3:XC:169:ALA:HB2 | 1.92 | 0.50 |
| 4:XD:108:LEU:HD11 | 4:XD:174:LEU:CD2 | 2.37 | 0.50 |
| 4:XD:112:VAL:HG12 | 4:XD:116:GLN:OE1 | 2.11 | 0.50 |
| 5:XE:126:ARG:HH11 | 5:XE:126:ARG:CG | 2.20 | 0.50 |
| 16:XP:43:LYS:C | 16:XP:45:THR:H | 2.14 | 0.50 |
| 22:XV:68:C:H2' | 22:XV:69:C:H6 | 1.76 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:YA:1309:G:P | 53:Y7:9:ARG:HD3 | 2.51 | 0.50 |
| 25:YA:2133:G:H1' | 25:YA:2158:A:H61 | 1.76 | 0.50 |
| 25:YA:2281:C:O2' | 25:YA:2282:G:H5' | 2.11 | 0.50 |
| 25:YA:2756:U:H1' | 25:YA:2757:A:H5'' | 1.93 | 0.50 |
| 28:YE:116:VAL:HG22 | 28:YE:122:PHE:HB2 | 1.91 | 0.50 |
| 33:YN:26:LEU:HG | 33:YN:30:ILE:HD11 | 1.93 | 0.50 |
| 35:YP:13:ASN:O | 35:YP:14:LYS:C | 2.49 | 0.50 |
| 35:YP:49:ARG:HE | 54:Y8:59:LYS:HG2 | 1.76 | 0.50 |
| 35:YP:62:LEU:CD2 | 35:YP:62:LEU:H | 2.19 | 0.50 |
| 38:YS:89:ARG:HD2 | 38:YS:89:ARG:O | 2.11 | 0.50 |
| 38:YS:95:HIS:CG | 38:YS:96:GLY:N | 2.77 | 0.50 |
| 39:YT:57:PHE:CG | 39:YT:58:ASN:N | 2.79 | 0.50 |
| 44:YY:95:LYS:O | 44:YY:96:ILE:O | 2.28 | 0.50 |
| 45:YZ:81:ARG:HD3 | 45:YZ:81:ARG:O | 2.12 | 0.50 |
| 45:YZ:116:VAL:HG23 | 45:YZ:116:VAL:O | 2.11 | 0.50 |
| 47:Y1:85:LEU:HA | 47:Y1:87:PRO:HD2 | 1.91 | 0.50 |
| 49:Y3:7:LYS:HE2 | 49:Y3:32:GLN:NE2 | 2.25 | 0.50 |
| 50:Y4:12:ALA:HB1 | 50:Y4:30:GLU:H | 1.76 | 0.50 |
| 1:QA:186(D):C:H2' | 1:QA:186(E):C:H6 | 1.75 | 0.50 |
| 1:QA:445:G:H2' | 1:QA:446:G:H8 | 1.77 | 0.50 |
| 3:QC:34:LEU:O | 3:QC:38:ARG:HG3 | 2.10 | 0.50 |
| 5:QE:83:GLU:HG2 | 5:QE:88:LYS:CG | 2.42 | 0.50 |
| 7:QG:23:VAL:O | 7:QG:27:ILE:CD1 | 2.60 | 0.50 |
| 8:QH:12:ARG:NH1 | 8:QH:27:PRO:HD2 | 2.25 | 0.50 |
| 14:QN:48:ALA:CA | 14:QN:53:LEU:HD12 | 2.41 | 0.50 |
| 22:QV:68:C:H2' | 22:QV:69:C:H6 | 1.76 | 0.50 |
| 25:RA:288:C:H2' | 25:RA:289:A:H8 | 1.76 | 0.50 |
| 29:RF:45:ARG:CG | 29:RF:45:ARG:NH1 | 2.71 | 0.50 |
| 30:RG:43:LEU:O | 30:RG:88:ILE:HG12 | 2.12 | 0.50 |
| 31:RH:153:LYS:HG3 | 31:RH:161:GLY:HA2 | 1.91 | 0.50 |
| 34:RO:20:MET:HG2 | 34:RO:21:CYS:O | 2.11 | 0.50 |
| 37:RR:70:LEU:O | 37:RR:72:ASP:N | 2.42 | 0.50 |
| 47:R1:4:VAL:HG23 | 47:R1:10:LYS:C | 2.32 | 0.50 |
| 51:R5:37:LYS:O | 51:R5:37:LYS:HD2 | 2.12 | 0.50 |
| 1:XA:1048:G:OP1 | 14:YN:3:ARG:HB3 | 2.11 | 0.50 |
| 1:XA:1225:A:H2' | 1:XA:1225:A:N3 | 2.26 | 0.50 |
| 1:XA:1346:A:C5' | 9:XI:120:ARG:HH12 | 2.24 | 0.50 |
| 1:XA:1399:C:C2 | 1:XA:1401:G:C5 | 3.00 | 0.50 |
| 2:XB:24:TRP:CE3 | 2:XB:26:PRO:HA | 2.45 | 0.50 |
| 3:XC:184:TYR:HA | 3:XC:200:ALA:O | 2.12 | 0.50 |
| 4:XD:33:MET:HE2 | 4:XD:37:PRO:HA | 1.93 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 9:XI:10:ARG:HG3 | 9:XI:105:ASP:HB2 | 1.92 | 0.50 |
| 16:XP:1:MET:O | 16:XP:3:LYS:HG3 | 2.11 | 0.50 |
| 17:XQ:48:GLU:O | 17:XQ:49:GLU:C | 2.48 | 0.50 |
| 21:XU:6:ARG:HH21 | 21:XU:15:ARG:NE | 2.09 | 0.50 |
| 25:YA:83:G:N2 | 25:YA:102:G:O2' | 2.43 | 0.50 |
| 25:YA:299:A:N6 | 25:YA:300:A:N1 | 2.58 | 0.50 |
| 25:YA:611:C:H2' | 25:YA:612:G:O4' | 2.11 | 0.50 |
| 25:YA:1230:C:H2' | 25:YA:1231:G:C8 | 2.46 | 0.50 |
| 25:YA:1818:U:H2' | 27:YD:157:ARG:HG3 | 1.92 | 0.50 |
| 25:YA:2318:G:H1 | 38:YS:2:ALA:HA | 1.75 | 0.50 |
| 27:YD:238:GLY:O | 27:YD:239:ARG:HB2 | 2.11 | 0.50 |
| 28:YE:54:GLN:NE2 | 28:YE:54:GLN:H | 2.09 | 0.50 |
| 28:YE:105:THR:HG23 | 28:YE:166:THR:OG1 | 2.10 | 0.50 |
| 29:YF:108:LYS:HA | 29:YF:108:LYS:NZ | 2.27 | 0.50 |
| 31:YH:103:LEU:CD1 | 31:YH:131:VAL:HG21 | 2.41 | 0.50 |
| 33:YN:73:THR:HG22 | 33:YN:82:LEU:HD11 | 1.93 | 0.50 |
| 34:YO:23:ARG:HH11 | 34:YO:23:ARG:HG2 | 1.76 | 0.50 |
| 38:YS:18:ILE:C | 38:YS:19:LYS:O | 2.44 | 0.50 |
| 38:YS:86:ALA:O | 38:YS:87:PHE:HB3 | 2.09 | 0.50 |
| 39:YT:20:PRO:HD2 | 39:YT:86:ILE:HG23 | 1.92 | 0.50 |
| 47:Y1:83:GLU:CD | 47:Y1:85:LEU:H | 2.15 | 0.50 |
| 49:Y3:56:VAL:CG1 | 49:Y3:57:GLU:N | 2.74 | 0.50 |
| 1:QA:102:G:O2' | 1:QA:151:A:N3 | 2.34 | 0.50 |
| 1:QA:110:C:O2' | 16:QP:25:ARG:O | 2.29 | 0.50 |
| 1:QA:314:C:H5' | 1:QA:315:A:OP2 | 2.10 | 0.50 |
| 1:QA:1111:A:N1 | 3:QC:177:THR:HG23 | 2.26 | 0.50 |
| 2:QB:170:GLU:HA | 2:QB:172:ILE:CD1 | 2.40 | 0.50 |
| 4:QD:107:ARG:C | 4:QD:109:GLY:H | 2.14 | 0.50 |
| 4:QD:206:PHE:CD2 | 4:QD:207:TYR:CD1 | 2.99 | 0.50 |
| 8:QH:83:ILE:HB | 8:QH:137:VAL:HG13 | 1.93 | 0.50 |
| 9:QI:10:ARG:HG3 | 9:QI:105:ASP:HB2 | 1.92 | 0.50 |
| 12:QL:23:LYS:O | 12:QL:24:VAL:HG23 | 2.11 | 0.50 |
| 13:QM:82:MET:O | 13:QM:83:ASP:C | 2.49 | 0.50 |
| 15:QO:26:GLU:OE2 | 15:QO:77:ARG:NH1 | 2.43 | 0.50 |
| 25:RA:589:C:H2' | 25:RA:590:A:C8 | 2.46 | 0.50 |
| 25:RA:1533:C:H3' | 25:RA:1534:G:H5'' | 1.92 | 0.50 |
| 25:RA:1578:U:C2' | 25:RA:1579:A:H5' | 2.41 | 0.50 |
| 31:RH:151:ILE:C | 31:RH:152:ARG:O | 2.49 | 0.50 |
| 31:RH:152:ARG:C | 31:RH:153:LYS:HE2 | 2.32 | 0.50 |
| 32:RI:4:ILE:N | 32:RI:37:VAL:O | 2.41 | 0.50 |
| 38:RS:35:ILE:CD1 | 38:RS:101:LEU:HD23 | 2.41 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:RU:112:ARG:HH11 | 40:RU:112:ARG:HG2 | 1.77 | 0.50 |
| 45:RZ:108:PRO:CB | 45:RZ:112:ARG:HB2 | 2.38 | 0.50 |
| 45:RZ:150:LEU:O | 45:RZ:151:HIS:O | 2.29 | 0.50 |
| 51:R5:48:GLU:HA | 51:R5:59:GLU:HG2 | 1.94 | 0.50 |
| 1:XA:255:G:H2' | 1:XA:256:U:C6 | 2.46 | 0.50 |
| 1:XA:280:C:C2 | 17:XQ:38:ARG:HG3 | 2.47 | 0.50 |
| 1:XA:523:A:H61 | 12:XL:92:ASP:CB | 2.16 | 0.50 |
| 1:XA:646:U:H2' | 1:XA:647:C:C6 | 2.46 | 0.50 |
| 1:XA:908:A:H2' | 1:XA:909:A:H8 | 1.76 | 0.50 |
| 1:XA:1213:A:C6 | 1:XA:1215:G:H1' | 2.46 | 0.50 |
| 1:XA:1465:C:H2' | 1:XA:1466:C:O4' | 2.11 | 0.50 |
| 2:XB:53:ARG:HA | 2:XB:56:ARG:HG3 | 1.93 | 0.50 |
| 2:XB:82:ARG:HA | 2:XB:92:TYR:CE2 | 2.45 | 0.50 |
| 5:XE:126:ARG:HG3 | 5:XE:126:ARG:NH1 | 2.19 | 0.50 |
| 9:XI:79:LEU:HD22 | 9:XI:101:PHE:O | 2.10 | 0.50 |
| 9:XI:83:ARG:HA | 9:XI:86:VAL:CG1 | 2.42 | 0.50 |
| 11:XK:106:LYS:O | 11:XK:107:SER:HB3 | 2.11 | 0.50 |
| 12:XL:126:LYS:HB2 | 12:XL:126:LYS:HZ2 | 1.74 | 0.50 |
| 13:XM:66:LEU:O | 13:XM:70:LEU:HB2 | 2.11 | 0.50 |
| 15:XO:17:ARG:NH1 | 15:XO:77:ARG:NH1 | 2.59 | 0.50 |
| 25:YA:284:U:H2' | 25:YA:285:C:C6 | 2.46 | 0.50 |
| 25:YA:451:C:H4' | 29:YF:52:LYS:HZ2 | 1.75 | 0.50 |
| 25:YA:651:G:OP2 | 54:Y8:21:LYS:HE3 | 2.11 | 0.50 |
| 25:YA:814:C:H41 | 35:YP:25:SER:HA | 1.77 | 0.50 |
| 25:YA:1006:C:H1' | 33:YN:106:MET:HE3 | 1.93 | 0.50 |
| 25:YA:2227:A:H5'' | 27:YD:263:ARG:HH11 | 1.74 | 0.50 |
| 27:YD:10:THR:HG23 | 27:YD:13:ARG:CB | 2.34 | 0.50 |
| 31:YH:126:PRO:HD2 | 31:YH:127:GLU:N | 2.26 | 0.50 |
| 32:YI:71:ILE:O | 32:YI:72:LEU:HB2 | 2.10 | 0.50 |
| 33:YN:87:LEU:HD23 | 33:YN:87:LEU:C | 2.31 | 0.50 |
| 38:YS:83:LYS:HG2 | 38:YS:109:GLY:HA2 | 1.90 | 0.50 |
| 41:YV:5:VAL:HG22 | 41:YV:14:VAL:HG22 | 1.93 | 0.50 |
| 44:YY:46:LYS:HE3 | 44:YY:63:LYS:HB3 | 1.93 | 0.50 |
| 44:YY:75:ILE:CG1 | 44:YY:76:CYS:N | 2.73 | 0.50 |
| 47:Y1:80:LEU:HB2 | 47:Y1:81:LYS:CE | 2.41 | 0.50 |
| 50:Y4:10:VAL:HG23 | 50:Y4:11:PRO:HD2 | 1.93 | 0.50 |
| 1:QA:560:U:N3 | 1:QA:566:G:O4' | 2.44 | 0.50 |
| 1:QA:1216:G:H5'' | 14:QN:5:ALA:CB | 2.41 | 0.50 |
| 3:QC:139:GLN:O | 3:QC:143:GLU:HB2 | 2.11 | 0.50 |
| 13:QM:30:ALA:O | 13:QM:31:LYS:C | 2.49 | 0.50 |
| 13:QM:66:LEU:O | 13:QM:70:LEU:HB2 | 2.11 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:QP:45:THR:HG23 | 16:QP:46:PRO:CD | 2.40 | 0.50 |
| 19:QS:26:GLY:O | 19:QS:27:GLU:HB2 | 2.11 | 0.50 |
| 19:QS:43:GLU:N | 19:QS:43:GLU:OE2 | 2.45 | 0.50 |
| 25:RA:746:A:O2' | 25:RA:747:U:OP2 | 2.29 | 0.50 |
| 25:RA:1110:G:H2' | 25:RA:1111:A:C8 | 2.46 | 0.50 |
| 25:RA:1826:G:H2' | 25:RA:1827:C:H6 | 1.76 | 0.50 |
| 25:RA:2199:A:H3' | 25:RA:2205:C:C6 | 2.42 | 0.50 |
| 27:RD:30:GLU:HG3 | 27:RD:63:ARG:NH2 | 2.26 | 0.50 |
| 27:RD:238:GLY:O | 27:RD:239:ARG:HB2 | 2.11 | 0.50 |
| 28:RE:37:ARG:HE | 28:RE:37:ARG:H | 1.59 | 0.50 |
| 30:RG:109:VAL:O | 30:RG:113:ARG:HG3 | 2.10 | 0.50 |
| 34:RO:24:VAL:O | 34:RO:24:VAL:HG13 | 2.11 | 0.50 |
| 34:RO:47:ILE:CG1 | 34:RO:48:PRO:HD2 | 2.42 | 0.50 |
| 35:RP:95:VAL:HG13 | 35:RP:100:LEU:CD2 | 2.41 | 0.50 |
| 35:RP:101:VAL:HA | 35:RP:105:LEU:O | 2.10 | 0.50 |
| 35:RP:104:GLY:C | 35:RP:105:LEU:HD12 | 2.31 | 0.50 |
| 45:RZ:124:ILE:HD11 | 45:RZ:165:VAL:CG2 | 2.41 | 0.50 |
| 45:RZ:134:PRO:O | 45:RZ:136:PHE:N | 2.45 | 0.50 |
| 1:XA:760:G:O2' | 17:XQ:98:LEU:HD23 | 2.12 | 0.50 |
| 1:XA:1348:U:N3 | 1:XA:1374:A:H2 | 2.09 | 0.50 |
| 2:XB:200:ILE:O | 2:XB:201:ILE:HD13 | 2.11 | 0.50 |
| 4:XD:162:LEU:HD13 | 4:XD:181:MET:HB3 | 1.93 | 0.50 |
| 8:XH:29:SER:CB | 8:XH:32:LYS:HG3 | 2.28 | 0.50 |
| 8:XH:102:ARG:NH1 | 8:XH:105:ARG:HH12 | 2.09 | 0.50 |
| 10:XJ:84:GLN:C | 10:XJ:86:MET:H | 2.14 | 0.50 |
| 14:XN:8:GLU:C | 14:XN:10:ALA:H | 2.13 | 0.50 |
| 14:XN:48:ALA:CA | 14:XN:53:LEU:HD12 | 2.42 | 0.50 |
| 15:XO:39:LEU:O | 15:XO:40:SER:C | 2.50 | 0.50 |
| 25:YA:99:U:H4' | 25:YA:101:G:C5' | 2.41 | 0.50 |
| 25:YA:239:U:H2' | 25:YA:240:G:O4' | 2.12 | 0.50 |
| 25:YA:818:G:O2' | 25:YA:838:C:O2' | 2.19 | 0.50 |
| 25:YA:1187:G:H8 | 25:YA:1187:G:O5' | 1.95 | 0.50 |
| 25:YA:2579:C:H2' | 25:YA:2580:U:O4' | 2.11 | 0.50 |
| 30:YG:111:LEU:N | 30:YG:112:PRO:CD | 2.75 | 0.50 |
| 31:YH:152:ARG:C | 31:YH:153:LYS:HE2 | 2.32 | 0.50 |
| 34:YO:15:GLY:O | 34:YO:46:ALA:HB1 | 2.10 | 0.50 |
| 35:YP:114:ILE:HD13 | 35:YP:125:VAL:CG2 | 2.41 | 0.50 |
| 38:YS:26:LEU:CD2 | 38:YS:87:PHE:CD1 | 2.94 | 0.50 |
| 38:YS:87:PHE:O | 38:YS:88:ASP:O | 2.29 | 0.50 |
| 45:YZ:134:PRO:C | 45:YZ:136:PHE:N | 2.64 | 0.50 |
| 49:Y3:17:LYS:HA | 49:Y3:20:LYS:HD2 | 1.92 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 50:Y4:61:ARG:C | 50:Y4:63:TYR:H | 2.14 | 0.50 |
| 51:Y5:56:LYS:HD2 | 51:Y5:56:LYS:N | 2.13 | 0.50 |
| 1:QA:170:U:O2' | 1:QA:171:A:H5' | 2.12 | 0.50 |
| 1:QA:735:C:H2' | 1:QA:736:C:H6 | 1.77 | 0.50 |
| 1:QA:1241:G:H2' | 1:QA:1242:C:C6 | 2.46 | 0.50 |
| 2:QB:15:VAL:H | 2:QB:16:HIS:HD1 | 1.59 | 0.50 |
| 2:QB:200:ILE:O | 2:QB:201:ILE:HD13 | 2.12 | 0.50 |
| 3:QC:11:ARG:HG3 | 3:QC:15:THR:HG21 | 1.93 | 0.50 |
| 3:QC:52:LEU:H | 3:QC:52:LEU:CD2 | 2.20 | 0.50 |
| 8:QH:95:VAL:HB | 8:QH:99:GLU:O | 2.12 | 0.50 |
| 16:QP:59:TRP:HA | 16:QP:59:TRP:HE3 | 1.76 | 0.50 |
| 25:RA:582:G:H2' | 25:RA:583:G:C8 | 2.47 | 0.50 |
| 25:RA:840:C:H2' | 25:RA:841:A:C8 | 2.46 | 0.50 |
| 25:RA:1050:A:H8 | 25:RA:2751:G:O2' | 1.94 | 0.50 |
| 25:RA:1494:A:H3' | 25:RA:1495:A:C8 | 2.46 | 0.50 |
| 25:RA:2426:A:H8 | 25:RA:2426:A:H5' | 1.77 | 0.50 |
| 25:RA:2658:C:H2' | 25:RA:2659:G:O4' | 2.12 | 0.50 |
| 27:RD:2:ALA:CB | 27:RD:20:ASP:CB | 2.89 | 0.50 |
| 27:RD:237:GLU:OE1 | 27:RD:237:GLU:HA | 2.12 | 0.50 |
| 31:RH:169:VAL:HG13 | 31:RH:170:ARG:N | 2.26 | 0.50 |
| 37:RR:92:GLY:N | 37:RR:94:TYR:HE2 | 2.09 | 0.50 |
| 38:RS:26:LEU:CD2 | 38:RS:87:PHE:CD1 | 2.94 | 0.50 |
| 38:RS:62:LYS:HB3 | 38:RS:97:ARG:CD | 2.39 | 0.50 |
| 38:RS:83:LYS:HG2 | 38:RS:109:GLY:HA2 | 1.90 | 0.50 |
| 45:RZ:134:PRO:C | 45:RZ:136:PHE:N | 2.64 | 0.50 |
| 51:R5:50:GLY:O | 51:R5:51:TYR:CB | 2.59 | 0.50 |
| 52:R6:9:LEU:HD13 | 52:R6:26:ASN:HD22 | 1.76 | 0.50 |
| 54:R8:56:GLU:O | 54:R8:57:ARG:C | 2.50 | 0.50 |
| 1:XA:167:G:H2' | 1:XA:168:G:C8 | 2.47 | 0.50 |
| 1:XA:797:C:OP1 | 11:XK:124:LYS:HE2 | 2.11 | 0.50 |
| 2:XB:23:ARG:HG2 | 2:XB:23:ARG:HH11 | 1.76 | 0.50 |
| 4:XD:165:MET:HE3 | 4:XD:168:ARG:HD2 | 1.93 | 0.50 |
| 10:XJ:81:THR:C | 10:XJ:83:GLU:N | 2.64 | 0.50 |
| 17:XQ:13:ASP:C | 17:XQ:15:MET:H | 2.15 | 0.50 |
| 19:XS:50:ALA:CB | 19:XS:57:HIS:HB3 | 2.37 | 0.50 |
| 25:YA:2067:G:O2' | 25:YA:2069:G:H5'' | 2.11 | 0.50 |
| 25:YA:2303:G:H1 | 25:YA:2313:C:H42 | 1.59 | 0.50 |
| 25:YA:2593:U:H2' | 25:YA:2594:C:C6 | 2.44 | 0.50 |
| 25:YA:2869:G:H2' | 25:YA:2870:C:O4' | 2.11 | 0.50 |
| 26:YB:44:G:H1' | 26:YB:47:C:N4 | 2.26 | 0.50 |
| 27:YD:182:LEU:H | 27:YD:272:ALA:CB | 2.25 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:YG:43:LEU:O | 30:YG:88:ILE:HG12 | 2.12 | 0.50 |
| 31:YH:16:SER:O | 31:YH:17:VAL:HG23 | 2.12 | 0.50 |
| 31:YH:131:VAL:CG1 | 31:YH:132:ARG:N | 2.74 | 0.50 |
| 31:YH:133:VAL:HG12 | 31:YH:141:VAL:HG13 | 1.93 | 0.50 |
| 33:YN:112:LEU:HD23 | 33:YN:113:GLY:N | 2.26 | 0.50 |
| 34:YO:35:VAL:O | 34:YO:35:VAL:HG23 | 2.11 | 0.50 |
| 35:YP:104:GLY:C | 35:YP:105:LEU:HD12 | 2.31 | 0.50 |
| 36:YQ:132:VAL:HG12 | 36:YQ:133:ARG:N | 2.27 | 0.50 |
| 37:YR:28:LEU:CD2 | 37:YR:114:VAL:HG12 | 2.40 | 0.50 |
| 40:YU:112:ARG:HG2 | 40:YU:112:ARG:HH11 | 1.77 | 0.50 |
| 41:YV:51:VAL:CG1 | 41:YV:52:VAL:H | 2.22 | 0.50 |
| 42:YW:22:ASP:HA | 42:YW:25:ARG:HH12 | 1.75 | 0.50 |
| 45:YZ:107:THR:HG22 | 45:YZ:108:PRO:HA | 1.94 | 0.50 |
| 47:Y1:4:VAL:HG23 | 47:Y1:10:LYS:C | 2.32 | 0.50 |
| 47:Y1:94:LEU:O | 47:Y1:95:LEU:HG | 2.11 | 0.50 |
| 50:Y4:57:GLU:O | 50:Y4:61:ARG:O | 2.30 | 0.50 |
| 52:Y6:9:LEU:HB3 | 52:Y6:26:ASN:O | 2.11 | 0.50 |
| 1:QA:598:U:H4' | 8:QH:94:TYR:CD2 | 2.46 | 0.50 |
| 3:QC:70:VAL:CG1 | 3:QC:71:ALA:N | 2.73 | 0.50 |
| 4:QD:128:VAL:O | 4:QD:130:GLY:N | 2.45 | 0.50 |
| 4:QD:198:VAL:CG1 | 4:QD:199:ASN:N | 2.75 | 0.50 |
| 8:QH:20:TYR:HD1 | 8:QH:65:TYR:HD2 | 1.55 | 0.50 |
| 9:QI:53:VAL:HG21 | 9:QI:92:TYR:CZ | 2.45 | 0.50 |
| 10:QJ:56:HIS:O | 10:QJ:58:ASP:O | 2.30 | 0.50 |
| 10:QJ:84:GLN:C | 10:QJ:86:MET:H | 2.15 | 0.50 |
| 10:QJ:98:ILE:H | 10:QJ:98:ILE:CD1 | 2.25 | 0.50 |
| 22:QV:75:C:H2' | 22:QV:76:A:O4' | 2.12 | 0.50 |
| 25:RA:116:C:H2' | 25:RA:117:G:O4' | 2.11 | 0.50 |
| 25:RA:1083:U:O2' | 25:RA:1085:A:H5'' | 2.12 | 0.50 |
| 25:RA:1655:A:O2' | 28:RE:115:GLY:HA2 | 2.11 | 0.50 |
| 25:RA:2582:G:N2 | 25:RA:2583:G:H1' | 2.27 | 0.50 |
| 26:RB:55:U:C5' | 30:RG:28:VAL:HG21 | 2.42 | 0.50 |
| 28:RE:61:ARG:CB | 28:RE:62:PRO:HD3 | 2.41 | 0.50 |
| 28:RE:203:LYS:HE3 | 28:RE:204:ALA:CB | 2.40 | 0.50 |
| 31:RH:133:VAL:HG12 | 31:RH:141:VAL:HG13 | 1.93 | 0.50 |
| 33:RN:87:LEU:HD23 | 33:RN:87:LEU:C | 2.32 | 0.50 |
| 34:RO:107:ARG:HA | 34:RO:112:MET:HE1 | 1.94 | 0.50 |
| 35:RP:61:ARG:HH21 | 54:R8:13:ARG:HD2 | 1.77 | 0.50 |
| 35:RP:114:ILE:HD13 | 35:RP:125:VAL:CG2 | 2.41 | 0.50 |
| 36:RQ:2:LEU:HD23 | 36:RQ:2:LEU:N | 2.27 | 0.50 |
| 36:RQ:108:GLY:O | 36:RQ:109:VAL:HG23 | 2.12 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:RU:92:ARG:NH1 | 40:RU:95:LEU:HD11 | 2.26 | 0.50 |
| 44:RY:16:ALA:O | 44:RY:21:LYS:HD3 | 2.11 | 0.50 |
| 44:RY:48:ALA:HB2 | 44:RY:61:ILE:CD1 | 2.41 | 0.50 |
| 44:RY:74:PRO:O | 44:RY:80:GLY:HA2 | 2.10 | 0.50 |
| 44:RY:88:LYS:NZ | 44:RY:88:LYS:HA | 2.27 | 0.50 |
| 46:R0:51:VAL:CG2 | 46:R0:81:VAL:HG23 | 2.42 | 0.50 |
| 48:R2:16:LEU:O | 48:R2:17:SER:CB | 2.56 | 0.50 |
| 1:XA:1015:A:N3 | 1:XA:1218:C:O2' | 2.43 | 0.50 |
| 1:XA:1329:A:H5' | 13:XM:29:ARG:HG3 | 1.93 | 0.50 |
| 1:XA:1348:U:H4' | 9:XI:120:ARG:HD2 | 1.93 | 0.50 |
| 1:XA:1427:U:H2' | 1:XA:1428:A:C8 | 2.47 | 0.50 |
| 2:XB:178:ARG:O | 8:XH:71:GLY:HA2 | 2.12 | 0.50 |
| 2:XB:178:ARG:HD2 | 8:XH:71:GLY:C | 2.32 | 0.50 |
| 3:XC:35:GLU:O | 3:XC:39:ILE:HG13 | 2.12 | 0.50 |
| 9:XI:53:VAL:HG21 | 9:XI:92:TYR:CZ | 2.46 | 0.50 |
| 10:XJ:54:PHE:O | 10:XJ:55:LYS:HG3 | 2.10 | 0.50 |
| 12:XL:28:LYS:O | 12:XL:29:GLY:C | 2.50 | 0.50 |
| 14:XN:39:LEU:HD22 | 14:XN:43:CYS:HB3 | 1.93 | 0.50 |
| 15:XO:17:ARG:NH1 | 15:XO:77:ARG:CZ | 2.75 | 0.50 |
| 16:XP:83:GLU:HG3 | 16:XP:84:ALA:H | 1.77 | 0.50 |
| 19:XS:67:VAL:HB | 50:Y4:59:PHE:CE2 | 2.47 | 0.50 |
| 20:XT:49:ALA:CB | 20:XT:99:LEU:HD22 | 2.42 | 0.50 |
| 25:YA:609(A):G:H2' | 25:YA:610:C:C6 | 2.47 | 0.50 |
| 25:YA:1007:C:OP1 | 33:YN:35:ARG:NH1 | 2.45 | 0.50 |
| 25:YA:1416:G:O2' | 25:YA:1417:C:O5' | 2.22 | 0.50 |
| 27:YD:233:HIS:CD2 | 27:YD:233:HIS:H | 2.29 | 0.50 |
| 28:YE:105:THR:HB | 28:YE:197:ILE:HG12 | 1.92 | 0.50 |
| 30:YG:6:ALA:H | 50:Y4:23:GLU:CG | 2.25 | 0.50 |
| 31:YH:169:VAL:HG13 | 31:YH:170:ARG:N | 2.26 | 0.50 |
| 32:YI:74:ASN:ND2 | 32:YI:75:LEU:H | 2.09 | 0.50 |
| 35:YP:138:LEU:HD11 | 35:YP:144:GLU:CG | 2.42 | 0.50 |
| 40:YU:92:ARG:CD | 40:YU:94:ASN:HB3 | 2.42 | 0.50 |
| 42:YW:70:TYR:N | 42:YW:70:TYR:CD2 | 2.75 | 0.50 |
| 45:YZ:170:THR:O | 45:YZ:171:ILE:CB | 2.60 | 0.50 |
| 47:Y1:60:PHE:HE2 | 47:Y1:91:LYS:HZ1 | 1.57 | 0.50 |
| 47:Y1:87:PRO:O | 47:Y1:91:LYS:HB2 | 2.10 | 0.50 |
| 48:Y2:41:ILE:HD11 | 48:Y2:44:LEU:CB | 2.42 | 0.50 |
| 1:QA:683:G:H2' | 1:QA:684:A:C8 | 2.47 | 0.50 |
| 1:QA:1128:C:N4 | 1:QA:1144:G:H1 | 2.09 | 0.50 |
| 3:QC:184:TYR:HA | 3:QC:200:ALA:O | 2.12 | 0.50 |
| 4:QD:178:VAL:O | 4:QD:180:GLY:N | 2.44 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 6:QF:63:TYR:N | 6:QF:63:TYR:CD2 | 2.79 | 0.50 |
| 7:QG:50:ILE:HA | 7:QG:54:THR:HG22 | 1.94 | 0.50 |
| 14:QN:22:THR:O | 14:QN:23:ARG:CB | 2.59 | 0.50 |
| 16:QP:83:GLU:HG3 | 16:QP:84:ALA:H | 1.77 | 0.50 |
| 17:QQ:13:ASP:C | 17:QQ:15:MET:H | 2.15 | 0.50 |
| 18:QR:30:ASP:C | 18:QR:32:ARG:H | 2.16 | 0.50 |
| 20:QT:49:ALA:CB | 20:QT:99:LEU:HD22 | 2.42 | 0.50 |
| 21:QU:2:GLY:O | 21:QU:4:GLY:N | 2.45 | 0.50 |
| 25:RA:1925:C:N3 | 25:RA:1929:G:O6 | 2.44 | 0.50 |
| 25:RA:2410:G:H2' | 25:RA:2411:A:H8 | 1.76 | 0.50 |
| 25:RA:2414:G:H21 | 35:RP:67:MET:CE | 2.25 | 0.50 |
| 27:RD:28:GLU:OE1 | 27:RD:29:PRO:HD2 | 2.11 | 0.50 |
| 30:RG:111:LEU:N | 30:RG:112:PRO:CD | 2.75 | 0.50 |
| 31:RH:16:SER:O | 31:RH:17:VAL:HG23 | 2.12 | 0.50 |
| 33:RN:46:VAL:O | 33:RN:47:ALA:CB | 2.58 | 0.50 |
| 39:RT:38:ASN:O | 39:RT:39:ARG:O | 2.30 | 0.50 |
| 42:RW:22:ASP:HA | 42:RW:25:ARG:HH12 | 1.75 | 0.50 |
| 44:RY:94:LYS:HE3 | 44:RY:101:LYS:HZ1 | 1.76 | 0.50 |
| 1:XA:345:C:H4' | 1:XA:346:G:C2 | 2.47 | 0.50 |
| 1:XA:836:G:OP1 | 18:XR:61:LYS:NZ | 2.34 | 0.50 |
| 1:XA:1069:C:O3' | 5:XE:25:ARG:NH1 | 2.45 | 0.50 |
| 1:XA:1225:A:H5'' | 1:XA:1226:C:OP2 | 2.12 | 0.50 |
| 1:XA:1443:G:N2 | 39:YT:119:LYS:HB2 | 2.27 | 0.50 |
| 2:XB:103:THR:N | 2:XB:180:LEU:HD11 | 2.27 | 0.50 |
| 7:XG:50:ILE:HA | 7:XG:54:THR:HG22 | 1.94 | 0.50 |
| 8:XH:95:VAL:HB | 8:XH:99:GLU:O | 2.12 | 0.50 |
| 9:XI:29:ASN:OD1 | 9:XI:64:THR:HA | 2.11 | 0.50 |
| 9:XI:105:ASP:C | 9:XI:107:ARG:H | 2.14 | 0.50 |
| 10:XJ:40:LEU:HB2 | 10:XJ:69:ASN:CB | 2.40 | 0.50 |
| 13:XM:57:ARG:HH11 | 13:XM:57:ARG:CB | 2.14 | 0.50 |
| 13:XM:120:LYS:O | 13:XM:121:LYS:HB2 | 2.11 | 0.50 |
| 25:YA:1156:A:C8 | 40:YU:51:LYS:HD2 | 2.46 | 0.50 |
| 25:YA:1312:U:H4' | 25:YA:1313:U:O5' | 2.12 | 0.50 |
| 25:YA:1658:C:C4 | 25:YA:1659:U:C4 | 3.00 | 0.50 |
| 25:YA:2347:C:H5 | 25:YA:2382:G:H1' | 1.76 | 0.50 |
| 30:YG:16:ARG:HB3 | 30:YG:17:PRO:HD3 | 1.94 | 0.50 |
| 30:YG:35:GLU:CD | 30:YG:35:GLU:C | 2.71 | 0.50 |
| 31:YH:24:VAL:HG21 | 31:YH:72:ILE:HG12 | 1.94 | 0.50 |
| 37:YR:117:VAL:CG2 | 37:YR:118:GLU:N | 2.74 | 0.50 |
| 41:YV:29:PRO:O | 41:YV:61:VAL:O | 2.29 | 0.50 |
| 41:YV:51:VAL:CG1 | 41:YV:52:VAL:N | 2.75 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 44:YY:48:ALA:HB2 | 44:YY:61:ILE:CD1 | 2.41 | 0.50 |
| 45:YZ:134:PRO:O | 45:YZ:136:PHE:N | 2.45 | 0.50 |
| 47:Y1:8:SER:HB3 | 47:Y1:66:HIS:CE1 | 2.46 | 0.50 |
| 48:Y2:9:GLN:O | 48:Y2:12:GLU:HB3 | 2.10 | 0.50 |
| 50:Y4:22:ILE:H | 50:Y4:22:ILE:HD12 | 1.77 | 0.50 |
| 53:Y7:9:ARG:HH12 | 53:Y7:47:ARG:HG3 | 1.76 | 0.50 |
| 53:Y7:46:VAL:HG12 | 53:Y7:47:ARG:N | 2.27 | 0.50 |
| 55:Z8:76:PPU:HD2 | 55:Z8:76:PPU:HN2 | 1.76 | 0.50 |
| 1:QA:186(A):C:H2' | 1:QA:186(B):C:H6 | 1.75 | 0.50 |
| 1:QA:254:G:OP1 | 17:QQ:67:LYS:O | 2.30 | 0.50 |
| 1:QA:452:A:H2' | 1:QA:453:A:C8 | 2.47 | 0.50 |
| 1:QA:1346:A:C5' | 9:QI:120:ARG:HH12 | 2.24 | 0.50 |
| 3:QC:35:GLU:O | 3:QC:39:ILE:HG13 | 2.12 | 0.50 |
| 3:QC:36:ASP:HA | 3:QC:39:ILE:HD12 | 1.94 | 0.50 |
| 8:QH:51:VAL:HG11 | 8:QH:60:ARG:HG3 | 1.92 | 0.50 |
| 9:QI:5:TYR:HA | 9:QI:17:VAL:O | 2.12 | 0.50 |
| 15:QO:8:LYS:HB2 | 15:QO:8:LYS:HZ2 | 1.74 | 0.50 |
| 16:QP:39:TYR:CE2 | 16:QP:41:PRO:HD3 | 2.47 | 0.50 |
| 21:QU:6:ARG:HE | 21:QU:15:ARG:NH2 | 2.08 | 0.50 |
| 25:RA:297:C:H5'' | 44:RY:85:VAL:HG21 | 1.93 | 0.50 |
| 27:RD:32:SER:O | 27:RD:33:LEU:CB | 2.60 | 0.50 |
| 27:RD:35:LYS:HD2 | 27:RD:104:TYR:CD1 | 2.46 | 0.50 |
| 28:RE:2:LYS:HG2 | 28:RE:95:ILE:CG2 | 2.42 | 0.50 |
| 28:RE:176:ILE:HG22 | 28:RE:176:ILE:O | 2.10 | 0.50 |
| 28:RE:179:GLU:O | 28:RE:180:ASN:HB2 | 2.12 | 0.50 |
| 29:RF:11:VAL:CG1 | 29:RF:12:LEU:N | 2.75 | 0.50 |
| 30:RG:103:LEU:HD21 | 30:RG:178:PHE:CZ | 2.47 | 0.50 |
| 31:RH:103:LEU:CD1 | 31:RH:131:VAL:HG21 | 2.41 | 0.50 |
| 32:RI:130:TYR:HB3 | 32:RI:136:VAL:HG13 | 1.93 | 0.50 |
| 32:RI:145:VAL:CG2 | 32:RI:146:ALA:N | 2.73 | 0.50 |
| 34:RO:104:ARG:NE | 39:RT:34:VAL:HG11 | 2.26 | 0.50 |
| 35:RP:6:LEU:N | 35:RP:6:LEU:CD2 | 2.75 | 0.50 |
| 37:RR:96:ARG:NH2 | 37:RR:117:VAL:HG23 | 2.27 | 0.50 |
| 45:RZ:170:THR:O | 45:RZ:171:ILE:CB | 2.60 | 0.50 |
| 47:R1:80:LEU:HB2 | 47:R1:81:LYS:CE | 2.41 | 0.50 |
| 1:XA:27:G:C4' | 4:XD:209:ARG:HG3 | 2.40 | 0.50 |
| 1:XA:52:G:H2' | 1:XA:53:A:H8 | 1.76 | 0.50 |
| 1:XA:186:C:H2' | 1:XA:186(A):C:C6 | 2.46 | 0.50 |
| 1:XA:428:G:H5'' | 4:XD:7:PRO:HB3 | 1.93 | 0.50 |
| 1:XA:1116:C:C2' | 1:XA:1117:G:H5' | 2.42 | 0.50 |
| 1:XA:1318:A:H4' | 19:XS:11:VAL:CG1 | 2.40 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:XB:16:HIS:HB3 | 2:XB:210:SER:CB | 2.42 | 0.50 |
| 3:XC:132:ARG:O | 3:XC:136:GLN:HB2 | 2.11 | 0.50 |
| 8:XH:84:ARG:O | 8:XH:135:CYS:HB2 | 2.12 | 0.50 |
| 9:XI:33:PHE:HZ | 9:XI:47:LEU:HD21 | 1.76 | 0.50 |
| 11:XK:25:TYR:CD1 | 11:XK:25:TYR:N | 2.80 | 0.50 |
| 13:XM:65:LYS:HZ2 | 13:XM:69:GLU:HG2 | 1.76 | 0.50 |
| 13:XM:102:ARG:O | 13:XM:102:ARG:HG3 | 2.11 | 0.50 |
| 20:XT:26:ASN:CB | 20:XT:71:THR:HG23 | 2.42 | 0.50 |
| 25:YA:272:G:H2' | 25:YA:273:G:H8 | 1.77 | 0.50 |
| 25:YA:571:A:H1' | 25:YA:573:G:C8 | 2.47 | 0.50 |
| 25:YA:910:A:N1 | 25:YA:2277:G:H1' | 2.27 | 0.50 |
| 25:YA:1069:A:H4' | 25:YA:1070:A:H5'' | 1.94 | 0.50 |
| 25:YA:1086:A:OP1 | 25:YA:1104:C:O2' | 2.30 | 0.50 |
| 25:YA:1162:G:H1' | 41:YV:23:GLU:OE2 | 2.12 | 0.50 |
| 25:YA:1388:G:H2' | 25:YA:1389:G:H8 | 1.76 | 0.50 |
| 26:YB:13:A:N1 | 26:YB:69:G:O2' | 2.33 | 0.50 |
| 27:YD:35:LYS:HE2 | 27:YD:104:TYR:HB2 | 1.94 | 0.50 |
| 27:YD:218:ARG:HB3 | 27:YD:219:PRO:HD2 | 1.94 | 0.50 |
| 34:YO:104:ARG:NE | 39:YT:34:VAL:HG11 | 2.26 | 0.50 |
| 36:YQ:36:ALA:HB1 | 36:YQ:127:ILE:HD12 | 1.93 | 0.50 |
| 38:YS:26:LEU:HD22 | 38:YS:87:PHE:CD1 | 2.46 | 0.50 |
| 49:Y3:7:LYS:CB | 49:Y3:34:GLU:HG2 | 2.41 | 0.50 |
| 51:Y5:37:LYS:O | 51:Y5:37:LYS:HD2 | 2.12 | 0.50 |
| 53:Y7:12:ARG:NH1 | 53:Y7:12:ARG:HG3 | 2.27 | 0.50 |
| 1:QA:621:A:H2' | 1:QA:622:A:C8 | 2.47 | 0.50 |
| 1:QA:980:C:H5'' | 1:QA:981:U:C5 | 2.47 | 0.50 |
| 7:QG:11:GLN:C | 7:QG:12:LEU:HD22 | 2.31 | 0.50 |
| 8:QH:84:ARG:O | 8:QH:135:CYS:HB2 | 2.12 | 0.50 |
| 11:QK:32:ILE:HD12 | 11:QK:72:ALA:CB | 2.36 | 0.50 |
| 12:QL:24:VAL:O | 12:QL:24:VAL:CG1 | 2.58 | 0.50 |
| 16:QP:39:TYR:OH | 16:QP:41:PRO:HB3 | 2.12 | 0.50 |
| 19:QS:41:VAL:CG1 | 19:QS:45:VAL:N | 2.74 | 0.50 |
| 25:RA:222:A:HO2' | 25:RA:223:A:P | 2.35 | 0.50 |
| 25:RA:1186:G:H2' | 25:RA:1187:G:O4' | 2.12 | 0.50 |
| 25:RA:2552:U:C2 | 25:RA:2554:U:H5'' | 2.47 | 0.50 |
| 27:RD:35:LYS:HE2 | 27:RD:104:TYR:HB2 | 1.94 | 0.50 |
| 28:RE:119:ARG:HD3 | 28:RE:160:TYR:CD2 | 2.47 | 0.50 |
| 33:RN:137:LYS:HG3 | 33:RN:138:LEU:H | 1.77 | 0.50 |
| 35:RP:114:ILE:HD11 | 35:RP:130:PHE:HE1 | 1.70 | 0.50 |
| 39:RT:23:ARG:CB | 39:RT:24:PRO:HD2 | 2.40 | 0.50 |
| 43:RX:18:TYR:C | 43:RX:20:GLY:N | 2.64 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 44:RY:81:LYS:HD3 | 44:RY:97:ARG:HD3 | 1.94 | 0.50 |
| 50:R4:1:MET:O | 50:R4:1:MET:HG3 | 2.12 | 0.50 |
| 52:R6:34:LEU:HD23 | 52:R6:36:LEU:HD22 | 1.92 | 0.50 |
| 52:R6:41:PRO:HD2 | 52:R6:46:HIS:H | 1.77 | 0.50 |
| 53:R7:12:ARG:NH1 | 53:R7:12:ARG:HG3 | 2.27 | 0.50 |
| 53:R7:46:VAL:HG12 | 53:R7:47:ARG:N | 2.27 | 0.50 |
| 1:XA:299:G:H2' | 1:XA:300:A:C8 | 2.46 | 0.50 |
| 2:XB:172:ILE:H | 2:XB:172:ILE:CD1 | 2.18 | 0.50 |
| 3:XC:36:ASP:HB3 | 3:XC:40:ARG:NH1 | 2.26 | 0.50 |
| 3:XC:195:VAL:HG12 | 3:XC:196:LEU:H | 1.75 | 0.50 |
| 4:XD:54:TYR:CE1 | 4:XD:206:PHE:HE1 | 2.29 | 0.50 |
| 5:XE:32:VAL:O | 5:XE:43:LEU:HD12 | 2.12 | 0.50 |
| 7:XG:50:ILE:HG21 | 7:XG:58:PRO:HA | 1.93 | 0.50 |
| 13:XM:14:ARG:HG3 | 13:XM:16:ASP:OD2 | 2.12 | 0.50 |
| 13:XM:117:VAL:O | 13:XM:118:ALA:C | 2.51 | 0.50 |
| 19:XS:26:GLY:O | 19:XS:27:GLU:HB2 | 2.12 | 0.50 |
| 23:XX:7:G:H8 | 23:XX:7:G:H5'' | 1.76 | 0.50 |
| 25:YA:49:A:N7 | 25:YA:120:U:C5 | 2.79 | 0.50 |
| 25:YA:323:G:H2' | 29:YF:169:ASN:ND2 | 2.27 | 0.50 |
| 25:YA:1388:G:O2' | 25:YA:1389:G:H5' | 2.11 | 0.50 |
| 25:YA:1727:U:H3 | 25:YA:1733:G:H1 | 1.60 | 0.50 |
| 27:YD:65:ILE:HD13 | 27:YD:65:ILE:C | 2.32 | 0.50 |
| 28:YE:2:LYS:HG2 | 28:YE:95:ILE:CG2 | 2.42 | 0.50 |
| 28:YE:37:ARG:HE | 28:YE:37:ARG:H | 1.59 | 0.50 |
| 30:YG:103:LEU:HD21 | 30:YG:178:PHE:CZ | 2.47 | 0.50 |
| 30:YG:114:ILE:HG21 | 30:YG:117:PHE:HB2 | 1.93 | 0.50 |
| 34:YO:55:GLY:O | 34:YO:56:ASP:C | 2.50 | 0.50 |
| 34:YO:105:GLU:O | 34:YO:108:GLU:HB2 | 2.12 | 0.50 |
| 35:YP:147:LEU:O | 35:YP:148:LEU:HB2 | 2.11 | 0.50 |
| 36:YQ:108:GLY:O | 36:YQ:109:VAL:HG23 | 2.12 | 0.50 |
| 38:YS:35:ILE:CD1 | 38:YS:101:LEU:HD23 | 2.41 | 0.50 |
| 45:YZ:150:LEU:O | 45:YZ:151:HIS:O | 2.29 | 0.50 |
| 48:Y2:69:ARG:CB | 48:Y2:69:ARG:HH11 | 2.25 | 0.50 |
| 50:Y4:36:CYS:O | 50:Y4:39:CYS:CB | 2.55 | 0.50 |
| 51:Y5:50:GLY:O | 51:Y5:51:TYR:CB | 2.59 | 0.50 |
| 52:Y6:44:ARG:O | 52:Y6:45:LYS:CB | 2.60 | 0.50 |
| 1:QA:1305:G:HO2' | 1:QA:1306:A:H8 | 1.60 | 0.49 |
| 1:QA:1479:C:H2' | 1:QA:1480:G:H8 | 1.77 | 0.49 |
| 2:QB:16:HIS:HB3 | 2:QB:210:SER:CB | 2.42 | 0.49 |
| 9:QI:48:GLU:N | 9:QI:49:PRO:CD | 2.74 | 0.49 |
| 10:QJ:22:LYS:NZ | 10:QJ:23:ILE:HG12 | 2.27 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 12:QL:28:LYS:O | 12:QL:29:GLY:C | 2.50 | 0.49 |
| 25:RA:503:A:H4' | 25:RA:504:U:H5'' | 1.93 | 0.49 |
| 25:RA:654(S):G:H2' | 25:RA:654(T):C:C6 | 2.47 | 0.49 |
| 25:RA:1285:G:H22 | 25:RA:1329:U:P | 2.33 | 0.49 |
| 25:RA:1371:G:O2' | 25:RA:1372:U:H5 | 1.87 | 0.49 |
| 25:RA:2311:A:C8 | 30:RG:82:LEU:HD11 | 2.47 | 0.49 |
| 25:RA:2643:G:H2' | 25:RA:2644:G:O4' | 2.11 | 0.49 |
| 31:RH:153:LYS:O | 31:RH:154:PRO:O | 2.30 | 0.49 |
| 32:RI:74:ASN:ND2 | 32:RI:75:LEU:H | 2.09 | 0.49 |
| 32:RI:114:LEU:HD12 | 32:RI:129:THR:O | 2.12 | 0.49 |
| 33:RN:42:TRP:HA | 33:RN:48:MET:CE | 2.42 | 0.49 |
| 41:RV:41:GLY:N | 41:RV:46:VAL:HG13 | 2.26 | 0.49 |
| 45:RZ:45:ASP:OD1 | 45:RZ:49:ARG:NE | 2.41 | 0.49 |
| 45:RZ:81:ARG:O | 45:RZ:81:ARG:HD3 | 2.12 | 0.49 |
| 50:R4:10:VAL:HG23 | 50:R4:11:PRO:HD2 | 1.93 | 0.49 |
| 1:XA:243:A:N6 | 1:XA:281:G:O2' | 2.45 | 0.49 |
| 1:XA:302:G:C6 | 1:XA:303:A:C5 | 2.99 | 0.49 |
| 1:XA:1298:C:H4' | 1:XA:1299:A:C8 | 2.47 | 0.49 |
| 4:XD:33:MET:CE | 4:XD:37:PRO:HA | 2.42 | 0.49 |
| 5:XE:41:VAL:CG1 | 5:XE:112:LEU:O | 2.60 | 0.49 |
| 8:XH:91:ARG:HG2 | 8:XH:91:ARG:NH1 | 2.25 | 0.49 |
| 10:XJ:22:LYS:NZ | 10:XJ:23:ILE:HG12 | 2.27 | 0.49 |
| 13:XM:82:MET:O | 13:XM:83:ASP:C | 2.49 | 0.49 |
| 14:YN:40:CYS:SG | 14:YN:43:CYS:N | 2.75 | 0.49 |
| 25:YA:121:G:H4' | 25:YA:149:A:H5' | 1.94 | 0.49 |
| 25:YA:1727:U:H2' | 25:YA:1728:G:O4' | 2.12 | 0.49 |
| 25:YA:1794:U:H2' | 25:YA:1795:C:H6 | 1.77 | 0.49 |
| 25:YA:2719:G:O2' | 25:YA:2720:U:O5' | 2.29 | 0.49 |
| 27:YD:2:ALA:CB | 27:YD:20:ASP:HB3 | 2.42 | 0.49 |
| 27:YD:76:PRO:HA | 27:YD:118:VAL:HG23 | 1.93 | 0.49 |
| 28:YE:46:ALA:HB1 | 28:YE:80:GLU:HB2 | 1.94 | 0.49 |
| 30:YG:49:ASP:OD1 | 30:YG:51:ARG:HG3 | 2.12 | 0.49 |
| 30:YG:83:ARG:HH11 | 30:YG:83:ARG:HG2 | 1.76 | 0.49 |
| 32:YI:140:LEU:HD23 | 32:YI:140:LEU:N | 2.28 | 0.49 |
| 35:YP:112:LEU:HD22 | 35:YP:113:LYS:N | 2.26 | 0.49 |
| 36:YQ:79:LEU:O | 36:YQ:80:GLU:OE1 | 2.31 | 0.49 |
| 38:YS:52:SER:O | 38:YS:56:LEU:CD2 | 2.60 | 0.49 |
| 40:YU:92:ARG:NH1 | 40:YU:95:LEU:HD11 | 2.26 | 0.49 |
| 44:YY:16:ALA:O | 44:YY:21:LYS:HD3 | 2.11 | 0.49 |
| 46:Y0:51:VAL:CG2 | 46:Y0:81:VAL:HG23 | 2.42 | 0.49 |
| 1:QA:1024:G:H4' | 1:QA:1024:G:OP1 | 2.11 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:QA:1410:G:H1 | 1:QA:1490:C:N4 | 2.08 | 0.49 |
| 4:QD:206:PHE:HD2 | 4:QD:207:TYR:CE1 | 2.30 | 0.49 |
| 5:QE:32:VAL:O | 5:QE:43:LEU:HD12 | 2.12 | 0.49 |
| 6:QF:72:VAL:HG13 | 6:QF:73:ASN:N | 2.27 | 0.49 |
| 7:QG:50:ILE:HG21 | 7:QG:58:PRO:HA | 1.93 | 0.49 |
| 13:QM:108:ARG:O | 13:QM:109:THR:C | 2.50 | 0.49 |
| 15:QO:17:ARG:NH1 | 15:QO:77:ARG:CZ | 2.74 | 0.49 |
| 25:RA:222:A:H5'' | 25:RA:421:U:OP1 | 2.13 | 0.49 |
| 25:RA:987:G:H2' | 25:RA:988:A:O4' | 2.12 | 0.49 |
| 25:RA:1728:G:H3' | 25:RA:1729:A:C5' | 2.37 | 0.49 |
| 25:RA:2400:G:N2 | 25:RA:2417:C:C2 | 2.80 | 0.49 |
| 26:RB:24:G:H5'' | 26:RB:25:A:OP1 | 2.12 | 0.49 |
| 27:RD:218:ARG:HB3 | 27:RD:219:PRO:HD2 | 1.94 | 0.49 |
| 28:RE:61:ARG:O | 28:RE:62:PRO:C | 2.51 | 0.49 |
| 30:RG:83:ARG:HG2 | 30:RG:83:ARG:HH11 | 1.76 | 0.49 |
| 31:RH:120:GLY:HA3 | 31:RH:140:LYS:NZ | 2.28 | 0.49 |
| 38:RS:60:GLY:O | 38:RS:61:ASN:CB | 2.56 | 0.49 |
| 42:RW:29:LEU:HD23 | 42:RW:29:LEU:O | 2.13 | 0.49 |
| 45:RZ:33:LEU:HD21 | 45:RZ:35:ARG:CD | 2.42 | 0.49 |
| 52:R6:20:ASN:O | 52:R6:21:TYR:CB | 2.59 | 0.49 |
| 1:XA:87:A:H2' | 1:XA:88:C:O4' | 2.11 | 0.49 |
| 1:XA:489:C:P | 4:XD:132:ARG:HH22 | 2.34 | 0.49 |
| 1:XA:711:G:H2' | 1:XA:712:A:C8 | 2.47 | 0.49 |
| 3:XC:34:LEU:O | 3:XC:38:ARG:HG3 | 2.11 | 0.49 |
| 4:XD:107:ARG:C | 4:XD:109:GLY:H | 2.15 | 0.49 |
| 8:XH:61:VAL:HG12 | 8:XH:63:LEU:HD13 | 1.94 | 0.49 |
| 13:XM:120:LYS:O | 13:XM:121:LYS:CB | 2.60 | 0.49 |
| 16:XP:59:TRP:HA | 16:XP:59:TRP:HE3 | 1.76 | 0.49 |
| 19:XS:64:GLU:HB2 | 50:Y4:55:ARG:NH1 | 2.22 | 0.49 |
| 25:YA:859:G:O2' | 25:YA:860:U:O5' | 2.30 | 0.49 |
| 25:YA:1182:A:H2' | 25:YA:1183:G:O4' | 2.12 | 0.49 |
| 25:YA:1930:G:H2' | 25:YA:1968:G:C6 | 2.46 | 0.49 |
| 25:YA:2197:U:H1' | 25:YA:2198:A:C8 | 2.47 | 0.49 |
| 27:YD:227:ASN:HB3 | 27:YD:228:PRO:CD | 2.30 | 0.49 |
| 33:YN:6:PRO:HG2 | 33:YN:43:THR:OG1 | 2.11 | 0.49 |
| 33:YN:137:LYS:HG3 | 33:YN:138:LEU:H | 1.77 | 0.49 |
| 34:YO:47:ILE:CG1 | 34:YO:48:PRO:HD2 | 2.42 | 0.49 |
| 35:YP:36:LYS:HB2 | 35:YP:40:SER:HB3 | 1.94 | 0.49 |
| 36:YQ:2:LEU:HD23 | 36:YQ:2:LEU:N | 2.27 | 0.49 |
| 38:YS:60:GLY:O | 38:YS:61:ASN:CB | 2.55 | 0.49 |
| 41:YV:3:ALA:HB3 | 41:YV:14:VAL:HG23 | 1.92 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 44:YY:19:LYS:O | 44:YY:19:LYS:CG | 2.60 | 0.49 |
| 44:YY:44:ILE:CG1 | 44:YY:45:VAL:H | 2.24 | 0.49 |
| 47:Y1:19:GLN:OE1 | 47:Y1:19:GLN:HA | 2.12 | 0.49 |
| 47:Y1:81:LYS:O | 47:Y1:82:LEU:O | 2.30 | 0.49 |
| 47:Y1:93:GLU:O | 47:Y1:97:LEU:HD11 | 2.12 | 0.49 |
| 49:Y3:21:ALA:O | 49:Y3:25:ALA:N | 2.41 | 0.49 |
| 1:QA:496:A:H5' | 1:QA:497:U:OP2 | 2.12 | 0.49 |
| 1:QA:692:U:H5 | 11:QK:26:ASN:OD1 | 1.95 | 0.49 |
| 1:QA:789:U:O2' | 1:QA:791:G:N7 | 2.46 | 0.49 |
| 1:QA:919:A:O2' | 1:QA:1080:A:N1 | 2.34 | 0.49 |
| 1:QA:1080:A:H5'' | 5:QE:16:THR:HG21 | 1.94 | 0.49 |
| 1:QA:1531:A:C8 | 1:QA:1531:A:C5' | 2.85 | 0.49 |
| 4:QD:8:VAL:O | 4:QD:11:LEU:HB2 | 2.12 | 0.49 |
| 4:QD:33:MET:CE | 4:QD:37:PRO:HA | 2.42 | 0.49 |
| 9:QI:105:ASP:C | 9:QI:107:ARG:H | 2.14 | 0.49 |
| 11:QK:29:ILE:HG13 | 11:QK:44:SER:HB3 | 1.92 | 0.49 |
| 25:RA:1537:C:H2' | 25:RA:1538:G:O4' | 2.11 | 0.49 |
| 27:RD:10:THR:HG23 | 27:RD:13:ARG:CB | 2.34 | 0.49 |
| 27:RD:35:LYS:CG | 27:RD:64:ILE:HG22 | 2.42 | 0.49 |
| 27:RD:123:ALA:HB3 | 27:RD:131:LEU:HG | 1.94 | 0.49 |
| 30:RG:49:ASP:OD1 | 30:RG:51:ARG:HG3 | 2.12 | 0.49 |
| 31:RH:19:VAL:HG13 | 31:RH:43:VAL:CG2 | 2.41 | 0.49 |
| 31:RH:19:VAL:HG13 | 31:RH:43:VAL:HG23 | 1.94 | 0.49 |
| 33:RN:73:THR:HG22 | 33:RN:82:LEU:HD11 | 1.93 | 0.49 |
| 38:RS:18:ILE:O | 38:RS:19:LYS:O | 2.31 | 0.49 |
| 41:RV:91:TYR:C | 41:RV:91:TYR:HD1 | 2.16 | 0.49 |
| 44:RY:77:PRO:O | 44:RY:78:ALA:HB2 | 2.11 | 0.49 |
| 44:RY:90:LEU:HD22 | 44:RY:90:LEU:H | 1.73 | 0.49 |
| 45:RZ:116:VAL:HG23 | 45:RZ:116:VAL:O | 2.11 | 0.49 |
| 48:R2:41:ILE:HD11 | 48:R2:44:LEU:CB | 2.42 | 0.49 |
| 49:R3:7:LYS:CB | 49:R3:34:GLU:HG2 | 2.41 | 0.49 |
| 50:R4:57:GLU:O | 50:R4:61:ARG:O | 2.30 | 0.49 |
| 51:R5:20:ARG:C | 51:R5:22:HIS:H | 2.14 | 0.49 |
| 1:XA:165:C:H2' | 1:XA:166:G:C8 | 2.47 | 0.49 |
| 1:XA:1480:G:H2' | 1:XA:1481:U:O4' | 2.12 | 0.49 |
| 2:XB:68:ILE:O | 2:XB:91:PRO:HD2 | 2.13 | 0.49 |
| 8:XH:91:ARG:HH11 | 8:XH:91:ARG:CG | 2.22 | 0.49 |
| 9:XI:5:TYR:HA | 9:XI:17:VAL:O | 2.12 | 0.49 |
| 9:XI:43:ALA:C | 9:XI:45:ALA:H | 2.16 | 0.49 |
| 12:XL:62:SER:C | 12:XL:64:TYR:H | 2.15 | 0.49 |
| 25:YA:1204:A:O2' | 25:YA:1205:U:O5' | 2.20 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:1300:U:H4' | 25:YA:1301:A:C5' | 2.42 | 0.49 |
| 25:YA:2031:A:N3 | 25:YA:2455:G:O2' | 2.36 | 0.49 |
| 27:YD:2:ALA:CB | 27:YD:20:ASP:CB | 2.89 | 0.49 |
| 29:YF:11:VAL:CG1 | 29:YF:12:LEU:N | 2.75 | 0.49 |
| 31:YH:153:LYS:HA | 31:YH:153:LYS:HZ3 | 1.75 | 0.49 |
| 32:YI:78:THR:HG22 | 32:YI:141:LYS:CD | 2.27 | 0.49 |
| 33:YN:46:VAL:O | 33:YN:47:ALA:CB | 2.57 | 0.49 |
| 33:YN:73:THR:CG2 | 33:YN:82:LEU:HD11 | 2.43 | 0.49 |
| 33:YN:82:LEU:HD12 | 33:YN:83:LYS:N | 2.27 | 0.49 |
| 34:YO:69:ILE:O | 34:YO:76:ALA:HA | 2.12 | 0.49 |
| 44:YY:88:LYS:NZ | 44:YY:88:LYS:HA | 2.27 | 0.49 |
| 45:YZ:57:ILE:HG22 | 45:YZ:58:VAL:N | 2.28 | 0.49 |
| 45:YZ:69:THR:HG22 | 45:YZ:90:VAL:HG22 | 1.94 | 0.49 |
| 45:YZ:124:ILE:O | 45:YZ:124:ILE:HG23 | 2.11 | 0.49 |
| 47:Y1:67:ILE:N | 47:Y1:68:PRO:CD | 2.76 | 0.49 |
| 50:Y4:9:LEU:H | 50:Y4:27:THR:CG2 | 2.26 | 0.49 |
| 54:Y8:56:GLU:O | 54:Y8:57:ARG:C | 2.50 | 0.49 |
| 55:Z6:76:PPU:HD2 | 55:Z6:76:PPU:HN2 | 1.76 | 0.49 |
| 1:QA:64:G:H4' | 1:QA:65:U:O5' | 2.13 | 0.49 |
| 1:QA:617:G:H1 | 1:QA:623:C:H42 | 1.60 | 0.49 |
| 1:QA:1198:G:H2' | 1:QA:1199:U:O4' | 2.11 | 0.49 |
| 1:QA:1498:U:O2' | 1:QA:1499:A:P | 2.69 | 0.49 |
| 2:QB:103:THR:N | 2:QB:180:LEU:HD11 | 2.27 | 0.49 |
| 2:QB:181:PHE:O | 2:QB:183:PRO:HD3 | 2.12 | 0.49 |
| 4:QD:9:CYS:SG | 4:QD:22:LYS:CE | 3.01 | 0.49 |
| 5:QE:12:LEU:HD23 | 5:QE:13:ILE:H | 1.77 | 0.49 |
| 6:QF:51:PRO:HA | 6:QF:55:ASP:O | 2.12 | 0.49 |
| 8:QH:14:ARG:O | 8:QH:14:ARG:HG2 | 2.12 | 0.49 |
| 11:QK:62:GLN:O | 11:QK:63:LEU:C | 2.51 | 0.49 |
| 12:QL:6:THR:O | 12:QL:7:ILE:C | 2.51 | 0.49 |
| 14:QN:8:GLU:O | 14:QN:10:ALA:N | 2.45 | 0.49 |
| 25:RA:242:G:O3' | 54:R8:6:THR:HG23 | 2.11 | 0.49 |
| 25:RA:1309:G:OP1 | 53:R7:9:ARG:HD3 | 2.13 | 0.49 |
| 25:RA:2277:G:OP1 | 36:RQ:85:LYS:HB2 | 2.12 | 0.49 |
| 25:RA:2531:A:H4' | 31:RH:157:TYR:CE2 | 2.47 | 0.49 |
| 25:RA:2585:U:O2' | 25:RA:2586:C:O5' | 2.29 | 0.49 |
| 27:RD:72:LYS:O | 27:RD:73:VAL:C | 2.51 | 0.49 |
| 28:RE:23:VAL:HG12 | 28:RE:173:VAL:HG21 | 1.94 | 0.49 |
| 32:RI:71:ILE:O | 32:RI:72:LEU:HB2 | 2.10 | 0.49 |
| 35:RP:49:ARG:HE | 54:R8:59:LYS:HG2 | 1.76 | 0.49 |
| 36:RQ:132:VAL:HG12 | 36:RQ:133:ARG:N | 2.27 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 37:RR:18:LEU:HD13 | 37:RR:18:LEU:C | 2.33 | 0.49 |
| 37:RR:118:GLU:OXT | 37:RR:118:GLU:HG3 | 2.11 | 0.49 |
| 40:RU:79:PHE:HE2 | 40:RU:83:LEU:HD22 | 1.78 | 0.49 |
| 43:RX:70:LEU:N | 43:RX:70:LEU:CD2 | 2.72 | 0.49 |
| 45:RZ:134:PRO:HB2 | 45:RZ:136:PHE:O | 2.12 | 0.49 |
| 47:R1:67:ILE:N | 47:R1:68:PRO:CD | 2.76 | 0.49 |
| 50:R4:9:LEU:H | 50:R4:27:THR:CG2 | 2.25 | 0.49 |
| 50:R4:23:GLU:C | 50:R4:24:THR:HG1 | 2.16 | 0.49 |
| 53:R7:9:ARG:HH12 | 53:R7:47:ARG:HG3 | 1.76 | 0.49 |
| 13:XM:54:VAL:CG2 | 50:Y4:32:TYR:OH | 2.60 | 0.49 |
| 19:XS:5:LEU:HG | 50:Y4:66:SER:CB | 2.42 | 0.49 |
| 25:YA:869:G:H1 | 25:YA:908:C:H42 | 1.58 | 0.49 |
| 25:YA:869:G:N2 | 25:YA:908:C:N3 | 2.59 | 0.49 |
| 25:YA:1568:G:O4' | 27:YD:58:HIS:HE1 | 1.96 | 0.49 |
| 25:YA:2273:A:H2' | 25:YA:2274:A:C8 | 2.47 | 0.49 |
| 25:YA:2850:A:N7 | 25:YA:2868:A:O2' | 2.27 | 0.49 |
| 27:YD:72:LYS:O | 27:YD:73:VAL:C | 2.51 | 0.49 |
| 33:YN:68:GLU:HG2 | 33:YN:88:GLU:CD | 2.33 | 0.49 |
| 36:YQ:29:PHE:N | 36:YQ:105:GLU:OE2 | 2.41 | 0.49 |
| 42:YW:29:LEU:O | 42:YW:29:LEU:HD23 | 2.13 | 0.49 |
| 45:YZ:82:ARG:HG3 | 45:YZ:83:PRO:N | 2.27 | 0.49 |
| 47:Y1:40:ARG:NH2 | 47:Y1:42:GLN:HG2 | 2.27 | 0.49 |
| 50:Y4:1:MET:HG3 | 50:Y4:1:MET:O | 2.12 | 0.49 |
| 50:Y4:42:PHE:O | 50:Y4:43:TYR:C | 2.51 | 0.49 |
| 54:Y8:10:ALA:O | 54:Y8:14:VAL:HG12 | 2.11 | 0.49 |
| 1:QA:103:C:P | 20:QT:17:ARG:HH21 | 2.35 | 0.49 |
| 1:QA:923:A:N6 | 1:QA:1392:G:O6 | 2.45 | 0.49 |
| 1:QA:981:U:H5 | 1:QA:982:U:HO2' | 1.61 | 0.49 |
| 3:QC:178:LEU:N | 3:QC:178:LEU:HD22 | 2.27 | 0.49 |
| 5:QE:11:ILE:CG1 | 5:QE:31:LEU:HD12 | 2.42 | 0.49 |
| 5:QE:82:VAL:HG12 | 5:QE:83:GLU:H | 1.77 | 0.49 |
| 8:QH:29:SER:CB | 8:QH:32:LYS:HG3 | 2.28 | 0.49 |
| 9:QI:79:LEU:O | 9:QI:79:LEU:HD13 | 2.12 | 0.49 |
| 9:QI:83:ARG:HA | 9:QI:86:VAL:CG1 | 2.42 | 0.49 |
| 11:QK:110:ASP:HB2 | 18:QR:88:LYS:HD3 | 1.95 | 0.49 |
| 12:QL:62:SER:C | 12:QL:64:TYR:H | 2.15 | 0.49 |
| 13:QM:102:ARG:O | 13:QM:102:ARG:HG3 | 2.11 | 0.49 |
| 16:QP:83:GLU:OE2 | 16:QP:83:GLU:HA | 2.12 | 0.49 |
| 17:QQ:67:LYS:HA | 17:QQ:70:ARG:HH12 | 1.76 | 0.49 |
| 21:QU:6:ARG:HH21 | 21:QU:15:ARG:NE | 2.09 | 0.49 |
| 25:RA:2328:A:H2' | 25:RA:2329:G:C8 | 2.47 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:2439:A:O2' | 25:RA:2440:C:OP2 | 2.24 | 0.49 |
| 25:RA:2540:C:H2' | 25:RA:2541:A:O4' | 2.12 | 0.49 |
| 25:RA:2696:U:H2' | 25:RA:2697:G:H8 | 1.77 | 0.49 |
| 26:RB:56:G:H5' | 30:RG:27:ASN:HD21 | 1.73 | 0.49 |
| 27:RD:2:ALA:CB | 27:RD:20:ASP:HB3 | 2.41 | 0.49 |
| 28:RE:55:ASN:O | 28:RE:57:LYS:N | 2.45 | 0.49 |
| 30:RG:35:GLU:CD | 30:RG:35:GLU:C | 2.71 | 0.49 |
| 31:RH:23:ARG:HD2 | 31:RH:34:GLU:OE2 | 2.12 | 0.49 |
| 33:RN:120:LEU:HD11 | 33:RN:122:VAL:CG2 | 2.42 | 0.49 |
| 38:RS:99:LYS:O | 38:RS:101:LEU:N | 2.45 | 0.49 |
| 39:RT:16:ARG:NE | 39:RT:19:LEU:HD21 | 2.27 | 0.49 |
| 39:RT:94:ALA:O | 39:RT:95:ARG:CB | 2.61 | 0.49 |
| 41:RV:76:LYS:HG3 | 41:RV:81:TYR:CD1 | 2.48 | 0.49 |
| 48:R2:33:MET:O | 48:R2:37:PHE:HD1 | 1.95 | 0.49 |
| 50:R4:68:ARG:HD3 | 50:R4:69:LYS:HG2 | 1.92 | 0.49 |
| 1:XA:946:A:O2' | 1:XA:1333:A:N3 | 2.39 | 0.49 |
| 2:XB:207:ALA:O | 2:XB:209:ARG:N | 2.45 | 0.49 |
| 3:XC:11:ARG:HG3 | 3:XC:15:THR:HG21 | 1.94 | 0.49 |
| 4:XD:128:VAL:O | 4:XD:130:GLY:N | 2.45 | 0.49 |
| 4:XD:196:LEU:C | 4:XD:198:VAL:N | 2.66 | 0.49 |
| 9:XI:43:ALA:HA | 9:XI:74:ILE:HD13 | 1.94 | 0.49 |
| 9:XI:113:LYS:H | 9:XI:119:ALA:HA | 1.77 | 0.49 |
| 13:XM:108:ARG:O | 13:XM:109:THR:C | 2.50 | 0.49 |
| 15:XO:32:LEU:O | 15:XO:33:THR:C | 2.51 | 0.49 |
| 25:YA:128:C:H4' | 53:Y7:49:ARG:HH12 | 1.77 | 0.49 |
| 25:YA:619:G:H3' | 25:YA:620:G:N2 | 2.26 | 0.49 |
| 25:YA:953:A:OP2 | 36:YQ:16:ARG:NH1 | 2.42 | 0.49 |
| 25:YA:1942:C:OP2 | 25:YA:1943:U:O2' | 2.18 | 0.49 |
| 25:YA:2723:C:H5'' | 37:YR:1:MET:HB3 | 1.93 | 0.49 |
| 28:YE:61:ARG:CB | 28:YE:62:PRO:CD | 2.90 | 0.49 |
| 30:YG:107:LEU:HD11 | 30:YG:178:PHE:CD1 | 2.48 | 0.49 |
| 31:YH:103:LEU:H | 31:YH:103:LEU:HD23 | 1.77 | 0.49 |
| 34:YO:20:MET:HG2 | 34:YO:21:CYS:O | 2.11 | 0.49 |
| 38:YS:25:ARG:HH12 | 38:YS:42:ASP:CG | 2.16 | 0.49 |
| 38:YS:99:LYS:O | 38:YS:101:LEU:N | 2.45 | 0.49 |
| 39:YT:39:ARG:CG | 39:YT:40:THR:H | 2.22 | 0.49 |
| 41:YV:91:TYR:C | 41:YV:91:TYR:HD1 | 2.16 | 0.49 |
| 42:YW:51:LEU:HD23 | 42:YW:105:VAL:HG11 | 1.95 | 0.49 |
| 44:YY:81:LYS:CD | 44:YY:97:ARG:HE | 2.20 | 0.49 |
| 45:YZ:111:VAL:HG22 | 45:YZ:111:VAL:O | 2.12 | 0.49 |
| 52:Y6:7:ILE:C | 52:Y6:9:LEU:N | 2.65 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:QA:78:G:H1 | 1:QA:91:C:H42 | 1.60 | 0.49 |
| 1:QA:148:G:H1 | 1:QA:174:C:H42 | 1.60 | 0.49 |
| 1:QA:629:G:H2' | 1:QA:630:G:C8 | 2.48 | 0.49 |
| 1:QA:661:G:H1 | 1:QA:744:C:H42 | 1.59 | 0.49 |
| 1:QA:1259:C:HO2' | 1:QA:1283:G:N2 | 2.09 | 0.49 |
| 1:QA:1326:C:H2' | 1:QA:1327:C:C6 | 2.48 | 0.49 |
| 5:QE:78:HIS:CB | 8:QH:104:ARG:O | 2.61 | 0.49 |
| 6:QF:101:ALA:HA | 18:QR:28:GLU:HG2 | 1.95 | 0.49 |
| 9:QI:18:PHE:O | 9:QI:61:ALA:HA | 2.13 | 0.49 |
| 9:QI:43:ALA:C | 9:QI:45:ALA:H | 2.16 | 0.49 |
| 10:QJ:49:VAL:HG23 | 14:QN:34:TYR:OH | 2.13 | 0.49 |
| 20:QT:37:SER:O | 20:QT:41:ILE:HG12 | 2.13 | 0.49 |
| 25:RA:227:A:H1' | 25:RA:228:A:C2 | 2.47 | 0.49 |
| 25:RA:328:U:H4' | 44:RY:68:HIS:CD2 | 2.47 | 0.49 |
| 25:RA:1951:U:N3 | 25:RA:1954:G:OP2 | 2.37 | 0.49 |
| 25:RA:2093:G:N2 | 25:RA:2198:A:H62 | 2.03 | 0.49 |
| 25:RA:2336:A:N3 | 25:RA:2385:C:H1' | 2.27 | 0.49 |
| 27:RD:25:THR:O | 27:RD:27:THR:HG22 | 2.12 | 0.49 |
| 29:RF:196:LEU:C | 29:RF:197:ASP:O | 2.50 | 0.49 |
| 34:RO:8:LEU:N | 34:RO:8:LEU:CD2 | 2.76 | 0.49 |
| 34:RO:69:ILE:O | 34:RO:76:ALA:HA | 2.12 | 0.49 |
| 34:RO:105:GLU:O | 34:RO:108:GLU:HB2 | 2.12 | 0.49 |
| 36:RQ:23:GLY:O | 36:RQ:24:GLY:O | 2.30 | 0.49 |
| 36:RQ:29:PHE:N | 36:RQ:105:GLU:OE2 | 2.41 | 0.49 |
| 44:RY:19:LYS:O | 44:RY:19:LYS:CG | 2.60 | 0.49 |
| 44:RY:95:LYS:N | 44:RY:95:LYS:CD | 2.75 | 0.49 |
| 45:RZ:19:ARG:HD3 | 45:RZ:25:PRO:HD2 | 1.95 | 0.49 |
| 45:RZ:82:ARG:HG3 | 45:RZ:83:PRO:N | 2.27 | 0.49 |
| 50:R4:22:ILE:HD12 | 50:R4:22:ILE:H | 1.77 | 0.49 |
| 1:XA:93:U:H2' | 1:XA:95:G:O4' | 2.12 | 0.49 |
| 1:XA:269:C:H2' | 1:XA:270:A:C8 | 2.47 | 0.49 |
| 1:XA:833:U:H2' | 1:XA:834:C:C6 | 2.47 | 0.49 |
| 4:XD:8:VAL:O | 4:XD:11:LEU:HB2 | 2.12 | 0.49 |
| 4:XD:11:LEU:CD2 | 4:XD:66:ARG:HD3 | 2.41 | 0.49 |
| 4:XD:118:ARG:NH2 | 4:XD:136:PRO:HB2 | 2.28 | 0.49 |
| 4:XD:163:GLU:O | 4:XD:165:MET:N | 2.46 | 0.49 |
| 4:XD:198:VAL:HG12 | 4:XD:199:ASN:H | 1.74 | 0.49 |
| 9:XI:110:GLU:O | 9:XI:110:GLU:HG3 | 2.12 | 0.49 |
| 13:XM:3:ARG:HG2 | 50:Y4:34:GLU:OE1 | 2.12 | 0.49 |
| 16:XP:83:GLU:HA | 16:XP:83:GLU:OE2 | 2.12 | 0.49 |
| 17:XQ:3:LYS:HD2 | 17:XQ:60:ILE:HD11 | 1.95 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 19:XS:11:VAL:O | 19:XS:12:ASP:CB | 2.61 | 0.49 |
| 21:XU:2:GLY:O | 21:XU:4:GLY:N | 2.46 | 0.49 |
| 25:YA:153:C:P | 47:Y1:88:LYS:HE2 | 2.53 | 0.49 |
| 25:YA:620:G:H4' | 25:YA:621:A:H5'' | 1.94 | 0.49 |
| 25:YA:1469:A:H2' | 25:YA:1470:G:C8 | 2.48 | 0.49 |
| 25:YA:2126:A:H61 | 25:YA:2163:C:H1' | 1.77 | 0.49 |
| 25:YA:2564:A:OP1 | 25:YA:2648:C:H4' | 2.13 | 0.49 |
| 25:YA:2610:C:H4' | 25:YA:2611:U:OP2 | 2.13 | 0.49 |
| 27:YD:130:ALA:C | 27:YD:131:LEU:HD12 | 2.33 | 0.49 |
| 28:YE:61:ARG:O | 28:YE:62:PRO:C | 2.51 | 0.49 |
| 28:YE:179:GLU:HA | 28:YE:179:GLU:OE1 | 2.10 | 0.49 |
| 28:YE:179:GLU:O | 28:YE:180:ASN:HB2 | 2.12 | 0.49 |
| 31:YH:19:VAL:HG13 | 31:YH:43:VAL:HG23 | 1.93 | 0.49 |
| 35:YP:30:THR:O | 35:YP:33:ARG:HB2 | 2.12 | 0.49 |
| 37:YR:1:MET:O | 37:YR:2:ARG:CB | 2.60 | 0.49 |
| 37:YR:96:ARG:NH2 | 37:YR:117:VAL:HG23 | 2.27 | 0.49 |
| 39:YT:38:ASN:O | 39:YT:39:ARG:O | 2.30 | 0.49 |
| 39:YT:57:PHE:O | 39:YT:59:THR:N | 2.46 | 0.49 |
| 41:YV:79:VAL:HG22 | 41:YV:79:VAL:O | 2.12 | 0.49 |
| 43:YX:51:VAL:HG13 | 43:YX:81:VAL:HG23 | 1.93 | 0.49 |
| 44:YY:61:ILE:HG22 | 44:YY:62:GLU:N | 2.28 | 0.49 |
| 45:YZ:143:GLY:O | 45:YZ:145:GLU:HG3 | 2.12 | 0.49 |
| 50:Y4:47:GLN:O | 50:Y4:48:ARG:CB | 2.60 | 0.49 |
| 54:Y8:58:ILE:O | 54:Y8:61:LEU:HD12 | 2.13 | 0.49 |
| 1:QA:396:G:O2' | 1:QA:398:C:OP1 | 2.12 | 0.49 |
| 1:QA:683:G:C6 | 1:QA:684:A:C6 | 3.01 | 0.49 |
| 2:QB:179:LYS:HA | 8:QH:72:PRO:HD3 | 1.95 | 0.49 |
| 8:QH:61:VAL:HG12 | 8:QH:63:LEU:HD13 | 1.94 | 0.49 |
| 9:QI:43:ALA:HA | 9:QI:74:ILE:HD13 | 1.94 | 0.49 |
| 13:QM:14:ARG:HG3 | 13:QM:16:ASP:OD2 | 2.13 | 0.49 |
| 13:QM:120:LYS:O | 13:QM:121:LYS:CB | 2.60 | 0.49 |
| 19:QS:62:ILE:C | 19:QS:63:THR:HG22 | 2.32 | 0.49 |
| 20:QT:53:LEU:HA | 20:QT:56:MET:CB | 2.43 | 0.49 |
| 25:RA:39:C:H2' | 25:RA:40:C:C6 | 2.47 | 0.49 |
| 25:RA:153:C:OP2 | 47:R1:88:LYS:HE2 | 2.13 | 0.49 |
| 25:RA:1535:U:H2' | 25:RA:1536:A:C8 | 2.48 | 0.49 |
| 25:RA:1655:A:H4' | 28:RE:115:GLY:N | 2.28 | 0.49 |
| 25:RA:1678:G:N2 | 25:RA:1989:G:H1 | 2.10 | 0.49 |
| 25:RA:1751:C:O2' | 25:RA:1752:C:H5' | 2.13 | 0.49 |
| 25:RA:2126:A:H61 | 25:RA:2163:C:H1' | 1.77 | 0.49 |
| 25:RA:2311:A:H1' | 30:RG:82:LEU:CD1 | 2.41 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:RA:2638:G:O2' | 25:RA:2778:A:N6 | 2.45 | 0.49 |
| 26:RB:116:G:O2' | 38:RS:54:LEU:HD11 | 2.12 | 0.49 |
| 27:RD:182:LEU:H | 27:RD:272:ALA:CB | 2.25 | 0.49 |
| 30:RG:6:ALA:H | 50:R4:23:GLU:CG | 2.24 | 0.49 |
| 30:RG:107:LEU:HD11 | 30:RG:178:PHE:CD1 | 2.48 | 0.49 |
| 30:RG:143:GLU:HA | 50:R4:28:LYS:HD3 | 1.95 | 0.49 |
| 31:RH:24:VAL:HG21 | 31:RH:72:ILE:HG12 | 1.93 | 0.49 |
| 31:RH:54:ARG:HD3 | 31:RH:65:HIS:ND1 | 2.27 | 0.49 |
| 32:RI:140:LEU:HD23 | 32:RI:140:LEU:N | 2.28 | 0.49 |
| 35:RP:101:VAL:CG1 | 35:RP:102:ARG:N | 2.75 | 0.49 |
| 36:RQ:79:LEU:O | 36:RQ:80:GLU:OE1 | 2.31 | 0.49 |
| 37:RR:52:ILE:CG2 | 37:RR:94:TYR:CD1 | 2.95 | 0.49 |
| 37:RR:71:GLN:HA | 37:RR:71:GLN:HE21 | 1.77 | 0.49 |
| 40:RU:92:ARG:CD | 40:RU:94:ASN:HB3 | 2.42 | 0.49 |
| 44:RY:35:TYR:CD1 | 44:RY:69:ALA:HB3 | 2.48 | 0.49 |
| 44:RY:84:ARG:HD3 | 44:RY:86:ARG:NH1 | 2.28 | 0.49 |
| 45:RZ:107:THR:HG22 | 45:RZ:108:PRO:CA | 2.43 | 0.49 |
| 47:R1:40:ARG:NH2 | 47:R1:42:GLN:HG2 | 2.27 | 0.49 |
| 47:R1:83:GLU:CD | 47:R1:85:LEU:H | 2.15 | 0.49 |
| 50:R4:42:PHE:O | 50:R4:44:THR:O | 2.31 | 0.49 |
| 52:R6:7:ILE:C | 52:R6:9:LEU:N | 2.65 | 0.49 |
| 52:R6:37:ARG:HA | 52:R6:37:ARG:HE | 1.77 | 0.49 |
| 54:R8:33:ASN:O | 54:R8:35:GLN:N | 2.46 | 0.49 |
| 1:XA:376:G:OP2 | 16:XP:67:THR:HG21 | 2.13 | 0.49 |
| 1:XA:923:A:N6 | 1:XA:1392:G:O6 | 2.45 | 0.49 |
| 3:XC:76:VAL:HG21 | 3:XC:103:VAL:HG11 | 1.95 | 0.49 |
| 3:XC:178:LEU:N | 3:XC:178:LEU:HD22 | 2.28 | 0.49 |
| 6:XF:72:VAL:HG13 | 6:XF:73:ASN:N | 2.27 | 0.49 |
| 8:XH:14:ARG:O | 8:XH:14:ARG:HG2 | 2.12 | 0.49 |
| 8:XH:83:ILE:HB | 8:XH:137:VAL:HG13 | 1.94 | 0.49 |
| 14:XN:8:GLU:O | 14:XN:10:ALA:N | 2.45 | 0.49 |
| 19:XS:9:VAL:O | 19:XS:10:PHE:HB3 | 2.13 | 0.49 |
| 20:XT:37:SER:O | 20:XT:41:ILE:HG12 | 2.12 | 0.49 |
| 25:YA:26:G:N1 | 25:YA:27:G:N2 | 2.61 | 0.49 |
| 25:YA:76:C:O2' | 48:Y2:62:THR:HG21 | 2.13 | 0.49 |
| 25:YA:389:G:H1 | 35:YP:71:VAL:HG12 | 1.77 | 0.49 |
| 25:YA:628:G:H5'' | 54:Y8:18:ALA:HB2 | 1.95 | 0.49 |
| 25:YA:2239:G:H5' | 27:YD:251:GLY:HA3 | 1.95 | 0.49 |
| 26:YB:52:A:H62 | 38:YS:33:LYS:HG3 | 1.77 | 0.49 |
| 27:YD:44:ASN:H | 27:YD:44:ASN:ND2 | 1.97 | 0.49 |
| 28:YE:17:ASP:N | 28:YE:17:ASP:OD2 | 2.46 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 30:YG:56:ALA:HB2 | 30:YG:153:ARG:NE | 2.27 | 0.49 |
| 31:YH:151:ILE:C | 31:YH:152:ARG:O | 2.49 | 0.49 |
| 31:YH:153:LYS:CB | 31:YH:154:PRO:CD | 2.69 | 0.49 |
| 32:YI:114:LEU:HD12 | 32:YI:129:THR:O | 2.12 | 0.49 |
| 32:YI:128:LEU:O | 32:YI:138:ILE:N | 2.44 | 0.49 |
| 37:YR:18:LEU:HD13 | 37:YR:18:LEU:C | 2.33 | 0.49 |
| 41:YV:29:PRO:O | 41:YV:61:VAL:HG22 | 2.12 | 0.49 |
| 41:YV:76:LYS:HG3 | 41:YV:81:TYR:CD1 | 2.47 | 0.49 |
| 51:Y5:2:ALA:O | 51:Y5:3:LYS:CB | 2.60 | 0.49 |
| 1:QA:167:G:H2' | 1:QA:168:G:C8 | 2.47 | 0.49 |
| 1:QA:244:U:H4' | 1:QA:245:C:C5' | 2.43 | 0.49 |
| 1:QA:538:G:H2' | 1:QA:539:A:C8 | 2.47 | 0.49 |
| 1:QA:539:A:OP2 | 12:QL:115:LYS:HE3 | 2.13 | 0.49 |
| 2:QB:16:HIS:HB3 | 2:QB:210:SER:HB2 | 1.95 | 0.49 |
| 2:QB:68:ILE:O | 2:QB:91:PRO:HD2 | 2.13 | 0.49 |
| 5:QE:41:VAL:CG1 | 5:QE:112:LEU:O | 2.60 | 0.49 |
| 6:QF:97:PHE:CD2 | 18:QR:31:LEU:HD21 | 2.48 | 0.49 |
| 15:QO:77:ARG:HA | 15:QO:80:ALA:HB3 | 1.95 | 0.49 |
| 17:QQ:74:LEU:HD12 | 17:QQ:75:ARG:NE | 2.28 | 0.49 |
| 20:QT:60:GLU:HG3 | 20:QT:81:LYS:HE3 | 1.94 | 0.49 |
| 25:RA:330:A:H2 | 25:RA:1210:A:H2' | 1.78 | 0.49 |
| 25:RA:852:G:H1 | 25:RA:925:C:H42 | 1.61 | 0.49 |
| 25:RA:2168:G:N2 | 25:RA:2170:A:N7 | 2.61 | 0.49 |
| 25:RA:2645:G:H3' | 25:RA:2646:C:C5' | 2.32 | 0.49 |
| 25:RA:2839:G:O2' | 37:RR:49:ASP:OD2 | 2.30 | 0.49 |
| 29:RF:45:ARG:NH1 | 29:RF:45:ARG:HG2 | 2.28 | 0.49 |
| 30:RG:115:ARG:NH1 | 30:RG:115:ARG:HG2 | 2.26 | 0.49 |
| 31:RH:128:PRO:HD2 | 31:RH:129:THR:N | 2.25 | 0.49 |
| 33:RN:30:ILE:O | 33:RN:34:LEU:HD23 | 2.13 | 0.49 |
| 33:RN:95:PRO:O | 33:RN:97:ARG:N | 2.46 | 0.49 |
| 35:RP:47:ASP:OD1 | 35:RP:49:ARG:NH1 | 2.46 | 0.49 |
| 35:RP:147:LEU:O | 35:RP:148:LEU:HB2 | 2.11 | 0.49 |
| 41:RV:7:THR:HG23 | 41:RV:22:VAL:HG11 | 1.94 | 0.49 |
| 41:RV:29:PRO:O | 41:RV:61:VAL:HG22 | 2.12 | 0.49 |
| 42:RW:30:GLU:O | 42:RW:34:ASN:ND2 | 2.46 | 0.49 |
| 45:RZ:69:THR:HG22 | 45:RZ:90:VAL:HG22 | 1.94 | 0.49 |
| 45:RZ:107:THR:HG22 | 45:RZ:108:PRO:HA | 1.94 | 0.49 |
| 51:R5:48:GLU:HA | 51:R5:59:GLU:CG | 2.43 | 0.49 |
| 1:XA:524:G:H2' | 1:XA:525:C:C6 | 2.47 | 0.49 |
| 3:XC:188:LEU:N | 3:XC:188:LEU:CD2 | 2.76 | 0.49 |
| 5:XE:153:LYS:HB2 | 5:XE:153:LYS:HZ3 | 1.77 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 6:XF:101:ALA:HA | 18:XR:28:GLU:HG2 | 1.95 | 0.49 |
| 9:XI:79:LEU:O | 9:XI:79:LEU:HD13 | 2.12 | 0.49 |
| 13:XM:73:GLU:O | 13:XM:76:ALA:HB3 | 2.13 | 0.49 |
| 13:XM:90:LEU:HA | 13:XM:93:ARG:CD | 2.34 | 0.49 |
| 17:XQ:67:LYS:HA | 17:XQ:70:ARG:HH12 | 1.76 | 0.49 |
| 19:XS:62:ILE:C | 19:XS:63:THR:HG22 | 2.33 | 0.49 |
| 25:YA:270(T):G:OP1 | 47:Y1:97:LEU:HD13 | 2.12 | 0.49 |
| 25:YA:748:G:C6 | 42:YW:90:ARG:NH1 | 2.81 | 0.49 |
| 25:YA:934:G:H2' | 25:YA:935:C:C6 | 2.47 | 0.49 |
| 25:YA:945:A:H4' | 25:YA:946:G:OP1 | 2.13 | 0.49 |
| 25:YA:1250:G:OP2 | 35:YP:21:ARG:HD3 | 2.13 | 0.49 |
| 25:YA:1930:G:HO2' | 25:YA:1931:U:P | 2.36 | 0.49 |
| 27:YD:35:LYS:CG | 27:YD:64:ILE:HG22 | 2.42 | 0.49 |
| 28:YE:119:ARG:HD3 | 28:YE:160:TYR:CD2 | 2.47 | 0.49 |
| 30:YG:113:ARG:HD2 | 50:Y4:33:VAL:CG1 | 2.43 | 0.49 |
| 30:YG:115:ARG:HH11 | 30:YG:115:ARG:HG2 | 1.77 | 0.49 |
| 31:YH:98:LEU:HD12 | 31:YH:102:ALA:O | 2.13 | 0.49 |
| 32:YI:35:LEU:O | 32:YI:36:ALA:CB | 2.61 | 0.49 |
| 33:YN:4:TYR:OH | 33:YN:7:LYS:NZ | 2.46 | 0.49 |
| 33:YN:95:PRO:O | 33:YN:97:ARG:N | 2.46 | 0.49 |
| 36:YQ:23:GLY:O | 36:YQ:24:GLY:O | 2.30 | 0.49 |
| 37:YR:33:ARG:NH2 | 51:Y5:55:ARG:CG | 2.66 | 0.49 |
| 40:YU:64:ARG:CG | 40:YU:64:ARG:NH2 | 2.70 | 0.49 |
| 44:YY:84:ARG:HD3 | 44:YY:86:ARG:NH1 | 2.28 | 0.49 |
| 45:YZ:77:ASP:OD2 | 45:YZ:80:ARG:HB2 | 2.12 | 0.49 |
| 52:Y6:9:LEU:HD13 | 52:Y6:26:ASN:HD22 | 1.76 | 0.49 |
| 52:Y6:20:ASN:CG | 52:Y6:21:TYR:N | 2.66 | 0.49 |
| 52:Y6:37:ARG:HE | 52:Y6:37:ARG:HA | 1.77 | 0.49 |
| 1:QA:1053:G:N7 | 1:QA:1200:C:H5'' | 2.28 | 0.49 |
| 1:QA:1352:C:H42 | 1:QA:1370:G:H1 | 1.61 | 0.49 |
| 2:QB:42:ILE:HD11 | 2:QB:202:PRO:HB2 | 1.95 | 0.49 |
| 2:QB:170:GLU:C | 2:QB:172:ILE:HD12 | 2.33 | 0.49 |
| 2:QB:193:ASP:OD2 | 2:QB:196:LEU:CG | 2.57 | 0.49 |
| 3:QC:173:VAL:N | 3:QC:174:PRO:HD3 | 2.28 | 0.49 |
| 3:QC:188:LEU:N | 3:QC:188:LEU:CD2 | 2.76 | 0.49 |
| 4:QD:9:CYS:C | 4:QD:11:LEU:H | 2.16 | 0.49 |
| 9:QI:110:GLU:O | 9:QI:110:GLU:HG3 | 2.12 | 0.49 |
| 10:QJ:49:VAL:CG1 | 10:QJ:50:ILE:N | 2.76 | 0.49 |
| 10:QJ:94:VAL:CG1 | 10:QJ:95:GLU:N | 2.76 | 0.49 |
| 11:QK:25:TYR:N | 11:QK:25:TYR:CD1 | 2.80 | 0.49 |
| 20:QT:97:ALA:HB3 | 20:QT:99:LEU:CD1 | 2.43 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:242:G:H4' | 25:RA:243:U:O5' | 2.12 | 0.49 |
| 25:RA:751:A:C6 | 25:RA:789:A:C5 | 3.00 | 0.49 |
| 25:RA:1344:G:H4' | 25:RA:1384:A:N7 | 2.28 | 0.49 |
| 25:RA:1441:G:H2' | 25:RA:1442:G:C8 | 2.47 | 0.49 |
| 25:RA:1790:C:H5'' | 25:RA:1791:A:OP1 | 2.12 | 0.49 |
| 25:RA:1931:U:H6 | 25:RA:1932:A:C8 | 2.31 | 0.49 |
| 25:RA:2051:A:H5' | 25:RA:2578:G:O4' | 2.12 | 0.49 |
| 28:RE:46:ALA:HB1 | 28:RE:80:GLU:HB2 | 1.94 | 0.49 |
| 28:RE:95:ILE:H | 28:RE:95:ILE:CD1 | 2.19 | 0.49 |
| 28:RE:119:ARG:HD3 | 28:RE:160:TYR:HD2 | 1.78 | 0.49 |
| 29:RF:129:PHE:CD2 | 29:RF:163:VAL:HG21 | 2.48 | 0.49 |
| 30:RG:113:ARG:HD2 | 50:R4:33:VAL:CG1 | 2.43 | 0.49 |
| 31:RH:12:PRO:HD3 | 31:RH:48:GLY:O | 2.13 | 0.49 |
| 31:RH:98:LEU:HD12 | 31:RH:102:ALA:O | 2.13 | 0.49 |
| 31:RH:137:ASP:CB | 31:RH:140:LYS:HB2 | 2.43 | 0.49 |
| 35:RP:64:LYS:C | 35:RP:66:GLY:N | 2.56 | 0.49 |
| 36:RQ:86:GLY:O | 36:RQ:88:GLY:N | 2.46 | 0.49 |
| 41:RV:79:VAL:HG22 | 41:RV:79:VAL:O | 2.12 | 0.49 |
| 41:RV:91:TYR:C | 41:RV:91:TYR:CD1 | 2.87 | 0.49 |
| 43:RX:51:VAL:HG13 | 43:RX:81:VAL:HG23 | 1.93 | 0.49 |
| 45:RZ:72:ARG:HH11 | 45:RZ:72:ARG:CG | 2.26 | 0.49 |
| 45:RZ:111:VAL:HG22 | 45:RZ:111:VAL:O | 2.12 | 0.49 |
| 45:RZ:124:ILE:O | 45:RZ:124:ILE:HG23 | 2.11 | 0.49 |
| 45:RZ:125:LEU:HG | 45:RZ:164:ALA:HB1 | 1.95 | 0.49 |
| 47:R1:81:LYS:O | 47:R1:82:LEU:O | 2.30 | 0.49 |
| 51:R5:2:ALA:O | 51:R5:3:LYS:CB | 2.61 | 0.49 |
| 51:R5:52:TYR:O | 51:R5:53:ALA:CB | 2.60 | 0.49 |
| 52:R6:27:LYS:NZ | 52:R6:27:LYS:CB | 2.73 | 0.49 |
| 52:R6:44:ARG:O | 52:R6:45:LYS:CB | 2.60 | 0.49 |
| 1:XA:191(D):U:H2' | 1:XA:191(E):G:H8 | 1.76 | 0.49 |
| 1:XA:1003:G:H21 | 1:XA:1005:A:H5' | 1.77 | 0.49 |
| 2:XB:7:VAL:CG2 | 2:XB:8:LYS:HD3 | 2.43 | 0.49 |
| 2:XB:95:GLN:NE2 | 2:XB:147:LYS:HE2 | 2.27 | 0.49 |
| 5:XE:12:LEU:HD23 | 5:XE:13:ILE:H | 1.76 | 0.49 |
| 5:XE:60:TYR:CE1 | 5:XE:64:ARG:NH2 | 2.77 | 0.49 |
| 7:XG:23:VAL:O | 7:XG:27:ILE:CD1 | 2.60 | 0.49 |
| 8:XH:109:ILE:HG12 | 8:XH:110:ALA:N | 2.27 | 0.49 |
| 9:XI:22:GLY:HA3 | 9:XI:60:ASP:OD2 | 2.13 | 0.49 |
| 10:XJ:63:PHE:CD1 | 14:XN:58:LYS:HA | 2.35 | 0.49 |
| 20:XT:60:GLU:HG3 | 20:XT:81:LYS:HE3 | 1.94 | 0.49 |
| 25:YA:299:A:H5' | 25:YA:300:A:OP2 | 2.13 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:YA:1049:C:H1' | 25:YA:1113:U:H4' | 1.94 | 0.49 |
| 25:YA:1264:G:H3' | 25:YA:1265:A:H5'' | 1.95 | 0.49 |
| 25:YA:1266:G:OP2 | 51:Y5:20:ARG:NE | 2.44 | 0.49 |
| 25:YA:1368:G:C2 | 25:YA:1369:G:C8 | 3.01 | 0.49 |
| 25:YA:2185:C:H2' | 25:YA:2186:G:C8 | 2.47 | 0.49 |
| 25:YA:2630:G:H1 | 25:YA:2788:C:H42 | 1.60 | 0.49 |
| 25:YA:2846:G:N2 | 25:YA:2871:C:H1' | 2.28 | 0.49 |
| 27:YD:237:GLU:OE1 | 27:YD:237:GLU:HA | 2.11 | 0.49 |
| 30:YG:3:LEU:HD21 | 50:Y4:25:TYR:CE1 | 2.48 | 0.49 |
| 31:YH:42:ARG:O | 31:YH:52:VAL:HA | 2.13 | 0.49 |
| 31:YH:54:ARG:HD3 | 31:YH:65:HIS:ND1 | 2.27 | 0.49 |
| 31:YH:124:GLU:HB3 | 31:YH:132:ARG:CG | 2.43 | 0.49 |
| 31:YH:153:LYS:O | 31:YH:154:PRO:O | 2.30 | 0.49 |
| 35:YP:14:LYS:O | 35:YP:15:ARG:C | 2.51 | 0.49 |
| 35:YP:47:ASP:OD1 | 35:YP:49:ARG:NH1 | 2.46 | 0.49 |
| 36:YQ:86:GLY:O | 36:YQ:88:GLY:N | 2.46 | 0.49 |
| 44:YY:47:LYS:C | 44:YY:49:VAL:H | 2.16 | 0.49 |
| 44:YY:81:LYS:HD3 | 44:YY:97:ARG:HD3 | 1.94 | 0.49 |
| 44:YY:95:LYS:N | 44:YY:95:LYS:CD | 2.76 | 0.49 |
| 45:YZ:134:PRO:HB2 | 45:YZ:136:PHE:O | 2.12 | 0.49 |
| 46:Y0:25:ARG:HD2 | 46:Y0:29:GLN:HE21 | 1.76 | 0.49 |
| 54:Y8:16:ILE:CD1 | 54:Y8:57:ARG:HG2 | 2.42 | 0.49 |
| 54:Y8:52:LYS:H | 54:Y8:53:PRO:HD2 | 1.66 | 0.49 |
| 1:QA:191:G:N9 | 20:QT:105:SER:HB3 | 2.27 | 0.49 |
| 1:QA:664:G:N2 | 1:QA:741:G:H1 | 2.10 | 0.49 |
| 1:QA:1190:G:OP1 | 3:QC:4:LYS:HA | 2.13 | 0.49 |
| 1:QA:1250:A:H2 | 1:QA:1353:G:H21 | 1.59 | 0.49 |
| 2:QB:207:ALA:O | 2:QB:209:ARG:N | 2.45 | 0.49 |
| 5:QE:42:GLY:CA | 5:QE:136:MET:HE1 | 2.42 | 0.49 |
| 8:QH:122:ARG:O | 8:QH:125:ARG:N | 2.46 | 0.49 |
| 9:QI:79:LEU:O | 9:QI:83:ARG:HG2 | 2.13 | 0.49 |
| 9:QI:112:LYS:HD3 | 9:QI:113:LYS:O | 2.13 | 0.49 |
| 10:QJ:33:GLN:HB2 | 10:QJ:75:ILE:CD1 | 2.43 | 0.49 |
| 13:QM:4:ILE:HG22 | 13:QM:5:ALA:H | 1.75 | 0.49 |
| 19:QS:27:GLU:O | 19:QS:28:LYS:CG | 2.53 | 0.49 |
| 20:QT:26:ASN:CB | 20:QT:71:THR:HG23 | 2.43 | 0.49 |
| 25:RA:518:G:H2' | 25:RA:519:U:C6 | 2.48 | 0.49 |
| 25:RA:851:U:H1' | 49:R3:46:ASN:HD21 | 1.78 | 0.49 |
| 25:RA:861:A:N3 | 26:RB:79:C:O2' | 2.46 | 0.49 |
| 28:RE:38:THR:O | 28:RE:42:ASP:HB2 | 2.13 | 0.49 |
| 30:RG:36:LYS:HA | 30:RG:95:ARG:HG2 | 1.95 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:RG:114:ILE:HG21 | 30:RG:117:PHE:HB2 | 1.93 | 0.49 |
| 31:RH:103:LEU:HD23 | 31:RH:103:LEU:H | 1.78 | 0.49 |
| 32:RI:1:MET:HG3 | 32:RI:23:PRO:HA | 1.94 | 0.49 |
| 33:RN:73:THR:CG2 | 33:RN:82:LEU:HD11 | 2.43 | 0.49 |
| 34:RO:55:GLY:O | 34:RO:56:ASP:C | 2.50 | 0.49 |
| 35:RP:36:LYS:HB2 | 35:RP:40:SER:HB3 | 1.94 | 0.49 |
| 36:RQ:31:ASP:O | 36:RQ:32:TYR:CG | 2.66 | 0.49 |
| 37:RR:44:LEU:HD22 | 37:RR:48:VAL:CG2 | 2.43 | 0.49 |
| 39:RT:16:ARG:HD3 | 39:RT:19:LEU:CG | 2.43 | 0.49 |
| 39:RT:111:ARG:O | 39:RT:112:ARG:CG | 2.55 | 0.49 |
| 41:RV:22:VAL:HG12 | 41:RV:23:GLU:H | 1.76 | 0.49 |
| 41:RV:35:LEU:HD22 | 41:RV:57:VAL:O | 2.13 | 0.49 |
| 42:RW:51:LEU:HD23 | 42:RW:105:VAL:HG11 | 1.95 | 0.49 |
| 44:RY:5:MET:HE1 | 44:RY:32:PRO:HB3 | 1.94 | 0.49 |
| 44:RY:6:HIS:O | 44:RY:7:VAL:CG1 | 2.59 | 0.49 |
| 45:RZ:77:ASP:OD2 | 45:RZ:80:ARG:HB2 | 2.12 | 0.49 |
| 50:R4:10:VAL:CG2 | 50:R4:11:PRO:HD2 | 2.43 | 0.49 |
| 52:R6:7:ILE:O | 52:R6:9:LEU:N | 2.46 | 0.49 |
| 52:R6:20:ASN:CG | 52:R6:21:TYR:N | 2.66 | 0.49 |
| 1:XA:417:C:H2' | 1:XA:418:C:C6 | 2.47 | 0.49 |
| 1:XA:798:G:OP1 | 11:XK:122:LYS:NZ | 2.46 | 0.49 |
| 1:XA:1022:G:H2' | 1:XA:1023:G:H8 | 1.77 | 0.49 |
| 1:XA:1284:C:H3' | 1:XA:1285:A:C8 | 2.47 | 0.49 |
| 1:XA:1347:G:C8 | 9:XI:107:ARG:HB3 | 2.48 | 0.49 |
| 2:XB:39:ILE:O | 2:XB:41:ILE:HD12 | 2.12 | 0.49 |
| 3:XC:87:LEU:C | 3:XC:89:GLU:N | 2.65 | 0.49 |
| 4:XD:206:PHE:HD2 | 4:XD:207:TYR:CE1 | 2.31 | 0.49 |
| 5:XE:45:PHE:CD2 | 5:XE:47:LYS:HD2 | 2.47 | 0.49 |
| 7:XG:63:LYS:O | 7:XG:63:LYS:HD2 | 2.13 | 0.49 |
| 12:XL:11:VAL:HG13 | 17:XQ:29:HIS:CD2 | 2.48 | 0.49 |
| 13:XM:3:ARG:HA | 13:XM:9:ILE:HG12 | 1.95 | 0.49 |
| 13:XM:12:ASN:O | 13:XM:13:LYS:HB2 | 2.13 | 0.49 |
| 13:XM:30:ALA:O | 13:XM:31:LYS:C | 2.49 | 0.49 |
| 19:XS:64:GLU:C | 50:Y4:55:ARG:NH1 | 2.66 | 0.49 |
| 20:XT:97:ALA:HB3 | 20:XT:99:LEU:CD1 | 2.43 | 0.49 |
| 25:YA:530:G:H1' | 25:YA:2021:C:O2' | 2.12 | 0.49 |
| 25:YA:1339:G:N2 | 25:YA:1603:A:H1' | 2.27 | 0.49 |
| 25:YA:1374:G:H2' | 25:YA:1375:C:O4' | 2.12 | 0.49 |
| 25:YA:1742:C:H5' | 25:YA:1743:G:OP2 | 2.13 | 0.49 |
| 25:YA:2123:G:H2' | 25:YA:2124:G:H8 | 1.78 | 0.49 |
| 27:YD:123:ALA:HB3 | 27:YD:131:LEU:HG | 1.94 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 30:YG:92:VAL:O | 30:YG:92:VAL:HG13 | 2.11 | 0.49 |
| 30:YG:115:ARG:NH1 | 30:YG:115:ARG:HG2 | 2.26 | 0.49 |
| 31:YH:13:LYS:HE2 | 31:YH:13:LYS:CA | 2.39 | 0.49 |
| 33:YN:56:ASN:ND2 | 33:YN:125:GLY:C | 2.66 | 0.49 |
| 35:YP:101:VAL:CG1 | 35:YP:102:ARG:N | 2.75 | 0.49 |
| 36:YQ:112:GLU:CD | 36:YQ:112:GLU:H | 2.17 | 0.49 |
| 38:YS:11:LYS:HG2 | 38:YS:11:LYS:O | 2.12 | 0.49 |
| 41:YV:35:LEU:HD22 | 41:YV:57:VAL:O | 2.13 | 0.49 |
| 41:YV:91:TYR:C | 41:YV:91:TYR:CD1 | 2.87 | 0.49 |
| 42:YW:88:ARG:HB3 | 42:YW:92:ARG:CB | 2.42 | 0.49 |
| 44:YY:97:ARG:HG2 | 44:YY:97:ARG:NH1 | 2.28 | 0.49 |
| 47:Y1:80:LEU:C | 47:Y1:81:LYS:CE | 2.77 | 0.49 |
| 1:QA:65:U:H6 | 1:QA:65:U:H5' | 1.77 | 0.48 |
| 1:QA:690:G:H22 | 11:QK:55:LYS:HZ1 | 1.60 | 0.48 |
| 1:QA:971:G:O2' | 1:QA:1365:G:O2' | 2.18 | 0.48 |
| 2:QB:39:ILE:O | 2:QB:41:ILE:HD12 | 2.12 | 0.48 |
| 7:QG:78:ARG:HG3 | 7:QG:78:ARG:HH11 | 1.78 | 0.48 |
| 10:QJ:3:LYS:O | 10:QJ:100:THR:HA | 2.13 | 0.48 |
| 11:QK:82:VAL:O | 11:QK:108:ILE:HA | 2.13 | 0.48 |
| 16:QP:43:LYS:HE2 | 16:QP:48:TRP:CZ3 | 2.48 | 0.48 |
| 25:RA:64:A:C4 | 43:RX:66:LEU:HD13 | 2.48 | 0.48 |
| 25:RA:226:G:O2' | 25:RA:227:A:O4' | 2.30 | 0.48 |
| 25:RA:312:G:H4' | 25:RA:331:A:C2 | 2.47 | 0.48 |
| 25:RA:482:A:N6 | 25:RA:506:G:O2' | 2.46 | 0.48 |
| 25:RA:1022:G:C6 | 25:RA:1140:C:C4 | 3.01 | 0.48 |
| 25:RA:1622:G:C2 | 25:RA:1623:G:C8 | 3.01 | 0.48 |
| 25:RA:2585:U:HO2' | 25:RA:2586:C:C5' | 2.25 | 0.48 |
| 25:RA:2735:G:H2' | 25:RA:2736:G:C8 | 2.46 | 0.48 |
| 29:RF:155:LEU:HD23 | 29:RF:186:ILE:HA | 1.95 | 0.48 |
| 34:RO:107:ARG:NH1 | 39:RT:36:GLU:OE1 | 2.46 | 0.48 |
| 35:RP:30:THR:O | 35:RP:33:ARG:HB2 | 2.12 | 0.48 |
| 35:RP:52:GLU:OE2 | 35:RP:57:THR:HA | 2.13 | 0.48 |
| 37:RR:67:LEU:HD13 | 37:RR:76:VAL:CG2 | 2.28 | 0.48 |
| 38:RS:48:LEU:N | 38:RS:48:LEU:CD1 | 2.76 | 0.48 |
| 38:RS:59:LYS:HG2 | 38:RS:60:GLY:N | 2.12 | 0.48 |
| 45:RZ:136:PHE:CD1 | 45:RZ:136:PHE:C | 2.86 | 0.48 |
| 47:R1:19:GLN:HA | 47:R1:19:GLN:OE1 | 2.12 | 0.48 |
| 47:R1:25:LYS:C | 47:R1:27:GLU:H | 2.17 | 0.48 |
| 50:R4:47:GLN:O | 50:R4:48:ARG:CB | 2.61 | 0.48 |
| 52:R6:8:LYS:O | 52:R6:27:LYS:HA | 2.13 | 0.48 |
| 54:R8:41:ILE:HG13 | 54:R8:42:ARG:N | 2.28 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 54:R8:58:ILE:O | 54:R8:61:LEU:HD12 | 2.13 | 0.48 |
| 1:XA:501:C:H1' | 1:XA:549:C:H1' | 1.95 | 0.48 |
| 2:XB:15:VAL:H | 2:XB:16:HIS:CE1 | 2.31 | 0.48 |
| 2:XB:16:HIS:HB3 | 2:XB:210:SER:HB2 | 1.95 | 0.48 |
| 2:XB:69:LEU:HB3 | 2:XB:162:ILE:HG22 | 1.95 | 0.48 |
| 2:XB:178:ARG:HH22 | 8:XH:68:ARG:NH2 | 2.10 | 0.48 |
| 2:XB:181:PHE:O | 2:XB:183:PRO:HD3 | 2.12 | 0.48 |
| 2:XB:193:ASP:OD2 | 2:XB:196:LEU:CG | 2.57 | 0.48 |
| 7:XG:80:VAL:HG12 | 7:XG:81:GLY:N | 2.28 | 0.48 |
| 8:XH:45:ILE:O | 8:XH:45:ILE:HG13 | 2.13 | 0.48 |
| 9:XI:79:LEU:O | 9:XI:83:ARG:HG2 | 2.13 | 0.48 |
| 11:XK:34:ASP:HB2 | 11:XK:35:PRO:HD2 | 1.95 | 0.48 |
| 11:XK:41:THR:HG22 | 11:XK:42:TRP:N | 2.28 | 0.48 |
| 12:XL:6:THR:O | 12:XL:7:ILE:C | 2.51 | 0.48 |
| 13:XM:16:ASP:HB3 | 13:XM:34:LEU:HD11 | 1.93 | 0.48 |
| 16:XP:43:LYS:HE2 | 16:XP:48:TRP:CZ3 | 2.47 | 0.48 |
| 16:XP:57:ARG:HH11 | 16:XP:57:ARG:HG3 | 1.78 | 0.48 |
| 22:XV:75:C:H2' | 22:XV:76:A:O4' | 2.12 | 0.48 |
| 25:YA:195:A:OP1 | 35:YP:46:LYS:HE2 | 2.13 | 0.48 |
| 25:YA:612:G:N2 | 25:YA:617:G:C5 | 2.81 | 0.48 |
| 25:YA:729:G:N7 | 27:YD:209:ALA:HB3 | 2.28 | 0.48 |
| 25:YA:942:G:O2' | 25:YA:1189:A:H2' | 2.12 | 0.48 |
| 25:YA:1364:G:N7 | 47:Y1:2:SER:N | 2.60 | 0.48 |
| 25:YA:1548:C:H2' | 25:YA:1549:C:C6 | 2.48 | 0.48 |
| 25:YA:2637:U:H5'' | 28:YE:82:ARG:NH2 | 2.27 | 0.48 |
| 30:YG:77:ILE:O | 30:YG:81:LYS:O | 2.31 | 0.48 |
| 35:YP:6:LEU:O | 35:YP:7:ARG:O | 2.31 | 0.48 |
| 35:YP:52:GLU:OE2 | 35:YP:57:THR:HA | 2.13 | 0.48 |
| 38:YS:33:LYS:HB3 | 38:YS:34:HIS:CD2 | 2.48 | 0.48 |
| 45:YZ:136:PHE:C | 45:YZ:136:PHE:CD1 | 2.86 | 0.48 |
| 48:Y2:16:LEU:O | 48:Y2:17:SER:CB | 2.56 | 0.48 |
| 51:Y5:49:CYS:SG | 51:Y5:58:LEU:HB2 | 2.53 | 0.48 |
| 52:Y6:7:ILE:O | 52:Y6:9:LEU:N | 2.46 | 0.48 |
| 54:Y8:33:ASN:O | 54:Y8:35:GLN:N | 2.46 | 0.48 |
| 1:QA:186(D):C:H2' | 1:QA:186(E):C:C6 | 2.47 | 0.48 |
| 1:QA:192:U:C4' | 20:QT:103:GLY:HA2 | 2.43 | 0.48 |
| 1:QA:545:C:OP1 | 4:QD:61:LYS:NZ | 2.41 | 0.48 |
| 2:QB:5:ILE:HG21 | 2:QB:224:GLN:HG2 | 1.95 | 0.48 |
| 2:QB:180:LEU:O | 2:QB:181:PHE:HB2 | 2.13 | 0.48 |
| 2:QB:214:ILE:O | 2:QB:218:ALA:HB2 | 2.13 | 0.48 |
| 4:QD:163:GLU:O | 4:QD:165:MET:N | 2.46 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:QE:78:HIS:CE1 | 5:QE:142:LEU:HD23 | 2.48 | 0.48 |
| 9:QI:18:PHE:HB2 | 9:QI:62:TYR:HB3 | 1.95 | 0.48 |
| 11:QK:34:ASP:HB2 | 11:QK:35:PRO:HD2 | 1.95 | 0.48 |
| 12:QL:27:LEU:C | 12:QL:29:GLY:N | 2.64 | 0.48 |
| 12:QL:119:LYS:C | 12:QL:120:TYR:HD1 | 2.16 | 0.48 |
| 23:QX:4:C:C3' | 23:QX:5:C:H5' | 2.41 | 0.48 |
| 25:RA:177:G:OP2 | 25:RA:177:G:N2 | 2.39 | 0.48 |
| 25:RA:872:A:H4' | 36:RQ:66:ILE:HD11 | 1.94 | 0.48 |
| 25:RA:995:C:N4 | 33:RN:2:LYS:HG3 | 2.28 | 0.48 |
| 25:RA:1034:G:H2' | 25:RA:1035:U:O4' | 2.13 | 0.48 |
| 25:RA:1069:A:O4' | 25:RA:1096:A:O2' | 2.30 | 0.48 |
| 25:RA:2544:G:H2' | 25:RA:2545:G:C8 | 2.48 | 0.48 |
| 28:RE:78:LEU:CD2 | 28:RE:79:ARG:HD2 | 2.43 | 0.48 |
| 30:RG:77:ILE:O | 30:RG:81:LYS:O | 2.31 | 0.48 |
| 30:RG:115:ARG:HG2 | 30:RG:115:ARG:HH11 | 1.77 | 0.48 |
| 31:RH:42:ARG:O | 31:RH:52:VAL:HA | 2.13 | 0.48 |
| 31:RH:124:GLU:HB3 | 31:RH:132:ARG:CG | 2.43 | 0.48 |
| 35:RP:35:HIS:O | 35:RP:36:LYS:O | 2.31 | 0.48 |
| 36:RQ:112:GLU:CD | 36:RQ:112:GLU:H | 2.17 | 0.48 |
| 37:RR:42:LYS:HA | 37:RR:45:ARG:HD2 | 1.95 | 0.48 |
| 40:RU:81:HIS:CE1 | 40:RU:117:GLN:HG3 | 2.48 | 0.48 |
| 43:RX:44:GLU:OE1 | 43:RX:50:LYS:HD2 | 2.13 | 0.48 |
| 44:RY:47:LYS:C | 44:RY:49:VAL:H | 2.16 | 0.48 |
| 44:RY:81:LYS:HZ2 | 44:RY:98:VAL:CG1 | 2.25 | 0.48 |
| 44:RY:101:LYS:O | 44:RY:102:CYS:SG | 2.66 | 0.48 |
| 45:RZ:93:ASP:OD1 | 45:RZ:94:GLU:N | 2.46 | 0.48 |
| 1:XA:1006:C:H2' | 1:XA:1007:C:C6 | 2.47 | 0.48 |
| 1:XA:1194:U:H4' | 5:XE:22:GLY:O | 2.13 | 0.48 |
| 2:XB:16:HIS:HD2 | 2:XB:210:SER:HA | 1.77 | 0.48 |
| 10:XJ:3:LYS:O | 10:XJ:100:THR:HA | 2.13 | 0.48 |
| 10:XJ:56:HIS:O | 10:XJ:58:ASP:O | 2.30 | 0.48 |
| 11:XK:13:GLN:HG3 | 11:XK:75:TYR:O | 2.14 | 0.48 |
| 11:XK:91:ARG:HH22 | 18:XR:88:LYS:NZ | 2.09 | 0.48 |
| 12:XL:85:ILE:HD11 | 12:XL:98:TYR:CB | 2.43 | 0.48 |
| 13:XM:23:TYR:HB3 | 13:XM:67:GLU:CG | 2.39 | 0.48 |
| 16:XP:39:TYR:CE2 | 16:XP:41:PRO:HD3 | 2.47 | 0.48 |
| 20:XT:37:SER:HB3 | 20:XT:84:LEU:CD2 | 2.43 | 0.48 |
| 20:XT:53:LEU:HA | 20:XT:56:MET:CB | 2.43 | 0.48 |
| 21:XU:9:ARG:HH11 | 21:XU:9:ARG:HG2 | 1.78 | 0.48 |
| 25:YA:7:G:H2' | 25:YA:8:A:O4' | 2.13 | 0.48 |
| 25:YA:142:G:H1' | 43:YX:37:THR:CG2 | 2.44 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:YA:205:G:O2' | 25:YA:206:U:OP2 | 2.30 | 0.48 |
| 25:YA:507:A:C5' | 25:YA:508:G:H5' | 2.42 | 0.48 |
| 25:YA:1557:C:H2' | 25:YA:1558:A:C2 | 2.48 | 0.48 |
| 26:YB:43:C:O2 | 30:YG:95:ARG:NH2 | 2.47 | 0.48 |
| 27:YD:25:THR:O | 27:YD:27:THR:HG22 | 2.12 | 0.48 |
| 27:YD:198:ASN:C | 27:YD:198:ASN:HD22 | 2.16 | 0.48 |
| 30:YG:143:GLU:HA | 50:Y4:28:LYS:HD3 | 1.95 | 0.48 |
| 31:YH:23:ARG:HD2 | 31:YH:34:GLU:OE2 | 2.12 | 0.48 |
| 32:YI:1:MET:HG3 | 32:YI:23:PRO:HA | 1.94 | 0.48 |
| 32:YI:123:LEU:HA | 32:YI:142:VAL:CG2 | 2.44 | 0.48 |
| 35:YP:144:GLU:O | 35:YP:144:GLU:OE1 | 2.31 | 0.48 |
| 36:YQ:34:LEU:HD23 | 36:YQ:104:PHE:HD1 | 1.77 | 0.48 |
| 37:YR:71:GLN:HE21 | 37:YR:71:GLN:HA | 1.77 | 0.48 |
| 40:YU:91:ASP:O | 40:YU:95:LEU:N | 2.42 | 0.48 |
| 41:YV:18:LEU:HB3 | 41:YV:96:ILE:CG1 | 2.43 | 0.48 |
| 52:Y6:27:LYS:O | 52:Y6:28:ARG:HG2 | 2.13 | 0.48 |
| 54:Y8:35:GLN:HA | 54:Y8:35:GLN:OE1 | 2.13 | 0.48 |
| 1:QA:20:U:H2' | 1:QA:21:G:O4' | 2.13 | 0.48 |
| 1:QA:129(A):G:N2 | 1:QA:188:U:O2' | 2.46 | 0.48 |
| 1:QA:189:U:H3 | 17:QQ:63:ARG:HB3 | 1.78 | 0.48 |
| 1:QA:964:A:N3 | 1:QA:969:A:O2' | 2.37 | 0.48 |
| 2:QB:7:VAL:CG2 | 2:QB:8:LYS:HD3 | 2.43 | 0.48 |
| 11:QK:19:ALA:CB | 11:QK:32:ILE:HG22 | 2.42 | 0.48 |
| 12:QL:38:THR:CG2 | 12:QL:57:LYS:HB3 | 2.44 | 0.48 |
| 25:RA:256:A:H2' | 25:RA:257:A:C8 | 2.47 | 0.48 |
| 25:RA:260:G:O4' | 25:RA:621:A:H1' | 2.13 | 0.48 |
| 25:RA:389:G:H22 | 35:RP:72:PRO:CD | 2.25 | 0.48 |
| 25:RA:678:C:H2' | 25:RA:679:C:C6 | 2.47 | 0.48 |
| 25:RA:774:A:H2 | 25:RA:787:U:O2' | 1.97 | 0.48 |
| 25:RA:1041:C:H2' | 25:RA:1042:G:C8 | 2.47 | 0.48 |
| 25:RA:1425:G:H2' | 25:RA:1426:G:C8 | 2.48 | 0.48 |
| 25:RA:2418:A:H2' | 25:RA:2419:U:H6 | 1.78 | 0.48 |
| 25:RA:2783:G:H2' | 25:RA:2784:C:H6 | 1.78 | 0.48 |
| 26:RB:8:U:H3 | 26:RB:112:G:H1 | 1.61 | 0.48 |
| 27:RD:233:HIS:CD2 | 27:RD:233:HIS:H | 2.29 | 0.48 |
| 30:RG:125:PHE:HB3 | 30:RG:166:ASP:HB2 | 1.95 | 0.48 |
| 31:RH:123:PHE:O | 31:RH:125:VAL:HG23 | 2.13 | 0.48 |
| 32:RI:10:GLU:O | 32:RI:11:ASN:O | 2.31 | 0.48 |
| 33:RN:95:PRO:O | 33:RN:96:GLU:C | 2.51 | 0.48 |
| 37:RR:70:LEU:C | 37:RR:72:ASP:H | 2.16 | 0.48 |
| 38:RS:11:LYS:O | 38:RS:11:LYS:HG2 | 2.12 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:RS:33:LYS:HB3 | 38:RS:34:HIS:CD2 | 2.48 | 0.48 |
| 41:RV:6:LYS:HD3 | 41:RV:11:GLN:HG2 | 1.96 | 0.48 |
| 43:RX:35:THR:O | 43:RX:37:THR:N | 2.47 | 0.48 |
| 46:R0:37:LEU:N | 46:R0:59:LEU:O | 2.41 | 0.48 |
| 48:R2:69:ARG:HH11 | 48:R2:69:ARG:HB3 | 1.79 | 0.48 |
| 51:R5:45:VAL:O | 51:R5:45:VAL:HG12 | 2.13 | 0.48 |
| 52:R6:27:LYS:O | 52:R6:28:ARG:HG2 | 2.13 | 0.48 |
| 1:XA:489:C:H2' | 1:XA:490:G:H8 | 1.77 | 0.48 |
| 1:XA:539:A:OP2 | 12:XL:115:LYS:HE3 | 2.12 | 0.48 |
| 1:XA:1122:U:O4 | 1:XA:1123:A:N6 | 2.47 | 0.48 |
| 1:XA:1346:A:C4 | 7:XG:10:ARG:NH1 | 2.81 | 0.48 |
| 2:XB:134:GLU:HB3 | 2:XB:138:LEU:HD12 | 1.93 | 0.48 |
| 2:XB:154:LEU:O | 2:XB:155:LEU:HB2 | 2.13 | 0.48 |
| 4:XD:9:CYS:SG | 4:XD:22:LYS:CE | 3.01 | 0.48 |
| 5:XE:83:GLU:HG2 | 5:XE:88:LYS:CG | 2.41 | 0.48 |
| 5:XE:84:PHE:HD2 | 5:XE:130:ASN:O | 1.97 | 0.48 |
| 6:XF:51:PRO:HA | 6:XF:55:ASP:O | 2.12 | 0.48 |
| 6:XF:79:LEU:O | 6:XF:85:VAL:HG11 | 2.14 | 0.48 |
| 7:XG:107:ALA:CB | 7:XG:134:ALA:HB2 | 2.44 | 0.48 |
| 10:XJ:33:GLN:HB2 | 10:XJ:75:ILE:CD1 | 2.43 | 0.48 |
| 18:XR:46:GLU:HG3 | 18:XR:47:THR:N | 2.29 | 0.48 |
| 24:XY:40:G:O2' | 24:XY:41:A:H5' | 2.13 | 0.48 |
| 25:YA:481:G:C4 | 25:YA:507:A:C2 | 3.02 | 0.48 |
| 25:YA:1779:U:OP2 | 25:YA:1784:A:N6 | 2.39 | 0.48 |
| 25:YA:1812:A:O2' | 27:YD:45:ASN:HB2 | 2.14 | 0.48 |
| 25:YA:2854:G:H2' | 25:YA:2855:C:C6 | 2.48 | 0.48 |
| 27:YD:48:ARG:HG3 | 27:YD:48:ARG:HH11 | 1.78 | 0.48 |
| 28:YE:38:THR:O | 28:YE:42:ASP:HB2 | 2.13 | 0.48 |
| 29:YF:128:ALA:O | 29:YF:129:PHE:HB2 | 2.13 | 0.48 |
| 29:YF:155:LEU:HD23 | 29:YF:186:ILE:HA | 1.95 | 0.48 |
| 31:YH:12:PRO:HD3 | 31:YH:48:GLY:O | 2.13 | 0.48 |
| 31:YH:137:ASP:CB | 31:YH:140:LYS:HB2 | 2.43 | 0.48 |
| 36:YQ:80:GLU:HG3 | 46:Y0:5:LYS:HB3 | 1.95 | 0.48 |
| 37:YR:52:ILE:CG2 | 37:YR:94:TYR:CD1 | 2.95 | 0.48 |
| 38:YS:48:LEU:N | 38:YS:48:LEU:CD1 | 2.76 | 0.48 |
| 38:YS:55:ALA:O | 38:YS:56:LEU:HB3 | 2.14 | 0.48 |
| 39:YT:135:ALA:C | 39:YT:137:LYS:H | 2.16 | 0.48 |
| 41:YV:7:THR:HG23 | 41:YV:22:VAL:HG11 | 1.94 | 0.48 |
| 45:YZ:157:LEU:HA | 45:YZ:161:VAL:HG11 | 1.95 | 0.48 |
| 47:Y1:8:SER:OG | 47:Y1:10:LYS:HG3 | 2.13 | 0.48 |
| 50:Y4:53:GLU:O | 50:Y4:57:GLU:HG3 | 2.14 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 53:Y7:48:LYS:CG | 53:Y7:49:ARG:H | 2.23 | 0.48 |
| 1:QA:177:C:H2' | 1:QA:178:C:C6 | 2.48 | 0.48 |
| 2:QB:15:VAL:H | 2:QB:16:HIS:CE1 | 2.30 | 0.48 |
| 4:QD:11:LEU:CD2 | 4:QD:66:ARG:HD3 | 2.41 | 0.48 |
| 4:QD:121:VAL:O | 4:QD:134:ASP:HA | 2.14 | 0.48 |
| 5:QE:51:VAL:CB | 5:QE:52:PRO:HD3 | 2.38 | 0.48 |
| 7:QG:80:VAL:HG12 | 7:QG:81:GLY:N | 2.28 | 0.48 |
| 9:QI:113:LYS:H | 9:QI:119:ALA:HA | 1.77 | 0.48 |
| 15:QO:32:LEU:O | 15:QO:33:THR:C | 2.51 | 0.48 |
| 16:QP:71:ARG:HH11 | 16:QP:71:ARG:HB2 | 1.79 | 0.48 |
| 25:RA:380:U:O3' | 47:R1:16:ASN:HB2 | 2.12 | 0.48 |
| 25:RA:824:A:H1' | 25:RA:2358:G:N7 | 2.28 | 0.48 |
| 25:RA:1398:C:OP1 | 43:RX:53:LYS:NZ | 2.46 | 0.48 |
| 27:RD:35:LYS:HD2 | 27:RD:104:TYR:CE1 | 2.49 | 0.48 |
| 29:RF:198:ALA:O | 29:RF:201:VAL:HG12 | 2.13 | 0.48 |
| 33:RN:12:ARG:NH1 | 33:RN:50:ASP:CG | 2.67 | 0.48 |
| 35:RP:101:VAL:C | 35:RP:103:ALA:H | 2.17 | 0.48 |
| 36:RQ:87:LYS:O | 36:RQ:89:ASN:N | 2.43 | 0.48 |
| 38:RS:46:VAL:HG12 | 38:RS:47:THR:N | 2.28 | 0.48 |
| 39:RT:132:LYS:O | 39:RT:136:GLN:HG3 | 2.14 | 0.48 |
| 41:RV:18:LEU:HB3 | 41:RV:96:ILE:CG1 | 2.43 | 0.48 |
| 42:RW:36:LEU:CD1 | 42:RW:47:VAL:HG12 | 2.44 | 0.48 |
| 47:R1:93:GLU:O | 47:R1:97:LEU:HD11 | 2.12 | 0.48 |
| 1:XA:134:A:H1' | 1:XA:325:A:C5 | 2.48 | 0.48 |
| 1:XA:429:U:H1' | 1:XA:430:A:H5'' | 1.94 | 0.48 |
| 2:XB:5:ILE:HG21 | 2:XB:224:GLN:HG2 | 1.96 | 0.48 |
| 2:XB:140:HIS:C | 2:XB:142:LEU:H | 2.16 | 0.48 |
| 2:XB:180:LEU:O | 2:XB:181:PHE:HB2 | 2.13 | 0.48 |
| 2:XB:206:ASP:HA | 2:XB:211:ILE:HD11 | 1.94 | 0.48 |
| 10:XJ:49:VAL:CG1 | 10:XJ:50:ILE:N | 2.75 | 0.48 |
| 10:XJ:94:VAL:CG1 | 10:XJ:95:GLU:N | 2.76 | 0.48 |
| 10:XJ:98:ILE:H | 10:XJ:98:ILE:CD1 | 2.24 | 0.48 |
| 11:XK:82:VAL:O | 11:XK:108:ILE:HA | 2.13 | 0.48 |
| 12:XL:38:THR:CG2 | 12:XL:57:LYS:HB3 | 2.44 | 0.48 |
| 22:XV:4:G:O2' | 22:XV:5:G:H8 | 1.96 | 0.48 |
| 25:YA:600:G:N2 | 25:YA:605:C:O3' | 2.46 | 0.48 |
| 25:YA:898:C:C2' | 25:YA:899:A:H5' | 2.43 | 0.48 |
| 25:YA:1013:C:N4 | 25:YA:1149:G:H1 | 2.07 | 0.48 |
| 25:YA:1264:G:H2' | 25:YA:2014:A:N6 | 2.29 | 0.48 |
| 25:YA:1316:U:H2' | 25:YA:1317:A:C8 | 2.48 | 0.48 |
| 25:YA:1386:C:H2' | 25:YA:1387:C:C6 | 2.48 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|-------------------|--------------------------|-------------------|
| 25:YA:2159:G:H2' | 25:YA:2160:G:C8 | 2.48 | 0.48 |
| 25:YA:2350:C:H5 | 54:Y8:42:ARG:HH12 | 1.61 | 0.48 |
| 28:YE:47:VAL:O | 28:YE:48:GLN:C | 2.52 | 0.48 |
| 29:YF:107:LYS:O | 29:YF:110:LEU:N | 2.47 | 0.48 |
| 32:YI:10:GLU:O | 32:YI:11:ASN:O | 2.31 | 0.48 |
| 33:YN:30:ILE:O | 33:YN:34:LEU:HD23 | 2.13 | 0.48 |
| 38:YS:18:ILE:O | 38:YS:19:LYS:O | 2.30 | 0.48 |
| 39:YT:16:ARG:HD3 | 39:YT:19:LEU:CG | 2.43 | 0.48 |
| 40:YU:52:ARG:NH1 | 40:YU:52:ARG:CG | 2.76 | 0.48 |
| 40:YU:81:HIS:CE1 | 40:YU:117:GLN:HG3 | 2.49 | 0.48 |
| 44:YY:35:TYR:CD1 | 44:YY:69:ALA:HB3 | 2.48 | 0.48 |
| 45:YZ:108:PRO:HG2 | 45:YZ:111:VAL:HA | 1.95 | 0.48 |
| 51:Y5:52:TYR:O | 51:Y5:53:ALA:CB | 2.60 | 0.48 |
| 1:QA:246:A:N6 | 1:QA:281:G:H1' | 2.28 | 0.48 |
| 1:QA:607:A:H2' | 1:QA:608:A:O4' | 2.13 | 0.48 |
| 2:QB:16:HIS:HD2 | 2:QB:210:SER:HA | 1.77 | 0.48 |
| 5:QE:100:VAL:O | 5:QE:107:ARG:NH2 | 2.47 | 0.48 |
| 9:QI:118:LYS:NZ | 9:QI:118:LYS:CB | 2.76 | 0.48 |
| 16:QP:21:VAL:HG23 | 16:QP:34:GLU:H | 1.79 | 0.48 |
| 17:QQ:63:ARG:HG2 | 17:QQ:64:PRO:N | 2.29 | 0.48 |
| 19:QS:24:ALA:O | 19:QS:25:LYS:HB2 | 2.13 | 0.48 |
| 22:QV:4:G:O2' | 22:QV:5:G:H8 | 1.96 | 0.48 |
| 25:RA:310:A:HO2' | 25:RA:311:A:P | 2.35 | 0.48 |
| 25:RA:455:C:N3 | 25:RA:472:A:H2' | 2.28 | 0.48 |
| 25:RA:1444(A):A:O2' | 25:RA:1460:A:N3 | 2.47 | 0.48 |
| 25:RA:1637:A:H4' | 25:RA:2711:A:O2' | 2.14 | 0.48 |
| 25:RA:2420:C:OP1 | 54:R8:34:TRP:HB2 | 2.14 | 0.48 |
| 25:RA:2528:U:O2' | 25:RA:2530:A:OP1 | 2.25 | 0.48 |
| 28:RE:77:ILE:CD1 | 28:RE:78:LEU:N | 2.70 | 0.48 |
| 33:RN:10:GLU:HA | 33:RN:11:PRO:HD3 | 1.73 | 0.48 |
| 36:RQ:19:GLY:O | 36:RQ:98:LYS:HD3 | 2.14 | 0.48 |
| 37:RR:61:HIS:O | 37:RR:65:LEU:HD13 | 2.14 | 0.48 |
| 43:RX:11:PRO:HB3 | 43:RX:92:LEU:CD2 | 2.43 | 0.48 |
| 44:RY:57:GLN:O | 44:RY:58:GLY:O | 2.32 | 0.48 |
| 46:R0:66:VAL:HG22 | 46:R0:82:ARG:HB3 | 1.96 | 0.48 |
| 48:R2:69:ARG:CB | 48:R2:69:ARG:HH11 | 2.25 | 0.48 |
| 52:R6:14:THR:OG1 | 52:R6:19:ARG:NE | 2.41 | 0.48 |
| 53:R7:12:ARG:HG3 | 53:R7:12:ARG:HH11 | 1.78 | 0.48 |
| 1:XA:389:A:H2' | 1:XA:390:C:O4' | 2.13 | 0.48 |
| 1:XA:977:A:H8 | 1:XA:1223:C:C4 | 2.31 | 0.48 |
| 1:XA:1326:C:OP1 | 21:XU:17:THR:OG1 | 2.23 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 2:XB:42:ILE:HD11 | 2:XB:202:PRO:HB2 | 1.95 | 0.48 |
| 2:XB:97:TRP:HZ2 | 2:XB:102:LEU:HD13 | 1.78 | 0.48 |
| 3:XC:71:ALA:HA | 3:XC:106:VAL:HB | 1.94 | 0.48 |
| 3:XC:173:VAL:N | 3:XC:174:PRO:HD3 | 2.28 | 0.48 |
| 4:XD:6:GLY:O | 4:XD:8:VAL:HG23 | 2.14 | 0.48 |
| 5:XE:11:ILE:CG1 | 5:XE:31:LEU:HD12 | 2.42 | 0.48 |
| 5:XE:96:PRO:HA | 5:XE:117:ASP:OD2 | 2.14 | 0.48 |
| 8:XH:86:ILE:HG13 | 8:XH:133:LEU:CD2 | 2.44 | 0.48 |
| 9:XI:118:LYS:NZ | 9:XI:118:LYS:CB | 2.75 | 0.48 |
| 15:XO:24:SER:OG | 15:XO:25:THR:N | 2.47 | 0.48 |
| 16:XP:40:ASP:C | 16:XP:42:ARG:H | 2.17 | 0.48 |
| 25:YA:577:G:O2' | 25:YA:1254:A:OP1 | 2.27 | 0.48 |
| 25:YA:859:G:O2' | 25:YA:860:U:P | 2.71 | 0.48 |
| 25:YA:942:G:C6 | 25:YA:943:U:N3 | 2.81 | 0.48 |
| 25:YA:1114:G:H2' | 25:YA:1115:G:C8 | 2.48 | 0.48 |
| 31:YH:82:GLY:O | 31:YH:83:TYR:O | 2.31 | 0.48 |
| 32:YI:140:LEU:N | 32:YI:140:LEU:CD2 | 2.77 | 0.48 |
| 35:YP:71:VAL:HG13 | 35:YP:72:PRO:CD | 2.43 | 0.48 |
| 36:YQ:19:GLY:O | 36:YQ:98:LYS:HD3 | 2.14 | 0.48 |
| 47:Y1:56:GLN:NE2 | 47:Y1:56:GLN:H | 2.10 | 0.48 |
| 48:Y2:69:ARG:HH11 | 48:Y2:69:ARG:HB3 | 1.79 | 0.48 |
| 51:Y5:48:GLU:HA | 51:Y5:59:GLU:HG2 | 1.94 | 0.48 |
| 1:QA:945:G:N2 | 1:QA:1334:G:O2' | 2.46 | 0.48 |
| 1:QA:1205:U:H1' | 3:QC:195:VAL:HG23 | 1.96 | 0.48 |
| 1:QA:1512:U:H2' | 1:QA:1513:A:H8 | 1.78 | 0.48 |
| 2:QB:97:TRP:HZ2 | 2:QB:102:LEU:HD13 | 1.78 | 0.48 |
| 2:QB:200:ILE:H | 2:QB:200:ILE:HD12 | 1.79 | 0.48 |
| 3:QC:71:ALA:HA | 3:QC:106:VAL:HB | 1.95 | 0.48 |
| 4:QD:183:GLY:C | 4:QD:184:LYS:HG3 | 2.34 | 0.48 |
| 11:QK:19:ALA:CA | 11:QK:32:ILE:HG22 | 2.43 | 0.48 |
| 11:QK:106:LYS:O | 11:QK:107:SER:HB3 | 2.12 | 0.48 |
| 16:QP:57:ARG:HG3 | 16:QP:57:ARG:HH11 | 1.78 | 0.48 |
| 23:QX:4:C:H42 | 24:QY:36:G:H1 | 1.60 | 0.48 |
| 25:RA:239:U:H2' | 25:RA:240:G:O4' | 2.14 | 0.48 |
| 25:RA:1774:C:O5' | 25:RA:1774:C:H6 | 1.97 | 0.48 |
| 25:RA:2283:C:P | 52:R6:5:VAL:HG13 | 2.54 | 0.48 |
| 25:RA:2335:A:O2' | 25:RA:2336:A:O5' | 2.28 | 0.48 |
| 25:RA:2637:U:H5'' | 28:RE:82:ARG:NH2 | 2.28 | 0.48 |
| 25:RA:2695:C:H2' | 25:RA:2696:U:H6 | 1.77 | 0.48 |
| 27:RD:130:ALA:HA | 27:RD:192:THR:HA | 1.95 | 0.48 |
| 27:RD:198:ASN:C | 27:RD:198:ASN:HD22 | 2.17 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:RF:107:LYS:O | 29:RF:110:LEU:N | 2.47 | 0.48 |
| 31:RH:7:LEU:N | 31:RH:8:PRO:CD | 2.77 | 0.48 |
| 31:RH:10:PRO:C | 31:RH:11:VAL:HG22 | 2.34 | 0.48 |
| 35:RP:14:LYS:O | 35:RP:15:ARG:C | 2.51 | 0.48 |
| 35:RP:71:VAL:HG13 | 35:RP:72:PRO:CD | 2.43 | 0.48 |
| 39:RT:135:ALA:C | 39:RT:137:LYS:H | 2.16 | 0.48 |
| 45:RZ:57:ILE:HG22 | 45:RZ:58:VAL:N | 2.28 | 0.48 |
| 46:R0:74:ARG:C | 46:R0:76:GLY:N | 2.66 | 0.48 |
| 51:R5:56:LYS:HD2 | 51:R5:56:LYS:N | 2.13 | 0.48 |
| 54:R8:35:GLN:HA | 54:R8:35:GLN:OE1 | 2.13 | 0.48 |
| 54:R8:56:GLU:O | 54:R8:58:ILE:N | 2.47 | 0.48 |
| 1:XA:271:C:H2' | 1:XA:272:C:H6 | 1.78 | 0.48 |
| 1:XA:791:G:N2 | 1:XA:1497:G:O3' | 2.46 | 0.48 |
| 1:XA:1243:C:H2' | 1:XA:1244:C:C6 | 2.48 | 0.48 |
| 2:XB:5:ILE:O | 2:XB:6:THR:O | 2.32 | 0.48 |
| 3:XC:153:VAL:HA | 3:XC:197:GLY:O | 2.14 | 0.48 |
| 3:XC:195:VAL:CG1 | 3:XC:196:LEU:H | 2.27 | 0.48 |
| 4:XD:3:ARG:O | 4:XD:5:ILE:HG13 | 2.14 | 0.48 |
| 4:XD:154:ASN:O | 4:XD:155:LEU:O | 2.32 | 0.48 |
| 4:XD:196:LEU:HB3 | 4:XD:197:PRO:HD2 | 1.95 | 0.48 |
| 9:XI:112:LYS:HD3 | 9:XI:113:LYS:O | 2.13 | 0.48 |
| 12:XL:119:LYS:C | 12:XL:120:TYR:HD1 | 2.16 | 0.48 |
| 14:XN:22:THR:O | 14:XN:23:ARG:CB | 2.59 | 0.48 |
| 25:YA:1655:A:H4' | 28:YE:115:GLY:N | 2.28 | 0.48 |
| 25:YA:2681:C:HO2' | 25:YA:2682:U:P | 2.36 | 0.48 |
| 27:YD:35:LYS:HD2 | 27:YD:104:TYR:CE1 | 2.49 | 0.48 |
| 28:YE:77:ILE:CD1 | 28:YE:78:LEU:N | 2.70 | 0.48 |
| 29:YF:198:ALA:O | 29:YF:201:VAL:HG12 | 2.13 | 0.48 |
| 30:YG:125:PHE:HB3 | 30:YG:166:ASP:HB2 | 1.95 | 0.48 |
| 31:YH:7:LEU:N | 31:YH:8:PRO:CD | 2.77 | 0.48 |
| 35:YP:6:LEU:N | 35:YP:6:LEU:CD2 | 2.75 | 0.48 |
| 35:YP:35:HIS:O | 35:YP:36:LYS:O | 2.31 | 0.48 |
| 39:YT:58:ASN:HD22 | 39:YT:58:ASN:N | 2.10 | 0.48 |
| 45:YZ:19:ARG:HD3 | 45:YZ:25:PRO:HD2 | 1.95 | 0.48 |
| 45:YZ:33:LEU:CG | 45:YZ:34:ASN:N | 2.77 | 0.48 |
| 45:YZ:93:ASP:OD1 | 45:YZ:94:GLU:N | 2.46 | 0.48 |
| 52:Y6:41:PRO:HD2 | 52:Y6:46:HIS:H | 1.77 | 0.48 |
| 1:QA:113:G:H21 | 1:QA:353:A:H1' | 1.79 | 0.48 |
| 1:QA:384:G:H2' | 1:QA:385:C:C6 | 2.49 | 0.48 |
| 1:QA:812:C:O2' | 1:QA:813:U:P | 2.72 | 0.48 |
| 1:QA:1127:G:H21 | 1:QA:1147:C:H41 | 1.61 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:QA:1159:U:O2' | 1:QA:1160:G:N7 | 2.46 | 0.48 |
| 1:QA:1530:G:H2' | 1:QA:1531:A:O5' | 2.14 | 0.48 |
| 4:QD:165:MET:HE3 | 4:QD:168:ARG:HD2 | 1.96 | 0.48 |
| 4:QD:165:MET:CE | 4:QD:168:ARG:HD2 | 2.44 | 0.48 |
| 4:QD:196:LEU:C | 4:QD:198:VAL:N | 2.66 | 0.48 |
| 4:QD:196:LEU:HB3 | 4:QD:197:PRO:HD2 | 1.96 | 0.48 |
| 5:QE:87:SER:HB3 | 5:QE:131:ILE:HD13 | 1.95 | 0.48 |
| 8:QH:6:ILE:O | 8:QH:10:LEU:HG | 2.14 | 0.48 |
| 8:QH:86:ILE:HG12 | 8:QH:135:CYS:HA | 1.96 | 0.48 |
| 8:QH:109:ILE:HG12 | 8:QH:110:ALA:N | 2.27 | 0.48 |
| 20:QT:50:GLU:HA | 20:QT:100:ILE:CG2 | 2.43 | 0.48 |
| 25:RA:278:A:N1 | 25:RA:362:U:N3 | 2.61 | 0.48 |
| 25:RA:530:G:O2' | 25:RA:532:A:N7 | 2.43 | 0.48 |
| 25:RA:1093:G:OP1 | 31:RH:170:ARG:HD2 | 2.13 | 0.48 |
| 25:RA:1697:G:H5'' | 25:RA:1698:A:H3' | 1.96 | 0.48 |
| 25:RA:1861:G:H1 | 25:RA:1881:C:H42 | 1.61 | 0.48 |
| 25:RA:2320:A:H2' | 25:RA:2320:A:N3 | 2.29 | 0.48 |
| 25:RA:2777:G:OP2 | 25:RA:2781:A:O2' | 2.27 | 0.48 |
| 27:RD:25:THR:O | 27:RD:26:LYS:C | 2.52 | 0.48 |
| 28:RE:61:ARG:CB | 28:RE:62:PRO:CD | 2.90 | 0.48 |
| 28:RE:93:VAL:H | 28:RE:95:ILE:CD1 | 2.23 | 0.48 |
| 29:RF:128:ALA:O | 29:RF:129:PHE:HB2 | 2.13 | 0.48 |
| 29:RF:155:LEU:HA | 29:RF:174:VAL:HG12 | 1.95 | 0.48 |
| 30:RG:16:ARG:HB3 | 30:RG:17:PRO:HD3 | 1.94 | 0.48 |
| 31:RH:104:GLU:HG3 | 31:RH:114:VAL:HG22 | 1.96 | 0.48 |
| 32:RI:140:LEU:N | 32:RI:140:LEU:CD2 | 2.77 | 0.48 |
| 33:RN:34:LEU:O | 33:RN:49:GLY:HA3 | 2.13 | 0.48 |
| 33:RN:56:ASN:ND2 | 33:RN:125:GLY:C | 2.65 | 0.48 |
| 35:RP:112:LEU:HD12 | 35:RP:127:ALA:CB | 2.44 | 0.48 |
| 35:RP:144:GLU:OE1 | 35:RP:144:GLU:O | 2.31 | 0.48 |
| 36:RQ:21:THR:HB | 36:RQ:22:LYS:H | 1.42 | 0.48 |
| 36:RQ:34:LEU:HD23 | 36:RQ:104:PHE:HD1 | 1.78 | 0.48 |
| 39:RT:57:PHE:O | 39:RT:59:THR:N | 2.46 | 0.48 |
| 44:RY:11:ASP:HB2 | 44:RY:27:VAL:HG11 | 1.94 | 0.48 |
| 45:RZ:7:ALA:CB | 45:RZ:59:LEU:HD22 | 2.42 | 0.48 |
| 50:R4:42:PHE:O | 50:R4:43:TYR:C | 2.51 | 0.48 |
| 51:R5:49:CYS:SG | 51:R5:58:LEU:HB2 | 2.53 | 0.48 |
| 1:XA:28:G:O2' | 1:XA:296:U:OP1 | 2.30 | 0.48 |
| 1:XA:564:C:N4 | 1:XA:565:U:O4 | 2.47 | 0.48 |
| 1:XA:1287:A:H2 | 1:XA:1353:G:N3 | 2.12 | 0.48 |
| 1:XA:1305:G:N2 | 1:XA:1331:G:H2' | 2.28 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:XA:1443:G:H4' | 1:XA:1446:A:OP2 | 2.13 | 0.48 |
| 2:XB:24:TRP:CD1 | 2:XB:26:PRO:HD3 | 2.49 | 0.48 |
| 4:XD:100:ARG:CZ | 4:XD:137:SER:HA | 2.44 | 0.48 |
| 5:XE:78:HIS:CE1 | 5:XE:142:LEU:HD23 | 2.48 | 0.48 |
| 9:XI:18:PHE:O | 9:XI:61:ALA:HA | 2.13 | 0.48 |
| 9:XI:59:PHE:CZ | 9:XI:88:TYR:CE1 | 3.01 | 0.48 |
| 13:XM:50:GLU:O | 13:XM:54:VAL:HG23 | 2.13 | 0.48 |
| 13:XM:72:ALA:O | 13:XM:76:ALA:HB2 | 2.14 | 0.48 |
| 19:XS:43:GLU:OE2 | 19:XS:43:GLU:N | 2.45 | 0.48 |
| 25:YA:680:G:C4 | 25:YA:798:G:N2 | 2.81 | 0.48 |
| 25:YA:721:C:H3' | 25:YA:722:A:H8 | 1.79 | 0.48 |
| 25:YA:1204:A:H1' | 25:YA:1206:G:C4 | 2.49 | 0.48 |
| 25:YA:1339:G:H21 | 25:YA:1603:A:H1' | 1.79 | 0.48 |
| 25:YA:1906:G:H8 | 25:YA:1929:G:H2' | 1.78 | 0.48 |
| 26:YB:40:U:H1' | 26:YB:45:A:H61 | 1.77 | 0.48 |
| 28:YE:174:ASP:O | 28:YE:182:LEU:HD12 | 2.14 | 0.48 |
| 33:YN:42:TRP:HA | 33:YN:48:MET:CE | 2.42 | 0.48 |
| 33:YN:95:PRO:O | 33:YN:96:GLU:C | 2.51 | 0.48 |
| 36:YQ:31:ASP:O | 36:YQ:32:TYR:CG | 2.66 | 0.48 |
| 37:YR:44:LEU:HD22 | 37:YR:48:VAL:CG2 | 2.42 | 0.48 |
| 39:YT:96:ARG:NH1 | 39:YT:96:ARG:CB | 2.77 | 0.48 |
| 43:YX:44:GLU:OE1 | 43:YX:50:LYS:HD2 | 2.13 | 0.48 |
| 44:YY:11:ASP:HB2 | 44:YY:27:VAL:HG11 | 1.94 | 0.48 |
| 45:YZ:94:GLU:CB | 45:YZ:130:PRO:HD3 | 2.38 | 0.48 |
| 45:YZ:125:LEU:HG | 45:YZ:164:ALA:HB1 | 1.95 | 0.48 |
| 50:Y4:42:PHE:O | 50:Y4:44:THR:O | 2.31 | 0.48 |
| 53:Y7:12:ARG:HG3 | 53:Y7:12:ARG:HH11 | 1.78 | 0.48 |
| 1:QA:192:U:H2' | 1:QA:193:C:H6 | 1.76 | 0.48 |
| 1:QA:198:G:H2' | 1:QA:199:G:H8 | 1.79 | 0.48 |
| 1:QA:1109:C:H2' | 1:QA:1110:A:O4' | 2.13 | 0.48 |
| 1:QA:1487:G:H8 | 1:QA:1487:G:O5' | 1.96 | 0.48 |
| 2:QB:154:LEU:O | 2:QB:155:LEU:HB2 | 2.13 | 0.48 |
| 3:QC:87:LEU:C | 3:QC:89:GLU:N | 2.65 | 0.48 |
| 4:QD:118:ARG:NH2 | 4:QD:136:PRO:HB2 | 2.28 | 0.48 |
| 11:QK:13:GLN:HG3 | 11:QK:75:TYR:O | 2.13 | 0.48 |
| 13:QM:73:GLU:O | 13:QM:76:ALA:HB3 | 2.14 | 0.48 |
| 15:QO:50:HIS:O | 15:QO:53:HIS:N | 2.47 | 0.48 |
| 19:QS:11:VAL:O | 19:QS:12:ASP:CB | 2.61 | 0.48 |
| 20:QT:37:SER:HB3 | 20:QT:84:LEU:CD2 | 2.43 | 0.48 |
| 25:RA:221:A:H5' | 25:RA:222:A:H4' | 1.94 | 0.48 |
| 25:RA:345:A:H2' | 25:RA:347:A:H62 | 1.79 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:528:A:C2 | 25:RA:2042:A:H2' | 2.49 | 0.48 |
| 25:RA:628:G:HO2' | 25:RA:651:G:HO2' | 1.60 | 0.48 |
| 25:RA:1384:A:O2' | 25:RA:1404:C:O2 | 2.27 | 0.48 |
| 25:RA:1523:U:H2' | 25:RA:1524:G:H8 | 1.79 | 0.48 |
| 25:RA:2093:G:OP1 | 32:RI:23:PRO:HG2 | 2.14 | 0.48 |
| 25:RA:2286:A:N6 | 52:R6:24:GLU:OE1 | 2.47 | 0.48 |
| 27:RD:65:ILE:HD13 | 27:RD:65:ILE:C | 2.33 | 0.48 |
| 28:RE:93:VAL:C | 28:RE:95:ILE:H | 2.17 | 0.48 |
| 29:RF:34:TRP:HD1 | 35:RP:6:LEU:HB3 | 1.79 | 0.48 |
| 29:RF:51:THR:O | 29:RF:93:LYS:NZ | 2.38 | 0.48 |
| 30:RG:136:ARG:O | 30:RG:154:GLY:CA | 2.62 | 0.48 |
| 31:RH:131:VAL:HG12 | 31:RH:132:ARG:N | 2.29 | 0.48 |
| 33:RN:82:LEU:HD12 | 33:RN:83:LYS:N | 2.27 | 0.48 |
| 35:RP:138:LEU:HD11 | 35:RP:144:GLU:CG | 2.42 | 0.48 |
| 36:RQ:119:ARG:O | 36:RQ:123:HIS:HD2 | 1.97 | 0.48 |
| 44:RY:44:ILE:O | 44:RY:62:GLU:O | 2.32 | 0.48 |
| 45:RZ:33:LEU:CG | 45:RZ:34:ASN:N | 2.77 | 0.48 |
| 45:RZ:143:GLY:O | 45:RZ:145:GLU:HG3 | 2.13 | 0.48 |
| 50:R4:60:GLN:O | 50:R4:63:TYR:HB3 | 2.14 | 0.48 |
| 1:XA:250:A:H4' | 1:XA:251:G:O5' | 2.13 | 0.48 |
| 1:XA:522:C:H41 | 12:XL:53:ARG:HH22 | 1.61 | 0.48 |
| 1:XA:1062:U:H2' | 1:XA:1063:C:C6 | 2.49 | 0.48 |
| 3:XC:148:GLY:O | 3:XC:202:ILE:HA | 2.14 | 0.48 |
| 4:XD:22:LYS:HB2 | 4:XD:26:CYS:HB2 | 1.96 | 0.48 |
| 5:XE:100:VAL:O | 5:XE:107:ARG:NH2 | 2.47 | 0.48 |
| 7:XG:51:GLN:OE1 | 7:XG:51:GLN:HA | 2.14 | 0.48 |
| 10:XJ:47:PHE:CE1 | 10:XJ:63:PHE:HB2 | 2.32 | 0.48 |
| 12:XL:61:THR:O | 12:XL:63:GLY:N | 2.45 | 0.48 |
| 16:XP:34:GLU:HG2 | 16:XP:35:LYS:N | 2.29 | 0.48 |
| 17:XQ:74:LEU:HD12 | 17:XQ:75:ARG:NE | 2.28 | 0.48 |
| 25:YA:141:A:H1' | 25:YA:1408:C:O4' | 2.14 | 0.48 |
| 25:YA:219:G:N3 | 25:YA:234:C:O2' | 2.44 | 0.48 |
| 25:YA:520:G:H2' | 25:YA:521:G:C8 | 2.49 | 0.48 |
| 25:YA:1190:G:C5' | 35:YP:32:THR:HA | 2.43 | 0.48 |
| 25:YA:1896:G:H2' | 25:YA:1897:G:H8 | 1.79 | 0.48 |
| 25:YA:1930:G:O2' | 25:YA:1931:U:P | 2.71 | 0.48 |
| 25:YA:2653:U:O2' | 31:YH:110:SER:HB2 | 2.13 | 0.48 |
| 25:YA:2734:A:H3' | 25:YA:2735:G:C8 | 2.43 | 0.48 |
| 25:YA:2849:U:H5 | 39:YT:93:ARG:HH12 | 1.62 | 0.48 |
| 27:YD:130:ALA:HA | 27:YD:192:THR:HA | 1.95 | 0.48 |
| 28:YE:23:VAL:HG12 | 28:YE:173:VAL:HG21 | 1.94 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 28:YE:55:ASN:O | 28:YE:57:LYS:N | 2.44 | 0.48 |
| 29:YF:129:PHE:CD2 | 29:YF:163:VAL:HG21 | 2.48 | 0.48 |
| 35:YP:101:VAL:C | 35:YP:103:ALA:H | 2.17 | 0.48 |
| 37:YR:42:LYS:HA | 37:YR:45:ARG:HD2 | 1.95 | 0.48 |
| 43:YX:6:ASP:OD1 | 48:Y2:29:LYS:NZ | 2.46 | 0.48 |
| 45:YZ:33:LEU:HD11 | 45:YZ:35:ARG:CG | 2.44 | 0.48 |
| 45:YZ:120:ILE:O | 45:YZ:171:ILE:HD13 | 2.14 | 0.48 |
| 48:Y2:33:MET:O | 48:Y2:37:PHE:HD1 | 1.95 | 0.48 |
| 50:Y4:10:VAL:CG2 | 50:Y4:11:PRO:HD2 | 2.43 | 0.48 |
| 1:QA:136:C:O2' | 16:QP:63:GLY:O | 2.28 | 0.48 |
| 1:QA:553:A:O2' | 12:QL:29:GLY:O | 2.31 | 0.48 |
| 1:QA:1512:U:H2' | 1:QA:1513:A:C8 | 2.49 | 0.48 |
| 2:QB:140:HIS:C | 2:QB:142:LEU:H | 2.16 | 0.48 |
| 2:QB:206:ASP:HA | 2:QB:211:ILE:HD11 | 1.94 | 0.48 |
| 4:QD:163:GLU:C | 4:QD:165:MET:N | 2.67 | 0.48 |
| 5:QE:10:MET:HB2 | 5:QE:32:VAL:HG22 | 1.93 | 0.48 |
| 5:QE:84:PHE:HD2 | 5:QE:130:ASN:O | 1.97 | 0.48 |
| 6:QF:89:MET:O | 6:QF:90:VAL:C | 2.51 | 0.48 |
| 10:QJ:4:ILE:CB | 10:QJ:74:ILE:HD11 | 2.36 | 0.48 |
| 11:QK:41:THR:HG22 | 11:QK:42:TRP:N | 2.28 | 0.48 |
| 13:QM:3:ARG:HA | 13:QM:9:ILE:HG12 | 1.95 | 0.48 |
| 13:QM:117:VAL:O | 13:QM:118:ALA:C | 2.51 | 0.48 |
| 15:QO:39:LEU:O | 15:QO:40:SER:C | 2.50 | 0.48 |
| 18:QR:31:LEU:HD23 | 18:QR:31:LEU:N | 2.29 | 0.48 |
| 19:QS:9:VAL:O | 19:QS:10:PHE:HB3 | 2.13 | 0.48 |
| 19:QS:36:ARG:HB3 | 19:QS:36:ARG:NH1 | 2.28 | 0.48 |
| 24:QY:40:G:O2' | 24:QY:41:A:H5' | 2.13 | 0.48 |
| 25:RA:118:A:N3 | 25:RA:178:G:H1' | 2.29 | 0.48 |
| 25:RA:181:A:H1' | 25:RA:435:C:H5' | 1.96 | 0.48 |
| 25:RA:205:G:H1' | 25:RA:206:U:OP2 | 2.14 | 0.48 |
| 25:RA:1138:G:H21 | 33:RN:106:MET:CE | 2.26 | 0.48 |
| 25:RA:1561:G:H2' | 25:RA:1562:A:C8 | 2.49 | 0.48 |
| 25:RA:2527:C:H2' | 25:RA:2528:U:O4' | 2.13 | 0.48 |
| 25:RA:2784:C:O2' | 28:RE:42:ASP:OD1 | 2.30 | 0.48 |
| 27:RD:48:ARG:HG3 | 27:RD:48:ARG:HH11 | 1.78 | 0.48 |
| 27:RD:130:ALA:C | 27:RD:131:LEU:HD12 | 2.33 | 0.48 |
| 27:RD:237:GLU:HB3 | 27:RD:238:GLY:H | 1.45 | 0.48 |
| 30:RG:3:LEU:HD21 | 50:R4:25:TYR:CE1 | 2.48 | 0.48 |
| 33:RN:18:ALA:O | 33:RN:19:GLU:C | 2.53 | 0.48 |
| 33:RN:75:TYR:C | 33:RN:76:SER:O | 2.52 | 0.48 |
| 38:RS:56:LEU:C | 38:RS:56:LEU:HD23 | 2.34 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:RU:92:ARG:CZ | 40:RU:94:ASN:HD22 | 2.27 | 0.48 |
| 45:RZ:26:GLY:HA3 | 45:RZ:86:VAL:O | 2.14 | 0.48 |
| 45:RZ:108:PRO:HG2 | 45:RZ:111:VAL:HA | 1.95 | 0.48 |
| 1:XA:134:A:H61 | 16:XP:25:ARG:NH1 | 2.11 | 0.48 |
| 1:XA:181:G:O2' | 1:XA:182:U:O5' | 2.32 | 0.48 |
| 1:XA:189:U:H3 | 17:XQ:63:ARG:CB | 2.27 | 0.48 |
| 2:XB:214:ILE:O | 2:XB:218:ALA:HB2 | 2.13 | 0.48 |
| 4:XD:60:GLU:O | 4:XD:63:LYS:HB3 | 2.14 | 0.48 |
| 4:XD:121:VAL:O | 4:XD:134:ASP:HA | 2.14 | 0.48 |
| 7:XG:97:GLN:O | 7:XG:101:LEU:HG | 2.14 | 0.48 |
| 13:XM:8:GLU:C | 13:XM:9:ILE:HG23 | 2.34 | 0.48 |
| 14:YN:15:LYS:HD2 | 14:YN:16:PHE:CE2 | 2.49 | 0.48 |
| 14:YN:41:ARG:HG2 | 14:YN:41:ARG:NH1 | 2.29 | 0.48 |
| 16:XP:69:THR:O | 16:XP:73:LEU:HG | 2.14 | 0.48 |
| 19:XS:36:ARG:HB3 | 19:XS:36:ARG:NH1 | 2.28 | 0.48 |
| 20:XT:30:LYS:O | 20:XT:33:ILE:HG12 | 2.14 | 0.48 |
| 25:YA:64:A:O3' | 43:YX:71:GLY:HA3 | 2.14 | 0.48 |
| 25:YA:270(R):G:H2' | 25:YA:270(S):G:C8 | 2.49 | 0.48 |
| 25:YA:272:G:H2' | 25:YA:273:G:C8 | 2.48 | 0.48 |
| 25:YA:1212:G:O2' | 25:YA:1213:A:OP2 | 2.31 | 0.48 |
| 25:YA:1545:A:N6 | 25:YA:1545(A):A:N1 | 2.62 | 0.48 |
| 25:YA:2210:G:H2' | 25:YA:2210:G:N3 | 2.28 | 0.48 |
| 25:YA:2277:G:OP1 | 36:YQ:85:LYS:HB2 | 2.13 | 0.48 |
| 25:YA:2370:G:N3 | 52:Y6:45:LYS:NZ | 2.62 | 0.48 |
| 25:YA:2516:G:C5 | 25:YA:2517:C:C4 | 3.02 | 0.48 |
| 25:YA:2657:A:H1' | 25:YA:2665:A:N6 | 2.28 | 0.48 |
| 25:YA:2724:C:P | 37:YR:1:MET:HE3 | 2.54 | 0.48 |
| 27:YD:25:THR:O | 27:YD:26:LYS:C | 2.52 | 0.48 |
| 27:YD:35:LYS:CG | 27:YD:64:ILE:CG2 | 2.92 | 0.48 |
| 28:YE:64:LYS:C | 28:YE:66:HIS:N | 2.68 | 0.48 |
| 29:YF:34:TRP:HD1 | 35:YP:6:LEU:HB3 | 1.79 | 0.48 |
| 29:YF:45:ARG:HG2 | 29:YF:45:ARG:NH1 | 2.28 | 0.48 |
| 31:YH:124:GLU:HB3 | 31:YH:132:ARG:CD | 2.44 | 0.48 |
| 31:YH:127:GLU:HB3 | 31:YH:128:PRO:HD2 | 1.92 | 0.48 |
| 36:YQ:42:ILE:HD12 | 36:YQ:42:ILE:N | 2.29 | 0.48 |
| 37:YR:107:ASP:C | 37:YR:107:ASP:OD2 | 2.52 | 0.48 |
| 38:YS:66:ALA:HA | 38:YS:69:VAL:HG12 | 1.96 | 0.48 |
| 39:YT:16:ARG:NE | 39:YT:19:LEU:HD21 | 2.27 | 0.48 |
| 40:YU:79:PHE:HE2 | 40:YU:83:LEU:CD2 | 2.26 | 0.48 |
| 41:YV:21:ARG:HD2 | 41:YV:91:TYR:CZ | 2.49 | 0.48 |
| 43:YX:11:PRO:HB3 | 43:YX:92:LEU:CD2 | 2.43 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 45:YZ:35:ARG:HB3 | 45:YZ:35:ARG:NH1 | 2.29 | 0.48 |
| 45:YZ:72:ARG:HH11 | 45:YZ:72:ARG:CG | 2.26 | 0.48 |
| 45:YZ:135:GLU:HG3 | 45:YZ:136:PHE:CD2 | 2.49 | 0.48 |
| 47:Y1:76:ARG:HD2 | 47:Y1:76:ARG:N | 2.29 | 0.48 |
| 50:Y4:8:LYS:O | 50:Y4:9:LEU:CB | 2.62 | 0.48 |
| 50:Y4:36:CYS:O | 50:Y4:37:SER:C | 2.52 | 0.48 |
| 1:QA:244:U:H4' | 1:QA:245:C:O5' | 2.12 | 0.48 |
| 1:QA:266:G:O2' | 1:QA:268:C:OP2 | 2.31 | 0.48 |
| 1:QA:356:A:N3 | 1:QA:368:U:O2' | 2.39 | 0.48 |
| 1:QA:450:G:H5' | 16:QP:41:PRO:O | 2.14 | 0.48 |
| 1:QA:709:G:H2' | 1:QA:710:G:H8 | 1.77 | 0.48 |
| 1:QA:1107:C:O2 | 1:QA:1191:A:O2' | 2.30 | 0.48 |
| 1:QA:1509:C:H2' | 1:QA:1510:U:O4' | 2.14 | 0.48 |
| 4:QD:6:GLY:O | 4:QD:8:VAL:HG23 | 2.14 | 0.48 |
| 7:QG:63:LYS:O | 7:QG:63:LYS:HD2 | 2.13 | 0.48 |
| 7:QG:79:ARG:O | 7:QG:80:VAL:HG23 | 2.14 | 0.48 |
| 7:QG:97:GLN:O | 7:QG:101:LEU:HG | 2.14 | 0.48 |
| 8:QH:45:ILE:O | 8:QH:45:ILE:HG13 | 2.13 | 0.48 |
| 9:QI:7:THR:O | 9:QI:83:ARG:HD2 | 2.14 | 0.48 |
| 15:QO:61:GLY:C | 15:QO:65:ARG:NH1 | 2.67 | 0.48 |
| 16:QP:43:LYS:C | 16:QP:45:THR:H | 2.14 | 0.48 |
| 16:QP:60:LEU:CA | 16:QP:64:ALA:HB3 | 2.43 | 0.48 |
| 20:QT:64:ASP:O | 20:QT:67:ALA:N | 2.47 | 0.48 |
| 25:RA:508:G:HO2' | 25:RA:509:C:P | 2.36 | 0.48 |
| 25:RA:1188:U:H4' | 41:RV:79:VAL:HG22 | 1.96 | 0.48 |
| 25:RA:2607:G:H2' | 25:RA:2608:G:O4' | 2.14 | 0.48 |
| 26:RB:17:C:H2' | 26:RB:18:G:O4' | 2.12 | 0.48 |
| 33:RN:57:ALA:O | 33:RN:58:ASP:CB | 2.61 | 0.48 |
