# WORLDWIDE PDB PROTEIN DATA BANK

# Full wwPDB X-ray Structure Validation Report (i)

Oct 31, 2023 – 07:54 AM EDT

| | | |
|---|---|---|
| PDB ID | : | 3TT6 |
| Title | : | Structure of ClpP from Bacillus subtilis in compressed state |
| Authors | : | Lee, B.-G.; Kim, M.K.; Song, H.K. |
| Deposited on | : | 2011-09-14 |
| Resolution | : | 2.59 Å(reported) |

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

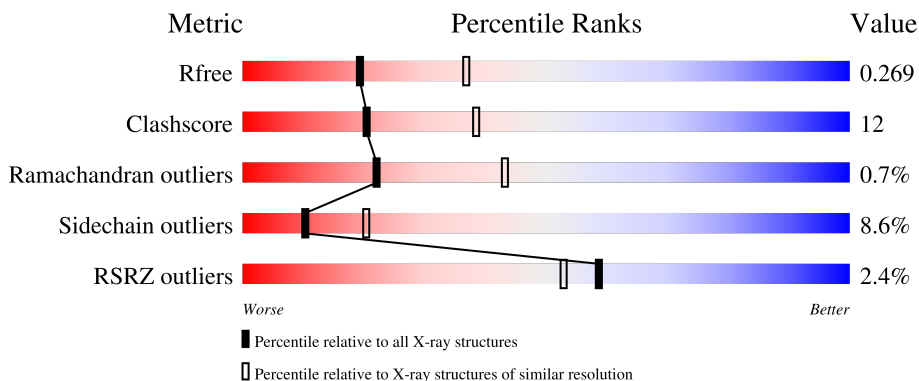| | | |
|---|---|---|
| MolProbity | : | 4.02b-467 |
| Xtriage (Phenix) | : | 1.13 |
| EDS | : | 2.36 |
| Percentile statistics | : | 20191225.v01 (using entries in the PDB archive December 25th 2019) |
| Refmac | : | 5.8.0158 |
| CCP4 | : | 7.0.044 (Gargrove) |
| Ideal geometry (proteins) | : | Engh & 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 2.59 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.
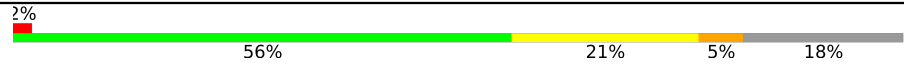
| Metric | Percentile Ranks | Value |
|--------|-----------------|-------|
| Rfree | | 0.269 |
| Clashscore | | 12 |
| Ramachandran outliers | | 0.7% |
| Sidechain outliers | | 8.6% |
| RSRZ outliers | | 2.4% |

*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 | 3163 (2.60-2.60) |
| Clashscore | 141614 | 3518 (2.60-2.60) |
| Ramachandran outliers | 138981 | 3455 (2.60-2.60) |
| Sidechain outliers | 138945 | 3455 (2.60-2.60) |
| RSRZ outliers | 127900 | 3104 (2.60-2.60) |

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 | A | 196 | % / 62% 17% · · 17% |
| 1 | B | 196 | 4% / 60% 20% · 17% |
| 1 | C | 196 | % / 62% 18% · 18% |
| 1 | D | 196 | 2% / 59% 20% · · 17% |
| 1 | E | 196 | 2% / 63% 15% · 18% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | F | 196 | 2% · 56% · 21% · 5% · 18% |
| 1 | G | 196 | 4% · 57% · 22% · · · 18% |

## 2 Entry composition ⓘ

There are 2 unique types of molecules in this entry. The entry contains 8602 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 ATP-dependent Clp protease proteolytic subunit.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 1 | A | 162 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1228 | 780 | 205 | 236 | 7 | | | |
| 1 | B | 162 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1228 | 780 | 205 | 236 | 7 | | | |
| 1 | C | 161 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1223 | 777 | 204 | 235 | 7 | | | |
| 1 | D | 162 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1233 | 783 | 207 | 236 | 7 | | | |
| 1 | E | 160 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1216 | 772 | 203 | 234 | 7 | | | |
| 1 | F | 160 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1218 | 774 | 203 | 234 | 7 | | | |
| 1 | G | 161 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1228 | 780 | 206 | 235 | 7 | | | |

- Molecule 2 is water.

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|---|---------|---------|
| 2 | A | 7 | Total | O | 0 | 0 |
| | | | 7 | 7 | | |
| 2 | B | 3 | Total | O | 0 | 0 |
| | | | 3 | 3 | | |
| 2 | C | 6 | Total | O | 0 | 0 |
| | | | 6 | 6 | | |
| 2 | D | 6 | Total | O | 0 | 0 |
| | | | 6 | 6 | | |
| 2 | E | 3 | Total | O | 0 | 0 |
| | | | 3 | 3 | | |
| 2 | F | 3 | Total | O | 0 | 0 |
| | | | 3 | 3 | | |

