



Full wwPDB X-ray Structure Validation Report ⓘ

Jun 24, 2024 – 04:18 PM EDT

PDB ID : 5WNQ
Title : Crystal Structure of 30S ribosomal subunit from *Thermus thermophilus*
Authors : DeMirci, H.
Deposited on : 2017-08-01
Resolution : 3.50 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 : 2.37.1
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) : 2.37.1

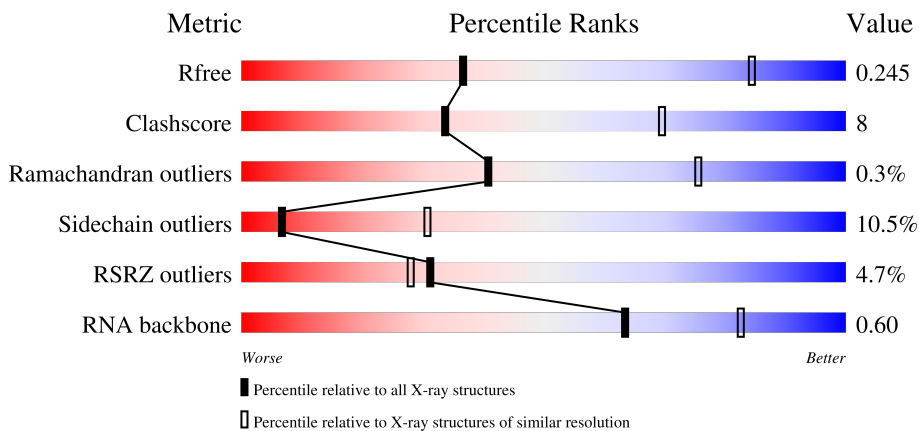
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.50 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 | 1659 (3.60-3.40) |
| Clashscore | 141614 | 1036 (3.58-3.42) |
| Ramachandran outliers | 138981 | 1005 (3.58-3.42) |
| Sidechain outliers | 138945 | 1006 (3.58-3.42) |
| RSRZ outliers | 127900 | 1559 (3.60-3.40) |
| RNA backbone | 3102 | 1002 (4.00-3.00) |

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 | A | 1522 | <div style="display: flex; align-items: center;"> <div style="width: 2%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 57%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 32%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 10%; height: 10px; background-color: orange; margin-right: 5px;"></div> <div style="width: 1%; height: 10px; background-color: grey;"></div> </div> <p style="text-align: center; margin-top: 5px;">2% 57% 32% 10% ..</p> |
| 2 | B | 234 | <div style="display: flex; align-items: center;"> <div style="width: 3%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 66%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 29%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 2%; height: 10px; background-color: orange;"></div> </div> <p style="text-align: center; margin-top: 5px;">3% 66% 29% .</p> |
| 3 | C | 206 | <div style="display: flex; align-items: center;"> <div style="width: 9%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 63%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 33%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 5%; height: 10px; background-color: orange;"></div> </div> <p style="text-align: center; margin-top: 5px;">9% 63% 33% .</p> |
| 4 | D | 208 | <div style="display: flex; align-items: center;"> <div style="width: 6%; height: 10px; background-color: red; margin-right: 5px;"></div> <div style="width: 69%; height: 10px; background-color: green; margin-right: 5px;"></div> <div style="width: 27%; height: 10px; background-color: yellow; margin-right: 5px;"></div> <div style="width: 8%; height: 10px; background-color: orange;"></div> </div> <p style="text-align: center; margin-top: 5px;">6% 69% 27% .</p> |

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| Mol | Chain | Length | Quality of chain | |
|-----|-------|--------|------------------|-----|
| 5 | E | 150 | 74% | 25% |
| 6 | F | 101 | 77% | 21% |
| 7 | G | 155 | 81% | 17% |
| 8 | H | 138 | 78% | 20% |
| 9 | I | 127 | 62% | 35% |
| 10 | J | 98 | 59% | 34% |
| 11 | K | 116 | 61% | 36% |
| 12 | L | 124 | 68% | 28% |
| 13 | M | 118 | 55% | 40% |
| 14 | N | 60 | 58% | 35% |
| 15 | O | 87 | 75% | 20% |
| 16 | P | 83 | 76% | 20% |
| 17 | Q | 99 | 80% | 19% |
| 18 | R | 70 | 79% | 19% |
| 19 | S | 80 | 71% | 28% |
| 20 | T | 99 | 66% | 28% |
| 21 | U | 24 | 75% | 25% |

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 |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 1 | PSU | A | 1540 | - | - | - | X |
| 1 | PSU | A | 1541 | - | - | - | X |
| 22 | MG | A | 1601 | - | - | - | X |
| 22 | MG | A | 1623 | - | - | - | X |
| 22 | MG | A | 1624 | - | - | - | X |
| 22 | MG | A | 1631 | - | - | - | X |
| 22 | MG | A | 1633 | - | - | - | X |
| 22 | MG | A | 1666 | - | - | - | X |

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| Mol | Type | Chain | Res | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 22 | MG | A | 1668 | - | - | - | X |
| 22 | MG | A | 1684 | - | - | - | X |
| 22 | MG | A | 1690 | - | - | - | X |
| 22 | MG | A | 1692 | - | - | - | X |
| 22 | MG | A | 1708 | - | - | - | X |
| 22 | MG | A | 1715 | - | - | - | X |
| 22 | MG | A | 1724 | - | - | - | X |
| 22 | MG | A | 1725 | - | - | - | X |
| 22 | MG | A | 1730 | - | - | - | X |
| 22 | MG | A | 1735 | - | - | - | X |
| 22 | MG | A | 1738 | - | - | - | X |
| 22 | MG | A | 1742 | - | - | - | X |
| 22 | MG | A | 1743 | - | - | - | X |
| 22 | MG | A | 1755 | - | - | - | X |
| 22 | MG | A | 1757 | - | - | - | X |
| 22 | MG | A | 1768 | - | - | - | X |
| 22 | MG | A | 1775 | - | - | - | X |
| 22 | MG | A | 1780 | - | - | - | X |
| 22 | MG | A | 1783 | - | - | - | X |
| 22 | MG | A | 1786 | - | - | - | X |
| 22 | MG | A | 1787 | - | - | - | X |
| 22 | MG | A | 1797 | - | - | - | X |
| 22 | MG | A | 1801 | - | - | - | X |
| 22 | MG | A | 1803 | - | - | - | X |
| 22 | MG | A | 1815 | - | - | - | X |
| 22 | MG | A | 1818 | - | - | - | X |
| 22 | MG | A | 1826 | - | - | - | X |
| 22 | MG | A | 1835 | - | - | - | X |
| 22 | MG | D | 304 | - | - | - | X |
| 22 | MG | D | 305 | - | - | - | X |
| 22 | MG | P | 101 | - | - | - | X |

2 Entry composition [i](#)

There are 24 unique types of molecules in this entry. The entry contains 52227 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 Ribosomal RNA rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|------|-------|------|---------|---------|-------|
| | | | Total | C | N | O | P | | | |
| 1 | A | 1512 | 32644 | 14540 | 6039 | 10547 | 1518 | 0 | 6 | 0 |

There are 2 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|-------------|
| A | 1534 | C | A | conflict | GB 55771382 |
| A | 1535 | A | C | conflict | GB 55771382 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 2 | B | 234 | 1900 | 1213 | 341 | 341 | 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 | C | 206 | 1612 | 1016 | 314 | 281 | 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 | D | 208 | 1703 | 1066 | 339 | 291 | 7 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 5 | E | 150 | 1146 | 724 | 217 | 201 | 4 | 0 | 0 | 0 |

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

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

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

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

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

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

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

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

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 10 | J | 98 | 792 | 498 | 156 | 137 | 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 | K | 116 | 864 | 537 | 164 | 160 | 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 | L | 124 | 972 | 612 | 195 | 163 | 2 | 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 | M | 118 | 937 | 579 | 193 | 163 | 2 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 14 | N | 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 | O | 87 | 729 | 457 | 146 | 124 | 2 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 16 | P | 83 | 700 | 443 | 139 | 117 | 1 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 17 | Q | 99 | 823 | 528 | 152 | 141 | 2 | 0 | 0 | 0 |

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

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

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 19 | S | 80 | 647 | 414 | 119 | 112 | 2 | 0 | 0 | 0 |

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

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

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

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| | | | Total | C | N | O | | | |
| 21 | U | 24 | 208 | 128 | 50 | 30 | 0 | 0 | 0 |

- Molecule 22 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

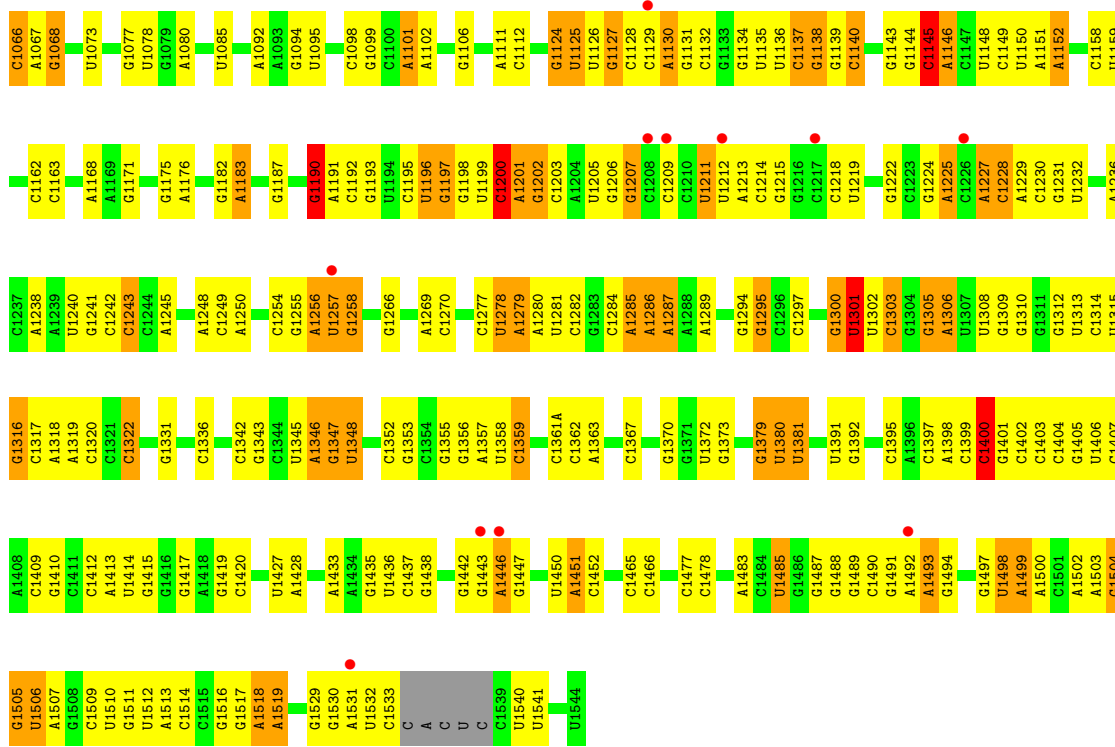
| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 22 | A | 237 | Total | Mg | 0 | 0 |
| | | | 237 | 237 | | |
| 22 | B | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 22 | C | 3 | Total | Mg | 0 | 0 |
| | | | 3 | 3 | | |
| 22 | D | 4 | Total | Mg | 0 | 0 |
| | | | 4 | 4 | | |
| 22 | E | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 22 | F | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 22 | I | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 22 | P | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 22 | Q | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 22 | S | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |

- Molecule 23 is ZINC ION (three-letter code: ZN) (formula: Zn).

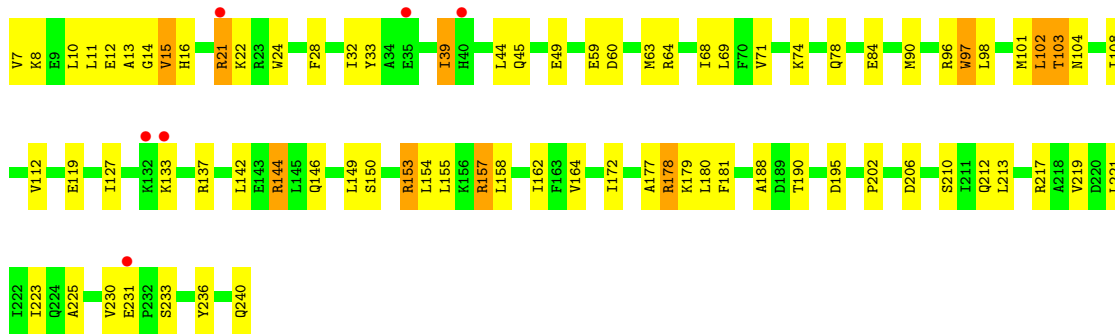
| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---------|---------|
| 23 | D | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 23 | N | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |

- Molecule 24 is water.

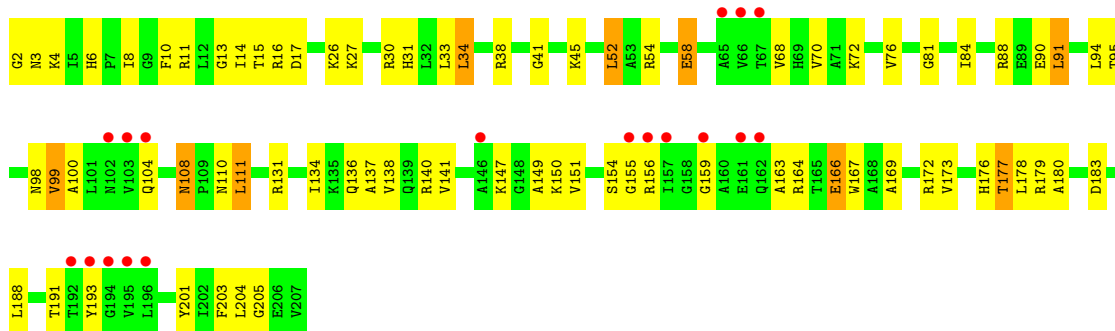
| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|-----|-------|----------|--------------------|---------|---------|
| 24 | A | 225 | Total O 225 225 | 0 | 0 |
| 24 | D | 2 | Total O 2 2 | 0 | 0 |
| 24 | E | 4 | Total O 4 4 | 0 | 0 |
| 24 | L | 3 | Total O 3 3 | 0 | 0 |
| 24 | N | 1 | Total O 1 1 | 0 | 0 |
| 24 | Q | 2 | Total O 2 2 | 0 | 0 |
| 24 | T | 2 | Total O 2 2 | 0 | 0 |



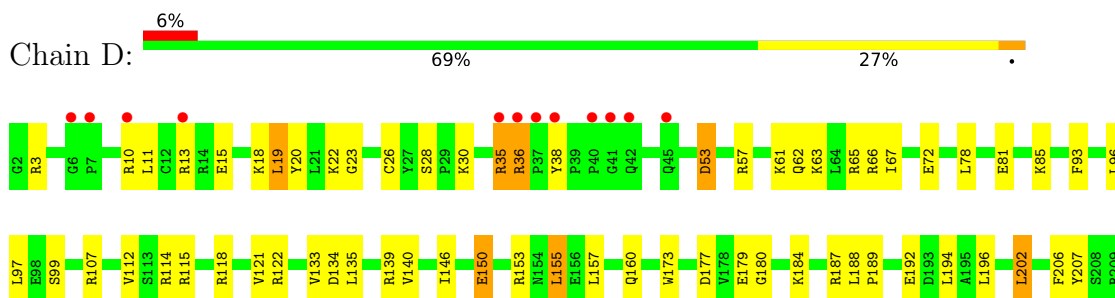
• Molecule 2: 30S ribosomal protein S2



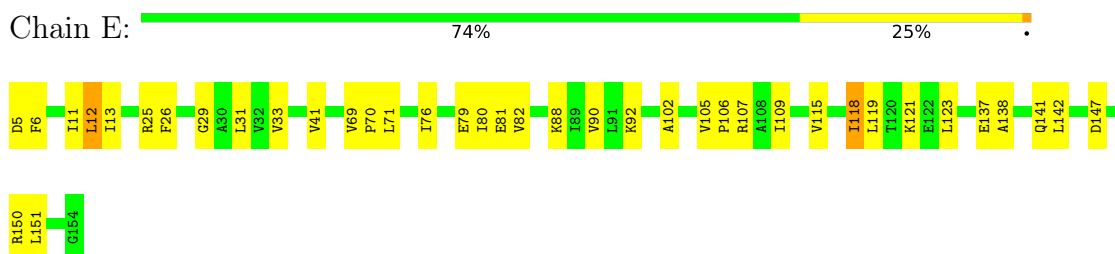
• Molecule 3: 30S ribosomal protein S3



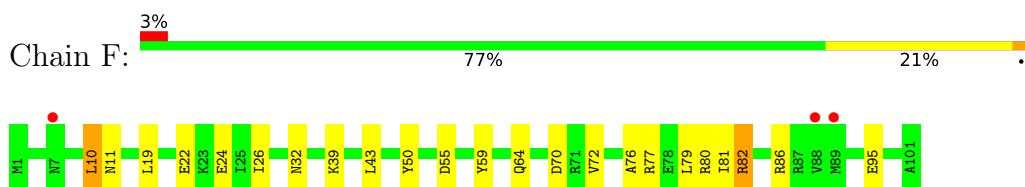
- Molecule 4: 30S ribosomal protein S4



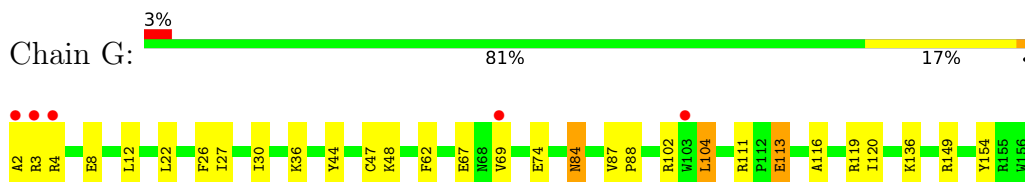
- Molecule 5: 30S ribosomal protein S5



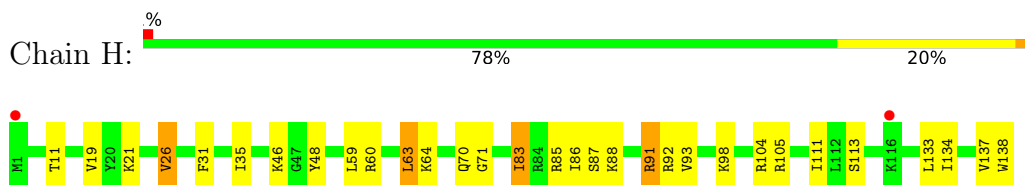
- Molecule 6: 30S ribosomal protein S6



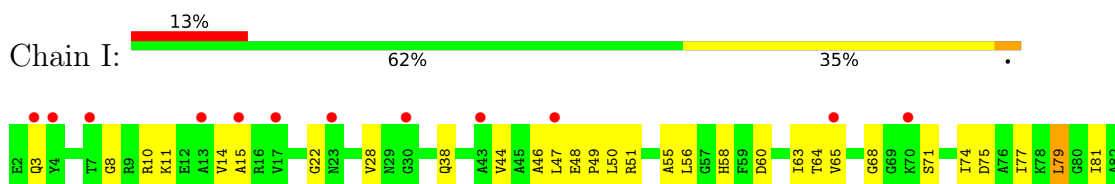
- Molecule 7: 30S ribosomal protein S7



- Molecule 8: 30S ribosomal protein S8



- Molecule 9: 30S ribosomal protein S9

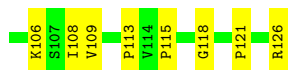
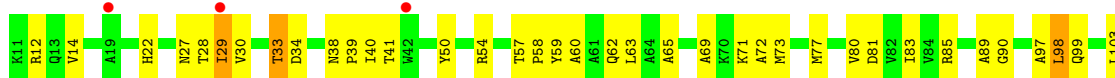




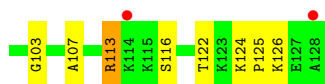
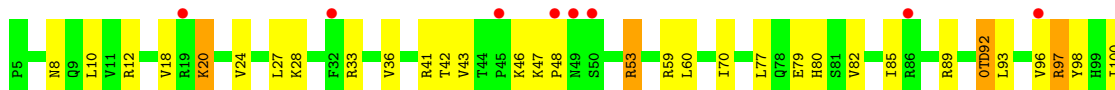
- Molecule 10: 30S ribosomal protein S10



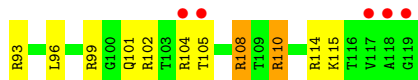
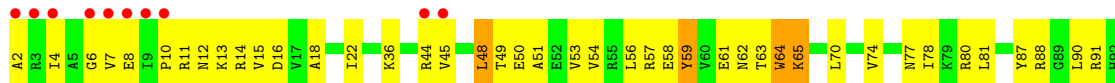
- Molecule 11: 30S ribosomal protein S11



- Molecule 12: 30S ribosomal protein S12



- Molecule 13: 30S ribosomal protein S13



- Molecule 14: 30S ribosomal protein S14 type Z





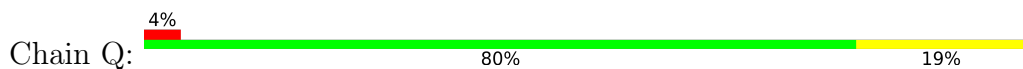
- Molecule 15: 30S ribosomal protein S15



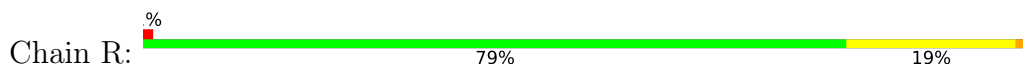
- Molecule 16: 30S ribosomal protein S16



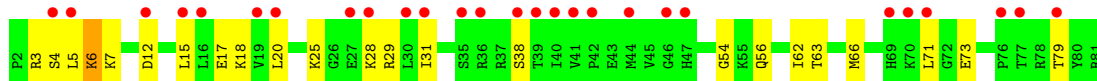
- Molecule 17: 30S ribosomal protein S17



- Molecule 18: 30S ribosomal protein S18



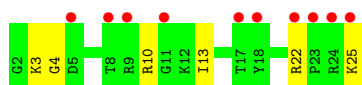
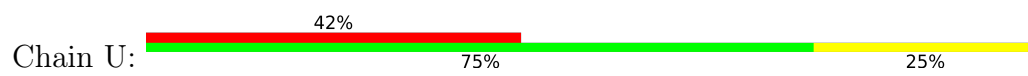
- Molecule 19: 30S ribosomal protein S19



- Molecule 20: 30S ribosomal protein S20



- Molecule 21: 30S ribosomal protein Thx



4 Data and refinement statistics

| Property | Value | Source |
|-------------------------------------------------------------------------|-------------------------------------------------------------|------------------|
| Space group | P 41 21 2 | Depositor |
| Cell constants a, b, c, α , β , γ | 400.00Å 400.00Å 173.00Å 90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 29.98 – 3.50 39.78 – 2.92 | Depositor EDS |
| % Data completeness (in resolution range) | 97.9 (29.98-3.50) 68.0 (39.78-2.92) | Depositor EDS |
| R_{merge} | 0.55 | Depositor |
| R_{sym} | (Not available) | Depositor |
| $\langle I/\sigma(I) \rangle$ ¹ | 0.01 (at 2.90Å) | Xtrriage |
| Refinement program | PHENIX | Depositor |
| R, R_{free} | 0.199 , 0.245 0.202 , 0.245 | Depositor DCC |
| R_{free} test set | 2000 reflections (0.68%) | wwPDB-VP |
| Wilson B-factor (Å ²) | 98.0 | Xtrriage |
| Anisotropy | 0.298 | Xtrriage |
| Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²) | 0.24 , 134.2 | EDS |
| L-test for twinning ² | $\langle L \rangle = 0.47$, $\langle L^2 \rangle = 0.30$ | Xtrriage |
| Estimated twinning fraction | No twinning to report. | Xtrriage |
| F_o, F_c correlation | 0.94 | EDS |
| Total number of atoms | 52227 | wwPDB-VP |
| Average B, all atoms (Å ²) | 210.0 | wwPDB-VP |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.34% 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: M2G, PSU, ZN, 7MG, MA6, 5MC, UR3, 0TD, 4OC, 2MG, MG

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 | A | 0.22 | 0/36139 | 0.80 | 26/56396 (0.0%) |
| 2 | B | 0.26 | 0/1935 | 0.43 | 0/2609 |
| 3 | C | 0.26 | 0/1636 | 0.47 | 0/2205 |
| 4 | D | 0.25 | 0/1733 | 0.41 | 0/2318 |
| 5 | E | 0.26 | 0/1162 | 0.46 | 0/1564 |
| 6 | F | 0.24 | 0/856 | 0.45 | 0/1154 |
| 7 | G | 0.24 | 0/1276 | 0.40 | 0/1709 |
| 8 | H | 0.26 | 0/1136 | 0.47 | 0/1527 |
| 9 | I | 0.26 | 0/1029 | 0.45 | 0/1379 |
| 10 | J | 0.26 | 0/805 | 0.52 | 0/1082 |
| 11 | K | 0.27 | 0/879 | 0.48 | 0/1187 |
| 12 | L | 0.25 | 0/977 | 0.51 | 0/1306 |
| 13 | M | 0.25 | 0/947 | 0.45 | 0/1270 |
| 14 | N | 0.26 | 0/501 | 0.46 | 0/664 |
| 15 | O | 0.25 | 0/740 | 0.39 | 0/987 |
| 16 | P | 0.25 | 0/716 | 0.44 | 0/963 |
| 17 | Q | 0.26 | 0/836 | 0.49 | 0/1117 |
| 18 | R | 0.25 | 0/579 | 0.45 | 0/768 |
| 19 | S | 0.25 | 0/661 | 0.52 | 0/890 |
| 20 | T | 0.25 | 0/765 | 0.43 | 0/1007 |
| 21 | U | 0.22 | 0/212 | 0.44 | 0/277 |
| All | All | 0.24 | 0/55520 | 0.71 | 26/82379 (0.0%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 2 | B | 0 | 1 |
| 3 | C | 0 | 1 |

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| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 10 | J | 0 | 2 |
| 13 | M | 0 | 1 |
| 14 | N | 0 | 1 |
| 20 | T | 0 | 1 |
| All | All | 0 | 7 |

There are no bond length outliers.

