# Full wwPDB X-ray Structure Validation Report ⓘ

Jan 16, 2024 – 01:51 am GMT

| | | |
|---|---|---|
| PDB ID | : | 6TU5 |
| Title | : | Influenza A/H7N9 polymerase core (apo) |
| Authors | : | Cusack, S.; Pflug, A. |
| Deposited on | : | 2020-01-02 |
| Resolution | : | 3.33 Å(reported) |

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

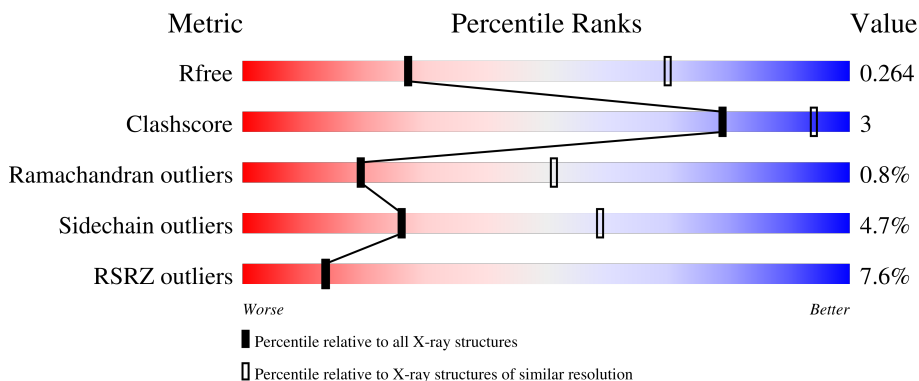| | | |
|---|---|---|
| MolProbity | : | 4.02b-467 |
| Xtriage (Phenix) | : | 1.13 |
| EDS | : | 2.36 |
| Percentile statistics | : | 20191225.v01 (using entries in the PDB archive December 25th 2019) |
| Refmac | : | 5.8.0158 |
| CCP4 | : | 7.0.044 (Gargrove) |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.36 |

# 1   Overall quality at a glance   ⓘ

The following experimental techniques were used to determine the structure:
*X-RAY DIFFRACTION*

The reported resolution of this entry is 3.33 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.
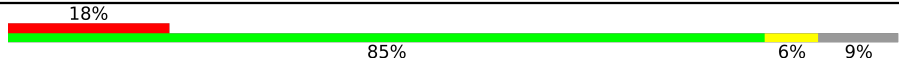
| Metric | Percentile Ranks | Value |
|---|---|---|
| Rfree | | 0.264 |
| Clashscore | | 3 |
| Ramachandran outliers | | 0.8% |
| Sidechain outliers | | 4.7% |
| RSRZ outliers | | 7.6% |

*Worse*           *Better*

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|---|---|---|
| $R_{free}$ | 130704 | 1089 (3.36-3.28) |
| Clashscore | 141614 | 1137 (3.36-3.28) |
| Ramachandran outliers | 138981 | 1115 (3.36-3.28) |
| Sidechain outliers | 138945 | 1114 (3.36-3.28) |
| RSRZ outliers | 127900 | 1059 (3.36-3.28) |

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

| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 1 | AAA | 517 | %<br>87%    11%   • |
| 1 | DDD | 517 | 3%<br>91%    8%   •• |
| 2 | BBB | 757 | 8%<br>79%    11%   •   10% |
| 2 | EEE | 757 | 9%<br>79%    10%   11% |
| 3 | CCC | 137 | 18%<br>74%    12%   14% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 3 | FFF | 137 | |

# 2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 21144 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 protein called Polymerase acidic protein.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|---|---|---|---|---------|---------|-------|
| 1 | AAA | 515 | Total 4142 | C 2622 | N 703 | O 787 | S 30 | 0 | 0 | 0 |
| 1 | DDD | 514 | Total 4131 | C 2616 | N 699 | O 786 | S 30 | 0 | 0 | 0 |

There are 2 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|---------|-----------|
| AAA | 200 | MET | - | initiating methionine | UNP M9TI86 |
| DDD | 200 | MET | - | initiating methionine | UNP M9TI86 |

- Molecule 2 is a protein called RNA-directed RNA polymerase catalytic subunit.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|---|---|---|---|---------|---------|-------|
| 2 | BBB | 685 | Total 5472 | C 3455 | N 942 | O 1031 | S 44 | 0 | 0 | 0 |
| 2 | EEE | 675 | Total 5385 | C 3401 | N 924 | O 1017 | S 43 | 0 | 0 | 0 |

- Molecule 3 is a protein called Polymerase basic protein 2.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|---|---|---|---|---------|---------|-------|
| 3 | CCC | 118 | Total 977 | C 616 | N 175 | O 176 | S 10 | 0 | 0 | 0 |
| 3 | FFF | 125 | Total 1035 | C 651 | N 187 | O 187 | S 10 | 0 | 0 | 0 |

There are 18 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|---------|-----------|
| CCC | 129 | SER | - | linker | UNP X5F427 |
| CCC | 130 | GLY | - | linker | UNP X5F427 |

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| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|---------|-----------|
| CCC | 131 | SER | - | linker | UNP X5F427 |
| CCC | 132 | GLU | - | expression tag | UNP X5F427 |
| CCC | 133 | ASN | - | expression tag | UNP X5F427 |
| CCC | 134 | LEU | - | expression tag | UNP X5F427 |
| CCC | 135 | TYR | - | expression tag | UNP X5F427 |
| CCC | 136 | PHE | - | expression tag | UNP X5F427 |
| CCC | 137 | GLN | - | expression tag | UNP X5F427 |
| FFF | 129 | SER | - | linker | UNP X5F427 |
| FFF | 130 | GLY | - | linker | UNP X5F427 |
| FFF | 131 | SER | - | linker | UNP X5F427 |
| FFF | 132 | GLU | - | expression tag | UNP X5F427 |
| FFF | 133 | ASN | - | expression tag | UNP X5F427 |
| FFF | 134 | LEU | - | expression tag | UNP X5F427 |
| FFF | 135 | TYR | - | expression tag | UNP X5F427 |
| FFF | 136 | PHE | - | expression tag | UNP X5F427 |
| FFF | 137 | GLN | - | expression tag | UNP X5F427 |

- Molecule 4 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|------|---------|---------|
| 4 | BBB | 1 | Total 1 | Mg 1 | 0 | 0 |
| 4 | EEE | 1 | Total 1 | Mg 1 | 0 | 0 |

# 3 Residue-property plots ⓘ

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

- Molecule 1: Polymerase acidic protein

Chain AAA:

- Molecule 1: Polymerase acidic protein

Chain DDD:

- Molecule 2: RNA-directed RNA polymerase catalytic subunit

Chain BBB:

V514 S515 E519 V527 N533 R571 R572 L576 Q582 L604 H605 I606 P607 C610 E618 N629 V632 S633 H634 K635 E636 ILE ASP SER VAL ASN ALA VAL MET PRO ALA HIS GLY PRO ALA LYS SER MET E656 Y657 D658 T663 R670 ASN
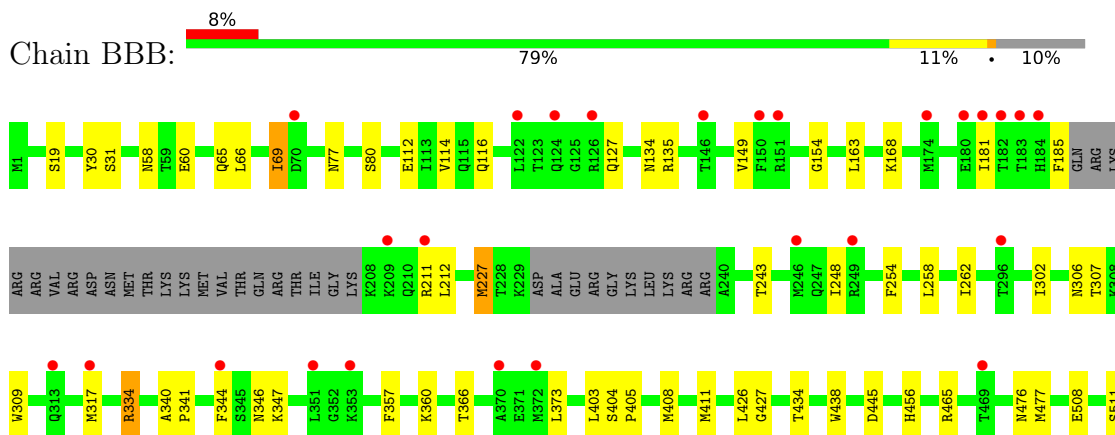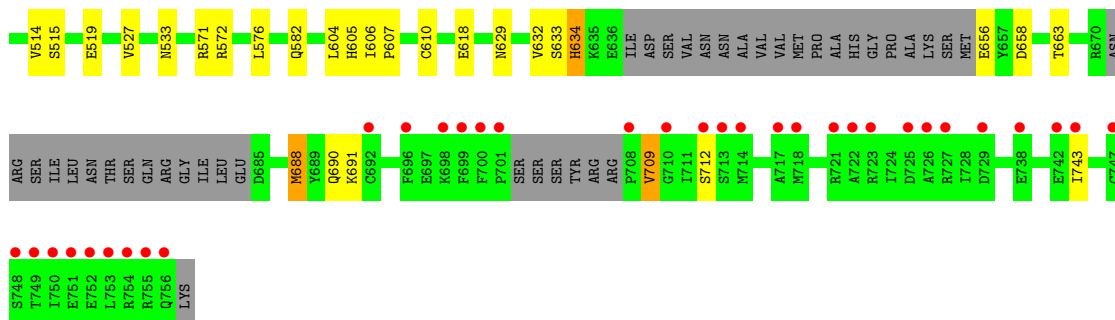
ARG SER ILE LEU ASN THR SER GLN ARG GLY ILE LEU LEU GLU D685 M688 Y689 Q690 K691 G692 F696 E697 K698 F699 F700 P701 SER SER TYR ARG ARG P708 V709 G710 I711 S712 S713 M714 A717 M718 R721 A722 R723 I724 D725 A726 R727 I728 D729 E738 E742 I743 C747

S748 T749 I750 E751 E752 L753 R754 R755 Q756 LYS

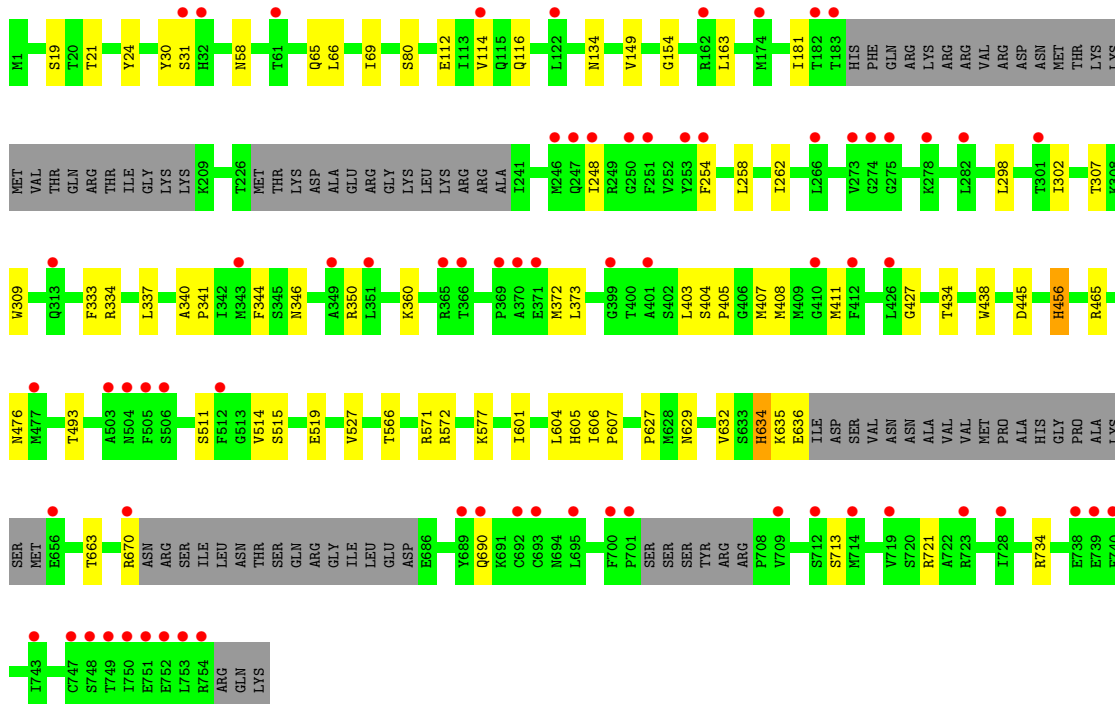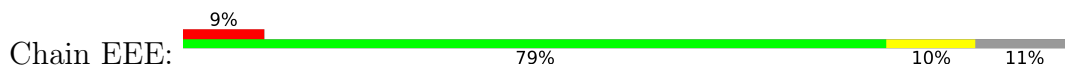• **Molecule 2: RNA-directed RNA polymerase catalytic subunit**

Chain EEE:

9%
79%   10%   11%

M1 S19 T20 T21 Y24 Y30 S31 H32 N58 T61 Q65 L66 I69 S80 E112 I113 V114 Q115 Q116 L122 N134 V149 G154 R162 L163 M174 I181 T182 T183 HIS PHE GLN ARG LYS ARG ARG VAL ARG ASP ASN MET THR LYS LYS