# 3 Residue-property plots ⓘ

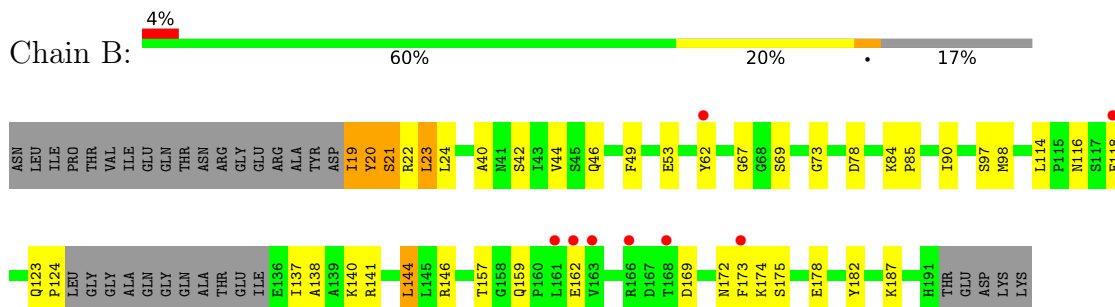These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. 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 as grey.
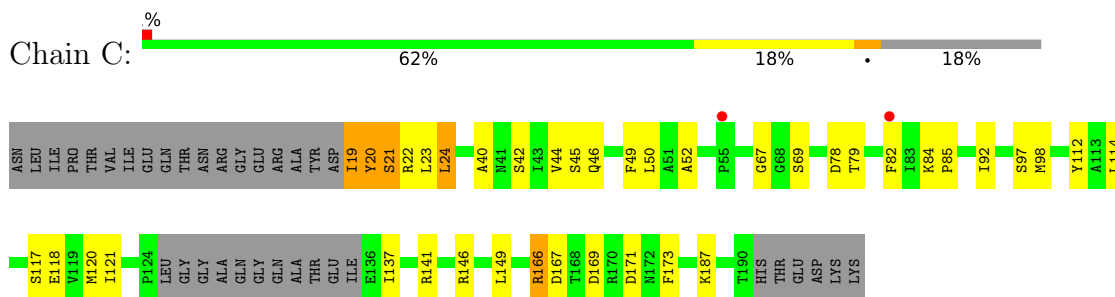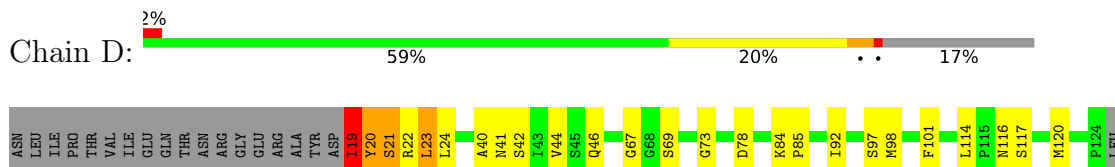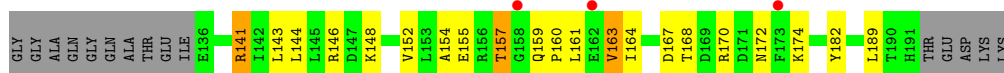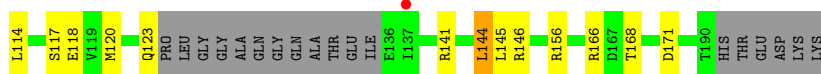
- Molecule 1: ATP-dependent Clp protease proteolytic subunit



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- Molecule 1: ATP-dependent Clp protease proteolytic subunit

GLY GLY ALA GLN GLY ALA THR GLU ILE E136 R141 I142 L143 L144 L145 R146 D147 K148 V152 L153 A154 E155 R156 T157 G158 Q159 P160 L161 E162 V163 I164 D167 T168 D169 R170 D171 N172 F173 K174 Y182 L189 T190 H191 THR GLU ASP LYS LYS

• Molecule 1: ATP-dependent Clp protease proteolytic subunit

Chain E:

2%

63% 15% • 18%

ASN LEU ILE PRO THR VAL ILE GLU GLN THR ASN ARG GLY GLU ARG ALA TYR ASP I19 Y20 S21 R22 L23 L24 A40 N41 S42 I43 V44 S45 Q46 L50 P55 G67 G68 S69 M74 D78 F82 I83 K84 P85 I92 S97 G106 E107 K108 R111

L114 S117 E118 V119 M120 Q123 PRO LEU GLY GLY ALA GLN GLY GLN ALA THR GLU ILE E136 I137 R141 L144 L145 R146 R156 R166 D167 T168 D171 T190 HIS THR GLU ASP LYS LYS

• Molecule 1: ATP-dependent Clp protease proteolytic subunit

Chain F:

2%

56% 21% 5% 18%

ASN LEU ILE PRO THR VAL ILE GLU GLN THR ASN ARG GLY GLU ARG ALA TYR ASP I19 Y20 S21 R22 L23 L24 V39 A40 N41 S42 I43 V44 S45 Q46 F49 L50 G67 G68 S69 D78 K84 P85 S97 G106 A113 N116 S117 E118 V119 M120 I121 H122 Q123

P124 LEU GLY GLY ALA GLN GLY GLN ALA THR GLU ILE GLU ILE A138 A139 K140 R141 L144 L145 R146 V152 E155 R156 Q159 P160 L161 E162 V163 I164 E165 R166 D167 R170 D171 N172 F173 K174 Y182 G183 L184 I185 L189 T190 H191 THR GLU ASP LYS LYS

• Molecule 1: ATP-dependent Clp protease proteolytic subunit

Chain G:

4%

57% 22% • • 18%

ASN LEU ILE PRO THR VAL ILE GLU GLN THR ASN ARG GLY GLU ARG ALA TYR ASP I19 Y20 S21 R22 L23 L24 A40 N41 S42 I43 V44 S45 Q46 F49 L50 Y62 G67 G68 S69 G73 M74 D78 K84 P85 I90 C91 I92 S97 M98 Y112 A113 L114

S117 E118 I121 P124 LEU GLY GLY ALA GLN GLY GLN ALA THR GLU ILE GLU I137 A138 A139 K140 R141 I142 L143 L144 L145 R146 D147 K148 K151 V152 L153 T157 P160 L161 E162 V163 I164 E165 R166 D167 T168 D169 R170 F173 K174 Y182 K187 T190 H191 THR