| 33:RN:68:GLU:HG2 | 33:RN:88:GLU:CD | 2.33 | 0.48 |
| 35:RP:6:LEU:O | 35:RP:7:ARG:O | 2.31 | 0.48 |
| 36:RQ:42:ILE:HD12 | 36:RQ:42:ILE:N | 2.29 | 0.48 |
| 36:RQ:57:HIS:ND1 | 36:RQ:58:PHE:N | 2.62 | 0.48 |
| 37:RR:63:ARG:NH1 | 37:RR:63:ARG:HG3 | 2.29 | 0.48 |
| 41:RV:35:LEU:O | 41:RV:37:VAL:N | 2.47 | 0.48 |
| 42:RW:66:GLU:O | 42:RW:69:LEU:HG | 2.14 | 0.48 |
| 45:RZ:120:ILE:HD12 | 45:RZ:171:ILE:N | 2.29 | 0.48 |
| 1:XA:255:G:H2' | 1:XA:256:U:H6 | 1.78 | 0.48 |
| 1:XA:438:G:H4' | 4:XD:123:HIS:ND1 | 2.28 | 0.48 |
| 1:XA:533:A:OP1 | 1:XA:533:A:H3' | 2.14 | 0.48 |
| 1:XA:741:G:H2' | 1:XA:742:G:O4' | 2.14 | 0.48 |
| 1:XA:779:C:H2' | 1:XA:780:A:O4' | 2.13 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:XA:977:A:C2' | 1:XA:978:A:H5' | 2.44 | 0.48 |
| 4:XD:11:LEU:O | 4:XD:19:LEU:HD21 | 2.14 | 0.48 |
| 4:XD:79:PHE:HE2 | 4:XD:83:SER:HB2 | 1.79 | 0.48 |
| 4:XD:114:ARG:HH11 | 4:XD:114:ARG:CG | 2.17 | 0.48 |
| 4:XD:163:GLU:C | 4:XD:165:MET:N | 2.66 | 0.48 |
| 7:XG:79:ARG:O | 7:XG:80:VAL:HG23 | 2.14 | 0.48 |
| 8:XH:44:PHE:CD1 | 8:XH:80:ILE:HG12 | 2.49 | 0.48 |
| 8:XH:86:ILE:HG22 | 8:XH:87:SER:N | 2.29 | 0.48 |
| 9:XI:7:THR:O | 9:XI:83:ARG:HD2 | 2.14 | 0.48 |
| 10:XJ:74:ILE:HG12 | 10:XJ:74:ILE:O | 2.14 | 0.48 |
| 11:XK:19:ALA:CB | 11:XK:32:ILE:HG22 | 2.42 | 0.48 |
| 11:XK:19:ALA:CA | 11:XK:32:ILE:HG22 | 2.43 | 0.48 |
| 11:XK:110:ASP:HB2 | 18:XR:88:LYS:HD3 | 1.95 | 0.48 |
| 11:XK:115:PRO:C | 11:XK:117:ASN:H | 2.17 | 0.48 |
| 12:XL:43:VAL:HG23 | 12:XL:93:LEU:HD22 | 1.96 | 0.48 |
| 14:XN:6:LEU:CD2 | 14:XN:23:ARG:NH2 | 2.77 | 0.48 |
| 17:XQ:63:ARG:HG2 | 17:XQ:64:PRO:N | 2.28 | 0.48 |
| 19:XS:41:VAL:CB | 19:XS:42:PRO:CA | 2.76 | 0.48 |
| 25:YA:37:C:H2' | 25:YA:38:A:O4' | 2.14 | 0.48 |
| 25:YA:298:G:P | 44:YY:85:VAL:HG22 | 2.54 | 0.48 |
| 25:YA:383:U:H2' | 25:YA:385:C:C5 | 2.48 | 0.48 |
| 25:YA:660:G:O3' | 29:YF:38:ARG:NH2 | 2.46 | 0.48 |
| 25:YA:1009:A:OP1 | 33:YN:37:LYS:NZ | 2.46 | 0.48 |
| 25:YA:1055:G:O2' | 25:YA:1085:A:N1 | 2.40 | 0.48 |
| 25:YA:1108:U:H2' | 25:YA:1109:C:C6 | 2.49 | 0.48 |
| 25:YA:1332:G:H8 | 25:YA:1332:G:H2' | 1.51 | 0.48 |
| 25:YA:1388:G:H2' | 25:YA:1389:G:C8 | 2.48 | 0.48 |
| 25:YA:1807:G:N2 | 25:YA:1810:A:OP2 | 2.44 | 0.48 |
| 25:YA:1930:G:H2' | 25:YA:1968:G:N1 | 2.29 | 0.48 |
| 27:YD:27:THR:O | 27:YD:29:PRO:CD | 2.62 | 0.48 |
| 27:YD:33:LEU:HB3 | 27:YD:34:VAL:H | 1.48 | 0.48 |
| 28:YE:93:VAL:C | 28:YE:95:ILE:H | 2.17 | 0.48 |
| 28:YE:119:ARG:HD3 | 28:YE:160:TYR:HD2 | 1.78 | 0.48 |
| 30:YG:97:ASP:N | 30:YG:100:TRP:HD1 | 2.05 | 0.48 |
| 31:YH:10:PRO:C | 31:YH:11:VAL:HG22 | 2.34 | 0.48 |
| 31:YH:45:VAL:O | 31:YH:45:VAL:HG13 | 2.14 | 0.48 |
| 31:YH:120:GLY:HA3 | 31:YH:140:LYS:NZ | 2.27 | 0.48 |
| 33:YN:34:LEU:O | 33:YN:49:GLY:HA3 | 2.13 | 0.48 |
| 33:YN:137:LYS:CG | 33:YN:138:LEU:H | 2.27 | 0.48 |
| 34:YO:107:ARG:NH1 | 39:YT:36:GLU:OE1 | 2.46 | 0.48 |
| 35:YP:61:ARG:HH21 | 54:Y8:13:ARG:HD2 | 1.77 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:YR:63:ARG:NH1 | 37:YR:63:ARG:HG3 | 2.29 | 0.48 |
| 37:YR:70:LEU:C | 37:YR:72:ASP:H | 2.16 | 0.48 |
| 38:YS:56:LEU:C | 38:YS:56:LEU:HD23 | 2.34 | 0.48 |
| 39:YT:94:ALA:O | 39:YT:95:ARG:CB | 2.61 | 0.48 |
| 44:YY:57:GLN:O | 44:YY:58:GLY:O | 2.32 | 0.48 |
| 44:YY:81:LYS:HZ2 | 44:YY:98:VAL:CG1 | 2.27 | 0.48 |
| 45:YZ:107:THR:HG22 | 45:YZ:108:PRO:CA | 2.43 | 0.48 |
| 47:Y1:25:LYS:C | 47:Y1:27:GLU:H | 2.16 | 0.48 |
| 47:Y1:94:LEU:O | 47:Y1:95:LEU:CB | 2.62 | 0.48 |
| 50:Y4:60:GLN:O | 50:Y4:63:TYR:HB3 | 2.13 | 0.48 |
| 52:Y6:20:ASN:ND2 | 52:Y6:42:TRP:CZ2 | 2.82 | 0.48 |
| 1:QA:181:G:HO2' | 1:QA:182:U:P | 2.37 | 0.47 |
| 1:QA:1152:A:H2' | 1:QA:1153:C:H6 | 1.78 | 0.47 |
| 1:QA:1297:C:H2' | 7:QG:114:ARG:NH2 | 2.28 | 0.47 |
| 2:QB:24:TRP:CZ3 | 2:QB:26:PRO:HA | 2.49 | 0.47 |
| 2:QB:87:ARG:NH1 | 2:QB:220:ASP:OD1 | 2.46 | 0.47 |
| 4:QD:100:ARG:CZ | 4:QD:137:SER:HA | 2.44 | 0.47 |
| 5:QE:75:THR:HG23 | 5:QE:76:ILE:O | 2.14 | 0.47 |
| 7:QG:8:GLU:CD | 7:QG:8:GLU:N | 2.67 | 0.47 |
| 7:QG:44:TYR:C | 7:QG:46:ALA:N | 2.66 | 0.47 |
| 7:QG:51:GLN:HA | 7:QG:51:GLN:OE1 | 2.14 | 0.47 |
| 10:QJ:39:PRO:CB | 10:QJ:70:ARG:HH12 | 2.27 | 0.47 |
| 11:QK:48:ILE:HG21 | 11:QK:63:LEU:HD13 | 1.96 | 0.47 |
| 12:QL:127:GLU:O | 12:QL:128:ALA:CB | 2.62 | 0.47 |
| 13:QM:12:ASN:O | 13:QM:13:LYS:HB2 | 2.13 | 0.47 |
| 13:QM:30:ALA:O | 13:QM:33:ALA:N | 2.47 | 0.47 |
| 25:RA:30:G:H2' | 25:RA:31:C:C6 | 2.49 | 0.47 |
| 25:RA:1069:A:H4' | 25:RA:1070:A:H5'' | 1.95 | 0.47 |
| 25:RA:1853:A:H2' | 25:RA:1854:A:C8 | 2.49 | 0.47 |
| 25:RA:2415:G:H4' | 35:RP:66:GLY:C | 2.35 | 0.47 |
| 25:RA:2520:C:H42 | 25:RA:2545:G:H1 | 1.61 | 0.47 |
| 25:RA:2593:U:H2' | 25:RA:2594:C:C6 | 2.49 | 0.47 |
| 27:RD:145:VAL:O | 27:RD:153:ALA:HA | 2.14 | 0.47 |
| 28:RE:64:LYS:C | 28:RE:66:HIS:N | 2.68 | 0.47 |
| 28:RE:120:TRP:O | 28:RE:121:ASN:HB2 | 2.14 | 0.47 |
| 33:RN:97:ARG:HA | 33:RN:100:GLU:HB3 | 1.96 | 0.47 |
| 33:RN:113:GLY:O | 33:RN:116:LEU:HB2 | 2.14 | 0.47 |
| 34:RO:8:LEU:HB2 | 34:RO:19:ILE:CD1 | 2.43 | 0.47 |
| 40:RU:79:PHE:HE2 | 40:RU:83:LEU:CD2 | 2.27 | 0.47 |
| 40:RU:91:ASP:O | 40:RU:92:ARG:C | 2.52 | 0.47 |
| 40:RU:107:ALA:O | 40:RU:110:VAL:HB | 2.14 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 41:RV:4:ILE:HA | 41:RV:12:TYR:O | 2.14 | 0.47 |
| 41:RV:21:ARG:HD2 | 41:RV:91:TYR:CZ | 2.49 | 0.47 |
| 44:RY:56:PRO:O | 44:RY:58:GLY:N | 2.47 | 0.47 |
| 44:RY:97:ARG:HG2 | 44:RY:97:ARG:NH1 | 2.28 | 0.47 |
| 46:R0:74:ARG:O | 46:R0:76:GLY:N | 2.47 | 0.47 |
| 47:R1:8:SER:OG | 47:R1:10:LYS:HG3 | 2.13 | 0.47 |
| 54:R8:43:GLN:C | 54:R8:44:LYS:HD2 | 2.34 | 0.47 |
| 1:XA:255:G:P | 17:XQ:69:LYS:HZ3 | 2.37 | 0.47 |
| 1:XA:413:G:H2' | 1:XA:428:G:N2 | 2.27 | 0.47 |
| 1:XA:701:C:H1' | 1:XA:703:G:C5 | 2.48 | 0.47 |
| 4:XD:165:MET:CE | 4:XD:168:ARG:HD2 | 2.44 | 0.47 |
| 4:XD:198:VAL:CG1 | 4:XD:199:ASN:N | 2.75 | 0.47 |
| 5:XE:82:VAL:CG1 | 5:XE:83:GLU:H | 2.27 | 0.47 |
| 12:XL:50:SER:O | 12:XL:51:ALA:HB2 | 2.14 | 0.47 |
| 18:XR:30:ASP:C | 18:XR:32:ARG:H | 2.16 | 0.47 |
| 19:XS:24:ALA:O | 19:XS:25:LYS:HB2 | 2.13 | 0.47 |
| 21:XU:15:ARG:HG2 | 21:XU:15:ARG:NH1 | 2.29 | 0.47 |
| 25:YA:652:C:H5' | 25:YA:653:A:OP2 | 2.14 | 0.47 |
| 25:YA:1055:G:H1 | 25:YA:1104:C:N4 | 2.12 | 0.47 |
| 25:YA:1682:G:OP1 | 25:YA:1699:G:N1 | 2.47 | 0.47 |
| 25:YA:2013:A:N3 | 42:YW:88:ARG:NH2 | 2.60 | 0.47 |
| 25:YA:2294:C:H2' | 25:YA:2295:C:H6 | 1.79 | 0.47 |
| 30:YG:12:TYR:O | 30:YG:16:ARG:HB3 | 2.14 | 0.47 |
| 32:YI:1:MET:HG3 | 32:YI:23:PRO:CA | 2.44 | 0.47 |
| 33:YN:57:ALA:O | 33:YN:58:ASP:CB | 2.61 | 0.47 |
| 33:YN:120:LEU:HD11 | 33:YN:122:VAL:CG2 | 2.42 | 0.47 |
| 40:YU:79:PHE:HE2 | 40:YU:83:LEU:HD22 | 1.78 | 0.47 |
| 41:YV:38:LEU:HD23 | 41:YV:39:LEU:H | 1.79 | 0.47 |
| 43:YX:53:LYS:HZ2 | 43:YX:55:ASN:HD21 | 1.62 | 0.47 |
| 45:YZ:39:VAL:HG21 | 45:YZ:44:PHE:HB2 | 1.95 | 0.47 |
| 52:Y6:8:LYS:O | 52:Y6:27:LYS:HA | 2.13 | 0.47 |
| 53:Y7:25:PRO:HA | 53:Y7:28:ARG:CZ | 2.44 | 0.47 |
| 54:Y8:41:ILE:HG13 | 54:Y8:42:ARG:N | 2.28 | 0.47 |
| 54:Y8:53:PRO:CD | 54:Y8:54:GLU:N | 2.77 | 0.47 |
| 1:QA:109:A:H5' | 1:QA:110:C:H5 | 1.80 | 0.47 |
| 1:QA:198:G:H1 | 1:QA:219:C:H42 | 1.62 | 0.47 |
| 1:QA:234:C:H2' | 1:QA:235:C:H6 | 1.79 | 0.47 |
| 1:QA:375:U:H4' | 16:QP:17:TYR:CE2 | 2.45 | 0.47 |
| 1:QA:601:C:H2' | 1:QA:602:A:O4' | 2.14 | 0.47 |
| 2:QB:24:TRP:CD1 | 2:QB:26:PRO:HD3 | 2.49 | 0.47 |
| 2:QB:164:VAL:HB | 2:QB:186:ALA:HB1 | 1.95 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:QC:16:ARG:NH2 | 3:QC:183:ASP:OD2 | 2.47 | 0.47 |
| 3:QC:153:VAL:HA | 3:QC:197:GLY:O | 2.14 | 0.47 |
| 4:QD:153:ARG:CZ | 4:QD:181:MET:HG3 | 2.44 | 0.47 |
| 5:QE:82:VAL:CG1 | 5:QE:83:GLU:H | 2.27 | 0.47 |
| 7:QG:69:VAL:O | 7:QG:69:VAL:CG1 | 2.62 | 0.47 |
| 9:QI:9:ARG:HA | 9:QI:76:ALA:HB1 | 1.96 | 0.47 |
| 9:QI:17:VAL:HG11 | 9:QI:81:ILE:HA | 1.96 | 0.47 |
| 9:QI:22:GLY:HA3 | 9:QI:60:ASP:OD2 | 2.13 | 0.47 |
| 9:QI:33:PHE:HZ | 9:QI:47:LEU:HD21 | 1.76 | 0.47 |
| 11:QK:124:LYS:O | 11:QK:126:ARG:N | 2.40 | 0.47 |
| 15:QO:24:SER:OG | 15:QO:25:THR:N | 2.47 | 0.47 |
| 17:QQ:3:LYS:HD2 | 17:QQ:60:ILE:HD11 | 1.95 | 0.47 |
| 20:QT:13:LEU:HD12 | 20:QT:13:LEU:C | 2.34 | 0.47 |
| 25:RA:960:A:H2' | 25:RA:962:G:H5' | 1.95 | 0.47 |
| 25:RA:1533:C:H42 | 25:RA:1538:G:H1 | 1.62 | 0.47 |
| 25:RA:2626:C:H2' | 25:RA:2627:G:O4' | 2.15 | 0.47 |
| 25:RA:2693:A:H2' | 25:RA:2694:G:C8 | 2.49 | 0.47 |
| 27:RD:35:LYS:CG | 27:RD:64:ILE:CG2 | 2.92 | 0.47 |
| 27:RD:134:ARG:HB2 | 27:RD:135:PHE:CD2 | 2.49 | 0.47 |
| 29:RF:53:THR:C | 29:RF:55:GLY:N | 2.68 | 0.47 |
| 30:RG:12:TYR:O | 30:RG:16:ARG:HB3 | 2.15 | 0.47 |
| 31:RH:154:PRO:CG | 31:RH:162:ILE:O | 2.61 | 0.47 |
| 32:RI:123:LEU:HA | 32:RI:142:VAL:CG2 | 2.44 | 0.47 |
| 33:RN:4:TYR:OH | 33:RN:7:LYS:NZ | 2.46 | 0.47 |
| 33:RN:67:LEU:O | 33:RN:88:GLU:HG3 | 2.14 | 0.47 |
| 33:RN:137:LYS:CG | 33:RN:138:LEU:N | 2.78 | 0.47 |
| 35:RP:47:ASP:OD1 | 35:RP:50:ARG:NH2 | 2.47 | 0.47 |
| 35:RP:126:VAL:HA | 35:RP:145:PRO:HD2 | 1.95 | 0.47 |
| 36:RQ:83:MET:H | 46:R0:7:LEU:HD12 | 1.80 | 0.47 |
| 37:RR:107:ASP:C | 37:RR:107:ASP:OD2 | 2.52 | 0.47 |
| 38:RS:55:ALA:O | 38:RS:56:LEU:HB3 | 2.13 | 0.47 |
| 41:RV:48:GLY:O | 41:RV:49:THR:C | 2.52 | 0.47 |
| 41:RV:66:ARG:NH1 | 41:RV:88:ARG:NH1 | 2.61 | 0.47 |
| 42:RW:32:ALA:O | 42:RW:33:ARG:C | 2.52 | 0.47 |
| 44:RY:81:LYS:NZ | 44:RY:98:VAL:HB | 2.29 | 0.47 |
| 51:R5:57:VAL:O | 51:R5:57:VAL:HG13 | 2.13 | 0.47 |
| 54:R8:53:PRO:CD | 54:R8:54:GLU:N | 2.77 | 0.47 |
| 1:XA:593:G:H5'' | 1:XA:594:G:OP2 | 2.14 | 0.47 |
| 1:XA:954:G:H21 | 1:XA:1227:A:N6 | 2.12 | 0.47 |
| 2:XB:170:GLU:C | 2:XB:172:ILE:HD12 | 2.33 | 0.47 |
| 4:XD:9:CYS:C | 4:XD:11:LEU:H | 2.17 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:XD:94:LEU:HD12 | 4:XD:94:LEU:N | 2.12 | 0.47 |
| 5:XE:75:THR:HG23 | 5:XE:76:ILE:O | 2.14 | 0.47 |
| 6:XF:97:PHE:CD2 | 18:XR:31:LEU:HD21 | 2.48 | 0.47 |
| 11:XK:32:ILE:HD11 | 11:XK:68:ALA:O | 2.14 | 0.47 |
| 11:XK:62:GLN:O | 11:XK:63:LEU:C | 2.51 | 0.47 |
| 16:XP:25:ARG:HG3 | 16:XP:25:ARG:HH11 | 1.79 | 0.47 |
| 20:XT:26:ASN:N | 20:XT:26:ASN:ND2 | 2.62 | 0.47 |
| 20:XT:50:GLU:HA | 20:XT:100:ILE:CG2 | 2.43 | 0.47 |
| 22:XV:19:G:H4' | 22:XV:20:U:OP2 | 2.14 | 0.47 |
| 25:YA:270(J):G:N2 | 25:YA:270(Q):C:O2 | 2.47 | 0.47 |
| 25:YA:483:A:H4' | 44:YY:49:VAL:CA | 2.33 | 0.47 |
| 25:YA:1087:G:C5 | 25:YA:1089:G:H1' | 2.48 | 0.47 |
| 25:YA:1728:G:H3' | 25:YA:1729:A:C5' | 2.44 | 0.47 |
| 25:YA:1799:G:H4' | 25:YA:1800:C:O5' | 2.14 | 0.47 |
| 25:YA:2376:A:H2' | 25:YA:2377:A:O4' | 2.14 | 0.47 |
| 26:YB:116:G:H2' | 26:YB:117:G:H8 | 1.79 | 0.47 |
| 29:YF:127:GLU:OE1 | 29:YF:127:GLU:HA | 2.06 | 0.47 |
| 29:YF:155:LEU:HA | 29:YF:174:VAL:HG12 | 1.95 | 0.47 |
| 29:YF:196:LEU:C | 29:YF:197:ASP:O | 2.50 | 0.47 |
| 33:YN:12:ARG:NH1 | 33:YN:50:ASP:CG | 2.67 | 0.47 |
| 33:YN:18:ALA:O | 33:YN:19:GLU:C | 2.53 | 0.47 |
| 33:YN:75:TYR:C | 33:YN:76:SER:O | 2.52 | 0.47 |
| 35:YP:147:LEU:N | 35:YP:147:LEU:HD22 | 2.28 | 0.47 |
| 37:YR:41:ALA:C | 37:YR:43:GLU:N | 2.68 | 0.47 |
| 39:YT:132:LYS:O | 39:YT:136:GLN:HG3 | 2.13 | 0.47 |
| 42:YW:30:GLU:O | 42:YW:34:ASN:ND2 | 2.46 | 0.47 |
| 44:YY:44:ILE:CG1 | 44:YY:45:VAL:N | 2.70 | 0.47 |
| 45:YZ:33:LEU:HD21 | 45:YZ:35:ARG:CD | 2.42 | 0.47 |
| 1:QA:189:U:H3 | 17:QQ:63:ARG:CB | 2.27 | 0.47 |
| 1:QA:558:G:H2' | 1:QA:559:A:C2 | 2.49 | 0.47 |
| 1:QA:792:A:H4' | 1:QA:793:U:O5' | 2.14 | 0.47 |
| 1:QA:954:G:O6 | 1:QA:1225:A:N6 | 2.47 | 0.47 |
| 2:QB:116:GLU:HA | 2:QB:119:GLU:HB3 | 1.96 | 0.47 |
| 3:QC:76:VAL:HG21 | 3:QC:103:VAL:HG11 | 1.95 | 0.47 |
| 4:QD:135:LEU:O | 4:QD:137:SER:N | 2.47 | 0.47 |
| 6:QF:22:GLU:CD | 6:QF:82:ARG:HH21 | 2.18 | 0.47 |
| 10:QJ:24:VAL:HG21 | 10:QJ:37:PRO:CG | 2.43 | 0.47 |
| 11:QK:115:PRO:C | 11:QK:117:ASN:H | 2.18 | 0.47 |
| 12:QL:10:LEU:HB3 | 17:QQ:32:TYR:CZ | 2.50 | 0.47 |
| 13:QM:50:GLU:O | 13:QM:54:VAL:HG23 | 2.13 | 0.47 |
| 14:QN:6:LEU:CD2 | 14:QN:23:ARG:NH2 | 2.77 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 20:QT:30:LYS:O | 20:QT:33:ILE:HG12 | 2.14 | 0.47 |
| 21:QU:9:ARG:HH11 | 21:QU:9:ARG:HG2 | 1.78 | 0.47 |
| 22:QV:19:G:H4' | 22:QV:20:U:OP2 | 2.14 | 0.47 |
| 25:RA:270(F):U:H2' | 25:RA:270(G):C:C6 | 2.49 | 0.47 |
| 25:RA:717:G:H2' | 25:RA:718:A:O4' | 2.14 | 0.47 |
| 25:RA:924:C:H2' | 25:RA:925:C:H6 | 1.79 | 0.47 |
| 25:RA:1329:U:H5'' | 25:RA:1330:C:H5 | 1.79 | 0.47 |
| 25:RA:1651:G:H1 | 25:RA:2006:C:H42 | 1.62 | 0.47 |
| 25:RA:2055:C:H4' | 25:RA:2056:G:H5'' | 1.96 | 0.47 |
| 28:RE:129:HIS:O | 28:RE:130:GLY:C | 2.53 | 0.47 |
| 28:RE:174:ASP:O | 28:RE:182:LEU:HD12 | 2.14 | 0.47 |
| 29:RF:162:LEU:HD23 | 29:RF:165:ARG:HH21 | 1.79 | 0.47 |
| 31:RH:82:GLY:O | 31:RH:83:TYR:O | 2.32 | 0.47 |
| 32:RI:9:LEU:HD21 | 32:RI:12:LEU:O | 2.15 | 0.47 |
| 37:RR:41:ALA:C | 37:RR:43:GLU:N | 2.68 | 0.47 |
| 38:RS:40:ILE:HG22 | 38:RS:41:ASP:N | 2.28 | 0.47 |
| 44:RY:75:ILE:HG12 | 44:RY:76:CYS:H | 1.79 | 0.47 |
| 47:R1:29:GLY:C | 47:R1:30:VAL:CG2 | 2.82 | 0.47 |
| 47:R1:56:GLN:NE2 | 47:R1:56:GLN:H | 2.10 | 0.47 |
| 50:R4:50:VAL:O | 50:R4:50:VAL:CG1 | 2.63 | 0.47 |
| 1:XA:554:C:H2' | 1:XA:555:C:H6 | 1.79 | 0.47 |
| 1:XA:696:A:H8 | 1:XA:696:A:O5' | 1.97 | 0.47 |
| 1:XA:745:C:H2' | 1:XA:746:A:C8 | 2.49 | 0.47 |
| 1:XA:881:G:P | 12:XL:12:ARG:NH2 | 2.88 | 0.47 |
| 1:XA:955:U:H1' | 1:XA:1227:A:H61 | 1.79 | 0.47 |
| 1:XA:992:U:H4' | 1:XA:993:G:O5' | 2.15 | 0.47 |
| 2:XB:4:GLU:CG | 2:XB:5:ILE:H | 1.99 | 0.47 |
| 3:XC:36:ASP:HA | 3:XC:39:ILE:HD12 | 1.95 | 0.47 |
| 4:XD:33:MET:HE1 | 4:XD:37:PRO:O | 2.14 | 0.47 |
| 4:XD:183:GLY:C | 4:XD:184:LYS:HG3 | 2.34 | 0.47 |
| 5:XE:87:SER:HB3 | 5:XE:131:ILE:HD13 | 1.95 | 0.47 |
| 7:XG:44:TYR:C | 7:XG:46:ALA:N | 2.66 | 0.47 |
| 9:XI:42:ARG:NH2 | 9:XI:75:ASP:OD2 | 2.47 | 0.47 |
| 15:XO:50:HIS:O | 15:XO:53:HIS:N | 2.47 | 0.47 |
| 15:XO:61:GLY:C | 15:XO:65:ARG:NH1 | 2.67 | 0.47 |
| 20:XT:64:ASP:O | 20:XT:67:ALA:N | 2.47 | 0.47 |
| 25:YA:543:C:N4 | 25:YA:550:G:H1 | 2.12 | 0.47 |
| 25:YA:1861:G:C2 | 25:YA:1862:G:C8 | 3.03 | 0.47 |
| 25:YA:2646:C:H2' | 25:YA:2647:U:O4' | 2.15 | 0.47 |
| 25:YA:2776:A:OP1 | 25:YA:2776:A:H3' | 2.14 | 0.47 |
| 25:YA:2795:G:H3' | 25:YA:2797:U:C5' | 2.43 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 28:YE:15:PHE:CD1 | 28:YE:20:ALA:HB2 | 2.50 | 0.47 |
| 28:YE:61:ARG:CB | 28:YE:62:PRO:HD3 | 2.41 | 0.47 |
| 29:YF:132:VAL:O | 29:YF:133:ASN:C | 2.52 | 0.47 |
| 30:YG:111:LEU:HD22 | 30:YG:120:LEU:HD21 | 1.97 | 0.47 |
| 36:YQ:57:HIS:ND1 | 36:YQ:58:PHE:N | 2.62 | 0.47 |
| 36:YQ:119:ARG:O | 36:YQ:123:HIS:HD2 | 1.97 | 0.47 |
| 37:YR:1:MET:SD | 37:YR:1:MET:N | 2.75 | 0.47 |
| 37:YR:10:LEU:O | 37:YR:12:ARG:HG3 | 2.14 | 0.47 |
| 39:YT:36:GLU:O | 39:YT:37:GLY:C | 2.53 | 0.47 |
| 41:YV:2:PHE:CD2 | 41:YV:13:ARG:NH2 | 2.83 | 0.47 |
| 41:YV:35:LEU:O | 41:YV:37:VAL:N | 2.47 | 0.47 |
| 46:Y0:3:HIS:CD2 | 46:Y0:3:HIS:C | 2.85 | 0.47 |
| 46:Y0:10:THR:CG2 | 46:Y0:11:ARG:N | 2.73 | 0.47 |
| 54:Y8:56:GLU:O | 54:Y8:58:ILE:N | 2.47 | 0.47 |
| 1:QA:15:G:H4' | 5:QE:24:ARG:HH12 | 1.79 | 0.47 |
| 1:QA:1359:C:H3' | 14:QN:35:ARG:HH12 | 1.78 | 0.47 |
| 4:QD:3:ARG:O | 4:QD:5:ILE:HG13 | 2.14 | 0.47 |
| 8:QH:44:PHE:CD1 | 8:QH:80:ILE:HG12 | 2.49 | 0.47 |
| 9:QI:42:ARG:NH2 | 9:QI:75:ASP:OD2 | 2.47 | 0.47 |
| 17:QQ:98:LEU:O | 17:QQ:99:SER:C | 2.53 | 0.47 |
| 18:QR:31:LEU:H | 18:QR:31:LEU:CD2 | 2.27 | 0.47 |
| 25:RA:458:G:O2' | 53:R7:39:ARG:HD3 | 2.14 | 0.47 |
| 25:RA:617:G:OP1 | 29:RF:40:GLN:NE2 | 2.47 | 0.47 |
| 25:RA:825:C:H2' | 25:RA:826:U:O4' | 2.15 | 0.47 |
| 25:RA:2401:U:H2' | 25:RA:2402:C:H5'' | 1.95 | 0.47 |
| 27:RD:72:LYS:CG | 27:RD:103:ARG:NH2 | 2.77 | 0.47 |
| 28:RE:56:PRO:O | 28:RE:57:LYS:CB | 2.61 | 0.47 |
| 30:RG:56:ALA:HB2 | 30:RG:153:ARG:NE | 2.27 | 0.47 |
| 31:RH:45:VAL:O | 31:RH:45:VAL:HG13 | 2.14 | 0.47 |
| 31:RH:124:GLU:HB3 | 31:RH:132:ARG:CD | 2.44 | 0.47 |
| 33:RN:118:LYS:O | 33:RN:120:LEU:N | 2.43 | 0.47 |
| 34:RO:37:ASP:O | 34:RO:62:VAL:HG23 | 2.14 | 0.47 |
| 37:RR:10:LEU:O | 37:RR:12:ARG:HG3 | 2.14 | 0.47 |
| 39:RT:96:ARG:NH1 | 39:RT:96:ARG:CB | 2.77 | 0.47 |
| 41:RV:16:PRO:HA | 41:RV:96:ILE:O | 2.14 | 0.47 |
| 41:RV:38:LEU:HD23 | 41:RV:39:LEU:H | 1.79 | 0.47 |
| 43:RX:6:ASP:OD1 | 48:R2:29:LYS:NZ | 2.47 | 0.47 |
| 44:RY:94:LYS:HE3 | 44:RY:101:LYS:HZ3 | 1.77 | 0.47 |
| 45:RZ:39:VAL:HG21 | 45:RZ:44:PHE:HB2 | 1.95 | 0.47 |
| 47:R1:94:LEU:O | 47:R1:95:LEU:CB | 2.62 | 0.47 |
| 50:R4:36:CYS:O | 50:R4:37:SER:C | 2.52 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 50:R4:55:ARG:C | 50:R4:59:PHE:HB3 | 2.35 | 0.47 |
| 1:XA:184:G:H2' | 1:XA:185:A:H8 | 1.79 | 0.47 |
| 1:XA:277:C:H2' | 1:XA:278:G:H8 | 1.78 | 0.47 |
| 1:XA:777:A:H2' | 1:XA:778:G:C8 | 2.49 | 0.47 |
| 1:XA:1320:C:H42 | 19:XS:36:ARG:HG3 | 1.77 | 0.47 |
| 1:XA:1431:C:H2' | 1:XA:1432:G:O4' | 2.14 | 0.47 |
| 2:XB:71:VAL:HG23 | 2:XB:164:VAL:HG13 | 1.96 | 0.47 |
| 2:XB:172:ILE:O | 2:XB:175:ARG:CB | 2.62 | 0.47 |
| 3:XC:127:ARG:CG | 3:XC:127:ARG:NH1 | 2.73 | 0.47 |
| 4:XD:9:CYS:SG | 4:XD:22:LYS:HE3 | 2.55 | 0.47 |
| 4:XD:29:PRO:O | 4:XD:30:LYS:HB3 | 2.15 | 0.47 |
| 5:XE:13:ILE:HG22 | 5:XE:13:ILE:O | 2.14 | 0.47 |
| 5:XE:141:GLN:HA | 5:XE:143:ARG:HH12 | 1.79 | 0.47 |
| 7:XG:151:TYR:HE1 | 11:XK:54:ARG:HD3 | 1.79 | 0.47 |
| 9:XI:18:PHE:HB2 | 9:XI:62:TYR:HB3 | 1.95 | 0.47 |
| 9:XI:106:ALA:O | 9:XI:108:VAL:HG13 | 2.15 | 0.47 |
| 10:XJ:24:VAL:HG21 | 10:XJ:37:PRO:CG | 2.43 | 0.47 |
| 13:XM:30:ALA:O | 13:XM:33:ALA:N | 2.46 | 0.47 |
| 19:XS:5:LEU:HD21 | 50:Y4:66:SER:CB | 2.45 | 0.47 |
| 25:YA:520:G:H2' | 25:YA:521:G:H8 | 1.79 | 0.47 |
| 25:YA:2287:A:N6 | 25:YA:2344:U:H3 | 2.08 | 0.47 |
| 28:YE:65:GLY:HA2 | 28:YE:70:ALA:HB3 | 1.95 | 0.47 |
| 30:YG:83:ARG:HB2 | 30:YG:86:MET:HE3 | 1.97 | 0.47 |
| 31:YH:123:PHE:O | 31:YH:125:VAL:HG23 | 2.13 | 0.47 |
| 34:YO:8:LEU:HB2 | 34:YO:19:ILE:CD1 | 2.43 | 0.47 |
| 35:YP:47:ASP:OD1 | 35:YP:50:ARG:NH2 | 2.47 | 0.47 |
| 40:YU:92:ARG:CZ | 40:YU:94:ASN:HD22 | 2.27 | 0.47 |
| 40:YU:106:PHE:O | 40:YU:109:LEU:HB2 | 2.15 | 0.47 |
| 41:YV:36:PRO:HA | 41:YV:56:SER:CB | 2.44 | 0.47 |
| 42:YW:32:ALA:O | 42:YW:33:ARG:C | 2.52 | 0.47 |
| 45:YZ:108:PRO:CG | 45:YZ:112:ARG:N | 2.70 | 0.47 |
| 46:Y0:74:ARG:C | 46:Y0:76:GLY:N | 2.67 | 0.47 |
| 1:QA:32:A:OP2 | 1:QA:398:C:H1' | 2.15 | 0.47 |
| 1:QA:859:A:H2' | 1:QA:860:A:O4' | 2.15 | 0.47 |
| 4:QD:11:LEU:O | 4:QD:19:LEU:HD21 | 2.14 | 0.47 |
| 4:QD:154:ASN:O | 4:QD:155:LEU:O | 2.32 | 0.47 |
| 7:QG:79:ARG:HG2 | 7:QG:79:ARG:NH1 | 2.29 | 0.47 |
| 8:QH:39:LEU:HD11 | 8:QH:111:ILE:HD11 | 1.96 | 0.47 |
| 10:QJ:40:LEU:HB2 | 10:QJ:69:ASN:CB | 2.40 | 0.47 |
| 12:QL:50:SER:O | 12:QL:51:ALA:HB2 | 2.14 | 0.47 |
| 13:QM:23:TYR:HB3 | 13:QM:67:GLU:CG | 2.39 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 13:QM:90:LEU:HA | 13:QM:93:ARG:CD | 2.34 | 0.47 |
| 14:QN:8:GLU:C | 14:QN:10:ALA:N | 2.68 | 0.47 |
| 16:QP:34:GLU:HG2 | 16:QP:35:LYS:N | 2.29 | 0.47 |
| 25:RA:1025:G:C4 | 25:RA:1135:C:H1' | 2.50 | 0.47 |
| 25:RA:1027:A:N6 | 25:RA:1126:A:C4 | 2.82 | 0.47 |
| 25:RA:1509:C:H3' | 25:RA:1510:A:C5' | 2.44 | 0.47 |
| 25:RA:2059:A:H5' | 25:RA:2060:A:OP2 | 2.14 | 0.47 |
| 25:RA:2102:U:H2' | 25:RA:2103:C:C6 | 2.49 | 0.47 |
| 25:RA:2287:A:HO2' | 25:RA:2288:A:P | 2.36 | 0.47 |
| 25:RA:2760:C:H2' | 25:RA:2761:G:O4' | 2.15 | 0.47 |
| 30:RG:5:VAL:HG22 | 50:R4:25:TYR:CE2 | 2.50 | 0.47 |
| 30:RG:13:GLU:O | 30:RG:13:GLU:HG3 | 2.14 | 0.47 |
| 32:RI:1:MET:HG3 | 32:RI:23:PRO:CA | 2.44 | 0.47 |
| 33:RN:131:GLN:HE21 | 33:RN:132:ALA:H | 1.58 | 0.47 |
| 35:RP:19:VAL:CG2 | 35:RP:20:GLY:H | 1.98 | 0.47 |
| 38:RS:25:ARG:HH12 | 38:RS:42:ASP:CG | 2.16 | 0.47 |
| 45:RZ:102:LEU:HD22 | 45:RZ:156:LYS:HZ1 | 1.77 | 0.47 |
| 45:RZ:157:LEU:HA | 45:RZ:161:VAL:HG11 | 1.95 | 0.47 |
| 47:R1:7:ILE:HD12 | 47:R1:62:VAL:HG11 | 1.96 | 0.47 |
| 1:XA:640:A:O2' | 8:XH:115:SER:HB3 | 2.14 | 0.47 |
| 1:XA:1312:G:P | 50:Y4:58:ARG:HH12 | 2.36 | 0.47 |
| 2:XB:24:TRP:CZ3 | 2:XB:26:PRO:HA | 2.50 | 0.47 |
| 2:XB:200:ILE:H | 2:XB:200:ILE:HD12 | 1.79 | 0.47 |
| 3:XC:95:THR:CG2 | 3:XC:96:GLY:H | 2.10 | 0.47 |
| 4:XD:153:ARG:CZ | 4:XD:181:MET:HG3 | 2.44 | 0.47 |
| 5:XE:42:GLY:CA | 5:XE:136:MET:HE1 | 2.44 | 0.47 |
| 6:XF:9:VAL:HB | 6:XF:87:ARG:HB2 | 1.97 | 0.47 |
| 7:XG:78:ARG:HG3 | 7:XG:78:ARG:HH11 | 1.78 | 0.47 |
| 8:XH:10:LEU:H | 8:XH:10:LEU:CD2 | 2.15 | 0.47 |
| 10:XJ:49:VAL:HG23 | 14:YN:34:TYR:OH | 2.13 | 0.47 |
| 11:XK:48:ILE:HG21 | 11:XK:63:LEU:HD13 | 1.96 | 0.47 |
| 11:XK:102:GLY:O | 11:XK:103:LEU:C | 2.53 | 0.47 |
| 13:XM:65:LYS:CE | 50:Y4:50:VAL:HG11 | 2.45 | 0.47 |
| 17:XQ:29:HIS:N | 17:XQ:33:GLY:O | 2.47 | 0.47 |
| 20:XT:13:LEU:HD12 | 20:XT:13:LEU:C | 2.34 | 0.47 |
| 25:YA:319:C:H2' | 25:YA:320:A:O4' | 2.14 | 0.47 |
| 25:YA:611:C:H2' | 25:YA:612:G:C8 | 2.50 | 0.47 |
| 25:YA:917:A:H62 | 26:YB:80:U:H4' | 1.78 | 0.47 |
| 25:YA:1308:A:H2' | 25:YA:1309:G:O4' | 2.14 | 0.47 |
| 25:YA:1930:G:H22 | 25:YA:1969:A:H5'' | 1.79 | 0.47 |
| 25:YA:2790:A:H2' | 25:YA:2791:C:H5'' | 1.95 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:YA:2849:U:H4' | 25:YA:2868:A:C2 | 2.49 | 0.47 |
| 26:YB:27:C:H5' | 26:YB:28:C:OP2 | 2.13 | 0.47 |
| 27:YD:134:ARG:HB2 | 27:YD:135:PHE:CD2 | 2.49 | 0.47 |
| 28:YE:195:LEU:HD12 | 28:YE:196:VAL:N | 2.29 | 0.47 |
| 30:YG:5:VAL:HG22 | 50:Y4:25:TYR:CE2 | 2.50 | 0.47 |
| 30:YG:16:ARG:NH2 | 30:YG:28:VAL:O | 2.48 | 0.47 |
| 31:YH:41:MET:HG3 | 31:YH:54:ARG:HA | 1.96 | 0.47 |
| 31:YH:127:GLU:OE2 | 31:YH:130:ARG:NH2 | 2.48 | 0.47 |
| 31:YH:131:VAL:HG12 | 31:YH:132:ARG:N | 2.29 | 0.47 |
| 31:YH:154:PRO:CG | 31:YH:162:ILE:O | 2.61 | 0.47 |
| 33:YN:9:VAL:HG21 | 33:YN:48:MET:CB | 2.45 | 0.47 |
| 33:YN:67:LEU:O | 33:YN:88:GLU:HG3 | 2.14 | 0.47 |
| 33:YN:137:LYS:CG | 33:YN:138:LEU:N | 2.77 | 0.47 |
| 35:YP:112:LEU:HD12 | 35:YP:127:ALA:CB | 2.44 | 0.47 |
| 37:YR:56:LYS:HE2 | 37:YR:94:TYR:OH | 2.14 | 0.47 |
| 37:YR:117:VAL:O | 37:YR:118:GLU:CB | 2.63 | 0.47 |
| 38:YS:40:ILE:HG22 | 38:YS:41:ASP:N | 2.28 | 0.47 |
| 41:YV:59:ALA:HB2 | 41:YV:96:ILE:HD13 | 1.97 | 0.47 |
| 46:Y0:12:ASN:HB2 | 46:Y0:13:GLY:H | 1.51 | 0.47 |
| 47:Y1:7:ILE:HD12 | 47:Y1:62:VAL:HG11 | 1.96 | 0.47 |
| 48:Y2:17:SER:CB | 48:Y2:18:PRO:CA | 2.92 | 0.47 |
| 54:Y8:43:GLN:C | 54:Y8:44:LYS:HD2 | 2.34 | 0.47 |
| 1:QA:377:G:P | 16:QP:5:ARG:HH11 | 2.35 | 0.47 |
| 1:QA:436:C:H2' | 1:QA:437:U:C6 | 2.49 | 0.47 |
| 1:QA:1076:C:N4 | 1:QA:1077:G:O6 | 2.47 | 0.47 |
| 1:QA:1127:G:H2' | 1:QA:1128:C:C6 | 2.50 | 0.47 |
| 1:QA:1347:G:N2 | 1:QA:1373:G:H2' | 2.29 | 0.47 |
| 1:QA:1418:A:N6 | 1:QA:1482:G:O2' | 2.44 | 0.47 |
| 2:QB:223:ILE:HA | 2:QB:226:ARG:HB3 | 1.97 | 0.47 |
| 5:QE:141:GLN:HA | 5:QE:143:ARG:HH12 | 1.79 | 0.47 |
| 6:QF:40:VAL:HG22 | 6:QF:41:GLU:N | 2.30 | 0.47 |
| 6:QF:79:LEU:O | 6:QF:85:VAL:HG11 | 2.14 | 0.47 |
| 7:QG:107:ALA:CB | 7:QG:134:ALA:HB2 | 2.44 | 0.47 |
| 10:QJ:74:ILE:HG12 | 10:QJ:74:ILE:O | 2.13 | 0.47 |
| 12:QL:85:ILE:HD11 | 12:QL:98:TYR:CB | 2.43 | 0.47 |
| 14:QN:15:LYS:HD2 | 14:QN:16:PHE:CE2 | 2.49 | 0.47 |
| 14:QN:36:PHE:C | 14:QN:36:PHE:CD1 | 2.88 | 0.47 |
| 18:QR:82:THR:HG22 | 18:QR:83:GLU:H | 1.79 | 0.47 |
| 25:RA:27:G:H1' | 25:RA:513:A:N6 | 2.30 | 0.47 |
| 25:RA:593:G:O3' | 54:R8:61:LEU:HD22 | 2.14 | 0.47 |
| 25:RA:598:G:C6 | 25:RA:599:G:C5 | 3.02 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:862:G:H2' | 25:RA:863:A:O4' | 2.15 | 0.47 |
| 25:RA:1012:U:O4 | 33:RN:25:ARG:HA | 2.14 | 0.47 |
| 25:RA:1729:A:H2' | 25:RA:1730:U:H5'' | 1.95 | 0.47 |
| 26:RB:6:C:O2' | 38:RS:29:PHE:HE1 | 1.97 | 0.47 |
| 28:RE:63:LEU:CD1 | 28:RE:64:LYS:N | 2.71 | 0.47 |
| 30:RG:106:LEU:HA | 30:RG:110:ALA:HB3 | 1.96 | 0.47 |
| 32:RI:74:ASN:HD22 | 32:RI:74:ASN:N | 1.94 | 0.47 |
| 32:RI:86:THR:O | 32:RI:87:LYS:HB2 | 2.15 | 0.47 |
| 35:RP:147:LEU:N | 35:RP:147:LEU:HD22 | 2.29 | 0.47 |
| 36:RQ:80:GLU:OE1 | 46:R0:5:LYS:HD2 | 2.14 | 0.47 |
| 41:RV:2:PHE:CD2 | 41:RV:13:ARG:NH2 | 2.83 | 0.47 |
| 41:RV:36:PRO:HA | 41:RV:56:SER:CB | 2.44 | 0.47 |
| 44:RY:61:ILE:HG22 | 44:RY:62:GLU:N | 2.27 | 0.47 |
| 1:XA:864:A:H2' | 1:XA:865:A:C8 | 2.49 | 0.47 |
| 1:XA:908:A:H8 | 1:XA:908:A:O5' | 1.97 | 0.47 |
| 1:XA:1317:C:H5'' | 1:XA:1318:A:OP2 | 2.14 | 0.47 |
| 1:XA:1440:C:O2' | 1:XA:1442:G:N2 | 2.48 | 0.47 |
| 6:XF:89:MET:O | 6:XF:90:VAL:C | 2.51 | 0.47 |
| 8:XH:16:ALA:HB2 | 8:XH:24:THR:CG2 | 2.44 | 0.47 |
| 8:XH:33:GLU:C | 8:XH:35:ILE:N | 2.65 | 0.47 |
| 8:XH:39:LEU:HD11 | 8:XH:111:ILE:HD11 | 1.96 | 0.47 |
| 8:XH:86:ILE:HG12 | 8:XH:135:CYS:HA | 1.96 | 0.47 |
| 13:XM:23:TYR:HB2 | 13:XM:67:GLU:OE1 | 2.15 | 0.47 |
| 25:YA:223:A:N1 | 25:YA:407:G:O2' | 2.34 | 0.47 |
| 25:YA:270(S):G:H1' | 47:Y1:78:LYS:HD2 | 1.97 | 0.47 |
| 25:YA:357:A:H2' | 25:YA:358:U:H6 | 1.79 | 0.47 |
| 25:YA:372:G:H8 | 47:Y1:65:SER:O | 1.97 | 0.47 |
| 25:YA:607:U:OP1 | 29:YF:102:PRO:HA | 2.13 | 0.47 |
| 25:YA:814:C:N4 | 35:YP:25:SER:HA | 2.28 | 0.47 |
| 25:YA:1006:C:H1' | 33:YN:106:MET:CE | 2.45 | 0.47 |
| 25:YA:1614:A:N1 | 42:YW:91:GLY:HA2 | 2.28 | 0.47 |
| 25:YA:2429:G:N7 | 35:YP:56:SER:OG | 2.41 | 0.47 |
| 25:YA:2729:G:H2' | 25:YA:2730:C:C6 | 2.49 | 0.47 |
| 25:YA:2860:A:C8 | 25:YA:2861:G:H1' | 2.49 | 0.47 |
| 27:YD:32:SER:O | 27:YD:33:LEU:CB | 2.60 | 0.47 |
| 30:YG:14:GLU:O | 30:YG:17:PRO:HG2 | 2.15 | 0.47 |
| 30:YG:106:LEU:HA | 30:YG:110:ALA:CB | 2.44 | 0.47 |
| 32:YI:74:ASN:ND2 | 32:YI:75:LEU:N | 2.63 | 0.47 |
| 33:YN:57:ALA:HA | 33:YN:60:ILE:CD1 | 2.44 | 0.47 |
| 34:YO:104:ARG:HD3 | 39:YT:36:GLU:OE2 | 2.15 | 0.47 |
| 42:YW:66:GLU:O | 42:YW:69:LEU:HG | 2.14 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 43:YX:35:THR:O | 43:YX:37:THR:N | 2.47 | 0.47 |
| 43:YX:43:VAL:HG11 | 43:YX:51:VAL:HG21 | 1.97 | 0.47 |
| 44:YY:19:LYS:HE3 | 44:YY:20:TYR:CE1 | 2.49 | 0.47 |
| 46:Y0:53:MET:HB3 | 46:Y0:59:LEU:HD23 | 1.96 | 0.47 |
| 46:Y0:74:ARG:O | 46:Y0:76:GLY:N | 2.47 | 0.47 |
| 51:Y5:48:GLU:HA | 51:Y5:59:GLU:CG | 2.44 | 0.47 |
| 1:QA:378:G:H2' | 1:QA:379:C:H6 | 1.79 | 0.47 |
| 1:QA:614:A:OP1 | 4:QD:85:LYS:NZ | 2.48 | 0.47 |
| 1:QA:623:C:H2' | 1:QA:624:C:O4' | 2.14 | 0.47 |
| 1:QA:871:U:HO2' | 1:QA:872:A:P | 2.36 | 0.47 |
| 1:QA:1275:A:H2' | 1:QA:1276:G:O4' | 2.15 | 0.47 |
| 1:QA:1327:C:H2' | 1:QA:1328:C:C6 | 2.49 | 0.47 |
| 1:QA:1327:C:OP2 | 21:QU:12:LYS:NZ | 2.48 | 0.47 |
| 1:QA:1446:A:N3 | 39:RT:118:ARG:HD2 | 2.30 | 0.47 |
| 2:QB:69:LEU:HB3 | 2:QB:162:ILE:HG22 | 1.95 | 0.47 |
| 2:QB:95:GLN:NE2 | 2:QB:147:LYS:HE2 | 2.27 | 0.47 |
| 2:QB:220:ASP:O | 2:QB:223:ILE:N | 2.48 | 0.47 |
| 3:QC:148:GLY:O | 3:QC:202:ILE:HA | 2.14 | 0.47 |
| 3:QC:203:PHE:O | 3:QC:204:LEU:HD23 | 2.15 | 0.47 |
| 4:QD:60:GLU:O | 4:QD:63:LYS:HB3 | 2.14 | 0.47 |
| 4:QD:110:PHE:HD1 | 4:QD:110:PHE:H | 1.63 | 0.47 |
| 5:QE:78:HIS:HB3 | 8:QH:104:ARG:O | 2.14 | 0.47 |
| 5:QE:96:PRO:HA | 5:QE:117:ASP:OD2 | 2.14 | 0.47 |
| 5:QE:101:ILE:CD1 | 5:QE:119:LEU:HD23 | 2.36 | 0.47 |
| 6:QF:19:LEU:HD23 | 6:QF:19:LEU:C | 2.35 | 0.47 |
| 8:QH:82:HIS:CD2 | 8:QH:83:ILE:N | 2.82 | 0.47 |
| 8:QH:86:ILE:HG22 | 8:QH:87:SER:N | 2.29 | 0.47 |
| 11:QK:32:ILE:HD11 | 11:QK:68:ALA:O | 2.14 | 0.47 |
| 13:QM:72:ALA:O | 13:QM:76:ALA:HB2 | 2.14 | 0.47 |
| 16:QP:40:ASP:C | 16:QP:42:ARG:H | 2.17 | 0.47 |
| 20:QT:99:LEU:O | 20:QT:100:ILE:HB | 2.15 | 0.47 |
| 21:QU:15:ARG:HG2 | 21:QU:15:ARG:NH1 | 2.28 | 0.47 |
| 25:RA:29:U:H2' | 25:RA:30:G:C8 | 2.50 | 0.47 |
| 25:RA:286:C:H2' | 25:RA:287:C:C6 | 2.48 | 0.47 |
| 25:RA:311:A:C6 | 25:RA:328:U:C4 | 3.02 | 0.47 |
| 25:RA:570:G:H2' | 25:RA:2030:A:C5 | 2.49 | 0.47 |
| 25:RA:784:A:N7 | 27:RD:229:VAL:HG21 | 2.29 | 0.47 |
| 25:RA:1897:G:C2 | 25:RA:1898:U:C2 | 3.03 | 0.47 |
| 25:RA:1986:A:H2' | 25:RA:1987:G:C8 | 2.50 | 0.47 |
| 25:RA:2011:U:OP2 | 42:RW:16:LYS:NZ | 2.46 | 0.47 |
| 25:RA:2207:C:H42 | 25:RA:2217:G:H1 | 1.62 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:2402:C:H5 | 25:RA:2415:G:H22 | 1.60 | 0.47 |
| 25:RA:2722:G:O2' | 37:RR:3:HIS:HB2 | 2.15 | 0.47 |
| 25:RA:2725:A:O2' | 25:RA:2726:U:OP2 | 2.31 | 0.47 |
| 26:RB:100:G:H2' | 26:RB:101:A:O4' | 2.15 | 0.47 |
| 26:RB:116:G:H4' | 38:RS:54:LEU:CD1 | 2.42 | 0.47 |
| 27:RD:205:VAL:O | 27:RD:206:LEU:C | 2.52 | 0.47 |
| 28:RE:3:GLY:HA3 | 28:RE:81:ILE:HG21 | 1.97 | 0.47 |
| 28:RE:65:GLY:HA2 | 28:RE:70:ALA:HB3 | 1.95 | 0.47 |
| 28:RE:195:LEU:HD12 | 28:RE:196:VAL:N | 2.29 | 0.47 |
| 28:RE:197:ILE:CD1 | 28:RE:199:ARG:HH12 | 2.26 | 0.47 |
| 29:RF:184:TYR:CD2 | 29:RF:188:ARG:HD2 | 2.50 | 0.47 |
| 30:RG:106:LEU:HA | 30:RG:110:ALA:CB | 2.44 | 0.47 |
| 32:RI:35:LEU:O | 32:RI:36:ALA:CB | 2.61 | 0.47 |
| 32:RI:74:ASN:ND2 | 32:RI:75:LEU:N | 2.63 | 0.47 |
| 32:RI:77:LEU:HD12 | 32:RI:140:LEU:HB2 | 1.96 | 0.47 |
| 33:RN:57:ALA:CA | 33:RN:60:ILE:HD11 | 2.44 | 0.47 |
| 33:RN:137:LYS:CG | 33:RN:138:LEU:H | 2.27 | 0.47 |
| 34:RO:120:GLU:OE1 | 39:RT:67:SER:OG | 2.24 | 0.47 |
| 35:RP:12:ALA:C | 35:RP:14:LYS:H | 2.17 | 0.47 |
| 35:RP:37:GLY:O | 35:RP:41:ARG:HD3 | 2.15 | 0.47 |
| 35:RP:75:ILE:H | 35:RP:75:ILE:CD1 | 2.15 | 0.47 |
| 37:RR:74:LYS:O | 37:RR:76:VAL:N | 2.45 | 0.47 |
| 37:RR:117:VAL:O | 37:RR:118:GLU:CB | 2.62 | 0.47 |
| 38:RS:108:GLY:O | 38:RS:110:LEU:N | 2.48 | 0.47 |
| 41:RV:2:PHE:CD1 | 41:RV:2:PHE:C | 2.88 | 0.47 |
| 44:RY:19:LYS:HE3 | 44:RY:20:TYR:CE1 | 2.49 | 0.47 |
| 44:RY:39:VAL:O | 44:RY:40:GLU:OE2 | 2.32 | 0.47 |
| 45:RZ:120:ILE:O | 45:RZ:171:ILE:HD13 | 2.14 | 0.47 |
| 45:RZ:135:GLU:HG3 | 45:RZ:136:PHE:CD2 | 2.49 | 0.47 |
| 50:R4:3:GLU:HG3 | 50:R4:4:GLY:H | 1.79 | 0.47 |
| 50:R4:8:LYS:O | 50:R4:9:LEU:CB | 2.62 | 0.47 |
| 52:R6:8:LYS:O | 52:R6:27:LYS:HG2 | 2.15 | 0.47 |
| 52:R6:20:ASN:ND2 | 52:R6:42:TRP:CZ2 | 2.82 | 0.47 |
| 54:R8:44:LYS:HD2 | 54:R8:44:LYS:N | 2.30 | 0.47 |
| 1:XA:271:C:H2' | 1:XA:272:C:C6 | 2.50 | 0.47 |
| 1:XA:668:G:O2' | 15:XO:46:HIS:HB3 | 2.14 | 0.47 |
| 1:XA:742:G:OP2 | 15:XO:35:ARG:NH2 | 2.42 | 0.47 |
| 1:XA:947:G:C6 | 1:XA:948:C:C4 | 3.02 | 0.47 |
| 1:XA:1010:G:N2 | 1:XA:1020:U:O2' | 2.47 | 0.47 |
| 1:XA:1326:C:H5'' | 21:XU:18:TYR:O | 2.14 | 0.47 |
| 1:XA:1329:A:P | 13:XM:28:ALA:HB3 | 2.54 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:XA:1347:G:O2' | 1:XA:1348:U:O5' | 2.33 | 0.47 |
| 1:XA:1366:C:O2' | 10:XJ:60:ARG:NH1 | 2.47 | 0.47 |
| 1:XA:1459:C:OP1 | 20:XT:27:LYS:NZ | 2.46 | 0.47 |
| 2:XB:86:GLU:C | 2:XB:88:ALA:H | 2.17 | 0.47 |
| 2:XB:92:TYR:CD1 | 2:XB:92:TYR:C | 2.88 | 0.47 |
| 2:XB:116:GLU:HA | 2:XB:119:GLU:HB3 | 1.96 | 0.47 |
| 2:XB:168:THR:CB | 2:XB:192:SER:HB2 | 2.41 | 0.47 |
| 2:XB:179:LYS:HA | 8:XH:72:PRO:HG3 | 1.96 | 0.47 |
| 2:XB:223:ILE:HA | 2:XB:226:ARG:HB3 | 1.97 | 0.47 |
| 2:XB:224:GLN:HA | 2:XB:229:VAL:HG23 | 1.97 | 0.47 |
| 3:XC:16:ARG:NH2 | 3:XC:183:ASP:OD2 | 2.48 | 0.47 |
| 3:XC:52:LEU:H | 3:XC:52:LEU:CD2 | 2.20 | 0.47 |
| 3:XC:203:PHE:O | 3:XC:204:LEU:HD23 | 2.14 | 0.47 |
| 4:XD:31:CYS:O | 4:XD:32:ALA:CB | 2.62 | 0.47 |
| 6:XF:19:LEU:HD23 | 6:XF:19:LEU:C | 2.35 | 0.47 |
| 6:XF:40:VAL:HG22 | 6:XF:41:GLU:N | 2.30 | 0.47 |
| 7:XG:70:LYS:O | 7:XG:138:LYS:HE3 | 2.15 | 0.47 |
| 8:XH:6:ILE:O | 8:XH:10:LEU:HG | 2.14 | 0.47 |
| 9:XI:5:TYR:OH | 9:XI:7:THR:HG23 | 2.15 | 0.47 |
| 9:XI:17:VAL:HG11 | 9:XI:81:ILE:HA | 1.96 | 0.47 |
| 14:XN:8:GLU:C | 14:XN:10:ALA:N | 2.68 | 0.47 |
| 15:XO:76:GLU:O | 15:XO:78:TYR:N | 2.48 | 0.47 |
| 17:XQ:63:ARG:HG2 | 17:XQ:64:PRO:CD | 2.45 | 0.47 |
| 17:XQ:98:LEU:O | 17:XQ:99:SER:C | 2.53 | 0.47 |
| 18:XR:31:LEU:H | 18:XR:31:LEU:CD2 | 2.27 | 0.47 |
| 20:XT:49:ALA:HB2 | 20:XT:99:LEU:HD22 | 1.97 | 0.47 |
| 20:XT:50:GLU:CG | 20:XT:51:GLU:N | 2.76 | 0.47 |
| 25:YA:598:G:H1 | 25:YA:659:C:N4 | 2.13 | 0.47 |
| 25:YA:639:U:H2' | 25:YA:640:C:C6 | 2.49 | 0.47 |
| 25:YA:956:G:H2' | 25:YA:957:A:H2' | 1.97 | 0.47 |
| 25:YA:1176:G:HO2' | 25:YA:1178:C:H5 | 1.62 | 0.47 |
| 25:YA:1300:U:H4' | 25:YA:1301:A:H5'' | 1.95 | 0.47 |
| 25:YA:1469:A:H2' | 25:YA:1470:G:H8 | 1.78 | 0.47 |
| 25:YA:1631:A:H2' | 25:YA:1632:A:O4' | 2.15 | 0.47 |
| 25:YA:1932:A:H2' | 25:YA:1933:G:O4' | 2.15 | 0.47 |
| 25:YA:2070:G:H2' | 25:YA:2071:A:O4' | 2.14 | 0.47 |
| 25:YA:2074:U:HO2' | 25:YA:2597:G:HO2' | 1.58 | 0.47 |
| 25:YA:2452:C:O4' | 55:Z8:76:PPU:HB2 | 2.15 | 0.47 |
| 25:YA:2850:A:H5' | 25:YA:2868:A:H2 | 1.79 | 0.47 |
| 25:YA:2867:G:O2' | 25:YA:2868:A:C8 | 2.68 | 0.47 |
| 26:YB:55:U:O3' | 30:YG:27:ASN:ND2 | 2.45 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:YD:35:LYS:HD3 | 27:YD:63:ARG:HB3 | 1.96 | 0.47 |
| 28:YE:56:PRO:O | 28:YE:57:LYS:CB | 2.61 | 0.47 |
| 28:YE:78:LEU:CD2 | 28:YE:79:ARG:HD2 | 2.43 | 0.47 |
| 28:YE:89:ASP:O | 28:YE:90:THR:O | 2.33 | 0.47 |
| 29:YF:53:THR:C | 29:YF:55:GLY:N | 2.68 | 0.47 |
| 30:YG:36:LYS:HA | 30:YG:95:ARG:HG2 | 1.95 | 0.47 |
| 31:YH:18:GLU:HA | 31:YH:18:GLU:OE2 | 2.14 | 0.47 |
| 32:YI:114:LEU:O | 32:YI:128:LEU:HD12 | 2.15 | 0.47 |
| 32:YI:133:HIS:CB | 32:YI:134:PRO:CD | 2.92 | 0.47 |
| 35:YP:126:VAL:HA | 35:YP:145:PRO:HD2 | 1.95 | 0.47 |
| 36:YQ:34:LEU:HD11 | 36:YQ:129:THR:CB | 2.35 | 0.47 |
| 38:YS:46:VAL:HG12 | 38:YS:47:THR:N | 2.28 | 0.47 |
| 38:YS:56:LEU:O | 38:YS:57:LYS:C | 2.53 | 0.47 |
| 39:YT:29:ARG:NH1 | 39:YT:46:GLU:OE1 | 2.48 | 0.47 |
| 39:YT:51:ARG:CG | 39:YT:98:LYS:HG3 | 2.44 | 0.47 |
| 40:YU:104:GLN:H | 40:YU:104:GLN:CD | 2.16 | 0.47 |
| 40:YU:107:ALA:O | 40:YU:110:VAL:HB | 2.14 | 0.47 |
| 41:YV:48:GLY:O | 41:YV:49:THR:C | 2.52 | 0.47 |
| 44:YY:39:VAL:O | 44:YY:40:GLU:OE2 | 2.32 | 0.47 |
| 44:YY:44:ILE:O | 44:YY:62:GLU:O | 2.32 | 0.47 |
| 44:YY:56:PRO:O | 44:YY:57:GLN:C | 2.53 | 0.47 |
| 44:YY:56:PRO:O | 44:YY:58:GLY:N | 2.47 | 0.47 |
| 45:YZ:125:LEU:HG | 45:YZ:164:ALA:CB | 2.44 | 0.47 |
| 47:Y1:29:GLY:C | 47:Y1:30:VAL:CG2 | 2.82 | 0.47 |
| 47:Y1:83:GLU:OE1 | 47:Y1:85:LEU:HB2 | 2.15 | 0.47 |
| 50:Y4:33:VAL:CG1 | 50:Y4:34:GLU:H | 2.22 | 0.47 |
| 50:Y4:38:LYS:C | 50:Y4:40:HIS:H | 2.07 | 0.47 |
| 50:Y4:50:VAL:O | 50:Y4:50:VAL:CG1 | 2.62 | 0.47 |
| 50:Y4:50:VAL:O | 50:Y4:50:VAL:HG13 | 2.15 | 0.47 |
| 1:QA:259:G:H1 | 1:QA:267:C:H42 | 1.62 | 0.47 |
| 1:QA:360:A:H2' | 1:QA:361:G:C8 | 2.50 | 0.47 |
| 1:QA:368:U:P | 32:YI:91:SER:HG | 2.38 | 0.47 |
| 1:QA:496:A:H2' | 1:QA:496:A:N3 | 2.30 | 0.47 |
| 1:QA:637:G:H2' | 1:QA:638:G:C8 | 2.49 | 0.47 |
| 1:QA:811:C:H4' | 1:QA:900:A:N6 | 2.29 | 0.47 |
| 1:QA:1442:G:C6 | 1:QA:1446:A:N6 | 2.83 | 0.47 |
| 2:QB:168:THR:CB | 2:QB:192:SER:HB2 | 2.41 | 0.47 |
| 4:QD:135:LEU:C | 4:QD:137:SER:H | 2.18 | 0.47 |
| 8:QH:33:GLU:C | 8:QH:35:ILE:N | 2.65 | 0.47 |
| 8:QH:80:ILE:HG23 | 8:QH:137:VAL:HG12 | 1.97 | 0.47 |
| 9:QI:112:LYS:HD3 | 9:QI:112:LYS:C | 2.35 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 16:QP:69:THR:O | 16:QP:73:LEU:HG | 2.14 | 0.47 |
| 20:QT:28:ALA:C | 20:QT:30:LYS:N | 2.67 | 0.47 |
| 25:RA:259:G:H21 | 25:RA:621:A:H8 | 1.63 | 0.47 |
| 25:RA:2152:G:H2' | 25:RA:2153:G:C8 | 2.50 | 0.47 |
| 25:RA:2534:A:C2 | 25:RA:2535:G:H1' | 2.50 | 0.47 |
| 27:RD:102:LYS:O | 27:RD:103:ARG:HG3 | 2.15 | 0.47 |
| 27:RD:165:ILE:C | 27:RD:166:GLN:HE21 | 2.18 | 0.47 |
| 28:RE:17:ASP:N | 28:RE:17:ASP:OD2 | 2.46 | 0.47 |
| 30:RG:16:ARG:NH2 | 30:RG:28:VAL:O | 2.48 | 0.47 |
| 31:RH:67:LEU:O | 31:RH:71:LEU:HB2 | 2.15 | 0.47 |
| 32:RI:79:ILE:HG23 | 32:RI:81:VAL:HG13 | 1.97 | 0.47 |
| 33:RN:134:ARG:N | 33:RN:135:PRO:CD | 2.58 | 0.47 |
| 36:RQ:66:ILE:H | 36:RQ:104:PHE:HA | 1.80 | 0.47 |
| 37:RR:56:LYS:C | 37:RR:58:GLY:H | 2.18 | 0.47 |
| 38:RS:61:ASN:O | 38:RS:65:VAL:HG23 | 2.15 | 0.47 |
| 40:RU:8:VAL:O | 40:RU:9:VAL:C | 2.53 | 0.47 |
| 44:RY:68:HIS:O | 44:RY:71:LYS:HB2 | 2.14 | 0.47 |
| 45:RZ:33:LEU:HD11 | 45:RZ:35:ARG:CG | 2.44 | 0.47 |
| 45:RZ:33:LEU:CD1 | 45:RZ:34:ASN:H | 2.28 | 0.47 |
| 45:RZ:128:VAL:HG22 | 45:RZ:129:SER:H | 1.80 | 0.47 |
| 1:XA:189:U:H3 | 17:XQ:63:ARG:HB2 | 1.79 | 0.47 |
| 1:XA:397:A:N7 | 1:XA:547:A:O2' | 2.44 | 0.47 |
| 1:XA:591:U:H2' | 1:XA:592:G:C8 | 2.46 | 0.47 |
| 1:XA:867:G:HO2' | 1:XA:873:A:N6 | 2.12 | 0.47 |
| 1:XA:1127:G:H2' | 1:XA:1128:C:C6 | 2.50 | 0.47 |
| 4:XD:114:ARG:NH1 | 4:XD:114:ARG:CG | 2.77 | 0.47 |
| 5:XE:152:ARG:HD3 | 8:XH:44:PHE:CE1 | 2.49 | 0.47 |
| 7:XG:50:ILE:HG21 | 7:XG:61:VAL:HG21 | 1.97 | 0.47 |
| 7:XG:50:ILE:CG2 | 7:XG:61:VAL:HG21 | 2.45 | 0.47 |
| 13:XM:87:TYR:C | 13:XM:89:GLY:H | 2.18 | 0.47 |
| 16:XP:21:VAL:HG23 | 16:XP:34:GLU:H | 1.79 | 0.47 |
| 25:YA:566:U:H5'' | 35:YP:29:LYS:NZ | 2.30 | 0.47 |
| 25:YA:680:G:H2' | 25:YA:681:G:C8 | 2.50 | 0.47 |
| 25:YA:806:C:C2 | 25:YA:807:U:C5 | 3.03 | 0.47 |
| 25:YA:2285:C:H5 | 52:Y6:27:LYS:HE2 | 1.79 | 0.47 |
| 25:YA:2553:G:H1' | 25:YA:2582:G:N3 | 2.29 | 0.47 |
| 25:YA:2630:G:H2' | 25:YA:2631:G:C8 | 2.49 | 0.47 |
| 27:YD:72:LYS:CG | 27:YD:103:ARG:NH2 | 2.77 | 0.47 |
| 27:YD:145:VAL:O | 27:YD:153:ALA:HA | 2.14 | 0.47 |
| 28:YE:52:LEU:HB2 | 28:YE:75:VAL:CG2 | 2.40 | 0.47 |
| 28:YE:61:ARG:O | 28:YE:63:LEU:CG | 2.57 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 28:YE:120:TRP:O | 28:YE:121:ASN:HB2 | 2.14 | 0.47 |
| 30:YG:52:ILE:HG22 | 30:YG:52:ILE:O | 2.15 | 0.47 |
| 30:YG:88:ILE:O | 30:YG:88:ILE:CD1 | 2.54 | 0.47 |
| 31:YH:67:LEU:O | 31:YH:71:LEU:HB2 | 2.15 | 0.47 |
| 31:YH:104:GLU:HG3 | 31:YH:114:VAL:HG22 | 1.96 | 0.47 |
| 40:YU:91:ASP:O | 40:YU:92:ARG:C | 2.53 | 0.47 |
| 41:YV:4:ILE:HA | 41:YV:12:TYR:O | 2.14 | 0.47 |
| 44:YY:81:LYS:NZ | 44:YY:98:VAL:HB | 2.30 | 0.47 |
| 45:YZ:120:ILE:HD12 | 45:YZ:171:ILE:N | 2.29 | 0.47 |
| 46:Y0:37:LEU:N | 46:Y0:59:LEU:O | 2.40 | 0.47 |
| 1:QA:321:A:H2' | 1:QA:322:C:C6 | 2.50 | 0.47 |
| 2:QB:5:ILE:O | 2:QB:6:THR:O | 2.32 | 0.47 |
| 2:QB:71:VAL:HG23 | 2:QB:164:VAL:HG13 | 1.97 | 0.47 |
| 2:QB:172:ILE:O | 2:QB:175:ARG:CB | 2.62 | 0.47 |
| 3:QC:11:ARG:HG2 | 3:QC:11:ARG:HH11 | 1.80 | 0.47 |
| 3:QC:23:TYR:CG | 3:QC:24:ALA:N | 2.83 | 0.47 |
| 3:QC:172:ARG:O | 3:QC:173:VAL:HG23 | 2.15 | 0.47 |
| 4:QD:146:ILE:HG22 | 4:QD:146:ILE:O | 2.15 | 0.47 |
| 4:QD:173:TRP:C | 4:QD:186:LEU:HB2 | 2.35 | 0.47 |
| 14:QN:40:CYS:O | 14:QN:42:ILE:N | 2.48 | 0.47 |
| 17:QQ:63:ARG:HG2 | 17:QQ:64:PRO:CD | 2.45 | 0.47 |
| 18:QR:32:ARG:HH11 | 18:QR:65:ILE:HD13 | 1.80 | 0.47 |
| 25:RA:311:A:H1' | 25:RA:332:A:H5' | 1.97 | 0.47 |
| 25:RA:451:C:N4 | 25:RA:454:A:H5' | 2.29 | 0.47 |
| 25:RA:516:C:H2' | 25:RA:517:C:H6 | 1.80 | 0.47 |
| 25:RA:771:G:OP1 | 53:R7:10:ARG:NH1 | 2.48 | 0.47 |
| 25:RA:1024:G:C6 | 25:RA:1025:G:C6 | 3.02 | 0.47 |
| 25:RA:1676:A:H2' | 25:RA:1677:A:O4' | 2.14 | 0.47 |
| 25:RA:2246:G:H2' | 25:RA:2247:A:C8 | 2.49 | 0.47 |
| 28:RE:63:LEU:O | 28:RE:64:LYS:CB | 2.62 | 0.47 |
| 31:RH:18:GLU:HA | 31:RH:18:GLU:OE2 | 2.14 | 0.47 |
| 32:RI:9:LEU:O | 32:RI:10:GLU:O | 2.33 | 0.47 |
| 32:RI:99:GLU:CG | 32:RI:103:ARG:NH2 | 2.75 | 0.47 |
| 32:RI:128:LEU:O | 32:RI:138:ILE:N | 2.44 | 0.47 |
| 32:RI:133:HIS:CB | 32:RI:134:PRO:CD | 2.92 | 0.47 |
| 33:RN:1:MET:HE3 | 40:RU:95:LEU:HD21 | 1.96 | 0.47 |
| 34:RO:53:LYS:CD | 34:RO:56:ASP:OD1 | 2.63 | 0.47 |
| 37:RR:56:LYS:HE2 | 37:RR:94:TYR:OH | 2.14 | 0.47 |
| 41:RV:30:GLY:O | 41:RV:31:ALA:O | 2.33 | 0.47 |
| 45:RZ:35:ARG:HB3 | 45:RZ:35:ARG:NH1 | 2.29 | 0.47 |
| 45:RZ:131:ARG:C | 45:RZ:133:ILE:H | 2.18 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 45:RZ:156:LYS:HB2 | 45:RZ:158:PRO:HD3 | 1.96 | 0.47 |
| 48:R2:17:SER:CB | 48:R2:18:PRO:CA | 2.92 | 0.47 |
| 51:R5:20:ARG:C | 51:R5:22:HIS:N | 2.68 | 0.47 |
| 1:XA:686:U:H1' | 11:XK:42:TRP:NE1 | 2.21 | 0.47 |
| 1:XA:970:C:N4 | 9:XI:128:ARG:OXT | 2.47 | 0.47 |
| 1:XA:971:G:H2' | 1:XA:1365:G:H4' | 1.95 | 0.47 |
| 1:XA:1036:G:H3' | 1:XA:1037:C:C6 | 2.50 | 0.47 |
| 1:XA:1314:C:OP2 | 19:XS:4:SER:OG | 2.32 | 0.47 |
| 2:XB:96:ARG:HD2 | 2:XB:96:ARG:N | 2.20 | 0.47 |
| 5:XE:77:PRO:HG2 | 5:XE:142:LEU:HD22 | 1.97 | 0.47 |
| 9:XI:112:LYS:HD3 | 9:XI:112:LYS:C | 2.35 | 0.47 |
| 11:XK:34:ASP:HB2 | 11:XK:35:PRO:CD | 2.45 | 0.47 |
| 20:XT:93:GLU:HG2 | 20:XT:93:GLU:O | 2.14 | 0.47 |
| 25:YA:273(A):G:C6 | 25:YA:364:C:C4 | 3.02 | 0.47 |
| 25:YA:503:A:H5'' | 25:YA:504:U:H5' | 1.97 | 0.47 |
| 25:YA:618(A):C:OP2 | 29:YF:103:LYS:HE2 | 2.15 | 0.47 |
| 25:YA:1029:A:N6 | 25:YA:1125:G:O2' | 2.44 | 0.47 |
| 25:YA:1138:G:H21 | 33:YN:106:MET:CE | 2.24 | 0.47 |
| 25:YA:1639:U:C2' | 25:YA:1640:C:H5'' | 2.44 | 0.47 |
| 26:YB:49:C:H2' | 26:YB:50:G:C8 | 2.50 | 0.47 |
| 26:YB:52:A:N6 | 38:YS:33:LYS:HG3 | 2.29 | 0.47 |
| 27:YD:136:ILE:HD12 | 27:YD:136:ILE:N | 2.30 | 0.47 |
| 27:YD:231:HIS:ND1 | 27:YD:232:PRO:HD2 | 2.30 | 0.47 |
| 28:YE:22:PRO:O | 28:YE:22:PRO:CG | 2.63 | 0.47 |
| 28:YE:103:ASP:OD2 | 28:YE:168:MET:HG2 | 2.15 | 0.47 |
| 32:YI:9:LEU:O | 32:YI:10:GLU:O | 2.33 | 0.47 |
| 32:YI:74:ASN:CG | 32:YI:75:LEU:HD13 | 2.36 | 0.47 |
| 33:YN:57:ALA:CA | 33:YN:60:ILE:HD11 | 2.44 | 0.47 |
| 35:YP:81:GLN:HB3 | 35:YP:110:TYR:HB3 | 1.97 | 0.47 |
| 38:YS:5:THR:HG1 | 38:YS:7:TYR:HB3 | 1.78 | 0.47 |
| 45:YZ:26:GLY:HA3 | 45:YZ:86:VAL:O | 2.14 | 0.47 |
| 45:YZ:95:PRO:O | 45:YZ:96:VAL:HG13 | 2.15 | 0.47 |
| 45:YZ:111:VAL:O | 45:YZ:113:ALA:N | 2.48 | 0.47 |
| 45:YZ:156:LYS:HB2 | 45:YZ:158:PRO:HD3 | 1.96 | 0.47 |
| 47:Y1:81:LYS:HE2 | 47:Y1:81:LYS:H | 1.62 | 0.47 |
| 48:Y2:4:SER:OG | 48:Y2:5:GLU:OE2 | 2.26 | 0.47 |
| 50:Y4:15:ILE:HG22 | 50:Y4:20:ASN:CA | 2.45 | 0.47 |
| 52:Y6:8:LYS:O | 52:Y6:27:LYS:HG2 | 2.15 | 0.47 |
| 1:QA:664:G:OP1 | 18:QR:64:ARG:NE | 2.41 | 0.47 |
| 1:QA:1186:G:O3' | 9:QI:113:LYS:NZ | 2.41 | 0.47 |
| 57:QA:1661:PAR:H43 | 57:QA:1661:PAR:H642 | 1.96 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:QD:22:LYS:HB2 | 4:QD:26:CYS:HB2 | 1.96 | 0.47 |
| 6:QF:41:GLU:HG2 | 6:QF:43:LEU:CD1 | 2.44 | 0.47 |
| 13:QM:8:GLU:C | 13:QM:9:ILE:HG23 | 2.35 | 0.47 |
| 15:QO:82:ILE:O | 15:QO:86:GLY:N | 2.48 | 0.47 |
| 17:QQ:59:ILE:N | 17:QQ:59:ILE:CD1 | 2.78 | 0.47 |
| 17:QQ:76:LEU:HD11 | 17:QQ:79:SER:H | 1.80 | 0.47 |
| 21:QU:14:TRP:CE3 | 21:QU:15:ARG:NH1 | 2.83 | 0.47 |
| 22:QV:1:C:H4' | 46:R0:5:LYS:CE | 2.42 | 0.47 |
| 25:RA:593:G:O2' | 54:R8:61:LEU:HD13 | 2.15 | 0.47 |
| 25:RA:626:U:H5'' | 25:RA:627:A:H5' | 1.96 | 0.47 |
| 25:RA:897:C:H2' | 25:RA:898:C:C6 | 2.51 | 0.47 |
| 25:RA:923:C:H2' | 25:RA:924:C:C6 | 2.50 | 0.47 |
| 25:RA:1131:G:C8 | 25:RA:2025:C:H4' | 2.50 | 0.47 |
| 25:RA:1270:C:H5'' | 25:RA:1271:G:H5' | 1.96 | 0.47 |
| 25:RA:2677:G:H1 | 25:RA:2730:C:H42 | 1.63 | 0.47 |
| 27:RD:35:LYS:HD3 | 27:RD:63:ARG:HB3 | 1.96 | 0.47 |
| 27:RD:231:HIS:ND1 | 27:RD:232:PRO:HD2 | 2.30 | 0.47 |
| 30:RG:44:GLY:HA2 | 30:RG:88:ILE:HG12 | 1.97 | 0.47 |
| 30:RG:98:ARG:CA | 30:RG:101:ILE:HG12 | 2.40 | 0.47 |
| 32:RI:67:ARG:NH2 | 32:RI:68:LEU:HB2 | 2.30 | 0.47 |
| 35:RP:98:GLU:HG2 | 35:RP:99:LEU:N | 2.30 | 0.47 |
| 39:RT:57:PHE:O | 39:RT:58:ASN:C | 2.53 | 0.47 |
| 43:RX:26:TYR:HB3 | 43:RX:92:LEU:HD12 | 1.97 | 0.47 |
| 50:R4:53:GLU:O | 50:R4:57:GLU:HG3 | 2.14 | 0.47 |
| 53:R7:2:LYS:HG2 | 53:R7:3:ARG:N | 2.30 | 0.47 |
| 1:XA:361:G:H2' | 1:XA:362:G:O4' | 2.15 | 0.47 |
| 1:XA:598:U:H4' | 8:XH:94:TYR:CG | 2.49 | 0.47 |
| 1:XA:637:G:H2' | 1:XA:638:G:H8 | 1.81 | 0.47 |
| 1:XA:977:A:C8 | 1:XA:1223:C:C4 | 3.02 | 0.47 |
| 1:XA:1164:G:C6 | 1:XA:1165:C:C4 | 3.03 | 0.47 |
| 1:XA:1266:G:N2 | 1:XA:1269:A:OP2 | 2.48 | 0.47 |
| 2:XB:220:ASP:O | 2:XB:223:ILE:N | 2.48 | 0.47 |
| 3:XC:172:ARG:O | 3:XC:173:VAL:CG2 | 2.63 | 0.47 |
| 4:XD:173:TRP:C | 4:XD:186:LEU:HB2 | 2.36 | 0.47 |
| 6:XF:69:GLU:O | 6:XF:71:ARG:N | 2.48 | 0.47 |
| 14:XN:40:CYS:O | 14:XN:42:ILE:N | 2.48 | 0.47 |
| 16:XP:13:HIS:C | 16:XP:15:PRO:HD3 | 2.36 | 0.47 |
| 25:YA:389:G:H22 | 35:YP:72:PRO:CG | 2.28 | 0.47 |
| 25:YA:769:G:H5' | 25:YA:1379:A:N6 | 2.30 | 0.47 |
| 25:YA:1496:A:H8 | 25:YA:1577:C:O2' | 1.80 | 0.47 |
| 25:YA:2356:C:H2' | 25:YA:2357:U:O4' | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 26:YB:31:C:H2' | 26:YB:53:A:H61 | 1.80 | 0.47 |
| 27:YD:205:VAL:O | 27:YD:206:LEU:C | 2.52 | 0.47 |
| 28:YE:101:ARG:HD2 | 28:YE:171:GLU:HA | 1.97 | 0.47 |
| 30:YG:13:GLU:O | 30:YG:13:GLU:HG3 | 2.14 | 0.47 |
| 30:YG:106:LEU:HA | 30:YG:110:ALA:HB3 | 1.95 | 0.47 |
| 31:YH:9:ILE:O | 31:YH:10:PRO:O | 2.33 | 0.47 |
| 33:YN:46:VAL:HG13 | 33:YN:47:ALA:N | 2.30 | 0.47 |
| 33:YN:73:THR:HA | 33:YN:83:LYS:O | 2.15 | 0.47 |
| 34:YO:53:LYS:CD | 34:YO:56:ASP:OD1 | 2.63 | 0.47 |
| 35:YP:115:LEU:CD1 | 35:YP:116:GLY:N | 2.78 | 0.47 |
| 36:YQ:58:PHE:O | 36:YQ:59:ARG:C | 2.53 | 0.47 |
| 40:YU:27:LEU:O | 40:YU:30:LYS:N | 2.41 | 0.47 |
| 40:YU:66:ASN:CB | 40:YU:76:TYR:HB2 | 2.44 | 0.47 |
| 41:YV:6:LYS:HD3 | 41:YV:11:GLN:HG2 | 1.96 | 0.47 |
| 45:YZ:33:LEU:CD1 | 45:YZ:34:ASN:H | 2.28 | 0.47 |
| 51:Y5:57:VAL:O | 51:Y5:57:VAL:HG13 | 2.14 | 0.47 |
| 1:QA:161:A:N1 | 1:QA:347:G:O2' | 2.47 | 0.46 |
| 1:QA:448:A:C2 | 1:QA:449:C:N3 | 2.83 | 0.46 |
| 1:QA:1365:G:H2' | 1:QA:1366:C:H6 | 1.80 | 0.46 |
| 3:QC:195:VAL:CG1 | 3:QC:196:LEU:H | 2.27 | 0.46 |
| 4:QD:79:PHE:HE2 | 4:QD:83:SER:HB2 | 1.79 | 0.46 |
| 5:QE:13:ILE:HG22 | 5:QE:13:ILE:O | 2.14 | 0.46 |
| 7:QG:70:LYS:O | 7:QG:138:LYS:HE3 | 2.15 | 0.46 |
| 8:QH:28:ALA:CB | 8:QH:57:PRO:HB2 | 2.45 | 0.46 |
| 9:QI:106:ALA:O | 9:QI:108:VAL:HG13 | 2.15 | 0.46 |
| 13:QM:87:TYR:C | 13:QM:89:GLY:H | 2.18 | 0.46 |
| 15:QO:76:GLU:O | 15:QO:78:TYR:N | 2.48 | 0.46 |
| 19:QS:40:ILE:CG1 | 19:QS:41:VAL:N | 2.78 | 0.46 |
| 25:RA:83:G:O2' | 25:RA:84:A:H8 | 1.97 | 0.46 |
| 25:RA:242:G:H5'' | 54:R8:3:LYS:HE3 | 1.97 | 0.46 |
| 25:RA:301:G:H1 | 25:RA:316:C:H42 | 1.62 | 0.46 |
| 25:RA:1363:C:H2' | 25:RA:1364:G:H8 | 1.80 | 0.46 |
| 25:RA:2198:A:O2' | 25:RA:2199:A:O5' | 2.28 | 0.46 |
| 25:RA:2844:G:H3' | 25:RA:2845:G:H8 | 1.80 | 0.46 |
| 26:RB:52:A:N6 | 38:RS:33:LYS:HG3 | 2.29 | 0.46 |
| 27:RD:18:VAL:CG1 | 27:RD:19:ALA:N | 2.78 | 0.46 |
| 27:RD:183:ARG:CG | 27:RD:183:ARG:NH1 | 2.69 | 0.46 |
| 28:RE:87:GLU:O | 28:RE:89:ASP:N | 2.48 | 0.46 |
| 29:RF:65:TRP:CH2 | 29:RF:72:ARG:HB3 | 2.50 | 0.46 |
| 31:RH:9:ILE:O | 31:RH:10:PRO:O | 2.33 | 0.46 |
| 32:RI:64:GLU:HG3 | 32:RI:67:ARG:NH2 | 2.30 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:RI:68:LEU:HA | 32:RI:71:ILE:HG23 | 1.97 | 0.46 |
| 34:RO:104:ARG:HD3 | 39:RT:36:GLU:OE2 | 2.15 | 0.46 |
| 36:RQ:34:LEU:HD11 | 36:RQ:129:THR:CB | 2.35 | 0.46 |
| 37:RR:78:LYS:O | 37:RR:78:LYS:HG2 | 2.15 | 0.46 |
| 38:RS:66:ALA:HA | 38:RS:69:VAL:HG12 | 1.96 | 0.46 |
| 45:RZ:122:ARG:HB3 | 45:RZ:123:ASP:H | 1.43 | 0.46 |
| 47:R1:76:ARG:HD2 | 47:R1:76:ARG:N | 2.29 | 0.46 |
| 47:R1:79:GLY:N | 47:R1:80:LEU:HD23 | 2.30 | 0.46 |
| 53:R7:25:PRO:HA | 53:R7:28:ARG:CZ | 2.45 | 0.46 |
| 1:XA:280:C:H5'' | 1:XA:281:G:C8 | 2.50 | 0.46 |
| 1:XA:585:G:O2' | 1:XA:879:C:OP1 | 2.32 | 0.46 |
| 1:XA:652:U:O4 | 1:XA:752:G:H2' | 2.15 | 0.46 |
| 1:XA:789:U:O2' | 1:XA:791:G:N7 | 2.35 | 0.46 |
| 1:XA:1206:G:C4 | 1:XA:1207:G:C8 | 3.04 | 0.46 |
| 1:XA:1219:U:H2' | 1:XA:1220:G:H8 | 1.80 | 0.46 |
| 1:XA:1367:C:H4' | 10:XJ:48:THR:HG21 | 1.96 | 0.46 |
| 2:XB:15:VAL:HG23 | 2:XB:209:ARG:HE | 1.80 | 0.46 |
| 3:XC:124:ILE:C | 3:XC:126:ARG:H | 2.19 | 0.46 |
| 4:XD:126:ILE:HG22 | 4:XD:127:THR:H | 1.80 | 0.46 |
| 8:XH:68:ARG:HH11 | 8:XH:68:ARG:HG2 | 1.80 | 0.46 |
| 8:XH:82:HIS:CD2 | 8:XH:83:ILE:N | 2.82 | 0.46 |
| 11:XK:32:ILE:HD12 | 11:XK:72:ALA:CB | 2.36 | 0.46 |
| 12:XL:10:LEU:CD1 | 17:XQ:32:TYR:CE2 | 2.89 | 0.46 |
| 18:XR:31:LEU:HD23 | 18:XR:31:LEU:N | 2.29 | 0.46 |
| 25:YA:199:A:O2' | 25:YA:2433:A:N6 | 2.43 | 0.46 |
| 25:YA:270(U):C:H2' | 25:YA:270(V):G:C8 | 2.50 | 0.46 |
| 25:YA:277:C:H5' | 25:YA:278:A:H8 | 1.80 | 0.46 |
| 25:YA:330:A:H2 | 25:YA:1210:A:H2' | 1.80 | 0.46 |
| 25:YA:534:U:H2' | 25:YA:535:C:C6 | 2.50 | 0.46 |
| 25:YA:1957:C:H2' | 25:YA:1958:C:C6 | 2.50 | 0.46 |
| 25:YA:2219:G:OP1 | 27:YD:172:TYR:OH | 2.23 | 0.46 |
| 25:YA:2364:C:H4' | 46:Y0:56:ASP:OD1 | 2.15 | 0.46 |
| 25:YA:2563:U:H1' | 25:YA:2566:A:N6 | 2.30 | 0.46 |
| 27:YD:183:ARG:CG | 27:YD:183:ARG:NH1 | 2.69 | 0.46 |
| 28:YE:20:ALA:C | 28:YE:21:VAL:HG13 | 2.35 | 0.46 |
| 29:YF:46:ARG:CG | 29:YF:46:ARG:NH1 | 2.71 | 0.46 |
| 29:YF:162:LEU:HD23 | 29:YF:165:ARG:HH21 | 1.80 | 0.46 |
| 30:YG:104:GLU:OE1 | 50:Y4:23:GLU:HB3 | 2.15 | 0.46 |
| 31:YH:86:GLU:O | 31:YH:132:ARG:HA | 2.16 | 0.46 |
| 32:YI:73:GLU:HG3 | 32:YI:136:VAL:CG2 | 2.43 | 0.46 |
| 33:YN:35:ARG:HG3 | 33:YN:35:ARG:O | 2.15 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:YO:37:ASP:O | 34:YO:62:VAL:HG23 | 2.14 | 0.46 |
| 35:YP:12:ALA:C | 35:YP:14:LYS:H | 2.16 | 0.46 |
| 35:YP:46:LYS:O | 35:YP:48:PRO:N | 2.48 | 0.46 |
| 37:YR:61:HIS:O | 37:YR:65:LEU:HD13 | 2.14 | 0.46 |
| 39:YT:111:ARG:C | 39:YT:113:LYS:N | 2.64 | 0.46 |
| 41:YV:2:PHE:CD1 | 41:YV:2:PHE:C | 2.88 | 0.46 |
| 42:YW:4:LYS:HA | 42:YW:106:ILE:HA | 1.98 | 0.46 |
| 43:YX:26:TYR:HB3 | 43:YX:92:LEU:HD12 | 1.96 | 0.46 |
| 44:YY:68:HIS:O | 44:YY:71:LYS:HB2 | 2.14 | 0.46 |
| 45:YZ:107:THR:HG21 | 45:YZ:144:LEU:N | 2.30 | 0.46 |
| 45:YZ:131:ARG:C | 45:YZ:133:ILE:H | 2.18 | 0.46 |
| 52:Y6:20:ASN:O | 52:Y6:21:TYR:HB2 | 2.15 | 0.46 |
| 54:Y8:9:GLY:O | 54:Y8:13:ARG:HG2 | 2.16 | 0.46 |
| 1:QA:296:U:H2' | 1:QA:297:G:C8 | 2.50 | 0.46 |
| 1:QA:651:C:H2' | 1:QA:652:U:C6 | 2.50 | 0.46 |
| 1:QA:752:G:H1' | 1:QA:754:C:H41 | 1.81 | 0.46 |
| 1:QA:1008:C:H42 | 1:QA:1021:G:H1 | 1.63 | 0.46 |
| 1:QA:1073:U:H3 | 1:QA:1102:A:H61 | 1.62 | 0.46 |
| 1:QA:1317:C:H5'' | 1:QA:1318:A:OP2 | 2.15 | 0.46 |
| 1:QA:1320:C:N4 | 19:QS:36:ARG:HG3 | 2.30 | 0.46 |
| 1:QA:1327:C:OP1 | 21:QU:21:TYR:HD1 | 1.98 | 0.46 |
| 2:QB:86:GLU:C | 2:QB:88:ALA:H | 2.17 | 0.46 |
| 3:QC:58:GLU:O | 3:QC:59:ARG:HG3 | 2.15 | 0.46 |
| 4:QD:29:PRO:O | 4:QD:30:LYS:HB3 | 2.15 | 0.46 |
| 4:QD:31:CYS:O | 4:QD:32:ALA:CB | 2.63 | 0.46 |
| 7:QG:89:MET:HE1 | 7:QG:156:TRP:H | 1.80 | 0.46 |
| 10:QJ:44:VAL:HG12 | 10:QJ:45:ARG:N | 2.30 | 0.46 |
| 10:QJ:47:PHE:CE1 | 10:QJ:63:PHE:HB2 | 2.32 | 0.46 |
| 10:QJ:95:GLU:OE2 | 10:QJ:95:GLU:HA | 2.16 | 0.46 |
| 11:QK:102:GLY:O | 11:QK:103:LEU:C | 2.53 | 0.46 |
| 12:QL:43:VAL:HG23 | 12:QL:93:LEU:HD22 | 1.97 | 0.46 |
| 19:QS:24:ALA:O | 19:QS:25:LYS:CB | 2.63 | 0.46 |
| 25:RA:19:C:H2' | 25:RA:20:C:C6 | 2.50 | 0.46 |
| 25:RA:265:A:O2' | 25:RA:266:G:H4' | 2.15 | 0.46 |
| 25:RA:704:G:H1' | 25:RA:727:A:N6 | 2.31 | 0.46 |
| 25:RA:2161:C:H2' | 25:RA:2162:G:O4' | 2.15 | 0.46 |
| 25:RA:2646:C:H2' | 25:RA:2647:U:O4' | 2.16 | 0.46 |
| 27:RD:27:THR:O | 27:RD:29:PRO:CD | 2.62 | 0.46 |
| 28:RE:20:ALA:C | 28:RE:21:VAL:HG13 | 2.35 | 0.46 |
| 31:RH:4:ILE:H | 31:RH:4:ILE:CD1 | 2.24 | 0.46 |
| 31:RH:41:MET:HG3 | 31:RH:54:ARG:HA | 1.96 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 31:RH:153:LYS:HG3 | 31:RH:162:ILE:H | 1.78 | 0.46 |
| 32:RI:37:VAL:HG12 | 32:RI:38:LEU:N | 2.30 | 0.46 |
| 32:RI:114:LEU:O | 32:RI:128:LEU:HD12 | 2.15 | 0.46 |
| 33:RN:9:VAL:HG21 | 33:RN:48:MET:CB | 2.45 | 0.46 |
| 36:RQ:58:PHE:O | 36:RQ:59:ARG:C | 2.53 | 0.46 |
| 38:RS:13:ARG:O | 38:RS:14:VAL:HB | 2.15 | 0.46 |
| 39:RT:29:ARG:NH1 | 39:RT:46:GLU:OE1 | 2.47 | 0.46 |
| 45:RZ:5:LEU:O | 45:RZ:5:LEU:HD13 | 2.16 | 0.46 |
| 45:RZ:30:ASN:CB | 45:RZ:89:PHE:HE2 | 2.27 | 0.46 |
| 45:RZ:95:PRO:O | 45:RZ:96:VAL:HG13 | 2.15 | 0.46 |
| 45:RZ:125:LEU:HG | 45:RZ:164:ALA:CB | 2.45 | 0.46 |
| 45:RZ:140:ASP:OD2 | 45:RZ:156:LYS:CA | 2.63 | 0.46 |
| 48:R2:15:LYS:H | 48:R2:67:LYS:HZ3 | 1.63 | 0.46 |
| 49:R3:56:VAL:CG1 | 49:R3:57:GLU:N | 2.74 | 0.46 |
| 51:R5:43:HIS:N | 51:R5:43:HIS:ND1 | 2.63 | 0.46 |
| 54:R8:29:LYS:HE3 | 54:R8:41:ILE:O | 2.15 | 0.46 |
| 1:XA:60:A:H4' | 1:XA:61:G:O5' | 2.15 | 0.46 |
| 1:XA:253:U:H2' | 1:XA:254:G:C8 | 2.51 | 0.46 |
| 1:XA:585:G:H1' | 1:XA:879:C:H5'' | 1.96 | 0.46 |
| 1:XA:833:U:H2' | 1:XA:834:C:H6 | 1.81 | 0.46 |
| 3:XC:6:HIS:C | 3:XC:8:ILE:H | 2.18 | 0.46 |
| 6:XF:41:GLU:HG2 | 6:XF:43:LEU:CD1 | 2.44 | 0.46 |
| 7:XG:92:SER:HB3 | 7:XG:95:ARG:CB | 2.45 | 0.46 |
| 7:XG:140:ASP:HA | 7:XG:143:ARG:HH11 | 1.79 | 0.46 |
| 11:XK:80:VAL:O | 11:XK:106:LYS:HD3 | 2.15 | 0.46 |
| 12:XL:127:GLU:O | 12:XL:128:ALA:CB | 2.62 | 0.46 |
| 15:XO:77:ARG:HA | 15:XO:80:ALA:HB3 | 1.96 | 0.46 |
| 20:XT:99:LEU:O | 20:XT:100:ILE:HB | 2.14 | 0.46 |
| 24:XY:40:G:H2' | 24:XY:41:A:C8 | 2.51 | 0.46 |
| 25:YA:486:C:H4' | 42:YW:60:ASN:OD1 | 2.15 | 0.46 |
| 25:YA:1437:C:H2' | 25:YA:1438:U:H6 | 1.80 | 0.46 |
| 25:YA:1448:G:H5' | 25:YA:1449:A:OP1 | 2.14 | 0.46 |
| 25:YA:1477:A:H2' | 25:YA:1478:G:O4' | 2.15 | 0.46 |
| 25:YA:2318:G:N1 | 38:YS:2:ALA:HA | 2.30 | 0.46 |
| 25:YA:2343:C:O2' | 25:YA:2373:G:O2' | 2.16 | 0.46 |
| 25:YA:2475:C:H3' | 25:YA:2476:A:H5'' | 1.97 | 0.46 |
| 25:YA:2850:A:C2 | 37:YR:61:HIS:CD2 | 3.02 | 0.46 |
| 25:YA:2875:C:H2' | 25:YA:2876:G:O4' | 2.15 | 0.46 |
| 27:YD:165:ILE:C | 27:YD:166:GLN:HE21 | 2.18 | 0.46 |
| 28:YE:188:VAL:O | 28:YE:188:VAL:HG13 | 2.15 | 0.46 |
| 29:YF:184:TYR:CD2 | 29:YF:188:ARG:HD2 | 2.50 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:YG:135:LEU:HD11 | 30:YG:157:ILE:HD12 | 1.98 | 0.46 |
| 31:YH:94:TYR:N | 31:YH:94:TYR:CD1 | 2.82 | 0.46 |
| 32:YI:77:LEU:HD12 | 32:YI:140:LEU:HB2 | 1.97 | 0.46 |
| 32:YI:86:THR:O | 32:YI:87:LYS:HB2 | 2.15 | 0.46 |
| 34:YO:61:VAL:O | 34:YO:84:ALA:HB1 | 2.16 | 0.46 |
| 34:YO:104:ARG:HG2 | 34:YO:121:VAL:HG12 | 1.97 | 0.46 |
| 35:YP:37:GLY:O | 35:YP:41:ARG:HD3 | 2.15 | 0.46 |
| 37:YR:56:LYS:C | 37:YR:58:GLY:H | 2.18 | 0.46 |
| 40:YU:8:VAL:O | 40:YU:9:VAL:C | 2.53 | 0.46 |
| 41:YV:5:VAL:HG13 | 41:YV:14:VAL:HG21 | 1.97 | 0.46 |
| 45:YZ:140:ASP:OD2 | 45:YZ:156:LYS:CA | 2.63 | 0.46 |
| 47:Y1:76:ARG:H | 47:Y1:76:ARG:CD | 2.28 | 0.46 |
| 50:Y4:55:ARG:C | 50:Y4:59:PHE:HB3 | 2.35 | 0.46 |
| 54:Y8:29:LYS:HE3 | 54:Y8:41:ILE:O | 2.15 | 0.46 |
| 1:QA:56:U:H2' | 1:QA:57:G:C8 | 2.50 | 0.46 |
| 1:QA:147:G:H1 | 1:QA:175:C:H42 | 1.62 | 0.46 |
| 1:QA:583:A:N6 | 1:QA:758:G:O2' | 2.48 | 0.46 |
| 1:QA:868:C:H2' | 1:QA:869:G:O4' | 2.15 | 0.46 |
| 1:QA:972:C:H4' | 10:QJ:57:LYS:CG | 2.46 | 0.46 |
| 1:QA:1051:C:N4 | 1:QA:1052:U:O4 | 2.49 | 0.46 |
| 1:QA:1471:G:H2' | 1:QA:1472:U:H6 | 1.80 | 0.46 |
| 57:QA:1661:PAR:N21 | 57:QA:1661:PAR:O53 | 2.49 | 0.46 |
| 2:QB:174:VAL:O | 2:QB:178:ARG:HB3 | 2.16 | 0.46 |
| 7:QG:50:ILE:CG2 | 7:QG:61:VAL:HG21 | 2.45 | 0.46 |
| 11:QK:34:ASP:HB2 | 11:QK:35:PRO:CD | 2.45 | 0.46 |
| 11:QK:96:ARG:O | 11:QK:97:ALA:C | 2.54 | 0.46 |
| 11:QK:104:GLN:O | 11:QK:106:LYS:HG3 | 2.16 | 0.46 |
| 13:QM:23:TYR:HB2 | 13:QM:67:GLU:OE1 | 2.14 | 0.46 |
| 13:QM:80:ARG:O | 13:QM:82:MET:O | 2.34 | 0.46 |
| 16:QP:25:ARG:HG3 | 16:QP:25:ARG:HH11 | 1.79 | 0.46 |
| 18:QR:46:GLU:HG3 | 18:QR:47:THR:N | 2.29 | 0.46 |
| 19:QS:3:ARG:HG3 | 19:QS:4:SER:N | 2.24 | 0.46 |
| 20:QT:26:ASN:N | 20:QT:26:ASN:ND2 | 2.62 | 0.46 |
| 24:QY:34:C:O2' | 24:QY:35:G:O5' | 2.25 | 0.46 |
| 25:RA:270(R):G:N3 | 47:R1:78:LYS:NZ | 2.63 | 0.46 |
| 25:RA:918:A:C5 | 25:RA:919:G:H1' | 2.51 | 0.46 |
| 25:RA:1430:C:H2' | 25:RA:1431:U:C6 | 2.50 | 0.46 |
| 25:RA:1482:U:H3 | 25:RA:1512:G:H1 | 1.63 | 0.46 |
| 25:RA:2303:G:H1 | 25:RA:2313:C:H42 | 1.63 | 0.46 |
| 26:RB:74:U:H2' | 26:RB:75:G:O4' | 2.16 | 0.46 |
| 30:RG:95:ARG:O | 30:RG:96:ARG:C | 2.54 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 31:RH:4:ILE:HG13 | 31:RH:6:ARG:HD3 | 1.97 | 0.46 |
| 33:RN:46:VAL:HG13 | 33:RN:47:ALA:N | 2.30 | 0.46 |
| 34:RO:112:MET:O | 34:RO:115:VAL:CG2 | 2.64 | 0.46 |
| 36:RQ:133:ARG:CG | 36:RQ:134:ARG:N | 2.78 | 0.46 |
| 38:RS:28:VAL:HG11 | 38:RS:98:VAL:HG12 | 1.97 | 0.46 |
| 38:RS:83:LYS:HG2 | 38:RS:109:GLY:H | 1.76 | 0.46 |
| 43:RX:8:ILE:CD1 | 43:RX:42:ALA:HB1 | 2.45 | 0.46 |
| 43:RX:12:VAL:O | 43:RX:12:VAL:HG13 | 2.15 | 0.46 |
| 45:RZ:107:THR:HG21 | 45:RZ:144:LEU:N | 2.30 | 0.46 |
| 47:R1:49:VAL:HG12 | 47:R1:51:VAL:CG2 | 2.45 | 0.46 |
| 48:R2:7:ARG:HG3 | 48:R2:7:ARG:NH1 | 2.25 | 0.46 |
| 52:R6:48:VAL:O | 52:R6:49:HIS:HB2 | 2.15 | 0.46 |
| 1:XA:106:C:H2' | 1:XA:107:G:H8 | 1.80 | 0.46 |
| 1:XA:297:G:N2 | 1:XA:299:G:H3' | 2.30 | 0.46 |
| 1:XA:1205:U:O2' | 3:XC:195:VAL:HG23 | 2.15 | 0.46 |
| 1:XA:1478:C:H2' | 1:XA:1479:C:C6 | 2.51 | 0.46 |
| 2:XB:178:ARG:HH22 | 8:XH:68:ARG:HH22 | 1.60 | 0.46 |
| 3:XC:23:TYR:CG | 3:XC:24:ALA:N | 2.83 | 0.46 |
| 3:XC:42:LEU:HD12 | 3:XC:45:LYS:HZ3 | 1.79 | 0.46 |
| 3:XC:113:ALA:O | 3:XC:115:LEU:N | 2.48 | 0.46 |
| 4:XD:7:PRO:HB2 | 4:XD:10:ARG:HD2 | 1.96 | 0.46 |
| 4:XD:146:ILE:N | 4:XD:146:ILE:CD1 | 2.73 | 0.46 |
| 5:XE:96:PRO:HA | 5:XE:117:ASP:CG | 2.35 | 0.46 |
| 7:XG:108:ALA:C | 7:XG:110:GLN:H | 2.19 | 0.46 |
| 8:XH:122:ARG:O | 8:XH:125:ARG:N | 2.46 | 0.46 |
| 10:XJ:32:ALA:HB3 | 10:XJ:76:ASN:CB | 2.33 | 0.46 |
| 10:XJ:80:LYS:HB2 | 10:XJ:80:LYS:NZ | 2.30 | 0.46 |
| 13:XM:68:GLY:HA2 | 30:YG:116:ASP:OD2 | 2.15 | 0.46 |
| 14:YN:36:PHE:CD1 | 14:YN:36:PHE:C | 2.88 | 0.46 |
| 19:XS:40:ILE:CG1 | 19:XS:41:VAL:N | 2.78 | 0.46 |
| 20:XT:28:ALA:C | 20:XT:30:LYS:N | 2.67 | 0.46 |
| 22:XV:13:C:O2' | 25:YA:1924:C:H4' | 2.16 | 0.46 |
| 25:YA:86:C:H4' | 25:YA:104:U:H1' | 1.96 | 0.46 |
| 25:YA:250:G:C6 | 25:YA:251:A:C6 | 3.04 | 0.46 |
| 25:YA:738:G:C6 | 25:YA:739:G:C2 | 3.03 | 0.46 |
| 25:YA:979:G:N2 | 25:YA:985:C:N3 | 2.63 | 0.46 |
| 25:YA:1022:G:O2' | 25:YA:1023:U:OP2 | 2.24 | 0.46 |
| 25:YA:1790:C:H5'' | 25:YA:1791:A:OP1 | 2.15 | 0.46 |
| 25:YA:2219:G:H5'' | 27:YD:269:PHE:CZ | 2.51 | 0.46 |
| 25:YA:2818:G:H1 | 25:YA:2828:C:H42 | 1.63 | 0.46 |
| 28:YE:3:GLY:HA3 | 28:YE:81:ILE:HG21 | 1.97 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 30:YG:20:ILE:HD13 | 30:YG:25:TYR:HB2 | 1.98 | 0.46 |
| 31:YH:4:ILE:HG13 | 31:YH:6:ARG:HD3 | 1.97 | 0.46 |
| 33:YN:97:ARG:HA | 33:YN:100:GLU:HB3 | 1.96 | 0.46 |
| 35:YP:144:GLU:OE1 | 35:YP:144:GLU:N | 2.48 | 0.46 |
| 36:YQ:80:GLU:CD | 46:Y0:5:LYS:CB | 2.84 | 0.46 |
| 36:YQ:87:LYS:O | 36:YQ:89:ASN:N | 2.43 | 0.46 |
| 36:YQ:109:VAL:HG13 | 36:YQ:113:GLN:OE1 | 2.16 | 0.46 |
| 37:YR:79:LEU:HD23 | 37:YR:79:LEU:O | 2.16 | 0.46 |
| 38:YS:24:LEU:HB2 | 38:YS:85:VAL:HG12 | 1.98 | 0.46 |
| 38:YS:28:VAL:HG11 | 38:YS:98:VAL:HG12 | 1.97 | 0.46 |
| 39:YT:96:ARG:CB | 39:YT:96:ARG:HH11 | 2.29 | 0.46 |
| 40:YU:73:GLY:O | 40:YU:74:LEU:CB | 2.63 | 0.46 |
| 41:YV:61:VAL:HA | 41:YV:94:LEU:HD23 | 1.97 | 0.46 |
| 45:YZ:45:ASP:OD1 | 45:YZ:49:ARG:NE | 2.41 | 0.46 |
| 45:YZ:102:LEU:CD1 | 45:YZ:171:ILE:HD11 | 2.46 | 0.46 |
| 45:YZ:128:VAL:HG22 | 45:YZ:129:SER:H | 1.80 | 0.46 |
| 54:Y8:40:GLU:C | 54:Y8:42:ARG:N | 2.68 | 0.46 |
| 1:QA:297:G:H4' | 1:QA:557:G:H4' | 1.97 | 0.46 |
| 1:QA:689:C:O2' | 1:QA:705:U:O2' | 2.16 | 0.46 |
| 1:QA:1347:G:C2 | 9:QI:107:ARG:NH2 | 2.83 | 0.46 |
| 2:QB:17:PHE:CD2 | 2:QB:44:LEU:HD21 | 2.47 | 0.46 |
| 2:QB:224:GLN:HA | 2:QB:229:VAL:HG23 | 1.97 | 0.46 |
| 6:QF:68:PRO:HG3 | 6:QF:71:ARG:NH2 | 2.31 | 0.46 |
| 7:QG:92:SER:HB3 | 7:QG:95:ARG:CB | 2.45 | 0.46 |
| 7:QG:95:ARG:NE | 7:QG:99:LEU:HD11 | 2.30 | 0.46 |
| 8:QH:39:LEU:C | 8:QH:45:ILE:HG12 | 2.35 | 0.46 |
| 9:QI:28:VAL:O | 9:QI:29:ASN:C | 2.53 | 0.46 |
| 10:QJ:80:LYS:NZ | 10:QJ:80:LYS:HB2 | 2.30 | 0.46 |
| 12:QL:115:LYS:O | 12:QL:117:ARG:N | 2.47 | 0.46 |
| 13:QM:65:LYS:NZ | 13:QM:69:GLU:HG2 | 2.31 | 0.46 |
| 17:QQ:29:HIS:N | 17:QQ:33:GLY:O | 2.48 | 0.46 |
| 18:QR:43:PHE:C | 18:QR:51:LEU:HD12 | 2.36 | 0.46 |
| 20:QT:44:ALA:O | 20:QT:91:LEU:HB3 | 2.16 | 0.46 |
| 20:QT:49:ALA:HB2 | 20:QT:99:LEU:HD22 | 1.97 | 0.46 |
| 25:RA:185:U:H2' | 25:RA:186:G:C8 | 2.50 | 0.46 |
| 25:RA:221:A:H4' | 25:RA:222:A:O5' | 2.14 | 0.46 |
| 25:RA:336:C:HO2' | 44:RY:35:TYR:HH | 1.53 | 0.46 |
| 25:RA:428:A:H8 | 25:RA:428:A:OP2 | 1.99 | 0.46 |
| 25:RA:1857:G:O2' | 25:RA:1885:A:N6 | 2.48 | 0.46 |
| 25:RA:1930:G:HO2' | 25:RA:1931:U:P | 2.39 | 0.46 |
| 25:RA:2210:G:H2' | 25:RA:2210:G:N3 | 2.29 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:RA:2331:G:O4' | 46:R0:42:GLY:HA3 | 2.15 | 0.46 |
| 25:RA:2468:G:H5'' | 36:RQ:120:ILE:HD12 | 1.97 | 0.46 |
| 25:RA:2769:C:H2' | 25:RA:2770:G:O4' | 2.15 | 0.46 |
| 29:RF:132:VAL:O | 29:RF:133:ASN:C | 2.52 | 0.46 |
| 31:RH:127:GLU:OE2 | 31:RH:130:ARG:NH2 | 2.47 | 0.46 |
| 36:RQ:66:ILE:O | 36:RQ:104:PHE:N | 2.49 | 0.46 |
| 38:RS:26:LEU:HD22 | 38:RS:87:PHE:CD1 | 2.46 | 0.46 |
| 39:RT:118:ARG:NH2 | 39:RT:121:ILE:HD12 | 2.31 | 0.46 |
| 44:RY:15:VAL:O | 44:RY:21:LYS:HA | 2.16 | 0.46 |
| 44:RY:35:TYR:CD1 | 44:RY:35:TYR:O | 2.69 | 0.46 |
| 44:RY:56:PRO:O | 44:RY:57:GLN:C | 2.53 | 0.46 |
| 45:RZ:11:GLU:HG3 | 45:RZ:12:GLY:N | 2.31 | 0.46 |
| 45:RZ:111:VAL:O | 45:RZ:113:ALA:N | 2.48 | 0.46 |
| 46:R0:53:MET:HB3 | 46:R0:59:LEU:HD23 | 1.97 | 0.46 |
| 46:R0:55:ARG:CZ | 46:R0:55:ARG:HB2 | 2.44 | 0.46 |
| 1:XA:35:G:O2' | 12:XL:118:SER:O | 2.22 | 0.46 |
| 1:XA:401:C:H2' | 1:XA:402:G:C8 | 2.50 | 0.46 |
| 1:XA:411:A:H62 | 1:XA:413:G:N2 | 2.07 | 0.46 |
| 1:XA:686:U:C1' | 11:XK:42:TRP:HE1 | 2.23 | 0.46 |
| 1:XA:1432:G:O2' | 1:XA:1468:A:N6 | 2.49 | 0.46 |
| 2:XB:77:ALA:HB1 | 2:XB:211:ILE:HG21 | 1.97 | 0.46 |
| 4:XD:135:LEU:C | 4:XD:137:SER:H | 2.18 | 0.46 |
| 4:XD:135:LEU:O | 4:XD:137:SER:N | 2.48 | 0.46 |
| 8:XH:39:LEU:C | 8:XH:45:ILE:HG12 | 2.35 | 0.46 |
| 8:XH:86:ILE:CG1 | 8:XH:133:LEU:HD22 | 2.46 | 0.46 |
| 10:XJ:38:ILE:CD1 | 10:XJ:71:LEU:HB3 | 2.46 | 0.46 |
| 15:XO:76:GLU:C | 15:XO:78:TYR:N | 2.69 | 0.46 |
| 17:XQ:76:LEU:HD11 | 17:XQ:79:SER:H | 1.80 | 0.46 |
| 17:XQ:100:LYS:O | 17:XQ:101:ARG:HB2 | 2.15 | 0.46 |
| 18:XR:43:PHE:C | 18:XR:44:LEU:HD12 | 2.36 | 0.46 |
| 20:XT:96:GLY:O | 20:XT:99:LEU:HD13 | 2.16 | 0.46 |
| 21:XU:14:TRP:CE3 | 21:XU:15:ARG:NH1 | 2.83 | 0.46 |
| 25:YA:74:A:H4' | 25:YA:75:G:O5' | 2.15 | 0.46 |
| 25:YA:631:A:H4' | 35:YP:65:ARG:HA | 1.96 | 0.46 |
| 25:YA:1269:A:H8 | 25:YA:1269:A:O5' | 1.98 | 0.46 |
| 25:YA:1925:C:N3 | 25:YA:1929:G:O6 | 2.48 | 0.46 |
| 25:YA:2394:C:H2' | 25:YA:2395:C:H6 | 1.81 | 0.46 |
| 25:YA:2744:G:H21 | 31:YH:143:GLN:HE21 | 1.63 | 0.46 |
| 27:YD:18:VAL:CG1 | 27:YD:19:ALA:N | 2.78 | 0.46 |
| 27:YD:102:LYS:O | 27:YD:103:ARG:HG3 | 2.15 | 0.46 |
| 27:YD:117:VAL:CG2 | 27:YD:128:GLY:C | 2.84 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:YD:198:ASN:C | 27:YD:198:ASN:ND2 | 2.69 | 0.46 |
| 29:YF:108:LYS:HA | 29:YF:108:LYS:HZ3 | 1.80 | 0.46 |
| 31:YH:89:ILE:HD13 | 31:YH:89:ILE:H | 1.81 | 0.46 |
| 32:YI:9:LEU:HD21 | 32:YI:12:LEU:O | 2.15 | 0.46 |
| 32:YI:37:VAL:HG12 | 32:YI:38:LEU:N | 2.30 | 0.46 |
| 33:YN:30:ILE:O | 33:YN:34:LEU:CD2 | 2.63 | 0.46 |
| 34:YO:7:TYR:CD1 | 34:YO:20:MET:HB2 | 2.50 | 0.46 |
| 35:YP:1:MET:O | 35:YP:2:LYS:HG3 | 2.16 | 0.46 |
| 37:YR:1:MET:O | 37:YR:2:ARG:HB2 | 2.15 | 0.46 |
| 40:YU:98:LEU:HD23 | 40:YU:98:LEU:C | 2.36 | 0.46 |
| 42:YW:36:LEU:CD1 | 42:YW:47:VAL:HG12 | 2.44 | 0.46 |
| 43:YX:31:HIS:CD2 | 43:YX:33:LYS:HB2 | 2.50 | 0.46 |
| 45:YZ:30:ASN:CB | 45:YZ:89:PHE:HE2 | 2.27 | 0.46 |
| 51:Y5:45:VAL:HG12 | 51:Y5:45:VAL:O | 2.14 | 0.46 |
| 1:QA:826:C:H2' | 1:QA:827:U:O2 | 2.15 | 0.46 |
| 1:QA:1204:A:OP1 | 14:QN:3:ARG:NH2 | 2.44 | 0.46 |
| 1:QA:1301:U:H3' | 1:QA:1302:U:H5' | 1.98 | 0.46 |
| 1:QA:1356:G:H2' | 1:QA:1357:A:C8 | 2.51 | 0.46 |
| 2:QB:170:GLU:CA | 2:QB:172:ILE:HD12 | 2.46 | 0.46 |
| 3:QC:42:LEU:HD12 | 3:QC:45:LYS:HZ3 | 1.80 | 0.46 |
| 3:QC:113:ALA:O | 3:QC:115:LEU:N | 2.48 | 0.46 |
| 3:QC:127:ARG:CG | 3:QC:127:ARG:NH1 | 2.74 | 0.46 |
| 5:QE:12:LEU:HD21 | 5:QE:14:ARG:HB3 | 1.98 | 0.46 |
| 5:QE:150:ARG:HG2 | 5:QE:150:ARG:O | 2.16 | 0.46 |
| 6:QF:3:ARG:HG3 | 6:QF:3:ARG:HH11 | 1.80 | 0.46 |
| 8:QH:68:ARG:HH11 | 8:QH:68:ARG:HG2 | 1.80 | 0.46 |
| 10:QJ:63:PHE:CD1 | 14:QN:58:LYS:HA | 2.35 | 0.46 |
| 13:QM:3:ARG:O | 13:QM:4:ILE:HD13 | 2.16 | 0.46 |
| 13:QM:10:PRO:HG3 | 13:QM:18:ALA:O | 2.15 | 0.46 |
| 20:QT:53:LEU:HD12 | 20:QT:100:ILE:HG23 | 1.98 | 0.46 |
| 25:RA:137(A):G:H1' | 43:RX:41:ASN:ND2 | 2.31 | 0.46 |
| 25:RA:270(E):G:C2 | 25:RA:270(V):G:C2 | 3.04 | 0.46 |
| 25:RA:1438:U:H2' | 25:RA:1439:A:H8 | 1.80 | 0.46 |
| 25:RA:1478:G:H2' | 25:RA:1479:G:C8 | 2.49 | 0.46 |
| 25:RA:1696:G:H8 | 25:RA:1696:G:OP2 | 1.97 | 0.46 |
| 25:RA:2228:G:H2' | 25:RA:2229:C:O4' | 2.15 | 0.46 |
| 25:RA:2591:C:OP2 | 27:RD:238:GLY:HA3 | 2.15 | 0.46 |
| 28:RE:47:VAL:O | 28:RE:48:GLN:C | 2.52 | 0.46 |
| 28:RE:54:GLN:CA | 28:RE:54:GLN:HE21 | 2.27 | 0.46 |
| 28:RE:103:ASP:OD2 | 28:RE:168:MET:HG2 | 2.15 | 0.46 |
| 28:RE:188:VAL:O | 28:RE:188:VAL:HG13 | 2.15 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:RF:31:HIS:O | 29:RF:34:TRP:HB3 | 2.15 | 0.46 |
| 35:RP:6:LEU:N | 35:RP:6:LEU:HD22 | 2.31 | 0.46 |
| 35:RP:90:ARG:HB3 | 35:RP:91:PHE:H | 1.60 | 0.46 |
| 37:RR:75:LEU:HA | 37:RR:78:LYS:HB3 | 1.97 | 0.46 |
| 38:RS:52:SER:O | 38:RS:56:LEU:CD2 | 2.60 | 0.46 |
| 39:RT:36:GLU:O | 39:RT:37:GLY:C | 2.53 | 0.46 |
| 39:RT:51:ARG:CG | 39:RT:98:LYS:HG3 | 2.44 | 0.46 |
| 40:RU:106:PHE:O | 40:RU:109:LEU:HB2 | 2.15 | 0.46 |
| 42:RW:4:LYS:HA | 42:RW:106:ILE:HA | 1.98 | 0.46 |
| 43:RX:24:GLY:O | 43:RX:82:GLN:HA | 2.16 | 0.46 |
| 45:RZ:152:ALA:H | 45:RZ:170:THR:N | 2.14 | 0.46 |
| 52:R6:18:ARG:O | 52:R6:19:ARG:O | 2.33 | 0.46 |
| 54:R8:52:LYS:O | 54:R8:52:LYS:CG | 2.64 | 0.46 |
| 1:XA:687:A:N3 | 1:XA:688:G:H1' | 2.30 | 0.46 |
| 1:XA:713:G:H21 | 1:XA:777:A:H1' | 1.80 | 0.46 |
| 1:XA:966:G:C4 | 22:XV:34:C:H4' | 2.50 | 0.46 |
| 1:XA:986:A:H2' | 1:XA:987:G:C8 | 2.51 | 0.46 |
| 1:XA:1308:U:OP1 | 13:XM:98:VAL:N | 2.26 | 0.46 |
| 2:XB:136:VAL:O | 2:XB:140:HIS:N | 2.43 | 0.46 |
| 2:XB:174:VAL:O | 2:XB:178:ARG:HB3 | 2.16 | 0.46 |
| 3:XC:73:PRO:O | 3:XC:77:ILE:HG13 | 2.16 | 0.46 |
| 3:XC:134:ILE:HG23 | 3:XC:151:VAL:HB | 1.98 | 0.46 |
| 6:XF:22:GLU:CD | 6:XF:82:ARG:HH21 | 2.18 | 0.46 |
| 6:XF:40:VAL:HG22 | 6:XF:41:GLU:H | 1.80 | 0.46 |
| 9:XI:40:LEU:C | 9:XI:42:ARG:H | 2.18 | 0.46 |
| 9:XI:83:ARG:C | 9:XI:86:VAL:HG12 | 2.36 | 0.46 |
| 12:XL:126:LYS:HB2 | 12:XL:126:LYS:HZ3 | 1.80 | 0.46 |
| 16:XP:60:LEU:CA | 16:XP:64:ALA:HB3 | 2.43 | 0.46 |
| 17:XQ:92:ARG:HG3 | 17:XQ:92:ARG:NH1 | 2.30 | 0.46 |
| 25:YA:30:G:O2' | 25:YA:1214:A:N3 | 2.41 | 0.46 |
| 25:YA:71:A:H5'' | 25:YA:72:U:H3' | 1.97 | 0.46 |
| 25:YA:414:C:O2 | 25:YA:1864:U:O2' | 2.26 | 0.46 |
| 25:YA:618:G:OP1 | 29:YF:106:ARG:HB3 | 2.16 | 0.46 |
| 25:YA:704:G:H1' | 25:YA:727:A:N6 | 2.30 | 0.46 |
| 25:YA:784:A:O2' | 25:YA:785:G:H8 | 1.98 | 0.46 |
| 27:YD:35:LYS:HE3 | 27:YD:65:ILE:N | 2.31 | 0.46 |
| 27:YD:211:ARG:HG2 | 27:YD:211:ARG:HH11 | 1.80 | 0.46 |
| 28:YE:54:GLN:HE21 | 28:YE:54:GLN:CA | 2.27 | 0.46 |
| 30:YG:36:LYS:O | 30:YG:37:VAL:HG23 | 2.15 | 0.46 |
| 30:YG:102:PHE:HA | 30:YG:105:LYS:HE3 | 1.98 | 0.46 |
| 30:YG:116:ASP:O | 30:YG:117:PHE:CB | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 33:YN:36:GLY:O | 33:YN:42:TRP:HE3 | 1.98 | 0.46 |
| 34:YO:101:PRO:HA | 34:YO:120:GLU:O | 2.16 | 0.46 |
| 35:YP:85:LEU:HD23 | 35:YP:88:LEU:HD22 | 1.97 | 0.46 |
| 36:YQ:11:LYS:HE2 | 36:YQ:87:LYS:HA | 1.98 | 0.46 |
| 36:YQ:63:LYS:HE2 | 36:YQ:65:PHE:CZ | 2.50 | 0.46 |
| 37:YR:75:LEU:HA | 37:YR:78:LYS:HB3 | 1.97 | 0.46 |
| 39:YT:6:LEU:O | 39:YT:10:VAL:HG23 | 2.16 | 0.46 |
| 39:YT:118:ARG:NH2 | 39:YT:121:ILE:HD12 | 2.31 | 0.46 |
| 41:YV:16:PRO:HA | 41:YV:96:ILE:O | 2.14 | 0.46 |
| 44:YY:15:VAL:O | 44:YY:21:LYS:HA | 2.15 | 0.46 |
| 46:Y0:55:ARG:CZ | 46:Y0:55:ARG:HB2 | 2.44 | 0.46 |
| 46:Y0:66:VAL:HG22 | 46:Y0:82:ARG:HB3 | 1.96 | 0.46 |
| 49:Y3:43:ILE:O | 49:Y3:47:VAL:HG23 | 2.16 | 0.46 |
| 54:Y8:48:PHE:N | 54:Y8:48:PHE:HD1 | 2.14 | 0.46 |
| 1:QA:74:C:H2' | 1:QA:75:C:H6 | 1.80 | 0.46 |
| 1:QA:254:G:H2' | 1:QA:255:G:C8 | 2.47 | 0.46 |
| 1:QA:310:G:H4' | 16:QP:31:LYS:HD3 | 1.97 | 0.46 |
| 1:QA:424:G:H2' | 1:QA:425:G:H8 | 1.81 | 0.46 |
| 1:QA:681:C:H2' | 1:QA:682:G:H8 | 1.80 | 0.46 |
| 1:QA:1048:G:OP1 | 14:QN:3:ARG:HB3 | 2.16 | 0.46 |
| 1:QA:1232:U:P | 9:QI:124:GLN:HE21 | 2.39 | 0.46 |
| 2:QB:163:PHE:CE1 | 2:QB:215:LEU:HD22 | 2.50 | 0.46 |
| 3:QC:124:ILE:C | 3:QC:126:ARG:H | 2.18 | 0.46 |
| 4:QD:9:CYS:SG | 4:QD:22:LYS:HE3 | 2.55 | 0.46 |
| 4:QD:166:LYS:HD3 | 27:YD:134:ARG:HH11 | 1.78 | 0.46 |
| 5:QE:55:VAL:O | 5:QE:58:ALA:HB3 | 2.16 | 0.46 |
| 5:QE:78:HIS:CD2 | 8:QH:104:ARG:HE | 2.33 | 0.46 |
| 6:QF:101:ALA:HA | 18:QR:28:GLU:CG | 2.46 | 0.46 |
| 8:QH:86:ILE:HG13 | 8:QH:133:LEU:CD2 | 2.44 | 0.46 |
| 8:QH:91:ARG:HG2 | 8:QH:91:ARG:NH1 | 2.25 | 0.46 |
| 9:QI:59:PHE:CZ | 9:QI:88:TYR:CE1 | 3.01 | 0.46 |
| 12:QL:8:ASN:OD1 | 17:QQ:34:LYS:CE | 2.48 | 0.46 |
| 20:QT:56:MET:HG3 | 20:QT:88:VAL:HG21 | 1.98 | 0.46 |
| 25:RA:242:G:C3' | 54:R8:6:THR:HG23 | 2.46 | 0.46 |
| 25:RA:401:A:H2' | 25:RA:402:A:O4' | 2.16 | 0.46 |
| 25:RA:459:U:H5'' | 53:R7:40:TRP:CD2 | 2.51 | 0.46 |
| 25:RA:571:A:H5' | 25:RA:2030:A:N7 | 2.30 | 0.46 |
| 25:RA:598:G:H2' | 25:RA:599:G:O4' | 2.14 | 0.46 |
| 25:RA:620:G:H4' | 25:RA:621:A:C5' | 2.45 | 0.46 |
| 25:RA:827:U:H1' | 25:RA:2246:G:O2' | 2.16 | 0.46 |
| 25:RA:1200:C:H1' | 40:RU:2:PRO:HG2 | 1.98 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:1927:A:C6 | 25:RA:1928:A:C6 | 3.04 | 0.46 |
| 25:RA:2181:G:H2' | 25:RA:2182:G:C8 | 2.50 | 0.46 |
| 25:RA:2287:A:C6 | 25:RA:2289:G:C4 | 3.03 | 0.46 |
| 26:RB:43:C:O2' | 30:RG:93:THR:O | 2.11 | 0.46 |
| 27:RD:69:ARG:C | 27:RD:71:ASP:N | 2.69 | 0.46 |
| 27:RD:136:ILE:HD12 | 27:RD:136:ILE:N | 2.30 | 0.46 |
| 28:RE:89:ASP:O | 28:RE:90:THR:O | 2.33 | 0.46 |
| 28:RE:172:VAL:HG13 | 28:RE:182:LEU:HD11 | 1.98 | 0.46 |
| 30:RG:37:VAL:HG22 | 30:RG:159:VAL:CA | 2.34 | 0.46 |
| 32:RI:78:THR:O | 32:RI:79:ILE:HG12 | 2.16 | 0.46 |
| 33:RN:30:ILE:O | 33:RN:34:LEU:CD2 | 2.63 | 0.46 |
| 35:RP:23:PRO:HG2 | 35:RP:23:PRO:O | 2.15 | 0.46 |
| 35:RP:81:GLN:HB3 | 35:RP:110:TYR:HB3 | 1.97 | 0.46 |
| 37:RR:29:LEU:N | 37:RR:29:LEU:CD1 | 2.79 | 0.46 |
| 37:RR:85:PRO:C | 37:RR:87:TYR:H | 2.19 | 0.46 |
| 38:RS:109:GLY:O | 38:RS:110:LEU:HB2 | 2.16 | 0.46 |
| 39:RT:96:ARG:CB | 39:RT:96:ARG:HH11 | 2.29 | 0.46 |
| 45:RZ:108:PRO:CG | 45:RZ:112:ARG:N | 2.70 | 0.46 |
| 45:RZ:151:HIS:O | 45:RZ:153:SER:O | 2.33 | 0.46 |
| 47:R1:83:GLU:OE1 | 47:R1:85:LEU:HB2 | 2.15 | 0.46 |
| 49:R3:18:ASP:O | 49:R3:21:ALA:N | 2.49 | 0.46 |
| 50:R4:50:VAL:O | 50:R4:50:VAL:HG13 | 2.15 | 0.46 |
| 1:XA:109:A:H4' | 1:XA:110:C:OP2 | 2.16 | 0.46 |
| 1:XA:565:U:H5'' | 1:XA:566:G:H2' | 1.96 | 0.46 |
| 1:XA:1080:A:H5'' | 5:XE:16:THR:HG21 | 1.98 | 0.46 |
| 1:XA:1298:C:C4 | 7:XG:114:ARG:HD2 | 2.51 | 0.46 |
| 2:XB:17:PHE:CD2 | 2:XB:44:LEU:HD21 | 2.47 | 0.46 |
| 2:XB:24:TRP:CZ2 | 2:XB:26:PRO:HB3 | 2.51 | 0.46 |
| 3:XC:11:ARG:HG2 | 3:XC:11:ARG:HH11 | 1.80 | 0.46 |
| 3:XC:58:GLU:O | 3:XC:59:ARG:HG3 | 2.15 | 0.46 |
| 8:XH:80:ILE:HG23 | 8:XH:137:VAL:HG12 | 1.97 | 0.46 |
| 9:XI:9:ARG:HA | 9:XI:76:ALA:HB1 | 1.96 | 0.46 |
| 11:XK:17:GLY:HA3 | 11:XK:77:MET:HE1 | 1.97 | 0.46 |
| 15:XO:82:ILE:HD11 | 15:XO:88:ARG:HG2 | 1.95 | 0.46 |
| 25:YA:372:G:O2' | 25:YA:373:U:OP2 | 2.33 | 0.46 |
| 25:YA:748:G:C8 | 42:YW:89:ALA:HB1 | 2.51 | 0.46 |
| 25:YA:1289:C:H2' | 25:YA:1290:C:H6 | 1.81 | 0.46 |
| 25:YA:1494:A:H2' | 25:YA:1495:A:H5' | 1.98 | 0.46 |
| 25:YA:1709:U:H2' | 25:YA:1710:C:C6 | 2.50 | 0.46 |
| 25:YA:2105:C:H2' | 25:YA:2106:G:C8 | 2.50 | 0.46 |
| 25:YA:2159:G:H2' | 25:YA:2160:G:H8 | 1.80 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:YA:2228:G:H2' | 25:YA:2229:C:O4' | 2.16 | 0.46 |
| 25:YA:2811:G:H1 | 25:YA:2889:C:H42 | 1.63 | 0.46 |
| 27:YD:14:ARG:HG3 | 27:YD:15:PHE:N | 2.31 | 0.46 |
| 27:YD:105:ILE:HG23 | 27:YD:106:ILE:O | 2.15 | 0.46 |
| 27:YD:148:GLU:HB2 | 27:YD:151:LYS:HD2 | 1.98 | 0.46 |
| 28:YE:63:LEU:O | 28:YE:64:LYS:CB | 2.62 | 0.46 |
| 31:YH:53:GLU:OE1 | 31:YH:53:GLU:HA | 2.16 | 0.46 |
| 31:YH:86:GLU:O | 31:YH:87:LEU:CB | 2.64 | 0.46 |
| 31:YH:106:THR:HG22 | 31:YH:112:PRO:HB3 | 1.97 | 0.46 |
| 32:YI:78:THR:O | 32:YI:79:ILE:HG12 | 2.16 | 0.46 |
| 33:YN:128:HIS:HB2 | 33:YN:129:PRO:CD | 2.46 | 0.46 |
| 36:YQ:87:LYS:O | 36:YQ:87:LYS:HG2 | 2.15 | 0.46 |
| 37:YR:78:LYS:HG2 | 37:YR:78:LYS:O | 2.15 | 0.46 |
| 38:YS:61:ASN:O | 38:YS:65:VAL:HG23 | 2.15 | 0.46 |
| 38:YS:108:GLY:O | 38:YS:110:LEU:N | 2.48 | 0.46 |
| 43:YX:12:VAL:O | 43:YX:12:VAL:HG13 | 2.15 | 0.46 |
| 43:YX:65:ARG:N | 43:YX:65:ARG:CD | 2.79 | 0.46 |
| 45:YZ:5:LEU:O | 45:YZ:5:LEU:HD13 | 2.16 | 0.46 |
| 45:YZ:27:VAL:CG2 | 45:YZ:28:MET:N | 2.78 | 0.46 |
| 51:Y5:20:ARG:C | 51:Y5:22:HIS:N | 2.68 | 0.46 |
| 51:Y5:54:GLY:O | 51:Y5:55:ARG:C | 2.54 | 0.46 |
| 54:Y8:44:LYS:HD2 | 54:Y8:44:LYS:N | 2.30 | 0.46 |
| 1:QA:643:C:H5' | 8:QH:31:PHE:CD1 | 2.51 | 0.46 |
| 1:QA:725:G:C6 | 1:QA:726:C:C4 | 3.03 | 0.46 |
| 1:QA:792:A:H1' | 1:QA:793:U:OP2 | 2.16 | 0.46 |
| 2:QB:162:ILE:CD1 | 2:QB:184:VAL:HG13 | 2.44 | 0.46 |
| 3:QC:6:HIS:C | 3:QC:8:ILE:H | 2.18 | 0.46 |
| 3:QC:15:THR:HG22 | 3:QC:15:THR:O | 2.15 | 0.46 |
| 4:QD:7:PRO:HB2 | 4:QD:10:ARG:HD2 | 1.97 | 0.46 |
| 6:QF:44:GLY:HA2 | 6:QF:59:TYR:CE2 | 2.51 | 0.46 |
| 9:QI:40:LEU:C | 9:QI:42:ARG:H | 2.18 | 0.46 |
| 11:QK:41:THR:CG2 | 11:QK:42:TRP:N | 2.79 | 0.46 |
| 12:QL:126:LYS:C | 12:QL:128:ALA:N | 2.69 | 0.46 |
| 13:QM:118:ALA:O | 22:QV:28:C:O3' | 2.34 | 0.46 |
| 15:QO:30:ALA:HA | 15:QO:85:LEU:HD11 | 1.97 | 0.46 |
| 17:QQ:84:LEU:O | 17:QQ:86:GLU:N | 2.49 | 0.46 |
| 22:QV:13:C:O2' | 25:RA:1924:C:H4' | 2.16 | 0.46 |
| 22:QV:49:G:O6 | 22:QV:65:C:N4 | 2.49 | 0.46 |
| 25:RA:639:U:H2' | 25:RA:640:C:C6 | 2.51 | 0.46 |
| 25:RA:719:C:H2' | 25:RA:720:C:C6 | 2.51 | 0.46 |
| 25:RA:1472:A:H2' | 25:RA:1473:G:O4' | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:1578:U:H2' | 25:RA:1579:A:H5' | 1.98 | 0.46 |
| 25:RA:1694:C:H4' | 25:RA:1695:G:O5' | 2.16 | 0.46 |
| 25:RA:1795:C:H2' | 25:RA:1796:U:O4' | 2.15 | 0.46 |
| 25:RA:2777:G:H5'' | 25:RA:2778:A:O5' | 2.16 | 0.46 |
| 27:RD:61:LEU:HB3 | 27:RD:63:ARG:NH1 | 2.31 | 0.46 |
| 27:RD:117:VAL:CG2 | 27:RD:128:GLY:C | 2.84 | 0.46 |
| 28:RE:7:VAL:HG11 | 39:RT:1:MET:CE | 2.45 | 0.46 |
| 28:RE:61:ARG:O | 28:RE:63:LEU:CG | 2.57 | 0.46 |
| 28:RE:95:ILE:HG22 | 28:RE:95:ILE:O | 2.16 | 0.46 |
| 30:RG:52:ILE:HG22 | 30:RG:52:ILE:O | 2.15 | 0.46 |
| 30:RG:104:GLU:OE1 | 50:R4:23:GLU:HB3 | 2.15 | 0.46 |
| 30:RG:111:LEU:HD22 | 30:RG:120:LEU:HD21 | 1.96 | 0.46 |
| 30:RG:135:LEU:HD11 | 30:RG:157:ILE:HD12 | 1.98 | 0.46 |
| 32:RI:77:LEU:HB2 | 32:RI:104:GLN:OE1 | 2.15 | 0.46 |
| 32:RI:135:GLU:HB2 | 32:RI:136:VAL:H | 1.50 | 0.46 |
| 34:RO:101:PRO:HA | 34:RO:120:GLU:O | 2.16 | 0.46 |
| 35:RP:21:ARG:HB3 | 35:RP:22:GLY:H | 1.65 | 0.46 |
| 35:RP:45:LEU:CD1 | 35:RP:45:LEU:N | 2.79 | 0.46 |
| 35:RP:85:LEU:HD23 | 35:RP:88:LEU:HD22 | 1.97 | 0.46 |
| 36:RQ:23:GLY:O | 36:RQ:24:GLY:C | 2.54 | 0.46 |
| 36:RQ:109:VAL:HG13 | 36:RQ:113:GLN:OE1 | 2.16 | 0.46 |
| 38:RS:24:LEU:HB2 | 38:RS:85:VAL:HG12 | 1.98 | 0.46 |
| 39:RT:58:ASN:HD22 | 39:RT:58:ASN:N | 2.10 | 0.46 |
| 40:RU:69:CYS:O | 40:RU:74:LEU:HD12 | 2.16 | 0.46 |
| 43:RX:43:VAL:HG11 | 43:RX:51:VAL:HG21 | 1.97 | 0.46 |
| 47:R1:60:PHE:CE2 | 47:R1:91:LYS:NZ | 2.84 | 0.46 |
| 49:R3:59:VAL:CG1 | 49:R3:60:GLU:H | 2.29 | 0.46 |
| 50:R4:15:ILE:HG22 | 50:R4:20:ASN:CA | 2.45 | 0.46 |
| 1:XA:335:C:O2' | 1:XA:1433:A:N3 | 2.47 | 0.46 |
| 1:XA:1095:U:H5' | 1:XA:1109:C:O2 | 2.15 | 0.46 |
| 1:XA:1219:U:P | 14:XN:19:ARG:HH22 | 2.36 | 0.46 |
| 1:XA:1220:G:O3' | 19:XS:36:ARG:HD3 | 2.15 | 0.46 |
| 1:XA:1441:G:H4' | 1:XA:1442:G:C4 | 2.51 | 0.46 |
| 4:XD:192:GLU:H | 4:XD:192:GLU:HG3 | 1.57 | 0.46 |
| 6:XF:100:ASN:HD22 | 6:XF:100:ASN:HA | 1.47 | 0.46 |
| 7:XG:140:ASP:C | 7:XG:142:GLU:N | 2.69 | 0.46 |
| 8:XH:49:GLU:HG3 | 8:XH:49:GLU:O | 2.15 | 0.46 |
| 9:XI:42:ARG:O | 9:XI:45:ALA:HB3 | 2.16 | 0.46 |
| 25:YA:142:G:H1' | 43:YX:37:THR:HG21 | 1.97 | 0.46 |
| 25:YA:634:C:H2' | 25:YA:635:C:C6 | 2.51 | 0.46 |
| 25:YA:669:G:C2 | 25:YA:801:G:C6 | 3.04 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:YA:829:A:H5' | 25:YA:831:G:N7 | 2.30 | 0.46 |
| 25:YA:857:C:OP2 | 46:Y0:77:ARG:NH2 | 2.49 | 0.46 |
| 25:YA:1026:U:H1' | 25:YA:1027:A:C5' | 2.46 | 0.46 |
| 25:YA:1093:G:H3' | 25:YA:1094:U:H6 | 1.80 | 0.46 |
| 25:YA:2038:G:H2' | 25:YA:2039:C:O4' | 2.16 | 0.46 |
| 25:YA:2347:C:C5 | 25:YA:2382:G:H1' | 2.51 | 0.46 |
| 27:YD:48:ARG:HG3 | 27:YD:48:ARG:NH1 | 2.31 | 0.46 |
| 27:YD:61:LEU:HB3 | 27:YD:63:ARG:NH1 | 2.31 | 0.46 |
| 28:YE:7:VAL:HG11 | 39:YT:1:MET:CE | 2.45 | 0.46 |
| 28:YE:87:GLU:O | 28:YE:89:ASP:N | 2.48 | 0.46 |
| 28:YE:129:HIS:O | 28:YE:130:GLY:C | 2.53 | 0.46 |
| 30:YG:76:SER:CB | 30:YG:83:ARG:HA | 2.46 | 0.46 |
| 31:YH:151:ILE:O | 31:YH:152:ARG:O | 2.34 | 0.46 |
| 32:YI:92:VAL:HG13 | 32:YI:92:VAL:O | 2.16 | 0.46 |
| 33:YN:96:GLU:O | 33:YN:99:LEU:N | 2.34 | 0.46 |
| 34:YO:8:LEU:N | 34:YO:8:LEU:CD2 | 2.76 | 0.46 |
| 35:YP:23:PRO:HG2 | 35:YP:23:PRO:O | 2.15 | 0.46 |
| 35:YP:144:GLU:HA | 35:YP:145:PRO:HD3 | 1.76 | 0.46 |
| 36:YQ:81:VAL:HG22 | 46:Y0:7:LEU:CD2 | 1.99 | 0.46 |
| 38:YS:74:ALA:O | 38:YS:75:GLU:C | 2.54 | 0.46 |
| 40:YU:69:CYS:O | 40:YU:74:LEU:HD12 | 2.16 | 0.46 |
| 41:YV:36:PRO:HA | 41:YV:56:SER:HG | 1.81 | 0.46 |
| 42:YW:28:SER:C | 42:YW:30:GLU:N | 2.69 | 0.46 |
| 42:YW:48:ALA:O | 42:YW:49:LYS:C | 2.53 | 0.46 |
| 43:YX:35:THR:O | 43:YX:35:THR:HG23 | 2.16 | 0.46 |
| 49:Y3:28:LEU:HA | 49:Y3:33:GLN:OE1 | 2.16 | 0.46 |
| 49:Y3:59:VAL:CG1 | 49:Y3:60:GLU:H | 2.29 | 0.46 |
| 52:Y6:15:GLU:HB3 | 52:Y6:16:CYS:H | 1.46 | 0.46 |
| 1:QA:46:G:H2' | 1:QA:366:C:H5 | 1.79 | 0.46 |
| 1:QA:156:G:H1 | 1:QA:165:C:H42 | 1.63 | 0.46 |
| 1:QA:1050:G:N2 | 1:QA:1209:C:C2 | 2.84 | 0.46 |
| 5:QE:96:PRO:HA | 5:QE:117:ASP:CG | 2.35 | 0.46 |
| 7:QG:54:THR:O | 7:QG:54:THR:HG23 | 2.16 | 0.46 |
| 7:QG:107:ALA:O | 7:QG:110:GLN:HB2 | 2.15 | 0.46 |
| 8:QH:49:GLU:HG3 | 8:QH:49:GLU:O | 2.14 | 0.46 |
| 14:QN:41:ARG:HG2 | 14:QN:41:ARG:NH1 | 2.29 | 0.46 |
| 17:QQ:100:LYS:O | 17:QQ:101:ARG:HB2 | 2.15 | 0.46 |
| 20:QT:93:GLU:HG2 | 20:QT:93:GLU:O | 2.14 | 0.46 |
| 20:QT:98:PRO:O | 20:QT:100:ILE:N | 2.42 | 0.46 |
| 22:QV:76:A:H8 | 25:RA:2602:A:H62 | 1.63 | 0.46 |
| 24:QY:40:G:H2' | 24:QY:41:A:C8 | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:307:G:N1 | 25:RA:310:A:OP2 | 2.48 | 0.46 |
| 25:RA:642:G:H21 | 25:RA:646:A:H2 | 1.63 | 0.46 |
| 25:RA:1641:A:H2' | 25:RA:1642:G:O4' | 2.16 | 0.46 |
| 25:RA:2693:A:H2' | 25:RA:2694:G:H8 | 1.80 | 0.46 |
| 28:RE:33:VAL:HG12 | 28:RE:90:THR:H | 1.81 | 0.46 |
| 30:RG:88:ILE:O | 30:RG:88:ILE:CD1 | 2.54 | 0.46 |
| 31:RH:13:LYS:HE2 | 31:RH:13:LYS:CA | 2.39 | 0.46 |
| 31:RH:59:ARG:CG | 31:RH:59:ARG:NH1 | 2.79 | 0.46 |
| 32:RI:92:VAL:HG13 | 32:RI:92:VAL:O | 2.16 | 0.46 |
| 33:RN:36:GLY:O | 33:RN:42:TRP:HE3 | 1.98 | 0.46 |
| 34:RO:61:VAL:O | 34:RO:84:ALA:HB1 | 2.16 | 0.46 |
| 39:RT:76:PHE:HA | 39:RT:77:PRO:HD3 | 1.75 | 0.46 |
| 41:RV:47:VAL:O | 41:RV:48:GLY:O | 2.34 | 0.46 |
| 45:RZ:108:PRO:HG2 | 45:RZ:112:ARG:N | 2.24 | 0.46 |
| 47:R1:80:LEU:C | 47:R1:81:LYS:CE | 2.77 | 0.46 |
| 47:R1:85:LEU:N | 47:R1:85:LEU:HD22 | 2.31 | 0.46 |
| 54:R8:40:GLU:C | 54:R8:42:ARG:N | 2.68 | 0.46 |
| 1:XA:545:C:OP2 | 4:XD:62:GLN:NE2 | 2.48 | 0.46 |
| 1:XA:991:U:O2' | 1:XA:992:U:O5' | 2.32 | 0.46 |
| 2:XB:122:PHE:HD1 | 2:XB:139:LYS:NZ | 2.08 | 0.46 |
| 4:XD:100:ARG:NH2 | 4:XD:137:SER:HA | 2.31 | 0.46 |
| 4:XD:110:PHE:HD1 | 4:XD:110:PHE:H | 1.63 | 0.46 |
| 5:XE:150:ARG:HG2 | 5:XE:150:ARG:O | 2.16 | 0.46 |
| 9:XI:28:VAL:O | 9:XI:29:ASN:C | 2.53 | 0.46 |
| 12:XL:126:LYS:C | 12:XL:128:ALA:N | 2.69 | 0.46 |
| 13:XM:23:TYR:HB3 | 13:XM:67:GLU:HA | 1.98 | 0.46 |
| 16:XP:30:GLY:O | 16:XP:31:LYS:C | 2.54 | 0.46 |
| 19:XS:63:THR:HG23 | 19:XS:66:MET:CE | 2.46 | 0.46 |
| 19:XS:65:ASN:HA | 50:Y4:55:ARG:HH11 | 1.81 | 0.46 |
| 25:YA:2396:G:C2' | 25:YA:2397:G:H5' | 2.45 | 0.46 |
| 25:YA:2415:G:H4' | 35:YP:66:GLY:C | 2.36 | 0.46 |
| 27:YD:79:VAL:HG21 | 27:YD:111:LEU:HD21 | 1.98 | 0.46 |
| 27:YD:206:LEU:HD23 | 27:YD:206:LEU:HA | 1.49 | 0.46 |
| 28:YE:137:HIS:CB | 28:YE:138:PRO:HD2 | 2.42 | 0.46 |
| 30:YG:14:GLU:O | 30:YG:17:PRO:HD2 | 2.16 | 0.46 |
| 31:YH:88:LEU:HD22 | 31:YH:163:TYR:O | 2.16 | 0.46 |
| 32:YI:40:THR:O | 32:YI:44:LEU:HB2 | 2.16 | 0.46 |
| 36:YQ:66:ILE:H | 36:YQ:104:PHE:HA | 1.80 | 0.46 |
| 37:YR:3:HIS:C | 37:YR:5:LYS:H | 2.17 | 0.46 |
| 39:YT:54:ARG:HG2 | 39:YT:54:ARG:NH1 | 2.23 | 0.46 |
| 45:YZ:58:VAL:O | 45:YZ:59:LEU:HB2 | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 51:Y5:36:CYS:C | 51:Y5:38:ALA:H | 2.19 | 0.46 |
| 1:QA:109:A:H5' | 1:QA:110:C:C5 | 2.51 | 0.46 |
| 1:QA:1022:G:H2' | 1:QA:1023:G:H8 | 1.81 | 0.46 |
| 1:QA:1269:A:N1 | 1:QA:1312:G:O2' | 2.43 | 0.46 |
| 3:QC:43:LEU:HD22 | 3:QC:47:LEU:CD2 | 2.46 | 0.46 |
| 3:QC:53:ALA:O | 3:QC:54:ARG:HB2 | 2.16 | 0.46 |
| 3:QC:87:LEU:C | 3:QC:89:GLU:H | 2.20 | 0.46 |
| 3:QC:108:ASN:HB3 | 3:QC:111:LEU:HG | 1.98 | 0.46 |
| 3:QC:172:ARG:O | 3:QC:173:VAL:CG2 | 2.63 | 0.46 |
| 7:QG:57:GLU:O | 7:QG:59:LEU:N | 2.49 | 0.46 |
| 9:QI:5:TYR:OH | 9:QI:7:THR:HG23 | 2.15 | 0.46 |
| 15:QO:76:GLU:C | 15:QO:78:TYR:N | 2.69 | 0.46 |
| 16:QP:30:GLY:O | 16:QP:31:LYS:C | 2.54 | 0.46 |
| 20:QT:98:PRO:C | 20:QT:100:ILE:H | 2.18 | 0.46 |
| 24:QY:39:C:O2' | 24:QY:40:G:P | 2.74 | 0.46 |
| 25:RA:171:G:H2' | 25:RA:172:C:C6 | 2.51 | 0.46 |
| 25:RA:376:C:H2' | 25:RA:377:C:C6 | 2.51 | 0.46 |
| 25:RA:845:G:H8 | 25:RA:845:G:OP2 | 1.99 | 0.46 |
| 25:RA:1341:U:OP1 | 25:RA:1397:U:N3 | 2.44 | 0.46 |
| 25:RA:1684:C:H42 | 25:RA:1704:G:H1 | 1.62 | 0.46 |
| 25:RA:1932:A:H2' | 25:RA:1933:G:O4' | 2.16 | 0.46 |
| 25:RA:1939:U:O2 | 25:RA:1967:C:H4' | 2.16 | 0.46 |
| 25:RA:2395:C:N4 | 25:RA:2421:G:H1 | 2.13 | 0.46 |
| 25:RA:2584:U:H6 | 25:RA:2585:U:C4 | 2.34 | 0.46 |
| 25:RA:2855:C:H2' | 25:RA:2856:C:C6 | 2.51 | 0.46 |
| 28:RE:15:PHE:CD1 | 28:RE:20:ALA:HB2 | 2.50 | 0.46 |
| 30:RG:14:GLU:HB3 | 30:RG:15:VAL:H | 1.56 | 0.46 |
| 30:RG:121:ASN:C | 30:RG:123:ASN:H | 2.19 | 0.46 |
| 31:RH:86:GLU:O | 31:RH:132:ARG:HA | 2.16 | 0.46 |
| 31:RH:88:LEU:HD22 | 31:RH:163:TYR:O | 2.16 | 0.46 |
| 32:RI:90:GLY:O | 32:RI:121:LYS:HE2 | 2.16 | 0.46 |
| 34:RO:7:TYR:CD1 | 34:RO:20:MET:HB2 | 2.50 | 0.46 |
| 35:RP:1:MET:O | 35:RP:2:LYS:HG3 | 2.16 | 0.46 |
| 35:RP:115:LEU:CD1 | 35:RP:116:GLY:N | 2.78 | 0.46 |
| 36:RQ:87:LYS:O | 36:RQ:87:LYS:HG2 | 2.15 | 0.46 |
| 40:RU:79:PHE:CE2 | 40:RU:83:LEU:HD13 | 2.51 | 0.46 |
| 40:RU:98:LEU:HD23 | 40:RU:98:LEU:C | 2.35 | 0.46 |
| 51:R5:41:PRO:HA | 51:R5:42:PRO:HD3 | 1.82 | 0.46 |
| 1:XA:451:A:OP1 | 1:XA:481:G:N2 | 2.49 | 0.46 |
| 1:XA:731:G:H2' | 1:XA:732:C:H6 | 1.81 | 0.46 |
| 2:XB:162:ILE:CD1 | 2:XB:184:VAL:HG13 | 2.44 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:XC:15:THR:HG22 | 3:XC:15:THR:O | 2.15 | 0.46 |
| 3:XC:53:ALA:O | 3:XC:54:ARG:HB2 | 2.16 | 0.46 |
| 4:XD:30:LYS:O | 4:XD:32:ALA:N | 2.49 | 0.46 |
| 4:XD:92:VAL:O | 4:XD:96:LEU:CD2 | 2.64 | 0.46 |
| 5:XE:12:LEU:HB3 | 5:XE:31:LEU:HB2 | 1.97 | 0.46 |
| 7:XG:8:GLU:CD | 7:XG:8:GLU:N | 2.67 | 0.46 |
| 7:XG:40:ALA:O | 7:XG:41:ARG:C | 2.54 | 0.46 |
| 7:XG:57:GLU:O | 7:XG:59:LEU:N | 2.49 | 0.46 |
| 9:XI:11:LYS:O | 9:XI:12:GLU:HB2 | 2.16 | 0.46 |
| 10:XJ:39:PRO:CB | 10:XJ:70:ARG:HH12 | 2.27 | 0.46 |
| 10:XJ:44:VAL:HG12 | 10:XJ:45:ARG:N | 2.30 | 0.46 |
| 13:XM:10:PRO:HG3 | 13:XM:18:ALA:O | 2.15 | 0.46 |
| 16:XP:19:ILE:HB | 16:XP:37:GLY:O | 2.16 | 0.46 |
| 18:XR:32:ARG:HH11 | 18:XR:65:ILE:HD13 | 1.80 | 0.46 |
| 19:XS:24:ALA:O | 19:XS:25:LYS:CB | 2.63 | 0.46 |
| 25:YA:94:G:H21 | 48:Y2:47:ASN:HD22 | 1.63 | 0.46 |
| 25:YA:241:A:H5' | 25:YA:243:U:H1' | 1.97 | 0.46 |
| 25:YA:592:G:N2 | 25:YA:666:G:C4 | 2.84 | 0.46 |
| 25:YA:730:C:OP2 | 25:YA:731:C:OP2 | 2.33 | 0.46 |
| 25:YA:1059:G:H3' | 25:YA:1060:U:H5'' | 1.96 | 0.46 |
| 25:YA:1225:C:O2' | 41:YV:85:LYS:HA | 2.16 | 0.46 |
| 25:YA:1453:A:O2' | 25:YA:1454:U:H2' | 2.16 | 0.46 |
| 25:YA:1677:A:H2' | 25:YA:1678:G:C8 | 2.50 | 0.46 |
| 25:YA:1764:G:H1 | 25:YA:1988:C:H42 | 1.62 | 0.46 |
| 25:YA:1891:G:C6 | 25:YA:1892:C:C4 | 3.04 | 0.46 |
| 25:YA:2133:G:H2' | 25:YA:2157:G:N2 | 2.31 | 0.46 |
| 26:YB:89:G:C6 | 26:YB:89(A):A:C6 | 3.04 | 0.46 |
| 27:YD:2:ALA:HB1 | 27:YD:20:ASP:CB | 2.46 | 0.46 |
| 27:YD:36:PRO:HB3 | 27:YD:62:TYR:O | 2.16 | 0.46 |
| 27:YD:118:VAL:O | 27:YD:129:ASN:HA | 2.16 | 0.46 |
| 30:YG:95:ARG:O | 30:YG:96:ARG:C | 2.54 | 0.46 |
| 30:YG:129:GLY:O | 30:YG:130:ASN:OD1 | 2.34 | 0.46 |
| 31:YH:128:PRO:HD2 | 31:YH:129:THR:N | 2.25 | 0.46 |
| 33:YN:36:GLY:O | 33:YN:42:TRP:CE3 | 2.69 | 0.46 |
| 41:YV:22:VAL:HG12 | 41:YV:23:GLU:H | 1.76 | 0.46 |
| 44:YY:11:ASP:HB2 | 44:YY:27:VAL:CG1 | 2.46 | 0.46 |
| 47:Y1:79:GLY:N | 47:Y1:80:LEU:HD23 | 2.30 | 0.46 |
| 49:Y3:7:LYS:HE2 | 49:Y3:32:GLN:HA | 1.98 | 0.46 |
| 52:Y6:11:LEU:HD11 | 52:Y6:51:GLU:HG3 | 1.98 | 0.46 |
| 1:QA:781:A:C8 | 1:QA:782:A:C8 | 3.04 | 0.46 |
| 1:QA:1431:C:H2' | 1:QA:1432:G:O4' | 2.16 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:QA:1461:G:H2' | 1:QA:1462:G:C8 | 2.51 | 0.46 |
| 2:QB:24:TRP:CZ2 | 2:QB:26:PRO:HB3 | 2.51 | 0.46 |
| 2:QB:77:ALA:HB1 | 2:QB:211:ILE:HG21 | 1.97 | 0.46 |
| 2:QB:92:TYR:C | 2:QB:92:TYR:CD1 | 2.88 | 0.46 |
| 2:QB:95:GLN:HA | 2:QB:95:GLN:OE1 | 2.16 | 0.46 |
| 4:QD:52:SER:N | 4:QD:55:ALA:HB3 | 2.31 | 0.46 |
| 4:QD:197:PRO:HD3 | 6:XF:16:GLN:CG | 2.46 | 0.46 |
| 6:QF:40:VAL:HG22 | 6:QF:41:GLU:H | 1.80 | 0.46 |
| 11:QK:121:PRO:HD2 | 11:QK:126:ARG:CD | 2.46 | 0.46 |
| 13:QM:28:ALA:C | 13:QM:30:ALA:N | 2.70 | 0.46 |
| 18:QR:43:PHE:C | 18:QR:44:LEU:HD12 | 2.36 | 0.46 |
| 19:QS:63:THR:HG23 | 19:QS:66:MET:CE | 2.46 | 0.46 |
| 20:QT:22:ARG:O | 20:QT:26:ASN:ND2 | 2.49 | 0.46 |
| 25:RA:51:G:H8 | 25:RA:51:G:OP2 | 1.99 | 0.46 |
| 25:RA:747:U:C2 | 51:R5:2:ALA:HB3 | 2.51 | 0.46 |
| 25:RA:972:G:OP2 | 25:RA:973:A:O2' | 2.17 | 0.46 |
| 25:RA:1047:G:H2' | 25:RA:1110:G:C6 | 2.51 | 0.46 |
| 25:RA:1454:U:H5' | 37:RR:63:ARG:NE | 2.24 | 0.46 |
| 25:RA:1570:A:H2' | 25:RA:1571:A:C8 | 2.50 | 0.46 |
| 25:RA:1889:A:H2' | 25:RA:1890:A:C8 | 2.51 | 0.46 |
| 25:RA:2324:C:H5'' | 25:RA:2325:G:H5' | 1.99 | 0.46 |
| 25:RA:2346:A:H5'' | 25:RA:2383:G:H1' | 1.98 | 0.46 |
| 25:RA:2843:G:H1 | 25:RA:2874:C:H42 | 1.63 | 0.46 |
| 26:RB:44:G:H1' | 26:RB:47:C:N4 | 2.31 | 0.46 |
| 27:RD:35:LYS:HE3 | 27:RD:65:ILE:N | 2.31 | 0.46 |
| 27:RD:105:ILE:HG23 | 27:RD:106:ILE:O | 2.15 | 0.46 |
| 28:RE:47:VAL:O | 28:RE:47:VAL:HG23 | 2.16 | 0.46 |
| 30:RG:14:GLU:O | 30:RG:17:PRO:HG2 | 2.15 | 0.46 |
| 30:RG:14:GLU:O | 30:RG:17:PRO:HD2 | 2.16 | 0.46 |
| 31:RH:137:ASP:HB2 | 31:RH:140:LYS:HE3 | 1.98 | 0.46 |
| 33:RN:112:LEU:O | 33:RN:116:LEU:HG | 2.16 | 0.46 |
| 35:RP:46:LYS:O | 35:RP:48:PRO:N | 2.48 | 0.46 |
| 36:RQ:26:TYR:O | 36:RQ:27:VAL:O | 2.34 | 0.46 |
| 38:RS:56:LEU:O | 38:RS:57:LYS:C | 2.53 | 0.46 |
| 40:RU:27:LEU:HD12 | 40:RU:31:SER:HB3 | 1.98 | 0.46 |
| 43:RX:35:THR:O | 43:RX:35:THR:HG23 | 2.16 | 0.46 |
| 46:R0:66:VAL:O | 46:R0:81:VAL:HA | 2.16 | 0.46 |
| 1:XA:1316:G:H5'' | 14:XN:17:LYS:CE | 2.46 | 0.46 |
| 1:XA:1521:G:N2 | 1:XA:1522:U:O2 | 2.49 | 0.46 |
| 2:XB:87:ARG:NH1 | 2:XB:220:ASP:OD1 | 2.46 | 0.46 |
| 3:XC:172:ARG:O | 3:XC:173:VAL:HG23 | 2.15 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 13:XM:80:ARG:O | 13:XM:82:MET:O | 2.33 | 0.46 |
| 15:XO:82:ILE:O | 15:XO:86:GLY:N | 2.49 | 0.46 |
| 16:XP:71:ARG:HB2 | 16:XP:71:ARG:HH11 | 1.79 | 0.46 |
| 19:XS:15:LEU:N | 19:XS:15:LEU:CD2 | 2.79 | 0.46 |
| 20:XT:22:ARG:O | 20:XT:26:ASN:ND2 | 2.49 | 0.46 |
| 25:YA:118:A:O5' | 25:YA:119:A:H5'' | 2.16 | 0.46 |
| 25:YA:247:G:H4' | 25:YA:386:G:C5 | 2.51 | 0.46 |
| 25:YA:270(R):G:H1' | 47:Y1:78:LYS:NZ | 2.30 | 0.46 |
| 25:YA:396:G:O3' | 47:Y1:44:PRO:HA | 2.15 | 0.46 |
| 25:YA:612:G:C2 | 25:YA:617:G:C6 | 3.04 | 0.46 |
| 25:YA:690:G:H2' | 25:YA:691:C:C6 | 2.51 | 0.46 |
| 25:YA:977:G:C6 | 25:YA:987:G:C6 | 3.04 | 0.46 |
| 25:YA:1264:G:H5' | 51:Y5:11:THR:CG2 | 2.46 | 0.46 |
| 25:YA:1663:C:O2' | 25:YA:1664:A:H8 | 1.99 | 0.46 |
| 25:YA:2198:A:O2' | 25:YA:2199:A:P | 2.74 | 0.46 |
| 25:YA:2210:G:H5' | 25:YA:2211:G:C5 | 2.51 | 0.46 |
| 25:YA:2517:C:N3 | 25:YA:2542:A:N6 | 2.64 | 0.46 |
| 30:YG:6:ALA:HB3 | 30:YG:104:GLU:OE2 | 2.16 | 0.46 |
| 32:YI:90:GLY:O | 32:YI:121:LYS:HE2 | 2.16 | 0.46 |
| 34:YO:86:ILE:H | 34:YO:86:ILE:CD1 | 2.28 | 0.46 |
| 35:YP:98:GLU:HG2 | 35:YP:99:LEU:N | 2.30 | 0.46 |
| 36:YQ:85:LYS:HD3 | 36:YQ:86:GLY:H | 1.80 | 0.46 |
| 38:YS:13:ARG:O | 38:YS:14:VAL:HB | 2.16 | 0.46 |
| 40:YU:92:ARG:C | 40:YU:94:ASN:N | 2.69 | 0.46 |
| 43:YX:8:ILE:CD1 | 43:YX:42:ALA:HB1 | 2.45 | 0.46 |
| 44:YY:48:ALA:CB | 44:YY:61:ILE:HD13 | 2.45 | 0.46 |
| 45:YZ:137:ILE:HG22 | 45:YZ:158:PRO:HG2 | 1.98 | 0.46 |
| 45:YZ:151:HIS:O | 45:YZ:153:SER:O | 2.33 | 0.46 |
| 47:Y1:80:LEU:CB | 47:Y1:81:LYS:HE2 | 2.44 | 0.46 |
| 49:Y3:18:ASP:O | 49:Y3:21:ALA:N | 2.49 | 0.46 |
| 51:Y5:43:HIS:ND1 | 51:Y5:43:HIS:N | 2.63 | 0.46 |
| 1:QA:521:G:H4' | 12:QL:73:GLU:HG3 | 1.98 | 0.45 |
| 1:QA:1105:A:H2' | 1:QA:1106:G:H8 | 1.81 | 0.45 |
| 1:QA:1313:U:OP1 | 19:QS:5:LEU:HB2 | 2.16 | 0.45 |
| 1:QA:1480:G:C6 | 1:QA:1481:U:C4 | 3.04 | 0.45 |
| 3:QC:8:ILE:C | 3:QC:10:PHE:N | 2.69 | 0.45 |
| 3:QC:108:ASN:HB3 | 3:QC:111:LEU:HD12 | 1.98 | 0.45 |
| 4:QD:52:SER:H | 4:QD:55:ALA:HB3 | 1.82 | 0.45 |
| 4:QD:92:VAL:O | 4:QD:96:LEU:CD2 | 2.64 | 0.45 |
| 4:QD:180:GLY:O | 4:QD:181:MET:C | 2.54 | 0.45 |
| 6:QF:72:VAL:HG23 | 6:QF:90:VAL:HG11 | 1.98 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|---------------------|--------------------------|-------------------|
| 8:QH:110:ALA:HB3 | 8:QH:121:ASP:HB3 | 1.99 | 0.45 |
| 9:QI:11:LYS:O | 9:QI:12:GLU:HB2 | 2.16 | 0.45 |
| 10:QJ:4:ILE:O | 10:QJ:74:ILE:HD13 | 2.16 | 0.45 |
| 10:QJ:96:ILE:N | 10:QJ:96:ILE:CD1 | 2.79 | 0.45 |
| 11:QK:80:VAL:O | 11:QK:106:LYS:HD3 | 2.16 | 0.45 |
| 16:QP:58:TYR:O | 16:QP:61:SER:OG | 2.27 | 0.45 |
| 25:RA:1270:C:H5'' | 25:RA:1271:G:C5' | 2.46 | 0.45 |
| 25:RA:2429:G:N7 | 35:RP:56:SER:OG | 2.44 | 0.45 |
| 26:RB:55:U:H4' | 30:RG:29:TRP:NE1 | 2.32 | 0.45 |
| 27:RD:148:GLU:HB2 | 27:RD:151:LYS:HD2 | 1.98 | 0.45 |
| 27:RD:198:ASN:C | 27:RD:198:ASN:ND2 | 2.69 | 0.45 |
| 28:RE:50:GLY:CA | 28:RE:74:PRO:HG3 | 2.46 | 0.45 |
| 31:RH:37:VAL:HG11 | 31:RH:68:THR:HG23 | 1.99 | 0.45 |
| 33:RN:17:ASP:O | 33:RN:55:VAL:O | 2.34 | 0.45 |
| 33:RN:73:THR:HA | 33:RN:83:LYS:O | 2.15 | 0.45 |
| 36:RQ:63:LYS:HE2 | 36:RQ:65:PHE:CZ | 2.50 | 0.45 |
| 38:RS:89:ARG:O | 38:RS:90:GLY:C | 2.54 | 0.45 |
| 42:RW:28:SER:C | 42:RW:30:GLU:N | 2.69 | 0.45 |
| 44:RY:47:LYS:O | 44:RY:49:VAL:N | 2.48 | 0.45 |
| 44:RY:75:ILE:HA | 44:RY:80:GLY:HA2 | 1.98 | 0.45 |
| 44:RY:90:LEU:N | 44:RY:90:LEU:CD2 | 2.73 | 0.45 |
| 45:RZ:108:PRO:HG2 | 45:RZ:111:VAL:CA | 2.46 | 0.45 |
| 46:R0:36:ILE:HD13 | 46:R0:36:ILE:N | 2.31 | 0.45 |
| 49:R3:7:LYS:HE2 | 49:R3:32:GLN:HA | 1.98 | 0.45 |
| 50:R4:38:LYS:C | 50:R4:40:HIS:H | 2.07 | 0.45 |
| 50:R4:56:VAL:HA | 50:R4:60:GLN:CB | 2.28 | 0.45 |
| 51:R5:54:GLY:O | 51:R5:55:ARG:C | 2.54 | 0.45 |