MET VAL THR GLN ARG THR ILE GLY LYS LYS K209 T226 MET THR LYS ASP ALA GLU ARG GLY LYS LEU LYS ARG ALA I241 M246 Q247 I248 R249 G250 F251 V252 Y253 F254 L258 I262 L266 V273 G274 G275 K278 L282 L298 I301 I302 T307 K308

W309 Q313 F333 R334 L337 A340 P341 I342 M343 F344 S345 N346 A349 R350 L351 K360 R365 T366 P369 A370 E371 M372 L373 G399 T400 A401 S402 L403 S404 P405 G406 M407 M408 M409 G410 M411 F412 L426 G427 T434 W438 D445 H456 R465

N476 M477 T493 A503 N504 F505 S506 S511 F512 G513 V514 S515 E519 V527 T566 R571 R572 K577 I601 L604 H605 I606 P607 P627 M628 N629 V632 S633 H634 K635 E636 ILE ASP SER VAL ASN ASN ALA VAL MET PRO ALA HIS GLY PRO ALA LYS

SER MET E656 T663 R670 ASN ARG SER ILE LEU ASN THR SER GLN ARG GLY ILE LEU LEU GLU ASP E686 Y689 Q690 K691 C692 C693 N694 L695 F700 P701 SER SER TYR ARG ARG P708 V709 S712 S713 M714 V19 S720 R721 A722 R723 I728 R734 E738 E739 F740

I743 C747 S748 T749 I750 E751 E752 L753 R754 ARG GLN LYS

• **Molecule 3: Polymerase basic protein 2**

Chain CCC:

18%
74%   12%   14%

M1 E2 R3 I4 K5 E6 L10 M11 S14 R15 T16 R17 E18 I19 L20 T21 D26 H27 M28 A29 I30 I31 K32 LYS TYR THR SER GLY ARG GLN E40 K41 N42 L45 A52 M66 A84 L94 T97 W98 W99 N100 R101 T108 Y111 Y115 Y118

V122 E123 R124 L125 LYS HIS GLY SER GLY SER GLU ASN LEU TYR PHE GLN

• **Molecule 3: Polymerase basic protein 2**

Chain FFF:

18%
85%   6%   9%

# 4 Data and refinement statistics ⓘ

| Property | Value | Source |
|---|---|---|
| Space group | P 21 21 21 | Depositor |
| Cell constants<br>a, b, c, $\alpha$, $\beta$, $\gamma$ | 75.51Å    143.17Å    335.37Å<br>90.00°    90.00°    90.00° | Depositor |
| Resolution (Å) | 132.02   –   3.33<br>131.68   –   3.32 | Depositor<br>EDS |
| % Data completeness<br>(in resolution range) | 92.4 (132.02-3.33)<br>92.4 (131.68-3.32) | Depositor<br>EDS |
| $R_{merge}$ | 0.19 | Depositor |
| $R_{sym}$ | (Not available) | Depositor |
| $< I/\sigma(I) >$ [1] | 1.78 (at 3.33Å) | Xtriage |
| Refinement program | REFMAC 5.8.0257 | Depositor |
| R, $R_{free}$ | 0.204   ,   0.268<br>0.205   ,   0.264 | Depositor<br>DCC |
| $R_{free}$ test set | 2496 reflections (4.95%) | wwPDB-VP |
| Wilson B-factor (Å$^2$) | 108.4 | Xtriage |
| Anisotropy | 0.024 | Xtriage |
| Bulk solvent $k_{sol}$(e/Å$^3$), $B_{sol}$(Å$^2$) | 0.32 , 78.3 | EDS |
| L-test for twinning[2] | $< |L| > = 0.47$, $< L^2 > = 0.29$ | Xtriage |
| Estimated twinning fraction | No twinning to report. | Xtriage |
| $F_o$,$F_c$ correlation | 0.94 | EDS |
| Total number of atoms | 21144 | wwPDB-VP |
| Average B, all atoms (Å$^2$) | 129.0 | wwPDB-VP |

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.07% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.

[2]Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

## 5 Model quality (i)

### 5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: 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 | AAA | 0.63 | 0/4231 | 0.73 | 0/5712 |
| 1 | DDD | 0.64 | 0/4220 | 0.72 | 0/5698 |
| 2 | BBB | 0.66 | 0/5580 | 0.72 | 0/7524 |
| 2 | EEE | 0.66 | 0/5491 | 0.72 | 0/7407 |
| 3 | CCC | 0.66 | 0/996 | 0.73 | 0/1340 |
| 3 | FFF | 0.66 | 0/1056 | 0.72 | 0/1421 |
| All | All | 0.65 | 0/21574 | 0.72 | 0/29102 |

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts (i)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | AAA | 4142 | 0 | 4109 | 29 | 0 |
| 1 | DDD | 4131 | 0 | 4096 | 15 | 0 |
| 2 | BBB | 5472 | 0 | 5436 | 45 | 0 |
| 2 | EEE | 5385 | 0 | 5348 | 38 | 0 |
| 3 | CCC | 977 | 0 | 1003 | 12 | 0 |
| 3 | FFF | 1035 | 0 | 1062 | 8 | 0 |
| 4 | BBB | 1 | 0 | 0 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 4 | EEE | 1 | 0 | 0 | 0 | 0 |
| All | All | 21144 | 0 | 21054 | 120 | 0 |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 3.