GLU ASP LYS LYS

# 4 Data and refinement statistics ⓘ

| Property | Value | Source |
|---|---|---|
| Space group | C 1 2 1 | Depositor |
| Cell constants<br>a, b, c, $\alpha$, $\beta$, $\gamma$ | 109.09Å 172.86Å 83.43Å<br>90.00° 118.93° 90.00° | Depositor |
| Resolution (Å) | 36.09 – 2.59<br>36.09 – 2.59 | Depositor<br>EDS |
| % Data completeness<br>(in resolution range) | 98.8 (36.09-2.59)<br>98.8 (36.09-2.59) | Depositor<br>EDS |
| $R_{merge}$ | 0.07 | Depositor |
| $R_{sym}$ | (Not available) | Depositor |
| $< I/\sigma(I) >$ [1] | 1.32 (at 2.58Å) | Xtriage |
| Refinement program | PHENIX 1.7_650 | Depositor |
| R, $R_{free}$ | 0.221 , 0.277<br>0.213 , 0.269 | Depositor<br>DCC |
| $R_{free}$ test set | 2002 reflections (4.84%) | wwPDB-VP |
| Wilson B-factor (Å$^2$) | 62.7 | Xtriage |
| Anisotropy | 0.263 | Xtriage |
| Bulk solvent $k_{sol}$(e/Å$^3$), $B_{sol}$(Å$^2$) | 0.31 , 50.8 | EDS |
| L-test for twinning[2] | $< |L| > = 0.51, < L^2 > = 0.34$ | Xtriage |
| Estimated twinning fraction | 0.000 for 1/2*h+1/2*k+l,3/2*h-1/2*k+l,-l<br>0.000 for 1/2*h-1/2*k+l,-3/2*h-1/2*k-l,-l | Xtriage |
| $F_o$,$F_c$ correlation | 0.95 | EDS |
| Total number of atoms | 8602 | wwPDB-VP |
| Average B, all atoms (Å$^2$) | 70.0 | wwPDB-VP |

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.81% 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 ⓘ

## 5.1 Standard geometry ⓘ

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 | 0.69 | 0/1242 | 0.72 | 0/1675 |
| 1 | B | 0.60 | 0/1242 | 0.71 | 1/1675 (0.1%) |
| 1 | C | 0.69 | 0/1237 | 0.72 | 0/1668 |
| 1 | D | 0.65 | 1/1248 (0.1%) | 0.71 | 0/1683 |
| 1 | E | 0.67 | 0/1229 | 0.70 | 0/1656 |
| 1 | F | 0.60 | 0/1232 | 0.67 | 0/1661 |
| 1 | G | 0.56 | 0/1243 | 0.67 | 0/1676 |
| All | All | 0.64 | 1/8673 (0.0%) | 0.70 | 1/11694 (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 |
|-----|-------|---------------------|---------------------|
| 1 | A | 0 | 1 |
| 1 | B | 0 | 1 |
| 1 | D | 0 | 1 |
| 1 | G | 0 | 1 |
| All | All | 0 | 4 |

All (1) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-----|-------------|----------|
| 1 | D | 41 | ASN | CG-ND2 | -5.24 | 1.19 | 1.32 |

All (1) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|-----|-------|-----|------|-------|-----|----------------|-------------|
| 1 | B | 53 | GLU | OE1-CD-OE2 | 5.91 | 130.40 | 123.30 |

There are no chirality outliers.

All (4) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-------|
| 1 | A | 19 | ILE | Mainchain |
| 1 | B | 137 | ILE | Peptide |
| 1 | D | 19 | ILE | Mainchain |
| 1 | G | 19 | ILE | Mainchain |

## 5.2 Too-close contacts ⓘ

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 | 1228 | 0 | 1254 | 27 | 0 |
| 1 | B | 1228 | 0 | 1254 | 32 | 0 |
| 1 | C | 1223 | 0 | 1252 | 35 | 0 |
| 1 | D | 1233 | 0 | 1259 | 41 | 0 |
| 1 | E | 1216 | 0 | 1245 | 31 | 0 |
| 1 | F | 1218 | 0 | 1250 | 45 | 0 |
| 1 | G | 1228 | 0 | 1257 | 39 | 0 |
| 2 | A | 7 | 0 | 0 | 0 | 0 |
| 2 | B | 3 | 0 | 0 | 0 | 0 |
| 2 | C | 6 | 0 | 0 | 0 | 0 |
| 2 | D | 6 | 0 | 0 | 0 | 0 |
| 2 | E | 3 | 0 | 0 | 0 | 0 |
| 2 | F | 3 | 0 | 0 | 0 | 0 |
| All | All | 8602 | 0 | 8771 | 215 | 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 12.