| 52:R6:15:GLU:OE2 | 52:R6:44:ARG:NH1 | 2.49 | 0.45 |
| 1:XA:310:G:OP2 | 16:XP:27:LYS:HE3 | 2.17 | 0.45 |
| 1:XA:1298:C:H4' | 1:XA:1299:A:C4 | 2.51 | 0.45 |
| 1:XA:1301:U:O2' | 1:XA:1302:U:OP1 | 2.30 | 0.45 |
| 1:XA:1304:G:C6 | 1:XA:1305:G:C2 | 3.04 | 0.45 |
| 1:XA:1362:C:H2' | 1:XA:1362(A):C:H5'' | 1.97 | 0.45 |
| 1:XA:1365:G:H2' | 1:XA:1366:C:H6 | 1.80 | 0.45 |
| 3:XC:43:LEU:HD22 | 3:XC:47:LEU:CD2 | 2.46 | 0.45 |
| 3:XC:78:GLY:HA3 | 3:XC:83:ARG:HB3 | 1.98 | 0.45 |
| 4:XD:199:ASN:O | 4:XD:201:GLN:N | 2.49 | 0.45 |
| 7:XG:54:THR:O | 7:XG:54:THR:HG23 | 2.16 | 0.45 |
| 8:XH:33:GLU:O | 8:XH:35:ILE:N | 2.49 | 0.45 |
| 10:XJ:4:ILE:O | 10:XJ:74:ILE:HD13 | 2.16 | 0.45 |
| 10:XJ:21:GLN:HG2 | 10:XJ:21:GLN:O | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 11:XK:104:GLN:O | 11:XK:106:LYS:HG3 | 2.16 | 0.45 |
| 12:XL:27:LEU:HD13 | 12:XL:28:LYS:N | 2.30 | 0.45 |
| 13:XM:3:ARG:O | 13:XM:4:ILE:HD13 | 2.16 | 0.45 |
| 25:YA:270(T):G:C6 | 25:YA:270(U):C:C4 | 3.04 | 0.45 |
| 25:YA:869:G:O2' | 25:YA:870:A:H5' | 2.15 | 0.45 |
| 25:YA:1454:U:H5' | 37:YR:63:ARG:NE | 2.23 | 0.45 |
| 25:YA:1786:A:H1' | 25:YA:1938:A:N6 | 2.30 | 0.45 |
| 25:YA:2512:C:H2' | 25:YA:2513:G:O4' | 2.15 | 0.45 |
| 26:YB:40:U:N3 | 26:YB:43:C:H5'' | 2.31 | 0.45 |
| 27:YD:11:PRO:O | 27:YD:12:SER:CB | 2.65 | 0.45 |
| 27:YD:109:ASP:HB2 | 27:YD:197:GLY:CA | 2.46 | 0.45 |
| 28:YE:33:VAL:HG12 | 28:YE:90:THR:H | 1.81 | 0.45 |
| 28:YE:111:ARG:NE | 28:YE:160:TYR:CE1 | 2.76 | 0.45 |
| 31:YH:51:ARG:HG3 | 31:YH:51:ARG:NH1 | 2.30 | 0.45 |
| 31:YH:109:PHE:CE1 | 31:YH:152:ARG:NH1 | 2.84 | 0.45 |
| 32:YI:79:ILE:HG23 | 32:YI:81:VAL:HG13 | 1.97 | 0.45 |
| 34:YO:112:MET:O | 34:YO:115:VAL:CG2 | 2.64 | 0.45 |
| 38:YS:78:LEU:HD21 | 38:YS:108:GLY:HA2 | 1.98 | 0.45 |
| 45:YZ:108:PRO:HG2 | 45:YZ:111:VAL:CA | 2.47 | 0.45 |
| 50:Y4:42:PHE:CD1 | 50:Y4:42:PHE:C | 2.90 | 0.45 |
| 52:Y6:11:LEU:H | 52:Y6:25:LYS:HA | 1.80 | 0.45 |
| 1:QA:300:A:H1' | 1:QA:565:U:O2 | 2.16 | 0.45 |
| 1:QA:308:C:H2' | 1:QA:309:G:H8 | 1.80 | 0.45 |
| 1:QA:363:A:OP2 | 12:QL:34:ARG:HB3 | 2.15 | 0.45 |
| 1:QA:408:A:OP2 | 4:QD:115:ARG:NH2 | 2.50 | 0.45 |
| 1:QA:502:G:OP1 | 12:QL:118:SER:HB2 | 2.17 | 0.45 |
| 1:QA:719:C:C2 | 18:QR:50:ILE:HD13 | 2.50 | 0.45 |
| 1:QA:983:A:H2 | 1:QA:984:C:C6 | 2.33 | 0.45 |
| 1:QA:1298:C:C4 | 7:QG:114:ARG:HD2 | 2.51 | 0.45 |
| 2:QB:24:TRP:CD2 | 2:QB:26:PRO:HD3 | 2.51 | 0.45 |
| 2:QB:96:ARG:HD2 | 2:QB:96:ARG:N | 2.20 | 0.45 |
| 3:QC:68:VAL:HG12 | 3:QC:70:VAL:HG23 | 1.98 | 0.45 |
| 4:QD:126:ILE:HG22 | 4:QD:127:THR:H | 1.80 | 0.45 |
| 4:QD:187:ARG:HH11 | 4:QD:187:ARG:HG2 | 1.82 | 0.45 |
| 7:QG:50:ILE:HG21 | 7:QG:61:VAL:HG21 | 1.97 | 0.45 |
| 7:QG:95:ARG:HG2 | 7:QG:99:LEU:HD12 | 1.98 | 0.45 |
| 8:QH:33:GLU:O | 8:QH:35:ILE:N | 2.49 | 0.45 |
| 12:QL:113:ARG:NH2 | 12:QL:120:TYR:CE2 | 2.85 | 0.45 |
| 15:QO:82:ILE:HD11 | 15:QO:88:ARG:HG2 | 1.95 | 0.45 |
| 24:QY:39:C:HO2' | 24:QY:40:G:P | 2.38 | 0.45 |
| 25:RA:128:C:H4' | 53:R7:49:ARG:NH1 | 2.28 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:RA:1140:C:P | 33:RN:66:LYS:HZ3 | 2.39 | 0.45 |
| 25:RA:1287:A:C6 | 25:RA:1288:U:N3 | 2.84 | 0.45 |
| 25:RA:1497:U:H5'' | 25:RA:1498:C:C5 | 2.50 | 0.45 |
| 25:RA:1543:A:O2' | 25:RA:1544:C:P | 2.73 | 0.45 |
| 25:RA:2031:A:N3 | 25:RA:2031:A:H2' | 2.31 | 0.45 |
| 25:RA:2108:C:H2' | 25:RA:2109:U:C6 | 2.51 | 0.45 |
| 25:RA:2212:A:H1' | 25:RA:2215:G:C5 | 2.51 | 0.45 |
| 25:RA:2287:A:H62 | 25:RA:2344:U:H3 | 1.65 | 0.45 |
| 25:RA:2529:G:H5'' | 25:RA:2530:A:H5'' | 1.97 | 0.45 |
| 25:RA:2572:A:C4 | 28:RE:144:ARG:NH2 | 2.84 | 0.45 |
| 25:RA:2615:U:C2 | 51:R5:7:PRO:HA | 2.51 | 0.45 |
| 25:RA:2779:U:O2' | 25:RA:2781:A:C5 | 2.64 | 0.45 |
| 26:RB:13:A:H4' | 26:RB:15:A:C5 | 2.52 | 0.45 |
| 28:RE:1:MET:HA | 28:RE:200:GLU:OE2 | 2.16 | 0.45 |
| 30:RG:76:SER:CB | 30:RG:83:ARG:HA | 2.46 | 0.45 |
| 30:RG:83:ARG:HG3 | 30:RG:86:MET:CE | 2.46 | 0.45 |
| 31:RH:86:GLU:O | 31:RH:87:LEU:CB | 2.64 | 0.45 |
| 31:RH:89:ILE:H | 31:RH:89:ILE:HD13 | 1.81 | 0.45 |
| 32:RI:79:ILE:HD13 | 32:RI:79:ILE:HA | 1.83 | 0.45 |
| 34:RO:104:ARG:HG2 | 34:RO:121:VAL:HG12 | 1.97 | 0.45 |
| 36:RQ:30:GLY:CA | 36:RQ:107:ALA:HB2 | 2.39 | 0.45 |
| 36:RQ:81:VAL:HG23 | 36:RQ:82:ARG:N | 2.32 | 0.45 |
| 36:RQ:85:LYS:HD3 | 36:RQ:86:GLY:H | 1.81 | 0.45 |
| 43:RX:35:THR:O | 43:RX:36:LYS:C | 2.55 | 0.45 |
| 1:XA:96:G:C6 | 1:XA:97:U:C2 | 3.04 | 0.45 |
| 1:XA:291:C:N4 | 1:XA:309:G:H1 | 2.10 | 0.45 |
| 1:XA:421:U:H5'' | 1:XA:422:C:OP2 | 2.16 | 0.45 |
| 1:XA:963:G:H21 | 10:XJ:55:LYS:CE | 2.30 | 0.45 |
| 1:XA:1124:G:H3' | 1:XA:1145:C:N4 | 2.31 | 0.45 |
| 1:XA:1346:A:H5'' | 9:XI:120:ARG:HH12 | 1.82 | 0.45 |
| 2:XB:95:GLN:OE1 | 2:XB:95:GLN:HA | 2.16 | 0.45 |
| 2:XB:163:PHE:CE1 | 2:XB:215:LEU:HD22 | 2.50 | 0.45 |
| 4:XD:173:TRP:NE1 | 4:XD:174:LEU:HG | 2.32 | 0.45 |
| 6:XF:44:GLY:HA2 | 6:XF:59:TYR:CE2 | 2.51 | 0.45 |
| 11:XK:91:ARG:HH22 | 18:XR:88:LYS:HZ3 | 1.63 | 0.45 |
| 15:XO:5:LYS:O | 15:XO:8:LYS:CG | 2.63 | 0.45 |
| 16:XP:40:ASP:O | 16:XP:42:ARG:N | 2.50 | 0.45 |
| 17:XQ:3:LYS:HD3 | 17:XQ:61:GLU:O | 2.16 | 0.45 |
| 20:XT:96:GLY:O | 20:XT:97:ALA:CB | 2.64 | 0.45 |
| 25:YA:17:G:H2' | 25:YA:18:C:C6 | 2.51 | 0.45 |
| 25:YA:500:G:N2 | 25:YA:502:A:H3' | 2.31 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:YA:580:C:H2' | 25:YA:581:C:C6 | 2.51 | 0.45 |
| 25:YA:855:G:C6 | 25:YA:856:C:C4 | 3.05 | 0.45 |
| 25:YA:872:A:H4' | 36:YQ:66:ILE:HD11 | 1.97 | 0.45 |
| 25:YA:934:G:H2' | 25:YA:935:C:H6 | 1.81 | 0.45 |
| 25:YA:1228:G:OP1 | 40:YU:13:LYS:HG2 | 2.16 | 0.45 |
| 25:YA:1329:U:H5'' | 25:YA:1330:C:H5 | 1.80 | 0.45 |
| 25:YA:1679:U:C2' | 25:YA:1680:U:H5' | 2.46 | 0.45 |
| 25:YA:1888:G:N3 | 25:YA:1888:G:H5'' | 2.31 | 0.45 |
| 25:YA:1965:C:H2' | 25:YA:1966:A:C8 | 2.51 | 0.45 |
| 25:YA:2406:U:C2 | 35:YP:72:PRO:HB2 | 2.52 | 0.45 |
| 25:YA:2638:G:O2' | 25:YA:2639:A:H8 | 1.99 | 0.45 |
| 26:YB:89:G:H8 | 26:YB:89:G:OP2 | 1.98 | 0.45 |
| 27:YD:92:ILE:HD12 | 27:YD:104:TYR:HD2 | 1.81 | 0.45 |
| 28:YE:1:MET:HA | 28:YE:200:GLU:OE2 | 2.16 | 0.45 |
| 28:YE:77:ILE:O | 28:YE:78:LEU:O | 2.35 | 0.45 |
| 30:YG:14:GLU:HB3 | 30:YG:15:VAL:H | 1.56 | 0.45 |
| 36:YQ:26:TYR:O | 36:YQ:27:VAL:O | 2.33 | 0.45 |
| 41:YV:4:ILE:HG22 | 41:YV:39:LEU:HD23 | 1.98 | 0.45 |
| 43:YX:24:GLY:O | 43:YX:82:GLN:HA | 2.16 | 0.45 |
| 44:YY:35:TYR:CD1 | 44:YY:35:TYR:O | 2.69 | 0.45 |
| 45:YZ:11:GLU:HG3 | 45:YZ:12:GLY:N | 2.31 | 0.45 |
| 45:YZ:52:SER:O | 45:YZ:54:HIS:N | 2.50 | 0.45 |
| 45:YZ:152:ALA:H | 45:YZ:170:THR:N | 2.14 | 0.45 |
| 1:QA:376:G:H5'' | 16:QP:5:ARG:HD2 | 1.99 | 0.45 |
| 1:QA:1322:C:H5' | 13:QM:100:GLY:HA2 | 1.98 | 0.45 |
| 2:QB:181:PHE:HE1 | 8:QH:70:GLN:O | 2.00 | 0.45 |
| 4:QD:150:GLU:C | 4:QD:152:SER:H | 2.20 | 0.45 |
| 5:QE:12:LEU:HB3 | 5:QE:31:LEU:HB2 | 1.98 | 0.45 |
| 5:QE:64:ARG:HH11 | 5:QE:64:ARG:HG3 | 1.82 | 0.45 |
| 6:QF:69:GLU:O | 6:QF:71:ARG:N | 2.48 | 0.45 |
| 9:QI:80:GLY:C | 9:QI:82:ALA:N | 2.70 | 0.45 |
| 12:QL:27:LEU:HD13 | 12:QL:28:LYS:N | 2.30 | 0.45 |
| 20:QT:71:THR:HG22 | 20:QT:72:LEU:N | 2.32 | 0.45 |
| 25:RA:309:G:O3' | 44:RY:18:GLY:HA2 | 2.16 | 0.45 |
| 25:RA:330:A:O2' | 25:RA:331:A:H2' | 2.15 | 0.45 |
| 25:RA:1005:C:C2 | 25:RA:1143:A:C5 | 3.05 | 0.45 |
| 25:RA:1274:A:OP1 | 25:RA:1646:C:N4 | 2.48 | 0.45 |
| 25:RA:1937:A:C8 | 25:RA:1939:U:H2' | 2.51 | 0.45 |
| 25:RA:2602:A:H2 | 55:Z6:76:PPU:N7 | 2.14 | 0.45 |
| 26:RB:40:U:H1' | 26:RB:45:A:N6 | 2.30 | 0.45 |
| 27:RD:80:ALA:O | 27:RD:113:VAL:HG13 | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 30:RG:36:LYS:O | 30:RG:37:VAL:HG23 | 2.15 | 0.45 |
| 31:RH:151:ILE:O | 31:RH:152:ARG:O | 2.34 | 0.45 |
| 32:RI:78:THR:HG22 | 32:RI:141:LYS:CD | 2.27 | 0.45 |
| 33:RN:22:THR:O | 33:RN:60:ILE:HG22 | 2.16 | 0.45 |
| 33:RN:129:PRO:C | 33:RN:131:GLN:H | 2.20 | 0.45 |
| 35:RP:144:GLU:OE1 | 35:RP:144:GLU:N | 2.48 | 0.45 |
| 36:RQ:104:PHE:O | 36:RQ:105:GLU:CB | 2.65 | 0.45 |
| 37:RR:1:MET:O | 37:RR:2:ARG:HB2 | 2.15 | 0.45 |
| 38:RS:74:ALA:O | 38:RS:75:GLU:C | 2.54 | 0.45 |
| 39:RT:36:GLU:CG | 39:RT:41:ARG:HD3 | 2.46 | 0.45 |
| 42:RW:34:ASN:O | 42:RW:35:ILE:C | 2.55 | 0.45 |
| 44:RY:81:LYS:CD | 44:RY:97:ARG:HE | 2.20 | 0.45 |
| 45:RZ:27:VAL:CG1 | 45:RZ:87:ASP:HB3 | 2.46 | 0.45 |
| 45:RZ:102:LEU:CD1 | 45:RZ:171:ILE:HD11 | 2.46 | 0.45 |
| 46:R0:7:LEU:HD22 | 46:R0:7:LEU:N | 2.30 | 0.45 |
| 1:XA:31:G:N2 | 1:XA:47:C:O5' | 2.49 | 0.45 |
| 1:XA:177:C:H5'' | 20:XT:65:LYS:HZ3 | 1.79 | 0.45 |
| 1:XA:570:G:O3' | 1:XA:819:A:O2' | 2.23 | 0.45 |
| 1:XA:777:A:H2' | 1:XA:778:G:H8 | 1.81 | 0.45 |
| 1:XA:1129:C:H5' | 1:XA:1130:A:OP1 | 2.16 | 0.45 |
| 1:XA:1179:A:O3' | 9:XI:103:THR:HG23 | 2.16 | 0.45 |
| 1:XA:1194:U:H3' | 1:XA:1195:C:C6 | 2.52 | 0.45 |
| 1:XA:1252:A:H2' | 1:XA:1253:G:O4' | 2.16 | 0.45 |
| 2:XB:214:ILE:HD13 | 2:XB:217:ARG:HH22 | 1.81 | 0.45 |
| 3:XC:108:ASN:HB3 | 3:XC:111:LEU:HG | 1.98 | 0.45 |
| 4:XD:146:ILE:HG22 | 4:XD:146:ILE:O | 2.15 | 0.45 |
| 7:XG:95:ARG:NE | 7:XG:99:LEU:HD11 | 2.30 | 0.45 |
| 7:XG:95:ARG:HG2 | 7:XG:99:LEU:HD12 | 1.98 | 0.45 |
| 9:XI:80:GLY:C | 9:XI:82:ALA:N | 2.70 | 0.45 |
| 10:XJ:95:GLU:OE2 | 10:XJ:95:GLU:HA | 2.16 | 0.45 |
| 13:XM:65:LYS:NZ | 13:XM:69:GLU:HG2 | 2.30 | 0.45 |
| 15:XO:77:ARG:HA | 15:XO:80:ALA:HB2 | 1.98 | 0.45 |
| 17:XQ:84:LEU:O | 17:XQ:86:GLU:N | 2.49 | 0.45 |
| 25:YA:229:A:OP1 | 25:YA:229:A:H4' | 2.17 | 0.45 |
| 25:YA:389:G:N1 | 35:YP:71:VAL:HG12 | 2.31 | 0.45 |
| 25:YA:596:G:C6 | 25:YA:597:U:C2 | 3.03 | 0.45 |
| 25:YA:1588:C:H2' | 25:YA:1589:C:H6 | 1.80 | 0.45 |
| 25:YA:1688:U:O2 | 25:YA:1700:A:H8 | 1.99 | 0.45 |
| 25:YA:2498:C:O2' | 25:YA:2499:C:H5' | 2.17 | 0.45 |
| 25:YA:2588:G:O6 | 25:YA:2607:G:C6 | 2.70 | 0.45 |
| 27:YD:65:ILE:HD11 | 27:YD:67:PHE:CE1 | 2.51 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 29:YF:7:TYR:CD1 | 29:YF:7:TYR:N | 2.85 | 0.45 |
| 29:YF:31:HIS:O | 29:YF:34:TRP:HB3 | 2.15 | 0.45 |
| 29:YF:65:TRP:CH2 | 29:YF:72:ARG:HB3 | 2.51 | 0.45 |
| 32:YI:77:LEU:HB2 | 32:YI:104:GLN:OE1 | 2.15 | 0.45 |
| 33:YN:10:GLU:HA | 33:YN:11:PRO:HD3 | 1.73 | 0.45 |
| 33:YN:113:GLY:O | 33:YN:116:LEU:HB2 | 2.14 | 0.45 |
| 33:YN:120:LEU:C | 33:YN:120:LEU:HD13 | 2.37 | 0.45 |
| 36:YQ:104:PHE:O | 36:YQ:105:GLU:CB | 2.64 | 0.45 |
| 37:YR:85:PRO:C | 37:YR:87:TYR:H | 2.19 | 0.45 |
| 38:YS:109:GLY:O | 38:YS:110:LEU:HB2 | 2.16 | 0.45 |
| 39:YT:107:ASP:HB2 | 39:YT:108:ARG:H | 1.48 | 0.45 |
| 41:YV:5:VAL:HG22 | 41:YV:14:VAL:CG2 | 2.46 | 0.45 |
| 42:YW:40:ASN:C | 42:YW:41:LYS:HG2 | 2.36 | 0.45 |
| 46:Y0:66:VAL:O | 46:Y0:81:VAL:HA | 2.16 | 0.45 |
| 51:Y5:16:ARG:O | 51:Y5:20:ARG:HG3 | 2.16 | 0.45 |
| 52:Y6:17:LYS:O | 52:Y6:18:ARG:CB | 2.65 | 0.45 |
| 1:QA:103:C:C4 | 1:QA:104:G:N7 | 2.85 | 0.45 |
| 1:QA:486:U:H2' | 1:QA:487:A:H8 | 1.81 | 0.45 |
| 1:QA:519:C:H2' | 1:QA:520:A:O4' | 2.16 | 0.45 |
| 1:QA:1028(B):C:H42 | 1:QA:1032(A):G:H1 | 1.65 | 0.45 |
| 2:QB:30:ARG:O | 2:QB:31:TYR:HD2 | 2.00 | 0.45 |
| 2:QB:240:GLN:HG2 | 2:QB:240:GLN:O | 2.16 | 0.45 |
| 4:QD:33:MET:HE1 | 4:QD:37:PRO:O | 2.17 | 0.45 |
| 4:QD:104:VAL:O | 4:QD:107:ARG:N | 2.49 | 0.45 |
| 4:QD:114:ARG:NH1 | 4:QD:114:ARG:CG | 2.77 | 0.45 |
| 4:QD:133:VAL:HG12 | 4:QD:135:LEU:H | 1.82 | 0.45 |
| 6:QF:9:VAL:HB | 6:QF:87:ARG:HB2 | 1.97 | 0.45 |
| 8:QH:41:ARG:CG | 8:QH:41:ARG:NH1 | 2.76 | 0.45 |
| 10:QJ:21:GLN:HG2 | 10:QJ:21:GLN:O | 2.16 | 0.45 |
| 15:QO:82:ILE:CG2 | 15:QO:83:GLU:N | 2.79 | 0.45 |
| 16:QP:40:ASP:O | 16:QP:42:ARG:N | 2.50 | 0.45 |
| 19:QS:10:PHE:CD1 | 19:QS:38:SER:HB2 | 2.52 | 0.45 |
| 25:RA:270(E):G:H1 | 25:RA:270(U):C:H42 | 1.62 | 0.45 |
| 25:RA:340:A:H2' | 25:RA:341:G:O4' | 2.16 | 0.45 |
| 25:RA:819:A:N6 | 25:RA:1189:A:H1' | 2.31 | 0.45 |
| 25:RA:1402:C:H2' | 25:RA:1403:C:H5' | 1.98 | 0.45 |
| 25:RA:1652:A:N7 | 25:RA:1653:G:C6 | 2.84 | 0.45 |
| 27:RD:2:ALA:HB1 | 27:RD:20:ASP:CB | 2.46 | 0.45 |
| 27:RD:31:LYS:C | 27:RD:32:SER:O | 2.54 | 0.45 |
| 27:RD:65:ILE:HD11 | 27:RD:67:PHE:CE1 | 2.51 | 0.45 |
| 27:RD:145:VAL:HB | 27:RD:155:LEU:HB2 | 1.99 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:RD:166:GLN:CA | 27:RD:166:GLN:NE2 | 2.78 | 0.45 |
| 27:RD:211:ARG:HH11 | 27:RD:211:ARG:HG2 | 1.80 | 0.45 |
| 28:RE:22:PRO:O | 28:RE:22:PRO:CG | 2.63 | 0.45 |
| 30:RG:51:ARG:NH2 | 30:RG:52:ILE:HD11 | 2.32 | 0.45 |
| 30:RG:83:ARG:HB2 | 30:RG:86:MET:HE3 | 1.97 | 0.45 |
| 31:RH:94:TYR:N | 31:RH:94:TYR:CD1 | 2.82 | 0.45 |
| 33:RN:128:HIS:HB2 | 33:RN:129:PRO:CD | 2.46 | 0.45 |
| 35:RP:62:LEU:CD2 | 35:RP:62:LEU:H | 2.19 | 0.45 |
| 39:RT:6:LEU:O | 39:RT:10:VAL:HG23 | 2.16 | 0.45 |
| 39:RT:24:PRO:HD3 | 39:RT:52:ILE:HD12 | 1.99 | 0.45 |
| 40:RU:57:PHE:O | 40:RU:59:ARG:N | 2.50 | 0.45 |
| 40:RU:92:ARG:C | 40:RU:94:ASN:N | 2.69 | 0.45 |
| 42:RW:14:PRO:O | 42:RW:16:LYS:N | 2.50 | 0.45 |
| 45:RZ:27:VAL:CG2 | 45:RZ:28:MET:N | 2.78 | 0.45 |
| 45:RZ:120:ILE:HD13 | 45:RZ:169:GLU:CG | 2.45 | 0.45 |
| 46:R0:43:THR:O | 46:R0:43:THR:CG2 | 2.62 | 0.45 |
| 51:R5:16:ARG:O | 51:R5:20:ARG:HG3 | 2.16 | 0.45 |
| 52:R6:11:LEU:H | 52:R6:25:LYS:HA | 1.81 | 0.45 |
| 52:R6:20:ASN:O | 52:R6:21:TYR:HB2 | 2.15 | 0.45 |
| 1:XA:412:A:H4' | 1:XA:413:G:O5' | 2.16 | 0.45 |
| 1:XA:564:C:C4 | 1:XA:565:U:C4 | 3.05 | 0.45 |
| 1:XA:1199:U:H5'' | 1:XA:1200:C:OP2 | 2.16 | 0.45 |
| 2:XB:25:ASN:HA | 2:XB:26:PRO:HD2 | 1.85 | 0.45 |
| 2:XB:51:LEU:O | 2:XB:55:PHE:HD2 | 2.00 | 0.45 |
| 2:XB:77:ALA:HB2 | 2:XB:211:ILE:HG21 | 1.99 | 0.45 |
| 2:XB:95:GLN:NE2 | 2:XB:96:ARG:NH1 | 2.64 | 0.45 |
| 3:XC:8:ILE:C | 3:XC:10:PHE:N | 2.69 | 0.45 |
| 4:XD:52:SER:H | 4:XD:55:ALA:HB3 | 1.82 | 0.45 |
| 4:XD:101:LEU:HD21 | 4:XD:121:VAL:HG13 | 1.99 | 0.45 |
| 6:XF:68:PRO:HG3 | 6:XF:71:ARG:NH2 | 2.31 | 0.45 |
| 7:XG:79:ARG:HG2 | 7:XG:79:ARG:NH1 | 2.29 | 0.45 |
| 10:XJ:29:ARG:HG2 | 10:XJ:29:ARG:HH11 | 1.81 | 0.45 |
| 11:XK:41:THR:CG2 | 11:XK:42:TRP:N | 2.79 | 0.45 |
| 18:XR:43:PHE:C | 18:XR:51:LEU:HD12 | 2.36 | 0.45 |
| 19:XS:69:HIS:O | 19:XS:70:LYS:O | 2.34 | 0.45 |
| 20:XT:24:LEU:O | 20:XT:24:LEU:HD13 | 2.16 | 0.45 |
| 25:YA:74:A:H4' | 25:YA:75:G:O4' | 2.17 | 0.45 |
| 25:YA:195:A:N6 | 25:YA:198:C:OP2 | 2.42 | 0.45 |
| 25:YA:566:U:OP1 | 35:YP:29:LYS:HE2 | 2.16 | 0.45 |
| 25:YA:1654:A:P | 37:YR:2:ARG:HD2 | 2.57 | 0.45 |
| 25:YA:1799:G:O2' | 27:YD:270:ILE:HD11 | 2.17 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 28:YE:13:ARG:HH11 | 28:YE:13:ARG:HB3 | 1.82 | 0.45 |
| 30:YG:44:GLY:HA2 | 30:YG:88:ILE:HG12 | 1.97 | 0.45 |
| 35:YP:115:LEU:HA | 35:YP:134:ALA:CB | 2.47 | 0.45 |
| 36:YQ:30:GLY:CA | 36:YQ:107:ALA:HB2 | 2.39 | 0.45 |
| 36:YQ:59:ARG:HD2 | 36:YQ:59:ARG:N | 2.31 | 0.45 |
| 37:YR:10:LEU:O | 37:YR:11:ASN:C | 2.55 | 0.45 |
| 37:YR:29:LEU:N | 37:YR:29:LEU:CD1 | 2.79 | 0.45 |
| 40:YU:27:LEU:HD12 | 40:YU:31:SER:HB3 | 1.98 | 0.45 |
| 41:YV:47:VAL:O | 41:YV:48:GLY:O | 2.34 | 0.45 |
| 45:YZ:108:PRO:HG2 | 45:YZ:112:ARG:N | 2.24 | 0.45 |
| 47:Y1:49:VAL:HG12 | 47:Y1:51:VAL:CG2 | 2.45 | 0.45 |
| 47:Y1:85:LEU:N | 47:Y1:85:LEU:HD22 | 2.31 | 0.45 |
| 48:Y2:28:LYS:HB3 | 48:Y2:57:ILE:HG12 | 1.97 | 0.45 |
| 1:QA:390:C:O3' | 16:QP:28:ARG:NH2 | 2.50 | 0.45 |
| 1:QA:756:C:H2' | 1:QA:757:U:O4' | 2.17 | 0.45 |
| 1:QA:909:A:H2' | 1:QA:910:C:O4' | 2.16 | 0.45 |
| 1:QA:922:G:N3 | 1:QA:1398:A:H2 | 2.14 | 0.45 |
| 3:QC:34:LEU:HD23 | 3:QC:34:LEU:C | 2.37 | 0.45 |
| 3:QC:78:GLY:HA3 | 3:QC:83:ARG:HB3 | 1.98 | 0.45 |
| 4:QD:101:LEU:HD21 | 4:QD:121:VAL:HG13 | 1.99 | 0.45 |
| 5:QE:52:PRO:HB2 | 5:QE:53:LEU:HD12 | 1.97 | 0.45 |
| 5:QE:77:PRO:HG2 | 5:QE:142:LEU:HD22 | 1.98 | 0.45 |
| 6:QF:35:ALA:HA | 6:QF:67:MET:HB3 | 1.99 | 0.45 |
| 8:QH:97:VAL:CG1 | 8:QH:98:LYS:H | 2.30 | 0.45 |
| 12:QL:64:TYR:O | 12:QL:65:GLU:HB2 | 2.17 | 0.45 |
| 12:QL:91:LYS:HE2 | 12:QL:91:LYS:HB2 | 1.76 | 0.45 |
| 18:QR:63:GLN:HA | 18:QR:63:GLN:OE1 | 2.16 | 0.45 |
| 22:QV:53:G:HO2' | 22:QV:54:U:H6 | 1.63 | 0.45 |
| 25:RA:71:A:H5'' | 25:RA:72:U:H3' | 1.97 | 0.45 |
| 25:RA:307:G:C2 | 25:RA:310:A:OP2 | 2.70 | 0.45 |
| 25:RA:329:G:OP1 | 25:RA:329:G:H8 | 1.99 | 0.45 |
| 25:RA:372:G:O2' | 25:RA:373:U:P | 2.74 | 0.45 |
| 25:RA:911:A:H2' | 36:RQ:9:TYR:OH | 2.16 | 0.45 |
| 25:RA:1588:C:H2' | 25:RA:1589:C:C6 | 2.51 | 0.45 |
| 25:RA:2655:G:H2' | 25:RA:2664:G:N1 | 2.30 | 0.45 |
| 26:RB:16:G:H2' | 26:RB:17:C:H6 | 1.81 | 0.45 |
| 28:RE:2:LYS:O | 28:RE:199:ARG:HA | 2.17 | 0.45 |
| 30:RG:20:ILE:HD13 | 30:RG:25:TYR:HB2 | 1.98 | 0.45 |
| 30:RG:102:PHE:HA | 30:RG:105:LYS:HE3 | 1.98 | 0.45 |
| 31:RH:109:PHE:CE1 | 31:RH:152:ARG:NH1 | 2.85 | 0.45 |
| 32:RI:127:VAL:HG13 | 32:RI:139:GLN:CG | 2.47 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 33:RN:5:VAL:O | 33:RN:5:VAL:HG13 | 2.16 | 0.45 |
| 33:RN:35:ARG:HG3 | 33:RN:35:ARG:O | 2.15 | 0.45 |
| 35:RP:21:ARG:HE | 35:RP:21:ARG:HA | 1.82 | 0.45 |
| 35:RP:31:ALA:C | 35:RP:32:THR:CG2 | 2.85 | 0.45 |
| 35:RP:96:THR:HG22 | 35:RP:126:VAL:CB | 2.46 | 0.45 |
| 40:RU:76:TYR:CD2 | 40:RU:76:TYR:C | 2.90 | 0.45 |
| 42:RW:40:ASN:C | 42:RW:41:LYS:HG2 | 2.37 | 0.45 |
| 42:RW:48:ALA:O | 42:RW:49:LYS:C | 2.53 | 0.45 |
| 44:RY:2:ARG:O | 44:RY:3:VAL:C | 2.55 | 0.45 |
| 48:R2:28:LYS:HB3 | 48:R2:57:ILE:HG12 | 1.97 | 0.45 |
| 49:R3:43:ILE:O | 49:R3:47:VAL:HG23 | 2.16 | 0.45 |
| 51:R5:36:CYS:C | 51:R5:38:ALA:H | 2.19 | 0.45 |
| 1:XA:757:U:H2' | 1:XA:758:G:O4' | 2.17 | 0.45 |
| 3:XC:42:LEU:HD12 | 3:XC:45:LYS:NZ | 2.32 | 0.45 |
| 4:XD:52:SER:N | 4:XD:55:ALA:HB3 | 2.31 | 0.45 |
| 4:XD:104:VAL:O | 4:XD:107:ARG:N | 2.49 | 0.45 |
| 5:XE:55:VAL:O | 5:XE:58:ALA:HB3 | 2.16 | 0.45 |
| 6:XF:3:ARG:HH11 | 6:XF:3:ARG:HG3 | 1.81 | 0.45 |
| 6:XF:61:LEU:HD23 | 6:XF:63:TYR:OH | 2.17 | 0.45 |
| 7:XG:148:ASN:C | 7:XG:150:ALA:N | 2.69 | 0.45 |
| 7:XG:151:TYR:OH | 11:XK:54:ARG:HG3 | 2.17 | 0.45 |
| 10:XJ:51:ARG:HH11 | 10:XJ:51:ARG:HG2 | 1.81 | 0.45 |
| 12:XL:115:LYS:O | 12:XL:117:ARG:N | 2.47 | 0.45 |
| 17:XQ:33:GLY:O | 17:XQ:34:LYS:C | 2.55 | 0.45 |
| 20:XT:84:LEU:HD13 | 20:XT:84:LEU:C | 2.37 | 0.45 |
| 25:YA:460:A:H2' | 25:YA:461:C:O4' | 2.17 | 0.45 |
| 25:YA:528:A:H2 | 25:YA:2043:C:C5' | 2.29 | 0.45 |
| 25:YA:746:A:C5 | 25:YA:2611:U:H5'' | 2.51 | 0.45 |
| 25:YA:1526:G:H2' | 25:YA:1527:G:O4' | 2.17 | 0.45 |
| 25:YA:1682:G:H2' | 25:YA:1683:C:O4' | 2.16 | 0.45 |
| 25:YA:2283:C:H2' | 25:YA:2284:C:O4' | 2.16 | 0.45 |
| 25:YA:2520:C:H42 | 25:YA:2545:G:H1 | 1.64 | 0.45 |
| 27:YD:68:LYS:HD2 | 27:YD:70:TRP:CZ2 | 2.52 | 0.45 |
| 27:YD:198:ASN:ND2 | 27:YD:198:ASN:O | 2.50 | 0.45 |
| 28:YE:47:VAL:O | 28:YE:47:VAL:HG23 | 2.16 | 0.45 |
| 28:YE:51:PHE:HD1 | 28:YE:52:LEU:H | 1.59 | 0.45 |
| 31:YH:16:SER:OG | 31:YH:17:VAL:N | 2.50 | 0.45 |
| 32:YI:127:VAL:HG13 | 32:YI:139:GLN:CG | 2.47 | 0.45 |
| 34:YO:97:ARG:H | 34:YO:117:LEU:CD2 | 2.24 | 0.45 |
| 36:YQ:23:GLY:O | 36:YQ:24:GLY:C | 2.54 | 0.45 |
| 36:YQ:65:PHE:O | 36:YQ:66:ILE:CG1 | 2.48 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 40:YU:95:LEU:HD13 | 41:YV:4:ILE:HD12 | 1.98 | 0.45 |
| 41:YV:30:GLY:O | 41:YV:31:ALA:O | 2.34 | 0.45 |
| 42:YW:21:VAL:HG12 | 42:YW:21:VAL:O | 2.17 | 0.45 |
| 44:YY:2:ARG:O | 44:YY:3:VAL:C | 2.55 | 0.45 |
| 44:YY:75:ILE:HA | 44:YY:80:GLY:HA2 | 1.99 | 0.45 |
| 47:Y1:54:ALA:O | 47:Y1:55:GLY:O | 2.35 | 0.45 |
| 47:Y1:60:PHE:CE2 | 47:Y1:91:LYS:NZ | 2.84 | 0.45 |
| 50:Y4:3:GLU:HG3 | 50:Y4:4:GLY:H | 1.80 | 0.45 |
| 52:Y6:9:LEU:CD1 | 52:Y6:26:ASN:ND2 | 2.80 | 0.45 |
| 1:QA:60:A:N1 | 1:QA:107:G:O2' | 2.30 | 0.45 |
| 1:QA:123:C:H5'' | 1:QA:311:C:O2' | 2.17 | 0.45 |
| 1:QA:438:G:H4' | 4:QD:123:HIS:CE1 | 2.52 | 0.45 |
| 1:QA:662:G:H2' | 1:QA:663:A:C8 | 2.51 | 0.45 |
| 1:QA:681:C:H2' | 1:QA:682:G:C8 | 2.51 | 0.45 |
| 1:QA:853:G:H2' | 1:QA:854:G:H8 | 1.82 | 0.45 |
| 1:QA:1107:C:C4 | 1:QA:1108:G:C8 | 3.05 | 0.45 |
| 1:QA:1343:G:H2' | 1:QA:1344:C:C6 | 2.52 | 0.45 |
| 2:QB:214:ILE:HD13 | 2:QB:217:ARG:HH22 | 1.81 | 0.45 |
| 3:QC:134:ILE:HG23 | 3:QC:151:VAL:HB | 1.98 | 0.45 |
| 12:QL:6:THR:H | 12:QL:9:GLN:NE2 | 1.97 | 0.45 |
| 12:QL:61:THR:O | 12:QL:63:GLY:N | 2.45 | 0.45 |
| 13:QM:108:ARG:O | 13:QM:111:LYS:N | 2.48 | 0.45 |
| 16:QP:13:HIS:C | 16:QP:15:PRO:HD3 | 2.36 | 0.45 |
| 20:QT:24:LEU:HD13 | 20:QT:24:LEU:O | 2.16 | 0.45 |
| 25:RA:16:G:H1 | 25:RA:524:U:H3 | 1.64 | 0.45 |
| 25:RA:1047:G:H2' | 25:RA:1110:G:N1 | 2.32 | 0.45 |
| 25:RA:1188:U:H4' | 41:RV:79:VAL:CG2 | 2.47 | 0.45 |
| 25:RA:1250:G:OP2 | 35:RP:21:ARG:HD3 | 2.16 | 0.45 |
| 25:RA:1340:U:OP2 | 43:RX:78:LYS:NZ | 2.49 | 0.45 |
| 25:RA:2419:U:H5' | 52:R6:23:THR:HG22 | 1.99 | 0.45 |
| 25:RA:2713:A:OP1 | 37:RR:14:SER:OG | 2.35 | 0.45 |
| 25:RA:2747:G:O2' | 31:RH:67:LEU:HD13 | 2.17 | 0.45 |
| 27:RD:118:VAL:O | 27:RD:129:ASN:HA | 2.16 | 0.45 |
| 28:RE:21:VAL:HG23 | 28:RE:22:PRO:CD | 2.46 | 0.45 |
| 31:RH:106:THR:HG22 | 31:RH:112:PRO:HB3 | 1.98 | 0.45 |
| 32:RI:1:MET:HG3 | 32:RI:23:PRO:CB | 2.47 | 0.45 |
| 32:RI:73:GLU:HG3 | 32:RI:136:VAL:CG2 | 2.43 | 0.45 |
| 33:RN:96:GLU:O | 33:RN:99:LEU:N | 2.34 | 0.45 |
| 35:RP:81:GLN:CD | 35:RP:106:LEU:O | 2.55 | 0.45 |
| 35:RP:92:GLU:HA | 35:RP:123:LEU:HD23 | 1.99 | 0.45 |
| 36:RQ:5:ARG:O | 36:RQ:6:ARG:O | 2.35 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 36:RQ:59:ARG:N | 36:RQ:59:ARG:HD2 | 2.31 | 0.45 |
| 38:RS:5:THR:OG1 | 38:RS:8:GLU:HG3 | 2.17 | 0.45 |
| 40:RU:73:GLY:O | 40:RU:74:LEU:CB | 2.63 | 0.45 |
| 45:RZ:23:LYS:HD3 | 45:RZ:23:LYS:N | 2.30 | 0.45 |
| 45:RZ:24:LEU:CD1 | 45:RZ:86:VAL:HG23 | 2.38 | 0.45 |
| 49:R3:28:LEU:HA | 49:R3:33:GLN:OE1 | 2.16 | 0.45 |
| 54:R8:48:PHE:N | 54:R8:48:PHE:HD1 | 2.14 | 0.45 |
| 1:XA:20:U:H2' | 1:XA:21:G:O4' | 2.17 | 0.45 |
| 1:XA:256:U:H2' | 1:XA:257:G:O4' | 2.17 | 0.45 |
| 1:XA:332:G:OP2 | 20:XT:10:LEU:HD23 | 2.15 | 0.45 |
| 1:XA:980:C:H5' | 1:XA:981:U:OP2 | 2.16 | 0.45 |
| 1:XA:1226:C:H2' | 13:XM:103:THR:CB | 2.45 | 0.45 |
| 1:XA:1356:G:H2' | 1:XA:1357:A:H8 | 1.81 | 0.45 |
| 1:XA:1412:C:C2 | 1:XA:1489:G:N2 | 2.85 | 0.45 |
| 2:XB:98:LEU:O | 2:XB:101:MET:HG3 | 2.17 | 0.45 |
| 2:XB:178:ARG:NE | 8:XH:71:GLY:O | 2.50 | 0.45 |
| 2:XB:240:GLN:HG2 | 2:XB:240:GLN:O | 2.17 | 0.45 |
| 4:XD:133:VAL:HG12 | 4:XD:135:LEU:H | 1.82 | 0.45 |
| 4:XD:187:ARG:HH11 | 4:XD:187:ARG:HG2 | 1.82 | 0.45 |
| 7:XG:107:ALA:O | 7:XG:110:GLN:HB2 | 2.15 | 0.45 |
| 7:XG:153:HIS:CE1 | 11:XK:57:THR:HG23 | 2.52 | 0.45 |
| 8:XH:102:ARG:NH1 | 8:XH:105:ARG:CZ | 2.80 | 0.45 |
| 11:XK:32:ILE:HD11 | 11:XK:72:ALA:HB2 | 1.96 | 0.45 |
| 12:XL:113:ARG:NH2 | 12:XL:120:TYR:CE2 | 2.85 | 0.45 |
| 13:XM:15:VAL:O | 13:XM:19:LEU:CD2 | 2.64 | 0.45 |
| 17:XQ:59:ILE:N | 17:XQ:59:ILE:CD1 | 2.78 | 0.45 |
| 25:YA:27:G:O2' | 25:YA:28:A:C8 | 2.67 | 0.45 |
| 25:YA:483:A:C4' | 44:YY:49:VAL:HA | 2.36 | 0.45 |
| 25:YA:1307:A:N6 | 25:YA:1606:G:O2' | 2.50 | 0.45 |
| 25:YA:1880:C:H2' | 25:YA:1881:C:O4' | 2.17 | 0.45 |
| 25:YA:2277:G:H5' | 36:YQ:85:LYS:HG3 | 1.97 | 0.45 |
| 25:YA:2290:G:C6 | 25:YA:2291:U:C4 | 3.04 | 0.45 |
| 25:YA:2561:A:H2' | 25:YA:2562:U:O4' | 2.17 | 0.45 |
| 26:YB:4:C:H42 | 26:YB:116:G:H1 | 1.64 | 0.45 |
| 27:YD:69:ARG:C | 27:YD:71:ASP:N | 2.69 | 0.45 |
| 28:YE:95:ILE:HG22 | 28:YE:95:ILE:O | 2.16 | 0.45 |
| 29:YF:117:ARG:NH2 | 29:YF:189:THR:O | 2.50 | 0.45 |
| 29:YF:167:ALA:HB1 | 29:YF:173:VAL:HG11 | 1.99 | 0.45 |
| 30:YG:51:ARG:NH2 | 30:YG:52:ILE:HD11 | 2.32 | 0.45 |
| 33:YN:20:GLY:HA2 | 33:YN:61:ARG:HD2 | 1.99 | 0.45 |
| 35:YP:88:LEU:C | 35:YP:88:LEU:HD23 | 2.36 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 38:YS:5:THR:OG1 | 38:YS:8:GLU:HG3 | 2.17 | 0.45 |
| 44:YY:97:ARG:HG2 | 44:YY:97:ARG:HH11 | 1.82 | 0.45 |
| 45:YZ:136:PHE:CD1 | 45:YZ:137:ILE:N | 2.84 | 0.45 |
| 52:Y6:15:GLU:OE2 | 52:Y6:44:ARG:NH1 | 2.49 | 0.45 |
| 52:Y6:45:LYS:HD3 | 52:Y6:45:LYS:HA | 1.79 | 0.45 |
| 52:Y6:48:VAL:O | 52:Y6:49:HIS:HB2 | 2.15 | 0.45 |
| 53:Y7:24:THR:O | 53:Y7:28:ARG:HG3 | 2.16 | 0.45 |
| 1:QA:58:C:O2' | 1:QA:388:G:N7 | 2.39 | 0.45 |
| 1:QA:1014:A:H4' | 19:QS:14:HIS:CD2 | 2.51 | 0.45 |
| 1:QA:1310:G:H2' | 1:QA:1311:G:H8 | 1.81 | 0.45 |
| 2:QB:15:VAL:HG23 | 2:QB:209:ARG:HE | 1.80 | 0.45 |
| 2:QB:33:TYR:HD1 | 2:QB:33:TYR:O | 2.00 | 0.45 |
| 3:QC:92:ALA:HB2 | 3:QC:99:VAL:HG11 | 1.99 | 0.45 |
| 4:QD:93:PHE:CZ | 4:QD:97:LEU:HD11 | 2.52 | 0.45 |
| 4:QD:100:ARG:NH2 | 4:QD:137:SER:HA | 2.32 | 0.45 |
| 4:QD:120:LEU:CD2 | 4:QD:125:HIS:HB2 | 2.45 | 0.45 |
| 4:QD:173:TRP:NE1 | 4:QD:174:LEU:HG | 2.32 | 0.45 |
| 7:QG:148:ASN:C | 7:QG:150:ALA:N | 2.69 | 0.45 |
| 9:QI:42:ARG:O | 9:QI:45:ALA:HB3 | 2.16 | 0.45 |
| 16:QP:19:ILE:HB | 16:QP:37:GLY:O | 2.16 | 0.45 |
| 25:RA:242:G:H5' | 54:R8:62:LEU:CD2 | 2.34 | 0.45 |
| 25:RA:358:U:H2' | 25:RA:359:A:H8 | 1.80 | 0.45 |
| 25:RA:618(A):C:OP2 | 29:RF:103:LYS:HE2 | 2.17 | 0.45 |
| 25:RA:704:G:O2' | 25:RA:705:A:P | 2.74 | 0.45 |
| 25:RA:1210:A:H4' | 25:RA:1211:U:O5' | 2.16 | 0.45 |
| 25:RA:1266:G:H1' | 25:RA:1267:U:OP2 | 2.16 | 0.45 |
| 25:RA:1771:C:O2' | 25:RA:1786:A:H8 | 2.00 | 0.45 |
| 25:RA:1999:C:H4' | 25:RA:2723:C:O2 | 2.17 | 0.45 |
| 25:RA:2399:G:H2' | 25:RA:2400:G:O4' | 2.17 | 0.45 |
| 25:RA:2544:G:H2' | 25:RA:2545:G:H8 | 1.81 | 0.45 |
| 25:RA:2585:U:O2' | 25:RA:2586:C:P | 2.75 | 0.45 |
| 25:RA:2893:G:H5'' | 25:RA:2894:G:H5' | 1.99 | 0.45 |
| 26:RB:42:C:H2' | 26:RB:43:C:H6 | 1.82 | 0.45 |
| 27:RD:36:PRO:HB3 | 27:RD:62:TYR:O | 2.16 | 0.45 |
| 29:RF:119:ARG:HH11 | 29:RF:119:ARG:CG | 2.29 | 0.45 |
| 29:RF:123:LEU:HD12 | 29:RF:124:LEU:H | 1.82 | 0.45 |
| 32:RI:74:ASN:CG | 32:RI:75:LEU:HD13 | 2.36 | 0.45 |
| 34:RO:2:ILE:HD11 | 34:RO:82:ASN:ND2 | 2.16 | 0.45 |
| 34:RO:40:VAL:CG1 | 34:RO:41:ALA:N | 2.80 | 0.45 |
| 36:RQ:93:TYR:CD1 | 36:RQ:93:TYR:N | 2.85 | 0.45 |
| 40:RU:53:ARG:C | 40:RU:55:ARG:H | 2.20 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 41:RV:59:ALA:HB2 | 41:RV:96:ILE:HD13 | 1.97 | 0.45 |
| 42:RW:65:LEU:CD1 | 42:RW:68:ARG:NH1 | 2.75 | 0.45 |
| 44:RY:36:ALA:HB1 | 44:RY:67:LEU:O | 2.16 | 0.45 |
| 47:R1:73:LEU:C | 47:R1:75:GLU:N | 2.70 | 0.45 |
| 49:R3:60:GLU:HG2 | 49:R3:60:GLU:O | 2.16 | 0.45 |
| 52:R6:7:ILE:O | 52:R6:8:LYS:HG2 | 2.17 | 0.45 |
| 1:XA:376:G:H5'' | 16:XP:5:ARG:HD2 | 1.98 | 0.45 |
| 1:XA:597:G:N2 | 1:XA:643:C:N3 | 2.65 | 0.45 |
| 1:XA:986:A:N3 | 19:XS:52:TYR:OH | 2.49 | 0.45 |
| 1:XA:1109:C:P | 3:XC:176:HIS:HD1 | 2.39 | 0.45 |
| 1:XA:1269:A:HO2' | 1:XA:1325:C:HO2' | 1.64 | 0.45 |
| 1:XA:1304:G:H2' | 1:XA:1305:G:H1' | 1.98 | 0.45 |
| 3:XC:92:ALA:HB2 | 3:XC:99:VAL:HG11 | 1.99 | 0.45 |
| 5:XE:7:GLU:HB3 | 5:XE:112:LEU:HD13 | 1.99 | 0.45 |
| 5:XE:12:LEU:HB3 | 5:XE:31:LEU:CB | 2.46 | 0.45 |
| 11:XK:48:ILE:HD11 | 11:XK:64:ALA:N | 2.32 | 0.45 |
| 12:XL:64:TYR:O | 12:XL:65:GLU:HB2 | 2.17 | 0.45 |
| 15:XO:30:ALA:HA | 15:XO:85:LEU:HD11 | 1.97 | 0.45 |
| 17:XQ:48:GLU:O | 17:XQ:50:LYS:N | 2.50 | 0.45 |
| 20:XT:71:THR:HG22 | 20:XT:72:LEU:N | 2.32 | 0.45 |
| 25:YA:419:C:H2' | 25:YA:420:C:O4' | 2.17 | 0.45 |
| 25:YA:431:U:H2' | 25:YA:432:A:H8 | 1.81 | 0.45 |
| 25:YA:1641:A:N6 | 25:YA:1642:G:C2 | 2.85 | 0.45 |
| 25:YA:2119:A:C2 | 25:YA:2171:A:H1' | 2.52 | 0.45 |
| 25:YA:2259:G:C2 | 25:YA:2282:G:N1 | 2.85 | 0.45 |
| 25:YA:2317:C:H2' | 25:YA:2318:G:H5' | 1.98 | 0.45 |
| 25:YA:2325:G:H2' | 25:YA:2326:C:H6 | 1.82 | 0.45 |
| 25:YA:2389:G:C5' | 25:YA:2390:U:H5' | 2.46 | 0.45 |
| 25:YA:2507:C:H2' | 25:YA:2508:G:O4' | 2.17 | 0.45 |
| 29:YF:45:ARG:CG | 29:YF:45:ARG:NH1 | 2.71 | 0.45 |
| 29:YF:155:LEU:HA | 29:YF:174:VAL:CG1 | 2.46 | 0.45 |
| 30:YG:121:ASN:C | 30:YG:123:ASN:H | 2.19 | 0.45 |
| 32:YI:79:ILE:HG22 | 32:YI:81:VAL:HG22 | 1.99 | 0.45 |
| 33:YN:7:LYS:HD3 | 33:YN:9:VAL:H | 1.80 | 0.45 |
| 33:YN:114:ARG:O | 33:YN:115:ARG:CB | 2.65 | 0.45 |
| 34:YO:22:ILE:HG12 | 34:YO:41:ALA:HA | 1.98 | 0.45 |
| 40:YU:76:TYR:CD2 | 40:YU:76:TYR:C | 2.90 | 0.45 |
| 40:YU:79:PHE:CE2 | 40:YU:83:LEU:HD13 | 2.51 | 0.45 |
| 42:YW:88:ARG:CB | 42:YW:92:ARG:HB3 | 2.47 | 0.45 |
| 43:YX:47:PHE:O | 43:YX:48:LYS:C | 2.55 | 0.45 |
| 46:Y0:36:ILE:HD13 | 46:Y0:36:ILE:N | 2.31 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 50:Y4:68:ARG:O | 50:Y4:69:LYS:HB2 | 2.17 | 0.45 |
| 1:QA:246:A:N1 | 1:QA:278:G:O2' | 2.40 | 0.45 |
| 1:QA:321:A:H2' | 1:QA:322:C:H6 | 1.81 | 0.45 |
| 1:QA:667:G:H4' | 15:QO:51:HIS:ND1 | 2.31 | 0.45 |
| 1:QA:948:C:H2' | 1:QA:949:A:C8 | 2.49 | 0.45 |
| 1:QA:1103:C:H2' | 1:QA:1104:G:O4' | 2.17 | 0.45 |
| 1:QA:1322:C:O2 | 1:QA:1322:C:H2' | 2.16 | 0.45 |
| 2:QB:22:LYS:O | 2:QB:24:TRP:N | 2.50 | 0.45 |
| 5:QE:152:ARG:HD3 | 8:QH:44:PHE:CE1 | 2.51 | 0.45 |
| 7:QG:95:ARG:HH11 | 7:QG:95:ARG:HG3 | 1.82 | 0.45 |
| 9:QI:83:ARG:C | 9:QI:86:VAL:HG12 | 2.36 | 0.45 |
| 10:QJ:51:ARG:HG2 | 10:QJ:51:ARG:HH11 | 1.81 | 0.45 |
| 13:QM:15:VAL:O | 13:QM:19:LEU:CD2 | 2.64 | 0.45 |
| 13:QM:23:TYR:HB3 | 13:QM:67:GLU:HA | 1.98 | 0.45 |
| 15:QO:5:LYS:O | 15:QO:8:LYS:CG | 2.63 | 0.45 |
| 20:QT:28:ALA:O | 20:QT:30:LYS:N | 2.50 | 0.45 |
| 20:QT:96:GLY:O | 20:QT:99:LEU:HD13 | 2.16 | 0.45 |
| 25:RA:180:G:OP1 | 53:R7:32:LYS:HG3 | 2.17 | 0.45 |
| 25:RA:412:A:H2' | 25:RA:413:C:H5' | 1.98 | 0.45 |
| 25:RA:1114:G:H2' | 25:RA:1115:G:C8 | 2.52 | 0.45 |
| 25:RA:1583:A:H4' | 25:RA:1586:A:N3 | 2.32 | 0.45 |
| 25:RA:2292:C:H2' | 25:RA:2293:C:H6 | 1.82 | 0.45 |
| 25:RA:2300:G:H2' | 25:RA:2301:C:C6 | 2.52 | 0.45 |
| 25:RA:2303:G:H1 | 25:RA:2313:C:N4 | 2.15 | 0.45 |
| 25:RA:2489:G:C5 | 25:RA:2490:G:C6 | 3.03 | 0.45 |
| 25:RA:2526:G:C6 | 25:RA:2527:C:C4 | 3.04 | 0.45 |
| 25:RA:2735:G:H22 | 25:RA:2770:G:H1' | 1.82 | 0.45 |
| 26:RB:40:U:N3 | 26:RB:43:C:H5'' | 2.32 | 0.45 |
| 27:RD:68:LYS:HD2 | 27:RD:70:TRP:CZ2 | 2.52 | 0.45 |
| 27:RD:109:ASP:HB2 | 27:RD:197:GLY:CA | 2.46 | 0.45 |
| 27:RD:143:HIS:HD2 | 27:RD:144:ALA:HB2 | 1.82 | 0.45 |
| 27:RD:213:ARG:HA | 27:RD:213:ARG:HD2 | 1.60 | 0.45 |
| 29:RF:184:TYR:CE2 | 29:RF:188:ARG:HD2 | 2.52 | 0.45 |
| 29:RF:196:LEU:O | 29:RF:200:GLU:HG2 | 2.17 | 0.45 |
| 31:RH:149:ARG:HA | 31:RH:162:ILE:HG21 | 1.99 | 0.45 |
| 32:RI:79:ILE:HG22 | 32:RI:81:VAL:HG22 | 1.99 | 0.45 |
| 33:RN:118:LYS:C | 33:RN:120:LEU:H | 2.20 | 0.45 |
| 34:RO:47:ILE:HG13 | 34:RO:48:PRO:HD2 | 1.99 | 0.45 |
| 35:RP:88:LEU:C | 35:RP:88:LEU:HD23 | 2.37 | 0.45 |
| 35:RP:88:LEU:O | 35:RP:90:ARG:N | 2.50 | 0.45 |
| 35:RP:115:LEU:CB | 35:RP:131:SER:HB2 | 2.47 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:RR:17:ARG:O | 37:RR:20:LEU:HB3 | 2.17 | 0.45 |
| 40:RU:79:PHE:C | 40:RU:79:PHE:HD2 | 2.18 | 0.45 |
| 40:RU:97:ASP:HA | 40:RU:100:VAL:CG2 | 2.47 | 0.45 |
| 41:RV:61:VAL:HA | 41:RV:94:LEU:HD23 | 1.97 | 0.45 |
| 47:R1:49:VAL:HG12 | 47:R1:51:VAL:HG23 | 1.99 | 0.45 |
| 47:R1:80:LEU:CB | 47:R1:81:LYS:HE2 | 2.44 | 0.45 |
| 47:R1:82:LEU:HD13 | 47:R1:83:GLU:C | 2.35 | 0.45 |
| 51:R5:15:ARG:HA | 51:R5:18:ALA:HB3 | 1.99 | 0.45 |
| 54:R8:36:LYS:HB3 | 54:R8:40:GLU:HG2 | 1.99 | 0.45 |
| 1:XA:359:U:H2' | 1:XA:360:A:C8 | 2.52 | 0.45 |
| 1:XA:428:G:O2' | 4:XD:36:ARG:NH2 | 2.47 | 0.45 |
| 1:XA:725:G:H2' | 1:XA:726:C:H6 | 1.81 | 0.45 |
| 1:XA:779:C:H4' | 11:XK:121:PRO:O | 2.17 | 0.45 |
| 1:XA:926:G:H2' | 1:XA:1505:G:N3 | 2.31 | 0.45 |
| 1:XA:1074:G:H4' | 2:XB:104:ASN:HB2 | 1.99 | 0.45 |
| 1:XA:1207:G:C6 | 1:XA:1208:C:C4 | 3.05 | 0.45 |
| 2:XB:22:LYS:O | 2:XB:24:TRP:N | 2.50 | 0.45 |
| 2:XB:68:ILE:HB | 2:XB:70:PHE:HE1 | 1.82 | 0.45 |
| 2:XB:229:VAL:HG12 | 2:XB:229:VAL:O | 2.17 | 0.45 |
| 7:XG:95:ARG:HH11 | 7:XG:95:ARG:HG3 | 1.82 | 0.45 |
| 8:XH:64:LYS:HB3 | 8:XH:79:VAL:HG21 | 1.98 | 0.45 |
| 9:XI:47:LEU:HD22 | 9:XI:47:LEU:H | 1.81 | 0.45 |
| 13:XM:3:ARG:HH12 | 30:YG:113:ARG:NH2 | 2.15 | 0.45 |
| 13:XM:57:ARG:HD2 | 13:XM:61:GLU:OE2 | 2.17 | 0.45 |
| 13:XM:110:ARG:HH11 | 13:XM:110:ARG:HG3 | 1.82 | 0.45 |
| 18:XR:63:GLN:HA | 18:XR:63:GLN:OE1 | 2.17 | 0.45 |
| 20:XT:10:LEU:C | 20:XT:12:ALA:H | 2.20 | 0.45 |
| 20:XT:53:LEU:HD12 | 20:XT:100:ILE:HG23 | 1.98 | 0.45 |
| 24:XY:39:C:O2' | 24:XY:40:G:P | 2.74 | 0.45 |
| 25:YA:356:G:H2' | 25:YA:357:A:C8 | 2.51 | 0.45 |
| 25:YA:428:A:H8 | 25:YA:428:A:OP2 | 1.99 | 0.45 |
| 25:YA:598:G:H2' | 25:YA:599:G:O4' | 2.17 | 0.45 |
| 25:YA:1843:C:H2' | 25:YA:1844:C:C6 | 2.52 | 0.45 |
| 25:YA:2677:G:H2' | 25:YA:2678:C:H6 | 1.82 | 0.45 |
| 25:YA:2712:U:O2' | 25:YA:2712(A):A:P | 2.74 | 0.45 |
| 26:YB:110:G:H2' | 26:YB:111:U:O4' | 2.17 | 0.45 |
| 27:YD:25:THR:CG2 | 27:YD:25:THR:O | 2.65 | 0.45 |
| 27:YD:166:GLN:CA | 27:YD:166:GLN:NE2 | 2.78 | 0.45 |
| 28:YE:2:LYS:O | 28:YE:199:ARG:HA | 2.17 | 0.45 |
| 28:YE:199:ARG:HH11 | 28:YE:199:ARG:HG3 | 1.82 | 0.45 |
| 31:YH:7:LEU:C | 31:YH:7:LEU:HD12 | 2.37 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:YN:5:VAL:O | 33:YN:5:VAL:HG13 | 2.16 | 0.45 |
| 33:YN:22:THR:O | 33:YN:60:ILE:HG22 | 2.16 | 0.45 |
| 34:YO:104:ARG:NH2 | 39:YT:34:VAL:HG11 | 2.32 | 0.45 |
| 35:YP:21:ARG:HA | 35:YP:21:ARG:HE | 1.82 | 0.45 |
| 35:YP:92:GLU:HA | 35:YP:123:LEU:HD23 | 1.99 | 0.45 |
| 36:YQ:5:ARG:O | 36:YQ:6:ARG:O | 2.35 | 0.45 |
| 36:YQ:34:LEU:HB2 | 36:YQ:118:LEU:HD22 | 1.99 | 0.45 |
| 36:YQ:133:ARG:CG | 36:YQ:134:ARG:N | 2.78 | 0.45 |
| 39:YT:24:PRO:HD3 | 39:YT:52:ILE:HD12 | 1.99 | 0.45 |
| 41:YV:61:VAL:O | 41:YV:61:VAL:HG22 | 2.16 | 0.45 |
| 45:YZ:105:VAL:HG11 | 45:YZ:138:GLU:HG2 | 1.99 | 0.45 |
| 52:Y6:7:ILE:O | 52:Y6:8:LYS:HG2 | 2.16 | 0.45 |
| 53:Y7:2:LYS:HG2 | 53:Y7:3:ARG:N | 2.31 | 0.45 |
| 1:QA:74:C:H2' | 1:QA:75:C:C6 | 2.52 | 0.45 |
| 1:QA:635:G:C6 | 1:QA:636:U:C4 | 3.05 | 0.45 |
| 1:QA:648:A:H2' | 1:QA:649:G:C8 | 2.52 | 0.45 |
| 1:QA:719:C:O2' | 18:QR:49:LYS:HB3 | 2.17 | 0.45 |
| 1:QA:779:C:H4' | 11:QK:121:PRO:O | 2.17 | 0.45 |
| 1:QA:1129:C:H5' | 1:QA:1130:A:OP1 | 2.16 | 0.45 |
| 1:QA:1151:A:H1' | 10:QJ:39:PRO:HB2 | 1.99 | 0.45 |
| 1:QA:1489:G:H2' | 1:QA:1490:C:O4' | 2.17 | 0.45 |
| 3:QC:22:TRP:HB3 | 3:QC:59:ARG:HB2 | 1.99 | 0.45 |
| 3:QC:140:ARG:HH11 | 3:QC:140:ARG:CG | 2.30 | 0.45 |
| 4:QD:199:ASN:O | 4:QD:201:GLN:N | 2.49 | 0.45 |
| 5:QE:7:GLU:HB3 | 5:QE:112:LEU:HD13 | 1.99 | 0.45 |
| 5:QE:78:HIS:CB | 8:QH:104:ARG:HG2 | 2.47 | 0.45 |
| 7:QG:108:ALA:C | 7:QG:110:GLN:H | 2.19 | 0.45 |
| 8:QH:86:ILE:CG1 | 8:QH:133:LEU:HD22 | 2.46 | 0.45 |
| 11:QK:32:ILE:HD11 | 11:QK:72:ALA:HB2 | 1.96 | 0.45 |
| 13:QM:56:LEU:HD13 | 13:QM:56:LEU:O | 2.17 | 0.45 |
| 13:QM:110:ARG:HH11 | 13:QM:110:ARG:HG3 | 1.82 | 0.45 |
| 16:QP:39:TYR:CZ | 16:QP:41:PRO:HB3 | 2.52 | 0.45 |
| 16:QP:50:LYS:O | 16:QP:50:LYS:HD3 | 2.16 | 0.45 |
| 22:QV:35:A:C2 | 23:QX:3:G:C2 | 3.05 | 0.45 |
| 25:RA:71:A:H62 | 25:RA:114:U:H1' | 1.81 | 0.45 |
| 25:RA:96:G:H4' | 48:R2:48:HIS:NE2 | 2.31 | 0.45 |
| 25:RA:122:G:OP1 | 25:RA:149:A:O2' | 2.31 | 0.45 |
| 25:RA:273(F):C:H2' | 25:RA:274:G:H5' | 1.99 | 0.45 |
| 25:RA:921:G:H4' | 25:RA:2269:A:C5 | 2.51 | 0.45 |
| 25:RA:1756:G:H4' | 25:RA:1758:G:O4' | 2.17 | 0.45 |
| 25:RA:1835:G:C4 | 25:RA:1931:U:N3 | 2.85 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:RA:1889:A:H1' | 25:RA:2087:G:O4' | 2.17 | 0.45 |
| 25:RA:1897:G:H2' | 25:RA:1898:U:H6 | 1.80 | 0.45 |
| 25:RA:2372:G:H4' | 52:R6:46:HIS:CD2 | 2.52 | 0.45 |
| 25:RA:2602:A:H2 | 55:Z6:76:PPU:H8 | 1.69 | 0.45 |
| 26:RB:43:C:C4 | 26:RB:45:A:C6 | 3.05 | 0.45 |
| 27:RD:166:GLN:NE2 | 27:RD:166:GLN:HA | 2.32 | 0.45 |
| 35:RP:115:LEU:HA | 35:RP:134:ALA:CB | 2.47 | 0.45 |
| 36:RQ:11:LYS:HE2 | 36:RQ:87:LYS:HA | 1.98 | 0.45 |
| 41:RV:5:VAL:HG22 | 41:RV:14:VAL:CG2 | 2.46 | 0.45 |
| 42:RW:67:ASP:OD2 | 42:RW:67:ASP:N | 2.50 | 0.45 |
| 43:RX:47:PHE:O | 43:RX:48:LYS:C | 2.55 | 0.45 |
| 46:R0:2:ALA:HA | 46:R0:3:HIS:HA | 1.70 | 0.45 |
| 46:R0:25:ARG:HD2 | 46:R0:29:GLN:HE21 | 1.77 | 0.45 |
| 47:R1:60:PHE:HZ | 47:R1:90:ILE:HG21 | 1.82 | 0.45 |
| 47:R1:94:LEU:O | 47:R1:95:LEU:HB2 | 2.17 | 0.45 |
| 1:XA:665:A:N3 | 1:XA:732:C:H2' | 2.31 | 0.45 |
| 1:XA:1014:A:C2 | 1:XA:1219:U:H1' | 2.52 | 0.45 |
| 1:XA:1086:U:H3 | 1:XA:1099:G:H22 | 1.65 | 0.45 |
| 1:XA:1222:G:H5'' | 19:XS:78:ARG:NH1 | 2.32 | 0.45 |
| 1:XA:1443:G:H22 | 39:YT:119:LYS:HD2 | 1.82 | 0.45 |
| 2:XB:170:GLU:CA | 2:XB:172:ILE:HD12 | 2.46 | 0.45 |
| 3:XC:34:LEU:HD23 | 3:XC:34:LEU:C | 2.37 | 0.45 |
| 4:XD:178:VAL:O | 4:XD:181:MET:N | 2.50 | 0.45 |
| 5:XE:101:ILE:HD13 | 5:XE:101:ILE:H | 1.82 | 0.45 |
| 16:XP:22:THR:CA | 16:XP:33:ILE:HG12 | 2.42 | 0.45 |
| 25:YA:140:A:H8 | 25:YA:1408:C:HO2' | 1.58 | 0.45 |
| 25:YA:606:U:H4' | 25:YA:658:C:H4' | 1.98 | 0.45 |
| 25:YA:910:A:C6 | 36:YQ:13:GLN:HG3 | 2.52 | 0.45 |
| 25:YA:1113:U:H2' | 25:YA:1114:G:C8 | 2.52 | 0.45 |
| 25:YA:2170:A:H2' | 25:YA:2171:A:O4' | 2.17 | 0.45 |
| 25:YA:2216:G:H2' | 25:YA:2217:G:C8 | 2.51 | 0.45 |
| 25:YA:2336:A:H61 | 46:Y0:43:THR:HG21 | 1.82 | 0.45 |
| 25:YA:2612:C:C5 | 25:YA:2613:U:H5 | 2.35 | 0.45 |
| 27:YD:45:ASN:CG | 27:YD:46:GLN:N | 2.68 | 0.45 |
| 28:YE:4:ILE:HG12 | 28:YE:91:VAL:HG11 | 1.99 | 0.45 |
| 29:YF:196:LEU:O | 29:YF:200:GLU:HG2 | 2.17 | 0.45 |
| 30:YG:83:ARG:HG3 | 30:YG:86:MET:CE | 2.46 | 0.45 |
| 34:YO:53:LYS:N | 34:YO:53:LYS:CD | 2.69 | 0.45 |
| 35:YP:45:LEU:CD1 | 35:YP:45:LEU:N | 2.79 | 0.45 |
| 35:YP:81:GLN:CD | 35:YP:106:LEU:O | 2.55 | 0.45 |
| 35:YP:112:LEU:CD1 | 35:YP:114:ILE:HG23 | 2.47 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:YR:12:ARG:HG3 | 37:YR:12:ARG:NH1 | 2.32 | 0.45 |
| 38:YS:89:ARG:O | 38:YS:90:GLY:C | 2.54 | 0.45 |
| 47:Y1:10:LYS:HD2 | 47:Y1:66:HIS:HE1 | 1.82 | 0.45 |
| 52:Y6:18:ARG:O | 52:Y6:19:ARG:O | 2.33 | 0.45 |
| 54:Y8:52:LYS:O | 54:Y8:52:LYS:CG | 2.64 | 0.45 |
| 1:QA:62:U:O2' | 1:QA:379:C:H1' | 2.17 | 0.45 |
| 1:QA:547:A:H4' | 1:QA:548:G:O5' | 2.16 | 0.45 |
| 1:QA:654:G:C6 | 1:QA:655:A:C4 | 3.05 | 0.45 |
| 1:QA:1233:G:O2' | 1:QA:1365:G:OP1 | 2.34 | 0.45 |
| 1:QA:1343:G:H1' | 9:QI:121:ARG:NH1 | 2.31 | 0.45 |
| 2:QB:95:GLN:NE2 | 2:QB:96:ARG:NH1 | 2.65 | 0.45 |
| 4:QD:94:LEU:O | 4:QD:98:GLU:N | 2.50 | 0.45 |
| 4:QD:178:VAL:O | 4:QD:181:MET:N | 2.50 | 0.45 |
| 5:QE:36:ASP:C | 5:QE:37:ARG:HG2 | 2.38 | 0.45 |
| 7:QG:26:PHE:HZ | 7:QG:120:ILE:HG23 | 1.82 | 0.45 |
| 8:QH:64:LYS:HB3 | 8:QH:79:VAL:HG21 | 1.98 | 0.45 |
| 10:QJ:29:ARG:HG2 | 10:QJ:29:ARG:HH11 | 1.81 | 0.45 |
| 10:QJ:38:ILE:CD1 | 10:QJ:71:LEU:HB3 | 2.46 | 0.45 |
| 10:QJ:62:HIS:N | 10:QJ:62:HIS:CD2 | 2.85 | 0.45 |
| 12:QL:120:TYR:N | 12:QL:120:TYR:CD1 | 2.85 | 0.45 |
| 13:QM:57:ARG:HD2 | 13:QM:61:GLU:OE2 | 2.17 | 0.45 |
| 13:QM:66:LEU:HB2 | 13:QM:67:GLU:H | 1.61 | 0.45 |
| 13:QM:101:GLN:HE21 | 13:QM:101:GLN:HB2 | 1.66 | 0.45 |
| 16:QP:15:PRO:O | 16:QP:16:HIS:ND1 | 2.50 | 0.45 |
| 17:QQ:3:LYS:HD3 | 17:QQ:61:GLU:O | 2.16 | 0.45 |
| 18:QR:82:THR:CG2 | 18:QR:83:GLU:N | 2.79 | 0.45 |
| 19:QS:69:HIS:O | 19:QS:70:LYS:O | 2.34 | 0.45 |
| 25:RA:51:G:H4' | 25:RA:52:A:H5' | 1.99 | 0.45 |
| 25:RA:289:A:H2' | 25:RA:290:G:O4' | 2.16 | 0.45 |
| 25:RA:459:U:OP1 | 53:R7:39:ARG:HA | 2.17 | 0.45 |
| 25:RA:632:A:H2' | 25:RA:633:A:C8 | 2.52 | 0.45 |
| 25:RA:1264:G:H5' | 51:R5:11:THR:CG2 | 2.46 | 0.45 |
| 25:RA:1282:U:H2' | 25:RA:1283:G:O4' | 2.17 | 0.45 |
| 25:RA:1303:G:H1' | 25:RA:1641:A:N1 | 2.32 | 0.45 |
| 25:RA:1319:G:C2 | 25:RA:1320:C:N3 | 2.85 | 0.45 |
| 25:RA:1543:A:HO2' | 25:RA:1544:C:P | 2.40 | 0.45 |
| 25:RA:1897:G:H2' | 25:RA:1898:U:O4' | 2.17 | 0.45 |
| 25:RA:2410:G:H2' | 25:RA:2411:A:C8 | 2.52 | 0.45 |
| 25:RA:2416:C:H5'' | 35:RP:64:LYS:HE3 | 1.99 | 0.45 |
| 25:RA:2420:C:H6 | 25:RA:2420:C:O5' | 2.00 | 0.45 |
| 25:RA:2627:G:O2' | 25:RA:2781:A:N1 | 2.45 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:RD:14:ARG:HG3 | 27:RD:15:PHE:N | 2.31 | 0.45 |
| 27:RD:44:ASN:HB2 | 27:RD:49:ILE:HA | 1.93 | 0.45 |
| 27:RD:79:VAL:HG21 | 27:RD:111:LEU:HD21 | 1.98 | 0.45 |
| 27:RD:198:ASN:ND2 | 27:RD:198:ASN:O | 2.50 | 0.45 |
| 28:RE:2:LYS:HG2 | 28:RE:95:ILE:HG22 | 1.99 | 0.45 |
| 30:RG:6:ALA:HB3 | 30:RG:104:GLU:OE2 | 2.16 | 0.45 |
| 30:RG:67:LYS:CE | 50:R4:6:HIS:NE2 | 2.74 | 0.45 |
| 31:RH:7:LEU:C | 31:RH:7:LEU:HD12 | 2.37 | 0.45 |
| 33:RN:7:LYS:HD3 | 33:RN:9:VAL:H | 1.80 | 0.45 |
| 36:RQ:10:ARG:O | 36:RQ:11:LYS:CB | 2.64 | 0.45 |
| 38:RS:78:LEU:HD21 | 38:RS:108:GLY:CA | 2.47 | 0.45 |
| 41:RV:5:VAL:HG13 | 41:RV:14:VAL:HG21 | 1.98 | 0.45 |
| 43:RX:87:GLN:HE21 | 43:RX:87:GLN:HB2 | 1.55 | 0.45 |
| 45:RZ:48:PHE:HE2 | 45:RZ:71:VAL:HG11 | 1.82 | 0.45 |
| 45:RZ:77:ASP:O | 45:RZ:78:LYS:C | 2.56 | 0.45 |
| 52:R6:9:LEU:CD1 | 52:R6:26:ASN:ND2 | 2.79 | 0.45 |
| 52:R6:17:LYS:O | 52:R6:18:ARG:CB | 2.65 | 0.45 |
| 53:R7:24:THR:O | 53:R7:28:ARG:HG3 | 2.16 | 0.45 |
| 1:XA:292:G:N7 | 1:XA:293:G:H1' | 2.32 | 0.45 |
| 1:XA:438:G:H2' | 1:XA:494:U:O4 | 2.17 | 0.45 |
| 1:XA:449:C:H5 | 1:XA:450:G:C4 | 2.35 | 0.45 |
| 1:XA:662:G:H2' | 1:XA:663:A:H8 | 1.81 | 0.45 |
| 1:XA:1128:C:H5' | 9:XI:16:ARG:NH2 | 2.32 | 0.45 |
| 1:XA:1234:C:H2' | 1:XA:1235:U:C6 | 2.52 | 0.45 |
| 1:XA:1347:G:N2 | 1:XA:1374:A:OP2 | 2.45 | 0.45 |
| 1:XA:1363:A:H4' | 1:XA:1364:U:H5'' | 1.99 | 0.45 |
| 1:XA:1525:G:C4 | 1:XA:1526:G:C8 | 3.05 | 0.45 |
| 2:XB:30:ARG:O | 2:XB:31:TYR:HD2 | 2.00 | 0.45 |
| 2:XB:179:LYS:HA | 8:XH:72:PRO:HD3 | 1.99 | 0.45 |
| 3:XC:22:TRP:HB3 | 3:XC:59:ARG:HB2 | 1.99 | 0.45 |
| 4:XD:94:LEU:O | 4:XD:98:GLU:N | 2.49 | 0.45 |
| 5:XE:12:LEU:HD21 | 5:XE:14:ARG:HB3 | 1.98 | 0.45 |
| 5:XE:93:PRO:HG3 | 8:XH:105:ARG:HG3 | 1.99 | 0.45 |
| 6:XF:22:GLU:OE1 | 6:XF:82:ARG:NH2 | 2.46 | 0.45 |
| 6:XF:101:ALA:HA | 18:XR:28:GLU:CG | 2.46 | 0.45 |
| 7:XG:16:LEU:HD13 | 9:XI:45:ALA:HB2 | 1.99 | 0.45 |
| 8:XH:97:VAL:CG1 | 8:XH:98:LYS:H | 2.30 | 0.45 |
| 9:XI:128:ARG:NH2 | 22:XV:35:A:P | 2.90 | 0.45 |
| 10:XJ:54:PHE:CE2 | 10:XJ:55:LYS:HD2 | 2.52 | 0.45 |
| 10:XJ:54:PHE:CD2 | 10:XJ:55:LYS:HD2 | 2.52 | 0.45 |
| 11:XK:53:SER:C | 11:XK:55:LYS:H | 2.20 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:XK:75:TYR:N | 11:XK:75:TYR:CD1 | 2.85 | 0.45 |
| 11:XK:83:ILE:HG12 | 11:XK:109:VAL:HG23 | 1.98 | 0.45 |
| 12:XL:117:ARG:NH2 | 12:XL:124:LYS:HD3 | 2.32 | 0.45 |
| 13:XM:56:LEU:HD13 | 13:XM:56:LEU:O | 2.17 | 0.45 |
| 13:XM:66:LEU:C | 13:XM:70:LEU:HB2 | 2.37 | 0.45 |
| 15:XO:82:ILE:CG2 | 15:XO:83:GLU:N | 2.79 | 0.45 |
| 21:XU:6:ARG:C | 21:XU:8:THR:H | 2.20 | 0.45 |
| 25:YA:2038:G:C6 | 25:YA:2039:C:C4 | 3.05 | 0.45 |
| 25:YA:2277:G:C5' | 36:YQ:85:LYS:HG3 | 2.47 | 0.45 |
| 25:YA:2729:G:H2' | 25:YA:2730:C:H6 | 1.82 | 0.45 |
| 25:YA:2882:A:OP1 | 37:YR:96:ARG:NH1 | 2.49 | 0.45 |
| 28:YE:18:ASP:O | 28:YE:19:ARG:C | 2.56 | 0.45 |
| 28:YE:21:VAL:HG23 | 28:YE:22:PRO:CD | 2.46 | 0.45 |
| 32:YI:99:GLU:CG | 32:YI:103:ARG:NH2 | 2.75 | 0.45 |
| 32:YI:124:GLY:N | 32:YI:142:VAL:HG23 | 2.31 | 0.45 |
| 32:YI:131:LYS:HD2 | 32:YI:131:LYS:N | 2.32 | 0.45 |
| 34:YO:19:ILE:HD13 | 34:YO:19:ILE:H | 1.83 | 0.45 |
| 37:YR:17:ARG:O | 37:YR:20:LEU:HB3 | 2.17 | 0.45 |
| 38:YS:83:LYS:CE | 38:YS:109:GLY:HA2 | 2.47 | 0.45 |
| 39:YT:57:PHE:O | 39:YT:58:ASN:C | 2.54 | 0.45 |
| 42:YW:14:PRO:O | 42:YW:16:LYS:N | 2.50 | 0.45 |
| 44:YY:25:GLY:HA3 | 44:YY:39:VAL:CG1 | 2.47 | 0.45 |
| 45:YZ:23:LYS:HD3 | 45:YZ:23:LYS:N | 2.30 | 0.45 |
| 52:Y6:7:ILE:HG23 | 52:Y6:8:LYS:N | 2.32 | 0.45 |
| 54:Y8:36:LYS:HB3 | 54:Y8:40:GLU:HG2 | 1.99 | 0.45 |
| 1:QA:181:G:N2 | 1:QA:195:A:N3 | 2.65 | 0.44 |
| 1:QA:1116:C:O2' | 9:QI:108:VAL:HG11 | 2.16 | 0.44 |
| 1:QA:1268:A:O3' | 21:QU:19:GLY:HA2 | 2.17 | 0.44 |
| 1:QA:1428:A:H2' | 1:QA:1429:C:C6 | 2.51 | 0.44 |
| 1:QA:1507:A:H2' | 1:QA:1508:G:O4' | 2.18 | 0.44 |
| 2:QB:30:ARG:HH21 | 2:QB:194:PRO:HG2 | 1.82 | 0.44 |
| 2:QB:189:ASP:OD2 | 2:QB:205:ASP:OD1 | 2.35 | 0.44 |
| 3:QC:43:LEU:HD11 | 3:QC:66:VAL:HG11 | 1.98 | 0.44 |
| 3:QC:73:PRO:O | 3:QC:77:ILE:HG13 | 2.16 | 0.44 |
| 4:QD:3:ARG:O | 4:QD:4:TYR:C | 2.55 | 0.44 |
| 4:QD:30:LYS:O | 4:QD:32:ALA:N | 2.49 | 0.44 |
| 5:QE:12:LEU:HB3 | 5:QE:31:LEU:CB | 2.46 | 0.44 |
| 5:QE:80:ILE:HG13 | 5:QE:82:VAL:HG23 | 1.99 | 0.44 |
| 6:QF:3:ARG:HG2 | 6:QF:93:SER:OG | 2.17 | 0.44 |
| 7:QG:45:ASP:O | 7:QG:49:ILE:HG12 | 2.17 | 0.44 |
| 10:QJ:33:GLN:HB2 | 10:QJ:75:ILE:HD11 | 1.99 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 10:QJ:63:PHE:HB3 | 14:QN:57:ARG:O | 2.18 | 0.44 |
| 13:QM:3:ARG:HD2 | 13:QM:9:ILE:CG1 | 2.45 | 0.44 |
| 15:QO:29:VAL:HB | 15:QO:81:LEU:HD21 | 1.99 | 0.44 |
| 25:RA:247:G:H4' | 25:RA:386:G:C6 | 2.52 | 0.44 |
| 25:RA:520:G:H2' | 25:RA:521:G:C8 | 2.48 | 0.44 |
| 25:RA:583:G:OP2 | 40:RU:10:ARG:NH1 | 2.50 | 0.44 |
| 25:RA:588:U:H1' | 29:RF:90:PHE:CD1 | 2.51 | 0.44 |
| 25:RA:900:A:H5' | 25:RA:901:A:OP2 | 2.17 | 0.44 |
| 25:RA:1079:C:H2' | 25:RA:1080:C:O4' | 2.17 | 0.44 |
| 25:RA:1695:G:H2' | 25:RA:1696:G:O4' | 2.17 | 0.44 |
| 25:RA:1980:G:O2' | 25:RA:1981:A:OP1 | 2.35 | 0.44 |
| 25:RA:2041:U:H2' | 25:RA:2042:A:O4' | 2.17 | 0.44 |
| 25:RA:2251:G:C4 | 25:RA:2450:A:H1' | 2.52 | 0.44 |
| 28:RE:4:ILE:HG12 | 28:RE:91:VAL:HG11 | 1.99 | 0.44 |
| 29:RF:7:TYR:N | 29:RF:7:TYR:CD1 | 2.84 | 0.44 |
| 30:RG:16:ARG:CZ | 30:RG:31:VAL:HG11 | 2.47 | 0.44 |
| 30:RG:129:GLY:O | 30:RG:130:ASN:OD1 | 2.34 | 0.44 |
| 31:RH:53:GLU:OE1 | 31:RH:53:GLU:HA | 2.16 | 0.44 |
| 32:RI:83:ALA:O | 32:RI:85:GLU:N | 2.50 | 0.44 |
| 32:RI:111:PRO:O | 32:RI:112:LYS:C | 2.55 | 0.44 |
| 33:RN:36:GLY:O | 33:RN:42:TRP:CE3 | 2.69 | 0.44 |
| 33:RN:57:ALA:HA | 33:RN:60:ILE:CD1 | 2.44 | 0.44 |
| 33:RN:120:LEU:HD13 | 33:RN:120:LEU:C | 2.37 | 0.44 |
| 34:RO:78:ARG:HH21 | 39:RT:103:ARG:HH22 | 1.64 | 0.44 |
| 35:RP:75:ILE:HG12 | 35:RP:77:ARG:HH12 | 1.82 | 0.44 |
| 36:RQ:119:ARG:HH11 | 36:RQ:119:ARG:CG | 2.25 | 0.44 |
| 41:RV:69:LYS:HG3 | 41:RV:87:HIS:O | 2.17 | 0.44 |
| 42:RW:21:VAL:O | 42:RW:21:VAL:HG12 | 2.17 | 0.44 |
| 44:RY:73:ARG:HE | 44:RY:73:ARG:HB3 | 1.51 | 0.44 |
| 44:RY:84:ARG:HD3 | 44:RY:86:ARG:HH11 | 1.83 | 0.44 |
| 45:RZ:58:VAL:O | 45:RZ:59:LEU:HB2 | 2.16 | 0.44 |
| 47:R1:48:LYS:HA | 47:R1:60:PHE:O | 2.17 | 0.44 |
| 51:R5:56:LYS:O | 51:R5:58:LEU:N | 2.50 | 0.44 |
| 52:R6:11:LEU:HD11 | 52:R6:51:GLU:HG3 | 1.98 | 0.44 |
| 54:R8:9:GLY:O | 54:R8:13:ARG:HG2 | 2.16 | 0.44 |
| 1:XA:340:U:C2 | 1:XA:350:G:N2 | 2.85 | 0.44 |
| 1:XA:580:U:H2' | 1:XA:581:G:O4' | 2.17 | 0.44 |
| 1:XA:1321:C:C5' | 1:XA:1322:C:H5'' | 2.48 | 0.44 |
| 3:XC:87:LEU:C | 3:XC:89:GLU:H | 2.19 | 0.44 |
| 3:XC:140:ARG:HH11 | 3:XC:140:ARG:CG | 2.30 | 0.44 |
| 4:XD:76:ARG:O | 4:XD:79:PHE:HB3 | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:XG:45:ASP:O | 7:XG:49:ILE:HG12 | 2.17 | 0.44 |
| 9:XI:5:TYR:CD2 | 9:XI:6:GLY:N | 2.85 | 0.44 |
| 9:XI:7:THR:O | 9:XI:83:ARG:CD | 2.66 | 0.44 |
| 9:XI:13:ALA:HB2 | 9:XI:68:GLY:CA | 2.47 | 0.44 |
| 10:XJ:6:ILE:O | 10:XJ:71:LEU:HD12 | 2.18 | 0.44 |
| 13:XM:28:ALA:C | 13:XM:30:ALA:N | 2.70 | 0.44 |
| 13:XM:108:ARG:O | 13:XM:111:LYS:N | 2.48 | 0.44 |
| 15:XO:83:GLU:C | 15:XO:85:LEU:N | 2.70 | 0.44 |
| 19:XS:5:LEU:CD2 | 50:Y4:67:TYR:CE2 | 2.90 | 0.44 |
| 19:XS:45:VAL:O | 19:XS:62:ILE:O | 2.35 | 0.44 |
| 20:XT:44:ALA:O | 20:XT:91:LEU:HB3 | 2.16 | 0.44 |
| 25:YA:327:G:H2' | 25:YA:328:U:H6 | 1.80 | 0.44 |
| 25:YA:448:U:H1' | 29:YF:84:VAL:CG2 | 2.47 | 0.44 |
| 25:YA:517:C:O2' | 42:YW:18:ARG:NH2 | 2.50 | 0.44 |
| 25:YA:596:G:H2' | 25:YA:597:U:O4' | 2.16 | 0.44 |
| 25:YA:1999:C:H2' | 25:YA:2000:G:O4' | 2.17 | 0.44 |
| 26:YB:95:U:C2 | 26:YB:96:G:C8 | 3.05 | 0.44 |
| 27:YD:166:GLN:NE2 | 27:YD:166:GLN:HA | 2.32 | 0.44 |
| 31:YH:137:ASP:HB2 | 31:YH:140:LYS:HE3 | 1.98 | 0.44 |
| 35:YP:75:ILE:HG12 | 35:YP:77:ARG:HH12 | 1.82 | 0.44 |
| 38:YS:78:LEU:HD21 | 38:YS:108:GLY:CA | 2.47 | 0.44 |
| 39:YT:80:SER:HA | 39:YT:81:PRO:HD3 | 1.73 | 0.44 |
| 45:YZ:93:ASP:O | 45:YZ:94:GLU:CB | 2.65 | 0.44 |
| 47:Y1:48:LYS:HA | 47:Y1:60:PHE:O | 2.17 | 0.44 |
| 51:Y5:56:LYS:O | 51:Y5:58:LEU:N | 2.50 | 0.44 |
| 1:QA:430:A:H4' | 4:QD:7:PRO:HG3 | 1.98 | 0.44 |
| 1:QA:719:C:N3 | 18:QR:50:ILE:HD13 | 2.32 | 0.44 |
| 1:QA:833:U:H2' | 1:QA:834:C:C6 | 2.52 | 0.44 |
| 1:QA:1064:G:H1' | 1:QA:1066:C:C6 | 2.52 | 0.44 |
| 1:QA:1293:G:H2' | 1:QA:1294:G:C8 | 2.53 | 0.44 |
| 1:QA:1326:C:H2' | 1:QA:1327:C:H6 | 1.82 | 0.44 |
| 1:QA:1397:C:H5'' | 1:QA:1398:A:O4' | 2.16 | 0.44 |
| 2:QB:51:LEU:O | 2:QB:55:PHE:HD2 | 1.99 | 0.44 |
| 2:QB:229:VAL:O | 2:QB:229:VAL:HG12 | 2.17 | 0.44 |
| 7:QG:40:ALA:O | 7:QG:41:ARG:C | 2.55 | 0.44 |
| 7:QG:111:ARG:HD2 | 7:QG:123:GLU:HB2 | 1.99 | 0.44 |
| 13:QM:66:LEU:C | 13:QM:70:LEU:HB2 | 2.37 | 0.44 |
| 15:QO:54:ARG:O | 15:QO:55:GLY:C | 2.55 | 0.44 |
| 20:QT:10:LEU:C | 20:QT:12:ALA:H | 2.21 | 0.44 |
| 20:QT:89:ARG:HH12 | 20:QT:106:ALA:HB1 | 1.82 | 0.44 |
| 25:RA:226:G:O2' | 25:RA:227:A:P | 2.75 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:470:A:H2' | 25:RA:471:A:O4' | 2.17 | 0.44 |
| 25:RA:1037:G:H1 | 25:RA:1118:C:N4 | 2.14 | 0.44 |
| 25:RA:1139:G:O2' | 25:RA:1143:A:N1 | 2.36 | 0.44 |
| 25:RA:1494:A:H2' | 25:RA:1494:A:N3 | 2.33 | 0.44 |
| 25:RA:1654:A:OP2 | 37:RR:2:ARG:HD2 | 2.17 | 0.44 |
| 25:RA:1835:G:N3 | 25:RA:1931:U:N3 | 2.57 | 0.44 |
| 25:RA:2052:G:C6 | 25:RA:2053:G:N7 | 2.86 | 0.44 |
| 25:RA:2342:C:H2' | 25:RA:2374:C:H5'' | 1.98 | 0.44 |
| 25:RA:2356:C:O3' | 46:R0:20:ARG:CD | 2.65 | 0.44 |
| 25:RA:2532:G:H2' | 25:RA:2533:A:C8 | 2.53 | 0.44 |
| 25:RA:2629:A:O2' | 25:RA:2630:G:H5'' | 2.17 | 0.44 |
| 27:RD:92:ILE:HD12 | 27:RD:104:TYR:HD2 | 1.81 | 0.44 |
| 28:RE:36:ARG:HH11 | 28:RE:36:ARG:CB | 2.28 | 0.44 |
| 28:RE:77:ILE:O | 28:RE:78:LEU:O | 2.35 | 0.44 |
| 28:RE:101:ARG:HD2 | 28:RE:171:GLU:HA | 1.98 | 0.44 |
| 29:RF:155:LEU:HA | 29:RF:174:VAL:CG1 | 2.46 | 0.44 |
| 31:RH:51:ARG:HG3 | 31:RH:51:ARG:NH1 | 2.30 | 0.44 |
| 32:RI:92:VAL:O | 32:RI:120:ILE:HG22 | 2.18 | 0.44 |
| 33:RN:67:LEU:HA | 33:RN:87:LEU:HD13 | 2.00 | 0.44 |
| 34:RO:19:ILE:HD13 | 34:RO:19:ILE:H | 1.83 | 0.44 |
| 36:RQ:90:VAL:C | 36:RQ:92:GLY:N | 2.71 | 0.44 |
| 37:RR:10:LEU:O | 37:RR:11:ASN:C | 2.55 | 0.44 |
| 40:RU:66:ASN:CB | 40:RU:76:TYR:HB2 | 2.44 | 0.44 |
| 44:RY:95:LYS:HB2 | 44:RY:99:CYS:O | 2.18 | 0.44 |
| 45:RZ:137:ILE:HG22 | 45:RZ:158:PRO:HG2 | 1.98 | 0.44 |
| 46:R0:40:GLN:OE1 | 46:R0:45:PHE:HB2 | 2.18 | 0.44 |
| 50:R4:15:ILE:CG2 | 50:R4:20:ASN:ND2 | 2.80 | 0.44 |
| 50:R4:68:ARG:HH11 | 50:R4:69:LYS:HG2 | 1.82 | 0.44 |
| 1:XA:106:C:H2' | 1:XA:107:G:C8 | 2.52 | 0.44 |
| 1:XA:1328:C:H2' | 1:XA:1329:A:O4' | 2.17 | 0.44 |
| 1:XA:1397:C:H1' | 23:XX:8:A:H62 | 1.82 | 0.44 |
| 2:XB:164:VAL:HB | 2:XB:186:ALA:HB1 | 1.96 | 0.44 |
| 2:XB:189:ASP:OD2 | 2:XB:205:ASP:OD1 | 2.35 | 0.44 |
| 4:XD:68:TYR:O | 4:XD:69:GLY:C | 2.55 | 0.44 |
| 4:XD:150:GLU:C | 4:XD:152:SER:H | 2.20 | 0.44 |
| 5:XE:52:PRO:HB2 | 5:XE:53:LEU:HD12 | 1.97 | 0.44 |
| 6:XF:23:LYS:HG2 | 6:XF:27:GLN:OE1 | 2.18 | 0.44 |
| 7:XG:26:PHE:HZ | 7:XG:120:ILE:HG23 | 1.82 | 0.44 |
| 10:XJ:61:GLU:CG | 14:XN:58:LYS:HE2 | 2.47 | 0.44 |
| 11:XK:13:GLN:HG3 | 11:XK:75:TYR:CA | 2.48 | 0.44 |
| 12:XL:120:TYR:N | 12:XL:120:TYR:CD1 | 2.86 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 18:XR:82:THR:HG22 | 18:XR:83:GLU:H | 1.80 | 0.44 |
| 19:XS:3:ARG:HB3 | 50:Y4:67:TYR:CD2 | 2.53 | 0.44 |
| 20:XT:36:LEU:C | 20:XT:38:LYS:N | 2.71 | 0.44 |
| 25:YA:288:C:N4 | 25:YA:353:G:H1 | 2.16 | 0.44 |
| 25:YA:357:A:H2' | 25:YA:358:U:C6 | 2.52 | 0.44 |
| 25:YA:597:U:H2' | 25:YA:598:G:C8 | 2.53 | 0.44 |
| 25:YA:1309:G:H1 | 25:YA:1605:C:H42 | 1.65 | 0.44 |
| 25:YA:1508:A:O2' | 25:YA:1509:C:O5' | 2.33 | 0.44 |
| 25:YA:1556:C:H2' | 25:YA:1557:C:H6 | 1.81 | 0.44 |
| 25:YA:2572:A:C4 | 28:YE:144:ARG:NH2 | 2.85 | 0.44 |
| 25:YA:2699:C:H2' | 25:YA:2700:C:O4' | 2.17 | 0.44 |
| 25:YA:2870:C:H2' | 25:YA:2871:C:O4' | 2.17 | 0.44 |
| 27:YD:52:ARG:HB2 | 27:YD:53:PHE:CD2 | 2.53 | 0.44 |
| 27:YD:80:ALA:O | 27:YD:113:VAL:HG13 | 2.16 | 0.44 |
| 27:YD:177:LEU:O | 27:YD:179:SER:N | 2.51 | 0.44 |
| 27:YD:238:GLY:O | 27:YD:239:ARG:O | 2.36 | 0.44 |
| 30:YG:63:ILE:HG12 | 30:YG:64:THR:N | 2.32 | 0.44 |
| 30:YG:129:GLY:HA2 | 30:YG:169:ALA:HB2 | 1.99 | 0.44 |
| 32:YI:83:ALA:O | 32:YI:85:GLU:N | 2.50 | 0.44 |
| 33:YN:112:LEU:O | 33:YN:116:LEU:HG | 2.16 | 0.44 |
| 34:YO:97:ARG:HA | 34:YO:117:LEU:HD22 | 1.99 | 0.44 |
| 35:YP:75:ILE:HG12 | 35:YP:77:ARG:NH1 | 2.32 | 0.44 |
| 36:YQ:93:TYR:CD1 | 36:YQ:93:TYR:N | 2.85 | 0.44 |
| 39:YT:23:ARG:CB | 39:YT:24:PRO:HD2 | 2.40 | 0.44 |
| 39:YT:36:GLU:CG | 39:YT:41:ARG:HD3 | 2.46 | 0.44 |
| 41:YV:69:LYS:HG3 | 41:YV:87:HIS:O | 2.17 | 0.44 |
| 45:YZ:27:VAL:CG1 | 45:YZ:87:ASP:HB3 | 2.46 | 0.44 |
| 45:YZ:120:ILE:HD13 | 45:YZ:169:GLU:CG | 2.45 | 0.44 |
| 46:Y0:25:ARG:HH11 | 46:Y0:25:ARG:HG2 | 1.81 | 0.44 |
| 49:Y3:60:GLU:HG2 | 49:Y3:60:GLU:O | 2.16 | 0.44 |
| 1:QA:59:A:H1' | 1:QA:354:G:N2 | 2.32 | 0.44 |
| 1:QA:191:G:H1' | 20:QT:105:SER:HB3 | 1.99 | 0.44 |
| 1:QA:374:A:C6 | 1:QA:375:U:C4 | 3.06 | 0.44 |
| 1:QA:392:G:OP2 | 16:QP:12:LYS:HG3 | 2.18 | 0.44 |
| 1:QA:502:G:P | 12:QL:118:SER:HB2 | 2.58 | 0.44 |
| 1:QA:1149:C:H2' | 1:QA:1150:U:O4' | 2.17 | 0.44 |
| 1:QA:1338:G:N3 | 22:QV:41:C:O2' | 2.49 | 0.44 |
| 3:QC:42:LEU:HD12 | 3:QC:45:LYS:NZ | 2.32 | 0.44 |
| 4:QD:76:ARG:O | 4:QD:79:PHE:HB3 | 2.17 | 0.44 |
| 5:QE:31:LEU:HD23 | 5:QE:45:PHE:CD1 | 2.53 | 0.44 |
| 6:QF:76:ALA:HB1 | 6:QF:80:ARG:HH21 | 1.82 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:QH:16:ALA:HB2 | 8:QH:24:THR:CG2 | 2.44 | 0.44 |
| 8:QH:82:HIS:CD2 | 8:QH:82:HIS:C | 2.91 | 0.44 |
| 9:QI:128:ARG:HH21 | 22:QV:35:A:P | 2.40 | 0.44 |
| 13:QM:39:ILE:HD12 | 13:QM:56:LEU:HD23 | 1.99 | 0.44 |
| 19:QS:41:VAL:HG13 | 19:QS:44:MET:CB | 2.39 | 0.44 |
| 20:QT:44:ALA:HB1 | 20:QT:91:LEU:HB2 | 2.00 | 0.44 |
| 25:RA:813:U:H2' | 25:RA:814:C:C6 | 2.51 | 0.44 |
| 25:RA:1893:C:C4 | 25:RA:1894:C:C4 | 3.05 | 0.44 |
| 25:RA:2350:C:H2' | 25:RA:2351:G:O4' | 2.17 | 0.44 |
| 25:RA:2417:C:C4 | 25:RA:2418:A:N7 | 2.86 | 0.44 |
| 25:RA:2844:G:H5' | 25:RA:2845:G:OP2 | 2.17 | 0.44 |
| 27:RD:48:ARG:HG3 | 27:RD:48:ARG:NH1 | 2.31 | 0.44 |
| 29:RF:132:VAL:HG23 | 29:RF:133:ASN:H | 1.82 | 0.44 |
| 32:RI:117:GLU:O | 32:RI:118:LYS:HB2 | 2.18 | 0.44 |
| 32:RI:124:GLY:N | 32:RI:142:VAL:HG23 | 2.31 | 0.44 |
| 33:RN:20:GLY:HA2 | 33:RN:61:ARG:HD2 | 1.99 | 0.44 |
| 34:RO:22:ILE:HG12 | 34:RO:41:ALA:HA | 1.98 | 0.44 |
| 34:RO:104:ARG:NH2 | 39:RT:34:VAL:HG11 | 2.32 | 0.44 |
| 39:RT:49:VAL:O | 39:RT:49:VAL:CG1 | 2.64 | 0.44 |
| 41:RV:61:VAL:O | 41:RV:61:VAL:HG22 | 2.16 | 0.44 |
| 47:R1:10:LYS:HD2 | 47:R1:66:HIS:HE1 | 1.82 | 0.44 |
| 47:R1:54:ALA:O | 47:R1:55:GLY:O | 2.35 | 0.44 |
| 50:R4:15:ILE:N | 50:R4:15:ILE:CD1 | 2.78 | 0.44 |
| 54:R8:16:ILE:CD1 | 54:R8:57:ARG:HG2 | 2.42 | 0.44 |
| 54:R8:17:THR:O | 54:R8:20:GLY:N | 2.46 | 0.44 |
| 54:R8:47:LYS:HD2 | 54:R8:48:PHE:N | 2.33 | 0.44 |
| 1:XA:317:G:C6 | 1:XA:318:G:C5 | 3.05 | 0.44 |
| 1:XA:412:A:OP2 | 4:XD:35:ARG:NH2 | 2.50 | 0.44 |
| 1:XA:422:C:O2' | 1:XA:423:G:H5'' | 2.18 | 0.44 |
| 1:XA:1074:G:C4' | 2:XB:104:ASN:HB2 | 2.46 | 0.44 |
| 1:XA:1128:C:H5' | 9:XI:16:ARG:HH22 | 1.82 | 0.44 |
| 1:XA:1213:A:N7 | 1:XA:1215:G:C5 | 2.85 | 0.44 |
| 1:XA:1530:G:H2' | 1:XA:1531:A:O4' | 2.17 | 0.44 |
| 2:XB:24:TRP:CD2 | 2:XB:26:PRO:HD3 | 2.51 | 0.44 |
| 2:XB:188:ALA:CB | 2:XB:200:ILE:HG23 | 2.48 | 0.44 |
| 6:XF:27:GLN:HG2 | 6:XF:27:GLN:H | 1.65 | 0.44 |
| 9:XI:4:TYR:CZ | 9:XI:88:TYR:HB2 | 2.51 | 0.44 |
| 9:XI:118:LYS:O | 9:XI:119:ALA:CB | 2.65 | 0.44 |
| 10:XJ:63:PHE:HB3 | 14:XN:57:ARG:O | 2.18 | 0.44 |
| 13:XM:53:VAL:HG12 | 13:XM:57:ARG:HH12 | 1.82 | 0.44 |
| 13:XM:121:LYS:HZ2 | 24:XY:40:G:P | 2.34 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 15:XO:29:VAL:HB | 15:XO:81:LEU:HD21 | 1.99 | 0.44 |
| 16:XP:72:ARG:CD | 16:XP:73:LEU:HD23 | 2.48 | 0.44 |
| 19:XS:3:ARG:CG | 19:XS:4:SER:H | 2.21 | 0.44 |
| 20:XT:98:PRO:C | 20:XT:100:ILE:H | 2.19 | 0.44 |
| 25:YA:102:G:OP1 | 48:Y2:7:ARG:NH2 | 2.50 | 0.44 |
| 25:YA:1319:G:H8 | 25:YA:1319:G:H5' | 1.82 | 0.44 |
| 25:YA:1437:C:H2' | 25:YA:1438:U:C6 | 2.52 | 0.44 |
| 25:YA:2105:C:H2' | 25:YA:2106:G:H8 | 1.83 | 0.44 |
| 25:YA:2550:G:C2 | 25:YA:2559:C:O2 | 2.71 | 0.44 |
| 25:YA:2693:A:H2' | 25:YA:2694:G:H8 | 1.83 | 0.44 |
| 26:YB:61:G:C6 | 26:YB:62:C:C4 | 3.06 | 0.44 |
| 26:YB:71:C:H2' | 26:YB:72:G:H8 | 1.82 | 0.44 |
| 26:YB:95:U:N3 | 26:YB:96:G:N7 | 2.65 | 0.44 |
| 27:YD:145:VAL:HG12 | 27:YD:146:GLU:N | 2.32 | 0.44 |
| 29:YF:144:LYS:C | 29:YF:146:ALA:H | 2.21 | 0.44 |
| 29:YF:149:ASP:OD2 | 29:YF:151:SER:HB3 | 2.17 | 0.44 |
| 30:YG:19:LEU:HA | 30:YG:22:ARG:HB2 | 1.99 | 0.44 |
| 32:YI:117:GLU:O | 32:YI:118:LYS:HB2 | 2.17 | 0.44 |
| 33:YN:63:THR:HG23 | 33:YN:66:LYS:HE3 | 2.00 | 0.44 |
| 34:YO:104:ARG:NH1 | 39:YT:36:GLU:CD | 2.71 | 0.44 |
| 35:YP:45:LEU:N | 35:YP:45:LEU:HD12 | 2.32 | 0.44 |
| 36:YQ:82:ARG:H | 46:Y0:7:LEU:HD22 | 1.80 | 0.44 |
| 38:YS:3:ARG:O | 38:YS:4:LEU:O | 2.35 | 0.44 |
| 40:YU:53:ARG:C | 40:YU:55:ARG:H | 2.20 | 0.44 |
| 40:YU:57:PHE:O | 40:YU:59:ARG:N | 2.50 | 0.44 |
| 41:YV:72:VAL:HG13 | 41:YV:85:LYS:HB3 | 2.00 | 0.44 |
| 42:YW:28:SER:O | 42:YW:30:GLU:N | 2.51 | 0.44 |
| 45:YZ:139:VAL:CG1 | 45:YZ:139:VAL:O | 2.65 | 0.44 |
| 45:YZ:169:GLU:O | 45:YZ:170:THR:OG1 | 2.35 | 0.44 |
| 46:Y0:78:TYR:CD1 | 46:Y0:78:TYR:N | 2.86 | 0.44 |
| 50:Y4:33:VAL:CG1 | 50:Y4:34:GLU:N | 2.80 | 0.44 |
| 51:Y5:40:LYS:HZ1 | 51:Y5:48:GLU:CB | 2.19 | 0.44 |
| 54:Y8:15:LYS:HD3 | 54:Y8:15:LYS:C | 2.37 | 0.44 |
| 1:QA:271:C:H2' | 1:QA:272:C:H6 | 1.83 | 0.44 |
| 1:QA:538:G:H2' | 1:QA:539:A:H8 | 1.81 | 0.44 |
| 1:QA:771:G:H2' | 1:QA:772:U:C6 | 2.52 | 0.44 |
| 1:QA:1311:G:C2 | 1:QA:1327:C:C2 | 3.06 | 0.44 |
| 1:QA:1318:A:H4' | 19:QS:11:VAL:CG1 | 2.42 | 0.44 |
| 4:QD:9:CYS:SG | 4:QD:32:ALA:HB2 | 2.58 | 0.44 |
| 4:QD:122:ARG:HA | 4:QD:134:ASP:HB2 | 2.00 | 0.44 |
| 5:QE:147:ASP:OD2 | 5:QE:147:ASP:N | 2.50 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:QI:7:THR:O | 9:QI:83:ARG:CD | 2.66 | 0.44 |
| 11:QK:13:GLN:HG3 | 11:QK:75:TYR:CA | 2.47 | 0.44 |
| 12:QL:120:TYR:O | 12:QL:121:GLY:O | 2.36 | 0.44 |
| 13:QM:16:ASP:O | 13:QM:19:LEU:HD23 | 2.17 | 0.44 |
| 17:QQ:33:GLY:O | 17:QQ:34:LYS:C | 2.55 | 0.44 |
| 24:QY:34:C:C2' | 24:QY:35:G:O5' | 2.65 | 0.44 |
| 25:RA:380:U:H2' | 25:RA:381:G:H8 | 1.81 | 0.44 |
| 25:RA:704:G:HO2' | 25:RA:705:A:P | 2.40 | 0.44 |
| 25:RA:2133:G:H2' | 25:RA:2157:G:N2 | 2.32 | 0.44 |
| 25:RA:2437:U:H2' | 25:RA:2438:U:C6 | 2.52 | 0.44 |
| 25:RA:2635:C:OP1 | 28:RE:78:LEU:HD12 | 2.17 | 0.44 |
| 25:RA:2887:U:H2' | 25:RA:2888:C:C6 | 2.51 | 0.44 |
| 27:RD:155:LEU:N | 27:RD:155:LEU:HD12 | 2.32 | 0.44 |
| 29:RF:117:ARG:NH2 | 29:RF:189:THR:O | 2.50 | 0.44 |
| 32:RI:9:LEU:C | 32:RI:10:GLU:HG3 | 2.36 | 0.44 |
| 35:RP:45:LEU:N | 35:RP:45:LEU:HD12 | 2.32 | 0.44 |
| 35:RP:81:GLN:HG3 | 35:RP:82:GLY:N | 2.32 | 0.44 |
| 39:RT:135:ALA:C | 39:RT:137:LYS:N | 2.71 | 0.44 |
| 40:RU:86:ALA:CB | 40:RU:88:ILE:HD11 | 2.48 | 0.44 |
| 41:RV:4:ILE:HG22 | 41:RV:39:LEU:HD23 | 1.99 | 0.44 |
| 41:RV:35:LEU:HD22 | 41:RV:35:LEU:N | 2.23 | 0.44 |
| 42:RW:29:LEU:HD11 | 42:RW:55:ALA:HB2 | 1.98 | 0.44 |
| 42:RW:88:ARG:HH11 | 42:RW:88:ARG:HG2 | 1.82 | 0.44 |
| 43:RX:70:LEU:HD23 | 43:RX:70:LEU:H | 1.77 | 0.44 |
| 44:RY:97:ARG:HG2 | 44:RY:97:ARG:HH11 | 1.82 | 0.44 |
| 45:RZ:52:SER:O | 45:RZ:54:HIS:N | 2.50 | 0.44 |
| 45:RZ:117:LEU:HB3 | 45:RZ:118:GLN:H | 1.70 | 0.44 |
| 45:RZ:136:PHE:CD1 | 45:RZ:137:ILE:N | 2.84 | 0.44 |
| 48:R2:41:ILE:HD12 | 48:R2:41:ILE:O | 2.16 | 0.44 |
| 49:R3:50:VAL:HB | 49:R3:53:LEU:HD12 | 2.00 | 0.44 |
| 53:R7:32:LYS:O | 53:R7:33:ARG:C | 2.56 | 0.44 |
| 54:R8:15:LYS:HD3 | 54:R8:15:LYS:C | 2.37 | 0.44 |
| 1:XA:36:C:O2' | 1:XA:501:C:OP1 | 2.32 | 0.44 |
| 1:XA:540:G:H2' | 1:XA:541:G:O4' | 2.18 | 0.44 |
| 1:XA:557:G:C6 | 1:XA:558:G:C6 | 3.05 | 0.44 |
| 1:XA:1221:G:O3' | 19:XS:77:THR:HG21 | 2.18 | 0.44 |
| 1:XA:1235:U:H2' | 1:XA:1236:A:O4' | 2.18 | 0.44 |
| 1:XA:1320:C:C4 | 19:XS:36:ARG:HG3 | 2.51 | 0.44 |
| 2:XB:30:ARG:HH21 | 2:XB:194:PRO:HG2 | 1.82 | 0.44 |
| 3:XC:43:LEU:HD11 | 3:XC:66:VAL:HG11 | 1.98 | 0.44 |
| 3:XC:68:VAL:HG12 | 3:XC:70:VAL:HG23 | 1.98 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 3:XC:69:HIS:N | 3:XC:69:HIS:ND1 | 2.66 | 0.44 |
| 3:XC:108:ASN:HB3 | 3:XC:111:LEU:HD12 | 1.99 | 0.44 |
| 4:XD:206:PHE:CD2 | 4:XD:207:TYR:CE1 | 3.05 | 0.44 |
| 5:XE:62:ALA:C | 5:XE:64:ARG:H | 2.21 | 0.44 |
| 5:XE:82:VAL:HG12 | 5:XE:83:GLU:H | 1.77 | 0.44 |
| 5:XE:147:ASP:N | 5:XE:147:ASP:OD2 | 2.50 | 0.44 |
| 7:XG:38:LEU:O | 7:XG:42:ILE:HG13 | 2.17 | 0.44 |
| 8:XH:28:ALA:O | 8:XH:29:SER:HB2 | 2.18 | 0.44 |
| 8:XH:110:ALA:HB3 | 8:XH:121:ASP:HB3 | 1.99 | 0.44 |
| 9:XI:128:ARG:HD3 | 22:XV:32:C:OP2 | 2.18 | 0.44 |
| 10:XJ:16:LEU:HD13 | 10:XJ:16:LEU:C | 2.38 | 0.44 |
| 15:XO:25:THR:HG22 | 15:XO:70:LEU:HD22 | 1.99 | 0.44 |
| 25:YA:71:A:C2 | 43:YX:31:HIS:CE1 | 2.94 | 0.44 |
| 25:YA:225:A:H5' | 25:YA:226:G:OP2 | 2.16 | 0.44 |
| 25:YA:514:A:H2' | 25:YA:515:A:C8 | 2.53 | 0.44 |
| 25:YA:529:A:C8 | 25:YA:530:G:C6 | 3.06 | 0.44 |
| 25:YA:573:G:N2 | 25:YA:2031:A:OP2 | 2.45 | 0.44 |
| 25:YA:1796:U:H2' | 25:YA:1797:C:C6 | 2.52 | 0.44 |
| 25:YA:1937:A:N7 | 25:YA:1939:U:H2' | 2.32 | 0.44 |
| 25:YA:2185:C:H2' | 25:YA:2186:G:H8 | 1.83 | 0.44 |
| 25:YA:2349:G:OP2 | 54:Y8:42:ARG:HD3 | 2.18 | 0.44 |
| 25:YA:2373:G:H2' | 25:YA:2374:C:C6 | 2.53 | 0.44 |
| 25:YA:2389:G:H5'' | 25:YA:2390:U:H5' | 1.99 | 0.44 |
| 25:YA:2625:G:H2' | 25:YA:2626:C:C6 | 2.52 | 0.44 |
| 27:YD:237:GLU:HB3 | 27:YD:238:GLY:H | 1.45 | 0.44 |
| 29:YF:201:VAL:HG13 | 29:YF:202:PHE:N | 2.33 | 0.44 |
| 32:YI:1:MET:HG3 | 32:YI:23:PRO:CB | 2.47 | 0.44 |
| 32:YI:9:LEU:C | 32:YI:10:GLU:HG3 | 2.36 | 0.44 |
| 36:YQ:66:ILE:O | 36:YQ:104:PHE:N | 2.49 | 0.44 |
| 39:YT:135:ALA:C | 39:YT:137:LYS:N | 2.71 | 0.44 |
| 42:YW:1:MET:CE | 42:YW:2:GLU:H | 2.31 | 0.44 |
| 45:YZ:137:ILE:O | 45:YZ:156:LYS:NZ | 2.50 | 0.44 |
| 48:Y2:41:ILE:HD12 | 48:Y2:41:ILE:O | 2.16 | 0.44 |
| 52:Y6:19:ARG:HD2 | 52:Y6:19:ARG:HA | 1.77 | 0.44 |
| 52:Y6:34:LEU:O | 52:Y6:36:LEU:HD22 | 2.17 | 0.44 |
| 54:Y8:47:LYS:HD2 | 54:Y8:48:PHE:N | 2.33 | 0.44 |
| 1:QA:420:U:H4' | 1:QA:421:U:H5 | 1.83 | 0.44 |
| 1:QA:892:A:C6 | 1:QA:893:C:C4 | 3.06 | 0.44 |
| 1:QA:1062:U:H2' | 1:QA:1063:C:C6 | 2.53 | 0.44 |
| 1:QA:1316:G:H5'' | 14:QN:17:LYS:HE3 | 1.99 | 0.44 |
| 1:QA:1346:A:N1 | 1:QA:1374:A:H5'' | 2.32 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:QB:17:PHE:CG | 2:QB:44:LEU:HD11 | 2.53 | 0.44 |
| 2:QB:98:LEU:O | 2:QB:101:MET:HG3 | 2.17 | 0.44 |
| 3:QC:69:HIS:N | 3:QC:69:HIS:ND1 | 2.66 | 0.44 |
| 4:QD:60:GLU:HG2 | 4:QD:202:LEU:HD12 | 2.00 | 0.44 |
| 4:QD:206:PHE:CD2 | 4:QD:207:TYR:CE1 | 3.05 | 0.44 |
| 5:QE:62:ALA:C | 5:QE:64:ARG:H | 2.21 | 0.44 |
| 7:QG:15:ASP:HB3 | 7:QG:20:ASP:N | 2.15 | 0.44 |
| 7:QG:150:ALA:HA | 11:QK:59:TYR:HD2 | 1.83 | 0.44 |
| 11:QK:83:ILE:HG12 | 11:QK:109:VAL:HG23 | 1.99 | 0.44 |
| 17:QQ:13:ASP:O | 17:QQ:15:MET:N | 2.51 | 0.44 |
| 20:QT:48:LYS:HB3 | 20:QT:51:GLU:CG | 2.48 | 0.44 |
| 20:QT:83:ARG:C | 20:QT:86:ARG:HB3 | 2.38 | 0.44 |
| 20:QT:84:LEU:C | 20:QT:84:LEU:HD13 | 2.37 | 0.44 |
| 25:RA:348:G:H2' | 25:RA:349:G:C8 | 2.53 | 0.44 |
| 25:RA:468:G:N7 | 53:R7:39:ARG:NH2 | 2.62 | 0.44 |
| 25:RA:774:A:HO2' | 25:RA:775:G:P | 2.40 | 0.44 |
| 25:RA:962:G:H2' | 25:RA:963:U:O4' | 2.17 | 0.44 |
| 25:RA:1045:A:O2' | 25:RA:1046:A:OP2 | 2.31 | 0.44 |
| 25:RA:1906:G:C8 | 25:RA:1929:G:C4 | 3.05 | 0.44 |
| 25:RA:2050:C:H2' | 25:RA:2051:A:O4' | 2.18 | 0.44 |
| 25:RA:2303:G:O2' | 25:RA:2304:G:H5' | 2.17 | 0.44 |
| 27:RD:145:VAL:HG12 | 27:RD:146:GLU:N | 2.32 | 0.44 |
| 28:RE:143:ASN:N | 28:RE:143:ASN:ND2 | 2.65 | 0.44 |
| 29:RF:174:VAL:CG1 | 29:RF:174:VAL:O | 2.65 | 0.44 |
| 30:RG:44:GLY:HA2 | 30:RG:88:ILE:HD11 | 2.00 | 0.44 |
| 30:RG:129:GLY:HA2 | 30:RG:169:ALA:HB2 | 1.99 | 0.44 |
| 32:RI:45:LYS:O | 32:RI:49:ALA:N | 2.48 | 0.44 |
| 32:RI:68:LEU:HA | 32:RI:71:ILE:HG22 | 1.99 | 0.44 |
| 32:RI:131:LYS:HD2 | 32:RI:131:LYS:N | 2.32 | 0.44 |
| 35:RP:101:VAL:HA | 35:RP:106:LEU:HB2 | 1.99 | 0.44 |
| 37:RR:12:ARG:HG3 | 37:RR:12:ARG:NH1 | 2.32 | 0.44 |
| 37:RR:79:LEU:HD23 | 37:RR:79:LEU:O | 2.16 | 0.44 |
| 38:RS:3:ARG:O | 38:RS:4:LEU:O | 2.35 | 0.44 |
| 40:RU:52:ARG:NH1 | 40:RU:52:ARG:CG | 2.76 | 0.44 |
| 42:RW:74:ALA:O | 42:RW:75:TYR:CB | 2.65 | 0.44 |
| 44:RY:88:LYS:HB3 | 44:RY:90:LEU:CD2 | 2.48 | 0.44 |
| 45:RZ:93:ASP:O | 45:RZ:94:GLU:CB | 2.65 | 0.44 |
| 48:R2:4:SER:OG | 48:R2:5:GLU:OE2 | 2.26 | 0.44 |
| 1:XA:170:U:H2' | 1:XA:171:A:H8 | 1.81 | 0.44 |
| 1:XA:339:C:H5 | 34:YO:97:ARG:HH12 | 1.62 | 0.44 |
| 1:XA:524:G:H2' | 1:XA:525:C:C5 | 2.52 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:XA:659:U:H2' | 1:XA:660:G:O4' | 2.17 | 0.44 |
| 1:XA:689:C:O4' | 1:XA:704:A:H2 | 2.00 | 0.44 |
| 1:XA:1117:G:H5'' | 9:XI:104:ARG:NH2 | 2.32 | 0.44 |
| 2:XB:54:THR:HG21 | 2:XB:201:ILE:HD11 | 1.99 | 0.44 |
| 4:XD:9:CYS:SG | 4:XD:32:ALA:HB2 | 2.58 | 0.44 |
| 4:XD:13:ARG:NH2 | 4:XD:36:ARG:HH21 | 2.15 | 0.44 |
| 5:XE:80:ILE:HG13 | 5:XE:82:VAL:HG23 | 1.99 | 0.44 |
| 7:XG:111:ARG:HD2 | 7:XG:123:GLU:HB2 | 1.99 | 0.44 |
| 9:XI:29:ASN:OD1 | 9:XI:65:VAL:N | 2.47 | 0.44 |
| 10:XJ:62:HIS:N | 10:XJ:62:HIS:CD2 | 2.85 | 0.44 |
| 13:XM:16:ASP:O | 13:XM:19:LEU:HD23 | 2.17 | 0.44 |
| 15:XO:54:ARG:O | 15:XO:55:GLY:C | 2.55 | 0.44 |
| 19:XS:5:LEU:HD21 | 50:Y4:66:SER:HB2 | 1.99 | 0.44 |
| 20:XT:56:MET:HG3 | 20:XT:88:VAL:HG21 | 1.98 | 0.44 |
| 20:XT:89:ARG:HH12 | 20:XT:106:ALA:HB1 | 1.82 | 0.44 |
| 25:YA:125:G:N2 | 53:Y7:9:ARG:HB3 | 2.33 | 0.44 |
| 25:YA:205:G:HO2' | 25:YA:206:U:H5 | 1.64 | 0.44 |
| 25:YA:273(C):C:N4 | 25:YA:363(C):G:H1 | 2.14 | 0.44 |
| 25:YA:835:A:C6 | 25:YA:836:G:C5 | 3.06 | 0.44 |
| 25:YA:1217:C:OP1 | 40:YU:15:LYS:NZ | 2.44 | 0.44 |
| 25:YA:1575:C:H2' | 25:YA:1576:U:O4' | 2.18 | 0.44 |
| 25:YA:2572:A:C8 | 28:YE:144:ARG:HB3 | 2.52 | 0.44 |
| 25:YA:2687:U:H2' | 25:YA:2688:U:O4' | 2.18 | 0.44 |
| 25:YA:2713:A:H3' | 25:YA:2714:G:H5'' | 1.99 | 0.44 |
| 27:YD:12:SER:C | 27:YD:14:ARG:N | 2.70 | 0.44 |
| 27:YD:145:VAL:HB | 27:YD:155:LEU:HB2 | 1.99 | 0.44 |
| 27:YD:226:MET:H | 27:YD:226:MET:HG2 | 1.53 | 0.44 |
| 28:YE:50:GLY:CA | 28:YE:74:PRO:HG3 | 2.46 | 0.44 |
| 29:YF:116:ASP:OD2 | 35:YP:1:MET:N | 2.44 | 0.44 |
| 30:YG:51:ARG:HB3 | 30:YG:51:ARG:NH1 | 2.33 | 0.44 |
| 32:YI:64:GLU:O | 32:YI:67:ARG:NE | 2.50 | 0.44 |
| 32:YI:110:ASP:CB | 32:YI:111:PRO:CA | 2.96 | 0.44 |
| 32:YI:135:GLU:HB2 | 32:YI:136:VAL:H | 1.49 | 0.44 |
| 34:YO:40:VAL:CG1 | 34:YO:41:ALA:N | 2.80 | 0.44 |
| 34:YO:120:GLU:OE1 | 39:YT:67:SER:OG | 2.24 | 0.44 |
| 35:YP:31:ALA:C | 35:YP:32:THR:CG2 | 2.85 | 0.44 |
| 35:YP:115:LEU:CB | 35:YP:131:SER:HB2 | 2.47 | 0.44 |
| 38:YS:56:LEU:O | 38:YS:57:LYS:O | 2.36 | 0.44 |
| 46:Y0:3:HIS:CD2 | 46:Y0:4:LYS:C | 2.74 | 0.44 |
| 46:Y0:42:GLY:C | 46:Y0:57:PHE:HD1 | 2.21 | 0.44 |
| 47:Y1:60:PHE:HE2 | 47:Y1:91:LYS:NZ | 2.16 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 50:Y4:15:ILE:CG2 | 50:Y4:20:ASN:ND2 | 2.81 | 0.44 |
| 50:Y4:39:CYS:HB3 | 50:Y4:41:PRO:HD2 | 2.00 | 0.44 |
| 1:QA:825:G:H2' | 1:QA:826:C:O4' | 2.17 | 0.44 |
| 1:QA:963:G:N3 | 10:QJ:55:LYS:NZ | 2.63 | 0.44 |
| 1:QA:1251:A:H2' | 1:QA:1252:A:C8 | 2.53 | 0.44 |
| 1:QA:1388:C:H2' | 1:QA:1389:C:H6 | 1.82 | 0.44 |
| 2:QB:136:VAL:O | 2:QB:140:HIS:N | 2.43 | 0.44 |
| 7:QG:38:LEU:O | 7:QG:42:ILE:HG13 | 2.17 | 0.44 |
| 9:QI:5:TYR:CD2 | 9:QI:6:GLY:N | 2.86 | 0.44 |
| 9:QI:47:LEU:HD22 | 9:QI:47:LEU:H | 1.81 | 0.44 |
| 10:QJ:6:ILE:O | 10:QJ:71:LEU:HD12 | 2.17 | 0.44 |
| 10:QJ:54:PHE:CD2 | 10:QJ:55:LYS:HD2 | 2.52 | 0.44 |
| 10:QJ:61:GLU:CG | 14:QN:58:LYS:HE2 | 2.47 | 0.44 |
| 11:QK:77:MET:HE3 | 11:QK:80:VAL:HG12 | 1.98 | 0.44 |
| 13:QM:53:VAL:HG12 | 13:QM:57:ARG:HH12 | 1.81 | 0.44 |
| 13:QM:90:LEU:HD12 | 13:QM:91:ARG:N | 2.33 | 0.44 |
| 17:QQ:48:GLU:O | 17:QQ:50:LYS:N | 2.50 | 0.44 |
| 17:QQ:92:ARG:HG3 | 17:QQ:92:ARG:NH1 | 2.30 | 0.44 |
| 18:QR:20:ALA:O | 18:QR:21:LYS:HG3 | 2.18 | 0.44 |
| 20:QT:50:GLU:O | 20:QT:52:ALA:N | 2.51 | 0.44 |
| 25:RA:300:A:H1' | 25:RA:319:C:H1' | 2.00 | 0.44 |
| 25:RA:310:A:OP1 | 44:RY:18:GLY:N | 2.44 | 0.44 |
| 25:RA:635:C:H2' | 25:RA:636:G:O4' | 2.18 | 0.44 |
| 25:RA:1542:G:H5'' | 25:RA:1543:A:OP2 | 2.18 | 0.44 |
| 25:RA:1844:C:OP1 | 27:RD:257:LEU:HD23 | 2.18 | 0.44 |
| 25:RA:2350:C:C5 | 54:R8:42:ARG:NH1 | 2.85 | 0.44 |
| 25:RA:2667:C:H1' | 31:RH:109:PHE:HD2 | 1.81 | 0.44 |
| 26:RB:12:C:O2' | 46:R0:74:ARG:HG3 | 2.17 | 0.44 |
| 26:RB:72:G:O2' | 26:RB:104:A:N6 | 2.44 | 0.44 |
| 27:RD:45:ASN:CG | 27:RD:46:GLN:N | 2.68 | 0.44 |
| 27:RD:95:LEU:HD12 | 27:RD:95:LEU:O | 2.17 | 0.44 |
| 27:RD:155:LEU:HD23 | 27:RD:177:LEU:HD21 | 2.00 | 0.44 |
| 28:RE:11:MET:O | 28:RE:12:THR:HB | 2.18 | 0.44 |
| 30:RG:67:LYS:HD2 | 30:RG:67:LYS:N | 2.33 | 0.44 |
| 32:RI:67:ARG:CZ | 32:RI:68:LEU:HB2 | 2.48 | 0.44 |
| 32:RI:79:ILE:CB | 32:RI:142:VAL:HA | 2.42 | 0.44 |
| 33:RN:57:ALA:O | 33:RN:124:ALA:HA | 2.18 | 0.44 |
| 34:RO:63:VAL:O | 34:RO:63:VAL:HG23 | 2.17 | 0.44 |
| 34:RO:91:LEU:N | 34:RO:91:LEU:CD2 | 2.80 | 0.44 |
| 36:RQ:34:LEU:HB2 | 36:RQ:118:LEU:HD22 | 1.99 | 0.44 |
| 37:RR:33:ARG:HA | 37:RR:114:VAL:O | 2.18 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 45:RZ:24:LEU:HD21 | 45:RZ:86:VAL:CG2 | 2.48 | 0.44 |
| 45:RZ:105:VAL:HG22 | 45:RZ:105:VAL:O | 2.18 | 0.44 |
| 45:RZ:152:ALA:HA | 45:RZ:171:ILE:HB | 2.00 | 0.44 |
| 52:R6:11:LEU:HD12 | 52:R6:51:GLU:HG3 | 2.00 | 0.44 |
| 52:R6:34:LEU:O | 52:R6:36:LEU:HD22 | 2.17 | 0.44 |
| 1:XA:15:G:H4' | 5:XE:24:ARG:HH12 | 1.81 | 0.44 |
| 1:XA:390:C:H4' | 16:XP:28:ARG:NH2 | 2.31 | 0.44 |
| 1:XA:664:G:H22 | 1:XA:741:G:H1 | 1.65 | 0.44 |
| 1:XA:1074:G:OP2 | 5:XE:61:TYR:OH | 2.30 | 0.44 |
| 1:XA:1297:C:O2' | 1:XA:1298:C:P | 2.75 | 0.44 |
| 1:XA:1389:C:H2' | 1:XA:1390:U:O4' | 2.18 | 0.44 |
| 4:XD:132:ARG:HG2 | 4:XD:132:ARG:HH11 | 1.83 | 0.44 |
| 10:XJ:33:GLN:HB2 | 10:XJ:75:ILE:HD11 | 1.99 | 0.44 |
| 10:XJ:100:THR:O | 10:XJ:101:VAL:HB | 2.17 | 0.44 |
| 11:XK:106:LYS:O | 11:XK:107:SER:CB | 2.65 | 0.44 |
| 11:XK:121:PRO:HD2 | 11:XK:126:ARG:CD | 2.46 | 0.44 |
| 11:XK:124:LYS:O | 11:XK:126:ARG:N | 2.40 | 0.44 |
| 16:XP:50:LYS:HD3 | 16:XP:50:LYS:O | 2.17 | 0.44 |
| 19:XS:67:VAL:HG21 | 50:Y4:60:GLN:HE22 | 1.83 | 0.44 |
| 20:XT:36:LEU:HD13 | 20:XT:36:LEU:HA | 1.82 | 0.44 |
| 20:XT:83:ARG:C | 20:XT:86:ARG:HB3 | 2.38 | 0.44 |
| 25:YA:83:G:O2' | 25:YA:84:A:H8 | 2.01 | 0.44 |
| 25:YA:531:C:OP1 | 25:YA:561:G:N1 | 2.51 | 0.44 |
| 25:YA:638:G:C5 | 25:YA:651:G:C2 | 3.05 | 0.44 |
| 25:YA:1126:A:H4' | 25:YA:1127:A:O5' | 2.17 | 0.44 |
| 25:YA:1530:G:C2 | 25:YA:1531:C:C2 | 3.05 | 0.44 |
| 25:YA:1771:C:O2' | 25:YA:1786:A:O4' | 2.35 | 0.44 |
| 25:YA:2193:G:H2' | 25:YA:2194:G:H8 | 1.82 | 0.44 |
| 25:YA:2331:G:O4' | 46:Y0:42:GLY:HA3 | 2.17 | 0.44 |
| 27:YD:17:THR:HG21 | 27:YD:204:ILE:HA | 1.99 | 0.44 |
| 27:YD:44:ASN:CB | 27:YD:49:ILE:HG22 | 2.46 | 0.44 |
| 27:YD:238:GLY:C | 27:YD:239:ARG:O | 2.53 | 0.44 |
| 28:YE:120:TRP:CE3 | 28:YE:155:LYS:HD3 | 2.53 | 0.44 |
| 28:YE:172:VAL:HG13 | 28:YE:182:LEU:HD11 | 1.98 | 0.44 |
| 29:YF:65:TRP:CZ2 | 29:YF:72:ARG:NH2 | 2.86 | 0.44 |
| 30:YG:16:ARG:NH2 | 30:YG:31:VAL:CG1 | 2.75 | 0.44 |
| 31:YH:6:ARG:CG | 31:YH:7:LEU:N | 2.81 | 0.44 |
| 33:YN:109:LYS:H | 33:YN:109:LYS:CD | 2.26 | 0.44 |
| 35:YP:6:LEU:N | 35:YP:6:LEU:HD22 | 2.31 | 0.44 |
| 35:YP:107:LYS:HB2 | 35:YP:110:TYR:HD2 | 1.83 | 0.44 |
| 36:YQ:21:THR:HB | 36:YQ:22:LYS:H | 1.42 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 37:YR:41:ALA:C | 37:YR:43:GLU:H | 2.20 | 0.44 |
| 40:YU:79:PHE:CE2 | 40:YU:83:LEU:CD1 | 3.00 | 0.44 |
| 40:YU:97:ASP:HA | 40:YU:100:VAL:CG2 | 2.47 | 0.44 |
| 42:YW:14:PRO:HB3 | 42:YW:18:ARG:HE | 1.83 | 0.44 |
| 42:YW:88:ARG:HH11 | 42:YW:88:ARG:HG2 | 1.82 | 0.44 |
| 45:YZ:108:PRO:CB | 45:YZ:112:ARG:HB2 | 2.38 | 0.44 |
| 46:Y0:40:GLN:OE1 | 46:Y0:45:PHE:HB2 | 2.18 | 0.44 |
| 46:Y0:68:GLU:OE1 | 46:Y0:82:ARG:NH1 | 2.50 | 0.44 |
| 50:Y4:23:GLU:O | 50:Y4:24:THR:OG1 | 2.34 | 0.44 |
| 50:Y4:39:CYS:O | 50:Y4:40:HIS:CB | 2.66 | 0.44 |
| 1:QA:149:A:H4' | 1:QA:1450:U:C4 | 2.53 | 0.44 |
| 1:QA:576:G:N2 | 1:QA:759:A:OP1 | 2.50 | 0.44 |
| 1:QA:738:C:H5'' | 6:QF:69:GLU:HB2 | 2.00 | 0.44 |
| 1:QA:792:A:H2' | 1:QA:792:A:N3 | 2.33 | 0.44 |
| 1:QA:1206:G:C6 | 1:QA:1207:G:C5 | 3.05 | 0.44 |
| 1:QA:1226:C:N4 | 13:QM:104:ARG:HD2 | 2.33 | 0.44 |
| 1:QA:1268:A:H4' | 21:QU:19:GLY:C | 2.38 | 0.44 |
| 1:QA:1494:G:H8 | 1:QA:1494:G:OP2 | 2.01 | 0.44 |
| 2:QB:29:ALA:O | 2:QB:32:ILE:HG22 | 2.17 | 0.44 |
| 2:QB:87:ARG:HH11 | 2:QB:223:ILE:HD11 | 1.82 | 0.44 |
| 2:QB:132:LYS:HA | 2:QB:135:GLN:CB | 2.42 | 0.44 |
| 2:QB:192:SER:OG | 2:QB:193:ASP:N | 2.50 | 0.44 |
| 4:QD:14:ARG:HD3 | 4:QD:14:ARG:C | 2.38 | 0.44 |
| 4:QD:68:TYR:O | 4:QD:69:GLY:C | 2.55 | 0.44 |
| 7:QG:62:PHE:O | 7:QG:64:GLN:N | 2.51 | 0.44 |
| 7:QG:140:ASP:HA | 7:QG:143:ARG:HH11 | 1.79 | 0.44 |
| 8:QH:23:SER:HB3 | 8:QH:62:TYR:HA | 1.99 | 0.44 |
| 9:QI:13:ALA:HB2 | 9:QI:68:GLY:CA | 2.47 | 0.44 |
| 10:QJ:70:ARG:HH11 | 10:QJ:70:ARG:HG3 | 1.83 | 0.44 |
| 20:QT:36:LEU:C | 20:QT:38:LYS:N | 2.71 | 0.44 |
| 20:QT:101:GLY:C | 20:QT:103:GLY:H | 2.21 | 0.44 |
| 25:RA:103:A:H8 | 25:RA:103:A:O5' | 2.00 | 0.44 |
| 25:RA:303:U:H2' | 25:RA:304:G:C8 | 2.53 | 0.44 |
| 25:RA:554:U:HO2' | 25:RA:556:G:P | 2.39 | 0.44 |
| 25:RA:836:G:H2' | 25:RA:837:C:C6 | 2.53 | 0.44 |
| 25:RA:994:C:OP1 | 40:RU:53:ARG:NH2 | 2.51 | 0.44 |
| 25:RA:1533:C:H2' | 25:RA:1534:G:C8 | 2.53 | 0.44 |
| 25:RA:2721:A:H1' | 25:RA:2873:A:O2' | 2.18 | 0.44 |
| 25:RA:2821:A:H2' | 25:RA:2822:G:C8 | 2.53 | 0.44 |
| 25:RA:2831:G:H1' | 25:RA:2883:A:H2' | 1.98 | 0.44 |
| 27:RD:11:PRO:O | 27:RD:12:SER:CB | 2.65 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:RD:12:SER:C | 27:RD:14:ARG:N | 2.70 | 0.44 |
| 27:RD:12:SER:O | 27:RD:14:ARG:N | 2.51 | 0.44 |
| 27:RD:30:GLU:HG3 | 27:RD:63:ARG:NE | 2.32 | 0.44 |
| 27:RD:30:GLU:CD | 27:RD:63:ARG:HE | 2.21 | 0.44 |
| 27:RD:44:ASN:H | 27:RD:44:ASN:ND2 | 1.97 | 0.44 |
| 27:RD:52:ARG:HB2 | 27:RD:53:PHE:CD2 | 2.53 | 0.44 |
| 28:RE:13:ARG:HH11 | 28:RE:13:ARG:HB3 | 1.82 | 0.44 |
| 33:RN:96:GLU:CG | 33:RN:97:ARG:N | 2.73 | 0.44 |
| 34:RO:77:ILE:O | 34:RO:77:ILE:HG23 | 2.17 | 0.44 |
| 37:RR:41:ALA:C | 37:RR:43:GLU:H | 2.20 | 0.44 |
| 38:RS:78:LEU:HD21 | 38:RS:108:GLY:HA2 | 1.99 | 0.44 |
| 39:RT:114:LEU:HD23 | 39:RT:114:LEU:HA | 1.74 | 0.44 |
| 42:RW:14:PRO:HB3 | 42:RW:18:ARG:HE | 1.83 | 0.44 |
| 45:RZ:12:GLY:O | 45:RZ:13:GLU:O | 2.36 | 0.44 |
| 46:R0:68:GLU:OE1 | 46:R0:82:ARG:NH1 | 2.50 | 0.44 |
| 51:R5:52:TYR:CD1 | 51:R5:52:TYR:N | 2.85 | 0.44 |
| 1:XA:186(C):G:H2' | 1:XA:186(D):C:O4' | 2.18 | 0.44 |
| 1:XA:730:G:C6 | 1:XA:731:G:H1' | 2.53 | 0.44 |
| 1:XA:1055:A:H4' | 3:XC:161:GLU:OE2 | 2.18 | 0.44 |
| 1:XA:1064:G:H4' | 1:XA:1065:U:O5' | 2.18 | 0.44 |
| 2:XB:33:TYR:HD1 | 2:XB:33:TYR:O | 2.00 | 0.44 |
| 4:XD:3:ARG:O | 4:XD:4:TYR:C | 2.55 | 0.44 |
| 4:XD:93:PHE:CZ | 4:XD:97:LEU:HD11 | 2.52 | 0.44 |
| 5:XE:10:MET:HB2 | 5:XE:32:VAL:HG22 | 1.94 | 0.44 |
| 5:XE:62:ALA:O | 5:XE:64:ARG:N | 2.50 | 0.44 |
| 7:XG:69:VAL:O | 7:XG:69:VAL:CG1 | 2.62 | 0.44 |
| 8:XH:23:SER:HB3 | 8:XH:62:TYR:HA | 1.99 | 0.44 |
| 8:XH:82:HIS:CD2 | 8:XH:82:HIS:C | 2.91 | 0.44 |
| 10:XJ:38:ILE:CG1 | 10:XJ:71:LEU:HB3 | 2.48 | 0.44 |
| 10:XJ:51:ARG:HG2 | 10:XJ:51:ARG:NH1 | 2.32 | 0.44 |
| 16:XP:15:PRO:O | 16:XP:16:HIS:ND1 | 2.51 | 0.44 |
| 16:XP:72:ARG:HD3 | 16:XP:72:ARG:O | 2.18 | 0.44 |
| 25:YA:26:G:C6 | 25:YA:27:G:C2 | 3.06 | 0.44 |
| 25:YA:295:G:C5 | 25:YA:344:G:C2 | 3.05 | 0.44 |
| 25:YA:356:G:C2 | 25:YA:357:A:C4 | 3.06 | 0.44 |
| 25:YA:987:G:H2' | 25:YA:988:A:O4' | 2.18 | 0.44 |
| 25:YA:1022:G:N2 | 25:YA:1142(A):A:H2 | 2.14 | 0.44 |
| 25:YA:1429:G:H2' | 25:YA:1430:C:C6 | 2.52 | 0.44 |
| 25:YA:2302:G:C6 | 25:YA:2303:G:C5 | 3.06 | 0.44 |
| 25:YA:2517:C:C4 | 25:YA:2542:A:C6 | 3.05 | 0.44 |
| 25:YA:2723:C:OP1 | 37:YR:3:HIS:HD2 | 2.00 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:YD:155:LEU:N | 27:YD:155:LEU:HD12 | 2.32 | 0.44 |
| 29:YF:24:LEU:HD12 | 29:YF:24:LEU:N | 2.33 | 0.44 |
| 29:YF:184:TYR:CE2 | 29:YF:188:ARG:HD2 | 2.52 | 0.44 |
| 30:YG:16:ARG:CZ | 30:YG:31:VAL:HG11 | 2.47 | 0.44 |
| 32:YI:92:VAL:O | 32:YI:120:ILE:HG22 | 2.18 | 0.44 |
| 38:YS:57:LYS:O | 38:YS:58:LEU:HB3 | 2.18 | 0.44 |
| 39:YT:99:LEU:CD1 | 39:YT:99:LEU:O | 2.65 | 0.44 |
| 40:YU:86:ALA:CB | 40:YU:88:ILE:HD11 | 2.48 | 0.44 |
| 43:YX:35:THR:O | 43:YX:36:LYS:C | 2.55 | 0.44 |
| 44:YY:88:LYS:HB3 | 44:YY:90:LEU:CD2 | 2.48 | 0.44 |
| 45:YZ:48:PHE:HE2 | 45:YZ:71:VAL:HG11 | 1.82 | 0.44 |
| 45:YZ:152:ALA:HA | 45:YZ:171:ILE:HB | 2.00 | 0.44 |
| 1:QA:209:U:H1' | 1:QA:216:G:C6 | 2.52 | 0.44 |
| 1:QA:277:C:H5'' | 17:QQ:68:ARG:NH2 | 2.31 | 0.44 |
| 1:QA:730:G:C5 | 1:QA:731:G:H1' | 2.52 | 0.44 |
| 1:QA:1266:G:N2 | 1:QA:1268:A:H3' | 2.33 | 0.44 |
| 1:QA:1429:C:H2' | 1:QA:1430:C:H6 | 1.82 | 0.44 |
| 2:QB:47:THR:HG22 | 2:QB:51:LEU:CG | 2.48 | 0.44 |
| 2:QB:77:ALA:HB2 | 2:QB:211:ILE:HG21 | 2.00 | 0.44 |
| 2:QB:178:ARG:NH2 | 8:QH:74:PRO:CG | 2.81 | 0.44 |
| 4:QD:146:ILE:H | 4:QD:146:ILE:CD1 | 2.29 | 0.44 |
| 5:QE:67:VAL:HG22 | 5:QE:68:GLU:N | 2.33 | 0.44 |
| 7:QG:16:LEU:HD13 | 9:QI:45:ALA:HB2 | 1.98 | 0.44 |
| 7:QG:151:TYR:HE1 | 11:QK:54:ARG:HD3 | 1.83 | 0.44 |
| 8:QH:88:LYS:HB3 | 8:QH:89:PRO:HD2 | 2.00 | 0.44 |
| 12:QL:117:ARG:NH2 | 12:QL:124:LYS:HD3 | 2.33 | 0.44 |
| 15:QO:10:LYS:O | 15:QO:14:GLU:HB2 | 2.18 | 0.44 |
| 16:QP:72:ARG:CD | 16:QP:73:LEU:HD23 | 2.48 | 0.44 |
| 25:RA:395:U:H2' | 25:RA:396:G:N7 | 2.32 | 0.44 |
| 25:RA:495:G:H1' | 42:RW:57:ASN:ND2 | 2.33 | 0.44 |
| 25:RA:618:G:OP1 | 29:RF:106:ARG:HB3 | 2.18 | 0.44 |
| 25:RA:625:G:OP1 | 54:R8:64:TYR:HD1 | 2.00 | 0.44 |
| 25:RA:1027:A:C6 | 25:RA:1126:A:C4 | 3.06 | 0.44 |
| 25:RA:1030:G:H1 | 25:RA:1124:C:H42 | 1.66 | 0.44 |
| 25:RA:1335:U:OP1 | 43:RX:65:ARG:NE | 2.51 | 0.44 |
| 25:RA:2674:G:H2' | 25:RA:2675:A:O4' | 2.18 | 0.44 |
| 27:RD:10:THR:O | 27:RD:11:PRO:C | 2.56 | 0.44 |
| 27:RD:25:THR:CG2 | 27:RD:25:THR:O | 2.65 | 0.44 |
| 28:RE:199:ARG:HH11 | 28:RE:199:ARG:HG3 | 1.82 | 0.44 |
| 29:RF:65:TRP:CZ2 | 29:RF:72:ARG:NH2 | 2.86 | 0.44 |
| 31:RH:84:SER:OG | 31:RH:85:LYS:N | 2.51 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 32:RI:40:THR:O | 32:RI:44:LEU:HB2 | 2.18 | 0.44 |
| 35:RP:83:VAL:HG11 | 35:RP:112:LEU:HD21 | 1.97 | 0.44 |
| 38:RS:110:LEU:HA | 38:RS:112:PHE:CE1 | 2.52 | 0.44 |
| 39:RT:111:ARG:C | 39:RT:113:LYS:N | 2.64 | 0.44 |
| 40:RU:79:PHE:CE2 | 40:RU:83:LEU:CD1 | 3.00 | 0.44 |
| 41:RV:72:VAL:HG13 | 41:RV:85:LYS:HB3 | 2.00 | 0.44 |
| 43:RX:14:SER:HB2 | 43:RX:15:GLU:OE1 | 2.18 | 0.44 |
| 44:RY:15:VAL:HB | 44:RY:20:TYR:O | 2.17 | 0.44 |
| 45:RZ:105:VAL:HG11 | 45:RZ:138:GLU:HG2 | 1.99 | 0.44 |
| 45:RZ:139:VAL:CG1 | 45:RZ:139:VAL:O | 2.65 | 0.44 |
| 50:R4:39:CYS:HB3 | 50:R4:41:PRO:HD2 | 2.00 | 0.44 |
| 1:XA:722:A:H2' | 1:XA:724:G:C8 | 2.52 | 0.44 |
| 1:XA:1002:G:N2 | 1:XA:1039:C:N3 | 2.65 | 0.44 |
| 1:XA:1305:G:O2' | 1:XA:1332:A:N6 | 2.50 | 0.44 |
| 3:XC:14:ILE:C | 3:XC:16:ARG:H | 2.21 | 0.44 |
| 3:XC:188:LEU:HD12 | 3:XC:195:VAL:CG1 | 2.48 | 0.44 |
| 5:XE:48:ALA:HB2 | 5:XE:57:LYS:HD3 | 2.00 | 0.44 |
| 5:XE:94:ALA:HB2 | 5:XE:119:LEU:HG | 2.00 | 0.44 |
| 6:XF:3:ARG:HG2 | 6:XF:93:SER:OG | 2.17 | 0.44 |
| 6:XF:35:ALA:HA | 6:XF:67:MET:HB3 | 1.99 | 0.44 |
| 8:XH:6:ILE:HB | 8:XH:85:ARG:HH11 | 1.74 | 0.44 |
| 8:XH:109:ILE:HD11 | 8:XH:120:THR:HG22 | 2.00 | 0.44 |
| 19:XS:8:GLY:O | 19:XS:9:VAL:CG2 | 2.57 | 0.44 |
| 25:YA:11:G:H2' | 25:YA:12:U:O4' | 2.18 | 0.44 |
| 25:YA:234:C:H2' | 25:YA:235:U:H6 | 1.79 | 0.44 |
| 25:YA:524:U:H2' | 25:YA:525:U:C6 | 2.53 | 0.44 |
| 25:YA:817:C:H4' | 25:YA:932:G:C5 | 2.53 | 0.44 |
| 25:YA:971:C:O2' | 25:YA:983:A:N3 | 2.43 | 0.44 |
| 25:YA:1214:A:H2' | 25:YA:1215:G:O4' | 2.17 | 0.44 |
| 25:YA:1442:G:C2 | 25:YA:1550:C:O2 | 2.71 | 0.44 |
| 25:YA:1495:A:N3 | 25:YA:1578:U:O2' | 2.41 | 0.44 |
| 25:YA:1567:A:H5' | 27:YD:58:HIS:CE1 | 2.53 | 0.44 |
| 25:YA:1660:C:H2' | 25:YA:1661:G:C8 | 2.53 | 0.44 |
| 25:YA:2262:U:H2' | 25:YA:2263:C:H6 | 1.83 | 0.44 |
| 25:YA:2296:U:H2' | 38:YS:9:ARG:NH1 | 2.33 | 0.44 |
| 25:YA:2328:A:H2' | 25:YA:2329:G:C8 | 2.53 | 0.44 |
| 25:YA:2397:G:H5'' | 47:Y1:28:GLY:HA2 | 2.00 | 0.44 |
| 27:YD:95:LEU:HD12 | 27:YD:95:LEU:O | 2.17 | 0.44 |
| 27:YD:143:HIS:HD2 | 27:YD:144:ALA:HB2 | 1.82 | 0.44 |
| 29:YF:42:ALA:O | 29:YF:45:ARG:HB2 | 2.18 | 0.44 |
| 30:YG:67:LYS:CE | 50:Y4:6:HIS:NE2 | 2.74 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 31:YH:37:VAL:HG11 | 31:YH:68:THR:HG23 | 1.98 | 0.44 |
| 32:YI:110:ASP:HB2 | 32:YI:111:PRO:C | 2.38 | 0.44 |
| 34:YO:77:ILE:HG23 | 34:YO:77:ILE:O | 2.17 | 0.44 |
| 35:YP:13:ASN:C | 35:YP:15:ARG:H | 2.21 | 0.44 |
| 35:YP:19:VAL:HG22 | 35:YP:21:ARG:H | 1.83 | 0.44 |
| 35:YP:88:LEU:O | 35:YP:90:ARG:N | 2.50 | 0.44 |
| 36:YQ:27:VAL:HG13 | 36:YQ:28:ALA:N | 2.32 | 0.44 |
| 38:YS:110:LEU:HA | 38:YS:112:PHE:CE1 | 2.53 | 0.44 |
| 39:YT:107:ASP:OD2 | 39:YT:109:GLU:HB2 | 2.18 | 0.44 |
| 42:YW:67:ASP:OD2 | 42:YW:67:ASP:N | 2.50 | 0.44 |
| 44:YY:36:ALA:HB1 | 44:YY:67:LEU:O | 2.16 | 0.44 |
| 46:Y0:25:ARG:CD | 46:Y0:29:GLN:HE22 | 2.27 | 0.44 |
| 47:Y1:49:VAL:HG12 | 47:Y1:51:VAL:HG23 | 1.99 | 0.44 |
| 1:QA:375:U:H5'' | 16:QP:69:THR:HG21 | 1.99 | 0.44 |
| 1:QA:580:U:H2' | 1:QA:581:G:O4' | 2.18 | 0.44 |
| 1:QA:1194:U:H4' | 5:QE:22:GLY:O | 2.17 | 0.44 |
| 1:QA:1286:A:H8 | 1:QA:1287:A:H4' | 1.83 | 0.44 |
| 1:QA:1346:A:O2' | 1:QA:1347:G:O4' | 2.36 | 0.44 |
| 1:QA:1374:A:O2' | 7:QG:28:ASN:HB3 | 2.17 | 0.44 |
| 2:QB:47:THR:O | 2:QB:51:LEU:N | 2.32 | 0.44 |
| 2:QB:87:ARG:NH1 | 2:QB:223:ILE:HD12 | 2.33 | 0.44 |
| 4:QD:90:GLY:HA3 | 4:QD:204:ILE:HD11 | 2.00 | 0.44 |
| 8:QH:28:ALA:O | 8:QH:29:SER:HB2 | 2.18 | 0.44 |
| 9:QI:43:ALA:O | 9:QI:45:ALA:N | 2.51 | 0.44 |
| 10:QJ:10:GLY:O | 10:QJ:68:HIS:N | 2.51 | 0.44 |
| 11:QK:53:SER:C | 11:QK:55:LYS:H | 2.21 | 0.44 |
| 12:QL:27:LEU:C | 12:QL:29:GLY:H | 2.20 | 0.44 |
| 13:QM:36:LYS:C | 13:QM:36:LYS:CD | 2.86 | 0.44 |
| 19:QS:45:VAL:O | 19:QS:62:ILE:O | 2.35 | 0.44 |
| 25:RA:251:A:C5 | 25:RA:252:G:H1' | 2.52 | 0.44 |
| 25:RA:271(C):U:O2' | 25:RA:271:G:OP1 | 2.33 | 0.44 |
| 25:RA:823:G:H2' | 25:RA:824:A:C8 | 2.53 | 0.44 |
| 25:RA:863:A:H2' | 25:RA:864:G:H8 | 1.79 | 0.44 |
| 25:RA:1020:A:N6 | 25:RA:1141:U:HO2' | 2.15 | 0.44 |
| 25:RA:1475:G:H2' | 25:RA:1476:C:C6 | 2.53 | 0.44 |
| 25:RA:1638:C:H4' | 25:RA:2710:C:O2 | 2.18 | 0.44 |
| 25:RA:2105:C:H2' | 25:RA:2106:G:H8 | 1.82 | 0.44 |
| 25:RA:2608:G:H5'' | 25:RA:2609:U:OP1 | 2.18 | 0.44 |
| 25:RA:2720:U:H2' | 25:RA:2721:A:O4' | 2.17 | 0.44 |
| 27:RD:102:LYS:O | 27:RD:103:ARG:CG | 2.66 | 0.44 |
| 28:RE:31:CYS:HB3 | 28:RE:49:LEU:HG | 2.00 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 28:RE:51:PHE:CD1 | 28:RE:52:LEU:N | 2.76 | 0.44 |
| 28:RE:52:LEU:HB2 | 28:RE:75:VAL:CG2 | 2.40 | 0.44 |
| 34:RO:104:ARG:NH1 | 39:RT:36:GLU:CD | 2.71 | 0.44 |
| 37:RR:3:HIS:C | 37:RR:5:LYS:H | 2.17 | 0.44 |
| 42:RW:70:TYR:HD2 | 42:RW:70:TYR:N | 2.06 | 0.44 |
| 43:RX:3:THR:HA | 43:RX:6:ASP:OD2 | 2.18 | 0.44 |
| 44:RY:48:ALA:CB | 44:RY:61:ILE:HD13 | 2.45 | 0.44 |
| 44:RY:95:LYS:HA | 44:RY:101:LYS:N | 2.33 | 0.44 |
| 45:RZ:103:ARG:HB3 | 45:RZ:138:GLU:HG3 | 2.00 | 0.44 |
| 47:R1:80:LEU:O | 47:R1:81:LYS:CD | 2.65 | 0.44 |
| 50:R4:33:VAL:CG1 | 50:R4:34:GLU:H | 2.22 | 0.44 |
| 51:R5:3:LYS:O | 51:R5:4:HIS:C | 2.56 | 0.44 |
| 53:R7:48:LYS:CG | 53:R7:49:ARG:H | 2.23 | 0.44 |
| 54:R8:40:GLU:O | 54:R8:43:GLN:N | 2.50 | 0.44 |
| 1:XA:148:G:H1 | 1:XA:174:C:N4 | 2.13 | 0.44 |
| 1:XA:258:G:H2' | 1:XA:259:G:C8 | 2.51 | 0.44 |
| 1:XA:573:A:N3 | 1:XA:883:C:O2' | 2.40 | 0.44 |
| 1:XA:1054:C:HO2' | 1:XA:1055:A:P | 2.40 | 0.44 |
| 2:XB:47:THR:HG22 | 2:XB:51:LEU:CG | 2.48 | 0.44 |
| 2:XB:192:SER:OG | 2:XB:193:ASP:N | 2.50 | 0.44 |
| 5:XE:20:GLN:O | 5:XE:21:ALA:C | 2.56 | 0.44 |
| 5:XE:31:LEU:HD23 | 5:XE:45:PHE:CD1 | 2.53 | 0.44 |
| 9:XI:10:ARG:NE | 9:XI:105:ASP:CB | 2.81 | 0.44 |
| 12:XL:120:TYR:O | 12:XL:121:GLY:O | 2.36 | 0.44 |
| 13:XM:80:ARG:NH1 | 19:XS:65:ASN:O | 2.51 | 0.44 |
| 14:XN:17:LYS:HG3 | 14:XN:18:VAL:N | 2.33 | 0.44 |
| 14:XN:47:LEU:O | 14:XN:48:ALA:C | 2.56 | 0.44 |
| 16:XP:20:VAL:HG22 | 16:XP:21:VAL:H | 1.83 | 0.44 |
| 19:XS:10:PHE:CD1 | 19:XS:38:SER:HB2 | 2.52 | 0.44 |
| 19:XS:63:THR:HG23 | 19:XS:66:MET:HE3 | 2.00 | 0.44 |
| 20:XT:48:LYS:HB3 | 20:XT:51:GLU:CG | 2.48 | 0.44 |
| 25:YA:146:G:H2' | 25:YA:147:U:O4' | 2.17 | 0.44 |
| 25:YA:380:U:O3' | 47:Y1:16:ASN:HB2 | 2.17 | 0.44 |
| 25:YA:775:G:C5 | 25:YA:794:G:C8 | 3.06 | 0.44 |
| 25:YA:1142(A):A:C4 | 25:YA:1144:G:C8 | 3.05 | 0.44 |
| 25:YA:1313:U:H5'' | 25:YA:1314:C:OP2 | 2.18 | 0.44 |
| 25:YA:2197:U:H2' | 25:YA:2224:G:H1 | 1.83 | 0.44 |
| 25:YA:2447:G:N2 | 25:YA:2450:A:OP2 | 2.51 | 0.44 |
| 25:YA:2524:G:H2' | 25:YA:2741:A:H2 | 1.82 | 0.44 |
| 25:YA:2528:U:O2' | 25:YA:2529:G:H3' | 2.18 | 0.44 |
| 25:YA:2592:G:C6 | 25:YA:2593:U:N3 | 2.86 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 31:YH:153:LYS:HG3 | 31:YH:162:ILE:H | 1.79 | 0.44 |
| 32:YI:60:GLU:O | 32:YI:64:GLU:N | 2.51 | 0.44 |
| 32:YI:68:LEU:HA | 32:YI:71:ILE:HG22 | 1.99 | 0.44 |
| 33:YN:67:LEU:HA | 33:YN:87:LEU:HD13 | 2.00 | 0.44 |
| 34:YO:91:LEU:N | 34:YO:91:LEU:CD2 | 2.80 | 0.44 |
| 35:YP:36:LYS:HZ3 | 35:YP:36:LYS:HG3 | 1.42 | 0.44 |
| 36:YQ:81:VAL:HG23 | 36:YQ:82:ARG:N | 2.32 | 0.44 |
| 39:YT:29:ARG:HA | 39:YT:45:PHE:O | 2.17 | 0.44 |
| 39:YT:49:VAL:O | 39:YT:49:VAL:CG1 | 2.64 | 0.44 |
| 44:YY:15:VAL:HB | 44:YY:20:TYR:O | 2.17 | 0.44 |
| 44:YY:95:LYS:HB2 | 44:YY:99:CYS:O | 2.17 | 0.44 |
| 45:YZ:102:LEU:HD22 | 45:YZ:156:LYS:HZ2 | 1.80 | 0.44 |
| 45:YZ:152:ALA:H | 45:YZ:170:THR:H | 1.66 | 0.44 |
| 50:Y4:2:LYS:HD2 | 50:Y4:2:LYS:HA | 1.61 | 0.44 |
| 1:QA:97:U:H2' | 1:QA:99:C:C6 | 2.53 | 0.43 |
| 1:QA:175:C:H2' | 1:QA:176:C:O4' | 2.18 | 0.43 |
| 1:QA:437:U:H2' | 1:QA:438:G:O4' | 2.18 | 0.43 |
| 1:QA:451:A:N7 | 1:QA:481:G:C2 | 2.86 | 0.43 |
| 1:QA:927:G:H1 | 1:QA:1390:U:H3 | 1.65 | 0.43 |
| 1:QA:1072:G:H2' | 1:QA:1073:U:O4' | 2.18 | 0.43 |
| 1:QA:1179:A:H2' | 1:QA:1180:A:O4' | 2.18 | 0.43 |
| 1:QA:1321:C:C3' | 1:QA:1322:C:H5'' | 2.48 | 0.43 |
| 1:QA:1365:G:H2' | 1:QA:1366:C:C6 | 2.53 | 0.43 |
| 2:QB:100:GLY:N | 2:QB:176:GLU:OE2 | 2.51 | 0.43 |
| 7:QG:78:ARG:HH11 | 7:QG:78:ARG:CG | 2.30 | 0.43 |
| 8:QH:118:VAL:O | 8:QH:119:LEU:HD23 | 2.18 | 0.43 |
| 9:QI:4:TYR:CZ | 9:QI:88:TYR:HB2 | 2.52 | 0.43 |
| 9:QI:100:GLY:C | 9:QI:102:LEU:N | 2.71 | 0.43 |
| 10:QJ:38:ILE:CG1 | 10:QJ:71:LEU:HB3 | 2.48 | 0.43 |
| 10:QJ:100:THR:O | 10:QJ:101:VAL:HB | 2.17 | 0.43 |
| 11:QK:34:ASP:OD1 | 11:QK:38:ASN:HB2 | 2.18 | 0.43 |
| 11:QK:48:ILE:HD11 | 11:QK:64:ALA:N | 2.32 | 0.43 |
| 12:QL:44:THR:HA | 12:QL:45:PRO:HD3 | 1.71 | 0.43 |
| 13:QM:69:GLU:O | 13:QM:70:LEU:C | 2.56 | 0.43 |
| 16:QP:83:GLU:HG3 | 16:QP:84:ALA:N | 2.33 | 0.43 |
| 19:QS:36:ARG:NH1 | 19:QS:52:TYR:O | 2.51 | 0.43 |
| 19:QS:51:VAL:HG12 | 19:QS:52:TYR:N | 2.33 | 0.43 |
| 25:RA:31:C:H5'' | 25:RA:1239:G:OP1 | 2.19 | 0.43 |
| 25:RA:71:A:H4' | 25:RA:72:U:H5'' | 2.00 | 0.43 |
| 25:RA:140:A:C8 | 25:RA:1408:C:O2' | 2.70 | 0.43 |
| 25:RA:276:A:O2' | 25:RA:277:C:O5' | 2.35 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:RA:396:G:H8 | 25:RA:396:G:O5' | 2.01 | 0.43 |
| 25:RA:675:A:N3 | 25:RA:2443:C:O2' | 2.40 | 0.43 |
| 25:RA:864:G:C6 | 25:RA:865:C:N4 | 2.86 | 0.43 |
| 25:RA:953:A:H2' | 25:RA:954:G:H8 | 1.81 | 0.43 |
| 25:RA:1267:U:OP2 | 25:RA:2012:G:N1 | 2.41 | 0.43 |
| 25:RA:1433:U:H1' | 25:RA:1561:G:N2 | 2.32 | 0.43 |
| 25:RA:1651:G:N2 | 25:RA:2007:C:C2 | 2.86 | 0.43 |
| 25:RA:2516:G:C5 | 25:RA:2517:C:C4 | 3.05 | 0.43 |
| 25:RA:2636:U:OP1 | 28:RE:79:ARG:HG3 | 2.18 | 0.43 |
| 27:RD:206:LEU:HD23 | 27:RD:206:LEU:HA | 1.49 | 0.43 |
| 28:RE:16:ARG:O | 28:RE:18:ASP:O | 2.36 | 0.43 |
| 29:RF:24:LEU:HD12 | 29:RF:24:LEU:N | 2.33 | 0.43 |
| 33:RN:30:ILE:HG22 | 33:RN:34:LEU:CD2 | 2.48 | 0.43 |
| 35:RP:107:LYS:HB2 | 35:RP:110:TYR:HD2 | 1.83 | 0.43 |
| 36:RQ:27:VAL:HG13 | 36:RQ:28:ALA:N | 2.32 | 0.43 |
| 38:RS:86:ALA:O | 38:RS:87:PHE:CB | 2.65 | 0.43 |
| 39:RT:29:ARG:HA | 39:RT:45:PHE:O | 2.17 | 0.43 |
| 39:RT:105:LEU:C | 39:RT:107:ASP:OD1 | 2.56 | 0.43 |
| 44:RY:25:GLY:HA3 | 44:RY:39:VAL:CG1 | 2.47 | 0.43 |
| 44:RY:88:LYS:HA | 44:RY:88:LYS:HZ2 | 1.83 | 0.43 |
| 46:R0:25:ARG:CD | 46:R0:29:GLN:HE22 | 2.27 | 0.43 |
| 47:R1:8:SER:CB | 47:R1:66:HIS:CE1 | 3.01 | 0.43 |
| 50:R4:48:ARG:C | 50:R4:49:PHE:HD1 | 2.22 | 0.43 |
| 54:R8:58:ILE:O | 54:R8:61:LEU:CG | 2.66 | 0.43 |
| 1:XA:61:G:H2' | 1:XA:62:U:O4' | 2.18 | 0.43 |
| 1:XA:89:U:HO2' | 1:XA:90:C:P | 2.42 | 0.43 |
| 2:XB:77:ALA:HB1 | 2:XB:165:VAL:HG11 | 2.00 | 0.43 |
| 4:XD:52:SER:HB3 | 4:XD:55:ALA:HB3 | 2.00 | 0.43 |
| 4:XD:95:GLY:O | 4:XD:99:SER:N | 2.51 | 0.43 |
| 5:XE:36:ASP:C | 5:XE:37:ARG:HG2 | 2.38 | 0.43 |
| 6:XF:72:VAL:HG23 | 6:XF:90:VAL:HG11 | 1.98 | 0.43 |
| 7:XG:60:LYS:O | 7:XG:61:VAL:C | 2.56 | 0.43 |
| 9:XI:127:LYS:HE2 | 22:XV:34:C:OP2 | 2.17 | 0.43 |
| 9:XI:128:ARG:NH2 | 22:XV:35:A:OP2 | 2.51 | 0.43 |
| 10:XJ:96:ILE:N | 10:XJ:96:ILE:CD1 | 2.79 | 0.43 |
| 10:XJ:96:ILE:HD13 | 10:XJ:96:ILE:H | 1.83 | 0.43 |
| 11:XK:96:ARG:O | 11:XK:97:ALA:C | 2.54 | 0.43 |
| 18:XR:82:THR:CG2 | 18:XR:83:GLU:N | 2.79 | 0.43 |
| 24:XY:39:C:H4' | 24:XY:40:G:OP1 | 2.18 | 0.43 |
| 25:YA:67:U:H3 | 25:YA:74:A:H2 | 1.64 | 0.43 |
| 25:YA:448:U:H1' | 29:YF:84:VAL:HG21 | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:YA:1025:G:C4 | 25:YA:1135:C:H1' | 2.52 | 0.43 |
| 25:YA:1252:G:H1' | 40:YU:33:ARG:HD3 | 2.00 | 0.43 |
| 25:YA:1469:A:H2' | 25:YA:1470:G:O4' | 2.18 | 0.43 |
| 25:YA:1562:A:N6 | 25:YA:1563:G:C6 | 2.86 | 0.43 |
| 25:YA:1956:U:O2 | 25:YA:1985:G:H4' | 2.18 | 0.43 |
| 25:YA:1967:C:H2' | 25:YA:1968:G:H5' | 1.99 | 0.43 |
| 26:YB:30:C:OP2 | 38:YS:32:LEU:HD11 | 2.18 | 0.43 |
| 27:YD:35:LYS:HB3 | 27:YD:36:PRO:HA | 2.00 | 0.43 |
| 27:YD:44:ASN:HB2 | 27:YD:49:ILE:HA | 1.93 | 0.43 |
| 27:YD:102:LYS:O | 27:YD:103:ARG:CG | 2.66 | 0.43 |
| 27:YD:213:ARG:HD2 | 27:YD:213:ARG:HA | 1.60 | 0.43 |
| 28:YE:2:LYS:HG2 | 28:YE:95:ILE:HG22 | 1.99 | 0.43 |
| 29:YF:174:VAL:CG1 | 29:YF:174:VAL:O | 2.65 | 0.43 |
| 30:YG:44:GLY:HA2 | 30:YG:88:ILE:HD11 | 1.99 | 0.43 |
| 31:YH:109:PHE:C | 31:YH:111:HIS:H | 2.22 | 0.43 |
| 31:YH:137:ASP:OD1 | 31:YH:138:LYS:N | 2.51 | 0.43 |
| 32:YI:111:PRO:O | 32:YI:112:LYS:C | 2.55 | 0.43 |
| 33:YN:87:LEU:C | 33:YN:87:LEU:CD2 | 2.86 | 0.43 |
| 35:YP:96:THR:HG22 | 35:YP:126:VAL:CB | 2.46 | 0.43 |
| 37:YR:33:ARG:HA | 37:YR:114:VAL:O | 2.18 | 0.43 |
| 38:YS:38:GLN:CG | 38:YS:47:THR:HG21 | 2.48 | 0.43 |
| 38:YS:86:ALA:O | 38:YS:87:PHE:CB | 2.65 | 0.43 |
| 39:YT:114:LEU:HA | 39:YT:114:LEU:HD23 | 1.74 | 0.43 |