All (26) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 1 | A | 328 | C | C2-N1-C1' | 7.59 | 127.15 | 118.80 |
| 1 | A | 1127 | G | N1-C6-O6 | -7.32 | 115.51 | 119.90 |
| 1 | A | 328 | C | N1-C2-O2 | 7.30 | 123.28 | 118.90 |
| 1 | A | 1127 | G | C5-C6-O6 | 7.04 | 132.83 | 128.60 |
| 1 | A | 839 | U | C2-N1-C1' | 6.76 | 125.81 | 117.70 |
| 1 | A | 1243 | C | C2-N3-C4 | -6.58 | 116.61 | 119.90 |
| 1 | A | 1243 | C | N1-C2-N3 | 6.32 | 123.62 | 119.20 |
| 1 | A | 1295 | G | N3-C4-N9 | -6.29 | 122.22 | 126.00 |
| 1 | A | 839 | U | N1-C2-O2 | 6.20 | 127.14 | 122.80 |
| 1 | A | 839 | U | N3-C2-O2 | -5.80 | 118.14 | 122.20 |
| 1 | A | 1243 | C | N3-C2-O2 | -5.63 | 117.96 | 121.90 |
| 1 | A | 476 | G | C5-C6-O6 | 5.56 | 131.94 | 128.60 |
| 1 | A | 1200 | C | C2-N1-C1' | 5.55 | 124.91 | 118.80 |
| 1 | A | 328 | C | N3-C2-O2 | -5.52 | 118.03 | 121.90 |
| 1 | A | 1145 | C | N3-C4-N4 | -5.52 | 114.14 | 118.00 |
| 1 | A | 328 | C | C6-N1-C1' | -5.49 | 114.22 | 120.80 |
| 1 | A | 1346 | A | P-O3'-C3' | 5.21 | 125.95 | 119.70 |
| 1 | A | 1397 | C | N3-C4-C5 | 5.19 | 123.97 | 121.90 |
| 1 | A | 1190 | G | P-O3'-C3' | 5.18 | 125.92 | 119.70 |
| 1 | A | 1395 | C | N1-C2-O2 | 5.17 | 122.00 | 118.90 |
| 1 | A | 1158 | C | C2-N1-C1' | 5.14 | 124.46 | 118.80 |
| 1 | A | 1295 | G | N9-C4-C5 | 5.13 | 107.45 | 105.40 |
| 1 | A | 1054 | C | N3-C4-C5 | 5.08 | 123.93 | 121.90 |
| 1 | A | 484 | G | P-O3'-C3' | 5.06 | 125.77 | 119.70 |
| 1 | A | 1200 | C | N1-C2-O2 | 5.05 | 121.93 | 118.90 |
| 1 | A | 1301 | U | P-O3'-C3' | 5.01 | 125.71 | 119.70 |

There are no chirality outliers.

All (7) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|---------|
| 2 | B | 15 | VAL | Peptide |
| 3 | C | 166 | GLU | Peptide |
| 10 | J | 54 | PHE | Peptide |
| 10 | J | 55 | LYS | Peptide |
| 13 | M | 6 | GLY | Peptide |
| 14 | N | 11 | LYS | Peptide |
| 20 | T | 74 | LYS | Peptide |

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 | A | 32644 | 0 | 16507 | 381 | 2 |
| 2 | B | 1900 | 0 | 1951 | 39 | 0 |
| 3 | C | 1612 | 0 | 1677 | 47 | 0 |
| 4 | D | 1703 | 0 | 1763 | 42 | 0 |
| 5 | E | 1146 | 0 | 1207 | 20 | 0 |
| 6 | F | 843 | 0 | 857 | 12 | 0 |
| 7 | G | 1257 | 0 | 1296 | 17 | 0 |
| 8 | H | 1116 | 0 | 1177 | 18 | 0 |
| 9 | I | 1010 | 0 | 1037 | 32 | 0 |
| 10 | J | 792 | 0 | 835 | 32 | 0 |
| 11 | K | 864 | 0 | 881 | 27 | 0 |
| 12 | L | 972 | 0 | 1058 | 24 | 0 |
| 13 | M | 937 | 0 | 995 | 37 | 0 |
| 14 | N | 492 | 0 | 529 | 26 | 0 |
| 15 | O | 729 | 0 | 768 | 8 | 0 |
| 16 | P | 700 | 0 | 720 | 12 | 0 |
| 17 | Q | 823 | 0 | 893 | 11 | 0 |
| 18 | R | 574 | 0 | 644 | 12 | 0 |
| 19 | S | 647 | 0 | 673 | 13 | 0 |
| 20 | T | 763 | 0 | 861 | 20 | 0 |
| 21 | U | 208 | 0 | 221 | 5 | 0 |
| 22 | A | 237 | 0 | 0 | 0 | 0 |
| 22 | B | 2 | 0 | 0 | 0 | 0 |
| 22 | C | 3 | 0 | 0 | 0 | 0 |
| 22 | D | 4 | 0 | 0 | 0 | 0 |
| 22 | E | 2 | 0 | 0 | 0 | 0 |
| 22 | F | 1 | 0 | 0 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 22 | I | 1 | 0 | 0 | 0 | 0 |
| 22 | P | 2 | 0 | 0 | 0 | 0 |
| 22 | Q | 1 | 0 | 0 | 0 | 0 |
| 22 | S | 1 | 0 | 0 | 0 | 0 |
| 23 | D | 1 | 0 | 0 | 0 | 0 |
| 23 | N | 1 | 0 | 0 | 0 | 0 |
| 24 | A | 225 | 0 | 0 | 2 | 0 |
| 24 | D | 2 | 0 | 0 | 0 | 0 |
| 24 | E | 4 | 0 | 0 | 0 | 0 |
| 24 | L | 3 | 0 | 0 | 0 | 0 |
| 24 | N | 1 | 0 | 0 | 0 | 0 |
| 24 | Q | 2 | 0 | 0 | 0 | 0 |
| 24 | T | 2 | 0 | 0 | 0 | 0 |
| All | All | 52227 | 0 | 36550 | 731 | 2 |

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 8.