All (215) 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:A:118:GLU:HG3 | 1:G:141:ARG:NH1 | 1.83 | 0.94 |
| 1:C:40:ALA:O | 1:C:44:VAL:HG23 | 1.66 | 0.93 |
| 1:D:160:PRO:HD2 | 1:D:163:VAL:HG11 | 1.49 | 0.93 |
| 1:E:108:LYS:HG2 | 1:E:156:ARG:HH12 | 1.32 | 0.92 |
| 1:A:118:GLU:HG3 | 1:G:141:ARG:CZ | 2.02 | 0.90 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:E:106:GLY:O | 1:E:156:ARG:NH2 | 2.07 | 0.87 |
| 1:F:155:GLU:OE1 | 1:F:156:ARG:HD2 | 1.75 | 0.87 |
| 1:C:120:MET:SD | 1:C:173:PHE:CE1 | 2.70 | 0.85 |
| 1:D:19:ILE:O | 1:D:21:SER:N | 2.09 | 0.85 |
| 1:F:140:LYS:HZ2 | 1:G:173:PHE:HZ | 1.23 | 0.83 |
| 1:B:67:GLY:HA3 | 1:B:97:SER:HB3 | 1.60 | 0.83 |
| 1:G:40:ALA:O | 1:G:44:VAL:HG23 | 1.79 | 0.83 |
| 1:E:67:GLY:HA3 | 1:E:97:SER:HB3 | 1.59 | 0.82 |
| 1:B:138:ALA:HB2 | 1:C:173:PHE:CZ | 2.15 | 0.82 |
| 1:A:19:ILE:O | 1:A:21:SER:N | 2.13 | 0.81 |
| 1:A:67:GLY:HA3 | 1:A:97:SER:HB3 | 1.65 | 0.79 |
| 1:C:67:GLY:HA3 | 1:C:97:SER:HB3 | 1.64 | 0.78 |
| 1:G:67:GLY:HA3 | 1:G:97:SER:HB3 | 1.65 | 0.78 |
| 1:D:67:GLY:HA3 | 1:D:97:SER:HB3 | 1.66 | 0.77 |
| 1:F:67:GLY:HA3 | 1:F:97:SER:HB3 | 1.65 | 0.77 |
| 1:D:154:ALA:HA | 1:D:164:ILE:CD1 | 2.15 | 0.76 |
| 1:F:40:ALA:O | 1:F:44:VAL:HG23 | 1.87 | 0.75 |
| 1:D:40:ALA:O | 1:D:44:VAL:HG23 | 1.87 | 0.74 |
| 1:G:19:ILE:O | 1:G:21:SER:N | 2.21 | 0.74 |
| 1:F:19:ILE:O | 1:F:22:ARG:N | 2.21 | 0.73 |
| 1:E:82:PHE:CE1 | 1:F:189:LEU:HD13 | 2.23 | 0.73 |
| 1:C:82:PHE:CZ | 1:D:189:LEU:HD13 | 2.24 | 0.72 |
| 1:E:40:ALA:O | 1:E:44:VAL:HG23 | 1.88 | 0.72 |
| 1:F:19:ILE:HG23 | 1:F:20:TYR:H | 1.55 | 0.72 |
| 1:E:19:ILE:HG23 | 1:E:20:TYR:H | 1.55 | 0.72 |
| 1:B:19:ILE:HG23 | 1:B:20:TYR:H | 1.55 | 0.71 |
| 1:D:160:PRO:HD2 | 1:D:163:VAL:CG1 | 2.19 | 0.71 |
| 1:D:148:LYS:HE2 | 1:D:152:VAL:HG23 | 1.72 | 0.70 |
| 1:C:19:ILE:HG23 | 1:C:20:TYR:H | 1.54 | 0.70 |
| 1:B:19:ILE:O | 1:B:22:ARG:N | 2.23 | 0.70 |
| 1:C:19:ILE:O | 1:C:22:ARG:N | 2.23 | 0.70 |
| 1:A:40:ALA:O | 1:A:44:VAL:HG23 | 1.91 | 0.70 |
| 1:A:19:ILE:O | 1:A:22:ARG:N | 2.23 | 0.69 |
| 1:F:141:ARG:NH1 | 1:G:118:GLU:HG3 | 2.07 | 0.69 |
| 1:D:19:ILE:HG12 | 1:D:20:TYR:N | 2.08 | 0.68 |
| 1:B:40:ALA:O | 1:B:44:VAL:HG23 | 1.94 | 0.67 |
| 1:B:78:ASP:HB3 | 1:C:114:LEU:HD13 | 1.74 | 0.67 |
| 1:G:19:ILE:O | 1:G:22:ARG:N | 2.24 | 0.67 |
| 1:E:19:ILE:O | 1:E:22:ARG:N | 2.25 | 0.66 |
| 1:C:120:MET:SD | 1:C:173:PHE:CZ | 2.89 | 0.66 |
| 1:A:19:ILE:C | 1:A:21:SER:H | 2.00 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:C:45:SER:HB3 | 1:D:23:LEU:HD21 | 1.78 | 0.65 |
| 1:D:19:ILE:O | 1:D:22:ARG:N | 2.26 | 0.65 |
| 1:D:154:ALA:HA | 1:D:164:ILE:HD12 | 1.79 | 0.65 |
| 1:D:19:ILE:C | 1:D:21:SER:H | 1.99 | 0.65 |
| 1:D:19:ILE:HG12 | 1:D:20:TYR:H | 1.62 | 0.64 |
| 1:B:141:ARG:NE | 1:C:118:GLU:HG3 | 2.13 | 0.64 |
| 1:D:114:LEU:HD21 | 1:D:189:LEU:HD12 | 1.81 | 0.63 |
| 1:E:146:ARG:HH12 | 1:E:168:THR:HB | 1.64 | 0.63 |
| 1:B:141:ARG:HG3 | 1:C:118:GLU:CD | 2.20 | 0.62 |
| 1:A:106:GLY:O | 1:A:156:ARG:NH2 | 2.34 | 0.61 |
| 1:D:114:LEU:CD2 | 1:D:189:LEU:HD12 | 2.30 | 0.61 |
| 1:A:19:ILE:C | 1:A:21:SER:N | 2.55 | 0.60 |
| 1:C:82:PHE:CD1 | 1:D:189:LEU:HB3 | 2.36 | 0.60 |
| 1:F:166:ARG:HD2 | 1:F:170:ARG:HH21 | 1.66 | 0.60 |
| 1:D:19:ILE:C | 1:D:21:SER:N | 2.55 | 0.59 |
| 1:G:139:ALA:O | 1:G:143:LEU:HD23 | 2.02 | 0.59 |
| 1:E:141:ARG:NE | 1:F:118:GLU:HG3 | 2.16 | 0.59 |
| 1:G:19:ILE:C | 1:G:21:SER:H | 2.06 | 0.58 |
| 1:B:118:GLU:OE2 | 1:B:173:PHE:CD1 | 2.56 | 0.58 |
| 1:C:78:ASP:OD2 | 1:D:116:ASN:HB2 | 2.02 | 0.58 |
| 1:B:118:GLU:OE2 | 1:B:173:PHE:HD1 | 1.87 | 0.57 |
| 1:A:121:ILE:HD11 | 1:A:167:ASP:HB3 | 1.87 | 0.56 |
| 1:C:19:ILE:O | 1:C:21:SER:N | 2.39 | 0.56 |
| 1:C:82:PHE:CE1 | 1:D:189:LEU:HB3 | 2.41 | 0.56 |
| 1:G:19:ILE:C | 1:G:21:SER:N | 2.59 | 0.56 |
| 1:B:174:LYS:HE3 | 1:B:182:TYR:CD1 | 2.41 | 0.55 |
| 1:F:121:ILE:HD11 | 1:F:167:ASP:HB3 | 1.87 | 0.55 |
| 1:G:162:GLU:HA | 1:G:162:GLU:OE1 | 2.05 | 0.55 |
| 1:F:19:ILE:O | 1:F:21:SER:N | 2.39 | 0.55 |
| 1:A:122:HIS:ND1 | 1:A:168:THR:O | 2.35 | 0.55 |