All (120) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------|--------|--------------------------|-------------------|
| 1:AAA:612:PHE:HA | 1:AAA:633:ILE:HG21 | 1.64 | 0.78 |
| 2:BBB:572:ARG:HB3 | 2:BBB:576:LEU:HD13 | 1.74 | 0.69 |
| 2:EEE:519:GLU:OE2 | 2:EEE:572:ARG:NH1 | 2.27 | 0.68 |
| 2:BBB:519:GLU:OE2 | 2:BBB:572:ARG:NH1 | 2.26 | 0.67 |
| 2:EEE:629:ASN:HD21 | 2:EEE:632:VAL:HG23 | 1.59 | 0.67 |
| 2:EEE:635:LYS:CG | 2:EEE:635:LYS:O | 2.43 | 0.67 |
| 2:EEE:629:ASN:HD21 | 2:EEE:632:VAL:CG2 | 2.11 | 0.64 |
| 1:DDD:423:VAL:HG23 | 1:DDD:456:THR:CG2 | 2.28 | 0.64 |
| 2:BBB:306:ASN:HD22 | 2:BBB:477:MET:HA | 1.63 | 0.63 |
| 1:DDD:656:GLU:HG3 | 2:EEE:24:TYR:HE2 | 1.63 | 0.63 |
| 2:BBB:576:LEU:HD12 | 3:CCC:97:THR:HG21 | 1.81 | 0.62 |
| 2:BBB:340:ALA:HB3 | 2:BBB:341:PRO:HD3 | 1.80 | 0.61 |
| 2:EEE:340:ALA:HB3 | 2:EEE:341:PRO:HD3 | 1.82 | 0.61 |
| 1:AAA:384:CYS:SG | 1:AAA:384:CYS:O | 2.59 | 0.61 |
| 2:EEE:663:THR:HG21 | 3:FFF:99:TRP:CD1 | 2.37 | 0.60 |
| 1:AAA:580:GLU:O | 1:AAA:583:ARG:HG2 | 2.02 | 0.59 |
| 2:BBB:582:GLN:HE22 | 3:CCC:101:ARG:HA | 1.69 | 0.58 |
| 1:DDD:384:CYS:SG | 1:DDD:384:CYS:O | 2.62 | 0.57 |
| 1:AAA:623:GLU:OE2 | 1:AAA:709:SER:OG | 2.23 | 0.56 |
| 2:BBB:691:LYS:HE2 | 3:CCC:10:LEU:HD21 | 1.86 | 0.56 |
| 1:AAA:323:ILE:HG13 | 1:AAA:544:GLU:HB2 | 1.87 | 0.56 |
| 2:EEE:134:ASN:HD21 | 2:EEE:350:ARG:NH1 | 2.05 | 0.55 |
| 1:AAA:449:GLU:HG2 | 1:AAA:634:GLY:CA | 2.37 | 0.55 |
| 1:DDD:346:GLN:HE21 | 1:DDD:346:GLN:N | 2.05 | 0.55 |
| 2:BBB:227:MET:HE3 | 2:BBB:243:THR:HG23 | 1.90 | 0.54 |
| 2:EEE:629:ASN:ND2 | 2:EEE:632:VAL:HG23 | 2.22 | 0.54 |
| 1:AAA:392:GLN:HA | 2:BBB:357:PHE:HA | 1.88 | 0.54 |
| 2:EEE:627:PRO:HB2 | 2:EEE:635:LYS:HD2 | 1.88 | 0.53 |
| 1:AAA:373:ASN:N | 1:AAA:373:ASN:HD22 | 2.05 | 0.53 |
| 2:EEE:635:LYS:O | 2:EEE:635:LYS:HG3 | 2.08 | 0.53 |
| 2:EEE:427:GLY:HA3 | 2:EEE:438:TRP:CD1 | 2.44 | 0.52 |
| 2:BBB:58:ASN:HD22 | 2:BBB:65:GLN:NE2 | 2.08 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:BBB:427:GLY:HA3 | 2:BBB:438:TRP:CD1 | 2.44 | 0.52 |
| 1:AAA:453:CYS:O | 1:AAA:456:THR:OG1 | 2.22 | 0.52 |
| 1:DDD:449:GLU:HG2 | 1:DDD:634:GLY:CA | 2.40 | 0.52 |
| 1:AAA:449:GLU:HG2 | 1:AAA:634:GLY:HA3 | 1.92 | 0.51 |
| 2:EEE:114:VAL:HA | 2:EEE:254:PHE:CE1 | 2.46 | 0.51 |
| 1:DDD:449:GLU:HG2 | 1:DDD:634:GLY:HA3 | 1.92 | 0.51 |
| 2:BBB:114:VAL:HA | 2:BBB:254:PHE:CE1 | 2.47 | 0.50 |
| 2:EEE:58:ASN:HD22 | 2:EEE:65:GLN:NE2 | 2.09 | 0.50 |
| 1:AAA:596:ILE:HG12 | 1:AAA:611:PHE:CD2 | 2.47 | 0.50 |
| 1:AAA:346:GLN:HE21 | 1:AAA:346:GLN:N | 2.10 | 0.50 |
| 2:BBB:743:ILE:HG23 | 3:CCC:4:ILE:HD13 | 1.95 | 0.49 |
| 2:EEE:634:HIS:O | 2:EEE:636:GLU:HG3 | 2.13 | 0.48 |
| 2:EEE:258:LEU:O | 2:EEE:262:ILE:HG12 | 2.14 | 0.48 |
| 2:BBB:258:LEU:O | 2:BBB:262:ILE:HG12 | 2.13 | 0.48 |
| 2:BBB:404:SER:N | 2:BBB:405:PRO:CD | 2.77 | 0.48 |
| 2:BBB:605:HIS:CD2 | 2:BBB:606:ILE:HG13 | 2.48 | 0.48 |
| 2:BBB:606:ILE:HG22 | 2:BBB:607:PRO:O | 2.14 | 0.47 |
| 2:BBB:227:MET:CE | 2:BBB:243:THR:HG23 | 2.44 | 0.47 |
| 2:EEE:527:VAL:HG13 | 2:EEE:604:LEU:HD22 | 1.96 | 0.47 |
| 2:EEE:713:SER:HA | 3:FFF:24:THR:HA | 1.95 | 0.47 |
| 2:EEE:606:ILE:HG22 | 2:EEE:607:PRO:O | 2.15 | 0.47 |
| 1:AAA:264:THR:N | 1:AAA:265:PRO:CD | 2.78 | 0.47 |
| 2:EEE:404:SER:N | 2:EEE:405:PRO:CD | 2.78 | 0.47 |
| 2:EEE:605:HIS:CD2 | 2:EEE:606:ILE:HG13 | 2.50 | 0.47 |
| 2:BBB:347:LYS:HE2 | 2:BBB:403:LEU:HD23 | 1.96 | 0.47 |
| 2:BBB:663:THR:HG21 | 3:CCC:99:TRP:CD1 | 2.50 | 0.46 |
| 2:EEE:572:ARG:HG2 | 3:FFF:94:LEU:HD23 | 1.97 | 0.46 |