| 43:YX:14:SER:HB2 | 43:YX:15:GLU:OE1 | 2.18 | 0.43 |
| 43:YX:70:LEU:HD23 | 43:YX:70:LEU:H | 1.77 | 0.43 |
| 45:YZ:24:LEU:HD21 | 45:YZ:86:VAL:CG2 | 2.48 | 0.43 |
| 45:YZ:27:VAL:CG2 | 45:YZ:28:MET:H | 2.31 | 0.43 |
| 45:YZ:158:PRO:N | 45:YZ:161:VAL:HG21 | 2.33 | 0.43 |
| 54:Y8:40:GLU:O | 54:Y8:43:GLN:N | 2.50 | 0.43 |
| 1:QA:358:U:H2' | 1:QA:359:U:H6 | 1.80 | 0.43 |
| 1:QA:401:C:H2' | 1:QA:402:G:C8 | 2.53 | 0.43 |
| 1:QA:542:G:N2 | 1:QA:543:C:C2 | 2.86 | 0.43 |
| 1:QA:757:U:O2' | 1:QA:879:C:H1' | 2.18 | 0.43 |
| 1:QA:1150:U:O4 | 1:QA:1151:A:N6 | 2.51 | 0.43 |
| 1:QA:1364:U:O2' | 1:QA:1365:G:OP1 | 2.31 | 0.43 |
| 1:QA:1429:C:H2' | 1:QA:1430:C:C6 | 2.53 | 0.43 |
| 4:QD:132:ARG:HH11 | 4:QD:132:ARG:HG2 | 1.83 | 0.43 |
| 5:QE:101:ILE:HD13 | 5:QE:101:ILE:H | 1.82 | 0.43 |
| 10:QJ:80:LYS:HE2 | 1:XA:1162:C:H4' | 2.00 | 0.43 |
| 11:QK:75:TYR:N | 11:QK:75:TYR:CD1 | 2.85 | 0.43 |
| 11:QK:106:LYS:O | 11:QK:107:SER:CB | 2.66 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 13:QM:19:LEU:HD22 | 13:QM:19:LEU:N | 2.33 | 0.43 |
| 13:QM:77:ASN:ND2 | 50:R4:71:ARG:HH12 | 2.16 | 0.43 |
| 15:QO:25:THR:HG22 | 15:QO:70:LEU:HD22 | 1.99 | 0.43 |
| 15:QO:77:ARG:HA | 15:QO:80:ALA:HB2 | 1.98 | 0.43 |
| 16:QP:23:ASP:O | 16:QP:26:ARG:HB2 | 2.18 | 0.43 |
| 22:QV:4:G:C6 | 22:QV:70:G:N1 | 2.86 | 0.43 |
| 24:QY:39:C:H4' | 24:QY:40:G:OP1 | 2.18 | 0.43 |
| 25:RA:271(B):G:N7 | 25:RA:421:U:H2' | 2.33 | 0.43 |
| 25:RA:639:U:H3 | 25:RA:649:G:H1 | 1.66 | 0.43 |
| 25:RA:2077:A:OP1 | 25:RA:2238:G:N2 | 2.49 | 0.43 |
| 25:RA:2364:C:H4' | 46:R0:56:ASP:OD1 | 2.18 | 0.43 |
| 27:RD:227:ASN:CB | 27:RD:228:PRO:CD | 2.93 | 0.43 |
| 28:RE:69:LYS:C | 28:RE:71:GLY:N | 2.71 | 0.43 |
| 30:RG:19:LEU:HA | 30:RG:22:ARG:HB2 | 1.99 | 0.43 |
| 30:RG:59:GLU:O | 30:RG:62:LEU:HB3 | 2.18 | 0.43 |
| 31:RH:109:PHE:C | 31:RH:111:HIS:H | 2.22 | 0.43 |
| 31:RH:125:VAL:CG1 | 31:RH:126:PRO:CG | 2.94 | 0.43 |
| 32:RI:35:LEU:O | 32:RI:35:LEU:HD12 | 2.19 | 0.43 |
| 33:RN:114:ARG:O | 33:RN:115:ARG:CB | 2.65 | 0.43 |
| 35:RP:75:ILE:HG12 | 35:RP:77:ARG:NH1 | 2.32 | 0.43 |
| 37:RR:81:ASP:N | 37:RR:81:ASP:OD2 | 2.50 | 0.43 |
| 39:RT:99:LEU:CD1 | 39:RT:99:LEU:O | 2.66 | 0.43 |
| 39:RT:105:LEU:O | 39:RT:105:LEU:HG | 2.18 | 0.43 |
| 41:RV:66:ARG:NH1 | 41:RV:88:ARG:CD | 2.74 | 0.43 |
| 43:RX:31:HIS:HA | 43:RX:32:PRO:HD3 | 1.88 | 0.43 |
| 44:RY:11:ASP:HB2 | 44:RY:27:VAL:CG1 | 2.46 | 0.43 |
| 45:RZ:15:PRO:HA | 45:RZ:18:LEU:HD13 | 2.00 | 0.43 |
| 46:R0:42:GLY:C | 46:R0:57:PHE:HD1 | 2.21 | 0.43 |
| 50:R4:39:CYS:O | 50:R4:40:HIS:CB | 2.66 | 0.43 |
| 50:R4:49:PHE:N | 50:R4:49:PHE:HD1 | 2.16 | 0.43 |
| 52:R6:15:GLU:HB3 | 52:R6:16:CYS:H | 1.46 | 0.43 |
| 1:XA:37:U:O2' | 1:XA:500:G:H4' | 2.17 | 0.43 |
| 1:XA:92:G:H3' | 1:XA:93:U:C6 | 2.53 | 0.43 |
| 1:XA:115:G:H8 | 1:XA:115:G:O5' | 2.02 | 0.43 |
| 1:XA:143:A:H2 | 1:XA:220:G:H1 | 1.65 | 0.43 |
| 1:XA:198:G:H1 | 1:XA:219:C:N4 | 2.16 | 0.43 |
| 1:XA:338:A:H61 | 1:XA:351:G:H1 | 1.66 | 0.43 |
| 1:XA:562:C:N4 | 12:XL:16:GLU:OE1 | 2.51 | 0.43 |
| 1:XA:978:A:O2' | 1:XA:1322:C:N3 | 2.51 | 0.43 |
| 1:XA:1054:C:N4 | 24:XY:34:C:C6 | 2.86 | 0.43 |
| 1:XA:1071:C:H2' | 1:XA:1072:G:C8 | 2.53 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:XB:95:GLN:HE21 | 2:XB:147:LYS:CE | 2.28 | 0.43 |
| 3:XC:106:VAL:HG11 | 3:XC:109:PRO:HA | 2.00 | 0.43 |
| 4:XD:180:GLY:O | 4:XD:181:MET:C | 2.55 | 0.43 |
| 7:XG:78:ARG:HH11 | 7:XG:78:ARG:CG | 2.30 | 0.43 |
| 8:XH:1:MET:H3 | 8:XH:1:MET:CE | 2.31 | 0.43 |
| 8:XH:88:LYS:HB3 | 8:XH:89:PRO:HD2 | 2.01 | 0.43 |
| 9:XI:43:ALA:O | 9:XI:45:ALA:N | 2.51 | 0.43 |
| 13:XM:39:ILE:HD12 | 13:XM:56:LEU:HD23 | 1.99 | 0.43 |
| 18:XR:20:ALA:O | 18:XR:21:LYS:HG3 | 2.18 | 0.43 |
| 20:XT:28:ALA:O | 20:XT:30:LYS:N | 2.50 | 0.43 |
| 20:XT:50:GLU:O | 20:XT:52:ALA:N | 2.51 | 0.43 |
| 25:YA:582:G:H2' | 25:YA:583:G:H8 | 1.83 | 0.43 |
| 25:YA:1024:G:OP2 | 25:YA:1025:G:C3' | 2.66 | 0.43 |
| 25:YA:1029:A:H2 | 25:YA:2465:C:O2 | 2.01 | 0.43 |
| 25:YA:1085:A:HO2' | 25:YA:1086:A:P | 2.38 | 0.43 |
| 25:YA:1126:A:OP1 | 25:YA:1126:A:H8 | 2.02 | 0.43 |
| 25:YA:1679:U:H2' | 25:YA:1680:U:H5' | 2.00 | 0.43 |
| 25:YA:1952:A:C6 | 25:YA:1953:A:N1 | 2.86 | 0.43 |
| 25:YA:2558:C:H2' | 25:YA:2559:C:O4' | 2.18 | 0.43 |
| 25:YA:2712:U:H1' | 25:YA:2712(A):A:N7 | 2.33 | 0.43 |
| 26:YB:5:C:O2' | 26:YB:27:C:O2 | 2.37 | 0.43 |
| 27:YD:10:THR:O | 27:YD:11:PRO:C | 2.56 | 0.43 |
| 27:YD:30:GLU:HG3 | 27:YD:63:ARG:NE | 2.32 | 0.43 |
| 30:YG:67:LYS:N | 30:YG:67:LYS:HD2 | 2.33 | 0.43 |
| 31:YH:53:GLU:CD | 31:YH:54:ARG:H | 2.21 | 0.43 |
| 31:YH:92:ILE:CD1 | 31:YH:160:LYS:HD3 | 2.48 | 0.43 |
| 33:YN:129:PRO:C | 33:YN:131:GLN:H | 2.20 | 0.43 |
| 34:YO:47:ILE:HG13 | 34:YO:48:PRO:HD2 | 1.99 | 0.43 |
| 35:YP:70:GLN:N | 35:YP:70:GLN:OE1 | 2.51 | 0.43 |
| 38:YS:110:LEU:HA | 38:YS:112:PHE:CZ | 2.54 | 0.43 |
| 41:YV:1:MET:HE1 | 41:YV:43:GLU:HG2 | 2.00 | 0.43 |
| 41:YV:66:ARG:NH1 | 41:YV:88:ARG:NH1 | 2.61 | 0.43 |
| 42:YW:29:LEU:HD11 | 42:YW:55:ALA:HB2 | 1.98 | 0.43 |
| 43:YX:3:THR:HA | 43:YX:6:ASP:OD2 | 2.18 | 0.43 |
| 45:YZ:117:LEU:HB3 | 45:YZ:118:GLN:H | 1.70 | 0.43 |
| 45:YZ:144:LEU:HD21 | 45:YZ:150:LEU:HD13 | 2.00 | 0.43 |
| 47:Y1:82:LEU:HD12 | 47:Y1:82:LEU:O | 2.10 | 0.43 |
| 50:Y4:68:ARG:HH11 | 50:Y4:69:LYS:HG2 | 1.83 | 0.43 |
| 54:Y8:58:ILE:O | 54:Y8:61:LEU:CD1 | 2.66 | 0.43 |
| 1:QA:190:G:N3 | 1:QA:190:G:H2' | 2.33 | 0.43 |
| 1:QA:232:G:H2' | 1:QA:233:C:O4' | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 1:QA:654:G:H2' | 1:QA:655:A:O4' | 2.18 | 0.43 |
| 1:QA:992:U:H1' | 1:QA:993:G:OP2 | 2.18 | 0.43 |
| 1:QA:995:C:H5' | 14:QN:8:GLU:HG2 | 2.00 | 0.43 |
| 1:QA:1362:C:H2' | 1:QA:1362(A):C:H5'' | 2.01 | 0.43 |
| 2:QB:142:LEU:HD23 | 2:QB:142:LEU:O | 2.18 | 0.43 |
| 3:QC:14:ILE:C | 3:QC:16:ARG:H | 2.21 | 0.43 |
| 3:QC:69:HIS:HA | 3:QC:104:GLN:HB2 | 2.00 | 0.43 |
| 9:QI:10:ARG:NE | 9:QI:105:ASP:CB | 2.81 | 0.43 |
| 9:QI:41:VAL:HG12 | 9:QI:41:VAL:O | 2.18 | 0.43 |
| 11:QK:20:TYR:C | 11:QK:21:ILE:HD12 | 2.38 | 0.43 |
| 15:QO:83:GLU:C | 15:QO:85:LEU:N | 2.71 | 0.43 |
| 16:QP:21:VAL:HG23 | 16:QP:34:GLU:N | 2.34 | 0.43 |
| 22:QV:15:G:N2 | 22:QV:48:C:H42 | 2.17 | 0.43 |
| 25:RA:308:G:C6 | 25:RA:309:G:C2 | 3.06 | 0.43 |
| 25:RA:818:G:O2' | 25:RA:1189:A:N6 | 2.52 | 0.43 |
| 25:RA:829:A:N7 | 25:RA:2248:C:H5' | 2.33 | 0.43 |
| 25:RA:1012:U:O2' | 25:RA:1013:C:OP2 | 2.27 | 0.43 |
| 25:RA:1213:A:N3 | 25:RA:1238:G:O2' | 2.49 | 0.43 |
| 25:RA:1380:G:H3' | 25:RA:1380:G:OP2 | 2.18 | 0.43 |
| 25:RA:1380:G:O2' | 25:RA:1569:A:N6 | 2.50 | 0.43 |
| 25:RA:1543:A:C2 | 25:RA:1545:A:C4 | 3.06 | 0.43 |
| 25:RA:1844:C:H2' | 25:RA:1845:G:H8 | 1.81 | 0.43 |
| 25:RA:2741:A:H2' | 25:RA:2742:C:O4' | 2.18 | 0.43 |
| 25:RA:2818:G:O2' | 25:RA:2819:G:H5' | 2.18 | 0.43 |
| 25:RA:2855:C:H2' | 25:RA:2856:C:H6 | 1.82 | 0.43 |
| 26:RB:13:A:H5'' | 26:RB:15:A:N6 | 2.33 | 0.43 |
| 28:RE:3:GLY:CA | 28:RE:81:ILE:HG21 | 2.49 | 0.43 |
| 28:RE:36:ARG:HB3 | 28:RE:36:ARG:NH1 | 2.31 | 0.43 |
| 29:RF:63:LYS:CE | 29:RF:67:GLN:HB2 | 2.48 | 0.43 |
| 29:RF:201:VAL:HG13 | 29:RF:202:PHE:N | 2.33 | 0.43 |
| 30:RG:131:TYR:HE2 | 30:RG:133:LEU:HD22 | 1.84 | 0.43 |
| 30:RG:139:LEU:HA | 30:RG:144:ILE:HG21 | 2.00 | 0.43 |
| 31:RH:119:GLU:CD | 31:RH:120:GLY:H | 2.22 | 0.43 |
| 31:RH:136:ILE:HD12 | 31:RH:136:ILE:N | 2.31 | 0.43 |
| 31:RH:137:ASP:OD1 | 31:RH:138:LYS:N | 2.51 | 0.43 |
| 32:RI:33:ARG:HH11 | 32:RI:33:ARG:CG | 2.31 | 0.43 |
| 32:RI:110:ASP:CB | 32:RI:111:PRO:CA | 2.96 | 0.43 |
| 32:RI:110:ASP:HB2 | 32:RI:111:PRO:C | 2.38 | 0.43 |
| 34:RO:51:ALA:O | 34:RO:53:LYS:HE3 | 2.19 | 0.43 |
| 34:RO:97:ARG:HA | 34:RO:117:LEU:HD22 | 2.00 | 0.43 |
| 35:RP:101:VAL:HG13 | 35:RP:102:ARG:N | 2.33 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 38:RS:14:VAL:CG1 | 38:RS:15:ARG:N | 2.81 | 0.43 |
| 38:RS:38:GLN:CG | 38:RS:47:THR:HG21 | 2.48 | 0.43 |
| 40:RU:64:ARG:CG | 40:RU:64:ARG:NH2 | 2.70 | 0.43 |
| 40:RU:88:ILE:HG22 | 40:RU:90:VAL:CG2 | 2.44 | 0.43 |
| 43:RX:7:VAL:O | 43:RX:30:VAL:CG1 | 2.67 | 0.43 |
| 44:RY:81:LYS:HZ2 | 44:RY:98:VAL:HB | 1.83 | 0.43 |
| 45:RZ:24:LEU:O | 45:RZ:24:LEU:HG | 2.18 | 0.43 |
| 47:R1:53:VAL:CG1 | 47:R1:54:ALA:N | 2.81 | 0.43 |
| 50:R4:42:PHE:CD1 | 50:R4:42:PHE:C | 2.90 | 0.43 |
| 52:R6:20:ASN:O | 52:R6:21:TYR:CG | 2.72 | 0.43 |
| 1:XA:584:G:H2' | 1:XA:585:G:C8 | 2.53 | 0.43 |
| 1:XA:667:G:H4' | 15:XO:51:HIS:ND1 | 2.32 | 0.43 |
| 1:XA:831:U:H2' | 1:XA:832:C:C6 | 2.52 | 0.43 |
| 1:XA:1226:C:H4' | 1:XA:1227:A:OP1 | 2.18 | 0.43 |
| 1:XA:1325:C:H2' | 1:XA:1326:C:C6 | 2.53 | 0.43 |
| 1:XA:1441:G:H4' | 1:XA:1442:G:C5 | 2.53 | 0.43 |
| 2:XB:115:LEU:HD21 | 2:XB:153:ARG:HD3 | 1.99 | 0.43 |
| 3:XC:59:ARG:HH12 | 3:XC:97:LYS:CD | 2.31 | 0.43 |
| 5:XE:67:VAL:HG22 | 5:XE:68:GLU:N | 2.33 | 0.43 |
| 6:XF:73:ASN:O | 6:XF:76:ALA:HB3 | 2.18 | 0.43 |
| 6:XF:91:VAL:CG1 | 18:XR:72:ARG:NH1 | 2.82 | 0.43 |
| 7:XG:75:VAL:HG13 | 7:XG:145:ALA:HA | 2.00 | 0.43 |
| 11:XK:108:ILE:HG21 | 18:XR:88:LYS:OXT | 2.19 | 0.43 |
| 11:XK:124:LYS:HB3 | 11:XK:125:PHE:H | 1.67 | 0.43 |
| 12:XL:6:THR:H | 12:XL:9:GLN:NE2 | 1.97 | 0.43 |
| 15:XO:17:ARG:HD3 | 15:XO:26:GLU:HG3 | 2.00 | 0.43 |
| 15:XO:83:GLU:HA | 15:XO:83:GLU:OE1 | 2.18 | 0.43 |
| 17:XQ:13:ASP:O | 17:XQ:15:MET:N | 2.51 | 0.43 |
| 18:XR:63:GLN:O | 18:XR:66:LEU:HB3 | 2.18 | 0.43 |
| 25:YA:270(R):G:H2' | 25:YA:270(S):G:H8 | 1.82 | 0.43 |
| 25:YA:373:U:H2' | 25:YA:374:A:H8 | 1.84 | 0.43 |
| 25:YA:594:U:H5' | 54:Y8:61:LEU:HD21 | 2.00 | 0.43 |
| 25:YA:792:G:O2' | 25:YA:2440:C:N3 | 2.42 | 0.43 |
| 25:YA:1012:U:H3 | 33:YN:25:ARG:HH11 | 1.66 | 0.43 |
| 25:YA:1819:A:C8 | 25:YA:1821:A:C2 | 3.06 | 0.43 |
| 27:YD:11:PRO:O | 27:YD:12:SER:OG | 2.29 | 0.43 |
| 27:YD:43:ARG:CZ | 27:YD:49:ILE:HG21 | 2.48 | 0.43 |
| 27:YD:44:ASN:HB3 | 27:YD:49:ILE:CG2 | 2.47 | 0.43 |
| 27:YD:272:ALA:HB1 | 27:YD:273:ARG:H | 1.58 | 0.43 |
| 28:YE:11:MET:O | 28:YE:12:THR:HB | 2.18 | 0.43 |
| 28:YE:69:LYS:C | 28:YE:71:GLY:N | 2.71 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 30:YG:31:VAL:O | 30:YG:31:VAL:HG13 | 2.18 | 0.43 |
| 32:YI:60:GLU:HA | 32:YI:63:ALA:HB3 | 2.00 | 0.43 |
| 33:YN:103:VAL:O | 33:YN:104:LYS:C | 2.56 | 0.43 |
| 34:YO:63:VAL:O | 34:YO:63:VAL:HG23 | 2.17 | 0.43 |
| 38:YS:14:VAL:CG1 | 38:YS:15:ARG:N | 2.81 | 0.43 |
| 42:YW:34:ASN:O | 42:YW:35:ILE:C | 2.55 | 0.43 |
| 42:YW:50:VAL:O | 42:YW:53:SER:N | 2.50 | 0.43 |
| 45:YZ:12:GLY:O | 45:YZ:13:GLU:O | 2.36 | 0.43 |
| 45:YZ:35:ARG:HB3 | 45:YZ:35:ARG:HH11 | 1.83 | 0.43 |
| 47:Y1:94:LEU:O | 47:Y1:95:LEU:HB2 | 2.17 | 0.43 |
| 48:Y2:59:ARG:O | 48:Y2:62:THR:HG23 | 2.18 | 0.43 |
| 50:Y4:48:ARG:NH1 | 50:Y4:51:ASP:HA | 2.34 | 0.43 |
| 50:Y4:59:PHE:CE1 | 50:Y4:70:GLY:N | 2.87 | 0.43 |
| 52:Y6:11:LEU:HD12 | 52:Y6:51:GLU:HG3 | 2.00 | 0.43 |
| 53:Y7:19:ARG:HG2 | 53:Y7:19:ARG:NH1 | 2.33 | 0.43 |
| 1:QA:25:C:H2' | 1:QA:26:A:H8 | 1.81 | 0.43 |
| 1:QA:1202:G:N7 | 10:QJ:53:PRO:HB2 | 2.33 | 0.43 |
| 2:QB:115:LEU:HD21 | 2:QB:153:ARG:HD3 | 2.00 | 0.43 |
| 2:QB:178:ARG:NH2 | 8:QH:68:ARG:HH22 | 2.17 | 0.43 |
| 3:QC:27:LYS:NZ | 3:QC:27:LYS:HB3 | 2.34 | 0.43 |
| 3:QC:67:THR:O | 3:QC:69:HIS:CE1 | 2.72 | 0.43 |
| 3:QC:106:VAL:HG11 | 3:QC:109:PRO:HA | 2.00 | 0.43 |
| 6:QF:88:VAL:HG12 | 6:QF:89:MET:N | 2.34 | 0.43 |
| 7:QG:15:ASP:OD1 | 7:QG:23:VAL:HG11 | 2.19 | 0.43 |
| 7:QG:60:LYS:O | 7:QG:61:VAL:C | 2.57 | 0.43 |
| 7:QG:155:ARG:HD3 | 7:QG:155:ARG:H | 1.83 | 0.43 |
| 10:QJ:16:LEU:HD13 | 10:QJ:16:LEU:C | 2.38 | 0.43 |
| 10:QJ:51:ARG:HG2 | 10:QJ:51:ARG:NH1 | 2.33 | 0.43 |
| 10:QJ:54:PHE:CE2 | 10:QJ:55:LYS:HD2 | 2.52 | 0.43 |
| 11:QK:62:GLN:O | 11:QK:64:ALA:N | 2.52 | 0.43 |
| 25:RA:27:G:O2' | 25:RA:28:A:H8 | 1.99 | 0.43 |
| 25:RA:221:A:H8 | 25:RA:221:A:OP2 | 2.01 | 0.43 |
| 25:RA:705:A:H2' | 25:RA:706:A:O4' | 2.18 | 0.43 |
| 25:RA:940:G:H2' | 25:RA:941:A:O4' | 2.19 | 0.43 |
| 25:RA:1210:A:P | 25:RA:1212:G:H5' | 2.58 | 0.43 |
| 25:RA:1453:A:C6 | 25:RA:2702:U:H1' | 2.53 | 0.43 |
| 25:RA:1469:A:H2' | 25:RA:1470:G:O4' | 2.18 | 0.43 |
| 25:RA:1479:G:H1 | 25:RA:1514:U:H3 | 1.65 | 0.43 |
| 25:RA:1804:C:H2' | 25:RA:1805:U:H6 | 1.83 | 0.43 |
| 25:RA:1805:U:H5'' | 27:RD:250:TRP:CG | 2.54 | 0.43 |
| 26:RB:111:U:H2' | 26:RB:112:G:H8 | 1.83 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 27:RD:17:THR:HG22 | 27:RD:204:ILE:HA | 1.98 | 0.43 |
| 29:RF:144:LYS:C | 29:RF:146:ALA:H | 2.21 | 0.43 |
| 29:RF:167:ALA:HB1 | 29:RF:173:VAL:HG11 | 1.99 | 0.43 |
| 32:RI:27:ARG:HD3 | 47:R1:71:TYR:CE1 | 2.45 | 0.43 |
| 33:RN:61:ARG:HA | 33:RN:61:ARG:NE | 2.32 | 0.43 |
| 33:RN:103:VAL:O | 33:RN:104:LYS:C | 2.56 | 0.43 |
| 35:RP:70:GLN:N | 35:RP:70:GLN:OE1 | 2.51 | 0.43 |
| 35:RP:135:LEU:HD13 | 35:RP:139:LYS:HE3 | 2.01 | 0.43 |
| 38:RS:56:LEU:O | 38:RS:57:LYS:O | 2.36 | 0.43 |
| 39:RT:89:VAL:O | 39:RT:90:GLN:HB2 | 2.19 | 0.43 |
| 46:R0:25:ARG:HH11 | 46:R0:25:ARG:HG2 | 1.82 | 0.43 |
| 47:R1:44:PRO:O | 47:R1:46:LEU:N | 2.51 | 0.43 |
| 53:R7:5:TRP:CD1 | 53:R7:7:PRO:HG3 | 2.53 | 0.43 |
| 54:R8:58:ILE:O | 54:R8:61:LEU:CD1 | 2.67 | 0.43 |
| 1:XA:89:U:H2' | 1:XA:90:C:C6 | 2.54 | 0.43 |
| 1:XA:236:G:H5'' | 17:XQ:42:TYR:OH | 2.18 | 0.43 |
| 1:XA:392:G:OP1 | 16:XP:8:ARG:NH2 | 2.51 | 0.43 |
| 1:XA:560:U:HO2' | 1:XA:561:U:P | 2.36 | 0.43 |
| 1:XA:571:U:O2 | 1:XA:918:A:H5' | 2.18 | 0.43 |
| 1:XA:1049:U:H4' | 1:XA:1050:G:C5' | 2.49 | 0.43 |
| 1:XA:1053:G:C5' | 1:XA:1054:C:H5' | 2.42 | 0.43 |
| 1:XA:1171:G:H2' | 1:XA:1172:C:C6 | 2.53 | 0.43 |
| 1:XA:1339:A:C5 | 1:XA:1340:A:H1' | 2.53 | 0.43 |
| 1:XA:1342:C:H1' | 9:XI:124:GLN:HG3 | 1.99 | 0.43 |
| 2:XB:29:ALA:O | 2:XB:32:ILE:HG22 | 2.17 | 0.43 |
| 3:XC:22:TRP:CB | 3:XC:59:ARG:HB2 | 2.48 | 0.43 |
| 4:XD:163:GLU:OE2 | 4:XD:163:GLU:HA | 2.19 | 0.43 |
| 7:XG:62:PHE:O | 7:XG:64:GLN:N | 2.51 | 0.43 |
| 7:XG:88:PRO:HB3 | 7:XG:145:ALA:HA | 2.01 | 0.43 |
| 9:XI:41:VAL:HG12 | 9:XI:41:VAL:O | 2.18 | 0.43 |
| 11:XK:20:TYR:C | 11:XK:21:ILE:HD12 | 2.38 | 0.43 |
| 11:XK:70:LYS:HA | 11:XK:73:MET:HE2 | 2.00 | 0.43 |
| 12:XL:27:LEU:C | 12:XL:29:GLY:H | 2.20 | 0.43 |
| 14:XN:12:ARG:C | 14:XN:14:PRO:CD | 2.80 | 0.43 |
| 20:XT:44:ALA:HB1 | 20:XT:91:LEU:HB2 | 1.99 | 0.43 |
| 22:XV:49:G:O6 | 22:XV:65:C:N4 | 2.49 | 0.43 |
| 25:YA:459:U:H2' | 25:YA:460:A:H8 | 1.83 | 0.43 |
| 25:YA:869:G:H1 | 25:YA:908:C:N4 | 2.16 | 0.43 |
| 25:YA:2308:G:H22 | 25:YA:2311:A:H2 | 1.66 | 0.43 |
| 25:YA:2318:G:H22 | 38:YS:2:ALA:CA | 2.29 | 0.43 |
| 25:YA:2372:G:H4' | 52:Y6:46:HIS:CD2 | 2.53 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:2865:U:C4 | 25:YA:2866:U:C4 | 3.07 | 0.43 |
| 25:YA:2868:A:H2' | 25:YA:2869:G:O4' | 2.18 | 0.43 |
| 28:YE:3:GLY:CA | 28:YE:81:ILE:HG21 | 2.49 | 0.43 |
| 28:YE:48:GLN:HE21 | 28:YE:48:GLN:HB3 | 1.55 | 0.43 |
| 31:YH:35:VAL:CG2 | 31:YH:75:ALA:HB2 | 2.48 | 0.43 |
| 31:YH:136:ILE:HD12 | 31:YH:136:ILE:N | 2.31 | 0.43 |
| 32:YI:35:LEU:O | 32:YI:35:LEU:HD12 | 2.19 | 0.43 |
| 33:YN:17:ASP:O | 33:YN:55:VAL:O | 2.34 | 0.43 |
| 35:YP:101:VAL:HA | 35:YP:106:LEU:HB2 | 1.99 | 0.43 |
| 37:YR:48:VAL:O | 37:YR:49:ASP:C | 2.57 | 0.43 |
| 38:YS:42:ASP:C | 38:YS:44:LYS:N | 2.72 | 0.43 |
| 38:YS:110:LEU:HD23 | 38:YS:112:PHE:CE2 | 2.54 | 0.43 |
| 42:YW:111:HIS:CG | 42:YW:112:GLY:H | 2.37 | 0.43 |
| 44:YY:6:HIS:ND1 | 44:YY:6:HIS:N | 2.66 | 0.43 |
| 44:YY:75:ILE:HG12 | 44:YY:76:CYS:H | 1.79 | 0.43 |
| 47:Y1:44:PRO:O | 47:Y1:46:LEU:N | 2.51 | 0.43 |
| 47:Y1:60:PHE:HZ | 47:Y1:90:ILE:HG21 | 1.82 | 0.43 |
| 52:Y6:20:ASN:O | 52:Y6:21:TYR:CG | 2.71 | 0.43 |
| 53:Y7:17:GLY:O | 53:Y7:20:ALA:HB3 | 2.18 | 0.43 |
| 54:Y8:58:ILE:O | 54:Y8:61:LEU:CG | 2.66 | 0.43 |
| 1:QA:544:G:C6 | 1:QA:545:C:C4 | 3.06 | 0.43 |
| 2:QB:32:ILE:HD13 | 2:QB:190:THR:CG2 | 2.48 | 0.43 |
| 2:QB:90:MET:HA | 2:QB:91:PRO:HD3 | 1.82 | 0.43 |
| 5:QE:62:ALA:O | 5:QE:64:ARG:N | 2.50 | 0.43 |
| 7:QG:88:PRO:HB3 | 7:QG:145:ALA:HA | 2.01 | 0.43 |
| 9:QI:95:LYS:HD3 | 9:QI:95:LYS:C | 2.39 | 0.43 |
| 10:QJ:90:LEU:N | 10:QJ:91:PRO:CD | 2.82 | 0.43 |
| 11:QK:105:VAL:O | 11:QK:105:VAL:HG23 | 2.19 | 0.43 |
| 12:QL:119:LYS:HB2 | 12:QL:120:TYR:HD1 | 1.83 | 0.43 |
| 25:RA:34:C:H41 | 25:RA:447:A:H61 | 1.67 | 0.43 |
| 25:RA:194:G:H2' | 25:RA:195:A:O4' | 2.18 | 0.43 |
| 25:RA:250:G:C6 | 25:RA:251:A:C6 | 3.07 | 0.43 |
| 25:RA:414:C:H2' | 25:RA:415:A:C8 | 2.51 | 0.43 |
| 25:RA:678:C:H2' | 25:RA:679:C:H6 | 1.83 | 0.43 |
| 25:RA:856:C:HO2' | 25:RA:857:C:P | 2.41 | 0.43 |
| 25:RA:868:U:H2' | 25:RA:869:G:O4' | 2.19 | 0.43 |
| 25:RA:945:A:C4 | 25:RA:2448:A:C2 | 3.06 | 0.43 |
| 25:RA:978:G:H1 | 25:RA:985:C:H42 | 1.66 | 0.43 |
| 25:RA:1434:A:H2' | 25:RA:1435:G:C8 | 2.54 | 0.43 |
| 25:RA:1951:U:O2 | 25:RA:1953:A:H8 | 2.01 | 0.43 |
| 25:RA:2081:C:H2' | 25:RA:2082:A:C8 | 2.53 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:RA:2231:C:H2' | 25:RA:2232:U:O4' | 2.18 | 0.43 |
| 29:RF:62:ARG:NH1 | 29:RF:62:ARG:CB | 2.82 | 0.43 |
| 31:RH:92:ILE:CD1 | 31:RH:160:LYS:HD3 | 2.48 | 0.43 |
| 32:RI:74:ASN:CG | 32:RI:75:LEU:N | 2.68 | 0.43 |
| 33:RN:1:MET:HG3 | 33:RN:1:MET:O | 2.19 | 0.43 |
| 34:RO:86:ILE:H | 34:RO:86:ILE:CD1 | 2.28 | 0.43 |
| 38:RS:110:LEU:HD23 | 38:RS:112:PHE:CE2 | 2.54 | 0.43 |
| 40:RU:95:LEU:HD13 | 41:RV:4:ILE:HD12 | 1.98 | 0.43 |
| 41:RV:15:GLU:O | 41:RV:96:ILE:HB | 2.19 | 0.43 |
| 43:RX:14:SER:O | 43:RX:15:GLU:C | 2.57 | 0.43 |
| 44:RY:6:HIS:ND1 | 44:RY:6:HIS:N | 2.66 | 0.43 |
| 45:RZ:35:ARG:HB3 | 45:RZ:35:ARG:HH11 | 1.83 | 0.43 |
| 50:R4:68:ARG:O | 50:R4:69:LYS:HB2 | 2.17 | 0.43 |
| 52:R6:7:ILE:HG23 | 52:R6:8:LYS:N | 2.32 | 0.43 |
| 1:XA:1115:C:H2' | 1:XA:1116:C:C6 | 2.53 | 0.43 |
| 1:XA:1126:U:C5 | 1:XA:1127:G:C4 | 3.07 | 0.43 |
| 2:XB:132:LYS:HA | 2:XB:135:GLN:CB | 2.43 | 0.43 |
| 2:XB:162:ILE:O | 2:XB:185:ILE:HG13 | 2.18 | 0.43 |
| 3:XC:27:LYS:HB3 | 3:XC:27:LYS:NZ | 2.34 | 0.43 |
| 4:XD:122:ARG:HA | 4:XD:134:ASP:HB2 | 2.00 | 0.43 |
| 7:XG:148:ASN:O | 7:XG:150:ALA:N | 2.51 | 0.43 |
| 10:XJ:70:ARG:HG3 | 10:XJ:70:ARG:HH11 | 1.83 | 0.43 |
| 10:XJ:90:LEU:N | 10:XJ:91:PRO:CD | 2.81 | 0.43 |
| 13:XM:36:LYS:C | 13:XM:36:LYS:CD | 2.86 | 0.43 |
| 22:XV:54:U:C4 | 22:XV:55:U:C4 | 3.06 | 0.43 |
| 25:YA:392:C:OP1 | 25:YA:409:C:OP1 | 2.37 | 0.43 |
| 25:YA:532:A:H2' | 40:YU:28:ARG:NE | 2.34 | 0.43 |
| 25:YA:652:C:N4 | 25:YA:653:A:N1 | 2.65 | 0.43 |
| 25:YA:1432:C:H2' | 25:YA:1433:U:O4' | 2.19 | 0.43 |
| 25:YA:1436:G:H2' | 25:YA:1437:C:O4' | 2.18 | 0.43 |
| 25:YA:1756:G:H4' | 25:YA:1758:G:O4' | 2.18 | 0.43 |
| 25:YA:1929:G:O5' | 25:YA:1929:G:H8 | 2.01 | 0.43 |
| 25:YA:2186:G:H2' | 25:YA:2187:G:H8 | 1.82 | 0.43 |
| 25:YA:2308:G:N2 | 25:YA:2311:A:H2 | 2.16 | 0.43 |
| 25:YA:2845:G:O2' | 25:YA:2846:G:H5' | 2.18 | 0.43 |
| 26:YB:87:G:H22 | 26:YB:89:G:H3' | 1.84 | 0.43 |
| 27:YD:241:PRO:O | 27:YD:242:ARG:C | 2.55 | 0.43 |
| 28:YE:51:PHE:O | 28:YE:74:PRO:CB | 2.67 | 0.43 |
| 28:YE:143:ASN:N | 28:YE:143:ASN:ND2 | 2.65 | 0.43 |
| 30:YG:114:ILE:O | 30:YG:116:ASP:N | 2.51 | 0.43 |
| 39:YT:105:LEU:C | 39:YT:107:ASP:OD1 | 2.56 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 40:YU:99:ALA:HA | 40:YU:106:PHE:HB2 | 2.01 | 0.43 |
| 44:YY:47:LYS:O | 44:YY:49:VAL:N | 2.48 | 0.43 |
| 45:YZ:103:ARG:HB3 | 45:YZ:138:GLU:HG3 | 2.00 | 0.43 |
| 47:Y1:92:LYS:O | 47:Y1:93:GLU:C | 2.56 | 0.43 |
| 50:Y4:15:ILE:N | 50:Y4:15:ILE:CD1 | 2.78 | 0.43 |
| 50:Y4:43:TYR:O | 50:Y4:46:GLN:HA | 2.19 | 0.43 |
| 51:Y5:15:ARG:HA | 51:Y5:18:ALA:HB3 | 1.99 | 0.43 |
| 1:QA:292:G:C5 | 1:QA:293:G:H1' | 2.53 | 0.43 |
| 1:QA:405:U:H5'' | 1:QA:406:G:O4' | 2.19 | 0.43 |
| 1:QA:692:U:O2 | 1:QA:694:A:H3' | 2.18 | 0.43 |
| 1:QA:762:C:H2' | 1:QA:763:G:H8 | 1.82 | 0.43 |
| 1:QA:1441:G:H4' | 1:QA:1442:G:C5 | 2.54 | 0.43 |
| 2:QB:109:SER:C | 2:QB:111:ARG:H | 2.21 | 0.43 |
| 3:QC:59:ARG:HH12 | 3:QC:97:LYS:CD | 2.31 | 0.43 |
| 4:QD:166:LYS:CD | 27:YD:135:PHE:HZ | 2.30 | 0.43 |
| 6:QF:27:GLN:HG2 | 6:QF:27:GLN:H | 1.65 | 0.43 |
| 6:QF:73:ASN:O | 6:QF:76:ALA:HB3 | 2.19 | 0.43 |
| 6:QF:91:VAL:CG1 | 18:QR:72:ARG:NH1 | 2.82 | 0.43 |
| 8:QH:64:LYS:CB | 8:QH:79:VAL:HG21 | 2.48 | 0.43 |
| 12:QL:22:SER:C | 12:QL:24:VAL:H | 2.22 | 0.43 |
| 13:QM:8:GLU:OE2 | 30:RG:115:ARG:NH1 | 2.51 | 0.43 |
| 14:QN:12:ARG:C | 14:QN:14:PRO:CD | 2.80 | 0.43 |
| 15:QO:64:ARG:CD | 15:QO:68:ARG:NH2 | 2.82 | 0.43 |
| 18:QR:43:PHE:HA | 18:QR:51:LEU:HD12 | 2.01 | 0.43 |
| 20:QT:44:ALA:C | 20:QT:91:LEU:HB3 | 2.39 | 0.43 |
| 25:RA:95:G:H5' | 48:R2:46:GLN:OE1 | 2.18 | 0.43 |
| 25:RA:453:C:H4' | 25:RA:472:A:N6 | 2.34 | 0.43 |
| 25:RA:541:C:H2' | 25:RA:542:C:C6 | 2.54 | 0.43 |
| 25:RA:1222:C:O5' | 25:RA:1222:C:H6 | 2.00 | 0.43 |
| 25:RA:1632:A:H8 | 25:RA:1632:A:O5' | 2.00 | 0.43 |
| 25:RA:1967:C:H2' | 25:RA:1968:G:O4' | 2.18 | 0.43 |
| 25:RA:2142:C:H2' | 25:RA:2143:C:C6 | 2.53 | 0.43 |
| 25:RA:2475:C:H42 | 25:RA:2529:G:H22 | 1.66 | 0.43 |
| 25:RA:2638:G:P | 28:RE:82:ARG:HH22 | 2.41 | 0.43 |
| 27:RD:69:ARG:NH2 | 27:RD:130:ALA:HB2 | 2.20 | 0.43 |
| 27:RD:238:GLY:O | 27:RD:239:ARG:O | 2.35 | 0.43 |
| 27:RD:241:PRO:O | 27:RD:242:ARG:C | 2.55 | 0.43 |
| 28:RE:120:TRP:CE3 | 28:RE:155:LYS:HD3 | 2.53 | 0.43 |
| 28:RE:203:LYS:HD2 | 28:RE:203:LYS:C | 2.38 | 0.43 |
| 29:RF:101:LEU:HD12 | 29:RF:102:PRO:N | 2.33 | 0.43 |
| 38:RS:57:LYS:O | 38:RS:58:LEU:HB3 | 2.18 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 38:RS:105:ALA:C | 38:RS:110:LEU:HD21 | 2.38 | 0.43 |
| 41:RV:25:LEU:H | 41:RV:92:THR:CG2 | 2.29 | 0.43 |
| 45:RZ:137:ILE:O | 45:RZ:156:LYS:NZ | 2.50 | 0.43 |
| 1:XA:35:G:C2 | 1:XA:550:G:C2 | 3.06 | 0.43 |
| 1:XA:287:U:H2' | 1:XA:288:A:H8 | 1.83 | 0.43 |
| 1:XA:690:G:N2 | 11:XK:55:LYS:HZ1 | 2.16 | 0.43 |
| 1:XA:721:G:H4' | 1:XA:722:A:O4' | 2.19 | 0.43 |
| 1:XA:1071:C:H2' | 1:XA:1072:G:H8 | 1.84 | 0.43 |
| 1:XA:1128:C:N4 | 1:XA:1144:G:H1 | 2.13 | 0.43 |
| 1:XA:1277:C:O2' | 1:XA:1279:A:H1' | 2.19 | 0.43 |
| 1:XA:1461:G:H2' | 1:XA:1462:G:C8 | 2.49 | 0.43 |
| 2:XB:127:ILE:HG23 | 2:XB:128:GLU:N | 2.34 | 0.43 |
| 3:XC:101:LEU:HD23 | 3:XC:101:LEU:C | 2.38 | 0.43 |
| 5:XE:64:ARG:HH11 | 5:XE:64:ARG:HG3 | 1.81 | 0.43 |
| 6:XF:76:ALA:HB1 | 6:XF:80:ARG:HH21 | 1.82 | 0.43 |
| 10:XJ:30:SER:OG | 10:XJ:81:THR:HG22 | 2.19 | 0.43 |
| 12:XL:27:LEU:HD13 | 12:XL:28:LYS:H | 1.84 | 0.43 |
| 13:XM:69:GLU:O | 13:XM:70:LEU:C | 2.56 | 0.43 |
| 15:XO:25:THR:O | 15:XO:29:VAL:HG23 | 2.18 | 0.43 |
| 25:YA:796:C:H2' | 25:YA:797:C:C6 | 2.54 | 0.43 |
| 25:YA:1193:G:H2' | 25:YA:1194:A:O4' | 2.18 | 0.43 |
| 25:YA:1266:G:O2' | 25:YA:2012:G:O6 | 2.17 | 0.43 |
| 25:YA:1759:A:H4' | 25:YA:2715:C:O4' | 2.18 | 0.43 |
| 27:YD:30:GLU:CD | 27:YD:63:ARG:HE | 2.21 | 0.43 |
| 28:YE:3:GLY:HA3 | 28:YE:81:ILE:CD1 | 2.48 | 0.43 |
| 31:YH:149:ARG:HA | 31:YH:162:ILE:HG21 | 1.99 | 0.43 |
| 33:YN:30:ILE:HG22 | 33:YN:34:LEU:CD2 | 2.48 | 0.43 |
| 34:YO:61:VAL:O | 34:YO:61:VAL:HG13 | 2.18 | 0.43 |
| 37:YR:54:LEU:O | 37:YR:62:ALA:HB1 | 2.19 | 0.43 |
| 37:YR:74:LYS:O | 37:YR:76:VAL:N | 2.45 | 0.43 |
| 38:YS:30:ARG:NH2 | 38:YS:92:TYR:HD1 | 2.17 | 0.43 |
| 39:YT:64:ARG:HH11 | 39:YT:64:ARG:HG2 | 1.84 | 0.43 |
| 39:YT:89:VAL:O | 39:YT:90:GLN:HB2 | 2.19 | 0.43 |
| 48:Y2:62:THR:O | 48:Y2:65:ASN:HB2 | 2.18 | 0.43 |
| 49:Y3:50:VAL:HB | 49:Y3:53:LEU:HD12 | 2.00 | 0.43 |
| 1:QA:209:U:O2' | 1:QA:210:U:H4' | 2.19 | 0.43 |
| 1:QA:377:G:P | 16:QP:5:ARG:NH1 | 2.91 | 0.43 |
| 1:QA:619:U:O2 | 4:QD:135:LEU:HD23 | 2.18 | 0.43 |
| 1:QA:765:G:N2 | 1:QA:812:C:O2' | 2.51 | 0.43 |
| 1:QA:885:G:C2 | 1:QA:886:G:C8 | 3.07 | 0.43 |
| 1:QA:1018:C:H2' | 1:QA:1019:C:C6 | 2.53 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:QB:127:ILE:HG23 | 2:QB:128:GLU:N | 2.34 | 0.43 |
| 4:QD:163:GLU:OE2 | 4:QD:163:GLU:HA | 2.19 | 0.43 |
| 8:QH:91:ARG:HH11 | 8:QH:91:ARG:CG | 2.22 | 0.43 |
| 11:QK:75:TYR:N | 11:QK:75:TYR:HD1 | 2.17 | 0.43 |
| 16:QP:72:ARG:HD3 | 16:QP:72:ARG:O | 2.18 | 0.43 |
| 22:QV:56:C:O2' | 30:RG:78:SER:HB2 | 2.19 | 0.43 |
| 25:RA:503:A:H4' | 25:RA:504:U:C5' | 2.49 | 0.43 |
| 25:RA:512:G:O2' | 25:RA:513:A:P | 2.76 | 0.43 |
| 25:RA:522:G:H2' | 25:RA:523:C:C6 | 2.54 | 0.43 |
| 25:RA:1050:A:O2' | 25:RA:2752:C:H1' | 2.18 | 0.43 |
| 25:RA:1669:A:H5'' | 25:RA:2550:G:OP1 | 2.19 | 0.43 |
| 25:RA:2619:C:H1' | 28:RE:156:MET:HE1 | 2.00 | 0.43 |
| 28:RE:23:VAL:HG12 | 28:RE:184:VAL:O | 2.19 | 0.43 |
| 28:RE:51:PHE:O | 28:RE:74:PRO:CB | 2.67 | 0.43 |
| 29:RF:149:ASP:OD2 | 29:RF:151:SER:HB3 | 2.18 | 0.43 |
| 33:RN:42:TRP:HA | 33:RN:48:MET:HE1 | 1.99 | 0.43 |
| 33:RN:96:GLU:O | 33:RN:97:ARG:C | 2.57 | 0.43 |
| 34:RO:61:VAL:O | 34:RO:61:VAL:HG13 | 2.18 | 0.43 |
| 45:RZ:144:LEU:HD21 | 45:RZ:150:LEU:HD13 | 2.00 | 0.43 |
| 47:R1:92:LYS:O | 47:R1:93:GLU:C | 2.56 | 0.43 |
| 50:R4:59:PHE:CE1 | 50:R4:70:GLY:N | 2.87 | 0.43 |
| 54:R8:40:GLU:O | 54:R8:41:ILE:C | 2.56 | 0.43 |
| 1:XA:33:A:H5'' | 1:XA:364:A:H1' | 2.00 | 0.43 |
| 1:XA:633:G:H5' | 1:XA:634:C:OP2 | 2.19 | 0.43 |
| 1:XA:654:G:C4 | 1:XA:753:A:C6 | 3.07 | 0.43 |
| 1:XA:1293:G:H2' | 1:XA:1294:G:O4' | 2.19 | 0.43 |
| 1:XA:1531:A:H8 | 1:XA:1531:A:OP2 | 2.02 | 0.43 |
| 2:XB:32:ILE:HD13 | 2:XB:190:THR:CG2 | 2.48 | 0.43 |
| 4:XD:60:GLU:HG2 | 4:XD:202:LEU:HD12 | 2.00 | 0.43 |
| 5:XE:31:LEU:HD22 | 5:XE:31:LEU:HA | 1.86 | 0.43 |
| 5:XE:72:GLN:C | 5:XE:74:GLY:H | 2.22 | 0.43 |
| 6:XF:48:LEU:HD23 | 6:XF:48:LEU:HA | 1.85 | 0.43 |
| 6:XF:85:VAL:HG12 | 6:XF:85:VAL:O | 2.18 | 0.43 |
| 7:XG:89:MET:HE3 | 7:XG:156:TRP:H | 1.83 | 0.43 |
| 8:XH:118:VAL:O | 8:XH:119:LEU:HD23 | 2.18 | 0.43 |
| 12:XL:10:LEU:HB3 | 17:XQ:32:TYR:CE2 | 2.53 | 0.43 |
| 12:XL:22:SER:C | 12:XL:24:VAL:H | 2.22 | 0.43 |
| 13:XM:87:TYR:HA | 13:XM:90:LEU:HG | 2.01 | 0.43 |
| 13:XM:90:LEU:HD12 | 13:XM:91:ARG:N | 2.33 | 0.43 |
| 19:XS:29:ARG:HH11 | 19:XS:29:ARG:HG2 | 1.84 | 0.43 |
| 20:XT:44:ALA:C | 20:XT:91:LEU:HB3 | 2.39 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 20:XT:101:GLY:C | 20:XT:103:GLY:H | 2.22 | 0.43 |
| 25:YA:49:A:C8 | 25:YA:120:U:H5 | 2.37 | 0.43 |
| 25:YA:303:U:H2' | 25:YA:304:G:C8 | 2.54 | 0.43 |
| 25:YA:582:G:H1 | 25:YA:1258:C:H42 | 1.65 | 0.43 |
| 25:YA:819:A:C4 | 25:YA:1189:A:C2 | 3.07 | 0.43 |
| 25:YA:825:C:H2' | 25:YA:826:U:O4' | 2.19 | 0.43 |
| 25:YA:1678:G:N2 | 25:YA:1989:G:N2 | 2.64 | 0.43 |
| 25:YA:2048:G:N2 | 25:YA:2621:A:H1' | 2.33 | 0.43 |
| 25:YA:2059:A:H5' | 25:YA:2060:A:OP2 | 2.19 | 0.43 |
| 25:YA:2310:A:N6 | 30:YG:79:ASN:HB2 | 2.33 | 0.43 |
| 25:YA:2419:U:OP1 | 52:Y6:23:THR:HG21 | 2.17 | 0.43 |
| 25:YA:2451:A:N1 | 55:Z8:76:PPU:HE2 | 2.33 | 0.43 |
| 27:YD:17:THR:HG22 | 27:YD:204:ILE:HA | 1.98 | 0.43 |
| 28:YE:25:VAL:HG21 | 39:YT:8:LYS:HG3 | 2.00 | 0.43 |
| 30:YG:136:ARG:O | 30:YG:154:GLY:CA | 2.62 | 0.43 |
| 30:YG:145:THR:O | 30:YG:146:TYR:HB3 | 2.19 | 0.43 |
| 32:YI:33:ARG:HH11 | 32:YI:33:ARG:CG | 2.31 | 0.43 |
| 33:YN:90:MET:O | 33:YN:91:LEU:C | 2.57 | 0.43 |
| 34:YO:51:ALA:O | 34:YO:53:LYS:HE3 | 2.19 | 0.43 |
| 39:YT:19:LEU:HA | 39:YT:20:PRO:HD3 | 1.88 | 0.43 |
| 39:YT:89:VAL:O | 39:YT:90:GLN:CB | 2.67 | 0.43 |
| 40:YU:43:GLY:HA3 | 41:YV:73:SER:OG | 2.19 | 0.43 |
| 40:YU:79:PHE:C | 40:YU:79:PHE:HD2 | 2.19 | 0.43 |
| 41:YV:66:ARG:NH1 | 41:YV:88:ARG:CD | 2.74 | 0.43 |
| 45:YZ:77:ASP:O | 45:YZ:78:LYS:C | 2.56 | 0.43 |
| 47:Y1:8:SER:CB | 47:Y1:66:HIS:CE1 | 3.01 | 0.43 |
| 1:QA:18:C:H4' | 1:QA:1078:U:O2 | 2.19 | 0.43 |
| 1:QA:411:A:N6 | 1:QA:413:G:H21 | 2.15 | 0.43 |
| 1:QA:565:U:H5'' | 1:QA:566:G:H2' | 2.01 | 0.43 |
| 1:QA:855:G:C6 | 1:QA:856:C:C4 | 3.07 | 0.43 |
| 1:QA:1060:C:C5 | 3:QC:2:GLY:HA2 | 2.53 | 0.43 |
| 1:QA:1211:U:H1' | 1:QA:1213:A:N3 | 2.34 | 0.43 |
| 1:QA:1479:C:H2' | 1:QA:1480:G:C8 | 2.54 | 0.43 |
| 2:QB:33:TYR:C | 2:QB:33:TYR:CD1 | 2.92 | 0.43 |
| 4:QD:90:GLY:O | 4:QD:93:PHE:HB3 | 2.19 | 0.43 |
| 5:QE:126:ARG:NH1 | 5:QE:126:ARG:CG | 2.79 | 0.43 |
| 6:QF:61:LEU:HD23 | 6:QF:63:TYR:OH | 2.17 | 0.43 |
| 7:QG:23:VAL:O | 7:QG:27:ILE:HD12 | 2.19 | 0.43 |
| 7:QG:122:HIS:HA | 7:QG:125:MET:HB2 | 2.00 | 0.43 |
| 12:QL:27:LEU:HD13 | 12:QL:28:LYS:H | 1.84 | 0.43 |
| 14:QN:17:LYS:HG3 | 14:QN:18:VAL:N | 2.33 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 18:QR:53:ARG:C | 18:QR:55:ARG:H | 2.22 | 0.43 |
| 19:QS:8:GLY:O | 19:QS:9:VAL:CG2 | 2.57 | 0.43 |
| 19:QS:62:ILE:HG22 | 19:QS:63:THR:N | 2.34 | 0.43 |
| 22:QV:43:A:H2' | 22:QV:44:A:C8 | 2.54 | 0.43 |
| 22:QV:54:U:C4 | 22:QV:55:U:C4 | 3.06 | 0.43 |
| 25:RA:48:G:H22 | 25:RA:177:G:H5'' | 1.84 | 0.43 |
| 25:RA:304:G:H2' | 25:RA:305:U:H6 | 1.82 | 0.43 |
| 25:RA:546:C:H5' | 25:RA:547:A:OP2 | 2.19 | 0.43 |
| 25:RA:753:C:H2' | 25:RA:754:C:C6 | 2.52 | 0.43 |
| 25:RA:774:A:O2' | 25:RA:775:G:O5' | 2.29 | 0.43 |
| 25:RA:1204:A:H1' | 25:RA:1206:G:C8 | 2.53 | 0.43 |
| 25:RA:1653:G:H4' | 25:RA:1654:A:O5' | 2.19 | 0.43 |
| 25:RA:2053:G:C2 | 25:RA:2617:C:C2 | 3.07 | 0.43 |
| 25:RA:2306:C:C3' | 25:RA:2307:G:H5'' | 2.49 | 0.43 |
| 25:RA:2340:G:H2' | 25:RA:2341:G:C8 | 2.53 | 0.43 |
| 25:RA:2415:G:H2' | 25:RA:2416:C:C6 | 2.53 | 0.43 |
| 25:RA:2839:G:H5' | 37:RR:46:GLY:HA2 | 2.00 | 0.43 |
| 27:RD:44:ASN:HB3 | 27:RD:49:ILE:CG2 | 2.47 | 0.43 |
| 27:RD:134:ARG:H | 27:RD:134:ARG:HG3 | 1.55 | 0.43 |
| 27:RD:177:LEU:O | 27:RD:179:SER:N | 2.51 | 0.43 |
| 28:RE:18:ASP:O | 28:RE:19:ARG:C | 2.55 | 0.43 |
| 28:RE:48:GLN:HE21 | 28:RE:48:GLN:HB3 | 1.55 | 0.43 |
| 28:RE:52:LEU:O | 28:RE:74:PRO:HA | 2.18 | 0.43 |
| 29:RF:183:VAL:O | 29:RF:184:TYR:C | 2.56 | 0.43 |
| 30:RG:51:ARG:HB3 | 30:RG:51:ARG:NH1 | 2.33 | 0.43 |
| 31:RH:6:ARG:CG | 31:RH:7:LEU:N | 2.81 | 0.43 |
| 33:RN:7:LYS:HD2 | 33:RN:7:LYS:N | 2.29 | 0.43 |
| 33:RN:63:THR:HG23 | 33:RN:66:LYS:HE3 | 2.00 | 0.43 |
| 35:RP:19:VAL:HG22 | 35:RP:21:ARG:H | 1.83 | 0.43 |
| 37:RR:10:LEU:O | 37:RR:12:ARG:N | 2.52 | 0.43 |
| 37:RR:54:LEU:O | 37:RR:62:ALA:HB1 | 2.19 | 0.43 |
| 38:RS:29:PHE:HD2 | 38:RS:92:TYR:HH | 1.66 | 0.43 |
| 45:RZ:29:TYR:HA | 45:RZ:33:LEU:O | 2.19 | 0.43 |
| 48:R2:62:THR:O | 48:R2:65:ASN:HB2 | 2.18 | 0.43 |
| 1:XA:237:C:H2' | 1:XA:238:G:C8 | 2.53 | 0.43 |
| 1:XA:434:U:H2' | 1:XA:435:C:C6 | 2.54 | 0.43 |
| 1:XA:836:G:C6 | 1:XA:851:G:C6 | 3.07 | 0.43 |
| 1:XA:885:G:H2' | 1:XA:886:G:H8 | 1.83 | 0.43 |
| 1:XA:1202:G:O4' | 14:XN:29:ARG:HD2 | 2.18 | 0.43 |
| 2:XB:33:TYR:C | 2:XB:33:TYR:CD1 | 2.92 | 0.43 |
| 2:XB:130:ARG:NH2 | 2:XB:138:LEU:HD21 | 2.34 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 2:XB:163:PHE:HD2 | 2:XB:163:PHE:HA | 1.70 | 0.43 |
| 3:XC:69:HIS:HA | 3:XC:104:GLN:HB2 | 2.00 | 0.43 |
| 6:XF:3:ARG:HB3 | 6:XF:93:SER:CB | 2.48 | 0.43 |
| 7:XG:122:HIS:HA | 7:XG:125:MET:HB2 | 2.00 | 0.43 |
| 11:XK:34:ASP:OD1 | 11:XK:38:ASN:HB2 | 2.18 | 0.43 |
| 11:XK:75:TYR:N | 11:XK:75:TYR:HD1 | 2.16 | 0.43 |
| 16:XP:1:MET:H2 | 16:XP:24:ALA:HB3 | 1.83 | 0.43 |
| 16:XP:21:VAL:HG23 | 16:XP:34:GLU:N | 2.34 | 0.43 |
| 19:XS:36:ARG:NH1 | 19:XS:52:TYR:O | 2.51 | 0.43 |
| 25:YA:6:A:H2' | 25:YA:7:G:H8 | 1.83 | 0.43 |
| 25:YA:273(C):C:N3 | 25:YA:363(C):G:N2 | 2.56 | 0.43 |
| 25:YA:310:A:HO2' | 25:YA:311:A:H2' | 1.82 | 0.43 |
| 25:YA:552:G:H2' | 25:YA:553:U:O4' | 2.19 | 0.43 |
| 25:YA:806:C:N3 | 25:YA:807:U:C5 | 2.87 | 0.43 |
| 25:YA:845:G:H8 | 25:YA:845:G:OP2 | 2.02 | 0.43 |
| 25:YA:2097:C:H2' | 25:YA:2098:U:O4' | 2.19 | 0.43 |
| 25:YA:2308:G:N1 | 25:YA:2311:A:H2 | 2.16 | 0.43 |
| 25:YA:2619:C:H2' | 25:YA:2620:C:H6 | 1.83 | 0.43 |
| 25:YA:2849:U:H5 | 39:YT:93:ARG:NH1 | 2.16 | 0.43 |
| 25:YA:2850:A:H2 | 37:YR:61:HIS:CG | 2.37 | 0.43 |
| 26:YB:24:G:N3 | 26:YB:27:C:N4 | 2.55 | 0.43 |
| 26:YB:87:G:N2 | 26:YB:89:G:H3' | 2.34 | 0.43 |
| 28:YE:23:VAL:HG12 | 28:YE:184:VAL:O | 2.19 | 0.43 |
| 30:YG:59:GLU:O | 30:YG:62:LEU:HB3 | 2.18 | 0.43 |
| 30:YG:139:LEU:HA | 30:YG:144:ILE:HG21 | 2.00 | 0.43 |
| 31:YH:59:ARG:CG | 31:YH:59:ARG:NH1 | 2.79 | 0.43 |
| 31:YH:120:GLY:O | 31:YH:136:ILE:HD12 | 2.19 | 0.43 |
| 33:YN:26:LEU:HG | 33:YN:30:ILE:CD1 | 2.49 | 0.43 |
| 33:YN:57:ALA:O | 33:YN:124:ALA:HA | 2.18 | 0.43 |
| 34:YO:107:ARG:HA | 34:YO:112:MET:HE1 | 2.00 | 0.43 |
| 37:YR:51:LEU:HD13 | 37:YR:66:VAL:HG22 | 2.01 | 0.43 |
| 50:Y4:48:ARG:C | 50:Y4:49:PHE:HD1 | 2.22 | 0.43 |
| 51:Y5:40:LYS:HE2 | 51:Y5:47:PRO:CG | 2.49 | 0.43 |
| 53:Y7:5:TRP:CD1 | 53:Y7:7:PRO:HG3 | 2.53 | 0.43 |
| 1:QA:663:A:H5' | 18:QR:61:LYS:NZ | 2.34 | 0.43 |
| 1:QA:836:G:C6 | 1:QA:851:G:C6 | 3.07 | 0.43 |
| 2:QB:54:THR:HG21 | 2:QB:201:ILE:HD11 | 2.00 | 0.43 |
| 2:QB:68:ILE:HB | 2:QB:70:PHE:HE1 | 1.82 | 0.43 |
| 2:QB:95:GLN:HE21 | 2:QB:147:LYS:CE | 2.28 | 0.43 |
| 2:QB:200:ILE:HD12 | 2:QB:200:ILE:N | 2.34 | 0.43 |
| 2:QB:231:GLU:HA | 2:QB:232:PRO:HD3 | 1.83 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:QC:12:LEU:C | 3:QC:14:ILE:H | 2.22 | 0.43 |
| 3:QC:188:LEU:HD12 | 3:QC:195:VAL:CG1 | 2.48 | 0.43 |
| 6:QF:85:VAL:HG12 | 6:QF:85:VAL:O | 2.18 | 0.43 |
| 7:QG:111:ARG:HH11 | 7:QG:111:ARG:CB | 2.24 | 0.43 |
| 7:QG:148:ASN:O | 7:QG:150:ALA:N | 2.51 | 0.43 |
| 8:QH:20:TYR:CD1 | 8:QH:65:TYR:HD2 | 2.35 | 0.43 |
| 9:QI:26:VAL:CG1 | 9:QI:63:ILE:HD13 | 2.49 | 0.43 |
| 11:QK:44:SER:O | 11:QK:48:ILE:HG12 | 2.18 | 0.43 |
| 15:QO:83:GLU:HA | 15:QO:83:GLU:OE1 | 2.19 | 0.43 |
| 17:QQ:77:VAL:O | 17:QQ:78:GLU:HB2 | 2.18 | 0.43 |
| 18:QR:29:PHE:N | 18:QR:29:PHE:HD2 | 2.17 | 0.43 |
| 19:QS:21:GLU:HG3 | 19:QS:22:LEU:CD1 | 2.49 | 0.43 |
| 25:RA:142:G:H2' | 25:RA:143:C:C6 | 2.52 | 0.43 |
| 25:RA:307:G:H8 | 25:RA:307:G:O5' | 2.01 | 0.43 |
| 25:RA:479:A:N3 | 25:RA:481:G:H5'' | 2.33 | 0.43 |
| 25:RA:996:A:N6 | 25:RA:1160:G:C6 | 2.87 | 0.43 |
| 25:RA:1059:G:H3' | 25:RA:1060:U:H5'' | 2.01 | 0.43 |
| 25:RA:1372:U:H2' | 25:RA:1373:A:H5' | 2.01 | 0.43 |
| 25:RA:1930:G:O2' | 25:RA:1931:U:P | 2.76 | 0.43 |
| 25:RA:1942:C:C4 | 25:RA:1943:U:C4 | 3.07 | 0.43 |
| 25:RA:2168:G:H2' | 25:RA:2168:G:N3 | 2.32 | 0.43 |
| 25:RA:2370:G:H2' | 25:RA:2371:G:O4' | 2.19 | 0.43 |
| 27:RD:44:ASN:CB | 27:RD:49:ILE:HG22 | 2.46 | 0.43 |
| 28:RE:155:LYS:O | 28:RE:156:MET:HG3 | 2.19 | 0.43 |
| 30:RG:25:TYR:CZ | 30:RG:32:PRO:HD3 | 2.54 | 0.43 |
| 31:RH:35:VAL:CG2 | 31:RH:75:ALA:HB2 | 2.48 | 0.43 |
| 31:RH:53:GLU:CD | 31:RH:54:ARG:H | 2.21 | 0.43 |
| 34:RO:17:ARG:HH11 | 34:RO:17:ARG:HG2 | 1.84 | 0.43 |
| 35:RP:13:ASN:C | 35:RP:15:ARG:H | 2.21 | 0.43 |
| 35:RP:81:GLN:HE21 | 35:RP:81:GLN:HB2 | 1.59 | 0.43 |
| 35:RP:120:ALA:HB1 | 35:RP:138:LEU:CB | 2.49 | 0.43 |
| 42:RW:88:ARG:CB | 42:RW:92:ARG:HB3 | 2.47 | 0.43 |
| 46:R0:78:TYR:N | 46:R0:78:TYR:CD1 | 2.86 | 0.43 |
| 50:R4:48:ARG:NH1 | 50:R4:51:ASP:HA | 2.34 | 0.43 |
| 52:R6:50:ARG:HH11 | 52:R6:50:ARG:HG2 | 1.84 | 0.43 |
| 53:R7:17:GLY:O | 53:R7:20:ALA:HB3 | 2.18 | 0.43 |
| 1:XA:166:G:H2' | 1:XA:167:G:H8 | 1.83 | 0.43 |
| 1:XA:390:C:H2' | 1:XA:391:G:C8 | 2.54 | 0.43 |
| 1:XA:975:A:N6 | 1:XA:1367:C:O4' | 2.52 | 0.43 |
| 1:XA:1024:G:OP1 | 1:XA:1024:G:H4' | 2.18 | 0.43 |
| 1:XA:1109:C:H2' | 1:XA:1110:A:O4' | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:XA:1489:G:H2' | 1:XA:1490:C:O4' | 2.19 | 0.43 |
| 2:XB:17:PHE:CG | 2:XB:44:LEU:HD11 | 2.53 | 0.43 |
| 2:XB:197:VAL:CG1 | 2:XB:198:ASP:N | 2.82 | 0.43 |
| 5:XE:126:ARG:CG | 5:XE:126:ARG:NH1 | 2.79 | 0.43 |
| 9:XI:26:VAL:CG1 | 9:XI:63:ILE:HD13 | 2.48 | 0.43 |
| 10:XJ:74:ILE:H | 10:XJ:74:ILE:CD1 | 2.21 | 0.43 |
| 13:XM:54:VAL:O | 13:XM:58:GLU:OE2 | 2.37 | 0.43 |
| 15:XO:71:GLN:HB2 | 15:XO:78:TYR:CE1 | 2.54 | 0.43 |
| 16:XP:39:TYR:CZ | 16:XP:41:PRO:HB3 | 2.53 | 0.43 |
| 22:XV:53:G:HO2' | 22:XV:54:U:H6 | 1.66 | 0.43 |
| 25:YA:177:G:H5'' | 25:YA:177:G:N3 | 2.33 | 0.43 |
| 25:YA:654(S):G:H2' | 25:YA:654(T):C:C6 | 2.53 | 0.43 |
| 25:YA:817:C:H2' | 25:YA:818:G:O4' | 2.18 | 0.43 |
| 25:YA:972:G:C6 | 25:YA:973:A:C6 | 3.07 | 0.43 |
| 25:YA:1906:G:H1 | 25:YA:1924:C:H42 | 1.66 | 0.43 |
| 25:YA:1906:G:C8 | 25:YA:1929:G:H2' | 2.54 | 0.43 |
| 25:YA:2259:G:C6 | 25:YA:2260:C:C4 | 3.06 | 0.43 |
| 25:YA:2272:U:H5'' | 25:YA:2273:A:OP1 | 2.19 | 0.43 |
| 28:YE:16:ARG:O | 28:YE:18:ASP:O | 2.36 | 0.43 |
| 28:YE:52:LEU:O | 28:YE:74:PRO:HA | 2.18 | 0.43 |
| 28:YE:155:LYS:O | 28:YE:156:MET:HG3 | 2.19 | 0.43 |
| 29:YF:63:LYS:CE | 29:YF:67:GLN:HB2 | 2.48 | 0.43 |
| 30:YG:131:TYR:HE2 | 30:YG:133:LEU:HD22 | 1.84 | 0.43 |
| 31:YH:125:VAL:CG1 | 31:YH:126:PRO:CG | 2.94 | 0.43 |
| 32:YI:31:LEU:HD12 | 32:YI:31:LEU:N | 2.34 | 0.43 |
| 32:YI:68:LEU:HA | 32:YI:71:ILE:HG23 | 1.98 | 0.43 |
| 33:YN:118:LYS:C | 33:YN:120:LEU:H | 2.21 | 0.43 |
| 38:YS:105:ALA:C | 38:YS:110:LEU:HD21 | 2.38 | 0.43 |
| 44:YY:84:ARG:HD3 | 44:YY:86:ARG:HH11 | 1.83 | 0.43 |
| 45:YZ:24:LEU:O | 45:YZ:24:LEU:HG | 2.19 | 0.43 |
| 45:YZ:63:ASP:O | 45:YZ:64:GLY:C | 2.57 | 0.43 |
| 47:Y1:29:GLY:O | 47:Y1:31:GLY:N | 2.49 | 0.43 |
| 51:Y5:3:LYS:O | 51:Y5:4:HIS:C | 2.56 | 0.43 |
| 51:Y5:56:LYS:O | 51:Y5:57:VAL:C | 2.57 | 0.43 |
| 53:Y7:32:LYS:O | 53:Y7:33:ARG:C | 2.56 | 0.43 |
| 1:QA:51:A:C6 | 1:QA:353:A:C2 | 3.07 | 0.43 |
| 1:QA:181:G:O2' | 1:QA:182:U:O5' | 2.31 | 0.43 |
| 1:QA:448:A:C2 | 1:QA:487:A:C2 | 3.06 | 0.43 |
| 1:QA:690:G:H22 | 11:QK:55:LYS:HZ2 | 1.66 | 0.43 |
| 1:QA:963:G:H1 | 1:QA:972:C:N4 | 2.17 | 0.43 |
| 1:QA:1130:A:N6 | 1:QA:1144:G:H21 | 2.16 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:QA:1227:A:OP2 | 13:QM:111:LYS:HE3 | 2.18 | 0.43 |
| 1:QA:1301:U:O2 | 1:QA:1301:U:H2' | 2.17 | 0.43 |
| 1:QA:1366:C:O2' | 10:QJ:60:ARG:NH1 | 2.49 | 0.43 |
| 2:QB:16:HIS:CD2 | 2:QB:213:LEU:HD13 | 2.54 | 0.43 |
| 2:QB:77:ALA:HB1 | 2:QB:165:VAL:HG11 | 2.01 | 0.43 |
| 2:QB:95:GLN:HB3 | 2:QB:148:TYR:HD1 | 1.84 | 0.43 |
| 2:QB:162:ILE:O | 2:QB:185:ILE:HG13 | 2.18 | 0.43 |
| 2:QB:188:ALA:CB | 2:QB:200:ILE:HG23 | 2.48 | 0.43 |
| 3:QC:76:VAL:CG2 | 3:QC:103:VAL:HG11 | 2.49 | 0.43 |
| 4:QD:52:SER:O | 4:QD:55:ALA:N | 2.52 | 0.43 |
| 5:QE:105:VAL:HB | 5:QE:106:PRO:CD | 2.48 | 0.43 |
| 6:QF:23:LYS:HG2 | 6:QF:27:GLN:OE1 | 2.18 | 0.43 |
| 12:QL:120:TYR:O | 12:QL:121:GLY:C | 2.57 | 0.43 |
| 16:QP:55:ARG:O | 16:QP:56:ALA:C | 2.57 | 0.43 |
| 19:QS:29:ARG:HH11 | 19:QS:29:ARG:HG2 | 1.84 | 0.43 |
| 25:RA:90:U:H4' | 25:RA:91:A:H5' | 2.00 | 0.43 |
| 25:RA:229:A:OP1 | 25:RA:229:A:H4' | 2.19 | 0.43 |
| 25:RA:242:G:H3' | 54:R8:6:THR:HG23 | 2.01 | 0.43 |
| 25:RA:605:C:O2 | 25:RA:657:U:O2' | 2.37 | 0.43 |
| 25:RA:747:U:C1' | 51:R5:2:ALA:HB3 | 2.48 | 0.43 |
| 25:RA:1046:A:H3' | 25:RA:1046:A:N3 | 2.34 | 0.43 |
| 25:RA:1438:U:H2' | 25:RA:1439:A:C8 | 2.54 | 0.43 |
| 25:RA:1775:U:H2' | 25:RA:1776:G:O4' | 2.19 | 0.43 |
| 25:RA:2391:G:OP2 | 54:R8:32:LEU:HD13 | 2.19 | 0.43 |
| 25:RA:2426:A:H5' | 25:RA:2426:A:C8 | 2.53 | 0.43 |
| 25:RA:2872:G:C2 | 25:RA:2873:A:N6 | 2.86 | 0.43 |
| 27:RD:17:THR:HG21 | 27:RD:204:ILE:HA | 1.99 | 0.43 |
| 27:RD:76:PRO:O | 27:RD:98:VAL:CG2 | 2.65 | 0.43 |
| 28:RE:25:VAL:HG21 | 39:RT:8:LYS:HG3 | 2.00 | 0.43 |
| 28:RE:188:VAL:HA | 28:RE:189:PRO:HD2 | 1.78 | 0.43 |
| 29:RF:64:ILE:HG23 | 29:RF:65:TRP:CD1 | 2.54 | 0.43 |
| 29:RF:176:LEU:HD11 | 29:RF:180:GLY:O | 2.19 | 0.43 |
| 32:RI:138:ILE:HG23 | 32:RI:138:ILE:O | 2.19 | 0.43 |
| 33:RN:90:MET:O | 33:RN:91:LEU:C | 2.57 | 0.43 |
| 35:RP:52:GLU:OE2 | 35:RP:58:THR:N | 2.52 | 0.43 |
| 35:RP:112:LEU:CD1 | 35:RP:114:ILE:HG23 | 2.47 | 0.43 |
| 37:RR:48:VAL:O | 37:RR:49:ASP:C | 2.57 | 0.43 |
| 39:RT:107:ASP:OD2 | 39:RT:109:GLU:HB2 | 2.19 | 0.43 |
| 40:RU:91:ASP:O | 40:RU:95:LEU:N | 2.42 | 0.43 |
| 42:RW:19:LEU:O | 42:RW:22:ASP:HB2 | 2.19 | 0.43 |
| 42:RW:28:SER:O | 42:RW:30:GLU:N | 2.51 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 44:RY:95:LYS:HB2 | 44:RY:95:LYS:HZ1 | 1.83 | 0.43 |
| 45:RZ:158:PRO:N | 45:RZ:161:VAL:HG21 | 2.33 | 0.43 |
| 46:R0:6:GLY:C | 46:R0:7:LEU:CD2 | 2.86 | 0.43 |
| 46:R0:72:ARG:HH21 | 46:R0:75:LEU:HD12 | 1.83 | 0.43 |
| 47:R1:13:ILE:CG1 | 47:R1:42:GLN:HB2 | 2.49 | 0.43 |
| 53:R7:19:ARG:HG2 | 53:R7:19:ARG:NH1 | 2.33 | 0.43 |
| 1:XA:33:A:H2' | 1:XA:34:C:C6 | 2.53 | 0.43 |
| 1:XA:337:C:H2' | 1:XA:338:A:C8 | 2.54 | 0.43 |
| 1:XA:875:C:C4 | 1:XA:876:G:N7 | 2.86 | 0.43 |
| 1:XA:889:A:H61 | 1:XA:907:A:H3' | 1.83 | 0.43 |
| 1:XA:895:G:H2' | 1:XA:896:C:C6 | 2.54 | 0.43 |
| 1:XA:1015:A:H2' | 1:XA:1016:A:O4' | 2.18 | 0.43 |
| 2:XB:100:GLY:N | 2:XB:176:GLU:OE2 | 2.51 | 0.43 |
| 3:XC:12:LEU:C | 3:XC:14:ILE:H | 2.21 | 0.43 |
| 4:XD:36:ARG:HA | 4:XD:37:PRO:HD2 | 1.82 | 0.43 |
| 8:XH:64:LYS:CB | 8:XH:79:VAL:HG21 | 2.49 | 0.43 |
| 8:XH:86:ILE:CB | 8:XH:133:LEU:HD22 | 2.49 | 0.43 |
| 9:XI:22:GLY:O | 9:XI:23:ASN:C | 2.57 | 0.43 |
| 9:XI:95:LYS:HD3 | 9:XI:95:LYS:C | 2.39 | 0.43 |
| 11:XK:105:VAL:O | 11:XK:105:VAL:HG23 | 2.19 | 0.43 |
| 13:XM:3:ARG:HD2 | 13:XM:9:ILE:CG1 | 2.45 | 0.43 |
| 15:XO:10:LYS:O | 15:XO:14:GLU:HB2 | 2.18 | 0.43 |
| 16:XP:20:VAL:CG2 | 16:XP:21:VAL:N | 2.81 | 0.43 |
| 19:XS:51:VAL:HG12 | 19:XS:52:TYR:N | 2.33 | 0.43 |
| 25:YA:650:C:OP1 | 54:Y8:48:PHE:CZ | 2.72 | 0.43 |
| 25:YA:862:G:H2' | 25:YA:863:A:O4' | 2.18 | 0.43 |
| 25:YA:958:U:OP1 | 36:YQ:74:TYR:OH | 2.22 | 0.43 |
| 25:YA:1230:C:H2' | 25:YA:1231:G:H8 | 1.84 | 0.43 |
| 25:YA:1316:U:H2' | 25:YA:1317:A:H8 | 1.83 | 0.43 |
| 25:YA:1684:C:H2' | 25:YA:1685:C:C6 | 2.54 | 0.43 |
| 25:YA:2660:A:H2' | 25:YA:2661:G:O4' | 2.19 | 0.43 |
| 25:YA:2816:C:H2' | 25:YA:2817:G:H8 | 1.84 | 0.43 |
| 25:YA:2848:G:O2' | 25:YA:2849:U:OP2 | 2.25 | 0.43 |
| 25:YA:2879:C:H4' | 25:YA:2880:C:OP1 | 2.19 | 0.43 |
| 26:YB:63:G:C6 | 26:YB:64:C:C4 | 3.07 | 0.43 |
| 26:YB:73:A:C4 | 26:YB:104:A:C2 | 3.07 | 0.43 |
| 28:YE:13:ARG:HH11 | 28:YE:13:ARG:HB2 | 1.82 | 0.43 |
| 30:YG:25:TYR:CZ | 30:YG:32:PRO:HD3 | 2.54 | 0.43 |
| 30:YG:77:ILE:H | 30:YG:82:LEU:HB2 | 1.84 | 0.43 |
| 31:YH:125:VAL:HG12 | 31:YH:126:PRO:CD | 2.49 | 0.43 |
| 35:YP:101:VAL:HG13 | 35:YP:102:ARG:N | 2.33 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 37:YR:94:TYR:N | 37:YR:94:TYR:CD2 | 2.87 | 0.43 |
| 44:YY:94:LYS:HE3 | 44:YY:101:LYS:HZ3 | 1.79 | 0.43 |
| 45:YZ:15:PRO:HA | 45:YZ:18:LEU:HD13 | 2.00 | 0.43 |
| 45:YZ:29:TYR:HA | 45:YZ:33:LEU:O | 2.19 | 0.43 |
| 45:YZ:105:VAL:HG22 | 45:YZ:105:VAL:O | 2.18 | 0.43 |
| 47:Y1:53:VAL:CG1 | 47:Y1:54:ALA:N | 2.81 | 0.43 |
| 48:Y2:6:VAL:O | 48:Y2:7:ARG:C | 2.57 | 0.43 |
| 1:QA:22:G:H2' | 1:QA:23:C:C6 | 2.54 | 0.42 |
| 1:QA:718:G:H5' | 11:QK:117:ASN:ND2 | 2.34 | 0.42 |
| 1:QA:1112:C:H1' | 3:QC:179:ARG:HH11 | 1.84 | 0.42 |
| 3:QC:22:TRP:CB | 3:QC:59:ARG:HB2 | 2.48 | 0.42 |
| 3:QC:101:LEU:HD23 | 3:QC:101:LEU:C | 2.38 | 0.42 |
| 5:QE:94:ALA:HB2 | 5:QE:119:LEU:HG | 2.00 | 0.42 |
| 6:QF:22:GLU:OE1 | 6:QF:82:ARG:NH2 | 2.46 | 0.42 |
| 10:QJ:30:SER:OG | 10:QJ:81:THR:HG22 | 2.19 | 0.42 |
| 11:QK:108:ILE:HG21 | 18:QR:88:LYS:OXT | 2.19 | 0.42 |
| 16:QP:75:ARG:C | 16:QP:77:ALA:N | 2.72 | 0.42 |
| 18:QR:73:ALA:HB3 | 18:QR:79:LEU:CD1 | 2.47 | 0.42 |
| 18:QR:76:LEU:N | 18:QR:76:LEU:HD22 | 2.34 | 0.42 |
| 22:QV:1:C:O2' | 22:QV:2:G:H5' | 2.19 | 0.42 |
| 25:RA:412:A:N7 | 25:RA:2411:A:H2 | 2.15 | 0.42 |
| 25:RA:422:A:C6 | 25:RA:423:A:C6 | 3.07 | 0.42 |
| 25:RA:924:C:H2' | 25:RA:925:C:C6 | 2.54 | 0.42 |
| 25:RA:1448:G:N3 | 25:RA:1529:A:H2 | 2.17 | 0.42 |
| 25:RA:1777:U:H3 | 25:RA:1787:A:H61 | 1.67 | 0.42 |
| 25:RA:2405:G:HO2' | 25:RA:2406:U:P | 2.42 | 0.42 |
| 29:RF:20:LEU:HD12 | 29:RF:21:ALA:N | 2.26 | 0.42 |
| 31:RH:16:SER:OG | 31:RH:17:VAL:N | 2.50 | 0.42 |
| 32:RI:31:LEU:HD12 | 32:RI:31:LEU:N | 2.34 | 0.42 |
| 37:RR:51:LEU:HD13 | 37:RR:66:VAL:HG22 | 2.01 | 0.42 |
| 38:RS:110:LEU:HA | 38:RS:112:PHE:CZ | 2.53 | 0.42 |
| 39:RT:6:LEU:HD12 | 39:RT:9:LEU:HD12 | 2.01 | 0.42 |
| 39:RT:64:ARG:HH11 | 39:RT:64:ARG:HG2 | 1.84 | 0.42 |
| 40:RU:27:LEU:O | 40:RU:30:LYS:N | 2.41 | 0.42 |
| 45:RZ:70:LEU:HB2 | 45:RZ:91:LEU:HD21 | 2.01 | 0.42 |
| 50:R4:22:ILE:CG2 | 50:R4:23:GLU:N | 2.81 | 0.42 |
| 50:R4:43:TYR:O | 50:R4:46:GLN:HA | 2.19 | 0.42 |
| 54:R8:28:GLY:O | 54:R8:29:LYS:O | 2.37 | 0.42 |
| 1:XA:316:G:C2 | 1:XA:317:G:C8 | 3.07 | 0.42 |
| 1:XA:825:G:H2' | 1:XA:826:C:O4' | 2.17 | 0.42 |
| 1:XA:955:U:H1' | 1:XA:1227:A:N6 | 2.34 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:XA:977:A:H2' | 1:XA:978:A:H5' | 2.01 | 0.42 |
| 1:XA:1429:C:H2' | 1:XA:1430:C:H6 | 1.83 | 0.42 |
| 3:XC:67:THR:O | 3:XC:69:HIS:CE1 | 2.72 | 0.42 |
| 4:XD:90:GLY:HA3 | 4:XD:204:ILE:HD11 | 2.01 | 0.42 |
| 9:XI:25:LYS:O | 9:XI:60:ASP:OD1 | 2.37 | 0.42 |
| 9:XI:88:TYR:O | 9:XI:89:ASN:HB2 | 2.19 | 0.42 |
| 10:XJ:10:GLY:O | 10:XJ:68:HIS:N | 2.51 | 0.42 |
| 11:XK:44:SER:O | 11:XK:48:ILE:HG12 | 2.18 | 0.42 |
| 11:XK:62:GLN:O | 11:XK:64:ALA:N | 2.52 | 0.42 |
| 20:XT:96:GLY:O | 20:XT:99:LEU:CD1 | 2.67 | 0.42 |
| 22:XV:4:G:C6 | 22:XV:70:G:N1 | 2.86 | 0.42 |
| 25:YA:137(A):G:H1' | 43:YX:41:ASN:HD22 | 1.83 | 0.42 |
| 25:YA:264:C:O2' | 25:YA:265:A:H5'' | 2.18 | 0.42 |
| 25:YA:484:C:H2' | 25:YA:485:C:C6 | 2.54 | 0.42 |
| 25:YA:797:C:OP1 | 29:YF:62:ARG:NH1 | 2.52 | 0.42 |
| 25:YA:1295:C:H2' | 25:YA:1296:G:H8 | 1.84 | 0.42 |
| 25:YA:1427:A:H4' | 25:YA:1428:C:O5' | 2.19 | 0.42 |
| 25:YA:1995:U:H2' | 25:YA:1996:C:C5 | 2.54 | 0.42 |
| 25:YA:2212:A:H1' | 25:YA:2215:G:C5 | 2.54 | 0.42 |
| 25:YA:2540:C:H2' | 25:YA:2541:A:O4' | 2.19 | 0.42 |
| 26:YB:29:A:H2' | 26:YB:30:C:C6 | 2.54 | 0.42 |
| 28:YE:94:GLU:C | 28:YE:96:PHE:N | 2.72 | 0.42 |
| 29:YF:45:ARG:HH11 | 29:YF:45:ARG:HG2 | 1.82 | 0.42 |
| 30:YG:7:LEU:CD2 | 30:YG:176:LEU:HD22 | 2.45 | 0.42 |
| 30:YG:34:LEU:HD11 | 30:YG:99:MET:CE | 2.49 | 0.42 |
| 32:YI:77:LEU:CD1 | 32:YI:140:LEU:HB2 | 2.49 | 0.42 |
| 33:YN:43:THR:HA | 33:YN:44:PRO:HD2 | 1.92 | 0.42 |
| 33:YN:62:VAL:HG12 | 33:YN:66:LYS:HB2 | 2.01 | 0.42 |
| 34:YO:78:ARG:HH21 | 39:YT:103:ARG:HH22 | 1.64 | 0.42 |
| 35:YP:120:ALA:HB1 | 35:YP:138:LEU:CB | 2.49 | 0.42 |
| 36:YQ:25:ASP:H | 36:YQ:102:VAL:HG23 | 1.84 | 0.42 |
| 38:YS:15:ARG:O | 38:YS:19:LYS:HD3 | 2.19 | 0.42 |
| 42:YW:65:LEU:CD1 | 42:YW:68:ARG:NH1 | 2.75 | 0.42 |
| 44:YY:97:ARG:HH21 | 44:YY:98:VAL:CG2 | 2.32 | 0.42 |
| 47:Y1:72:GLU:O | 47:Y1:75:GLU:HB2 | 2.19 | 0.42 |
| 47:Y1:73:LEU:C | 47:Y1:75:GLU:N | 2.70 | 0.42 |
| 1:QA:309:G:H1' | 1:QA:608:A:C2 | 2.53 | 0.42 |
| 1:QA:468:A:H4' | 16:QP:80:PHE:O | 2.19 | 0.42 |
| 1:QA:539:A:OP1 | 12:QL:114:LYS:HE2 | 2.18 | 0.42 |
| 1:QA:783:C:O2' | 1:QA:784:C:H5' | 2.20 | 0.42 |
| 1:QA:828:A:H2' | 1:QA:829:G:O4' | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:QA:1086:U:H6 | 1:QA:1086:U:O5' | 2.02 | 0.42 |
| 1:QA:1488:G:H2' | 1:QA:1489:G:C8 | 2.54 | 0.42 |
| 2:QB:92:TYR:C | 2:QB:92:TYR:HD1 | 2.22 | 0.42 |
| 2:QB:211:ILE:O | 2:QB:215:LEU:HB2 | 2.19 | 0.42 |
| 3:QC:113:ALA:C | 3:QC:115:LEU:N | 2.72 | 0.42 |
| 10:QJ:49:VAL:HG11 | 14:QN:41:ARG:O | 2.19 | 0.42 |
| 13:QM:54:VAL:O | 13:QM:58:GLU:OE2 | 2.37 | 0.42 |
| 16:QP:40:ASP:C | 16:QP:42:ARG:N | 2.73 | 0.42 |
| 17:QQ:22:LEU:HD13 | 17:QQ:41:LYS:HG2 | 2.02 | 0.42 |
| 18:QR:74:ARG:NH2 | 18:QR:81:PHE:HA | 2.35 | 0.42 |
| 19:QS:66:MET:O | 19:QS:66:MET:HG3 | 2.19 | 0.42 |
| 25:RA:96:G:H4' | 48:R2:48:HIS:CD2 | 2.54 | 0.42 |
| 25:RA:270(O):U:C4 | 32:RI:52:ARG:HD3 | 2.53 | 0.42 |
| 25:RA:2485:G:H5'' | 36:RQ:46:GLN:NE2 | 2.34 | 0.42 |
| 26:RB:32:C:N4 | 26:RB:33:G:O6 | 2.52 | 0.42 |
| 27:RD:33:LEU:O | 27:RD:35:LYS:N | 2.52 | 0.42 |
| 27:RD:71:ASP:CB | 27:RD:103:ARG:HH22 | 2.32 | 0.42 |
| 27:RD:108:PRO:HG2 | 27:RD:111:LEU:HB2 | 2.01 | 0.42 |
| 30:RG:4:ASP:O | 30:RG:5:VAL:HB | 2.19 | 0.42 |
| 30:RG:31:VAL:O | 30:RG:31:VAL:HG13 | 2.18 | 0.42 |
| 33:RN:26:LEU:HG | 33:RN:30:ILE:CD1 | 2.49 | 0.42 |
| 33:RN:30:ILE:HG22 | 33:RN:34:LEU:HD21 | 2.01 | 0.42 |
| 33:RN:87:LEU:C | 33:RN:87:LEU:CD2 | 2.87 | 0.42 |
| 34:RO:31:LYS:O | 34:RO:32:TYR:HD2 | 2.02 | 0.42 |
| 35:RP:49:ARG:HG2 | 35:RP:49:ARG:HH11 | 1.84 | 0.42 |
| 35:RP:114:ILE:CD1 | 35:RP:130:PHE:CE1 | 2.98 | 0.42 |
| 39:RT:50:ILE:HD11 | 39:RT:102:ILE:HG12 | 2.01 | 0.42 |
| 40:RU:98:LEU:O | 40:RU:102:GLU:N | 2.49 | 0.42 |
| 41:RV:72:VAL:HG13 | 41:RV:72:VAL:O | 2.19 | 0.42 |
| 42:RW:111:HIS:CG | 42:RW:112:GLY:H | 2.37 | 0.42 |
| 47:R1:72:GLU:O | 47:R1:75:GLU:HB2 | 2.19 | 0.42 |
| 48:R2:6:VAL:O | 48:R2:7:ARG:C | 2.57 | 0.42 |
| 1:XA:88:C:H3' | 1:XA:89:U:C6 | 2.54 | 0.42 |
| 1:XA:254:G:OP1 | 17:XQ:67:LYS:O | 2.37 | 0.42 |
| 1:XA:329:A:C5 | 1:XA:332:G:C6 | 3.07 | 0.42 |
| 1:XA:518:C:H2' | 1:XA:530:G:N3 | 2.33 | 0.42 |
| 1:XA:527:G:O2' | 1:XA:535:A:N1 | 2.34 | 0.42 |
| 1:XA:532:A:O2' | 1:XA:533:A:P | 2.77 | 0.42 |
| 1:XA:784:C:H4' | 25:YA:1837:C:OP1 | 2.19 | 0.42 |
| 1:XA:1151:A:N3 | 10:XJ:39:PRO:HG3 | 2.34 | 0.42 |
| 2:XB:87:ARG:NH1 | 2:XB:223:ILE:HD12 | 2.33 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:XD:14:ARG:HD3 | 4:XD:14:ARG:C | 2.39 | 0.42 |
| 4:XD:90:GLY:O | 4:XD:93:PHE:HB3 | 2.19 | 0.42 |
| 4:XD:146:ILE:H | 4:XD:146:ILE:CD1 | 2.30 | 0.42 |
| 5:XE:105:VAL:HB | 5:XE:106:PRO:CD | 2.49 | 0.42 |
| 6:XF:45:LEU:CD1 | 6:XF:59:TYR:HD1 | 2.31 | 0.42 |
| 7:XG:23:VAL:O | 7:XG:27:ILE:HD12 | 2.19 | 0.42 |
| 16:XP:40:ASP:C | 16:XP:42:ARG:N | 2.73 | 0.42 |
| 16:XP:75:ARG:C | 16:XP:77:ALA:N | 2.72 | 0.42 |
| 18:XR:43:PHE:HA | 18:XR:51:LEU:HD12 | 2.01 | 0.42 |
| 19:XS:62:ILE:HG22 | 19:XS:63:THR:N | 2.34 | 0.42 |
| 25:YA:311:A:C6 | 25:YA:328:U:C4 | 3.07 | 0.42 |
| 25:YA:335:C:O5' | 25:YA:335:C:H6 | 2.02 | 0.42 |
| 25:YA:449:A:H2' | 25:YA:450:G:O4' | 2.19 | 0.42 |
| 25:YA:728:G:H4' | 27:YD:13:ARG:HD2 | 2.01 | 0.42 |
| 25:YA:873:G:H1 | 25:YA:904:C:H42 | 1.67 | 0.42 |
| 25:YA:1224:G:OP2 | 41:YV:66:ARG:NH2 | 2.52 | 0.42 |
| 25:YA:1301:A:H2 | 25:YA:1626:G:N3 | 2.16 | 0.42 |
| 25:YA:1885:A:H5' | 25:YA:1886:C:OP2 | 2.19 | 0.42 |
| 25:YA:2198:A:O2' | 25:YA:2199:A:O4' | 2.37 | 0.42 |
| 25:YA:2309:A:H2' | 25:YA:2310:A:O4' | 2.18 | 0.42 |
| 25:YA:2784:C:H5'' | 28:YE:41:LYS:NZ | 2.34 | 0.42 |
| 27:YD:155:LEU:HD23 | 27:YD:177:LEU:HD21 | 2.00 | 0.42 |
| 27:YD:181:GLU:HA | 27:YD:272:ALA:CB | 2.39 | 0.42 |
| 28:YE:179:GLU:CB | 28:YE:181:LEU:HD23 | 2.24 | 0.42 |
| 28:YE:203:LYS:HD2 | 28:YE:203:LYS:C | 2.39 | 0.42 |
| 31:YH:26:VAL:CG1 | 31:YH:33:LEU:HB2 | 2.49 | 0.42 |
| 35:YP:98:GLU:O | 35:YP:99:LEU:C | 2.57 | 0.42 |
| 35:YP:107:LYS:O | 35:YP:108:LYS:C | 2.58 | 0.42 |
| 37:YR:81:ASP:N | 37:YR:81:ASP:OD2 | 2.51 | 0.42 |
| 38:YS:99:LYS:C | 38:YS:101:LEU:N | 2.72 | 0.42 |
| 41:YV:38:LEU:CD2 | 41:YV:39:LEU:N | 2.82 | 0.42 |
| 45:YZ:134:PRO:C | 45:YZ:136:PHE:H | 2.22 | 0.42 |
| 47:Y1:13:ILE:CG1 | 47:Y1:42:GLN:HB2 | 2.49 | 0.42 |
| 48:Y2:48:HIS:O | 48:Y2:49:LYS:C | 2.57 | 0.42 |
| 49:Y3:46:ASN:O | 49:Y3:50:VAL:HG22 | 2.19 | 0.42 |
| 1:QA:940:C:H2' | 1:QA:941:G:C8 | 2.54 | 0.42 |
| 1:QA:1292:U:H2' | 1:QA:1293:G:H8 | 1.84 | 0.42 |
| 1:QA:1310:G:H2' | 1:QA:1311:G:C8 | 2.53 | 0.42 |
| 4:QD:59:ARG:HA | 4:QD:59:ARG:NE | 2.34 | 0.42 |
| 5:QE:20:GLN:O | 5:QE:21:ALA:C | 2.57 | 0.42 |
| 7:QG:79:ARG:HH12 | 7:QG:82:GLY:HA2 | 1.84 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:QG:126:ASP:N | 7:QG:126:ASP:OD2 | 2.53 | 0.42 |
| 9:QI:29:ASN:OD1 | 9:QI:65:VAL:N | 2.48 | 0.42 |
| 11:QK:124:LYS:HB3 | 11:QK:125:PHE:H | 1.67 | 0.42 |
| 13:QM:4:ILE:CG2 | 13:QM:5:ALA:H | 2.29 | 0.42 |
| 14:QN:47:LEU:O | 14:QN:48:ALA:C | 2.56 | 0.42 |
| 15:QO:8:LYS:NZ | 15:QO:31:LEU:HD11 | 2.34 | 0.42 |
| 15:QO:17:ARG:HD3 | 15:QO:26:GLU:HG3 | 2.01 | 0.42 |
| 25:RA:195:A:OP1 | 35:RP:46:LYS:HE2 | 2.19 | 0.42 |
| 25:RA:196:A:H2' | 25:RA:196:A:N3 | 2.35 | 0.42 |
| 25:RA:288:C:H2' | 25:RA:289:A:C8 | 2.53 | 0.42 |
| 25:RA:373:U:H2' | 25:RA:374:A:H8 | 1.84 | 0.42 |
| 25:RA:675:A:H4' | 29:RF:67:GLN:OE1 | 2.19 | 0.42 |
| 25:RA:846:C:H42 | 25:RA:931:G:H1 | 1.67 | 0.42 |
| 25:RA:1649:G:C6 | 25:RA:2009:G:C6 | 3.08 | 0.42 |
| 25:RA:2287:A:N6 | 25:RA:2344:U:H3 | 2.17 | 0.42 |
| 25:RA:2487:G:H2' | 25:RA:2488:A:C8 | 2.54 | 0.42 |
| 25:RA:2531:A:H3' | 25:RA:2532:G:C8 | 2.52 | 0.42 |
| 25:RA:2722:G:H4' | 37:RR:4:LEU:HB2 | 2.01 | 0.42 |
| 27:RD:33:LEU:HB3 | 27:RD:34:VAL:H | 1.48 | 0.42 |
| 27:RD:168:ARG:O | 27:RD:169:GLU:HB2 | 2.19 | 0.42 |
| 27:RD:238:GLY:C | 27:RD:239:ARG:O | 2.53 | 0.42 |
| 28:RE:54:GLN:N | 28:RE:54:GLN:CD | 2.73 | 0.42 |
| 29:RF:164:ARG:HG2 | 29:RF:164:ARG:NH1 | 2.34 | 0.42 |
| 30:RG:114:ILE:O | 30:RG:116:ASP:N | 2.51 | 0.42 |
| 33:RN:15:LEU:C | 33:RN:15:LEU:HD13 | 2.40 | 0.42 |
| 34:RO:2:ILE:N | 34:RO:2:ILE:CD1 | 2.82 | 0.42 |
| 35:RP:119:GLU:OE1 | 35:RP:119:GLU:HA | 2.19 | 0.42 |
| 38:RS:52:SER:HB2 | 38:RS:55:ALA:CB | 2.50 | 0.42 |
| 38:RS:95:HIS:O | 38:RS:96:GLY:C | 2.57 | 0.42 |
| 40:RU:92:ARG:NH2 | 41:RV:11:GLN:O | 2.53 | 0.42 |
| 41:RV:44:LYS:HB3 | 41:RV:45:THR:H | 1.56 | 0.42 |
| 42:RW:8:ARG:HG3 | 42:RW:8:ARG:NH1 | 2.34 | 0.42 |
| 44:RY:42:VAL:HG11 | 44:RY:65:ALA:HB3 | 2.02 | 0.42 |
| 49:R3:46:ASN:O | 49:R3:50:VAL:HG22 | 2.19 | 0.42 |
| 51:R5:3:LYS:HA | 51:R5:3:LYS:CE | 2.36 | 0.42 |
| 53:R7:47:ARG:HB2 | 53:R7:48:LYS:H | 1.64 | 0.42 |
| 1:XA:520:A:O2' | 12:XL:73:GLU:HG2 | 2.19 | 0.42 |
| 1:XA:1222:G:P | 19:XS:77:THR:HG21 | 2.58 | 0.42 |
| 1:XA:1225:A:H5'' | 13:XM:103:THR:HG1 | 1.85 | 0.42 |
| 2:XB:142:LEU:HD23 | 2:XB:142:LEU:O | 2.18 | 0.42 |
| 2:XB:142:LEU:O | 2:XB:145:LEU:HB2 | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:XD:19:LEU:O | 4:XD:20:TYR:C | 2.57 | 0.42 |
| 6:XF:36:ARG:CZ | 6:XF:38:GLU:HG2 | 2.50 | 0.42 |
| 7:XG:79:ARG:NH1 | 7:XG:82:GLY:HA2 | 2.34 | 0.42 |
| 14:YN:26:ARG:NH1 | 14:YN:43:CYS:HA | 2.34 | 0.42 |
| 15:XO:8:LYS:NZ | 15:XO:31:LEU:HD11 | 2.34 | 0.42 |
| 16:XP:23:ASP:O | 16:XP:26:ARG:HB2 | 2.18 | 0.42 |
| 17:XQ:77:VAL:O | 17:XQ:78:GLU:HB2 | 2.18 | 0.42 |
| 20:XT:13:LEU:CD1 | 20:XT:17:ARG:NH1 | 2.82 | 0.42 |
| 25:YA:15:G:H4' | 51:Y5:21:SER:CB | 2.49 | 0.42 |
| 25:YA:1282:U:H2' | 25:YA:1283:G:O4' | 2.19 | 0.42 |
| 25:YA:1467:C:H2' | 25:YA:1468:C:H6 | 1.84 | 0.42 |
| 25:YA:1473:G:H1 | 25:YA:1520:U:H3 | 1.67 | 0.42 |
| 25:YA:1647:G:C8 | 25:YA:1647:G:H5' | 2.54 | 0.42 |
| 25:YA:2289:G:H1 | 25:YA:2343:C:H42 | 1.68 | 0.42 |
| 25:YA:2354:G:O2' | 46:Y0:36:ILE:HD12 | 2.19 | 0.42 |
| 25:YA:2642:G:H4' | 33:YN:78:TYR:CE2 | 2.54 | 0.42 |
| 25:YA:2849:U:O4 | 39:YT:23:ARG:NH2 | 2.48 | 0.42 |
| 27:YD:31:LYS:C | 27:YD:32:SER:O | 2.54 | 0.42 |
| 27:YD:33:LEU:O | 27:YD:35:LYS:N | 2.52 | 0.42 |
| 28:YE:197:ILE:CD1 | 28:YE:199:ARG:HH12 | 2.26 | 0.42 |
| 29:YF:128:ALA:O | 29:YF:129:PHE:CB | 2.67 | 0.42 |
| 30:YG:16:ARG:NE | 30:YG:31:VAL:HG11 | 2.35 | 0.42 |
| 30:YG:121:ASN:HA | 30:YG:181:ARG:NH2 | 2.34 | 0.42 |
| 33:YN:15:LEU:C | 33:YN:15:LEU:HD13 | 2.39 | 0.42 |
| 35:YP:52:GLU:OE2 | 35:YP:58:THR:N | 2.52 | 0.42 |
| 35:YP:125:VAL:C | 35:YP:145:PRO:HD2 | 2.39 | 0.42 |
| 37:YR:10:LEU:O | 37:YR:12:ARG:N | 2.52 | 0.42 |
| 40:YU:91:ASP:OD2 | 40:YU:96:ALA:HB2 | 2.19 | 0.42 |
| 46:Y0:72:ARG:HH21 | 46:Y0:75:LEU:HD12 | 1.83 | 0.42 |
| 50:Y4:23:GLU:C | 50:Y4:24:THR:HG1 | 2.22 | 0.42 |
| 53:Y7:47:ARG:HB2 | 53:Y7:48:LYS:H | 1.64 | 0.42 |
| 1:QA:189:U:C2 | 17:QQ:72:ARG:NH1 | 2.87 | 0.42 |
| 1:QA:346:G:H5' | 39:RT:41:ARG:NH1 | 2.34 | 0.42 |
| 1:QA:600:C:H2' | 1:QA:601:C:C6 | 2.54 | 0.42 |
| 1:QA:795:C:H6 | 1:QA:795:C:O5' | 2.02 | 0.42 |
| 1:QA:1060:C:H2' | 1:QA:1061:G:C8 | 2.48 | 0.42 |
| 1:QA:1346:A:C4 | 7:QG:10:ARG:NH1 | 2.87 | 0.42 |
| 1:QA:1525:G:H2' | 1:QA:1526:G:O4' | 2.19 | 0.42 |
| 2:QB:33:TYR:HD1 | 2:QB:33:TYR:C | 2.23 | 0.42 |
| 2:QB:99:GLY:O | 2:QB:108:ILE:HD11 | 2.20 | 0.42 |
| 4:QD:19:LEU:O | 4:QD:20:TYR:C | 2.57 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:QD:127:THR:HG23 | 4:QD:130:GLY:O | 2.20 | 0.42 |
| 4:QD:150:GLU:O | 4:QD:152:SER:N | 2.53 | 0.42 |
| 5:QE:48:ALA:HB2 | 5:QE:57:LYS:HD3 | 2.00 | 0.42 |
| 7:QG:79:ARG:NH1 | 7:QG:82:GLY:HA2 | 2.35 | 0.42 |
| 8:QH:33:GLU:O | 8:QH:36:LEU:N | 2.53 | 0.42 |
| 8:QH:109:ILE:HD11 | 8:QH:120:THR:HG22 | 2.00 | 0.42 |
| 10:QJ:49:VAL:HG13 | 10:QJ:50:ILE:N | 2.35 | 0.42 |
| 13:QM:87:TYR:HA | 13:QM:90:LEU:HG | 2.01 | 0.42 |
| 14:QN:26:ARG:NH1 | 14:QN:43:CYS:HA | 2.34 | 0.42 |
| 15:QO:25:THR:O | 15:QO:29:VAL:HG23 | 2.19 | 0.42 |
| 16:QP:20:VAL:CG2 | 16:QP:21:VAL:N | 2.82 | 0.42 |
| 19:QS:41:VAL:CG1 | 19:QS:45:VAL:H | 2.32 | 0.42 |
| 20:QT:96:GLY:O | 20:QT:99:LEU:CD1 | 2.67 | 0.42 |
| 25:RA:397:G:H1' | 25:RA:2231:C:O2' | 2.18 | 0.42 |
| 25:RA:464:U:H2' | 25:RA:465:G:O4' | 2.19 | 0.42 |
| 25:RA:553:U:H2' | 25:RA:554:U:O4' | 2.19 | 0.42 |
| 25:RA:554:U:H2' | 25:RA:556:G:C8 | 2.55 | 0.42 |
| 25:RA:747:U:C4 | 51:R5:2:ALA:N | 2.88 | 0.42 |
| 25:RA:1007:C:H5'' | 33:RN:35:ARG:NH1 | 2.34 | 0.42 |
| 25:RA:1071:G:H8 | 25:RA:1071:G:O5' | 2.02 | 0.42 |
| 25:RA:1354:A:OP1 | 27:RD:38:LYS:HE2 | 2.20 | 0.42 |
| 25:RA:1430:C:C2 | 25:RA:1431:U:C5 | 3.07 | 0.42 |
| 25:RA:1497:U:H3' | 25:RA:1498:C:H6 | 1.85 | 0.42 |
| 25:RA:1921:G:H2' | 25:RA:1922:G:H8 | 1.84 | 0.42 |
| 25:RA:2587:A:H8 | 25:RA:2587:A:O5' | 2.02 | 0.42 |
| 25:RA:2596:U:H2' | 25:RA:2597:G:O4' | 2.19 | 0.42 |
| 25:RA:2623:G:H5' | 25:RA:2826:A:H1' | 2.02 | 0.42 |
| 26:RB:55:U:H4' | 30:RG:28:VAL:CG2 | 2.50 | 0.42 |
| 27:RD:14:ARG:CG | 27:RD:15:PHE:N | 2.83 | 0.42 |
| 27:RD:43:ARG:CZ | 27:RD:49:ILE:HG21 | 2.49 | 0.42 |
| 30:RG:27:ASN:HB3 | 30:RG:30:GLU:OE2 | 2.20 | 0.42 |
| 30:RG:41:GLN:NE2 | 30:RG:154:GLY:O | 2.52 | 0.42 |
| 30:RG:145:THR:O | 30:RG:146:TYR:HB3 | 2.19 | 0.42 |
| 31:RH:26:VAL:CG1 | 31:RH:33:LEU:HB2 | 2.50 | 0.42 |
| 31:RH:58:GLU:O | 31:RH:60:ARG:N | 2.53 | 0.42 |
| 32:RI:121:LYS:HE3 | 32:RI:121:LYS:HB2 | 1.79 | 0.42 |
| 35:RP:115:LEU:HB3 | 35:RP:131:SER:HB2 | 2.01 | 0.42 |
| 37:RR:10:LEU:C | 37:RR:12:ARG:N | 2.72 | 0.42 |
| 37:RR:44:LEU:HD23 | 37:RR:44:LEU:HA | 1.79 | 0.42 |
| 47:R1:60:PHE:HE2 | 47:R1:91:LYS:NZ | 2.16 | 0.42 |
| 48:R2:59:ARG:O | 48:R2:62:THR:HG23 | 2.18 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 51:R5:20:ARG:HA | 51:R5:23:HIS:CE1 | 2.54 | 0.42 |
| 1:XA:728:A:C6 | 15:XO:54:ARG:HD2 | 2.54 | 0.42 |
| 1:XA:947:G:H2' | 1:XA:948:C:H6 | 1.82 | 0.42 |
| 1:XA:1311:G:N2 | 1:XA:1327:C:C2 | 2.88 | 0.42 |
| 1:XA:1453:G:H8 | 20:XT:39:LYS:HZ1 | 1.65 | 0.42 |
| 2:XB:5:ILE:HB | 2:XB:221:LEU:HD23 | 2.01 | 0.42 |
| 2:XB:44:LEU:H | 2:XB:44:LEU:CD1 | 2.26 | 0.42 |
| 2:XB:60:ASP:C | 2:XB:62:ALA:N | 2.72 | 0.42 |
| 2:XB:69:LEU:HD12 | 2:XB:91:PRO:O | 2.19 | 0.42 |
| 2:XB:97:TRP:HZ3 | 2:XB:172:ILE:HG22 | 1.85 | 0.42 |
| 2:XB:179:LYS:HA | 8:XH:72:PRO:CG | 2.49 | 0.42 |
| 2:XB:200:ILE:HD12 | 2:XB:200:ILE:N | 2.34 | 0.42 |
| 3:XC:143:GLU:C | 3:XC:145:GLY:H | 2.23 | 0.42 |
| 5:XE:71:LEU:HD11 | 5:XE:113:ALA:O | 2.19 | 0.42 |
| 7:XG:79:ARG:HH12 | 7:XG:82:GLY:HA2 | 1.84 | 0.42 |
| 7:XG:140:ASP:O | 7:XG:142:GLU:N | 2.52 | 0.42 |
| 8:XH:20:TYR:CD1 | 8:XH:65:TYR:HD2 | 2.35 | 0.42 |
| 9:XI:8:GLY:CA | 9:XI:79:LEU:HD12 | 2.49 | 0.42 |
| 9:XI:100:GLY:C | 9:XI:102:LEU:N | 2.71 | 0.42 |
| 19:XS:41:VAL:HG12 | 19:XS:45:VAL:H | 1.85 | 0.42 |
| 19:XS:41:VAL:CG1 | 19:XS:45:VAL:H | 2.32 | 0.42 |
| 21:XU:5:ASP:O | 21:XU:11:GLY:HA3 | 2.20 | 0.42 |
| 24:XY:36:G:C2 | 24:XY:37:1MG:C4 | 3.07 | 0.42 |
| 25:YA:445:C:H5'' | 40:YU:3:ARG:HB2 | 2.01 | 0.42 |
| 25:YA:1265:A:H8 | 25:YA:1265:A:OP1 | 2.03 | 0.42 |
| 25:YA:1558:A:H1' | 25:YA:1559:G:H5'' | 2.00 | 0.42 |
| 25:YA:2123:G:H2' | 25:YA:2124:G:C8 | 2.53 | 0.42 |
| 25:YA:2296:U:OP2 | 38:YS:9:ARG:NH1 | 2.53 | 0.42 |
| 25:YA:2645:G:N2 | 25:YA:2767:C:OP2 | 2.52 | 0.42 |
| 27:YD:108:PRO:HG2 | 27:YD:111:LEU:HB2 | 2.01 | 0.42 |
| 28:YE:36:ARG:HH11 | 28:YE:36:ARG:CB | 2.28 | 0.42 |
| 28:YE:104:VAL:CG1 | 28:YE:188:VAL:HG23 | 2.49 | 0.42 |
| 30:YG:114:ILE:HG22 | 30:YG:117:PHE:HB2 | 2.01 | 0.42 |
| 32:YI:8:PRO:HG3 | 32:YI:14:ASP:CB | 2.48 | 0.42 |
| 36:YQ:20:ALA:HA | 36:YQ:98:LYS:HB3 | 2.02 | 0.42 |
| 38:YS:64:GLU:O | 38:YS:68:GLN:HG3 | 2.19 | 0.42 |
| 39:YT:110:ILE:CG2 | 39:YT:111:ARG:N | 2.82 | 0.42 |
| 41:YV:38:LEU:CD1 | 41:YV:55:ALA:HB1 | 2.50 | 0.42 |
| 42:YW:19:LEU:O | 42:YW:22:ASP:HB2 | 2.19 | 0.42 |
| 52:Y6:33:LYS:C | 52:Y6:35:GLU:H | 2.22 | 0.42 |
| 54:Y8:53:PRO:HD2 | 54:Y8:54:GLU:H | 1.84 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:QA:404:U:H2' | 1:QA:405:U:C6 | 2.55 | 0.42 |
| 1:QA:731:G:OP1 | 1:QA:766:A:H1' | 2.20 | 0.42 |
| 1:QA:865:A:H5' | 1:QA:1078:U:C5 | 2.54 | 0.42 |
| 1:QA:1001:G:H2' | 1:QA:1002:G:O4' | 2.20 | 0.42 |
| 2:QB:60:ASP:C | 2:QB:62:ALA:N | 2.72 | 0.42 |
| 2:QB:158:LEU:HD12 | 2:QB:158:LEU:C | 2.38 | 0.42 |
| 3:QC:83:ARG:O | 3:QC:86:VAL:HG22 | 2.20 | 0.42 |
| 3:QC:142:MET:HG2 | 3:QC:149:ALA:HB2 | 2.01 | 0.42 |
| 3:QC:149:ALA:O | 3:QC:169:ALA:CA | 2.67 | 0.42 |
| 5:QE:26:PHE:CD1 | 5:QE:26:PHE:N | 2.87 | 0.42 |
| 6:QF:45:LEU:O | 6:QF:46:ARG:HB2 | 2.19 | 0.42 |
| 10:QJ:75:ILE:CG1 | 10:QJ:76:ASN:H | 2.18 | 0.42 |
| 17:QQ:27:PHE:HA | 17:QQ:28:PRO:HD3 | 1.91 | 0.42 |
| 19:QS:29:ARG:HD3 | 19:QS:30:LEU:H | 1.84 | 0.42 |
| 19:QS:30:LEU:O | 19:QS:31:ILE:HB | 2.19 | 0.42 |
| 20:QT:36:LEU:HD13 | 20:QT:36:LEU:HA | 1.82 | 0.42 |
| 21:QU:6:ARG:C | 21:QU:8:THR:H | 2.20 | 0.42 |
| 25:RA:273:G:H1 | 25:RA:364:C:N4 | 2.17 | 0.42 |
| 25:RA:417:C:H2' | 25:RA:418:G:O4' | 2.19 | 0.42 |
| 25:RA:748:G:O6 | 42:RW:90:ARG:NH1 | 2.53 | 0.42 |
| 25:RA:897:C:H2' | 25:RA:898:C:H6 | 1.83 | 0.42 |
| 25:RA:1159:U:O2' | 25:RA:1160:G:H5' | 2.18 | 0.42 |
| 25:RA:1167:U:C2 | 25:RA:1183:G:N2 | 2.87 | 0.42 |
| 25:RA:1337:G:C4 | 25:RA:1338:G:C8 | 3.07 | 0.42 |
| 25:RA:1382:G:C5 | 25:RA:1383:C:C4 | 3.07 | 0.42 |
| 25:RA:1534:G:N3 | 25:RA:1534:G:H2' | 2.33 | 0.42 |
| 25:RA:1880:C:H2' | 25:RA:1881:C:O4' | 2.19 | 0.42 |
| 25:RA:2068:U:H3 | 25:RA:2430:A:H2 | 1.60 | 0.42 |
| 25:RA:2183:C:H2' | 25:RA:2184:G:C8 | 2.50 | 0.42 |
| 25:RA:2397:G:H2' | 25:RA:2398:U:C6 | 2.49 | 0.42 |
| 25:RA:2432:A:C8 | 47:R1:33:LYS:HE2 | 2.54 | 0.42 |
| 25:RA:2758:A:C2 | 25:RA:2759:G:H1' | 2.54 | 0.42 |
| 25:RA:2816:C:H2' | 25:RA:2817:G:C8 | 2.54 | 0.42 |
| 28:RE:3:GLY:HA3 | 28:RE:81:ILE:CD1 | 2.48 | 0.42 |
| 28:RE:137:HIS:CB | 28:RE:138:PRO:HD2 | 2.42 | 0.42 |
| 28:RE:143:ASN:HB2 | 28:RE:147:PRO:HD2 | 2.00 | 0.42 |
| 30:RG:109:VAL:C | 30:RG:112:PRO:HD2 | 2.40 | 0.42 |
| 30:RG:121:ASN:HA | 30:RG:181:ARG:NH2 | 2.34 | 0.42 |
| 31:RH:89:ILE:CD1 | 31:RH:89:ILE:H | 2.32 | 0.42 |
| 31:RH:120:GLY:O | 31:RH:136:ILE:HD12 | 2.19 | 0.42 |
| 33:RN:10:GLU:OE2 | 33:RN:11:PRO:CD | 2.68 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:RO:31:LYS:HA | 34:RO:31:LYS:HD3 | 1.91 | 0.42 |
| 35:RP:37:GLY:O | 35:RP:38:GLN:C | 2.58 | 0.42 |
| 39:RT:80:SER:HA | 39:RT:81:PRO:HD3 | 1.73 | 0.42 |
| 40:RU:79:PHE:CD2 | 40:RU:83:LEU:HD13 | 2.54 | 0.42 |
| 41:RV:59:ALA:HA | 41:RV:95:LEU:O | 2.19 | 0.42 |
| 50:R4:54:GLY:HA2 | 50:R4:57:GLU:CG | 2.50 | 0.42 |
| 52:R6:33:LYS:C | 52:R6:35:GLU:H | 2.22 | 0.42 |
| 1:XA:1403:C:H6 | 1:XA:1403:C:O5' | 2.02 | 0.42 |
| 2:XB:16:HIS:CD2 | 2:XB:213:LEU:HD13 | 2.54 | 0.42 |
| 2:XB:33:TYR:HD1 | 2:XB:33:TYR:C | 2.23 | 0.42 |
| 2:XB:92:TYR:C | 2:XB:92:TYR:HD1 | 2.21 | 0.42 |
| 2:XB:163:PHE:CD2 | 2:XB:185:ILE:HD12 | 2.54 | 0.42 |
| 3:XC:83:ARG:O | 3:XC:86:VAL:HG22 | 2.20 | 0.42 |
| 4:XD:59:ARG:NE | 4:XD:59:ARG:HA | 2.34 | 0.42 |
| 8:XH:85:ARG:HA | 8:XH:135:CYS:HB3 | 2.02 | 0.42 |
| 10:XJ:49:VAL:HG11 | 14:YN:41:ARG:O | 2.19 | 0.42 |
| 12:XL:120:TYR:O | 12:XL:121:GLY:C | 2.57 | 0.42 |
| 13:XM:88:ARG:HD2 | 13:XM:88:ARG:O | 2.19 | 0.42 |
| 14:YN:9:LYS:HG2 | 14:YN:9:LYS:O | 2.19 | 0.42 |
| 14:YN:48:ALA:HA | 14:YN:53:LEU:HD12 | 2.02 | 0.42 |
| 16:XP:83:GLU:HG3 | 16:XP:84:ALA:N | 2.33 | 0.42 |
| 18:XR:29:PHE:N | 18:XR:29:PHE:HD2 | 2.17 | 0.42 |
| 19:XS:18:LYS:O | 19:XS:18:LYS:HD2 | 2.19 | 0.42 |
| 25:YA:49:A:H61 | 25:YA:177:G:H2' | 1.85 | 0.42 |
| 25:YA:590:A:H2' | 25:YA:591:C:O4' | 2.19 | 0.42 |
| 25:YA:620:G:H4' | 25:YA:621:A:C5' | 2.49 | 0.42 |
| 25:YA:1317:A:H2' | 25:YA:1318:C:C6 | 2.55 | 0.42 |
| 25:YA:1466:G:N2 | 25:YA:1547:C:N3 | 2.67 | 0.42 |
| 25:YA:1473:G:C2 | 25:YA:1474:C:C2 | 3.08 | 0.42 |
| 25:YA:2313:C:O2' | 25:YA:2314:C:H5' | 2.20 | 0.42 |
| 27:YD:2:ALA:O | 27:YD:3:VAL:CB | 2.68 | 0.42 |
| 27:YD:75:ILE:HG21 | 27:YD:99:ASP:HB2 | 2.01 | 0.42 |
| 27:YD:177:LEU:C | 27:YD:179:SER:H | 2.23 | 0.42 |
| 28:YE:117:MET:HA | 28:YE:122:PHE:N | 2.35 | 0.42 |
| 29:YF:132:VAL:HG23 | 29:YF:133:ASN:H | 1.82 | 0.42 |
| 30:YG:73:ALA:O | 30:YG:84:LYS:O | 2.38 | 0.42 |
| 30:YG:117:PHE:CE1 | 30:YG:119:GLY:CA | 3.03 | 0.42 |
| 31:YH:58:GLU:O | 31:YH:60:ARG:N | 2.52 | 0.42 |
| 31:YH:136:ILE:O | 31:YH:137:ASP:O | 2.37 | 0.42 |
| 34:YO:1:MET:HG2 | 34:YO:67:LYS:HG2 | 2.02 | 0.42 |
| 39:YT:54:ARG:HA | 39:YT:59:THR:HG23 | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 39:YT:96:ARG:HB2 | 39:YT:96:ARG:CZ | 2.49 | 0.42 |
| 40:YU:79:PHE:CD2 | 40:YU:83:LEU:HD13 | 2.54 | 0.42 |
| 41:YV:25:LEU:H | 41:YV:92:THR:CG2 | 2.28 | 0.42 |
| 42:YW:81:ALA:C | 42:YW:82:LEU:HD12 | 2.40 | 0.42 |
| 43:YX:87:GLN:C | 43:YX:88:LYS:HG3 | 2.40 | 0.42 |
| 44:YY:60:PHE:CD2 | 44:YY:60:PHE:N | 2.87 | 0.42 |
| 45:YZ:70:LEU:HD11 | 45:YZ:98:MET:CE | 2.49 | 0.42 |
| 46:Y0:11:ARG:CZ | 46:Y0:11:ARG:CB | 2.97 | 0.42 |
| 51:Y5:20:ARG:HA | 51:Y5:23:HIS:CE1 | 2.55 | 0.42 |
| 53:Y7:12:ARG:HH21 | 53:Y7:44:PRO:HB3 | 1.85 | 0.42 |
| 1:QA:44:G:C6 | 1:QA:45:U:C2 | 3.08 | 0.42 |
| 1:QA:119:A:C8 | 1:QA:288:A:C2 | 3.07 | 0.42 |
| 1:QA:162:A:C5 | 1:QA:163:C:H1' | 2.55 | 0.42 |
| 1:QA:230:G:N2 | 1:QA:231:G:H1' | 2.35 | 0.42 |
| 1:QA:323:U:H2' | 1:QA:324:G:O4' | 2.19 | 0.42 |
| 1:QA:372:C:O2' | 1:QA:373:A:O5' | 2.37 | 0.42 |
| 1:QA:410:G:H2' | 1:QA:429:U:C4 | 2.55 | 0.42 |
| 1:QA:651:C:N4 | 1:QA:753:A:OP2 | 2.47 | 0.42 |
| 1:QA:1048:G:N2 | 1:QA:1209:C:N3 | 2.58 | 0.42 |
| 1:QA:1053:G:H2' | 1:QA:1199:U:H5 | 1.84 | 0.42 |
| 1:QA:1213:A:N6 | 1:QA:1215:G:N3 | 2.68 | 0.42 |
| 3:QC:143:GLU:C | 3:QC:145:GLY:H | 2.23 | 0.42 |
| 4:QD:13:ARG:NH2 | 4:QD:36:ARG:HH21 | 2.15 | 0.42 |
| 4:QD:172:PRO:CG | 6:XF:24:GLU:OE1 | 2.67 | 0.42 |
| 6:QF:46:ARG:HG3 | 6:QF:47:ARG:N | 2.34 | 0.42 |
| 7:QG:11:GLN:HG3 | 7:QG:12:LEU:H | 1.85 | 0.42 |
| 7:QG:75:VAL:HG13 | 7:QG:145:ALA:HA | 2.00 | 0.42 |
| 8:QH:102:ARG:NH1 | 8:QH:105:ARG:CZ | 2.80 | 0.42 |
| 9:QI:25:LYS:O | 9:QI:60:ASP:OD1 | 2.37 | 0.42 |
| 18:QR:63:GLN:O | 18:QR:66:LEU:HB3 | 2.18 | 0.42 |
| 18:QR:64:ARG:O | 18:QR:65:ILE:C | 2.58 | 0.42 |
| 25:RA:500:G:N2 | 25:RA:502:A:H3' | 2.34 | 0.42 |
| 25:RA:579:G:C2 | 25:RA:1262:A:C4 | 3.07 | 0.42 |
| 25:RA:738:G:O6 | 25:RA:739:G:N1 | 2.53 | 0.42 |
| 25:RA:760:G:H2' | 25:RA:761:A:O4' | 2.20 | 0.42 |
| 25:RA:1216:G:N2 | 25:RA:1234:U:H1' | 2.34 | 0.42 |
| 25:RA:1401:G:C6 | 25:RA:1402:C:C4 | 3.07 | 0.42 |
| 25:RA:1952:A:C2 | 34:RO:22:ILE:HG23 | 2.55 | 0.42 |
| 25:RA:2094:G:C2 | 25:RA:2196:C:C2 | 3.08 | 0.42 |
| 25:RA:2327:A:H2' | 25:RA:2328:A:C8 | 2.55 | 0.42 |
| 25:RA:2729:G:C1' | 28:RE:187:ALA:HB2 | 2.37 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 28:RE:24:THR:HB | 28:RE:184:VAL:HG23 | 2.02 | 0.42 |
| 28:RE:35:GLN:HB3 | 28:RE:48:GLN:HB2 | 2.01 | 0.42 |
| 28:RE:101:ARG:C | 28:RE:201:THR:OG1 | 2.58 | 0.42 |
| 30:RG:34:LEU:HD11 | 30:RG:99:MET:CE | 2.49 | 0.42 |
| 31:RH:136:ILE:O | 31:RH:137:ASP:O | 2.38 | 0.42 |
| 31:RH:169:VAL:HG22 | 31:RH:170:ARG:N | 2.25 | 0.42 |
| 32:RI:117:GLU:O | 32:RI:118:LYS:CB | 2.67 | 0.42 |
| 33:RN:75:TYR:HA | 33:RN:82:LEU:HA | 2.01 | 0.42 |
| 36:RQ:27:VAL:HG11 | 36:RQ:134:ARG:HG3 | 2.00 | 0.42 |
| 36:RQ:65:PHE:O | 36:RQ:66:ILE:CG1 | 2.48 | 0.42 |
| 37:RR:29:LEU:HD11 | 37:RR:48:VAL:CG1 | 2.50 | 0.42 |
| 38:RS:83:LYS:HE3 | 38:RS:84:GLN:HG3 | 2.02 | 0.42 |
| 39:RT:24:PRO:HA | 39:RT:49:VAL:CG1 | 2.39 | 0.42 |
| 40:RU:91:ASP:OD2 | 40:RU:96:ALA:HB2 | 2.19 | 0.42 |
| 40:RU:97:ASP:HA | 40:RU:100:VAL:HG23 | 2.01 | 0.42 |
| 42:RW:14:PRO:O | 42:RW:15:ARG:C | 2.58 | 0.42 |
| 44:RY:20:TYR:CE1 | 44:RY:42:VAL:HA | 2.55 | 0.42 |
| 44:RY:60:PHE:CD2 | 44:RY:60:PHE:N | 2.87 | 0.42 |
| 45:RZ:63:ASP:O | 45:RZ:64:GLY:C | 2.57 | 0.42 |
| 49:R3:37:LEU:HD12 | 49:R3:43:ILE:CG2 | 2.50 | 0.42 |
| 1:XA:1095:U:H2' | 1:XA:1096:C:O4' | 2.20 | 0.42 |
| 1:XA:1190:G:OP1 | 3:XC:4:LYS:HA | 2.19 | 0.42 |
| 1:XA:1401:G:C2 | 1:XA:1402:C:H1' | 2.55 | 0.42 |
| 2:XB:67:THR:C | 2:XB:68:ILE:HD12 | 2.40 | 0.42 |
| 2:XB:109:SER:C | 2:XB:111:ARG:N | 2.73 | 0.42 |
| 2:XB:158:LEU:HD12 | 2:XB:158:LEU:C | 2.39 | 0.42 |
| 4:XD:206:PHE:CD2 | 4:XD:207:TYR:HD1 | 2.37 | 0.42 |
| 5:XE:31:LEU:HD23 | 5:XE:45:PHE:HD1 | 1.85 | 0.42 |
| 7:XG:15:ASP:OD1 | 7:XG:23:VAL:HG11 | 2.19 | 0.42 |
| 7:XG:151:TYR:CE1 | 11:XK:54:ARG:HG2 | 2.54 | 0.42 |
| 9:XI:35:GLU:O | 9:XI:35:GLU:HG2 | 2.19 | 0.42 |
| 9:XI:71:SER:O | 9:XI:74:ILE:N | 2.52 | 0.42 |
| 11:XK:33:THR:HB | 11:XK:37:GLY:C | 2.40 | 0.42 |
| 19:XS:21:GLU:HG3 | 19:XS:22:LEU:CD1 | 2.49 | 0.42 |
| 19:XS:39:THR:CG2 | 19:XS:40:ILE:H | 2.24 | 0.42 |
| 19:XS:68:GLY:H | 50:Y4:59:PHE:HZ | 1.62 | 0.42 |
| 22:XV:15:G:N2 | 22:XV:48:C:H42 | 2.17 | 0.42 |
| 22:XV:35:A:C2 | 23:XX:3:G:N3 | 2.87 | 0.42 |
| 25:YA:85:G:OP1 | 44:YY:8:LYS:HA | 2.19 | 0.42 |
| 25:YA:443:A:H3' | 29:YF:45:ARG:NH1 | 2.34 | 0.42 |
| 25:YA:1010:A:H1' | 25:YA:1153:C:H1' | 2.00 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:1251:C:OP1 | 40:YU:10:ARG:HG3 | 2.20 | 0.42 |
| 25:YA:1338:G:O6 | 43:YX:62:LYS:HE2 | 2.19 | 0.42 |
| 25:YA:1554:A:O2' | 25:YA:1555:G:P | 2.78 | 0.42 |
| 25:YA:2336:A:H61 | 46:Y0:43:THR:CG2 | 2.33 | 0.42 |
| 25:YA:2395:C:O2' | 47:Y1:30:VAL:HG12 | 2.20 | 0.42 |
| 25:YA:2525:G:H1 | 25:YA:2538:C:H42 | 1.68 | 0.42 |
| 25:YA:2564:A:C6 | 25:YA:2565:A:C6 | 3.07 | 0.42 |
| 25:YA:2567:G:H2' | 25:YA:2568:C:C6 | 2.55 | 0.42 |
| 25:YA:2636:U:OP1 | 28:YE:79:ARG:HG3 | 2.19 | 0.42 |
| 25:YA:2845:G:H2' | 25:YA:2846:G:H8 | 1.84 | 0.42 |
| 27:YD:25:THR:HG23 | 27:YD:27:THR:HB | 2.02 | 0.42 |
| 28:YE:31:CYS:HB3 | 28:YE:49:LEU:HG | 2.01 | 0.42 |
| 29:YF:62:ARG:NH1 | 29:YF:62:ARG:CB | 2.82 | 0.42 |
| 30:YG:109:VAL:C | 30:YG:112:PRO:HD2 | 2.40 | 0.42 |
| 31:YH:77:LYS:HB3 | 31:YH:77:LYS:HZ2 | 1.78 | 0.42 |
| 32:YI:138:ILE:O | 32:YI:138:ILE:HG23 | 2.19 | 0.42 |
| 32:YI:145:VAL:HG23 | 32:YI:146:ALA:N | 2.35 | 0.42 |
| 33:YN:75:TYR:HA | 33:YN:82:LEU:HA | 2.01 | 0.42 |
| 38:YS:52:SER:HB2 | 38:YS:55:ALA:CB | 2.49 | 0.42 |
| 39:YT:3:ARG:O | 39:YT:4:GLY:C | 2.58 | 0.42 |
| 41:YV:59:ALA:HA | 41:YV:95:LEU:O | 2.19 | 0.42 |
| 45:YZ:102:LEU:HD22 | 45:YZ:156:LYS:HZ1 | 1.83 | 0.42 |
| 46:Y0:74:ARG:H | 46:Y0:74:ARG:HG3 | 1.60 | 0.42 |
| 48:Y2:27:GLU:H | 48:Y2:27:GLU:CD | 2.17 | 0.42 |
| 52:Y6:7:ILE:O | 52:Y6:8:LYS:CG | 2.68 | 0.42 |
| 52:Y6:41:PRO:HG3 | 52:Y6:44:ARG:HB2 | 2.01 | 0.42 |
| 54:Y8:28:GLY:O | 54:Y8:29:LYS:O | 2.37 | 0.42 |
| 1:QA:341:C:H2' | 1:QA:342:C:C6 | 2.54 | 0.42 |
| 1:QA:501:C:H2' | 1:QA:502:G:C8 | 2.55 | 0.42 |
| 1:QA:512:U:H2' | 1:QA:513:C:C6 | 2.55 | 0.42 |
| 1:QA:1446:A:N3 | 1:QA:1446:A:H5' | 2.33 | 0.42 |
| 2:QB:197:VAL:CG1 | 2:QB:198:ASP:N | 2.82 | 0.42 |
| 3:QC:35:GLU:O | 3:QC:38:ARG:N | 2.53 | 0.42 |
| 5:QE:71:LEU:HD11 | 5:QE:113:ALA:O | 2.20 | 0.42 |
| 9:QI:71:SER:O | 9:QI:74:ILE:N | 2.52 | 0.42 |
| 12:QL:38:THR:HG22 | 12:QL:57:LYS:HB3 | 2.01 | 0.42 |
| 13:QM:13:LYS:HA | 13:QM:44:ARG:CD | 2.48 | 0.42 |
| 17:QQ:76:LEU:HD21 | 17:QQ:79:SER:HB2 | 2.01 | 0.42 |
| 19:QS:18:LYS:O | 19:QS:18:LYS:HD2 | 2.19 | 0.42 |
| 20:QT:96:GLY:O | 20:QT:97:ALA:CB | 2.64 | 0.42 |
| 20:QT:99:LEU:O | 20:QT:100:ILE:CB | 2.68 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 22:QV:17:C:H2' | 22:QV:17:C:O2 | 2.20 | 0.42 |
| 25:RA:76:C:O2' | 25:RA:77:C:H5' | 2.20 | 0.42 |
| 25:RA:942:G:O2' | 25:RA:1189:A:H2' | 2.20 | 0.42 |
| 25:RA:968:G:C6 | 25:RA:969:U:C4 | 3.07 | 0.42 |
| 25:RA:1429:G:H2' | 25:RA:1430:C:H6 | 1.83 | 0.42 |
| 25:RA:1705:G:C6 | 25:RA:1706:U:C4 | 3.07 | 0.42 |
| 25:RA:1800:C:OP1 | 27:RD:260:ARG:NH2 | 2.52 | 0.42 |
| 25:RA:1821:A:H8 | 25:RA:1821:A:OP2 | 2.02 | 0.42 |
| 25:RA:1847:A:H5' | 25:RA:1848:A:OP2 | 2.20 | 0.42 |
| 25:RA:2526:G:C5 | 25:RA:2527:C:C5 | 3.07 | 0.42 |
| 25:RA:2867:G:HO2' | 25:RA:2868:A:P | 2.42 | 0.42 |
| 27:RD:182:LEU:N | 27:RD:272:ALA:HB3 | 2.32 | 0.42 |
| 28:RE:104:VAL:CG1 | 28:RE:188:VAL:HG23 | 2.49 | 0.42 |
| 28:RE:121:ASN:O | 28:RE:122:PHE:C | 2.57 | 0.42 |
| 29:RF:63:LYS:HE2 | 29:RF:67:GLN:HB2 | 2.01 | 0.42 |
| 31:RH:125:VAL:HG12 | 31:RH:126:PRO:CD | 2.49 | 0.42 |
| 33:RN:43:THR:HA | 33:RN:44:PRO:HD2 | 1.92 | 0.42 |
| 34:RO:50:GLY:O | 34:RO:51:ALA:C | 2.57 | 0.42 |
| 38:RS:102:ALA:C | 38:RS:104:GLY:N | 2.73 | 0.42 |
| 39:RT:110:ILE:CG2 | 39:RT:111:ARG:N | 2.82 | 0.42 |
| 40:RU:43:GLY:HA3 | 41:RV:73:SER:OG | 2.19 | 0.42 |
| 41:RV:21:ARG:HD2 | 41:RV:91:TYR:CE2 | 2.55 | 0.42 |
| 42:RW:71:VAL:HA | 42:RW:107:LEU:HD12 | 2.02 | 0.42 |
| 45:RZ:152:ALA:H | 45:RZ:170:THR:H | 1.66 | 0.42 |
| 45:RZ:153:SER:O | 45:RZ:154:ASP:HB3 | 2.20 | 0.42 |
| 47:R1:76:ARG:H | 47:R1:76:ARG:CD | 2.28 | 0.42 |
| 51:R5:40:LYS:HE2 | 51:R5:47:PRO:HG2 | 2.02 | 0.42 |
| 52:R6:7:ILE:O | 52:R6:8:LYS:CG | 2.68 | 0.42 |
| 1:XA:452:A:H4' | 16:XP:72:ARG:NH2 | 2.35 | 0.42 |
| 1:XA:529:G:H22 | 12:XL:51:ALA:HB2 | 1.84 | 0.42 |
| 1:XA:575:G:O2' | 1:XA:821:G:H5' | 2.20 | 0.42 |
| 1:XA:977:A:H8 | 1:XA:1223:C:N3 | 2.17 | 0.42 |
| 1:XA:977:A:H8 | 1:XA:1223:C:C2 | 2.37 | 0.42 |
| 1:XA:1091:U:N3 | 1:XA:1094:G:OP2 | 2.31 | 0.42 |
| 1:XA:1312:G:H3' | 50:Y4:67:TYR:OH | 2.19 | 0.42 |
| 1:XA:1394:A:C5 | 1:XA:1501:C:H4' | 2.55 | 0.42 |
| 3:XC:23:TYR:CD2 | 3:XC:24:ALA:N | 2.88 | 0.42 |
| 3:XC:35:GLU:O | 3:XC:38:ARG:N | 2.53 | 0.42 |
| 5:XE:78:HIS:CD2 | 8:XH:104:ARG:HE | 2.37 | 0.42 |
| 5:XE:78:HIS:HE1 | 5:XE:143:ARG:N | 2.12 | 0.42 |
| 6:XF:46:ARG:HG3 | 6:XF:47:ARG:N | 2.34 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 12:XL:53:ARG:HH12 | 12:XL:92:ASP:CB | 2.33 | 0.42 |
| 12:XL:119:LYS:HB2 | 12:XL:120:TYR:HD1 | 1.83 | 0.42 |
| 13:XM:19:LEU:HD22 | 13:XM:19:LEU:N | 2.33 | 0.42 |
| 16:XP:55:ARG:O | 16:XP:56:ALA:C | 2.57 | 0.42 |
| 25:YA:130:C:O3' | 25:YA:1349:A:H1' | 2.19 | 0.42 |
| 25:YA:1149:G:H2' | 25:YA:1150:C:C6 | 2.54 | 0.42 |
| 25:YA:1204:A:H2 | 25:YA:1241:A:N1 | 2.18 | 0.42 |
| 25:YA:1344:G:H5' | 25:YA:1384:A:C6 | 2.54 | 0.42 |
| 25:YA:1405:U:H2' | 25:YA:1406:U:C6 | 2.54 | 0.42 |
| 25:YA:1594:G:C6 | 25:YA:1595:G:C5 | 3.08 | 0.42 |
| 25:YA:1929:G:H4' | 25:YA:1930:G:OP1 | 2.19 | 0.42 |
| 25:YA:2469:A:H3' | 25:YA:2470:G:O4' | 2.19 | 0.42 |
| 25:YA:2531:A:N6 | 25:YA:2662:A:H61 | 2.17 | 0.42 |
| 26:YB:38:C:O2 | 26:YB:48:A:H1' | 2.20 | 0.42 |
| 26:YB:48:A:P | 38:YS:30:ARG:NH2 | 2.93 | 0.42 |
| 27:YD:12:SER:O | 27:YD:14:ARG:N | 2.51 | 0.42 |
| 27:YD:71:ASP:CB | 27:YD:103:ARG:HH22 | 2.32 | 0.42 |
| 27:YD:158:ALA:HB3 | 27:YD:161:THR:CG2 | 2.49 | 0.42 |
| 27:YD:263:ARG:NH1 | 27:YD:263:ARG:CB | 2.75 | 0.42 |
| 28:YE:36:ARG:HB3 | 28:YE:36:ARG:NH1 | 2.31 | 0.42 |
| 28:YE:152:LYS:HG2 | 33:YN:78:TYR:CD1 | 2.55 | 0.42 |
| 29:YF:11:VAL:HG12 | 29:YF:12:LEU:H | 1.85 | 0.42 |
| 29:YF:109:GLY:O | 29:YF:110:LEU:C | 2.58 | 0.42 |
| 29:YF:123:LEU:HD12 | 29:YF:124:LEU:H | 1.82 | 0.42 |
| 31:YH:119:GLU:CD | 31:YH:120:GLY:H | 2.22 | 0.42 |
| 34:YO:2:ILE:HG12 | 34:YO:8:LEU:HD11 | 2.02 | 0.42 |
| 34:YO:50:GLY:O | 34:YO:51:ALA:C | 2.57 | 0.42 |
| 35:YP:37:GLY:O | 35:YP:38:GLN:C | 2.58 | 0.42 |
| 35:YP:119:GLU:HA | 35:YP:119:GLU:OE1 | 2.19 | 0.42 |
| 35:YP:135:LEU:HD13 | 35:YP:139:LYS:HE3 | 2.01 | 0.42 |
| 36:YQ:132:VAL:HG11 | 45:YZ:81:ARG:CZ | 2.50 | 0.42 |
| 37:YR:10:LEU:C | 37:YR:12:ARG:N | 2.72 | 0.42 |
| 38:YS:95:HIS:O | 38:YS:96:GLY:C | 2.57 | 0.42 |
| 42:YW:74:ALA:O | 42:YW:75:TYR:CB | 2.65 | 0.42 |
| 43:YX:60:ARG:HH12 | 53:Y7:47:ARG:HH22 | 1.67 | 0.42 |
| 45:YZ:82:ARG:HG3 | 45:YZ:83:PRO:CD | 2.50 | 0.42 |
| 50:Y4:54:GLY:HA2 | 50:Y4:57:GLU:CG | 2.50 | 0.42 |
| 52:Y6:25:LYS:HE2 | 52:Y6:27:LYS:CD | 2.49 | 0.42 |
| 1:QA:222:U:C2 | 1:QA:223:U:C5 | 3.08 | 0.42 |
| 1:QA:250:A:H4' | 1:QA:251:G:O5' | 2.20 | 0.42 |
| 1:QA:501:C:O3' | 12:QL:118:SER:HB2 | 2.20 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:QA:977:A:H3' | 1:QA:977:A:N3 | 2.35 | 0.42 |
| 1:QA:1081:G:P | 5:QE:16:THR:OG1 | 2.78 | 0.42 |
| 1:QA:1296:C:H5' | 1:QA:1297:C:OP2 | 2.20 | 0.42 |
| 1:QA:1316:G:O2' | 1:QA:1318:A:N7 | 2.49 | 0.42 |
| 1:QA:1348:U:C4 | 1:QA:1374:A:H2 | 2.37 | 0.42 |
| 1:QA:1434:A:H2' | 1:QA:1435:G:O4' | 2.20 | 0.42 |
| 2:QB:69:LEU:HD12 | 2:QB:91:PRO:O | 2.19 | 0.42 |
| 2:QB:130:ARG:NH2 | 2:QB:138:LEU:HD21 | 2.34 | 0.42 |
| 2:QB:200:ILE:CG2 | 2:QB:201:ILE:N | 2.83 | 0.42 |
| 2:QB:204:ASN:HD22 | 2:QB:204:ASN:C | 2.22 | 0.42 |
| 3:QC:47:LEU:HD11 | 3:QC:76:VAL:CG1 | 2.42 | 0.42 |
| 3:QC:58:GLU:HB2 | 3:QC:65:ALA:HB3 | 2.01 | 0.42 |
| 3:QC:88:ARG:NH2 | 3:QC:101:LEU:O | 2.53 | 0.42 |
| 4:QD:150:GLU:C | 4:QD:152:SER:N | 2.73 | 0.42 |
| 6:QF:45:LEU:CD1 | 6:QF:59:TYR:HD1 | 2.30 | 0.42 |
| 8:QH:95:VAL:O | 8:QH:95:VAL:HG23 | 2.20 | 0.42 |
| 12:QL:117:ARG:HB3 | 12:QL:122:THR:HB | 2.02 | 0.42 |
| 14:QN:24:CYS:SG | 14:QN:39:LEU:C | 2.99 | 0.42 |
| 16:QP:21:VAL:HG21 | 16:QP:59:TRP:NE1 | 2.35 | 0.42 |
| 19:QS:41:VAL:HG11 | 19:QS:45:VAL:HG13 | 2.02 | 0.42 |
| 22:QV:58:A:O2' | 22:QV:60:U:OP2 | 2.17 | 0.42 |
| 23:QX:2:U:HO2' | 23:QX:3:G:H5' | 1.82 | 0.42 |
| 25:RA:13:A:C2 | 25:RA:526:A:N7 | 2.88 | 0.42 |
| 25:RA:483:A:H4' | 44:RY:49:VAL:CA | 2.46 | 0.42 |
| 25:RA:903:C:H2' | 25:RA:904:C:C6 | 2.54 | 0.42 |
| 25:RA:949:C:H42 | 25:RA:968:G:H1 | 1.68 | 0.42 |
| 25:RA:1030:G:H4' | 25:RA:2466:C:O2' | 2.20 | 0.42 |
| 25:RA:1529:A:H2' | 25:RA:1530:G:O4' | 2.19 | 0.42 |
| 25:RA:2625:G:H2' | 25:RA:2626:C:C6 | 2.55 | 0.42 |
| 27:RD:9:TYR:CZ | 27:RD:13:ARG:HD3 | 2.54 | 0.42 |
| 28:RE:10:GLY:HA3 | 39:RT:8:LYS:HD3 | 2.02 | 0.42 |
| 28:RE:28:ALA:HB3 | 28:RE:93:VAL:CG2 | 2.47 | 0.42 |
| 28:RE:117:MET:HA | 28:RE:122:PHE:N | 2.35 | 0.42 |
| 28:RE:144:ARG:HB3 | 28:RE:145:LYS:H | 1.58 | 0.42 |
| 28:RE:176:ILE:HD12 | 28:RE:176:ILE:N | 2.35 | 0.42 |
| 29:RF:118:ALA:HA | 29:RF:123:LEU:HB3 | 2.02 | 0.42 |
| 29:RF:132:VAL:CG2 | 29:RF:133:ASN:N | 2.80 | 0.42 |
| 29:RF:192:LEU:HD21 | 29:RF:194:MET:HE3 | 2.01 | 0.42 |
| 30:RG:16:ARG:NE | 30:RG:31:VAL:HG11 | 2.34 | 0.42 |
| 30:RG:51:ARG:NH1 | 30:RG:51:ARG:CB | 2.83 | 0.42 |
| 30:RG:55:LYS:O | 30:RG:59:GLU:HB2 | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 30:RG:63:ILE:HG12 | 30:RG:64:THR:N | 2.33 | 0.42 |
| 30:RG:78:SER:O | 30:RG:80:PHE:N | 2.53 | 0.42 |
| 30:RG:99:MET:O | 30:RG:103:LEU:HB2 | 2.20 | 0.42 |
| 32:RI:77:LEU:CD1 | 32:RI:140:LEU:HB2 | 2.49 | 0.42 |
| 32:RI:112:LYS:H | 32:RI:112:LYS:HG2 | 1.62 | 0.42 |
| 33:RN:62:VAL:HG12 | 33:RN:66:LYS:HB2 | 2.01 | 0.42 |
| 35:RP:98:GLU:O | 35:RP:99:LEU:C | 2.57 | 0.42 |
| 36:RQ:118:LEU:HD23 | 36:RQ:118:LEU:HA | 1.87 | 0.42 |
| 38:RS:49:VAL:HG21 | 38:RS:77:ALA:HA | 2.02 | 0.42 |
| 39:RT:3:ARG:O | 39:RT:4:GLY:C | 2.58 | 0.42 |
| 40:RU:35:ALA:O | 40:RU:39:LEU:HG | 2.19 | 0.42 |
| 40:RU:39:LEU:O | 40:RU:42:ALA:N | 2.53 | 0.42 |
| 41:RV:35:LEU:HB2 | 41:RV:37:VAL:CG2 | 2.48 | 0.42 |
| 42:RW:81:ALA:C | 42:RW:82:LEU:HD12 | 2.40 | 0.42 |
| 43:RX:54:VAL:C | 43:RX:55:ASN:HD22 | 2.23 | 0.42 |
| 43:RX:57:LEU:HD12 | 43:RX:57:LEU:H | 1.85 | 0.42 |
| 46:R0:49:LYS:N | 46:R0:80:HIS:ND1 | 2.63 | 0.42 |
| 47:R1:74:VAL:O | 47:R1:74:VAL:CG1 | 2.64 | 0.42 |
| 50:R4:2:LYS:HD2 | 50:R4:2:LYS:HA | 1.61 | 0.42 |
| 1:XA:579:G:C6 | 1:XA:580:U:C4 | 3.08 | 0.42 |
| 1:XA:664:G:N2 | 1:XA:741:G:H1 | 2.17 | 0.42 |
| 1:XA:677:U:H2' | 1:XA:678:U:C6 | 2.54 | 0.42 |
| 1:XA:936:C:H2' | 1:XA:937:A:O4' | 2.20 | 0.42 |
| 1:XA:1221:G:OP1 | 19:XS:36:ARG:HD3 | 2.20 | 0.42 |
| 1:XA:1388:C:H2' | 1:XA:1389:C:C6 | 2.55 | 0.42 |
| 2:XB:109:SER:C | 2:XB:111:ARG:H | 2.21 | 0.42 |
| 2:XB:211:ILE:O | 2:XB:215:LEU:HB2 | 2.20 | 0.42 |
| 3:XC:113:ALA:C | 3:XC:115:LEU:N | 2.72 | 0.42 |
| 5:XE:153:LYS:HD3 | 5:XE:153:LYS:C | 2.40 | 0.42 |
| 7:XG:11:GLN:HG3 | 7:XG:12:LEU:H | 1.85 | 0.42 |
| 8:XH:95:VAL:O | 8:XH:95:VAL:HG23 | 2.20 | 0.42 |
| 10:XJ:49:VAL:HG13 | 10:XJ:50:ILE:N | 2.35 | 0.42 |
| 13:XM:16:ASP:HB3 | 13:XM:34:LEU:CD1 | 2.49 | 0.42 |
| 15:XO:54:ARG:NH1 | 15:XO:58:MET:SD | 2.93 | 0.42 |
| 15:XO:64:ARG:CD | 15:XO:68:ARG:NH2 | 2.82 | 0.42 |
| 19:XS:4:SER:O | 19:XS:5:LEU:HD13 | 2.20 | 0.42 |
| 19:XS:5:LEU:CD2 | 50:Y4:66:SER:HB2 | 2.49 | 0.42 |
| 19:XS:58:VAL:O | 19:XS:58:VAL:HG23 | 2.20 | 0.42 |
| 20:XT:99:LEU:O | 20:XT:100:ILE:CB | 2.68 | 0.42 |
| 22:XV:43:A:H2' | 22:XV:44:A:C8 | 2.54 | 0.42 |
| 25:YA:6:A:H2' | 25:YA:7:G:C8 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:273:G:H1 | 25:YA:364:C:H42 | 1.67 | 0.42 |
| 25:YA:514:A:H1' | 25:YA:581:C:O2' | 2.20 | 0.42 |
| 25:YA:729:G:H2' | 25:YA:1775:U:H1' | 2.02 | 0.42 |
| 25:YA:917:A:N6 | 26:YB:80:U:H4' | 2.34 | 0.42 |
| 25:YA:1018:C:O3' | 25:YA:1120:G:N2 | 2.52 | 0.42 |
| 25:YA:1094:U:O2' | 25:YA:1096:A:OP1 | 2.26 | 0.42 |
| 25:YA:2331:G:H5' | 46:Y0:44:ARG:HG3 | 2.01 | 0.42 |
| 25:YA:2531:A:H2 | 25:YA:2658:C:O2 | 2.02 | 0.42 |
| 25:YA:2653:U:H3' | 25:YA:2654:A:C8 | 2.55 | 0.42 |
| 25:YA:2804:C:H2' | 25:YA:2805:G:O4' | 2.20 | 0.42 |
| 25:YA:2849:U:H4' | 25:YA:2868:A:N1 | 2.34 | 0.42 |
| 27:YD:109:ASP:HB2 | 27:YD:197:GLY:HA2 | 2.02 | 0.42 |
| 27:YD:196:VAL:O | 27:YD:196:VAL:CG1 | 2.68 | 0.42 |
| 28:YE:28:ALA:HB3 | 28:YE:93:VAL:CG2 | 2.47 | 0.42 |
| 28:YE:35:GLN:HB3 | 28:YE:48:GLN:HB2 | 2.01 | 0.42 |
| 28:YE:176:ILE:HD12 | 28:YE:176:ILE:N | 2.35 | 0.42 |
| 29:YF:101:LEU:HD12 | 29:YF:102:PRO:N | 2.33 | 0.42 |
| 29:YF:183:VAL:HG22 | 29:YF:184:TYR:N | 2.35 | 0.42 |
| 29:YF:192:LEU:HD21 | 29:YF:194:MET:HE3 | 2.02 | 0.42 |
| 30:YG:4:ASP:O | 30:YG:5:VAL:HB | 2.20 | 0.42 |
| 30:YG:99:MET:O | 30:YG:103:LEU:HB2 | 2.20 | 0.42 |
| 31:YH:84:SER:O | 31:YH:85:LYS:CB | 2.64 | 0.42 |
| 31:YH:105:LEU:CD1 | 31:YH:105:LEU:N | 2.81 | 0.42 |
| 32:YI:87:LYS:HA | 32:YI:122:GLU:HA | 2.02 | 0.42 |
| 34:YO:20:MET:O | 34:YO:41:ALA:CB | 2.67 | 0.42 |
| 35:YP:64:LYS:HG3 | 54:Y8:25:MET:CE | 2.50 | 0.42 |
| 35:YP:83:VAL:HG11 | 35:YP:112:LEU:HD21 | 1.97 | 0.42 |
| 36:YQ:27:VAL:HG11 | 36:YQ:134:ARG:HG3 | 2.00 | 0.42 |
| 38:YS:26:LEU:HB3 | 38:YS:87:PHE:HA | 2.02 | 0.42 |
| 39:YT:24:PRO:HA | 39:YT:49:VAL:CG1 | 2.39 | 0.42 |
| 41:YV:47:VAL:HG13 | 41:YV:48:GLY:N | 2.26 | 0.42 |
| 44:YY:91:GLU:CG | 44:YY:92:ASN:N | 2.83 | 0.42 |
| 44:YY:95:LYS:HA | 44:YY:101:LYS:N | 2.33 | 0.42 |
| 45:YZ:68:PRO:HG2 | 45:YZ:68:PRO:O | 2.20 | 0.42 |
| 47:Y1:56:GLN:HB2 | 47:Y1:57:GLU:H | 1.48 | 0.42 |
| 49:Y3:7:LYS:O | 49:Y3:7:LYS:HG2 | 2.19 | 0.42 |
| 51:Y5:40:LYS:HE2 | 51:Y5:47:PRO:HG2 | 2.02 | 0.42 |
| 52:Y6:50:ARG:HH11 | 52:Y6:50:ARG:HG2 | 1.85 | 0.42 |
| 53:Y7:9:ARG:NH1 | 53:Y7:47:ARG:HG3 | 2.35 | 0.42 |
| 1:QA:537:G:H5'' | 12:QL:113:ARG:HH12 | 1.84 | 0.42 |
| 1:QA:685:G:H5'' | 1:QA:686:U:OP2 | 2.19 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 1:QA:838:G:C5 | 1:QA:842:C:H1' | 2.55 | 0.42 |
| 1:QA:887:G:H21 | 1:QA:1489:G:H4' | 1.85 | 0.42 |
| 1:QA:1179:A:H5'' | 9:QI:102:LEU:O | 2.20 | 0.42 |
| 1:QA:1424:C:H2' | 1:QA:1425:U:O4' | 2.20 | 0.42 |
| 2:QB:155:LEU:C | 2:QB:157:ARG:H | 2.22 | 0.42 |
| 2:QB:162:ILE:O | 2:QB:185:ILE:CG1 | 2.67 | 0.42 |
| 4:QD:111:ALA:HB3 | 4:QD:117:ALA:HB2 | 2.02 | 0.42 |
| 4:QD:178:VAL:HG12 | 4:QD:179:GLU:N | 2.35 | 0.42 |
| 6:QF:36:ARG:CZ | 6:QF:38:GLU:HG2 | 2.49 | 0.42 |
| 7:QG:80:VAL:CG1 | 7:QG:81:GLY:N | 2.83 | 0.42 |
| 8:QH:53:VAL:HG12 | 8:QH:54:ASP:OD2 | 2.20 | 0.42 |
| 8:QH:74:PRO:O | 8:QH:75:ARG:C | 2.58 | 0.42 |
| 9:QI:6:GLY:HA3 | 9:QI:84:ALA:HB2 | 2.01 | 0.42 |
| 9:QI:22:GLY:O | 9:QI:23:ASN:C | 2.57 | 0.42 |
| 9:QI:35:GLU:HG2 | 9:QI:35:GLU:O | 2.19 | 0.42 |
| 11:QK:72:ALA:HB1 | 11:QK:77:MET:HG2 | 2.02 | 0.42 |
| 13:QM:119:GLY:O | 13:QM:120:LYS:O | 2.38 | 0.42 |
| 17:QQ:77:VAL:O | 17:QQ:77:VAL:HG12 | 2.20 | 0.42 |
| 17:QQ:82:MET:C | 17:QQ:84:LEU:N | 2.72 | 0.42 |
| 19:QS:15:LEU:N | 19:QS:15:LEU:CD2 | 2.79 | 0.42 |
| 20:QT:10:LEU:O | 20:QT:12:ALA:N | 2.53 | 0.42 |
| 20:QT:50:GLU:HA | 20:QT:100:ILE:HG22 | 2.02 | 0.42 |
| 25:RA:106:C:H2' | 25:RA:107:C:H6 | 1.85 | 0.42 |
| 25:RA:232:G:H8 | 25:RA:232:G:OP2 | 2.03 | 0.42 |
| 25:RA:429:A:C5 | 25:RA:430:G:C6 | 3.07 | 0.42 |
| 25:RA:432:A:H2' | 25:RA:433:C:H6 | 1.85 | 0.42 |
| 25:RA:631:A:H5' | 35:RP:65:ARG:HG3 | 2.02 | 0.42 |
| 25:RA:904:C:H5' | 25:RA:905:U:OP2 | 2.20 | 0.42 |
| 25:RA:1142(A):A:O2' | 25:RA:1143:A:O5' | 2.33 | 0.42 |
| 25:RA:1359:A:N6 | 25:RA:1372:U:N3 | 2.66 | 0.42 |
| 25:RA:1538:G:H2' | 25:RA:1539:G:H8 | 1.85 | 0.42 |
| 25:RA:1998:G:H4' | 25:RA:2724:C:O2' | 2.20 | 0.42 |
| 25:RA:2521:C:H42 | 25:RA:2544:G:H1 | 1.67 | 0.42 |
| 25:RA:2542:A:H5' | 25:RA:2543:G:OP1 | 2.19 | 0.42 |
| 25:RA:2776:A:H4' | 25:RA:2777:G:O5' | 2.19 | 0.42 |
| 26:RB:15:A:H1' | 26:RB:109:G:N9 | 2.34 | 0.42 |
| 27:RD:110:GLY:O | 27:RD:111:LEU:C | 2.59 | 0.42 |
| 27:RD:158:ALA:HB3 | 27:RD:161:THR:CG2 | 2.49 | 0.42 |
| 27:RD:165:ILE:O | 27:RD:166:GLN:NE2 | 2.53 | 0.42 |
| 29:RF:61:GLY:O | 29:RF:62:ARG:C | 2.58 | 0.42 |
| 29:RF:198:ALA:HA | 29:RF:201:VAL:CG1 | 2.41 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 30:RG:22:ARG:HH22 | 30:RG:175:LEU:HD21 | 1.85 | 0.42 |
| 31:RH:66:GLY:O | 31:RH:67:LEU:C | 2.58 | 0.42 |
| 31:RH:86:GLU:H | 31:RH:86:GLU:CD | 2.16 | 0.42 |
| 35:RP:107:LYS:O | 35:RP:108:LYS:C | 2.58 | 0.42 |
| 39:RT:89:VAL:O | 39:RT:90:GLN:CB | 2.67 | 0.42 |
| 40:RU:99:ALA:HA | 40:RU:106:PHE:HB2 | 2.01 | 0.42 |
| 43:RX:60:ARG:HA | 43:RX:75:ASP:OD2 | 2.20 | 0.42 |
| 44:RY:91:GLU:CG | 44:RY:92:ASN:N | 2.83 | 0.42 |
| 45:RZ:48:PHE:CE2 | 45:RZ:52:SER:HA | 2.55 | 0.42 |
| 45:RZ:48:PHE:CE2 | 45:RZ:71:VAL:HG11 | 2.55 | 0.42 |
| 45:RZ:134:PRO:C | 45:RZ:136:PHE:H | 2.22 | 0.42 |
| 47:R1:81:LYS:N | 47:R1:81:LYS:CD | 2.83 | 0.42 |
| 49:R3:37:LEU:N | 49:R3:37:LEU:HD23 | 2.35 | 0.42 |
| 50:R4:26:SER:C | 50:R4:27:THR:O | 2.58 | 0.42 |
| 50:R4:61:ARG:C | 50:R4:63:TYR:N | 2.73 | 0.42 |
| 50:R4:68:ARG:HB2 | 50:R4:69:LYS:H | 1.35 | 0.42 |
| 53:R7:9:ARG:NH1 | 53:R7:47:ARG:HG3 | 2.35 | 0.42 |
| 54:R8:56:GLU:C | 54:R8:58:ILE:N | 2.73 | 0.42 |
| 1:XA:735:C:H2' | 1:XA:736:C:C6 | 2.52 | 0.42 |
| 1:XA:828:A:H4' | 1:XA:828:A:OP1 | 2.20 | 0.42 |
| 1:XA:1222:G:OP1 | 19:XS:77:THR:HG21 | 2.20 | 0.42 |
| 1:XA:1347:G:O2' | 1:XA:1348:U:P | 2.78 | 0.42 |
| 2:XB:99:GLY:O | 2:XB:108:ILE:HD11 | 2.19 | 0.42 |
| 4:XD:52:SER:O | 4:XD:55:ALA:N | 2.52 | 0.42 |
| 4:XD:150:GLU:O | 4:XD:152:SER:N | 2.53 | 0.42 |
| 7:XG:18:TYR:CD2 | 7:XG:59:LEU:HD13 | 2.55 | 0.42 |
| 12:XL:109:GLY:HA3 | 12:XL:121:GLY:O | 2.19 | 0.42 |
| 15:XO:50:HIS:O | 15:XO:53:HIS:HB3 | 2.20 | 0.42 |
| 18:XR:74:ARG:NH2 | 18:XR:81:PHE:HA | 2.35 | 0.42 |
| 25:YA:227:A:O2' | 25:YA:228:A:P | 2.77 | 0.42 |
| 25:YA:270:A:H1' | 25:YA:370:G:C2 | 2.55 | 0.42 |
| 25:YA:310:A:H5' | 44:YY:21:LYS:NZ | 2.35 | 0.42 |
| 25:YA:700:G:H2' | 25:YA:701:G:O4' | 2.20 | 0.42 |
| 25:YA:782:A:H5' | 25:YA:783:A:C2 | 2.54 | 0.42 |
| 25:YA:1045:A:O2' | 25:YA:1046:A:OP2 | 2.30 | 0.42 |
| 25:YA:1318:C:C3' | 25:YA:1319:G:H5'' | 2.50 | 0.42 |
| 25:YA:1896:G:H2' | 25:YA:1897:G:C8 | 2.55 | 0.42 |
| 25:YA:2315:G:H2' | 25:YA:2316:C:C6 | 2.54 | 0.42 |
| 25:YA:2508:G:H2' | 25:YA:2509:G:O4' | 2.19 | 0.42 |
| 26:YB:70:C:H42 | 26:YB:106:G:H1 | 1.68 | 0.42 |
| 27:YD:14:ARG:CG | 27:YD:15:PHE:N | 2.83 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 28:YE:9:VAL:HB | 28:YE:10:GLY:H | 1.70 | 0.42 |
| 28:YE:25:VAL:CG1 | 39:YT:11:GLU:HG2 | 2.50 | 0.42 |
| 30:YG:55:LYS:O | 30:YG:59:GLU:HB2 | 2.19 | 0.42 |
| 31:YH:89:ILE:CD1 | 31:YH:89:ILE:H | 2.32 | 0.42 |
| 32:YI:74:ASN:CG | 32:YI:75:LEU:N | 2.68 | 0.42 |
| 33:YN:58:ASP:HB3 | 33:YN:95:PRO:HB3 | 2.02 | 0.42 |
| 33:YN:96:GLU:O | 33:YN:97:ARG:C | 2.57 | 0.42 |
| 35:YP:81:GLN:HE21 | 35:YP:81:GLN:HB2 | 1.59 | 0.42 |
| 35:YP:114:ILE:CD1 | 35:YP:130:PHE:CE1 | 2.98 | 0.42 |
| 35:YP:115:LEU:HB3 | 35:YP:131:SER:HB2 | 2.02 | 0.42 |
| 36:YQ:20:ALA:HB2 | 36:YQ:99:PRO:HD2 | 1.99 | 0.42 |
| 37:YR:28:LEU:HD13 | 37:YR:28:LEU:C | 2.40 | 0.42 |
| 37:YR:28:LEU:HD12 | 37:YR:29:LEU:HD12 | 2.02 | 0.42 |
| 37:YR:34:ILE:HG22 | 37:YR:35:THR:N | 2.35 | 0.42 |
| 39:YT:50:ILE:HD11 | 39:YT:102:ILE:HG12 | 2.01 | 0.42 |
| 40:YU:6:THR:HG21 | 40:YU:10:ARG:CZ | 2.50 | 0.42 |
| 40:YU:27:LEU:C | 40:YU:29:SER:N | 2.74 | 0.42 |
| 41:YV:15:GLU:O | 41:YV:96:ILE:HB | 2.19 | 0.42 |
| 42:YW:96:ILE:O | 42:YW:96:ILE:CG2 | 2.68 | 0.42 |
| 43:YX:14:SER:O | 43:YX:15:GLU:C | 2.57 | 0.42 |
| 46:Y0:36:ILE:HD13 | 46:Y0:36:ILE:H | 1.85 | 0.42 |
| 50:Y4:12:ALA:HB1 | 50:Y4:30:GLU:N | 2.35 | 0.42 |
| 52:Y6:24:GLU:HB3 | 52:Y6:25:LYS:H | 1.56 | 0.42 |
| 53:Y7:25:PRO:HA | 53:Y7:28:ARG:NH2 | 2.35 | 0.42 |
| 1:QA:9:G:H2' | 1:QA:10:A:H8 | 1.84 | 0.42 |
| 1:QA:153:C:H2' | 1:QA:154:C:C6 | 2.55 | 0.42 |
| 1:QA:190:G:O6 | 1:QA:264:U:H5'' | 2.20 | 0.42 |
| 1:QA:376:G:O2' | 1:QA:377:G:H5' | 2.20 | 0.42 |
| 2:QB:67:THR:C | 2:QB:68:ILE:HD12 | 2.40 | 0.42 |
| 2:QB:109:SER:C | 2:QB:111:ARG:N | 2.73 | 0.42 |
| 2:QB:142:LEU:O | 2:QB:145:LEU:HB2 | 2.19 | 0.42 |
| 3:QC:120:VAL:O | 3:QC:123:GLN:HB2 | 2.20 | 0.42 |
| 5:QE:78:HIS:CD2 | 8:QH:104:ARG:NE | 2.88 | 0.42 |
| 7:QG:18:TYR:CD2 | 7:QG:59:LEU:HD13 | 2.55 | 0.42 |
| 7:QG:95:ARG:O | 7:QG:96:GLN:C | 2.58 | 0.42 |
| 7:QG:140:ASP:O | 7:QG:142:GLU:N | 2.52 | 0.42 |
| 8:QH:86:ILE:CB | 8:QH:133:LEU:HD22 | 2.49 | 0.42 |
| 9:QI:43:ALA:C | 9:QI:45:ALA:N | 2.72 | 0.42 |
| 10:QJ:29:ARG:O | 10:QJ:30:SER:HB3 | 2.20 | 0.42 |
| 11:QK:21:ILE:HD13 | 11:QK:84:VAL:HG12 | 2.02 | 0.42 |
| 12:QL:89:ARG:HB3 | 12:QL:97:ARG:HA | 2.01 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:QM:88:ARG:HD2 | 13:QM:88:ARG:O | 2.19 | 0.42 |
| 14:QN:48:ALA:HA | 14:QN:53:LEU:HD12 | 2.01 | 0.42 |
| 16:QP:8:ARG:HG2 | 16:QP:8:ARG:NH1 | 2.31 | 0.42 |
| 16:QP:45:THR:CG2 | 16:QP:46:PRO:HD2 | 2.47 | 0.42 |
| 17:QQ:11:VAL:HG23 | 17:QQ:12:SER:N | 2.35 | 0.42 |
| 19:QS:7:LYS:CG | 19:QS:8:GLY:N | 2.83 | 0.42 |
| 20:QT:13:LEU:CD1 | 20:QT:17:ARG:NH1 | 2.82 | 0.42 |
| 20:QT:101:GLY:C | 20:QT:103:GLY:N | 2.73 | 0.42 |
| 21:QU:5:ASP:O | 21:QU:11:GLY:HA3 | 2.20 | 0.42 |
| 25:RA:180:G:H5' | 25:RA:181:A:OP1 | 2.20 | 0.42 |
| 25:RA:263:C:H2' | 25:RA:264:C:O4' | 2.20 | 0.42 |
| 25:RA:829:A:N6 | 25:RA:2247:A:O2' | 2.48 | 0.42 |
| 25:RA:1311:G:O6 | 53:R7:9:ARG:NH2 | 2.53 | 0.42 |
| 25:RA:1764:G:C6 | 25:RA:1989:G:C2 | 3.08 | 0.42 |
| 25:RA:2059:A:N6 | 25:RA:2503:A:H2' | 2.35 | 0.42 |
| 25:RA:2238:G:H2' | 25:RA:2238:G:N3 | 2.34 | 0.42 |
| 26:RB:28:C:H2' | 26:RB:29:A:O4' | 2.20 | 0.42 |
| 28:RE:7:VAL:CG2 | 28:RE:8:LYS:H | 2.11 | 0.42 |
| 28:RE:13:ARG:HH11 | 28:RE:13:ARG:HB2 | 1.81 | 0.42 |
| 28:RE:94:GLU:C | 28:RE:96:PHE:N | 2.72 | 0.42 |
| 28:RE:128:SER:O | 28:RE:129:HIS:HB2 | 2.20 | 0.42 |
| 28:RE:152:LYS:HG2 | 33:RN:78:TYR:CD1 | 2.55 | 0.42 |
| 29:RF:42:ALA:O | 29:RF:45:ARG:HB2 | 2.18 | 0.42 |
| 34:RO:1:MET:HG2 | 34:RO:67:LYS:HG2 | 2.02 | 0.42 |
