



wwPDB X-ray Structure Validation Summary Report ⓘ

May 15, 2020 – 06:46 pm BST

PDB ID : 5IY4
Title : Crystal structure of human PCNA in complex with the PIP box of DVC1
Authors : Jiang, T.; Xu, M.; Wang, Y.
Deposited on : 2016-03-24
Resolution : 2.94 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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 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 | : | 2.11 |
| 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) | : | 2.11 |

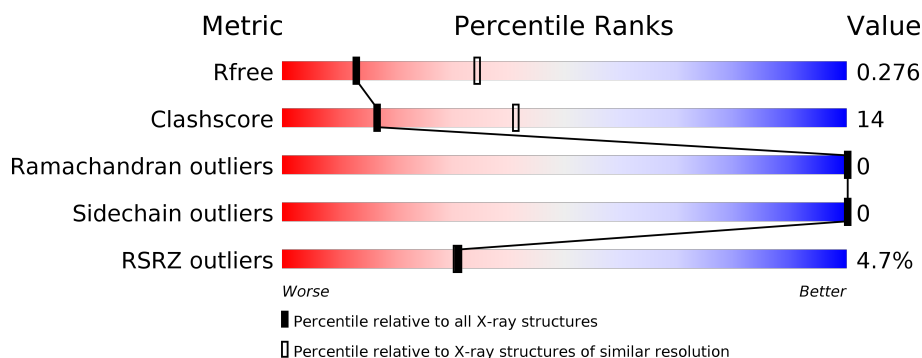
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.94 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 | 2969 (2.98-2.90) |
| Clashscore | 141614 | 3218 (2.98-2.90) |
| Ramachandran outliers | 138981 | 3122 (2.98-2.90) |
| Sidechain outliers | 138945 | 3124 (2.98-2.90) |
| RSRZ outliers | 127900 | 2902 (2.98-2.90) |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments on 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 | 270 | <div> <div>2%</div> <div> <div></div> <div>71%</div> <div>21%</div> <div>7%</div> </div> </div> |
| 1 | C | 270 | <div> <div>2%</div> <div> <div></div> <div>73%</div> <div>20%</div> <div>7%</div> </div> </div> |
| 1 | E | 270 | <div> <div>5%</div> <div> <div></div> <div>72%</div> <div>20%</div> <div>7%</div> </div> </div> |
| 2 | B | 16 | <div> <div></div> <div> <div></div> <div>81%</div> <div>6%</div> <div>13%</div> </div> </div> |
| 2 | D | 16 | <div> <div>6%</div> <div> <div></div> <div>56%</div> <div>31%</div> <div>13%</div> </div> </div> |
| 2 | F | 16 | <div> <div></div> <div> <div>69%</div> <div>19%</div> <div>50%</div> <div>31%</div> </div> </div> |

2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 6099 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 Proliferating cell nuclear antigen.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|---------|-------|
| 1 | A | 250 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1922 | 1209 | 315 | 382 | 16 | | | |
| 1 | C | 251 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1931 | 1214 | 316 | 385 | 16 | | | |
| 1 | E | 250 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1922 | 1209 | 315 | 382 | 16 | | | |

There are 27 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------------|------------|
| A | 262 | LEU | - | expression tag | UNP P12004 |
| A | 263 | GLU | - | expression tag | UNP P12004 |
| A | 264 | HIS | - | expression tag | UNP P12004 |
| A | 265 | HIS | - | expression tag | UNP P12004 |
| A | 266 | HIS | - | expression tag | UNP P12004 |
| A | 267 | HIS | - | expression tag | UNP P12004 |
| A | 268 | HIS | - | expression tag | UNP P12004 |
| A | 269 | HIS | - | expression tag | UNP P12004 |
| A | 270 | HIS | - | expression tag | UNP P12004 |
| C | 262 | LEU | - | expression tag | UNP P12004 |
| C | 263 | GLU | - | expression tag | UNP P12004 |
| C | 264 | HIS | - | expression tag | UNP P12004 |
| C | 265 | HIS | - | expression tag | UNP P12004 |
| C | 266 | HIS | - | expression tag | UNP P12004 |
| C | 267 | HIS | - | expression tag | UNP P12004 |
| C | 268 | HIS | - | expression tag | UNP P12004 |
| C | 269 | HIS | - | expression tag | UNP P12004 |
| C | 270 | HIS | - | expression tag | UNP P12004 |
| E | 262 | LEU | - | expression tag | UNP P12004 |
| E | 263 | GLU | - | expression tag | UNP P12004 |
| E | 264 | HIS | - | expression tag | UNP P12004 |
| E | 265 | HIS | - | expression tag | UNP P12004 |
| E | 266 | HIS | - | expression tag | UNP P12004 |