| 1:G:42:SER:O | 1:G:46:GLN:HG3 | 2.06 | 0.54 |
| 1:B:84:LYS:HB3 | 1:B:85:PRO:HD3 | 1.90 | 0.54 |
| 1:E:78:ASP:OD2 | 1:F:116:ASN:HB2 | 2.07 | 0.54 |
| 1:D:154:ALA:CA | 1:D:164:ILE:CD1 | 2.85 | 0.54 |
| 1:C:84:LYS:HB3 | 1:C:85:PRO:HD3 | 1.90 | 0.54 |
| 1:E:24:LEU:HD12 | 1:E:50:LEU:HD21 | 1.89 | 0.54 |
| 1:D:92:ILE:O | 1:D:117:SER:HB3 | 2.08 | 0.54 |
| 1:A:148:LYS:HG3 | 1:B:116:ASN:OD1 | 2.08 | 0.53 |
| 1:E:19:ILE:O | 1:E:21:SER:N | 2.40 | 0.53 |
| 1:D:84:LYS:HB3 | 1:D:85:PRO:HD3 | 1.91 | 0.53 |
| 1:B:78:ASP:HB3 | 1:C:114:LEU:CD1 | 2.39 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:A:172:ASN:C | 1:A:172:ASN:OD1 | 2.47 | 0.52 |
| 1:C:24:LEU:HD12 | 1:C:50:LEU:HD21 | 1.91 | 0.52 |
| 1:E:111:ARG:HD3 | 1:E:156:ARG:NH2 | 2.25 | 0.52 |
| 1:D:164:ILE:O | 1:D:168:THR:HG23 | 2.09 | 0.52 |
| 1:E:84:LYS:HB3 | 1:E:85:PRO:HD3 | 1.91 | 0.52 |
| 1:A:42:SER:O | 1:A:46:GLN:HG3 | 2.09 | 0.51 |
| 1:F:174:LYS:HE2 | 1:F:182:TYR:CD1 | 2.44 | 0.51 |
| 1:A:84:LYS:HB3 | 1:A:85:PRO:HD3 | 1.92 | 0.51 |
| 1:A:118:GLU:OE2 | 1:A:173:PHE:HB2 | 2.09 | 0.51 |
| 1:B:19:ILE:O | 1:B:21:SER:N | 2.44 | 0.51 |
| 1:D:42:SER:O | 1:D:46:GLN:HG3 | 2.12 | 0.50 |
| 1:D:120:MET:HE3 | 1:D:172:ASN:O | 2.11 | 0.50 |
| 1:C:49:PHE:O | 1:C:52:ALA:HB3 | 2.11 | 0.50 |
| 1:C:112:TYR:CD1 | 1:C:187:LYS:HB3 | 2.46 | 0.50 |
| 1:B:49:PHE:CE1 | 1:C:22:ARG:CB | 2.94 | 0.50 |
| 1:E:74:MET:HG3 | 1:E:145:LEU:HD22 | 1.93 | 0.49 |
| 1:D:78:ASP:HB3 | 1:E:114:LEU:HD13 | 1.94 | 0.49 |
| 1:E:141:ARG:CZ | 1:F:118:GLU:HG3 | 2.42 | 0.49 |
| 1:B:42:SER:O | 1:B:46:GLN:HG3 | 2.13 | 0.49 |
| 1:F:118:GLU:OE2 | 1:F:173:PHE:HB2 | 2.13 | 0.49 |
| 1:G:84:LYS:HB3 | 1:G:85:PRO:HD3 | 1.95 | 0.49 |
| 1:F:49:PHE:HB2 | 1:G:23:LEU:HD13 | 1.94 | 0.49 |
| 1:C:121:ILE:HD11 | 1:C:167:ASP:HB3 | 1.95 | 0.49 |
| 1:E:42:SER:O | 1:E:46:GLN:HG3 | 2.13 | 0.49 |
| 1:E:92:ILE:O | 1:E:117:SER:HB3 | 2.13 | 0.48 |
| 1:C:166:ARG:HE | 1:C:166:ARG:HB3 | 1.50 | 0.48 |
| 1:D:154:ALA:CA | 1:D:164:ILE:HD12 | 2.43 | 0.48 |
| 1:D:141:ARG:HH21 | 1:E:118:GLU:HG3 | 1.77 | 0.48 |
| 1:A:24:LEU:HD12 | 1:A:50:LEU:HD21 | 1.95 | 0.48 |
| 1:G:24:LEU:HD12 | 1:G:50:LEU:HD21 | 1.96 | 0.48 |
| 1:F:162:GLU:CD | 1:F:162:GLU:H | 2.18 | 0.47 |
| 1:D:160:PRO:O | 1:D:163:VAL:HG13 | 2.14 | 0.47 |
| 1:F:78:ASP:HB3 | 1:G:114:LEU:HD13 | 1.96 | 0.47 |
| 1:F:42:SER:O | 1:F:46:GLN:HG3 | 2.14 | 0.47 |
| 1:F:140:LYS:NZ | 1:G:173:PHE:HZ | 2.04 | 0.47 |
| 1:D:161:LEU:O | 1:D:161:LEU:HD12 | 2.14 | 0.47 |
| 1:F:113:ALA:HB3 | 1:F:185:ILE:HD13 | 1.97 | 0.47 |
| 1:B:140:LYS:HB3 | 1:B:140:LYS:HE2 | 1.51 | 0.47 |
| 1:D:160:PRO:O | 1:D:163:VAL:CG1 | 2.63 | 0.47 |
| 1:G:73:GLY:HA3 | 1:G:98:MET:HE2 | 1.97 | 0.47 |
| 1:C:42:SER:O | 1:C:46:GLN:HG3 | 2.15 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:F:84:LYS:HB3 | 1:F:85:PRO:HD3 | 1.97 | 0.47 |
| 1:F:123:GLN:OE1 | 1:F:124:PRO:C | 2.54 | 0.46 |
| 1:A:116:ASN:HB2 | 1:G:78:ASP:OD2 | 2.16 | 0.46 |
| 1:G:153:LEU:HB3 | 1:G:164:ILE:HD12 | 1.97 | 0.46 |
| 1:B:175:SER:OG | 1:B:178:GLU:HG3 | 2.16 | 0.45 |
| 1:G:74:MET:HG3 | 1:G:145:LEU:HD22 | 1.98 | 0.45 |
| 1:C:84:LYS:N | 1:C:85:PRO:CD | 2.79 | 0.45 |
| 1:G:160:PRO:O | 1:G:163:VAL:HG22 | 2.16 | 0.45 |
| 1:A:78:ASP:HB3 | 1:B:114:LEU:HD13 | 1.99 | 0.45 |
| 1:F:144:LEU:HD12 | 1:F:144:LEU:HA | 1.75 | 0.45 |
| 1:B:138:ALA:HB2 | 1:C:173:PHE:CE1 | 2.51 | 0.45 |
| 1:D:174:LYS:HZ2 | 1:D:182:TYR:HD1 | 1.64 | 0.45 |
| 1:B:174:LYS:HB3 | 1:B:178:GLU:HB2 | 1.99 | 0.45 |
| 1:C:120:MET:HE3 | 1:C:120:MET:HB3 | 1.79 | 0.45 |
| 1:G:148:LYS:O | 1:G:152:VAL:HG23 | 2.16 | 0.44 |
| 1:G:112:TYR:CD1 | 1:G:187:LYS:HB3 | 2.51 | 0.44 |
| 1:F:24:LEU:HD12 | 1:F:50:LEU:HD21 | 2.00 | 0.44 |
| 1:D:120:MET:HE3 | 1:D:120:MET:HB3 | 1.64 | 0.44 |
| 1:C:19:ILE:C | 1:C:21:SER:N | 2.71 | 0.44 |
| 1:D:101:PHE:CZ | 1:D:152:VAL:HG11 | 2.53 | 0.44 |
| 1:G:173:PHE:H | 1:G:173:PHE:HD2 | 1.64 | 0.44 |
| 1:F:160:PRO:HG2 | 1:F:163:VAL:CG2 | 2.48 | 0.44 |
| 1:G:92:ILE:O | 1:G:117:SER:HB3 | 2.18 | 0.44 |