All (731) 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) |
|----------------------|----------------------|--------------------------|-------------------|
| 20:T:100:ILE:HG22 | 20:T:102:GLY:H | 1.39 | 0.86 |
| 1:A:664:G:H22 | 1:A:741:G:H1 | 1.21 | 0.86 |
| 1:A:1125:U:OP2 | 1:A:1145:C:N4 | 2.10 | 0.85 |
| 1:A:1443:G:H5'' | 1:A:1446:A:H5' | 1.58 | 0.85 |
| 1:A:1347:G:O6 | 9:I:10:ARG:NH2 | 2.15 | 0.80 |
| 1:A:1125:U:H3 | 10:J:5:ARG:HH21 | 1.30 | 0.79 |
| 1:A:1417:G:O2' | 1:A:1483:A:N6 | 2.17 | 0.78 |
| 4:D:11:LEU:HD13 | 4:D:66:ARG:HD2 | 1.66 | 0.78 |
| 13:M:10:PRO:HB2 | 13:M:18:ALA:HB1 | 1.68 | 0.75 |
| 9:I:50:LEU:HB3 | 9:I:55:ALA:HB3 | 1.69 | 0.75 |
| 3:C:33:LEU:HD21 | 14:N:53:LEU:HD22 | 1.70 | 0.73 |
| 1:A:1518[B]:MA6:H102 | 1:A:1519[B]:MA6:H103 | 1.70 | 0.73 |
| 1:A:1049:U:O2' | 14:N:3:ARG:NH1 | 2.23 | 0.72 |
| 1:A:974:A:OP2 | 14:N:29:ARG:NH2 | 2.23 | 0.72 |
| 6:F:10:LEU:HD12 | 6:F:59:TYR:HB3 | 1.73 | 0.71 |
| 1:A:1134:G:H1 | 1:A:1140:C:H42 | 1.36 | 0.71 |
| 3:C:41:GLY:O | 3:C:45:LYS:HG2 | 1.91 | 0.71 |
| 1:A:1516[B]:G:N2 | 1:A:1519[B]:MA6:OP2 | 2.22 | 0.71 |
| 2:B:21:ARG:HA | 2:B:39:ILE:HA | 1.73 | 0.71 |
| 20:T:74:LYS:O | 20:T:76:ALA:N | 2.23 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|----------------------|--------------------------|-------------------|
| 17:Q:66:SER:O | 17:Q:70:ARG:NH1 | 2.24 | 0.70 |
| 1:A:1373:G:H5'' | 7:G:36:LYS:HE3 | 1.73 | 0.69 |
| 1:A:1128:C:O2' | 1:A:1130:A:N7 | 2.25 | 0.69 |
| 1:A:1195:C:H3' | 1:A:1196:U:H5'' | 1.74 | 0.69 |
| 12:L:41:ARG:HE | 12:L:43:VAL:HG22 | 1.58 | 0.69 |
| 9:I:10:ARG:HG2 | 9:I:75:ASP:HB2 | 1.74 | 0.69 |
| 3:C:52:LEU:HD12 | 3:C:68:VAL:HG13 | 1.74 | 0.68 |
| 1:A:103:C:OP1 | 20:T:17:ARG:NH1 | 2.27 | 0.68 |
| 16:P:4:ILE:HG12 | 16:P:21:VAL:HG22 | 1.76 | 0.68 |
| 20:T:75:ASN:OD1 | 20:T:75:ASN:N | 2.26 | 0.68 |
| 8:H:83:ILE:HG12 | 8:H:137:VAL:HG22 | 1.75 | 0.68 |
| 17:Q:12:SER:HB3 | 17:Q:20:THR:HB | 1.75 | 0.68 |
| 10:J:61:GLU:OE2 | 14:N:58:LYS:NZ | 2.26 | 0.68 |
| 10:J:82:ILE:HA | 10:J:85:LEU:HB2 | 1.76 | 0.68 |
| 1:A:1028:C:H42 | 1:A:1033:G:H1 | 1.41 | 0.67 |
| 5:E:71:LEU:HD21 | 5:E:115:VAL:HG22 | 1.76 | 0.67 |
| 1:A:972:C:H4' | 10:J:57:LYS:HD3 | 1.77 | 0.67 |
| 1:A:532:A:N6 | 3:C:159:GLY:O | 2.28 | 0.67 |
| 1:A:1399:C:H4' | 1:A:1400:5MC:H5'' | 1.76 | 0.66 |
| 1:A:1111:A:H61 | 3:C:177:THR:HB | 1.60 | 0.66 |
| 10:J:61:GLU:OE1 | 14:N:45:ARG:NH1 | 2.29 | 0.66 |
| 12:L:53:ARG:NH1 | 12:L:92:0TD:OD2 | 2.27 | 0.66 |
| 10:J:49:VAL:HG13 | 14:N:41:ARG:HB2 | 1.78 | 0.66 |
| 1:A:1073:U:O2 | 2:B:104:ASN:ND2 | 2.28 | 0.66 |
| 15:O:39:LEU:HD13 | 15:O:56:LEU:HB2 | 1.78 | 0.65 |
| 1:A:372:C:H4' | 1:A:373:A:O5' | 1.95 | 0.65 |
| 3:C:26:LYS:O | 3:C:30:ARG:NH1 | 2.30 | 0.65 |
| 11:K:85:ARG:HD3 | 11:K:113:PRO:HD3 | 1.78 | 0.65 |
| 1:A:1009:G:H1 | 1:A:1020:U:H3 | 1.45 | 0.65 |
| 4:D:107:ARG:HH12 | 4:D:114:ARG:HH21 | 1.45 | 0.65 |
| 1:A:1405:G:HO2' | 1:A:1518[A]:MA6:HO2' | 1.44 | 0.64 |
| 4:D:15:GLU:HB3 | 4:D:63:LYS:HD3 | 1.79 | 0.64 |
| 1:A:1004:A:N7 | 1:A:1036:G:O6 | 2.31 | 0.64 |
| 8:H:111:ILE:HG22 | 8:H:134:ILE:HD12 | 1.79 | 0.64 |
| 1:A:95:U:H2' | 1:A:96:G:H8 | 1.62 | 0.64 |
| 19:S:5:LEU:C | 19:S:6:LYS:HG3 | 2.19 | 0.64 |
| 1:A:564:C:O2' | 8:H:91:ARG:NH2 | 2.30 | 0.63 |
| 1:A:686:U:HO2' | 1:A:687:A:H8 | 1.46 | 0.63 |
| 12:L:41:ARG:HH21 | 12:L:43:VAL:HG13 | 1.63 | 0.63 |
| 1:A:671:G:H5' | 6:F:77:ARG:HH21 | 1.63 | 0.63 |
| 1:A:1347:G:H1' | 1:A:1348:U:H5 | 1.63 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:279:A:OP2 | 17:Q:95:TYR:OH | 2.15 | 0.63 |
| 4:D:194:LEU:HB3 | 4:D:196:LEU:HG | 1.81 | 0.63 |
| 4:D:57:ARG:HG3 | 4:D:202:LEU:HD13 | 1.81 | 0.62 |
| 20:T:46:GLU:OE1 | 20:T:48:LYS:NZ | 2.33 | 0.62 |
| 14:N:47:LEU:HB3 | 14:N:53:LEU:HD21 | 1.80 | 0.62 |
| 11:K:80:VAL:HG21 | 11:K:103:LEU:HD13 | 1.81 | 0.62 |
| 1:A:1406:U:O2' | 1:A:1517[B]:G:N2 | 2.33 | 0.61 |
| 16:P:28:ARG:NH1 | 16:P:29:ASP:OD2 | 2.32 | 0.61 |
| 1:A:427:U:OP1 | 4:D:13:ARG:NH2 | 2.33 | 0.61 |
| 1:A:1243:C:O2 | 1:A:1295:G:N2 | 2.33 | 0.61 |
| 5:E:102:ALA:O | 5:E:107:ARG:NH1 | 2.33 | 0.61 |
| 1:A:1391:U:H2' | 1:A:1392:G:C8 | 2.36 | 0.61 |
| 13:M:96:LEU:O | 13:M:110:ARG:NH1 | 2.32 | 0.61 |
| 2:B:84:GLU:HB3 | 2:B:219:VAL:HG21 | 1.83 | 0.61 |
| 1:A:992:U:H3 | 1:A:1044:A:H62 | 1.48 | 0.60 |
| 1:A:404:U:OP2 | 4:D:118:ARG:NH1 | 2.33 | 0.60 |
| 1:A:946:A:H2' | 1:A:947:G:C8 | 2.35 | 0.60 |
| 20:T:33:ILE:HD13 | 20:T:62:LEU:HB3 | 1.84 | 0.60 |
| 1:A:1305:G:N2 | 1:A:1331:G:H1' | 2.16 | 0.60 |
| 7:G:69:VAL:HG21 | 7:G:104:LEU:HD21 | 1.83 | 0.60 |
| 1:A:1222:G:OP2 | 1:A:1322:C:N4 | 2.31 | 0.60 |
| 1:A:1505:G:O2' | 1:A:1506:U:OP2 | 2.16 | 0.60 |
| 9:I:86:VAL:HG21 | 9:I:102:LEU:HD11 | 1.82 | 0.60 |
| 10:J:79:ARG:HH12 | 10:J:82:ILE:HD12 | 1.67 | 0.59 |
| 11:K:57:THR:HG23 | 11:K:60:ALA:H | 1.65 | 0.59 |
| 1:A:462:G:H21 | 16:P:82:GLN:HE21 | 1.48 | 0.59 |
| 1:A:1266:G:N2 | 1:A:1269:A:OP2 | 2.26 | 0.59 |
| 1:A:321:A:N6 | 1:A:329:A:OP2 | 2.35 | 0.59 |
| 5:E:105:VAL:HB | 5:E:106:PRO:HD3 | 1.84 | 0.59 |
| 13:M:57:ARG:O | 13:M:61:GLU:HB2 | 2.02 | 0.59 |
| 16:P:53:VAL:HG12 | 16:P:79:VAL:HG22 | 1.84 | 0.59 |
| 1:A:951:G:OP2 | 13:M:102:ARG:NH2 | 2.35 | 0.59 |
| 1:A:376:G:H5'' | 16:P:5:ARG:HB2 | 1.85 | 0.59 |
| 1:A:1498:UR3:O5' | 1:A:1498:UR3:H6 | 2.02 | 0.59 |
| 13:M:8:GLU:HG3 | 13:M:22:ILE:HG23 | 1.85 | 0.59 |
| 1:A:426:G:OP1 | 4:D:38:TYR:OH | 2.21 | 0.58 |
| 1:A:1240:U:OP1 | 7:G:119:ARG:NH2 | 2.33 | 0.58 |
| 1:A:522:C:H41 | 12:L:53:ARG:HH22 | 1.52 | 0.58 |
| 4:D:99:SER:HB3 | 4:D:139:ARG:HG3 | 1.84 | 0.58 |
| 1:A:1310:G:H5' | 13:M:77:ASN:HD21 | 1.68 | 0.58 |
| 1:A:1510:U:H2' | 1:A:1511:G:C8 | 2.38 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 2:B:63:MET:HB3 | 2:B:225:ALA:HB1 | 1.86 | 0.58 |
| 1:A:1414:U:H2' | 1:A:1415:G:C8 | 2.39 | 0.58 |
| 4:D:107:ARG:HH21 | 4:D:194:LEU:HD12 | 1.69 | 0.58 |
| 1:A:1242:C:OP1 | 21:U:10:ARG:NH1 | 2.34 | 0.57 |
| 20:T:39:LYS:HG2 | 20:T:55:ILE:HD13 | 1.86 | 0.57 |
| 1:A:451:A:N6 | 1:A:481:G:C4 | 2.72 | 0.57 |
| 1:A:1006:C:H42 | 1:A:1022:G:H22 | 1.52 | 0.57 |
| 3:C:156:ARG:H | 3:C:163:ALA:HA | 1.69 | 0.57 |
| 1:A:403:C:OP2 | 4:D:3:ARG:NH2 | 2.37 | 0.57 |
| 1:A:792:A:H4' | 1:A:793:U:O5' | 2.04 | 0.57 |
| 3:C:137:ALA:HA | 3:C:140:ARG:HD2 | 1.86 | 0.57 |
| 1:A:1532:U:H2' | 1:A:1533:C:H3' | 1.87 | 0.57 |
| 2:B:59:GLU:HB2 | 2:B:221:LEU:HD11 | 1.86 | 0.57 |
| 12:L:46:LYS:HB3 | 12:L:92:OTD:H8 | 1.86 | 0.57 |
| 3:C:150:LYS:HB2 | 3:C:173:VAL:HG21 | 1.85 | 0.57 |
| 1:A:1193:G:OP1 | 3:C:167:TRP:NE1 | 2.32 | 0.57 |
| 18:R:47:THR:HA | 18:R:83:GLU:HB2 | 1.87 | 0.57 |
| 1:A:21:G:H2' | 1:A:22:G:C8 | 2.40 | 0.57 |
| 1:A:982:U:OP2 | 14:N:23:ARG:NH2 | 2.38 | 0.57 |
| 1:A:1048:G:H1 | 1:A:1209:C:H42 | 1.53 | 0.57 |
| 11:K:40:ILE:HG22 | 11:K:41:THR:HG23 | 1.86 | 0.57 |
| 1:A:45:U:H2' | 1:A:46:G:C8 | 2.40 | 0.57 |
| 1:A:297:G:N2 | 1:A:300:A:OP2 | 2.33 | 0.57 |
| 1:A:1504:G:OP1 | 1:A:1507:A:H4' | 2.05 | 0.57 |
| 1:A:191:G:O2' | 20:T:102:GLY:O | 2.17 | 0.57 |
| 15:O:33:THR:OG1 | 15:O:63:ARG:NH1 | 2.36 | 0.56 |
| 1:A:56:U:H2' | 1:A:57:G:H8 | 1.70 | 0.56 |
| 3:C:14:ILE:HG22 | 3:C:15:THR:HG23 | 1.87 | 0.56 |
| 4:D:18:LYS:HE2 | 4:D:20:TYR:HE2 | 1.70 | 0.56 |
| 4:D:78:LEU:HD21 | 4:D:96:LEU:HB3 | 1.88 | 0.56 |
| 11:K:69:ALA:O | 11:K:73:MET:HG2 | 2.06 | 0.56 |
| 19:S:18:LYS:HD3 | 19:S:31:ILE:HD11 | 1.88 | 0.56 |
| 20:T:50:GLU:HA | 20:T:100:ILE:HG13 | 1.88 | 0.56 |
| 1:A:250:A:H4' | 1:A:251:G:O5' | 2.05 | 0.56 |
| 1:A:1064:G:N2 | 1:A:1190:G:O2' | 2.38 | 0.56 |
| 12:L:60:LEU:HD11 | 12:L:85:ILE:HD12 | 1.88 | 0.56 |
| 13:M:88:ARG:HH11 | 19:S:3:ARG:HH21 | 1.54 | 0.56 |
| 1:A:1491:G:N2 | 1:A:1492:A:H62 | 2.02 | 0.56 |
| 3:C:131:ARG:HA | 3:C:134:ILE:HD12 | 1.87 | 0.56 |
| 1:A:17:U:H2' | 1:A:18:C:C6 | 2.40 | 0.56 |
| 6:F:22:GLU:OE1 | 6:F:82:ARG:NH1 | 2.39 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|---------------------|--------------------------|-------------------|
| 1:A:227:G:N2 | 16:P:62:VAL:O | 2.36 | 0.56 |
| 1:A:959:A:O2' | 1:A:984:C:O2' | 2.22 | 0.56 |
| 1:A:1144:G:H21 | 1:A:1146:A:H62 | 1.52 | 0.56 |
| 3:C:91:LEU:HD21 | 3:C:99:VAL:HG22 | 1.88 | 0.56 |
| 3:C:134:ILE:HG23 | 3:C:151:VAL:HB | 1.86 | 0.56 |
| 1:A:955:U:H1' | 1:A:1227:A:H61 | 1.72 | 0.55 |
| 1:A:1405:G:O2' | 1:A:1518[A]:MA6:O2' | 2.19 | 0.55 |
| 10:J:53:PRO:HA | 14:N:41:ARG:NH2 | 2.20 | 0.55 |
| 12:L:24:VAL:HG13 | 12:L:98:TYR:HE2 | 1.72 | 0.55 |
| 1:A:88:A:H2' | 1:A:89:C:O4' | 2.07 | 0.55 |
| 1:A:56:U:H2' | 1:A:57:G:C8 | 2.41 | 0.55 |
| 1:A:1437:C:H2' | 1:A:1438:G:H8 | 1.72 | 0.55 |
| 1:A:129(A):G:N2 | 1:A:190(F):G:OP2 | 2.34 | 0.55 |
| 8:H:26:VAL:HG13 | 8:H:59:LEU:HB2 | 1.88 | 0.55 |
| 1:A:269:C:H2' | 1:A:270:A:C8 | 2.41 | 0.55 |
| 1:A:1415:G:H1 | 1:A:1485:U:H3 | 1.54 | 0.55 |
| 1:A:542:G:OP1 | 4:D:10:ARG:NH2 | 2.40 | 0.55 |
| 1:A:95:U:H2' | 1:A:96:G:C8 | 2.42 | 0.55 |
| 9:I:46:ALA:HB2 | 9:I:74:ILE:HG23 | 1.88 | 0.55 |
| 1:A:407:G:OP1 | 4:D:115:ARG:NH1 | 2.40 | 0.54 |
| 3:C:68:VAL:HG12 | 3:C:70:VAL:HG22 | 1.90 | 0.54 |
| 1:A:216:G:H2' | 1:A:217:C:C6 | 2.42 | 0.54 |
| 9:I:79:LEU:O | 9:I:83:ARG:HG2 | 2.07 | 0.54 |
| 1:A:1060:C:OP1 | 14:N:45:ARG:NH2 | 2.41 | 0.54 |
| 3:C:180:ALA:HB1 | 3:C:205:GLY:O | 2.08 | 0.54 |
| 8:H:48:TYR:HA | 8:H:60:ARG:O | 2.07 | 0.54 |
| 1:A:880:C:OP1 | 12:L:8:ASN:ND2 | 2.39 | 0.54 |
| 1:A:1162:C:H2' | 1:A:1163:C:C6 | 2.42 | 0.54 |
| 15:O:56:LEU:HA | 15:O:59:MET:HE2 | 1.90 | 0.54 |
| 1:A:77:G:H2' | 1:A:78:G:C8 | 2.43 | 0.54 |
| 1:A:1313:U:O4 | 19:S:4:SER:OG | 2.18 | 0.54 |
| 9:I:112:LYS:HA | 9:I:119:ALA:HB2 | 1.89 | 0.54 |
| 1:A:811:C:O2' | 1:A:901:A:N1 | 2.35 | 0.54 |
| 1:A:1305:G:O2' | 1:A:1306:A:O5' | 2.26 | 0.54 |
| 1:A:442:C:H42 | 1:A:492:G:H1 | 1.56 | 0.54 |
| 1:A:448:A:P | 1:A:485:G:H22 | 2.31 | 0.53 |
| 1:A:1049:U:H4' | 1:A:1050:G:O5' | 2.08 | 0.53 |
| 1:A:973:G:H3' | 1:A:974:A:H5'' | 1.90 | 0.53 |
| 1:A:677:U:H3 | 1:A:713:G:H22 | 1.56 | 0.53 |
| 10:J:48:THR:O | 14:N:34:TYR:OH | 2.25 | 0.53 |
| 1:A:390:C:O3' | 16:P:28:ARG:NH2 | 2.42 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:A:1342:C:H2' | 1:A:1343:G:C8 | 2.43 | 0.53 |
| 1:A:1498:UR3:O4' | 1:A:1519[A]:MA6:H2 | 2.08 | 0.53 |
| 11:K:65:ALA:HB1 | 11:K:98:LEU:HD23 | 1.90 | 0.53 |
| 12:L:24:VAL:HG13 | 12:L:98:TYR:CE2 | 2.43 | 0.53 |
| 1:A:501:C:H2' | 1:A:502:G:C8 | 2.44 | 0.53 |
| 1:A:1148:U:H2' | 1:A:1149:C:O4' | 2.09 | 0.53 |
| 1:A:1198:G:H2' | 1:A:1199:U:C6 | 2.44 | 0.53 |
| 6:F:39:LYS:HG2 | 6:F:64:GLN:HB3 | 1.91 | 0.53 |
| 1:A:1150:U:O4 | 1:A:1151:A:N6 | 2.42 | 0.53 |
| 3:C:150:LYS:HB3 | 3:C:201:TYR:HB2 | 1.91 | 0.52 |
| 1:A:1008:C:N4 | 1:A:1021:G:H1 | 2.07 | 0.52 |
| 1:A:1379:G:O6 | 7:G:2:ALA:N | 2.42 | 0.52 |
| 4:D:57:ARG:HB3 | 4:D:206:PHE:HB2 | 1.91 | 0.52 |
| 1:A:1305:G:O2' | 1:A:1306:A:H8 | 1.93 | 0.52 |
| 1:A:1488:G:H2' | 1:A:1489:G:C8 | 2.44 | 0.52 |
| 10:J:55:LYS:HD2 | 10:J:56:HIS:H | 1.73 | 0.52 |
| 1:A:89:C:H2' | 1:A:90:U:O4' | 2.09 | 0.52 |
| 1:A:130:A:OP2 | 1:A:190(E):U:O2' | 2.24 | 0.52 |
| 3:C:156:ARG:NH1 | 3:C:193:TYR:O | 2.43 | 0.52 |
| 1:A:537:G:OP1 | 12:L:113:ARG:NH2 | 2.42 | 0.52 |
| 1:A:1254:C:H2' | 1:A:1255:G:C8 | 2.44 | 0.52 |
| 2:B:21:ARG:HG3 | 2:B:22:LYS:H | 1.75 | 0.52 |
| 1:A:518:C:H4' | 1:A:519:C:O5' | 2.09 | 0.52 |
| 1:A:113:G:H1' | 1:A:354:G:H5' | 1.90 | 0.52 |
| 1:A:1143:G:H2' | 1:A:1144:G:C8 | 2.45 | 0.52 |
| 2:B:162:ILE:HD12 | 2:B:177:ALA:HB2 | 1.92 | 0.52 |
| 4:D:140:VAL:HG11 | 4:D:146:ILE:HD11 | 1.92 | 0.52 |
| 12:L:70:ILE:HG12 | 12:L:100:ILE:HD12 | 1.92 | 0.52 |
| 20:T:92:LEU:O | 20:T:96:GLY:HA2 | 2.10 | 0.52 |
| 1:A:481:G:O2' | 1:A:482:A:H8 | 1.92 | 0.52 |
| 1:A:1195:C:H3' | 1:A:1196:U:C5' | 2.39 | 0.52 |
| 1:A:1392:G:N2 | 1:A:1502:A:H8 | 2.08 | 0.52 |
| 1:A:1187:G:N3 | 14:N:60:SER:OG | 2.43 | 0.51 |
| 12:L:103:GLY:N | 12:L:107:ALA:O | 2.28 | 0.51 |
| 12:L:113:ARG:HH11 | 12:L:116:SER:H | 1.59 | 0.51 |
| 1:A:7:G:H5' | 1:A:298:A:O4' | 2.10 | 0.51 |
| 1:A:932:C:H5' | 7:G:4:ARG:HG3 | 1.92 | 0.51 |
| 1:A:937:A:N6 | 1:A:1345:U:O4 | 2.43 | 0.51 |
| 1:A:1257:U:O2' | 1:A:1258:G:OP2 | 2.24 | 0.51 |
| 1:A:1391:U:H2' | 1:A:1392:G:H8 | 1.73 | 0.51 |
| 3:C:81:GLY:O | 3:C:84:ILE:HG22 | 2.10 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:1294:G:H2' | 1:A:1295:G:C8 | 2.46 | 0.51 |
| 3:C:88:ARG:HH21 | 3:C:100:ALA:HB1 | 1.75 | 0.51 |
| 10:J:50:ILE:HA | 10:J:60:ARG:HB3 | 1.92 | 0.51 |
| 1:A:1345:U:OP1 | 9:I:120:ARG:NH1 | 2.43 | 0.51 |
| 1:A:1435:G:H2' | 1:A:1436:U:C6 | 2.45 | 0.51 |
| 2:B:119:GLU:OE1 | 2:B:153:ARG:NH2 | 2.44 | 0.51 |
| 2:B:158:LEU:HD12 | 2:B:158:LEU:H | 1.76 | 0.51 |
| 3:C:58:GLU:HB3 | 10:J:92:THR:HG21 | 1.92 | 0.51 |
| 7:G:84:ASN:OD1 | 7:G:84:ASN:N | 2.29 | 0.51 |
| 1:A:235:C:N4 | 24:A:1903:HOH:O | 2.42 | 0.51 |
| 1:A:1098:C:OP2 | 2:B:144:ARG:NH2 | 2.43 | 0.51 |
| 1:A:1145:C:O2' | 1:A:1146:A:O5' | 2.22 | 0.51 |
| 1:A:1497:G:H2' | 1:A:1498:UR3:H5' | 1.92 | 0.51 |
| 20:T:16:HIS:O | 20:T:19:SER:HB3 | 2.11 | 0.51 |
| 3:C:138:VAL:HG13 | 3:C:149:ALA:HB3 | 1.93 | 0.51 |
| 1:A:501:C:H2' | 1:A:502:G:H8 | 1.76 | 0.50 |
| 1:A:736:C:H2' | 1:A:737:A:C8 | 2.46 | 0.50 |
| 1:A:1092:A:N3 | 1:A:1183:A:N6 | 2.58 | 0.50 |
| 1:A:1106:G:H5'' | 3:C:172:ARG:HB3 | 1.93 | 0.50 |
| 1:A:1310:G:H5' | 13:M:77:ASN:ND2 | 2.25 | 0.50 |
| 1:A:41:G:H2' | 1:A:42:G:C8 | 2.46 | 0.50 |
| 1:A:1031:G:H2' | 1:A:1032:G:C8 | 2.47 | 0.50 |
| 14:N:9:LYS:HD2 | 14:N:23:ARG:HB2 | 1.93 | 0.50 |
| 3:C:155:GLY:HA2 | 3:C:164:ARG:H | 1.77 | 0.50 |
| 4:D:62:GLN:OE1 | 4:D:65:ARG:NH1 | 2.44 | 0.50 |
| 10:J:5:ARG:HB2 | 10:J:99:LYS:O | 2.11 | 0.50 |
| 1:A:5:U:H4' | 1:A:6:G:O5' | 2.12 | 0.50 |
| 1:A:474:G:H2' | 1:A:475:G:C8 | 2.47 | 0.50 |
| 1:A:558:G:OP2 | 1:A:559:A:O2' | 2.28 | 0.50 |
| 1:A:1137:C:H4' | 1:A:1138:G:C2 | 2.47 | 0.50 |
| 1:A:1250:A:H4' | 9:I:68:GLY:H | 1.77 | 0.50 |
| 3:C:108:ASN:HB3 | 3:C:111:LEU:HB2 | 1.93 | 0.50 |
| 20:T:70:SER:HA | 20:T:73:HIS:CD2 | 2.46 | 0.50 |
| 1:A:673:G:H2' | 1:A:674:G:C8 | 2.46 | 0.50 |
| 1:A:1314:C:H2' | 1:A:1315:U:C6 | 2.47 | 0.50 |
| 8:H:46:LYS:HG3 | 8:H:64:LYS:HB3 | 1.94 | 0.50 |
| 9:I:99:LEU:HB3 | 9:I:101:PHE:HD1 | 1.77 | 0.50 |
| 11:K:121:PRO:HD2 | 11:K:126:ARG:HD2 | 1.92 | 0.50 |
| 1:A:1053:G:HO2' | 1:A:1199:U:H5 | 1.59 | 0.49 |
| 1:A:335:C:O2' | 1:A:1433:A:N3 | 2.40 | 0.49 |
| 2:B:45:GLN:O | 2:B:49:GLU:HG3 | 2.12 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:913:A:H4' | 1:A:914:A:O5' | 2.12 | 0.49 |
| 1:A:1305:G:O2' | 1:A:1306:A:P | 2.70 | 0.49 |
| 11:K:22:HIS:HB3 | 11:K:29:ILE:HD13 | 1.94 | 0.49 |
| 1:A:1343:G:H4' | 9:I:122:ALA:HB3 | 1.95 | 0.49 |
| 6:F:77:ARG:O | 6:F:81:ILE:HG13 | 2.12 | 0.49 |
| 1:A:474:G:H2' | 1:A:475:G:H8 | 1.77 | 0.49 |
| 1:A:701:C:H5'' | 1:A:703:G:H5' | 1.95 | 0.49 |
| 19:S:12:ASP:H | 19:S:38:SER:HB3 | 1.77 | 0.49 |
| 1:A:157:G:H2' | 1:A:158:G:H8 | 1.78 | 0.49 |
| 1:A:1008:C:H42 | 1:A:1021:G:H1 | 1.61 | 0.49 |
| 1:A:1256:A:H4' | 1:A:1257:U:O5' | 2.13 | 0.49 |
| 10:J:9:ARG:HG3 | 10:J:95:GLU:HB3 | 1.94 | 0.49 |
| 1:A:514:C:H2' | 1:A:515:G:H8 | 1.78 | 0.49 |
| 1:A:1068:G:H8 | 1:A:1068:G:OP2 | 1.95 | 0.49 |
| 1:A:1232:U:H5'' | 9:I:124:GLN:O | 2.13 | 0.49 |
| 4:D:173:TRP:CD2 | 4:D:189:PRO:HB3 | 2.48 | 0.49 |
| 1:A:920:U:H2' | 1:A:921:U:C6 | 2.48 | 0.49 |
| 1:A:1131:G:H2' | 1:A:1132:C:C6 | 2.48 | 0.49 |
| 9:I:22:GLY:HA3 | 9:I:60:ASP:HB2 | 1.94 | 0.49 |
| 11:K:14:VAL:HG21 | 11:K:40:ILE:HD13 | 1.95 | 0.49 |
| 1:A:1412:C:H2' | 1:A:1413:A:C8 | 2.48 | 0.48 |
| 2:B:98:LEU:O | 2:B:101:MET:HG3 | 2.13 | 0.48 |
| 5:E:33:VAL:HG11 | 5:E:109:ILE:HA | 1.94 | 0.48 |
| 1:A:1502:A:H2 | 1:A:1505:G:H1 | 1.60 | 0.48 |
| 4:D:81:GLU:O | 4:D:85:LYS:HG3 | 2.14 | 0.48 |
| 7:G:113:GLU:HG3 | 7:G:119:ARG:HA | 1.95 | 0.48 |
| 10:J:48:THR:HA | 10:J:62:HIS:HB3 | 1.94 | 0.48 |
| 19:S:62:ILE:HD12 | 19:S:66:MET:HG3 | 1.94 | 0.48 |
| 1:A:1192:C:O2 | 5:E:25:ARG:NH2 | 2.47 | 0.48 |
| 10:J:10:GLY:HA3 | 10:J:16:LEU:HD21 | 1.94 | 0.48 |
| 1:A:769:G:H4' | 1:A:1513:A:H4' | 1.96 | 0.48 |
| 1:A:1196:U:OP1 | 1:A:1197:G:H5' | 2.13 | 0.48 |
| 1:A:1343:G:H1' | 9:I:121:ARG:HH12 | 1.78 | 0.48 |
| 1:A:1359:C:H1' | 1:A:1361(A):C:H41 | 1.78 | 0.48 |
| 3:C:6:HIS:CE1 | 3:C:8:ILE:HB | 2.49 | 0.48 |
| 18:R:46:GLU:CD | 18:R:46:GLU:H | 2.15 | 0.48 |
| 1:A:337:C:H2' | 1:A:338:A:C8 | 2.49 | 0.48 |
| 1:A:1356:G:H2' | 1:A:1357:A:C8 | 2.49 | 0.48 |
| 11:K:83:ILE:HD13 | 11:K:109:VAL:HB | 1.95 | 0.48 |
| 2:B:97:TRP:HZ2 | 2:B:102:LEU:HD22 | 1.79 | 0.48 |
| 3:C:13:GLY:HA3 | 14:N:57:ARG:HH21 | 1.78 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 1:A:390:C:H2' | 1:A:391:G:C8 | 2.48 | 0.48 |
| 1:A:945:G:O6 | 1:A:1236:A:N1 | 2.46 | 0.48 |
| 2:B:101:MET:HA | 2:B:108:ILE:HG13 | 1.96 | 0.48 |
| 6:F:50:TYR:CE1 | 18:R:77:GLY:HA2 | 2.49 | 0.48 |
| 1:A:130:A:H1' | 1:A:263:A:O2' | 2.14 | 0.48 |
| 1:A:686:U:O2' | 1:A:687:A:H8 | 1.95 | 0.48 |
| 13:M:74:VAL:O | 13:M:78:ILE:HG12 | 2.14 | 0.48 |
| 17:Q:24:GLU:HG2 | 17:Q:39:SER:HB3 | 1.95 | 0.48 |
| 1:A:201:C:H42 | 1:A:216:G:H1 | 1.62 | 0.48 |
| 1:A:298:A:N6 | 24:A:1901:HOH:O | 2.18 | 0.48 |
| 6:F:70:ASP:OD1 | 6:F:70:ASP:N | 2.39 | 0.48 |
| 1:A:401:C:O2' | 1:A:621:A:N3 | 2.41 | 0.47 |
| 1:A:1305:G:O2' | 1:A:1306:A:C8 | 2.67 | 0.47 |
| 3:C:70:VAL:HG12 | 3:C:72:LYS:H | 1.78 | 0.47 |
| 7:G:22:LEU:HG | 7:G:62:PHE:HE2 | 1.79 | 0.47 |
| 13:M:48:LEU:HB3 | 13:M:53:VAL:HG23 | 1.95 | 0.47 |
| 1:A:1136:U:H5'' | 1:A:1137:C:OP2 | 2.14 | 0.47 |
| 1:A:1451:A:H5'' | 1:A:1452:C:H5 | 1.80 | 0.47 |
| 2:B:68:ILE:O | 2:B:90:MET:HB3 | 2.14 | 0.47 |
| 4:D:23:GLY:HA3 | 4:D:112:VAL:HG12 | 1.95 | 0.47 |
| 9:I:96:LEU:HD23 | 9:I:102:LEU:HG | 1.95 | 0.47 |
| 10:J:7:LYS:HE3 | 10:J:9:ARG:HH21 | 1.78 | 0.47 |
| 1:A:718:G:O6 | 18:R:74:ARG:NH1 | 2.47 | 0.47 |
| 5:E:81:GLU:HG2 | 5:E:90:VAL:HG22 | 1.97 | 0.47 |
| 1:A:31:G:N2 | 1:A:48:C:OP1 | 2.44 | 0.47 |
| 1:A:35:G:H2' | 1:A:36:C:C6 | 2.49 | 0.47 |
| 1:A:328:C:H4' | 1:A:329:A:O5' | 2.15 | 0.47 |
| 1:A:1201:A:H4' | 1:A:1202:G:O5' | 2.14 | 0.47 |
| 5:E:102:ALA:HB1 | 5:E:106:PRO:HB2 | 1.97 | 0.47 |
| 14:N:29:ARG:HB3 | 14:N:33:VAL:HG22 | 1.96 | 0.47 |
| 1:A:707:C:OP1 | 11:K:85:ARG:NH1 | 2.48 | 0.47 |
| 1:A:1286:A:H2' | 1:A:1287:A:H4' | 1.96 | 0.47 |
| 1:A:1355:G:H2' | 1:A:1356:G:C8 | 2.50 | 0.47 |
| 1:A:1513:A:H2' | 1:A:1514:C:C6 | 2.49 | 0.47 |
| 8:H:104:ARG:HG3 | 8:H:138:TRP:CD2 | 2.49 | 0.47 |
| 1:A:129:U:O3' | 1:A:129(A):G:H3' | 2.14 | 0.47 |
| 1:A:263:A:OP2 | 20:T:79:ARG:NH1 | 2.47 | 0.47 |
| 1:A:701:C:H4' | 1:A:702:A:O5' | 2.13 | 0.47 |
| 1:A:1112:C:O2 | 3:C:179:ARG:HB2 | 2.15 | 0.47 |
| 1:A:1269:A:N1 | 1:A:1312:G:O2' | 2.45 | 0.47 |
| 9:I:48:GLU:N | 9:I:49:PRO:HD2 | 2.30 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 1:A:1145:C:HO2' | 1:A:1146:A:P | 2.37 | 0.47 |
| 1:A:1225:A:H2' | 1:A:1225:A:N3 | 2.29 | 0.47 |
| 1:A:1427:U:H2' | 1:A:1428:A:C8 | 2.50 | 0.47 |
| 4:D:72:GLU:OE1 | 4:D:207:TYR:OH | 2.32 | 0.47 |
| 17:Q:5:VAL:HG22 | 17:Q:60:ILE:HG12 | 1.96 | 0.47 |
| 1:A:579:G:H5' | 1:A:728:A:H1' | 1.97 | 0.47 |
| 1:A:976:G:OP2 | 1:A:1358:U:O2' | 2.32 | 0.47 |
| 13:M:49:THR:HG22 | 13:M:51:ALA:H | 1.79 | 0.47 |
| 2:B:60:ASP:CG | 2:B:64:ARG:HH12 | 2.19 | 0.47 |
| 2:B:133:LYS:O | 2:B:137:ARG:HG3 | 2.15 | 0.47 |
| 5:E:88:LYS:HD2 | 5:E:123:LEU:HD12 | 1.97 | 0.47 |
| 1:A:164:U:H2' | 1:A:165:C:C6 | 2.50 | 0.46 |
| 1:A:689:C:H2' | 1:A:690:G:O4' | 2.16 | 0.46 |
| 1:A:981:U:H5' | 14:N:21:TYR:CZ | 2.50 | 0.46 |
| 1:A:1257:U:H4' | 1:A:1258:G:O5' | 2.15 | 0.46 |
| 1:A:1301:U:OP2 | 1:A:1303:C:N4 | 2.48 | 0.46 |