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| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------------|------------|
| E | 267 | HIS | - | expression tag | UNP P12004 |
| E | 268 | HIS | - | expression tag | UNP P12004 |
| E | 269 | HIS | - | expression tag | UNP P12004 |
| E | 270 | HIS | - | expression tag | UNP P12004 |

- Molecule 2 is a protein called DVC1 PIP box.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---------|---------|-------|
| 2 | B | 14 | Total | C | N | O | 0 | 0 | 0 |
| | | | 116 | 73 | 22 | 21 | | | |
| 2 | D | 14 | Total | C | N | O | 0 | 0 | 0 |
| | | | 116 | 73 | 22 | 21 | | | |
| 2 | F | 11 | Total | C | N | O | 0 | 0 | 0 |
| | | | 92 | 59 | 16 | 17 | | | |

These plots are drawn for all protein, RNA and DNA 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 ($\text{RSRZ} > 2$). 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.

- Chain A:
-
- 2% 71% 21% 7%
- H1 F2 R5 L6 V7 L12 L16 I23 C27 Q38 S39 G56 T59 Y60 R61 R64 M65 L66 A67 M68 G69 V70 M71 L72 T73 S74 M75 S76 K77 I78 L79 I87 L88 T89 A96 V102 F103 E104 A105 Q108 E109 M116 K117 L118 I121
 D122 V123 Q125 L126 E130 Y133 E143 I147 D165 G166 L175 M179 L182 S183 Q184 T185 S186 ASN VAL ASP LYS GLU E192 E193 A194 V195 T196 I197 E198 M199 N200 E201 L212 T216 S220 A242 D243 M244 T255 GLU ASP GLU GLU GLY SER LEU

- Chain C:
-
- | Category | Percentage |
|----------|------------|
| Green | 73% |
| Yellow | 20% |
| Grey | 7% |
- Legend: Green, Yellow, Grey