| 1:A:101:PHE:CD1 | 1:A:149:LEU:HD12 | 2.52 | 0.44 |
| 1:B:19:ILE:HG23 | 1:B:20:TYR:N | 2.30 | 0.44 |
| 1:E:144:LEU:HD12 | 1:E:144:LEU:HA | 1.74 | 0.43 |
| 1:G:23:LEU:HD12 | 1:G:23:LEU:HA | 1.83 | 0.43 |
| 1:F:19:ILE:C | 1:F:21:SER:N | 2.71 | 0.43 |
| 1:F:141:ARG:HD3 | 1:G:118:GLU:CD | 2.38 | 0.43 |
| 1:F:166:ARG:CD | 1:F:170:ARG:HH21 | 2.30 | 0.43 |
| 1:F:174:LYS:HE2 | 1:F:182:TYR:CG | 2.52 | 0.43 |
| 1:A:92:ILE:O | 1:A:117:SER:HB3 | 2.18 | 0.43 |
| 1:C:98:MET:HB3 | 1:C:98:MET:HE3 | 1.89 | 0.43 |
| 1:E:82:PHE:CD1 | 1:F:189:LEU:HB3 | 2.53 | 0.43 |
| 1:E:111:ARG:HD3 | 1:E:156:ARG:HH21 | 1.82 | 0.43 |
| 1:E:123:GLN:HB3 | 1:E:146:ARG:NH1 | 2.33 | 0.43 |
| 1:F:23:LEU:HD12 | 1:F:23:LEU:HA | 1.85 | 0.43 |
| 1:F:152:VAL:O | 1:F:156:ARG:HG2 | 2.17 | 0.43 |
| 1:B:62:TYR:CE1 | 1:B:90:ILE:HD13 | 2.54 | 0.43 |
| 1:A:181:GLU:OE1 | 1:A:181:GLU:HA | 2.19 | 0.43 |
| 1:D:148:LYS:HA | 1:D:148:LYS:HD2 | 1.79 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:F:19:ILE:HG23 | 1:F:20:TYR:CD2 | 2.54 | 0.43 |
| 1:E:19:ILE:C | 1:E:21:SER:N | 2.70 | 0.42 |
| 1:B:138:ALA:HB2 | 1:C:173:PHE:CE2 | 2.54 | 0.42 |
| 1:D:157:THR:HB | 1:D:159:GLN:HG2 | 1.99 | 0.42 |
| 1:F:159:GLN:HB2 | 1:F:164:ILE:HD11 | 2.01 | 0.42 |
| 1:B:141:ARG:HE | 1:C:118:GLU:HG3 | 1.82 | 0.42 |
| 1:D:73:GLY:HA3 | 1:D:98:MET:HE2 | 2.01 | 0.42 |
| 1:D:167:ASP:OD2 | 1:D:182:TYR:OH | 2.25 | 0.42 |
| 1:F:20:TYR:HA | 1:F:23:LEU:HB2 | 2.02 | 0.42 |
| 1:C:92:ILE:O | 1:C:117:SER:HB3 | 2.20 | 0.42 |
| 1:G:73:GLY:HA3 | 1:G:98:MET:CE | 2.49 | 0.42 |
| 1:D:159:GLN:HA | 1:D:160:PRO:HD3 | 1.93 | 0.42 |
| 1:A:114:LEU:HD13 | 1:G:78:ASP:HB3 | 2.01 | 0.42 |
| 1:B:73:GLY:HA3 | 1:B:98:MET:HE2 | 2.02 | 0.42 |
| 1:C:44:VAL:HG13 | 1:C:79:THR:OG1 | 2.20 | 0.42 |
| 1:A:19:ILE:HG12 | 1:A:20:TYR:N | 2.35 | 0.41 |
| 1:E:19:ILE:HG23 | 1:E:20:TYR:N | 2.30 | 0.41 |
| 1:F:106:GLY:O | 1:F:156:ARG:NH2 | 2.53 | 0.41 |
| 1:G:62:TYR:CE1 | 1:G:90:ILE:HD13 | 2.55 | 0.41 |
| 1:G:121:ILE:HD11 | 1:G:167:ASP:HB3 | 2.02 | 0.41 |
| 1:B:19:ILE:C | 1:B:21:SER:N | 2.74 | 0.41 |
| 1:C:112:TYR:HD1 | 1:C:187:LYS:HB3 | 1.85 | 0.41 |
| 1:E:19:ILE:HG23 | 1:E:20:TYR:CD2 | 2.55 | 0.41 |
| 1:F:119:VAL:HG11 | 1:F:184:LEU:HD13 | 2.02 | 0.41 |
| 1:G:141:ARG:CZ | 1:G:145:LEU:HD11 | 2.50 | 0.41 |
| 1:G:160:PRO:C | 1:G:162:GLU:N | 2.71 | 0.41 |
| 1:F:141:ARG:CZ | 1:G:118:GLU:HG3 | 2.49 | 0.41 |
| 1:A:156:ARG:HA | 1:A:156:ARG:HD2 | 1.76 | 0.41 |
| 1:F:120:MET:HE3 | 1:F:120:MET:HB3 | 1.72 | 0.41 |
| 1:G:142:ILE:H | 1:G:142:ILE:HG13 | 1.55 | 0.41 |
| 1:B:144:LEU:HD12 | 1:B:144:LEU:HA | 1.83 | 0.41 |
| 1:F:160:PRO:HG2 | 1:F:163:VAL:HG23 | 2.02 | 0.41 |
| 1:D:84:LYS:N | 1:D:85:PRO:CD | 2.84 | 0.41 |
| 1:A:120:MET:HE3 | 1:A:120:MET:HB3 | 1.73 | 0.41 |
| 1:B:23:LEU:HD12 | 1:B:23:LEU:HA | 1.91 | 0.41 |
| 1:E:141:ARG:HG3 | 1:F:118:GLU:CD | 2.42 | 0.41 |
| 1:A:23:LEU:HD12 | 1:A:23:LEU:HA | 1.83 | 0.41 |
| 1:B:157:THR:OG1 | 1:B:159:GLN:HB2 | 2.21 | 0.41 |
| 1:E:23:LEU:HD12 | 1:E:23:LEU:HA | 1.88 | 0.41 |
| 1:F:19:ILE:HG23 | 1:F:20:TYR:N | 2.31 | 0.41 |
| 1:E:145:LEU:HA | 1:E:145:LEU:HD23 | 1.82 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:G:174:LYS:HE3 | 1:G:182:TYR:CD1 | 2.56 | 0.40 |
| 1:B:123:GLN:OE1 | 1:B:124:PRO:HD2 | 2.21 | 0.40 |
| 1:E:120:MET:HE3 | 1:E:120:MET:HB3 | 1.73 | 0.40 |
| 1:G:174:LYS:HZ3 | 1:G:174:LYS:HG3 | 1.76 | 0.40 |
| 1:F:39:VAL:O | 1:F:43:ILE:HG12 | 2.21 | 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 | A | 158/196 (81%) | 155 (98%) | 2 (1%) | 1 (1%) | 25 | 47 |
| 1 | B | 158/196 (81%) | 154 (98%) | 3 (2%) | 1 (1%) | 25 | 47 |
| 1 | C | 157/196 (80%) | 152 (97%) | 3 (2%) | 2 (1%) | 12 | 24 |
| 1 | D | 158/196 (81%) | 155 (98%) | 2 (1%) | 1 (1%) | 25 | 47 |
| 1 | E | 156/196 (80%) | 151 (97%) | 4 (3%) | 1 (1%) | 25 | 47 |
| 1 | F | 156/196 (80%) | 152 (97%) | 3 (2%) | 1 (1%) | 25 | 47 |
| 1 | G | 157/196 (80%) | 152 (97%) | 4 (2%) | 1 (1%) | 25 | 47 |
| All | All | 1100/1372 (80%) | 1071 (97%) | 21 (2%) | 8 (1%) | 22 | 43 |