| 2:BBB:227:MET:SD | 2:BBB:227:MET:N | 2.88 | 0.46 |
| 2:BBB:572:ARG:HG2 | 3:CCC:94:LEU:HD23 | 1.96 | 0.46 |
| 1:DDD:264:THR:N | 1:DDD:265:PRO:CD | 2.78 | 0.46 |
| 2:BBB:527:VAL:HG13 | 2:BBB:604:LEU:HD22 | 1.97 | 0.46 |
| 2:BBB:688:MET:HG3 | 3:CCC:16:THR:CG2 | 2.45 | 0.46 |
| 2:EEE:634:HIS:CG | 2:EEE:635:LYS:N | 2.84 | 0.46 |
| 1:AAA:621:ILE:HD11 | 1:AAA:639:THR:HG21 | 1.98 | 0.46 |
| 2:BBB:309:TRP:CG | 2:BBB:445:ASP:HB3 | 2.51 | 0.45 |
| 1:AAA:362:LYS:O | 1:AAA:367:LYS:HE2 | 2.17 | 0.45 |
| 1:DDD:665:LEU:HD23 | 1:DDD:707:PHE:CZ | 2.52 | 0.45 |
| 1:AAA:665:LEU:HD23 | 1:AAA:707:PHE:CZ | 2.51 | 0.45 |
| 1:DDD:337:THR:HG22 | 1:DDD:366:LEU:HD13 | 1.98 | 0.45 |
| 2:EEE:635:LYS:O | 2:EEE:635:LYS:HG2 | 2.17 | 0.45 |
| 1:AAA:204:ARG:O | 2:BBB:168:LYS:NZ | 2.47 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 2:BBB:134:ASN:O | 2:BBB:134:ASN:ND2 | 2.49 | 0.45 |
| 2:EEE:309:TRP:CG | 2:EEE:445:ASP:HB3 | 2.52 | 0.44 |
| 2:EEE:670:ARG:HB2 | 3:FFF:38:ARG:NH2 | 2.33 | 0.44 |
| 1:AAA:220:PRO:CB | 2:BBB:69:ILE:HD11 | 2.48 | 0.44 |
| 2:EEE:134:ASN:O | 2:EEE:134:ASN:ND2 | 2.50 | 0.44 |
| 1:AAA:366:LEU:HD23 | 1:AAA:366:LEU:HA | 1.84 | 0.44 |
| 3:CCC:42:ASN:OD1 | 3:CCC:45:LEU:HG | 2.18 | 0.44 |
| 1:AAA:234:ASP:OD1 | 2:BBB:334:ARG:NH2 | 2.50 | 0.43 |
| 2:BBB:149:VAL:HG22 | 2:BBB:181:ILE:HD13 | 2.00 | 0.43 |
| 2:EEE:344:PHE:CZ | 2:EEE:411:MET:HG2 | 2.52 | 0.43 |
| 2:BBB:65:GLN:HE22 | 2:BBB:346:ASN:HA | 1.84 | 0.43 |
| 2:EEE:670:ARG:HB2 | 3:FFF:38:ARG:HH22 | 1.83 | 0.43 |
| 1:DDD:621:ILE:HG21 | 1:DDD:636:VAL:HG22 | 2.01 | 0.43 |
| 2:EEE:298:LEU:CD1 | 2:EEE:456:HIS:ND1 | 2.82 | 0.43 |
| 2:EEE:572:ARG:HH21 | 3:FFF:97:THR:HG1 | 1.66 | 0.43 |
| 2:EEE:670:ARG:O | 3:FFF:46:ARG:NH2 | 2.52 | 0.43 |
| 1:AAA:697:ASP:HB3 | 1:AAA:700:VAL:HG12 | 2.01 | 0.43 |
| 3:CCC:115:TYR:HD1 | 3:CCC:118:TYR:CE1 | 2.37 | 0.42 |
| 1:DDD:474:CYS:HB2 | 3:FFF:49:TRP:CH2 | 2.54 | 0.42 |
| 2:EEE:58:ASN:ND2 | 2:EEE:346:ASN:OD1 | 2.51 | 0.42 |
| 2:BBB:58:ASN:ND2 | 2:BBB:346:ASN:OD1 | 2.52 | 0.42 |
| 2:EEE:65:GLN:HE22 | 2:EEE:346:ASN:HA | 1.85 | 0.42 |
| 2:EEE:149:VAL:HG22 | 2:EEE:181:ILE:HD13 | 2.01 | 0.42 |
| 1:AAA:220:PRO:HB3 | 2:BBB:69:ILE:HD11 | 2.01 | 0.42 |
| 2:BBB:658:ASP:HB3 | 3:CCC:118:TYR:CD2 | 2.55 | 0.42 |
| 1:DDD:366:LEU:HD12 | 1:DDD:366:LEU:HA | 1.86 | 0.42 |
| 2:BBB:629:ASN:HD21 | 2:BBB:632:VAL:HG23 | 1.84 | 0.42 |
| 2:EEE:333:PHE:CZ | 2:EEE:337:LEU:HD11 | 2.55 | 0.42 |
| 2:EEE:566:THR:O | 2:EEE:577:LYS:HE2 | 2.20 | 0.42 |
| 1:AAA:221:PRO:O | 1:AAA:222:ASN:HB2 | 2.20 | 0.41 |
| 1:AAA:390:LEU:HD21 | 2:BBB:366:THR:HG21 | 2.02 | 0.41 |
| 2:BBB:344:PHE:CZ | 2:BBB:411:MET:HG2 | 2.55 | 0.41 |
| 2:BBB:571:ARG:NH2 | 3:CCC:52:ALA:O | 2.54 | 0.41 |
| 2:BBB:610:CYS:HB3 | 3:CCC:122:VAL:HG21 | 2.02 | 0.41 |
| 1:AAA:253:VAL:HA | 2:BBB:77:ASN:HD21 | 1.86 | 0.41 |
| 1:DDD:331:ASN:N | 1:DDD:332:PRO:CD | 2.84 | 0.41 |
| 1:AAA:213:ARG:HE | 2:BBB:60:GLU:CD | 2.24 | 0.41 |
| 1:AAA:479:ASP:O | 1:AAA:506:LYS:NZ | 2.54 | 0.41 |
| 2:BBB:212:LEU:HD23 | 2:BBB:212:LEU:HA | 1.97 | 0.41 |
| 2:BBB:127:GLN:OE1 | 2:BBB:227:MET:HB2 | 2.21 | 0.40 |
| 2:BBB:709:VAL:HG13 | 2:BBB:712:SER:HB2 | 2.01 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:AAA:331:ASN:N | 1:AAA:332:PRO:CD | 2.84 | 0.40 |
| 2:BBB:248:ILE:HD11 | 2:BBB:344:PHE:CD2 | 2.55 | 0.40 |
| 1:DDD:697:ASP:C | 1:DDD:697:ASP:OD1 | 2.60 | 0.40 |
| 1:DDD:596:ILE:HG12 | 1:DDD:611:PHE:CD2 | 2.56 | 0.40 |
| 2:EEE:248:ILE:HD11 | 2:EEE:344:PHE:CD2 | 2.57 | 0.40 |
| 1:AAA:449:GLU:HG2 | 1:AAA:634:GLY:HA2 | 2.03 | 0.40 |