- Chain E:
-
- Sequence logo for Chain E. The y-axis represents information content in bits (0.00 to 0.25). The x-axis shows positions 1 to 100. A color scale at the top indicates conservation levels: 5% (red), 72% (green), 20% (yellow), and 7% (grey).
- | Position | Amino Acid | Information Content (bits) | Conservation Level |
|----------|------------|----------------------------|--------------------|
| 1 | L126 | 0.15 | High |
| 2 | HIS | 0.05 | Low |
| 3 | G127 | 0.05 | Low |
| 4 | HIS | 0.05 | Low |
| 5 | P129 | 0.10 | Medium |
| 6 | HIS | 0.05 | Low |
| 7 | HIS | 0.05 | Low |
| 8 | HIS | 0.05 | Low |
| 9 | Y133 | 0.05 | Low |
| 10 | K138 | 0.05 | Low |
| 11 | M139 | 0.05 | Low |
| 12 | P140 | 0.05 | Low |
| 13 | E143 | 0.05 | Low |
| 14 | I147 | 0.05 | Low |
| 15 | K168 | 0.05 | Low |
| 16 | S172 | 0.05 | Low |
| 17 | L175 | 0.05 | Low |
| 18 | G176 | 0.05 | Low |
| 19 | N177 | 0.05 | Low |
| 20 | K181 | 0.05 | Low |
| 21 | S186 | 0.15 | High |
| 22 | ASN | 0.05 | Low |
| 23 | VAL | 0.05 | Low |
| 24 | ASP | 0.05 | Low |
| 25 | LYS | 0.05 | Low |
| 26 | GLU | 0.10 | Medium |
| 27 | E192 | 0.05 | Low |
| 28 | E193 | 0.05 | Low |
| 29 | T216 | 0.05 | Low |
| 30 | T219 | 0.05 | Low |
| 31 | P220 | 0.05 | Low |
| 32 | T226 | 0.05 | Low |
| 33 | S230 | 0.10 | Medium |
| 34 | V233 | 0.05 | Low |
| 35 | M244 | 0.05 | Low |
| 36 | G245 | 0.05 | Low |
| 37 | Y250 | 0.05 | Low |
| 38 | K254 | 0.05 | Low |
| 39 | T255 | 0.05 | Low |
| 40 | GLU | 0.05 | Low |
| 41 | ASP | 0.05 | Low |
| 42 | GLU | 0.05 | Low |
| 43 | GLY | 0.05 | Low |
| 44 | SER | 0.05 | Low |
| 45 | LEU | 0.05 | Low |
| 46 | GLU | 0.05 | Low |
| 47 | L121 | 0.10 | Medium |
| 48 | D122 | 0.10 | Medium |
| 49 | V123 | 0.10 | Medium |
| 50 | E124 | 0.10 | Medium |
| 51 | G125 | 0.10 | Medium |
| 52 | L94 | 0.15 | High |
| 53 | N95 | 0.15 | High |
| 54 | A96 | 0.15 | High |
| 55 | V102 | 0.05 | Low |
| 56 | N107 | 0.05 | Low |
| 57 | Q108 | 0.05 | Low |
| 58 | E109 | 0.05 | Low |
| 59 | K110 | 0.05 | Low |
| 60 | Y114 | 0.05 | Low |
| 61 | E115 | 0.05 | Low |
| 62 | M116 | 0.05 | Low |
| 63 | L123 | 0.05 | Low |
| 64 | M40 | 0.05 | Low |
| 65 | H44 | 0.05 | Low |
| 66 | L47 | 0.05 | Low |
| 67 | R53 | 0.05 | Low |
| 68 | G56 | 0.05 | Low |
| 69 | T59 | 0.05 | Low |
| 70 | D63 | 0.05 | Low |
| 71 | L66 | 0.15 | High |
| 72 | L72 | 0.05 | Low |
| 73 | M75 | 0.05 | Low |
| 74 | L79 | 0.05 | Low |
| 75 | I87 | 0.05 | Low |
| 76 | T88 | 0.05 | Low |
| 77 | T89 | 0.05 | Low |
| 78 | L90 | 0.05 | Low |
| 79 | R91 | 0.05 | Low |
| 80 | F2 | 0.05 | Low |
| 81 | R5 | 0.05 | Low |
| 82 | L6 | 0.10 | Medium |
| 83 | V7 | 0.05 | Low |
| 84 | I23 | 0.05 | Low |
| 85 | M40 | 0.05 | Low |
| 86 | H44 | 0.05 | Low |
| 87 | L47 | 0.05 | Low |
| 88 | R53 | 0.05 | Low |
| 89 | G56 | 0.05 | Low |
| 90 | T59 | 0.05 | Low |
| 91 | D63 | 0.05 | Low |
| 92 | L66 | 0.15 | High |
| 93 | L72 | 0.05 | Low |
| 94 | M75 | 0.05 | Low |
| 95 | L79 | 0.05 | Low |
| 96 | I87 | 0.05 | Low |
| 97 | T88 | 0.05 | Low |
| 98 | T89 | 0.05 | Low |
| 99 | L90 | 0.05 | Low |
| 100 | R91 | 0.05 | Low |

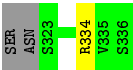
- 
- WORLD WIDE
PDB
PROTEIN DATA BANK

Chain B:

81%

6%

13%



● Molecule 2: DVC1 PIP box

Chain D:

6%

56%

31%

13%



● Molecule 2: DVC1 PIP box

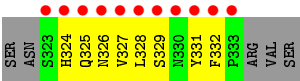
Chain F:

19%

69%

50%

31%



4 Data and refinement statistics

| Property | Value | Source |
|---|---|------------------|
| Space group | P 43 21 2 | Depositor |
| Cell constants a, b, c, α , β , γ | 71.65Å 71.65Å 322.21Å 90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 48.33 – 2.94 48.33 – 2.95 | Depositor EDS |
| % Data completeness (in resolution range) | 94.6 (48.33-2.94) 94.7 (48.33-2.95) | Depositor EDS |
| R_{merge} | 0.16 | Depositor |
| R_{sym} | (Not available) | Depositor |
| $\langle I/\sigma(I) \rangle$ ¹ | 3.11 (at 2.96Å) | Xtriage |
| Refinement program | PHENIX 1.9_1692 | Depositor |
| R, R_{free} | 0.207 , 0.270 0.219 , 0.276 | Depositor DCC |
| R_{free} test set | 919 reflections (5.16%) | wwPDB-VP |
| Wilson B-factor (Å ²) | 51.0 | Xtriage |
| Anisotropy | 0.044 | Xtriage |
| Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²) | 0.36 , 40.7 | EDS |
| L-test for twinning ² | $\langle L \rangle = 0.48$, $\langle L^2 \rangle = 0.31$ | Xtriage |
| Estimated twinning fraction | No twinning to report. | Xtriage |
| F_o, F_c correlation | 0.90 | EDS |
| Total number of atoms | 6099 | wwPDB-VP |
| Average B, all atoms (Å ²) | 45.0 | wwPDB-VP |