| 14:N:32:SER:O | 14:N:40:CYS:HB2 | 2.16 | 0.46 |
| 1:A:1230:C:N4 | 13:M:105:THR:HG21 | 2.31 | 0.46 |
| 1:A:80:G:H2' | 1:A:81:U:H5' | 1.96 | 0.46 |
| 1:A:362:G:N2 | 1:A:365:U:OP2 | 2.45 | 0.46 |
| 1:A:450:G:H4' | 16:P:41:PRO:HB2 | 1.96 | 0.46 |
| 1:A:580:U:H2' | 1:A:581:G:O4' | 2.15 | 0.46 |
| 1:A:1020:U:H2' | 1:A:1021:G:H8 | 1.79 | 0.46 |
| 1:A:966:M2G:HM22 | 1:A:967:5MC:C2 | 2.50 | 0.46 |
| 1:A:1254:C:H2' | 1:A:1255:G:H8 | 1.80 | 0.46 |
| 13:M:15:VAL:HG21 | 13:M:48:LEU:HD21 | 1.97 | 0.46 |
| 1:A:316:G:OP2 | 1:A:351:G:O2' | 2.33 | 0.46 |
| 2:B:71:VAL:HB | 2:B:164:VAL:HG12 | 1.97 | 0.46 |
| 11:K:33:THR:OG1 | 11:K:34:ASP:N | 2.49 | 0.46 |
| 17:Q:59:ILE:HG23 | 17:Q:71:PHE:HB3 | 1.97 | 0.46 |
| 20:T:50:GLU:HG3 | 20:T:100:ILE:HD11 | 1.98 | 0.46 |
| 1:A:514:C:H2' | 1:A:515:G:C8 | 2.50 | 0.46 |
| 1:A:560:U:H5' | 1:A:566:G:N2 | 2.30 | 0.46 |
| 1:A:1518[A]:MA6:H8 | 1:A:1518[A]:MA6:O5' | 2.15 | 0.46 |
| 3:C:137:ALA:O | 3:C:141:VAL:HG23 | 2.15 | 0.46 |
| 4:D:187:ARG:NH2 | 4:D:188:LEU:HB2 | 2.31 | 0.46 |
| 8:H:63:LEU:H | 8:H:63:LEU:HD22 | 1.81 | 0.46 |
| 16:P:68:ASP:OD1 | 16:P:68:ASP:N | 2.49 | 0.46 |
| 1:A:142:G:H2' | 1:A:143:A:C8 | 2.51 | 0.46 |
| 1:A:359:U:H2' | 1:A:360:A:C8 | 2.50 | 0.46 |
| 1:A:452:A:O2' | 1:A:453:A:O4' | 2.29 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:1409:C:H2' | 1:A:1410:G:C8 | 2.51 | 0.46 |
| 3:C:6:HIS:HE1 | 3:C:8:ILE:HB | 1.80 | 0.46 |
| 3:C:34:LEU:O | 3:C:38:ARG:HG2 | 2.16 | 0.46 |
| 12:L:10:LEU:HB3 | 17:Q:32:TYR:CE1 | 2.50 | 0.46 |
| 21:U:13:ILE:HG22 | 21:U:22:ARG:CZ | 2.46 | 0.46 |
| 8:H:87:SER:HB2 | 8:H:93:VAL:HB | 1.98 | 0.46 |
| 1:A:41:G:H2' | 1:A:42:G:H8 | 1.81 | 0.46 |
| 1:A:1367:C:H5' | 10:J:60:ARG:HE | 1.81 | 0.46 |
| 2:B:142:LEU:HD23 | 2:B:142:LEU:HA | 1.83 | 0.46 |
| 11:K:50:TYR:CD2 | 11:K:54:ARG:HB3 | 2.51 | 0.46 |
| 11:K:72:ALA:HB1 | 11:K:77:MET:HG3 | 1.97 | 0.46 |
| 1:A:766:A:H2' | 1:A:767:A:O4' | 2.16 | 0.46 |
| 1:A:1218:C:H2' | 1:A:1219:U:C6 | 2.51 | 0.46 |
| 1:A:1347:G:O2' | 1:A:1348:U:P | 2.73 | 0.46 |
| 3:C:150:LYS:HG3 | 3:C:169:ALA:HB2 | 1.97 | 0.46 |
| 4:D:19:LEU:HB3 | 4:D:67:ILE:HG12 | 1.98 | 0.45 |
| 4:D:177:ASP:OD1 | 4:D:179:GLU:HG2 | 2.16 | 0.45 |
| 7:G:26:PHE:O | 7:G:30:ILE:HG13 | 2.15 | 0.45 |
| 1:A:1317:C:H2' | 1:A:1318:A:O4' | 2.16 | 0.45 |
| 3:C:3:ASN:OD1 | 3:C:4:LYS:NZ | 2.46 | 0.45 |
| 8:H:86:ILE:HD12 | 8:H:133:LEU:HD22 | 1.98 | 0.45 |
| 9:I:48:GLU:OE1 | 9:I:51:ARG:NH1 | 2.49 | 0.45 |
| 1:A:532:A:H2' | 1:A:533:A:H5'' | 1.97 | 0.45 |
| 2:B:16:HIS:CE1 | 2:B:210:SER:HB2 | 2.51 | 0.45 |
| 3:C:134:ILE:O | 3:C:138:VAL:HG23 | 2.17 | 0.45 |
| 4:D:184:LYS:HE3 | 4:D:184:LYS:HB2 | 1.78 | 0.45 |
| 5:E:11:ILE:HG22 | 5:E:12:LEU:HD12 | 1.98 | 0.45 |
| 1:A:437:U:H5' | 4:D:155:LEU:HD21 | 1.98 | 0.45 |
| 3:C:134:ILE:HG21 | 3:C:167:TRP:O | 2.16 | 0.45 |
| 13:M:48:LEU:HD22 | 13:M:48:LEU:HA | 1.82 | 0.45 |
| 1:A:1380:U:H1' | 1:A:1381:U:OP2 | 2.16 | 0.45 |
| 3:C:16:ARG:NH1 | 3:C:183:ASP:OD2 | 2.45 | 0.45 |
| 12:L:27:LEU:HG | 12:L:28:LYS:H | 1.81 | 0.45 |
| 14:N:24:CYS:H | 14:N:33:VAL:HG21 | 1.81 | 0.45 |
| 1:A:299:G:H2' | 1:A:300:A:C8 | 2.52 | 0.45 |
| 1:A:344:A:H5' | 1:A:345:C:C5 | 2.52 | 0.45 |
| 1:A:356:A:N3 | 1:A:368:U:O2' | 2.32 | 0.45 |
| 1:A:1005:A:N3 | 1:A:1026:G:N2 | 2.65 | 0.45 |
| 1:A:1498:UR3:H1' | 1:A:1499:A:OP2 | 2.17 | 0.45 |
| 4:D:93:PHE:CE1 | 4:D:97:LEU:HD11 | 2.51 | 0.45 |
| 1:A:337:C:H2' | 1:A:338:A:H8 | 1.81 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:898:G:N2 | 1:A:901:A:OP2 | 2.43 | 0.45 |
| 1:A:974:A:OP1 | 1:A:974:A:H8 | 1.99 | 0.45 |
| 1:A:1511:G:H2' | 1:A:1512:U:O4' | 2.17 | 0.45 |
| 4:D:11:LEU:HD22 | 4:D:66:ARG:NH1 | 2.32 | 0.45 |
| 2:B:102:LEU:HB3 | 2:B:180:LEU:HD12 | 1.99 | 0.45 |
| 4:D:133:VAL:HG12 | 4:D:135:LEU:H | 1.82 | 0.45 |
| 13:M:16:ASP:OD1 | 13:M:16:ASP:N | 2.50 | 0.45 |
| 1:A:92:C:H2' | 1:A:93:G:C8 | 2.51 | 0.45 |
| 1:A:757:U:H2' | 1:A:758:G:O4' | 2.16 | 0.45 |
| 1:A:953:G:N7 | 13:M:104:ARG:NH2 | 2.64 | 0.45 |
| 2:B:146:GLN:O | 2:B:150:SER:HB3 | 2.16 | 0.45 |
| 1:A:125:U:O3' | 1:A:633:G:N2 | 2.51 | 0.44 |
| 1:A:186:C:H2' | 1:A:187:C:C6 | 2.53 | 0.44 |
| 1:A:555:C:H2' | 1:A:556:C:C6 | 2.52 | 0.44 |
| 1:A:1277:C:O2' | 1:A:1279:A:H1' | 2.17 | 0.44 |
| 1:A:1348:U:OP1 | 9:I:110:GLU:HB3 | 2.16 | 0.44 |
| 4:D:150:GLU:HA | 4:D:153:ARG:HG3 | 1.98 | 0.44 |
| 8:H:19:VAL:HG23 | 8:H:21:LYS:HG3 | 1.99 | 0.44 |
| 10:J:42:THR:HG21 | 10:J:66:ARG:HB2 | 1.99 | 0.44 |
| 1:A:217:C:H2' | 1:A:218:C:C6 | 2.52 | 0.44 |
| 1:A:281:G:H4' | 1:A:282:A:O5' | 2.17 | 0.44 |
| 12:L:8:ASN:O | 12:L:12:ARG:HG3 | 2.18 | 0.44 |
| 15:O:18:PHE:CZ | 15:O:21:ASP:HB2 | 2.52 | 0.44 |
| 1:A:19:C:H2' | 1:A:20:U:H6 | 1.81 | 0.44 |
| 2:B:179:LYS:HE3 | 2:B:179:LYS:HB2 | 1.81 | 0.44 |
| 8:H:31:PHE:O | 8:H:35:ILE:HG12 | 2.17 | 0.44 |
| 1:A:476:G:H2' | 1:A:477:G:H8 | 1.82 | 0.44 |
| 1:A:707:C:O2 | 11:K:39:PRO:HD3 | 2.17 | 0.44 |
| 1:A:1065:U:H1' | 1:A:1066:C:OP2 | 2.17 | 0.44 |
| 1:A:1316:G:N2 | 1:A:1319:A:OP2 | 2.51 | 0.44 |
| 9:I:63:ILE:HG21 | 9:I:77:ILE:HG12 | 2.00 | 0.44 |
| 11:K:58:PRO:HD3 | 11:K:89:ALA:HB1 | 1.99 | 0.44 |
| 13:M:99:ARG:HB2 | 13:M:101:GLN:NE2 | 2.32 | 0.44 |
| 1:A:79:G:H2' | 1:A:79:G:N3 | 2.33 | 0.44 |
| 1:A:615:C:H2' | 1:A:616:G:O4' | 2.18 | 0.44 |
| 2:B:188:ALA:O | 2:B:202:PRO:HA | 2.17 | 0.44 |
| 4:D:28:SER:O | 4:D:30:LYS:N | 2.48 | 0.44 |
| 10:J:50:ILE:HD12 | 10:J:50:ILE:H | 1.81 | 0.44 |
| 13:M:62:ASN:OD1 | 13:M:62:ASN:N | 2.50 | 0.44 |
| 20:T:63:ILE:HG21 | 20:T:81:LYS:HG3 | 2.00 | 0.44 |
| 1:A:1125:U:O4 | 10:J:5:ARG:NE | 2.42 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|---------------------|--------------------------|-------------------|
| 2:B:230:VAL:HG12 | 2:B:231:GLU:O | 2.17 | 0.44 |
| 9:I:15:ALA:HB2 | 9:I:65:VAL:HG23 | 2.00 | 0.44 |
| 1:A:299:G:C6 | 1:A:300:A:C6 | 3.06 | 0.44 |
| 1:A:1403:C:H1' | 1:A:1500:A:N1 | 2.33 | 0.44 |
| 1:A:1516[A]:G:H2' | 1:A:1518[A]:MA6:OP2 | 2.17 | 0.44 |
| 12:L:53:ARG:HG2 | 12:L:93:LEU:HD11 | 1.99 | 0.44 |
| 15:O:75:PRO:O | 15:O:79:ARG:HG3 | 2.17 | 0.44 |
| 18:R:40:LEU:HB3 | 18:R:79:LEU:HD11 | 2.00 | 0.44 |
| 1:A:381:C:H2' | 1:A:382:A:O4' | 2.18 | 0.44 |
| 1:A:688:G:H2' | 1:A:689:C:C6 | 2.53 | 0.44 |
| 1:A:719:C:O2' | 18:R:49:LYS:HB3 | 2.18 | 0.44 |
| 1:A:1022:G:N2 | 1:A:1023:G:N7 | 2.65 | 0.44 |
| 1:A:1049:U:H5' | 1:A:1201:A:OP2 | 2.17 | 0.44 |
| 1:A:1493:A:H2' | 1:A:1494:G:H8 | 1.82 | 0.44 |
| 10:J:8:LEU:O | 10:J:69:ASN:HA | 2.17 | 0.44 |
| 1:A:691:G:H2' | 1:A:692:U:C6 | 2.52 | 0.44 |
| 1:A:1200:C:H5' | 1:A:1201:A:OP1 | 2.18 | 0.44 |
| 4:D:61:LYS:NZ | 4:D:62:GLN:OE1 | 2.38 | 0.44 |
| 5:E:118:ILE:HG12 | 5:E:119:LEU:N | 2.33 | 0.44 |
| 16:P:3:LYS:HE2 | 16:P:3:LYS:HB3 | 1.87 | 0.44 |
| 17:Q:50:LYS:HE2 | 17:Q:50:LYS:HB3 | 1.77 | 0.44 |
| 20:T:72:LEU:HD11 | 20:T:80:ARG:HD2 | 1.99 | 0.44 |
| 1:A:105:G:H2' | 1:A:106:C:C6 | 2.53 | 0.43 |
| 1:A:1007:C:H2' | 1:A:1008:C:C6 | 2.53 | 0.43 |
| 1:A:1151:A:HO2' | 1:A:1152:A:H8 | 1.66 | 0.43 |
| 1:A:1211:U:H1' | 1:A:1213:A:N3 | 2.33 | 0.43 |
| 5:E:13:ILE:HA | 5:E:29:GLY:O | 2.17 | 0.43 |
| 10:J:57:LYS:O | 10:J:60:ARG:NH1 | 2.51 | 0.43 |
| 13:M:54:VAL:HG23 | 13:M:57:ARG:NH1 | 2.33 | 0.43 |
| 1:A:157:G:H2' | 1:A:158:G:C8 | 2.52 | 0.43 |
| 1:A:371:G:O2' | 1:A:372:C:H5' | 2.17 | 0.43 |
| 1:A:812:C:H4' | 1:A:813:U:O5' | 2.18 | 0.43 |
| 1:A:1399:C:C2 | 1:A:1502:A:N6 | 2.86 | 0.43 |
| 2:B:213:LEU:O | 2:B:217:ARG:HG2 | 2.18 | 0.43 |
| 3:C:27:LYS:HA | 3:C:30:ARG:HH12 | 1.83 | 0.43 |
| 5:E:80:ILE:HD13 | 5:E:138:ALA:HB1 | 2.00 | 0.43 |
| 13:M:4:ILE:O | 13:M:57:ARG:HG3 | 2.18 | 0.43 |
| 1:A:825:G:N2 | 8:H:11:THR:HG21 | 2.34 | 0.43 |
| 1:A:1037:C:H2' | 1:A:1038:C:C6 | 2.53 | 0.43 |
| 1:A:1248:A:H2' | 1:A:1249:C:C6 | 2.54 | 0.43 |
| 9:I:8:GLY:H | 9:I:83:ARG:HD2 | 1.82 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 9:I:10:ARG:HG2 | 9:I:75:ASP:CB | 2.46 | 0.43 |
| 5:E:76:ILE:HG23 | 5:E:142:LEU:HD13 | 2.01 | 0.43 |
| 13:M:51:ALA:O | 13:M:54:VAL:HG12 | 2.18 | 0.43 |
| 18:R:47:THR:HG22 | 18:R:83:GLU:H | 1.83 | 0.43 |
| 1:A:662:G:H2' | 1:A:663:A:C8 | 2.53 | 0.43 |
| 1:A:1437:C:H2' | 1:A:1438:G:C8 | 2.52 | 0.43 |
| 1:A:1518[B]:MA6:H93 | 1:A:1519[B]:MA6:N1 | 2.33 | 0.43 |
| 8:H:113:SER:HB2 | 8:H:134:ILE:HD11 | 1.99 | 0.43 |
| 11:K:27:ASN:OD1 | 11:K:28:THR:N | 2.52 | 0.43 |
| 13:M:11:ARG:HA | 13:M:45:VAL:HG11 | 2.00 | 0.43 |
| 13:M:63:THR:HG23 | 13:M:64:TRP:CD2 | 2.54 | 0.43 |
| 15:O:29:VAL:HG11 | 15:O:67:LEU:HD21 | 2.00 | 0.43 |
| 1:A:252:U:H2' | 1:A:253:U:C6 | 2.53 | 0.43 |
| 1:A:428:G:H1' | 1:A:429:U:OP2 | 2.19 | 0.43 |
| 1:A:676:A:H1' | 11:K:115:PRO:HB3 | 2.00 | 0.43 |
| 1:A:833:U:H2' | 1:A:834:C:C6 | 2.53 | 0.43 |
| 1:A:1419:G:H2' | 1:A:1420:C:C6 | 2.54 | 0.43 |
| 12:L:124:LYS:HD2 | 12:L:125:PRO:HD2 | 2.00 | 0.43 |
| 1:A:7:G:H21 | 5:E:121:LYS:HG2 | 1.84 | 0.43 |
| 1:A:433:C:H2' | 1:A:434:U:C6 | 2.54 | 0.43 |
| 1:A:963:G:HO2' | 10:J:54:PHE:HZ | 1.63 | 0.43 |
| 2:B:103:THR:HG23 | 2:B:180:LEU:HD21 | 1.99 | 0.43 |
| 1:A:142:G:O2' | 1:A:196:A:N1 | 2.44 | 0.43 |
| 1:A:1242:C:P | 21:U:10:ARG:HH12 | 2.40 | 0.43 |
| 1:A:1300:G:H4' | 1:A:1301:U:O5' | 2.18 | 0.43 |
| 1:A:1355:G:H2' | 1:A:1356:G:H8 | 1.84 | 0.43 |
| 2:B:13:ALA:O | 2:B:15:VAL:N | 2.52 | 0.43 |
| 4:D:35:ARG:HD2 | 4:D:35:ARG:N | 2.33 | 0.43 |
| 4:D:121:VAL:O | 4:D:134:ASP:HA | 2.19 | 0.43 |
| 14:N:29:ARG:HA | 14:N:29:ARG:HD2 | 1.84 | 0.43 |
| 14:N:29:ARG:HH22 | 14:N:41:ARG:NH1 | 2.17 | 0.43 |
| 18:R:53:ARG:NH1 | 18:R:58:LEU:O | 2.45 | 0.43 |
| 1:A:19:C:H2' | 1:A:20:U:C6 | 2.53 | 0.43 |
| 1:A:960:U:H4' | 1:A:961:U:C5' | 2.49 | 0.43 |
| 1:A:1278:U:H5' | 1:A:1279:A:O4' | 2.18 | 0.43 |
| 1:A:1284:C:H3' | 1:A:1285:A:H8 | 1.84 | 0.43 |
| 1:A:1343:G:H1' | 9:I:121:ARG:NH1 | 2.34 | 0.43 |
| 9:I:28:VAL:HA | 9:I:63:ILE:O | 2.19 | 0.43 |
| 13:M:77:ASN:O | 13:M:81:LEU:HG | 2.19 | 0.43 |
| 17:Q:83:ASP:OD1 | 17:Q:83:ASP:N | 2.50 | 0.43 |
| 19:S:17:GLU:HA | 19:S:20:LEU:HG | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 20:T:45:GLN:HA | 20:T:91:LEU:HD12 | 2.01 | 0.43 |
| 20:T:89:ARG:NH2 | 20:T:104:LEU:HB3 | 2.33 | 0.43 |
| 1:A:373:A:H1' | 1:A:481:G:H1' | 2.01 | 0.42 |
| 1:A:1305:G:H5'' | 21:U:4:GLY:HA3 | 2.01 | 0.42 |
| 1:A:1401:G:O6 | 1:A:1504:G:N2 | 2.52 | 0.42 |
| 1:A:1465:C:H2' | 1:A:1466:C:O4' | 2.19 | 0.42 |
| 4:D:177:ASP:OD1 | 4:D:180:GLY:N | 2.40 | 0.42 |
| 11:K:59:TYR:CE2 | 11:K:63:LEU:HD11 | 2.54 | 0.42 |
| 13:M:57:ARG:HG2 | 13:M:61:GLU:HG3 | 2.00 | 0.42 |
| 14:N:6:LEU:HB3 | 14:N:23:ARG:NH2 | 2.34 | 0.42 |
| 18:R:48:GLY:O | 18:R:74:ARG:NH2 | 2.52 | 0.42 |
| 1:A:517:G:N1 | 1:A:533:A:OP2 | 2.46 | 0.42 |
| 1:A:1229:A:OP2 | 13:M:114:ARG:NH1 | 2.53 | 0.42 |
| 3:C:110:ASN:O | 3:C:141:VAL:HG22 | 2.20 | 0.42 |
| 3:C:147:LYS:HB2 | 3:C:203:PHE:CE2 | 2.54 | 0.42 |
| 7:G:44:TYR:O | 7:G:48:LYS:HG3 | 2.19 | 0.42 |
| 7:G:87:VAL:HG11 | 7:G:154:TYR:O | 2.18 | 0.42 |
| 13:M:54:VAL:O | 13:M:58:GLU:HG2 | 2.19 | 0.42 |
| 19:S:28:LYS:HG2 | 19:S:29:ARG:H | 1.84 | 0.42 |
| 20:T:73:HIS:HB3 | 20:T:74:LYS:H | 1.58 | 0.42 |
| 1:A:952:U:H2' | 1:A:953:G:H8 | 1.85 | 0.42 |
| 1:A:1111:A:N6 | 3:C:177:THR:HB | 2.30 | 0.42 |
| 1:A:1202:G:H2' | 1:A:1203:C:O4' | 2.19 | 0.42 |
| 1:A:1300:G:H1' | 1:A:1301:U:OP2 | 2.18 | 0.42 |
| 1:A:1316:G:N1 | 1:A:1319:A:OP2 | 2.51 | 0.42 |
| 3:C:70:VAL:HG21 | 3:C:76:VAL:HG21 | 2.01 | 0.42 |
| 4:D:22:LYS:HB2 | 4:D:26:CYS:SG | 2.59 | 0.42 |
| 12:L:20:LYS:H | 12:L:20:LYS:HG3 | 1.52 | 0.42 |
| 1:A:217:C:H2' | 1:A:218:C:H6 | 1.83 | 0.42 |
| 1:A:757:U:O2' | 1:A:879:C:O2 | 2.37 | 0.42 |
| 1:A:1130:A:H4' | 9:I:3:GLN:NE2 | 2.35 | 0.42 |
| 7:G:26:PHE:CE2 | 7:G:30:ILE:HD11 | 2.55 | 0.42 |
| 11:K:33:THR:HG1 | 11:K:38:ASN:C | 2.22 | 0.42 |
| 12:L:77:LEU:HD23 | 12:L:77:LEU:HA | 1.90 | 0.42 |
| 14:N:29:ARG:HH22 | 14:N:41:ARG:HH12 | 1.67 | 0.42 |
| 1:A:936:C:H2' | 1:A:937:A:O4' | 2.20 | 0.42 |
| 1:A:1098:C:H2' | 1:A:1099:G:O4' | 2.19 | 0.42 |
| 4:D:187:ARG:HA | 4:D:187:ARG:HD2 | 1.84 | 0.42 |
| 9:I:99:LEU:HB3 | 9:I:101:PHE:CD1 | 2.55 | 0.42 |
| 13:M:2:ALA:O | 13:M:10:PRO:HD2 | 2.19 | 0.42 |
| 13:M:36:LYS:HB2 | 13:M:59:TYR:CE2 | 2.55 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 1:A:1232:U:OP1 | 9:I:126:SER:HB3 | 2.18 | 0.42 |
| 3:C:180:ALA:HB3 | 3:C:203:PHE:HE1 | 1.84 | 0.42 |
| 10:J:9:ARG:HA | 10:J:68:HIS:O | 2.20 | 0.42 |
| 10:J:90:LEU:N | 10:J:91:PRO:HD2 | 2.34 | 0.42 |
| 11:K:29:ILE:HG12 | 11:K:30:VAL:N | 2.34 | 0.42 |
| 13:M:13:LYS:O | 13:M:45:VAL:HG23 | 2.20 | 0.42 |
| 1:A:939:G:H5' | 7:G:102:ARG:CZ | 2.50 | 0.42 |
| 1:A:1308:U:H2' | 1:A:1309:G:C8 | 2.55 | 0.42 |
| 1:A:1477:C:H2' | 1:A:1478:C:C6 | 2.55 | 0.42 |
| 6:F:55:ASP:HB3 | 6:F:86:ARG:HH12 | 1.85 | 0.42 |
| 13:M:56:LEU:HD23 | 13:M:56:LEU:HA | 1.88 | 0.42 |
| 1:A:463:A:H2' | 1:A:474:G:O4' | 2.19 | 0.42 |
| 1:A:721:G:OP2 | 18:R:53:ARG:HG3 | 2.20 | 0.42 |
| 2:B:28:PHE:HD2 | 2:B:32:ILE:HD11 | 1.85 | 0.42 |
| 2:B:112:VAL:HG22 | 2:B:149:LEU:HD13 | 2.02 | 0.42 |
| 7:G:111:ARG:NH1 | 7:G:113:GLU:OE2 | 2.53 | 0.42 |
| 9:I:111:ARG:NH1 | 9:I:112:LYS:O | 2.52 | 0.42 |
| 13:M:87:TYR:N | 19:S:73:GLU:O | 2.53 | 0.42 |
| 1:A:695:A:H61 | 1:A:797:C:H1' | 1.84 | 0.42 |
| 1:A:716:A:N3 | 11:K:118:GLY:HA2 | 2.34 | 0.42 |
| 10:J:39:PRO:HA | 10:J:70:ARG:HD3 | 2.02 | 0.42 |
| 11:K:58:PRO:HA | 11:K:90:GLY:HA3 | 2.02 | 0.42 |
| 1:A:413:G:H2' | 1:A:428:G:N2 | 2.35 | 0.42 |
| 1:A:484:G:H1' | 1:A:485:G:OP2 | 2.20 | 0.42 |
| 1:A:1077:G:N2 | 1:A:1080:A:OP2 | 2.47 | 0.42 |
| 1:A:1255:G:C6 | 1:A:1279:A:N7 | 2.88 | 0.42 |
| 2:B:84:GLU:OE2 | 2:B:233:SER:OG | 2.38 | 0.42 |
| 2:B:157:ARG:HG2 | 2:B:158:LEU:N | 2.35 | 0.42 |
| 4:D:36:ARG:HG2 | 4:D:38:TYR:CZ | 2.55 | 0.42 |
| 5:E:137:GLU:O | 5:E:141:GLN:HG3 | 2.20 | 0.42 |
| 6:F:26:ILE:HG23 | 6:F:79:LEU:HD21 | 2.02 | 0.42 |
| 8:H:105:ARG:HD3 | 8:H:105:ARG:HA | 1.85 | 0.42 |
| 9:I:50:LEU:HD11 | 9:I:81:ILE:HD13 | 2.01 | 0.42 |
| 10:J:79:ARG:NH1 | 10:J:79:ARG:HA | 2.34 | 0.42 |
| 13:M:65:LYS:H | 13:M:65:LYS:HG2 | 1.50 | 0.42 |
| 1:A:384:G:H2' | 1:A:385:C:C6 | 2.55 | 0.41 |
| 1:A:544:G:OP1 | 4:D:62:GLN:NE2 | 2.44 | 0.41 |
| 1:A:859:A:OP2 | 1:A:869:G:N1 | 2.36 | 0.41 |
| 3:C:17:ASP:O | 3:C:54:ARG:NH2 | 2.53 | 0.41 |
| 5:E:82:VAL:HG21 | 5:E:138:ALA:HA | 2.01 | 0.41 |
| 6:F:11:ASN:HD22 | 6:F:86:ARG:NH2 | 2.17 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------|--------------------------|-------------------|
| 7:G:74:GLU:O | 7:G:88:PRO:HA | 2.20 | 0.41 |
| 7:G:116:ALA:O | 7:G:120:ILE:HG12 | 2.20 | 0.41 |
| 13:M:90:LEU:HD23 | 13:M:93:ARG:HD2 | 2.02 | 0.41 |
| 1:A:397:A:H5' | 1:A:398:C:OP1 | 2.20 | 0.41 |
| 1:A:1034:G:H2' | 1:A:1035:A:H8 | 1.84 | 0.41 |
| 1:A:1205:U:H2' | 1:A:1206:G:H8 | 1.84 | 0.41 |
| 1:A:1308:U:OP2 | 13:M:99:ARG:HG2 | 2.19 | 0.41 |
| 2:B:178:ARG:O | 8:H:71:GLY:HA2 | 2.20 | 0.41 |
| 2:B:181:PHE:HD2 | 8:H:70:GLN:HB3 | 1.85 | 0.41 |
| 4:D:53:ASP:OD1 | 4:D:53:ASP:N | 2.53 | 0.41 |
| 15:O:55:GLY:O | 15:O:59:MET:HG3 | 2.20 | 0.41 |
| 1:A:349:A:H2' | 1:A:350:G:O4' | 2.20 | 0.41 |
| 1:A:975:A:H5'' | 1:A:1363:A:N6 | 2.34 | 0.41 |
| 11:K:62:GLN:HG3 | 11:K:97:ALA:HB2 | 2.01 | 0.41 |
| 16:P:4:ILE:O | 16:P:66:PRO:HA | 2.20 | 0.41 |
| 16:P:21:VAL:HG23 | 16:P:36:ILE:HG12 | 2.02 | 0.41 |
| 19:S:7:LYS:HE3 | 19:S:7:LYS:HB3 | 1.87 | 0.41 |
| 1:A:671:G:H5' | 6:F:77:ARG:NH2 | 2.32 | 0.41 |
| 1:A:1004:A:H5'' | 1:A:1025:U:C4 | 2.55 | 0.41 |
| 10:J:47:PHE:HB3 | 14:N:34:TYR:HE2 | 1.85 | 0.41 |
| 1:A:488:C:H2' | 1:A:489:C:C6 | 2.56 | 0.41 |
| 1:A:1162:C:H2' | 1:A:1163:C:H6 | 1.84 | 0.41 |
| 1:A:1279:A:H8 | 1:A:1282:C:N3 | 2.17 | 0.41 |
| 2:B:28:PHE:CD2 | 2:B:190:THR:HA | 2.56 | 0.41 |
| 1:A:110:C:H2' | 1:A:111:G:O4' | 2.20 | 0.41 |
| 1:A:986:A:H1' | 19:S:54:GLY:O | 2.20 | 0.41 |
| 1:A:1277:C:H1' | 1:A:1282:C:H1' | 2.02 | 0.41 |
| 12:L:126:LYS:HE2 | 12:L:126:LYS:HB2 | 1.86 | 0.41 |
| 14:N:8:GLU:O | 14:N:11:LYS:HG3 | 2.21 | 0.41 |
| 3:C:136:GLN:O | 3:C:140:ARG:HG3 | 2.20 | 0.41 |
| 4:D:61:LYS:HE3 | 4:D:61:LYS:HB3 | 1.92 | 0.41 |
| 6:F:76:ALA:O | 6:F:80:ARG:HG3 | 2.20 | 0.41 |
| 8:H:104:ARG:HD3 | 8:H:104:ARG:HA | 1.89 | 0.41 |
| 9:I:8:GLY:HA2 | 9:I:79:LEU:HD13 | 2.02 | 0.41 |
| 18:R:39:VAL:HG13 | 18:R:40:LEU:HD23 | 2.02 | 0.41 |
| 19:S:29:ARG:HD2 | 19:S:29:ARG:N | 2.35 | 0.41 |
| 1:A:77:G:H2' | 1:A:78:G:H8 | 1.83 | 0.41 |
| 1:A:841:U:H5' | 1:A:848:C:C6 | 2.56 | 0.41 |
| 1:A:1231:G:H5'' | 9:I:126:SER:OG | 2.21 | 0.41 |
| 2:B:223:ILE:H | 2:B:223:ILE:HG13 | 1.74 | 0.41 |
| 14:N:22:THR:HB | 14:N:33:VAL:HB | 2.03 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|----------------------|---------------------|--------------------------|-------------------|
| 1:A:7:G:O6 | 5:E:92:LYS:NZ | 2.36 | 0.41 |
| 1:A:116:A:H2' | 1:A:117:G:H8 | 1.86 | 0.41 |
| 1:A:160:A:H1' | 1:A:344:A:N7 | 2.36 | 0.41 |
| 1:A:190(K):G:H2' | 1:A:190(L):U:C6 | 2.56 | 0.41 |
| 1:A:453:A:N6 | 1:A:480:U:O2 | 2.54 | 0.41 |
| 1:A:509:A:HO2' | 1:A:510:A:P | 2.43 | 0.41 |
| 1:A:911:U:H2' | 1:A:912:C:C6 | 2.55 | 0.41 |
| 1:A:939:G:H2' | 1:A:940:C:C6 | 2.56 | 0.41 |
| 1:A:1518[B]:MA6:H102 | 1:A:1519[B]:MA6:C10 | 2.47 | 0.41 |
| 10:J:19:SER:HB2 | 10:J:91:PRO:HG3 | 2.03 | 0.41 |
| 12:L:48:PRO:HD2 | 12:L:92:OTD:H8 | 2.03 | 0.41 |
| 12:L:89:ARG:HG2 | 12:L:97:ARG:HA | 2.03 | 0.41 |
| 1:A:278:G:C6 | 17:Q:95:TYR:HD2 | 2.39 | 0.41 |
| 1:A:1006:C:H2' | 1:A:1007:C:C6 | 2.56 | 0.41 |
| 1:A:1450:U:O2' | 1:A:1451:A:H8 | 2.04 | 0.41 |
| 11:K:106:LYS:HD2 | 11:K:106:LYS:HA | 1.94 | 0.41 |
| 1:A:176:C:H2' | 1:A:177:C:C6 | 2.56 | 0.40 |
| 1:A:1003(A):G:C5 | 1:A:1004:A:H1' | 2.56 | 0.40 |
| 1:A:1101:A:H4' | 1:A:1102:A:O5' | 2.21 | 0.40 |
| 1:A:1124:G:H5' | 10:J:35:SER:HA | 2.02 | 0.40 |
| 1:A:1175:G:H2' | 1:A:1176:A:C8 | 2.56 | 0.40 |
| 1:A:1352:C:OP1 | 21:U:3:LYS:NZ | 2.36 | 0.40 |
| 10:J:53:PRO:HB3 | 14:N:42:ILE:HD13 | 2.02 | 0.40 |
| 17:Q:56:VAL:HG21 | 17:Q:81:ARG:HD3 | 2.03 | 0.40 |
| 18:R:23:LYS:HD2 | 18:R:58:LEU:HD23 | 2.03 | 0.40 |
| 19:S:25:LYS:HD2 | 19:S:25:LYS:N | 2.36 | 0.40 |
| 1:A:502:G:H2' | 1:A:503:C:O4' | 2.21 | 0.40 |
| 1:A:587:G:N2 | 1:A:754:C:OP2 | 2.53 | 0.40 |
| 1:A:620:C:H2' | 1:A:621:A:O4' | 2.21 | 0.40 |
| 1:A:666:G:H5' | 1:A:726:C:H1' | 2.04 | 0.40 |
| 1:A:1228:C:OP1 | 13:M:108:ARG:NH2 | 2.54 | 0.40 |
| 1:A:1372:U:H5'' | 9:I:71:SER:HB3 | 2.02 | 0.40 |
| 5:E:69:VAL:HA | 5:E:70:PRO:HD3 | 1.94 | 0.40 |
| 5:E:147:ASP:N | 5:E:147:ASP:OD1 | 2.53 | 0.40 |
| 7:G:12:LEU:H | 7:G:12:LEU:HD12 | 1.85 | 0.40 |
| 15:O:26:GLU:HA | 15:O:81:LEU:HD11 | 2.03 | 0.40 |
| 1:A:98:U:H2' | 1:A:99:C:C6 | 2.57 | 0.40 |
| 1:A:222:U:H2' | 1:A:223:U:C6 | 2.56 | 0.40 |
| 1:A:860:A:H2' | 1:A:861:G:O4' | 2.20 | 0.40 |
| 1:A:1057:G:H5'' | 3:C:154:SER:HB2 | 2.02 | 0.40 |
| 1:A:1061:G:N7 | 3:C:2:GLY:HA3 | 2.36 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 1:A:1213:A:N6 | 1:A:1215:G:N3 | 2.68 | 0.40 |
| 1:A:1497:G:C2' | 1:A:1498:UR3:H5' | 2.51 | 0.40 |
| 2:B:155:LEU:HD23 | 2:B:155:LEU:HA | 1.79 | 0.40 |
| 2:B:240:GLN:OE1 | 2:B:240:GLN:N | 2.44 | 0.40 |
| 11:K:99:GLN:HE21 | 11:K:108:ILE:HD11 | 1.86 | 0.40 |
| 12:L:113:ARG:NH1 | 12:L:116:SER:H | 2.20 | 0.40 |
| 2:B:74:LYS:O | 2:B:78:GLN:HG3 | 2.21 | 0.40 |
| 1:A:815:A:N7 | 1:A:1509:C:O2' | 2.47 | 0.40 |
| 1:A:824:C:H2' | 1:A:825:G:C8 | 2.57 | 0.40 |
| 1:A:1211:U:H1' | 1:A:1213:A:C2 | 2.57 | 0.40 |
| 5:E:11:ILE:HB | 5:E:31:LEU:HB3 | 2.03 | 0.40 |
| 11:K:41:THR:HG21 | 11:K:71:LYS:HB3 | 2.03 | 0.40 |
| 13:M:87:TYR:CE1 | 13:M:91:ARG:HD3 | 2.57 | 0.40 |
| 20:T:81:LYS:O | 20:T:85:MET:HG3 | 2.22 | 0.40 |