All (8) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | A | 20 | TYR |
| 1 | C | 137 | ILE |
| 1 | D | 20 | TYR |
| 1 | G | 20 | TYR |
| 1 | B | 20 | TYR |
| 1 | C | 20 | TYR |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | E | 20 | TYR |
| 1 | F | 20 | TYR |

### 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 | A | 130/162 (80%) | 118 (91%) | 12 (9%) | 9 | 17 |
| 1 | B | 130/162 (80%) | 119 (92%) | 11 (8%) | 10 | 21 |
| 1 | C | 130/162 (80%) | 119 (92%) | 11 (8%) | 10 | 21 |
| 1 | D | 131/162 (81%) | 118 (90%) | 13 (10%) | 8 | 15 |
| 1 | E | 129/162 (80%) | 121 (94%) | 8 (6%) | 18 | 37 |
| 1 | F | 130/162 (80%) | 119 (92%) | 11 (8%) | 10 | 21 |
| 1 | G | 131/162 (81%) | 119 (91%) | 12 (9%) | 9 | 17 |
| All | All | 911/1134 (80%) | 833 (91%) | 78 (9%) | 10 | 20 |

All (78) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | A | 19 | ILE |
| 1 | A | 21 | SER |
| 1 | A | 23 | LEU |
| 1 | A | 24 | LEU |
| 1 | A | 69 | SER |
| 1 | A | 141 | ARG |
| 1 | A | 144 | LEU |
| 1 | A | 148 | LYS |
| 1 | A | 149 | LEU |
| 1 | A | 166 | ARG |
| 1 | A | 169 | ASP |
| 1 | A | 171 | ASP |
| 1 | B | 19 | ILE |
| 1 | B | 21 | SER |
| 1 | B | 23 | LEU |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | B | 24 | LEU |
| 1 | B | 69 | SER |
| 1 | B | 144 | LEU |
| 1 | B | 146 | ARG |
| 1 | B | 162 | GLU |
| 1 | B | 169 | ASP |
| 1 | B | 172 | ASN |
| 1 | B | 187 | LYS |
| 1 | C | 19 | ILE |
| 1 | C | 21 | SER |
| 1 | C | 23 | LEU |
| 1 | C | 24 | LEU |
| 1 | C | 69 | SER |
| 1 | C | 141 | ARG |
| 1 | C | 146 | ARG |
| 1 | C | 149 | LEU |
| 1 | C | 166 | ARG |
| 1 | C | 169 | ASP |
| 1 | C | 171 | ASP |
| 1 | D | 19 | ILE |
| 1 | D | 21 | SER |
| 1 | D | 23 | LEU |
| 1 | D | 24 | LEU |
| 1 | D | 69 | SER |
| 1 | D | 141 | ARG |
| 1 | D | 143 | LEU |
| 1 | D | 144 | LEU |
| 1 | D | 146 | ARG |
| 1 | D | 155 | GLU |
| 1 | D | 157 | THR |
| 1 | D | 163 | VAL |
| 1 | D | 170 | ARG |
| 1 | E | 19 | ILE |
| 1 | E | 21 | SER |
| 1 | E | 23 | LEU |
| 1 | E | 24 | LEU |
| 1 | E | 69 | SER |
| 1 | E | 144 | LEU |
| 1 | E | 166 | ARG |
| 1 | E | 171 | ASP |
| 1 | F | 19 | ILE |
| 1 | F | 21 | SER |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | F | 23 | LEU |
| 1 | F | 24 | LEU |
| 1 | F | 69 | SER |
| 1 | F | 141 | ARG |
| 1 | F | 144 | LEU |
| 1 | F | 146 | ARG |
| 1 | F | 166 | ARG |
| 1 | F | 170 | ARG |
| 1 | F | 172 | ASN |
| 1 | G | 19 | ILE |
| 1 | G | 21 | SER |
| 1 | G | 23 | LEU |
| 1 | G | 24 | LEU |
| 1 | G | 69 | SER |
| 1 | G | 141 | ARG |
| 1 | G | 144 | LEU |
| 1 | G | 146 | ARG |
| 1 | G | 151 | LYS |
| 1 | G | 170 | ARG |
| 1 | G | 173 | PHE |
| 1 | G | 190 | THR |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | C | 172 | ASN |
| 1 | D | 41 | ASN |
| 1 | D | 191 | HIS |
| 1 | F | 172 | ASN |
| 1 | G | 81 | GLN |
| 1 | G | 172 | ASN |