There are no symmetry-related clashes.

## 5.3 Torsion angles ⓘ

### 5.3.1 Protein backbone ⓘ

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

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 1 | AAA | 513/517 (99%) | 478 (93%) | 30 (6%) | 5 (1%) | 15 | 47 |
| 1 | DDD | 512/517 (99%) | 474 (93%) | 34 (7%) | 4 (1%) | 19 | 51 |
| 2 | BBB | 673/757 (89%) | 621 (92%) | 47 (7%) | 5 (1%) | 22 | 55 |
| 2 | EEE | 663/757 (88%) | 608 (92%) | 49 (7%) | 6 (1%) | 17 | 49 |
| 3 | CCC | 114/137 (83%) | 105 (92%) | 8 (7%) | 1 (1%) | 17 | 49 |
| 3 | FFF | 123/137 (90%) | 114 (93%) | 9 (7%) | 0 | 100 | 100 |
| All | All | 2598/2822 (92%) | 2400 (92%) | 177 (7%) | 21 (1%) | 19 | 51 |

All (21) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 2 | EEE | 634 | HIS |
| 1 | AAA | 222 | ASN |
| 1 | AAA | 394 | ASP |
| 3 | CCC | 84 | ALA |
| 1 | DDD | 222 | ASN |
| 1 | DDD | 394 | ASP |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | AAA | 295 | PRO |
| 2 | BBB | 31 | SER |
| 1 | DDD | 295 | PRO |
| 2 | EEE | 31 | SER |
| 1 | AAA | 393 | TYR |
| 2 | BBB | 511 | SER |
| 1 | DDD | 393 | TYR |
| 1 | AAA | 451 | SER |
| 2 | BBB | 30 | TYR |
| 2 | BBB | 634 | HIS |
| 2 | EEE | 30 | TYR |
| 2 | EEE | 511 | SER |
| 2 | EEE | 601 | ILE |
| 2 | BBB | 154 | GLY |
| 2 | EEE | 154 | GLY |

### 5.3.2 Protein sidechains ⓘ

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 | |
|-----|-------|----------|-----------|----------|------|------|
| 1 | AAA | 462/464 (100%) | 438 (95%) | 24 (5%) | 23 | 55 |
| 1 | DDD | 461/464 (99%) | 440 (95%) | 21 (5%) | 27 | 60 |
| 2 | BBB | 604/668 (90%) | 570 (94%) | 34 (6%) | 21 | 53 |
| 2 | EEE | 595/668 (89%) | 567 (95%) | 28 (5%) | 26 | 59 |
| 3 | CCC | 109/125 (87%) | 106 (97%) | 3 (3%) | 43 | 71 |
| 3 | FFF | 115/125 (92%) | 114 (99%) | 1 (1%) | 78 | 88 |
| All | All | 2346/2514 (93%) | 2235 (95%) | 111 (5%) | 26 | 59 |

All (111) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | AAA | 203 | GLU |
| 1 | AAA | 206 | GLU |
| 1 | AAA | 227 | GLU |

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| Mol | Chain | Res | Type |
|:---:|:---:|:---:|:---:|
| 1 | AAA | 230 | ARG |
| 1 | AAA | 234 | ASP |
| 1 | AAA | 279 | ARG |
| 1 | AAA | 324 | LYS |
| 1 | AAA | 346 | GLN |
| 1 | AAA | 356 | ARG |
| 1 | AAA | 373 | ASN |
| 1 | AAA | 381 | PHE |
| 1 | AAA | 384 | CYS |
| 1 | AAA | 391 | LYS |
| 1 | AAA | 419 | ASP |
| 1 | AAA | 426 | ASP |
| 1 | AAA | 427 | GLU |
| 1 | AAA | 449 | GLU |
| 1 | AAA | 460 | MET |
| 1 | AAA | 469 | LEU |
| 1 | AAA | 490 | ARG |
| 1 | AAA | 492 | LYS |
| 1 | AAA | 524 | GLU |
| 1 | AAA | 605 | LYS |
| 1 | AAA | 616 | SER |
| 2 | BBB | 19 | SER |
| 2 | BBB | 66 | LEU |
| 2 | BBB | 69 | ILE |
| 2 | BBB | 80 | SER |
| 2 | BBB | 112 | GLU |
| 2 | BBB | 116 | GLN |
| 2 | BBB | 135 | ARG |
| 2 | BBB | 163 | LEU |
| 2 | BBB | 185 | PHE |
| 2 | BBB | 211 | ARG |
| 2 | BBB | 227 | MET |
| 2 | BBB | 302 | ILE |
| 2 | BBB | 307 | THR |
| 2 | BBB | 317 | MET |
| 2 | BBB | 334 | ARG |
| 2 | BBB | 360 | LYS |
| 2 | BBB | 373 | LEU |
| 2 | BBB | 408 | MET |
| 2 | BBB | 426 | LEU |
| 2 | BBB | 434 | THR |
| 2 | BBB | 456 | HIS |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | BBB | 465 | ARG |
| 2 | BBB | 476 | ASN |
| 2 | BBB | 508 | GLU |
| 2 | BBB | 514 | VAL |
| 2 | BBB | 515 | SER |
| 2 | BBB | 533 | ASN |
| 2 | BBB | 618 | GLU |
| 2 | BBB | 633 | SER |
| 2 | BBB | 634 | HIS |
| 2 | BBB | 656 | GLU |
| 2 | BBB | 688 | MET |
| 2 | BBB | 690 | GLN |
| 2 | BBB | 709 | VAL |
| 3 | CCC | 2 | GLU |
| 3 | CCC | 66 | MET |
| 3 | CCC | 108 | THR |
| 1 | DDD | 203 | GLU |
| 1 | DDD | 206 | GLU |
| 1 | DDD | 227 | GLU |
| 1 | DDD | 230 | ARG |
| 1 | DDD | 262 | ARG |
| 1 | DDD | 324 | LYS |
| 1 | DDD | 327 | GLU |
| 1 | DDD | 346 | GLN |
| 1 | DDD | 356 | ARG |
| 1 | DDD | 391 | LYS |
| 1 | DDD | 393 | TYR |
| 1 | DDD | 419 | ASP |
| 1 | DDD | 426 | ASP |
| 1 | DDD | 449 | GLU |
| 1 | DDD | 460 | MET |
| 1 | DDD | 469 | LEU |
| 1 | DDD | 490 | ARG |
| 1 | DDD | 508 | ARG |
| 1 | DDD | 514 | ASP |
| 1 | DDD | 524 | GLU |
| 1 | DDD | 616 | SER |
| 2 | EEE | 19 | SER |
| 2 | EEE | 21 | THR |
| 2 | EEE | 66 | LEU |
| 2 | EEE | 69 | ILE |
| 2 | EEE | 80 | SER |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | EEE | 112 | GLU |
| 2 | EEE | 116 | GLN |
| 2 | EEE | 163 | LEU |
| 2 | EEE | 302 | ILE |
| 2 | EEE | 307 | THR |
| 2 | EEE | 334 | ARG |
| 2 | EEE | 360 | LYS |
| 2 | EEE | 372 | MET |
| 2 | EEE | 373 | LEU |
| 2 | EEE | 403 | LEU |
| 2 | EEE | 407 | MET |
| 2 | EEE | 408 | MET |
| 2 | EEE | 434 | THR |
| 2 | EEE | 456 | HIS |
| 2 | EEE | 465 | ARG |
| 2 | EEE | 476 | ASN |
| 2 | EEE | 493 | THR |
| 2 | EEE | 514 | VAL |
| 2 | EEE | 515 | SER |
| 2 | EEE | 571 | ARG |
| 2 | EEE | 690 | GLN |
| 2 | EEE | 721 | ARG |
| 2 | EEE | 734 | ARG |
| 3 | FFF | 35 | THR |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

There are no non-standard protein/DNA/RNA residues in this entry.