All (2) 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) |
|-------------|------------------------|--------------------------|-------------------|
| 1:A:82:U:O2 | 1:A:1400:5MC:C2[3_545] | 1.93 | 0.27 |
| 1:A:82:U:O2 | 1:A:1400:5MC:C4[3_545] | 2.13 | 0.07 |

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles |
|-----|-------|---------------|-----------|---------|----------|-------------|
| 2 | B | 232/234 (99%) | 213 (92%) | 18 (8%) | 1 (0%) | 34 72 |
| 3 | C | 204/206 (99%) | 186 (91%) | 18 (9%) | 0 | 100 100 |
| 4 | D | 206/208 (99%) | 201 (98%) | 5 (2%) | 0 | 100 100 |
| 5 | E | 148/150 (99%) | 143 (97%) | 5 (3%) | 0 | 100 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-----------------|------------|----------|----------|-------------|-----|
| 6 | F | 99/101 (98%) | 96 (97%) | 3 (3%) | 0 | 100 | 100 |
| 7 | G | 153/155 (99%) | 150 (98%) | 3 (2%) | 0 | 100 | 100 |
| 8 | H | 136/138 (99%) | 135 (99%) | 1 (1%) | 0 | 100 | 100 |
| 9 | I | 125/127 (98%) | 117 (94%) | 8 (6%) | 0 | 100 | 100 |
| 10 | J | 96/98 (98%) | 79 (82%) | 14 (15%) | 3 (3%) | 4 | 30 |
| 11 | K | 114/116 (98%) | 109 (96%) | 5 (4%) | 0 | 100 | 100 |
| 12 | L | 121/124 (98%) | 107 (88%) | 14 (12%) | 0 | 100 | 100 |
| 13 | M | 116/118 (98%) | 106 (91%) | 10 (9%) | 0 | 100 | 100 |
| 14 | N | 58/60 (97%) | 49 (84%) | 9 (16%) | 0 | 100 | 100 |
| 15 | O | 85/87 (98%) | 83 (98%) | 2 (2%) | 0 | 100 | 100 |
| 16 | P | 81/83 (98%) | 78 (96%) | 3 (4%) | 0 | 100 | 100 |
| 17 | Q | 97/99 (98%) | 95 (98%) | 2 (2%) | 0 | 100 | 100 |
| 18 | R | 68/70 (97%) | 67 (98%) | 1 (2%) | 0 | 100 | 100 |
| 19 | S | 78/80 (98%) | 73 (94%) | 5 (6%) | 0 | 100 | 100 |
| 20 | T | 97/99 (98%) | 84 (87%) | 10 (10%) | 3 (3%) | 4 | 30 |
| 21 | U | 22/24 (92%) | 21 (96%) | 1 (4%) | 0 | 100 | 100 |
| All | All | 2336/2377 (98%) | 2192 (94%) | 137 (6%) | 7 (0%) | 41 | 75 |

All (7) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 10 | J | 55 | LYS |
| 20 | T | 74 | LYS |
| 20 | T | 75 | ASN |
| 2 | B | 14 | GLY |
| 10 | J | 56 | HIS |
| 20 | T | 73 | HIS |
| 10 | J | 54 | PHE |

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 | B | 202/202 (100%) | 176 (87%) | 26 (13%) | 4 | 22 |
| 3 | C | 160/160 (100%) | 138 (86%) | 22 (14%) | 3 | 20 |
| 4 | D | 180/180 (100%) | 169 (94%) | 11 (6%) | 18 | 51 |
| 5 | E | 115/115 (100%) | 106 (92%) | 9 (8%) | 12 | 42 |
| 6 | F | 90/90 (100%) | 82 (91%) | 8 (9%) | 9 | 37 |
| 7 | G | 126/126 (100%) | 116 (92%) | 10 (8%) | 12 | 41 |
| 8 | H | 119/119 (100%) | 111 (93%) | 8 (7%) | 16 | 48 |
| 9 | I | 98/98 (100%) | 83 (85%) | 15 (15%) | 2 | 17 |
| 10 | J | 87/88 (99%) | 76 (87%) | 11 (13%) | 4 | 22 |
| 11 | K | 88/88 (100%) | 83 (94%) | 5 (6%) | 20 | 53 |
| 12 | L | 103/103 (100%) | 88 (85%) | 15 (15%) | 3 | 18 |
| 13 | M | 94/94 (100%) | 80 (85%) | 14 (15%) | 3 | 17 |
| 14 | N | 49/49 (100%) | 43 (88%) | 6 (12%) | 5 | 23 |
| 15 | O | 79/79 (100%) | 66 (84%) | 13 (16%) | 2 | 13 |
| 16 | P | 72/72 (100%) | 63 (88%) | 9 (12%) | 4 | 23 |
| 17 | Q | 94/94 (100%) | 89 (95%) | 5 (5%) | 22 | 55 |
| 18 | R | 61/61 (100%) | 57 (93%) | 4 (7%) | 16 | 49 |
| 19 | S | 71/71 (100%) | 65 (92%) | 6 (8%) | 10 | 39 |
| 20 | T | 76/76 (100%) | 65 (86%) | 11 (14%) | 3 | 18 |
| 21 | U | 19/19 (100%) | 18 (95%) | 1 (5%) | 22 | 55 |
| All | All | 1983/1984 (100%) | 1774 (90%) | 209 (10%) | 7 | 31 |

All (209) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | B | 7 | VAL |
| 2 | B | 8 | LYS |
| 2 | B | 10 | LEU |
| 2 | B | 11 | LEU |
| 2 | B | 12 | GLU |
| 2 | B | 21 | ARG |
| 2 | B | 24 | TRP |
| 2 | B | 33 | TYR |
| 2 | B | 39 | ILE |
| 2 | B | 44 | LEU |
| 2 | B | 69 | LEU |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 2 | B | 96 | ARG |
| 2 | B | 97 | TRP |
| 2 | B | 102 | LEU |
| 2 | B | 103 | THR |
| 2 | B | 127 | ILE |
| 2 | B | 144 | ARG |
| 2 | B | 153 | ARG |
| 2 | B | 154 | LEU |
| 2 | B | 157 | ARG |
| 2 | B | 172 | ILE |
| 2 | B | 178 | ARG |
| 2 | B | 195 | ASP |
| 2 | B | 206 | ASP |
| 2 | B | 212 | GLN |
| 2 | B | 236 | TYR |
| 3 | C | 10 | PHE |
| 3 | C | 11 | ARG |
| 3 | C | 31 | HIS |
| 3 | C | 34 | LEU |
| 3 | C | 52 | LEU |
| 3 | C | 58 | GLU |
| 3 | C | 90 | GLU |
| 3 | C | 91 | LEU |
| 3 | C | 94 | LEU |
| 3 | C | 95 | THR |
| 3 | C | 98 | ASN |
| 3 | C | 99 | VAL |
| 3 | C | 104 | GLN |
| 3 | C | 108 | ASN |
| 3 | C | 111 | LEU |
| 3 | C | 166 | GLU |
| 3 | C | 176 | HIS |
| 3 | C | 177 | THR |
| 3 | C | 178 | LEU |
| 3 | C | 188 | LEU |
| 3 | C | 191 | THR |
| 3 | C | 204 | LEU |
| 4 | D | 19 | LEU |
| 4 | D | 35 | ARG |
| 4 | D | 36 | ARG |
| 4 | D | 53 | ASP |
| 4 | D | 122 | ARG |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 4 | D | 150 | GLU |
| 4 | D | 155 | LEU |
| 4 | D | 157 | LEU |
| 4 | D | 160 | GLN |
| 4 | D | 192 | GLU |
| 4 | D | 202 | LEU |
| 5 | E | 5 | ASP |
| 5 | E | 6 | PHE |
| 5 | E | 12 | LEU |
| 5 | E | 26 | PHE |
| 5 | E | 41 | VAL |
| 5 | E | 79 | GLU |
| 5 | E | 118 | ILE |
| 5 | E | 150 | ARG |
| 5 | E | 151 | LEU |
| 6 | F | 10 | LEU |
| 6 | F | 19 | LEU |
| 6 | F | 24 | GLU |
| 6 | F | 32 | ASN |
| 6 | F | 43 | LEU |
| 6 | F | 72 | VAL |
| 6 | F | 82 | ARG |
| 6 | F | 95 | GLU |
| 7 | G | 3 | ARG |
| 7 | G | 8 | GLU |
| 7 | G | 27 | ILE |
| 7 | G | 47 | CYS |
| 7 | G | 67 | GLU |
| 7 | G | 84 | ASN |
| 7 | G | 104 | LEU |
| 7 | G | 113 | GLU |
| 7 | G | 136 | LYS |
| 7 | G | 149 | ARG |
| 8 | H | 26 | VAL |
| 8 | H | 63 | LEU |
| 8 | H | 83 | ILE |
| 8 | H | 85 | ARG |
| 8 | H | 88 | LYS |
| 8 | H | 91 | ARG |
| 8 | H | 92 | ARG |
| 8 | H | 98 | LYS |
| 9 | I | 11 | LYS |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 9 | I | 14 | VAL |
| 9 | I | 38 | GLN |
| 9 | I | 44 | VAL |
| 9 | I | 47 | LEU |
| 9 | I | 56 | LEU |
| 9 | I | 58 | HIS |
| 9 | I | 64 | THR |
| 9 | I | 79 | LEU |
| 9 | I | 83 | ARG |
| 9 | I | 91 | ASP |
| 9 | I | 96 | LEU |
| 9 | I | 99 | LEU |
| 9 | I | 113 | LYS |
| 9 | I | 118 | LYS |
| 10 | J | 3 | LYS |
| 10 | J | 38 | ILE |
| 10 | J | 45 | ARG |
| 10 | J | 55 | LYS |
| 10 | J | 60 | ARG |
| 10 | J | 62 | HIS |
| 10 | J | 73 | ASP |
| 10 | J | 78 | ASN |
| 10 | J | 80 | LYS |
| 10 | J | 85 | LEU |
| 10 | J | 95 | GLU |
| 11 | K | 12 | ARG |
| 11 | K | 29 | ILE |
| 11 | K | 33 | THR |
| 11 | K | 81 | ASP |
| 11 | K | 98 | LEU |
| 12 | L | 18 | VAL |
| 12 | L | 20 | LYS |
| 12 | L | 33 | ARG |
| 12 | L | 36 | VAL |
| 12 | L | 42 | THR |
| 12 | L | 47 | LYS |
| 12 | L | 53 | ARG |
| 12 | L | 59 | ARG |
| 12 | L | 79 | GLU |
| 12 | L | 80 | HIS |
| 12 | L | 82 | VAL |
| 12 | L | 96 | VAL |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 12 | L | 97 | ARG |
| 12 | L | 113 | ARG |
| 12 | L | 122 | THR |
| 13 | M | 7 | VAL |
| 13 | M | 12 | ASN |
| 13 | M | 14 | ARG |
| 13 | M | 44 | ARG |
| 13 | M | 48 | LEU |
| 13 | M | 50 | GLU |
| 13 | M | 59 | TYR |
| 13 | M | 64 | TRP |
| 13 | M | 65 | LYS |
| 13 | M | 70 | LEU |
| 13 | M | 80 | ARG |
| 13 | M | 108 | ARG |
| 13 | M | 110 | ARG |
| 13 | M | 115 | LYS |
| 14 | N | 12 | ARG |
| 14 | N | 22 | THR |
| 14 | N | 24 | CYS |
| 14 | N | 25 | VAL |
| 14 | N | 27 | CYS |
| 14 | N | 53 | LEU |
| 15 | O | 5 | LYS |
| 15 | O | 8 | LYS |
| 15 | O | 21 | ASP |
| 15 | O | 32 | LEU |
| 15 | O | 33 | THR |
| 15 | O | 39 | LEU |
| 15 | O | 45 | VAL |
| 15 | O | 56 | LEU |
| 15 | O | 65 | ARG |
| 15 | O | 70 | LEU |
| 15 | O | 71 | GLN |
| 15 | O | 81 | LEU |
| 15 | O | 83 | GLU |
| 16 | P | 9 | PHE |
| 16 | P | 20 | VAL |
| 16 | P | 29 | ASP |
| 16 | P | 42 | ARG |
| 16 | P | 47 | ASP |
| 16 | P | 53 | VAL |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 16 | P | 54 | GLU |
| 16 | P | 55 | ARG |
| 16 | P | 62 | VAL |
| 17 | Q | 13 | ASP |
| 17 | Q | 34 | LYS |
| 17 | Q | 53 | LEU |
| 17 | Q | 60 | ILE |
| 17 | Q | 86 | GLU |
| 18 | R | 40 | LEU |
| 18 | R | 47 | THR |
| 18 | R | 69 | THR |
| 18 | R | 87 | ARG |
| 19 | S | 6 | LYS |
| 19 | S | 15 | LEU |
| 19 | S | 56 | GLN |
| 19 | S | 63 | THR |
| 19 | S | 71 | LEU |
| 19 | S | 79 | THR |
| 20 | T | 53 | LEU |
| 20 | T | 56 | MET |
| 20 | T | 57 | ARG |
| 20 | T | 62 | LEU |
| 20 | T | 72 | LEU |
| 20 | T | 73 | HIS |
| 20 | T | 74 | LYS |
| 20 | T | 75 | ASN |
| 20 | T | 84 | LEU |
| 20 | T | 92 | LEU |
| 20 | T | 93 | GLU |
| 21 | U | 25 | LYS |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | B | 204 | ASN |
| 2 | B | 212 | GLN |
| 9 | I | 3 | GLN |
| 16 | P | 82 | GLN |