| 34:RO:16:ALA:HA | 34:RO:46:ALA:CB | 2.50 | 0.42 |
| 34:RO:71:ARG:HH11 | 39:RT:74:ARG:HH21 | 1.65 | 0.42 |
| 34:RO:97:ARG:CA | 34:RO:117:LEU:HD22 | 2.50 | 0.42 |
| 35:RP:144:GLU:HA | 35:RP:145:PRO:HD3 | 1.76 | 0.42 |
| 37:RR:55:ALA:HA | 37:RR:80:PHE:CE2 | 2.55 | 0.42 |
| 38:RS:51:ALA:HB3 | 38:RS:73:LEU:HD23 | 2.01 | 0.42 |
| 38:RS:83:LYS:HE3 | 38:RS:84:GLN:CG | 2.50 | 0.42 |
| 38:RS:99:LYS:C | 38:RS:101:LEU:N | 2.73 | 0.42 |
| 39:RT:134:GLU:OE1 | 39:RT:135:ALA:N | 2.53 | 0.42 |
| 47:R1:29:GLY:O | 47:R1:31:GLY:N | 2.49 | 0.42 |
| 48:R2:41:ILE:C | 48:R2:41:ILE:CD1 | 2.81 | 0.42 |
| 51:R5:56:LYS:O | 51:R5:57:VAL:C | 2.57 | 0.42 |
| 1:XA:57:G:H1 | 1:XA:355:C:H42 | 1.66 | 0.42 |
| 1:XA:430:A:OP1 | 4:XD:9:CYS:N | 2.44 | 0.42 |
| 1:XA:818:G:H3' | 1:XA:819:A:H5'' | 2.01 | 0.42 |
| 1:XA:1058:G:C5 | 1:XA:1059:C:C4 | 3.08 | 0.42 |
| 1:XA:1191:A:H2' | 1:XA:1192:C:C6 | 2.55 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:XA:1302:U:O2 | 1:XA:1302:U:H2' | 2.19 | 0.42 |
| 1:XA:1339:A:H2' | 1:XA:1340:A:O4' | 2.19 | 0.42 |
| 2:XB:162:ILE:O | 2:XB:185:ILE:CG1 | 2.67 | 0.42 |
| 3:XC:76:VAL:CG2 | 3:XC:103:VAL:HG11 | 2.49 | 0.42 |
| 3:XC:142:MET:HG2 | 3:XC:149:ALA:HB2 | 2.01 | 0.42 |
| 4:XD:150:GLU:C | 4:XD:152:SER:N | 2.73 | 0.42 |
| 4:XD:198:VAL:CG1 | 4:XD:199:ASN:H | 2.32 | 0.42 |
| 6:XF:45:LEU:O | 6:XF:46:ARG:HB2 | 2.19 | 0.42 |
| 8:XH:11:THR:HA | 8:XH:14:ARG:NH1 | 2.35 | 0.42 |
| 9:XI:6:GLY:HA3 | 9:XI:84:ALA:HB2 | 2.02 | 0.42 |
| 12:XL:89:ARG:HB3 | 12:XL:97:ARG:HA | 2.02 | 0.42 |
| 14:XN:39:LEU:HB3 | 14:XN:43:CYS:CB | 2.42 | 0.42 |
| 16:XP:45:THR:CG2 | 16:XP:46:PRO:HD2 | 2.47 | 0.42 |
| 17:XQ:74:LEU:HD13 | 17:XQ:74:LEU:O | 2.20 | 0.42 |
| 18:XR:53:ARG:C | 18:XR:55:ARG:H | 2.22 | 0.42 |
| 19:XS:29:ARG:HD3 | 19:XS:30:LEU:H | 1.84 | 0.42 |
| 19:XS:41:VAL:HG11 | 19:XS:45:VAL:HG13 | 2.02 | 0.42 |
| 25:YA:188:G:H1 | 25:YA:208:C:H42 | 1.68 | 0.42 |
| 25:YA:529:A:H8 | 25:YA:530:G:C6 | 2.37 | 0.42 |
| 25:YA:1284:A:H2' | 25:YA:1285:G:O4' | 2.20 | 0.42 |
| 25:YA:1312:U:C2 | 25:YA:1603:A:C2 | 3.07 | 0.42 |
| 25:YA:1356:G:C6 | 25:YA:1357:U:C4 | 3.08 | 0.42 |
| 25:YA:1627:G:C2 | 25:YA:1628:G:C8 | 3.08 | 0.42 |
| 25:YA:1971:A:C5 | 27:YD:241:PRO:HD3 | 2.55 | 0.42 |
| 27:YD:165:ILE:O | 27:YD:166:GLN:NE2 | 2.53 | 0.42 |
| 28:YE:128:SER:O | 28:YE:129:HIS:HB2 | 2.20 | 0.42 |
| 28:YE:143:ASN:HB2 | 28:YE:147:PRO:HD2 | 2.01 | 0.42 |
| 30:YG:27:ASN:HB3 | 30:YG:30:GLU:OE2 | 2.19 | 0.42 |
| 31:YH:84:SER:OG | 31:YH:85:LYS:N | 2.51 | 0.42 |
| 32:YI:123:LEU:HA | 32:YI:142:VAL:HG21 | 2.02 | 0.42 |
| 33:YN:52:VAL:CG1 | 33:YN:53:VAL:N | 2.82 | 0.42 |
| 34:YO:31:LYS:O | 34:YO:32:TYR:HD2 | 2.02 | 0.42 |
| 34:YO:97:ARG:CA | 34:YO:117:LEU:HD22 | 2.50 | 0.42 |
| 35:YP:65:ARG:HH21 | 54:Y8:15:LYS:HB3 | 1.85 | 0.42 |
| 36:YQ:34:LEU:HD23 | 36:YQ:104:PHE:CD1 | 2.55 | 0.42 |
| 39:YT:105:LEU:O | 39:YT:105:LEU:HG | 2.19 | 0.42 |
| 40:YU:35:ALA:O | 40:YU:39:LEU:HG | 2.19 | 0.42 |
| 40:YU:57:PHE:C | 40:YU:59:ARG:N | 2.74 | 0.42 |
| 41:YV:16:PRO:HB3 | 41:YV:97:LYS:O | 2.20 | 0.42 |
| 43:YX:60:ARG:HH22 | 53:Y7:47:ARG:HH12 | 1.68 | 0.42 |
| 44:YY:20:TYR:CE1 | 44:YY:42:VAL:HA | 2.55 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 44:YY:90:LEU:HB2 | 44:YY:91:GLU:H | 1.53 | 0.42 |
| 45:YZ:153:SER:O | 45:YZ:154:ASP:HB3 | 2.20 | 0.42 |
| 52:Y6:36:LEU:HD13 | 52:Y6:50:ARG:HH12 | 1.81 | 0.42 |
| 1:QA:386:C:C2' | 1:QA:387:U:H5' | 2.50 | 0.41 |
| 1:QA:386:C:H2' | 1:QA:387:U:H5' | 2.01 | 0.41 |
| 1:QA:417:C:H42 | 1:QA:426:G:H1 | 1.68 | 0.41 |
| 1:QA:528:C:H41 | 12:QL:49:ASN:CG | 2.23 | 0.41 |
| 1:QA:684:A:O2' | 11:QK:39:PRO:O | 2.30 | 0.41 |
| 1:QA:977:A:C8 | 1:QA:1223:C:C2 | 3.08 | 0.41 |
| 1:QA:1453:G:H8 | 20:QT:39:LYS:HE2 | 1.85 | 0.41 |
| 2:QB:97:TRP:HZ3 | 2:QB:172:ILE:HG22 | 1.85 | 0.41 |
| 2:QB:125:PRO:O | 2:QB:126:GLU:HB2 | 2.20 | 0.41 |
| 2:QB:159:PRO:HB2 | 2:QB:160:ASP:H | 1.74 | 0.41 |
| 4:QD:95:GLY:O | 4:QD:99:SER:N | 2.51 | 0.41 |
| 5:QE:31:LEU:HD23 | 5:QE:45:PHE:HD1 | 1.85 | 0.41 |
| 7:QG:17:VAL:HG12 | 7:QG:18:TYR:CD1 | 2.55 | 0.41 |
| 7:QG:141:VAL:O | 7:QG:141:VAL:CG1 | 2.64 | 0.41 |
| 13:QM:16:ASP:HB3 | 13:QM:34:LEU:CD1 | 2.50 | 0.41 |
| 17:QQ:74:LEU:HD13 | 17:QQ:74:LEU:O | 2.20 | 0.41 |
| 25:RA:13:A:C2 | 25:RA:525:U:C2 | 3.08 | 0.41 |
| 25:RA:64:A:H2' | 25:RA:65:C:O4' | 2.19 | 0.41 |
| 25:RA:299:A:H5' | 44:RY:84:ARG:NH2 | 2.33 | 0.41 |
| 25:RA:918:A:N3 | 26:RB:80:U:O2' | 2.46 | 0.41 |
| 25:RA:962:G:HO2' | 25:RA:2496:C:HO2' | 1.66 | 0.41 |
| 25:RA:1765:C:H2' | 25:RA:1766:U:O4' | 2.19 | 0.41 |
| 25:RA:1805:U:H5'' | 27:RD:250:TRP:CD2 | 2.54 | 0.41 |
| 25:RA:1826:G:H4' | 27:RD:242:ARG:NH2 | 2.27 | 0.41 |
| 25:RA:1935:G:H1' | 25:RA:1964:G:N2 | 2.35 | 0.41 |
| 25:RA:2766:G:N3 | 25:RA:2766:G:H2' | 2.34 | 0.41 |
| 28:RE:11:MET:HE3 | 28:RE:186:GLY:HA2 | 2.01 | 0.41 |
| 29:RF:34:TRP:CA | 35:RP:6:LEU:HD12 | 2.46 | 0.41 |
| 30:RG:73:ALA:O | 30:RG:84:LYS:O | 2.38 | 0.41 |
| 31:RH:128:PRO:CG | 31:RH:129:THR:H | 2.33 | 0.41 |
| 43:RX:60:ARG:HH12 | 53:R7:47:ARG:HH22 | 1.67 | 0.41 |
| 43:RX:87:GLN:C | 43:RX:88:LYS:HG3 | 2.40 | 0.41 |
| 50:R4:38:LYS:HG3 | 50:R4:44:THR:OG1 | 2.20 | 0.41 |
| 52:R6:19:ARG:HA | 52:R6:19:ARG:HD2 | 1.77 | 0.41 |
| 1:XA:474:G:H5' | 16:XP:81:ARG:HG3 | 2.00 | 0.41 |
| 1:XA:854:G:H3' | 1:XA:871:U:O4 | 2.19 | 0.41 |
| 1:XA:1346:A:H5' | 9:XI:120:ARG:HH12 | 1.85 | 0.41 |
| 4:XD:94:LEU:HA | 4:XD:97:LEU:HD12 | 2.01 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:XE:26:PHE:CD1 | 5:XE:26:PHE:N | 2.87 | 0.41 |
| 6:XF:67:MET:HB2 | 6:XF:68:PRO:CD | 2.47 | 0.41 |
| 7:XG:17:VAL:HG12 | 7:XG:18:TYR:CD1 | 2.55 | 0.41 |
| 7:XG:79:ARG:CZ | 7:XG:82:GLY:HA2 | 2.50 | 0.41 |
| 7:XG:95:ARG:O | 7:XG:96:GLN:C | 2.58 | 0.41 |
| 8:XH:28:ALA:CB | 8:XH:57:PRO:HB2 | 2.45 | 0.41 |
| 8:XH:122:ARG:HH11 | 8:XH:122:ARG:HG3 | 1.85 | 0.41 |
| 10:XJ:45:ARG:HG3 | 10:XJ:45:ARG:HH11 | 1.85 | 0.41 |
| 11:XK:72:ALA:HB1 | 11:XK:77:MET:HG2 | 2.02 | 0.41 |
| 14:YN:9:LYS:HB3 | 14:YN:9:LYS:HE2 | 1.85 | 0.41 |
| 18:XR:64:ARG:O | 18:XR:65:ILE:C | 2.58 | 0.41 |
| 25:YA:204:A:OP1 | 25:YA:204:A:H8 | 2.02 | 0.41 |
| 25:YA:1301:A:O2' | 25:YA:1302:A:H3' | 2.19 | 0.41 |
| 25:YA:1328:G:H8 | 25:YA:1328:G:O5' | 2.02 | 0.41 |
| 25:YA:1971:A:OP2 | 27:YD:242:ARG:NH2 | 2.44 | 0.41 |
| 25:YA:2364:C:H2' | 25:YA:2365:G:O4' | 2.20 | 0.41 |
| 25:YA:2441:C:H2' | 25:YA:2442:C:C6 | 2.55 | 0.41 |
| 25:YA:2591:C:OP2 | 27:YD:238:GLY:HA3 | 2.20 | 0.41 |
| 25:YA:2599:G:OP2 | 27:YD:236:GLY:HA2 | 2.20 | 0.41 |
| 25:YA:2681:C:O2' | 25:YA:2682:U:OP2 | 2.29 | 0.41 |
| 25:YA:2749:A:H3' | 25:YA:2750:A:H2' | 2.02 | 0.41 |
| 26:YB:44:G:H1' | 26:YB:47:C:H42 | 1.85 | 0.41 |
| 27:YD:110:GLY:O | 27:YD:111:LEU:C | 2.58 | 0.41 |
| 27:YD:239:ARG:O | 27:YD:240:ALA:CB | 2.62 | 0.41 |
| 29:YF:80:ALA:O | 29:YF:83:PHE:HB2 | 2.20 | 0.41 |
| 30:YG:78:SER:O | 30:YG:80:PHE:N | 2.53 | 0.41 |
| 32:YI:117:GLU:O | 32:YI:118:LYS:CB | 2.67 | 0.41 |
| 33:YN:10:GLU:OE2 | 33:YN:11:PRO:CD | 2.68 | 0.41 |
| 33:YN:30:ILE:HG22 | 33:YN:34:LEU:HD21 | 2.01 | 0.41 |
| 34:YO:2:ILE:N | 34:YO:2:ILE:CD1 | 2.82 | 0.41 |
| 39:YT:6:LEU:HD12 | 39:YT:9:LEU:HD12 | 2.01 | 0.41 |
| 43:YX:57:LEU:HD12 | 43:YX:57:LEU:H | 1.85 | 0.41 |
| 44:YY:51:VAL:CG1 | 44:YY:52:SER:N | 2.74 | 0.41 |
| 51:Y5:39:MET:C | 51:Y5:40:LYS:HG3 | 2.39 | 0.41 |
| 54:Y8:40:GLU:O | 54:Y8:41:ILE:C | 2.56 | 0.41 |
| 1:QA:14:U:O2 | 1:QA:17:U:H5 | 2.03 | 0.41 |
| 1:QA:259:G:H2' | 1:QA:260:G:H8 | 1.85 | 0.41 |
| 1:QA:340:U:H2' | 1:QA:341:C:C6 | 2.56 | 0.41 |
| 1:QA:686:U:O4 | 1:QA:703:G:H2' | 2.19 | 0.41 |
| 1:QA:1095:U:H2' | 1:QA:1096:C:O4' | 2.19 | 0.41 |
| 1:QA:1290:G:C4 | 1:QA:1291:G:C8 | 3.07 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:QB:163:PHE:CD2 | 2:QB:185:ILE:HD12 | 2.54 | 0.41 |
| 4:QD:93:PHE:CE1 | 4:QD:97:LEU:HD11 | 2.55 | 0.41 |
| 4:QD:94:LEU:HA | 4:QD:97:LEU:HD12 | 2.01 | 0.41 |
| 4:QD:101:LEU:CD2 | 4:QD:121:VAL:HG11 | 2.50 | 0.41 |
| 7:QG:24:THR:HA | 7:QG:27:ILE:HD13 | 2.01 | 0.41 |
| 7:QG:44:TYR:O | 7:QG:47:CYS:N | 2.53 | 0.41 |
| 8:QH:85:ARG:HA | 8:QH:135:CYS:HB3 | 2.02 | 0.41 |
| 9:QI:8:GLY:CA | 9:QI:79:LEU:HD12 | 2.49 | 0.41 |
| 10:QJ:71:LEU:HD12 | 10:QJ:72:VAL:H | 1.85 | 0.41 |
| 14:QN:9:LYS:O | 14:QN:9:LYS:HG2 | 2.19 | 0.41 |
| 15:QO:3:ILE:HD13 | 15:QO:3:ILE:N | 2.22 | 0.41 |
| 15:QO:71:GLN:HB2 | 15:QO:78:TYR:CE1 | 2.54 | 0.41 |
| 17:QQ:11:VAL:CG2 | 17:QQ:20:THR:HB | 2.50 | 0.41 |
| 18:QR:20:ALA:C | 18:QR:21:LYS:HG3 | 2.41 | 0.41 |
| 22:QV:23:C:H2' | 22:QV:24:U:C6 | 2.55 | 0.41 |
| 25:RA:140:A:H8 | 25:RA:1408:C:HO2' | 1.58 | 0.41 |
| 25:RA:255:A:O2' | 25:RA:384:U:OP1 | 2.37 | 0.41 |
| 25:RA:265:A:H2' | 25:RA:266:G:O4' | 2.20 | 0.41 |
| 25:RA:348:G:H2' | 25:RA:349:G:H8 | 1.85 | 0.41 |
| 25:RA:738:G:C6 | 25:RA:739:G:C2 | 3.09 | 0.41 |
| 25:RA:947:G:H2' | 25:RA:948:G:H8 | 1.86 | 0.41 |
| 25:RA:2467:C:C2' | 25:RA:2468:G:H5' | 2.50 | 0.41 |
| 25:RA:2469:A:H4' | 25:RA:2469:A:OP1 | 2.20 | 0.41 |
| 25:RA:2563:U:N3 | 25:RA:2566:A:OP2 | 2.25 | 0.41 |
| 25:RA:2692:C:O2 | 25:RA:2847:U:O2' | 2.38 | 0.41 |
| 25:RA:2779:U:H6 | 25:RA:2779:U:H2' | 1.58 | 0.41 |
| 27:RD:196:VAL:O | 27:RD:196:VAL:CG1 | 2.68 | 0.41 |
| 28:RE:35:GLN:HG3 | 28:RE:37:ARG:NH2 | 2.35 | 0.41 |
| 29:RF:53:THR:O | 29:RF:55:GLY:N | 2.53 | 0.41 |
| 31:RH:105:LEU:CD1 | 31:RH:105:LEU:N | 2.81 | 0.41 |
| 31:RH:146:ALA:HA | 31:RH:164:TYR:OH | 2.21 | 0.41 |
| 32:RI:72:LEU:C | 32:RI:74:ASN:H | 2.24 | 0.41 |
| 32:RI:87:LYS:HA | 32:RI:122:GLU:HA | 2.02 | 0.41 |
| 32:RI:93:THR:O | 32:RI:97:ILE:HG12 | 2.20 | 0.41 |
| 32:RI:132:PRO:O | 32:RI:133:HIS:C | 2.59 | 0.41 |
| 33:RN:27:ALA:O | 33:RN:28:THR:C | 2.58 | 0.41 |
| 33:RN:62:VAL:CG1 | 33:RN:66:LYS:HB2 | 2.50 | 0.41 |
| 33:RN:114:ARG:C | 33:RN:116:LEU:N | 2.74 | 0.41 |
| 35:RP:18:ARG:HD2 | 35:RP:27:HIS:CD2 | 2.55 | 0.41 |
| 36:RQ:20:ALA:CB | 45:RZ:79:ARG:NH1 | 2.80 | 0.41 |
| 39:RT:39:ARG:CG | 39:RT:40:THR:H | 2.22 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 39:RT:96:ARG:HB2 | 39:RT:96:ARG:CZ | 2.49 | 0.41 |
| 41:RV:38:LEU:CD2 | 41:RV:39:LEU:N | 2.81 | 0.41 |
| 42:RW:19:LEU:HA | 42:RW:19:LEU:HD12 | 1.79 | 0.41 |
| 45:RZ:157:LEU:O | 45:RZ:158:PRO:O | 2.37 | 0.41 |
| 48:R2:50:ILE:H | 48:R2:50:ILE:HG13 | 1.64 | 0.41 |
| 50:R4:64:GLY:C | 50:R4:66:SER:N | 2.73 | 0.41 |
| 51:R5:40:LYS:HE2 | 51:R5:47:PRO:CG | 2.49 | 0.41 |
| 52:R6:41:PRO:HG3 | 52:R6:44:ARG:HB2 | 2.01 | 0.41 |
| 53:R7:25:PRO:HA | 53:R7:28:ARG:NH2 | 2.35 | 0.41 |
| 1:XA:883:C:C2' | 1:XA:884:U:H5' | 2.50 | 0.41 |
| 1:XA:889:A:N1 | 1:XA:907:A:H5'' | 2.35 | 0.41 |
| 1:XA:892:A:C6 | 1:XA:893:C:C4 | 3.08 | 0.41 |
| 1:XA:1073:U:OP2 | 5:XE:57:LYS:NZ | 2.40 | 0.41 |
| 1:XA:1128:C:N3 | 1:XA:1144:G:N2 | 2.67 | 0.41 |
| 2:XB:130:ARG:HH22 | 2:XB:138:LEU:HD21 | 1.85 | 0.41 |
| 2:XB:178:ARG:CD | 8:XH:71:GLY:O | 2.68 | 0.41 |
| 3:XC:58:GLU:HB2 | 3:XC:65:ALA:HB3 | 2.01 | 0.41 |
| 3:XC:59:ARG:NH1 | 3:XC:97:LYS:HE3 | 2.34 | 0.41 |
| 4:XD:120:LEU:HD23 | 4:XD:120:LEU:HA | 1.84 | 0.41 |
| 6:XF:36:ARG:NH2 | 6:XF:38:GLU:HG2 | 2.35 | 0.41 |
| 6:XF:88:VAL:HG12 | 6:XF:89:MET:N | 2.34 | 0.41 |
| 8:XH:38:ILE:CD1 | 8:XH:118:VAL:HG12 | 2.49 | 0.41 |
| 9:XI:118:LYS:HZ2 | 9:XI:118:LYS:HB2 | 1.84 | 0.41 |
| 12:XL:8:ASN:O | 12:XL:11:VAL:HG23 | 2.20 | 0.41 |
| 14:XN:18:VAL:CG2 | 14:XN:19:ARG:N | 2.82 | 0.41 |
| 16:XP:21:VAL:HG21 | 16:XP:59:TRP:NE1 | 2.35 | 0.41 |
| 18:XR:74:ARG:NE | 18:XR:80:PRO:O | 2.48 | 0.41 |
| 19:XS:30:LEU:O | 19:XS:31:ILE:HB | 2.20 | 0.41 |
| 19:XS:66:MET:HG3 | 19:XS:66:MET:O | 2.20 | 0.41 |
| 25:YA:65:C:P | 43:YX:71:GLY:HA3 | 2.60 | 0.41 |
| 25:YA:303:U:H2' | 25:YA:304:G:H8 | 1.85 | 0.41 |
| 25:YA:376:C:H2' | 25:YA:377:C:O4' | 2.20 | 0.41 |
| 25:YA:456:C:C5 | 43:YX:69:TYR:CZ | 3.09 | 0.41 |
| 25:YA:950:G:H2' | 25:YA:951:C:C6 | 2.55 | 0.41 |
| 25:YA:1899:G:O2' | 25:YA:1900:A:H5'' | 2.20 | 0.41 |
| 25:YA:2469:A:H5' | 25:YA:2470:G:OP2 | 2.19 | 0.41 |
| 25:YA:2639:A:H1' | 25:YA:2778:A:C2 | 2.56 | 0.41 |
| 26:YB:66:A:HO2' | 26:YB:67:G:P | 2.43 | 0.41 |
| 26:YB:71:C:H2' | 26:YB:72:G:C8 | 2.55 | 0.41 |
| 28:YE:10:GLY:HA3 | 39:YT:8:LYS:HD3 | 2.02 | 0.41 |
| 29:YF:183:VAL:O | 29:YF:184:TYR:C | 2.57 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 30:YG:41:GLN:NE2 | 30:YG:154:GLY:O | 2.52 | 0.41 |
| 33:YN:1:MET:O | 33:YN:1:MET:HG3 | 2.19 | 0.41 |
| 34:YO:92:GLU:O | 34:YO:93:PRO:C | 2.58 | 0.41 |
| 35:YP:39:LYS:HA | 35:YP:45:LEU:HD11 | 1.83 | 0.41 |
| 38:YS:49:VAL:HG21 | 38:YS:77:ALA:HA | 2.02 | 0.41 |
| 40:YU:97:ASP:HA | 40:YU:100:VAL:HG23 | 2.01 | 0.41 |
| 41:YV:35:LEU:HB2 | 41:YV:37:VAL:CG2 | 2.49 | 0.41 |
| 45:YZ:24:LEU:CD1 | 45:YZ:86:VAL:HG23 | 2.38 | 0.41 |
| 46:Y0:36:ILE:HA | 46:Y0:60:PHE:CB | 2.51 | 0.41 |
| 47:Y1:80:LEU:O | 47:Y1:81:LYS:CD | 2.65 | 0.41 |
| 50:Y4:38:LYS:HG3 | 50:Y4:44:THR:OG1 | 2.20 | 0.41 |
| 1:QA:160:A:H1' | 1:QA:344:A:N7 | 2.36 | 0.41 |
| 1:QA:468:A:C8 | 1:QA:474:G:C8 | 3.07 | 0.41 |
| 1:QA:498:A:H1' | 1:QA:500:G:O5' | 2.20 | 0.41 |
| 1:QA:502:G:OP1 | 12:QL:118:SER:N | 2.47 | 0.41 |
| 1:QA:752:G:HO2' | 1:QA:753:A:P | 2.43 | 0.41 |
| 1:QA:939:G:H5'' | 7:QG:102:ARG:CZ | 2.50 | 0.41 |
| 1:QA:972:C:O3' | 10:QJ:57:LYS:HG2 | 2.20 | 0.41 |
| 1:QA:976:G:N2 | 1:QA:1362(A):C:OP2 | 2.35 | 0.41 |
| 1:QA:1277:C:O2' | 1:QA:1279:A:H8 | 2.03 | 0.41 |
| 3:QC:78:GLY:HA3 | 3:QC:83:ARG:HB2 | 2.03 | 0.41 |
| 4:QD:198:VAL:CG1 | 4:QD:199:ASN:H | 2.32 | 0.41 |
| 5:QE:31:LEU:HD22 | 5:QE:31:LEU:HA | 1.86 | 0.41 |
| 7:QG:78:ARG:NH1 | 7:QG:78:ARG:CG | 2.84 | 0.41 |
| 8:QH:122:ARG:HG3 | 8:QH:122:ARG:HH11 | 1.85 | 0.41 |
| 9:QI:118:LYS:NZ | 9:QI:118:LYS:HB3 | 2.34 | 0.41 |
| 10:QJ:45:ARG:HB2 | 10:QJ:65:LEU:HB3 | 2.02 | 0.41 |
| 11:QK:33:THR:HB | 11:QK:37:GLY:C | 2.40 | 0.41 |
| 13:QM:77:ASN:OD1 | 50:R4:71:ARG:NH1 | 2.53 | 0.41 |
| 14:QN:3:ARG:CG | 14:QN:4:LYS:N | 2.83 | 0.41 |
| 14:QN:22:THR:HB | 14:QN:33:VAL:CG1 | 2.50 | 0.41 |
| 15:QO:54:ARG:NH1 | 15:QO:58:MET:SD | 2.93 | 0.41 |
| 25:RA:146:G:H2' | 25:RA:147:U:O4' | 2.19 | 0.41 |
| 25:RA:222:A:H1' | 25:RA:223:A:OP1 | 2.20 | 0.41 |
| 25:RA:337:C:H2' | 25:RA:338:G:O4' | 2.21 | 0.41 |
| 25:RA:389:G:H22 | 35:RP:72:PRO:CG | 2.33 | 0.41 |
| 25:RA:527:C:C4 | 25:RA:2779:U:H5'' | 2.55 | 0.41 |
| 25:RA:585:G:H8 | 25:RA:585:G:O5' | 2.02 | 0.41 |
| 25:RA:1327:C:N4 | 25:RA:1328:G:C6 | 2.88 | 0.41 |
| 25:RA:1491:G:C6 | 25:RA:1500:G:C2 | 3.08 | 0.41 |
| 25:RA:1543:A:O2' | 25:RA:1544:C:O5' | 2.34 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:2081:C:H2' | 25:RA:2082:A:H8 | 1.85 | 0.41 |
| 25:RA:2273:A:H2' | 25:RA:2274:A:H8 | 1.82 | 0.41 |
| 25:RA:2642:G:H5'' | 33:RN:78:TYR:CG | 2.56 | 0.41 |
| 26:RB:16:G:H2' | 26:RB:17:C:C6 | 2.55 | 0.41 |
| 27:RD:35:LYS:HB3 | 27:RD:36:PRO:HA | 2.00 | 0.41 |
| 27:RD:75:ILE:HG21 | 27:RD:99:ASP:HB2 | 2.01 | 0.41 |
| 28:RE:25:VAL:CG1 | 39:RT:11:GLU:HG2 | 2.50 | 0.41 |
| 28:RE:179:GLU:CB | 28:RE:181:LEU:HD23 | 2.23 | 0.41 |
| 30:RG:60:LEU:HD23 | 30:RG:60:LEU:C | 2.41 | 0.41 |
| 30:RG:117:PHE:CE1 | 30:RG:119:GLY:CA | 3.03 | 0.41 |
| 33:RN:21:LYS:O | 33:RN:22:THR:O | 2.39 | 0.41 |
| 33:RN:131:GLN:HE21 | 33:RN:131:GLN:HB3 | 1.57 | 0.41 |
| 36:RQ:20:ALA:HA | 36:RQ:98:LYS:HB3 | 2.02 | 0.41 |
| 38:RS:15:ARG:O | 38:RS:19:LYS:HD3 | 2.19 | 0.41 |
| 38:RS:30:ARG:NH2 | 38:RS:92:TYR:HD1 | 2.17 | 0.41 |
| 39:RT:134:GLU:O | 39:RT:135:ALA:CB | 2.69 | 0.41 |
| 40:RU:83:LEU:HG | 40:RU:88:ILE:HG13 | 2.02 | 0.41 |
| 41:RV:16:PRO:HB3 | 41:RV:97:LYS:O | 2.20 | 0.41 |
| 41:RV:81:TYR:C | 41:RV:82:ARG:CG | 2.89 | 0.41 |
| 42:RW:1:MET:HG3 | 42:RW:2:GLU:N | 2.35 | 0.41 |
| 44:RY:2:ARG:O | 44:RY:3:VAL:O | 2.38 | 0.41 |
| 44:RY:13:VAL:O | 44:RY:24:VAL:HA | 2.20 | 0.41 |
| 45:RZ:31:ARG:HE | 45:RZ:31:ARG:HB2 | 1.61 | 0.41 |
| 45:RZ:91:LEU:N | 45:RZ:91:LEU:HD22 | 2.35 | 0.41 |
| 48:R2:61:LEU:HD23 | 48:R2:64:LEU:HD12 | 2.03 | 0.41 |
| 52:R6:25:LYS:HE2 | 52:R6:27:LYS:CD | 2.49 | 0.41 |
| 1:XA:376:G:H2' | 1:XA:377:G:C8 | 2.53 | 0.41 |
| 1:XA:427:U:O2' | 1:XA:541:G:OP1 | 2.33 | 0.41 |
| 1:XA:597:G:H1' | 1:XA:644:G:N2 | 2.35 | 0.41 |
| 1:XA:692:U:H1' | 1:XA:695:A:N7 | 2.35 | 0.41 |
| 1:XA:1106:G:H2' | 1:XA:1107:C:C6 | 2.55 | 0.41 |
| 1:XA:1151:A:H2' | 1:XA:1152:A:C8 | 2.55 | 0.41 |
| 2:XB:155:LEU:C | 2:XB:157:ARG:H | 2.23 | 0.41 |
| 2:XB:166:ASP:O | 2:XB:170:GLU:OE1 | 2.39 | 0.41 |
| 3:XC:128:PHE:O | 3:XC:130:VAL:N | 2.54 | 0.41 |
| 4:XD:25:ARG:C | 4:XD:27:TYR:H | 2.24 | 0.41 |
| 5:XE:68:GLU:O | 5:XE:68:GLU:CG | 2.68 | 0.41 |
| 7:XG:24:THR:HA | 7:XG:27:ILE:HD13 | 2.02 | 0.41 |
| 7:XG:44:TYR:O | 7:XG:47:CYS:N | 2.53 | 0.41 |
| 7:XG:111:ARG:HH11 | 7:XG:111:ARG:CB | 2.23 | 0.41 |
| 7:XG:126:ASP:N | 7:XG:126:ASP:OD2 | 2.53 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 9:XI:118:LYS:NZ | 9:XI:118:LYS:HB3 | 2.34 | 0.41 |
| 14:YN:3:ARG:CG | 14:YN:4:LYS:N | 2.84 | 0.41 |
| 17:XQ:22:LEU:HD13 | 17:XQ:41:LYS:HG2 | 2.01 | 0.41 |
| 17:XQ:76:LEU:HD21 | 17:XQ:79:SER:HB2 | 2.02 | 0.41 |
| 17:XQ:82:MET:C | 17:XQ:84:LEU:N | 2.72 | 0.41 |
| 19:XS:41:VAL:HG13 | 19:XS:44:MET:CB | 2.38 | 0.41 |
| 22:XV:17:C:O2 | 22:XV:17:C:H2' | 2.20 | 0.41 |
| 25:YA:71:A:OP1 | 25:YA:72:U:H2' | 2.19 | 0.41 |
| 25:YA:532:A:H2' | 40:YU:28:ARG:HE | 1.85 | 0.41 |
| 25:YA:589:C:H2' | 25:YA:590:A:C8 | 2.55 | 0.41 |
| 25:YA:738:G:C6 | 25:YA:739:G:N1 | 2.88 | 0.41 |
| 25:YA:1471:A:H3' | 25:YA:1472:A:H8 | 1.84 | 0.41 |
| 25:YA:2298:A:H62 | 25:YA:2318:G:H8 | 1.64 | 0.41 |
| 25:YA:2555:U:C4 | 25:YA:2556:C:C2 | 3.08 | 0.41 |
| 27:YD:9:TYR:CZ | 27:YD:13:ARG:HD3 | 2.54 | 0.41 |
| 28:YE:167:VAL:CG1 | 28:YE:189:PRO:HD3 | 2.50 | 0.41 |
| 29:YF:20:LEU:HD12 | 29:YF:21:ALA:N | 2.26 | 0.41 |
| 29:YF:53:THR:O | 29:YF:55:GLY:N | 2.53 | 0.41 |
| 29:YF:129:PHE:O | 29:YF:142:TRP:HD1 | 2.03 | 0.41 |
| 31:YH:169:VAL:HG22 | 31:YH:170:ARG:N | 2.25 | 0.41 |
| 32:YI:54:GLN:O | 32:YI:57:ARG:HG3 | 2.21 | 0.41 |
| 33:YN:28:THR:O | 33:YN:29:LYS:C | 2.59 | 0.41 |
| 33:YN:42:TRP:HA | 33:YN:48:MET:HE3 | 2.03 | 0.41 |
| 33:YN:109:LYS:N | 33:YN:109:LYS:CD | 2.83 | 0.41 |
| 34:YO:17:ARG:HG2 | 34:YO:17:ARG:HH11 | 1.84 | 0.41 |
| 35:YP:49:ARG:HG2 | 35:YP:49:ARG:HH11 | 1.84 | 0.41 |
| 38:YS:51:ALA:HB3 | 38:YS:73:LEU:HD23 | 2.01 | 0.41 |
| 40:YU:83:LEU:HG | 40:YU:88:ILE:HG13 | 2.02 | 0.41 |
| 40:YU:92:ARG:NH2 | 41:YV:11:GLN:O | 2.53 | 0.41 |
| 41:YV:21:ARG:HD2 | 41:YV:91:TYR:CE2 | 2.55 | 0.41 |
| 41:YV:72:VAL:HG13 | 41:YV:72:VAL:O | 2.19 | 0.41 |
| 42:YW:8:ARG:HG3 | 42:YW:8:ARG:NH1 | 2.34 | 0.41 |
| 42:YW:25:ARG:NH1 | 42:YW:25:ARG:CB | 2.79 | 0.41 |
| 45:YZ:48:PHE:CE2 | 45:YZ:52:SER:HA | 2.55 | 0.41 |
| 45:YZ:70:LEU:HB2 | 45:YZ:91:LEU:HD21 | 2.01 | 0.41 |
| 45:YZ:91:LEU:HD22 | 45:YZ:91:LEU:N | 2.35 | 0.41 |
| 45:YZ:157:LEU:O | 45:YZ:158:PRO:O | 2.37 | 0.41 |
| 51:Y5:41:PRO:HA | 51:Y5:42:PRO:HD3 | 1.81 | 0.41 |
| 54:Y8:26:LYS:HD3 | 54:Y8:26:LYS:HA | 1.86 | 0.41 |
| 1:QA:32:A:C2 | 1:QA:33:A:C4 | 3.08 | 0.41 |
| 1:QA:973:G:C1' | 10:QJ:55:LYS:HG2 | 2.50 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:QA:1052:U:H5' | 1:QA:1053:G:OP2 | 2.20 | 0.41 |
| 1:QA:1055:A:N7 | 1:QA:1200:C:N4 | 2.69 | 0.41 |
| 2:QB:32:ILE:HD13 | 2:QB:190:THR:HG21 | 2.03 | 0.41 |
| 2:QB:231:GLU:HG3 | 2:QB:233:SER:H | 1.86 | 0.41 |
| 3:QC:92:ALA:HB2 | 3:QC:99:VAL:HG13 | 2.03 | 0.41 |
| 6:QF:92:LYS:NZ | 6:QF:92:LYS:CB | 2.83 | 0.41 |
| 7:QG:79:ARG:CZ | 7:QG:82:GLY:HA2 | 2.51 | 0.41 |
| 7:QG:118:VAL:HG23 | 7:QG:119:ARG:N | 2.35 | 0.41 |
| 12:QL:53:ARG:HH12 | 12:QL:92:ASP:CB | 2.33 | 0.41 |
| 19:QS:4:SER:O | 19:QS:5:LEU:HD13 | 2.20 | 0.41 |
| 19:QS:58:VAL:O | 19:QS:58:VAL:HG23 | 2.20 | 0.41 |
| 25:RA:234:C:H2' | 25:RA:235:U:O4' | 2.19 | 0.41 |
| 25:RA:715:G:C6 | 25:RA:716:A:C6 | 3.08 | 0.41 |
| 25:RA:1320:C:H4' | 25:RA:1321:A:OP1 | 2.21 | 0.41 |
| 25:RA:1387:C:C2 | 25:RA:1388:G:C8 | 3.08 | 0.41 |
| 25:RA:1929:G:H4' | 25:RA:1930:G:OP1 | 2.20 | 0.41 |
| 25:RA:2235:G:H2' | 25:RA:2236:C:C6 | 2.55 | 0.41 |
| 25:RA:2419:U:OP1 | 52:R6:23:THR:HG21 | 2.19 | 0.41 |
| 25:RA:2448:A:OP1 | 25:RA:2499:C:OP1 | 2.38 | 0.41 |
| 25:RA:2869:G:H2' | 25:RA:2870:C:O4' | 2.20 | 0.41 |
| 26:RB:4:C:C2 | 26:RB:117:G:N2 | 2.88 | 0.41 |
| 27:RD:2:ALA:O | 27:RD:3:VAL:CB | 2.68 | 0.41 |
| 27:RD:13:ARG:HG2 | 27:RD:13:ARG:O | 2.20 | 0.41 |
| 28:RE:93:VAL:HG21 | 28:RE:180:ASN:HA | 2.03 | 0.41 |
| 28:RE:111:ARG:NE | 28:RE:160:TYR:CE1 | 2.76 | 0.41 |
| 34:RO:86:ILE:N | 34:RO:86:ILE:CD1 | 2.83 | 0.41 |
| 35:RP:64:LYS:HG3 | 54:R8:25:MET:CE | 2.50 | 0.41 |
| 35:RP:125:VAL:C | 35:RP:145:PRO:HD2 | 2.39 | 0.41 |
| 1:XA:110:C:H2' | 1:XA:111:G:O4' | 2.19 | 0.41 |
| 1:XA:451:A:H4' | 1:XA:452:A:O4' | 2.21 | 0.41 |
| 1:XA:507:C:OP2 | 1:XA:508:C:O2' | 2.30 | 0.41 |
| 1:XA:769:G:H4' | 1:XA:1513:A:H4' | 2.02 | 0.41 |
| 1:XA:1057:G:C6 | 1:XA:1058:G:C4 | 3.08 | 0.41 |
| 1:XA:1237:C:H4' | 1:XA:1303:C:O2 | 2.20 | 0.41 |
| 1:XA:1298:C:O2' | 1:XA:1299:A:OP2 | 2.31 | 0.41 |
| 2:XB:23:ARG:H | 2:XB:23:ARG:CD | 2.30 | 0.41 |
| 2:XB:62:ALA:O | 2:XB:65:GLY:N | 2.53 | 0.41 |
| 3:XC:88:ARG:NH2 | 3:XC:101:LEU:O | 2.53 | 0.41 |
| 4:XD:111:ALA:HB3 | 4:XD:117:ALA:HB2 | 2.02 | 0.41 |
| 7:XG:101:LEU:O | 7:XG:104:LEU:HB2 | 2.21 | 0.41 |
| 8:XH:105:ARG:O | 8:XH:107:LEU:N | 2.47 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 9:XI:49:PRO:O | 9:XI:85:LEU:HD21 | 2.20 | 0.41 |
| 10:XJ:40:LEU:HB3 | 10:XJ:41:PRO:HD2 | 2.02 | 0.41 |
| 12:XL:53:ARG:HH12 | 12:XL:92:ASP:HB3 | 1.85 | 0.41 |
| 13:XM:13:LYS:HA | 13:XM:44:ARG:CD | 2.48 | 0.41 |
| 14:YN:22:THR:HB | 14:YN:33:VAL:CG1 | 2.50 | 0.41 |
| 17:XQ:11:VAL:HG23 | 17:XQ:12:SER:N | 2.35 | 0.41 |
| 18:XR:20:ALA:C | 18:XR:21:LYS:HG3 | 2.41 | 0.41 |
| 18:XR:76:LEU:N | 18:XR:76:LEU:HD22 | 2.35 | 0.41 |
| 25:YA:265:A:O2' | 25:YA:266:G:H4' | 2.19 | 0.41 |
| 25:YA:530:G:C4 | 25:YA:2022:U:H5'' | 2.56 | 0.41 |
| 25:YA:588:U:C2 | 29:YF:90:PHE:CE1 | 3.08 | 0.41 |
| 25:YA:704:G:O2' | 25:YA:705:A:P | 2.79 | 0.41 |
| 25:YA:1142(A):A:H4' | 25:YA:1143:A:OP1 | 2.21 | 0.41 |
| 25:YA:1356:G:C2 | 25:YA:1357:U:C2 | 3.08 | 0.41 |
| 25:YA:1519:G:H2' | 25:YA:1520:U:O4' | 2.20 | 0.41 |
| 25:YA:1980:G:O2' | 25:YA:1982:C:OP2 | 2.39 | 0.41 |
| 25:YA:2002:G:H2' | 25:YA:2003:G:H8 | 1.85 | 0.41 |
| 25:YA:2169:A:N6 | 25:YA:2170:A:N1 | 2.67 | 0.41 |
| 25:YA:2698:U:H2' | 25:YA:2699:C:H6 | 1.84 | 0.41 |
| 27:YD:182:LEU:N | 27:YD:272:ALA:HB3 | 2.32 | 0.41 |
| 27:YD:269:PHE:CD2 | 27:YD:269:PHE:N | 2.88 | 0.41 |
| 28:YE:4:ILE:HG22 | 28:YE:198:VAL:HB | 2.03 | 0.41 |
| 29:YF:34:TRP:CA | 35:YP:6:LEU:HD12 | 2.46 | 0.41 |
| 29:YF:64:ILE:HG23 | 29:YF:65:TRP:CD1 | 2.54 | 0.41 |
| 30:YG:51:ARG:NH1 | 30:YG:51:ARG:CB | 2.83 | 0.41 |
| 33:YN:21:LYS:O | 33:YN:22:THR:O | 2.39 | 0.41 |
| 33:YN:114:ARG:C | 33:YN:116:LEU:N | 2.74 | 0.41 |
| 36:YQ:27:VAL:HG22 | 36:YQ:105:GLU:CD | 2.41 | 0.41 |
| 36:YQ:118:LEU:HD13 | 36:YQ:131:ILE:HG23 | 2.02 | 0.41 |
| 37:YR:55:ALA:HA | 37:YR:80:PHE:CE2 | 2.55 | 0.41 |
| 37:YR:85:PRO:C | 37:YR:87:TYR:N | 2.73 | 0.41 |
| 38:YS:92:TYR:HB2 | 38:YS:98:VAL:HG11 | 2.03 | 0.41 |
| 41:YV:81:TYR:C | 41:YV:82:ARG:CG | 2.89 | 0.41 |
| 42:YW:17:VAL:O | 42:YW:18:ARG:C | 2.57 | 0.41 |
| 42:YW:73:ALA:HB3 | 42:YW:106:ILE:CG1 | 2.46 | 0.41 |
| 45:YZ:20:ARG:O | 45:YZ:20:ARG:CD | 2.68 | 0.41 |
| 45:YZ:29:TYR:O | 45:YZ:30:ASN:HB3 | 2.21 | 0.41 |
| 45:YZ:48:PHE:CE2 | 45:YZ:71:VAL:HG11 | 2.55 | 0.41 |
| 49:Y3:37:LEU:HD23 | 49:Y3:37:LEU:N | 2.35 | 0.41 |
| 1:QA:544:G:H2' | 1:QA:545:C:C6 | 2.56 | 0.41 |
| 1:QA:578:C:H2' | 1:QA:579:G:O4' | 2.21 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:QA:823:G:H2' | 1:QA:824:C:C6 | 2.56 | 0.41 |
| 1:QA:985:C:H2' | 1:QA:986:A:H8 | 1.85 | 0.41 |
| 2:QB:5:ILE:HB | 2:QB:221:LEU:HD23 | 2.01 | 0.41 |
| 4:QD:52:SER:HB3 | 4:QD:55:ALA:HB3 | 2.00 | 0.41 |
| 5:QE:153:LYS:HD3 | 5:QE:153:LYS:C | 2.40 | 0.41 |
| 7:QG:121:ALA:O | 7:QG:125:MET:HG3 | 2.21 | 0.41 |
| 8:QH:6:ILE:HB | 8:QH:85:ARG:HH11 | 1.74 | 0.41 |
| 8:QH:11:THR:HA | 8:QH:14:ARG:NH1 | 2.35 | 0.41 |
| 9:QI:127:LYS:CE | 22:QV:34:C:OP2 | 2.69 | 0.41 |
| 10:QJ:40:LEU:HB3 | 10:QJ:41:PRO:HD2 | 2.02 | 0.41 |
| 11:QK:20:TYR:N | 11:QK:31:THR:O | 2.54 | 0.41 |
| 11:QK:56:GLY:O | 11:QK:89:ALA:HB3 | 2.21 | 0.41 |
| 12:QL:53:ARG:HH12 | 12:QL:92:ASP:HB3 | 1.85 | 0.41 |
| 14:QN:18:VAL:CG2 | 14:QN:19:ARG:H | 2.32 | 0.41 |
| 16:QP:12:LYS:HB3 | 16:QP:12:LYS:HE2 | 1.74 | 0.41 |
| 16:QP:22:THR:HB | 16:QP:32:TYR:HB3 | 2.03 | 0.41 |
| 18:QR:53:ARG:O | 18:QR:55:ARG:N | 2.53 | 0.41 |
| 25:RA:36:G:N3 | 25:RA:450:G:O2' | 2.52 | 0.41 |
| 25:RA:83:G:O2' | 25:RA:84:A:C8 | 2.73 | 0.41 |
| 25:RA:184:C:H2' | 25:RA:185:U:H6 | 1.84 | 0.41 |
| 25:RA:702:G:H5' | 25:RA:703:U:OP2 | 2.21 | 0.41 |
| 25:RA:857:C:N4 | 25:RA:858:U:O4 | 2.53 | 0.41 |
| 25:RA:870:A:OP1 | 36:RQ:6:ARG:NE | 2.53 | 0.41 |
| 25:RA:1429:G:H2' | 25:RA:1430:C:C6 | 2.55 | 0.41 |
| 25:RA:1820:U:O2' | 27:RD:158:ALA:HB1 | 2.19 | 0.41 |
| 25:RA:2123:G:H2' | 25:RA:2124:G:H8 | 1.85 | 0.41 |
| 25:RA:2512:C:H5'' | 25:RA:2513:G:OP2 | 2.21 | 0.41 |
| 25:RA:2697:G:H2' | 25:RA:2698:U:O4' | 2.20 | 0.41 |
| 25:RA:2774:C:H2' | 25:RA:2775:A:O4' | 2.20 | 0.41 |
| 25:RA:2882:A:OP1 | 37:RR:96:ARG:NH1 | 2.46 | 0.41 |
| 26:RB:117:G:OP1 | 38:RS:57:LYS:NZ | 2.53 | 0.41 |
| 27:RD:158:ALA:O | 27:RD:196:VAL:HG11 | 2.21 | 0.41 |
| 27:RD:269:PHE:CD2 | 27:RD:269:PHE:N | 2.88 | 0.41 |
| 29:RF:46:ARG:CG | 29:RF:46:ARG:NH1 | 2.72 | 0.41 |
| 29:RF:111:ALA:O | 29:RF:112:MET:C | 2.59 | 0.41 |
| 30:RG:135:LEU:N | 30:RG:135:LEU:CD1 | 2.84 | 0.41 |
| 37:RR:28:LEU:HD13 | 37:RR:28:LEU:C | 2.40 | 0.41 |
| 37:RR:28:LEU:HD12 | 37:RR:29:LEU:HD12 | 2.01 | 0.41 |
| 38:RS:99:LYS:HE2 | 38:RS:103:GLU:OE2 | 2.21 | 0.41 |
| 42:RW:55:ALA:O | 42:RW:58:ALA:HB3 | 2.21 | 0.41 |
| 50:R4:14:ILE:HA | 50:R4:31:ILE:O | 2.21 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 52:R6:6:ARG:HA | 52:R6:6:ARG:NE | 2.35 | 0.41 |
| 1:XA:595:G:N1 | 1:XA:641:U:O2' | 2.44 | 0.41 |
| 1:XA:1079:G:H2' | 1:XA:1080:A:C8 | 2.55 | 0.41 |
| 1:XA:1226:C:C4 | 13:XM:104:ARG:HB2 | 2.56 | 0.41 |
| 1:XA:1268:A:O3' | 21:XU:19:GLY:HA2 | 2.21 | 0.41 |
| 2:XB:231:GLU:HG3 | 2:XB:233:SER:H | 1.86 | 0.41 |
| 3:XC:46:GLU:C | 3:XC:48:TYR:H | 2.23 | 0.41 |
| 4:XD:101:LEU:CD2 | 4:XD:121:VAL:HG11 | 2.50 | 0.41 |
| 5:XE:68:GLU:HG3 | 5:XE:70:PRO:HD3 | 2.03 | 0.41 |
| 7:XG:80:VAL:CG1 | 7:XG:81:GLY:N | 2.83 | 0.41 |
| 7:XG:87:VAL:HG11 | 7:XG:155:ARG:HA | 2.03 | 0.41 |
| 7:XG:141:VAL:O | 7:XG:141:VAL:CG1 | 2.65 | 0.41 |
| 10:XJ:29:ARG:O | 10:XJ:30:SER:HB3 | 2.20 | 0.41 |
| 11:XK:20:TYR:N | 11:XK:31:THR:O | 2.54 | 0.41 |
| 13:XM:65:LYS:HZ1 | 50:Y4:52:THR:HG21 | 1.84 | 0.41 |
| 14:YN:15:LYS:HD3 | 14:YN:15:LYS:HA | 1.86 | 0.41 |
| 14:YN:34:TYR:N | 14:YN:34:TYR:CD1 | 2.89 | 0.41 |
| 20:XT:48:LYS:O | 20:XT:49:ALA:C | 2.59 | 0.41 |
| 21:XU:2:GLY:C | 21:XU:4:GLY:H | 2.24 | 0.41 |
| 25:YA:242:G:H5'' | 54:Y8:3:LYS:CE | 2.46 | 0.41 |
| 25:YA:571:A:C5' | 25:YA:2030:A:H62 | 2.33 | 0.41 |
| 25:YA:602:G:H3' | 25:YA:654(V):A:H61 | 1.85 | 0.41 |
| 25:YA:753:C:O5' | 25:YA:753:C:H6 | 2.02 | 0.41 |
| 25:YA:821:A:H5'' | 25:YA:822:U:H6 | 1.86 | 0.41 |
| 25:YA:1513:C:H2' | 25:YA:1514:U:O4' | 2.21 | 0.41 |
| 25:YA:1601:G:C5 | 25:YA:1602:U:C4 | 3.08 | 0.41 |
| 25:YA:1607:C:H4' | 25:YA:1608:A:O5' | 2.20 | 0.41 |
| 25:YA:2011:U:H2' | 25:YA:2012:G:O4' | 2.20 | 0.41 |
| 25:YA:2068:U:N3 | 25:YA:2430:A:H2 | 2.11 | 0.41 |
| 25:YA:2291:U:H2' | 25:YA:2292:C:C6 | 2.56 | 0.41 |
| 25:YA:2633:G:H5' | 25:YA:2811:G:O2' | 2.20 | 0.41 |
| 26:YB:51:G:N7 | 38:YS:62:LYS:NZ | 2.52 | 0.41 |
| 27:YD:145:VAL:CG1 | 27:YD:146:GLU:N | 2.84 | 0.41 |
| 28:YE:24:THR:HB | 28:YE:184:VAL:HG23 | 2.02 | 0.41 |
| 28:YE:35:GLN:HG3 | 28:YE:37:ARG:NH2 | 2.35 | 0.41 |
| 28:YE:54:GLN:N | 28:YE:54:GLN:CD | 2.73 | 0.41 |
| 29:YF:176:LEU:HD11 | 29:YF:180:GLY:O | 2.19 | 0.41 |
| 30:YG:60:LEU:HD23 | 30:YG:60:LEU:C | 2.41 | 0.41 |
| 31:YH:146:ALA:HB2 | 31:YH:164:TYR:OH | 2.21 | 0.41 |
| 33:YN:27:ALA:O | 33:YN:28:THR:C | 2.57 | 0.41 |
| 34:YO:71:ARG:HH11 | 39:YT:74:ARG:HH21 | 1.65 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 38:YS:83:LYS:HE3 | 38:YS:84:GLN:CG | 2.50 | 0.41 |
| 39:YT:134:GLU:OE1 | 39:YT:135:ALA:N | 2.53 | 0.41 |
| 42:YW:1:MET:HG3 | 42:YW:2:GLU:N | 2.36 | 0.41 |
| 42:YW:29:LEU:HD23 | 42:YW:29:LEU:C | 2.41 | 0.41 |
| 43:YX:60:ARG:HA | 43:YX:75:ASP:OD2 | 2.20 | 0.41 |
| 49:Y3:39:ASP:O | 49:Y3:40:THR:C | 2.59 | 0.41 |
| 1:QA:193:C:OP1 | 20:QT:57:ARG:HD2 | 2.20 | 0.41 |
| 1:QA:359:U:H2' | 1:QA:360:A:C8 | 2.56 | 0.41 |
| 1:QA:500:G:C6 | 1:QA:546:G:C2 | 3.09 | 0.41 |
| 1:QA:1003:G:H2' | 1:QA:1004:A:H5' | 2.02 | 0.41 |
| 1:QA:1173:G:H2' | 1:QA:1174:G:O4' | 2.20 | 0.41 |
| 1:QA:1347:G:O2' | 1:QA:1348:U:P | 2.78 | 0.41 |
| 2:QB:166:ASP:O | 2:QB:170:GLU:OE1 | 2.38 | 0.41 |
| 4:QD:36:ARG:HA | 4:QD:37:PRO:HD2 | 1.82 | 0.41 |
| 7:QG:103:TRP:O | 7:QG:104:LEU:C | 2.58 | 0.41 |
| 9:QI:71:SER:O | 9:QI:72:GLY:C | 2.58 | 0.41 |
| 10:QJ:45:ARG:HG3 | 10:QJ:45:ARG:HH11 | 1.86 | 0.41 |
| 12:QL:21:LYS:N | 12:QL:21:LYS:CD | 2.83 | 0.41 |
| 13:QM:47:ASP:O | 13:QM:48:LEU:HB3 | 2.20 | 0.41 |
| 13:QM:82:MET:HG2 | 13:QM:93:ARG:HG3 | 2.03 | 0.41 |
| 13:QM:110:ARG:HG3 | 13:QM:110:ARG:O | 2.20 | 0.41 |
| 15:QO:74:ASP:C | 15:QO:76:GLU:H | 2.24 | 0.41 |
| 16:QP:6:LEU:N | 16:QP:6:LEU:CD1 | 2.84 | 0.41 |
| 20:QT:95:ALA:O | 20:QT:97:ALA:N | 2.54 | 0.41 |
| 22:QV:21:A:N6 | 22:QV:46:G:H2' | 2.36 | 0.41 |
| 25:RA:398:G:H2' | 25:RA:399:G:O4' | 2.20 | 0.41 |
| 25:RA:1021:A:C2 | 25:RA:1023:U:C2 | 3.09 | 0.41 |
| 25:RA:1372:U:H2' | 25:RA:1372:U:O2 | 2.20 | 0.41 |
| 25:RA:1541:U:H2' | 25:RA:1542:G:O4' | 2.21 | 0.41 |
| 25:RA:2675:A:H8 | 25:RA:2675:A:OP2 | 2.03 | 0.41 |
| 25:RA:2712:U:O2' | 25:RA:2712(A):A:P | 2.77 | 0.41 |
| 25:RA:2822:G:H8 | 25:RA:2822:G:O5' | 2.04 | 0.41 |
| 26:RB:24:G:O6 | 26:RB:56:G:O2' | 2.39 | 0.41 |
| 28:RE:167:VAL:CG1 | 28:RE:189:PRO:HD3 | 2.50 | 0.41 |
| 30:RG:53:LEU:CD1 | 30:RG:87:PRO:HB2 | 2.51 | 0.41 |
| 30:RG:77:ILE:H | 30:RG:82:LEU:HB2 | 1.84 | 0.41 |
| 31:RH:86:GLU:HG3 | 31:RH:165:ALA:CA | 2.49 | 0.41 |
| 33:RN:52:VAL:CG1 | 33:RN:53:VAL:N | 2.82 | 0.41 |
| 33:RN:133:GLN:C | 33:RN:134:ARG:HG2 | 2.41 | 0.41 |
| 35:RP:9:ASN:HB2 | 35:RP:10:PRO:HD2 | 2.02 | 0.41 |
| 37:RR:47:PHE:O | 37:RR:51:LEU:HD23 | 2.21 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:RS:42:ASP:C | 38:RS:44:LYS:N | 2.72 | 0.41 |
| 38:RS:64:GLU:O | 38:RS:68:GLN:HG3 | 2.19 | 0.41 |
| 40:RU:91:ASP:OD2 | 40:RU:96:ALA:CA | 2.69 | 0.41 |
| 41:RV:22:VAL:CG1 | 41:RV:23:GLU:H | 2.32 | 0.41 |
| 41:RV:38:LEU:CD1 | 41:RV:55:ALA:HB1 | 2.50 | 0.41 |
| 41:RV:61:VAL:CG2 | 41:RV:61:VAL:O | 2.68 | 0.41 |
| 41:RV:67:GLY:O | 41:RV:68:LYS:C | 2.59 | 0.41 |
| 42:RW:17:VAL:O | 42:RW:18:ARG:C | 2.57 | 0.41 |
| 44:RY:97:ARG:HH21 | 44:RY:98:VAL:CG2 | 2.32 | 0.41 |
| 45:RZ:68:PRO:O | 45:RZ:68:PRO:HG2 | 2.20 | 0.41 |
| 47:R1:94:LEU:HA | 47:R1:94:LEU:HD23 | 1.82 | 0.41 |
| 54:R8:14:VAL:CG1 | 54:R8:60:LEU:HD11 | 2.50 | 0.41 |
| 54:R8:16:ILE:HD11 | 54:R8:57:ARG:CG | 2.44 | 0.41 |
| 1:XA:22:G:H4' | 1:XA:885:G:C8 | 2.55 | 0.41 |
| 1:XA:115:G:C2 | 1:XA:289:G:C5 | 3.08 | 0.41 |
| 1:XA:439:A:OP2 | 1:XA:493:G:N2 | 2.54 | 0.41 |
| 1:XA:1101:A:H4' | 1:XA:1102:A:O5' | 2.20 | 0.41 |
| 1:XA:1367:C:OP2 | 9:XI:112:LYS:NZ | 2.53 | 0.41 |
| 2:XB:212:GLN:NE2 | 2:XB:212:GLN:O | 2.54 | 0.41 |
| 3:XC:59:ARG:HH12 | 3:XC:97:LYS:CE | 2.34 | 0.41 |
| 3:XC:70:VAL:HG12 | 3:XC:71:ALA:H | 1.84 | 0.41 |
| 4:XD:93:PHE:CE1 | 4:XD:97:LEU:HD11 | 2.55 | 0.41 |
| 9:XI:20:ARG:O | 9:XI:21:PRO:C | 2.59 | 0.41 |
| 11:XK:56:GLY:O | 11:XK:89:ALA:HB3 | 2.21 | 0.41 |
| 11:XK:124:LYS:HB3 | 11:XK:125:PHE:CD1 | 2.47 | 0.41 |
| 12:XL:62:SER:HB2 | 12:XL:64:TYR:CD1 | 2.56 | 0.41 |
| 16:XP:9:PHE:HB3 | 16:XP:10:GLY:H | 1.64 | 0.41 |
| 19:XS:5:LEU:HD22 | 50:Y4:67:TYR:OH | 2.19 | 0.41 |
| 19:XS:7:LYS:CG | 19:XS:8:GLY:N | 2.83 | 0.41 |
| 19:XS:13:ASP:O | 19:XS:14:HIS:O | 2.39 | 0.41 |
| 19:XS:39:THR:HG23 | 19:XS:68:GLY:O | 2.21 | 0.41 |
| 20:XT:10:LEU:O | 20:XT:12:ALA:N | 2.54 | 0.41 |
| 20:XT:101:GLY:C | 20:XT:103:GLY:N | 2.73 | 0.41 |
| 25:YA:271(B):G:O2' | 25:YA:271(C):U:OP2 | 2.28 | 0.41 |
| 25:YA:653:A:H4' | 25:YA:654:A:OP1 | 2.20 | 0.41 |
| 25:YA:658:C:H2' | 25:YA:659:C:H6 | 1.85 | 0.41 |
| 25:YA:707:G:H2' | 25:YA:708:C:O4' | 2.20 | 0.41 |
| 25:YA:1364:G:C8 | 47:Y1:2:SER:N | 2.89 | 0.41 |
| 25:YA:1376:C:H2' | 25:YA:1377:G:C8 | 2.56 | 0.41 |
| 25:YA:1387:C:C2 | 25:YA:1388:G:C8 | 3.09 | 0.41 |
| 25:YA:2256:G:C6 | 25:YA:2257:U:C4 | 3.09 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:YA:2404:C:O3' | 35:YP:77:ARG:NH2 | 2.54 | 0.41 |
| 25:YA:2406:U:C4 | 35:YP:72:PRO:HB2 | 2.55 | 0.41 |
| 25:YA:2468:G:H5'' | 36:YQ:120:ILE:CD1 | 2.51 | 0.41 |
| 25:YA:2723:C:H5'' | 37:YR:1:MET:CB | 2.50 | 0.41 |
| 26:YB:45:A:O4' | 30:YG:95:ARG:NH1 | 2.54 | 0.41 |
| 27:YD:117:VAL:HG22 | 27:YD:118:VAL:N | 2.35 | 0.41 |
| 27:YD:134:ARG:H | 27:YD:134:ARG:HG3 | 1.55 | 0.41 |
| 27:YD:145:VAL:O | 27:YD:154:LYS:N | 2.48 | 0.41 |
| 27:YD:154:LYS:C | 27:YD:155:LEU:HD12 | 2.41 | 0.41 |
| 27:YD:158:ALA:O | 27:YD:196:VAL:HG11 | 2.21 | 0.41 |
| 27:YD:168:ARG:O | 27:YD:169:GLU:HB2 | 2.19 | 0.41 |
| 28:YE:63:LEU:CD1 | 28:YE:64:LYS:N | 2.71 | 0.41 |
| 28:YE:161:GLY:O | 28:YE:162:ALA:HB3 | 2.20 | 0.41 |
| 30:YG:44:GLY:C | 30:YG:46:ALA:N | 2.73 | 0.41 |
| 38:YS:66:ALA:HA | 38:YS:69:VAL:CG1 | 2.51 | 0.41 |
| 40:YU:39:LEU:O | 40:YU:42:ALA:N | 2.53 | 0.41 |
| 42:YW:14:PRO:C | 42:YW:16:LYS:N | 2.73 | 0.41 |
| 42:YW:14:PRO:C | 42:YW:18:ARG:HD2 | 2.41 | 0.41 |
| 42:YW:55:ALA:O | 42:YW:58:ALA:HB3 | 2.20 | 0.41 |
| 42:YW:68:ARG:O | 42:YW:110:LYS:N | 2.46 | 0.41 |
| 44:YY:6:HIS:O | 44:YY:7:VAL:CG1 | 2.59 | 0.41 |
| 44:YY:95:LYS:H | 44:YY:95:LYS:CD | 2.33 | 0.41 |
| 45:YZ:79:ARG:C | 45:YZ:81:ARG:H | 2.24 | 0.41 |
| 48:Y2:61:LEU:HD23 | 48:Y2:61:LEU:HA | 1.85 | 0.41 |
| 49:Y3:37:LEU:HD12 | 49:Y3:43:ILE:CG2 | 2.50 | 0.41 |
| 50:Y4:61:ARG:C | 50:Y4:63:TYR:N | 2.73 | 0.41 |
| 1:QA:118:U:O4 | 1:QA:288:A:H2' | 2.21 | 0.41 |
| 1:QA:430:A:OP1 | 4:QD:9:CYS:HB2 | 2.21 | 0.41 |
| 1:QA:618:C:N3 | 1:QA:622:A:N6 | 2.68 | 0.41 |
| 1:QA:665:A:H2' | 1:QA:725:G:N2 | 2.35 | 0.41 |
| 1:QA:1137:C:O2' | 1:QA:1138:G:H5'' | 2.20 | 0.41 |
| 2:QB:223:ILE:O | 2:QB:226:ARG:HB3 | 2.21 | 0.41 |
| 5:QE:68:GLU:O | 5:QE:68:GLU:CG | 2.68 | 0.41 |
| 6:QF:36:ARG:NH2 | 6:QF:38:GLU:HG2 | 2.35 | 0.41 |
| 7:QG:22:LEU:O | 7:QG:25:ALA:HB3 | 2.21 | 0.41 |
| 7:QG:87:VAL:HG11 | 7:QG:155:ARG:HA | 2.02 | 0.41 |
| 12:QL:43:VAL:HG13 | 12:QL:55:VAL:HG21 | 2.03 | 0.41 |
| 13:QM:28:ALA:C | 13:QM:30:ALA:H | 2.24 | 0.41 |
| 13:QM:80:ARG:NH1 | 19:QS:65:ASN:O | 2.51 | 0.41 |
| 18:QR:84:LYS:H | 18:QR:84:LYS:HG2 | 1.57 | 0.41 |
| 19:QS:41:VAL:HG12 | 19:QS:45:VAL:H | 1.85 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 21:QU:2:GLY:C | 21:QU:4:GLY:H | 2.23 | 0.41 |
| 22:QV:16:C:O2' | 22:QV:17:C:OP1 | 2.39 | 0.41 |
| 25:RA:227:A:HO2' | 25:RA:228:A:P | 2.41 | 0.41 |
| 25:RA:345:A:H5'' | 25:RA:346:A:OP1 | 2.21 | 0.41 |
| 25:RA:528:A:H2 | 25:RA:2043:C:C5' | 2.34 | 0.41 |
| 25:RA:564:C:H2' | 25:RA:565:C:O4' | 2.20 | 0.41 |
| 25:RA:948:G:H2' | 25:RA:949:C:C6 | 2.56 | 0.41 |
| 25:RA:1711:C:H2' | 25:RA:1712:C:C6 | 2.55 | 0.41 |
| 25:RA:2199:A:C2 | 25:RA:2205:C:H1' | 2.55 | 0.41 |
| 25:RA:2528:U:H2' | 25:RA:2530:A:O5' | 2.20 | 0.41 |
| 25:RA:2534:A:C5 | 25:RA:2535:G:C8 | 3.08 | 0.41 |
| 25:RA:2844:G:H3' | 25:RA:2845:G:C8 | 2.55 | 0.41 |
| 26:RB:79:C:H2' | 26:RB:80:U:O4' | 2.21 | 0.41 |
| 28:RE:197:ILE:HD11 | 28:RE:199:ARG:NH1 | 2.30 | 0.41 |
| 30:RG:47:LYS:HB2 | 30:RG:47:LYS:HE3 | 1.80 | 0.41 |
| 34:RO:2:ILE:HG12 | 34:RO:8:LEU:HD11 | 2.02 | 0.41 |
| 35:RP:101:VAL:HG23 | 35:RP:106:LEU:HB3 | 2.03 | 0.41 |
| 36:RQ:20:ALA:HB1 | 36:RQ:99:PRO:CG | 2.51 | 0.41 |
| 36:RQ:34:LEU:HD23 | 36:RQ:104:PHE:CD1 | 2.55 | 0.41 |
| 36:RQ:132:VAL:HG11 | 45:RZ:81:ARG:CZ | 2.50 | 0.41 |
| 38:RS:53:SER:HA | 38:RS:56:LEU:CD2 | 2.50 | 0.41 |
| 40:RU:6:THR:HG21 | 40:RU:10:ARG:CZ | 2.50 | 0.41 |
| 41:RV:38:LEU:CD1 | 41:RV:55:ALA:CB | 2.99 | 0.41 |
| 42:RW:29:LEU:HD23 | 42:RW:29:LEU:C | 2.41 | 0.41 |
| 42:RW:96:ILE:O | 42:RW:96:ILE:CG2 | 2.68 | 0.41 |
| 43:RX:83:VAL:CG1 | 43:RX:87:GLN:HB2 | 2.50 | 0.41 |
| 45:RZ:27:VAL:CG2 | 45:RZ:28:MET:H | 2.31 | 0.41 |
| 45:RZ:122:ARG:HA | 45:RZ:122:ARG:HD2 | 1.84 | 0.41 |
| 48:R2:41:ILE:HD12 | 48:R2:43:GLN:N | 2.35 | 0.41 |
| 54:R8:26:LYS:HA | 54:R8:26:LYS:HD3 | 1.86 | 0.41 |
| 54:R8:64:TYR:HB3 | 54:R8:65:GLU:H | 1.40 | 0.41 |
| 1:XA:294:U:H2' | 1:XA:295:C:H6 | 1.85 | 0.41 |
| 1:XA:1167:A:H8 | 1:XA:1167:A:OP1 | 2.04 | 0.41 |
| 1:XA:1231:G:O3' | 9:XI:126:SER:OG | 2.39 | 0.41 |
| 2:XB:114:ARG:O | 2:XB:118:LEU:HG | 2.21 | 0.41 |
| 2:XB:115:LEU:O | 2:XB:119:GLU:N | 2.54 | 0.41 |
| 3:XC:108:ASN:CG | 3:XC:111:LEU:HG | 2.41 | 0.41 |
| 3:XC:113:ALA:HB3 | 3:XC:114:PRO:CD | 2.44 | 0.41 |
| 3:XC:129:ALA:C | 3:XC:131:ARG:N | 2.72 | 0.41 |
| 4:XD:26:CYS:HA | 4:XD:31:CYS:HA | 2.03 | 0.41 |
| 4:XD:127:THR:HG23 | 4:XD:130:GLY:O | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 5:XE:10:MET:CE | 5:XE:13:ILE:HD13 | 2.51 | 0.41 |
| 7:XG:89:MET:HE1 | 7:XG:156:TRP:H | 1.86 | 0.41 |
| 7:XG:103:TRP:O | 7:XG:104:LEU:C | 2.59 | 0.41 |
| 9:XI:43:ALA:C | 9:XI:45:ALA:N | 2.73 | 0.41 |
| 11:XK:21:ILE:HD13 | 11:XK:84:VAL:HG12 | 2.02 | 0.41 |
| 12:XL:44:THR:HA | 12:XL:45:PRO:HD3 | 1.70 | 0.41 |
| 17:XQ:77:VAL:O | 17:XQ:77:VAL:HG12 | 2.20 | 0.41 |
| 22:XV:12:G:H4' | 25:YA:1908:C:O2 | 2.20 | 0.41 |
| 25:YA:18:C:O2' | 25:YA:553:U:H5'' | 2.20 | 0.41 |
| 25:YA:65:C:H5' | 43:YX:71:GLY:HA3 | 2.03 | 0.41 |
| 25:YA:265:A:N6 | 25:YA:428:A:C8 | 2.89 | 0.41 |
| 25:YA:465:G:H21 | 25:YA:684:G:H1' | 1.85 | 0.41 |
| 25:YA:1022:G:H4' | 25:YA:1023:U:H5' | 2.03 | 0.41 |
| 25:YA:1322:A:OP1 | 42:YW:11:ARG:HG3 | 2.21 | 0.41 |
| 25:YA:1354:A:H2' | 25:YA:1355:G:O4' | 2.21 | 0.41 |
| 25:YA:1609:A:C6 | 25:YA:1616:A:C5 | 3.09 | 0.41 |
| 25:YA:1681:G:OP2 | 25:YA:1681:G:H8 | 2.04 | 0.41 |
| 25:YA:1799:G:H5' | 25:YA:1819:A:H61 | 1.84 | 0.41 |
| 25:YA:1833:U:O2' | 25:YA:1969:A:N1 | 2.40 | 0.41 |
| 25:YA:1855:G:H2' | 25:YA:1856:G:O4' | 2.20 | 0.41 |
| 25:YA:1895:C:H2' | 25:YA:1896:G:O4' | 2.20 | 0.41 |
| 25:YA:2378:A:C5 | 25:YA:2379:G:H1' | 2.56 | 0.41 |
| 25:YA:2544:G:H8 | 25:YA:2544:G:O5' | 2.04 | 0.41 |
| 27:YD:197:GLY:O | 27:YD:198:ASN:HB3 | 2.21 | 0.41 |
| 27:YD:215:LEU:H | 27:YD:215:LEU:HG | 1.59 | 0.41 |
| 27:YD:240:ALA:HA | 27:YD:241:PRO:HD2 | 1.85 | 0.41 |
| 28:YE:36:ARG:O | 28:YE:37:ARG:C | 2.59 | 0.41 |
| 30:YG:22:ARG:HH22 | 30:YG:175:LEU:HD21 | 1.85 | 0.41 |
| 30:YG:95:ARG:CA | 30:YG:99:MET:HB3 | 2.50 | 0.41 |
| 31:YH:86:GLU:HG3 | 31:YH:165:ALA:CA | 2.49 | 0.41 |
| 32:YI:74:ASN:ND2 | 32:YI:74:ASN:N | 2.61 | 0.41 |
| 32:YI:132:PRO:O | 32:YI:133:HIS:C | 2.59 | 0.41 |
| 33:YN:62:VAL:CG1 | 33:YN:66:LYS:HB2 | 2.50 | 0.41 |
| 35:YP:12:ALA:C | 35:YP:14:LYS:N | 2.72 | 0.41 |
| 36:YQ:90:VAL:C | 36:YQ:92:GLY:N | 2.71 | 0.41 |
| 39:YT:28:VAL:HG23 | 39:YT:87:ASP:O | 2.21 | 0.41 |
| 39:YT:76:PHE:HA | 39:YT:77:PRO:HD3 | 1.75 | 0.41 |
| 40:YU:92:ARG:O | 40:YU:92:ARG:CG | 2.54 | 0.41 |
| 42:YW:14:PRO:HG3 | 42:YW:101:SER:OG | 2.21 | 0.41 |
| 43:YX:7:VAL:O | 43:YX:30:VAL:CG1 | 2.67 | 0.41 |
| 43:YX:83:VAL:CG1 | 43:YX:87:GLN:HB2 | 2.50 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 44:YY:49:VAL:O | 44:YY:50:ARG:C | 2.59 | 0.41 |
| 47:Y1:82:LEU:HD13 | 47:Y1:83:GLU:C | 2.35 | 0.41 |
| 48:Y2:53:LEU:O | 48:Y2:57:ILE:HG13 | 2.21 | 0.41 |
| 50:Y4:4:GLY:O | 50:Y4:5:ILE:C | 2.59 | 0.41 |
| 52:Y6:27:LYS:NZ | 52:Y6:27:LYS:CB | 2.73 | 0.41 |
| 54:Y8:14:VAL:CG1 | 54:Y8:60:LEU:HD11 | 2.51 | 0.41 |
| 54:Y8:25:MET:HB3 | 54:Y8:26:LYS:H | 1.69 | 0.41 |
| 1:QA:191(F):U:C2 | 20:QT:105:SER:HB2 | 2.55 | 0.41 |
| 1:QA:419:C:H42 | 1:QA:424:G:H1 | 1.68 | 0.41 |
| 1:QA:963:G:H21 | 10:QJ:55:LYS:HD3 | 1.86 | 0.41 |
| 1:QA:1030:C:H2' | 1:QA:1031:G:O4' | 2.21 | 0.41 |
| 1:QA:1301:U:H3' | 1:QA:1302:U:C5' | 2.51 | 0.41 |
| 2:QB:115:LEU:O | 2:QB:119:GLU:N | 2.54 | 0.41 |
| 3:QC:55:VAL:HG12 | 3:QC:55:VAL:O | 2.21 | 0.41 |
| 5:QE:10:MET:CE | 5:QE:13:ILE:HD13 | 2.51 | 0.41 |
| 5:QE:32:VAL:CG2 | 5:QE:58:ALA:HB1 | 2.51 | 0.41 |
| 5:QE:132:ALA:O | 5:QE:133:TYR:C | 2.59 | 0.41 |
| 7:QG:92:SER:HB3 | 7:QG:95:ARG:HB2 | 2.03 | 0.41 |
| 7:QG:101:LEU:O | 7:QG:104:LEU:HB2 | 2.20 | 0.41 |
| 8:QH:18:ARG:HA | 8:QH:18:ARG:HD2 | 1.92 | 0.41 |
| 9:QI:49:PRO:O | 9:QI:85:LEU:HD21 | 2.20 | 0.41 |
| 10:QJ:8:LEU:HD11 | 10:QJ:23:ILE:CD1 | 2.37 | 0.41 |
| 11:QK:22:HIS:HB3 | 11:QK:29:ILE:HG22 | 2.03 | 0.41 |
| 11:QK:92:GLU:O | 11:QK:95:ILE:N | 2.54 | 0.41 |
| 13:QM:15:VAL:O | 13:QM:19:LEU:HD22 | 2.21 | 0.41 |
| 13:QM:117:VAL:O | 13:QM:119:GLY:N | 2.53 | 0.41 |
| 16:QP:20:VAL:HG22 | 16:QP:21:VAL:H | 1.83 | 0.41 |
| 16:QP:22:THR:CA | 16:QP:33:ILE:HG12 | 2.41 | 0.41 |
| 23:QX:4:C:H2' | 23:QX:4:C:O2 | 2.19 | 0.41 |
| 25:RA:67:U:H3 | 25:RA:74:A:H2 | 1.64 | 0.41 |
| 25:RA:83:G:O2' | 25:RA:84:A:P | 2.79 | 0.41 |
| 25:RA:141:A:C8 | 25:RA:1408:C:H1' | 2.55 | 0.41 |
| 25:RA:269:U:C4 | 25:RA:270(Z):U:C2 | 3.09 | 0.41 |
| 25:RA:544:C:H2' | 25:RA:545:G:O4' | 2.21 | 0.41 |
| 25:RA:1002:G:C6 | 25:RA:1003:G:C5 | 3.09 | 0.41 |
| 25:RA:1430:C:N3 | 25:RA:1431:U:C4 | 2.89 | 0.41 |
| 25:RA:1543:A:C2 | 25:RA:1545:A:N9 | 2.88 | 0.41 |
| 25:RA:1657:C:O2' | 28:RE:133:LYS:HD2 | 2.21 | 0.41 |
| 25:RA:1889:A:C6 | 25:RA:1890:A:C6 | 3.08 | 0.41 |
| 25:RA:2037:G:C6 | 25:RA:2038:G:C6 | 3.08 | 0.41 |
| 25:RA:2341:G:H2' | 25:RA:2342:C:C6 | 2.56 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:RA:2472:G:H2' | 25:RA:2475:C:H42 | 1.85 | 0.41 |
| 25:RA:2758:A:H2' | 25:RA:2759:G:O4' | 2.19 | 0.41 |
| 27:RD:197:GLY:O | 27:RD:198:ASN:HB3 | 2.21 | 0.41 |
| 28:RE:4:ILE:HG22 | 28:RE:198:VAL:HB | 2.02 | 0.41 |
| 29:RF:183:VAL:HG22 | 29:RF:184:TYR:N | 2.35 | 0.41 |
| 30:RG:7:LEU:CD2 | 30:RG:176:LEU:HD22 | 2.45 | 0.41 |
| 30:RG:44:GLY:C | 30:RG:46:ALA:N | 2.73 | 0.41 |
| 31:RH:45:VAL:O | 31:RH:45:VAL:CG1 | 2.69 | 0.41 |
| 31:RH:137:ASP:HB2 | 31:RH:140:LYS:CE | 2.51 | 0.41 |
| 32:RI:123:LEU:HA | 32:RI:142:VAL:HG21 | 2.02 | 0.41 |
| 33:RN:56:ASN:ND2 | 33:RN:126:PRO:N | 2.69 | 0.41 |
| 34:RO:10:VAL:HG21 | 34:RO:16:ALA:HB3 | 2.03 | 0.41 |
| 34:RO:48:PRO:O | 34:RO:50:GLY:N | 2.54 | 0.41 |
| 36:RQ:39:PRO:HA | 36:RQ:97:VAL:O | 2.21 | 0.41 |
| 39:RT:28:VAL:HG23 | 39:RT:87:ASP:O | 2.21 | 0.41 |
| 44:RY:86:ARG:HD2 | 44:RY:86:ARG:HA | 1.91 | 0.41 |
| 47:R1:18:ILE:O | 47:R1:18:ILE:HG22 | 2.21 | 0.41 |
| 48:R2:18:PRO:C | 48:R2:20:GLU:N | 2.73 | 0.41 |
| 50:R4:4:GLY:O | 50:R4:5:ILE:C | 2.59 | 0.41 |
| 50:R4:12:ALA:HB1 | 50:R4:30:GLU:N | 2.35 | 0.41 |
| 1:XA:181:G:HO2' | 1:XA:182:U:H6 | 1.68 | 0.41 |
| 1:XA:707:C:H2' | 1:XA:708:C:C6 | 2.56 | 0.41 |
| 1:XA:1316:G:H2' | 1:XA:1318:A:OP2 | 2.21 | 0.41 |
| 2:XB:95:GLN:O | 2:XB:96:ARG:C | 2.59 | 0.41 |
| 2:XB:200:ILE:CG2 | 2:XB:201:ILE:N | 2.83 | 0.41 |
| 4:XD:15:GLU:N | 4:XD:15:GLU:OE1 | 2.54 | 0.41 |
| 4:XD:209:ARG:NE | 4:XD:209:ARG:HA | 2.36 | 0.41 |
| 8:XH:1:MET:O | 8:XH:2:LEU:HB2 | 2.21 | 0.41 |
| 10:XJ:45:ARG:HB2 | 10:XJ:65:LEU:HB3 | 2.03 | 0.41 |
| 10:XJ:54:PHE:CZ | 10:XJ:55:LYS:CE | 3.04 | 0.41 |
| 11:XK:92:GLU:O | 11:XK:95:ILE:N | 2.54 | 0.41 |
| 12:XL:90:VAL:HG12 | 12:XL:92:ASP:H | 1.85 | 0.41 |
| 13:XM:8:GLU:CD | 30:YG:115:ARG:NH2 | 2.68 | 0.41 |
| 13:XM:110:ARG:HG3 | 13:XM:110:ARG:O | 2.20 | 0.41 |
| 14:XM:40:CYS:N | 14:XM:43:CYS:SG | 2.87 | 0.41 |
| 16:XP:22:THR:HB | 16:XP:32:TYR:HB3 | 2.03 | 0.41 |
| 16:XP:50:LYS:HD3 | 16:XP:51:VAL:O | 2.21 | 0.41 |
| 18:XR:53:ARG:O | 18:XR:55:ARG:N | 2.53 | 0.41 |
| 18:XR:74:ARG:HG2 | 18:XR:79:LEU:HB2 | 2.01 | 0.41 |
| 19:XS:64:GLU:C | 50:Y4:55:ARG:HH12 | 2.24 | 0.41 |
| 20:XT:89:ARG:HH12 | 20:XT:106:ALA:CB | 2.34 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 22:XV:23:C:H2' | 22:XV:24:U:C6 | 2.55 | 0.41 |
| 25:YA:738:G:C2 | 25:YA:759:G:C5 | 3.08 | 0.41 |
| 25:YA:995:C:N4 | 33:YN:2:LYS:HG3 | 2.35 | 0.41 |
| 25:YA:1210:A:C5' | 25:YA:1210:A:H8 | 2.34 | 0.41 |
| 25:YA:1301:A:O3' | 25:YA:1302:A:H2' | 2.21 | 0.41 |
| 25:YA:1509:C:H3' | 25:YA:1510:A:C5' | 2.49 | 0.41 |
| 25:YA:2145:C:H2' | 25:YA:2147:G:N2 | 2.36 | 0.41 |
| 25:YA:2313:C:H2' | 25:YA:2314:C:C6 | 2.56 | 0.41 |
| 25:YA:2318:G:C2 | 38:YS:2:ALA:HA | 2.56 | 0.41 |
| 25:YA:2366:A:C6 | 25:YA:2367:G:C4 | 3.09 | 0.41 |
| 25:YA:2394:C:H2' | 25:YA:2395:C:C6 | 2.56 | 0.41 |
| 25:YA:2790:A:C2 | 25:YA:2791:C:H2' | 2.55 | 0.41 |
| 25:YA:2821:A:H2' | 25:YA:2822:G:O4' | 2.21 | 0.41 |
| 25:YA:2852:G:C6 | 25:YA:2853:C:C4 | 3.08 | 0.41 |
| 25:YA:2870:C:C5' | 37:YR:65:LEU:HD21 | 2.51 | 0.41 |
| 28:YE:11:MET:HE3 | 28:YE:186:GLY:HA2 | 2.03 | 0.41 |
| 31:YH:145:ALA:O | 31:YH:148:ILE:HB | 2.21 | 0.41 |
| 32:YI:79:ILE:CB | 32:YI:142:VAL:HA | 2.42 | 0.41 |
| 34:YO:10:VAL:HG21 | 34:YO:16:ALA:HB3 | 2.03 | 0.41 |
| 34:YO:47:ILE:HD12 | 34:YO:48:PRO:CD | 2.43 | 0.41 |
| 34:YO:48:PRO:O | 34:YO:50:GLY:N | 2.54 | 0.41 |
| 35:YP:18:ARG:HD2 | 35:YP:27:HIS:CD2 | 2.55 | 0.41 |
| 35:YP:101:VAL:O | 35:YP:103:ALA:N | 2.53 | 0.41 |
| 37:YR:29:LEU:HD11 | 37:YR:48:VAL:CG1 | 2.50 | 0.41 |
| 40:YU:57:PHE:O | 40:YU:60:LEU:N | 2.54 | 0.41 |
| 41:YV:38:LEU:O | 41:YV:51:VAL:HA | 2.21 | 0.41 |
| 43:YX:31:HIS:HA | 43:YX:32:PRO:HD3 | 1.88 | 0.41 |
| 45:YZ:108:PRO:HB2 | 45:YZ:112:ARG:CB | 2.42 | 0.41 |
| 47:Y1:86:SER:O | 47:Y1:89:GLU:HB2 | 2.21 | 0.41 |
| 50:Y4:60:GLN:HB3 | 50:Y4:61:ARG:H | 1.55 | 0.41 |
| 53:Y7:24:THR:HB | 53:Y7:25:PRO:HD2 | 2.03 | 0.41 |
| 1:QA:57:G:H2' | 1:QA:58:C:O4' | 2.21 | 0.41 |
| 1:QA:177:C:H2' | 1:QA:178:C:H6 | 1.84 | 0.41 |
| 1:QA:866:C:C4 | 1:QA:867:G:H1' | 2.56 | 0.41 |
| 1:QA:908:A:H2' | 1:QA:909:A:H8 | 1.85 | 0.41 |
| 1:QA:1036:G:H3' | 1:QA:1037:C:C6 | 2.56 | 0.41 |
| 1:QA:1043:C:H2' | 1:QA:1044:A:H8 | 1.86 | 0.41 |
| 1:QA:1189:C:H5'' | 3:QC:5:ILE:HG21 | 2.03 | 0.41 |
| 1:QA:1238:A:N7 | 1:QA:1303:C:H1' | 2.36 | 0.41 |
| 2:QB:71:VAL:HG23 | 2:QB:164:VAL:HG22 | 2.02 | 0.41 |
| 2:QB:168:THR:CG2 | 2:QB:192:SER:HB2 | 2.51 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 3:QC:23:TYR:CD2 | 3:QC:24:ALA:N | 2.88 | 0.41 |
| 3:QC:46:GLU:C | 3:QC:48:TYR:H | 2.23 | 0.41 |
| 3:QC:47:LEU:CD1 | 3:QC:76:VAL:HG12 | 2.42 | 0.41 |
| 3:QC:95:THR:HG23 | 3:QC:97:LYS:HZ1 | 1.86 | 0.41 |
| 3:QC:108:ASN:HB3 | 3:QC:111:LEU:CG | 2.51 | 0.41 |
| 3:QC:108:ASN:CG | 3:QC:111:LEU:HG | 2.41 | 0.41 |
| 3:QC:140:ARG:HB2 | 3:QC:140:ARG:NH1 | 2.36 | 0.41 |
| 6:QF:75:LEU:HD23 | 6:QF:75:LEU:C | 2.41 | 0.41 |
| 8:QH:38:ILE:CD1 | 8:QH:118:VAL:HG12 | 2.49 | 0.41 |
| 9:QI:83:ARG:HA | 9:QI:86:VAL:HG12 | 2.03 | 0.41 |
| 9:QI:88:TYR:O | 9:QI:89:ASN:HB2 | 2.20 | 0.41 |
| 12:QL:90:VAL:HG12 | 12:QL:92:ASP:H | 1.86 | 0.41 |
| 12:QL:109:GLY:HA3 | 12:QL:121:GLY:O | 2.20 | 0.41 |
| 13:QM:8:GLU:C | 13:QM:9:ILE:CG2 | 2.90 | 0.41 |
| 15:QO:3:ILE:H | 15:QO:3:ILE:CD1 | 2.20 | 0.41 |
| 15:QO:69:TYR:CZ | 15:QO:73:GLU:HG3 | 2.56 | 0.41 |
| 16:QP:50:LYS:HD3 | 16:QP:50:LYS:C | 2.42 | 0.41 |
| 17:QQ:11:VAL:HG23 | 17:QQ:12:SER:H | 1.85 | 0.41 |
| 17:QQ:51:TYR:HA | 17:QQ:52:LYS:HZ2 | 1.85 | 0.41 |
| 17:QQ:67:LYS:O | 17:QQ:68:ARG:HB3 | 2.21 | 0.41 |
| 17:QQ:89:LEU:HD23 | 17:QQ:89:LEU:HA | 1.93 | 0.41 |
| 19:QS:32:LYS:HA | 19:QS:50:ALA:HB3 | 2.03 | 0.41 |
| 19:QS:39:THR:HG23 | 19:QS:68:GLY:O | 2.21 | 0.41 |
| 25:RA:14:A:H5'' | 25:RA:15:G:OP2 | 2.20 | 0.41 |
| 25:RA:27:G:N2 | 25:RA:512:G:O2' | 2.54 | 0.41 |
| 25:RA:35:G:H1' | 25:RA:454:A:C4 | 2.56 | 0.41 |
| 25:RA:57:C:H6 | 25:RA:57:C:O5' | 2.04 | 0.41 |
| 25:RA:118:A:OP2 | 25:RA:119:A:H5'' | 2.21 | 0.41 |
| 25:RA:121:G:H5'' | 25:RA:149:A:O4' | 2.21 | 0.41 |
| 25:RA:210:C:OP2 | 53:R7:29:LYS:NZ | 2.53 | 0.41 |
| 25:RA:216:A:C8 | 25:RA:432:A:C6 | 3.09 | 0.41 |
| 25:RA:238:C:H42 | 25:RA:259:G:H1 | 1.68 | 0.41 |
| 25:RA:365:C:H2' | 25:RA:366:C:O4' | 2.21 | 0.41 |
| 25:RA:425:G:N1 | 25:RA:426:C:C4 | 2.89 | 0.41 |
| 25:RA:623:G:H2' | 25:RA:624:C:C6 | 2.56 | 0.41 |
| 25:RA:631:A:H61 | 25:RA:2402:C:N4 | 2.18 | 0.41 |
| 25:RA:706:A:H2' | 25:RA:707:G:O4' | 2.21 | 0.41 |
| 25:RA:729:G:N7 | 27:RD:209:ALA:HB3 | 2.36 | 0.41 |
| 25:RA:918:A:C6 | 25:RA:919:G:H1' | 2.56 | 0.41 |
| 25:RA:1006:C:H1' | 33:RN:106:MET:HE3 | 2.02 | 0.41 |
| 25:RA:1165:U:H2' | 25:RA:1166:C:C6 | 2.55 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:RA:1338:G:N7 | 43:RX:62:LYS:NZ | 2.63 | 0.41 |
| 25:RA:1418:G:N1 | 25:RA:1579:A:OP2 | 2.44 | 0.41 |
| 25:RA:1443:G:H1 | 25:RA:1548:C:H42 | 1.68 | 0.41 |
| 25:RA:1824:G:OP1 | 27:RD:52:ARG:HD3 | 2.21 | 0.41 |
| 25:RA:1906:G:C2 | 25:RA:1907:G:C8 | 3.08 | 0.41 |
| 25:RA:2093:G:N3 | 25:RA:2198:A:N6 | 2.69 | 0.41 |
| 25:RA:2314:C:H2' | 25:RA:2315:G:H8 | 1.86 | 0.41 |
| 25:RA:2344:U:OP1 | 52:R6:38:LYS:HD3 | 2.20 | 0.41 |
| 25:RA:2377:A:H4' | 38:RS:111:GLU:O | 2.21 | 0.41 |
| 25:RA:2507:C:H2' | 25:RA:2508:G:O4' | 2.20 | 0.41 |
| 25:RA:2543:G:H21 | 25:RA:2646:C:H5'' | 1.86 | 0.41 |
| 25:RA:2585:U:HO2' | 25:RA:2586:C:P | 2.44 | 0.41 |
| 25:RA:2848:G:OP2 | 39:RT:96:ARG:HG3 | 2.19 | 0.41 |
| 25:RA:2867:G:HO2' | 25:RA:2868:A:H8 | 1.67 | 0.41 |
| 26:RB:10:C:C4 | 26:RB:11:C:C5 | 3.08 | 0.41 |
| 26:RB:16:G:H1 | 26:RB:68:C:H42 | 1.68 | 0.41 |
| 27:RD:31:LYS:O | 27:RD:32:SER:O | 2.39 | 0.41 |
| 27:RD:68:LYS:HG3 | 27:RD:68:LYS:O | 2.20 | 0.41 |
| 27:RD:134:ARG:HD3 | 27:RD:135:PHE:HE2 | 1.82 | 0.41 |
| 27:RD:154:LYS:C | 27:RD:155:LEU:HD12 | 2.41 | 0.41 |
| 27:RD:177:LEU:C | 27:RD:179:SER:H | 2.23 | 0.41 |
| 27:RD:263:ARG:NH1 | 27:RD:263:ARG:CB | 2.75 | 0.41 |
| 28:RE:51:PHE:CG | 28:RE:52:LEU:N | 2.89 | 0.41 |
| 28:RE:92:THR:HB | 28:RE:93:VAL:H | 1.57 | 0.41 |
| 28:RE:147:PRO:HB2 | 28:RE:149:ARG:HG2 | 2.03 | 0.41 |
| 29:RF:13:SER:OG | 29:RF:14:PRO:HD2 | 2.21 | 0.41 |
| 30:RG:67:LYS:NZ | 50:R4:6:HIS:CD2 | 2.89 | 0.41 |
| 30:RG:95:ARG:HA | 30:RG:99:MET:HB3 | 2.03 | 0.41 |
| 30:RG:95:ARG:CA | 30:RG:99:MET:HB3 | 2.50 | 0.41 |
| 30:RG:143:GLU:C | 50:R4:28:LYS:HZ2 | 2.24 | 0.41 |
| 31:RH:145:ALA:O | 31:RH:148:ILE:HB | 2.21 | 0.41 |
| 33:RN:58:ASP:HB3 | 33:RN:95:PRO:HB3 | 2.02 | 0.41 |
| 33:RN:133:GLN:CB | 33:RN:135:PRO:HD3 | 2.42 | 0.41 |
| 35:RP:65:ARG:C | 35:RP:66:GLY:O | 2.59 | 0.41 |
| 36:RQ:27:VAL:HG22 | 36:RQ:105:GLU:CD | 2.41 | 0.41 |
| 38:RS:106:ARG:HB2 | 38:RS:106:ARG:CZ | 2.49 | 0.41 |
| 39:RT:39:ARG:HG2 | 39:RT:40:THR:N | 2.25 | 0.41 |
| 40:RU:27:LEU:C | 40:RU:29:SER:N | 2.73 | 0.41 |
| 40:RU:33:ARG:O | 40:RU:37:GLU:HB2 | 2.21 | 0.41 |
| 40:RU:57:PHE:O | 40:RU:60:LEU:N | 2.54 | 0.41 |
| 40:RU:76:TYR:O | 40:RU:80:ILE:HG12 | 2.21 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 40:RU:83:LEU:CD1 | 40:RU:113:ALA:HB2 | 2.50 | 0.41 |
| 42:RW:14:PRO:HG3 | 42:RW:101:SER:OG | 2.21 | 0.41 |
| 42:RW:14:PRO:C | 42:RW:16:LYS:N | 2.73 | 0.41 |
| 42:RW:50:VAL:O | 42:RW:53:SER:N | 2.50 | 0.41 |
| 45:RZ:24:LEU:HD11 | 45:RZ:86:VAL:CG2 | 2.40 | 0.41 |
| 45:RZ:72:ARG:HG2 | 45:RZ:72:ARG:O | 2.21 | 0.41 |
| 46:R0:36:ILE:HA | 46:R0:60:PHE:CB | 2.51 | 0.41 |
| 48:R2:11:GLU:HA | 48:R2:14:ARG:HD2 | 2.02 | 0.41 |
| 48:R2:48:HIS:O | 48:R2:49:LYS:C | 2.57 | 0.41 |
| 48:R2:65:ASN:O | 48:R2:66:GLU:C | 2.59 | 0.41 |
| 50:R4:26:SER:O | 50:R4:27:THR:O | 2.39 | 0.41 |
| 50:R4:63:TYR:O | 50:R4:65:ASP:N | 2.54 | 0.41 |
| 52:R6:8:LYS:O | 52:R6:9:LEU:HB2 | 2.21 | 0.41 |
| 53:R7:24:THR:HB | 53:R7:25:PRO:HD2 | 2.03 | 0.41 |
| 1:XA:24:U:H2' | 1:XA:25:C:C6 | 2.56 | 0.41 |
| 1:XA:73:G:H2' | 1:XA:74:C:C6 | 2.56 | 0.41 |
| 1:XA:191:G:O2' | 20:XT:101:GLY:O | 2.38 | 0.41 |
| 1:XA:302:G:O3' | 12:XL:17:LYS:HE2 | 2.21 | 0.41 |
| 1:XA:321:A:C2 | 1:XA:333:G:C2 | 3.08 | 0.41 |
| 1:XA:411:A:C8 | 1:XA:413:G:H1' | 2.55 | 0.41 |
| 1:XA:501:C:OP1 | 12:XL:117:ARG:NH2 | 2.49 | 0.41 |
| 1:XA:588:G:C6 | 1:XA:589:C:N4 | 2.89 | 0.41 |
| 1:XA:637:G:H2' | 1:XA:638:G:C8 | 2.56 | 0.41 |
| 1:XA:767:A:H2' | 1:XA:768:A:O4' | 2.21 | 0.41 |
| 1:XA:926:G:C6 | 1:XA:1505:G:C6 | 3.09 | 0.41 |
| 1:XA:1186:G:O3' | 9:XI:113:LYS:NZ | 2.51 | 0.41 |
| 1:XA:1301:U:HO2' | 1:XA:1302:U:P | 2.44 | 0.41 |
| 1:XA:1314:C:H2' | 1:XA:1315:U:C6 | 2.56 | 0.41 |
| 1:XA:1316:G:H5'' | 14:YN:17:LYS:HE3 | 2.03 | 0.41 |
| 1:XA:1474:G:O2' | 25:YA:1701:A:H2 | 2.03 | 0.41 |
| 2:XB:37:ASN:C | 2:XB:39:ILE:N | 2.73 | 0.41 |
| 2:XB:75:LYS:C | 2:XB:77:ALA:H | 2.25 | 0.41 |
| 2:XB:87:ARG:HH11 | 2:XB:223:ILE:HD11 | 1.82 | 0.41 |
| 2:XB:95:GLN:HB3 | 2:XB:148:TYR:HD1 | 1.84 | 0.41 |
| 2:XB:143:GLU:O | 2:XB:147:LYS:HB2 | 2.21 | 0.41 |
| 3:XC:47:LEU:CD1 | 3:XC:76:VAL:HG12 | 2.42 | 0.41 |
| 4:XD:170:VAL:CG2 | 4:XD:171:GLY:H | 2.17 | 0.41 |
| 5:XE:6:PHE:HB2 | 5:XE:63:ARG:HH12 | 1.86 | 0.41 |
| 5:XE:51:VAL:CB | 5:XE:52:PRO:HD3 | 2.38 | 0.41 |
| 5:XE:90:VAL:C | 5:XE:91:LEU:HD12 | 2.42 | 0.41 |
| 8:XH:20:TYR:CD1 | 8:XH:65:TYR:CD2 | 2.98 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 8:XH:33:GLU:O | 8:XH:36:LEU:N | 2.53 | 0.41 |
| 8:XH:109:ILE:HG13 | 8:XH:120:THR:HB | 2.03 | 0.41 |
| 9:XI:10:ARG:CG | 9:XI:105:ASP:HB2 | 2.51 | 0.41 |
| 9:XI:83:ARG:HG2 | 9:XI:83:ARG:H | 1.64 | 0.41 |
| 9:XI:105:ASP:C | 9:XI:107:ARG:N | 2.74 | 0.41 |
| 12:XL:25:PRO:HD2 | 12:XL:97:ARG:HH11 | 1.86 | 0.41 |
| 12:XL:38:THR:HG22 | 12:XL:57:LYS:HB3 | 2.01 | 0.41 |
| 12:XL:62:SER:O | 12:XL:64:TYR:N | 2.54 | 0.41 |
| 13:XM:15:VAL:O | 13:XM:19:LEU:HD22 | 2.21 | 0.41 |
| 13:XM:117:VAL:O | 13:XM:119:GLY:N | 2.53 | 0.41 |
| 14:XN:48:ALA:O | 14:XN:51:GLY:N | 2.53 | 0.41 |
| 15:XO:69:TYR:CZ | 15:XO:73:GLU:HG3 | 2.56 | 0.41 |
| 16:XP:20:VAL:CG2 | 16:XP:32:TYR:CD2 | 3.04 | 0.41 |
| 17:XQ:11:VAL:HG23 | 17:XQ:12:SER:H | 1.85 | 0.41 |
| 17:XQ:63:ARG:HG2 | 17:XQ:64:PRO:HD2 | 2.03 | 0.41 |
| 19:XS:39:THR:O | 19:XS:40:ILE:HB | 2.21 | 0.41 |
| 25:YA:28:A:C2 | 25:YA:513:A:C8 | 3.09 | 0.41 |
| 25:YA:467:G:OP1 | 53:Y7:33:ARG:NH1 | 2.54 | 0.41 |
| 25:YA:643:A:C2 | 25:YA:644:A:C4 | 3.08 | 0.41 |
| 25:YA:760:G:H2' | 25:YA:761:A:O4' | 2.21 | 0.41 |
| 25:YA:1011:G:H4' | 25:YA:1012:U:OP1 | 2.20 | 0.41 |
| 25:YA:1153:C:OP1 | 40:YU:76:TYR:OH | 2.37 | 0.41 |
| 25:YA:1212:G:H1' | 25:YA:1237:A:N6 | 2.36 | 0.41 |
| 25:YA:1340:U:OP2 | 43:YX:78:LYS:NZ | 2.50 | 0.41 |
| 25:YA:1506:C:H3' | 25:YA:1507:A:H5'' | 2.02 | 0.41 |
| 25:YA:1717:G:H1 | 25:YA:1742:C:H42 | 1.69 | 0.41 |
| 25:YA:1766:U:H2' | 25:YA:1767:C:H6 | 1.85 | 0.41 |
| 25:YA:1776:G:H2' | 25:YA:1776:G:N3 | 2.36 | 0.41 |
| 25:YA:1793:C:H2' | 25:YA:1794:U:C6 | 2.55 | 0.41 |
| 25:YA:1906:G:C2 | 25:YA:1907:G:C8 | 3.08 | 0.41 |
| 25:YA:2100:G:H2' | 25:YA:2100:G:N3 | 2.36 | 0.41 |
| 25:YA:2317:C:C2' | 25:YA:2318:G:H5' | 2.51 | 0.41 |
| 25:YA:2360:A:H2' | 25:YA:2361:A:O4' | 2.21 | 0.41 |
| 25:YA:2390:U:O2' | 25:YA:2391:G:H5' | 2.21 | 0.41 |
| 25:YA:2495:G:H5'' | 36:YQ:81:VAL:CG1 | 2.50 | 0.41 |
| 25:YA:2530:A:OP1 | 25:YA:2535:G:N2 | 2.54 | 0.41 |
| 25:YA:2623:G:OP1 | 25:YA:2826:A:H1' | 2.21 | 0.41 |
| 25:YA:2729:G:C1' | 28:YE:187:ALA:HB2 | 2.44 | 0.41 |
| 25:YA:2850:A:C2 | 25:YA:2851:A:C4 | 3.09 | 0.41 |
| 28:YE:62:PRO:O | 28:YE:63:LEU:C | 2.59 | 0.41 |
| 28:YE:101:ARG:C | 28:YE:201:THR:OG1 | 2.58 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 29:YF:13:SER:OG | 29:YF:14:PRO:HD2 | 2.21 | 0.41 |
| 29:YF:59:TYR:HB3 | 29:YF:60:SER:H | 1.70 | 0.41 |
| 30:YG:47:LYS:HE3 | 30:YG:47:LYS:HB2 | 1.80 | 0.41 |
| 30:YG:53:LEU:CD1 | 30:YG:87:PRO:HB2 | 2.51 | 0.41 |
| 30:YG:67:LYS:NZ | 50:Y4:6:HIS:CD2 | 2.89 | 0.41 |
| 30:YG:78:SER:O | 30:YG:79:ASN:C | 2.59 | 0.41 |
| 32:YI:32:PRO:C | 32:YI:34:GLY:H | 2.24 | 0.41 |
| 33:YN:1:MET:HE3 | 40:YU:95:LEU:HD21 | 1.98 | 0.41 |
| 33:YN:9:VAL:HB | 33:YN:10:GLU:H | 1.70 | 0.41 |
| 33:YN:101:HIS:HD2 | 33:YN:102:ALA:N | 2.19 | 0.41 |
| 34:YO:31:LYS:HA | 34:YO:31:LYS:HD3 | 1.92 | 0.41 |
| 37:YR:55:ALA:O | 37:YR:58:GLY:HA3 | 2.21 | 0.41 |
| 38:YS:53:SER:HA | 38:YS:56:LEU:CD2 | 2.50 | 0.41 |
| 38:YS:89:ARG:HG2 | 38:YS:89:ARG:NH1 | 2.36 | 0.41 |
| 38:YS:93:LYS:HE3 | 38:YS:93:LYS:HB2 | 1.93 | 0.41 |
| 40:YU:76:TYR:O | 40:YU:80:ILE:HG12 | 2.21 | 0.41 |
| 40:YU:91:ASP:OD2 | 40:YU:96:ALA:CA | 2.69 | 0.41 |
| 41:YV:38:LEU:CD1 | 41:YV:55:ALA:CB | 2.98 | 0.41 |
| 42:YW:71:VAL:HA | 42:YW:107:LEU:HD12 | 2.02 | 0.41 |
| 43:YX:54:VAL:C | 43:YX:55:ASN:HD22 | 2.23 | 0.41 |
| 44:YY:2:ARG:O | 44:YY:3:VAL:O | 2.38 | 0.41 |
| 44:YY:13:VAL:O | 44:YY:24:VAL:HA | 2.20 | 0.41 |
| 44:YY:42:VAL:HG21 | 44:YY:67:LEU:CD1 | 2.51 | 0.41 |
| 44:YY:95:LYS:HB2 | 44:YY:95:LYS:HZ1 | 1.86 | 0.41 |
| 44:YY:98:VAL:O | 44:YY:99:CYS:HB3 | 2.21 | 0.41 |
| 45:YZ:72:ARG:NH2 | 45:YZ:97:GLU:O | 2.54 | 0.41 |
| 46:Y0:40:GLN:NE2 | 46:Y0:43:THR:HA | 2.36 | 0.41 |
| 48:Y2:18:PRO:C | 48:Y2:20:GLU:N | 2.73 | 0.41 |
| 48:Y2:41:ILE:HD12 | 48:Y2:43:GLN:N | 2.35 | 0.41 |
| 50:Y4:26:SER:C | 50:Y4:27:THR:O | 2.58 | 0.41 |
| 52:Y6:6:ARG:HA | 52:Y6:6:ARG:NE | 2.35 | 0.41 |
| 52:Y6:8:LYS:O | 52:Y6:9:LEU:HB2 | 2.21 | 0.41 |
| 54:Y8:56:GLU:C | 54:Y8:58:ILE:N | 2.73 | 0.41 |
| 1:QA:130:A:N3 | 1:QA:263:A:O2' | 2.49 | 0.41 |
| 2:QB:130:ARG:HH22 | 2:QB:138:LEU:HD21 | 1.85 | 0.41 |
| 3:QC:13:GLY:O | 3:QC:14:ILE:HB | 2.21 | 0.41 |
| 4:QD:199:ASN:OD1 | 4:QD:201:GLN:HB3 | 2.21 | 0.41 |
| 6:QF:3:ARG:HB3 | 6:QF:93:SER:CB | 2.48 | 0.41 |
| 8:QH:97:VAL:O | 8:QH:100:ILE:HG13 | 2.20 | 0.41 |
| 10:QJ:84:GLN:H | 10:QJ:84:GLN:HG3 | 1.50 | 0.41 |
| 12:QL:8:ASN:O | 12:QL:11:VAL:HG23 | 2.20 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 12:QL:62:SER:HB2 | 12:QL:64:TYR:CD1 | 2.56 | 0.41 |
| 13:QM:8:GLU:OE2 | 30:RG:115:ARG:CZ | 2.69 | 0.41 |
| 15:QO:11:VAL:O | 15:QO:12:ILE:C | 2.60 | 0.41 |
| 15:QO:25:THR:CG2 | 15:QO:70:LEU:HB2 | 2.49 | 0.41 |
| 17:QQ:60:ILE:HG23 | 17:QQ:60:ILE:O | 2.21 | 0.41 |
| 19:QS:29:ARG:HG2 | 19:QS:29:ARG:NH1 | 2.36 | 0.41 |
| 25:RA:373:U:H2' | 25:RA:374:A:C8 | 2.56 | 0.41 |
| 25:RA:681:G:H2' | 25:RA:682:G:O4' | 2.20 | 0.41 |
| 25:RA:1012:U:O2 | 33:RN:25:ARG:NH1 | 2.54 | 0.41 |
| 25:RA:1466:G:H2' | 25:RA:1547:C:H41 | 1.86 | 0.41 |
| 25:RA:1638:C:H5'' | 25:RA:2710:C:O2' | 2.20 | 0.41 |
| 25:RA:1826:G:OP1 | 27:RD:224:ALA:N | 2.43 | 0.41 |
| 25:RA:2396:G:H4' | 47:R1:30:VAL:HA | 2.02 | 0.41 |
| 25:RA:2511:U:O2 | 28:RE:140:SER:N | 2.53 | 0.41 |
| 25:RA:2873:A:N3 | 37:RR:5:LYS:HA | 2.36 | 0.41 |
| 25:RA:2892:A:H2' | 25:RA:2893:G:O4' | 2.21 | 0.41 |
| 26:RB:37:C:C4 | 26:RB:38:C:C4 | 3.09 | 0.41 |
| 27:RD:117:VAL:HG22 | 27:RD:118:VAL:N | 2.35 | 0.41 |
| 28:RE:62:PRO:O | 28:RE:63:LEU:C | 2.59 | 0.41 |
| 28:RE:161:GLY:O | 28:RE:162:ALA:HB3 | 2.20 | 0.41 |
| 29:RF:80:ALA:O | 29:RF:83:PHE:HB2 | 2.20 | 0.41 |
| 30:RG:61:ALA:CB | 30:RG:67:LYS:HA | 2.51 | 0.41 |
| 32:RI:82:ARG:HD3 | 32:RI:82:ARG:HA | 1.77 | 0.41 |
| 33:RN:10:GLU:OE2 | 33:RN:11:PRO:HD2 | 2.21 | 0.41 |
| 33:RN:23:LEU:CD1 | 33:RN:99:LEU:HD23 | 2.51 | 0.41 |
| 36:RQ:139:GLU:CG | 36:RQ:140:ALA:N | 2.84 | 0.41 |
| 37:RR:22:ARG:O | 37:RR:26:LYS:HG3 | 2.21 | 0.41 |
| 37:RR:55:ALA:O | 37:RR:58:GLY:HA3 | 2.21 | 0.41 |
| 37:RR:94:TYR:N | 37:RR:94:TYR:CD2 | 2.87 | 0.41 |
| 38:RS:66:ALA:HA | 38:RS:69:VAL:CG1 | 2.51 | 0.41 |
| 39:RT:84:GLN:HG2 | 39:RT:85:LYS:N | 2.36 | 0.41 |
| 42:RW:14:PRO:C | 42:RW:18:ARG:HD2 | 2.41 | 0.41 |
| 44:RY:49:VAL:O | 44:RY:50:ARG:C | 2.59 | 0.41 |
| 44:RY:90:LEU:HB2 | 44:RY:91:GLU:H | 1.53 | 0.41 |
| 45:RZ:10:ARG:O | 45:RZ:36:LYS:HB2 | 2.21 | 0.41 |
| 45:RZ:108:PRO:O | 45:RZ:110:GLY:N | 2.45 | 0.41 |
| 47:R1:85:LEU:N | 47:R1:85:LEU:CD2 | 2.84 | 0.41 |
| 50:R4:42:PHE:CZ | 50:R4:43:TYR:HB3 | 2.56 | 0.41 |
| 54:R8:32:LEU:HD23 | 54:R8:32:LEU:HA | 1.94 | 0.41 |
| 1:XA:1221:G:P | 19:XS:36:ARG:HD3 | 2.62 | 0.41 |
| 1:XA:1327:C:P | 21:XU:12:LYS:HZ1 | 2.40 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:XA:1343:G:H2' | 1:XA:1344:C:C6 | 2.56 | 0.41 |
| 3:XC:19:GLU:HA | 3:XC:54:ARG:NH1 | 2.14 | 0.41 |
| 4:XD:12:CYS:O | 4:XD:33:MET:HG3 | 2.21 | 0.41 |
| 4:XD:178:VAL:HG12 | 4:XD:179:GLU:N | 2.35 | 0.41 |
| 5:XE:75:THR:CG2 | 5:XE:76:ILE:N | 2.80 | 0.41 |
| 5:XE:132:ALA:O | 5:XE:133:TYR:C | 2.59 | 0.41 |
| 6:XF:40:VAL:HA | 6:XF:62:TRP:O | 2.21 | 0.41 |
| 9:XI:113:LYS:H | 9:XI:113:LYS:CD | 2.28 | 0.41 |
| 13:XM:117:VAL:CG2 | 13:XM:118:ALA:H | 2.31 | 0.41 |
| 14:YN:47:LEU:O | 14:YN:50:LYS:N | 2.52 | 0.41 |
| 15:XO:11:VAL:O | 15:XO:12:ILE:C | 2.60 | 0.41 |
| 17:XQ:83:ASP:O | 17:XQ:87:LYS:HG2 | 2.21 | 0.41 |
| 17:XQ:86:GLU:O | 17:XQ:87:LYS:C | 2.60 | 0.41 |
| 17:XQ:89:LEU:HD23 | 17:XQ:89:LEU:HA | 1.93 | 0.41 |
| 20:XT:50:GLU:HA | 20:XT:100:ILE:HG22 | 2.02 | 0.41 |
| 25:YA:78:A:H2' | 25:YA:79:G:H8 | 1.85 | 0.41 |
| 25:YA:611:C:H2' | 25:YA:612:G:H8 | 1.85 | 0.41 |
| 25:YA:741:G:C6 | 25:YA:757:U:O2 | 2.74 | 0.41 |
| 25:YA:888:C:H3' | 25:YA:889:C:C4' | 2.49 | 0.41 |
| 25:YA:1395:A:C6 | 25:YA:1398:C:C2 | 3.09 | 0.41 |
| 25:YA:1659:U:C2 | 25:YA:2002:G:N2 | 2.89 | 0.41 |
| 25:YA:1790:C:H2' | 25:YA:1791:A:C5 | 2.56 | 0.41 |
| 25:YA:1826:G:H4' | 27:YD:242:ARG:NH2 | 2.31 | 0.41 |
| 25:YA:2287:A:N1 | 25:YA:2289:G:H1' | 2.35 | 0.41 |
| 25:YA:2408:U:O5' | 25:YA:2408:U:H6 | 2.04 | 0.41 |
| 25:YA:2562:U:H1' | 34:YO:23:ARG:NH1 | 2.36 | 0.41 |
| 25:YA:2619:C:H2' | 25:YA:2620:C:C6 | 2.56 | 0.41 |
| 27:YD:13:ARG:HG2 | 27:YD:13:ARG:O | 2.20 | 0.41 |
| 27:YD:68:LYS:O | 27:YD:68:LYS:HG3 | 2.20 | 0.41 |
| 27:YD:147:LEU:CD1 | 27:YD:155:LEU:HD21 | 2.51 | 0.41 |
| 27:YD:228:PRO:HD3 | 27:YD:234:GLY:O | 2.21 | 0.41 |
| 29:YF:68:LYS:O | 29:YF:69:HIS:HB2 | 2.21 | 0.41 |
| 30:YG:18:GLU:HA | 30:YG:18:GLU:OE2 | 2.21 | 0.41 |
| 30:YG:112:PRO:CA | 50:Y4:37:SER:HB2 | 2.51 | 0.41 |
| 31:YH:26:VAL:HG12 | 31:YH:33:LEU:HB2 | 2.03 | 0.41 |
| 31:YH:66:GLY:O | 31:YH:67:LEU:C | 2.58 | 0.41 |
| 31:YH:137:ASP:HB2 | 31:YH:140:LYS:CE | 2.51 | 0.41 |
| 32:YI:10:GLU:O | 32:YI:11:ASN:HB3 | 2.21 | 0.41 |
| 33:YN:7:LYS:CG | 33:YN:8:GLN:N | 2.80 | 0.41 |
| 35:YP:84:ASN:HB2 | 35:YP:87:ASP:OD2 | 2.21 | 0.41 |
| 35:YP:101:VAL:HG23 | 35:YP:106:LEU:HB3 | 2.03 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 37:YR:61:HIS:CE1 | 37:YR:65:LEU:HD11 | 2.56 | 0.41 |
| 39:YT:10:VAL:O | 39:YT:11:GLU:C | 2.59 | 0.41 |
| 39:YT:39:ARG:HG2 | 39:YT:40:THR:N | 2.25 | 0.41 |
| 44:YY:97:ARG:NH2 | 44:YY:98:VAL:CG2 | 2.84 | 0.41 |
| 45:YZ:72:ARG:O | 45:YZ:72:ARG:HG2 | 2.21 | 0.41 |
| 47:Y1:85:LEU:N | 47:Y1:85:LEU:CD2 | 2.84 | 0.41 |
| 48:Y2:11:GLU:HA | 48:Y2:14:ARG:HD2 | 2.02 | 0.41 |
| 48:Y2:65:ASN:O | 48:Y2:66:GLU:C | 2.59 | 0.41 |
| 50:Y4:63:TYR:O | 50:Y4:65:ASP:N | 2.53 | 0.41 |
| 54:Y8:17:THR:O | 54:Y8:20:GLY:N | 2.46 | 0.41 |
| 54:Y8:40:GLU:O | 54:Y8:42:ARG:N | 2.54 | 0.41 |
| 1:QA:24:U:H2' | 1:QA:25:C:H6 | 1.86 | 0.40 |
| 1:QA:256:U:H3 | 1:QA:270:A:H61 | 1.69 | 0.40 |
| 1:QA:391:G:C6 | 1:QA:392:G:C5 | 3.09 | 0.40 |
| 1:QA:452:A:C6 | 1:QA:453:A:C6 | 3.09 | 0.40 |
| 1:QA:502:G:C6 | 1:QA:503:C:C4 | 3.09 | 0.40 |
| 1:QA:692:U:O2' | 1:QA:694:A:N7 | 2.41 | 0.40 |
| 1:QA:1276:G:H2' | 1:QA:1277:C:C6 | 2.56 | 0.40 |
| 1:QA:1376:U:P | 7:QG:94:ARG:HH12 | 2.44 | 0.40 |
| 2:QB:62:ALA:O | 2:QB:65:GLY:N | 2.53 | 0.40 |
| 2:QB:95:GLN:O | 2:QB:96:ARG:C | 2.59 | 0.40 |
| 4:QD:172:PRO:HG2 | 6:XF:24:GLU:OE1 | 2.21 | 0.40 |
| 5:QE:41:VAL:O | 5:QE:66:MET:HA | 2.22 | 0.40 |
| 5:QE:72:GLN:C | 5:QE:74:GLY:H | 2.23 | 0.40 |
| 18:QR:37:VAL:O | 18:QR:40:LEU:N | 2.54 | 0.40 |
| 18:QR:74:ARG:HG2 | 18:QR:79:LEU:HB2 | 2.01 | 0.40 |
| 19:QS:31:ILE:HG23 | 19:QS:31:ILE:O | 2.21 | 0.40 |
| 25:RA:27:G:H22 | 25:RA:512:G:C2' | 2.34 | 0.40 |
| 25:RA:482:A:OP2 | 25:RA:507:A:N6 | 2.39 | 0.40 |
| 25:RA:855:G:O2' | 46:R0:27:GLU:OE2 | 2.39 | 0.40 |
| 25:RA:871:U:OP1 | 36:RQ:5:ARG:HG2 | 2.21 | 0.40 |
| 25:RA:1570:A:C6 | 25:RA:1571:A:C6 | 3.09 | 0.40 |
| 25:RA:1992:G:C8 | 25:RA:1992:G:O5' | 2.74 | 0.40 |
| 25:RA:2255:G:H1 | 25:RA:2275:C:H42 | 1.68 | 0.40 |
| 25:RA:2291:U:OP1 | 25:RA:2380:C:O2' | 2.33 | 0.40 |
| 25:RA:2583:G:H3' | 25:RA:2584:U:O2 | 2.20 | 0.40 |
| 25:RA:2723:C:H4' | 37:RR:1:MET:HE2 | 2.02 | 0.40 |
| 27:RD:147:LEU:CD1 | 27:RD:155:LEU:HD21 | 2.51 | 0.40 |
| 32:RI:27:ARG:HB3 | 47:R1:71:TYR:CE1 | 2.56 | 0.40 |
| 34:RO:92:GLU:O | 34:RO:93:PRO:C | 2.58 | 0.40 |
| 35:RP:55:ARG:HG2 | 35:RP:55:ARG:NH2 | 2.36 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 35:RP:66:GLY:O | 35:RP:67:MET:CB | 2.63 | 0.40 |
| 35:RP:84:ASN:HB2 | 35:RP:87:ASP:OD2 | 2.22 | 0.40 |
| 36:RQ:52:VAL:O | 36:RQ:53:ALA:C | 2.59 | 0.40 |
| 36:RQ:76:LYS:HB3 | 36:RQ:90:VAL:CG1 | 2.51 | 0.40 |
| 42:RW:88:ARG:HA | 42:RW:88:ARG:HD2 | 1.92 | 0.40 |
| 43:RX:60:ARG:HH22 | 53:R7:47:ARG:HH12 | 1.68 | 0.40 |
| 44:RY:87:LYS:HB2 | 44:RY:87:LYS:HZ2 | 1.85 | 0.40 |
| 45:RZ:82:ARG:HG3 | 45:RZ:83:PRO:CD | 2.50 | 0.40 |
| 45:RZ:111:VAL:HG23 | 45:RZ:115:GLY:O | 2.21 | 0.40 |
| 46:R0:5:LYS:HG2 | 46:R0:6:GLY:H | 1.86 | 0.40 |
| 46:R0:55:ARG:HG3 | 46:R0:55:ARG:NH1 | 2.35 | 0.40 |
| 47:R1:96:LYS:O | 47:R1:96:LYS:HG2 | 2.21 | 0.40 |
| 48:R2:32:LEU:O | 48:R2:32:LEU:HD23 | 2.21 | 0.40 |
| 54:R8:3:LYS:HE2 | 54:R8:3:LYS:HB3 | 1.83 | 0.40 |
| 1:XA:57:G:H2' | 1:XA:58:C:C6 | 2.56 | 0.40 |
| 1:XA:135:C:H2' | 1:XA:136:C:H5' | 2.02 | 0.40 |
| 1:XA:295:C:H2' | 1:XA:296:U:C6 | 2.56 | 0.40 |
| 1:XA:321:A:N6 | 1:XA:332:G:H1 | 2.19 | 0.40 |
| 1:XA:410:G:C8 | 1:XA:410:G:H3' | 2.56 | 0.40 |
| 1:XA:791:G:C6 | 1:XA:792:A:N1 | 2.89 | 0.40 |
| 1:XA:1064:G:C8 | 1:XA:1066:C:C2 | 3.09 | 0.40 |
| 1:XA:1232:U:P | 9:XI:124:GLN:HE21 | 2.43 | 0.40 |
| 2:XB:76:GLN:OE1 | 2:XB:206:ASP:HB3 | 2.21 | 0.40 |
| 2:XB:125:PRO:O | 2:XB:126:GLU:HB2 | 2.21 | 0.40 |
| 2:XB:223:ILE:O | 2:XB:226:ARG:HB3 | 2.20 | 0.40 |
| 3:XC:5:ILE:CD1 | 3:XC:5:ILE:H | 2.35 | 0.40 |
| 3:XC:47:LEU:HD11 | 3:XC:76:VAL:CG1 | 2.42 | 0.40 |
| 7:XG:21:VAL:HG23 | 7:XG:22:LEU:N | 2.32 | 0.40 |
| 8:XH:33:GLU:C | 8:XH:35:ILE:H | 2.25 | 0.40 |
| 10:XJ:84:GLN:H | 10:XJ:84:GLN:HG3 | 1.50 | 0.40 |
| 11:XK:21:ILE:CD1 | 11:XK:82:VAL:HG13 | 2.51 | 0.40 |
| 11:XK:31:THR:O | 11:XK:31:THR:HG23 | 2.21 | 0.40 |
| 12:XL:10:LEU:CD1 | 17:XQ:32:TYR:CD2 | 3.03 | 0.40 |
| 13:XM:8:GLU:C | 13:XM:9:ILE:CG2 | 2.90 | 0.40 |
| 13:XM:65:LYS:HE3 | 50:Y4:50:VAL:HG11 | 2.03 | 0.40 |
| 17:XQ:85:VAL:HG12 | 17:XQ:85:VAL:O | 2.20 | 0.40 |
| 17:XQ:94:ASN:O | 17:XQ:97:SER:N | 2.53 | 0.40 |
| 18:XR:84:LYS:H | 18:XR:84:LYS:HG2 | 1.56 | 0.40 |
| 19:XS:10:PHE:CD2 | 19:XS:11:VAL:N | 2.90 | 0.40 |
| 19:XS:31:ILE:HG23 | 19:XS:31:ILE:O | 2.21 | 0.40 |
| 22:XV:16:C:O2' | 22:XV:17:C:OP1 | 2.39 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:YA:588:U:H1' | 29:YF:90:PHE:CD1 | 2.56 | 0.40 |
| 25:YA:638:G:H2' | 25:YA:639:U:O4' | 2.20 | 0.40 |
| 25:YA:1166:C:H2' | 25:YA:1167:U:H6 | 1.86 | 0.40 |
| 25:YA:1446:C:N4 | 25:YA:1465:G:H1 | 2.17 | 0.40 |
| 25:YA:1655:A:O2' | 28:YE:115:GLY:HA2 | 2.22 | 0.40 |
| 25:YA:1659:U:O2' | 25:YA:2712(A):A:N1 | 2.47 | 0.40 |
| 25:YA:1690:A:H2' | 25:YA:1691:C:O4' | 2.21 | 0.40 |
| 25:YA:1729:A:N6 | 25:YA:1731:G:C2 | 2.88 | 0.40 |
| 25:YA:1872:A:H5' | 25:YA:1878:G:OP2 | 2.21 | 0.40 |
| 29:YF:62:ARG:HB3 | 29:YF:62:ARG:CZ | 2.52 | 0.40 |
| 31:YH:20:ALA:HB3 | 31:YH:23:ARG:HG2 | 2.03 | 0.40 |
| 31:YH:45:VAL:O | 31:YH:45:VAL:CG1 | 2.69 | 0.40 |
| 31:YH:128:PRO:CG | 31:YH:129:THR:H | 2.33 | 0.40 |
| 32:YI:27:ARG:HB3 | 47:Y1:71:TYR:CE1 | 2.57 | 0.40 |
| 32:YI:93:THR:O | 32:YI:97:ILE:HG12 | 2.21 | 0.40 |
| 36:YQ:20:ALA:HB1 | 36:YQ:99:PRO:CG | 2.51 | 0.40 |
| 38:YS:20:ARG:HE | 38:YS:21:THR:HA | 1.87 | 0.40 |
| 38:YS:102:ALA:C | 38:YS:104:GLY:N | 2.73 | 0.40 |
| 40:YU:57:PHE:O | 40:YU:58:ARG:C | 2.59 | 0.40 |
| 50:Y4:64:GLY:C | 50:Y4:66:SER:N | 2.73 | 0.40 |
| 1:QA:259:G:H1 | 1:QA:267:C:N4 | 2.19 | 0.40 |
| 1:QA:282:A:C8 | 1:QA:283:C:C5 | 3.10 | 0.40 |
| 1:QA:426:G:OP1 | 4:QD:38:TYR:OH | 2.38 | 0.40 |
| 1:QA:467:G:C6 | 1:QA:468:A:C5 | 3.09 | 0.40 |
| 1:QA:864:A:H2' | 1:QA:865:A:C8 | 2.55 | 0.40 |
| 2:QB:132:LYS:HA | 2:QB:135:GLN:CG | 2.51 | 0.40 |
| 3:QC:128:PHE:O | 3:QC:130:VAL:N | 2.54 | 0.40 |
| 3:QC:178:LEU:N | 3:QC:178:LEU:CD2 | 2.85 | 0.40 |
| 5:QE:27:ARG:CG | 5:QE:28:PHE:N | 2.84 | 0.40 |
| 5:QE:90:VAL:C | 5:QE:91:LEU:HD12 | 2.42 | 0.40 |
| 9:QI:13:ALA:H | 9:QI:68:GLY:HA3 | 1.86 | 0.40 |
| 11:QK:83:ILE:HG12 | 11:QK:109:VAL:CG2 | 2.51 | 0.40 |
| 14:QN:26:ARG:CD | 14:QN:47:LEU:HD21 | 2.52 | 0.40 |
| 14:QN:34:TYR:CD1 | 14:QN:34:TYR:N | 2.89 | 0.40 |
| 17:QQ:85:VAL:HG12 | 17:QQ:85:VAL:O | 2.20 | 0.40 |
| 17:QQ:86:GLU:O | 17:QQ:87:LYS:C | 2.60 | 0.40 |
| 19:QS:5:LEU:CD2 | 50:R4:66:SER:HB2 | 2.51 | 0.40 |
| 19:QS:10:PHE:CD2 | 19:QS:11:VAL:N | 2.89 | 0.40 |
| 20:QT:44:ALA:HB3 | 20:QT:91:LEU:HD12 | 2.03 | 0.40 |
| 25:RA:195:A:H61 | 25:RA:198:C:H3' | 1.86 | 0.40 |
| 25:RA:1419:A:H61 | 25:RA:1494:A:H61 | 1.70 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:RA:1688:U:O2 | 25:RA:1700:A:H5'' | 2.20 | 0.40 |
| 25:RA:1688:U:O2 | 25:RA:1700:A:H8 | 2.05 | 0.40 |
| 25:RA:1771:C:O2' | 25:RA:1786:A:C8 | 2.73 | 0.40 |
| 25:RA:1845:G:N2 | 25:RA:1846:G:H1' | 2.36 | 0.40 |
| 25:RA:2210:G:H5' | 25:RA:2211:G:C5 | 2.56 | 0.40 |
| 25:RA:2326:C:H6 | 25:RA:2326:C:O5' | 2.04 | 0.40 |
| 25:RA:2740:A:N6 | 25:RA:2763:G:O2' | 2.55 | 0.40 |
| 27:RD:145:VAL:CG1 | 27:RD:146:GLU:N | 2.84 | 0.40 |
| 28:RE:5:LEU:O | 28:RE:28:ALA:HA | 2.22 | 0.40 |
| 29:RF:68:LYS:O | 29:RF:69:HIS:HB2 | 2.21 | 0.40 |
| 29:RF:128:ALA:O | 29:RF:129:PHE:CB | 2.67 | 0.40 |
| 29:RF:144:LYS:C | 29:RF:146:ALA:N | 2.75 | 0.40 |
| 30:RG:78:SER:O | 30:RG:79:ASN:C | 2.59 | 0.40 |
| 31:RH:20:ALA:HB3 | 31:RH:23:ARG:HG2 | 2.03 | 0.40 |
| 33:RN:137:LYS:HA | 33:RN:137:LYS:HD2 | 1.89 | 0.40 |
| 34:RO:47:ILE:HD12 | 34:RO:48:PRO:CD | 2.43 | 0.40 |
| 37:RR:84:ALA:O | 37:RR:85:PRO:C | 2.59 | 0.40 |
| 38:RS:6:ALA:O | 38:RS:10:ARG:HD3 | 2.22 | 0.40 |
| 38:RS:12:PHE:HD2 | 38:RS:12:PHE:HA | 1.80 | 0.40 |
| 38:RS:42:ASP:O | 38:RS:43:GLU:CB | 2.62 | 0.40 |
| 38:RS:100:ALA:CA | 38:RS:103:GLU:HG2 | 2.49 | 0.40 |
| 41:RV:55:ALA:O | 41:RV:56:SER:OG | 2.31 | 0.40 |
| 42:RW:100:THR:O | 42:RW:100:THR:HG23 | 2.22 | 0.40 |
| 50:R4:21:VAL:O | 50:R4:22:ILE:O | 2.40 | 0.40 |
| 52:R6:50:ARG:NH1 | 52:R6:50:ARG:HG2 | 2.36 | 0.40 |
| 54:R8:53:PRO:HD2 | 54:R8:54:GLU:H | 1.84 | 0.40 |
| 1:XA:187:C:H2' | 1:XA:188:U:O4' | 2.22 | 0.40 |
| 1:XA:474:G:H2' | 1:XA:475:G:C8 | 2.56 | 0.40 |
| 1:XA:498:A:N1 | 1:XA:546:G:O2' | 2.45 | 0.40 |
| 1:XA:575:G:C5 | 1:XA:881:G:C2 | 3.10 | 0.40 |
| 1:XA:1162:C:O2' | 1:XA:1163:C:O4' | 2.39 | 0.40 |
| 1:XA:1418:A:C2 | 1:XA:1483:A:C2 | 3.09 | 0.40 |
| 2:XB:47:THR:O | 2:XB:51:LEU:N | 2.32 | 0.40 |
| 2:XB:204:ASN:HD22 | 2:XB:204:ASN:C | 2.22 | 0.40 |
| 3:XC:13:GLY:O | 3:XC:14:ILE:HB | 2.21 | 0.40 |
| 3:XC:138:VAL:HG22 | 3:XC:151:VAL:HG23 | 2.03 | 0.40 |
| 3:XC:140:ARG:HB2 | 3:XC:140:ARG:NH1 | 2.36 | 0.40 |
| 4:XD:68:TYR:OH | 4:XD:196:LEU:HD21 | 2.21 | 0.40 |
| 7:XG:92:SER:HB3 | 7:XG:95:ARG:HB2 | 2.03 | 0.40 |
| 7:XG:118:VAL:HG23 | 7:XG:119:ARG:N | 2.35 | 0.40 |
| 8:XH:53:VAL:HG12 | 8:XH:54:ASP:OD2 | 2.20 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:XH:97:VAL:O | 8:XH:100:ILE:HG13 | 2.20 | 0.40 |
| 9:XI:71:SER:O | 9:XI:72:GLY:C | 2.58 | 0.40 |
| 11:XK:83:ILE:HG12 | 11:XK:109:VAL:CG2 | 2.51 | 0.40 |
| 12:XL:117:ARG:HB3 | 12:XL:122:THR:HB | 2.02 | 0.40 |
| 18:XR:37:VAL:O | 18:XR:40:LEU:N | 2.54 | 0.40 |
| 19:XS:3:ARG:CG | 19:XS:4:SER:N | 2.83 | 0.40 |
| 25:YA:273(A):G:C2 | 25:YA:364:C:C2 | 3.09 | 0.40 |
| 25:YA:407:G:H2' | 25:YA:408:G:C8 | 2.57 | 0.40 |
| 25:YA:686:G:H8 | 53:Y7:6:GLN:O | 2.04 | 0.40 |
| 25:YA:716:A:C2 | 25:YA:717:G:H1' | 2.57 | 0.40 |
| 25:YA:724:U:H2' | 25:YA:725:G:O4' | 2.22 | 0.40 |
| 25:YA:780:G:N2 | 25:YA:783:A:H62 | 2.12 | 0.40 |
| 25:YA:1638:C:OP1 | 25:YA:2710:C:O2' | 2.39 | 0.40 |
| 25:YA:2262:U:H2' | 25:YA:2263:C:C6 | 2.57 | 0.40 |
| 25:YA:2345:G:H4' | 25:YA:2346:A:O5' | 2.21 | 0.40 |
| 25:YA:2867:G:O2' | 25:YA:2868:A:H8 | 2.04 | 0.40 |
| 27:YD:31:LYS:O | 27:YD:32:SER:O | 2.39 | 0.40 |
| 28:YE:119:ARG:HG2 | 28:YE:160:TYR:HB2 | 2.03 | 0.40 |
| 29:YF:198:ALA:HA | 29:YF:201:VAL:CG1 | 2.41 | 0.40 |
| 32:YI:82:ARG:HD3 | 32:YI:82:ARG:HA | 1.77 | 0.40 |
| 32:YI:94:ALA:O | 32:YI:96:ASP:N | 2.54 | 0.40 |
| 32:YI:121:LYS:HE3 | 32:YI:121:LYS:HB2 | 1.79 | 0.40 |
| 33:YN:10:GLU:OE2 | 33:YN:11:PRO:HD2 | 2.21 | 0.40 |
| 34:YO:86:ILE:N | 34:YO:86:ILE:CD1 | 2.83 | 0.40 |
| 34:YO:106:LEU:HD23 | 34:YO:106:LEU:HA | 1.88 | 0.40 |
| 36:YQ:52:VAL:O | 36:YQ:53:ALA:C | 2.59 | 0.40 |
| 36:YQ:139:GLU:CG | 36:YQ:140:ALA:N | 2.84 | 0.40 |
| 39:YT:50:ILE:CG2 | 39:YT:62:THR:OG1 | 2.68 | 0.40 |
| 40:YU:5:LYS:C | 40:YU:7:GLY:N | 2.75 | 0.40 |
| 42:YW:66:GLU:HG2 | 42:YW:67:ASP:N | 2.37 | 0.40 |
| 46:Y0:19:LYS:HA | 46:Y0:19:LYS:HD3 | 1.68 | 0.40 |
| 46:Y0:68:GLU:CG | 46:Y0:80:HIS:HB2 | 2.50 | 0.40 |
| 47:Y1:94:LEU:HD23 | 47:Y1:94:LEU:HA | 1.81 | 0.40 |
| 48:Y2:15:LYS:H | 48:Y2:67:LYS:HZ3 | 1.70 | 0.40 |
| 48:Y2:37:PHE:O | 48:Y2:40:SER:HB3 | 2.22 | 0.40 |
| 50:Y4:42:PHE:CZ | 50:Y4:43:TYR:HB3 | 2.56 | 0.40 |
| 50:Y4:49:PHE:N | 50:Y4:49:PHE:HD1 | 2.17 | 0.40 |
| 54:Y8:64:TYR:HB3 | 54:Y8:65:GLU:H | 1.40 | 0.40 |
| 1:QA:127:G:C2 | 1:QA:128:G:C8 | 3.09 | 0.40 |
| 1:QA:421:U:H5'' | 1:QA:422:C:OP2 | 2.22 | 0.40 |
| 1:QA:661:G:H1 | 1:QA:744:C:N4 | 2.19 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:QA:709:G:H2' | 1:QA:710:G:C8 | 2.56 | 0.40 |
| 1:QA:753:A:H4' | 1:QA:754:C:O5' | 2.21 | 0.40 |
| 1:QA:804:U:H5'' | 1:QA:805:C:OP2 | 2.21 | 0.40 |
| 1:QA:883:C:N3 | 1:QA:884:U:C4 | 2.89 | 0.40 |
| 1:QA:1285:A:H4' | 1:QA:1286:A:C5' | 2.52 | 0.40 |
| 1:QA:1432:G:OP1 | 39:RT:107:ASP:HB2 | 2.21 | 0.40 |
| 1:QA:1531:A:C8 | 1:QA:1531:A:C4' | 3.04 | 0.40 |
| 2:QB:17:PHE:HB2 | 2:QB:42:ILE:CG2 | 2.51 | 0.40 |
| 2:QB:143:GLU:O | 2:QB:147:LYS:HB2 | 2.21 | 0.40 |
| 3:QC:129:ALA:C | 3:QC:131:ARG:N | 2.72 | 0.40 |
| 4:QD:26:CYS:HA | 4:QD:31:CYS:HA | 2.03 | 0.40 |
| 4:QD:96:LEU:C | 4:QD:98:GLU:N | 2.72 | 0.40 |
| 4:QD:110:PHE:HE2 | 4:QD:148:VAL:HG23 | 1.86 | 0.40 |
| 5:QE:31:LEU:HD13 | 5:QE:43:LEU:HD11 | 2.04 | 0.40 |
| 10:QJ:22:LYS:C | 10:QJ:22:LYS:CD | 2.90 | 0.40 |
| 10:QJ:65:LEU:HA | 14:QN:55:GLY:O | 2.22 | 0.40 |
| 13:QM:39:ILE:CD1 | 13:QM:56:LEU:HB2 | 2.51 | 0.40 |
| 14:QN:9:LYS:HB3 | 14:QN:9:LYS:HE2 | 1.85 | 0.40 |
| 25:RA:66:C:C4 | 25:RA:67:U:C4 | 3.10 | 0.40 |
| 25:RA:270(R):G:H1' | 47:R1:78:LYS:HZ1 | 1.85 | 0.40 |
| 25:RA:568:U:O5' | 25:RA:945:A:N6 | 2.54 | 0.40 |
| 25:RA:680:G:H2' | 25:RA:681:G:C8 | 2.56 | 0.40 |
| 25:RA:1425:G:H2' | 25:RA:1426:G:O4' | 2.20 | 0.40 |
| 25:RA:1859:A:C2 | 25:RA:1884:A:H1' | 2.57 | 0.40 |
| 25:RA:2020:A:OP1 | 40:RU:27:LEU:HD23 | 2.20 | 0.40 |
| 25:RA:2145:C:H2' | 25:RA:2147:G:N2 | 2.35 | 0.40 |
| 25:RA:2152:G:H2' | 25:RA:2153:G:H8 | 1.86 | 0.40 |
| 25:RA:2252:G:H2' | 25:RA:2253:G:O4' | 2.22 | 0.40 |
| 25:RA:2337:G:H2' | 25:RA:2337:G:N3 | 2.36 | 0.40 |
| 25:RA:2526:G:H5' | 25:RA:2742:C:O2' | 2.21 | 0.40 |
| 26:RB:45:A:H1' | 30:RG:95:ARG:HH22 | 1.86 | 0.40 |
| 27:RD:176:ARG:HH11 | 27:RD:176:ARG:CG | 2.30 | 0.40 |
| 27:RD:272:ALA:HB1 | 27:RD:273:ARG:H | 1.58 | 0.40 |
| 28:RE:119:ARG:HG2 | 28:RE:160:TYR:HB2 | 2.03 | 0.40 |
| 29:RF:62:ARG:HB3 | 29:RF:62:ARG:CZ | 2.52 | 0.40 |
| 29:RF:64:ILE:HD12 | 29:RF:64:ILE:HA | 1.89 | 0.40 |
| 31:RH:26:VAL:HG12 | 31:RH:33:LEU:HB2 | 2.03 | 0.40 |
| 33:RN:5:VAL:HA | 33:RN:6:PRO:HD3 | 1.94 | 0.40 |
| 33:RN:28:THR:O | 33:RN:29:LYS:C | 2.59 | 0.40 |
| 34:RO:20:MET:O | 34:RO:41:ALA:CB | 2.67 | 0.40 |
| 34:RO:31:LYS:C | 34:RO:32:TYR:CD2 | 2.95 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:RP:19:VAL:HG22 | 35:RP:21:ARG:N | 2.36 | 0.40 |
| 35:RP:65:ARG:HH21 | 54:R8:15:LYS:HB3 | 1.85 | 0.40 |
| 36:RQ:139:GLU:HG2 | 36:RQ:140:ALA:N | 2.37 | 0.40 |
| 37:RR:14:SER:HB2 | 37:RR:15:SER:H | 1.72 | 0.40 |
| 37:RR:61:HIS:CE1 | 37:RR:65:LEU:HD11 | 2.56 | 0.40 |
| 39:RT:10:VAL:O | 39:RT:11:GLU:C | 2.59 | 0.40 |
| 41:RV:38:LEU:O | 41:RV:51:VAL:HA | 2.21 | 0.40 |
| 42:RW:1:MET:CE | 42:RW:2:GLU:H | 2.31 | 0.40 |
| 44:RY:95:LYS:HA | 44:RY:101:LYS:CB | 2.51 | 0.40 |
| 47:R1:86:SER:O | 47:R1:89:GLU:HB2 | 2.21 | 0.40 |
| 48:R2:53:LEU:O | 48:R2:57:ILE:HG13 | 2.21 | 0.40 |
| 52:R6:7:ILE:CG1 | 52:R6:8:LYS:N | 2.75 | 0.40 |
| 53:R7:5:TRP:HE1 | 53:R7:7:PRO:HG3 | 1.85 | 0.40 |
| 54:R8:40:GLU:O | 54:R8:42:ARG:N | 2.54 | 0.40 |
| 1:XA:247:G:O6 | 1:XA:278:G:C6 | 2.74 | 0.40 |
| 1:XA:453:A:C6 | 1:XA:454:C:C4 | 3.10 | 0.40 |
| 1:XA:558:G:H2' | 1:XA:559:A:H2 | 1.86 | 0.40 |
| 1:XA:901:A:C5 | 1:XA:902:G:H1' | 2.56 | 0.40 |
| 2:XB:17:PHE:HB2 | 2:XB:42:ILE:CG2 | 2.50 | 0.40 |
| 2:XB:97:TRP:CH2 | 2:XB:176:GLU:HB2 | 2.54 | 0.40 |
| 2:XB:168:THR:CG2 | 2:XB:192:SER:HB2 | 2.51 | 0.40 |
| 3:XC:178:LEU:N | 3:XC:178:LEU:CD2 | 2.85 | 0.40 |
| 4:XD:19:LEU:HG | 4:XD:21:LEU:HG | 2.03 | 0.40 |
| 7:XG:121:ALA:O | 7:XG:125:MET:HG3 | 2.21 | 0.40 |
| 12:XL:43:VAL:HG13 | 12:XL:55:VAL:HG21 | 2.03 | 0.40 |
| 13:XM:54:VAL:O | 13:XM:54:VAL:HG12 | 2.21 | 0.40 |
| 13:XM:56:LEU:HD13 | 13:XM:60:VAL:CG2 | 2.51 | 0.40 |
| 16:XP:8:ARG:HG2 | 16:XP:8:ARG:NH1 | 2.31 | 0.40 |
| 16:XP:39:TYR:CD2 | 16:XP:41:PRO:HD3 | 2.56 | 0.40 |
| 16:XP:50:LYS:HD3 | 16:XP:50:LYS:C | 2.41 | 0.40 |
| 18:XR:44:LEU:C | 18:XR:45:SER:O | 2.59 | 0.40 |
| 18:XR:73:ALA:HB3 | 18:XR:79:LEU:CD1 | 2.47 | 0.40 |
| 19:XS:29:ARG:HG2 | 19:XS:29:ARG:NH1 | 2.37 | 0.40 |
| 25:YA:38:A:H4' | 29:YF:50:SER:HB2 | 2.02 | 0.40 |
| 25:YA:48:G:H22 | 25:YA:177:G:C5' | 2.35 | 0.40 |
| 25:YA:723:G:H2' | 25:YA:724:U:C6 | 2.57 | 0.40 |
| 25:YA:728:G:C2 | 25:YA:730:C:C2 | 3.09 | 0.40 |
| 25:YA:1084:A:H5' | 25:YA:1085:A:OP2 | 2.22 | 0.40 |
| 25:YA:1128:A:O4' | 25:YA:2516:G:O2' | 2.39 | 0.40 |
| 25:YA:1789:A:OP1 | 27:YD:221:VAL:HA | 2.21 | 0.40 |
| 25:YA:2168:G:N3 | 25:YA:2168:G:H2' | 2.35 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:YA:2359:C:H42 | 25:YA:2428:G:H1 | 1.69 | 0.40 |
| 27:YD:35:LYS:CE | 27:YD:64:ILE:C | 2.89 | 0.40 |
| 28:YE:93:VAL:H | 28:YE:95:ILE:CD1 | 2.23 | 0.40 |
| 28:YE:154:LYS:HD3 | 28:YE:154:LYS:C | 2.42 | 0.40 |
| 29:YF:33:LEU:O | 29:YF:37:VAL:HG23 | 2.21 | 0.40 |
| 29:YF:61:GLY:O | 29:YF:62:ARG:C | 2.57 | 0.40 |
| 29:YF:118:ALA:HA | 29:YF:123:LEU:HB3 | 2.02 | 0.40 |
| 30:YG:61:ALA:CB | 30:YG:67:LYS:HA | 2.50 | 0.40 |
| 31:YH:146:ALA:HA | 31:YH:164:TYR:OH | 2.21 | 0.40 |
| 32:YI:9:LEU:CD2 | 32:YI:12:LEU:O | 2.69 | 0.40 |
| 34:YO:16:ALA:HA | 34:YO:46:ALA:CB | 2.50 | 0.40 |
| 36:YQ:139:GLU:HG2 | 36:YQ:140:ALA:N | 2.36 | 0.40 |
| 39:YT:29:ARG:HB2 | 39:YT:29:ARG:NH1 | 2.36 | 0.40 |
| 42:YW:14:PRO:O | 42:YW:15:ARG:C | 2.58 | 0.40 |
| 43:YX:9:LEU:HA | 48:Y2:36:ARG:HH21 | 1.86 | 0.40 |
| 44:YY:97:ARG:O | 44:YY:97:ARG:CG | 2.69 | 0.40 |
| 48:Y2:18:PRO:C | 48:Y2:20:GLU:H | 2.24 | 0.40 |
| 52:Y6:50:ARG:NH1 | 52:Y6:50:ARG:HG2 | 2.37 | 0.40 |
| 54:Y8:39:LYS:HD2 | 54:Y8:39:LYS:O | 2.22 | 0.40 |
| 1:QA:132:C:H4' | 1:QA:262:A:H1' | 2.03 | 0.40 |
| 1:QA:403:C:H4' | 4:QD:122:ARG:NH2 | 2.36 | 0.40 |
| 1:QA:437:U:H5'' | 4:QD:155:LEU:HD22 | 2.03 | 0.40 |
| 1:QA:532:A:N1 | 3:QC:156:ARG:NH1 | 2.68 | 0.40 |
| 1:QA:1157:A:H1' | 1:QA:1158:C:N3 | 2.36 | 0.40 |
| 1:QA:1250:A:H4' | 9:QI:68:GLY:O | 2.21 | 0.40 |
| 1:QA:1415:G:C4 | 1:QA:1486:G:C2 | 3.10 | 0.40 |
| 1:QA:1439:C:H42 | 1:QA:1462:G:H1 | 1.69 | 0.40 |
| 2:QB:76:GLN:OE1 | 2:QB:206:ASP:HB3 | 2.21 | 0.40 |
| 2:QB:212:GLN:NE2 | 2:QB:212:GLN:O | 2.54 | 0.40 |
| 3:QC:113:ALA:HB3 | 3:QC:114:PRO:CD | 2.43 | 0.40 |
| 4:QD:15:GLU:OE1 | 4:QD:15:GLU:N | 2.54 | 0.40 |
| 4:QD:19:LEU:HG | 4:QD:21:LEU:HG | 2.03 | 0.40 |
| 4:QD:25:ARG:C | 4:QD:27:TYR:H | 2.24 | 0.40 |
| 4:QD:63:LYS:O | 4:QD:67:ILE:HG13 | 2.21 | 0.40 |
| 5:QE:48:ALA:C | 5:QE:50:GLU:H | 2.25 | 0.40 |
| 6:QF:61:LEU:HB3 | 6:QF:63:TYR:CE2 | 2.53 | 0.40 |
| 7:QG:140:ASP:C | 7:QG:142:GLU:N | 2.69 | 0.40 |
| 13:QM:36:LYS:HE3 | 13:QM:59:TYR:CD1 | 2.57 | 0.40 |
| 15:QO:50:HIS:O | 15:QO:53:HIS:HB3 | 2.20 | 0.40 |
| 16:QP:20:VAL:CG2 | 16:QP:32:TYR:CD2 | 3.04 | 0.40 |
| 18:QR:52:PRO:HG2 | 18:QR:55:ARG:HG2 | 2.04 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 20:QT:47:GLY:C | 20:QT:49:ALA:N | 2.72 | 0.40 |
| 20:QT:82:SER:O | 20:QT:86:ARG:CB | 2.70 | 0.40 |
| 25:RA:89:G:OP2 | 25:RA:90:U:O2' | 2.28 | 0.40 |
| 25:RA:135:G:H1 | 25:RA:144:C:N4 | 2.17 | 0.40 |
| 25:RA:315:G:H2' | 25:RA:316:C:H6 | 1.85 | 0.40 |
| 25:RA:328:U:H4' | 44:RY:68:HIS:CE1 | 2.56 | 0.40 |
| 25:RA:336:C:H5'' | 44:RY:6:HIS:CD2 | 2.56 | 0.40 |
| 25:RA:817:C:H2' | 25:RA:818:G:O4' | 2.21 | 0.40 |
| 25:RA:974:G:H1' | 25:RA:975:G:N7 | 2.36 | 0.40 |
| 25:RA:1159:U:H2' | 25:RA:1160:G:H8 | 1.85 | 0.40 |
| 25:RA:1252:G:H1' | 40:RU:33:ARG:HD3 | 2.04 | 0.40 |
| 25:RA:1454:U:O2 | 37:RR:64:ARG:NE | 2.45 | 0.40 |
| 25:RA:1751:C:H2' | 25:RA:1752:C:H6 | 1.86 | 0.40 |
| 25:RA:1839:G:C8 | 25:RA:1927:A:H1' | 2.56 | 0.40 |
| 25:RA:1930:G:H2' | 25:RA:1968:G:H1 | 1.87 | 0.40 |
| 25:RA:2120:G:H2' | 25:RA:2121:G:C8 | 2.57 | 0.40 |
| 29:RF:36:VAL:HG11 | 29:RF:183:VAL:HG11 | 2.04 | 0.40 |
| 30:RG:41:GLN:HB3 | 30:RG:43:LEU:CD1 | 2.51 | 0.40 |
| 30:RG:112:PRO:CA | 50:R4:37:SER:HB2 | 2.51 | 0.40 |
| 33:RN:101:HIS:HD2 | 33:RN:102:ALA:N | 2.19 | 0.40 |
| 35:RP:65:ARG:O | 35:RP:66:GLY:C | 2.60 | 0.40 |
| 38:RS:52:SER:HB2 | 38:RS:55:ALA:HB3 | 2.04 | 0.40 |
| 38:RS:89:ARG:HG2 | 38:RS:89:ARG:NH1 | 2.36 | 0.40 |
| 45:RZ:108:PRO:C | 45:RZ:110:GLY:N | 2.75 | 0.40 |
| 45:RZ:154:ASP:O | 45:RZ:157:LEU:CD1 | 2.68 | 0.40 |
| 47:R1:82:LEU:HD13 | 47:R1:83:GLU:CA | 2.49 | 0.40 |
| 49:R3:7:LYS:O | 49:R3:7:LYS:HG2 | 2.19 | 0.40 |
| 52:R6:36:LEU:HD23 | 52:R6:36:LEU:N | 2.37 | 0.40 |
| 52:R6:37:ARG:O | 52:R6:48:VAL:O | 2.39 | 0.40 |
| 54:R8:53:PRO:CG | 54:R8:54:GLU:N | 2.85 | 0.40 |
| 1:XA:328:C:H4' | 1:XA:329:A:C5' | 2.51 | 0.40 |
| 1:XA:598:U:H2' | 1:XA:599:C:C6 | 2.56 | 0.40 |
| 1:XA:701:C:O2 | 1:XA:703:G:N1 | 2.54 | 0.40 |
| 1:XA:773:G:H2' | 1:XA:774:G:O4' | 2.21 | 0.40 |
| 1:XA:871:U:O2' | 1:XA:872:A:H5'' | 2.22 | 0.40 |
| 1:XA:971:G:H22 | 1:XA:1363:A:P | 2.39 | 0.40 |
| 1:XA:1279:A:O2' | 1:XA:1282:C:N4 | 2.55 | 0.40 |
| 1:XA:1297:C:HO2' | 1:XA:1298:C:P | 2.45 | 0.40 |
| 2:XB:132:LYS:HA | 2:XB:135:GLN:CG | 2.52 | 0.40 |
| 2:XB:183:PRO:HA | 2:XB:198:ASP:OD1 | 2.21 | 0.40 |
| 3:XC:70:VAL:CG1 | 3:XC:71:ALA:H | 2.35 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:XC:108:ASN:HB3 | 3:XC:111:LEU:CG | 2.51 | 0.40 |
| 3:XC:120:VAL:O | 3:XC:123:GLN:HB2 | 2.20 | 0.40 |
| 5:XE:48:ALA:C | 5:XE:50:GLU:H | 2.24 | 0.40 |
| 7:XG:46:ALA:O | 7:XG:49:ILE:HB | 2.21 | 0.40 |
| 9:XI:9:ARG:CG | 9:XI:14:VAL:HG22 | 2.51 | 0.40 |
| 13:XM:28:ALA:C | 13:XM:30:ALA:H | 2.24 | 0.40 |
| 13:XM:47:ASP:O | 13:XM:48:LEU:HB3 | 2.20 | 0.40 |
| 15:XO:70:LEU:HD23 | 15:XO:81:LEU:HD23 | 2.04 | 0.40 |
| 17:XQ:68:ARG:O | 17:XQ:68:ARG:HG3 | 2.22 | 0.40 |
| 17:XQ:82:MET:C | 17:XQ:84:LEU:H | 2.25 | 0.40 |
| 25:YA:252:G:N2 | 25:YA:253:C:H1' | 2.37 | 0.40 |
| 25:YA:781:A:O2' | 25:YA:1788:C:O2 | 2.39 | 0.40 |
| 25:YA:975:G:H1' | 25:YA:990:A:C2 | 2.57 | 0.40 |
| 25:YA:1284:A:C6 | 25:YA:1285:G:C2 | 3.10 | 0.40 |
| 25:YA:1817:G:C6 | 25:YA:1818:U:C5 | 3.09 | 0.40 |
| 25:YA:2306:C:H2' | 25:YA:2307:G:H21 | 1.87 | 0.40 |
| 25:YA:2552:U:H6 | 25:YA:2552:U:O5' | 2.04 | 0.40 |
| 26:YB:49:C:H2' | 26:YB:50:G:H8 | 1.85 | 0.40 |
| 28:YE:93:VAL:HG21 | 28:YE:180:ASN:HA | 2.03 | 0.40 |
| 29:YF:36:VAL:HG11 | 29:YF:183:VAL:HG11 | 2.04 | 0.40 |
| 29:YF:124:LEU:HD12 | 29:YF:125:LEU:O | 2.22 | 0.40 |
| 32:YI:56:LYS:HG3 | 32:YI:57:ARG:N | 2.36 | 0.40 |
| 33:YN:133:GLN:C | 33:YN:134:ARG:HG2 | 2.41 | 0.40 |
| 34:YO:13:ASN:HD21 | 34:YO:97:ARG:HB3 | 1.87 | 0.40 |
| 34:YO:31:LYS:C | 34:YO:32:TYR:CD2 | 2.95 | 0.40 |
| 35:YP:85:LEU:HA | 35:YP:85:LEU:HD23 | 1.92 | 0.40 |
| 35:YP:126:VAL:HG12 | 35:YP:147:LEU:CD2 | 2.23 | 0.40 |
| 36:YQ:39:PRO:HA | 36:YQ:97:VAL:O | 2.21 | 0.40 |
| 36:YQ:58:PHE:C | 36:YQ:59:ARG:HD2 | 2.42 | 0.40 |
| 38:YS:83:LYS:HE3 | 38:YS:84:GLN:HG3 | 2.02 | 0.40 |
| 39:YT:20:PRO:HG2 | 39:YT:86:ILE:O | 2.21 | 0.40 |
| 40:YU:33:ARG:O | 40:YU:37:GLU:HB2 | 2.21 | 0.40 |
| 41:YV:70:ILE:O | 41:YV:70:ILE:HG22 | 2.21 | 0.40 |
| 45:YZ:37:VAL:HG23 | 45:YZ:38:TYR:N | 2.36 | 0.40 |
| 47:Y1:91:LYS:HG3 | 47:Y1:92:LYS:N | 2.33 | 0.40 |
| 47:Y1:96:LYS:O | 47:Y1:96:LYS:HG2 | 2.21 | 0.40 |
| 50:Y4:21:VAL:O | 50:Y4:22:ILE:O | 2.40 | 0.40 |
| 50:Y4:52:THR:O | 50:Y4:53:GLU:CB | 2.69 | 0.40 |
| 1:QA:410:G:C2 | 1:QA:429:U:C2 | 3.10 | 0.40 |
| 1:QA:590:C:OP1 | 8:QH:29:SER:HA | 2.22 | 0.40 |
| 1:QA:838:G:C2 | 1:QA:849:C:C2 | 3.10 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:QA:1250:A:H2 | 1:QA:1353:G:N2 | 2.19 | 0.40 |
| 1:QA:1329:A:H5'' | 13:QM:29:ARG:HG3 | 2.03 | 0.40 |
| 1:QA:1343:G:H1' | 9:QI:121:ARG:HH12 | 1.87 | 0.40 |
| 2:QB:201:ILE:HG21 | 2:QB:214:ILE:HG21 | 2.03 | 0.40 |
| 3:QC:59:ARG:NH1 | 3:QC:97:LYS:HE3 | 2.34 | 0.40 |
| 3:QC:138:VAL:HG22 | 3:QC:151:VAL:HG23 | 2.03 | 0.40 |
| 3:QC:172:ARG:C | 3:QC:173:VAL:HG23 | 2.42 | 0.40 |
| 4:QD:12:CYS:O | 4:QD:33:MET:HG3 | 2.21 | 0.40 |
| 4:QD:120:LEU:HD23 | 4:QD:120:LEU:HA | 1.84 | 0.40 |
| 4:QD:209:ARG:HA | 4:QD:209:ARG:NE | 2.36 | 0.40 |
| 6:QF:98:LEU:HD12 | 6:QF:98:LEU:C | 2.41 | 0.40 |
| 6:QF:99:ALA:O | 6:QF:100:ASN:CB | 2.70 | 0.40 |
| 7:QG:69:VAL:HG12 | 7:QG:100:ALA:HA | 2.03 | 0.40 |
| 8:QH:100:ILE:HA | 8:QH:101:PRO:HD3 | 1.85 | 0.40 |
| 9:QI:105:ASP:C | 9:QI:107:ARG:N | 2.74 | 0.40 |
| 10:QJ:101:VAL:O | 10:QJ:101:VAL:HG13 | 2.22 | 0.40 |
| 11:QK:25:TYR:H | 11:QK:25:TYR:HD1 | 1.69 | 0.40 |
| 12:QL:39:VAL:HG12 | 12:QL:41:ARG:HG2 | 2.04 | 0.40 |
| 14:QN:48:ALA:O | 14:QN:51:GLY:N | 2.53 | 0.40 |
| 15:QO:77:ARG:CA | 15:QO:80:ALA:HB3 | 2.52 | 0.40 |
| 25:RA:49:A:H5' | 25:RA:51:G:O4' | 2.21 | 0.40 |
| 25:RA:271(B):G:N3 | 25:RA:271:G:H1' | 2.37 | 0.40 |
| 25:RA:372:G:N2 | 25:RA:400:G:H2' | 2.37 | 0.40 |
| 25:RA:755:C:H2' | 25:RA:756:C:H6 | 1.86 | 0.40 |
| 25:RA:930:U:H4' | 25:RA:931:G:O4' | 2.21 | 0.40 |
| 25:RA:1422:G:C6 | 25:RA:1423:G:C5 | 3.10 | 0.40 |
| 25:RA:1572:A:H2' | 25:RA:1573:G:O4' | 2.22 | 0.40 |
| 25:RA:1728:G:C6 | 25:RA:1730:U:OP2 | 2.74 | 0.40 |
| 25:RA:2030:A:H4' | 25:RA:2031:A:C8 | 2.57 | 0.40 |
| 25:RA:2458:G:H1' | 25:RA:2460:U:O4 | 2.22 | 0.40 |
| 25:RA:2630:G:N3 | 25:RA:2894:G:N2 | 2.70 | 0.40 |
| 25:RA:2742:C:O5' | 25:RA:2742:C:H6 | 2.04 | 0.40 |
| 26:RB:12:C:C2 | 46:R0:74:ARG:HD2 | 2.57 | 0.40 |
| 27:RD:25:THR:HG23 | 27:RD:27:THR:HB | 2.01 | 0.40 |
| 27:RD:185:VAL:HG12 | 27:RD:186:HIS:N | 2.37 | 0.40 |
| 28:RE:93:VAL:C | 28:RE:95:ILE:N | 2.75 | 0.40 |
| 28:RE:154:LYS:C | 28:RE:154:LYS:HD3 | 2.42 | 0.40 |
| 32:RI:94:ALA:O | 32:RI:96:ASP:N | 2.54 | 0.40 |
| 32:RI:121:LYS:CG | 32:RI:122:GLU:N | 2.85 | 0.40 |
| 34:RO:97:ARG:H | 34:RO:117:LEU:CD2 | 2.24 | 0.40 |
| 38:RS:92:TYR:HB2 | 38:RS:98:VAL:HG11 | 2.02 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 39:RT:23:ARG:O | 39:RT:49:VAL:HG11 | 2.21 | 0.40 |
| 39:RT:50:ILE:HD11 | 39:RT:102:ILE:CG1 | 2.52 | 0.40 |
| 39:RT:54:ARG:HA | 39:RT:59:THR:HG23 | 2.02 | 0.40 |
| 40:RU:15:LYS:O | 40:RU:16:LYS:C | 2.60 | 0.40 |
| 41:RV:95:LEU:C | 41:RV:95:LEU:HD13 | 2.42 | 0.40 |
| 44:RY:57:GLN:O | 44:RY:58:GLY:C | 2.60 | 0.40 |
| 45:RZ:168:GLU:OE2 | 45:RZ:168:GLU:N | 2.55 | 0.40 |
| 46:R0:40:GLN:NE2 | 46:R0:43:THR:HA | 2.36 | 0.40 |
| 52:R6:24:GLU:HB3 | 52:R6:25:LYS:H | 1.56 | 0.40 |
| 1:XA:192:U:H2' | 1:XA:193:C:C6 | 2.57 | 0.40 |
| 1:XA:338:A:C5 | 1:XA:339:C:C5 | 3.10 | 0.40 |
| 1:XA:370:C:C2 | 1:XA:392:G:N2 | 2.89 | 0.40 |
| 1:XA:468:A:OP1 | 16:XP:75:ARG:NH2 | 2.55 | 0.40 |
| 1:XA:570:G:H1' | 1:XA:820:U:C4 | 2.56 | 0.40 |
| 1:XA:1034:G:N2 | 1:XA:1035:A:C6 | 2.90 | 0.40 |
| 1:XA:1154:G:C4 | 1:XA:1155:G:C8 | 3.09 | 0.40 |
| 1:XA:1262:C:H2' | 1:XA:1263:C:C6 | 2.55 | 0.40 |
| 3:XC:33:LEU:HD11 | 14:XN:53:LEU:HD23 | 2.04 | 0.40 |
| 3:XC:55:VAL:HG12 | 3:XC:55:VAL:O | 2.21 | 0.40 |
| 3:XC:149:ALA:O | 3:XC:169:ALA:CA | 2.67 | 0.40 |
| 3:XC:172:ARG:C | 3:XC:173:VAL:HG23 | 2.42 | 0.40 |
| 4:XD:110:PHE:HE2 | 4:XD:148:VAL:HG23 | 1.86 | 0.40 |
| 4:XD:199:ASN:OD1 | 4:XD:201:GLN:HB3 | 2.21 | 0.40 |
| 5:XE:36:ASP:O | 5:XE:37:ARG:HG2 | 2.22 | 0.40 |
| 7:XG:69:VAL:HG12 | 7:XG:100:ALA:HA | 2.03 | 0.40 |
| 8:XH:41:ARG:CG | 8:XH:41:ARG:NH1 | 2.76 | 0.40 |
| 9:XI:13:ALA:H | 9:XI:68:GLY:HA3 | 1.86 | 0.40 |
| 10:XJ:22:LYS:C | 10:XJ:22:LYS:CD | 2.89 | 0.40 |
| 10:XJ:49:VAL:HG13 | 14:XN:41:ARG:HD2 | 2.03 | 0.40 |
| 11:XK:90:GLY:O | 11:XK:94:ALA:HB2 | 2.21 | 0.40 |
| 12:XL:21:LYS:N | 12:XL:21:LYS:CD | 2.83 | 0.40 |
| 13:XM:119:GLY:O | 13:XM:120:LYS:O | 2.38 | 0.40 |
| 14:XN:40:CYS:N | 14:XN:43:CYS:HB2 | 2.36 | 0.40 |
| 16:XP:6:LEU:CD1 | 16:XP:6:LEU:N | 2.84 | 0.40 |
| 17:XQ:8:GLY:HA3 | 17:XQ:21:VAL:HG12 | 2.03 | 0.40 |
| 17:XQ:51:TYR:HA | 17:XQ:52:LYS:HZ2 | 1.86 | 0.40 |
| 20:XT:49:ALA:HA | 20:XT:92:LEU:HD21 | 2.04 | 0.40 |
| 20:XT:55:ILE:HA | 20:XT:58:LYS:HB3 | 2.03 | 0.40 |
| 22:XV:21:A:N6 | 22:XV:46:G:H2' | 2.36 | 0.40 |
| 22:XV:74:C:H2' | 22:XV:75:C:H5' | 2.03 | 0.40 |
| 25:YA:99:U:H1' | 25:YA:102:G:C2 | 2.57 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:YA:133:C:N4 | 25:YA:146:G:H1 | 2.18 | 0.40 |
| 25:YA:191:A:H2' | 25:YA:192:C:C6 | 2.57 | 0.40 |
| 25:YA:483:A:H3' | 25:YA:484:C:H6 | 1.87 | 0.40 |
| 25:YA:539:G:H5' | 25:YA:540:G:P | 2.62 | 0.40 |
| 25:YA:790:C:H6 | 25:YA:790:C:H2' | 1.69 | 0.40 |
| 25:YA:1101:U:H2' | 25:YA:1102:C:C6 | 2.56 | 0.40 |
| 25:YA:1402:C:C2' | 25:YA:1403:C:H5' | 2.51 | 0.40 |
| 25:YA:1795:C:H2' | 25:YA:1796:U:O4' | 2.21 | 0.40 |
| 25:YA:2083:G:H2' | 25:YA:2084:C:O4' | 2.22 | 0.40 |
| 25:YA:2168:G:N2 | 25:YA:2170:A:N7 | 2.70 | 0.40 |
| 25:YA:2360:A:O5' | 25:YA:2360:A:H8 | 2.04 | 0.40 |
| 27:YD:107:ALA:HA | 27:YD:108:PRO:HD2 | 2.01 | 0.40 |
| 27:YD:230:ASP:OD2 | 27:YD:230:ASP:N | 2.54 | 0.40 |
| 28:YE:3:GLY:HA3 | 28:YE:81:ILE:CG2 | 2.52 | 0.40 |
| 30:YG:98:ARG:CA | 30:YG:101:ILE:HG12 | 2.40 | 0.40 |
| 30:YG:137:GLU:OE2 | 30:YG:139:LEU:HD11 | 2.22 | 0.40 |
| 35:YP:96:THR:O | 35:YP:97:PRO:O | 2.40 | 0.40 |
| 38:YS:59:LYS:CG | 38:YS:60:GLY:N | 2.80 | 0.40 |
| 40:YU:30:LYS:HA | 40:YU:30:LYS:HD3 | 1.84 | 0.40 |
| 41:YV:35:LEU:C | 41:YV:37:VAL:N | 2.75 | 0.40 |
| 44:YY:57:GLN:O | 44:YY:58:GLY:C | 2.60 | 0.40 |
| 44:YY:95:LYS:HA | 44:YY:101:LYS:CB | 2.51 | 0.40 |
| 45:YZ:144:LEU:CD2 | 45:YZ:150:LEU:HD13 | 2.51 | 0.40 |
| 47:Y1:86:SER:O | 47:Y1:89:GLU:N | 2.54 | 0.40 |
| 50:Y4:51:ASP:O | 50:Y4:51:ASP:CG | 2.60 | 0.40 |
| 52:Y6:53:LYS:HB3 | 52:Y6:53:LYS:NZ | 2.36 | 0.40 |