## 5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

## 5.6 Ligand geometry ⓘ

Of 2 ligands modelled in this entry, 2 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 ⓘ

## 6.1 Protein, DNA and RNA chains ⓘ

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

| Mol | Chain | Analysed | <RSRZ> | #RSRZ>2 | | | OWAB(Å$^2$) | Q<0.9 |
|-----|-------|----------|--------|---------|----|----|-------------|-------|
| 1 | AAA | 515/517 (99%) | 0.40 | 7 (1%) | 75 | 75 | 59, 88, 175, 266 | 0 |
| 1 | DDD | 514/517 (99%) | 0.34 | 16 (3%) | 49 | 48 | 85, 127, 183, 221 | 0 |
| 2 | BBB | 685/757 (90%) | 0.62 | 59 (8%) | 10 | 10 | 60, 118, 207, 239 | 0 |
| 2 | EEE | 675/757 (89%) | 0.65 | 70 (10%) | 6 | 6 | 80, 139, 205, 241 | 0 |
| 3 | CCC | 118/137 (86%) | 0.94 | 24 (20%) | 1 | 0 | 80, 151, 216, 241 | 0 |
| 3 | FFF | 125/137 (91%) | 1.04 | 25 (20%) | 1 | 0 | 86, 148, 217, 233 | 0 |
| All | All | 2632/2822 (93%) | 0.56 | 201 (7%) | 13 | 14 | 59, 123, 204, 266 | 0 |