5.3.3 RNA [i](#)

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1 | A | 1504/1522 (98%) | 258 (17%) | 46 (3%) |

All (258) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|--------|------|
| 1 | A | 6 | G |
| 1 | A | 7 | G |
| 1 | A | 9 | G |
| 1 | A | 32 | A |
| 1 | A | 39 | G |
| 1 | A | 47 | C |
| 1 | A | 48 | C |
| 1 | A | 50 | A |
| 1 | A | 51 | A |
| 1 | A | 54 | C |
| 1 | A | 80 | G |
| 1 | A | 81 | U |
| 1 | A | 92 | C |
| 1 | A | 101 | A |
| 1 | A | 116 | A |
| 1 | A | 117 | G |
| 1 | A | 121 | C |
| 1 | A | 129(A) | G |
| 1 | A | 130 | A |
| 1 | A | 131 | C |
| 1 | A | 163 | C |
| 1 | A | 182 | U |
| 1 | A | 183 | G |
| 1 | A | 195 | A |
| 1 | A | 201 | C |
| 1 | A | 202 | U |
| 1 | A | 203 | U |
| 1 | A | 204 | U |
| 1 | A | 216 | G |
| 1 | A | 220 | G |
| 1 | A | 231 | G |
| 1 | A | 247 | G |
| 1 | A | 251 | G |
| 1 | A | 252 | U |
| 1 | A | 266 | G |
| 1 | A | 267 | C |
| 1 | A | 279 | A |
| 1 | A | 282 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 289 | G |
| 1 | A | 319 | G |
| 1 | A | 321 | A |
| 1 | A | 328 | C |
| 1 | A | 329 | A |
| 1 | A | 332 | G |
| 1 | A | 344 | A |
| 1 | A | 345 | C |
| 1 | A | 346 | G |
| 1 | A | 350 | G |
| 1 | A | 351 | G |
| 1 | A | 352 | C |
| 1 | A | 353 | A |
| 1 | A | 354 | G |
| 1 | A | 356 | A |
| 1 | A | 367 | U |
| 1 | A | 373 | A |
| 1 | A | 374 | A |
| 1 | A | 384 | G |
| 1 | A | 390 | C |
| 1 | A | 397 | A |
| 1 | A | 398 | C |
| 1 | A | 406 | G |
| 1 | A | 412 | A |
| 1 | A | 413 | G |
| 1 | A | 421 | U |
| 1 | A | 424 | G |
| 1 | A | 429 | U |
| 1 | A | 439 | A |
| 1 | A | 451 | A |
| 1 | A | 460 | A |
| 1 | A | 461 | C |
| 1 | A | 481 | G |
| 1 | A | 485 | G |
| 1 | A | 486 | U |
| 1 | A | 497 | A |
| 1 | A | 498 | U |
| 1 | A | 509 | A |
| 1 | A | 510 | A |
| 1 | A | 511 | C |
| 1 | A | 517 | G |
| 1 | A | 518 | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 519 | C |
| 1 | A | 524 | G |
| 1 | A | 527 | 7MG |
| 1 | A | 531 | U |
| 1 | A | 532 | A |
| 1 | A | 533 | A |
| 1 | A | 545 | C |
| 1 | A | 547 | A |
| 1 | A | 559 | A |
| 1 | A | 560 | U |
| 1 | A | 562 | C |
| 1 | A | 564 | C |
| 1 | A | 568 | G |
| 1 | A | 572 | A |
| 1 | A | 573 | A |
| 1 | A | 576 | G |
| 1 | A | 577 | G |
| 1 | A | 579 | G |
| 1 | A | 588 | G |
| 1 | A | 596 | C |
| 1 | A | 653 | A |
| 1 | A | 665 | A |
| 1 | A | 686 | U |
| 1 | A | 687 | A |
| 1 | A | 688 | G |
| 1 | A | 695 | A |
| 1 | A | 701 | C |
| 1 | A | 702 | A |
| 1 | A | 703 | G |
| 1 | A | 723 | U |
| 1 | A | 731 | G |
| 1 | A | 749 | C |
| 1 | A | 755 | G |
| 1 | A | 777 | A |
| 1 | A | 781 | A |
| 1 | A | 782 | A |
| 1 | A | 785 | G |
| 1 | A | 792 | A |
| 1 | A | 793 | U |
| 1 | A | 794 | A |
| 1 | A | 799 | G |
| 1 | A | 813 | U |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 815 | A |
| 1 | A | 817 | C |
| 1 | A | 818 | G |
| 1 | A | 821 | G |
| 1 | A | 828 | A |
| 1 | A | 839 | U |
| 1 | A | 840 | C |
| 1 | A | 841 | U |
| 1 | A | 848 | C |
| 1 | A | 902 | G |
| 1 | A | 914 | A |
| 1 | A | 922 | G |
| 1 | A | 926 | G |
| 1 | A | 927 | G |
| 1 | A | 934 | C |
| 1 | A | 937 | A |
| 1 | A | 942 | G |
| 1 | A | 960 | U |
| 1 | A | 961 | U |
| 1 | A | 966 | M2G |
| 1 | A | 969 | A |
| 1 | A | 971 | G |
| 1 | A | 974 | A |
| 1 | A | 975 | A |
| 1 | A | 976 | G |
| 1 | A | 977 | A |
| 1 | A | 982 | U |
| 1 | A | 984 | C |
| 1 | A | 989 | C |
| 1 | A | 991 | U |
| 1 | A | 992 | U |
| 1 | A | 993 | G |
| 1 | A | 994 | A |
| 1 | A | 995 | C |
| 1 | A | 1004 | A |
| 1 | A | 1005 | A |
| 1 | A | 1006 | C |
| 1 | A | 1020 | U |
| 1 | A | 1023 | G |
| 1 | A | 1024 | G |
| 1 | A | 1026 | G |
| 1 | A | 1030(B) | C |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 1031 | G |
| 1 | A | 1045 | C |
| 1 | A | 1050 | G |
| 1 | A | 1053 | G |
| 1 | A | 1054 | C |
| 1 | A | 1065 | U |
| 1 | A | 1066 | C |
| 1 | A | 1068 | G |
| 1 | A | 1078 | U |
| 1 | A | 1085 | U |
| 1 | A | 1094 | G |
| 1 | A | 1095 | U |
| 1 | A | 1101 | A |
| 1 | A | 1124 | G |
| 1 | A | 1125 | U |
| 1 | A | 1126 | U |
| 1 | A | 1127 | G |
| 1 | A | 1130 | A |
| 1 | A | 1135 | U |
| 1 | A | 1137 | C |
| 1 | A | 1138 | G |
| 1 | A | 1139 | G |
| 1 | A | 1140 | C |
| 1 | A | 1146 | A |
| 1 | A | 1152 | A |
| 1 | A | 1159 | U |
| 1 | A | 1168 | A |
| 1 | A | 1171 | G |
| 1 | A | 1183 | A |
| 1 | A | 1191 | A |
| 1 | A | 1196 | U |
| 1 | A | 1197 | G |
| 1 | A | 1200 | C |
| 1 | A | 1201 | A |
| 1 | A | 1202 | G |
| 1 | A | 1207 | 2MG |
| 1 | A | 1211 | U |
| 1 | A | 1212 | U |
| 1 | A | 1214 | C |
| 1 | A | 1224 | G |
| 1 | A | 1225 | A |
| 1 | A | 1227 | A |

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| Mol | Chain | Res | Type |
|------------|--------------|------------|-------------|
| 1 | A | 1228 | C |
| 1 | A | 1238 | A |
| 1 | A | 1241 | G |
| 1 | A | 1245 | A |
| 1 | A | 1256 | A |
| 1 | A | 1257 | U |
| 1 | A | 1258 | G |
| 1 | A | 1270 | C |
| 1 | A | 1278 | U |
| 1 | A | 1279 | A |
| 1 | A | 1280 | A |
| 1 | A | 1281 | U |
| 1 | A | 1286 | A |
| 1 | A | 1287 | A |
| 1 | A | 1289 | A |
| 1 | A | 1297 | C |
| 1 | A | 1300 | G |
| 1 | A | 1301 | U |
| 1 | A | 1302 | U |
| 1 | A | 1303 | C |
| 1 | A | 1305 | G |
| 1 | A | 1306 | A |
| 1 | A | 1316 | G |
| 1 | A | 1320 | C |
| 1 | A | 1322 | C |
| 1 | A | 1336 | C |
| 1 | A | 1346 | A |
| 1 | A | 1347 | G |
| 1 | A | 1348 | U |
| 1 | A | 1353 | G |
| 1 | A | 1359 | C |
| 1 | A | 1362 | C |
| 1 | A | 1370 | G |
| 1 | A | 1379 | G |
| 1 | A | 1381 | U |
| 1 | A | 1398 | A |
| 1 | A | 1400 | 5MC |
| 1 | A | 1442 | G |
| 1 | A | 1446 | A |
| 1 | A | 1447 | G |
| 1 | A | 1451 | A |
| 1 | A | 1485 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | A | 1487 | G |
| 1 | A | 1490 | C |
| 1 | A | 1493 | A |
| 1 | A | 1499 | A |
| 1 | A | 1503 | A |
| 1 | A | 1504 | G |
| 1 | A | 1506 | U |
| 1 | A | 1529 | G |
| 1 | A | 1530 | G |
| 1 | A | 1531 | A |

All (46) RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|--------|------|
| 1 | A | 5 | U |
| 1 | A | 115 | G |
| 1 | A | 129(A) | G |
| 1 | A | 181 | G |
| 1 | A | 204 | U |
| 1 | A | 250 | A |
| 1 | A | 251 | G |
| 1 | A | 281 | G |
| 1 | A | 328 | C |
| 1 | A | 372 | C |
| 1 | A | 428 | G |
| 1 | A | 484 | G |
| 1 | A | 485 | G |
| 1 | A | 496 | A |
| 1 | A | 509 | A |
| 1 | A | 518 | C |
| 1 | A | 559 | A |
| 1 | A | 575 | G |
| 1 | A | 687 | A |
| 1 | A | 701 | C |
| 1 | A | 748 | C |
| 1 | A | 792 | A |
| 1 | A | 812 | C |
| 1 | A | 913 | A |
| 1 | A | 960 | U |
| 1 | A | 992 | U |
| 1 | A | 1049 | U |
| 1 | A | 1065 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | A | 1067 | A |
| 1 | A | 1126 | U |
| 1 | A | 1129 | C |
| 1 | A | 1139 | G |
| 1 | A | 1145 | C |
| 1 | A | 1182 | G |
| 1 | A | 1190 | G |
| 1 | A | 1201 | A |
| 1 | A | 1256 | A |
| 1 | A | 1257 | U |
| 1 | A | 1285 | A |
| 1 | A | 1300 | G |
| 1 | A | 1301 | U |
| 1 | A | 1305 | G |
| 1 | A | 1346 | A |
| 1 | A | 1347 | G |
| 1 | A | 1380 | U |
| 1 | A | 1505 | G |

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

17 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 |
| 1 | PSU | A | 516 | 1 | 18,21,22 | 2.00 | 6 (33%) | 22,30,33 | 1.40 | 4 (18%) |
| 1 | M2G | A | 966 | 1 | 20,27,28 | 1.41 | 4 (20%) | 22,40,43 | 1.36 | 3 (13%) |
| 1 | 5MC | A | 1404 | 1 | 18,22,23 | 1.04 | 2 (11%) | 26,32,35 | 0.93 | 2 (7%) |
| 1 | 4OC | A | 1402 | 1 | 20,23,24 | 0.96 | 2 (10%) | 26,32,35 | 0.73 | 1 (3%) |
| 1 | PSU | A | 1540 | 1 | 18,21,22 | 1.99 | 7 (38%) | 22,30,33 | 1.46 | 3 (13%) |
| 1 | MA6 | A | 1518[A] | 1 | 18,26,27 | 0.62 | 0 | 19,38,41 | 0.90 | 1 (5%) |
| 1 | MA6 | A | 1518[B] | 1 | 18,26,27 | 0.65 | 0 | 19,38,41 | 0.92 | 1 (5%) |
| 1 | 7MG | A | 527 | 1 | 22,26,27 | 5.07 | 4 (18%) | 29,39,42 | 2.11 | 9 (31%) |

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|---------|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 1 | 5MC | A | 1400 | 1 | 18,22,23 | 1.07 | 2 (11%) | 26,32,35 | 0.92 | 1 (3%) |
| 1 | MA6 | A | 1519[A] | 1 | 18,26,27 | 0.65 | 0 | 19,38,41 | 0.97 | 1 (5%) |
| 1 | PSU | A | 1541 | 22,1 | 18,21,22 | 2.00 | 6 (33%) | 22,30,33 | 1.41 | 3 (13%) |
| 1 | 2MG | A | 1207 | 1 | 18,26,27 | 1.30 | 4 (22%) | 16,38,41 | 1.40 | 2 (12%) |
| 1 | UR3 | A | 1498 | 1 | 19,22,23 | 0.69 | 1 (5%) | 26,32,35 | 1.08 | 1 (3%) |
| 1 | MA6 | A | 1519[B] | 1 | 18,26,27 | 0.68 | 0 | 19,38,41 | 0.92 | 1 (5%) |
| 12 | 0TD | L | 92 | 12 | 7,9,10 | 1.03 | 0 | 6,11,13 | 2.22 | 2 (33%) |
| 1 | 5MC | A | 967 | 1 | 18,22,23 | 1.02 | 2 (11%) | 26,32,35 | 0.92 | 2 (7%) |
| 1 | 5MC | A | 1407 | 1 | 18,22,23 | 1.05 | 2 (11%) | 26,32,35 | 0.99 | 2 (7%) |

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 |
|-----|------|-------|---------|------|---------|-----------|---------|
| 1 | PSU | A | 516 | 1 | - | 0/7/25/26 | 0/2/2/2 |
| 1 | M2G | A | 966 | 1 | - | 2/7/29/30 | 0/3/3/3 |
| 1 | 5MC | A | 1404 | 1 | - | 0/7/25/26 | 0/2/2/2 |
| 1 | 4OC | A | 1402 | 1 | - | 2/9/29/30 | 0/2/2/2 |
| 1 | PSU | A | 1540 | 1 | - | 0/7/25/26 | 0/2/2/2 |
| 1 | MA6 | A | 1518[A] | 1 | - | 1/7/29/30 | 0/3/3/3 |
| 1 | MA6 | A | 1518[B] | 1 | - | 0/7/29/30 | 0/3/3/3 |
| 1 | 7MG | A | 527 | 1 | - | 2/7/37/38 | 0/3/3/3 |
| 1 | 5MC | A | 1400 | 1 | - | 2/7/25/26 | 0/2/2/2 |
| 1 | MA6 | A | 1519[A] | 1 | - | 1/7/29/30 | 0/3/3/3 |
| 1 | PSU | A | 1541 | 22,1 | - | 1/7/25/26 | 0/2/2/2 |
| 1 | 2MG | A | 1207 | 1 | - | 2/5/27/28 | 0/3/3/3 |
| 1 | UR3 | A | 1498 | 1 | - | 0/7/25/26 | 0/2/2/2 |
| 1 | MA6 | A | 1519[B] | 1 | - | 0/7/29/30 | 0/3/3/3 |
| 12 | 0TD | L | 92 | 12 | - | 2/7/12/14 | - |
| 1 | 5MC | A | 967 | 1 | - | 2/7/25/26 | 0/2/2/2 |
| 1 | 5MC | A | 1407 | 1 | - | 0/7/25/26 | 0/2/2/2 |

All (42) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|--------|-------------|----------|
| 1 | A | 527 | 7MG | C8-N9 | -23.03 | 1.33 | 1.46 |
| 1 | A | 527 | 7MG | C2-N2 | 3.80 | 1.43 | 1.34 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|-------|-------------|----------|
| 1 | A | 1540 | PSU | C2-N1 | -3.60 | 1.31 | 1.36 |
| 1 | A | 1541 | PSU | C2-N1 | -3.57 | 1.31 | 1.36 |
| 1 | A | 516 | PSU | C2-N1 | -3.57 | 1.31 | 1.36 |
| 1 | A | 1541 | PSU | C6-C5 | 3.54 | 1.39 | 1.35 |
| 1 | A | 516 | PSU | C6-C5 | 3.51 | 1.39 | 1.35 |
| 1 | A | 1540 | PSU | C6-C5 | 3.47 | 1.39 | 1.35 |
| 1 | A | 516 | PSU | C4-N3 | -3.43 | 1.32 | 1.38 |
| 1 | A | 1540 | PSU | C4-N3 | -3.40 | 1.32 | 1.38 |
| 1 | A | 1541 | PSU | C4-N3 | -3.30 | 1.32 | 1.38 |
| 1 | A | 966 | M2G | C6-N1 | 3.24 | 1.42 | 1.37 |
| 1 | A | 1540 | PSU | C2-N3 | -3.22 | 1.32 | 1.37 |
| 1 | A | 1541 | PSU | C2-N3 | -3.18 | 1.32 | 1.37 |
| 1 | A | 516 | PSU | C2-N3 | -3.14 | 1.32 | 1.37 |
| 1 | A | 966 | M2G | C2-N3 | 3.10 | 1.34 | 1.30 |
| 1 | A | 1207 | 2MG | C2-N2 | 2.85 | 1.39 | 1.33 |
| 1 | A | 966 | M2G | C2-N2 | 2.72 | 1.40 | 1.35 |
| 1 | A | 516 | PSU | O4-C4 | -2.72 | 1.18 | 1.23 |
| 1 | A | 1207 | 2MG | C6-N1 | 2.70 | 1.41 | 1.37 |
| 1 | A | 1541 | PSU | O4-C4 | -2.69 | 1.18 | 1.23 |
| 1 | A | 1207 | 2MG | C5-C6 | -2.68 | 1.42 | 1.47 |
| 1 | A | 527 | 7MG | C5-N7 | 2.61 | 1.38 | 1.35 |
| 1 | A | 1540 | PSU | O4-C4 | -2.60 | 1.18 | 1.23 |
| 1 | A | 966 | M2G | C5-C6 | -2.54 | 1.42 | 1.47 |
| 1 | A | 1400 | 5MC | C2-N1 | 2.46 | 1.45 | 1.40 |
| 1 | A | 1407 | 5MC | C2-N1 | 2.43 | 1.45 | 1.40 |
| 1 | A | 1400 | 5MC | C2-N3 | 2.42 | 1.41 | 1.36 |
| 1 | A | 1404 | 5MC | C2-N1 | 2.35 | 1.45 | 1.40 |
| 1 | A | 1404 | 5MC | C2-N3 | 2.32 | 1.41 | 1.36 |
| 1 | A | 1402 | 4OC | C2-N3 | 2.31 | 1.41 | 1.36 |
| 1 | A | 967 | 5MC | C2-N3 | 2.30 | 1.41 | 1.36 |
| 1 | A | 1407 | 5MC | C2-N3 | 2.30 | 1.41 | 1.36 |
| 1 | A | 1207 | 2MG | C2-N1 | 2.23 | 1.40 | 1.36 |
| 1 | A | 967 | 5MC | C2-N1 | 2.22 | 1.44 | 1.40 |
| 1 | A | 1540 | PSU | O2-C2 | -2.20 | 1.18 | 1.23 |
| 1 | A | 1541 | PSU | O2-C2 | -2.20 | 1.18 | 1.23 |
| 1 | A | 527 | 7MG | C4-N3 | 2.19 | 1.39 | 1.34 |
| 1 | A | 516 | PSU | O2-C2 | -2.17 | 1.18 | 1.23 |
| 1 | A | 1402 | 4OC | O2-C2 | -2.08 | 1.19 | 1.23 |
| 1 | A | 1540 | PSU | C6-N1 | -2.06 | 1.32 | 1.36 |
| 1 | A | 1498 | UR3 | C2-N1 | 2.03 | 1.41 | 1.38 |

All (39) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|---------|------|-----------|-------|-------------|----------|
| 1 | A | 527 | 7MG | C5-C6-N1 | 4.91 | 119.64 | 110.99 |
| 1 | A | 527 | 7MG | C2-N3-C4 | 4.50 | 120.33 | 112.30 |
| 1 | A | 527 | 7MG | N9-C4-N3 | 4.40 | 132.05 | 125.47 |
| 1 | A | 1207 | 2MG | O6-C6-N1 | -4.07 | 115.85 | 120.65 |
| 1 | A | 527 | 7MG | C5-C4-N3 | -4.02 | 120.46 | 128.13 |
| 12 | L | 92 | 0TD | CSB-SB-CB | -3.98 | 95.24 | 102.44 |
| 1 | A | 1540 | PSU | N1-C2-N3 | 3.94 | 119.60 | 115.13 |
| 1 | A | 966 | M2G | N1-C2-N2 | -3.87 | 114.74 | 118.04 |
| 1 | A | 1498 | UR3 | C6-N1-C2 | -3.72 | 118.45 | 121.79 |
| 1 | A | 516 | PSU | N1-C2-N3 | 3.70 | 119.32 | 115.13 |
| 1 | A | 1541 | PSU | N1-C2-N3 | 3.60 | 119.21 | 115.13 |
| 1 | A | 527 | 7MG | N9-C8-N7 | 3.54 | 108.45 | 103.38 |
| 1 | A | 1207 | 2MG | O6-C6-C5 | 3.48 | 131.17 | 124.37 |
| 1 | A | 966 | M2G | O6-C6-C5 | 3.27 | 130.76 | 124.37 |
| 1 | A | 527 | 7MG | C2-N1-C6 | -2.84 | 119.92 | 125.10 |
| 1 | A | 1541 | PSU | C6-C5-C4 | -2.82 | 116.22 | 118.20 |
| 12 | L | 92 | 0TD | OD1-CG-CB | -2.82 | 116.53 | 122.44 |
| 1 | A | 527 | 7MG | O6-C6-C5 | -2.81 | 120.65 | 127.54 |
| 1 | A | 966 | M2G | O6-C6-N1 | -2.76 | 117.39 | 120.65 |
| 1 | A | 1540 | PSU | C4-N3-C2 | -2.75 | 122.38 | 126.34 |
| 1 | A | 1519[A] | MA6 | N1-C6-N6 | -2.69 | 114.22 | 117.06 |
| 1 | A | 1518[A] | MA6 | N1-C6-N6 | -2.66 | 114.26 | 117.06 |
| 1 | A | 1541 | PSU | C4-N3-C2 | -2.55 | 122.67 | 126.34 |
| 1 | A | 1518[B] | MA6 | N1-C6-N6 | -2.54 | 114.38 | 117.06 |
| 1 | A | 516 | PSU | C4-N3-C2 | -2.52 | 122.70 | 126.34 |
| 1 | A | 1407 | 5MC | N4-C4-N3 | -2.49 | 113.94 | 118.48 |
| 1 | A | 516 | PSU | C6-C5-C4 | -2.45 | 116.48 | 118.20 |
| 1 | A | 527 | 7MG | C6-C5-C4 | -2.44 | 117.60 | 122.62 |
| 1 | A | 1519[B] | MA6 | N1-C6-N6 | -2.36 | 114.57 | 117.06 |
| 1 | A | 967 | 5MC | N4-C4-N3 | -2.35 | 114.19 | 118.48 |
| 1 | A | 1404 | 5MC | N4-C4-N3 | -2.27 | 114.33 | 118.48 |
| 1 | A | 527 | 7MG | C6-C5-N7 | 2.27 | 135.49 | 131.91 |
| 1 | A | 1407 | 5MC | C5-C4-N3 | 2.19 | 124.03 | 121.67 |
| 1 | A | 1540 | PSU | O2-C2-N1 | -2.15 | 120.43 | 122.79 |
| 1 | A | 1402 | 4OC | C5-C4-N4 | -2.11 | 118.31 | 122.61 |
| 1 | A | 1400 | 5MC | C5-C4-N3 | 2.09 | 123.93 | 121.67 |
| 1 | A | 516 | PSU | O2-C2-N1 | -2.06 | 120.53 | 122.79 |
| 1 | A | 967 | 5MC | C5-C4-N3 | 2.05 | 123.88 | 121.67 |
| 1 | A | 1404 | 5MC | C5-C4-N3 | 2.01 | 123.84 | 121.67 |

There are no chirality outliers.