All (3) 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) |
|------------------|------------------------|--------------------------|-------------------|
| 41:YV:51:VAL:N | 51:Y5:60:VAL:O[4_445] | 1.98 | 0.22 |
| 31:YH:47:GLU:OE2 | 44:YY:79:CYS:CB[4_445] | 2.04 | 0.16 |
| 11:QK:99:GLN:NE2 | 3:XC:79:ARG:NH2[4_555] | 2.06 | 0.14 |

5.3 Torsion angles

5.3.1 Protein backbone

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 | QB | 235/256 (92%) | 153 (65%) | 52 (22%) | 30 (13%) | 0 | 4 |
| 2 | XB | 235/256 (92%) | 152 (65%) | 53 (23%) | 30 (13%) | 0 | 4 |
| 3 | QC | 203/239 (85%) | 128 (63%) | 56 (28%) | 19 (9%) | 0 | 7 |
| 3 | XC | 203/239 (85%) | 128 (63%) | 56 (28%) | 19 (9%) | 0 | 7 |
| 4 | QD | 206/209 (99%) | 133 (65%) | 51 (25%) | 22 (11%) | 0 | 6 |
| 4 | XD | 206/209 (99%) | 133 (65%) | 50 (24%) | 23 (11%) | 0 | 5 |
| 5 | QE | 149/162 (92%) | 103 (69%) | 30 (20%) | 16 (11%) | 0 | 6 |
| 5 | XE | 149/162 (92%) | 103 (69%) | 31 (21%) | 15 (10%) | 0 | 6 |
| 6 | QF | 99/101 (98%) | 66 (67%) | 24 (24%) | 9 (9%) | 1 | 7 |
| 6 | XF | 99/101 (98%) | 66 (67%) | 24 (24%) | 9 (9%) | 1 | 7 |
| 7 | QG | 153/156 (98%) | 102 (67%) | 37 (24%) | 14 (9%) | 1 | 7 |
| 7 | XG | 153/156 (98%) | 102 (67%) | 36 (24%) | 15 (10%) | 0 | 6 |
| 8 | QH | 136/138 (99%) | 92 (68%) | 29 (21%) | 15 (11%) | 0 | 5 |
| 8 | XH | 136/138 (99%) | 92 (68%) | 29 (21%) | 15 (11%) | 0 | 5 |
| 9 | QI | 125/128 (98%) | 77 (62%) | 32 (26%) | 16 (13%) | 0 | 4 |
| 9 | XI | 125/128 (98%) | 77 (62%) | 32 (26%) | 16 (13%) | 0 | 4 |
| 10 | QJ | 97/105 (92%) | 68 (70%) | 19 (20%) | 10 (10%) | 0 | 6 |
| 10 | XJ | 97/105 (92%) | 68 (70%) | 20 (21%) | 9 (9%) | 0 | 7 |
| 11 | QK | 117/129 (91%) | 87 (74%) | 21 (18%) | 9 (8%) | 1 | 9 |
| 11 | XK | 117/129 (91%) | 87 (74%) | 21 (18%) | 9 (8%) | 1 | 9 |
| 12 | QL | 123/132 (93%) | 85 (69%) | 24 (20%) | 14 (11%) | 0 | 5 |
| 12 | XL | 123/132 (93%) | 85 (69%) | 24 (20%) | 14 (11%) | 0 | 5 |
| 13 | QM | 119/126 (94%) | 71 (60%) | 27 (23%) | 21 (18%) | 0 | 1 |
| 13 | XM | 119/126 (94%) | 71 (60%) | 27 (23%) | 21 (18%) | 0 | 1 |
| 14 | QN | 58/61 (95%) | 33 (57%) | 15 (26%) | 10 (17%) | 0 | 2 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|----------|-------------|----|
| 14 | XN | 58/61 (95%) | 33 (57%) | 15 (26%) | 10 (17%) | 0 | 2 |
| 15 | QO | 86/89 (97%) | 61 (71%) | 19 (22%) | 6 (7%) | 1 | 11 |
| 15 | XO | 86/89 (97%) | 61 (71%) | 19 (22%) | 6 (7%) | 1 | 11 |
| 16 | QP | 82/88 (93%) | 48 (58%) | 23 (28%) | 11 (13%) | 0 | 3 |
| 16 | XP | 82/88 (93%) | 48 (58%) | 23 (28%) | 11 (13%) | 0 | 3 |
| 17 | QQ | 98/105 (93%) | 75 (76%) | 15 (15%) | 8 (8%) | 1 | 9 |
| 17 | XQ | 98/105 (93%) | 75 (76%) | 15 (15%) | 8 (8%) | 1 | 9 |
| 18 | QR | 68/88 (77%) | 46 (68%) | 14 (21%) | 8 (12%) | 0 | 5 |
| 18 | XR | 68/88 (77%) | 46 (68%) | 14 (21%) | 8 (12%) | 0 | 5 |
| 19 | QS | 82/93 (88%) | 46 (56%) | 18 (22%) | 18 (22%) | 0 | 1 |
| 19 | XS | 82/93 (88%) | 46 (56%) | 18 (22%) | 18 (22%) | 0 | 1 |
| 20 | QT | 97/106 (92%) | 63 (65%) | 16 (16%) | 18 (19%) | 0 | 1 |
| 20 | XT | 97/106 (92%) | 63 (65%) | 15 (16%) | 19 (20%) | 0 | 1 |
| 21 | QU | 23/27 (85%) | 15 (65%) | 4 (17%) | 4 (17%) | 0 | 2 |
| 21 | XU | 23/27 (85%) | 15 (65%) | 4 (17%) | 4 (17%) | 0 | 2 |
| 27 | RD | 270/276 (98%) | 204 (76%) | 46 (17%) | 20 (7%) | 1 | 10 |
| 27 | YD | 270/276 (98%) | 204 (76%) | 46 (17%) | 20 (7%) | 1 | 10 |
| 28 | RE | 203/206 (98%) | 120 (59%) | 41 (20%) | 42 (21%) | 0 | 1 |
| 28 | YE | 203/206 (98%) | 120 (59%) | 41 (20%) | 42 (21%) | 0 | 1 |
| 29 | RF | 200/210 (95%) | 144 (72%) | 36 (18%) | 20 (10%) | 0 | 6 |
| 29 | YF | 200/210 (95%) | 144 (72%) | 36 (18%) | 20 (10%) | 0 | 6 |
| 30 | RG | 179/182 (98%) | 120 (67%) | 38 (21%) | 21 (12%) | 0 | 5 |
| 30 | YG | 179/182 (98%) | 120 (67%) | 38 (21%) | 21 (12%) | 0 | 5 |
| 31 | RH | 168/180 (93%) | 94 (56%) | 35 (21%) | 39 (23%) | 0 | 1 |
| 31 | YH | 168/180 (93%) | 95 (56%) | 35 (21%) | 38 (23%) | 0 | 1 |
| 32 | RI | 144/148 (97%) | 83 (58%) | 33 (23%) | 28 (19%) | 0 | 1 |
| 32 | YI | 144/148 (97%) | 85 (59%) | 32 (22%) | 27 (19%) | 0 | 1 |
| 33 | RN | 136/140 (97%) | 84 (62%) | 30 (22%) | 22 (16%) | 0 | 2 |
| 33 | YN | 136/140 (97%) | 84 (62%) | 30 (22%) | 22 (16%) | 0 | 2 |
| 34 | RO | 120/122 (98%) | 90 (75%) | 21 (18%) | 9 (8%) | 1 | 10 |
| 34 | YO | 120/122 (98%) | 90 (75%) | 21 (18%) | 9 (8%) | 1 | 10 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|----------|----------|----------|-------------|----|
| 35 | RP | 148/150 (99%) | 97 (66%) | 19 (13%) | 32 (22%) | 0 | 1 |
| 35 | YP | 148/150 (99%) | 97 (66%) | 19 (13%) | 32 (22%) | 0 | 1 |
| 36 | RQ | 139/141 (99%) | 94 (68%) | 30 (22%) | 15 (11%) | 0 | 5 |
| 36 | YQ | 139/141 (99%) | 94 (68%) | 30 (22%) | 15 (11%) | 0 | 5 |
| 37 | RR | 116/118 (98%) | 82 (71%) | 20 (17%) | 14 (12%) | 0 | 4 |
| 37 | YR | 116/118 (98%) | 82 (71%) | 20 (17%) | 14 (12%) | 0 | 4 |
| 38 | RS | 109/112 (97%) | 62 (57%) | 28 (26%) | 19 (17%) | 0 | 2 |
| 38 | YS | 109/112 (97%) | 63 (58%) | 27 (25%) | 19 (17%) | 0 | 2 |
| 39 | RT | 135/146 (92%) | 83 (62%) | 32 (24%) | 20 (15%) | 0 | 2 |
| 39 | YT | 135/146 (92%) | 83 (62%) | 32 (24%) | 20 (15%) | 0 | 2 |
| 40 | RU | 115/118 (98%) | 87 (76%) | 19 (16%) | 9 (8%) | 1 | 9 |
| 40 | YU | 115/118 (98%) | 86 (75%) | 20 (17%) | 9 (8%) | 1 | 9 |
| 41 | RV | 99/101 (98%) | 73 (74%) | 16 (16%) | 10 (10%) | 0 | 6 |
| 41 | YV | 99/101 (98%) | 73 (74%) | 16 (16%) | 10 (10%) | 0 | 6 |
| 42 | RW | 111/113 (98%) | 75 (68%) | 22 (20%) | 14 (13%) | 0 | 4 |
| 42 | YW | 111/113 (98%) | 75 (68%) | 22 (20%) | 14 (13%) | 0 | 4 |
| 43 | RX | 90/96 (94%) | 77 (86%) | 8 (9%) | 5 (6%) | 2 | 16 |
| 43 | YX | 90/96 (94%) | 77 (86%) | 8 (9%) | 5 (6%) | 2 | 16 |
| 44 | RY | 100/110 (91%) | 57 (57%) | 17 (17%) | 26 (26%) | 0 | 0 |
| 44 | YY | 100/110 (91%) | 57 (57%) | 17 (17%) | 26 (26%) | 0 | 0 |
| 45 | RZ | 170/206 (82%) | 91 (54%) | 40 (24%) | 39 (23%) | 0 | 1 |
| 45 | YZ | 170/206 (82%) | 91 (54%) | 40 (24%) | 39 (23%) | 0 | 1 |
| 46 | R0 | 80/85 (94%) | 61 (76%) | 14 (18%) | 5 (6%) | 1 | 13 |
| 46 | Y0 | 80/85 (94%) | 62 (78%) | 12 (15%) | 6 (8%) | 1 | 10 |
| 47 | R1 | 95/98 (97%) | 64 (67%) | 20 (21%) | 11 (12%) | 0 | 5 |
| 47 | Y1 | 95/98 (97%) | 64 (67%) | 20 (21%) | 11 (12%) | 0 | 5 |
| 48 | R2 | 67/72 (93%) | 46 (69%) | 12 (18%) | 9 (13%) | 0 | 3 |
| 48 | Y2 | 67/72 (93%) | 46 (69%) | 12 (18%) | 9 (13%) | 0 | 3 |
| 49 | R3 | 57/60 (95%) | 45 (79%) | 9 (16%) | 3 (5%) | 2 | 16 |
| 49 | Y3 | 57/60 (95%) | 45 (79%) | 9 (16%) | 3 (5%) | 2 | 16 |
| 50 | R4 | 69/71 (97%) | 23 (33%) | 20 (29%) | 26 (38%) | 0 | 0 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-------------------|------------|------------|------------|-------------|----|
| 50 | Y4 | 69/71 (97%) | 23 (33%) | 20 (29%) | 26 (38%) | 0 | 0 |
| 51 | R5 | 57/60 (95%) | 33 (58%) | 9 (16%) | 15 (26%) | 0 | 0 |
| 51 | Y5 | 57/60 (95%) | 33 (58%) | 9 (16%) | 15 (26%) | 0 | 0 |
| 52 | R6 | 47/54 (87%) | 15 (32%) | 18 (38%) | 14 (30%) | 0 | 0 |
| 52 | Y6 | 47/54 (87%) | 15 (32%) | 18 (38%) | 14 (30%) | 0 | 0 |
| 53 | R7 | 47/49 (96%) | 37 (79%) | 7 (15%) | 3 (6%) | 1 | 13 |
| 53 | Y7 | 47/49 (96%) | 37 (79%) | 7 (15%) | 3 (6%) | 1 | 13 |
| 54 | R8 | 62/65 (95%) | 36 (58%) | 15 (24%) | 11 (18%) | 0 | 1 |
| 54 | Y8 | 62/65 (95%) | 36 (58%) | 15 (24%) | 11 (18%) | 0 | 1 |
| All | All | 11378/12054 (94%) | 7461 (66%) | 2359 (21%) | 1558 (14%) | 0 | 3 |

All (1558) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | QB | 6 | THR |
| 2 | QB | 15 | VAL |
| 2 | QB | 26 | PRO |
| 2 | QB | 84 | GLU |
| 2 | QB | 88 | ALA |
| 2 | QB | 126 | GLU |
| 2 | QB | 230 | VAL |
| 2 | QB | 233 | SER |
| 3 | QC | 4 | LYS |
| 3 | QC | 12 | LEU |
| 3 | QC | 14 | ILE |
| 3 | QC | 29 | TYR |
| 3 | QC | 61 | ALA |
| 3 | QC | 189 | ALA |
| 3 | QC | 190 | ARG |
| 4 | QD | 28 | SER |
| 4 | QD | 30 | LYS |
| 4 | QD | 51 | PRO |
| 4 | QD | 89 | THR |
| 4 | QD | 129 | ASN |
| 4 | QD | 154 | ASN |
| 4 | QD | 155 | LEU |
| 4 | QD | 178 | VAL |
| 5 | QE | 146 | ALA |
| 7 | QG | 5 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 7 | QG | 7 | ALA |
| 8 | QH | 50 | ARG |
| 8 | QH | 129 | VAL |
| 9 | QI | 23 | ASN |
| 9 | QI | 56 | LEU |
| 9 | QI | 95 | LYS |
| 9 | QI | 111 | ARG |
| 9 | QI | 117 | HIS |
| 10 | QJ | 30 | SER |
| 10 | QJ | 33 | GLN |
| 11 | QK | 91 | ARG |
| 12 | QL | 18 | VAL |
| 12 | QL | 27 | LEU |
| 12 | QL | 48 | PRO |
| 12 | QL | 62 | SER |
| 12 | QL | 121 | GLY |
| 13 | QM | 70 | LEU |
| 13 | QM | 83 | ASP |
| 13 | QM | 106 | ASN |
| 13 | QM | 108 | ARG |
| 13 | QM | 118 | ALA |
| 14 | QN | 3 | ARG |
| 14 | QN | 16 | PHE |
| 14 | QN | 23 | ARG |
| 15 | QO | 88 | ARG |
| 16 | QP | 44 | THR |
| 16 | QP | 67 | THR |
| 17 | QQ | 34 | LYS |
| 17 | QQ | 49 | GLU |
| 18 | QR | 22 | VAL |
| 19 | QS | 3 | ARG |
| 19 | QS | 12 | ASP |
| 19 | QS | 14 | HIS |
| 19 | QS | 25 | LYS |
| 19 | QS | 26 | GLY |
| 19 | QS | 31 | ILE |
| 19 | QS | 41 | VAL |
| 19 | QS | 70 | LYS |
| 19 | QS | 78 | ARG |
| 19 | QS | 79 | THR |
| 20 | QT | 48 | LYS |
| 20 | QT | 49 | ALA |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 20 | QT | 74 | LYS |
| 20 | QT | 95 | ALA |
| 20 | QT | 96 | GLY |
| 20 | QT | 100 | ILE |
| 21 | QU | 7 | ARG |
| 21 | QU | 9 | ARG |
| 21 | QU | 22 | ARG |
| 27 | RD | 26 | LYS |
| 27 | RD | 28 | GLU |
| 27 | RD | 123 | ALA |
| 27 | RD | 231 | HIS |
| 28 | RE | 4 | ILE |
| 28 | RE | 7 | VAL |
| 28 | RE | 9 | VAL |
| 28 | RE | 22 | PRO |
| 28 | RE | 54 | GLN |
| 28 | RE | 57 | LYS |
| 28 | RE | 60 | ASN |
| 28 | RE | 63 | LEU |
| 28 | RE | 64 | LYS |
| 28 | RE | 68 | ALA |
| 28 | RE | 70 | ALA |
| 28 | RE | 73 | GLU |
| 28 | RE | 90 | THR |
| 28 | RE | 92 | THR |
| 28 | RE | 93 | VAL |
| 28 | RE | 169 | ASN |
| 28 | RE | 187 | ALA |
| 28 | RE | 189 | PRO |
| 29 | RF | 25 | PRO |
| 29 | RF | 66 | PRO |
| 29 | RF | 68 | LYS |
| 29 | RF | 73 | ALA |
| 29 | RF | 89 | VAL |
| 29 | RF | 128 | ALA |
| 29 | RF | 176 | LEU |
| 30 | RG | 4 | ASP |
| 30 | RG | 14 | GLU |
| 30 | RG | 79 | ASN |
| 30 | RG | 86 | MET |
| 31 | RH | 10 | PRO |
| 31 | RH | 12 | PRO |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 31 | RH | 83 | TYR |
| 31 | RH | 85 | LYS |
| 31 | RH | 86 | GLU |
| 31 | RH | 87 | LEU |
| 31 | RH | 90 | LYS |
| 31 | RH | 92 | ILE |
| 31 | RH | 126 | PRO |
| 31 | RH | 127 | GLU |
| 31 | RH | 128 | PRO |
| 31 | RH | 137 | ASP |
| 31 | RH | 138 | LYS |
| 31 | RH | 153 | LYS |
| 31 | RH | 154 | PRO |
| 31 | RH | 155 | SER |
| 31 | RH | 169 | VAL |
| 32 | RI | 9 | LEU |
| 32 | RI | 10 | GLU |
| 32 | RI | 13 | GLY |
| 32 | RI | 15 | VAL |
| 32 | RI | 56 | LYS |
| 32 | RI | 115 | ALA |
| 32 | RI | 133 | HIS |
| 32 | RI | 145 | VAL |
| 33 | RN | 6 | PRO |
| 33 | RN | 9 | VAL |
| 33 | RN | 22 | THR |
| 33 | RN | 36 | GLY |
| 33 | RN | 58 | ASP |
| 33 | RN | 95 | PRO |
| 33 | RN | 97 | ARG |
| 33 | RN | 119 | ARG |
| 33 | RN | 131 | GLN |
| 33 | RN | 133 | GLN |
| 33 | RN | 134 | ARG |
| 34 | RO | 49 | ARG |
| 35 | RP | 5 | ASP |
| 35 | RP | 10 | PRO |
| 35 | RP | 15 | ARG |
| 35 | RP | 19 | VAL |
| 35 | RP | 21 | ARG |
| 35 | RP | 25 | SER |
| 35 | RP | 27 | HIS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | RP | 36 | LYS |
| 35 | RP | 38 | GLN |
| 35 | RP | 42 | SER |
| 35 | RP | 65 | ARG |
| 35 | RP | 95 | VAL |
| 35 | RP | 106 | LEU |
| 35 | RP | 107 | LYS |
| 35 | RP | 141 | ALA |
| 35 | RP | 148 | LEU |
| 36 | RQ | 6 | ARG |
| 36 | RQ | 18 | LYS |
| 36 | RQ | 22 | LYS |
| 36 | RQ | 27 | VAL |
| 36 | RQ | 81 | VAL |
| 36 | RQ | 90 | VAL |
| 36 | RQ | 134 | ARG |
| 37 | RR | 2 | ARG |
| 37 | RR | 3 | HIS |
| 37 | RR | 4 | LEU |
| 37 | RR | 14 | SER |
| 37 | RR | 58 | GLY |
| 37 | RR | 86 | ARG |
| 37 | RR | 117 | VAL |
| 38 | RS | 4 | LEU |
| 38 | RS | 12 | PHE |
| 38 | RS | 14 | VAL |
| 38 | RS | 23 | ARG |
| 38 | RS | 56 | LEU |
| 38 | RS | 57 | LYS |
| 38 | RS | 88 | ASP |
| 38 | RS | 89 | ARG |
| 38 | RS | 90 | GLY |
| 38 | RS | 107 | GLU |
| 39 | RT | 2 | ASN |
| 39 | RT | 3 | ARG |
| 39 | RT | 39 | ARG |
| 39 | RT | 55 | ASN |
| 39 | RT | 58 | ASN |
| 39 | RT | 90 | GLN |
| 39 | RT | 94 | ALA |
| 39 | RT | 97 | ALA |
| 39 | RT | 106 | SER |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 39 | RT | 107 | ASP |
| 41 | RV | 28 | GLU |
| 41 | RV | 31 | ALA |
| 41 | RV | 45 | THR |
| 41 | RV | 48 | GLY |
| 41 | RV | 49 | THR |
| 41 | RV | 50 | PRO |
| 41 | RV | 53 | GLU |
| 41 | RV | 79 | VAL |
| 42 | RW | 59 | VAL |
| 42 | RW | 67 | ASP |
| 42 | RW | 75 | TYR |
| 42 | RW | 111 | HIS |
| 43 | RX | 36 | LYS |
| 44 | RY | 3 | VAL |
| 44 | RY | 23 | ARG |
| 44 | RY | 48 | ALA |
| 44 | RY | 49 | VAL |
| 44 | RY | 50 | ARG |
| 44 | RY | 53 | PRO |
| 44 | RY | 58 | GLY |
| 44 | RY | 63 | LYS |
| 44 | RY | 77 | PRO |
| 44 | RY | 78 | ALA |
| 44 | RY | 96 | ILE |
| 45 | RZ | 6 | LYS |
| 45 | RZ | 13 | GLU |
| 45 | RZ | 31 | ARG |
| 45 | RZ | 51 | ALA |
| 45 | RZ | 111 | VAL |
| 45 | RZ | 112 | ARG |
| 45 | RZ | 114 | GLY |
| 45 | RZ | 116 | VAL |
| 45 | RZ | 122 | ARG |
| 45 | RZ | 141 | VAL |
| 45 | RZ | 151 | HIS |
| 45 | RZ | 155 | LEU |
| 45 | RZ | 156 | LYS |
| 45 | RZ | 158 | PRO |
| 45 | RZ | 170 | THR |
| 45 | RZ | 171 | ILE |
| 47 | R1 | 30 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 47 | R1 | 54 | ALA |
| 47 | R1 | 81 | LYS |
| 47 | R1 | 82 | LEU |
| 47 | R1 | 95 | LEU |
| 48 | R2 | 16 | LEU |
| 48 | R2 | 43 | GLN |
| 48 | R2 | 47 | ASN |
| 48 | R2 | 48 | HIS |
| 48 | R2 | 71 | ASN |
| 49 | R3 | 3 | ARG |
| 50 | R4 | 5 | ILE |
| 50 | R4 | 14 | ILE |
| 50 | R4 | 16 | CYS |
| 50 | R4 | 22 | ILE |
| 50 | R4 | 23 | GLU |
| 50 | R4 | 36 | CYS |
| 50 | R4 | 37 | SER |
| 50 | R4 | 40 | HIS |
| 50 | R4 | 42 | PHE |
| 50 | R4 | 43 | TYR |
| 50 | R4 | 49 | PHE |
| 50 | R4 | 50 | VAL |
| 50 | R4 | 51 | ASP |
| 50 | R4 | 53 | GLU |
| 50 | R4 | 62 | ARG |
| 50 | R4 | 66 | SER |
| 50 | R4 | 68 | ARG |
| 51 | R5 | 3 | LYS |
| 51 | R5 | 4 | HIS |
| 51 | R5 | 35 | GLU |
| 51 | R5 | 51 | TYR |
| 51 | R5 | 53 | ALA |
| 52 | R6 | 7 | ILE |
| 52 | R6 | 14 | THR |
| 52 | R6 | 15 | GLU |
| 52 | R6 | 19 | ARG |
| 52 | R6 | 21 | TYR |
| 52 | R6 | 33 | LYS |
| 52 | R6 | 45 | LYS |
| 52 | R6 | 48 | VAL |
| 54 | R8 | 29 | LYS |
| 54 | R8 | 31 | HIS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 54 | R8 | 34 | TRP |
| 54 | R8 | 52 | LYS |
| 54 | R8 | 62 | LEU |
| 2 | XB | 6 | THR |
| 2 | XB | 15 | VAL |
| 2 | XB | 26 | PRO |
| 2 | XB | 84 | GLU |
| 2 | XB | 88 | ALA |
| 2 | XB | 126 | GLU |
| 2 | XB | 230 | VAL |
| 2 | XB | 233 | SER |
| 3 | XC | 4 | LYS |
| 3 | XC | 12 | LEU |
| 3 | XC | 14 | ILE |
| 3 | XC | 29 | TYR |
| 3 | XC | 61 | ALA |
| 3 | XC | 189 | ALA |
| 3 | XC | 190 | ARG |
| 4 | XD | 28 | SER |
| 4 | XD | 30 | LYS |
| 4 | XD | 51 | PRO |
| 4 | XD | 89 | THR |
| 4 | XD | 129 | ASN |
| 4 | XD | 154 | ASN |
| 4 | XD | 155 | LEU |
| 4 | XD | 178 | VAL |
| 5 | XE | 146 | ALA |
| 7 | XG | 5 | ARG |
| 7 | XG | 7 | ALA |
| 8 | XH | 50 | ARG |
| 8 | XH | 129 | VAL |
| 9 | XI | 23 | ASN |
| 9 | XI | 56 | LEU |
| 9 | XI | 95 | LYS |
| 9 | XI | 111 | ARG |
| 9 | XI | 117 | HIS |
| 10 | XJ | 30 | SER |
| 10 | XJ | 33 | GLN |
| 11 | XK | 91 | ARG |
| 12 | XL | 18 | VAL |
| 12 | XL | 27 | LEU |
| 12 | XL | 48 | PRO |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 12 | XL | 62 | SER |
| 12 | XL | 121 | GLY |
| 13 | XM | 67 | GLU |
| 13 | XM | 70 | LEU |
| 13 | XM | 83 | ASP |
| 13 | XM | 106 | ASN |
| 13 | XM | 108 | ARG |
| 13 | XM | 118 | ALA |
| 14 | XN | 3 | ARG |
| 14 | XN | 16 | PHE |
| 14 | XN | 23 | ARG |
| 15 | XO | 88 | ARG |
| 16 | XP | 44 | THR |
| 16 | XP | 67 | THR |
| 17 | XQ | 34 | LYS |
| 17 | XQ | 49 | GLU |
| 18 | XR | 22 | VAL |
| 19 | XS | 3 | ARG |
| 19 | XS | 12 | ASP |
| 19 | XS | 14 | HIS |
| 19 | XS | 25 | LYS |
| 19 | XS | 26 | GLY |
| 19 | XS | 31 | ILE |
| 19 | XS | 41 | VAL |
| 19 | XS | 70 | LYS |
| 19 | XS | 78 | ARG |
| 19 | XS | 79 | THR |
| 20 | XT | 48 | LYS |
| 20 | XT | 49 | ALA |
| 20 | XT | 74 | LYS |
| 20 | XT | 95 | ALA |
| 20 | XT | 96 | GLY |
| 20 | XT | 100 | ILE |
| 21 | XU | 7 | ARG |
| 21 | XU | 9 | ARG |
| 21 | XU | 22 | ARG |
| 27 | YD | 26 | LYS |
| 27 | YD | 28 | GLU |
| 27 | YD | 123 | ALA |
| 27 | YD | 231 | HIS |
| 28 | YE | 4 | ILE |
| 28 | YE | 7 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 28 | YE | 9 | VAL |
| 28 | YE | 22 | PRO |
| 28 | YE | 54 | GLN |
| 28 | YE | 57 | LYS |
| 28 | YE | 60 | ASN |
| 28 | YE | 63 | LEU |
| 28 | YE | 64 | LYS |
| 28 | YE | 68 | ALA |
| 28 | YE | 70 | ALA |
| 28 | YE | 73 | GLU |
| 28 | YE | 90 | THR |
| 28 | YE | 92 | THR |
| 28 | YE | 93 | VAL |
| 28 | YE | 169 | ASN |
| 28 | YE | 187 | ALA |
| 28 | YE | 189 | PRO |
| 29 | YF | 25 | PRO |
| 29 | YF | 66 | PRO |
| 29 | YF | 68 | LYS |
| 29 | YF | 73 | ALA |
| 29 | YF | 89 | VAL |
| 29 | YF | 128 | ALA |
| 29 | YF | 176 | LEU |
| 30 | YG | 4 | ASP |
| 30 | YG | 14 | GLU |
| 30 | YG | 79 | ASN |
| 30 | YG | 86 | MET |
| 31 | YH | 10 | PRO |
| 31 | YH | 12 | PRO |
| 31 | YH | 83 | TYR |
| 31 | YH | 85 | LYS |
| 31 | YH | 86 | GLU |
| 31 | YH | 87 | LEU |
| 31 | YH | 90 | LYS |
| 31 | YH | 92 | ILE |
| 31 | YH | 126 | PRO |
| 31 | YH | 127 | GLU |
| 31 | YH | 128 | PRO |
| 31 | YH | 137 | ASP |
| 31 | YH | 138 | LYS |
| 31 | YH | 153 | LYS |
| 31 | YH | 154 | PRO |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 31 | YH | 155 | SER |
| 31 | YH | 169 | VAL |
| 32 | YI | 9 | LEU |
| 32 | YI | 10 | GLU |
| 32 | YI | 13 | GLY |
| 32 | YI | 15 | VAL |
| 32 | YI | 115 | ALA |
| 32 | YI | 133 | HIS |
| 32 | YI | 145 | VAL |
| 33 | YN | 6 | PRO |
| 33 | YN | 9 | VAL |
| 33 | YN | 22 | THR |
| 33 | YN | 36 | GLY |
| 33 | YN | 58 | ASP |
| 33 | YN | 95 | PRO |
| 33 | YN | 97 | ARG |
| 33 | YN | 119 | ARG |
| 33 | YN | 131 | GLN |
| 33 | YN | 133 | GLN |
| 33 | YN | 134 | ARG |
| 34 | YO | 49 | ARG |
| 35 | YP | 5 | ASP |
| 35 | YP | 10 | PRO |
| 35 | YP | 15 | ARG |
| 35 | YP | 19 | VAL |
| 35 | YP | 21 | ARG |
| 35 | YP | 25 | SER |
| 35 | YP | 27 | HIS |
| 35 | YP | 36 | LYS |
| 35 | YP | 38 | GLN |
| 35 | YP | 42 | SER |
| 35 | YP | 65 | ARG |
| 35 | YP | 95 | VAL |
| 35 | YP | 106 | LEU |
| 35 | YP | 107 | LYS |
| 35 | YP | 141 | ALA |
| 35 | YP | 148 | LEU |
| 36 | YQ | 6 | ARG |
| 36 | YQ | 18 | LYS |
| 36 | YQ | 22 | LYS |
| 36 | YQ | 27 | VAL |
| 36 | YQ | 81 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 36 | YQ | 90 | VAL |
| 36 | YQ | 134 | ARG |
| 37 | YR | 2 | ARG |
| 37 | YR | 3 | HIS |
| 37 | YR | 4 | LEU |
| 37 | YR | 14 | SER |
| 37 | YR | 58 | GLY |
| 37 | YR | 86 | ARG |
| 37 | YR | 117 | VAL |
| 38 | YS | 4 | LEU |
| 38 | YS | 12 | PHE |
| 38 | YS | 14 | VAL |
| 38 | YS | 23 | ARG |
| 38 | YS | 56 | LEU |
| 38 | YS | 57 | LYS |
| 38 | YS | 88 | ASP |
| 38 | YS | 89 | ARG |
| 38 | YS | 90 | GLY |
| 38 | YS | 107 | GLU |
| 39 | YT | 2 | ASN |
| 39 | YT | 3 | ARG |
| 39 | YT | 39 | ARG |
| 39 | YT | 55 | ASN |
| 39 | YT | 58 | ASN |
| 39 | YT | 90 | GLN |
| 39 | YT | 94 | ALA |
| 39 | YT | 97 | ALA |
| 39 | YT | 106 | SER |
| 39 | YT | 107 | ASP |
| 41 | YV | 28 | GLU |
| 41 | YV | 31 | ALA |
| 41 | YV | 45 | THR |
| 41 | YV | 48 | GLY |
| 41 | YV | 49 | THR |
| 41 | YV | 50 | PRO |
| 41 | YV | 53 | GLU |
| 41 | YV | 79 | VAL |
| 42 | YW | 59 | VAL |
| 42 | YW | 67 | ASP |
| 42 | YW | 75 | TYR |
| 42 | YW | 111 | HIS |
| 43 | YX | 36 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 44 | YY | 3 | VAL |
| 44 | YY | 23 | ARG |
| 44 | YY | 48 | ALA |
| 44 | YY | 49 | VAL |
| 44 | YY | 50 | ARG |
| 44 | YY | 53 | PRO |
| 44 | YY | 58 | GLY |
| 44 | YY | 63 | LYS |
| 44 | YY | 77 | PRO |
| 44 | YY | 78 | ALA |
| 44 | YY | 96 | ILE |
| 45 | YZ | 6 | LYS |
| 45 | YZ | 13 | GLU |
| 45 | YZ | 31 | ARG |
| 45 | YZ | 51 | ALA |
| 45 | YZ | 111 | VAL |
| 45 | YZ | 112 | ARG |
| 45 | YZ | 114 | GLY |
| 45 | YZ | 116 | VAL |
| 45 | YZ | 122 | ARG |
| 45 | YZ | 141 | VAL |
| 45 | YZ | 151 | HIS |
| 45 | YZ | 155 | LEU |
| 45 | YZ | 156 | LYS |
| 45 | YZ | 158 | PRO |
| 45 | YZ | 170 | THR |
| 45 | YZ | 171 | ILE |
| 47 | Y1 | 30 | VAL |
| 47 | Y1 | 54 | ALA |
| 47 | Y1 | 81 | LYS |
| 47 | Y1 | 82 | LEU |
| 47 | Y1 | 95 | LEU |
| 48 | Y2 | 16 | LEU |
| 48 | Y2 | 43 | GLN |
| 48 | Y2 | 47 | ASN |
| 48 | Y2 | 48 | HIS |
| 48 | Y2 | 71 | ASN |
| 49 | Y3 | 3 | ARG |
| 50 | Y4 | 5 | ILE |
| 50 | Y4 | 14 | ILE |
| 50 | Y4 | 16 | CYS |
| 50 | Y4 | 22 | ILE |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 50 | Y4 | 23 | GLU |
| 50 | Y4 | 36 | CYS |
| 50 | Y4 | 37 | SER |
| 50 | Y4 | 40 | HIS |
| 50 | Y4 | 42 | PHE |
| 50 | Y4 | 43 | TYR |
| 50 | Y4 | 49 | PHE |
| 50 | Y4 | 50 | VAL |
| 50 | Y4 | 51 | ASP |
| 50 | Y4 | 53 | GLU |
| 50 | Y4 | 62 | ARG |
| 50 | Y4 | 66 | SER |
| 50 | Y4 | 68 | ARG |
| 51 | Y5 | 3 | LYS |
| 51 | Y5 | 4 | HIS |
| 51 | Y5 | 35 | GLU |
| 51 | Y5 | 51 | TYR |
| 51 | Y5 | 53 | ALA |
| 52 | Y6 | 7 | ILE |
| 52 | Y6 | 14 | THR |
| 52 | Y6 | 15 | GLU |
| 52 | Y6 | 19 | ARG |
| 52 | Y6 | 21 | TYR |
| 52 | Y6 | 33 | LYS |
| 52 | Y6 | 45 | LYS |
| 52 | Y6 | 48 | VAL |
| 54 | Y8 | 29 | LYS |
| 54 | Y8 | 31 | HIS |
| 54 | Y8 | 34 | TRP |
| 54 | Y8 | 52 | LYS |
| 54 | Y8 | 62 | LEU |
| 2 | QB | 18 | GLY |
| 2 | QB | 65 | GLY |
| 2 | QB | 208 | ILE |
| 2 | QB | 216 | SER |
| 2 | QB | 237 | ALA |
| 3 | QC | 60 | ALA |
| 3 | QC | 79 | ARG |
| 3 | QC | 129 | ALA |
| 3 | QC | 145 | GLY |
| 4 | QD | 7 | PRO |
| 4 | QD | 20 | TYR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 4 | QD | 32 | ALA |
| 4 | QD | 164 | ALA |
| 4 | QD | 170 | VAL |
| 4 | QD | 179 | GLU |
| 4 | QD | 181 | MET |
| 4 | QD | 200 | GLU |
| 5 | QE | 21 | ALA |
| 5 | QE | 63 | ARG |
| 5 | QE | 108 | ALA |
| 6 | QF | 70 | ASP |
| 7 | QG | 4 | ARG |
| 7 | QG | 63 | LYS |
| 7 | QG | 141 | VAL |
| 8 | QH | 68 | ARG |
| 8 | QH | 69 | ARG |
| 8 | QH | 76 | PRO |
| 8 | QH | 122 | ARG |
| 9 | QI | 31 | GLN |
| 9 | QI | 41 | VAL |
| 9 | QI | 100 | GLY |
| 9 | QI | 109 | VAL |
| 10 | QJ | 36 | GLY |
| 10 | QJ | 68 | HIS |
| 11 | QK | 103 | LEU |
| 11 | QK | 107 | SER |
| 11 | QK | 124 | LYS |
| 11 | QK | 125 | PHE |
| 11 | QK | 126 | ARG |
| 12 | QL | 65 | GLU |
| 12 | QL | 110 | VAL |
| 12 | QL | 115 | LYS |
| 12 | QL | 116 | SER |
| 12 | QL | 128 | ALA |
| 13 | QM | 49 | THR |
| 13 | QM | 67 | GLU |
| 13 | QM | 68 | GLY |
| 13 | QM | 120 | LYS |
| 14 | QN | 14 | PRO |
| 14 | QN | 15 | LYS |
| 16 | QP | 49 | LEU |
| 17 | QQ | 14 | LYS |
| 17 | QQ | 33 | GLY |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 17 | QQ | 78 | GLU |
| 17 | QQ | 100 | LYS |
| 18 | QR | 27 | GLY |
| 18 | QR | 54 | ARG |
| 18 | QR | 64 | ARG |
| 18 | QR | 65 | ILE |
| 19 | QS | 13 | ASP |
| 19 | QS | 45 | VAL |
| 20 | QT | 11 | SER |
| 20 | QT | 28 | ALA |
| 20 | QT | 62 | LEU |
| 20 | QT | 99 | LEU |
| 20 | QT | 102 | GLY |
| 20 | QT | 103 | GLY |
| 21 | QU | 3 | LYS |
| 27 | RD | 3 | VAL |
| 27 | RD | 32 | SER |
| 27 | RD | 58 | HIS |
| 27 | RD | 122 | ASP |
| 27 | RD | 169 | GLU |
| 28 | RE | 8 | LYS |
| 28 | RE | 20 | ALA |
| 28 | RE | 37 | ARG |
| 28 | RE | 53 | PRO |
| 28 | RE | 61 | ARG |
| 28 | RE | 78 | LEU |
| 28 | RE | 88 | GLY |
| 28 | RE | 186 | GLY |
| 28 | RE | 190 | GLY |
| 28 | RE | 204 | ALA |
| 29 | RF | 18 | ARG |
| 29 | RF | 107 | LYS |
| 29 | RF | 108 | LYS |
| 29 | RF | 111 | ALA |
| 29 | RF | 132 | VAL |
| 29 | RF | 134 | GLY |
| 29 | RF | 168 | ARG |
| 30 | RG | 36 | LYS |
| 30 | RG | 81 | LYS |
| 30 | RG | 82 | LEU |
| 30 | RG | 96 | ARG |
| 30 | RG | 110 | ALA |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 30 | RG | 126 | ASP |
| 30 | RG | 136 | ARG |
| 31 | RH | 3 | ARG |
| 31 | RH | 8 | PRO |
| 31 | RH | 55 | PRO |
| 31 | RH | 59 | ARG |
| 31 | RH | 84 | SER |
| 31 | RH | 151 | ILE |
| 31 | RH | 156 | ALA |
| 31 | RH | 168 | PRO |
| 32 | RI | 12 | LEU |
| 32 | RI | 36 | ALA |
| 32 | RI | 57 | ARG |
| 32 | RI | 72 | LEU |
| 32 | RI | 135 | GLU |
| 33 | RN | 23 | LEU |
| 33 | RN | 76 | SER |
| 34 | RO | 51 | ALA |
| 34 | RO | 56 | ASP |
| 34 | RO | 68 | GLU |
| 35 | RP | 6 | LEU |
| 35 | RP | 11 | GLY |
| 35 | RP | 12 | ALA |
| 35 | RP | 16 | ARG |
| 36 | RQ | 13 | GLN |
| 36 | RQ | 24 | GLY |
| 36 | RQ | 28 | ALA |
| 36 | RQ | 57 | HIS |
| 36 | RQ | 59 | ARG |
| 37 | RR | 11 | ASN |
| 38 | RS | 75 | GLU |
| 38 | RS | 87 | PHE |
| 38 | RS | 96 | GLY |
| 38 | RS | 100 | ALA |
| 38 | RS | 109 | GLY |
| 38 | RS | 111 | GLU |
| 39 | RT | 4 | GLY |
| 39 | RT | 36 | GLU |
| 39 | RT | 43 | GLN |
| 39 | RT | 67 | SER |
| 39 | RT | 124 | ASP |
| 40 | RU | 9 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 40 | RU | 28 | ARG |
| 40 | RU | 73 | GLY |
| 40 | RU | 90 | VAL |
| 42 | RW | 63 | ASP |
| 42 | RW | 66 | GLU |
| 43 | RX | 67 | GLY |
| 44 | RY | 4 | LYS |
| 44 | RY | 41 | GLY |
| 44 | RY | 56 | PRO |
| 44 | RY | 57 | GLN |
| 44 | RY | 99 | CYS |
| 45 | RZ | 38 | TYR |
| 45 | RZ | 79 | ARG |
| 45 | RZ | 110 | GLY |
| 45 | RZ | 124 | ILE |
| 45 | RZ | 153 | SER |
| 45 | RZ | 159 | PRO |
| 46 | R0 | 18 | ALA |
| 46 | R0 | 55 | ARG |
| 47 | R1 | 45 | ASN |
| 47 | R1 | 55 | GLY |
| 47 | R1 | 84 | GLY |
| 48 | R2 | 24 | LEU |
| 48 | R2 | 44 | LEU |
| 48 | R2 | 70 | GLN |
| 50 | R4 | 9 | LEU |
| 50 | R4 | 24 | THR |
| 51 | R5 | 43 | HIS |
| 51 | R5 | 55 | ARG |
| 53 | R7 | 39 | ARG |
| 2 | XB | 18 | GLY |
| 2 | XB | 65 | GLY |
| 2 | XB | 208 | ILE |
| 2 | XB | 216 | SER |
| 2 | XB | 237 | ALA |
| 3 | XC | 60 | ALA |
| 3 | XC | 79 | ARG |
| 3 | XC | 129 | ALA |
| 3 | XC | 145 | GLY |
| 4 | XD | 7 | PRO |
| 4 | XD | 20 | TYR |
| 4 | XD | 32 | ALA |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 4 | XD | 164 | ALA |
| 4 | XD | 170 | VAL |
| 4 | XD | 179 | GLU |
| 4 | XD | 181 | MET |
| 4 | XD | 200 | GLU |
| 5 | XE | 21 | ALA |
| 5 | XE | 63 | ARG |
| 5 | XE | 108 | ALA |
| 6 | XF | 70 | ASP |
| 7 | XG | 4 | ARG |
| 7 | XG | 63 | LYS |
| 7 | XG | 141 | VAL |
| 8 | XH | 68 | ARG |
| 8 | XH | 69 | ARG |
| 8 | XH | 76 | PRO |
| 8 | XH | 122 | ARG |
| 8 | XH | 128 | GLY |
| 9 | XI | 31 | GLN |
| 9 | XI | 41 | VAL |
| 9 | XI | 100 | GLY |
| 9 | XI | 109 | VAL |
| 10 | XJ | 36 | GLY |
| 10 | XJ | 68 | HIS |
| 11 | XK | 103 | LEU |
| 11 | XK | 107 | SER |
| 11 | XK | 124 | LYS |
| 11 | XK | 125 | PHE |
| 11 | XK | 126 | ARG |
| 12 | XL | 65 | GLU |
| 12 | XL | 110 | VAL |
| 12 | XL | 115 | LYS |
| 12 | XL | 116 | SER |
| 12 | XL | 128 | ALA |
| 13 | XM | 49 | THR |
| 13 | XM | 68 | GLY |
| 13 | XM | 120 | LYS |
| 14 | XN | 14 | PRO |
| 14 | XN | 15 | LYS |
| 16 | XP | 49 | LEU |
| 17 | XQ | 14 | LYS |
| 17 | XQ | 33 | GLY |
| 17 | XQ | 78 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 17 | XQ | 100 | LYS |
| 18 | XR | 27 | GLY |
| 18 | XR | 54 | ARG |
| 18 | XR | 64 | ARG |
| 18 | XR | 65 | ILE |
| 19 | XS | 13 | ASP |
| 19 | XS | 45 | VAL |
| 20 | XT | 11 | SER |
| 20 | XT | 28 | ALA |
| 20 | XT | 62 | LEU |
| 20 | XT | 99 | LEU |
| 20 | XT | 102 | GLY |
| 20 | XT | 103 | GLY |
| 21 | XU | 3 | LYS |
| 27 | YD | 3 | VAL |
| 27 | YD | 32 | SER |
| 27 | YD | 58 | HIS |
| 27 | YD | 122 | ASP |
| 27 | YD | 169 | GLU |
| 28 | YE | 8 | LYS |
| 28 | YE | 20 | ALA |
| 28 | YE | 37 | ARG |
| 28 | YE | 53 | PRO |
| 28 | YE | 61 | ARG |
| 28 | YE | 71 | GLY |
| 28 | YE | 78 | LEU |
| 28 | YE | 88 | GLY |
| 28 | YE | 186 | GLY |
| 28 | YE | 190 | GLY |
| 28 | YE | 204 | ALA |
| 29 | YF | 18 | ARG |
| 29 | YF | 107 | LYS |
| 29 | YF | 108 | LYS |
| 29 | YF | 111 | ALA |
| 29 | YF | 132 | VAL |
| 29 | YF | 134 | GLY |
| 29 | YF | 168 | ARG |
| 30 | YG | 5 | VAL |
| 30 | YG | 36 | LYS |
| 30 | YG | 81 | LYS |
| 30 | YG | 82 | LEU |
| 30 | YG | 96 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 30 | YG | 110 | ALA |
| 30 | YG | 126 | ASP |
| 30 | YG | 136 | ARG |
| 31 | YH | 3 | ARG |
| 31 | YH | 8 | PRO |
| 31 | YH | 55 | PRO |
| 31 | YH | 59 | ARG |
| 31 | YH | 84 | SER |
| 31 | YH | 151 | ILE |
| 31 | YH | 156 | ALA |
| 31 | YH | 168 | PRO |
| 32 | YI | 12 | LEU |
| 32 | YI | 36 | ALA |
| 32 | YI | 72 | LEU |
| 32 | YI | 135 | GLU |
| 33 | YN | 23 | LEU |
| 33 | YN | 76 | SER |
| 34 | YO | 51 | ALA |
| 34 | YO | 56 | ASP |
| 34 | YO | 68 | GLU |
| 35 | YP | 6 | LEU |
| 35 | YP | 11 | GLY |
| 35 | YP | 12 | ALA |
| 35 | YP | 16 | ARG |
| 36 | YQ | 13 | GLN |
| 36 | YQ | 24 | GLY |
| 36 | YQ | 28 | ALA |
| 36 | YQ | 57 | HIS |
| 36 | YQ | 59 | ARG |
| 37 | YR | 11 | ASN |
| 38 | YS | 87 | PHE |
| 38 | YS | 96 | GLY |
| 38 | YS | 100 | ALA |
| 38 | YS | 109 | GLY |
| 38 | YS | 111 | GLU |
| 39 | YT | 4 | GLY |
| 39 | YT | 36 | GLU |
| 39 | YT | 43 | GLN |
| 39 | YT | 67 | SER |
| 39 | YT | 124 | ASP |
| 40 | YU | 9 | VAL |
| 40 | YU | 28 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 40 | YU | 73 | GLY |
| 40 | YU | 90 | VAL |
| 42 | YW | 63 | ASP |
| 42 | YW | 66 | GLU |
| 43 | YX | 67 | GLY |
| 44 | YY | 4 | LYS |
| 44 | YY | 41 | GLY |
| 44 | YY | 56 | PRO |
| 44 | YY | 57 | GLN |
| 44 | YY | 91 | GLU |
| 44 | YY | 99 | CYS |
| 45 | YZ | 38 | TYR |
| 45 | YZ | 79 | ARG |
| 45 | YZ | 80 | ARG |
| 45 | YZ | 110 | GLY |
| 45 | YZ | 124 | ILE |
| 45 | YZ | 153 | SER |
| 45 | YZ | 159 | PRO |
| 46 | Y0 | 9 | SER |
| 46 | Y0 | 18 | ALA |
| 46 | Y0 | 55 | ARG |
| 47 | Y1 | 45 | ASN |
| 47 | Y1 | 55 | GLY |
| 47 | Y1 | 84 | GLY |
| 48 | Y2 | 24 | LEU |
| 48 | Y2 | 44 | LEU |
| 48 | Y2 | 70 | GLN |
| 50 | Y4 | 9 | LEU |
| 50 | Y4 | 24 | THR |
| 51 | Y5 | 43 | HIS |
| 51 | Y5 | 55 | ARG |
| 53 | Y7 | 39 | ARG |
| 2 | QB | 155 | LEU |
| 2 | QB | 159 | PRO |
| 2 | QB | 175 | ARG |
| 3 | QC | 16 | ARG |
| 3 | QC | 45 | LYS |
| 3 | QC | 81 | GLY |
| 4 | QD | 29 | PRO |
| 4 | QD | 73 | ARG |
| 4 | QD | 136 | PRO |
| 5 | QE | 37 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 6 | QF | 41 | GLU |
| 6 | QF | 87 | ARG |
| 7 | QG | 35 | LYS |
| 7 | QG | 62 | PHE |
| 7 | QG | 149 | ARG |
| 8 | QH | 2 | LEU |
| 8 | QH | 128 | GLY |
| 9 | QI | 12 | GLU |
| 9 | QI | 13 | ALA |
| 10 | QJ | 57 | LYS |
| 12 | QL | 51 | ALA |
| 12 | QL | 123 | LYS |
| 13 | QM | 12 | ASN |
| 13 | QM | 101 | GLN |
| 13 | QM | 121 | LYS |
| 14 | QN | 9 | LYS |
| 14 | QN | 41 | ARG |
| 14 | QN | 48 | ALA |
| 15 | QO | 14 | GLU |
| 15 | QO | 23 | GLY |
| 15 | QO | 77 | ARG |
| 16 | QP | 8 | ARG |
| 16 | QP | 83 | GLU |
| 17 | QQ | 30 | PRO |
| 17 | QQ | 99 | SER |
| 18 | QR | 55 | ARG |
| 19 | QS | 6 | LYS |
| 19 | QS | 27 | GLU |
| 19 | QS | 64 | GLU |
| 20 | QT | 82 | SER |
| 20 | QT | 98 | PRO |
| 27 | RD | 111 | LEU |
| 27 | RD | 238 | GLY |
| 27 | RD | 242 | ARG |
| 27 | RD | 262 | ARG |
| 28 | RE | 62 | PRO |
| 28 | RE | 69 | LYS |
| 28 | RE | 71 | GLY |
| 28 | RE | 82 | ARG |
| 28 | RE | 117 | MET |
| 28 | RE | 130 | GLY |
| 28 | RE | 132 | HIS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 30 | RG | 5 | VAL |
| 30 | RG | 115 | ARG |
| 30 | RG | 128 | ARG |
| 30 | RG | 174 | GLU |
| 31 | RH | 50 | VAL |
| 31 | RH | 81 | GLU |
| 31 | RH | 152 | ARG |
| 32 | RI | 11 | ASN |
| 32 | RI | 86 | THR |
| 32 | RI | 87 | LYS |
| 32 | RI | 110 | ASP |
| 32 | RI | 118 | LYS |
| 33 | RN | 45 | ASN |
| 33 | RN | 130 | HIS |
| 33 | RN | 135 | PRO |
| 35 | RP | 7 | ARG |
| 35 | RP | 14 | LYS |
| 35 | RP | 43 | GLY |
| 35 | RP | 89 | ALA |
| 35 | RP | 102 | ARG |
| 35 | RP | 115 | LEU |
| 36 | RQ | 88 | GLY |
| 36 | RQ | 91 | GLU |
| 37 | RR | 42 | LYS |
| 37 | RR | 45 | ARG |
| 37 | RR | 71 | GLN |
| 37 | RR | 107 | ASP |
| 38 | RS | 19 | LYS |
| 38 | RS | 61 | ASN |
| 38 | RS | 74 | ALA |
| 39 | RT | 78 | LEU |
| 39 | RT | 112 | ARG |
| 40 | RU | 46 | ALA |
| 40 | RU | 93 | LYS |
| 41 | RV | 54 | GLY |
| 42 | RW | 68 | ARG |
| 42 | RW | 93 | ALA |
| 43 | RX | 48 | LYS |
| 43 | RX | 87 | GLN |
| 44 | RY | 21 | LYS |
| 44 | RY | 39 | VAL |
| 44 | RY | 42 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 44 | RY | 69 | ALA |
| 44 | RY | 91 | GLU |
| 44 | RY | 102 | CYS |
| 45 | RZ | 30 | ASN |
| 45 | RZ | 61 | LEU |
| 45 | RZ | 64 | GLY |
| 45 | RZ | 80 | ARG |
| 45 | RZ | 81 | ARG |
| 45 | RZ | 92 | SER |
| 45 | RZ | 118 | GLN |
| 45 | RZ | 135 | GLU |
| 45 | RZ | 163 | LEU |
| 46 | R0 | 15 | ASP |
| 46 | R0 | 57 | PHE |
| 46 | R0 | 75 | LEU |
| 47 | R1 | 74 | VAL |
| 47 | R1 | 91 | LYS |
| 47 | R1 | 93 | GLU |
| 50 | R4 | 27 | THR |
| 50 | R4 | 46 | GLN |
| 52 | R6 | 18 | ARG |
| 53 | R7 | 32 | LYS |
| 54 | R8 | 46 | ARG |
| 54 | R8 | 47 | LYS |
| 2 | XB | 155 | LEU |
| 2 | XB | 159 | PRO |
| 2 | XB | 175 | ARG |
| 3 | XC | 16 | ARG |
| 3 | XC | 45 | LYS |
| 3 | XC | 81 | GLY |
| 4 | XD | 29 | PRO |
| 4 | XD | 73 | ARG |
| 4 | XD | 136 | PRO |
| 5 | XE | 37 | ARG |
| 6 | XF | 41 | GLU |
| 6 | XF | 87 | ARG |
| 7 | XG | 62 | PHE |
| 7 | XG | 149 | ARG |
| 8 | XH | 2 | LEU |
| 9 | XI | 12 | GLU |
| 9 | XI | 13 | ALA |
| 12 | XL | 51 | ALA |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 12 | XL | 123 | LYS |
| 13 | XM | 101 | GLN |
| 13 | XM | 121 | LYS |
| 14 | XN | 9 | LYS |
| 14 | XN | 41 | ARG |
| 15 | XO | 14 | GLU |
| 15 | XO | 23 | GLY |
| 15 | XO | 77 | ARG |
| 16 | XP | 8 | ARG |
| 16 | XP | 83 | GLU |
| 17 | XQ | 30 | PRO |
| 17 | XQ | 99 | SER |
| 18 | XR | 55 | ARG |
| 19 | XS | 6 | LYS |
| 19 | XS | 27 | GLU |
| 20 | XT | 82 | SER |
| 20 | XT | 98 | PRO |
| 27 | YD | 111 | LEU |
| 27 | YD | 238 | GLY |
| 27 | YD | 242 | ARG |
| 27 | YD | 262 | ARG |
| 28 | YE | 62 | PRO |
| 28 | YE | 69 | LYS |
| 28 | YE | 82 | ARG |
| 28 | YE | 117 | MET |
| 28 | YE | 130 | GLY |
| 28 | YE | 132 | HIS |
| 30 | YG | 115 | ARG |
| 30 | YG | 128 | ARG |
| 30 | YG | 174 | GLU |
| 31 | YH | 50 | VAL |
| 31 | YH | 81 | GLU |
| 31 | YH | 152 | ARG |
| 32 | YI | 11 | ASN |
| 32 | YI | 86 | THR |
| 32 | YI | 87 | LYS |
| 32 | YI | 118 | LYS |
| 33 | YN | 45 | ASN |
| 33 | YN | 130 | HIS |
| 33 | YN | 135 | PRO |
| 35 | YP | 7 | ARG |
| 35 | YP | 14 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | YP | 43 | GLY |
| 35 | YP | 89 | ALA |
| 35 | YP | 102 | ARG |
| 35 | YP | 115 | LEU |
| 36 | YQ | 88 | GLY |
| 36 | YQ | 91 | GLU |
| 37 | YR | 42 | LYS |
| 37 | YR | 45 | ARG |
| 37 | YR | 71 | GLN |
| 37 | YR | 107 | ASP |
| 38 | YS | 19 | LYS |
| 38 | YS | 61 | ASN |
| 38 | YS | 74 | ALA |
| 38 | YS | 75 | GLU |
| 39 | YT | 78 | LEU |
| 39 | YT | 112 | ARG |
| 40 | YU | 46 | ALA |
| 40 | YU | 58 | ARG |
| 40 | YU | 93 | LYS |
| 41 | YV | 54 | GLY |
| 42 | YW | 68 | ARG |
| 42 | YW | 93 | ALA |
| 43 | YX | 48 | LYS |
| 43 | YX | 87 | GLN |
| 44 | YY | 21 | LYS |
| 44 | YY | 39 | VAL |
| 44 | YY | 42 | VAL |
| 44 | YY | 69 | ALA |
| 44 | YY | 102 | CYS |
| 45 | YZ | 30 | ASN |
| 45 | YZ | 61 | LEU |
| 45 | YZ | 64 | GLY |
| 45 | YZ | 81 | ARG |
| 45 | YZ | 92 | SER |
| 45 | YZ | 118 | GLN |
| 45 | YZ | 135 | GLU |
| 45 | YZ | 163 | LEU |
| 46 | Y0 | 15 | ASP |
| 46 | Y0 | 57 | PHE |
| 46 | Y0 | 75 | LEU |
| 47 | Y1 | 74 | VAL |
| 47 | Y1 | 91 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 47 | Y1 | 93 | GLU |
| 50 | Y4 | 27 | THR |
| 50 | Y4 | 46 | GLN |
| 52 | Y6 | 18 | ARG |
| 53 | Y7 | 32 | LYS |
| 54 | Y8 | 46 | ARG |
| 54 | Y8 | 47 | LYS |
| 2 | QB | 19 | HIS |
| 2 | QB | 131 | PRO |
| 2 | QB | 160 | ASP |
| 2 | QB | 177 | ALA |
| 3 | QC | 168 | ALA |
| 4 | QD | 151 | LYS |
| 5 | QE | 70 | PRO |
| 5 | QE | 72 | GLN |
| 5 | QE | 124 | GLY |
| 6 | QF | 13 | ASN |
| 6 | QF | 40 | VAL |
| 6 | QF | 42 | GLU |
| 7 | QG | 41 | ARG |
| 7 | QG | 109 | ASN |
| 7 | QG | 116 | ALA |
| 7 | QG | 117 | ALA |
| 8 | QH | 27 | PRO |
| 8 | QH | 49 | GLU |
| 10 | QJ | 93 | GLY |
| 12 | QL | 64 | TYR |
| 13 | QM | 4 | ILE |
| 13 | QM | 14 | ARG |
| 13 | QM | 69 | GLU |
| 13 | QM | 77 | ASN |
| 14 | QN | 44 | LEU |
| 15 | QO | 86 | GLY |
| 16 | QP | 26 | ARG |
| 16 | QP | 28 | ARG |
| 16 | QP | 48 | TRP |
| 18 | QR | 58 | LEU |
| 19 | QS | 28 | LYS |
| 19 | QS | 44 | MET |
| 20 | QT | 40 | ALA |
| 20 | QT | 51 | GLU |
| 27 | RD | 12 | SER |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 27 | RD | 73 | VAL |
| 28 | RE | 66 | HIS |
| 28 | RE | 126 | PRO |
| 29 | RF | 43 | LYS |
| 29 | RF | 130 | ALA |
| 29 | RF | 145 | GLU |
| 30 | RG | 12 | TYR |
| 30 | RG | 117 | PHE |
| 30 | RG | 146 | TYR |
| 31 | RH | 13 | LYS |
| 31 | RH | 109 | PHE |
| 31 | RH | 159 | GLU |
| 32 | RI | 113 | ARG |
| 32 | RI | 117 | GLU |
| 32 | RI | 122 | GLU |
| 33 | RN | 96 | GLU |
| 33 | RN | 127 | ASP |
| 33 | RN | 132 | ALA |
| 34 | RO | 17 | ARG |
| 34 | RO | 97 | ARG |
| 35 | RP | 29 | LYS |
| 35 | RP | 47 | ASP |
| 35 | RP | 139 | LYS |
| 39 | RT | 37 | GLY |
| 39 | RT | 95 | ARG |
| 40 | RU | 58 | ARG |
| 40 | RU | 74 | LEU |
| 42 | RW | 14 | PRO |
| 42 | RW | 48 | ALA |
| 45 | RZ | 144 | LEU |
| 50 | R4 | 8 | LYS |
| 51 | R5 | 14 | ALA |
| 51 | R5 | 37 | LYS |
| 51 | R5 | 45 | VAL |
| 51 | R5 | 48 | GLU |
| 52 | R6 | 8 | LYS |
| 52 | R6 | 9 | LEU |
| 52 | R6 | 10 | LEU |
| 52 | R6 | 49 | HIS |
| 54 | R8 | 25 | MET |
| 54 | R8 | 53 | PRO |
| 54 | R8 | 57 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | XB | 19 | HIS |
| 2 | XB | 129 | GLU |
| 2 | XB | 131 | PRO |
| 2 | XB | 160 | ASP |
| 3 | XC | 168 | ALA |
| 4 | XD | 151 | LYS |
| 5 | XE | 70 | PRO |
| 5 | XE | 72 | GLN |
| 5 | XE | 124 | GLY |
| 6 | XF | 13 | ASN |
| 6 | XF | 40 | VAL |
| 6 | XF | 42 | GLU |
| 7 | XG | 35 | LYS |
| 7 | XG | 41 | ARG |
| 7 | XG | 116 | ALA |
| 7 | XG | 117 | ALA |
| 8 | XH | 27 | PRO |
| 8 | XH | 29 | SER |
| 8 | XH | 49 | GLU |
| 10 | XJ | 57 | LYS |
| 10 | XJ | 93 | GLY |
| 12 | XL | 64 | TYR |
| 13 | XM | 4 | ILE |
| 13 | XM | 12 | ASN |
| 13 | XM | 14 | ARG |
| 13 | XM | 69 | GLU |
| 13 | XM | 77 | ASN |
| 14 | XN | 44 | LEU |
| 14 | XN | 48 | ALA |
| 15 | XO | 86 | GLY |
| 16 | XP | 26 | ARG |
| 16 | XP | 28 | ARG |
| 16 | XP | 48 | TRP |
| 19 | XS | 28 | LYS |
| 19 | XS | 44 | MET |
| 19 | XS | 64 | GLU |
| 20 | XT | 40 | ALA |
| 20 | XT | 51 | GLU |
| 27 | YD | 12 | SER |
| 27 | YD | 73 | VAL |
| 28 | YE | 66 | HIS |
| 28 | YE | 126 | PRO |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 29 | YF | 43 | LYS |
| 29 | YF | 130 | ALA |
| 29 | YF | 145 | GLU |
| 30 | YG | 12 | TYR |
| 30 | YG | 117 | PHE |
| 30 | YG | 146 | TYR |
| 31 | YH | 13 | LYS |
| 31 | YH | 109 | PHE |
| 31 | YH | 159 | GLU |
| 32 | YI | 110 | ASP |
| 32 | YI | 113 | ARG |
| 32 | YI | 117 | GLU |
| 32 | YI | 122 | GLU |
| 33 | YN | 96 | GLU |
| 33 | YN | 127 | ASP |
| 33 | YN | 132 | ALA |
| 34 | YO | 17 | ARG |
| 34 | YO | 97 | ARG |
| 35 | YP | 29 | LYS |
| 35 | YP | 47 | ASP |
| 35 | YP | 139 | LYS |
| 39 | YT | 37 | GLY |
| 39 | YT | 95 | ARG |
| 40 | YU | 74 | LEU |
| 42 | YW | 14 | PRO |
| 42 | YW | 48 | ALA |
| 45 | YZ | 144 | LEU |
| 50 | Y4 | 8 | LYS |
| 51 | Y5 | 14 | ALA |
| 51 | Y5 | 37 | LYS |
| 51 | Y5 | 45 | VAL |
| 51 | Y5 | 48 | GLU |
| 52 | Y6 | 8 | LYS |
| 52 | Y6 | 9 | LEU |
| 52 | Y6 | 10 | LEU |
| 52 | Y6 | 49 | HIS |
| 54 | Y8 | 25 | MET |
| 54 | Y8 | 53 | PRO |
| 2 | QB | 23 | ARG |
| 2 | QB | 25 | ASN |
| 2 | QB | 98 | LEU |
| 2 | QB | 129 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | QB | 194 | PRO |
| 2 | QB | 229 | VAL |
| 2 | QB | 231 | GLU |
| 3 | QC | 125 | GLU |
| 5 | QE | 74 | GLY |
| 5 | QE | 77 | PRO |
| 5 | QE | 112 | LEU |
| 5 | QE | 128 | PRO |
| 5 | QE | 132 | ALA |
| 6 | QF | 12 | PRO |
| 6 | QF | 32 | ASN |
| 6 | QF | 96 | PRO |
| 8 | QH | 29 | SER |
| 8 | QH | 34 | GLU |
| 8 | QH | 103 | VAL |
| 9 | QI | 44 | VAL |
| 9 | QI | 88 | TYR |
| 9 | QI | 89 | ASN |
| 10 | QJ | 53 | PRO |
| 10 | QJ | 59 | SER |
| 10 | QJ | 75 | ILE |
| 11 | QK | 64 | ALA |
| 11 | QK | 105 | VAL |
| 12 | QL | 63 | GLY |
| 19 | QS | 11 | VAL |
| 27 | RD | 33 | LEU |
| 27 | RD | 178 | PRO |
| 27 | RD | 239 | ARG |
| 28 | RE | 79 | ARG |
| 29 | RF | 47 | GLY |
| 29 | RF | 118 | ALA |
| 29 | RF | 136 | THR |
| 31 | RH | 11 | VAL |
| 31 | RH | 27 | LYS |
| 31 | RH | 47 | GLU |
| 31 | RH | 77 | LYS |
| 31 | RH | 170 | ARG |
| 32 | RI | 18 | VAL |
| 32 | RI | 26 | ALA |
| 32 | RI | 102 | SER |
| 33 | RN | 29 | LYS |
| 33 | RN | 104 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 33 | RN | 128 | HIS |
| 34 | RO | 25 | LEU |
| 35 | RP | 50 | ARG |
| 35 | RP | 97 | PRO |
| 35 | RP | 108 | LYS |
| 37 | RR | 85 | PRO |
| 40 | RU | 91 | ASP |
| 42 | RW | 32 | ALA |
| 43 | RX | 19 | ALA |
| 44 | RY | 7 | VAL |
| 45 | RZ | 132 | ASN |
| 45 | RZ | 133 | ILE |
| 49 | R3 | 13 | ILE |
| 50 | R4 | 30 | GLU |
| 50 | R4 | 33 | VAL |
| 51 | R5 | 42 | PRO |
| 52 | R6 | 35 | GLU |
| 53 | R7 | 44 | PRO |
| 54 | R8 | 64 | TYR |
| 2 | XB | 23 | ARG |
| 2 | XB | 25 | ASN |
| 2 | XB | 98 | LEU |
| 2 | XB | 177 | ALA |
| 2 | XB | 194 | PRO |
| 2 | XB | 229 | VAL |
| 2 | XB | 231 | GLU |
| 3 | XC | 125 | GLU |
| 5 | XE | 74 | GLY |
| 5 | XE | 77 | PRO |
| 5 | XE | 128 | PRO |
| 5 | XE | 132 | ALA |
| 6 | XF | 12 | PRO |
| 6 | XF | 32 | ASN |
| 6 | XF | 96 | PRO |
| 7 | XG | 109 | ASN |
| 8 | XH | 34 | GLU |
| 8 | XH | 103 | VAL |
| 9 | XI | 44 | VAL |
| 9 | XI | 88 | TYR |
| 9 | XI | 89 | ASN |
| 10 | XJ | 53 | PRO |
| 10 | XJ | 59 | SER |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 10 | XJ | 75 | ILE |
| 11 | XK | 64 | ALA |
| 11 | XK | 105 | VAL |
| 12 | XL | 63 | GLY |
| 18 | XR | 58 | LEU |
| 19 | XS | 11 | VAL |
| 27 | YD | 33 | LEU |
| 27 | YD | 239 | ARG |
| 28 | YE | 79 | ARG |
| 29 | YF | 47 | GLY |
| 29 | YF | 118 | ALA |
| 29 | YF | 136 | THR |
| 31 | YH | 11 | VAL |
| 31 | YH | 27 | LYS |
| 31 | YH | 47 | GLU |
| 31 | YH | 77 | LYS |
| 31 | YH | 170 | ARG |
| 32 | YI | 18 | VAL |
| 32 | YI | 102 | SER |
| 33 | YN | 29 | LYS |
| 33 | YN | 104 | LYS |
| 33 | YN | 128 | HIS |
| 34 | YO | 25 | LEU |
| 35 | YP | 50 | ARG |
| 35 | YP | 97 | PRO |
| 35 | YP | 108 | LYS |
| 37 | YR | 85 | PRO |
| 39 | YT | 38 | ASN |
| 40 | YU | 91 | ASP |
| 42 | YW | 32 | ALA |
| 43 | YX | 19 | ALA |
| 44 | YY | 7 | VAL |
| 45 | YZ | 132 | ASN |
| 45 | YZ | 133 | ILE |
| 50 | Y4 | 30 | GLU |
| 50 | Y4 | 33 | VAL |
| 50 | Y4 | 70 | GLY |
| 51 | Y5 | 42 | PRO |
| 52 | Y6 | 35 | GLU |
| 53 | Y7 | 44 | PRO |
| 54 | Y8 | 57 | ARG |
| 54 | Y8 | 64 | TYR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | QB | 239 | VAL |
| 3 | QC | 51 | GLY |
| 5 | QE | 115 | VAL |
| 10 | QJ | 85 | LEU |
| 11 | QK | 106 | LYS |
| 13 | QM | 13 | LYS |
| 13 | QM | 48 | LEU |
| 14 | QN | 20 | ALA |
| 16 | QP | 57 | ARG |
| 30 | RG | 109 | VAL |
| 30 | RG | 181 | ARG |
| 31 | RH | 7 | LEU |
| 31 | RH | 26 | VAL |
| 31 | RH | 69 | ARG |
| 32 | RI | 104 | GLN |
| 32 | RI | 112 | LYS |
| 32 | RI | 120 | ILE |
| 39 | RT | 38 | ASN |
| 42 | RW | 11 | ARG |
| 42 | RW | 33 | ARG |
| 45 | RZ | 94 | GLU |
| 50 | R4 | 69 | LYS |
| 50 | R4 | 70 | GLY |
| 51 | R5 | 57 | VAL |
| 3 | XC | 51 | GLY |
| 4 | XD | 72 | GLU |
| 5 | XE | 49 | PRO |
| 5 | XE | 112 | LEU |
| 5 | XE | 115 | VAL |
| 11 | XK | 106 | LYS |
| 13 | XM | 13 | LYS |
| 13 | XM | 48 | LEU |
| 14 | XN | 20 | ALA |
| 16 | XP | 57 | ARG |
| 20 | XT | 70 | SER |
| 27 | YD | 178 | PRO |
| 30 | YG | 109 | VAL |
| 30 | YG | 181 | ARG |
| 31 | YH | 7 | LEU |
| 31 | YH | 26 | VAL |
| 32 | YI | 26 | ALA |
| 32 | YI | 104 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 32 | YI | 112 | LYS |
| 32 | YI | 120 | ILE |
| 41 | YV | 36 | PRO |
| 42 | YW | 11 | ARG |
| 42 | YW | 33 | ARG |
| 45 | YZ | 94 | GLU |
| 49 | Y3 | 13 | ILE |
| 50 | Y4 | 69 | LYS |
| 51 | Y5 | 57 | VAL |
| 2 | QB | 202 | PRO |
| 3 | QC | 114 | PRO |
| 4 | QD | 88 | VAL |
| 5 | QE | 49 | PRO |
| 7 | QG | 55 | GLY |
| 7 | QG | 58 | PRO |
| 8 | QH | 106 | GLY |
| 16 | QP | 53 | VAL |
| 18 | QR | 37 | VAL |
| 20 | QT | 63 | ILE |
| 27 | RD | 240 | ALA |
| 28 | RE | 86 | PRO |
| 28 | RE | 184 | VAL |
| 32 | RI | 71 | ILE |
| 36 | RQ | 86 | GLY |
| 37 | RR | 32 | GLY |
| 41 | RV | 36 | PRO |
| 42 | RW | 35 | ILE |
| 45 | RZ | 53 | ILE |
| 45 | RZ | 130 | PRO |
| 2 | XB | 202 | PRO |
| 2 | XB | 239 | VAL |
| 3 | XC | 114 | PRO |
| 4 | XD | 88 | VAL |
| 7 | XG | 55 | GLY |
| 7 | XG | 58 | PRO |
| 18 | XR | 37 | VAL |
| 20 | XT | 63 | ILE |
| 27 | YD | 240 | ALA |
| 28 | YE | 86 | PRO |
| 28 | YE | 184 | VAL |
| 32 | YI | 71 | ILE |
| 36 | YQ | 86 | GLY |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 37 | YR | 32 | GLY |
| 42 | YW | 35 | ILE |
| 45 | YZ | 53 | ILE |
| 45 | YZ | 130 | PRO |
| 2 | QB | 227 | GLY |
| 3 | QC | 134 | ILE |
| 4 | QD | 90 | GLY |
| 9 | QI | 24 | GLY |
| 13 | QM | 60 | VAL |
| 15 | QO | 18 | PHE |
| 44 | RY | 27 | VAL |
| 44 | RY | 32 | PRO |
| 51 | R5 | 46 | CYS |
| 2 | XB | 227 | GLY |
| 4 | XD | 90 | GLY |
| 8 | XH | 106 | GLY |
| 9 | XI | 24 | GLY |
| 13 | XM | 60 | VAL |
| 15 | XO | 18 | PHE |
| 16 | XP | 53 | VAL |
| 44 | YY | 32 | PRO |
| 51 | Y5 | 46 | CYS |
| 9 | QI | 21 | PRO |
| 13 | QM | 84 | ILE |
| 27 | RD | 34 | VAL |
| 30 | RG | 52 | ILE |
| 34 | RO | 114 | ILE |
| 44 | RY | 51 | VAL |
| 45 | RZ | 107 | THR |
| 45 | RZ | 115 | GLY |
| 51 | R5 | 34 | PRO |
| 3 | XC | 134 | ILE |
| 9 | XI | 21 | PRO |
| 13 | XM | 84 | ILE |
| 27 | YD | 34 | VAL |
| 30 | YG | 52 | ILE |
| 32 | YI | 144 | VAL |
| 34 | YO | 114 | ILE |
| 44 | YY | 27 | VAL |
| 44 | YY | 51 | VAL |
| 45 | YZ | 107 | THR |
| 45 | YZ | 115 | GLY |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 51 | Y5 | 34 | PRO |
| 13 | QM | 78 | ILE |
| 28 | RE | 52 | LEU |
| 28 | RE | 55 | ASN |
| 34 | RO | 27 | GLY |
| 49 | R3 | 40 | THR |
| 13 | XM | 78 | ILE |
| 28 | YE | 52 | LEU |
| 28 | YE | 55 | ASN |
| 34 | YO | 27 | GLY |
| 49 | Y3 | 40 | THR |
| 5 | QE | 129 | ILE |
| 8 | QH | 51 | VAL |
| 16 | QP | 41 | PRO |
| 20 | QT | 97 | ALA |
| 7 | XG | 14 | PRO |
| 8 | XH | 51 | VAL |
| 16 | XP | 41 | PRO |
| 20 | XT | 97 | ALA |
| 48 | R2 | 18 | PRO |
| 48 | Y2 | 18 | 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 | QB | 205/220 (93%) | 181 (88%) | 24 (12%) | 5 | 24 |
| 2 | XB | 205/220 (93%) | 181 (88%) | 24 (12%) | 5 | 24 |
| 3 | QC | 159/188 (85%) | 143 (90%) | 16 (10%) | 7 | 31 |
| 3 | XC | 159/188 (85%) | 143 (90%) | 16 (10%) | 7 | 31 |
| 4 | QD | 180/181 (99%) | 164 (91%) | 16 (9%) | 9 | 36 |
| 4 | XD | 180/181 (99%) | 164 (91%) | 16 (9%) | 9 | 36 |
| 5 | QE | 116/123 (94%) | 107 (92%) | 9 (8%) | 12 | 42 |
| 5 | XE | 116/123 (94%) | 108 (93%) | 8 (7%) | 15 | 47 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------------|-----------|----------|-------------|----|
| 6 | QF | 90/90 (100%) | 77 (86%) | 13 (14%) | 3 | 17 |
| 6 | XF | 90/90 (100%) | 77 (86%) | 13 (14%) | 3 | 17 |
| 7 | QG | 126/127 (99%) | 115 (91%) | 11 (9%) | 10 | 37 |
| 7 | XG | 126/127 (99%) | 115 (91%) | 11 (9%) | 10 | 37 |
| 8 | QH | 119/119 (100%) | 106 (89%) | 13 (11%) | 6 | 28 |
| 8 | XH | 119/119 (100%) | 106 (89%) | 13 (11%) | 6 | 28 |
| 9 | QI | 98/99 (99%) | 87 (89%) | 11 (11%) | 6 | 26 |
| 9 | XI | 98/99 (99%) | 87 (89%) | 11 (11%) | 6 | 26 |
| 10 | QJ | 89/92 (97%) | 81 (91%) | 8 (9%) | 9 | 36 |
| 10 | XJ | 89/92 (97%) | 81 (91%) | 8 (9%) | 9 | 36 |
| 11 | QK | 90/99 (91%) | 81 (90%) | 9 (10%) | 7 | 31 |
| 11 | XK | 90/99 (91%) | 81 (90%) | 9 (10%) | 7 | 31 |
| 12 | QL | 104/109 (95%) | 90 (86%) | 14 (14%) | 4 | 19 |
| 12 | XL | 104/109 (95%) | 90 (86%) | 14 (14%) | 4 | 19 |
| 13 | QM | 97/101 (96%) | 81 (84%) | 16 (16%) | 2 | 11 |
| 13 | XM | 97/101 (96%) | 80 (82%) | 17 (18%) | 2 | 9 |
| 14 | QN | 49/50 (98%) | 45 (92%) | 4 (8%) | 11 | 40 |
| 14 | XN | 49/50 (98%) | 42 (86%) | 7 (14%) | 3 | 17 |
| 15 | QO | 79/80 (99%) | 73 (92%) | 6 (8%) | 13 | 43 |
| 15 | XO | 79/80 (99%) | 73 (92%) | 6 (8%) | 13 | 43 |
| 16 | QP | 72/74 (97%) | 63 (88%) | 9 (12%) | 4 | 21 |
| 16 | XP | 72/74 (97%) | 63 (88%) | 9 (12%) | 4 | 21 |
| 17 | QQ | 95/97 (98%) | 89 (94%) | 6 (6%) | 18 | 50 |
| 17 | XQ | 95/97 (98%) | 89 (94%) | 6 (6%) | 18 | 50 |
| 18 | QR | 61/77 (79%) | 54 (88%) | 7 (12%) | 5 | 25 |
| 18 | XR | 61/77 (79%) | 54 (88%) | 7 (12%) | 5 | 25 |
| 19 | QS | 73/80 (91%) | 62 (85%) | 11 (15%) | 3 | 15 |
| 19 | XS | 73/80 (91%) | 62 (85%) | 11 (15%) | 3 | 15 |
| 20 | QT | 76/82 (93%) | 68 (90%) | 8 (10%) | 7 | 29 |
| 20 | XT | 76/82 (93%) | 68 (90%) | 8 (10%) | 7 | 29 |
| 21 | QU | 20/22 (91%) | 19 (95%) | 1 (5%) | 24 | 57 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------------|-----------|----------|-------------|----|
| 21 | XU | 20/22 (91%) | 19 (95%) | 1 (5%) | 24 | 57 |
| 27 | RD | 214/218 (98%) | 177 (83%) | 37 (17%) | 2 | 10 |
| 27 | YD | 214/218 (98%) | 177 (83%) | 37 (17%) | 2 | 10 |
| 28 | RE | 165/166 (99%) | 127 (77%) | 38 (23%) | 1 | 3 |
| 28 | YE | 165/166 (99%) | 127 (77%) | 38 (23%) | 1 | 3 |
| 29 | RF | 161/166 (97%) | 140 (87%) | 21 (13%) | 4 | 20 |
| 29 | YF | 161/166 (97%) | 139 (86%) | 22 (14%) | 3 | 18 |
| 30 | RG | 155/156 (99%) | 130 (84%) | 25 (16%) | 2 | 13 |
| 30 | YG | 155/156 (99%) | 131 (84%) | 24 (16%) | 2 | 14 |
| 31 | RH | 142/148 (96%) | 115 (81%) | 27 (19%) | 1 | 6 |
| 31 | YH | 142/148 (96%) | 115 (81%) | 27 (19%) | 1 | 6 |
| 32 | RI | 122/124 (98%) | 98 (80%) | 24 (20%) | 1 | 5 |
| 32 | YI | 122/124 (98%) | 97 (80%) | 25 (20%) | 1 | 5 |
| 33 | RN | 117/119 (98%) | 98 (84%) | 19 (16%) | 2 | 12 |
| 33 | YN | 117/119 (98%) | 98 (84%) | 19 (16%) | 2 | 12 |
| 34 | RO | 100/100 (100%) | 90 (90%) | 10 (10%) | 7 | 31 |
| 34 | YO | 100/100 (100%) | 90 (90%) | 10 (10%) | 7 | 31 |
| 35 | RP | 116/116 (100%) | 89 (77%) | 27 (23%) | 1 | 3 |
| 35 | YP | 116/116 (100%) | 89 (77%) | 27 (23%) | 1 | 3 |
| 36 | RQ | 111/111 (100%) | 92 (83%) | 19 (17%) | 2 | 10 |
| 36 | YQ | 111/111 (100%) | 92 (83%) | 19 (17%) | 2 | 10 |
| 37 | RR | 101/101 (100%) | 84 (83%) | 17 (17%) | 2 | 11 |
| 37 | YR | 101/101 (100%) | 84 (83%) | 17 (17%) | 2 | 11 |
| 38 | RS | 87/88 (99%) | 74 (85%) | 13 (15%) | 3 | 16 |
| 38 | YS | 87/88 (99%) | 74 (85%) | 13 (15%) | 3 | 16 |
| 39 | RT | 120/127 (94%) | 97 (81%) | 23 (19%) | 1 | 6 |
| 39 | YT | 120/127 (94%) | 97 (81%) | 23 (19%) | 1 | 6 |
| 40 | RU | 93/94 (99%) | 80 (86%) | 13 (14%) | 3 | 17 |
| 40 | YU | 93/94 (99%) | 80 (86%) | 13 (14%) | 3 | 17 |
| 41 | RV | 82/82 (100%) | 71 (87%) | 11 (13%) | 4 | 19 |
| 41 | YV | 82/82 (100%) | 71 (87%) | 11 (13%) | 4 | 19 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-----------------|------------|------------|-------------|----|
| 42 | RW | 92/92 (100%) | 77 (84%) | 15 (16%) | 2 | 12 |
| 42 | YW | 92/92 (100%) | 77 (84%) | 15 (16%) | 2 | 12 |
| 43 | RX | 74/78 (95%) | 63 (85%) | 11 (15%) | 3 | 16 |
| 43 | YX | 74/78 (95%) | 63 (85%) | 11 (15%) | 3 | 16 |
| 44 | RY | 85/91 (93%) | 70 (82%) | 15 (18%) | 2 | 9 |
| 44 | YY | 85/91 (93%) | 70 (82%) | 15 (18%) | 2 | 9 |
| 45 | RZ | 152/179 (85%) | 124 (82%) | 28 (18%) | 1 | 7 |
| 45 | YZ | 152/179 (85%) | 124 (82%) | 28 (18%) | 1 | 7 |
| 46 | R0 | 65/67 (97%) | 55 (85%) | 10 (15%) | 2 | 14 |
| 46 | Y0 | 65/67 (97%) | 56 (86%) | 9 (14%) | 3 | 18 |
| 47 | R1 | 82/83 (99%) | 67 (82%) | 15 (18%) | 1 | 7 |
| 47 | Y1 | 82/83 (99%) | 67 (82%) | 15 (18%) | 1 | 7 |
| 48 | R2 | 64/67 (96%) | 57 (89%) | 7 (11%) | 6 | 28 |
| 48 | Y2 | 64/67 (96%) | 57 (89%) | 7 (11%) | 6 | 28 |
| 49 | R3 | 51/52 (98%) | 40 (78%) | 11 (22%) | 1 | 4 |
| 49 | Y3 | 51/52 (98%) | 40 (78%) | 11 (22%) | 1 | 4 |
| 50 | R4 | 63/63 (100%) | 44 (70%) | 19 (30%) | 0 | 2 |
| 50 | Y4 | 63/63 (100%) | 44 (70%) | 19 (30%) | 0 | 2 |
| 51 | R5 | 51/52 (98%) | 39 (76%) | 12 (24%) | 1 | 3 |
| 51 | Y5 | 51/52 (98%) | 39 (76%) | 12 (24%) | 1 | 3 |
| 52 | R6 | 48/52 (92%) | 38 (79%) | 10 (21%) | 1 | 5 |
| 52 | Y6 | 48/52 (92%) | 38 (79%) | 10 (21%) | 1 | 5 |
| 53 | R7 | 42/42 (100%) | 39 (93%) | 3 (7%) | 14 | 46 |
| 53 | Y7 | 42/42 (100%) | 39 (93%) | 3 (7%) | 14 | 46 |
| 54 | R8 | 54/55 (98%) | 39 (72%) | 15 (28%) | 0 | 2 |
| 54 | Y8 | 54/55 (98%) | 39 (72%) | 15 (28%) | 0 | 2 |
| All | All | 9614/9998 (96%) | 8197 (85%) | 1417 (15%) | 3 | 16 |