### 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 (i)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry (i)

There are no ligands in this entry.

## 5.7 Other polymers (i)

There are no such residues in this entry.

## 5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

# 6 Fit of model and data ⓘ

## 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 | A | 162/196 (82%) | 0.15 | 1 (0%) | 89 | 88 | 47, 62, 96, 112 | 0 |
| 1 | B | 162/196 (82%) | 0.16 | 8 (4%) | 29 | 23 | 50, 65, 96, 121 | 0 |
| 1 | C | 161/196 (82%) | 0.14 | 2 (1%) | 79 | 76 | 41, 63, 95, 115 | 0 |
| 1 | D | 162/196 (82%) | 0.09 | 3 (1%) | 66 | 62 | 49, 68, 101, 124 | 0 |
| 1 | E | 160/196 (81%) | -0.04 | 3 (1%) | 66 | 62 | 44, 61, 96, 113 | 0 |
| 1 | F | 160/196 (81%) | 0.16 | 3 (1%) | 66 | 62 | 49, 64, 95, 114 | 0 |
| 1 | G | 161/196 (82%) | 0.24 | 7 (4%) | 35 | 28 | 51, 72, 102, 114 | 0 |
| All | All | 1128/1372 (82%) | 0.13 | 27 (2%) | 59 | 53 | 41, 65, 99, 124 | 0 |

All (27) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1 | A | 123 | GLN | 4.4 |
| 1 | B | 163 | VAL | 3.8 |
| 1 | C | 82 | PHE | 3.8 |
| 1 | G | 157 | THR | 3.8 |
| 1 | G | 166 | ARG | 3.8 |
| 1 | D | 158 | GLY | 3.4 |
| 1 | D | 173 | PHE | 3.2 |
| 1 | G | 49 | PHE | 2.8 |
| 1 | B | 118 | GLU | 2.7 |
| 1 | B | 166 | ARG | 2.6 |
| 1 | C | 55 | PRO | 2.5 |
| 1 | F | 44 | VAL | 2.5 |
| 1 | G | 162 | GLU | 2.5 |
| 1 | E | 137 | ILE | 2.5 |
| 1 | E | 82 | PHE | 2.5 |
| 1 | F | 162 | GLU | 2.4 |
| 1 | G | 169 | ASP | 2.4 |

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| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1 | E | 55 | PRO | 2.3 |
| 1 | B | 162 | GLU | 2.2 |
| 1 | B | 168 | THR | 2.2 |
| 1 | G | 182 | TYR | 2.1 |
| 1 | D | 162 | GLU | 2.1 |
| 1 | B | 161 | LEU | 2.1 |
| 1 | G | 170 | ARG | 2.1 |
| 1 | B | 62 | TYR | 2.0 |
| 1 | F | 166 | ARG | 2.0 |
| 1 | B | 173 | 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 ⓘ

There are no ligands in this entry.

## 6.5 Other polymers ⓘ

There are no such residues in this entry.