All (17) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|---------|------|-----------------|
| 1 | A | 527 | 7MG | C3'-C4'-C5'-O5' |
| 1 | A | 1207 | 2MG | O4'-C4'-C5'-O5' |
| 1 | A | 1518[A] | MA6 | C5-C6-N6-C10 |
| 1 | A | 1207 | 2MG | C3'-C4'-C5'-O5' |
| 1 | A | 1400 | 5MC | O4'-C4'-C5'-O5' |
| 1 | A | 1402 | 4OC | O4'-C4'-C5'-O5' |
| 1 | A | 1400 | 5MC | C3'-C4'-C5'-O5' |
| 1 | A | 1402 | 4OC | C3'-C4'-C5'-O5' |
| 1 | A | 527 | 7MG | O4'-C4'-C5'-O5' |
| 1 | A | 966 | M2G | O4'-C4'-C5'-O5' |
| 1 | A | 967 | 5MC | O4'-C4'-C5'-O5' |
| 1 | A | 1519[A] | MA6 | C5-C6-N6-C9 |
| 1 | A | 966 | M2G | C3'-C4'-C5'-O5' |
| 12 | L | 92 | 0TD | CG-CB-SB-CSB |
| 12 | L | 92 | 0TD | SB-CB-CG-OD1 |
| 1 | A | 1541 | PSU | O4'-C1'-C5-C4 |
| 1 | A | 967 | 5MC | C3'-C4'-C5'-O5' |

There are no ring outliers.

9 monomers are involved in 20 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|---------|------|---------|--------------|
| 1 | A | 966 | M2G | 1 | 0 |
| 1 | A | 1518[A] | MA6 | 4 | 0 |
| 1 | A | 1518[B] | MA6 | 3 | 0 |
| 1 | A | 1400 | 5MC | 1 | 2 |
| 1 | A | 1519[A] | MA6 | 1 | 0 |
| 1 | A | 1498 | UR3 | 5 | 0 |
| 1 | A | 1519[B] | MA6 | 4 | 0 |
| 12 | L | 92 | 0TD | 3 | 0 |
| 1 | A | 967 | 5MC | 1 | 0 |

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 256 ligands modelled in this entry, 256 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

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 | A | 1498/1522 (98%) | -0.27 | 38 (2%) 57 51 | 124, 195, 320, 468 | 0 |
| 2 | B | 234/234 (100%) | -0.35 | 6 (2%) 56 49 | 146, 204, 294, 345 | 0 |
| 3 | C | 206/206 (100%) | 0.12 | 18 (8%) 10 11 | 216, 274, 324, 352 | 0 |
| 4 | D | 208/208 (100%) | -0.02 | 12 (5%) 23 20 | 147, 210, 275, 352 | 0 |
| 5 | E | 150/150 (100%) | -0.12 | 0 100 100 | 125, 165, 215, 248 | 0 |
| 6 | F | 101/101 (100%) | -0.34 | 3 (2%) 50 44 | 166, 206, 236, 279 | 0 |
| 7 | G | 155/155 (100%) | -0.11 | 5 (3%) 47 42 | 174, 245, 300, 335 | 0 |
| 8 | H | 138/138 (100%) | -0.45 | 2 (1%) 75 69 | 115, 151, 192, 252 | 0 |
| 9 | I | 127/127 (100%) | 0.47 | 16 (12%) 3 5 | 199, 272, 353, 384 | 0 |
| 10 | J | 98/98 (100%) | 0.39 | 9 (9%) 9 9 | 209, 280, 367, 444 | 0 |
| 11 | K | 116/116 (100%) | -0.21 | 3 (2%) 56 49 | 137, 175, 227, 259 | 0 |
| 12 | L | 123/124 (99%) | 0.15 | 10 (8%) 12 12 | 119, 201, 249, 279 | 0 |
| 13 | M | 118/118 (100%) | 0.17 | 15 (12%) 3 4 | 173, 227, 283, 338 | 0 |
| 14 | N | 60/60 (100%) | 0.02 | 1 (1%) 70 64 | 192, 249, 301, 332 | 0 |
| 15 | O | 87/87 (100%) | -0.39 | 0 100 100 | 131, 173, 220, 240 | 0 |
| 16 | P | 83/83 (100%) | -0.33 | 0 100 100 | 151, 201, 244, 286 | 0 |
| 17 | Q | 99/99 (100%) | -0.15 | 4 (4%) 38 33 | 128, 160, 196, 235 | 0 |
| 18 | R | 70/70 (100%) | -0.18 | 1 (1%) 75 69 | 134, 177, 243, 286 | 0 |
| 19 | S | 80/80 (100%) | 1.55 | 27 (33%) 0 0 | 196, 279, 328, 376 | 0 |
| 20 | T | 99/99 (100%) | -0.23 | 2 (2%) 65 60 | 148, 191, 243, 274 | 0 |
| 21 | U | 24/24 (100%) | 1.83 | 10 (41%) 0 0 | 216, 236, 259, 287 | 0 |
| All | All | 3874/3899 (99%) | -0.11 | 182 (4%) 31 28 | 115, 206, 312, 468 | 0 |

All (182) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 1 | A | 1018 | C | 10.9 |
| 3 | C | 193 | TYR | 9.4 |
| 1 | A | 1017 | G | 9.0 |
| 1 | A | 990 | C | 8.9 |
| 1 | A | 1129 | C | 8.2 |
| 13 | M | 7 | VAL | 8.2 |
| 1 | A | 1019 | C | 7.3 |
| 1 | A | 412 | A | 7.3 |
| 10 | J | 33 | GLN | 7.1 |
| 1 | A | 1006 | C | 7.1 |
| 19 | S | 40 | ILE | 7.1 |
| 19 | S | 38 | SER | 7.1 |
| 21 | U | 17 | THR | 6.9 |
| 4 | D | 35 | ARG | 6.2 |
| 3 | C | 157 | ILE | 6.2 |
| 1 | A | 993 | G | 6.1 |
| 1 | A | 994 | A | 5.9 |
| 1 | A | 991 | U | 5.8 |
| 19 | S | 41 | VAL | 5.7 |
| 1 | A | 532 | A | 5.7 |
| 4 | D | 42 | GLN | 5.6 |
| 10 | J | 34 | VAL | 5.5 |
| 3 | C | 103 | VAL | 5.3 |
| 3 | C | 155 | GLY | 5.3 |
| 9 | I | 126 | SER | 5.3 |
| 9 | I | 15 | ALA | 5.2 |
| 19 | S | 79 | THR | 5.2 |
| 3 | C | 156 | ARG | 5.0 |
| 7 | G | 2 | ALA | 4.9 |
| 21 | U | 18 | TYR | 4.9 |
| 19 | S | 27 | GLU | 4.8 |
| 13 | M | 118 | ALA | 4.8 |
| 19 | S | 69 | HIS | 4.7 |
| 1 | A | 1443 | G | 4.6 |
| 13 | M | 119 | GLY | 4.5 |
| 13 | M | 105 | THR | 4.5 |
| 19 | S | 30 | LEU | 4.5 |
| 4 | D | 13 | ARG | 4.3 |
| 9 | I | 124 | GLN | 4.3 |
| 3 | C | 162 | GLN | 4.3 |
| 21 | U | 5 | ASP | 4.3 |
| 21 | U | 11 | GLY | 4.2 |
| 3 | C | 146 | ALA | 4.1 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 21 | U | 24 | ARG | 4.1 |
| 13 | M | 2 | ALA | 4.1 |
| 1 | A | 1005 | A | 4.1 |
| 2 | B | 132 | LYS | 4.0 |
| 3 | C | 196 | LEU | 4.0 |
| 21 | U | 23 | PRO | 3.8 |
| 13 | M | 117 | VAL | 3.7 |
| 1 | A | 1036 | G | 3.7 |
| 19 | S | 35 | SER | 3.7 |
| 10 | J | 32 | ALA | 3.7 |
| 19 | S | 36 | ARG | 3.6 |
| 1 | A | 1030 | C | 3.6 |
| 4 | D | 45 | GLN | 3.6 |
| 19 | S | 28 | LYS | 3.6 |
| 6 | F | 89 | MET | 3.5 |
| 1 | A | 1257 | U | 3.5 |
| 3 | C | 65 | ALA | 3.5 |
| 13 | M | 8 | GLU | 3.5 |
| 19 | S | 42 | PRO | 3.5 |
| 1 | A | 1027 | C | 3.4 |
| 1 | A | 1029 | C | 3.4 |
| 8 | H | 116 | LYS | 3.4 |
| 10 | J | 45 | ARG | 3.4 |
| 12 | L | 128 | ALA | 3.4 |
| 4 | D | 37 | PRO | 3.4 |
| 19 | S | 19 | VAL | 3.3 |
| 10 | J | 96 | ILE | 3.3 |
| 13 | M | 6 | GLY | 3.2 |
| 19 | S | 77 | THR | 3.2 |
| 9 | I | 65 | VAL | 3.2 |
| 3 | C | 161 | GLU | 3.2 |
| 13 | M | 3 | ARG | 3.2 |
| 13 | M | 104 | ARG | 3.2 |
| 1 | A | 1208 | C | 3.2 |
| 3 | C | 195 | VAL | 3.1 |
| 9 | I | 4 | TYR | 3.1 |
| 9 | I | 125 | TYR | 3.1 |
| 4 | D | 40 | PRO | 3.0 |
| 19 | S | 71 | LEU | 3.0 |
| 4 | D | 41 | GLY | 3.0 |
| 19 | S | 5 | LEU | 3.0 |
| 19 | S | 47 | HIS | 3.0 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 4 | D | 6 | GLY | 3.0 |
| 2 | B | 21 | ARG | 3.0 |
| 4 | D | 36 | ARG | 2.9 |
| 3 | C | 104 | GLN | 2.9 |
| 19 | S | 31 | ILE | 2.9 |
| 12 | L | 86 | ARG | 2.9 |
| 1 | A | 81 | U | 2.9 |
| 2 | B | 40 | HIS | 2.9 |
| 12 | L | 50 | SER | 2.9 |
| 11 | K | 19 | ALA | 2.9 |
| 12 | L | 32 | PHE | 2.9 |
| 18 | R | 88 | LYS | 2.9 |
| 12 | L | 49 | ASN | 2.8 |
| 19 | S | 70 | LYS | 2.8 |
| 13 | M | 44 | ARG | 2.8 |
| 3 | C | 102 | ASN | 2.8 |
| 3 | C | 66 | VAL | 2.8 |
| 9 | I | 70 | LYS | 2.8 |
| 13 | M | 9 | ILE | 2.8 |
| 7 | G | 4 | ARG | 2.7 |
| 3 | C | 192 | THR | 2.7 |
| 12 | L | 45 | PRO | 2.7 |
| 1 | A | 1016 | A | 2.7 |
| 3 | C | 67 | THR | 2.7 |
| 17 | Q | 63 | ARG | 2.7 |
| 12 | L | 48 | PRO | 2.7 |
| 3 | C | 159 | GLY | 2.6 |
| 1 | A | 952 | U | 2.6 |
| 1 | A | 1212 | U | 2.6 |
| 19 | S | 15 | LEU | 2.6 |
| 1 | A | 1037 | C | 2.6 |
| 19 | S | 20 | LEU | 2.6 |
| 19 | S | 39 | THR | 2.6 |
| 6 | F | 88 | VAL | 2.6 |
| 7 | G | 69 | VAL | 2.6 |
| 1 | A | 1028 | C | 2.5 |
| 1 | A | 1035 | A | 2.5 |
| 2 | B | 35 | GLU | 2.5 |
| 13 | M | 4 | ILE | 2.5 |
| 3 | C | 194 | GLY | 2.5 |
| 17 | Q | 44 | ALA | 2.5 |
| 6 | F | 7 | ASN | 2.5 |