All (201) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 2 | BBB | 750 | ILE | 7.6 |
| 2 | BBB | 755 | ARG | 7.4 |
| 2 | BBB | 751 | GLU | 6.5 |
| 1 | AAA | 383 | ASP | 5.9 |
| 2 | BBB | 756 | GLN | 5.9 |
| 2 | EEE | 274 | GLY | 5.8 |
| 2 | EEE | 504 | ASN | 5.8 |
| 2 | BBB | 701 | PRO | 5.7 |
| 3 | FFF | 13 | GLN | 5.7 |
| 3 | FFF | 12 | SER | 5.1 |
| 3 | CCC | 2 | GLU | 5.0 |
| 2 | EEE | 505 | PHE | 5.0 |
| 2 | EEE | 31 | SER | 4.9 |
| 2 | EEE | 273 | VAL | 4.8 |
| 1 | AAA | 382 | GLU | 4.6 |
| 3 | CCC | 16 | THR | 4.5 |
| 2 | EEE | 506 | SER | 4.4 |
| 2 | EEE | 750 | ILE | 4.3 |
| 3 | FFF | 8 | ARG | 4.1 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 2 | EEE | 122 | LEU | 4.1 |
| 2 | BBB | 699 | PHE | 4.1 |
| 2 | BBB | 718 | MET | 4.0 |
| 2 | EEE | 183 | THR | 4.0 |
| 2 | EEE | 246 | MET | 4.0 |
| 2 | BBB | 754 | ARG | 4.0 |
| 2 | EEE | 695 | LEU | 3.9 |
| 3 | FFF | 84 | ALA | 3.9 |
| 3 | CCC | 1 | MET | 3.9 |
| 2 | EEE | 248 | ILE | 3.8 |
| 3 | FFF | 37 | GLY | 3.8 |
| 2 | BBB | 712 | SER | 3.8 |
| 3 | FFF | 85 | GLY | 3.8 |
| 2 | BBB | 181 | ILE | 3.8 |
| 3 | FFF | 7 | LEU | 3.8 |
| 2 | EEE | 693 | CYS | 3.7 |
| 3 | CCC | 15 | ARG | 3.6 |
| 2 | BBB | 713 | SER | 3.6 |
| 2 | EEE | 752 | GLU | 3.6 |
| 2 | BBB | 753 | LEU | 3.6 |
| 2 | BBB | 700 | PHE | 3.5 |
| 3 | FFF | 11 | MET | 3.5 |
| 2 | EEE | 365 | ARG | 3.5 |
| 3 | CCC | 14 | SER | 3.4 |
| 2 | EEE | 749 | THR | 3.4 |
| 3 | FFF | 34 | TYR | 3.4 |
| 2 | EEE | 182 | THR | 3.4 |
| 2 | BBB | 749 | THR | 3.4 |
| 3 | FFF | 16 | THR | 3.4 |
| 2 | EEE | 410 | GLY | 3.3 |
| 2 | BBB | 692 | CYS | 3.3 |
| 3 | CCC | 111 | TYR | 3.3 |
| 2 | BBB | 725 | ASP | 3.3 |
| 3 | FFF | 14 | SER | 3.3 |
| 3 | CCC | 32 | LYS | 3.3 |
| 2 | EEE | 690 | GLN | 3.3 |
| 3 | FFF | 18 | GLU | 3.3 |
| 2 | EEE | 740 | PHE | 3.2 |
| 2 | BBB | 729 | ASP | 3.2 |
| 2 | BBB | 714 | MET | 3.2 |
| 2 | BBB | 182 | THR | 3.2 |
| 1 | AAA | 390 | LEU | 3.2 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 3 | CCC | 20 | LEU | 3.2 |
| 2 | BBB | 246 | MET | 3.1 |
| 2 | EEE | 738 | GLU | 3.1 |
| 3 | FFF | 40 | GLU | 3.1 |
| 2 | EEE | 753 | LEU | 3.1 |
| 2 | EEE | 754 | ARG | 3.0 |
| 3 | CCC | 10 | LEU | 3.0 |
| 3 | CCC | 27 | HIS | 3.0 |
| 2 | EEE | 343 | MET | 3.0 |
| 3 | FFF | 10 | LEU | 3.0 |
| 1 | DDD | 690 | ILE | 3.0 |
| 2 | BBB | 742 | GLU | 2.9 |
| 2 | BBB | 752 | GLU | 2.9 |
| 2 | EEE | 278 | LYS | 2.9 |
| 3 | CCC | 18 | GLU | 2.9 |
| 1 | DDD | 299 | GLY | 2.9 |
| 2 | EEE | 247 | GLN | 2.8 |
| 2 | BBB | 122 | LEU | 2.8 |
| 3 | FFF | 15 | ARG | 2.8 |
| 2 | BBB | 708 | PRO | 2.8 |
| 2 | EEE | 282 | LEU | 2.8 |
| 2 | EEE | 254 | PHE | 2.8 |
| 1 | DDD | 317 | TRP | 2.8 |
| 2 | EEE | 712 | SER | 2.8 |
| 3 | CCC | 29 | ALA | 2.8 |
| 1 | AAA | 315 | PHE | 2.8 |
| 2 | BBB | 747 | CYS | 2.8 |
| 2 | BBB | 184 | HIS | 2.8 |
| 3 | FFF | 20 | LEU | 2.8 |
| 2 | BBB | 722 | ALA | 2.8 |
| 2 | BBB | 209 | LYS | 2.8 |
| 2 | EEE | 61 | THR | 2.8 |
| 2 | BBB | 124 | GLN | 2.7 |
| 3 | CCC | 6 | GLU | 2.7 |
| 2 | BBB | 249 | ARG | 2.7 |
| 3 | CCC | 4 | ILE | 2.7 |
| 3 | CCC | 108 | THR | 2.7 |
| 2 | EEE | 701 | PRO | 2.7 |
| 3 | CCC | 122 | VAL | 2.7 |
| 3 | FFF | 125 | LEU | 2.7 |
| 2 | EEE | 32 | HIS | 2.6 |
| 2 | EEE | 719 | VAL | 2.6 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 3 | FFF | 21 | THR | 2.6 |
| 2 | BBB | 748 | SER | 2.6 |
| 2 | EEE | 371 | GLU | 2.6 |
| 2 | BBB | 723 | ARG | 2.6 |
| 2 | BBB | 70 | ASP | 2.6 |
| 2 | EEE | 512 | PHE | 2.5 |
| 2 | EEE | 401 | ALA | 2.5 |
| 1 | DDD | 650 | TYR | 2.5 |
| 2 | BBB | 726 | ALA | 2.5 |
| 2 | EEE | 751 | GLU | 2.5 |
| 2 | EEE | 275 | GLY | 2.5 |
| 3 | CCC | 21 | THR | 2.5 |
| 2 | EEE | 114 | VAL | 2.5 |
| 2 | EEE | 399 | GLY | 2.5 |
| 3 | CCC | 19 | ILE | 2.5 |
| 3 | FFF | 30 | ILE | 2.5 |
| 2 | BBB | 696 | PHE | 2.5 |
| 2 | BBB | 738 | GLU | 2.5 |
| 2 | BBB | 710 | GLY | 2.5 |
| 2 | EEE | 313 | GLN | 2.5 |
| 3 | CCC | 11 | MET | 2.5 |
| 1 | DDD | 496 | ARG | 2.5 |
| 2 | EEE | 728 | ILE | 2.5 |
| 1 | DDD | 514 | ASP | 2.4 |
| 3 | FFF | 25 | VAL | 2.4 |
| 2 | BBB | 717 | ALA | 2.4 |
| 2 | BBB | 698 | LYS | 2.4 |
| 2 | EEE | 747 | CYS | 2.4 |
| 1 | AAA | 716 | ARG | 2.4 |
| 2 | BBB | 353 | LYS | 2.4 |
| 1 | DDD | 300 | GLU | 2.4 |
| 2 | EEE | 692 | CYS | 2.4 |
| 2 | BBB | 721 | ARG | 2.4 |
| 2 | EEE | 253 | TYR | 2.4 |
| 2 | EEE | 366 | THR | 2.4 |
| 2 | BBB | 174 | MET | 2.4 |
| 2 | BBB | 344 | PHE | 2.3 |
| 2 | EEE | 477 | MET | 2.3 |
| 2 | EEE | 748 | SER | 2.3 |
| 2 | BBB | 296 | THR | 2.3 |
| 2 | BBB | 151 | ARG | 2.3 |
| 2 | EEE | 162 | ARG | 2.3 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 2 | BBB | 150 | PHE | 2.3 |
| 1 | AAA | 222 | ASN | 2.3 |
| 2 | EEE | 174 | MET | 2.3 |
| 3 | FFF | 26 | ASP | 2.3 |
| 3 | FFF | 22 | LYS | 2.3 |
| 3 | CCC | 3 | ARG | 2.3 |
| 1 | DDD | 207 | ILE | 2.3 |
| 2 | EEE | 670 | ARG | 2.3 |
| 2 | BBB | 370 | ALA | 2.3 |
| 2 | EEE | 349 | ALA | 2.3 |
| 1 | DDD | 681 | PHE | 2.3 |
| 1 | AAA | 380 | ASP | 2.2 |
| 2 | EEE | 301 | THR | 2.2 |
| 2 | EEE | 351 | LEU | 2.2 |
| 2 | EEE | 709 | VAL | 2.2 |
| 2 | BBB | 183 | THR | 2.2 |
| 2 | BBB | 469 | THR | 2.2 |
| 2 | EEE | 251 | PHE | 2.2 |
| 3 | FFF | 28 | MET | 2.2 |
| 2 | BBB | 727 | ARG | 2.2 |
| 2 | EEE | 714 | MET | 2.2 |
| 3 | CCC | 123 | GLU | 2.2 |
| 2 | BBB | 313 | GLN | 2.2 |
| 2 | EEE | 266 | LEU | 2.2 |
| 2 | EEE | 250 | GLY | 2.2 |
| 2 | EEE | 369 | PRO | 2.2 |
| 2 | BBB | 211 | ARG | 2.2 |
| 1 | DDD | 585 | LEU | 2.2 |
| 2 | EEE | 743 | ILE | 2.2 |
| 1 | DDD | 334 | TYR | 2.1 |
| 2 | EEE | 426 | LEU | 2.1 |
| 2 | EEE | 370 | ALA | 2.1 |
| 1 | DDD | 260 | PHE | 2.1 |
| 2 | BBB | 180 | GLU | 2.1 |
| 3 | CCC | 30 | ILE | 2.1 |
| 3 | CCC | 26 | ASP | 2.1 |
| 1 | DDD | 338 | TRP | 2.1 |
| 1 | DDD | 253 | VAL | 2.1 |
| 2 | BBB | 146 | THR | 2.1 |
| 2 | BBB | 317 | MET | 2.1 |
| 2 | EEE | 412 | PHE | 2.1 |
| 2 | EEE | 739 | GLU | 2.1 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 2 | EEE | 656 | GLU | 2.1 |
| 3 | FFF | 6 | GLU | 2.1 |
| 2 | EEE | 723 | ARG | 2.1 |
| 2 | EEE | 689 | TYR | 2.1 |
| 3 | FFF | 19 | ILE | 2.1 |
| 1 | DDD | 278 | GLN | 2.0 |
| 2 | BBB | 126 | ARG | 2.0 |
| 3 | CCC | 28 | MET | 2.0 |
| 2 | EEE | 503 | ALA | 2.0 |
| 2 | BBB | 351 | LEU | 2.0 |
| 2 | BBB | 743 | ILE | 2.0 |
| 2 | EEE | 700 | PHE | 2.0 |
| 2 | BBB | 372 | MET | 2.0 |
| 1 | DDD | 710 | PHE | 2.0 |

## 6.2 Non-standard residues in protein, DNA, RNA chains ⓘ

There are no non-standard protein/DNA/RNA residues in this entry.

## 6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

## 6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, $95^{th}$ percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res | Atoms | RSCC | RSR | B-factors($\text{Å}^2$) | Q<0.9 |
|-----|------|-------|-----|-------|------|-----|-------------------------|-------|
| 4 | MG | EEE | 801 | 1/1 | 0.94 | 0.08 | 103,103,103,103 | 0 |
| 4 | MG | BBB | 801 | 1/1 | 0.96 | 0.15 | 69,69,69,69 | 0 |

## 6.5 Other polymers ⓘ

There are no such residues in this entry.