All (1417) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | QB | 5 | ILE |
| 2 | QB | 8 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | QB | 16 | HIS |
| 2 | QB | 23 | ARG |
| 2 | QB | 24 | TRP |
| 2 | QB | 33 | TYR |
| 2 | QB | 36 | ARG |
| 2 | QB | 63 | MET |
| 2 | QB | 67 | THR |
| 2 | QB | 73 | THR |
| 2 | QB | 82 | ARG |
| 2 | QB | 92 | TYR |
| 2 | QB | 94 | ASN |
| 2 | QB | 121 | LEU |
| 2 | QB | 155 | LEU |
| 2 | QB | 163 | PHE |
| 2 | QB | 165 | VAL |
| 2 | QB | 168 | THR |
| 2 | QB | 172 | ILE |
| 2 | QB | 174 | VAL |
| 2 | QB | 178 | ARG |
| 2 | QB | 196 | LEU |
| 2 | QB | 204 | ASN |
| 2 | QB | 215 | LEU |
| 3 | QC | 3 | ASN |
| 3 | QC | 5 | ILE |
| 3 | QC | 12 | LEU |
| 3 | QC | 16 | ARG |
| 3 | QC | 21 | ARG |
| 3 | QC | 29 | TYR |
| 3 | QC | 56 | ASP |
| 3 | QC | 69 | HIS |
| 3 | QC | 94 | LEU |
| 3 | QC | 127 | ARG |
| 3 | QC | 131 | ARG |
| 3 | QC | 154 | SER |
| 3 | QC | 184 | TYR |
| 3 | QC | 192 | THR |
| 3 | QC | 193 | TYR |
| 3 | QC | 196 | LEU |
| 4 | QD | 3 | ARG |
| 4 | QD | 7 | PRO |
| 4 | QD | 9 | CYS |
| 4 | QD | 13 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 4 | QD | 30 | LYS |
| 4 | QD | 50 | ARG |
| 4 | QD | 53 | ASP |
| 4 | QD | 79 | PHE |
| 4 | QD | 86 | LYS |
| 4 | QD | 94 | LEU |
| 4 | QD | 96 | LEU |
| 4 | QD | 114 | ARG |
| 4 | QD | 122 | ARG |
| 4 | QD | 131 | ARG |
| 4 | QD | 181 | MET |
| 4 | QD | 200 | GLU |
| 5 | QE | 10 | MET |
| 5 | QE | 13 | ILE |
| 5 | QE | 16 | THR |
| 5 | QE | 31 | LEU |
| 5 | QE | 53 | LEU |
| 5 | QE | 73 | ASN |
| 5 | QE | 79 | GLU |
| 5 | QE | 101 | ILE |
| 5 | QE | 153 | LYS |
| 6 | QF | 17 | SER |
| 6 | QF | 21 | LEU |
| 6 | QF | 36 | ARG |
| 6 | QF | 55 | ASP |
| 6 | QF | 63 | TYR |
| 6 | QF | 69 | GLU |
| 6 | QF | 74 | ASP |
| 6 | QF | 77 | ARG |
| 6 | QF | 87 | ARG |
| 6 | QF | 92 | LYS |
| 6 | QF | 94 | GLN |
| 6 | QF | 97 | PHE |
| 6 | QF | 100 | ASN |
| 7 | QG | 8 | GLU |
| 7 | QG | 12 | LEU |
| 7 | QG | 78 | ARG |
| 7 | QG | 84 | ASN |
| 7 | QG | 98 | SER |
| 7 | QG | 111 | ARG |
| 7 | QG | 114 | ARG |
| 7 | QG | 124 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 7 | QG | 137 | LYS |
| 7 | QG | 148 | ASN |
| 7 | QG | 155 | ARG |
| 8 | QH | 1 | MET |
| 8 | QH | 10 | LEU |
| 8 | QH | 27 | PRO |
| 8 | QH | 41 | ARG |
| 8 | QH | 52 | ASP |
| 8 | QH | 63 | LEU |
| 8 | QH | 69 | ARG |
| 8 | QH | 81 | HIS |
| 8 | QH | 99 | GLU |
| 8 | QH | 119 | LEU |
| 8 | QH | 121 | ASP |
| 8 | QH | 129 | VAL |
| 8 | QH | 137 | VAL |
| 9 | QI | 7 | THR |
| 9 | QI | 9 | ARG |
| 9 | QI | 48 | GLU |
| 9 | QI | 65 | VAL |
| 9 | QI | 83 | ARG |
| 9 | QI | 95 | LYS |
| 9 | QI | 104 | ARG |
| 9 | QI | 113 | LYS |
| 9 | QI | 114 | TYR |
| 9 | QI | 121 | ARG |
| 9 | QI | 128 | ARG |
| 10 | QJ | 22 | LYS |
| 10 | QJ | 47 | PHE |
| 10 | QJ | 57 | LYS |
| 10 | QJ | 62 | HIS |
| 10 | QJ | 74 | ILE |
| 10 | QJ | 80 | LYS |
| 10 | QJ | 84 | GLN |
| 10 | QJ | 96 | ILE |
| 11 | QK | 26 | ASN |
| 11 | QK | 32 | ILE |
| 11 | QK | 63 | LEU |
| 11 | QK | 75 | TYR |
| 11 | QK | 92 | GLU |
| 11 | QK | 109 | VAL |
| 11 | QK | 114 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 11 | QK | 116 | HIS |
| 11 | QK | 125 | PHE |
| 12 | QL | 17 | LYS |
| 12 | QL | 20 | LYS |
| 12 | QL | 27 | LEU |
| 12 | QL | 41 | ARG |
| 12 | QL | 53 | ARG |
| 12 | QL | 57 | LYS |
| 12 | QL | 60 | LEU |
| 12 | QL | 62 | SER |
| 12 | QL | 70 | ILE |
| 12 | QL | 73 | GLU |
| 12 | QL | 81 | SER |
| 12 | QL | 89 | ARG |
| 12 | QL | 112 | ASP |
| 12 | QL | 120 | TYR |
| 13 | QM | 3 | ARG |
| 13 | QM | 8 | GLU |
| 13 | QM | 13 | LYS |
| 13 | QM | 35 | GLU |
| 13 | QM | 47 | ASP |
| 13 | QM | 56 | LEU |
| 13 | QM | 57 | ARG |
| 13 | QM | 64 | TRP |
| 13 | QM | 66 | LEU |
| 13 | QM | 70 | LEU |
| 13 | QM | 88 | ARG |
| 13 | QM | 90 | LEU |
| 13 | QM | 101 | GLN |
| 13 | QM | 115 | LYS |
| 13 | QM | 116 | THR |
| 13 | QM | 122 | LYS |
| 14 | QN | 3 | ARG |
| 14 | QN | 12 | ARG |
| 14 | QN | 14 | PRO |
| 14 | QN | 16 | PHE |
| 15 | QO | 3 | ILE |
| 15 | QO | 8 | LYS |
| 15 | QO | 26 | GLU |
| 15 | QO | 39 | LEU |
| 15 | QO | 62 | GLN |
| 15 | QO | 65 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 16 | QP | 1 | MET |
| 16 | QP | 26 | ARG |
| 16 | QP | 28 | ARG |
| 16 | QP | 59 | TRP |
| 16 | QP | 62 | VAL |
| 16 | QP | 69 | THR |
| 16 | QP | 71 | ARG |
| 16 | QP | 72 | ARG |
| 16 | QP | 82 | GLN |
| 17 | QQ | 12 | SER |
| 17 | QQ | 48 | GLU |
| 17 | QQ | 52 | LYS |
| 17 | QQ | 59 | ILE |
| 17 | QQ | 68 | ARG |
| 17 | QQ | 74 | LEU |
| 18 | QR | 26 | LEU |
| 18 | QR | 29 | PHE |
| 18 | QR | 32 | ARG |
| 18 | QR | 36 | ASN |
| 18 | QR | 46 | GLU |
| 18 | QR | 54 | ARG |
| 18 | QR | 55 | ARG |
| 19 | QS | 5 | LEU |
| 19 | QS | 10 | PHE |
| 19 | QS | 12 | ASP |
| 19 | QS | 13 | ASP |
| 19 | QS | 15 | LEU |
| 19 | QS | 29 | ARG |
| 19 | QS | 30 | LEU |
| 19 | QS | 41 | VAL |
| 19 | QS | 63 | THR |
| 19 | QS | 65 | ASN |
| 19 | QS | 83 | HIS |
| 20 | QT | 11 | SER |
| 20 | QT | 24 | LEU |
| 20 | QT | 26 | ASN |
| 20 | QT | 41 | ILE |
| 20 | QT | 62 | LEU |
| 20 | QT | 73 | HIS |
| 20 | QT | 75 | ASN |
| 20 | QT | 93 | GLU |
| 21 | QU | 6 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 27 | RD | 10 | THR |
| 27 | RD | 17 | THR |
| 27 | RD | 26 | LYS |
| 27 | RD | 33 | LEU |
| 27 | RD | 43 | ARG |
| 27 | RD | 44 | ASN |
| 27 | RD | 61 | LEU |
| 27 | RD | 65 | ILE |
| 27 | RD | 67 | PHE |
| 27 | RD | 71 | ASP |
| 27 | RD | 73 | VAL |
| 27 | RD | 94 | LEU |
| 27 | RD | 98 | VAL |
| 27 | RD | 105 | ILE |
| 27 | RD | 106 | ILE |
| 27 | RD | 131 | LEU |
| 27 | RD | 134 | ARG |
| 27 | RD | 135 | PHE |
| 27 | RD | 155 | LEU |
| 27 | RD | 157 | ARG |
| 27 | RD | 166 | GLN |
| 27 | RD | 173 | VAL |
| 27 | RD | 183 | ARG |
| 27 | RD | 192 | THR |
| 27 | RD | 198 | ASN |
| 27 | RD | 200 | ASP |
| 27 | RD | 215 | LEU |
| 27 | RD | 217 | ARG |
| 27 | RD | 218 | ARG |
| 27 | RD | 226 | MET |
| 27 | RD | 230 | ASP |
| 27 | RD | 237 | GLU |
| 27 | RD | 257 | LEU |
| 27 | RD | 259 | THR |
| 27 | RD | 261 | LYS |
| 27 | RD | 262 | ARG |
| 27 | RD | 271 | ILE |
| 28 | RE | 2 | LYS |
| 28 | RE | 4 | ILE |
| 28 | RE | 13 | ARG |
| 28 | RE | 16 | ARG |
| 28 | RE | 17 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 28 | RE | 25 | VAL |
| 28 | RE | 26 | ILE |
| 28 | RE | 27 | LEU |
| 28 | RE | 33 | VAL |
| 28 | RE | 36 | ARG |
| 28 | RE | 37 | ARG |
| 28 | RE | 38 | THR |
| 28 | RE | 41 | LYS |
| 28 | RE | 45 | THR |
| 28 | RE | 54 | GLN |
| 28 | RE | 61 | ARG |
| 28 | RE | 62 | PRO |
| 28 | RE | 66 | HIS |
| 28 | RE | 73 | GLU |
| 28 | RE | 75 | VAL |
| 28 | RE | 77 | ILE |
| 28 | RE | 78 | LEU |
| 28 | RE | 79 | ARG |
| 28 | RE | 80 | GLU |
| 28 | RE | 101 | ARG |
| 28 | RE | 113 | PHE |
| 28 | RE | 117 | MET |
| 28 | RE | 119 | ARG |
| 28 | RE | 143 | ASN |
| 28 | RE | 146 | THR |
| 28 | RE | 154 | LYS |
| 28 | RE | 167 | VAL |
| 28 | RE | 179 | GLU |
| 28 | RE | 184 | VAL |
| 28 | RE | 196 | VAL |
| 28 | RE | 200 | GLU |
| 28 | RE | 202 | LYS |
| 28 | RE | 203 | LYS |
| 29 | RF | 7 | TYR |
| 29 | RF | 9 | ILE |
| 29 | RF | 25 | PRO |
| 29 | RF | 32 | LEU |
| 29 | RF | 45 | ARG |
| 29 | RF | 46 | ARG |
| 29 | RF | 65 | TRP |
| 29 | RF | 66 | PRO |
| 29 | RF | 67 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 29 | RF | 70 | THR |
| 29 | RF | 82 | ILE |
| 29 | RF | 106 | ARG |
| 29 | RF | 108 | LYS |
| 29 | RF | 117 | ARG |
| 29 | RF | 124 | LEU |
| 29 | RF | 127 | GLU |
| 29 | RF | 145 | GLU |
| 29 | RF | 164 | ARG |
| 29 | RF | 181 | LEU |
| 29 | RF | 183 | VAL |
| 29 | RF | 206 | ILE |
| 30 | RG | 4 | ASP |
| 30 | RG | 22 | ARG |
| 30 | RG | 26 | GLN |
| 30 | RG | 33 | ARG |
| 30 | RG | 34 | LEU |
| 30 | RG | 35 | GLU |
| 30 | RG | 43 | LEU |
| 30 | RG | 45 | GLU |
| 30 | RG | 63 | ILE |
| 30 | RG | 67 | LYS |
| 30 | RG | 71 | THR |
| 30 | RG | 88 | ILE |
| 30 | RG | 94 | LEU |
| 30 | RG | 96 | ARG |
| 30 | RG | 97 | ASP |
| 30 | RG | 103 | LEU |
| 30 | RG | 115 | ARG |
| 30 | RG | 118 | ARG |
| 30 | RG | 133 | LEU |
| 30 | RG | 147 | ASP |
| 30 | RG | 155 | MET |
| 30 | RG | 156 | ASP |
| 30 | RG | 159 | VAL |
| 30 | RG | 167 | GLU |
| 30 | RG | 174 | GLU |
| 31 | RH | 3 | ARG |
| 31 | RH | 4 | ILE |
| 31 | RH | 9 | ILE |
| 31 | RH | 10 | PRO |
| 31 | RH | 11 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 31 | RH | 16 | SER |
| 31 | RH | 27 | LYS |
| 31 | RH | 32 | GLU |
| 31 | RH | 37 | VAL |
| 31 | RH | 41 | MET |
| 31 | RH | 43 | VAL |
| 31 | RH | 59 | ARG |
| 31 | RH | 64 | LEU |
| 31 | RH | 77 | LYS |
| 31 | RH | 81 | GLU |
| 31 | RH | 85 | LYS |
| 31 | RH | 88 | LEU |
| 31 | RH | 89 | ILE |
| 31 | RH | 105 | LEU |
| 31 | RH | 132 | ARG |
| 31 | RH | 139 | GLN |
| 31 | RH | 152 | ARG |
| 31 | RH | 153 | LYS |
| 31 | RH | 154 | PRO |
| 31 | RH | 155 | SER |
| 31 | RH | 158 | HIS |
| 31 | RH | 169 | VAL |
| 32 | RI | 1 | MET |
| 32 | RI | 9 | LEU |
| 32 | RI | 25 | TYR |
| 32 | RI | 33 | ARG |
| 32 | RI | 38 | LEU |
| 32 | RI | 41 | GLU |
| 32 | RI | 51 | ILE |
| 32 | RI | 67 | ARG |
| 32 | RI | 70 | GLU |
| 32 | RI | 74 | ASN |
| 32 | RI | 85 | GLU |
| 32 | RI | 88 | ILE |
| 32 | RI | 96 | ASP |
| 32 | RI | 101 | LEU |
| 32 | RI | 112 | LYS |
| 32 | RI | 113 | ARG |
| 32 | RI | 128 | LEU |
| 32 | RI | 131 | LYS |
| 32 | RI | 134 | PRO |
| 32 | RI | 135 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 32 | RI | 139 | GLN |
| 32 | RI | 140 | LEU |
| 32 | RI | 141 | LYS |
| 32 | RI | 142 | VAL |
| 33 | RN | 2 | LYS |
| 33 | RN | 7 | LYS |
| 33 | RN | 43 | THR |
| 33 | RN | 48 | MET |
| 33 | RN | 60 | ILE |
| 33 | RN | 61 | ARG |
| 33 | RN | 65 | LYS |
| 33 | RN | 73 | THR |
| 33 | RN | 78 | TYR |
| 33 | RN | 90 | MET |
| 33 | RN | 93 | THR |
| 33 | RN | 94 | HIS |
| 33 | RN | 101 | HIS |
| 33 | RN | 109 | LYS |
| 33 | RN | 112 | LEU |
| 33 | RN | 120 | LEU |
| 33 | RN | 127 | ASP |
| 33 | RN | 131 | GLN |
| 33 | RN | 136 | GLU |
| 34 | RO | 8 | LEU |
| 34 | RO | 9 | GLU |
| 34 | RO | 17 | ARG |
| 34 | RO | 19 | ILE |
| 34 | RO | 23 | ARG |
| 34 | RO | 31 | LYS |
| 34 | RO | 39 | ILE |
| 34 | RO | 49 | ARG |
| 34 | RO | 53 | LYS |
| 34 | RO | 65 | THR |
| 35 | RP | 5 | ASP |
| 35 | RP | 9 | ASN |
| 35 | RP | 10 | PRO |
| 35 | RP | 16 | ARG |
| 35 | RP | 21 | ARG |
| 35 | RP | 27 | HIS |
| 35 | RP | 29 | LYS |
| 35 | RP | 30 | THR |
| 35 | RP | 32 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | RP | 36 | LYS |
| 35 | RP | 38 | GLN |
| 35 | RP | 41 | ARG |
| 35 | RP | 50 | ARG |
| 35 | RP | 55 | ARG |
| 35 | RP | 61 | ARG |
| 35 | RP | 62 | LEU |
| 35 | RP | 64 | LYS |
| 35 | RP | 65 | ARG |
| 35 | RP | 75 | ILE |
| 35 | RP | 81 | GLN |
| 35 | RP | 88 | LEU |
| 35 | RP | 91 | PHE |
| 35 | RP | 99 | LEU |
| 35 | RP | 100 | LEU |
| 35 | RP | 108 | LYS |
| 35 | RP | 144 | GLU |
| 35 | RP | 146 | VAL |
| 36 | RQ | 2 | LEU |
| 36 | RQ | 25 | ASP |
| 36 | RQ | 26 | TYR |
| 36 | RQ | 27 | VAL |
| 36 | RQ | 45 | GLN |
| 36 | RQ | 46 | GLN |
| 36 | RQ | 54 | MET |
| 36 | RQ | 55 | VAL |
| 36 | RQ | 58 | PHE |
| 36 | RQ | 59 | ARG |
| 36 | RQ | 79 | LEU |
| 36 | RQ | 80 | GLU |
| 36 | RQ | 83 | MET |
| 36 | RQ | 89 | ASN |
| 36 | RQ | 90 | VAL |
| 36 | RQ | 91 | GLU |
| 36 | RQ | 130 | LYS |
| 36 | RQ | 135 | ASP |
| 36 | RQ | 139 | GLU |
| 37 | RR | 14 | SER |
| 37 | RR | 31 | HIS |
| 37 | RR | 37 | THR |
| 37 | RR | 44 | LEU |
| 37 | RR | 51 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 37 | RR | 57 | ARG |
| 37 | RR | 66 | VAL |
| 37 | RR | 67 | LEU |
| 37 | RR | 71 | GLN |
| 37 | RR | 75 | LEU |
| 37 | RR | 76 | VAL |
| 37 | RR | 81 | ASP |
| 37 | RR | 95 | THR |
| 37 | RR | 104 | ARG |
| 37 | RR | 105 | ARG |
| 37 | RR | 107 | ASP |
| 37 | RR | 113 | LEU |
| 38 | RS | 4 | LEU |
| 38 | RS | 12 | PHE |
| 38 | RS | 17 | ARG |
| 38 | RS | 18 | ILE |
| 38 | RS | 20 | ARG |
| 38 | RS | 44 | LYS |
| 38 | RS | 56 | LEU |
| 38 | RS | 57 | LYS |
| 38 | RS | 89 | ARG |
| 38 | RS | 101 | LEU |
| 38 | RS | 103 | GLU |
| 38 | RS | 106 | ARG |
| 38 | RS | 111 | GLU |
| 39 | RT | 2 | ASN |
| 39 | RT | 14 | TYR |
| 39 | RT | 22 | PHE |
| 39 | RT | 23 | ARG |
| 39 | RT | 26 | ASP |
| 39 | RT | 27 | THR |
| 39 | RT | 42 | ILE |
| 39 | RT | 51 | ARG |
| 39 | RT | 58 | ASN |
| 39 | RT | 65 | LYS |
| 39 | RT | 73 | GLU |
| 39 | RT | 78 | LEU |
| 39 | RT | 86 | ILE |
| 39 | RT | 87 | ASP |
| 39 | RT | 99 | LEU |
| 39 | RT | 100 | TYR |
| 39 | RT | 104 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 39 | RT | 107 | ASP |
| 39 | RT | 111 | ARG |
| 39 | RT | 112 | ARG |
| 39 | RT | 115 | ARG |
| 39 | RT | 128 | GLU |
| 39 | RT | 134 | GLU |
| 40 | RU | 5 | LYS |
| 40 | RU | 9 | VAL |
| 40 | RU | 31 | SER |
| 40 | RU | 52 | ARG |
| 40 | RU | 74 | LEU |
| 40 | RU | 76 | TYR |
| 40 | RU | 79 | PHE |
| 40 | RU | 88 | ILE |
| 40 | RU | 92 | ARG |
| 40 | RU | 98 | LEU |
| 40 | RU | 108 | GLU |
| 40 | RU | 114 | LYS |
| 40 | RU | 117 | GLN |
| 41 | RV | 13 | ARG |
| 41 | RV | 14 | VAL |
| 41 | RV | 18 | LEU |
| 41 | RV | 35 | LEU |
| 41 | RV | 38 | LEU |
| 41 | RV | 39 | LEU |
| 41 | RV | 40 | LEU |
| 41 | RV | 66 | ARG |
| 41 | RV | 75 | PHE |
| 41 | RV | 91 | TYR |
| 41 | RV | 99 | ILE |
| 42 | RW | 11 | ARG |
| 42 | RW | 14 | PRO |
| 42 | RW | 16 | LYS |
| 42 | RW | 18 | ARG |
| 42 | RW | 19 | LEU |
| 42 | RW | 20 | VAL |
| 42 | RW | 63 | ASP |
| 42 | RW | 67 | ASP |
| 42 | RW | 69 | LEU |
| 42 | RW | 70 | TYR |
| 42 | RW | 87 | PRO |
| 42 | RW | 88 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 42 | RW | 92 | ARG |
| 42 | RW | 107 | LEU |
| 42 | RW | 109 | GLU |
| 43 | RX | 3 | THR |
| 43 | RX | 6 | ASP |
| 43 | RX | 15 | GLU |
| 43 | RX | 27 | THR |
| 43 | RX | 30 | VAL |
| 43 | RX | 55 | ASN |
| 43 | RX | 57 | LEU |
| 43 | RX | 65 | ARG |
| 43 | RX | 70 | LEU |
| 43 | RX | 80 | ILE |
| 43 | RX | 88 | LYS |
| 44 | RY | 7 | VAL |
| 44 | RY | 11 | ASP |
| 44 | RY | 27 | VAL |
| 44 | RY | 45 | VAL |
| 44 | RY | 57 | GLN |
| 44 | RY | 64 | GLU |
| 44 | RY | 75 | ILE |
| 44 | RY | 77 | PRO |
| 44 | RY | 79 | CYS |
| 44 | RY | 87 | LYS |
| 44 | RY | 88 | LYS |
| 44 | RY | 89 | PHE |
| 44 | RY | 90 | LEU |
| 44 | RY | 95 | LYS |
| 44 | RY | 97 | ARG |
| 45 | RZ | 2 | GLU |
| 45 | RZ | 20 | ARG |
| 45 | RZ | 24 | LEU |
| 45 | RZ | 31 | ARG |
| 45 | RZ | 38 | TYR |
| 45 | RZ | 72 | ARG |
| 45 | RZ | 76 | LEU |
| 45 | RZ | 81 | ARG |
| 45 | RZ | 82 | ARG |
| 45 | RZ | 87 | ASP |
| 45 | RZ | 94 | GLU |
| 45 | RZ | 96 | VAL |
| 45 | RZ | 97 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 45 | RZ | 107 | THR |
| 45 | RZ | 117 | LEU |
| 45 | RZ | 118 | GLN |
| 45 | RZ | 119 | GLU |
| 45 | RZ | 121 | HIS |
| 45 | RZ | 122 | ARG |
| 45 | RZ | 123 | ASP |
| 45 | RZ | 131 | ARG |
| 45 | RZ | 132 | ASN |
| 45 | RZ | 137 | ILE |
| 45 | RZ | 139 | VAL |
| 45 | RZ | 148 | ASP |
| 45 | RZ | 155 | LEU |
| 45 | RZ | 170 | THR |
| 45 | RZ | 171 | ILE |
| 46 | R0 | 3 | HIS |
| 46 | R0 | 9 | SER |
| 46 | R0 | 10 | THR |
| 46 | R0 | 11 | ARG |
| 46 | R0 | 35 | ASN |
| 46 | R0 | 36 | ILE |
| 46 | R0 | 41 | ARG |
| 46 | R0 | 55 | ARG |
| 46 | R0 | 74 | ARG |
| 46 | R0 | 82 | ARG |
| 47 | R1 | 2 | SER |
| 47 | R1 | 11 | ARG |
| 47 | R1 | 21 | ARG |
| 47 | R1 | 30 | VAL |
| 47 | R1 | 40 | ARG |
| 47 | R1 | 41 | ARG |
| 47 | R1 | 56 | GLN |
| 47 | R1 | 76 | ARG |
| 47 | R1 | 80 | LEU |
| 47 | R1 | 81 | LYS |
| 47 | R1 | 83 | GLU |
| 47 | R1 | 87 | PRO |
| 47 | R1 | 91 | LYS |
| 47 | R1 | 92 | LYS |
| 47 | R1 | 97 | LEU |
| 48 | R2 | 7 | ARG |
| 48 | R2 | 9 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 48 | R2 | 16 | LEU |
| 48 | R2 | 24 | LEU |
| 48 | R2 | 53 | LEU |
| 48 | R2 | 62 | THR |
| 48 | R2 | 64 | LEU |
| 49 | R3 | 4 | LEU |
| 49 | R3 | 8 | LEU |
| 49 | R3 | 9 | VAL |
| 49 | R3 | 10 | LYS |
| 49 | R3 | 17 | LYS |
| 49 | R3 | 30 | ARG |
| 49 | R3 | 31 | LEU |
| 49 | R3 | 32 | GLN |
| 49 | R3 | 37 | LEU |
| 49 | R3 | 40 | THR |
| 49 | R3 | 44 | ARG |
| 50 | R4 | 6 | HIS |
| 50 | R4 | 15 | ILE |
| 50 | R4 | 18 | CYS |
| 50 | R4 | 21 | VAL |
| 50 | R4 | 23 | GLU |
| 50 | R4 | 39 | CYS |
| 50 | R4 | 42 | PHE |
| 50 | R4 | 48 | ARG |
| 50 | R4 | 49 | PHE |
| 50 | R4 | 50 | VAL |
| 50 | R4 | 51 | ASP |
| 50 | R4 | 53 | GLU |
| 50 | R4 | 57 | GLU |
| 50 | R4 | 61 | ARG |
| 50 | R4 | 62 | ARG |
| 50 | R4 | 63 | TYR |
| 50 | R4 | 67 | TYR |
| 50 | R4 | 68 | ARG |
| 50 | R4 | 71 | ARG |
| 51 | R5 | 3 | LYS |
| 51 | R5 | 4 | HIS |
| 51 | R5 | 6 | VAL |
| 51 | R5 | 11 | THR |
| 51 | R5 | 19 | ARG |
| 51 | R5 | 25 | LEU |
| 51 | R5 | 36 | CYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 51 | R5 | 37 | LYS |
| 51 | R5 | 43 | HIS |
| 51 | R5 | 52 | TYR |
| 51 | R5 | 56 | LYS |
| 51 | R5 | 58 | LEU |
| 52 | R6 | 6 | ARG |
| 52 | R6 | 8 | LYS |
| 52 | R6 | 18 | ARG |
| 52 | R6 | 19 | ARG |
| 52 | R6 | 28 | ARG |
| 52 | R6 | 34 | LEU |
| 52 | R6 | 37 | ARG |
| 52 | R6 | 42 | TRP |
| 52 | R6 | 44 | ARG |
| 52 | R6 | 46 | HIS |
| 53 | R7 | 1 | MET |
| 53 | R7 | 9 | ARG |
| 53 | R7 | 43 | THR |
| 54 | R8 | 15 | LYS |
| 54 | R8 | 16 | ILE |
| 54 | R8 | 30 | ARG |
| 54 | R8 | 35 | GLN |
| 54 | R8 | 39 | LYS |
| 54 | R8 | 43 | GLN |
| 54 | R8 | 44 | LYS |
| 54 | R8 | 47 | LYS |
| 54 | R8 | 48 | PHE |
| 54 | R8 | 49 | VAL |
| 54 | R8 | 52 | LYS |
| 54 | R8 | 53 | PRO |
| 54 | R8 | 62 | LEU |
| 54 | R8 | 63 | PRO |
| 54 | R8 | 65 | GLU |
| 2 | XB | 5 | ILE |
| 2 | XB | 8 | LYS |
| 2 | XB | 16 | HIS |
| 2 | XB | 23 | ARG |
| 2 | XB | 24 | TRP |
| 2 | XB | 33 | TYR |
| 2 | XB | 36 | ARG |
| 2 | XB | 63 | MET |
| 2 | XB | 67 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | XB | 73 | THR |
| 2 | XB | 82 | ARG |
| 2 | XB | 92 | TYR |
| 2 | XB | 94 | ASN |
| 2 | XB | 121 | LEU |
| 2 | XB | 155 | LEU |
| 2 | XB | 163 | PHE |
| 2 | XB | 165 | VAL |
| 2 | XB | 168 | THR |
| 2 | XB | 172 | ILE |
| 2 | XB | 174 | VAL |
| 2 | XB | 178 | ARG |
| 2 | XB | 196 | LEU |
| 2 | XB | 204 | ASN |
| 2 | XB | 215 | LEU |
| 3 | XC | 3 | ASN |
| 3 | XC | 5 | ILE |
| 3 | XC | 12 | LEU |
| 3 | XC | 16 | ARG |
| 3 | XC | 21 | ARG |
| 3 | XC | 29 | TYR |
| 3 | XC | 56 | ASP |
| 3 | XC | 69 | HIS |
| 3 | XC | 94 | LEU |
| 3 | XC | 127 | ARG |
| 3 | XC | 131 | ARG |
| 3 | XC | 154 | SER |
| 3 | XC | 184 | TYR |
| 3 | XC | 192 | THR |
| 3 | XC | 193 | TYR |
| 3 | XC | 196 | LEU |
| 4 | XD | 3 | ARG |
| 4 | XD | 7 | PRO |
| 4 | XD | 9 | CYS |
| 4 | XD | 13 | ARG |
| 4 | XD | 30 | LYS |
| 4 | XD | 50 | ARG |
| 4 | XD | 53 | ASP |
| 4 | XD | 79 | PHE |
| 4 | XD | 86 | LYS |
| 4 | XD | 94 | LEU |
| 4 | XD | 96 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 4 | XD | 114 | ARG |
| 4 | XD | 122 | ARG |
| 4 | XD | 131 | ARG |
| 4 | XD | 181 | MET |
| 4 | XD | 200 | GLU |
| 5 | XE | 10 | MET |
| 5 | XE | 13 | ILE |
| 5 | XE | 16 | THR |
| 5 | XE | 31 | LEU |
| 5 | XE | 53 | LEU |
| 5 | XE | 79 | GLU |
| 5 | XE | 101 | ILE |
| 5 | XE | 153 | LYS |
| 6 | XF | 17 | SER |
| 6 | XF | 21 | LEU |
| 6 | XF | 36 | ARG |
| 6 | XF | 55 | ASP |
| 6 | XF | 63 | TYR |
| 6 | XF | 69 | GLU |
| 6 | XF | 74 | ASP |
| 6 | XF | 77 | ARG |
| 6 | XF | 87 | ARG |
| 6 | XF | 92 | LYS |
| 6 | XF | 94 | GLN |
| 6 | XF | 97 | PHE |
| 6 | XF | 100 | ASN |
| 7 | XG | 8 | GLU |
| 7 | XG | 12 | LEU |
| 7 | XG | 78 | ARG |
| 7 | XG | 84 | ASN |
| 7 | XG | 98 | SER |
| 7 | XG | 111 | ARG |
| 7 | XG | 114 | ARG |
| 7 | XG | 124 | LEU |
| 7 | XG | 137 | LYS |
| 7 | XG | 148 | ASN |
| 7 | XG | 155 | ARG |
| 8 | XH | 1 | MET |
| 8 | XH | 10 | LEU |
| 8 | XH | 27 | PRO |
| 8 | XH | 41 | ARG |
| 8 | XH | 52 | ASP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 8 | XH | 63 | LEU |
| 8 | XH | 69 | ARG |
| 8 | XH | 81 | HIS |
| 8 | XH | 99 | GLU |
| 8 | XH | 119 | LEU |
| 8 | XH | 121 | ASP |
| 8 | XH | 129 | VAL |
| 8 | XH | 137 | VAL |
| 9 | XI | 7 | THR |
| 9 | XI | 9 | ARG |
| 9 | XI | 48 | GLU |
| 9 | XI | 65 | VAL |
| 9 | XI | 83 | ARG |
| 9 | XI | 95 | LYS |
| 9 | XI | 104 | ARG |
| 9 | XI | 113 | LYS |
| 9 | XI | 114 | TYR |
| 9 | XI | 121 | ARG |
| 9 | XI | 128 | ARG |
| 10 | XJ | 22 | LYS |
| 10 | XJ | 47 | PHE |
| 10 | XJ | 57 | LYS |
| 10 | XJ | 62 | HIS |
| 10 | XJ | 74 | ILE |
| 10 | XJ | 80 | LYS |
| 10 | XJ | 84 | GLN |
| 10 | XJ | 96 | ILE |
| 11 | XK | 26 | ASN |
| 11 | XK | 32 | ILE |
| 11 | XK | 63 | LEU |
| 11 | XK | 75 | TYR |
| 11 | XK | 92 | GLU |
| 11 | XK | 109 | VAL |
| 11 | XK | 114 | VAL |
| 11 | XK | 116 | HIS |
| 11 | XK | 125 | PHE |
| 12 | XL | 17 | LYS |
| 12 | XL | 20 | LYS |
| 12 | XL | 27 | LEU |
| 12 | XL | 41 | ARG |
| 12 | XL | 53 | ARG |
| 12 | XL | 57 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 12 | XL | 60 | LEU |
| 12 | XL | 62 | SER |
| 12 | XL | 70 | ILE |
| 12 | XL | 73 | GLU |
| 12 | XL | 81 | SER |
| 12 | XL | 89 | ARG |
| 12 | XL | 112 | ASP |
| 12 | XL | 120 | TYR |
| 13 | XM | 3 | ARG |
| 13 | XM | 8 | GLU |
| 13 | XM | 13 | LYS |
| 13 | XM | 35 | GLU |
| 13 | XM | 47 | ASP |
| 13 | XM | 56 | LEU |
| 13 | XM | 57 | ARG |
| 13 | XM | 64 | TRP |
| 13 | XM | 66 | LEU |
| 13 | XM | 70 | LEU |
| 13 | XM | 77 | ASN |
| 13 | XM | 88 | ARG |
| 13 | XM | 90 | LEU |
| 13 | XM | 101 | GLN |
| 13 | XM | 115 | LYS |
| 13 | XM | 116 | THR |
| 13 | XM | 122 | LYS |
| 14 | XN | 3 | ARG |
| 14 | XN | 12 | ARG |
| 14 | XN | 14 | PRO |
| 14 | XN | 16 | PHE |
| 14 | XN | 24 | CYS |
| 14 | XN | 27 | CYS |
| 14 | XN | 44 | LEU |
| 15 | XO | 3 | ILE |
| 15 | XO | 8 | LYS |
| 15 | XO | 26 | GLU |
| 15 | XO | 39 | LEU |
| 15 | XO | 62 | GLN |
| 15 | XO | 65 | ARG |
| 16 | XP | 1 | MET |
| 16 | XP | 26 | ARG |
| 16 | XP | 28 | ARG |
| 16 | XP | 59 | TRP |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 16 | XP | 62 | VAL |
| 16 | XP | 69 | THR |
| 16 | XP | 71 | ARG |
| 16 | XP | 72 | ARG |
| 16 | XP | 82 | GLN |
| 17 | XQ | 12 | SER |
| 17 | XQ | 48 | GLU |
| 17 | XQ | 52 | LYS |
| 17 | XQ | 59 | ILE |
| 17 | XQ | 68 | ARG |
| 17 | XQ | 74 | LEU |
| 18 | XR | 26 | LEU |
| 18 | XR | 29 | PHE |
| 18 | XR | 32 | ARG |
| 18 | XR | 36 | ASN |
| 18 | XR | 46 | GLU |
| 18 | XR | 54 | ARG |
| 18 | XR | 55 | ARG |
| 19 | XS | 5 | LEU |
| 19 | XS | 10 | PHE |
| 19 | XS | 12 | ASP |
| 19 | XS | 13 | ASP |
| 19 | XS | 15 | LEU |
| 19 | XS | 29 | ARG |
| 19 | XS | 30 | LEU |
| 19 | XS | 41 | VAL |
| 19 | XS | 63 | THR |
| 19 | XS | 65 | ASN |
| 19 | XS | 83 | HIS |
| 20 | XT | 11 | SER |
| 20 | XT | 24 | LEU |
| 20 | XT | 26 | ASN |
| 20 | XT | 41 | ILE |
| 20 | XT | 62 | LEU |
| 20 | XT | 73 | HIS |
| 20 | XT | 75 | ASN |
| 20 | XT | 93 | GLU |
| 21 | XU | 6 | ARG |
| 27 | YD | 10 | THR |
| 27 | YD | 17 | THR |
| 27 | YD | 26 | LYS |
| 27 | YD | 33 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 27 | YD | 43 | ARG |
| 27 | YD | 44 | ASN |
| 27 | YD | 61 | LEU |
| 27 | YD | 65 | ILE |
| 27 | YD | 67 | PHE |
| 27 | YD | 71 | ASP |
| 27 | YD | 73 | VAL |
| 27 | YD | 94 | LEU |
| 27 | YD | 98 | VAL |
| 27 | YD | 105 | ILE |
| 27 | YD | 106 | ILE |
| 27 | YD | 131 | LEU |
| 27 | YD | 134 | ARG |
| 27 | YD | 135 | PHE |
| 27 | YD | 155 | LEU |
| 27 | YD | 157 | ARG |
| 27 | YD | 166 | GLN |
| 27 | YD | 173 | VAL |
| 27 | YD | 183 | ARG |
| 27 | YD | 192 | THR |
| 27 | YD | 198 | ASN |
| 27 | YD | 200 | ASP |
| 27 | YD | 215 | LEU |
| 27 | YD | 217 | ARG |
| 27 | YD | 218 | ARG |
| 27 | YD | 226 | MET |
| 27 | YD | 230 | ASP |
| 27 | YD | 237 | GLU |
| 27 | YD | 257 | LEU |
| 27 | YD | 259 | THR |
| 27 | YD | 261 | LYS |
| 27 | YD | 262 | ARG |
| 27 | YD | 271 | ILE |
| 28 | YE | 2 | LYS |
| 28 | YE | 4 | ILE |
| 28 | YE | 13 | ARG |
| 28 | YE | 16 | ARG |
| 28 | YE | 17 | ASP |
| 28 | YE | 25 | VAL |
| 28 | YE | 26 | ILE |
| 28 | YE | 27 | LEU |
| 28 | YE | 33 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 28 | YE | 36 | ARG |
| 28 | YE | 37 | ARG |
| 28 | YE | 38 | THR |
| 28 | YE | 41 | LYS |
| 28 | YE | 45 | THR |
| 28 | YE | 54 | GLN |
| 28 | YE | 61 | ARG |
| 28 | YE | 62 | PRO |
| 28 | YE | 66 | HIS |
| 28 | YE | 73 | GLU |
| 28 | YE | 75 | VAL |
| 28 | YE | 77 | ILE |
| 28 | YE | 78 | LEU |
| 28 | YE | 79 | ARG |
| 28 | YE | 80 | GLU |
| 28 | YE | 101 | ARG |
| 28 | YE | 113 | PHE |
| 28 | YE | 117 | MET |
| 28 | YE | 119 | ARG |
| 28 | YE | 143 | ASN |
| 28 | YE | 146 | THR |
| 28 | YE | 154 | LYS |
| 28 | YE | 167 | VAL |
| 28 | YE | 179 | GLU |
| 28 | YE | 184 | VAL |
| 28 | YE | 196 | VAL |
| 28 | YE | 200 | GLU |
| 28 | YE | 202 | LYS |
| 28 | YE | 203 | LYS |
| 29 | YF | 7 | TYR |
| 29 | YF | 9 | ILE |
| 29 | YF | 25 | PRO |
| 29 | YF | 32 | LEU |
| 29 | YF | 45 | ARG |
| 29 | YF | 46 | ARG |
| 29 | YF | 65 | TRP |
| 29 | YF | 66 | PRO |
| 29 | YF | 67 | GLN |
| 29 | YF | 70 | THR |
| 29 | YF | 82 | ILE |
| 29 | YF | 106 | ARG |
| 29 | YF | 108 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 29 | YF | 117 | ARG |
| 29 | YF | 124 | LEU |
| 29 | YF | 127 | GLU |
| 29 | YF | 145 | GLU |
| 29 | YF | 164 | ARG |
| 29 | YF | 169 | ASN |
| 29 | YF | 181 | LEU |
| 29 | YF | 183 | VAL |
| 29 | YF | 206 | ILE |
| 30 | YG | 4 | ASP |
| 30 | YG | 22 | ARG |
| 30 | YG | 26 | GLN |
| 30 | YG | 33 | ARG |
| 30 | YG | 34 | LEU |
| 30 | YG | 35 | GLU |
| 30 | YG | 43 | LEU |
| 30 | YG | 45 | GLU |
| 30 | YG | 63 | ILE |
| 30 | YG | 67 | LYS |
| 30 | YG | 71 | THR |
| 30 | YG | 88 | ILE |
| 30 | YG | 94 | LEU |
| 30 | YG | 96 | ARG |
| 30 | YG | 97 | ASP |
| 30 | YG | 103 | LEU |
| 30 | YG | 115 | ARG |
| 30 | YG | 118 | ARG |
| 30 | YG | 133 | LEU |
| 30 | YG | 147 | ASP |
| 30 | YG | 155 | MET |
| 30 | YG | 156 | ASP |
| 30 | YG | 159 | VAL |
| 30 | YG | 174 | GLU |
| 31 | YH | 3 | ARG |
| 31 | YH | 4 | ILE |
| 31 | YH | 9 | ILE |
| 31 | YH | 10 | PRO |
| 31 | YH | 11 | VAL |
| 31 | YH | 16 | SER |
| 31 | YH | 27 | LYS |
| 31 | YH | 32 | GLU |
| 31 | YH | 37 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 31 | YH | 41 | MET |
| 31 | YH | 43 | VAL |
| 31 | YH | 59 | ARG |
| 31 | YH | 64 | LEU |
| 31 | YH | 77 | LYS |
| 31 | YH | 81 | GLU |
| 31 | YH | 85 | LYS |
| 31 | YH | 88 | LEU |
| 31 | YH | 89 | ILE |
| 31 | YH | 105 | LEU |
| 31 | YH | 132 | ARG |
| 31 | YH | 139 | GLN |
| 31 | YH | 152 | ARG |
| 31 | YH | 153 | LYS |
| 31 | YH | 154 | PRO |
| 31 | YH | 155 | SER |
| 31 | YH | 158 | HIS |
| 31 | YH | 169 | VAL |
| 32 | YI | 1 | MET |
| 32 | YI | 9 | LEU |
| 32 | YI | 25 | TYR |
| 32 | YI | 33 | ARG |
| 32 | YI | 38 | LEU |
| 32 | YI | 56 | LYS |
| 32 | YI | 57 | ARG |
| 32 | YI | 60 | GLU |
| 32 | YI | 67 | ARG |
| 32 | YI | 70 | GLU |
| 32 | YI | 74 | ASN |
| 32 | YI | 85 | GLU |
| 32 | YI | 88 | ILE |
| 32 | YI | 96 | ASP |
| 32 | YI | 101 | LEU |
| 32 | YI | 112 | LYS |
| 32 | YI | 113 | ARG |
| 32 | YI | 128 | LEU |
| 32 | YI | 131 | LYS |
| 32 | YI | 134 | PRO |
| 32 | YI | 135 | GLU |
| 32 | YI | 139 | GLN |
| 32 | YI | 140 | LEU |
| 32 | YI | 141 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 32 | YI | 142 | VAL |
| 33 | YN | 2 | LYS |
| 33 | YN | 7 | LYS |
| 33 | YN | 43 | THR |
| 33 | YN | 48 | MET |
| 33 | YN | 60 | ILE |
| 33 | YN | 61 | ARG |
| 33 | YN | 65 | LYS |
| 33 | YN | 73 | THR |
| 33 | YN | 78 | TYR |
| 33 | YN | 90 | MET |
| 33 | YN | 93 | THR |
| 33 | YN | 94 | HIS |
| 33 | YN | 101 | HIS |
| 33 | YN | 109 | LYS |
| 33 | YN | 112 | LEU |
| 33 | YN | 120 | LEU |
| 33 | YN | 127 | ASP |
| 33 | YN | 131 | GLN |
| 33 | YN | 136 | GLU |
| 34 | YO | 8 | LEU |
| 34 | YO | 9 | GLU |
| 34 | YO | 17 | ARG |
| 34 | YO | 19 | ILE |
| 34 | YO | 23 | ARG |
| 34 | YO | 31 | LYS |
| 34 | YO | 39 | ILE |
| 34 | YO | 49 | ARG |
| 34 | YO | 53 | LYS |
| 34 | YO | 65 | THR |
| 35 | YP | 5 | ASP |
| 35 | YP | 9 | ASN |
| 35 | YP | 10 | PRO |
| 35 | YP | 16 | ARG |
| 35 | YP | 21 | ARG |
| 35 | YP | 27 | HIS |
| 35 | YP | 29 | LYS |
| 35 | YP | 30 | THR |
| 35 | YP | 32 | THR |
| 35 | YP | 36 | LYS |
| 35 | YP | 38 | GLN |
| 35 | YP | 41 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 35 | YP | 50 | ARG |
| 35 | YP | 55 | ARG |
| 35 | YP | 61 | ARG |
| 35 | YP | 62 | LEU |
| 35 | YP | 64 | LYS |
| 35 | YP | 65 | ARG |
| 35 | YP | 75 | ILE |
| 35 | YP | 81 | GLN |
| 35 | YP | 88 | LEU |
| 35 | YP | 91 | PHE |
| 35 | YP | 99 | LEU |
| 35 | YP | 100 | LEU |
| 35 | YP | 108 | LYS |
| 35 | YP | 144 | GLU |
| 35 | YP | 146 | VAL |
| 36 | YQ | 2 | LEU |
| 36 | YQ | 25 | ASP |
| 36 | YQ | 26 | TYR |
| 36 | YQ | 27 | VAL |
| 36 | YQ | 45 | GLN |
| 36 | YQ | 46 | GLN |
| 36 | YQ | 54 | MET |
| 36 | YQ | 55 | VAL |
| 36 | YQ | 58 | PHE |
| 36 | YQ | 59 | ARG |
| 36 | YQ | 79 | LEU |
| 36 | YQ | 80 | GLU |
| 36 | YQ | 83 | MET |
| 36 | YQ | 89 | ASN |
| 36 | YQ | 90 | VAL |
| 36 | YQ | 91 | GLU |
| 36 | YQ | 130 | LYS |
| 36 | YQ | 135 | ASP |
| 36 | YQ | 139 | GLU |
| 37 | YR | 14 | SER |
| 37 | YR | 31 | HIS |
| 37 | YR | 37 | THR |
| 37 | YR | 44 | LEU |
| 37 | YR | 51 | LEU |
| 37 | YR | 57 | ARG |
| 37 | YR | 66 | VAL |
| 37 | YR | 67 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 37 | YR | 71 | GLN |
| 37 | YR | 75 | LEU |
| 37 | YR | 76 | VAL |
| 37 | YR | 81 | ASP |
| 37 | YR | 95 | THR |
| 37 | YR | 104 | ARG |
| 37 | YR | 105 | ARG |
| 37 | YR | 107 | ASP |
| 37 | YR | 113 | LEU |
| 38 | YS | 4 | LEU |
| 38 | YS | 12 | PHE |
| 38 | YS | 17 | ARG |
| 38 | YS | 18 | ILE |
| 38 | YS | 20 | ARG |
| 38 | YS | 44 | LYS |
| 38 | YS | 56 | LEU |
| 38 | YS | 57 | LYS |
| 38 | YS | 89 | ARG |
| 38 | YS | 101 | LEU |
| 38 | YS | 103 | GLU |
| 38 | YS | 106 | ARG |
| 38 | YS | 111 | GLU |
| 39 | YT | 2 | ASN |
| 39 | YT | 14 | TYR |
| 39 | YT | 22 | PHE |
| 39 | YT | 23 | ARG |
| 39 | YT | 26 | ASP |
| 39 | YT | 27 | THR |
| 39 | YT | 42 | ILE |
| 39 | YT | 51 | ARG |
| 39 | YT | 58 | ASN |
| 39 | YT | 65 | LYS |
| 39 | YT | 73 | GLU |
| 39 | YT | 78 | LEU |
| 39 | YT | 86 | ILE |
| 39 | YT | 87 | ASP |
| 39 | YT | 99 | LEU |
| 39 | YT | 100 | TYR |
| 39 | YT | 104 | ASN |
| 39 | YT | 107 | ASP |
| 39 | YT | 111 | ARG |
| 39 | YT | 112 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 39 | YT | 115 | ARG |
| 39 | YT | 128 | GLU |
| 39 | YT | 134 | GLU |
| 40 | YU | 5 | LYS |
| 40 | YU | 9 | VAL |
| 40 | YU | 31 | SER |
| 40 | YU | 52 | ARG |
| 40 | YU | 74 | LEU |
| 40 | YU | 76 | TYR |
| 40 | YU | 79 | PHE |
| 40 | YU | 88 | ILE |
| 40 | YU | 92 | ARG |
| 40 | YU | 98 | LEU |
| 40 | YU | 108 | GLU |
| 40 | YU | 114 | LYS |
| 40 | YU | 117 | GLN |
| 41 | YV | 13 | ARG |
| 41 | YV | 14 | VAL |
| 41 | YV | 18 | LEU |
| 41 | YV | 35 | LEU |
| 41 | YV | 38 | LEU |
| 41 | YV | 39 | LEU |
| 41 | YV | 40 | LEU |
| 41 | YV | 66 | ARG |
| 41 | YV | 75 | PHE |
| 41 | YV | 91 | TYR |
| 41 | YV | 99 | ILE |
| 42 | YW | 11 | ARG |
| 42 | YW | 14 | PRO |
| 42 | YW | 16 | LYS |
| 42 | YW | 18 | ARG |
| 42 | YW | 19 | LEU |
| 42 | YW | 20 | VAL |
| 42 | YW | 63 | ASP |
| 42 | YW | 67 | ASP |
| 42 | YW | 69 | LEU |
| 42 | YW | 70 | TYR |
| 42 | YW | 87 | PRO |
| 42 | YW | 88 | ARG |
| 42 | YW | 92 | ARG |
| 42 | YW | 107 | LEU |
| 42 | YW | 109 | GLU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 43 | YX | 3 | THR |
| 43 | YX | 6 | ASP |
| 43 | YX | 15 | GLU |
| 43 | YX | 27 | THR |
| 43 | YX | 30 | VAL |
| 43 | YX | 55 | ASN |
| 43 | YX | 57 | LEU |
| 43 | YX | 65 | ARG |
| 43 | YX | 70 | LEU |
| 43 | YX | 80 | ILE |
| 43 | YX | 88 | LYS |
| 44 | YY | 7 | VAL |
| 44 | YY | 11 | ASP |
| 44 | YY | 27 | VAL |
| 44 | YY | 45 | VAL |
| 44 | YY | 57 | GLN |
| 44 | YY | 64 | GLU |
| 44 | YY | 75 | ILE |
| 44 | YY | 77 | PRO |
| 44 | YY | 79 | CYS |
| 44 | YY | 87 | LYS |
| 44 | YY | 88 | LYS |
| 44 | YY | 89 | PHE |
| 44 | YY | 90 | LEU |
| 44 | YY | 95 | LYS |
| 44 | YY | 97 | ARG |
| 45 | YZ | 2 | GLU |
| 45 | YZ | 20 | ARG |
| 45 | YZ | 24 | LEU |
| 45 | YZ | 31 | ARG |
| 45 | YZ | 38 | TYR |
| 45 | YZ | 72 | ARG |
| 45 | YZ | 76 | LEU |
| 45 | YZ | 81 | ARG |
| 45 | YZ | 82 | ARG |
| 45 | YZ | 87 | ASP |
| 45 | YZ | 94 | GLU |
| 45 | YZ | 96 | VAL |
| 45 | YZ | 97 | GLU |
| 45 | YZ | 107 | THR |
| 45 | YZ | 117 | LEU |
| 45 | YZ | 118 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 45 | YZ | 119 | GLU |
| 45 | YZ | 121 | HIS |
| 45 | YZ | 122 | ARG |
| 45 | YZ | 123 | ASP |
| 45 | YZ | 131 | ARG |
| 45 | YZ | 132 | ASN |
| 45 | YZ | 137 | ILE |
| 45 | YZ | 139 | VAL |
| 45 | YZ | 148 | ASP |
| 45 | YZ | 155 | LEU |
| 45 | YZ | 170 | THR |
| 45 | YZ | 171 | ILE |
| 46 | Y0 | 4 | LYS |
| 46 | Y0 | 7 | LEU |
| 46 | Y0 | 11 | ARG |
| 46 | Y0 | 35 | ASN |
| 46 | Y0 | 36 | ILE |
| 46 | Y0 | 41 | ARG |
| 46 | Y0 | 55 | ARG |
| 46 | Y0 | 74 | ARG |
| 46 | Y0 | 82 | ARG |
| 47 | Y1 | 2 | SER |
| 47 | Y1 | 11 | ARG |
| 47 | Y1 | 21 | ARG |
| 47 | Y1 | 30 | VAL |
| 47 | Y1 | 40 | ARG |
| 47 | Y1 | 41 | ARG |
| 47 | Y1 | 56 | GLN |
| 47 | Y1 | 76 | ARG |
| 47 | Y1 | 80 | LEU |
| 47 | Y1 | 81 | LYS |
| 47 | Y1 | 83 | GLU |
| 47 | Y1 | 87 | PRO |
| 47 | Y1 | 91 | LYS |
| 47 | Y1 | 92 | LYS |
| 47 | Y1 | 97 | LEU |
| 48 | Y2 | 7 | ARG |
| 48 | Y2 | 9 | GLN |
| 48 | Y2 | 16 | LEU |
| 48 | Y2 | 24 | LEU |
| 48 | Y2 | 53 | LEU |
| 48 | Y2 | 62 | THR |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 48 | Y2 | 64 | LEU |
| 49 | Y3 | 4 | LEU |
| 49 | Y3 | 8 | LEU |
| 49 | Y3 | 9 | VAL |
| 49 | Y3 | 10 | LYS |
| 49 | Y3 | 17 | LYS |
| 49 | Y3 | 30 | ARG |
| 49 | Y3 | 31 | LEU |
| 49 | Y3 | 32 | GLN |
| 49 | Y3 | 37 | LEU |
| 49 | Y3 | 40 | THR |
| 49 | Y3 | 44 | ARG |
| 50 | Y4 | 6 | HIS |
| 50 | Y4 | 15 | ILE |
| 50 | Y4 | 18 | CYS |
| 50 | Y4 | 21 | VAL |
| 50 | Y4 | 23 | GLU |
| 50 | Y4 | 39 | CYS |
| 50 | Y4 | 42 | PHE |
| 50 | Y4 | 48 | ARG |
| 50 | Y4 | 49 | PHE |
| 50 | Y4 | 50 | VAL |
| 50 | Y4 | 51 | ASP |
| 50 | Y4 | 53 | GLU |
| 50 | Y4 | 57 | GLU |
| 50 | Y4 | 61 | ARG |
| 50 | Y4 | 62 | ARG |
| 50 | Y4 | 63 | TYR |
| 50 | Y4 | 67 | TYR |
| 50 | Y4 | 68 | ARG |
| 50 | Y4 | 71 | ARG |
| 51 | Y5 | 3 | LYS |
| 51 | Y5 | 4 | HIS |
| 51 | Y5 | 6 | VAL |
| 51 | Y5 | 11 | THR |
| 51 | Y5 | 19 | ARG |
| 51 | Y5 | 25 | LEU |
| 51 | Y5 | 36 | CYS |
| 51 | Y5 | 37 | LYS |
| 51 | Y5 | 43 | HIS |
| 51 | Y5 | 52 | TYR |
| 51 | Y5 | 56 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 51 | Y5 | 58 | LEU |
| 52 | Y6 | 6 | ARG |
| 52 | Y6 | 8 | LYS |
| 52 | Y6 | 18 | ARG |
| 52 | Y6 | 19 | ARG |
| 52 | Y6 | 28 | ARG |
| 52 | Y6 | 34 | LEU |
| 52 | Y6 | 37 | ARG |
| 52 | Y6 | 42 | TRP |
| 52 | Y6 | 44 | ARG |
| 52 | Y6 | 46 | HIS |
| 53 | Y7 | 1 | MET |
| 53 | Y7 | 9 | ARG |
| 53 | Y7 | 43 | THR |
| 54 | Y8 | 15 | LYS |
| 54 | Y8 | 16 | ILE |
| 54 | Y8 | 30 | ARG |
| 54 | Y8 | 35 | GLN |
| 54 | Y8 | 39 | LYS |
| 54 | Y8 | 43 | GLN |
| 54 | Y8 | 44 | LYS |
| 54 | Y8 | 47 | LYS |
| 54 | Y8 | 48 | PHE |
| 54 | Y8 | 49 | VAL |
| 54 | Y8 | 52 | LYS |
| 54 | Y8 | 53 | PRO |
| 54 | Y8 | 62 | LEU |
| 54 | Y8 | 63 | PRO |
| 54 | Y8 | 65 | GLU |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (105) such sidechains are listed below:

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | QB | 95 | GLN |
| 2 | QB | 135 | GLN |
| 2 | QB | 204 | ASN |
| 2 | QB | 212 | GLN |
| 3 | QC | 181 | ASN |
| 5 | QE | 72 | GLN |
| 5 | QE | 78 | HIS |
| 6 | QF | 64 | GLN |
| 6 | QF | 100 | ASN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 7 | QG | 37 | ASN |
| 7 | QG | 86 | GLN |
| 7 | QG | 148 | ASN |
| 10 | QJ | 78 | ASN |
| 12 | QL | 9 | GLN |
| 13 | QM | 40 | ASN |
| 13 | QM | 62 | ASN |
| 13 | QM | 101 | GLN |
| 19 | QS | 65 | ASN |
| 20 | QT | 26 | ASN |
| 27 | RD | 44 | ASN |
| 27 | RD | 143 | HIS |
| 27 | RD | 166 | GLN |
| 27 | RD | 198 | ASN |
| 28 | RE | 48 | GLN |
| 28 | RE | 135 | HIS |
| 32 | RI | 11 | ASN |
| 32 | RI | 74 | ASN |
| 32 | RI | 105 | HIS |
| 33 | RN | 56 | ASN |
| 33 | RN | 101 | HIS |
| 33 | RN | 131 | GLN |
| 34 | RO | 5 | GLN |
| 34 | RO | 82 | ASN |
| 35 | RP | 81 | GLN |
| 35 | RP | 84 | ASN |
| 36 | RQ | 123 | HIS |
| 37 | RR | 3 | HIS |
| 39 | RT | 55 | ASN |
| 39 | RT | 58 | ASN |
| 40 | RU | 81 | HIS |
| 40 | RU | 94 | ASN |
| 41 | RV | 11 | GLN |
| 43 | RX | 55 | ASN |
| 43 | RX | 87 | GLN |
| 44 | RY | 57 | GLN |
| 46 | R0 | 3 | HIS |
| 46 | R0 | 29 | GLN |
| 47 | R1 | 56 | GLN |
| 48 | R2 | 9 | GLN |
| 48 | R2 | 47 | ASN |
| 49 | R3 | 19 | GLN |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 49 | R3 | 32 | GLN |
| 2 | XB | 95 | GLN |
| 2 | XB | 135 | GLN |
| 2 | XB | 204 | ASN |
| 2 | XB | 212 | GLN |
| 3 | XC | 181 | ASN |
| 5 | XE | 72 | GLN |
| 5 | XE | 78 | HIS |
| 6 | XF | 64 | GLN |
| 6 | XF | 100 | ASN |
| 7 | XG | 28 | ASN |
| 7 | XG | 86 | GLN |
| 7 | XG | 148 | ASN |
| 10 | XJ | 78 | ASN |
| 11 | XK | 117 | ASN |
| 12 | XL | 9 | GLN |
| 13 | XM | 62 | ASN |
| 13 | XM | 101 | GLN |
| 19 | XS | 65 | ASN |
| 20 | XT | 26 | ASN |
| 27 | YD | 44 | ASN |
| 27 | YD | 143 | HIS |
| 27 | YD | 166 | GLN |
| 27 | YD | 198 | ASN |
| 28 | YE | 48 | GLN |
| 28 | YE | 135 | HIS |
| 32 | YI | 11 | ASN |
| 32 | YI | 74 | ASN |
| 32 | YI | 105 | HIS |
| 33 | YN | 56 | ASN |
| 33 | YN | 101 | HIS |
| 33 | YN | 131 | GLN |
| 34 | YO | 5 | GLN |
| 34 | YO | 82 | ASN |
| 35 | YP | 81 | GLN |
| 35 | YP | 84 | ASN |
| 36 | YQ | 123 | HIS |
| 37 | YR | 3 | HIS |
| 39 | YT | 55 | ASN |
| 39 | YT | 58 | ASN |
| 40 | YU | 49 | HIS |
| 40 | YU | 94 | ASN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 41 | YV | 11 | GLN |
| 42 | YW | 61 | ASN |
| 43 | YX | 31 | HIS |
| 43 | YX | 55 | ASN |
| 43 | YX | 87 | GLN |
| 44 | YY | 57 | GLN |
| 46 | Y0 | 3 | HIS |
| 46 | Y0 | 29 | GLN |
| 47 | Y1 | 56 | GLN |
| 48 | Y2 | 9 | GLN |
| 49 | Y3 | 19 | GLN |
| 49 | Y3 | 32 | GLN |

5.3.3 RNA [i](#)

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1 | QA | 1499/1522 (98%) | 343 (22%) | 51 (3%) |
| 1 | XA | 1499/1522 (98%) | 333 (22%) | 55 (3%) |
| 22 | QV | 76/77 (98%) | 30 (39%) | 1 (1%) |
| 22 | XV | 76/77 (98%) | 30 (39%) | 1 (1%) |
| 23 | QX | 7/25 (28%) | 6 (85%) | 1 (14%) |
| 23 | XX | 7/25 (28%) | 2 (28%) | 0 |
| 24 | QY | 13/18 (72%) | 6 (46%) | 1 (7%) |
| 24 | XY | 13/18 (72%) | 5 (38%) | 1 (7%) |
| 25 | RA | 2880/2916 (98%) | 734 (25%) | 76 (2%) |
| 25 | YA | 2879/2916 (98%) | 747 (25%) | 75 (2%) |
| 26 | RB | 119/122 (97%) | 30 (25%) | 2 (1%) |
| 26 | YB | 119/122 (97%) | 38 (31%) | 1 (0%) |
| 55 | Z6 | 1/3 (33%) | 0 | 0 |
| 55 | Z8 | 1/3 (33%) | 0 | 0 |
| All | All | 9189/9366 (98%) | 2304 (25%) | 265 (2%) |

All (2304) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | QA | 6 | G |
| 1 | QA | 7 | G |
| 1 | QA | 9 | G |
| 1 | QA | 32 | A |
| 1 | QA | 39 | G |
| 1 | QA | 41 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 44 | G |
| 1 | QA | 47 | C |
| 1 | QA | 48 | C |
| 1 | QA | 50 | A |
| 1 | QA | 51 | A |
| 1 | QA | 64 | G |
| 1 | QA | 65 | U |
| 1 | QA | 66 | G |
| 1 | QA | 76 | G |
| 1 | QA | 80 | G |
| 1 | QA | 89 | U |
| 1 | QA | 91 | C |
| 1 | QA | 95 | G |
| 1 | QA | 101 | A |
| 1 | QA | 108 | G |
| 1 | QA | 116 | A |
| 1 | QA | 120 | A |
| 1 | QA | 121 | C |
| 1 | QA | 129(A) | G |
| 1 | QA | 130 | A |
| 1 | QA | 142 | G |
| 1 | QA | 144 | G |
| 1 | QA | 147 | G |
| 1 | QA | 162 | A |
| 1 | QA | 163 | C |
| 1 | QA | 168 | G |
| 1 | QA | 171 | A |
| 1 | QA | 173 | U |
| 1 | QA | 174 | C |
| 1 | QA | 182 | U |
| 1 | QA | 185 | A |
| 1 | QA | 190 | G |
| 1 | QA | 195 | A |
| 1 | QA | 209 | U |
| 1 | QA | 222 | U |
| 1 | QA | 226 | G |
| 1 | QA | 244 | U |
| 1 | QA | 245 | C |
| 1 | QA | 247 | G |
| 1 | QA | 251 | G |
| 1 | QA | 267 | C |
| 1 | QA | 270 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 279 | A |
| 1 | QA | 281 | G |
| 1 | QA | 289 | G |
| 1 | QA | 290 | C |
| 1 | QA | 306 | G |
| 1 | QA | 314 | C |
| 1 | QA | 315 | A |
| 1 | QA | 316 | G |
| 1 | QA | 328 | C |
| 1 | QA | 329 | A |
| 1 | QA | 332 | G |
| 1 | QA | 343 | U |
| 1 | QA | 344 | A |
| 1 | QA | 345 | C |
| 1 | QA | 346 | G |
| 1 | QA | 347 | G |
| 1 | QA | 351 | G |
| 1 | QA | 352 | C |
| 1 | QA | 353 | A |
| 1 | QA | 354 | G |
| 1 | QA | 362 | G |
| 1 | QA | 367 | U |
| 1 | QA | 373 | A |
| 1 | QA | 382 | A |
| 1 | QA | 384 | G |
| 1 | QA | 388 | G |
| 1 | QA | 397 | A |
| 1 | QA | 398 | C |
| 1 | QA | 406 | G |
| 1 | QA | 411 | A |
| 1 | QA | 412 | A |
| 1 | QA | 413 | G |
| 1 | QA | 414 | A |
| 1 | QA | 419 | C |
| 1 | QA | 421 | U |
| 1 | QA | 422 | C |
| 1 | QA | 423 | G |
| 1 | QA | 424 | G |
| 1 | QA | 429 | U |
| 1 | QA | 439 | A |
| 1 | QA | 440 | A |
| 1 | QA | 442 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 450 | G |
| 1 | QA | 452 | A |
| 1 | QA | 465 | A |
| 1 | QA | 467 | G |
| 1 | QA | 482 | A |
| 1 | QA | 484 | G |
| 1 | QA | 485 | G |
| 1 | QA | 486 | U |
| 1 | QA | 496 | A |
| 1 | QA | 497 | U |
| 1 | QA | 498 | A |
| 1 | QA | 500 | G |
| 1 | QA | 505 | G |
| 1 | QA | 509 | A |
| 1 | QA | 510 | A |
| 1 | QA | 511 | C |
| 1 | QA | 517 | G |
| 1 | QA | 518 | C |
| 1 | QA | 521 | G |
| 1 | QA | 527 | G |
| 1 | QA | 531 | U |
| 1 | QA | 532 | A |
| 1 | QA | 533 | A |
| 1 | QA | 534 | U |
| 1 | QA | 536 | C |
| 1 | QA | 547 | A |
| 1 | QA | 559 | A |
| 1 | QA | 560 | U |
| 1 | QA | 561 | U |
| 1 | QA | 566 | G |
| 1 | QA | 568 | G |
| 1 | QA | 572 | A |
| 1 | QA | 573 | A |
| 1 | QA | 576 | G |
| 1 | QA | 577 | G |
| 1 | QA | 596 | C |
| 1 | QA | 597 | G |
| 1 | QA | 618 | C |
| 1 | QA | 623 | C |
| 1 | QA | 630 | G |
| 1 | QA | 631 | G |
| 1 | QA | 633 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 652 | U |
| 1 | QA | 653 | A |
| 1 | QA | 665 | A |
| 1 | QA | 686 | U |
| 1 | QA | 687 | A |
| 1 | QA | 688 | G |
| 1 | QA | 701 | C |
| 1 | QA | 702 | A |
| 1 | QA | 703 | G |
| 1 | QA | 704 | A |
| 1 | QA | 723 | U |
| 1 | QA | 724 | G |
| 1 | QA | 729 | A |
| 1 | QA | 731 | G |
| 1 | QA | 733 | A |
| 1 | QA | 748 | C |
| 1 | QA | 749 | C |
| 1 | QA | 753 | A |
| 1 | QA | 754 | C |
| 1 | QA | 755 | G |
| 1 | QA | 777 | A |
| 1 | QA | 786 | G |
| 1 | QA | 792 | A |
| 1 | QA | 793 | U |
| 1 | QA | 794 | A |
| 1 | QA | 795 | C |
| 1 | QA | 796 | C |
| 1 | QA | 801 | U |
| 1 | QA | 802 | A |
| 1 | QA | 813 | U |
| 1 | QA | 815 | A |
| 1 | QA | 816 | A |
| 1 | QA | 817 | C |
| 1 | QA | 818 | G |
| 1 | QA | 819 | A |
| 1 | QA | 821 | G |
| 1 | QA | 828 | A |
| 1 | QA | 836 | G |
| 1 | QA | 841 | U |
| 1 | QA | 843 | U |
| 1 | QA | 848 | C |
| 1 | QA | 859 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 870 | U |
| 1 | QA | 871 | U |
| 1 | QA | 872 | A |
| 1 | QA | 873 | A |
| 1 | QA | 889 | A |
| 1 | QA | 902 | G |
| 1 | QA | 914 | A |
| 1 | QA | 926 | G |
| 1 | QA | 927 | G |
| 1 | QA | 934 | C |
| 1 | QA | 935 | A |
| 1 | QA | 960 | U |
| 1 | QA | 961 | U |
| 1 | QA | 966 | G |
| 1 | QA | 968 | A |
| 1 | QA | 969 | A |
| 1 | QA | 971 | G |
| 1 | QA | 972 | C |
| 1 | QA | 974 | A |
| 1 | QA | 975 | A |
| 1 | QA | 976 | G |
| 1 | QA | 977 | A |
| 1 | QA | 978 | A |
| 1 | QA | 981 | U |
| 1 | QA | 982 | U |
| 1 | QA | 983 | A |
| 1 | QA | 991 | U |
| 1 | QA | 992 | U |
| 1 | QA | 993 | G |
| 1 | QA | 994 | A |
| 1 | QA | 995 | C |
| 1 | QA | 1001 | G |
| 1 | QA | 1002 | G |
| 1 | QA | 1004 | A |
| 1 | QA | 1005 | A |
| 1 | QA | 1006 | C |
| 1 | QA | 1008 | C |
| 1 | QA | 1016 | A |
| 1 | QA | 1020 | U |
| 1 | QA | 1021 | G |
| 1 | QA | 1024 | G |
| 1 | QA | 1025 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 1028 | C |
| 1 | QA | 1029 | G |
| 1 | QA | 1032(A) | G |
| 1 | QA | 1036 | G |
| 1 | QA | 1039 | C |
| 1 | QA | 1040 | U |
| 1 | QA | 1050 | G |
| 1 | QA | 1052 | U |
| 1 | QA | 1053 | G |
| 1 | QA | 1054 | C |
| 1 | QA | 1055 | A |
| 1 | QA | 1064 | G |
| 1 | QA | 1065 | U |
| 1 | QA | 1066 | C |
| 1 | QA | 1085 | U |
| 1 | QA | 1094 | G |
| 1 | QA | 1095 | U |
| 1 | QA | 1096 | C |
| 1 | QA | 1101 | A |
| 1 | QA | 1112 | C |
| 1 | QA | 1117 | G |
| 1 | QA | 1124 | G |
| 1 | QA | 1125 | U |
| 1 | QA | 1126 | U |
| 1 | QA | 1127 | G |
| 1 | QA | 1130 | A |
| 1 | QA | 1131 | G |
| 1 | QA | 1136 | U |
| 1 | QA | 1137 | C |
| 1 | QA | 1138 | G |
| 1 | QA | 1139 | G |
| 1 | QA | 1145 | C |
| 1 | QA | 1146 | A |
| 1 | QA | 1157 | A |
| 1 | QA | 1158 | C |
| 1 | QA | 1159 | U |
| 1 | QA | 1160 | G |
| 1 | QA | 1171 | G |
| 1 | QA | 1176 | A |
| 1 | QA | 1177 | G |
| 1 | QA | 1181 | G |
| 1 | QA | 1182 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 1183 | A |
| 1 | QA | 1187 | G |
| 1 | QA | 1196 | U |
| 1 | QA | 1200 | C |
| 1 | QA | 1201 | A |
| 1 | QA | 1202 | G |
| 1 | QA | 1212 | U |
| 1 | QA | 1213 | A |
| 1 | QA | 1218 | C |
| 1 | QA | 1224 | G |
| 1 | QA | 1225 | A |
| 1 | QA | 1238 | A |
| 1 | QA | 1240 | U |
| 1 | QA | 1241 | G |
| 1 | QA | 1256 | A |
| 1 | QA | 1257 | U |
| 1 | QA | 1258 | G |
| 1 | QA | 1268 | A |
| 1 | QA | 1270 | C |
| 1 | QA | 1273 | G |
| 1 | QA | 1280 | A |
| 1 | QA | 1281 | U |
| 1 | QA | 1282 | C |
| 1 | QA | 1286 | A |
| 1 | QA | 1287 | A |
| 1 | QA | 1290 | G |
| 1 | QA | 1293 | G |
| 1 | QA | 1296 | C |
| 1 | QA | 1297 | C |
| 1 | QA | 1298 | C |
| 1 | QA | 1299 | A |
| 1 | QA | 1300 | G |
| 1 | QA | 1301 | U |
| 1 | QA | 1302 | U |
| 1 | QA | 1303 | C |
| 1 | QA | 1305 | G |
| 1 | QA | 1306 | A |
| 1 | QA | 1317 | C |
| 1 | QA | 1319 | A |
| 1 | QA | 1320 | C |
| 1 | QA | 1321 | C |
| 1 | QA | 1322 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 1323 | G |
| 1 | QA | 1331 | G |
| 1 | QA | 1335 | C |
| 1 | QA | 1336 | C |
| 1 | QA | 1337 | G |
| 1 | QA | 1338 | G |
| 1 | QA | 1347 | G |
| 1 | QA | 1348 | U |
| 1 | QA | 1353 | G |
| 1 | QA | 1359 | C |
| 1 | QA | 1362(A) | C |
| 1 | QA | 1363 | A |
| 1 | QA | 1364 | U |
| 1 | QA | 1365 | G |
| 1 | QA | 1368 | G |
| 1 | QA | 1370 | G |
| 1 | QA | 1379 | G |
| 1 | QA | 1388 | C |
| 1 | QA | 1397 | C |
| 1 | QA | 1398 | A |
| 1 | QA | 1404 | C |
| 1 | QA | 1419 | G |
| 1 | QA | 1442 | G |
| 1 | QA | 1443 | G |
| 1 | QA | 1446 | A |
| 1 | QA | 1447 | G |
| 1 | QA | 1451 | A |
| 1 | QA | 1452 | C |
| 1 | QA | 1453 | G |
| 1 | QA | 1454 | G |
| 1 | QA | 1460 | A |
| 1 | QA | 1487 | G |
| 1 | QA | 1492 | A |
| 1 | QA | 1499 | A |
| 1 | QA | 1503 | A |
| 1 | QA | 1504 | G |
| 1 | QA | 1506 | U |
| 1 | QA | 1508 | G |
| 1 | QA | 1517 | G |
| 1 | QA | 1519 | A |
| 1 | QA | 1520 | G |
| 1 | QA | 1529 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 1530 | G |
| 22 | QV | 3 | C |
| 22 | QV | 4 | G |
| 22 | QV | 5 | G |
| 22 | QV | 7 | G |
| 22 | QV | 8 | U |
| 22 | QV | 14 | A |
| 22 | QV | 16 | C |
| 22 | QV | 17 | C |
| 22 | QV | 17(A) | U |
| 22 | QV | 18 | G |
| 22 | QV | 19 | G |
| 22 | QV | 21 | A |
| 22 | QV | 22 | G |
| 22 | QV | 25 | C |
| 22 | QV | 31 | G |
| 22 | QV | 37 | A |
| 22 | QV | 42 | G |
| 22 | QV | 47 | U |
| 22 | QV | 48 | C |
| 22 | QV | 49 | G |
| 22 | QV | 50 | U |
| 22 | QV | 51 | C |
| 22 | QV | 52 | G |
| 22 | QV | 54 | U |
| 22 | QV | 59 | A |
| 22 | QV | 63 | G |
| 22 | QV | 67 | C |
| 22 | QV | 72 | A |
| 22 | QV | 75 | C |
| 22 | QV | 76 | A |
| 23 | QX | 3 | G |
| 23 | QX | 4 | C |
| 23 | QX | 5 | C |
| 23 | QX | 6 | C |
| 23 | QX | 7 | G |
| 23 | QX | 8 | A |
| 24 | QY | 31 | G |
| 24 | QY | 33 | U |
| 24 | QY | 35 | G |
| 24 | QY | 36 | G |
| 24 | QY | 39 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 24 | QY | 40 | G |
| 25 | RA | 9 | U |
| 25 | RA | 15 | G |
| 25 | RA | 33 | U |
| 25 | RA | 34 | C |
| 25 | RA | 35 | G |
| 25 | RA | 36 | G |
| 25 | RA | 46 | C |
| 25 | RA | 49 | A |
| 25 | RA | 50 | U |
| 25 | RA | 51 | G |
| 25 | RA | 52 | A |
| 25 | RA | 55 | G |
| 25 | RA | 61 | G |
| 25 | RA | 64 | A |
| 25 | RA | 72 | U |
| 25 | RA | 74 | A |
| 25 | RA | 75 | G |
| 25 | RA | 84 | A |
| 25 | RA | 91 | A |
| 25 | RA | 95 | G |
| 25 | RA | 96 | G |
| 25 | RA | 99 | U |
| 25 | RA | 101 | G |
| 25 | RA | 102 | G |
| 25 | RA | 103 | A |
| 25 | RA | 118 | A |
| 25 | RA | 119 | A |
| 25 | RA | 120 | U |
| 25 | RA | 125 | G |
| 25 | RA | 138 | G |
| 25 | RA | 149 | A |
| 25 | RA | 161 | U |
| 25 | RA | 175 | G |
| 25 | RA | 177 | G |
| 25 | RA | 181 | A |
| 25 | RA | 196 | A |
| 25 | RA | 199 | A |
| 25 | RA | 206 | U |
| 25 | RA | 214 | G |
| 25 | RA | 215 | G |
| 25 | RA | 216 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 221 | A |
| 25 | RA | 222 | A |
| 25 | RA | 223 | A |
| 25 | RA | 225 | A |
| 25 | RA | 227 | A |
| 25 | RA | 228 | A |
| 25 | RA | 229 | A |
| 25 | RA | 230 | U |
| 25 | RA | 232 | G |
| 25 | RA | 233 | A |
| 25 | RA | 242 | G |
| 25 | RA | 243 | U |
| 25 | RA | 248 | G |
| 25 | RA | 249 | C |
| 25 | RA | 250 | G |
| 25 | RA | 252 | G |
| 25 | RA | 265 | A |
| 25 | RA | 266 | G |
| 25 | RA | 267 | C |
| 25 | RA | 269 | U |
| 25 | RA | 270(L) | U |
| 25 | RA | 270(M) | U |
| 25 | RA | 270(N) | G |
| 25 | RA | 270(P) | C |
| 25 | RA | 270(U) | C |
| 25 | RA | 271(C) | U |
| 25 | RA | 271 | G |
| 25 | RA | 273(F) | C |
| 25 | RA | 274 | G |
| 25 | RA | 275 | G |
| 25 | RA | 276 | A |
| 25 | RA | 277 | C |
| 25 | RA | 278 | A |
| 25 | RA | 279 | C |
| 25 | RA | 294 | A |
| 25 | RA | 299 | A |
| 25 | RA | 305 | U |
| 25 | RA | 311 | A |
| 25 | RA | 323 | G |
| 25 | RA | 324 | A |
| 25 | RA | 327 | G |
| 25 | RA | 329 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 330 | A |
| 25 | RA | 332 | A |
| 25 | RA | 342 | G |
| 25 | RA | 343 | C |
| 25 | RA | 346 | A |
| 25 | RA | 352 | G |
| 25 | RA | 362 | U |
| 25 | RA | 363(E) | U |
| 25 | RA | 363(F) | A |
| 25 | RA | 371 | A |
| 25 | RA | 372 | G |
| 25 | RA | 373 | U |
| 25 | RA | 376 | C |
| 25 | RA | 386 | G |
| 25 | RA | 396 | G |
| 25 | RA | 404 | C |
| 25 | RA | 405 | U |
| 25 | RA | 411 | G |
| 25 | RA | 412 | A |
| 25 | RA | 420 | C |
| 25 | RA | 422 | A |
| 25 | RA | 428 | A |
| 25 | RA | 444 | C |
| 25 | RA | 448 | U |
| 25 | RA | 451 | C |
| 25 | RA | 454 | A |
| 25 | RA | 455 | C |
| 25 | RA | 457 | A |
| 25 | RA | 459 | U |
| 25 | RA | 470 | A |
| 25 | RA | 481 | G |
| 25 | RA | 483 | A |
| 25 | RA | 496 | G |
| 25 | RA | 503 | A |
| 25 | RA | 504 | U |
| 25 | RA | 505 | A |
| 25 | RA | 509 | C |
| 25 | RA | 513 | A |
| 25 | RA | 527 | C |
| 25 | RA | 531 | C |
| 25 | RA | 532 | A |
| 25 | RA | 533 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 537 | C |
| 25 | RA | 539 | G |
| 25 | RA | 540 | G |
| 25 | RA | 541 | C |
| 25 | RA | 544 | C |
| 25 | RA | 546 | C |
| 25 | RA | 547 | A |
| 25 | RA | 549 | G |
| 25 | RA | 556 | G |
| 25 | RA | 562 | U |
| 25 | RA | 563 | G |
| 25 | RA | 573 | G |
| 25 | RA | 575 | A |
| 25 | RA | 577 | G |
| 25 | RA | 588 | U |
| 25 | RA | 603 | A |
| 25 | RA | 606 | U |
| 25 | RA | 607 | U |
| 25 | RA | 609(A) | G |
| 25 | RA | 614 | U |
| 25 | RA | 615 | G |
| 25 | RA | 616 | A |
| 25 | RA | 617 | G |
| 25 | RA | 621 | A |
| 25 | RA | 622 | G |
| 25 | RA | 624 | C |
| 25 | RA | 626 | U |
| 25 | RA | 627 | A |
| 25 | RA | 631 | A |
| 25 | RA | 637 | A |
| 25 | RA | 638 | G |
| 25 | RA | 645 | C |
| 25 | RA | 646 | A |
| 25 | RA | 650 | C |
| 25 | RA | 651 | G |
| 25 | RA | 652 | C |
| 25 | RA | 653 | A |
| 25 | RA | 654 | A |
| 25 | RA | 654(A) | G |
| 25 | RA | 654(B) | C |
| 25 | RA | 654(T) | C |
| 25 | RA | 658 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 659 | C |
| 25 | RA | 668 | G |
| 25 | RA | 669 | G |
| 25 | RA | 685 | A |
| 25 | RA | 686 | G |
| 25 | RA | 702 | G |
| 25 | RA | 705 | A |
| 25 | RA | 709 | U |
| 25 | RA | 717 | G |
| 25 | RA | 722 | A |
| 25 | RA | 726 | G |
| 25 | RA | 730 | C |
| 25 | RA | 734 | A |
| 25 | RA | 739 | G |
| 25 | RA | 740 | U |
| 25 | RA | 747 | U |
| 25 | RA | 752 | A |
| 25 | RA | 753 | C |
| 25 | RA | 765 | G |
| 25 | RA | 769 | G |
| 25 | RA | 775 | G |
| 25 | RA | 776 | G |
| 25 | RA | 782 | A |
| 25 | RA | 783 | A |
| 25 | RA | 784 | A |
| 25 | RA | 785 | G |
| 25 | RA | 790 | C |
| 25 | RA | 792 | G |
| 25 | RA | 800 | A |
| 25 | RA | 805 | G |
| 25 | RA | 812 | C |
| 25 | RA | 819 | A |
| 25 | RA | 827 | U |
| 25 | RA | 828 | U |
| 25 | RA | 831 | G |
| 25 | RA | 847 | U |
| 25 | RA | 854 | G |
| 25 | RA | 856 | C |
| 25 | RA | 857 | C |
| 25 | RA | 859 | G |
| 25 | RA | 860 | U |
| 25 | RA | 869 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 872 | A |
| 25 | RA | 880 | G |
| 25 | RA | 881 | G |
| 25 | RA | 882 | G |
| 25 | RA | 884 | C |
| 25 | RA | 885 | C |
| 25 | RA | 886 | C |
| 25 | RA | 888 | C |
| 25 | RA | 889 | C |
| 25 | RA | 893 | C |
| 25 | RA | 896 | A |
| 25 | RA | 899 | A |
| 25 | RA | 900 | A |
| 25 | RA | 901 | A |
| 25 | RA | 902 | C |
| 25 | RA | 904 | C |
| 25 | RA | 906 | G |
| 25 | RA | 907 | U |
| 25 | RA | 910 | A |
| 25 | RA | 914 | C |
| 25 | RA | 917 | A |
| 25 | RA | 932 | G |
| 25 | RA | 941 | A |
| 25 | RA | 945 | A |
| 25 | RA | 946 | G |
| 25 | RA | 954 | G |
| 25 | RA | 959 | A |
| 25 | RA | 961 | C |
| 25 | RA | 962 | G |
| 25 | RA | 973 | A |
| 25 | RA | 974 | G |
| 25 | RA | 974(A) | C |
| 25 | RA | 979 | G |
| 25 | RA | 983 | A |
| 25 | RA | 990 | A |
| 25 | RA | 991 | C |
| 25 | RA | 996 | A |
| 25 | RA | 1003 | G |
| 25 | RA | 1011 | G |
| 25 | RA | 1012 | U |
| 25 | RA | 1013 | C |
| 25 | RA | 1015 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 1022 | G |
| 25 | RA | 1023 | U |
| 25 | RA | 1025 | G |
| 25 | RA | 1026 | U |
| 25 | RA | 1027 | A |
| 25 | RA | 1033 | U |
| 25 | RA | 1034 | G |
| 25 | RA | 1036 | G |
| 25 | RA | 1039 | G |
| 25 | RA | 1044 | G |
| 25 | RA | 1045 | A |
| 25 | RA | 1046 | A |
| 25 | RA | 1050 | A |
| 25 | RA | 1054 | A |
| 25 | RA | 1055 | G |
| 25 | RA | 1057 | A |
| 25 | RA | 1059 | G |
| 25 | RA | 1060 | U |
| 25 | RA | 1061 | U |
| 25 | RA | 1066 | U |
| 25 | RA | 1067 | A |
| 25 | RA | 1068 | G |
| 25 | RA | 1070 | A |
| 25 | RA | 1071 | G |
| 25 | RA | 1076 | C |
| 25 | RA | 1077 | A |
| 25 | RA | 1078 | U |
| 25 | RA | 1079 | C |
| 25 | RA | 1082 | U |
| 25 | RA | 1083 | U |
| 25 | RA | 1084 | A |
| 25 | RA | 1085 | A |
| 25 | RA | 1086 | A |
| 25 | RA | 1087 | G |
| 25 | RA | 1088 | A |
| 25 | RA | 1090 | U |
| 25 | RA | 1093 | G |
| 25 | RA | 1095 | A |
| 25 | RA | 1096 | A |
| 25 | RA | 1097 | U |
| 25 | RA | 1099 | G |
| 25 | RA | 1104 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 1105 | U |
| 25 | RA | 1110 | G |
| 25 | RA | 1111 | A |
| 25 | RA | 1112 | G |
| 25 | RA | 1129 | A |
| 25 | RA | 1130 | U |
| 25 | RA | 1131 | G |
| 25 | RA | 1135 | C |
| 25 | RA | 1136 | G |
| 25 | RA | 1140 | C |
| 25 | RA | 1142 | U |
| 25 | RA | 1142(A) | A |
| 25 | RA | 1143 | A |
| 25 | RA | 1148 | A |
| 25 | RA | 1151 | G |
| 25 | RA | 1157 | G |
| 25 | RA | 1173 | G |
| 25 | RA | 1174 | A |
| 25 | RA | 1175 | U |
| 25 | RA | 1176 | G |
| 25 | RA | 1178 | C |
| 25 | RA | 1179 | C |
| 25 | RA | 1180 | C |
| 25 | RA | 1181 | C |
| 25 | RA | 1190 | G |
| 25 | RA | 1195 | G |
| 25 | RA | 1204 | A |
| 25 | RA | 1205 | U |
| 25 | RA | 1209 | G |
| 25 | RA | 1210 | A |
| 25 | RA | 1211 | U |
| 25 | RA | 1220 | A |
| 25 | RA | 1221 | C |
| 25 | RA | 1238 | G |
| 25 | RA | 1252 | G |
| 25 | RA | 1256 | G |
| 25 | RA | 1265 | A |
| 25 | RA | 1266 | G |
| 25 | RA | 1267 | U |
| 25 | RA | 1271 | G |
| 25 | RA | 1272 | A |
| 25 | RA | 1282 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 1286 | A |
| 25 | RA | 1288 | U |
| 25 | RA | 1300 | U |
| 25 | RA | 1301 | A |
| 25 | RA | 1302 | A |
| 25 | RA | 1304 | C |
| 25 | RA | 1306 | C |
| 25 | RA | 1312 | U |
| 25 | RA | 1313 | U |
| 25 | RA | 1314 | C |
| 25 | RA | 1319 | G |
| 25 | RA | 1321 | A |
| 25 | RA | 1329 | U |
| 25 | RA | 1341 | U |
| 25 | RA | 1349 | A |
| 25 | RA | 1352 | U |
| 25 | RA | 1365 | A |
| 25 | RA | 1368 | G |
| 25 | RA | 1370 | C |
| 25 | RA | 1372 | U |
| 25 | RA | 1379 | A |
| 25 | RA | 1380 | G |
| 25 | RA | 1384 | A |
| 25 | RA | 1385 | G |
| 25 | RA | 1386 | C |
| 25 | RA | 1391 | U |
| 25 | RA | 1392 | A |
| 25 | RA | 1395 | A |
| 25 | RA | 1402 | C |
| 25 | RA | 1406 | U |
| 25 | RA | 1407 | C |
| 25 | RA | 1408 | C |
| 25 | RA | 1411 | C |
| 25 | RA | 1416 | G |
| 25 | RA | 1419 | A |
| 25 | RA | 1420 | U |
| 25 | RA | 1421 | G |
| 25 | RA | 1424 | G |
| 25 | RA | 1428 | C |
| 25 | RA | 1435 | G |
| 25 | RA | 1444(A) | A |
| 25 | RA | 1445 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 1449 | A |
| 25 | RA | 1449(A) | G |
| 25 | RA | 1455 | G |
| 25 | RA | 1459 | G |
| 25 | RA | 1460 | A |
| 25 | RA | 1461 | G |
| 25 | RA | 1467 | C |
| 25 | RA | 1471 | A |
| 25 | RA | 1472 | A |
| 25 | RA | 1480 | G |
| 25 | RA | 1482 | U |
| 25 | RA | 1483 | G |
| 25 | RA | 1485 | G |
| 25 | RA | 1486 | A |
| 25 | RA | 1493 | C |
| 25 | RA | 1494 | A |
| 25 | RA | 1495 | A |
| 25 | RA | 1497 | U |
| 25 | RA | 1504 | C |
| 25 | RA | 1506 | C |
| 25 | RA | 1508 | A |
| 25 | RA | 1510 | A |
| 25 | RA | 1513 | C |
| 25 | RA | 1514 | U |
| 25 | RA | 1515 | C |
| 25 | RA | 1520 | U |
| 25 | RA | 1522 | G |
| 25 | RA | 1534 | G |
| 25 | RA | 1535 | U |
| 25 | RA | 1536 | A |
| 25 | RA | 1537 | C |
| 25 | RA | 1538 | G |
| 25 | RA | 1543 | A |
| 25 | RA | 1544 | C |
| 25 | RA | 1545 | A |
| 25 | RA | 1547 | C |
| 25 | RA | 1554 | A |
| 25 | RA | 1558 | A |
| 25 | RA | 1559 | G |
| 25 | RA | 1566 | A |
| 25 | RA | 1567 | A |
| 25 | RA | 1569 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 1573 | G |
| 25 | RA | 1578 | U |
| 25 | RA | 1579 | A |
| 25 | RA | 1580 | A |
| 25 | RA | 1581 | G |
| 25 | RA | 1585 | C |
| 25 | RA | 1586 | A |
| 25 | RA | 1593 | G |
| 25 | RA | 1598 | C |
| 25 | RA | 1602 | U |
| 25 | RA | 1603 | A |
| 25 | RA | 1608 | A |
| 25 | RA | 1609 | A |
| 25 | RA | 1610 | A |
| 25 | RA | 1617 | C |
| 25 | RA | 1618 | A |
| 25 | RA | 1639 | U |
| 25 | RA | 1640 | C |
| 25 | RA | 1646 | C |
| 25 | RA | 1648 | C |
| 25 | RA | 1654 | A |
| 25 | RA | 1667 | G |
| 25 | RA | 1668 | A |
| 25 | RA | 1674 | G |
| 25 | RA | 1695 | G |
| 25 | RA | 1698 | A |
| 25 | RA | 1699 | G |
| 25 | RA | 1725 | G |
| 25 | RA | 1728 | G |
| 25 | RA | 1729 | A |
| 25 | RA | 1730 | U |
| 25 | RA | 1731 | G |
| 25 | RA | 1732 | A |
| 25 | RA | 1733 | G |
| 25 | RA | 1742 | C |
| 25 | RA | 1743 | G |
| 25 | RA | 1752 | C |
| 25 | RA | 1754 | C |
| 25 | RA | 1756 | G |
| 25 | RA | 1762 | A |
| 25 | RA | 1763 | G |
| 25 | RA | 1764 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 1773 | A |
| 25 | RA | 1780 | A |
| 25 | RA | 1787 | A |
| 25 | RA | 1791 | A |
| 25 | RA | 1799 | G |
| 25 | RA | 1800 | C |
| 25 | RA | 1801 | G |
| 25 | RA | 1803 | A |
| 25 | RA | 1816 | G |
| 25 | RA | 1817 | G |
| 25 | RA | 1820 | U |
| 25 | RA | 1821 | A |
| 25 | RA | 1829 | A |
| 25 | RA | 1835 | G |
| 25 | RA | 1847 | A |
| 25 | RA | 1848 | A |
| 25 | RA | 1853 | A |
| 25 | RA | 1858 | G |
| 25 | RA | 1869 | G |
| 25 | RA | 1870 | C |
| 25 | RA | 1872 | A |
| 25 | RA | 1878 | G |
| 25 | RA | 1885 | A |
| 25 | RA | 1888 | G |
| 25 | RA | 1889 | A |
| 25 | RA | 1896 | G |
| 25 | RA | 1905 | C |
| 25 | RA | 1906 | G |
| 25 | RA | 1909 | C |
| 25 | RA | 1913 | A |
| 25 | RA | 1914 | C |
| 25 | RA | 1916 | A |
| 25 | RA | 1919 | A |
| 25 | RA | 1927 | A |
| 25 | RA | 1929 | G |
| 25 | RA | 1930 | G |
| 25 | RA | 1931 | U |
| 25 | RA | 1934 | C |
| 25 | RA | 1936 | A |
| 25 | RA | 1937 | A |
| 25 | RA | 1938 | A |
| 25 | RA | 1939 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 1940 | U |
| 25 | RA | 1949 | G |
| 25 | RA | 1954 | G |
| 25 | RA | 1955 | U |
| 25 | RA | 1956 | U |
| 25 | RA | 1963 | U |
| 25 | RA | 1964 | G |
| 25 | RA | 1966 | A |
| 25 | RA | 1967 | C |
| 25 | RA | 1969 | A |
| 25 | RA | 1970 | A |
| 25 | RA | 1971 | A |
| 25 | RA | 1972 | A |
| 25 | RA | 1981 | A |
| 25 | RA | 1982 | C |
| 25 | RA | 1992 | G |
| 25 | RA | 1993 | U |
| 25 | RA | 2023 | G |
| 25 | RA | 2027 | G |
| 25 | RA | 2031 | A |
| 25 | RA | 2033 | A |
| 25 | RA | 2043 | C |
| 25 | RA | 2051 | A |
| 25 | RA | 2052 | G |
| 25 | RA | 2055 | C |
| 25 | RA | 2056 | G |
| 25 | RA | 2059 | A |
| 25 | RA | 2060 | A |
| 25 | RA | 2061 | G |
| 25 | RA | 2062 | A |
| 25 | RA | 2063 | C |
| 25 | RA | 2069 | G |
| 25 | RA | 2089 | U |
| 25 | RA | 2092 | U |
| 25 | RA | 2093 | G |
| 25 | RA | 2111 | C |
| 25 | RA | 2113 | U |
| 25 | RA | 2114 | A |
| 25 | RA | 2115 | G |
| 25 | RA | 2116 | G |
| 25 | RA | 2117 | A |
| 25 | RA | 2118 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 2120 | G |
| 25 | RA | 2126 | A |
| 25 | RA | 2127 | G |
| 25 | RA | 2128 | C |
| 25 | RA | 2131 | G |
| 25 | RA | 2132 | U |
| 25 | RA | 2133 | G |
| 25 | RA | 2136 | C |
| 25 | RA | 2146 | C |
| 25 | RA | 2147 | G |
| 25 | RA | 2148 | G |
| 25 | RA | 2158 | A |
| 25 | RA | 2166 | G |
| 25 | RA | 2168 | G |
| 25 | RA | 2169 | A |
| 25 | RA | 2173 | A |
| 25 | RA | 2176 | A |
| 25 | RA | 2190 | G |
| 25 | RA | 2192 | G |
| 25 | RA | 2197 | U |
| 25 | RA | 2198 | A |
| 25 | RA | 2199 | A |
| 25 | RA | 2205 | C |
| 25 | RA | 2207 | C |
| 25 | RA | 2208 | U |
| 25 | RA | 2210 | G |
| 25 | RA | 2211 | G |
| 25 | RA | 2212 | A |
| 25 | RA | 2213 | U |
| 25 | RA | 2215 | G |
| 25 | RA | 2225 | A |
| 25 | RA | 2239 | G |
| 25 | RA | 2243 | U |
| 25 | RA | 2245 | U |
| 25 | RA | 2275 | C |
| 25 | RA | 2280 | G |
| 25 | RA | 2283 | C |
| 25 | RA | 2286 | A |
| 25 | RA | 2287 | A |
| 25 | RA | 2294 | C |
| 25 | RA | 2295 | C |
| 25 | RA | 2303 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 2305 | A |
| 25 | RA | 2307 | G |
| 25 | RA | 2308 | G |
| 25 | RA | 2311 | A |
| 25 | RA | 2319 | G |
| 25 | RA | 2320 | A |
| 25 | RA | 2321 | G |
| 25 | RA | 2325 | G |
| 25 | RA | 2329 | G |
| 25 | RA | 2330 | G |
| 25 | RA | 2334 | G |
| 25 | RA | 2342 | C |
| 25 | RA | 2343 | C |
| 25 | RA | 2345 | G |
| 25 | RA | 2346 | A |
| 25 | RA | 2347 | C |
| 25 | RA | 2350 | C |
| 25 | RA | 2354 | G |
| 25 | RA | 2372 | G |
| 25 | RA | 2379 | G |
| 25 | RA | 2382 | G |
| 25 | RA | 2383 | G |
| 25 | RA | 2385 | C |
| 25 | RA | 2388 | A |
| 25 | RA | 2392 | A |
| 25 | RA | 2394 | C |
| 25 | RA | 2400 | G |
| 25 | RA | 2402 | C |
| 25 | RA | 2403 | C |
| 25 | RA | 2406 | U |
| 25 | RA | 2411 | A |
| 25 | RA | 2423 | U |
| 25 | RA | 2425 | A |
| 25 | RA | 2426 | A |
| 25 | RA | 2427 | C |
| 25 | RA | 2428 | G |
| 25 | RA | 2429 | G |
| 25 | RA | 2430 | A |
| 25 | RA | 2431 | U |
| 25 | RA | 2435 | A |
| 25 | RA | 2439 | A |
| 25 | RA | 2440 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 2441 | C |
| 25 | RA | 2445 | G |
| 25 | RA | 2448 | A |
| 25 | RA | 2450 | A |
| 25 | RA | 2469 | A |
| 25 | RA | 2470 | G |
| 25 | RA | 2476 | A |
| 25 | RA | 2482 | G |
| 25 | RA | 2483 | C |
| 25 | RA | 2484 | G |
| 25 | RA | 2487 | G |
| 25 | RA | 2494 | G |
| 25 | RA | 2502 | G |
| 25 | RA | 2505 | G |
| 25 | RA | 2506 | U |
| 25 | RA | 2507 | C |
| 25 | RA | 2513 | G |
| 25 | RA | 2519 | U |
| 25 | RA | 2520 | C |
| 25 | RA | 2531 | A |
| 25 | RA | 2532 | G |
| 25 | RA | 2542 | A |
| 25 | RA | 2543 | G |
| 25 | RA | 2549 | G |
| 25 | RA | 2553 | G |
| 25 | RA | 2554 | U |
| 25 | RA | 2559 | C |
| 25 | RA | 2560 | C |
| 25 | RA | 2567 | G |
| 25 | RA | 2573 | C |
| 25 | RA | 2582 | G |
| 25 | RA | 2585 | U |
| 25 | RA | 2586 | C |
| 25 | RA | 2602 | A |
| 25 | RA | 2603 | G |
| 25 | RA | 2609 | U |
| 25 | RA | 2610 | C |
| 25 | RA | 2611 | U |
| 25 | RA | 2612 | C |
| 25 | RA | 2614 | A |
| 25 | RA | 2616 | C |
| 25 | RA | 2623 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 2629 | A |
| 25 | RA | 2634 | G |
| 25 | RA | 2638 | G |
| 25 | RA | 2645 | G |
| 25 | RA | 2646 | C |
| 25 | RA | 2647 | U |
| 25 | RA | 2654 | A |
| 25 | RA | 2655 | G |
| 25 | RA | 2656 | U |
| 25 | RA | 2665 | A |
| 25 | RA | 2673 | G |
| 25 | RA | 2682 | U |
| 25 | RA | 2686 | G |
| 25 | RA | 2689 | U |
| 25 | RA | 2690 | C |
| 25 | RA | 2691 | C |
| 25 | RA | 2702 | U |
| 25 | RA | 2703 | C |
| 25 | RA | 2712 | U |
| 25 | RA | 2712(A) | A |
| 25 | RA | 2713 | A |
| 25 | RA | 2714 | G |
| 25 | RA | 2724 | C |
| 25 | RA | 2726 | U |
| 25 | RA | 2733 | A |
| 25 | RA | 2734 | A |
| 25 | RA | 2752 | C |
| 25 | RA | 2754 | U |
| 25 | RA | 2757 | A |
| 25 | RA | 2760 | C |
| 25 | RA | 2761 | G |
| 25 | RA | 2762 | G |
| 25 | RA | 2764 | A |
| 25 | RA | 2765 | A |
| 25 | RA | 2766 | G |
| 25 | RA | 2777 | G |
| 25 | RA | 2778 | A |
| 25 | RA | 2779 | U |
| 25 | RA | 2780 | G |
| 25 | RA | 2781 | A |
| 25 | RA | 2789 | C |
| 25 | RA | 2790 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 2791 | C |
| 25 | RA | 2797 | U |
| 25 | RA | 2807 | G |
| 25 | RA | 2810 | A |
| 25 | RA | 2812 | G |
| 25 | RA | 2817 | G |
| 25 | RA | 2818 | G |
| 25 | RA | 2820 | A |
| 25 | RA | 2821 | A |
| 25 | RA | 2833 | G |
| 25 | RA | 2839 | G |
| 25 | RA | 2847 | U |
| 25 | RA | 2849 | U |
| 25 | RA | 2867 | G |
| 25 | RA | 2868 | A |
| 25 | RA | 2872 | G |
| 25 | RA | 2874 | C |
| 25 | RA | 2880 | C |
| 25 | RA | 2891 | G |
| 25 | RA | 2892 | A |
| 25 | RA | 2894 | G |
| 26 | RB | 8 | U |
| 26 | RB | 9 | G |
| 26 | RB | 12 | C |
| 26 | RB | 13 | A |
| 26 | RB | 14 | U |
| 26 | RB | 15 | A |
| 26 | RB | 22 | U |
| 26 | RB | 25 | A |
| 26 | RB | 26 | A |
| 26 | RB | 27 | C |
| 26 | RB | 30 | C |
| 26 | RB | 32 | C |
| 26 | RB | 33 | G |
| 26 | RB | 41 | U |
| 26 | RB | 42 | C |
| 26 | RB | 45 | A |
| 26 | RB | 47 | C |
| 26 | RB | 52 | A |
| 26 | RB | 53 | A |
| 26 | RB | 56 | G |
| 26 | RB | 67 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 26 | RB | 73 | A |
| 26 | RB | 81 | G |
| 26 | RB | 88 | C |
| 26 | RB | 89 | G |
| 26 | RB | 101 | A |
| 26 | RB | 105 | G |
| 26 | RB | 108 | C |
| 26 | RB | 109 | G |
| 26 | RB | 112 | G |
| 1 | XA | 6 | G |
| 1 | XA | 7 | G |
| 1 | XA | 9 | G |
| 1 | XA | 32 | A |
| 1 | XA | 39 | G |
| 1 | XA | 47 | C |
| 1 | XA | 48 | C |
| 1 | XA | 51 | A |
| 1 | XA | 61 | G |
| 1 | XA | 65 | U |
| 1 | XA | 66 | G |
| 1 | XA | 78 | G |
| 1 | XA | 81 | G |
| 1 | XA | 82 | U |
| 1 | XA | 89 | U |
| 1 | XA | 90 | C |
| 1 | XA | 92 | G |
| 1 | XA | 95 | G |
| 1 | XA | 101 | A |
| 1 | XA | 116 | A |
| 1 | XA | 120 | A |
| 1 | XA | 121 | C |
| 1 | XA | 129 | U |
| 1 | XA | 129(A) | G |
| 1 | XA | 130 | A |
| 1 | XA | 131 | C |
| 1 | XA | 144 | G |
| 1 | XA | 147 | G |
| 1 | XA | 163 | C |
| 1 | XA | 172 | A |
| 1 | XA | 173 | U |
| 1 | XA | 174 | C |
| 1 | XA | 182 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | XA | 190 | G |
| 1 | XA | 195 | A |
| 1 | XA | 197 | A |
| 1 | XA | 201 | C |
| 1 | XA | 209 | U |
| 1 | XA | 216 | G |
| 1 | XA | 240 | C |
| 1 | XA | 243 | A |
| 1 | XA | 244 | U |
| 1 | XA | 245 | C |
| 1 | XA | 247 | G |
| 1 | XA | 251 | G |
| 1 | XA | 256 | U |
| 1 | XA | 262 | A |
| 1 | XA | 267 | C |
| 1 | XA | 270 | A |
| 1 | XA | 281 | G |
| 1 | XA | 282 | A |
| 1 | XA | 289 | G |
| 1 | XA | 309 | G |
| 1 | XA | 316 | G |
| 1 | XA | 321 | A |
| 1 | XA | 328 | C |
| 1 | XA | 329 | A |
| 1 | XA | 330 | C |
| 1 | XA | 332 | G |
| 1 | XA | 344 | A |
| 1 | XA | 345 | C |
| 1 | XA | 346 | G |
| 1 | XA | 347 | G |
| 1 | XA | 352 | C |
| 1 | XA | 353 | A |
| 1 | XA | 354 | G |
| 1 | XA | 356 | A |
| 1 | XA | 367 | U |
| 1 | XA | 373 | A |
| 1 | XA | 384 | G |
| 1 | XA | 388 | G |
| 1 | XA | 390 | C |
| 1 | XA | 392 | G |
| 1 | XA | 397 | A |
| 1 | XA | 398 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | XA | 406 | G |
| 1 | XA | 410 | G |
| 1 | XA | 411 | A |
| 1 | XA | 412 | A |
| 1 | XA | 413 | G |
| 1 | XA | 414 | A |
| 1 | XA | 419 | C |
| 1 | XA | 421 | U |
| 1 | XA | 422 | C |
| 1 | XA | 423 | G |
| 1 | XA | 424 | G |
| 1 | XA | 429 | U |
| 1 | XA | 430 | A |
| 1 | XA | 440 | A |
| 1 | XA | 442 | C |
| 1 | XA | 466 | C |
| 1 | XA | 467 | G |
| 1 | XA | 482 | A |
| 1 | XA | 485 | G |
| 1 | XA | 497 | U |
| 1 | XA | 509 | A |
| 1 | XA | 510 | A |
| 1 | XA | 511 | C |
| 1 | XA | 518 | C |
| 1 | XA | 519 | C |
| 1 | XA | 524 | G |
| 1 | XA | 527 | G |
| 1 | XA | 531 | U |
| 1 | XA | 532 | A |
| 1 | XA | 533 | A |
| 1 | XA | 534 | U |
| 1 | XA | 547 | A |
| 1 | XA | 559 | A |
| 1 | XA | 561 | U |
| 1 | XA | 562 | C |
| 1 | XA | 566 | G |
| 1 | XA | 572 | A |
| 1 | XA | 573 | A |
| 1 | XA | 576 | G |
| 1 | XA | 577 | G |
| 1 | XA | 579 | G |
| 1 | XA | 592 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | XA | 593 | G |
| 1 | XA | 596 | C |
| 1 | XA | 630 | G |
| 1 | XA | 631 | G |
| 1 | XA | 632 | A |
| 1 | XA | 633 | G |
| 1 | XA | 649 | G |
| 1 | XA | 651 | C |
| 1 | XA | 653 | A |
| 1 | XA | 664 | G |
| 1 | XA | 665 | A |
| 1 | XA | 686 | U |
| 1 | XA | 688 | G |
| 1 | XA | 701 | C |
| 1 | XA | 702 | A |
| 1 | XA | 703 | G |
| 1 | XA | 704 | A |
| 1 | XA | 721 | G |
| 1 | XA | 731 | G |
| 1 | XA | 742 | G |
| 1 | XA | 748 | C |
| 1 | XA | 749 | C |
| 1 | XA | 753 | A |
| 1 | XA | 754 | C |
| 1 | XA | 755 | G |
| 1 | XA | 760 | G |
| 1 | XA | 763 | G |
| 1 | XA | 774 | G |
| 1 | XA | 777 | A |
| 1 | XA | 792 | A |
| 1 | XA | 793 | U |
| 1 | XA | 794 | A |
| 1 | XA | 796 | C |
| 1 | XA | 813 | U |
| 1 | XA | 817 | C |
| 1 | XA | 818 | G |
| 1 | XA | 819 | A |
| 1 | XA | 821 | G |
| 1 | XA | 828 | A |
| 1 | XA | 841 | U |
| 1 | XA | 843 | U |
| 1 | XA | 848 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | XA | 853 | G |
| 1 | XA | 855 | G |
| 1 | XA | 859 | A |
| 1 | XA | 871 | U |
| 1 | XA | 872 | A |
| 1 | XA | 888 | G |
| 1 | XA | 889 | A |
| 1 | XA | 902 | G |
| 1 | XA | 914 | A |
| 1 | XA | 920 | U |
| 1 | XA | 922 | G |
| 1 | XA | 926 | G |
| 1 | XA | 927 | G |
| 1 | XA | 934 | C |
| 1 | XA | 935 | A |
| 1 | XA | 942 | G |
| 1 | XA | 948 | C |
| 1 | XA | 960 | U |
| 1 | XA | 961 | U |
| 1 | XA | 966 | G |
| 1 | XA | 968 | A |
| 1 | XA | 969 | A |
| 1 | XA | 972 | C |
| 1 | XA | 974 | A |
| 1 | XA | 975 | A |
| 1 | XA | 976 | G |
| 1 | XA | 977 | A |
| 1 | XA | 978 | A |
| 1 | XA | 982 | U |
| 1 | XA | 991 | U |
| 1 | XA | 992 | U |
| 1 | XA | 993 | G |
| 1 | XA | 994 | A |
| 1 | XA | 1001 | G |
| 1 | XA | 1002 | G |
| 1 | XA | 1004 | A |
| 1 | XA | 1005 | A |
| 1 | XA | 1006 | C |
| 1 | XA | 1008 | C |
| 1 | XA | 1016 | A |
| 1 | XA | 1020 | U |
| 1 | XA | 1021 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | XA | 1024 | G |
| 1 | XA | 1025 | U |
| 1 | XA | 1028 | C |
| 1 | XA | 1029 | G |
| 1 | XA | 1032(A) | G |
| 1 | XA | 1036 | G |
| 1 | XA | 1039 | C |
| 1 | XA | 1040 | U |
| 1 | XA | 1054 | C |
| 1 | XA | 1055 | A |
| 1 | XA | 1064 | G |
| 1 | XA | 1065 | U |
| 1 | XA | 1066 | C |
| 1 | XA | 1085 | U |
| 1 | XA | 1094 | G |
| 1 | XA | 1095 | U |
| 1 | XA | 1101 | A |
| 1 | XA | 1107 | C |
| 1 | XA | 1117 | G |
| 1 | XA | 1124 | G |
| 1 | XA | 1125 | U |
| 1 | XA | 1126 | U |
| 1 | XA | 1127 | G |
| 1 | XA | 1130 | A |
| 1 | XA | 1131 | G |
| 1 | XA | 1136 | U |
| 1 | XA | 1137 | C |
| 1 | XA | 1138 | G |
| 1 | XA | 1139 | G |
| 1 | XA | 1146 | A |
| 1 | XA | 1151 | A |
| 1 | XA | 1154 | G |
| 1 | XA | 1157 | A |
| 1 | XA | 1158 | C |
| 1 | XA | 1159 | U |
| 1 | XA | 1160 | G |
| 1 | XA | 1162 | C |
| 1 | XA | 1171 | G |
| 1 | XA | 1176 | A |
| 1 | XA | 1177 | G |
| 1 | XA | 1181 | G |
| 1 | XA | 1182 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | XA | 1183 | A |
| 1 | XA | 1184 | G |
| 1 | XA | 1187 | G |
| 1 | XA | 1190 | G |
| 1 | XA | 1191 | A |
| 1 | XA | 1193 | G |
| 1 | XA | 1196 | U |
| 1 | XA | 1200 | C |
| 1 | XA | 1201 | A |
| 1 | XA | 1202 | G |
| 1 | XA | 1210 | C |
| 1 | XA | 1211 | U |
| 1 | XA | 1212 | U |
| 1 | XA | 1213 | A |
| 1 | XA | 1215 | G |
| 1 | XA | 1225 | A |
| 1 | XA | 1226 | C |
| 1 | XA | 1232 | U |
| 1 | XA | 1236 | A |
| 1 | XA | 1238 | A |
| 1 | XA | 1240 | U |
| 1 | XA | 1241 | G |
| 1 | XA | 1256 | A |
| 1 | XA | 1257 | U |
| 1 | XA | 1258 | G |
| 1 | XA | 1263 | C |
| 1 | XA | 1270 | C |
| 1 | XA | 1272 | G |
| 1 | XA | 1273 | G |
| 1 | XA | 1280 | A |
| 1 | XA | 1281 | U |
| 1 | XA | 1282 | C |
| 1 | XA | 1286 | A |
| 1 | XA | 1287 | A |
| 1 | XA | 1296 | C |
| 1 | XA | 1297 | C |
| 1 | XA | 1298 | C |
| 1 | XA | 1299 | A |
| 1 | XA | 1301 | U |
| 1 | XA | 1302 | U |
| 1 | XA | 1305 | G |
| 1 | XA | 1310 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | XA | 1317 | C |
| 1 | XA | 1319 | A |
| 1 | XA | 1320 | C |
| 1 | XA | 1322 | C |
| 1 | XA | 1323 | G |
| 1 | XA | 1330 | U |
| 1 | XA | 1331 | G |
| 1 | XA | 1334 | G |
| 1 | XA | 1336 | C |
| 1 | XA | 1337 | G |
| 1 | XA | 1348 | U |
| 1 | XA | 1353 | G |
| 1 | XA | 1362(A) | C |
| 1 | XA | 1363 | A |
| 1 | XA | 1364 | U |
| 1 | XA | 1365 | G |
| 1 | XA | 1368 | G |
| 1 | XA | 1370 | G |
| 1 | XA | 1372 | U |
| 1 | XA | 1373 | G |
| 1 | XA | 1381 | U |
| 1 | XA | 1397 | C |
| 1 | XA | 1411 | C |
| 1 | XA | 1419 | G |
| 1 | XA | 1420 | C |
| 1 | XA | 1442 | G |
| 1 | XA | 1443 | G |
| 1 | XA | 1446 | A |
| 1 | XA | 1447 | G |
| 1 | XA | 1449 | C |
| 1 | XA | 1452 | C |
| 1 | XA | 1453 | G |
| 1 | XA | 1454 | G |
| 1 | XA | 1475 | G |
| 1 | XA | 1487 | G |
| 1 | XA | 1492 | A |
| 1 | XA | 1499 | A |
| 1 | XA | 1502 | A |
| 1 | XA | 1503 | A |
| 1 | XA | 1504 | G |
| 1 | XA | 1505 | G |
| 1 | XA | 1506 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | XA | 1507 | A |
| 1 | XA | 1517 | G |
| 1 | XA | 1520 | G |
| 1 | XA | 1529 | G |
| 1 | XA | 1530 | G |
| 1 | XA | 1531 | A |
| 22 | XV | 3 | C |
| 22 | XV | 4 | G |
| 22 | XV | 5 | G |
| 22 | XV | 7 | G |
| 22 | XV | 8 | U |
| 22 | XV | 14 | A |
| 22 | XV | 16 | C |
| 22 | XV | 17 | C |
| 22 | XV | 17(A) | U |
| 22 | XV | 18 | G |
| 22 | XV | 19 | G |
| 22 | XV | 21 | A |
| 22 | XV | 22 | G |
| 22 | XV | 25 | C |
| 22 | XV | 31 | G |
| 22 | XV | 37 | A |
| 22 | XV | 42 | G |
| 22 | XV | 47 | U |
| 22 | XV | 48 | C |
| 22 | XV | 49 | G |
| 22 | XV | 50 | U |
| 22 | XV | 51 | C |
| 22 | XV | 52 | G |
| 22 | XV | 54 | U |
| 22 | XV | 59 | A |
| 22 | XV | 63 | G |
| 22 | XV | 67 | C |
| 22 | XV | 72 | A |
| 22 | XV | 75 | C |
| 22 | XV | 76 | A |
| 23 | XX | 3 | G |
| 23 | XX | 4 | C |
| 24 | XY | 31 | G |
| 24 | XY | 33 | U |
| 24 | XY | 36 | G |
| 24 | XY | 39 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 24 | XY | 40 | G |
| 25 | YA | 9 | U |
| 25 | YA | 13 | A |
| 25 | YA | 15 | G |
| 25 | YA | 33 | U |
| 25 | YA | 34 | C |
| 25 | YA | 35 | G |
| 25 | YA | 43 | G |
| 25 | YA | 46 | C |
| 25 | YA | 49 | A |
| 25 | YA | 50 | U |
| 25 | YA | 51 | G |
| 25 | YA | 55 | G |
| 25 | YA | 61 | G |
| 25 | YA | 63 | U |
| 25 | YA | 64 | A |
| 25 | YA | 66 | C |
| 25 | YA | 72 | U |
| 25 | YA | 74 | A |
| 25 | YA | 75 | G |
| 25 | YA | 91 | A |
| 25 | YA | 95 | G |
| 25 | YA | 96 | G |
| 25 | YA | 97 | C |
| 25 | YA | 99 | U |
| 25 | YA | 101 | G |
| 25 | YA | 102 | G |
| 25 | YA | 103 | A |
| 25 | YA | 118 | A |
| 25 | YA | 119 | A |
| 25 | YA | 120 | U |
| 25 | YA | 124 | G |
| 25 | YA | 127 | A |
| 25 | YA | 140 | A |
| 25 | YA | 142 | G |
| 25 | YA | 155 | C |
| 25 | YA | 161 | U |
| 25 | YA | 173 | G |
| 25 | YA | 177 | G |
| 25 | YA | 188 | G |
| 25 | YA | 196 | A |
| 25 | YA | 202 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 205 | G |
| 25 | YA | 206 | U |
| 25 | YA | 214 | G |
| 25 | YA | 216 | A |
| 25 | YA | 222 | A |
| 25 | YA | 223 | A |
| 25 | YA | 225 | A |
| 25 | YA | 226 | G |
| 25 | YA | 227 | A |
| 25 | YA | 228 | A |
| 25 | YA | 229 | A |
| 25 | YA | 230 | U |
| 25 | YA | 232 | G |
| 25 | YA | 242 | G |
| 25 | YA | 243 | U |
| 25 | YA | 248 | G |
| 25 | YA | 252 | G |
| 25 | YA | 265 | A |
| 25 | YA | 266 | G |
| 25 | YA | 269 | U |
| 25 | YA | 270(L) | U |
| 25 | YA | 270(M) | U |
| 25 | YA | 270(N) | G |
| 25 | YA | 270(P) | C |
| 25 | YA | 270(Z) | U |
| 25 | YA | 271(C) | U |
| 25 | YA | 271 | G |
| 25 | YA | 274 | G |
| 25 | YA | 276 | A |
| 25 | YA | 278 | A |
| 25 | YA | 279 | C |
| 25 | YA | 285 | C |
| 25 | YA | 288 | C |
| 25 | YA | 299 | A |
| 25 | YA | 300 | A |
| 25 | YA | 310 | A |
| 25 | YA | 323 | G |
| 25 | YA | 324 | A |
| 25 | YA | 329 | G |
| 25 | YA | 330 | A |
| 25 | YA | 332 | A |
| 25 | YA | 342 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 345 | A |
| 25 | YA | 352 | G |
| 25 | YA | 353 | G |
| 25 | YA | 363 | G |
| 25 | YA | 364 | C |
| 25 | YA | 371 | A |
| 25 | YA | 372 | G |
| 25 | YA | 373 | U |
| 25 | YA | 380 | U |
| 25 | YA | 386 | G |
| 25 | YA | 387 | U |
| 25 | YA | 393 | C |
| 25 | YA | 396 | G |
| 25 | YA | 405 | U |
| 25 | YA | 411 | G |
| 25 | YA | 412 | A |
| 25 | YA | 417 | C |
| 25 | YA | 421 | U |
| 25 | YA | 428 | A |
| 25 | YA | 442 | G |
| 25 | YA | 444 | C |
| 25 | YA | 448 | U |
| 25 | YA | 451 | C |
| 25 | YA | 457 | A |
| 25 | YA | 470 | A |
| 25 | YA | 479 | A |
| 25 | YA | 481 | G |
| 25 | YA | 482 | A |
| 25 | YA | 483 | A |
| 25 | YA | 491 | G |
| 25 | YA | 496 | G |
| 25 | YA | 503 | A |
| 25 | YA | 504 | U |
| 25 | YA | 505 | A |
| 25 | YA | 509 | C |
| 25 | YA | 512 | G |
| 25 | YA | 518 | G |
| 25 | YA | 527 | C |
| 25 | YA | 531 | C |
| 25 | YA | 532 | A |
| 25 | YA | 533 | G |
| 25 | YA | 537 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 539 | G |
| 25 | YA | 540 | G |
| 25 | YA | 546 | C |
| 25 | YA | 547 | A |
| 25 | YA | 549 | G |
| 25 | YA | 563 | G |
| 25 | YA | 573 | G |
| 25 | YA | 575 | A |
| 25 | YA | 586 | A |
| 25 | YA | 588 | U |
| 25 | YA | 599 | G |
| 25 | YA | 603 | A |
| 25 | YA | 607 | U |
| 25 | YA | 609(A) | G |
| 25 | YA | 613 | U |
| 25 | YA | 614 | U |
| 25 | YA | 615 | G |
| 25 | YA | 617 | G |
| 25 | YA | 621 | A |
| 25 | YA | 622 | G |
| 25 | YA | 624 | C |
| 25 | YA | 627 | A |
| 25 | YA | 629 | G |
| 25 | YA | 631 | A |
| 25 | YA | 634 | C |
| 25 | YA | 637 | A |
| 25 | YA | 638 | G |
| 25 | YA | 645 | C |
| 25 | YA | 646 | A |
| 25 | YA | 648 | G |
| 25 | YA | 649 | G |
| 25 | YA | 650 | C |
| 25 | YA | 652 | C |
| 25 | YA | 654 | A |
| 25 | YA | 654(A) | G |
| 25 | YA | 654(B) | C |
| 25 | YA | 659 | C |
| 25 | YA | 664 | C |
| 25 | YA | 668 | G |
| 25 | YA | 669 | G |
| 25 | YA | 670 | A |
| 25 | YA | 681 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 686 | G |
| 25 | YA | 705 | A |
| 25 | YA | 709 | U |
| 25 | YA | 717 | G |
| 25 | YA | 722 | A |
| 25 | YA | 730 | C |
| 25 | YA | 747 | U |
| 25 | YA | 753 | C |
| 25 | YA | 764 | A |
| 25 | YA | 765 | G |
| 25 | YA | 776 | G |
| 25 | YA | 782 | A |
| 25 | YA | 784 | A |
| 25 | YA | 785 | G |
| 25 | YA | 790 | C |
| 25 | YA | 791 | C |
| 25 | YA | 792 | G |
| 25 | YA | 805 | G |
| 25 | YA | 812 | C |
| 25 | YA | 819 | A |
| 25 | YA | 827 | U |
| 25 | YA | 828 | U |
| 25 | YA | 829 | A |
| 25 | YA | 831 | G |
| 25 | YA | 845 | G |
| 25 | YA | 846 | C |
| 25 | YA | 847 | U |
| 25 | YA | 854 | G |
| 25 | YA | 856 | C |
| 25 | YA | 857 | C |
| 25 | YA | 859 | G |
| 25 | YA | 860 | U |
| 25 | YA | 865 | C |
| 25 | YA | 866 | A |
| 25 | YA | 870 | A |
| 25 | YA | 880 | G |
| 25 | YA | 881 | G |
| 25 | YA | 882 | G |
| 25 | YA | 884 | C |
| 25 | YA | 885 | C |
| 25 | YA | 886 | C |
| 25 | YA | 887 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 888 | C |
| 25 | YA | 889 | C |
| 25 | YA | 890 | A |
| 25 | YA | 893 | C |
| 25 | YA | 896 | A |
| 25 | YA | 897 | C |
| 25 | YA | 899 | A |
| 25 | YA | 900 | A |
| 25 | YA | 901 | A |
| 25 | YA | 904 | C |
| 25 | YA | 906 | G |
| 25 | YA | 907 | U |
| 25 | YA | 910 | A |
| 25 | YA | 917 | A |
| 25 | YA | 918 | A |
| 25 | YA | 932 | G |
| 25 | YA | 938 | G |
| 25 | YA | 941 | A |
| 25 | YA | 945 | A |
| 25 | YA | 946 | G |
| 25 | YA | 961 | C |
| 25 | YA | 974 | G |
| 25 | YA | 974(A) | C |
| 25 | YA | 975 | G |
| 25 | YA | 983 | A |
| 25 | YA | 986 | C |
| 25 | YA | 990 | A |
| 25 | YA | 991 | C |
| 25 | YA | 996 | A |
| 25 | YA | 1003 | G |
| 25 | YA | 1005 | C |
| 25 | YA | 1011 | G |
| 25 | YA | 1012 | U |
| 25 | YA | 1013 | C |
| 25 | YA | 1015 | G |
| 25 | YA | 1022 | G |
| 25 | YA | 1023 | U |
| 25 | YA | 1025 | G |
| 25 | YA | 1026 | U |
| 25 | YA | 1027 | A |
| 25 | YA | 1033 | U |
| 25 | YA | 1045 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 1046 | A |
| 25 | YA | 1047 | G |
| 25 | YA | 1050 | A |
| 25 | YA | 1051 | G |
| 25 | YA | 1054 | A |
| 25 | YA | 1055 | G |
| 25 | YA | 1057 | A |
| 25 | YA | 1059 | G |
| 25 | YA | 1060 | U |
| 25 | YA | 1061 | U |
| 25 | YA | 1065 | U |
| 25 | YA | 1066 | U |
| 25 | YA | 1067 | A |
| 25 | YA | 1068 | G |
| 25 | YA | 1070 | A |
| 25 | YA | 1071 | G |
| 25 | YA | 1076 | C |
| 25 | YA | 1077 | A |
| 25 | YA | 1078 | U |
| 25 | YA | 1079 | C |
| 25 | YA | 1082 | U |
| 25 | YA | 1083 | U |
| 25 | YA | 1084 | A |
| 25 | YA | 1085 | A |
| 25 | YA | 1086 | A |
| 25 | YA | 1088 | A |
| 25 | YA | 1090 | U |
| 25 | YA | 1095 | A |
| 25 | YA | 1096 | A |
| 25 | YA | 1097 | U |
| 25 | YA | 1103 | A |
| 25 | YA | 1104 | C |
| 25 | YA | 1105 | U |
| 25 | YA | 1110 | G |
| 25 | YA | 1111 | A |
| 25 | YA | 1112 | G |
| 25 | YA | 1122 | G |
| 25 | YA | 1124 | C |
| 25 | YA | 1131 | G |
| 25 | YA | 1135 | C |
| 25 | YA | 1136 | G |
| 25 | YA | 1142 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 1142(A) | A |
| 25 | YA | 1143 | A |
| 25 | YA | 1148 | A |
| 25 | YA | 1155 | A |
| 25 | YA | 1157 | G |
| 25 | YA | 1168 | G |
| 25 | YA | 1170 | G |
| 25 | YA | 1173 | G |
| 25 | YA | 1174 | A |
| 25 | YA | 1175 | U |
| 25 | YA | 1176 | G |
| 25 | YA | 1178 | C |
| 25 | YA | 1179 | C |
| 25 | YA | 1181 | C |
| 25 | YA | 1183 | G |
| 25 | YA | 1188 | U |
| 25 | YA | 1190 | G |
| 25 | YA | 1195 | G |
| 25 | YA | 1197 | G |
| 25 | YA | 1204 | A |
| 25 | YA | 1205 | U |
| 25 | YA | 1210 | A |
| 25 | YA | 1211 | U |
| 25 | YA | 1218 | C |
| 25 | YA | 1220 | A |
| 25 | YA | 1236 | G |
| 25 | YA | 1237 | A |
| 25 | YA | 1238 | G |
| 25 | YA | 1241 | A |
| 25 | YA | 1243 | G |
| 25 | YA | 1244 | G |
| 25 | YA | 1248 | G |
| 25 | YA | 1252 | G |
| 25 | YA | 1253 | A |
| 25 | YA | 1256 | G |
| 25 | YA | 1265 | A |
| 25 | YA | 1271 | G |
| 25 | YA | 1272 | A |
| 25 | YA | 1273 | U |
| 25 | YA | 1274 | A |
| 25 | YA | 1282 | U |
| 25 | YA | 1300 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 1301 | A |
| 25 | YA | 1303 | G |
| 25 | YA | 1308 | A |
| 25 | YA | 1313 | U |
| 25 | YA | 1319 | G |
| 25 | YA | 1321 | A |
| 25 | YA | 1329 | U |
| 25 | YA | 1330 | C |
| 25 | YA | 1345 | C |
| 25 | YA | 1349 | A |
| 25 | YA | 1352 | U |
| 25 | YA | 1356 | G |
| 25 | YA | 1365 | A |
| 25 | YA | 1368 | G |
| 25 | YA | 1371 | G |
| 25 | YA | 1376 | C |
| 25 | YA | 1378 | A |
| 25 | YA | 1379 | A |
| 25 | YA | 1380 | G |
| 25 | YA | 1384 | A |
| 25 | YA | 1385 | G |
| 25 | YA | 1386 | C |
| 25 | YA | 1388 | G |
| 25 | YA | 1389 | G |
| 25 | YA | 1390 | U |
| 25 | YA | 1392 | A |
| 25 | YA | 1395 | A |
| 25 | YA | 1407 | C |
| 25 | YA | 1408 | C |
| 25 | YA | 1411 | C |
| 25 | YA | 1412 | A |
| 25 | YA | 1416 | G |
| 25 | YA | 1417 | C |
| 25 | YA | 1419 | A |
| 25 | YA | 1420 | U |
| 25 | YA | 1421 | G |
| 25 | YA | 1428 | C |
| 25 | YA | 1444(A) | A |
| 25 | YA | 1445 | C |
| 25 | YA | 1448 | G |
| 25 | YA | 1449 | A |
| 25 | YA | 1449(A) | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 1451 | C |
| 25 | YA | 1453 | A |
| 25 | YA | 1455 | G |
| 25 | YA | 1458 | C |
| 25 | YA | 1460 | A |
| 25 | YA | 1461 | G |
| 25 | YA | 1467 | C |
| 25 | YA | 1471 | A |
| 25 | YA | 1474 | C |
| 25 | YA | 1480 | G |
| 25 | YA | 1482 | U |
| 25 | YA | 1483 | G |
| 25 | YA | 1486 | A |
| 25 | YA | 1493 | C |
| 25 | YA | 1494 | A |
| 25 | YA | 1495 | A |
| 25 | YA | 1497 | U |
| 25 | YA | 1505 | C |
| 25 | YA | 1506 | C |
| 25 | YA | 1507 | A |
| 25 | YA | 1508 | A |
| 25 | YA | 1510 | A |
| 25 | YA | 1513 | C |
| 25 | YA | 1514 | U |
| 25 | YA | 1522 | G |
| 25 | YA | 1534 | G |
| 25 | YA | 1535 | U |
| 25 | YA | 1536 | A |
| 25 | YA | 1537 | C |
| 25 | YA | 1538 | G |
| 25 | YA | 1543 | A |
| 25 | YA | 1544 | C |
| 25 | YA | 1545 | A |
| 25 | YA | 1549 | C |
| 25 | YA | 1554 | A |
| 25 | YA | 1555 | G |
| 25 | YA | 1558 | A |
| 25 | YA | 1559 | G |
| 25 | YA | 1560 | G |
| 25 | YA | 1566 | A |
| 25 | YA | 1569 | A |
| 25 | YA | 1578 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 1579 | A |
| 25 | YA | 1581 | G |
| 25 | YA | 1585 | C |
| 25 | YA | 1586 | A |
| 25 | YA | 1598 | C |
| 25 | YA | 1606 | G |
| 25 | YA | 1607 | C |
| 25 | YA | 1608 | A |
| 25 | YA | 1610 | A |
| 25 | YA | 1616 | A |
| 25 | YA | 1617 | C |
| 25 | YA | 1618 | A |
| 25 | YA | 1619 | G |
| 25 | YA | 1631 | A |
| 25 | YA | 1639 | U |
| 25 | YA | 1640 | C |
| 25 | YA | 1646 | C |
| 25 | YA | 1647 | G |
| 25 | YA | 1648 | C |
| 25 | YA | 1654 | A |
| 25 | YA | 1666 | G |
| 25 | YA | 1667 | G |
| 25 | YA | 1668 | A |
| 25 | YA | 1674 | G |
| 25 | YA | 1688 | U |
| 25 | YA | 1695 | G |
| 25 | YA | 1699 | G |
| 25 | YA | 1700 | A |
| 25 | YA | 1725 | G |
| 25 | YA | 1728 | G |
| 25 | YA | 1729 | A |
| 25 | YA | 1730 | U |
| 25 | YA | 1731 | G |
| 25 | YA | 1741 | C |
| 25 | YA | 1742 | C |
| 25 | YA | 1743 | G |
| 25 | YA | 1750 | G |
| 25 | YA | 1753 | G |
| 25 | YA | 1754 | C |
| 25 | YA | 1756 | G |
| 25 | YA | 1759 | A |
| 25 | YA | 1762 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 1763 | G |
| 25 | YA | 1764 | G |
| 25 | YA | 1769 | G |
| 25 | YA | 1773 | A |
| 25 | YA | 1780 | A |
| 25 | YA | 1787 | A |
| 25 | YA | 1791 | A |
| 25 | YA | 1799 | G |
| 25 | YA | 1800 | C |
| 25 | YA | 1801 | G |
| 25 | YA | 1811 | G |
| 25 | YA | 1816 | G |
| 25 | YA | 1819 | A |
| 25 | YA | 1820 | U |
| 25 | YA | 1829 | A |
| 25 | YA | 1833 | U |
| 25 | YA | 1834 | U |
| 25 | YA | 1835 | G |
| 25 | YA | 1836 | C |
| 25 | YA | 1847 | A |
| 25 | YA | 1849 | G |
| 25 | YA | 1850 | G |
| 25 | YA | 1858 | G |
| 25 | YA | 1869 | G |
| 25 | YA | 1870 | C |
| 25 | YA | 1872 | A |
| 25 | YA | 1878 | G |
| 25 | YA | 1881 | C |
| 25 | YA | 1882 | C |
| 25 | YA | 1885 | A |
| 25 | YA | 1889 | A |
| 25 | YA | 1896 | G |
| 25 | YA | 1903 | G |
| 25 | YA | 1906 | G |
| 25 | YA | 1910 | G |
| 25 | YA | 1913 | A |
| 25 | YA | 1916 | A |
| 25 | YA | 1930 | G |
| 25 | YA | 1931 | U |
| 25 | YA | 1936 | A |
| 25 | YA | 1937 | A |
| 25 | YA | 1938 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 1939 | U |
| 25 | YA | 1941 | C |
| 25 | YA | 1945 | G |
| 25 | YA | 1947 | C |
| 25 | YA | 1955 | U |
| 25 | YA | 1963 | U |
| 25 | YA | 1964 | G |
| 25 | YA | 1965 | C |
| 25 | YA | 1967 | C |
| 25 | YA | 1968 | G |
| 25 | YA | 1969 | A |
| 25 | YA | 1970 | A |
| 25 | YA | 1971 | A |
| 25 | YA | 1972 | A |
| 25 | YA | 1982 | C |
| 25 | YA | 1988 | C |
| 25 | YA | 1991 | U |
| 25 | YA | 1993 | U |
| 25 | YA | 2017 | U |
| 25 | YA | 2020 | A |
| 25 | YA | 2023 | G |
| 25 | YA | 2031 | A |
| 25 | YA | 2033 | A |
| 25 | YA | 2034 | U |
| 25 | YA | 2040 | C |
| 25 | YA | 2043 | C |
| 25 | YA | 2049 | G |
| 25 | YA | 2052 | G |
| 25 | YA | 2055 | C |
| 25 | YA | 2056 | G |
| 25 | YA | 2059 | A |
| 25 | YA | 2060 | A |
| 25 | YA | 2061 | G |
| 25 | YA | 2062 | A |
| 25 | YA | 2063 | C |
| 25 | YA | 2069 | G |
| 25 | YA | 2093 | G |
| 25 | YA | 2099 | U |
| 25 | YA | 2111 | C |
| 25 | YA | 2113 | U |
| 25 | YA | 2114 | A |
| 25 | YA | 2115 | G |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 2116 | G |
| 25 | YA | 2117 | A |
| 25 | YA | 2118 | U |
| 25 | YA | 2119 | A |
| 25 | YA | 2120 | G |
| 25 | YA | 2126 | A |
| 25 | YA | 2127 | G |
| 25 | YA | 2128 | C |
| 25 | YA | 2131 | G |
| 25 | YA | 2132 | U |
| 25 | YA | 2133 | G |
| 25 | YA | 2136 | C |
| 25 | YA | 2145 | C |
| 25 | YA | 2146 | C |
| 25 | YA | 2147 | G |
| 25 | YA | 2148 | G |
| 25 | YA | 2158 | A |
| 25 | YA | 2166 | G |
| 25 | YA | 2167 | U |
| 25 | YA | 2168 | G |
| 25 | YA | 2169 | A |
| 25 | YA | 2173 | A |
| 25 | YA | 2176 | A |
| 25 | YA | 2181 | G |
| 25 | YA | 2190 | G |
| 25 | YA | 2191 | G |
| 25 | YA | 2192 | G |
| 25 | YA | 2193 | G |
| 25 | YA | 2198 | A |
| 25 | YA | 2199 | A |
| 25 | YA | 2205 | C |
| 25 | YA | 2209 | C |
| 25 | YA | 2210 | G |
| 25 | YA | 2211 | G |
| 25 | YA | 2212 | A |
| 25 | YA | 2215 | G |
| 25 | YA | 2225 | A |
| 25 | YA | 2238 | G |
| 25 | YA | 2239 | G |
| 25 | YA | 2240 | C |
| 25 | YA | 2243 | U |
| 25 | YA | 2249 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 2250 | G |
| 25 | YA | 2273 | A |
| 25 | YA | 2275 | C |
| 25 | YA | 2279 | G |
| 25 | YA | 2280 | G |
| 25 | YA | 2283 | C |
| 25 | YA | 2286 | A |
| 25 | YA | 2287 | A |
| 25 | YA | 2290 | G |
| 25 | YA | 2303 | G |
| 25 | YA | 2305 | A |
| 25 | YA | 2307 | G |
| 25 | YA | 2308 | G |
| 25 | YA | 2310 | A |
| 25 | YA | 2311 | A |
| 25 | YA | 2319 | G |
| 25 | YA | 2320 | A |
| 25 | YA | 2325 | G |
| 25 | YA | 2334 | G |
| 25 | YA | 2335 | A |
| 25 | YA | 2336 | A |
| 25 | YA | 2341 | G |
| 25 | YA | 2342 | C |
| 25 | YA | 2343 | C |
| 25 | YA | 2346 | A |
| 25 | YA | 2347 | C |
| 25 | YA | 2350 | C |
| 25 | YA | 2357 | U |
| 25 | YA | 2372 | G |
| 25 | YA | 2383 | G |
| 25 | YA | 2385 | C |
| 25 | YA | 2387 | U |
| 25 | YA | 2392 | A |
| 25 | YA | 2394 | C |
| 25 | YA | 2396 | G |
| 25 | YA | 2397 | G |
| 25 | YA | 2398 | U |
| 25 | YA | 2402 | C |
| 25 | YA | 2403 | C |
| 25 | YA | 2406 | U |
| 25 | YA | 2407 | G |
| 25 | YA | 2408 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 2411 | A |
| 25 | YA | 2422 | A |
| 25 | YA | 2423 | U |
| 25 | YA | 2424 | C |
| 25 | YA | 2426 | A |
| 25 | YA | 2429 | G |
| 25 | YA | 2430 | A |
| 25 | YA | 2435 | A |
| 25 | YA | 2439 | A |
| 25 | YA | 2440 | C |
| 25 | YA | 2441 | C |
| 25 | YA | 2445 | G |
| 25 | YA | 2448 | A |
| 25 | YA | 2450 | A |
| 25 | YA | 2460 | U |
| 25 | YA | 2467 | C |
| 25 | YA | 2469 | A |
| 25 | YA | 2470 | G |
| 25 | YA | 2474 | C |
| 25 | YA | 2475 | C |
| 25 | YA | 2478 | A |
| 25 | YA | 2482 | G |
| 25 | YA | 2484 | G |
| 25 | YA | 2494 | G |
| 25 | YA | 2502 | G |
| 25 | YA | 2505 | G |
| 25 | YA | 2506 | U |
| 25 | YA | 2507 | C |
| 25 | YA | 2518 | A |
| 25 | YA | 2519 | U |
| 25 | YA | 2529 | G |
| 25 | YA | 2542 | A |
| 25 | YA | 2543 | G |
| 25 | YA | 2554 | U |
| 25 | YA | 2562 | U |
| 25 | YA | 2566 | A |
| 25 | YA | 2567 | G |
| 25 | YA | 2569 | G |
| 25 | YA | 2573 | C |
| 25 | YA | 2582 | G |
| 25 | YA | 2585 | U |
| 25 | YA | 2602 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 2609 | U |
| 25 | YA | 2610 | C |
| 25 | YA | 2611 | U |
| 25 | YA | 2612 | C |
| 25 | YA | 2623 | G |
| 25 | YA | 2629 | A |
| 25 | YA | 2632 | A |
| 25 | YA | 2641 | G |
| 25 | YA | 2642 | G |
| 25 | YA | 2654 | A |
| 25 | YA | 2655 | G |
| 25 | YA | 2665 | A |
| 25 | YA | 2666 | C |
| 25 | YA | 2673 | G |
| 25 | YA | 2681 | C |
| 25 | YA | 2682 | U |
| 25 | YA | 2689 | U |
| 25 | YA | 2690 | C |
| 25 | YA | 2691 | C |
| 25 | YA | 2702 | U |
| 25 | YA | 2703 | C |
| 25 | YA | 2712 | U |
| 25 | YA | 2712(A) | A |
| 25 | YA | 2713 | A |
| 25 | YA | 2718 | G |
| 25 | YA | 2719 | G |
| 25 | YA | 2720 | U |
| 25 | YA | 2723 | C |
| 25 | YA | 2724 | C |
| 25 | YA | 2726 | U |
| 25 | YA | 2727 | G |
| 25 | YA | 2730 | C |
| 25 | YA | 2733 | A |
| 25 | YA | 2734 | A |
| 25 | YA | 2744 | G |
| 25 | YA | 2748 | A |
| 25 | YA | 2751 | G |
| 25 | YA | 2752 | C |
| 25 | YA | 2753 | A |
| 25 | YA | 2757 | A |
| 25 | YA | 2758 | A |
| 25 | YA | 2760 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 2761 | G |
| 25 | YA | 2764 | A |
| 25 | YA | 2765 | A |
| 25 | YA | 2771 | C |
| 25 | YA | 2777 | G |
| 25 | YA | 2778 | A |
| 25 | YA | 2779 | U |
| 25 | YA | 2780 | G |
| 25 | YA | 2787 | C |
| 25 | YA | 2790 | A |
| 25 | YA | 2791 | C |
| 25 | YA | 2797 | U |
| 25 | YA | 2807 | G |
| 25 | YA | 2808 | U |
| 25 | YA | 2813 | A |
| 25 | YA | 2818 | G |
| 25 | YA | 2820 | A |
| 25 | YA | 2821 | A |
| 25 | YA | 2831 | G |
| 25 | YA | 2833 | G |
| 25 | YA | 2834 | G |
| 25 | YA | 2835 | A |
| 25 | YA | 2846 | G |
| 25 | YA | 2847 | U |
| 25 | YA | 2848 | G |
| 25 | YA | 2849 | U |
| 25 | YA | 2861 | G |
| 25 | YA | 2867 | G |
| 25 | YA | 2868 | A |
| 25 | YA | 2872 | G |
| 25 | YA | 2883 | A |
| 25 | YA | 2891 | G |
| 25 | YA | 2892 | A |
| 25 | YA | 2894 | G |
| 26 | YB | 2 | C |
| 26 | YB | 7 | G |
| 26 | YB | 8 | U |
| 26 | YB | 9 | G |
| 26 | YB | 12 | C |
| 26 | YB | 13 | A |
| 26 | YB | 14 | U |
| 26 | YB | 15 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 26 | YB | 19 | G |
| 26 | YB | 21 | G |
| 26 | YB | 22 | U |
| 26 | YB | 24 | G |
| 26 | YB | 25 | A |
| 26 | YB | 26 | A |
| 26 | YB | 27 | C |
| 26 | YB | 31 | C |
| 26 | YB | 32 | C |
| 26 | YB | 40 | U |
| 26 | YB | 41 | U |
| 26 | YB | 42 | C |
| 26 | YB | 44 | G |
| 26 | YB | 45 | A |
| 26 | YB | 52 | A |
| 26 | YB | 53 | A |
| 26 | YB | 54 | G |
| 26 | YB | 56 | G |
| 26 | YB | 67 | G |
| 26 | YB | 73 | A |
| 26 | YB | 81 | G |
| 26 | YB | 84 | C |
| 26 | YB | 88 | C |
| 26 | YB | 89 | G |
| 26 | YB | 89(A) | A |
| 26 | YB | 101 | A |
| 26 | YB | 105 | G |
| 26 | YB | 109 | G |
| 26 | YB | 112 | G |
| 26 | YB | 116 | G |

All (265) RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 5 | U |
| 1 | QA | 31 | G |
| 1 | QA | 64 | G |
| 1 | QA | 115 | G |
| 1 | QA | 181 | G |
| 1 | QA | 243 | A |
| 1 | QA | 244 | U |
| 1 | QA | 250 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 266 | G |
| 1 | QA | 328 | C |
| 1 | QA | 372 | C |
| 1 | QA | 388 | G |
| 1 | QA | 410 | G |
| 1 | QA | 412 | A |
| 1 | QA | 421 | U |
| 1 | QA | 428 | G |
| 1 | QA | 481 | G |
| 1 | QA | 484 | G |
| 1 | QA | 485 | G |
| 1 | QA | 498 | A |
| 1 | QA | 509 | A |
| 1 | QA | 533 | A |
| 1 | QA | 560 | U |
| 1 | QA | 595 | G |
| 1 | QA | 687 | A |
| 1 | QA | 701 | C |
| 1 | QA | 703 | G |
| 1 | QA | 753 | A |
| 1 | QA | 792 | A |
| 1 | QA | 812 | C |
| 1 | QA | 815 | A |
| 1 | QA | 870 | U |
| 1 | QA | 871 | U |
| 1 | QA | 913 | A |
| 1 | QA | 960 | U |
| 1 | QA | 991 | U |
| 1 | QA | 992 | U |
| 1 | QA | 1027 | C |
| 1 | QA | 1065 | U |
| 1 | QA | 1129 | C |
| 1 | QA | 1200 | C |
| 1 | QA | 1201 | A |
| 1 | QA | 1285 | A |
| 1 | QA | 1297 | C |
| 1 | QA | 1305 | G |
| 1 | QA | 1336 | C |
| 1 | QA | 1347 | G |
| 1 | QA | 1446 | A |
| 1 | QA | 1498 | U |
| 1 | QA | 1503 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | QA | 1528 | U |
| 22 | QV | 53 | G |
| 23 | QX | 6 | C |
| 24 | QY | 39 | C |
| 25 | RA | 50 | U |
| 25 | RA | 74 | A |
| 25 | RA | 83 | G |
| 25 | RA | 99 | U |
| 25 | RA | 102 | G |
| 25 | RA | 196 | A |
| 25 | RA | 205 | G |
| 25 | RA | 221 | A |
| 25 | RA | 222 | A |
| 25 | RA | 226 | G |
| 25 | RA | 227 | A |
| 25 | RA | 229 | A |
| 25 | RA | 241 | A |
| 25 | RA | 242 | G |
| 25 | RA | 271(B) | G |
| 25 | RA | 271(C) | U |
| 25 | RA | 276 | A |
| 25 | RA | 372 | G |
| 25 | RA | 404 | C |
| 25 | RA | 503 | A |
| 25 | RA | 508 | G |
| 25 | RA | 512 | G |
| 25 | RA | 587 | C |
| 25 | RA | 637 | A |
| 25 | RA | 685 | A |
| 25 | RA | 704 | G |
| 25 | RA | 752 | A |
| 25 | RA | 774 | A |
| 25 | RA | 846 | C |
| 25 | RA | 856 | C |
| 25 | RA | 960 | A |
| 25 | RA | 1022 | G |
| 25 | RA | 1026 | U |
| 25 | RA | 1045 | A |
| 25 | RA | 1078 | U |
| 25 | RA | 1085 | A |
| 25 | RA | 1130 | U |
| 25 | RA | 1142(A) | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | RA | 1178 | C |
| 25 | RA | 1210 | A |
| 25 | RA | 1266 | G |
| 25 | RA | 1301 | A |
| 25 | RA | 1312 | U |
| 25 | RA | 1379 | A |
| 25 | RA | 1427 | A |
| 25 | RA | 1460 | A |
| 25 | RA | 1558 | A |
| 25 | RA | 1608 | A |
| 25 | RA | 1653 | G |
| 25 | RA | 1694 | C |
| 25 | RA | 1698 | A |
| 25 | RA | 1786 | A |
| 25 | RA | 1819 | A |
| 25 | RA | 1929 | G |
| 25 | RA | 1930 | G |
| 25 | RA | 1936 | A |
| 25 | RA | 1944 | U |
| 25 | RA | 1955 | U |
| 25 | RA | 1980 | G |
| 25 | RA | 1992 | G |
| 25 | RA | 2126 | A |
| 25 | RA | 2426 | A |
| 25 | RA | 2439 | A |
| 25 | RA | 2481 | G |
| 25 | RA | 2518 | A |
| 25 | RA | 2566 | A |
| 25 | RA | 2585 | U |
| 25 | RA | 2610 | C |
| 25 | RA | 2681 | C |
| 25 | RA | 2689 | U |
| 25 | RA | 2712 | U |
| 25 | RA | 2756 | U |
| 25 | RA | 2776 | A |
| 25 | RA | 2832 | U |
| 25 | RA | 2848 | G |
| 25 | RA | 2867 | G |
| 26 | RB | 24 | G |
| 26 | RB | 66 | A |
| 1 | XA | 31 | G |
| 1 | XA | 60 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | XA | 64 | G |
| 1 | XA | 89 | U |
| 1 | XA | 115 | G |
| 1 | XA | 181 | G |
| 1 | XA | 243 | A |
| 1 | XA | 244 | U |
| 1 | XA | 250 | A |
| 1 | XA | 266 | G |
| 1 | XA | 328 | C |
| 1 | XA | 366 | C |
| 1 | XA | 410 | G |
| 1 | XA | 412 | A |
| 1 | XA | 428 | G |
| 1 | XA | 429 | U |
| 1 | XA | 481 | G |
| 1 | XA | 484 | G |
| 1 | XA | 509 | A |
| 1 | XA | 532 | A |
| 1 | XA | 533 | A |
| 1 | XA | 560 | U |
| 1 | XA | 575 | G |
| 1 | XA | 595 | G |
| 1 | XA | 687 | A |
| 1 | XA | 701 | C |
| 1 | XA | 703 | G |
| 1 | XA | 753 | A |
| 1 | XA | 792 | A |
| 1 | XA | 812 | C |
| 1 | XA | 871 | U |
| 1 | XA | 913 | A |
| 1 | XA | 960 | U |
| 1 | XA | 965 | A |
| 1 | XA | 991 | U |
| 1 | XA | 992 | U |
| 1 | XA | 1027 | C |
| 1 | XA | 1064 | G |
| 1 | XA | 1065 | U |
| 1 | XA | 1094 | G |
| 1 | XA | 1200 | C |
| 1 | XA | 1224 | G |
| 1 | XA | 1279 | A |
| 1 | XA | 1285 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | XA | 1297 | C |
| 1 | XA | 1300 | G |
| 1 | XA | 1301 | U |
| 1 | XA | 1336 | C |
| 1 | XA | 1347 | G |
| 1 | XA | 1364 | U |
| 1 | XA | 1443 | G |
| 1 | XA | 1498 | U |
| 1 | XA | 1503 | A |
| 1 | XA | 1504 | G |
| 1 | XA | 1528 | U |
| 22 | XV | 53 | G |
| 24 | XY | 39 | C |
| 25 | YA | 74 | A |
| 25 | YA | 99 | U |
| 25 | YA | 196 | A |
| 25 | YA | 205 | G |
| 25 | YA | 221 | A |
| 25 | YA | 222 | A |
| 25 | YA | 227 | A |
| 25 | YA | 229 | A |
| 25 | YA | 242 | G |
| 25 | YA | 271(B) | G |
| 25 | YA | 278 | A |
| 25 | YA | 370 | G |
| 25 | YA | 372 | G |
| 25 | YA | 404 | C |
| 25 | YA | 508 | G |
| 25 | YA | 587 | C |
| 25 | YA | 637 | A |
| 25 | YA | 653 | A |
| 25 | YA | 669 | G |
| 25 | YA | 704 | G |
| 25 | YA | 752 | A |
| 25 | YA | 846 | C |
| 25 | YA | 856 | C |
| 25 | YA | 858 | U |
| 25 | YA | 859 | G |
| 25 | YA | 880 | G |
| 25 | YA | 896 | A |
| 25 | YA | 945 | A |
| 25 | YA | 974(A) | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 25 | YA | 1022 | G |
| 25 | YA | 1026 | U |
| 25 | YA | 1045 | A |
| 25 | YA | 1078 | U |
| 25 | YA | 1085 | A |
| 25 | YA | 1130 | U |
| 25 | YA | 1178 | C |
| 25 | YA | 1204 | A |
| 25 | YA | 1210 | A |
| 25 | YA | 1300 | U |
| 25 | YA | 1427 | A |
| 25 | YA | 1554 | A |
| 25 | YA | 1558 | A |
| 25 | YA | 1653 | G |
| 25 | YA | 1694 | C |
| 25 | YA | 1698 | A |
| 25 | YA | 1786 | A |
| 25 | YA | 1799 | G |
| 25 | YA | 1819 | A |
| 25 | YA | 1847 | A |
| 25 | YA | 1929 | G |
| 25 | YA | 1930 | G |
| 25 | YA | 1937 | A |
| 25 | YA | 1992 | G |
| 25 | YA | 2060 | A |
| 25 | YA | 2126 | A |
| 25 | YA | 2198 | A |
| 25 | YA | 2238 | G |
| 25 | YA | 2405 | G |
| 25 | YA | 2428 | G |
| 25 | YA | 2439 | A |
| 25 | YA | 2481 | G |
| 25 | YA | 2566 | A |
| 25 | YA | 2610 | C |
| 25 | YA | 2681 | C |
| 25 | YA | 2702 | U |
| 25 | YA | 2712 | U |
| 25 | YA | 2719 | G |
| 25 | YA | 2751 | G |
| 25 | YA | 2756 | U |
| 25 | YA | 2776 | A |
| 25 | YA | 2779 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 25 | YA | 2832 | U |
| 25 | YA | 2848 | G |
| 25 | YA | 2867 | G |
| 25 | YA | 2873 | A |
| 26 | YB | 66 | A |

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 |
| 55 | PPU | Z6 | 76 | 55,25 | 32,40,41 | 2.55 | 6 (18%) | 33,57,60 | 2.14 | 5 (15%) |
| 55 | PPU | Z8 | 76 | 55,25 | 32,40,41 | 2.54 | 6 (18%) | 33,57,60 | 2.14 | 5 (15%) |
| 24 | 1MG | XY | 37 | 24 | 18,26,27 | 2.28 | 2 (11%) | 19,39,42 | 1.58 | 2 (10%) |
| 24 | 1MG | QY | 37 | 24 | 18,26,27 | 2.31 | 2 (11%) | 19,39,42 | 1.53 | 3 (15%) |

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 |
|-----|------|-------|-----|-------|---------|------------|---------|
| 55 | PPU | Z6 | 76 | 55,25 | - | 2/21/43/44 | 0/4/4/4 |
| 55 | PPU | Z8 | 76 | 55,25 | - | 2/21/43/44 | 0/4/4/4 |
| 24 | 1MG | XY | 37 | 24 | - | 0/3/25/26 | 0/3/3/3 |
| 24 | 1MG | QY | 37 | 24 | - | 0/3/25/26 | 0/3/3/3 |

All (16) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|------|-------------|----------|
| 55 | Z6 | 76 | PPU | O-C | 9.21 | 1.41 | 1.23 |
| 55 | Z8 | 76 | PPU | O-C | 9.21 | 1.41 | 1.23 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 24 | QY | 37 | 1MG | C2-N2 | 7.88 | 1.48 | 1.34 |
| 24 | XY | 37 | 1MG | C2-N2 | 7.84 | 1.48 | 1.34 |
| 55 | Z6 | 76 | PPU | C9-N6 | -5.95 | 1.32 | 1.45 |
| 55 | Z8 | 76 | PPU | C9-N6 | -5.91 | 1.32 | 1.45 |
| 55 | Z6 | 76 | PPU | C-N3' | 5.71 | 1.46 | 1.34 |
| 55 | Z8 | 76 | PPU | C-N3' | 5.70 | 1.46 | 1.34 |
| 55 | Z8 | 76 | PPU | C10-N6 | -5.62 | 1.32 | 1.45 |
| 55 | Z6 | 76 | PPU | C10-N6 | -5.61 | 1.32 | 1.45 |
| 24 | QY | 37 | 1MG | C4-N3 | 4.98 | 1.49 | 1.37 |
| 24 | XY | 37 | 1MG | C4-N3 | 4.88 | 1.49 | 1.37 |
| 55 | Z8 | 76 | PPU | O4'-C1' | 2.66 | 1.44 | 1.41 |
| 55 | Z6 | 76 | PPU | O4'-C1' | 2.65 | 1.44 | 1.41 |
| 55 | Z6 | 76 | PPU | C4-N3 | -2.12 | 1.32 | 1.35 |
| 55 | Z8 | 76 | PPU | C4-N3 | -2.09 | 1.32 | 1.35 |

All (15) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 55 | Z8 | 76 | PPU | C3'-N3'-C | -8.58 | 110.27 | 123.21 |
| 55 | Z6 | 76 | PPU | C3'-N3'-C | -8.58 | 110.28 | 123.21 |
| 55 | Z6 | 76 | PPU | N3-C2-N1 | -4.69 | 121.35 | 128.68 |
| 55 | Z8 | 76 | PPU | N3-C2-N1 | -4.67 | 121.38 | 128.68 |
| 24 | XY | 37 | 1MG | C8-N7-C5 | 4.22 | 111.03 | 102.99 |
| 24 | QY | 37 | 1MG | C8-N7-C5 | 4.12 | 110.84 | 102.99 |
| 55 | Z6 | 76 | PPU | CA-C-N3' | 4.01 | 121.72 | 116.15 |
| 55 | Z8 | 76 | PPU | CA-C-N3' | 4.00 | 121.70 | 116.15 |
| 24 | XY | 37 | 1MG | C2-N1-C6 | 3.86 | 124.09 | 120.95 |
| 24 | QY | 37 | 1MG | C2-N1-C6 | 3.65 | 123.91 | 120.95 |
| 55 | Z8 | 76 | PPU | CM-OC-CZ | -3.37 | 110.20 | 117.51 |
| 55 | Z6 | 76 | PPU | CM-OC-CZ | -3.37 | 110.20 | 117.51 |
| 55 | Z8 | 76 | PPU | C4-C5-N7 | -3.25 | 106.01 | 109.40 |
| 55 | Z6 | 76 | PPU | C4-C5-N7 | -3.22 | 106.04 | 109.40 |
| 24 | QY | 37 | 1MG | C5-C6-N1 | 2.05 | 116.98 | 113.90 |

There are no chirality outliers.

All (4) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|------------|
| 55 | Z6 | 76 | PPU | O-C-CA-N |
| 55 | Z8 | 76 | PPU | O-C-CA-N |
| 55 | Z6 | 76 | PPU | N3'-C-CA-N |
| 55 | Z8 | 76 | PPU | N3'-C-CA-N |

There are no ring outliers.

3 monomers are involved in 15 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 55 | Z6 | 76 | PPU | 10 | 0 |
| 55 | Z8 | 76 | PPU | 4 | 0 |
| 24 | XY | 37 | IMG | 1 | 0 |

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 607 ligands modelled in this entry, 605 are monoatomic - leaving 2 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 |
| 57 | PAR | QA | 1661 | - | 45,45,45 | 1.43 | 7 (15%) | 64,67,67 | 1.36 | 8 (12%) |
| 57 | PAR | XA | 1664 | - | 45,45,45 | 1.46 | 7 (15%) | 64,67,67 | 1.33 | 7 (10%) |

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 |
|-----|------|-------|------|------|---------|------------|---------|
| 57 | PAR | QA | 1661 | - | - | 7/18/94/94 | 0/4/4/4 |
| 57 | PAR | XA | 1664 | - | - | 4/18/94/94 | 0/4/4/4 |

All (14) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|------|-------------|----------|
| 57 | QA | 1661 | PAR | C64-C54 | 4.85 | 1.58 | 1.52 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|------|-------------|----------|
| 57 | XA | 1664 | PAR | C64-C54 | 4.83 | 1.58 | 1.52 |
| 57 | XA | 1664 | PAR | C52-C42 | 3.02 | 1.58 | 1.52 |
| 57 | XA | 1664 | PAR | C11-C21 | 2.98 | 1.58 | 1.52 |
| 57 | QA | 1661 | PAR | C52-C42 | 2.97 | 1.58 | 1.52 |
| 57 | QA | 1661 | PAR | O54-C14 | 2.89 | 1.49 | 1.41 |
| 57 | XA | 1664 | PAR | O54-C14 | 2.71 | 1.48 | 1.41 |
| 57 | XA | 1664 | PAR | O51-C11 | 2.47 | 1.48 | 1.41 |
| 57 | QA | 1661 | PAR | O51-C11 | 2.28 | 1.47 | 1.41 |
| 57 | QA | 1661 | PAR | C11-C21 | 2.27 | 1.56 | 1.52 |
| 57 | XA | 1664 | PAR | C14-C24 | 2.21 | 1.56 | 1.52 |
| 57 | QA | 1661 | PAR | C31-C21 | 2.16 | 1.56 | 1.53 |
| 57 | QA | 1661 | PAR | C14-C24 | 2.01 | 1.56 | 1.52 |
| 57 | XA | 1664 | PAR | C31-C21 | 2.00 | 1.56 | 1.53 |

All (15) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 57 | XA | 1664 | PAR | O33-C14-C24 | 4.33 | 115.67 | 108.22 |
| 57 | QA | 1661 | PAR | C14-O54-C54 | 4.20 | 121.94 | 113.69 |
| 57 | XA | 1664 | PAR | C14-O54-C54 | 4.06 | 121.65 | 113.69 |
| 57 | QA | 1661 | PAR | O33-C14-C24 | 3.79 | 114.74 | 108.22 |
| 57 | QA | 1661 | PAR | O52-C13-C23 | 3.79 | 115.81 | 107.96 |
| 57 | QA | 1661 | PAR | O54-C54-C64 | 3.40 | 112.33 | 106.01 |
| 57 | XA | 1664 | PAR | O52-C13-C23 | 3.33 | 114.86 | 107.96 |
| 57 | XA | 1664 | PAR | O54-C54-C64 | 3.02 | 111.63 | 106.01 |
| 57 | XA | 1664 | PAR | O11-C42-C32 | -2.99 | 102.06 | 109.18 |
| 57 | QA | 1661 | PAR | O11-C42-C32 | -2.89 | 102.29 | 109.18 |
| 57 | QA | 1661 | PAR | C22-C12-C62 | -2.42 | 106.38 | 110.04 |
| 57 | XA | 1664 | PAR | C11-O51-C51 | 2.20 | 118.00 | 113.69 |
| 57 | QA | 1661 | PAR | C22-C32-C42 | 2.09 | 114.82 | 109.53 |
| 57 | XA | 1664 | PAR | C31-C41-C51 | -2.05 | 106.59 | 110.24 |
| 57 | QA | 1661 | PAR | O41-C41-C51 | 2.01 | 114.28 | 109.30 |

There are no chirality outliers.

All (11) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|------|------|-----------------|
| 57 | QA | 1661 | PAR | C44-C54-C64-N64 |
| 57 | QA | 1661 | PAR | O54-C54-C64-N64 |
| 57 | XA | 1664 | PAR | O51-C51-C61-O61 |
| 57 | XA | 1664 | PAR | C41-C51-C61-O61 |
| 57 | QA | 1661 | PAR | O51-C51-C61-O61 |

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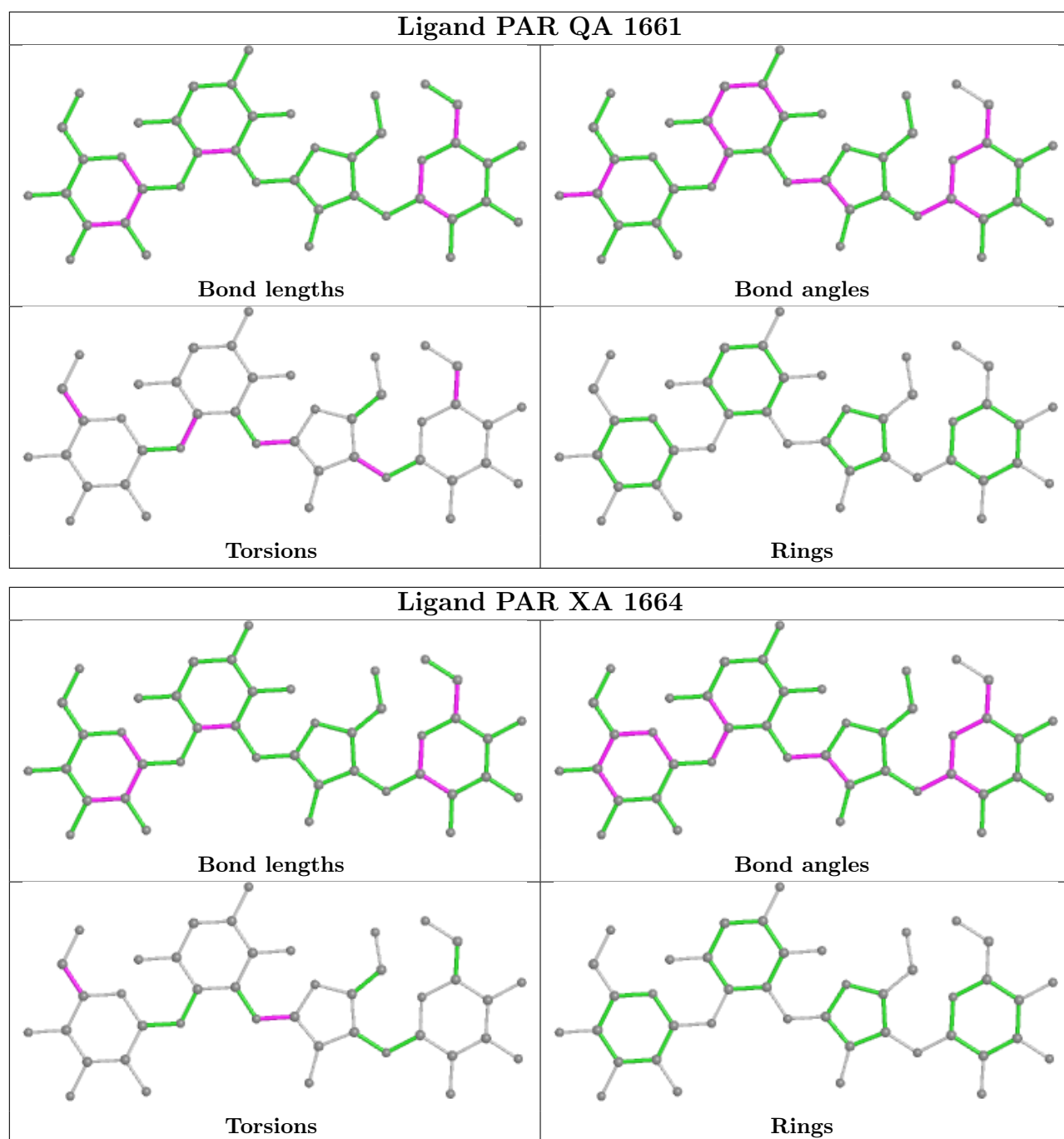
| Mol | Chain | Res | Type | Atoms |
|-----|-------|------|------|-----------------|
| 57 | QA | 1661 | PAR | C41-C51-C61-O61 |
| 57 | XA | 1664 | PAR | C23-C13-O52-C52 |
| 57 | QA | 1661 | PAR | C43-C33-O33-C14 |
| 57 | XA | 1664 | PAR | O43-C13-O52-C52 |
| 57 | QA | 1661 | PAR | C23-C13-O52-C52 |
| 57 | QA | 1661 | PAR | C52-C42-O11-C11 |

There are no ring outliers.

2 monomers are involved in 5 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|------|------|---------|--------------|
| 57 | QA | 1661 | PAR | 4 | 0 |
| 57 | XA | 1664 | PAR | 1 | 0 |

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [\(i\)](#)

There are no chain breaks in this entry.