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| Mol | Chain | Res | Type | RSRZ |
|------------|--------------|------------|-------------|-------------|
| 19 | S | 76 | PRO | 2.5 |
| 1 | A | 1217 | C | 2.4 |
| 20 | T | 9 | ASN | 2.4 |
| 4 | D | 10 | ARG | 2.4 |
| 1 | A | 1050 | G | 2.4 |
| 4 | D | 38 | TYR | 2.4 |
| 13 | M | 45 | VAL | 2.4 |
| 1 | A | 1531 | A | 2.4 |
| 19 | S | 44 | MET | 2.4 |
| 10 | J | 90 | LEU | 2.4 |
| 9 | I | 43 | ALA | 2.3 |
| 10 | J | 76 | ASN | 2.3 |
| 19 | S | 12 | ASP | 2.3 |
| 9 | I | 30 | GLY | 2.3 |
| 12 | L | 114 | LYS | 2.3 |
| 1 | A | 1492 | A | 2.3 |
| 7 | G | 3 | ARG | 2.3 |
| 19 | S | 16 | LEU | 2.3 |
| 4 | D | 7 | PRO | 2.3 |
| 7 | G | 103 | TRP | 2.3 |
| 21 | U | 9 | ARG | 2.3 |
| 9 | I | 13 | ALA | 2.3 |
| 21 | U | 25 | LYS | 2.2 |
| 11 | K | 42 | TRP | 2.2 |
| 9 | I | 7 | THR | 2.2 |
| 11 | K | 29 | ILE | 2.2 |
| 12 | L | 19 | ARG | 2.2 |
| 14 | N | 3 | ARG | 2.2 |
| 9 | I | 23 | ASN | 2.2 |
| 12 | L | 96 | VAL | 2.2 |
| 21 | U | 8 | THR | 2.2 |
| 1 | A | 1030(B) | C | 2.2 |
| 1 | A | 1209 | C | 2.2 |
| 21 | U | 22 | ARG | 2.2 |
| 20 | T | 106 | ALA | 2.1 |
| 13 | M | 10 | PRO | 2.1 |
| 10 | J | 75 | ILE | 2.1 |
| 10 | J | 38 | ILE | 2.1 |
| 1 | A | 1051 | C | 2.1 |
| 19 | S | 4 | SER | 2.1 |
| 2 | B | 231 | GLU | 2.1 |
| 9 | I | 3 | GLN | 2.1 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|------|------|------|
| 9 | I | 47 | LEU | 2.1 |
| 1 | A | 1226 | C | 2.1 |
| 17 | Q | 98 | LEU | 2.1 |
| 1 | A | 353 | A | 2.1 |
| 8 | H | 1 | MET | 2.1 |
| 1 | A | 223 | U | 2.1 |
| 17 | Q | 45 | HIS | 2.0 |
| 1 | A | 224 | C | 2.0 |
| 19 | S | 46 | GLY | 2.0 |
| 1 | A | 1446 | A | 2.0 |
| 2 | B | 133 | LYS | 2.0 |
| 9 | I | 17 | VAL | 2.0 |
| 9 | I | 84 | ALA | 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 |
|-----|------|-------|---------|-------|------|------|----------------------------|-------|
| 1 | PSU | A | 1540 | 20/21 | 0.69 | 0.67 | 305,315,354,358 | 0 |
| 1 | PSU | A | 1541 | 20/21 | 0.70 | 0.55 | 310,320,357,440 | 0 |
| 1 | PSU | A | 516 | 20/21 | 0.87 | 0.10 | 206,229,245,257 | 0 |
| 1 | 5MC | A | 1404 | 21/22 | 0.90 | 0.22 | 148,166,197,218 | 0 |
| 1 | 7MG | A | 527 | 24/25 | 0.90 | 0.19 | 127,179,201,218 | 0 |
| 1 | 2MG | A | 1207 | 24/25 | 0.90 | 0.23 | 250,270,291,306 | 0 |
| 12 | 0TD | L | 92 | 10/11 | 0.90 | 1.00 | 192,255,325,334 | 0 |
| 1 | 5MC | A | 1407 | 21/22 | 0.91 | 0.12 | 165,213,234,244 | 0 |
| 1 | MA6 | A | 1519[B] | 24/25 | 0.92 | 0.35 | 144,156,174,176 | 24 |
| 1 | MA6 | A | 1518[A] | 24/25 | 0.92 | 0.21 | 152,157,174,177 | 24 |
| 1 | MA6 | A | 1518[B] | 24/25 | 0.92 | 0.21 | 149,161,179,181 | 24 |
| 1 | MA6 | A | 1519[A] | 24/25 | 0.92 | 0.35 | 146,150,157,168 | 24 |
| 1 | 4OC | A | 1402 | 22/23 | 0.93 | 0.25 | 157,174,198,199 | 0 |
| 1 | UR3 | A | 1498 | 21/22 | 0.94 | 0.30 | 153,185,202,219 | 0 |
| 1 | 5MC | A | 1400 | 21/22 | 0.94 | 0.14 | 152,183,200,213 | 0 |
| 1 | 5MC | A | 967 | 21/22 | 0.96 | 0.13 | 171,187,219,234 | 0 |
| 1 | M2G | A | 966 | 25/26 | 0.96 | 0.14 | 201,210,227,233 | 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 |
|-----|------|-------|------|-------|-------|------|----------------------------|-------|
| 22 | MG | A | 1797 | 1/1 | -0.42 | 1.83 | 236,236,236,236 | 0 |
| 22 | MG | A | 1668 | 1/1 | -0.16 | 0.71 | 202,202,202,202 | 0 |
| 22 | MG | A | 1725 | 1/1 | -0.05 | 1.16 | 461,461,461,461 | 0 |
| 22 | MG | A | 1624 | 1/1 | 0.12 | 3.64 | 223,223,223,223 | 0 |
| 22 | MG | A | 1688 | 1/1 | 0.21 | 0.25 | 221,221,221,221 | 0 |
| 22 | MG | A | 1830 | 1/1 | 0.25 | 0.16 | 177,177,177,177 | 0 |
| 22 | MG | A | 1770 | 1/1 | 0.28 | 0.35 | 146,146,146,146 | 0 |
| 22 | MG | A | 1753 | 1/1 | 0.29 | 0.28 | 168,168,168,168 | 0 |
| 22 | MG | A | 1823 | 1/1 | 0.29 | 0.16 | 156,156,156,156 | 0 |
| 22 | MG | A | 1744 | 1/1 | 0.29 | 0.27 | 175,175,175,175 | 0 |
| 22 | MG | A | 1735 | 1/1 | 0.34 | 0.99 | 169,169,169,169 | 0 |
| 22 | MG | A | 1603 | 1/1 | 0.35 | 0.23 | 171,171,171,171 | 0 |
| 22 | MG | A | 1757 | 1/1 | 0.37 | 0.79 | 169,169,169,169 | 0 |
| 22 | MG | A | 1718 | 1/1 | 0.40 | 0.24 | 230,230,230,230 | 0 |
| 22 | MG | A | 1816 | 1/1 | 0.41 | 0.30 | 158,158,158,158 | 0 |
| 22 | MG | A | 1690 | 1/1 | 0.45 | 1.02 | 198,198,198,198 | 0 |
| 22 | MG | Q | 201 | 1/1 | 0.45 | 0.22 | 185,185,185,185 | 0 |
| 22 | MG | A | 1835 | 1/1 | 0.46 | 0.55 | 213,213,213,213 | 0 |
| 22 | MG | D | 304 | 1/1 | 0.51 | 0.62 | 186,186,186,186 | 0 |
| 22 | MG | A | 1826 | 1/1 | 0.52 | 0.66 | 174,174,174,174 | 0 |
| 22 | MG | A | 1665 | 1/1 | 0.53 | 0.40 | 168,168,168,168 | 0 |
| 22 | MG | A | 1743 | 1/1 | 0.53 | 1.24 | 176,176,176,176 | 0 |
| 22 | MG | A | 1810 | 1/1 | 0.54 | 0.14 | 222,222,222,222 | 0 |
| 22 | MG | A | 1791 | 1/1 | 0.55 | 0.25 | 220,220,220,220 | 0 |
| 22 | MG | A | 1792 | 1/1 | 0.55 | 0.39 | 190,190,190,190 | 0 |
| 22 | MG | A | 1724 | 1/1 | 0.55 | 0.66 | 154,154,154,154 | 0 |
| 22 | MG | A | 1803 | 1/1 | 0.55 | 0.86 | 163,163,163,163 | 0 |
| 22 | MG | A | 1730 | 1/1 | 0.56 | 0.47 | 187,187,187,187 | 0 |
| 22 | MG | A | 1817 | 1/1 | 0.56 | 0.29 | 165,165,165,165 | 0 |
| 22 | MG | A | 1786 | 1/1 | 0.58 | 1.26 | 149,149,149,149 | 0 |
| 22 | MG | A | 1684 | 1/1 | 0.58 | 0.74 | 156,156,156,156 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 22 | MG | P | 102 | 1/1 | 0.60 | 0.14 | 191,191,191,191 | 0 |
| 22 | MG | A | 1807 | 1/1 | 0.61 | 0.13 | 162,162,162,162 | 0 |
| 22 | MG | A | 1703 | 1/1 | 0.62 | 0.24 | 252,252,252,252 | 0 |
| 22 | MG | A | 1775 | 1/1 | 0.62 | 0.55 | 145,145,145,145 | 0 |
| 22 | MG | A | 1666 | 1/1 | 0.62 | 0.76 | 140,140,140,140 | 0 |
| 22 | MG | A | 1687 | 1/1 | 0.64 | 0.08 | 220,220,220,220 | 0 |
| 22 | MG | A | 1815 | 1/1 | 0.65 | 0.77 | 162,162,162,162 | 0 |
| 22 | MG | A | 1662 | 1/1 | 0.66 | 0.31 | 138,138,138,138 | 0 |
| 22 | MG | A | 1833 | 1/1 | 0.66 | 0.12 | 177,177,177,177 | 0 |
| 22 | MG | A | 1780 | 1/1 | 0.67 | 0.86 | 171,171,171,171 | 0 |
| 22 | MG | A | 1601 | 1/1 | 0.67 | 0.89 | 192,192,192,192 | 0 |
| 22 | MG | A | 1832 | 1/1 | 0.67 | 0.13 | 201,201,201,201 | 0 |
| 22 | MG | A | 1692 | 1/1 | 0.67 | 0.84 | 185,185,185,185 | 0 |
| 22 | MG | A | 1708 | 1/1 | 0.68 | 0.61 | 151,151,151,151 | 0 |
| 22 | MG | A | 1613 | 1/1 | 0.68 | 0.24 | 197,197,197,197 | 0 |
| 22 | MG | A | 1787 | 1/1 | 0.68 | 1.02 | 168,168,168,168 | 0 |
| 22 | MG | A | 1836 | 1/1 | 0.70 | 0.36 | 180,180,180,180 | 0 |
| 22 | MG | A | 1783 | 1/1 | 0.70 | 0.83 | 114,114,114,114 | 0 |
| 22 | MG | A | 1742 | 1/1 | 0.70 | 0.85 | 161,161,161,161 | 0 |
| 22 | MG | A | 1707 | 1/1 | 0.70 | 0.16 | 187,187,187,187 | 0 |
| 22 | MG | A | 1633 | 1/1 | 0.71 | 0.78 | 169,169,169,169 | 0 |
| 22 | MG | A | 1778 | 1/1 | 0.71 | 0.12 | 142,142,142,142 | 0 |
| 22 | MG | A | 1755 | 1/1 | 0.71 | 0.43 | 153,153,153,153 | 0 |
| 22 | MG | P | 101 | 1/1 | 0.71 | 0.45 | 119,119,119,119 | 0 |
| 22 | MG | A | 1623 | 1/1 | 0.71 | 0.65 | 174,174,174,174 | 0 |
| 22 | MG | A | 1615 | 1/1 | 0.71 | 0.12 | 158,158,158,158 | 0 |
| 22 | MG | S | 101 | 1/1 | 0.72 | 0.20 | 177,177,177,177 | 0 |
| 22 | MG | A | 1801 | 1/1 | 0.73 | 0.48 | 243,243,243,243 | 0 |
| 22 | MG | D | 305 | 1/1 | 0.73 | 1.88 | 156,156,156,156 | 0 |
| 22 | MG | A | 1768 | 1/1 | 0.73 | 0.92 | 176,176,176,176 | 0 |
| 22 | MG | A | 1642 | 1/1 | 0.74 | 0.17 | 182,182,182,182 | 0 |
| 22 | MG | A | 1669 | 1/1 | 0.74 | 0.17 | 188,188,188,188 | 0 |
| 22 | MG | A | 1697 | 1/1 | 0.75 | 0.29 | 141,141,141,141 | 0 |
| 22 | MG | D | 303 | 1/1 | 0.75 | 0.17 | 158,158,158,158 | 0 |
| 22 | MG | A | 1715 | 1/1 | 0.75 | 0.59 | 200,200,200,200 | 0 |
| 22 | MG | A | 1831 | 1/1 | 0.75 | 0.11 | 173,173,173,173 | 0 |
| 22 | MG | A | 1738 | 1/1 | 0.76 | 0.45 | 165,165,165,165 | 0 |
| 22 | MG | C | 301 | 1/1 | 0.76 | 0.18 | 200,200,200,200 | 0 |
| 22 | MG | A | 1663 | 1/1 | 0.76 | 0.04 | 206,206,206,206 | 0 |
| 22 | MG | A | 1674 | 1/1 | 0.77 | 0.14 | 216,216,216,216 | 0 |
| 22 | MG | A | 1818 | 1/1 | 0.77 | 0.41 | 178,178,178,178 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 22 | MG | A | 1631 | 1/1 | 0.78 | 0.52 | 147,147,147,147 | 0 |
| 22 | MG | A | 1639 | 1/1 | 0.78 | 0.34 | 207,207,207,207 | 0 |
| 22 | MG | A | 1682 | 1/1 | 0.78 | 0.38 | 185,185,185,185 | 0 |
| 22 | MG | A | 1629 | 1/1 | 0.80 | 0.38 | 152,152,152,152 | 0 |
| 22 | MG | A | 1628 | 1/1 | 0.80 | 0.28 | 203,203,203,203 | 0 |
| 22 | MG | A | 1729 | 1/1 | 0.80 | 0.41 | 186,186,186,186 | 0 |
| 22 | MG | A | 1814 | 1/1 | 0.80 | 0.36 | 187,187,187,187 | 0 |
| 22 | MG | A | 1771 | 1/1 | 0.81 | 0.46 | 169,169,169,169 | 0 |
| 22 | MG | A | 1774 | 1/1 | 0.81 | 0.17 | 182,182,182,182 | 0 |
| 22 | MG | A | 1638 | 1/1 | 0.81 | 0.25 | 135,135,135,135 | 0 |
| 22 | MG | A | 1760 | 1/1 | 0.81 | 1.49 | 154,154,154,154 | 0 |
| 22 | MG | A | 1645 | 1/1 | 0.81 | 0.13 | 182,182,182,182 | 0 |
| 22 | MG | A | 1673 | 1/1 | 0.81 | 0.30 | 172,172,172,172 | 0 |
| 22 | MG | A | 1790 | 1/1 | 0.82 | 0.21 | 182,182,182,182 | 0 |
| 22 | MG | A | 1610 | 1/1 | 0.82 | 0.22 | 144,144,144,144 | 0 |
| 22 | MG | A | 1784 | 1/1 | 0.82 | 0.34 | 178,178,178,178 | 0 |
| 22 | MG | A | 1720 | 1/1 | 0.82 | 0.84 | 203,203,203,203 | 0 |
| 22 | MG | A | 1825 | 1/1 | 0.82 | 0.46 | 167,167,167,167 | 0 |
| 22 | MG | A | 1781 | 1/1 | 0.82 | 0.14 | 179,179,179,179 | 0 |
| 22 | MG | A | 1827 | 1/1 | 0.82 | 1.27 | 145,145,145,145 | 0 |
| 22 | MG | A | 1676 | 1/1 | 0.83 | 0.51 | 150,150,150,150 | 0 |
| 22 | MG | A | 1837 | 1/1 | 0.83 | 1.64 | 212,212,212,212 | 0 |
| 22 | MG | A | 1737 | 1/1 | 0.83 | 0.37 | 151,151,151,151 | 0 |
| 22 | MG | A | 1648 | 1/1 | 0.83 | 0.68 | 201,201,201,201 | 0 |
| 22 | MG | A | 1649 | 1/1 | 0.83 | 0.46 | 172,172,172,172 | 0 |
| 22 | MG | A | 1704 | 1/1 | 0.84 | 0.28 | 176,176,176,176 | 0 |
| 22 | MG | A | 1705 | 1/1 | 0.84 | 0.36 | 189,189,189,189 | 0 |
| 22 | MG | A | 1719 | 1/1 | 0.84 | 0.23 | 226,226,226,226 | 0 |
| 22 | MG | A | 1689 | 1/1 | 0.84 | 0.25 | 189,189,189,189 | 0 |
| 22 | MG | A | 1736 | 1/1 | 0.84 | 0.41 | 194,194,194,194 | 0 |
| 22 | MG | A | 1721 | 1/1 | 0.84 | 0.19 | 137,137,137,137 | 0 |
| 22 | MG | A | 1694 | 1/1 | 0.84 | 0.38 | 189,189,189,189 | 0 |
| 22 | MG | A | 1763 | 1/1 | 0.84 | 0.40 | 196,196,196,196 | 0 |
| 22 | MG | A | 1782 | 1/1 | 0.84 | 0.47 | 159,159,159,159 | 0 |
| 22 | MG | A | 1627 | 1/1 | 0.85 | 1.19 | 156,156,156,156 | 0 |
| 22 | MG | A | 1802 | 1/1 | 0.85 | 0.47 | 149,149,149,149 | 0 |
| 22 | MG | A | 1618 | 1/1 | 0.85 | 0.43 | 176,176,176,176 | 0 |
| 22 | MG | A | 1764 | 1/1 | 0.85 | 1.38 | 140,140,140,140 | 0 |
| 22 | MG | A | 1808 | 1/1 | 0.85 | 0.18 | 185,185,185,185 | 0 |
| 22 | MG | A | 1677 | 1/1 | 0.85 | 0.16 | 136,136,136,136 | 0 |
| 22 | MG | A | 1711 | 1/1 | 0.86 | 0.15 | 223,223,223,223 | 0 |
| 22 | MG | B | 302 | 1/1 | 0.86 | 0.59 | 239,239,239,239 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 22 | MG | A | 1805 | 1/1 | 0.86 | 0.22 | 160,160,160,160 | 0 |
| 22 | MG | A | 1749 | 1/1 | 0.86 | 0.21 | 171,171,171,171 | 0 |
| 22 | MG | A | 1605 | 1/1 | 0.86 | 1.53 | 150,150,150,150 | 0 |
| 22 | MG | A | 1612 | 1/1 | 0.87 | 0.27 | 184,184,184,184 | 0 |
| 22 | MG | A | 1691 | 1/1 | 0.87 | 0.32 | 169,169,169,169 | 0 |
| 22 | MG | A | 1811 | 1/1 | 0.87 | 0.39 | 215,215,215,215 | 0 |
| 22 | MG | A | 1795 | 1/1 | 0.87 | 1.05 | 179,179,179,179 | 0 |
| 22 | MG | A | 1812 | 1/1 | 0.88 | 0.23 | 237,237,237,237 | 0 |
| 22 | MG | A | 1647 | 1/1 | 0.88 | 0.84 | 197,197,197,197 | 0 |
| 22 | MG | A | 1695 | 1/1 | 0.88 | 0.25 | 166,166,166,166 | 0 |
| 22 | MG | A | 1680 | 1/1 | 0.88 | 0.44 | 148,148,148,148 | 0 |
| 22 | MG | B | 301 | 1/1 | 0.88 | 0.35 | 173,173,173,173 | 0 |
| 22 | MG | A | 1716 | 1/1 | 0.88 | 0.71 | 172,172,172,172 | 0 |
| 22 | MG | A | 1698 | 1/1 | 0.88 | 0.28 | 138,138,138,138 | 0 |
| 22 | MG | C | 302 | 1/1 | 0.88 | 0.23 | 204,204,204,204 | 0 |
| 22 | MG | A | 1617 | 1/1 | 0.88 | 0.23 | 117,117,117,117 | 0 |
| 22 | MG | A | 1634 | 1/1 | 0.88 | 0.30 | 180,180,180,180 | 0 |
| 22 | MG | A | 1739 | 1/1 | 0.88 | 0.35 | 98,98,98,98 | 0 |
| 22 | MG | A | 1740 | 1/1 | 0.88 | 0.29 | 156,156,156,156 | 0 |
| 22 | MG | A | 1621 | 1/1 | 0.88 | 0.24 | 176,176,176,176 | 0 |
| 22 | MG | A | 1788 | 1/1 | 0.88 | 0.37 | 182,182,182,182 | 0 |
| 22 | MG | A | 1693 | 1/1 | 0.88 | 0.13 | 214,214,214,214 | 0 |
| 22 | MG | A | 1675 | 1/1 | 0.89 | 0.24 | 200,200,200,200 | 0 |
| 22 | MG | A | 1779 | 1/1 | 0.89 | 0.44 | 201,201,201,201 | 0 |
| 22 | MG | D | 302 | 1/1 | 0.89 | 0.22 | 154,154,154,154 | 0 |
| 22 | MG | A | 1658 | 1/1 | 0.89 | 0.28 | 176,176,176,176 | 0 |
| 22 | MG | A | 1804 | 1/1 | 0.89 | 0.16 | 192,192,192,192 | 0 |
| 22 | MG | A | 1685 | 1/1 | 0.90 | 1.50 | 165,165,165,165 | 0 |
| 22 | MG | A | 1686 | 1/1 | 0.90 | 1.04 | 213,213,213,213 | 0 |
| 22 | MG | A | 1632 | 1/1 | 0.90 | 0.11 | 157,157,157,157 | 0 |
| 22 | MG | A | 1752 | 1/1 | 0.90 | 0.44 | 199,199,199,199 | 0 |
| 22 | MG | A | 1700 | 1/1 | 0.90 | 0.15 | 161,161,161,161 | 0 |
| 22 | MG | A | 1796 | 1/1 | 0.90 | 0.25 | 166,166,166,166 | 0 |
| 22 | MG | A | 1702 | 1/1 | 0.90 | 0.22 | 143,143,143,143 | 0 |
| 22 | MG | A | 1608 | 1/1 | 0.90 | 0.04 | 180,180,180,180 | 0 |
| 22 | MG | A | 1652 | 1/1 | 0.90 | 0.43 | 200,200,200,200 | 0 |
| 22 | MG | A | 1616 | 1/1 | 0.91 | 0.21 | 119,119,119,119 | 0 |
| 22 | MG | A | 1717 | 1/1 | 0.91 | 0.46 | 264,264,264,264 | 0 |
| 22 | MG | A | 1733 | 1/1 | 0.91 | 0.29 | 120,120,120,120 | 0 |
| 22 | MG | A | 1722 | 1/1 | 0.91 | 0.63 | 167,167,167,167 | 0 |
| 22 | MG | A | 1785 | 1/1 | 0.91 | 0.37 | 145,145,145,145 | 0 |
| 22 | MG | A | 1723 | 1/1 | 0.91 | 0.17 | 179,179,179,179 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 22 | MG | A | 1800 | 1/1 | 0.91 | 0.41 | 144,144,144,144 | 0 |
| 22 | MG | A | 1626 | 1/1 | 0.91 | 0.78 | 140,140,140,140 | 0 |
| 22 | MG | A | 1660 | 1/1 | 0.91 | 0.10 | 157,157,157,157 | 0 |
| 23 | ZN | D | 301 | 1/1 | 0.91 | 0.41 | 243,243,243,243 | 0 |
| 22 | MG | A | 1706 | 1/1 | 0.92 | 0.06 | 169,169,169,169 | 0 |
| 22 | MG | A | 1670 | 1/1 | 0.92 | 0.34 | 176,176,176,176 | 0 |
| 22 | MG | A | 1758 | 1/1 | 0.92 | 0.14 | 151,151,151,151 | 0 |
| 22 | MG | A | 1611 | 1/1 | 0.92 | 0.14 | 143,143,143,143 | 0 |
| 22 | MG | A | 1829 | 1/1 | 0.92 | 0.26 | 163,163,163,163 | 0 |
| 22 | MG | A | 1622 | 1/1 | 0.92 | 0.14 | 124,124,124,124 | 0 |
| 22 | MG | A | 1614 | 1/1 | 0.92 | 0.18 | 141,141,141,141 | 0 |
| 22 | MG | A | 1664 | 1/1 | 0.92 | 0.09 | 161,161,161,161 | 0 |
| 22 | MG | A | 1635 | 1/1 | 0.92 | 0.27 | 189,189,189,189 | 0 |
| 22 | MG | A | 1834 | 1/1 | 0.92 | 1.00 | 163,163,163,163 | 0 |
| 22 | MG | A | 1637 | 1/1 | 0.92 | 0.47 | 175,175,175,175 | 0 |
| 22 | MG | A | 1619 | 1/1 | 0.92 | 0.21 | 145,145,145,145 | 0 |
| 22 | MG | A | 1625 | 1/1 | 0.92 | 0.23 | 190,190,190,190 | 0 |
| 22 | MG | A | 1799 | 1/1 | 0.93 | 0.89 | 154,154,154,154 | 0 |
| 22 | MG | A | 1806 | 1/1 | 0.93 | 0.16 | 189,189,189,189 | 0 |
| 22 | MG | A | 1699 | 1/1 | 0.93 | 0.20 | 177,177,177,177 | 0 |
| 22 | MG | E | 202 | 1/1 | 0.93 | 0.10 | 169,169,169,169 | 0 |
| 22 | MG | A | 1630 | 1/1 | 0.93 | 0.24 | 147,147,147,147 | 0 |
| 22 | MG | A | 1679 | 1/1 | 0.93 | 0.19 | 225,225,225,225 | 0 |
| 22 | MG | A | 1731 | 1/1 | 0.93 | 2.01 | 172,172,172,172 | 0 |
| 22 | MG | A | 1824 | 1/1 | 0.93 | 0.29 | 140,140,140,140 | 0 |
| 22 | MG | A | 1640 | 1/1 | 0.93 | 0.18 | 143,143,143,143 | 0 |
| 22 | MG | A | 1681 | 1/1 | 0.94 | 0.84 | 153,153,153,153 | 0 |
| 22 | MG | A | 1828 | 1/1 | 0.94 | 0.10 | 156,156,156,156 | 0 |
| 22 | MG | A | 1607 | 1/1 | 0.94 | 0.40 | 166,166,166,166 | 0 |
| 22 | MG | E | 201 | 1/1 | 0.94 | 0.21 | 160,160,160,160 | 0 |
| 22 | MG | A | 1820 | 1/1 | 0.94 | 0.36 | 162,162,162,162 | 0 |
| 22 | MG | A | 1714 | 1/1 | 0.94 | 0.24 | 184,184,184,184 | 0 |
| 22 | MG | A | 1659 | 1/1 | 0.94 | 0.24 | 165,165,165,165 | 0 |
| 22 | MG | A | 1769 | 1/1 | 0.94 | 0.43 | 157,157,157,157 | 0 |
| 22 | MG | C | 303 | 1/1 | 0.94 | 0.15 | 232,232,232,232 | 0 |
| 22 | MG | A | 1750 | 1/1 | 0.94 | 0.26 | 175,175,175,175 | 0 |
| 22 | MG | A | 1813 | 1/1 | 0.95 | 0.08 | 177,177,177,177 | 0 |
| 22 | MG | A | 1657 | 1/1 | 0.95 | 0.38 | 144,144,144,144 | 0 |
| 22 | MG | A | 1667 | 1/1 | 0.95 | 0.34 | 164,164,164,164 | 0 |
| 22 | MG | A | 1747 | 1/1 | 0.95 | 0.20 | 169,169,169,169 | 0 |
| 22 | MG | A | 1713 | 1/1 | 0.95 | 0.27 | 185,185,185,185 | 0 |
| 22 | MG | A | 1728 | 1/1 | 0.95 | 0.13 | 186,186,186,186 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(Å ²) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 22 | MG | A | 1773 | 1/1 | 0.95 | 0.31 | 213,213,213,213 | 0 |
| 22 | MG | A | 1822 | 1/1 | 0.95 | 0.35 | 146,146,146,146 | 0 |
| 22 | MG | A | 1761 | 1/1 | 0.95 | 0.32 | 176,176,176,176 | 0 |
| 22 | MG | A | 1809 | 1/1 | 0.95 | 0.33 | 210,210,210,210 | 0 |
| 22 | MG | A | 1620 | 1/1 | 0.95 | 0.56 | 191,191,191,191 | 0 |
| 22 | MG | A | 1776 | 1/1 | 0.95 | 0.96 | 118,118,118,118 | 0 |
| 22 | MG | A | 1777 | 1/1 | 0.95 | 0.76 | 162,162,162,162 | 0 |
| 23 | ZN | N | 101 | 1/1 | 0.95 | 0.23 | 279,279,279,279 | 0 |
| 22 | MG | A | 1766 | 1/1 | 0.96 | 0.24 | 188,188,188,188 | 0 |
| 22 | MG | A | 1767 | 1/1 | 0.96 | 0.51 | 127,127,127,127 | 0 |
| 22 | MG | A | 1661 | 1/1 | 0.96 | 0.21 | 192,192,192,192 | 0 |
| 22 | MG | A | 1644 | 1/1 | 0.96 | 0.94 | 134,134,134,134 | 0 |
| 22 | MG | A | 1726 | 1/1 | 0.96 | 0.41 | 162,162,162,162 | 0 |
| 22 | MG | A | 1650 | 1/1 | 0.96 | 0.39 | 135,135,135,135 | 0 |
| 22 | MG | A | 1710 | 1/1 | 0.96 | 0.23 | 140,140,140,140 | 0 |
| 22 | MG | A | 1741 | 1/1 | 0.96 | 0.68 | 143,143,143,143 | 0 |
| 22 | MG | F | 201 | 1/1 | 0.96 | 0.03 | 156,156,156,156 | 0 |
| 22 | MG | A | 1609 | 1/1 | 0.96 | 0.14 | 149,149,149,149 | 0 |
| 22 | MG | A | 1789 | 1/1 | 0.96 | 0.25 | 233,233,233,233 | 0 |
| 22 | MG | A | 1683 | 1/1 | 0.96 | 0.13 | 187,187,187,187 | 0 |
| 22 | MG | A | 1696 | 1/1 | 0.96 | 0.48 | 379,379,379,379 | 0 |
| 22 | MG | A | 1655 | 1/1 | 0.96 | 0.34 | 169,169,169,169 | 0 |
| 22 | MG | A | 1748 | 1/1 | 0.96 | 0.21 | 182,182,182,182 | 0 |
| 22 | MG | A | 1819 | 1/1 | 0.97 | 0.36 | 179,179,179,179 | 0 |
| 22 | MG | A | 1646 | 1/1 | 0.97 | 1.01 | 179,179,179,179 | 0 |
| 22 | MG | A | 1606 | 1/1 | 0.97 | 0.13 | 154,154,154,154 | 0 |
| 22 | MG | A | 1701 | 1/1 | 0.97 | 0.22 | 263,263,263,263 | 0 |
| 22 | MG | A | 1709 | 1/1 | 0.97 | 0.58 | 243,243,243,243 | 0 |
| 22 | MG | A | 1654 | 1/1 | 0.97 | 0.40 | 145,145,145,145 | 0 |
| 22 | MG | I | 201 | 1/1 | 0.97 | 0.52 | 169,169,169,169 | 0 |
| 22 | MG | A | 1678 | 1/1 | 0.97 | 0.94 | 208,208,208,208 | 0 |
| 22 | MG | A | 1602 | 1/1 | 0.97 | 0.88 | 190,190,190,190 | 0 |
| 22 | MG | A | 1641 | 1/1 | 0.97 | 0.74 | 195,195,195,195 | 0 |
| 22 | MG | A | 1754 | 1/1 | 0.97 | 0.15 | 201,201,201,201 | 0 |
| 22 | MG | A | 1732 | 1/1 | 0.97 | 0.22 | 232,232,232,232 | 0 |
| 22 | MG | A | 1756 | 1/1 | 0.97 | 0.20 | 100,100,100,100 | 0 |
| 22 | MG | A | 1653 | 1/1 | 0.98 | 0.08 | 136,136,136,136 | 0 |
| 22 | MG | A | 1765 | 1/1 | 0.98 | 0.19 | 193,193,193,193 | 0 |
| 22 | MG | A | 1656 | 1/1 | 0.98 | 0.29 | 216,216,216,216 | 0 |
| 22 | MG | A | 1727 | 1/1 | 0.98 | 0.63 | 177,177,177,177 | 0 |
| 22 | MG | A | 1751 | 1/1 | 0.98 | 0.19 | 142,142,142,142 | 0 |
| 22 | MG | A | 1759 | 1/1 | 0.98 | 0.39 | 155,155,155,155 | 0 |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors(\AA^2) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 22 | MG | A | 1745 | 1/1 | 0.98 | 0.20 | 143,143,143,143 | 0 |
| 22 | MG | A | 1793 | 1/1 | 0.98 | 0.36 | 138,138,138,138 | 0 |
| 22 | MG | A | 1794 | 1/1 | 0.98 | 0.06 | 125,125,125,125 | 0 |
| 22 | MG | A | 1746 | 1/1 | 0.98 | 0.19 | 150,150,150,150 | 0 |
| 22 | MG | A | 1772 | 1/1 | 0.98 | 0.40 | 161,161,161,161 | 0 |
| 22 | MG | A | 1762 | 1/1 | 0.98 | 0.11 | 143,143,143,143 | 0 |
| 22 | MG | A | 1798 | 1/1 | 0.98 | 0.40 | 132,132,132,132 | 0 |
| 22 | MG | A | 1672 | 1/1 | 0.98 | 0.11 | 210,210,210,210 | 0 |
| 22 | MG | A | 1671 | 1/1 | 0.99 | 0.24 | 176,176,176,176 | 0 |
| 22 | MG | A | 1712 | 1/1 | 0.99 | 0.40 | 197,197,197,197 | 0 |
| 22 | MG | A | 1604 | 1/1 | 0.99 | 0.19 | 192,192,192,192 | 0 |
| 22 | MG | A | 1734 | 1/1 | 0.99 | 0.22 | 173,173,173,173 | 0 |
| 22 | MG | A | 1651 | 1/1 | 0.99 | 0.16 | 126,126,126,126 | 0 |
| 22 | MG | A | 1636 | 1/1 | 0.99 | 0.28 | 128,128,128,128 | 0 |
| 22 | MG | A | 1821 | 1/1 | 0.99 | 0.22 | 165,165,165,165 | 0 |
| 22 | MG | A | 1643 | 1/1 | 1.00 | 0.09 | 148,148,148,148 | 0 |

6.5 Other polymers [i](#)

There are no such residues in this entry.