6 Fit of model and data i

6.1 Protein, DNA and RNA chains i

In the following table, the column labelled ‘#RSRZ> 2’ contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled ‘Q< 0.9’ lists the number of (and percentage) of residues with an average occupancy less than 0.9.

| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|-----------------|--------|---------------|-----------------------|-------|
| 1 | QA | 1500/1522 (98%) | 0.19 | 57 (3%) 40 39 | 30, 83, 175, 356 | 0 |
| 1 | XA | 1501/1522 (98%) | 0.06 | 50 (3%) 46 45 | 30, 76, 171, 324 | 0 |
| 2 | QB | 237/256 (92%) | 0.84 | 31 (13%) 3 5 | 56, 138, 222, 266 | 0 |
| 2 | XB | 237/256 (92%) | 0.50 | 24 (10%) 7 9 | 55, 126, 194, 238 | 0 |
| 3 | QC | 205/239 (85%) | 0.69 | 30 (14%) 2 3 | 54, 122, 199, 216 | 0 |
| 3 | XC | 205/239 (85%) | 0.25 | 10 (4%) 29 30 | 39, 95, 158, 217 | 0 |
| 4 | QD | 208/209 (99%) | 0.17 | 8 (3%) 40 39 | 44, 92, 154, 184 | 0 |
| 4 | XD | 208/209 (99%) | 0.30 | 8 (3%) 40 39 | 39, 95, 161, 234 | 0 |
| 5 | QE | 151/162 (93%) | 0.57 | 11 (7%) 15 17 | 29, 104, 175, 237 | 0 |
| 5 | XE | 151/162 (93%) | 0.12 | 4 (2%) 56 54 | 34, 79, 149, 229 | 0 |
| 6 | QF | 101/101 (100%) | 0.11 | 3 (2%) 50 48 | 44, 86, 125, 222 | 0 |
| 6 | XF | 101/101 (100%) | 0.10 | 3 (2%) 50 48 | 36, 86, 144, 209 | 0 |
| 7 | QG | 155/156 (99%) | 0.50 | 15 (9%) 7 10 | 51, 106, 181, 215 | 0 |
| 7 | XG | 155/156 (99%) | 0.28 | 9 (5%) 23 24 | 46, 103, 177, 230 | 0 |
| 8 | QH | 138/138 (100%) | 0.25 | 3 (2%) 62 60 | 48, 108, 167, 204 | 0 |
| 8 | XH | 138/138 (100%) | 0.18 | 4 (2%) 51 50 | 48, 96, 158, 208 | 0 |
| 9 | QI | 127/128 (99%) | 0.69 | 14 (11%) 5 8 | 53, 124, 188, 214 | 0 |
| 9 | XI | 127/128 (99%) | 0.55 | 8 (6%) 20 21 | 43, 116, 194, 219 | 0 |
| 10 | QJ | 99/105 (94%) | 1.30 | 24 (24%) 0 1 | 67, 145, 212, 246 | 0 |
| 10 | XJ | 99/105 (94%) | 0.90 | 20 (20%) 1 1 | 37, 119, 193, 210 | 0 |
| 11 | QK | 119/129 (92%) | 0.52 | 10 (8%) 11 14 | 42, 92, 152, 199 | 0 |
| 11 | XK | 119/129 (92%) | 0.31 | 5 (4%) 36 35 | 39, 89, 165, 204 | 0 |
| 12 | QL | 125/132 (94%) | 0.39 | 6 (4%) 30 31 | 42, 84, 176, 269 | 0 |
| 12 | XL | 125/132 (94%) | 0.08 | 4 (3%) 47 46 | 30, 66, 131, 242 | 0 |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|-----------------|--------|----------------|-----------------------|-------|
| 13 | QM | 121/126 (96%) | 0.53 | 11 (9%) 9 11 | 43, 124, 197, 254 | 0 |
| 13 | XM | 121/126 (96%) | 0.24 | 5 (4%) 37 36 | 44, 98, 183, 264 | 0 |
| 14 | QN | 60/61 (98%) | 1.05 | 9 (15%) 2 3 | 61, 128, 195, 227 | 0 |
| 14 | XN | 60/61 (98%) | 0.09 | 1 (1%) 70 68 | 47, 87, 134, 161 | 0 |
| 15 | QO | 88/89 (98%) | 0.44 | 7 (7%) 12 15 | 42, 97, 165, 235 | 0 |
| 15 | XO | 88/89 (98%) | -0.07 | 1 (1%) 80 77 | 39, 79, 130, 178 | 0 |
| 16 | QP | 84/88 (95%) | 0.28 | 1 (1%) 79 76 | 41, 79, 136, 206 | 0 |
| 16 | XP | 84/88 (95%) | 0.38 | 3 (3%) 42 42 | 54, 92, 151, 203 | 0 |
| 17 | QQ | 100/105 (95%) | 0.27 | 2 (2%) 65 63 | 53, 102, 165, 210 | 0 |
| 17 | XQ | 100/105 (95%) | 0.42 | 6 (6%) 21 23 | 38, 101, 159, 213 | 0 |
| 18 | QR | 70/88 (79%) | 0.12 | 3 (4%) 35 34 | 34, 90, 156, 213 | 0 |
| 18 | XR | 70/88 (79%) | 0.10 | 2 (2%) 51 50 | 30, 88, 138, 206 | 0 |
| 19 | QS | 84/93 (90%) | 1.23 | 18 (21%) 0 1 | 87, 149, 204, 237 | 0 |
| 19 | XS | 84/93 (90%) | 0.56 | 6 (7%) 16 18 | 55, 105, 176, 244 | 0 |
| 20 | QT | 99/106 (93%) | 0.53 | 9 (9%) 9 11 | 48, 101, 192, 233 | 0 |
| 20 | XT | 99/106 (93%) | 0.25 | 6 (6%) 21 23 | 50, 107, 163, 197 | 0 |
| 21 | QU | 25/27 (92%) | 1.03 | 3 (12%) 4 6 | 41, 100, 139, 189 | 0 |
| 21 | XU | 25/27 (92%) | 0.72 | 2 (8%) 12 15 | 52, 96, 135, 165 | 0 |
| 22 | QV | 77/77 (100%) | 0.46 | 5 (6%) 18 20 | 40, 91, 151, 170 | 0 |
| 22 | XV | 77/77 (100%) | 0.18 | 2 (2%) 56 54 | 34, 77, 126, 180 | 0 |
| 23 | QX | 8/25 (32%) | 0.64 | 0 100 100 | 61, 82, 137, 169 | 0 |
| 23 | XX | 8/25 (32%) | 0.65 | 1 (12%) 3 6 | 39, 67, 104, 175 | 0 |
| 24 | QY | 13/18 (72%) | 4.04 | 8 (61%) 0 0 | 93, 213, 294, 312 | 0 |
| 24 | XY | 13/18 (72%) | 2.83 | 6 (46%) 0 0 | 69, 188, 276, 278 | 0 |
| 25 | RA | 2883/2916 (98%) | 0.12 | 174 (6%) 21 23 | 24, 57, 221, 389 | 0 |
| 25 | YA | 2882/2916 (98%) | -0.00 | 158 (5%) 25 26 | 17, 48, 215, 377 | 0 |
| 26 | RB | 120/122 (98%) | 0.11 | 2 (1%) 70 68 | 52, 91, 141, 150 | 0 |
| 26 | YB | 120/122 (98%) | -0.12 | 0 100 100 | 44, 74, 109, 158 | 0 |
| 27 | RD | 272/276 (98%) | 0.06 | 2 (0%) 87 85 | 19, 60, 98, 243 | 0 |
| 27 | YD | 272/276 (98%) | -0.12 | 1 (0%) 92 91 | 13, 50, 85, 221 | 0 |
| 28 | RE | 205/206 (99%) | 0.16 | 5 (2%) 59 57 | 24, 78, 165, 260 | 0 |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|----------------|--------|---------------|-----------------------|-------|
| 28 | YE | 205/206 (99%) | 0.19 | 6 (2%) 51 50 | 22, 76, 161, 238 | 0 |
| 29 | RF | 202/210 (96%) | 0.21 | 7 (3%) 44 43 | 21, 82, 158, 250 | 0 |
| 29 | YF | 202/210 (96%) | 0.04 | 4 (1%) 65 63 | 13, 64, 130, 197 | 0 |
| 30 | RG | 181/182 (99%) | 1.89 | 74 (40%) 0 0 | 58, 164, 258, 303 | 0 |
| 30 | YG | 181/182 (99%) | 0.90 | 26 (14%) 2 4 | 59, 108, 186, 248 | 0 |
| 31 | RH | 170/180 (94%) | 1.29 | 37 (21%) 0 1 | 78, 171, 239, 267 | 0 |
| 31 | YH | 170/180 (94%) | 0.46 | 10 (5%) 22 24 | 39, 100, 156, 260 | 0 |
| 32 | RI | 146/148 (98%) | 0.66 | 16 (10%) 5 8 | 56, 118, 204, 240 | 0 |
| 32 | YI | 146/148 (98%) | 0.24 | 3 (2%) 63 62 | 40, 104, 169, 214 | 0 |
| 33 | RN | 138/140 (98%) | 0.08 | 3 (2%) 62 60 | 32, 84, 153, 194 | 0 |
| 33 | YN | 138/140 (98%) | -0.06 | 1 (0%) 87 85 | 31, 78, 128, 166 | 0 |
| 34 | RO | 122/122 (100%) | 0.04 | 3 (2%) 57 55 | 24, 71, 133, 170 | 0 |
| 34 | YO | 122/122 (100%) | 0.08 | 0 100 100 | 23, 66, 114, 153 | 0 |
| 35 | RP | 150/150 (100%) | 0.35 | 13 (8%) 10 13 | 15, 79, 185, 232 | 0 |
| 35 | YP | 150/150 (100%) | 0.12 | 3 (2%) 65 63 | 5, 68, 135, 230 | 0 |
| 36 | RQ | 141/141 (100%) | 0.31 | 7 (4%) 28 29 | 38, 85, 149, 219 | 0 |
| 36 | YQ | 141/141 (100%) | 0.02 | 2 (1%) 75 72 | 27, 66, 118, 196 | 0 |
| 37 | RR | 118/118 (100%) | -0.09 | 0 100 100 | 28, 68, 107, 171 | 0 |
| 37 | YR | 118/118 (100%) | -0.08 | 0 100 100 | 20, 64, 114, 153 | 0 |
| 38 | RS | 111/112 (99%) | 0.26 | 5 (4%) 33 32 | 40, 90, 146, 203 | 0 |
| 38 | YS | 111/112 (99%) | 0.07 | 3 (2%) 54 52 | 36, 77, 134, 207 | 0 |
| 39 | RT | 137/146 (93%) | 0.31 | 10 (7%) 15 17 | 39, 90, 189, 221 | 0 |
| 39 | YT | 137/146 (93%) | 0.27 | 5 (3%) 42 42 | 41, 78, 176, 220 | 0 |
| 40 | RU | 117/118 (99%) | 0.14 | 5 (4%) 35 34 | 27, 73, 155, 249 | 0 |
| 40 | YU | 117/118 (99%) | -0.05 | 2 (1%) 70 68 | 20, 59, 129, 212 | 0 |
| 41 | RV | 101/101 (100%) | 0.46 | 11 (10%) 5 8 | 28, 88, 167, 278 | 0 |
| 41 | YV | 101/101 (100%) | 0.16 | 4 (3%) 38 37 | 25, 82, 143, 255 | 0 |
| 42 | RW | 113/113 (100%) | 0.09 | 4 (3%) 44 43 | 28, 63, 127, 241 | 0 |
| 42 | YW | 113/113 (100%) | -0.10 | 0 100 100 | 22, 60, 109, 204 | 0 |
| 43 | RX | 92/96 (95%) | 0.00 | 1 (1%) 80 77 | 31, 65, 108, 137 | 0 |
| 43 | YX | 92/96 (95%) | 0.12 | 2 (2%) 62 60 | 21, 50, 92, 134 | 0 |

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| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | OWAB(Å ²) | Q<0.9 |
|-----|-------|-------------------|--------|-----------------|-----------------------|-------|
| 44 | RY | 102/110 (92%) | 0.94 | 20 (19%) 1 1 | 46, 106, 214, 270 | 0 |
| 44 | YY | 102/110 (92%) | 0.34 | 7 (6%) 16 19 | 25, 85, 144, 243 | 0 |
| 45 | RZ | 172/206 (83%) | 1.50 | 42 (24%) 0 1 | 62, 130, 264, 332 | 0 |
| 45 | YZ | 172/206 (83%) | 0.89 | 25 (14%) 2 4 | 33, 111, 243, 361 | 0 |
| 46 | R0 | 82/85 (96%) | 0.25 | 1 (1%) 79 76 | 35, 72, 104, 143 | 0 |
| 46 | Y0 | 82/85 (96%) | 0.03 | 0 100 100 | 28, 63, 99, 116 | 0 |
| 47 | R1 | 97/98 (98%) | 0.40 | 3 (3%) 49 48 | 24, 67, 167, 259 | 0 |
| 47 | Y1 | 97/98 (98%) | 0.27 | 5 (5%) 27 28 | 20, 65, 161, 211 | 0 |
| 48 | R2 | 69/72 (95%) | 0.07 | 3 (4%) 35 34 | 34, 82, 149, 217 | 0 |
| 48 | Y2 | 69/72 (95%) | 0.11 | 2 (2%) 51 50 | 22, 72, 138, 203 | 0 |
| 49 | R3 | 59/60 (98%) | 0.24 | 1 (1%) 70 68 | 35, 81, 147, 173 | 0 |
| 49 | Y3 | 59/60 (98%) | 0.05 | 2 (3%) 45 44 | 33, 67, 108, 178 | 0 |
| 50 | R4 | 71/71 (100%) | 3.14 | 42 (59%) 0 0 | 102, 207, 282, 352 | 0 |
| 50 | Y4 | 71/71 (100%) | 1.83 | 23 (32%) 0 0 | 88, 160, 251, 277 | 0 |
| 51 | R5 | 59/60 (98%) | 0.49 | 7 (11%) 4 6 | 12, 64, 224, 264 | 0 |
| 51 | Y5 | 59/60 (98%) | -0.07 | 3 (5%) 28 28 | 20, 71, 220, 229 | 0 |
| 52 | R6 | 49/54 (90%) | 4.18 | 33 (67%) 0 0 | 119, 196, 290, 297 | 0 |
| 52 | Y6 | 49/54 (90%) | 3.70 | 37 (75%) 0 0 | 120, 182, 235, 265 | 0 |
| 53 | R7 | 49/49 (100%) | -0.25 | 0 100 100 | 19, 44, 100, 216 | 0 |
| 53 | Y7 | 49/49 (100%) | -0.06 | 3 (6%) 21 23 | 15, 37, 100, 216 | 0 |
| 54 | R8 | 64/65 (98%) | 0.22 | 3 (4%) 31 31 | 18, 62, 156, 228 | 0 |
| 54 | Y8 | 64/65 (98%) | 0.23 | 2 (3%) 49 48 | 20, 61, 116, 173 | 0 |
| 55 | Z6 | 2/3 (66%) | 0.38 | 0 100 100 | 49, 49, 49, 51 | 0 |
| 55 | Z8 | 2/3 (66%) | 0.22 | 0 100 100 | 36, 36, 36, 37 | 0 |
| All | All | 20776/21420 (96%) | 0.27 | 1351 (6%) 18 20 | 5, 78, 194, 389 | 0 |

All (1351) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 25 | YA | 2173 | A | 16.7 |
| 25 | RA | 2116 | G | 15.6 |
| 52 | R6 | 43 | CYS | 15.1 |
| 25 | YA | 2175 | C | 15.0 |
| 24 | QY | 32 | U | 14.9 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 25 | YA | 2174 | C | 14.6 |
| 50 | R4 | 70 | GLY | 13.5 |
| 25 | YA | 2112 | G | 13.1 |
| 25 | RA | 2169 | A | 13.1 |
| 25 | YA | 2801 | A | 12.7 |
| 25 | RA | 2168 | G | 12.5 |
| 25 | RA | 1088 | A | 12.5 |
| 52 | Y6 | 43 | CYS | 12.4 |
| 50 | R4 | 44 | THR | 12.1 |
| 52 | R6 | 46 | HIS | 11.8 |
| 25 | YA | 2125 | G | 11.4 |
| 24 | XY | 32 | U | 11.3 |
| 50 | Y4 | 40 | HIS | 11.1 |
| 50 | R4 | 47 | GLN | 11.0 |
| 25 | RA | 1059 | G | 11.0 |
| 45 | RZ | 142 | SER | 10.9 |
| 25 | RA | 1057 | A | 10.8 |
| 1 | QA | 1033 | G | 10.7 |
| 45 | RZ | 112 | ARG | 10.6 |
| 25 | YA | 2136 | C | 10.5 |
| 25 | RA | 1096 | A | 10.5 |
| 42 | RW | 113 | LYS | 10.5 |
| 25 | RA | 2117 | A | 10.3 |
| 7 | QG | 82 | GLY | 10.3 |
| 7 | QG | 81 | GLY | 10.2 |
| 51 | R5 | 60 | VAL | 10.2 |
| 25 | RA | 1098 | A | 10.2 |
| 52 | R6 | 50 | ARG | 10.2 |
| 52 | R6 | 14 | THR | 9.9 |
| 2 | QB | 4 | GLU | 9.8 |
| 44 | RY | 58 | GLY | 9.8 |
| 45 | RZ | 146 | ILE | 9.8 |
| 1 | QA | 1032(A) | G | 9.7 |
| 25 | YA | 1096 | A | 9.6 |
| 1 | QA | 1032(B) | G | 9.5 |
| 50 | R4 | 71 | ARG | 9.5 |
| 25 | RA | 2118 | U | 9.4 |
| 25 | YA | 2799 | A | 9.4 |
| 25 | RA | 2173 | A | 9.4 |
| 2 | QB | 231 | GLU | 9.3 |
| 25 | YA | 2121 | G | 9.2 |
| 25 | YA | 1058 | G | 9.0 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 25 | YA | 2113 | U | 8.9 |
| 24 | QY | 33 | U | 8.9 |
| 25 | RA | 2799 | A | 8.9 |
| 25 | YA | 2123 | G | 8.8 |
| 52 | R6 | 20 | ASN | 8.8 |
| 25 | RA | 2138 | C | 8.7 |
| 1 | XA | 87 | A | 8.7 |
| 25 | YA | 2122 | U | 8.7 |
| 25 | RA | 2170 | A | 8.6 |
| 25 | YA | 1057 | A | 8.6 |
| 25 | RA | 1061 | U | 8.6 |
| 25 | RA | 1065 | U | 8.6 |
| 45 | RZ | 140 | ASP | 8.5 |
| 45 | RZ | 144 | LEU | 8.4 |
| 52 | R6 | 40 | CYS | 8.4 |
| 25 | YA | 2129 | C | 8.4 |
| 2 | QB | 19 | HIS | 8.2 |
| 50 | R4 | 45 | GLY | 8.2 |
| 25 | YA | 2114 | A | 8.1 |
| 50 | R4 | 11 | PRO | 8.0 |
| 25 | RA | 1068 | G | 8.0 |
| 45 | YZ | 148 | ASP | 8.0 |
| 25 | RA | 2798 | C | 7.9 |
| 25 | RA | 2797 | U | 7.9 |
| 25 | YA | 1536 | A | 7.8 |
| 52 | R6 | 49 | HIS | 7.8 |
| 25 | YA | 2133 | G | 7.8 |
| 52 | R6 | 6 | ARG | 7.8 |
| 25 | RA | 1067 | A | 7.8 |
| 25 | RA | 1064 | C | 7.8 |
| 25 | YA | 1060 | U | 7.7 |
| 25 | RA | 2119 | A | 7.6 |
| 25 | RA | 1060 | U | 7.6 |
| 25 | RA | 2801 | A | 7.6 |
| 30 | RG | 182 | LYS | 7.6 |
| 25 | RA | 2141 | G | 7.6 |
| 45 | RZ | 138 | GLU | 7.5 |
| 49 | Y3 | 60 | GLU | 7.4 |
| 1 | QA | 1029 | G | 7.3 |
| 25 | RA | 2114 | A | 7.3 |
| 45 | YZ | 147 | GLY | 7.2 |
| 52 | R6 | 7 | ILE | 7.2 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 50 | R4 | 39 | CYS | 7.2 |
| 25 | YA | 2117 | A | 7.2 |
| 50 | R4 | 49 | PHE | 7.2 |
| 25 | RA | 1100 | C | 7.1 |
| 1 | XA | 1032(A) | G | 7.1 |
| 52 | Y6 | 48 | VAL | 7.1 |
| 2 | QB | 233 | SER | 7.1 |
| 52 | Y6 | 38 | LYS | 7.1 |
| 50 | R4 | 67 | TYR | 7.1 |
| 25 | RA | 1063 | G | 7.0 |
| 25 | RA | 2112 | G | 7.0 |
| 30 | RG | 154 | GLY | 7.0 |
| 52 | Y6 | 39 | TYR | 7.0 |
| 1 | XA | 1032 | A | 6.9 |
| 25 | YA | 2141 | G | 6.9 |
| 50 | R4 | 29 | PRO | 6.9 |
| 25 | RA | 2894 | G | 6.9 |
| 45 | RZ | 141 | VAL | 6.9 |
| 1 | QA | 345 | C | 6.8 |
| 13 | QM | 121 | LYS | 6.8 |
| 25 | RA | 654 | A | 6.8 |
| 52 | R6 | 13 | CYS | 6.8 |
| 25 | YA | 2167 | U | 6.7 |
| 52 | Y6 | 46 | HIS | 6.7 |
| 16 | XP | 83 | GLU | 6.7 |
| 24 | QY | 31 | G | 6.7 |
| 25 | YA | 1059 | G | 6.7 |
| 25 | YA | 2166 | G | 6.6 |
| 52 | R6 | 30 | THR | 6.6 |
| 28 | RE | 204 | ALA | 6.6 |
| 30 | RG | 2 | PRO | 6.6 |
| 2 | QB | 232 | PRO | 6.6 |
| 1 | QA | 344 | A | 6.6 |
| 25 | RA | 1078 | U | 6.5 |
| 25 | RA | 1084 | A | 6.5 |
| 52 | Y6 | 44 | ARG | 6.5 |
| 45 | YZ | 149 | SER | 6.5 |
| 25 | YA | 2893 | G | 6.4 |
| 25 | YA | 1061 | U | 6.4 |
| 10 | QJ | 33 | GLN | 6.4 |
| 52 | R6 | 52 | VAL | 6.4 |
| 30 | RG | 108 | ASN | 6.4 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 24 | XY | 33 | U | 6.4 |
| 10 | XJ | 4 | ILE | 6.3 |
| 25 | RA | 2113 | U | 6.3 |
| 25 | RA | 1058 | G | 6.3 |
| 50 | Y4 | 39 | CYS | 6.3 |
| 25 | RA | 1099 | G | 6.2 |
| 25 | YA | 2894 | G | 6.2 |
| 50 | Y4 | 1 | MET | 6.2 |
| 52 | Y6 | 37 | ARG | 6.2 |
| 24 | XY | 31 | G | 6.2 |
| 25 | RA | 2128 | C | 6.2 |
| 45 | RZ | 148 | ASP | 6.1 |
| 10 | QJ | 25 | GLU | 6.1 |
| 45 | YZ | 171 | ILE | 6.1 |
| 25 | YA | 2164 | C | 6.1 |
| 25 | YA | 2798 | C | 6.1 |
| 11 | QK | 129 | SER | 6.1 |
| 52 | Y6 | 49 | HIS | 6.1 |
| 1 | QA | 994 | A | 6.0 |
| 52 | R6 | 38 | LYS | 6.0 |
| 25 | YA | 2132 | U | 6.0 |
| 45 | RZ | 117 | LEU | 6.0 |
| 19 | QS | 27 | GLU | 6.0 |
| 50 | Y4 | 66 | SER | 6.0 |
| 25 | YA | 2793 | G | 6.0 |
| 25 | RA | 2115 | G | 5.9 |
| 45 | YZ | 145 | GLU | 5.9 |
| 52 | Y6 | 13 | CYS | 5.9 |
| 7 | XG | 78 | ARG | 5.9 |
| 45 | RZ | 147 | GLY | 5.9 |
| 44 | RY | 48 | ALA | 5.9 |
| 25 | YA | 2106 | G | 5.9 |
| 12 | QL | 129 | ALA | 5.8 |
| 52 | R6 | 39 | TYR | 5.8 |
| 52 | Y6 | 22 | ALA | 5.8 |
| 25 | RA | 1536 | A | 5.8 |
| 25 | RA | 1079 | C | 5.8 |
| 25 | RA | 1093 | G | 5.7 |
| 25 | RA | 2129 | C | 5.7 |
| 45 | RZ | 109 | ALA | 5.7 |
| 52 | R6 | 5 | VAL | 5.7 |
| 25 | YA | 2135 | A | 5.7 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 1 | XA | 345 | C | 5.7 |
| 1 | XA | 344 | A | 5.7 |
| 19 | XS | 27 | GLU | 5.7 |
| 2 | QB | 40 | HIS | 5.7 |
| 25 | RA | 546 | C | 5.6 |
| 25 | RA | 1066 | U | 5.6 |
| 6 | QF | 101 | ALA | 5.6 |
| 10 | XJ | 5 | ARG | 5.6 |
| 25 | YA | 1095 | A | 5.6 |
| 25 | RA | 1055 | G | 5.6 |
| 2 | QB | 240 | GLN | 5.6 |
| 2 | XB | 240 | GLN | 5.6 |
| 9 | XI | 98 | PRO | 5.6 |
| 5 | QE | 154 | GLY | 5.6 |
| 25 | RA | 2125 | G | 5.6 |
| 25 | YA | 2165 | G | 5.6 |
| 45 | RZ | 113 | ALA | 5.6 |
| 2 | QB | 18 | GLY | 5.6 |
| 5 | QE | 155 | GLU | 5.6 |
| 42 | RW | 112 | GLY | 5.6 |
| 52 | Y6 | 53 | LYS | 5.6 |
| 31 | RH | 43 | VAL | 5.6 |
| 2 | QB | 6 | THR | 5.6 |
| 41 | RV | 26 | ASP | 5.5 |
| 1 | QA | 1024 | G | 5.5 |
| 25 | YA | 2168 | G | 5.5 |
| 25 | RA | 1095 | A | 5.5 |
| 20 | XT | 106 | ALA | 5.5 |
| 50 | R4 | 19 | GLY | 5.5 |
| 47 | R1 | 98 | LEU | 5.5 |
| 1 | QA | 1451 | A | 5.5 |
| 19 | QS | 64 | GLU | 5.5 |
| 52 | R6 | 45 | LYS | 5.4 |
| 2 | XB | 96 | ARG | 5.4 |
| 13 | XM | 7 | VAL | 5.4 |
| 45 | RZ | 143 | GLY | 5.4 |
| 50 | Y4 | 67 | TYR | 5.4 |
| 25 | RA | 2131 | G | 5.4 |
| 45 | RZ | 33 | LEU | 5.4 |
| 1 | QA | 1025 | U | 5.4 |
| 25 | RA | 890 | A | 5.3 |
| 50 | R4 | 1 | MET | 5.3 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 28 | RE | 205 | ALA | 5.3 |
| 7 | XG | 85 | TYR | 5.3 |
| 1 | XA | 80 | G | 5.3 |
| 52 | Y6 | 41 | PRO | 5.3 |
| 25 | RA | 2154 | G | 5.3 |
| 40 | YU | 118 | GLY | 5.3 |
| 51 | R5 | 59 | GLU | 5.3 |
| 18 | XR | 88 | LYS | 5.3 |
| 25 | YA | 2477 | C | 5.3 |
| 52 | Y6 | 26 | ASN | 5.3 |
| 25 | YA | 2137 | C | 5.2 |
| 25 | YA | 2797 | U | 5.2 |
| 32 | RI | 59 | ALA | 5.2 |
| 50 | R4 | 40 | HIS | 5.2 |
| 50 | R4 | 12 | ALA | 5.2 |
| 25 | YA | 2178 | C | 5.2 |
| 1 | QA | 1001 | G | 5.2 |
| 32 | RI | 146 | ALA | 5.2 |
| 1 | QA | 1036 | G | 5.2 |
| 30 | RG | 26 | GLN | 5.2 |
| 25 | YA | 2188 | C | 5.2 |
| 31 | RH | 35 | VAL | 5.2 |
| 1 | QA | 1032 | A | 5.2 |
| 30 | RG | 85 | GLY | 5.2 |
| 52 | Y6 | 40 | CYS | 5.2 |
| 19 | QS | 28 | LYS | 5.2 |
| 52 | R6 | 47 | THR | 5.1 |
| 25 | RA | 887 | A | 5.1 |
| 2 | QB | 228 | GLY | 5.1 |
| 25 | RA | 1087 | G | 5.1 |
| 30 | RG | 46 | ALA | 5.1 |
| 45 | YZ | 144 | LEU | 5.1 |
| 52 | Y6 | 30 | THR | 5.1 |
| 25 | RA | 2156 | G | 5.1 |
| 25 | YA | 890 | A | 5.1 |
| 50 | R4 | 66 | SER | 5.1 |
| 25 | RA | 899 | A | 5.1 |
| 50 | R4 | 23 | GLU | 5.0 |
| 25 | RA | 1077 | A | 5.0 |
| 52 | Y6 | 32 | ASN | 5.0 |
| 1 | QA | 1450 | U | 5.0 |
| 41 | RV | 36 | PRO | 5.0 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 25 | RA | 1074 | G | 5.0 |
| 44 | RY | 57 | GLN | 5.0 |
| 1 | QA | 1034 | G | 5.0 |
| 25 | RA | 654(A) | G | 5.0 |
| 25 | YA | 2118 | U | 5.0 |
| 25 | RA | 2174 | C | 5.0 |
| 25 | YA | 2108 | C | 5.0 |
| 30 | RG | 152 | LEU | 5.0 |
| 50 | R4 | 8 | LYS | 5.0 |
| 25 | RA | 2165 | G | 4.9 |
| 15 | QO | 7 | GLU | 4.9 |
| 10 | XJ | 33 | GLN | 4.9 |
| 45 | YZ | 140 | ASP | 4.9 |
| 25 | RA | 1105 | U | 4.9 |
| 4 | XD | 24 | GLU | 4.9 |
| 50 | R4 | 61 | ARG | 4.8 |
| 30 | RG | 82 | LEU | 4.8 |
| 45 | YZ | 117 | LEU | 4.8 |
| 2 | QB | 198 | ASP | 4.8 |
| 35 | RP | 150 | ALA | 4.8 |
| 3 | QC | 193 | TYR | 4.8 |
| 30 | RG | 122 | PRO | 4.8 |
| 4 | XD | 23 | GLY | 4.8 |
| 25 | RA | 2104 | G | 4.8 |
| 25 | RA | 2133 | G | 4.8 |
| 25 | YA | 2124 | G | 4.8 |
| 40 | YU | 117 | GLN | 4.8 |
| 1 | QA | 1026 | G | 4.8 |
| 25 | YA | 2160 | G | 4.8 |
| 2 | QB | 229 | VAL | 4.7 |
| 25 | YA | 2119 | A | 4.7 |
| 1 | XA | 81 | G | 4.7 |
| 24 | QY | 29 | U | 4.7 |
| 27 | RD | 26 | LYS | 4.7 |
| 52 | R6 | 41 | PRO | 4.7 |
| 30 | RG | 28 | VAL | 4.7 |
| 25 | RA | 1054 | A | 4.7 |
| 25 | RA | 2171 | A | 4.7 |
| 20 | QT | 102 | GLY | 4.7 |
| 2 | QB | 230 | VAL | 4.7 |
| 25 | YA | 276 | A | 4.7 |
| 30 | RG | 93 | THR | 4.7 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 25 | RA | 1083 | U | 4.7 |
| 1 | XA | 1129 | C | 4.7 |
| 49 | R3 | 60 | GLU | 4.6 |
| 1 | XA | 1032(B) | G | 4.6 |
| 20 | QT | 104 | LEU | 4.6 |
| 52 | Y6 | 23 | THR | 4.6 |
| 9 | QI | 127 | LYS | 4.6 |
| 25 | RA | 2153 | G | 4.6 |
| 31 | RH | 5 | GLY | 4.6 |
| 44 | RY | 55 | TYR | 4.6 |
| 25 | YA | 1064 | C | 4.6 |
| 32 | RI | 83 | ALA | 4.6 |
| 12 | QL | 64 | TYR | 4.6 |
| 25 | YA | 2803 | C | 4.6 |
| 44 | RY | 56 | PRO | 4.6 |
| 1 | QA | 1023 | G | 4.6 |
| 25 | YA | 2162 | G | 4.6 |
| 47 | Y1 | 98 | LEU | 4.6 |
| 25 | RA | 1085 | A | 4.5 |
| 25 | YA | 2169 | A | 4.5 |
| 10 | XJ | 101 | VAL | 4.5 |
| 25 | RA | 1056 | G | 4.5 |
| 25 | YA | 897 | C | 4.5 |
| 25 | YA | 2146 | C | 4.5 |
| 25 | RA | 2146 | C | 4.5 |
| 30 | RG | 58 | GLN | 4.5 |
| 50 | R4 | 51 | ASP | 4.5 |
| 25 | RA | 2160 | G | 4.5 |
| 31 | RH | 124 | GLU | 4.5 |
| 50 | R4 | 20 | ASN | 4.5 |
| 30 | RG | 118 | ARG | 4.5 |
| 31 | RH | 4 | ILE | 4.5 |
| 50 | Y4 | 56 | VAL | 4.5 |
| 31 | RH | 24 | VAL | 4.4 |
| 25 | YA | 2104 | G | 4.4 |
| 50 | Y4 | 62 | ARG | 4.4 |
| 30 | YG | 26 | GLN | 4.4 |
| 50 | R4 | 60 | GLN | 4.4 |
| 45 | RZ | 119 | GLU | 4.4 |
| 45 | RZ | 149 | SER | 4.4 |
| 7 | QG | 79 | ARG | 4.4 |
| 25 | RA | 898 | C | 4.4 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 25 | YA | 1087 | G | 4.4 |
| 50 | R4 | 46 | GLN | 4.4 |
| 13 | XM | 122 | LYS | 4.4 |
| 7 | QG | 83 | ALA | 4.3 |
| 3 | XC | 179 | ARG | 4.3 |
| 25 | YA | 2130 | U | 4.3 |
| 25 | YA | 2189 | U | 4.3 |
| 41 | YV | 45 | THR | 4.3 |
| 25 | YA | 2128 | C | 4.3 |
| 1 | XA | 1028(B) | C | 4.3 |
| 25 | YA | 546 | C | 4.3 |
| 52 | R6 | 19 | ARG | 4.2 |
| 51 | R5 | 54 | GLY | 4.2 |
| 7 | QG | 2 | ALA | 4.2 |
| 52 | R6 | 42 | TRP | 4.2 |
| 45 | YZ | 119 | GLU | 4.2 |
| 2 | XB | 233 | SER | 4.2 |
| 14 | QN | 2 | ALA | 4.2 |
| 32 | RI | 144 | VAL | 4.2 |
| 11 | XK | 129 | SER | 4.2 |
| 1 | QA | 1000 | A | 4.2 |
| 31 | RH | 125 | VAL | 4.2 |
| 25 | YA | 2105 | C | 4.2 |
| 52 | Y6 | 29 | ASN | 4.2 |
| 41 | RV | 45 | THR | 4.2 |
| 25 | RA | 1082 | U | 4.2 |
| 30 | RG | 117 | PHE | 4.2 |
| 25 | RA | 2152 | G | 4.2 |
| 31 | RH | 33 | LEU | 4.2 |
| 50 | Y4 | 11 | PRO | 4.2 |
| 2 | QB | 5 | ILE | 4.2 |
| 25 | YA | 2794 | C | 4.2 |
| 52 | Y6 | 42 | TRP | 4.2 |
| 31 | RH | 42 | ARG | 4.1 |
| 10 | XJ | 98 | ILE | 4.1 |
| 31 | RH | 97 | ARG | 4.1 |
| 19 | QS | 6 | LYS | 4.1 |
| 31 | RH | 18 | GLU | 4.1 |
| 30 | RG | 87 | PRO | 4.1 |
| 25 | YA | 2161 | C | 4.1 |
| 10 | XJ | 73 | ASP | 4.1 |
| 50 | Y4 | 71 | ARG | 4.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 30 | RG | 92 | VAL | 4.1 |
| 1 | QA | 81 | G | 4.1 |
| 25 | YA | 2143 | C | 4.1 |
| 45 | RZ | 107 | THR | 4.1 |
| 50 | R4 | 10 | VAL | 4.1 |
| 25 | RA | 645 | C | 4.1 |
| 15 | QO | 26 | GLU | 4.1 |
| 25 | RA | 1062 | G | 4.1 |
| 52 | R6 | 16 | CYS | 4.1 |
| 10 | QJ | 29 | ARG | 4.0 |
| 25 | RA | 888 | C | 4.0 |
| 2 | QB | 21 | ARG | 4.0 |
| 25 | YA | 2795 | G | 4.0 |
| 52 | Y6 | 45 | LYS | 4.0 |
| 7 | XG | 84 | ASN | 4.0 |
| 14 | QN | 35 | ARG | 4.0 |
| 30 | RG | 158 | ALA | 4.0 |
| 30 | RG | 4 | ASP | 4.0 |
| 31 | YH | 2 | SER | 4.0 |
| 40 | RU | 118 | GLY | 4.0 |
| 7 | QG | 156 | TRP | 4.0 |
| 45 | RZ | 1 | MET | 4.0 |
| 3 | QC | 104 | GLN | 4.0 |
| 1 | XA | 90 | C | 4.0 |
| 31 | RH | 81 | GLU | 4.0 |
| 11 | QK | 11 | LYS | 4.0 |
| 25 | YA | 2159 | G | 4.0 |
| 45 | RZ | 121 | HIS | 4.0 |
| 2 | XB | 95 | GLN | 4.0 |
| 25 | RA | 2802 | G | 4.0 |
| 52 | R6 | 12 | GLU | 4.0 |
| 25 | YA | 1067 | A | 4.0 |
| 25 | YA | 2176 | A | 4.0 |
| 44 | YY | 99 | CYS | 3.9 |
| 3 | QC | 107 | GLN | 3.9 |
| 30 | RG | 77 | ILE | 3.9 |
| 13 | QM | 120 | LYS | 3.9 |
| 24 | XY | 29 | U | 3.9 |
| 25 | YA | 1066 | U | 3.9 |
| 10 | XJ | 6 | ILE | 3.9 |
| 1 | XA | 630 | G | 3.9 |
| 25 | YA | 2110 | G | 3.9 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 10 | QJ | 34 | VAL | 3.9 |
| 52 | R6 | 23 | THR | 3.9 |
| 32 | YI | 59 | ALA | 3.9 |
| 54 | R8 | 65 | GLU | 3.9 |
| 12 | QL | 63 | GLY | 3.9 |
| 25 | YA | 1075 | C | 3.9 |
| 25 | YA | 2804 | C | 3.9 |
| 25 | YA | 2126 | A | 3.9 |
| 30 | RG | 131 | TYR | 3.9 |
| 31 | RH | 25 | LYS | 3.9 |
| 25 | YA | 2156 | G | 3.9 |
| 25 | RA | 1097 | U | 3.9 |
| 25 | YA | 1069 | A | 3.9 |
| 25 | YA | 654(A) | G | 3.9 |
| 25 | RA | 1052 | C | 3.9 |
| 25 | RA | 2136 | C | 3.9 |
| 25 | RA | 1070 | A | 3.9 |
| 25 | YA | 2182 | G | 3.9 |
| 10 | QJ | 28 | ARG | 3.8 |
| 45 | RZ | 93 | ASP | 3.8 |
| 25 | RA | 889 | C | 3.8 |
| 25 | YA | 1070 | A | 3.8 |
| 25 | RA | 2145 | C | 3.8 |
| 25 | YA | 654(T) | C | 3.8 |
| 4 | XD | 37 | PRO | 3.8 |
| 45 | RZ | 64 | GLY | 3.8 |
| 3 | QC | 101 | LEU | 3.8 |
| 25 | YA | 2102 | U | 3.8 |
| 1 | XA | 82 | U | 3.8 |
| 32 | RI | 61 | ARG | 3.8 |
| 25 | YA | 654 | A | 3.8 |
| 27 | YD | 26 | LYS | 3.8 |
| 29 | YF | 8 | GLN | 3.8 |
| 52 | R6 | 29 | ASN | 3.8 |
| 25 | RA | 2135 | A | 3.8 |
| 25 | YA | 2790 | A | 3.8 |
| 13 | QM | 7 | VAL | 3.8 |
| 25 | RA | 2147 | G | 3.8 |
| 31 | RH | 96 | ALA | 3.8 |
| 35 | RP | 13 | ASN | 3.8 |
| 45 | YZ | 167 | PRO | 3.8 |
| 25 | RA | 1075 | C | 3.8 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 45 | YZ | 143 | GLY | 3.7 |
| 50 | R4 | 32 | TYR | 3.7 |
| 10 | QJ | 72 | VAL | 3.7 |
| 25 | RA | 2159 | G | 3.7 |
| 1 | QA | 723 | U | 3.7 |
| 31 | RH | 3 | ARG | 3.7 |
| 3 | QC | 72 | LYS | 3.7 |
| 4 | QD | 35 | ARG | 3.7 |
| 1 | QA | 1020 | U | 3.7 |
| 31 | RH | 82 | GLY | 3.7 |
| 25 | YA | 2140 | C | 3.7 |
| 25 | RA | 2148 | G | 3.7 |
| 30 | YG | 182 | LYS | 3.7 |
| 30 | RG | 72 | ARG | 3.7 |
| 19 | QS | 67 | VAL | 3.7 |
| 25 | RA | 1094 | U | 3.7 |
| 30 | RG | 80 | PHE | 3.7 |
| 50 | R4 | 18 | CYS | 3.7 |
| 1 | QA | 1042 | G | 3.7 |
| 16 | XP | 82 | GLN | 3.7 |
| 50 | Y4 | 34 | GLU | 3.7 |
| 44 | RY | 79 | CYS | 3.7 |
| 25 | RA | 1089 | G | 3.6 |
| 19 | QS | 79 | THR | 3.6 |
| 25 | YA | 1076 | C | 3.6 |
| 25 | YA | 2116 | G | 3.6 |
| 24 | QY | 30 | C | 3.6 |
| 25 | RA | 2175 | C | 3.6 |
| 20 | QT | 106 | ALA | 3.6 |
| 45 | RZ | 116 | VAL | 3.6 |
| 25 | RA | 1102 | C | 3.6 |
| 10 | QJ | 21 | GLN | 3.6 |
| 25 | YA | 2170 | A | 3.6 |
| 13 | QM | 83 | ASP | 3.6 |
| 44 | RY | 50 | ARG | 3.6 |
| 45 | YZ | 109 | ALA | 3.6 |
| 25 | RA | 1508 | A | 3.6 |
| 25 | YA | 899 | A | 3.6 |
| 31 | RH | 14 | GLY | 3.6 |
| 30 | RG | 27 | ASN | 3.6 |
| 2 | QB | 20 | GLU | 3.6 |
| 19 | XS | 67 | VAL | 3.6 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 49 | Y3 | 59 | VAL | 3.6 |
| 52 | Y6 | 47 | THR | 3.6 |
| 25 | YA | 2144 | U | 3.5 |
| 30 | RG | 155 | MET | 3.5 |
| 45 | YZ | 146 | ILE | 3.5 |
| 1 | XA | 210 | U | 3.5 |
| 10 | XJ | 72 | VAL | 3.5 |
| 52 | R6 | 21 | TYR | 3.5 |
| 52 | R6 | 44 | ARG | 3.5 |
| 21 | XU | 26 | LYS | 3.5 |
| 25 | RA | 1092 | C | 3.5 |
| 1 | QA | 210 | U | 3.5 |
| 39 | RT | 2 | ASN | 3.5 |
| 1 | XA | 77 | C | 3.5 |
| 45 | YZ | 105 | VAL | 3.5 |
| 50 | R4 | 6 | HIS | 3.5 |
| 29 | RF | 162 | LEU | 3.5 |
| 45 | YZ | 142 | SER | 3.5 |
| 31 | RH | 83 | TYR | 3.5 |
| 9 | XI | 99 | LEU | 3.5 |
| 51 | R5 | 53 | ALA | 3.5 |
| 32 | RI | 73 | GLU | 3.5 |
| 10 | QJ | 71 | LEU | 3.5 |
| 3 | QC | 109 | PRO | 3.5 |
| 30 | RG | 100 | TRP | 3.5 |
| 31 | RH | 157 | TYR | 3.5 |
| 25 | RA | 2166 | G | 3.5 |
| 35 | YP | 13 | ASN | 3.5 |
| 25 | RA | 2132 | U | 3.5 |
| 17 | XQ | 36 | ILE | 3.5 |
| 39 | RT | 115 | ARG | 3.5 |
| 25 | RA | 10 | G | 3.5 |
| 25 | YA | 2127 | G | 3.5 |
| 19 | QS | 5 | LEU | 3.5 |
| 25 | YA | 1088 | A | 3.4 |
| 25 | YA | 2134 | A | 3.4 |
| 9 | QI | 117 | HIS | 3.4 |
| 30 | RG | 30 | GLU | 3.4 |
| 30 | YG | 52 | ILE | 3.4 |
| 1 | XA | 1026 | G | 3.4 |
| 25 | YA | 1077 | A | 3.4 |
| 25 | RA | 2167 | U | 3.4 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 25 | YA | 1078 | U | 3.4 |
| 25 | YA | 1086 | A | 3.4 |
| 45 | RZ | 139 | VAL | 3.4 |
| 45 | RZ | 145 | GLU | 3.4 |
| 40 | RU | 117 | GLN | 3.4 |
| 25 | YA | 1068 | G | 3.4 |
| 25 | YA | 2792 | G | 3.4 |
| 1 | XA | 1260 | C | 3.4 |
| 5 | XE | 64 | ARG | 3.4 |
| 6 | XF | 31 | GLU | 3.4 |
| 50 | Y4 | 41 | PRO | 3.4 |
| 4 | QD | 42 | GLN | 3.4 |
| 25 | YA | 2172 | U | 3.4 |
| 16 | QP | 83 | GLU | 3.4 |
| 50 | R4 | 65 | ASP | 3.4 |
| 28 | YE | 60 | ASN | 3.4 |
| 28 | RE | 69 | LYS | 3.4 |
| 44 | YY | 63 | LYS | 3.4 |
| 16 | XP | 84 | ALA | 3.4 |
| 25 | YA | 654(S) | G | 3.4 |
| 31 | RH | 32 | GLU | 3.4 |
| 35 | RP | 149 | GLU | 3.4 |
| 25 | YA | 2158 | A | 3.4 |
| 50 | Y4 | 2 | LYS | 3.4 |
| 30 | RG | 90 | LEU | 3.4 |
| 30 | RG | 116 | ASP | 3.4 |
| 50 | R4 | 9 | LEU | 3.3 |
| 45 | RZ | 137 | ILE | 3.3 |
| 9 | QI | 124 | GLN | 3.3 |
| 52 | Y6 | 5 | VAL | 3.3 |
| 25 | RA | 1176 | G | 3.3 |
| 25 | YA | 2131 | G | 3.3 |
| 28 | YE | 205 | ALA | 3.3 |
| 13 | QM | 122 | LYS | 3.3 |
| 5 | QE | 34 | VAL | 3.3 |
| 52 | R6 | 22 | ALA | 3.3 |
| 1 | QA | 993 | G | 3.3 |
| 1 | QA | 1003 | G | 3.3 |
| 31 | RH | 141 | VAL | 3.3 |
| 30 | RG | 113 | ARG | 3.3 |
| 30 | YG | 25 | TYR | 3.3 |
| 25 | RA | 2105 | C | 3.3 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 25 | YA | 889 | C | 3.3 |
| 1 | QA | 1027 | C | 3.3 |
| 1 | XA | 1037 | C | 3.3 |
| 25 | RA | 2139 | C | 3.3 |
| 50 | Y4 | 47 | GLN | 3.3 |
| 28 | YE | 204 | ALA | 3.3 |
| 4 | XD | 154 | ASN | 3.3 |
| 9 | QI | 65 | VAL | 3.3 |
| 25 | RA | 2157 | G | 3.3 |
| 25 | RA | 2795 | G | 3.3 |
| 2 | XB | 231 | GLU | 3.3 |
| 11 | XK | 11 | LYS | 3.3 |
| 44 | RY | 22 | GLY | 3.3 |
| 45 | RZ | 171 | ILE | 3.3 |
| 1 | XA | 1027 | C | 3.3 |
| 25 | RA | 2896 | C | 3.3 |
| 47 | Y1 | 28 | GLY | 3.3 |
| 41 | YV | 36 | PRO | 3.3 |
| 25 | YA | 1079 | C | 3.3 |
| 9 | QI | 126 | SER | 3.2 |
| 25 | YA | 2151 | G | 3.2 |
| 50 | Y4 | 18 | CYS | 3.2 |
| 10 | QJ | 98 | ILE | 3.2 |
| 31 | RH | 100 | GLY | 3.2 |
| 1 | QA | 992 | U | 3.2 |
| 7 | QG | 78 | ARG | 3.2 |
| 22 | QV | 1 | C | 3.2 |
| 52 | Y6 | 15 | GLU | 3.2 |
| 25 | RA | 2162 | G | 3.2 |
| 33 | YN | 130 | HIS | 3.2 |
| 3 | QC | 158 | GLY | 3.2 |
| 52 | Y6 | 9 | LEU | 3.2 |
| 30 | YG | 80 | PHE | 3.2 |
| 52 | Y6 | 20 | ASN | 3.2 |
| 25 | RA | 1448 | G | 3.2 |
| 30 | YG | 143 | GLU | 3.2 |
| 10 | XJ | 21 | GLN | 3.2 |
| 2 | QB | 94 | ASN | 3.2 |
| 13 | QM | 65 | LYS | 3.2 |
| 32 | YI | 123 | LEU | 3.2 |
| 52 | Y6 | 34 | LEU | 3.2 |
| 1 | QA | 208 | U | 3.2 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 30 | YG | 88 | ILE | 3.2 |
| 35 | RP | 118 | GLY | 3.2 |
| 3 | QC | 66 | VAL | 3.2 |
| 1 | QA | 485 | G | 3.2 |
| 54 | R8 | 64 | TYR | 3.2 |
| 1 | XA | 89 | U | 3.1 |
| 10 | QJ | 4 | ILE | 3.1 |
| 1 | QA | 88 | C | 3.1 |
| 25 | YA | 1173 | G | 3.1 |
| 25 | RA | 1076 | C | 3.1 |
| 25 | YA | 884 | C | 3.1 |
| 7 | XG | 81 | GLY | 3.1 |
| 50 | Y4 | 12 | ALA | 3.1 |
| 48 | R2 | 43 | GLN | 3.1 |
| 52 | Y6 | 28 | ARG | 3.1 |
| 39 | YT | 137 | LYS | 3.1 |
| 50 | R4 | 56 | VAL | 3.1 |
| 9 | XI | 94 | ALA | 3.1 |
| 30 | RG | 43 | LEU | 3.1 |
| 39 | YT | 136 | GLN | 3.1 |
| 24 | QY | 39 | C | 3.1 |
| 14 | XN | 2 | ALA | 3.1 |
| 45 | YZ | 172 | ALA | 3.1 |
| 45 | RZ | 115 | GLY | 3.1 |
| 10 | QJ | 64 | GLU | 3.1 |
| 30 | YG | 137 | GLU | 3.1 |
| 25 | RA | 2791 | C | 3.1 |
| 30 | YG | 46 | ALA | 3.1 |
| 41 | RV | 27 | ALA | 3.1 |
| 2 | XB | 228 | GLY | 3.1 |
| 12 | QL | 19 | ARG | 3.1 |
| 39 | YT | 133 | GLU | 3.1 |
| 2 | QB | 125 | PRO | 3.1 |
| 30 | YG | 116 | ASP | 3.1 |
| 12 | QL | 62 | SER | 3.1 |
| 25 | RA | 2893 | G | 3.1 |
| 30 | RG | 179 | PRO | 3.1 |
| 31 | RH | 95 | ARG | 3.1 |
| 47 | Y1 | 81 | LYS | 3.1 |
| 6 | XF | 101 | ALA | 3.1 |
| 30 | YG | 112 | PRO | 3.1 |
| 13 | QM | 103 | THR | 3.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 1 | XA | 88 | C | 3.1 |
| 25 | RA | 1071 | G | 3.0 |
| 25 | RA | 2127 | G | 3.0 |
| 25 | RA | 2158 | A | 3.0 |
| 2 | XB | 4 | GLU | 3.0 |
| 45 | RZ | 2 | GLU | 3.0 |
| 31 | YH | 3 | ARG | 3.0 |
| 10 | QJ | 62 | HIS | 3.0 |
| 46 | R0 | 2 | ALA | 3.0 |
| 1 | QA | 1031 | G | 3.0 |
| 45 | RZ | 159 | PRO | 3.0 |
| 5 | QE | 24 | ARG | 3.0 |
| 25 | RA | 885 | C | 3.0 |
| 2 | XB | 232 | PRO | 3.0 |
| 44 | RY | 49 | VAL | 3.0 |
| 25 | YA | 2120 | G | 3.0 |
| 19 | QS | 8 | GLY | 3.0 |
| 31 | RH | 52 | VAL | 3.0 |
| 5 | QE | 94 | ALA | 3.0 |
| 25 | RA | 2793 | G | 3.0 |
| 25 | RA | 2892 | A | 3.0 |
| 25 | YA | 1073 | A | 3.0 |
| 44 | RY | 45 | VAL | 3.0 |
| 52 | Y6 | 36 | LEU | 3.0 |
| 30 | RG | 29 | TRP | 3.0 |
| 2 | XB | 5 | ILE | 3.0 |
| 9 | XI | 8 | GLY | 3.0 |
| 30 | YG | 89 | GLY | 3.0 |
| 3 | XC | 193 | TYR | 3.0 |
| 25 | RA | 1053 | C | 3.0 |
| 25 | YA | 2897 | U | 3.0 |
| 7 | QG | 53 | LYS | 3.0 |
| 48 | R2 | 72 | ALA | 3.0 |
| 47 | R1 | 97 | LEU | 3.0 |
| 9 | QI | 38 | GLN | 3.0 |
| 32 | RI | 125 | GLU | 3.0 |
| 44 | RY | 102 | CYS | 3.0 |
| 51 | R5 | 55 | ARG | 3.0 |
| 19 | QS | 2 | PRO | 3.0 |
| 5 | QE | 13 | ILE | 3.0 |
| 25 | YA | 2107 | C | 3.0 |
| 45 | RZ | 154 | ASP | 3.0 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 20 | QT | 99 | LEU | 3.0 |
| 19 | QS | 85 | LYS | 3.0 |
| 25 | RA | 1069 | A | 3.0 |
| 2 | XB | 227 | GLY | 2.9 |
| 25 | RA | 2123 | G | 2.9 |
| 30 | RG | 63 | ILE | 2.9 |
| 50 | Y4 | 22 | ILE | 2.9 |
| 1 | XA | 1043 | C | 2.9 |
| 2 | XB | 156 | LYS | 2.9 |
| 25 | YA | 2805 | G | 2.9 |
| 18 | QR | 54 | ARG | 2.9 |
| 35 | RP | 139 | LYS | 2.9 |
| 44 | RY | 62 | GLU | 2.9 |
| 44 | RY | 89 | PHE | 2.9 |
| 25 | RA | 1103 | A | 2.9 |
| 25 | RA | 2476 | A | 2.9 |
| 25 | YA | 2476 | A | 2.9 |
| 5 | QE | 8 | GLU | 2.9 |
| 32 | RI | 54 | GLN | 2.9 |
| 30 | YG | 87 | PRO | 2.9 |
| 1 | QA | 91 | C | 2.9 |
| 25 | RA | 1166 | C | 2.9 |
| 48 | Y2 | 15 | LYS | 2.9 |
| 25 | RA | 547 | A | 2.9 |
| 2 | XB | 6 | THR | 2.9 |
| 3 | QC | 191 | THR | 2.9 |
| 25 | YA | 2148 | G | 2.9 |
| 25 | YA | 2154 | G | 2.9 |
| 30 | RG | 53 | LEU | 2.9 |
| 50 | Y4 | 68 | ARG | 2.9 |
| 9 | XI | 126 | SER | 2.9 |
| 5 | XE | 155 | GLU | 2.9 |
| 30 | YG | 134 | GLY | 2.9 |
| 17 | XQ | 19 | VAL | 2.9 |
| 19 | QS | 29 | ARG | 2.9 |
| 44 | RY | 47 | LYS | 2.9 |
| 14 | QN | 43 | CYS | 2.9 |
| 13 | XM | 8 | GLU | 2.9 |
| 24 | QY | 41 | A | 2.9 |
| 10 | QJ | 80 | LYS | 2.9 |
| 29 | RF | 115 | ALA | 2.9 |
| 1 | XA | 1259 | C | 2.9 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 25 | RA | 1018 | C | 2.9 |
| 30 | RG | 13 | GLU | 2.9 |
| 1 | QA | 1304 | G | 2.9 |
| 39 | RT | 130 | ALA | 2.9 |
| 30 | YG | 45 | GLU | 2.9 |
| 25 | YA | 2109 | U | 2.9 |
| 45 | RZ | 98 | MET | 2.9 |
| 1 | XA | 631 | G | 2.9 |
| 25 | YA | 1093 | G | 2.9 |
| 30 | RG | 143 | GLU | 2.9 |
| 36 | RQ | 138 | ASP | 2.9 |
| 8 | QH | 107 | LEU | 2.9 |
| 8 | XH | 67 | PRO | 2.9 |
| 7 | QG | 4 | ARG | 2.8 |
| 23 | XX | 8 | A | 2.8 |
| 25 | RA | 879 | G | 2.8 |
| 15 | QO | 30 | ALA | 2.8 |
| 52 | Y6 | 8 | LYS | 2.8 |
| 10 | QJ | 8 | LEU | 2.8 |
| 42 | RW | 77 | ASP | 2.8 |
| 1 | XA | 1453 | G | 2.8 |
| 38 | RS | 108 | GLY | 2.8 |
| 2 | QB | 234 | PRO | 2.8 |
| 31 | RH | 34 | GLU | 2.8 |
| 9 | QI | 125 | TYR | 2.8 |
| 25 | YA | 1176 | G | 2.8 |
| 41 | YV | 101 | GLY | 2.8 |
| 30 | RG | 97 | ASP | 2.8 |
| 44 | RY | 46 | LYS | 2.8 |
| 41 | RV | 1 | MET | 2.8 |
| 34 | RO | 107 | ARG | 2.8 |
| 30 | RG | 180 | PHE | 2.8 |
| 31 | RH | 89 | ILE | 2.8 |
| 24 | XY | 41 | A | 2.8 |
| 30 | YG | 164 | GLU | 2.8 |
| 50 | R4 | 69 | LYS | 2.8 |
| 52 | Y6 | 18 | ARG | 2.8 |
| 1 | XA | 1036 | G | 2.8 |
| 52 | Y6 | 33 | LYS | 2.8 |
| 3 | QC | 100 | ALA | 2.8 |
| 9 | QI | 123 | PRO | 2.8 |
| 5 | QE | 60 | TYR | 2.8 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 45 | RZ | 153 | SER | 2.8 |
| 2 | QB | 160 | ASP | 2.8 |
| 13 | QM | 6 | GLY | 2.8 |
| 44 | RY | 51 | VAL | 2.8 |
| 45 | YZ | 141 | VAL | 2.8 |
| 50 | Y4 | 60 | GLN | 2.8 |
| 15 | QO | 15 | PHE | 2.8 |
| 25 | YA | 1534 | G | 2.8 |
| 25 | YA | 2101 | G | 2.8 |
| 32 | RI | 81 | VAL | 2.8 |
| 19 | QS | 40 | ILE | 2.8 |
| 9 | QI | 110 | GLU | 2.8 |
| 10 | QJ | 83 | GLU | 2.8 |
| 25 | RA | 1046 | A | 2.8 |
| 25 | YA | 887 | A | 2.8 |
| 3 | QC | 52 | LEU | 2.8 |
| 31 | RH | 2 | SER | 2.8 |
| 7 | XG | 55 | GLY | 2.8 |
| 34 | RO | 30 | ALA | 2.8 |
| 1 | QA | 1129 | C | 2.8 |
| 9 | QI | 53 | VAL | 2.8 |
| 43 | YX | 65 | ARG | 2.8 |
| 22 | QV | 47 | U | 2.7 |
| 17 | XQ | 101 | ARG | 2.7 |
| 31 | RH | 146 | ALA | 2.7 |
| 51 | R5 | 2 | ALA | 2.7 |
| 30 | RG | 137 | GLU | 2.7 |
| 24 | XY | 30 | C | 2.7 |
| 25 | RA | 2179 | C | 2.7 |
| 3 | QC | 60 | ALA | 2.7 |
| 39 | RT | 116 | ALA | 2.7 |
| 44 | YY | 60 | PHE | 2.7 |
| 13 | XM | 43 | THR | 2.7 |
| 32 | RI | 58 | LEU | 2.7 |
| 25 | RA | 2140 | C | 2.7 |
| 10 | QJ | 88 | LEU | 2.7 |
| 30 | RG | 133 | LEU | 2.7 |
| 31 | RH | 41 | MET | 2.7 |
| 45 | YZ | 154 | ASP | 2.7 |
| 8 | XH | 66 | GLY | 2.7 |
| 45 | RZ | 136 | PHE | 2.7 |
| 1 | QA | 1303 | C | 2.7 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|--------|------|------|
| 25 | YA | 270(K) | C | 2.7 |
| 45 | RZ | 120 | ILE | 2.7 |
| 4 | QD | 45 | GLN | 2.7 |
| 53 | Y7 | 49 | ARG | 2.7 |
| 35 | RP | 91 | PHE | 2.7 |
| 2 | QB | 31 | TYR | 2.7 |
| 9 | QI | 128 | ARG | 2.7 |
| 1 | XA | 208 | U | 2.7 |
| 4 | XD | 42 | GLN | 2.7 |
| 30 | RG | 132 | ASN | 2.7 |
| 25 | YA | 2892 | A | 2.7 |
| 1 | XA | 220 | G | 2.7 |
| 45 | RZ | 92 | SER | 2.7 |
| 22 | XV | 47 | U | 2.7 |
| 6 | XF | 37 | VAL | 2.7 |
| 7 | XG | 156 | TRP | 2.7 |
| 10 | XJ | 35 | SER | 2.7 |
| 25 | YA | 1177 | A | 2.7 |
| 7 | QG | 80 | VAL | 2.7 |
| 5 | XE | 60 | TYR | 2.7 |
| 11 | XK | 36 | ASP | 2.7 |
| 15 | QO | 22 | THR | 2.7 |
| 25 | YA | 2139 | C | 2.7 |
| 21 | QU | 25 | LYS | 2.7 |
| 30 | RG | 17 | PRO | 2.7 |
| 30 | YG | 142 | PRO | 2.7 |
| 44 | RY | 2 | ARG | 2.7 |
| 1 | QA | 89 | U | 2.7 |
| 30 | YG | 2 | PRO | 2.7 |
| 17 | XQ | 12 | SER | 2.7 |
| 25 | RA | 2172 | U | 2.7 |
| 30 | RG | 107 | LEU | 2.6 |
| 3 | QC | 108 | ASN | 2.6 |
| 28 | RE | 60 | ASN | 2.6 |
| 1 | QA | 1006 | C | 2.6 |
| 38 | RS | 57 | LYS | 2.6 |
| 30 | RG | 12 | TYR | 2.6 |
| 54 | Y8 | 48 | PHE | 2.6 |
| 10 | QJ | 36 | GLY | 2.6 |
| 25 | YA | 895 | U | 2.6 |
| 10 | XJ | 28 | ARG | 2.6 |
| 28 | YE | 61 | ARG | 2.6 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 31 | RH | 39 | PRO | 2.6 |
| 25 | RA | 2804 | C | 2.6 |
| 15 | QO | 73 | GLU | 2.6 |
| 30 | RG | 136 | ARG | 2.6 |
| 30 | RG | 164 | GLU | 2.6 |
| 4 | XD | 38 | TYR | 2.6 |
| 30 | RG | 57 | ALA | 2.6 |
| 47 | Y1 | 80 | LEU | 2.6 |
| 5 | XE | 154 | GLY | 2.6 |
| 29 | RF | 15 | SER | 2.6 |
| 11 | QK | 25 | TYR | 2.6 |
| 25 | RA | 2101 | G | 2.6 |
| 28 | YE | 69 | LYS | 2.6 |
| 29 | RF | 207 | GLY | 2.6 |
| 45 | YZ | 116 | VAL | 2.6 |
| 25 | RA | 654(T) | C | 2.6 |
| 25 | RA | 2895 | U | 2.6 |
| 20 | QT | 103 | GLY | 2.6 |
| 25 | RA | 1104 | C | 2.6 |
| 2 | QB | 113 | HIS | 2.6 |
| 2 | XB | 35 | GLU | 2.6 |
| 9 | XI | 2 | GLU | 2.6 |
| 10 | XJ | 8 | LEU | 2.6 |
| 1 | QA | 1312 | G | 2.6 |
| 24 | QY | 40 | G | 2.6 |
| 25 | YA | 2149 | G | 2.6 |
| 1 | QA | 979 | C | 2.6 |
| 14 | QN | 8 | GLU | 2.6 |
| 25 | RA | 2164 | C | 2.6 |
| 30 | RG | 89 | GLY | 2.6 |
| 10 | XJ | 71 | LEU | 2.6 |
| 50 | R4 | 25 | TYR | 2.6 |
| 20 | XT | 9 | ASN | 2.6 |
| 50 | Y4 | 20 | ASN | 2.6 |
| 17 | XQ | 37 | LYS | 2.6 |
| 30 | RG | 75 | LYS | 2.6 |
| 30 | RG | 165 | THR | 2.6 |
| 25 | RA | 2111 | C | 2.6 |
| 25 | RA | 2130 | U | 2.6 |
| 20 | QT | 49 | ALA | 2.6 |
| 3 | XC | 103 | VAL | 2.6 |
| 2 | QB | 63 | MET | 2.6 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 11 | QK | 71 | LYS | 2.6 |
| 17 | XQ | 61 | GLU | 2.6 |
| 44 | RY | 91 | GLU | 2.6 |
| 3 | XC | 192 | THR | 2.6 |
| 1 | XA | 1005 | A | 2.5 |
| 1 | QA | 1028 | C | 2.5 |
| 3 | QC | 64 | VAL | 2.5 |
| 8 | XH | 43 | GLY | 2.5 |
| 25 | RA | 1108 | U | 2.5 |
| 25 | YA | 274 | G | 2.5 |
| 25 | YA | 2103 | C | 2.5 |
| 25 | YA | 2181 | G | 2.5 |
| 25 | YA | 2802 | G | 2.5 |
| 40 | RU | 90 | VAL | 2.5 |
| 35 | RP | 135 | LEU | 2.5 |
| 2 | XB | 234 | PRO | 2.5 |
| 9 | QI | 98 | PRO | 2.5 |
| 38 | RS | 34 | HIS | 2.5 |
| 35 | YP | 118 | GLY | 2.5 |
| 1 | QA | 1002 | G | 2.5 |
| 1 | XA | 1258 | G | 2.5 |
| 2 | XB | 26 | PRO | 2.5 |
| 10 | XJ | 59 | SER | 2.5 |
| 1 | XA | 1006 | C | 2.5 |
| 25 | RA | 2161 | C | 2.5 |
| 25 | YA | 878 | A | 2.5 |
| 44 | YY | 50 | ARG | 2.5 |
| 45 | RZ | 108 | PRO | 2.5 |
| 31 | RH | 27 | LYS | 2.5 |
| 3 | QC | 62 | ASP | 2.5 |
| 3 | XC | 79 | ARG | 2.5 |
| 31 | YH | 34 | GLU | 2.5 |
| 45 | RZ | 101 | PRO | 2.5 |
| 45 | RZ | 55 | HIS | 2.5 |
| 30 | RG | 88 | ILE | 2.5 |
| 50 | R4 | 13 | ARG | 2.5 |
| 50 | R4 | 22 | ILE | 2.5 |
| 52 | Y6 | 6 | ARG | 2.5 |
| 2 | QB | 35 | GLU | 2.5 |
| 30 | RG | 159 | VAL | 2.5 |
| 25 | RA | 2803 | C | 2.5 |
| 32 | RI | 107 | VAL | 2.5 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 25 | RA | 1081 | U | 2.5 |
| 36 | RQ | 141 | GLN | 2.5 |
| 3 | QC | 58 | GLU | 2.5 |
| 35 | RP | 1 | MET | 2.5 |
| 25 | YA | 277 | C | 2.5 |
| 27 | RD | 98 | VAL | 2.5 |
| 1 | XA | 1001 | G | 2.5 |
| 22 | QV | 46 | G | 2.5 |
| 30 | RG | 99 | MET | 2.5 |
| 35 | YP | 108 | LYS | 2.5 |
| 7 | QG | 52 | GLU | 2.5 |
| 12 | QL | 127 | GLU | 2.5 |
| 12 | XL | 127 | GLU | 2.5 |
| 25 | YA | 1080 | C | 2.5 |
| 2 | QB | 105 | PHE | 2.5 |
| 5 | QE | 64 | ARG | 2.5 |
| 39 | YT | 2 | ASN | 2.5 |
| 1 | XA | 78 | G | 2.5 |
| 10 | QJ | 84 | GLN | 2.5 |
| 1 | QA | 1531 | A | 2.5 |
| 25 | RA | 2126 | A | 2.5 |
| 25 | RA | 2794 | C | 2.5 |
| 25 | YA | 2179 | C | 2.5 |
| 54 | R8 | 31 | HIS | 2.5 |
| 10 | QJ | 70 | ARG | 2.5 |
| 52 | Y6 | 35 | GLU | 2.5 |
| 1 | XA | 64 | G | 2.5 |
| 30 | RG | 54 | GLU | 2.5 |
| 45 | YZ | 168 | GLU | 2.5 |
| 8 | QH | 119 | LEU | 2.4 |
| 10 | QJ | 101 | VAL | 2.4 |
| 29 | RF | 166 | ALA | 2.4 |
| 10 | QJ | 54 | PHE | 2.4 |
| 9 | QI | 66 | ARG | 2.4 |
| 11 | QK | 12 | ARG | 2.4 |
| 52 | R6 | 18 | ARG | 2.4 |
| 31 | YH | 47 | GLU | 2.4 |
| 25 | RA | 2124 | G | 2.4 |
| 2 | XB | 148 | TYR | 2.4 |
| 25 | RA | 2122 | U | 2.4 |
| 45 | YZ | 101 | PRO | 2.4 |
| 11 | QK | 32 | ILE | 2.4 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 19 | XS | 28 | LYS | 2.4 |
| 25 | RA | 654(S) | G | 2.4 |
| 25 | YA | 270(O) | U | 2.4 |
| 19 | QS | 46 | GLY | 2.4 |
| 6 | QF | 93 | SER | 2.4 |
| 41 | RV | 31 | ALA | 2.4 |
| 44 | RY | 87 | LYS | 2.4 |
| 1 | QA | 995 | C | 2.4 |
| 25 | RA | 1101 | U | 2.4 |
| 25 | YA | 886 | C | 2.4 |
| 25 | YA | 2896 | C | 2.4 |
| 1 | QA | 1269 | A | 2.4 |
| 25 | YA | 10 | G | 2.4 |
| 25 | YA | 1084 | A | 2.4 |
| 44 | YY | 103 | GLY | 2.4 |
| 45 | YZ | 121 | HIS | 2.4 |
| 52 | Y6 | 25 | LYS | 2.4 |
| 30 | RG | 101 | ILE | 2.4 |
| 47 | Y1 | 89 | GLU | 2.4 |
| 30 | RG | 41 | GLN | 2.4 |
| 35 | RP | 16 | ARG | 2.4 |
| 25 | YA | 2142 | C | 2.4 |
| 25 | YA | 2791 | C | 2.4 |
| 1 | QA | 1124 | G | 2.4 |
| 20 | XT | 11 | SER | 2.4 |
| 12 | XL | 61 | THR | 2.4 |
| 31 | RH | 123 | PHE | 2.4 |
| 5 | QE | 83 | GLU | 2.4 |
| 50 | R4 | 58 | ARG | 2.4 |
| 1 | QA | 478 | A | 2.4 |
| 30 | RG | 38 | VAL | 2.4 |
| 1 | XA | 1029 | G | 2.4 |
| 13 | QM | 62 | ASN | 2.4 |
| 25 | YA | 11 | G | 2.4 |
| 1 | QA | 1028(B) | C | 2.4 |
| 1 | XA | 1030 | C | 2.4 |
| 19 | XS | 6 | LYS | 2.4 |
| 36 | RQ | 1 | MET | 2.4 |
| 36 | YQ | 141 | GLN | 2.4 |
| 25 | RA | 878 | A | 2.4 |
| 6 | QF | 38 | GLU | 2.4 |
| 30 | RG | 145 | THR | 2.4 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 41 | RV | 15 | GLU | 2.4 |
| 45 | YZ | 112 | ARG | 2.4 |
| 48 | Y2 | 11 | GLU | 2.4 |
| 50 | R4 | 68 | ARG | 2.4 |
| 21 | QU | 2 | GLY | 2.4 |
| 33 | RN | 1 | MET | 2.4 |
| 51 | Y5 | 54 | GLY | 2.4 |
| 25 | RA | 1080 | C | 2.4 |
| 30 | RG | 142 | PRO | 2.4 |
| 9 | XI | 95 | LYS | 2.4 |
| 19 | QS | 80 | TYR | 2.4 |
| 2 | XB | 63 | MET | 2.4 |
| 25 | RA | 1173 | G | 2.4 |
| 25 | RA | 2155 | G | 2.4 |
| 11 | XK | 15 | ALA | 2.4 |
| 18 | QR | 88 | LYS | 2.4 |
| 35 | RP | 94 | GLU | 2.4 |
| 4 | XD | 167 | GLY | 2.3 |
| 25 | RA | 1177 | A | 2.3 |
| 30 | YG | 113 | ARG | 2.3 |
| 30 | YG | 75 | LYS | 2.3 |
| 52 | R6 | 24 | GLU | 2.3 |
| 11 | QK | 89 | ALA | 2.3 |
| 25 | YA | 1044 | G | 2.3 |
| 39 | RT | 131 | ALA | 2.3 |
| 3 | XC | 101 | LEU | 2.3 |
| 52 | R6 | 37 | ARG | 2.3 |
| 3 | QC | 105 | GLU | 2.3 |
| 25 | RA | 654(U) | A | 2.3 |
| 50 | Y4 | 32 | TYR | 2.3 |
| 30 | YG | 90 | LEU | 2.3 |
| 2 | XB | 229 | VAL | 2.3 |
| 1 | XA | 73 | G | 2.3 |
| 10 | XJ | 48 | THR | 2.3 |
| 25 | YA | 879 | G | 2.3 |
| 50 | Y4 | 45 | GLY | 2.3 |
| 10 | XJ | 17 | ASP | 2.3 |
| 4 | QD | 71 | SER | 2.3 |
| 32 | RI | 6 | LEU | 2.3 |
| 13 | XM | 58 | GLU | 2.3 |
| 45 | YZ | 75 | ASN | 2.3 |
| 1 | XA | 1031 | G | 2.3 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 2 | QB | 96 | ARG | 2.3 |
| 25 | YA | 2157 | G | 2.3 |
| 28 | RE | 68 | ALA | 2.3 |
| 32 | RI | 79 | ILE | 2.3 |
| 52 | R6 | 36 | LEU | 2.3 |
| 7 | XG | 77 | SER | 2.3 |
| 1 | XA | 1450 | U | 2.3 |
| 36 | RQ | 91 | GLU | 2.3 |
| 3 | QC | 15 | THR | 2.3 |
| 7 | QG | 86 | GLN | 2.3 |
| 38 | YS | 68 | GLN | 2.3 |
| 20 | QT | 44 | ALA | 2.3 |
| 19 | QS | 26 | GLY | 2.3 |
| 25 | RA | 1505 | C | 2.3 |
| 1 | QA | 1021 | G | 2.3 |
| 30 | YG | 24 | GLY | 2.3 |
| 7 | QG | 5 | ARG | 2.3 |
| 1 | QA | 1004 | A | 2.3 |
| 7 | QG | 84 | ASN | 2.3 |
| 30 | RG | 172 | LEU | 2.3 |
| 19 | QS | 9 | VAL | 2.3 |
| 1 | XA | 1028(A) | C | 2.3 |
| 30 | YG | 54 | GLU | 2.3 |
| 45 | RZ | 162 | GLU | 2.3 |
| 1 | XA | 1047 | G | 2.3 |
| 20 | XT | 45 | GLN | 2.3 |
| 25 | YA | 275 | G | 2.3 |
| 2 | QB | 239 | VAL | 2.3 |
| 7 | XG | 80 | VAL | 2.3 |
| 25 | YA | 654(U) | A | 2.3 |
| 36 | YQ | 1 | MET | 2.3 |
| 1 | QA | 841 | U | 2.3 |
| 29 | RF | 169 | ASN | 2.3 |
| 30 | RG | 9 | ARG | 2.3 |
| 32 | RI | 113 | ARG | 2.3 |
| 25 | RA | 11 | G | 2.3 |
| 25 | RA | 918 | A | 2.3 |
| 25 | RA | 2790 | A | 2.3 |
| 25 | YA | 1444(A) | A | 2.3 |
| 28 | YE | 41 | LYS | 2.3 |
| 8 | XH | 1 | MET | 2.3 |
| 53 | Y7 | 1 | MET | 2.3 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 3 | QC | 140 | ARG | 2.3 |
| 17 | QQ | 29 | HIS | 2.3 |
| 7 | QG | 85 | TYR | 2.3 |
| 25 | RA | 925 | C | 2.3 |
| 31 | YH | 35 | VAL | 2.3 |
| 47 | R1 | 45 | ASN | 2.3 |
| 10 | QJ | 6 | ILE | 2.3 |
| 4 | QD | 20 | TYR | 2.3 |
| 30 | RG | 37 | VAL | 2.3 |
| 45 | RZ | 156 | LYS | 2.3 |
| 3 | QC | 98 | ASN | 2.3 |
| 3 | QC | 177 | THR | 2.3 |
| 8 | QH | 24 | THR | 2.3 |
| 11 | QK | 39 | PRO | 2.3 |
| 19 | XS | 4 | SER | 2.3 |
| 1 | XA | 96 | G | 2.2 |
| 30 | YG | 100 | TRP | 2.2 |
| 2 | XB | 10 | LEU | 2.2 |
| 3 | QC | 102 | ASN | 2.2 |
| 14 | QN | 39 | LEU | 2.2 |
| 25 | RA | 2137 | C | 2.2 |
| 30 | RG | 112 | PRO | 2.2 |
| 31 | RH | 131 | VAL | 2.2 |
| 50 | R4 | 43 | TYR | 2.2 |
| 50 | R4 | 62 | ARG | 2.2 |
| 25 | RA | 545 | G | 2.2 |
| 33 | RN | 83 | LYS | 2.2 |
| 31 | RH | 48 | GLY | 2.2 |
| 11 | QK | 40 | ILE | 2.2 |
| 35 | RP | 122 | PRO | 2.2 |
| 2 | QB | 95 | GLN | 2.2 |
| 17 | QQ | 101 | ARG | 2.2 |
| 36 | RQ | 139 | GLU | 2.2 |
| 41 | RV | 28 | GLU | 2.2 |
| 2 | XB | 213 | LEU | 2.2 |
| 50 | R4 | 15 | ILE | 2.2 |
| 15 | QO | 89 | GLY | 2.2 |
| 30 | RG | 171 | ALA | 2.2 |
| 31 | RH | 13 | LYS | 2.2 |
| 10 | QJ | 5 | ARG | 2.2 |
| 51 | Y5 | 60 | VAL | 2.2 |
| 12 | XL | 126 | LYS | 2.2 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 18 | QR | 19 | LYS | 2.2 |
| 45 | YZ | 164 | ALA | 2.2 |
| 50 | R4 | 41 | PRO | 2.2 |
| 4 | XD | 12 | CYS | 2.2 |
| 30 | RG | 34 | LEU | 2.2 |
| 25 | YA | 1082 | U | 2.2 |
| 2 | XB | 22 | LYS | 2.2 |
| 7 | XG | 6 | ARG | 2.2 |
| 20 | QT | 56 | MET | 2.2 |
| 1 | XA | 79 | G | 2.2 |
| 38 | RS | 109 | GLY | 2.2 |
| 3 | QC | 87 | LEU | 2.2 |
| 30 | RG | 138 | GLN | 2.2 |
| 15 | XO | 88 | ARG | 2.2 |
| 1 | QA | 978 | A | 2.2 |
| 30 | YG | 157 | ILE | 2.2 |
| 3 | XC | 122 | GLU | 2.2 |
| 31 | YH | 155 | SER | 2.2 |
| 19 | QS | 13 | ASP | 2.2 |
| 45 | RZ | 124 | ILE | 2.2 |
| 1 | QA | 991 | U | 2.2 |
| 20 | QT | 46 | GLU | 2.2 |
| 50 | R4 | 34 | GLU | 2.2 |
| 31 | YH | 135 | GLY | 2.2 |
| 1 | QA | 1035 | A | 2.2 |
| 2 | XB | 30 | ARG | 2.2 |
| 19 | XS | 42 | PRO | 2.2 |
| 31 | YH | 59 | ARG | 2.2 |
| 25 | RA | 279 | C | 2.2 |
| 25 | RA | 2751 | G | 2.2 |
| 25 | YA | 1063 | G | 2.2 |
| 2 | XB | 123 | ALA | 2.2 |
| 14 | QN | 5 | ALA | 2.2 |
| 35 | RP | 124 | LYS | 2.2 |
| 25 | RA | 273(F) | C | 2.2 |
| 40 | RU | 72 | HIS | 2.2 |
| 41 | RV | 63 | GLY | 2.2 |
| 31 | RH | 103 | LEU | 2.2 |
| 52 | R6 | 53 | LYS | 2.2 |
| 21 | QU | 5 | ASP | 2.2 |
| 21 | XU | 23 | PRO | 2.2 |
| 31 | YH | 29 | PRO | 2.2 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 50 | R4 | 42 | PHE | 2.2 |
| 30 | RG | 168 | GLU | 2.2 |
| 33 | RN | 10 | GLU | 2.2 |
| 39 | RT | 3 | ARG | 2.2 |
| 3 | QC | 91 | LEU | 2.1 |
| 29 | YF | 162 | LEU | 2.1 |
| 1 | XA | 456 | C | 2.1 |
| 25 | RA | 1072 | C | 2.1 |
| 39 | RT | 106 | SER | 2.1 |
| 1 | XA | 1257 | U | 2.1 |
| 25 | RA | 362 | U | 2.1 |
| 53 | Y7 | 48 | LYS | 2.1 |
| 10 | XJ | 100 | THR | 2.1 |
| 5 | QE | 150 | ARG | 2.1 |
| 39 | RT | 137 | LYS | 2.1 |
| 44 | RY | 61 | ILE | 2.1 |
| 1 | QA | 1338 | G | 2.1 |
| 25 | RA | 2120 | G | 2.1 |
| 30 | RG | 74 | LYS | 2.1 |
| 52 | Y6 | 12 | GLU | 2.1 |
| 50 | Y4 | 51 | ASP | 2.1 |
| 4 | QD | 25 | ARG | 2.1 |
| 9 | QI | 111 | ARG | 2.1 |
| 11 | QK | 31 | THR | 2.1 |
| 38 | RS | 2 | ALA | 2.1 |
| 43 | RX | 3 | THR | 2.1 |
| 50 | Y4 | 49 | PHE | 2.1 |
| 20 | XT | 60 | GLU | 2.1 |
| 1 | XA | 1138 | G | 2.1 |
| 25 | RA | 229 | A | 2.1 |
| 25 | RA | 1086 | A | 2.1 |
| 30 | RG | 65 | GLY | 2.1 |
| 30 | YG | 65 | GLY | 2.1 |
| 1 | QA | 998(A) | C | 2.1 |
| 25 | YA | 1100 | C | 2.1 |
| 42 | RW | 92 | ARG | 2.1 |
| 10 | XJ | 95 | GLU | 2.1 |
| 52 | R6 | 32 | ASN | 2.1 |
| 52 | Y6 | 24 | GLU | 2.1 |
| 2 | XB | 36 | ARG | 2.1 |
| 3 | QC | 154 | SER | 2.1 |
| 10 | XJ | 99 | LYS | 2.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 31 | RH | 36 | PRO | 2.1 |
| 30 | RG | 21 | ARG | 2.1 |
| 25 | RA | 2100 | G | 2.1 |
| 25 | YA | 270(L) | U | 2.1 |
| 30 | RG | 109 | VAL | 2.1 |
| 38 | YS | 111 | GLU | 2.1 |
| 54 | Y8 | 35 | GLN | 2.1 |
| 29 | YF | 135 | LYS | 2.1 |
| 36 | RQ | 83 | MET | 2.1 |
| 44 | YY | 2 | ARG | 2.1 |
| 44 | YY | 46 | LYS | 2.1 |
| 3 | XC | 206 | GLU | 2.1 |
| 22 | XV | 21 | A | 2.1 |
| 3 | QC | 194 | GLY | 2.1 |
| 3 | XC | 26 | LYS | 2.1 |
| 25 | YA | 1071 | G | 2.1 |
| 30 | RG | 62 | LEU | 2.1 |
| 39 | YT | 36 | GLU | 2.1 |
| 9 | XI | 54 | ASP | 2.1 |
| 3 | QC | 127 | ARG | 2.1 |
| 10 | QJ | 74 | ILE | 2.1 |
| 19 | QS | 12 | ASP | 2.1 |
| 14 | QN | 38 | GLY | 2.1 |
| 29 | YF | 168 | ARG | 2.1 |
| 43 | YX | 82 | GLN | 2.1 |
| 25 | YA | 892 | G | 2.1 |
| 25 | YA | 2211 | G | 2.1 |
| 41 | YV | 34 | GLU | 2.1 |
| 34 | RO | 1 | MET | 2.1 |
| 3 | QC | 103 | VAL | 2.1 |
| 39 | RT | 41 | ARG | 2.1 |
| 26 | RB | 4 | C | 2.1 |
| 1 | XA | 76 | G | 2.1 |
| 1 | XA | 1274 | G | 2.1 |
| 22 | QV | 45 | G | 2.1 |
| 40 | RU | 91 | ASP | 2.1 |
| 25 | YA | 1081 | U | 2.1 |
| 32 | RI | 82 | ARG | 2.1 |
| 41 | RV | 17 | GLY | 2.1 |
| 2 | QB | 16 | HIS | 2.1 |
| 30 | RG | 156 | ASP | 2.1 |
| 1 | QA | 1047 | G | 2.0 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 13 | QM | 8 | GLU | 2.0 |
| 51 | Y5 | 55 | ARG | 2.0 |
| 52 | Y6 | 50 | ARG | 2.0 |
| 13 | QM | 43 | THR | 2.0 |
| 38 | YS | 56 | LEU | 2.0 |
| 14 | QN | 31 | ARG | 2.0 |
| 25 | RA | 917 | A | 2.0 |
| 51 | R5 | 37 | LYS | 2.0 |
| 25 | YA | 645 | C | 2.0 |
| 2 | QB | 33 | TYR | 2.0 |
| 14 | QN | 30 | ALA | 2.0 |
| 32 | RI | 65 | ALA | 2.0 |
| 45 | RZ | 91 | LEU | 2.0 |
| 48 | R2 | 44 | LEU | 2.0 |
| 26 | RB | 97 | G | 2.0 |
| 2 | QB | 48 | MET | 2.0 |
| 25 | RA | 2176 | A | 2.0 |
| 25 | YA | 529 | A | 2.0 |
| 4 | QD | 86 | LYS | 2.0 |
| 10 | XJ | 74 | ILE | 2.0 |
| 25 | RA | 1585 | C | 2.0 |
| 41 | RV | 101 | GLY | 2.0 |
| 1 | XA | 991 | U | 2.0 |
| 39 | RT | 1 | MET | 2.0 |
| 25 | RA | 1534 | G | 2.0 |
| 3 | XC | 42 | LEU | 2.0 |
| 4 | QD | 46 | LYS | 2.0 |
| 1 | QA | 1041 | A | 2.0 |
| 18 | XR | 54 | ARG | 2.0 |
| 50 | R4 | 55 | ARG | 2.0 |
| 25 | RA | 2107 | C | 2.0 |
| 3 | QC | 90 | GLU | 2.0 |
| 35 | RP | 119 | GLU | 2.0 |
| 12 | XL | 28 | LYS | 2.0 |
| 25 | RA | 271(C) | U | 2.0 |
| 29 | RF | 23 | ASP | 2.0 |
| 32 | YI | 144 | VAL | 2.0 |
| 1 | XA | 1131 | G | 2.0 |
| 31 | YH | 5 | GLY | 2.0 |
| 22 | QV | 21 | A | 2.0 |
| 3 | QC | 135 | LYS | 2.0 |
| 36 | RQ | 89 | ASN | 2.0 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 20 | XT | 18 | GLN | 2.0 |
| 11 | XK | 25 | TYR | 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, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|----------------------------|-------|
| 24 | 1MG | QY | 37 | 24/25 | 0.83 | 0.24 | 124,124,124,124 | 0 |
| 24 | 1MG | XY | 37 | 24/25 | 0.93 | 0.15 | 89,89,89,89 | 0 |
| 55 | PPU | Z6 | 76 | 37/38 | 0.94 | 0.28 | 53,53,53,53 | 0 |
| 55 | PPU | Z8 | 76 | 37/38 | 0.95 | 0.25 | 40,40,40,40 | 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, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56 | MG | RA | 3203 | 1/1 | 0.57 | 0.27 | 73,73,73,73 | 0 |
| 56 | MG | QH | 201 | 1/1 | 0.63 | 0.31 | 124,124,124,124 | 0 |
| 56 | MG | QA | 1639 | 1/1 | 0.64 | 0.13 | 44,44,44,44 | 0 |
| 56 | MG | XA | 1605 | 1/1 | 0.65 | 0.41 | 126,126,126,126 | 0 |
| 56 | MG | QA | 1615 | 1/1 | 0.67 | 0.76 | 46,46,46,46 | 0 |
| 56 | MG | YA | 3173 | 1/1 | 0.67 | 0.20 | 43,43,43,43 | 0 |
| 56 | MG | XA | 1648 | 1/1 | 0.68 | 0.32 | 25,25,25,25 | 0 |
| 56 | MG | YA | 3012 | 1/1 | 0.70 | 1.51 | 80,80,80,80 | 0 |
| 56 | MG | RA | 3176 | 1/1 | 0.71 | 0.53 | 71,71,71,71 | 0 |
| 56 | MG | RA | 3201 | 1/1 | 0.72 | 0.34 | 22,22,22,22 | 0 |
| 56 | MG | YA | 3171 | 1/1 | 0.72 | 0.30 | 72,72,72,72 | 0 |
| 56 | MG | XM | 202 | 1/1 | 0.72 | 0.32 | 43,43,43,43 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56 | MG | RA | 3141 | 1/1 | 0.73 | 0.37 | 43,43,43,43 | 0 |
| 56 | MG | YA | 3236 | 1/1 | 0.74 | 0.24 | 57,57,57,57 | 0 |
| 56 | MG | YA | 3172 | 1/1 | 0.75 | 0.17 | 55,55,55,55 | 0 |
| 56 | MG | XA | 1619 | 1/1 | 0.76 | 0.15 | 46,46,46,46 | 0 |
| 56 | MG | YA | 3177 | 1/1 | 0.76 | 0.17 | 35,35,35,35 | 0 |
| 56 | MG | RA | 3173 | 1/1 | 0.76 | 0.18 | 71,71,71,71 | 0 |
| 58 | ZN | QN | 101 | 1/1 | 0.76 | 0.13 | 155,155,155,155 | 0 |
| 56 | MG | RA | 3202 | 1/1 | 0.77 | 0.41 | 84,84,84,84 | 0 |
| 56 | MG | YA | 3169 | 1/1 | 0.78 | 0.21 | 84,84,84,84 | 0 |
| 56 | MG | YE | 302 | 1/1 | 0.79 | 0.19 | 13,13,13,13 | 0 |
| 56 | MG | YA | 3156 | 1/1 | 0.80 | 0.15 | 33,33,33,33 | 0 |
| 56 | MG | YA | 3239 | 1/1 | 0.81 | 0.44 | 48,48,48,48 | 0 |
| 56 | MG | YA | 3120 | 1/1 | 0.81 | 0.23 | 36,36,36,36 | 0 |
| 56 | MG | YA | 3176 | 1/1 | 0.81 | 0.17 | 54,54,54,54 | 0 |
| 56 | MG | YA | 3084 | 1/1 | 0.83 | 0.19 | 23,23,23,23 | 0 |
| 56 | MG | YA | 3158 | 1/1 | 0.83 | 0.12 | 20,20,20,20 | 0 |
| 56 | MG | YA | 3105 | 1/1 | 0.83 | 0.22 | 16,16,16,16 | 0 |
| 56 | MG | RA | 3187 | 1/1 | 0.83 | 0.49 | 68,68,68,68 | 0 |
| 56 | MG | YA | 3165 | 1/1 | 0.84 | 0.24 | 42,42,42,42 | 0 |
| 56 | MG | XA | 1644 | 1/1 | 0.84 | 0.28 | 59,59,59,59 | 0 |
| 56 | MG | XA | 1647 | 1/1 | 0.84 | 0.52 | 58,58,58,58 | 0 |
| 56 | MG | QA | 1620 | 1/1 | 0.84 | 0.50 | 40,40,40,40 | 0 |
| 56 | MG | RA | 3192 | 1/1 | 0.84 | 0.29 | 56,56,56,56 | 0 |
| 56 | MG | RA | 3200 | 1/1 | 0.84 | 0.23 | 58,58,58,58 | 0 |
| 56 | MG | RA | 3096 | 1/1 | 0.84 | 0.16 | 8,8,8,8 | 0 |
| 56 | MG | YA | 3181 | 1/1 | 0.84 | 0.28 | 51,51,51,51 | 0 |
| 56 | MG | QA | 1627 | 1/1 | 0.84 | 0.36 | 57,57,57,57 | 0 |
| 56 | MG | QA | 1613 | 1/1 | 0.84 | 0.33 | 56,56,56,56 | 0 |
| 56 | MG | YA | 3240 | 1/1 | 0.84 | 0.14 | 45,45,45,45 | 0 |
| 56 | MG | RA | 3175 | 1/1 | 0.84 | 0.25 | 99,99,99,99 | 0 |
| 56 | MG | QA | 1643 | 1/1 | 0.84 | 0.20 | 24,24,24,24 | 0 |
| 56 | MG | RA | 3167 | 1/1 | 0.85 | 0.19 | 35,35,35,35 | 0 |
| 56 | MG | YA | 3116 | 1/1 | 0.85 | 0.20 | 28,28,28,28 | 0 |
| 56 | MG | XA | 1638 | 1/1 | 0.86 | 0.21 | 55,55,55,55 | 0 |
| 56 | MG | XA | 1642 | 1/1 | 0.86 | 0.27 | 49,49,49,49 | 0 |
| 56 | MG | QA | 1614 | 1/1 | 0.86 | 0.25 | 38,38,38,38 | 0 |
| 56 | MG | YA | 3133 | 1/1 | 0.86 | 0.73 | 43,43,43,43 | 0 |
| 56 | MG | RA | 3162 | 1/1 | 0.86 | 0.28 | 56,56,56,56 | 0 |
| 56 | MG | YA | 3183 | 1/1 | 0.86 | 0.12 | 36,36,36,36 | 0 |
| 56 | MG | RA | 3208 | 1/1 | 0.86 | 0.14 | 47,47,47,47 | 0 |
| 56 | MG | YA | 3164 | 1/1 | 0.86 | 0.30 | 25,25,25,25 | 0 |
| 56 | MG | QF | 201 | 1/1 | 0.86 | 0.17 | 56,56,56,56 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56 | MG | XA | 1618 | 1/1 | 0.86 | 0.14 | 24,24,24,24 | 0 |
| 56 | MG | RA | 3186 | 1/1 | 0.86 | 0.22 | 90,90,90,90 | 0 |
| 56 | MG | RA | 3210 | 1/1 | 0.87 | 0.34 | 38,38,38,38 | 0 |
| 56 | MG | YA | 3207 | 1/1 | 0.87 | 0.30 | 66,66,66,66 | 0 |
| 56 | MG | YA | 3228 | 1/1 | 0.87 | 0.17 | 45,45,45,45 | 0 |
| 56 | MG | RA | 3122 | 1/1 | 0.87 | 0.24 | 70,70,70,70 | 0 |
| 56 | MG | RA | 3083 | 1/1 | 0.87 | 0.20 | 26,26,26,26 | 0 |
| 56 | MG | RA | 3117 | 1/1 | 0.87 | 0.24 | 42,42,42,42 | 0 |
| 56 | MG | RA | 3163 | 1/1 | 0.87 | 0.18 | 38,38,38,38 | 0 |
| 56 | MG | YA | 3122 | 1/1 | 0.87 | 0.17 | 35,35,35,35 | 0 |
| 56 | MG | RA | 3207 | 1/1 | 0.88 | 0.12 | 51,51,51,51 | 0 |
| 56 | MG | RA | 3196 | 1/1 | 0.88 | 0.23 | 53,53,53,53 | 0 |
| 56 | MG | RA | 3209 | 1/1 | 0.88 | 0.25 | 49,49,49,49 | 0 |
| 56 | MG | RA | 3197 | 1/1 | 0.88 | 0.15 | 50,50,50,50 | 0 |
| 56 | MG | YA | 3186 | 1/1 | 0.88 | 0.28 | 50,50,50,50 | 0 |
| 56 | MG | YA | 3190 | 1/1 | 0.88 | 0.24 | 51,51,51,51 | 0 |
| 56 | MG | YA | 3162 | 1/1 | 0.88 | 0.27 | 34,34,34,34 | 0 |
| 56 | MG | YA | 3227 | 1/1 | 0.88 | 0.14 | 22,22,22,22 | 0 |
| 56 | MG | RA | 3144 | 1/1 | 0.88 | 0.18 | 36,36,36,36 | 0 |
| 56 | MG | YA | 3039 | 1/1 | 0.88 | 0.20 | 30,30,30,30 | 0 |
| 56 | MG | RA | 3190 | 1/1 | 0.88 | 0.18 | 50,50,50,50 | 0 |
| 56 | MG | QA | 1657 | 1/1 | 0.88 | 0.10 | 76,76,76,76 | 0 |
| 56 | MG | RA | 3195 | 1/1 | 0.88 | 0.25 | 28,28,28,28 | 0 |
| 56 | MG | RA | 3205 | 1/1 | 0.88 | 0.23 | 54,54,54,54 | 0 |
| 56 | MG | RA | 3056 | 1/1 | 0.89 | 0.15 | 26,26,26,26 | 0 |
| 56 | MG | RA | 3169 | 1/1 | 0.89 | 0.14 | 23,23,23,23 | 0 |
| 56 | MG | YA | 3016 | 1/1 | 0.89 | 0.14 | 19,19,19,19 | 0 |
| 56 | MG | RA | 3080 | 1/1 | 0.89 | 0.27 | 44,44,44,44 | 0 |
| 56 | MG | RA | 3133 | 1/1 | 0.89 | 0.13 | 32,32,32,32 | 0 |
| 56 | MG | QA | 1625 | 1/1 | 0.89 | 0.14 | 66,66,66,66 | 0 |
| 56 | MG | YA | 3107 | 1/1 | 0.89 | 0.22 | 25,25,25,25 | 0 |
| 56 | MG | XA | 1621 | 1/1 | 0.89 | 0.15 | 22,22,22,22 | 0 |
| 56 | MG | YA | 3188 | 1/1 | 0.89 | 0.20 | 38,38,38,38 | 0 |
| 56 | MG | XA | 1626 | 1/1 | 0.89 | 0.32 | 27,27,27,27 | 0 |
| 56 | MG | RA | 3180 | 1/1 | 0.89 | 0.21 | 28,28,28,28 | 0 |
| 56 | MG | XA | 1641 | 1/1 | 0.89 | 0.13 | 24,24,24,24 | 0 |
| 56 | MG | QA | 1640 | 1/1 | 0.89 | 0.18 | 54,54,54,54 | 0 |
| 56 | MG | YA | 3234 | 1/1 | 0.89 | 0.22 | 34,34,34,34 | 0 |
| 56 | MG | RA | 3147 | 1/1 | 0.89 | 0.41 | 49,49,49,49 | 0 |
| 56 | MG | XA | 1645 | 1/1 | 0.89 | 0.19 | 31,31,31,31 | 0 |
| 56 | MG | RA | 3106 | 1/1 | 0.89 | 0.50 | 24,24,24,24 | 0 |
| 56 | MG | RA | 3108 | 1/1 | 0.89 | 0.17 | 26,26,26,26 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56 | MG | XA | 1654 | 1/1 | 0.89 | 0.12 | 50,50,50,50 | 0 |
| 56 | MG | RA | 3185 | 1/1 | 0.90 | 0.37 | 44,44,44,44 | 0 |
| 56 | MG | XA | 1652 | 1/1 | 0.90 | 0.16 | 64,64,64,64 | 0 |
| 56 | MG | RA | 3097 | 1/1 | 0.90 | 0.21 | 24,24,24,24 | 0 |
| 56 | MG | XA | 1656 | 1/1 | 0.90 | 0.18 | 37,37,37,37 | 0 |
| 56 | MG | XA | 1658 | 1/1 | 0.90 | 0.28 | 50,50,50,50 | 0 |
| 56 | MG | RA | 3152 | 1/1 | 0.90 | 0.18 | 26,26,26,26 | 0 |
| 56 | MG | QA | 1622 | 1/1 | 0.90 | 0.27 | 60,60,60,60 | 0 |
| 56 | MG | RF | 301 | 1/1 | 0.90 | 0.24 | 45,45,45,45 | 0 |
| 56 | MG | RA | 3191 | 1/1 | 0.90 | 0.17 | 62,62,62,62 | 0 |
| 56 | MG | YA | 3056 | 1/1 | 0.90 | 0.19 | 9,9,9,9 | 0 |
| 56 | MG | QA | 1632 | 1/1 | 0.90 | 0.24 | 41,41,41,41 | 0 |
| 56 | MG | QA | 1644 | 1/1 | 0.90 | 0.19 | 23,23,23,23 | 0 |
| 56 | MG | RA | 3072 | 1/1 | 0.90 | 0.27 | 24,24,24,24 | 0 |
| 56 | MG | YA | 3192 | 1/1 | 0.90 | 0.28 | 40,40,40,40 | 0 |
| 56 | MG | RA | 3130 | 1/1 | 0.90 | 0.31 | 44,44,44,44 | 0 |
| 56 | MG | RA | 3174 | 1/1 | 0.90 | 0.39 | 68,68,68,68 | 0 |
| 56 | MG | QA | 1652 | 1/1 | 0.90 | 0.16 | 36,36,36,36 | 0 |
| 56 | MG | YA | 3130 | 1/1 | 0.90 | 0.19 | 16,16,16,16 | 0 |
| 56 | MG | QA | 1618 | 1/1 | 0.90 | 0.16 | 41,41,41,41 | 0 |
| 56 | MG | YA | 3139 | 1/1 | 0.90 | 0.22 | 32,32,32,32 | 0 |
| 56 | MG | QA | 1660 | 1/1 | 0.90 | 0.19 | 45,45,45,45 | 0 |
| 56 | MG | RA | 3183 | 1/1 | 0.90 | 0.33 | 49,49,49,49 | 0 |
| 57 | PAR | QA | 1661 | 42/42 | 0.90 | 0.23 | 75,75,75,75 | 0 |
| 56 | MG | RA | 3206 | 1/1 | 0.90 | 0.28 | 38,38,38,38 | 0 |
| 56 | MG | RA | 3181 | 1/1 | 0.91 | 0.28 | 34,34,34,34 | 0 |
| 56 | MG | QA | 1601 | 1/1 | 0.91 | 0.23 | 27,27,27,27 | 0 |
| 56 | MG | YA | 3117 | 1/1 | 0.91 | 0.34 | 60,60,60,60 | 0 |
| 56 | MG | YA | 3182 | 1/1 | 0.91 | 0.24 | 30,30,30,30 | 0 |
| 56 | MG | XA | 1653 | 1/1 | 0.91 | 0.22 | 44,44,44,44 | 0 |
| 56 | MG | QA | 1637 | 1/1 | 0.91 | 0.17 | 49,49,49,49 | 0 |
| 56 | MG | RA | 3098 | 1/1 | 0.91 | 0.13 | 11,11,11,11 | 0 |
| 56 | MG | RA | 3101 | 1/1 | 0.91 | 0.11 | 50,50,50,50 | 0 |
| 56 | MG | XA | 1663 | 1/1 | 0.91 | 0.29 | 85,85,85,85 | 0 |
| 56 | MG | YA | 3194 | 1/1 | 0.91 | 0.30 | 42,42,42,42 | 0 |
| 56 | MG | YA | 3200 | 1/1 | 0.91 | 0.12 | 15,15,15,15 | 0 |
| 56 | MG | YA | 3201 | 1/1 | 0.91 | 0.10 | 122,122,122,122 | 0 |
| 56 | MG | YA | 3151 | 1/1 | 0.91 | 0.51 | 26,26,26,26 | 0 |
| 56 | MG | XA | 1631 | 1/1 | 0.91 | 0.32 | 45,45,45,45 | 0 |
| 56 | MG | YA | 3003 | 1/1 | 0.91 | 0.13 | 13,13,13,13 | 0 |
| 56 | MG | RA | 3171 | 1/1 | 0.91 | 0.33 | 49,49,49,49 | 0 |
| 56 | MG | RA | 3103 | 1/1 | 0.91 | 0.61 | 48,48,48,48 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56 | MG | QA | 1638 | 1/1 | 0.91 | 0.31 | 53,53,53,53 | 0 |
| 56 | MG | RA | 3027 | 1/1 | 0.91 | 0.74 | 80,80,80,80 | 0 |
| 56 | MG | YA | 3065 | 1/1 | 0.91 | 0.13 | 12,12,12,12 | 0 |
| 56 | MG | YX | 101 | 1/1 | 0.91 | 0.09 | 28,28,28,28 | 0 |
| 56 | MG | RA | 3111 | 1/1 | 0.91 | 0.30 | 52,52,52,52 | 0 |
| 57 | PAR | XA | 1664 | 42/42 | 0.91 | 0.25 | 57,57,57,57 | 0 |
| 56 | MG | RA | 3159 | 1/1 | 0.91 | 0.42 | 26,26,26,26 | 0 |
| 56 | MG | QA | 1659 | 1/1 | 0.92 | 0.26 | 79,79,79,79 | 0 |
| 56 | MG | XA | 1614 | 1/1 | 0.92 | 0.11 | 14,14,14,14 | 0 |
| 56 | MG | RA | 3033 | 1/1 | 0.92 | 0.21 | 62,62,62,62 | 0 |
| 56 | MG | RA | 3188 | 1/1 | 0.92 | 0.28 | 58,58,58,58 | 0 |
| 56 | MG | RA | 3153 | 1/1 | 0.92 | 0.16 | 36,36,36,36 | 0 |
| 56 | MG | YA | 3061 | 1/1 | 0.92 | 0.12 | 35,35,35,35 | 0 |
| 56 | MG | YA | 3063 | 1/1 | 0.92 | 0.12 | 6,6,6,6 | 0 |
| 56 | MG | QA | 1634 | 1/1 | 0.92 | 0.10 | 48,48,48,48 | 0 |
| 56 | MG | YA | 3071 | 1/1 | 0.92 | 0.14 | 18,18,18,18 | 0 |
| 56 | MG | RA | 3066 | 1/1 | 0.92 | 0.24 | 12,12,12,12 | 0 |
| 56 | MG | YA | 3098 | 1/1 | 0.92 | 0.18 | 49,49,49,49 | 0 |
| 56 | MG | QA | 1611 | 1/1 | 0.92 | 0.08 | 32,32,32,32 | 0 |
| 56 | MG | RA | 3164 | 1/1 | 0.92 | 0.15 | 52,52,52,52 | 0 |
| 56 | MG | RA | 3073 | 1/1 | 0.92 | 0.38 | 5,5,5,5 | 0 |
| 56 | MG | RA | 3075 | 1/1 | 0.92 | 0.35 | 4,4,4,4 | 0 |
| 56 | MG | RA | 3115 | 1/1 | 0.92 | 0.26 | 59,59,59,59 | 0 |
| 56 | MG | QA | 1610 | 1/1 | 0.92 | 0.21 | 33,33,33,33 | 0 |
| 56 | MG | QV | 102 | 1/1 | 0.92 | 0.19 | 8,8,8,8 | 0 |
| 56 | MG | XA | 1651 | 1/1 | 0.92 | 0.14 | 18,18,18,18 | 0 |
| 56 | MG | YA | 3230 | 1/1 | 0.92 | 0.39 | 43,43,43,43 | 0 |
| 56 | MG | RA | 3123 | 1/1 | 0.92 | 0.14 | 32,32,32,32 | 0 |
| 56 | MG | YA | 3150 | 1/1 | 0.92 | 0.19 | 54,54,54,54 | 0 |
| 56 | MG | RA | 3091 | 1/1 | 0.92 | 0.17 | 21,21,21,21 | 0 |
| 56 | MG | YA | 3152 | 1/1 | 0.92 | 0.39 | 38,38,38,38 | 0 |
| 56 | MG | YB | 202 | 1/1 | 0.92 | 0.16 | 42,42,42,42 | 0 |
| 56 | MG | RA | 3178 | 1/1 | 0.92 | 0.25 | 62,62,62,62 | 0 |
| 56 | MG | RA | 3092 | 1/1 | 0.92 | 0.10 | 18,18,18,18 | 0 |
| 56 | MG | RA | 3095 | 1/1 | 0.92 | 0.14 | 31,31,31,31 | 0 |
| 56 | MG | RA | 3015 | 1/1 | 0.92 | 0.15 | 15,15,15,15 | 0 |
| 56 | MG | RA | 3146 | 1/1 | 0.92 | 0.30 | 44,44,44,44 | 0 |
| 56 | MG | QA | 1633 | 1/1 | 0.93 | 0.36 | 50,50,50,50 | 0 |
| 56 | MG | YA | 3082 | 1/1 | 0.93 | 0.15 | 13,13,13,13 | 0 |
| 56 | MG | XA | 1646 | 1/1 | 0.93 | 0.18 | 23,23,23,23 | 0 |
| 56 | MG | RA | 3120 | 1/1 | 0.93 | 0.11 | 10,10,10,10 | 0 |
| 56 | MG | YA | 3178 | 1/1 | 0.93 | 0.22 | 68,68,68,68 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56 | MG | RA | 3157 | 1/1 | 0.93 | 0.38 | 20,20,20,20 | 0 |
| 56 | MG | RA | 3158 | 1/1 | 0.93 | 0.16 | 14,14,14,14 | 0 |
| 56 | MG | QA | 1645 | 1/1 | 0.93 | 0.17 | 22,22,22,22 | 0 |
| 56 | MG | RA | 3102 | 1/1 | 0.93 | 0.25 | 32,32,32,32 | 0 |
| 56 | MG | QA | 1631 | 1/1 | 0.93 | 0.15 | 55,55,55,55 | 0 |
| 56 | MG | XA | 1655 | 1/1 | 0.93 | 0.21 | 33,33,33,33 | 0 |
| 56 | MG | YA | 3124 | 1/1 | 0.93 | 0.22 | 22,22,22,22 | 0 |
| 56 | MG | QA | 1635 | 1/1 | 0.93 | 0.18 | 31,31,31,31 | 0 |
| 56 | MG | YA | 3198 | 1/1 | 0.93 | 0.26 | 32,32,32,32 | 0 |
| 56 | MG | RA | 3134 | 1/1 | 0.93 | 0.21 | 18,18,18,18 | 0 |
| 56 | MG | RA | 3168 | 1/1 | 0.93 | 0.10 | 31,31,31,31 | 0 |
| 56 | MG | YA | 3141 | 1/1 | 0.93 | 0.48 | 43,43,43,43 | 0 |
| 56 | MG | YA | 3208 | 1/1 | 0.93 | 0.21 | 53,53,53,53 | 0 |
| 56 | MG | YA | 3226 | 1/1 | 0.93 | 0.15 | 14,14,14,14 | 0 |
| 56 | MG | YA | 3142 | 1/1 | 0.93 | 0.16 | 30,30,30,30 | 0 |
| 56 | MG | RA | 3193 | 1/1 | 0.93 | 0.15 | 49,49,49,49 | 0 |
| 56 | MG | XV | 102 | 1/1 | 0.93 | 0.12 | 22,22,22,22 | 0 |
| 56 | MG | RA | 3139 | 1/1 | 0.93 | 0.13 | 31,31,31,31 | 0 |
| 56 | MG | RA | 3007 | 1/1 | 0.93 | 0.13 | 8,8,8,8 | 0 |
| 56 | MG | RA | 3143 | 1/1 | 0.93 | 0.47 | 16,16,16,16 | 0 |
| 56 | MG | YA | 3160 | 1/1 | 0.93 | 0.19 | 37,37,37,37 | 0 |
| 56 | MG | YA | 3242 | 1/1 | 0.93 | 0.32 | 34,34,34,34 | 0 |
| 56 | MG | XA | 1632 | 1/1 | 0.93 | 0.19 | 11,11,11,11 | 0 |
| 56 | MG | YE | 301 | 1/1 | 0.93 | 0.11 | 1,1,1,1 | 0 |
| 56 | MG | RA | 3012 | 1/1 | 0.93 | 0.37 | 26,26,26,26 | 0 |
| 56 | MG | RA | 3114 | 1/1 | 0.93 | 0.11 | 30,30,30,30 | 0 |
| 56 | MG | YA | 3168 | 1/1 | 0.93 | 0.29 | 65,65,65,65 | 0 |
| 56 | MG | QA | 1619 | 1/1 | 0.93 | 0.29 | 48,48,48,48 | 0 |
| 56 | MG | RA | 3150 | 1/1 | 0.93 | 0.25 | 26,26,26,26 | 0 |
| 56 | MG | YA | 3018 | 1/1 | 0.94 | 0.32 | 24,24,24,24 | 0 |
| 56 | MG | YA | 3033 | 1/1 | 0.94 | 0.24 | 6,6,6,6 | 0 |
| 56 | MG | RA | 3137 | 1/1 | 0.94 | 0.17 | 36,36,36,36 | 0 |
| 56 | MG | QA | 1623 | 1/1 | 0.94 | 0.15 | 28,28,28,28 | 0 |
| 56 | MG | YA | 3170 | 1/1 | 0.94 | 0.35 | 10,10,10,10 | 0 |
| 56 | MG | XA | 1636 | 1/1 | 0.94 | 0.15 | 58,58,58,58 | 0 |
| 56 | MG | RA | 3009 | 1/1 | 0.94 | 0.17 | 21,21,21,21 | 0 |
| 56 | MG | RA | 3040 | 1/1 | 0.94 | 0.13 | 9,9,9,9 | 0 |
| 56 | MG | YA | 3174 | 1/1 | 0.94 | 0.19 | 29,29,29,29 | 0 |
| 56 | MG | YA | 3175 | 1/1 | 0.94 | 0.12 | 12,12,12,12 | 0 |
| 56 | MG | YA | 3066 | 1/1 | 0.94 | 0.48 | 18,18,18,18 | 0 |
| 56 | MG | YA | 3067 | 1/1 | 0.94 | 0.14 | 15,15,15,15 | 0 |
| 56 | MG | RA | 3199 | 1/1 | 0.94 | 0.18 | 47,47,47,47 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56 | MG | RA | 3078 | 1/1 | 0.94 | 0.19 | 15,15,15,15 | 0 |
| 56 | MG | QA | 1656 | 1/1 | 0.94 | 0.22 | 53,53,53,53 | 0 |
| 56 | MG | YA | 3088 | 1/1 | 0.94 | 0.26 | 20,20,20,20 | 0 |
| 56 | MG | YA | 3184 | 1/1 | 0.94 | 0.17 | 33,33,33,33 | 0 |
| 56 | MG | RA | 3121 | 1/1 | 0.94 | 0.65 | 35,35,35,35 | 0 |
| 56 | MG | RA | 3149 | 1/1 | 0.94 | 0.18 | 48,48,48,48 | 0 |
| 56 | MG | RA | 3082 | 1/1 | 0.94 | 0.14 | 13,13,13,13 | 0 |
| 56 | MG | YA | 3191 | 1/1 | 0.94 | 0.13 | 24,24,24,24 | 0 |
| 56 | MG | XA | 1650 | 1/1 | 0.94 | 0.26 | 39,39,39,39 | 0 |
| 56 | MG | RA | 3179 | 1/1 | 0.94 | 0.21 | 22,22,22,22 | 0 |
| 56 | MG | YA | 3196 | 1/1 | 0.94 | 0.13 | 33,33,33,33 | 0 |
| 56 | MG | YA | 3197 | 1/1 | 0.94 | 0.16 | 33,33,33,33 | 0 |
| 56 | MG | RA | 3057 | 1/1 | 0.94 | 0.06 | 22,22,22,22 | 0 |
| 56 | MG | YA | 3199 | 1/1 | 0.94 | 0.21 | 42,42,42,42 | 0 |
| 56 | MG | YA | 3121 | 1/1 | 0.94 | 0.16 | 23,23,23,23 | 0 |
| 56 | MG | RA | 3127 | 1/1 | 0.94 | 0.18 | 47,47,47,47 | 0 |
| 56 | MG | YA | 3205 | 1/1 | 0.94 | 0.15 | 28,28,28,28 | 0 |
| 56 | MG | RA | 3128 | 1/1 | 0.94 | 0.20 | 27,27,27,27 | 0 |
| 56 | MG | YA | 3126 | 1/1 | 0.94 | 0.18 | 27,27,27,27 | 0 |
| 56 | MG | YA | 3211 | 1/1 | 0.94 | 0.18 | 42,42,42,42 | 0 |
| 56 | MG | YA | 3212 | 1/1 | 0.94 | 0.10 | 21,21,21,21 | 0 |
| 56 | MG | YA | 3214 | 1/1 | 0.94 | 0.15 | 42,42,42,42 | 0 |
| 56 | MG | YA | 3215 | 1/1 | 0.94 | 0.15 | 51,51,51,51 | 0 |
| 56 | MG | YA | 3223 | 1/1 | 0.94 | 0.09 | 30,30,30,30 | 0 |
| 56 | MG | YA | 3127 | 1/1 | 0.94 | 0.53 | 44,44,44,44 | 0 |
| 56 | MG | RA | 3104 | 1/1 | 0.94 | 0.24 | 44,44,44,44 | 0 |
| 56 | MG | YA | 3131 | 1/1 | 0.94 | 0.14 | 20,20,20,20 | 0 |
| 56 | MG | RA | 3131 | 1/1 | 0.94 | 0.20 | 77,77,77,77 | 0 |
| 56 | MG | YA | 3231 | 1/1 | 0.94 | 0.29 | 32,32,32,32 | 0 |
| 56 | MG | RA | 3160 | 1/1 | 0.94 | 0.17 | 25,25,25,25 | 0 |
| 56 | MG | XA | 1662 | 1/1 | 0.94 | 0.24 | 27,27,27,27 | 0 |
| 56 | MG | RA | 3161 | 1/1 | 0.94 | 0.16 | 32,32,32,32 | 0 |
| 56 | MG | YA | 3149 | 1/1 | 0.94 | 0.30 | 26,26,26,26 | 0 |
| 56 | MG | YA | 3241 | 1/1 | 0.94 | 0.28 | 33,33,33,33 | 0 |
| 56 | MG | XM | 201 | 1/1 | 0.94 | 0.12 | 28,28,28,28 | 0 |
| 56 | MG | RA | 3189 | 1/1 | 0.94 | 0.23 | 34,34,34,34 | 0 |
| 56 | MG | QX | 102 | 1/1 | 0.94 | 0.09 | 42,42,42,42 | 0 |
| 56 | MG | RA | 3069 | 1/1 | 0.94 | 0.30 | 43,43,43,43 | 0 |
| 56 | MG | YA | 3005 | 1/1 | 0.94 | 0.12 | 19,19,19,19 | 0 |
| 56 | MG | YA | 3159 | 1/1 | 0.94 | 0.30 | 43,43,43,43 | 0 |
| 56 | MG | XA | 1625 | 1/1 | 0.94 | 0.14 | 20,20,20,20 | 0 |
| 56 | MG | RA | 3135 | 1/1 | 0.94 | 0.27 | 32,32,32,32 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56 | MG | YA | 3004 | 1/1 | 0.95 | 0.23 | 13,13,13,13 | 0 |
| 56 | MG | QA | 1617 | 1/1 | 0.95 | 0.22 | 41,41,41,41 | 0 |
| 56 | MG | XA | 1637 | 1/1 | 0.95 | 0.11 | 39,39,39,39 | 0 |
| 56 | MG | YA | 3134 | 1/1 | 0.95 | 0.10 | 29,29,29,29 | 0 |
| 56 | MG | RA | 3047 | 1/1 | 0.95 | 0.23 | 7,7,7,7 | 0 |
| 56 | MG | XA | 1639 | 1/1 | 0.95 | 0.17 | 32,32,32,32 | 0 |
| 56 | MG | RA | 3048 | 1/1 | 0.95 | 0.22 | 13,13,13,13 | 0 |
| 56 | MG | YA | 3145 | 1/1 | 0.95 | 0.15 | 42,42,42,42 | 0 |
| 56 | MG | YA | 3148 | 1/1 | 0.95 | 0.11 | 25,25,25,25 | 0 |
| 56 | MG | QA | 1655 | 1/1 | 0.95 | 0.36 | 50,50,50,50 | 0 |
| 56 | MG | YA | 3045 | 1/1 | 0.95 | 0.37 | 22,22,22,22 | 0 |
| 56 | MG | QA | 1629 | 1/1 | 0.95 | 0.17 | 68,68,68,68 | 0 |
| 56 | MG | RA | 3065 | 1/1 | 0.95 | 0.28 | 21,21,21,21 | 0 |
| 56 | MG | YA | 3154 | 1/1 | 0.95 | 0.16 | 15,15,15,15 | 0 |
| 56 | MG | YA | 3155 | 1/1 | 0.95 | 0.24 | 22,22,22,22 | 0 |
| 56 | MG | RA | 3094 | 1/1 | 0.95 | 0.12 | 19,19,19,19 | 0 |
| 56 | MG | RA | 3136 | 1/1 | 0.95 | 0.24 | 49,49,49,49 | 0 |
| 56 | MG | QA | 1649 | 1/1 | 0.95 | 0.34 | 45,45,45,45 | 0 |
| 56 | MG | RB | 202 | 1/1 | 0.95 | 0.07 | 31,31,31,31 | 0 |
| 56 | MG | YA | 3220 | 1/1 | 0.95 | 0.14 | 18,18,18,18 | 0 |
| 56 | MG | YA | 3221 | 1/1 | 0.95 | 0.21 | 26,26,26,26 | 0 |
| 56 | MG | YA | 3070 | 1/1 | 0.95 | 0.13 | 22,22,22,22 | 0 |
| 56 | MG | YA | 3224 | 1/1 | 0.95 | 0.18 | 18,18,18,18 | 0 |
| 56 | MG | RA | 3116 | 1/1 | 0.95 | 0.22 | 69,69,69,69 | 0 |
| 56 | MG | RP | 201 | 1/1 | 0.95 | 0.34 | 37,37,37,37 | 0 |
| 56 | MG | RA | 3166 | 1/1 | 0.95 | 0.23 | 56,56,56,56 | 0 |
| 56 | MG | YA | 3085 | 1/1 | 0.95 | 0.10 | 41,41,41,41 | 0 |
| 56 | MG | XA | 1609 | 1/1 | 0.95 | 0.24 | 15,15,15,15 | 0 |
| 56 | MG | YA | 3232 | 1/1 | 0.95 | 0.29 | 43,43,43,43 | 0 |
| 56 | MG | RA | 3018 | 1/1 | 0.95 | 0.22 | 6,6,6,6 | 0 |
| 56 | MG | RA | 3119 | 1/1 | 0.95 | 0.39 | 34,34,34,34 | 0 |
| 56 | MG | RA | 3023 | 1/1 | 0.95 | 0.29 | 24,24,24,24 | 0 |
| 56 | MG | XA | 1660 | 1/1 | 0.95 | 0.08 | 61,61,61,61 | 0 |
| 56 | MG | XA | 1661 | 1/1 | 0.95 | 0.20 | 38,38,38,38 | 0 |
| 56 | MG | QA | 1650 | 1/1 | 0.95 | 0.14 | 36,36,36,36 | 0 |
| 56 | MG | RA | 3099 | 1/1 | 0.95 | 0.13 | 21,21,21,21 | 0 |
| 56 | MG | RA | 3148 | 1/1 | 0.95 | 0.20 | 21,21,21,21 | 0 |
| 56 | MG | XA | 1627 | 1/1 | 0.95 | 0.29 | 31,31,31,31 | 0 |
| 56 | MG | RA | 3005 | 1/1 | 0.95 | 0.26 | 8,8,8,8 | 0 |
| 56 | MG | RA | 3125 | 1/1 | 0.95 | 0.32 | 24,24,24,24 | 0 |
| 56 | MG | YA | 3128 | 1/1 | 0.95 | 0.21 | 23,23,23,23 | 0 |
| 56 | MG | YA | 3185 | 1/1 | 0.95 | 0.09 | 10,10,10,10 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56 | MG | RA | 3001 | 1/1 | 0.96 | 0.19 | 36,36,36,36 | 0 |
| 56 | MG | YA | 3100 | 1/1 | 0.96 | 0.32 | 1,1,1,1 | 0 |
| 56 | MG | YA | 3102 | 1/1 | 0.96 | 0.25 | 5,5,5,5 | 0 |
| 56 | MG | YA | 3179 | 1/1 | 0.96 | 0.41 | 31,31,31,31 | 0 |
| 56 | MG | RE | 302 | 1/1 | 0.96 | 0.38 | 22,22,22,22 | 0 |
| 56 | MG | RA | 3003 | 1/1 | 0.96 | 0.23 | 17,17,17,17 | 0 |
| 56 | MG | YA | 3115 | 1/1 | 0.96 | 0.14 | 21,21,21,21 | 0 |
| 56 | MG | RA | 3034 | 1/1 | 0.96 | 0.28 | 16,16,16,16 | 0 |
| 56 | MG | XA | 1657 | 1/1 | 0.96 | 0.13 | 28,28,28,28 | 0 |
| 56 | MG | YA | 3119 | 1/1 | 0.96 | 0.37 | 35,35,35,35 | 0 |
| 56 | MG | YA | 3187 | 1/1 | 0.96 | 0.36 | 58,58,58,58 | 0 |
| 56 | MG | RA | 3184 | 1/1 | 0.96 | 0.30 | 33,33,33,33 | 0 |
| 56 | MG | XA | 1659 | 1/1 | 0.96 | 0.10 | 60,60,60,60 | 0 |
| 56 | MG | RA | 3038 | 1/1 | 0.96 | 0.15 | 14,14,14,14 | 0 |
| 56 | MG | YA | 3123 | 1/1 | 0.96 | 0.12 | 15,15,15,15 | 0 |
| 56 | MG | XA | 1612 | 1/1 | 0.96 | 0.31 | 21,21,21,21 | 0 |
| 56 | MG | YA | 3125 | 1/1 | 0.96 | 0.13 | 18,18,18,18 | 0 |
| 56 | MG | RA | 3087 | 1/1 | 0.96 | 0.11 | 9,9,9,9 | 0 |
| 56 | MG | XA | 1615 | 1/1 | 0.96 | 0.24 | 19,19,19,19 | 0 |
| 56 | MG | XA | 1617 | 1/1 | 0.96 | 0.14 | 26,26,26,26 | 0 |
| 56 | MG | RA | 3088 | 1/1 | 0.96 | 0.17 | 24,24,24,24 | 0 |
| 56 | MG | RA | 3090 | 1/1 | 0.96 | 0.11 | 14,14,14,14 | 0 |
| 56 | MG | YA | 3202 | 1/1 | 0.96 | 0.07 | 21,21,21,21 | 0 |
| 56 | MG | YA | 3203 | 1/1 | 0.96 | 0.13 | 24,24,24,24 | 0 |
| 56 | MG | XA | 1620 | 1/1 | 0.96 | 0.10 | 55,55,55,55 | 0 |
| 56 | MG | RA | 3004 | 1/1 | 0.96 | 0.11 | 5,5,5,5 | 0 |
| 56 | MG | RA | 3124 | 1/1 | 0.96 | 0.33 | 21,21,21,21 | 0 |
| 56 | MG | YA | 3210 | 1/1 | 0.96 | 0.11 | 35,35,35,35 | 0 |
| 56 | MG | YA | 3008 | 1/1 | 0.96 | 0.27 | 17,17,17,17 | 0 |
| 56 | MG | YA | 3009 | 1/1 | 0.96 | 0.45 | 27,27,27,27 | 0 |
| 56 | MG | YA | 3144 | 1/1 | 0.96 | 0.16 | 13,13,13,13 | 0 |
| 56 | MG | RA | 3041 | 1/1 | 0.96 | 0.17 | 5,5,5,5 | 0 |
| 56 | MG | YA | 3219 | 1/1 | 0.96 | 0.26 | 29,29,29,29 | 0 |
| 56 | MG | RA | 3044 | 1/1 | 0.96 | 0.29 | 21,21,21,21 | 0 |
| 56 | MG | QA | 1602 | 1/1 | 0.96 | 0.34 | 19,19,19,19 | 0 |
| 56 | MG | QA | 1604 | 1/1 | 0.96 | 0.10 | 33,33,33,33 | 0 |
| 56 | MG | YA | 3034 | 1/1 | 0.96 | 0.19 | 3,3,3,3 | 0 |
| 56 | MG | YA | 3225 | 1/1 | 0.96 | 0.16 | 32,32,32,32 | 0 |
| 56 | MG | RA | 3051 | 1/1 | 0.96 | 0.40 | 1,1,1,1 | 0 |
| 56 | MG | RA | 3052 | 1/1 | 0.96 | 0.42 | 24,24,24,24 | 0 |
| 56 | MG | RA | 3008 | 1/1 | 0.96 | 0.20 | 13,13,13,13 | 0 |
| 56 | MG | YA | 3060 | 1/1 | 0.96 | 0.23 | 13,13,13,13 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56 | MG | QA | 1624 | 1/1 | 0.96 | 0.34 | 24,24,24,24 | 0 |
| 56 | MG | RA | 3063 | 1/1 | 0.96 | 0.20 | 27,27,27,27 | 0 |
| 56 | MG | QA | 1612 | 1/1 | 0.96 | 0.07 | 37,37,37,37 | 0 |
| 56 | MG | QA | 1653 | 1/1 | 0.96 | 0.26 | 39,39,39,39 | 0 |
| 56 | MG | YA | 3163 | 1/1 | 0.96 | 0.20 | 40,40,40,40 | 0 |
| 56 | MG | RA | 3140 | 1/1 | 0.96 | 0.20 | 45,45,45,45 | 0 |
| 56 | MG | RA | 3016 | 1/1 | 0.96 | 0.26 | 2,2,2,2 | 0 |
| 56 | MG | QA | 1626 | 1/1 | 0.96 | 0.34 | 77,77,77,77 | 0 |
| 56 | MG | YA | 3074 | 1/1 | 0.96 | 0.17 | 28,28,28,28 | 0 |
| 56 | MG | RA | 3177 | 1/1 | 0.96 | 0.15 | 59,59,59,59 | 0 |
| 56 | MG | YA | 3083 | 1/1 | 0.96 | 0.42 | 21,21,21,21 | 0 |
| 56 | MG | RA | 3020 | 1/1 | 0.96 | 0.27 | 29,29,29,29 | 0 |
| 56 | MG | QA | 1616 | 1/1 | 0.96 | 0.09 | 42,42,42,42 | 0 |
| 56 | MG | RA | 3212 | 1/1 | 0.96 | 0.28 | 18,18,18,18 | 0 |
| 58 | ZN | QD | 301 | 1/1 | 0.96 | 0.19 | 59,59,59,59 | 0 |
| 56 | MG | YA | 3097 | 1/1 | 0.96 | 0.24 | 19,19,19,19 | 0 |
| 56 | MG | RA | 3002 | 1/1 | 0.97 | 0.24 | 8,8,8,8 | 0 |
| 56 | MG | YA | 3143 | 1/1 | 0.97 | 0.13 | 33,33,33,33 | 0 |
| 56 | MG | XA | 1610 | 1/1 | 0.97 | 0.17 | 37,37,37,37 | 0 |
| 56 | MG | RA | 3068 | 1/1 | 0.97 | 0.13 | 16,16,16,16 | 0 |
| 56 | MG | YA | 3146 | 1/1 | 0.97 | 0.11 | 50,50,50,50 | 0 |
| 56 | MG | RA | 3100 | 1/1 | 0.97 | 0.16 | 44,44,44,44 | 0 |
| 56 | MG | RA | 3138 | 1/1 | 0.97 | 0.17 | 21,21,21,21 | 0 |
| 56 | MG | YA | 3014 | 1/1 | 0.97 | 0.39 | 12,12,12,12 | 0 |
| 56 | MG | QA | 1608 | 1/1 | 0.97 | 0.18 | 27,27,27,27 | 0 |
| 56 | MG | RA | 3071 | 1/1 | 0.97 | 0.19 | 32,32,32,32 | 0 |
| 56 | MG | YA | 3019 | 1/1 | 0.97 | 0.39 | 21,21,21,21 | 0 |
| 56 | MG | YA | 3020 | 1/1 | 0.97 | 0.34 | 8,8,8,8 | 0 |
| 56 | MG | YA | 3026 | 1/1 | 0.97 | 0.40 | 9,9,9,9 | 0 |
| 56 | MG | YA | 3157 | 1/1 | 0.97 | 0.16 | 29,29,29,29 | 0 |
| 56 | MG | YA | 3029 | 1/1 | 0.97 | 0.35 | 17,17,17,17 | 0 |
| 56 | MG | YA | 3030 | 1/1 | 0.97 | 0.27 | 24,24,24,24 | 0 |
| 56 | MG | QA | 1642 | 1/1 | 0.97 | 0.09 | 49,49,49,49 | 0 |
| 56 | MG | RA | 3037 | 1/1 | 0.97 | 0.26 | 10,10,10,10 | 0 |
| 56 | MG | YA | 3035 | 1/1 | 0.97 | 0.20 | 10,10,10,10 | 0 |
| 56 | MG | RA | 3105 | 1/1 | 0.97 | 0.12 | 50,50,50,50 | 0 |
| 56 | MG | YA | 3040 | 1/1 | 0.97 | 0.12 | 1,1,1,1 | 0 |
| 56 | MG | YA | 3167 | 1/1 | 0.97 | 0.06 | 12,12,12,12 | 0 |
| 56 | MG | YA | 3041 | 1/1 | 0.97 | 0.28 | 6,6,6,6 | 0 |
| 56 | MG | XA | 1623 | 1/1 | 0.97 | 0.39 | 31,31,31,31 | 0 |
| 56 | MG | YA | 3047 | 1/1 | 0.97 | 0.26 | 6,6,6,6 | 0 |
| 56 | MG | YA | 3051 | 1/1 | 0.97 | 0.22 | 4,4,4,4 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56 | MG | YA | 3054 | 1/1 | 0.97 | 0.14 | 14,14,14,14 | 0 |
| 56 | MG | YA | 3055 | 1/1 | 0.97 | 0.22 | 16,16,16,16 | 0 |
| 56 | MG | RA | 3145 | 1/1 | 0.97 | 0.22 | 37,37,37,37 | 0 |
| 56 | MG | YA | 3057 | 1/1 | 0.97 | 0.49 | 22,22,22,22 | 0 |
| 56 | MG | YA | 3059 | 1/1 | 0.97 | 0.15 | 74,74,74,74 | 0 |
| 56 | MG | RA | 3074 | 1/1 | 0.97 | 0.32 | 8,8,8,8 | 0 |
| 56 | MG | QA | 1609 | 1/1 | 0.97 | 0.28 | 34,34,34,34 | 0 |
| 56 | MG | XA | 1629 | 1/1 | 0.97 | 0.13 | 49,49,49,49 | 0 |
| 56 | MG | YA | 3180 | 1/1 | 0.97 | 0.11 | 53,53,53,53 | 0 |
| 56 | MG | RA | 3076 | 1/1 | 0.97 | 0.40 | 22,22,22,22 | 0 |
| 56 | MG | RA | 3077 | 1/1 | 0.97 | 0.32 | 14,14,14,14 | 0 |
| 56 | MG | XA | 1633 | 1/1 | 0.97 | 0.23 | 32,32,32,32 | 0 |
| 56 | MG | YA | 3069 | 1/1 | 0.97 | 0.16 | 16,16,16,16 | 0 |
| 56 | MG | XA | 1634 | 1/1 | 0.97 | 0.29 | 28,28,28,28 | 0 |
| 56 | MG | QA | 1605 | 1/1 | 0.97 | 0.17 | 51,51,51,51 | 0 |
| 56 | MG | YA | 3072 | 1/1 | 0.97 | 0.14 | 10,10,10,10 | 0 |
| 56 | MG | RA | 3151 | 1/1 | 0.97 | 0.23 | 23,23,23,23 | 0 |
| 56 | MG | YA | 3189 | 1/1 | 0.97 | 0.11 | 31,31,31,31 | 0 |
| 56 | MG | YA | 3077 | 1/1 | 0.97 | 0.15 | 8,8,8,8 | 0 |
| 56 | MG | YA | 3080 | 1/1 | 0.97 | 0.30 | 3,3,3,3 | 0 |
| 56 | MG | YA | 3081 | 1/1 | 0.97 | 0.30 | 18,18,18,18 | 0 |
| 56 | MG | YA | 3193 | 1/1 | 0.97 | 0.14 | 39,39,39,39 | 0 |
| 56 | MG | QA | 1621 | 1/1 | 0.97 | 0.18 | 48,48,48,48 | 0 |
| 56 | MG | RA | 3081 | 1/1 | 0.97 | 0.47 | 28,28,28,28 | 0 |
| 56 | MG | XA | 1640 | 1/1 | 0.97 | 0.19 | 47,47,47,47 | 0 |
| 56 | MG | RA | 3155 | 1/1 | 0.97 | 0.21 | 12,12,12,12 | 0 |
| 56 | MG | RA | 3118 | 1/1 | 0.97 | 0.14 | 14,14,14,14 | 0 |
| 56 | MG | YA | 3090 | 1/1 | 0.97 | 0.39 | 11,11,11,11 | 0 |
| 56 | MG | YA | 3092 | 1/1 | 0.97 | 0.16 | 11,11,11,11 | 0 |
| 56 | MG | XA | 1643 | 1/1 | 0.97 | 0.17 | 47,47,47,47 | 0 |
| 56 | MG | RA | 3198 | 1/1 | 0.97 | 0.09 | 53,53,53,53 | 0 |
| 56 | MG | RA | 3042 | 1/1 | 0.97 | 0.20 | 11,11,11,11 | 0 |
| 56 | MG | YA | 3101 | 1/1 | 0.97 | 0.27 | 5,5,5,5 | 0 |
| 56 | MG | QA | 1647 | 1/1 | 0.97 | 0.10 | 41,41,41,41 | 0 |
| 56 | MG | RA | 3085 | 1/1 | 0.97 | 0.11 | 15,15,15,15 | 0 |
| 56 | MG | YA | 3106 | 1/1 | 0.97 | 0.29 | 32,32,32,32 | 0 |
| 56 | MG | QA | 1636 | 1/1 | 0.97 | 0.08 | 15,15,15,15 | 0 |
| 56 | MG | YA | 3213 | 1/1 | 0.97 | 0.13 | 41,41,41,41 | 0 |
| 56 | MG | YA | 3110 | 1/1 | 0.97 | 0.08 | 10,10,10,10 | 0 |
| 56 | MG | YA | 3112 | 1/1 | 0.97 | 0.11 | 41,41,41,41 | 0 |
| 56 | MG | YA | 3216 | 1/1 | 0.97 | 0.09 | 42,42,42,42 | 0 |
| 56 | MG | YA | 3218 | 1/1 | 0.97 | 0.11 | 19,19,19,19 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56 | MG | YA | 3113 | 1/1 | 0.97 | 0.27 | 21,21,21,21 | 0 |
| 56 | MG | XA | 1649 | 1/1 | 0.97 | 0.36 | 28,28,28,28 | 0 |
| 56 | MG | QV | 101 | 1/1 | 0.97 | 0.19 | 17,17,17,17 | 0 |
| 56 | MG | RA | 3204 | 1/1 | 0.97 | 0.12 | 30,30,30,30 | 0 |
| 56 | MG | YA | 3118 | 1/1 | 0.97 | 0.17 | 12,12,12,12 | 0 |
| 56 | MG | QA | 1606 | 1/1 | 0.97 | 0.16 | 7,7,7,7 | 0 |
| 56 | MG | QX | 101 | 1/1 | 0.97 | 0.10 | 24,24,24,24 | 0 |
| 56 | MG | QA | 1630 | 1/1 | 0.97 | 0.12 | 66,66,66,66 | 0 |
| 56 | MG | RA | 3093 | 1/1 | 0.97 | 0.08 | 24,24,24,24 | 0 |
| 56 | MG | RA | 3129 | 1/1 | 0.97 | 0.20 | 26,26,26,26 | 0 |
| 56 | MG | RA | 3021 | 1/1 | 0.97 | 0.42 | 27,27,27,27 | 0 |
| 56 | MG | RA | 3211 | 1/1 | 0.97 | 0.27 | 13,13,13,13 | 0 |
| 56 | MG | YA | 3233 | 1/1 | 0.97 | 0.38 | 44,44,44,44 | 0 |
| 56 | MG | RA | 3170 | 1/1 | 0.97 | 0.09 | 41,41,41,41 | 0 |
| 56 | MG | RA | 3060 | 1/1 | 0.97 | 0.22 | 25,25,25,25 | 0 |
| 56 | MG | RE | 301 | 1/1 | 0.97 | 0.12 | 22,22,22,22 | 0 |
| 56 | MG | YA | 3129 | 1/1 | 0.97 | 0.07 | 22,22,22,22 | 0 |
| 56 | MG | RA | 3172 | 1/1 | 0.97 | 0.21 | 29,29,29,29 | 0 |
| 56 | MG | RA | 3132 | 1/1 | 0.97 | 0.21 | 12,12,12,12 | 0 |
| 56 | MG | YA | 3132 | 1/1 | 0.97 | 0.11 | 13,13,13,13 | 0 |
| 56 | MG | QA | 1607 | 1/1 | 0.97 | 0.14 | 22,22,22,22 | 0 |
| 56 | MG | R5 | 101 | 1/1 | 0.97 | 0.14 | 27,27,27,27 | 0 |
| 56 | MG | YA | 3136 | 1/1 | 0.97 | 0.15 | 4,4,4,4 | 0 |
| 56 | MG | YA | 3138 | 1/1 | 0.97 | 0.16 | 15,15,15,15 | 0 |
| 56 | MG | XA | 1602 | 1/1 | 0.97 | 0.15 | 15,15,15,15 | 0 |
| 56 | MG | YA | 3140 | 1/1 | 0.97 | 0.29 | 2,2,2,2 | 0 |
| 56 | MG | RA | 3026 | 1/1 | 0.97 | 0.22 | 6,6,6,6 | 0 |
| 56 | MG | RA | 3045 | 1/1 | 0.98 | 0.29 | 12,12,12,12 | 0 |
| 56 | MG | YA | 3064 | 1/1 | 0.98 | 0.18 | 23,23,23,23 | 0 |
| 56 | MG | RA | 3046 | 1/1 | 0.98 | 0.35 | 31,31,31,31 | 0 |
| 56 | MG | RA | 3142 | 1/1 | 0.98 | 0.11 | 15,15,15,15 | 0 |
| 56 | MG | RA | 3010 | 1/1 | 0.98 | 0.36 | 4,4,4,4 | 0 |
| 56 | MG | YA | 3161 | 1/1 | 0.98 | 0.09 | 30,30,30,30 | 0 |
| 56 | MG | YA | 3068 | 1/1 | 0.98 | 0.31 | 12,12,12,12 | 0 |
| 56 | MG | XA | 1601 | 1/1 | 0.98 | 0.12 | 15,15,15,15 | 0 |
| 56 | MG | RA | 3110 | 1/1 | 0.98 | 0.12 | 51,51,51,51 | 0 |
| 56 | MG | XA | 1603 | 1/1 | 0.98 | 0.07 | 23,23,23,23 | 0 |
| 56 | MG | YA | 3166 | 1/1 | 0.98 | 0.19 | 51,51,51,51 | 0 |
| 56 | MG | RA | 3182 | 1/1 | 0.98 | 0.34 | 25,25,25,25 | 0 |
| 56 | MG | YA | 3073 | 1/1 | 0.98 | 0.25 | 24,24,24,24 | 0 |
| 56 | MG | XA | 1606 | 1/1 | 0.98 | 0.25 | 17,17,17,17 | 0 |
| 56 | MG | YA | 3075 | 1/1 | 0.98 | 0.10 | 14,14,14,14 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56 | MG | YA | 3076 | 1/1 | 0.98 | 0.37 | 7,7,7,7 | 0 |
| 56 | MG | XA | 1608 | 1/1 | 0.98 | 0.16 | 7,7,7,7 | 0 |
| 56 | MG | YA | 3078 | 1/1 | 0.98 | 0.39 | 25,25,25,25 | 0 |
| 56 | MG | YA | 3079 | 1/1 | 0.98 | 0.26 | 18,18,18,18 | 0 |
| 56 | MG | RA | 3079 | 1/1 | 0.98 | 0.20 | 32,32,32,32 | 0 |
| 56 | MG | RA | 3112 | 1/1 | 0.98 | 0.28 | 50,50,50,50 | 0 |
| 56 | MG | XA | 1611 | 1/1 | 0.98 | 0.17 | 29,29,29,29 | 0 |
| 56 | MG | RA | 3113 | 1/1 | 0.98 | 0.27 | 24,24,24,24 | 0 |
| 56 | MG | QA | 1651 | 1/1 | 0.98 | 0.21 | 70,70,70,70 | 0 |
| 56 | MG | RA | 3028 | 1/1 | 0.98 | 0.19 | 12,12,12,12 | 0 |
| 56 | MG | YA | 3086 | 1/1 | 0.98 | 0.14 | 3,3,3,3 | 0 |
| 56 | MG | YA | 3087 | 1/1 | 0.98 | 0.24 | 7,7,7,7 | 0 |
| 56 | MG | XV | 101 | 1/1 | 0.98 | 0.21 | 14,14,14,14 | 0 |
| 56 | MG | RA | 3029 | 1/1 | 0.98 | 0.15 | 2,2,2,2 | 0 |
| 56 | MG | YA | 3091 | 1/1 | 0.98 | 0.13 | 23,23,23,23 | 0 |
| 56 | MG | YA | 3001 | 1/1 | 0.98 | 0.43 | 13,13,13,13 | 0 |
| 56 | MG | YA | 3094 | 1/1 | 0.98 | 0.29 | 10,10,10,10 | 0 |
| 56 | MG | RA | 3030 | 1/1 | 0.98 | 0.28 | 15,15,15,15 | 0 |
| 56 | MG | RA | 3084 | 1/1 | 0.98 | 0.30 | 17,17,17,17 | 0 |
| 56 | MG | YA | 3099 | 1/1 | 0.98 | 0.34 | 11,11,11,11 | 0 |
| 56 | MG | RA | 3031 | 1/1 | 0.98 | 0.29 | 26,26,26,26 | 0 |
| 56 | MG | YA | 3006 | 1/1 | 0.98 | 0.24 | 0,0,0,0 | 0 |
| 56 | MG | RA | 3154 | 1/1 | 0.98 | 0.13 | 12,12,12,12 | 0 |
| 56 | MG | YA | 3103 | 1/1 | 0.98 | 0.08 | 12,12,12,12 | 0 |
| 56 | MG | YA | 3195 | 1/1 | 0.98 | 0.09 | 55,55,55,55 | 0 |
| 56 | MG | XA | 1622 | 1/1 | 0.98 | 0.07 | 40,40,40,40 | 0 |
| 56 | MG | YA | 3010 | 1/1 | 0.98 | 0.15 | 3,3,3,3 | 0 |
| 56 | MG | RA | 3086 | 1/1 | 0.98 | 0.22 | 33,33,33,33 | 0 |
| 56 | MG | YA | 3109 | 1/1 | 0.98 | 0.25 | 25,25,25,25 | 0 |
| 56 | MG | RA | 3194 | 1/1 | 0.98 | 0.14 | 14,14,14,14 | 0 |
| 56 | MG | YA | 3015 | 1/1 | 0.98 | 0.43 | 10,10,10,10 | 0 |
| 56 | MG | RA | 3058 | 1/1 | 0.98 | 0.20 | 13,13,13,13 | 0 |
| 56 | MG | YA | 3017 | 1/1 | 0.98 | 0.11 | 16,16,16,16 | 0 |
| 56 | MG | QM | 201 | 1/1 | 0.98 | 0.15 | 34,34,34,34 | 0 |
| 56 | MG | YA | 3206 | 1/1 | 0.98 | 0.10 | 24,24,24,24 | 0 |
| 56 | MG | XA | 1628 | 1/1 | 0.98 | 0.17 | 24,24,24,24 | 0 |
| 56 | MG | RA | 3089 | 1/1 | 0.98 | 0.28 | 26,26,26,26 | 0 |
| 56 | MG | YA | 3209 | 1/1 | 0.98 | 0.18 | 41,41,41,41 | 0 |
| 56 | MG | YA | 3021 | 1/1 | 0.98 | 0.32 | 12,12,12,12 | 0 |
| 56 | MG | YA | 3022 | 1/1 | 0.98 | 0.21 | 6,6,6,6 | 0 |
| 56 | MG | YA | 3024 | 1/1 | 0.98 | 0.19 | 10,10,10,10 | 0 |
| 56 | MG | YA | 3025 | 1/1 | 0.98 | 0.18 | 6,6,6,6 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56 | MG | XA | 1630 | 1/1 | 0.98 | 0.14 | 39,39,39,39 | 0 |
| 56 | MG | YA | 3027 | 1/1 | 0.98 | 0.11 | 5,5,5,5 | 0 |
| 56 | MG | RA | 3061 | 1/1 | 0.98 | 0.21 | 28,28,28,28 | 0 |
| 56 | MG | YA | 3217 | 1/1 | 0.98 | 0.09 | 35,35,35,35 | 0 |
| 56 | MG | RA | 3062 | 1/1 | 0.98 | 0.38 | 21,21,21,21 | 0 |
| 56 | MG | YA | 3032 | 1/1 | 0.98 | 0.21 | 9,9,9,9 | 0 |
| 56 | MG | RA | 3126 | 1/1 | 0.98 | 0.24 | 27,27,27,27 | 0 |
| 56 | MG | QA | 1628 | 1/1 | 0.98 | 0.28 | 14,14,14,14 | 0 |
| 56 | MG | YA | 3222 | 1/1 | 0.98 | 0.05 | 9,9,9,9 | 0 |
| 56 | MG | RA | 3064 | 1/1 | 0.98 | 0.40 | 25,25,25,25 | 0 |
| 56 | MG | YA | 3036 | 1/1 | 0.98 | 0.23 | 3,3,3,3 | 0 |
| 56 | MG | YA | 3038 | 1/1 | 0.98 | 0.13 | 12,12,12,12 | 0 |
| 56 | MG | RA | 3165 | 1/1 | 0.98 | 0.09 | 5,5,5,5 | 0 |
| 56 | MG | RA | 3035 | 1/1 | 0.98 | 0.12 | 21,21,21,21 | 0 |
| 56 | MG | QA | 1658 | 1/1 | 0.98 | 0.08 | 68,68,68,68 | 0 |
| 56 | MG | YA | 3229 | 1/1 | 0.98 | 0.10 | 52,52,52,52 | 0 |
| 56 | MG | YA | 3137 | 1/1 | 0.98 | 0.08 | 15,15,15,15 | 0 |
| 56 | MG | YA | 3043 | 1/1 | 0.98 | 0.39 | 9,9,9,9 | 0 |
| 56 | MG | YA | 3044 | 1/1 | 0.98 | 0.22 | 9,9,9,9 | 0 |
| 56 | MG | RA | 3067 | 1/1 | 0.98 | 0.06 | 7,7,7,7 | 0 |
| 56 | MG | RA | 3019 | 1/1 | 0.98 | 0.16 | 10,10,10,10 | 0 |
| 56 | MG | YA | 3048 | 1/1 | 0.98 | 0.16 | 4,4,4,4 | 0 |
| 56 | MG | YA | 3237 | 1/1 | 0.98 | 0.08 | 15,15,15,15 | 0 |
| 56 | MG | YA | 3238 | 1/1 | 0.98 | 0.26 | 34,34,34,34 | 0 |
| 56 | MG | YA | 3049 | 1/1 | 0.98 | 0.27 | 15,15,15,15 | 0 |
| 56 | MG | YA | 3050 | 1/1 | 0.98 | 0.18 | 2,2,2,2 | 0 |
| 56 | MG | RA | 3039 | 1/1 | 0.98 | 0.26 | 18,18,18,18 | 0 |
| 56 | MG | YA | 3052 | 1/1 | 0.98 | 0.23 | 17,17,17,17 | 0 |
| 56 | MG | YB | 201 | 1/1 | 0.98 | 0.15 | 21,21,21,21 | 0 |
| 56 | MG | RA | 3070 | 1/1 | 0.98 | 0.31 | 37,37,37,37 | 0 |
| 56 | MG | QA | 1641 | 1/1 | 0.98 | 0.17 | 25,25,25,25 | 0 |
| 56 | MG | QA | 1654 | 1/1 | 0.98 | 0.15 | 14,14,14,14 | 0 |
| 56 | MG | RA | 3022 | 1/1 | 0.98 | 0.33 | 3,3,3,3 | 0 |
| 56 | MG | Y5 | 101 | 1/1 | 0.98 | 0.15 | 25,25,25,25 | 0 |
| 56 | MG | RB | 201 | 1/1 | 0.98 | 0.05 | 13,13,13,13 | 0 |
| 56 | MG | YA | 3153 | 1/1 | 0.98 | 0.22 | 26,26,26,26 | 0 |
| 56 | MG | RA | 3043 | 1/1 | 0.98 | 0.11 | 30,30,30,30 | 0 |
| 56 | MG | QA | 1646 | 1/1 | 0.98 | 0.25 | 14,14,14,14 | 0 |
| 58 | ZN | XD | 301 | 1/1 | 0.98 | 0.23 | 49,49,49,49 | 0 |
| 58 | ZN | XN | 101 | 1/1 | 0.98 | 0.12 | 107,107,107,107 | 0 |
| 56 | MG | YA | 3108 | 1/1 | 0.99 | 0.11 | 5,5,5,5 | 0 |
| 56 | MG | RA | 3014 | 1/1 | 0.99 | 0.24 | 10,10,10,10 | 0 |

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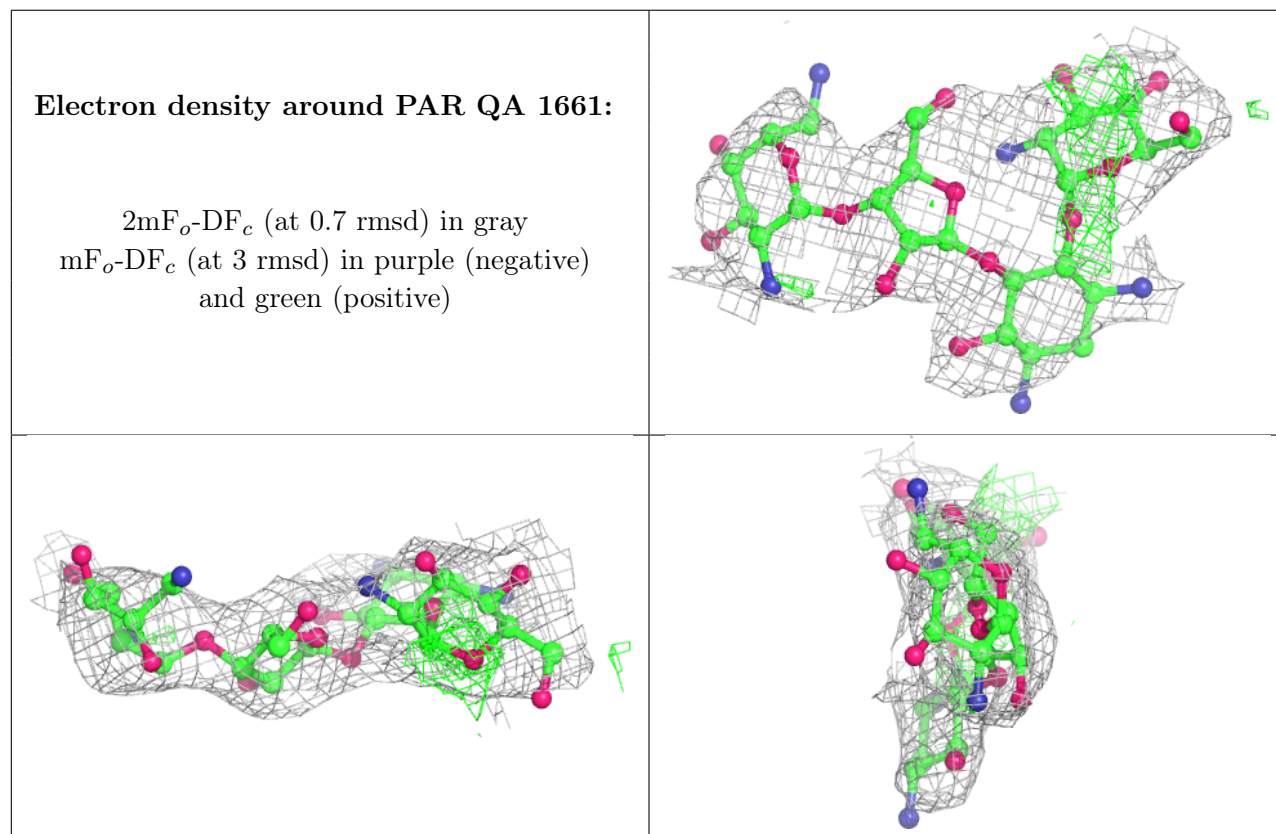
| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56 | MG | YA | 3028 | 1/1 | 0.99 | 0.18 | 23,23,23,23 | 0 |
| 56 | MG | YA | 3111 | 1/1 | 0.99 | 0.23 | 30,30,30,30 | 0 |
| 56 | MG | RA | 3006 | 1/1 | 0.99 | 0.17 | 3,3,3,3 | 0 |
| 56 | MG | XA | 1613 | 1/1 | 0.99 | 0.13 | 45,45,45,45 | 0 |
| 56 | MG | YA | 3114 | 1/1 | 0.99 | 0.24 | 6,6,6,6 | 0 |
| 56 | MG | YA | 3031 | 1/1 | 0.99 | 0.35 | 6,6,6,6 | 0 |
| 56 | MG | RA | 3059 | 1/1 | 0.99 | 0.27 | 21,21,21,21 | 0 |
| 56 | MG | RA | 3032 | 1/1 | 0.99 | 0.16 | 17,17,17,17 | 0 |
| 56 | MG | XA | 1616 | 1/1 | 0.99 | 0.11 | 20,20,20,20 | 0 |
| 56 | MG | QA | 1603 | 1/1 | 0.99 | 0.05 | 28,28,28,28 | 0 |
| 56 | MG | RA | 3024 | 1/1 | 0.99 | 0.45 | 4,4,4,4 | 0 |
| 56 | MG | YA | 3037 | 1/1 | 0.99 | 0.20 | 3,3,3,3 | 0 |
| 56 | MG | RA | 3025 | 1/1 | 0.99 | 0.14 | 9,9,9,9 | 0 |
| 56 | MG | RA | 3036 | 1/1 | 0.99 | 0.33 | 10,10,10,10 | 0 |
| 56 | MG | YA | 3007 | 1/1 | 0.99 | 0.17 | 6,6,6,6 | 0 |
| 56 | MG | RA | 3156 | 1/1 | 0.99 | 0.16 | 22,22,22,22 | 0 |
| 56 | MG | YA | 3042 | 1/1 | 0.99 | 0.31 | 28,28,28,28 | 0 |
| 56 | MG | RA | 3017 | 1/1 | 0.99 | 0.12 | 13,13,13,13 | 0 |
| 56 | MG | RA | 3049 | 1/1 | 0.99 | 0.15 | 10,10,10,10 | 0 |
| 56 | MG | YA | 3011 | 1/1 | 0.99 | 0.26 | 13,13,13,13 | 0 |
| 56 | MG | YA | 3046 | 1/1 | 0.99 | 0.13 | 4,4,4,4 | 0 |
| 56 | MG | XA | 1624 | 1/1 | 0.99 | 0.13 | 35,35,35,35 | 0 |
| 56 | MG | YA | 3013 | 1/1 | 0.99 | 0.31 | 3,3,3,3 | 0 |
| 56 | MG | RA | 3050 | 1/1 | 0.99 | 0.14 | 0,0,0,0 | 0 |
| 56 | MG | RA | 3011 | 1/1 | 0.99 | 0.17 | 30,30,30,30 | 0 |
| 56 | MG | YA | 3135 | 1/1 | 0.99 | 0.10 | 33,33,33,33 | 0 |
| 56 | MG | YA | 3089 | 1/1 | 0.99 | 0.23 | 2,2,2,2 | 0 |
| 56 | MG | QA | 1648 | 1/1 | 0.99 | 0.03 | 100,100,100,100 | 0 |
| 56 | MG | YA | 3235 | 1/1 | 0.99 | 0.13 | 26,26,26,26 | 0 |
| 56 | MG | RA | 3053 | 1/1 | 0.99 | 0.17 | 5,5,5,5 | 0 |
| 56 | MG | YA | 3053 | 1/1 | 0.99 | 0.15 | 4,4,4,4 | 0 |
| 56 | MG | YA | 3093 | 1/1 | 0.99 | 0.14 | 18,18,18,18 | 0 |
| 56 | MG | XA | 1604 | 1/1 | 0.99 | 0.07 | 31,31,31,31 | 0 |
| 56 | MG | YA | 3095 | 1/1 | 0.99 | 0.29 | 5,5,5,5 | 0 |
| 56 | MG | YA | 3096 | 1/1 | 0.99 | 0.22 | 15,15,15,15 | 0 |
| 56 | MG | RA | 3054 | 1/1 | 0.99 | 0.23 | 5,5,5,5 | 0 |
| 56 | MG | RA | 3055 | 1/1 | 0.99 | 0.15 | 12,12,12,12 | 0 |
| 56 | MG | XA | 1607 | 1/1 | 0.99 | 0.07 | 5,5,5,5 | 0 |
| 56 | MG | YA | 3147 | 1/1 | 0.99 | 0.11 | 11,11,11,11 | 0 |
| 56 | MG | YA | 3058 | 1/1 | 0.99 | 0.30 | 16,16,16,16 | 0 |
| 56 | MG | RA | 3107 | 1/1 | 0.99 | 0.28 | 21,21,21,21 | 0 |
| 56 | MG | YA | 3023 | 1/1 | 0.99 | 0.26 | 4,4,4,4 | 0 |

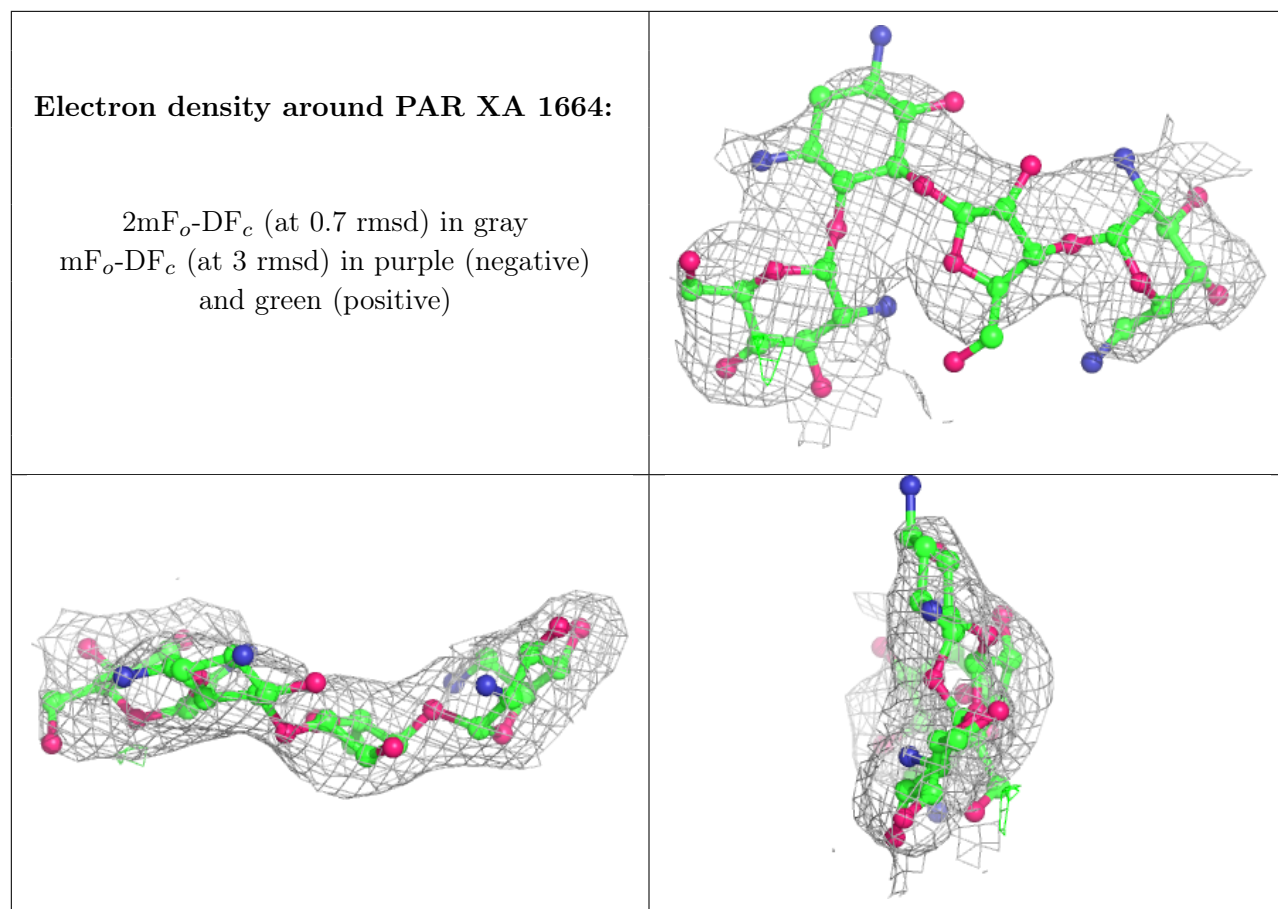
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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56 | MG | RA | 3013 | 1/1 | 0.99 | 0.22 | 10,10,10,10 | 0 |
| 56 | MG | YA | 3104 | 1/1 | 0.99 | 0.24 | 6,6,6,6 | 0 |
| 56 | MG | YA | 3062 | 1/1 | 0.99 | 0.11 | 6,6,6,6 | 0 |
| 56 | MG | XA | 1635 | 1/1 | 0.99 | 0.07 | 36,36,36,36 | 0 |
| 56 | MG | RA | 3109 | 1/1 | 0.99 | 0.07 | 26,26,26,26 | 0 |
| 56 | MG | YA | 3204 | 1/1 | 0.99 | 0.16 | 43,43,43,43 | 0 |
| 56 | MG | YA | 3002 | 1/1 | 1.00 | 0.38 | 15,15,15,15 | 0 |

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.





6.5 Other polymers [i](#)

There are no such residues in this entry.