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.39% 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](#)

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 | 0.58 | 0/1947 | 0.69 | 0/2629 |
| 1 | C | 0.61 | 0/1956 | 0.72 | 0/2641 |
| 1 | E | 0.58 | 1/1947 (0.1%) | 0.71 | 0/2629 |
| 2 | B | 0.39 | 0/119 | 0.55 | 0/161 |
| 2 | D | 0.40 | 0/119 | 0.59 | 0/161 |
| 2 | F | 0.40 | 0/95 | 0.58 | 0/129 |
| All | All | 0.58 | 1/6183 (0.0%) | 0.70 | 0/8350 |

All (1) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|------|-------------|----------|
| 1 | E | 129 | PRO | N-CD | 5.75 | 1.55 | 1.47 |

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 | A | 1922 | 0 | 1932 | 56 | 1 |
| 1 | C | 1931 | 0 | 1938 | 52 | 1 |
| 1 | E | 1922 | 0 | 1934 | 66 | 0 |
| 2 | B | 116 | 0 | 108 | 1 | 0 |
| 2 | D | 116 | 0 | 108 | 5 | 0 |
| 2 | F | 92 | 0 | 81 | 15 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| All | All | 6099 | 0 | 6101 | 172 | 1 |

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 14.

The worst 5 of 172 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:E:47:LEU:CD2 | 1:E:128:ILE:HD11 | 1.42 | 1.45 |
| 1:E:44:HIS:O | 2:F:327:VAL:HG13 | 1.33 | 1.25 |
| 1:E:216:THR:O | 1:E:219:THR:HG23 | 1.45 | 1.15 |
| 1:E:47:LEU:HD22 | 1:E:128:ILE:HD11 | 1.23 | 1.12 |
| 1:C:16:LEU:HD22 | 1:C:79:LEU:HD12 | 1.30 | 1.10 |

All (1) 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:5:ARG:NH1 | 1:C:95:ASN:ND2[5_454] | 2.15 | 0.05 |

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 | |
|-----|-------|---------------|-----------|---------|----------|-------------|-----|
| 1 | A | 246/270 (91%) | 243 (99%) | 3 (1%) | 0 | 100 | 100 |
| 1 | C | 247/270 (92%) | 238 (96%) | 9 (4%) | 0 | 100 | 100 |
| 1 | E | 246/270 (91%) | 242 (98%) | 4 (2%) | 0 | 100 | 100 |
| 2 | B | 12/16 (75%) | 12 (100%) | 0 | 0 | 100 | 100 |
| 2 | D | 12/16 (75%) | 11 (92%) | 1 (8%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|---------|----------|-------------|-----|
| 2 | F | 9/16 (56%) | 4 (44%) | 5 (56%) | 0 | 100 | 100 |
| All | All | 772/858 (90%) | 750 (97%) | 22 (3%) | 0 | 100 | 100 |

There are no Ramachandran outliers to report.

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 | 218/237 (92%) | 218 (100%) | 0 | 100 | 100 |
| 1 | C | 219/237 (92%) | 219 (100%) | 0 | 100 | 100 |
| 1 | E | 218/237 (92%) | 218 (100%) | 0 | 100 | 100 |
| 2 | B | 14/16 (88%) | 14 (100%) | 0 | 100 | 100 |
| 2 | D | 14/16 (88%) | 14 (100%) | 0 | 100 | 100 |
| 2 | F | 11/16 (69%) | 11 (100%) | 0 | 100 | 100 |
| All | All | 694/759 (91%) | 694 (100%) | 0 | 100 | 100 |

There are no protein residues with a non-rotameric sidechain to report.

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | C | 184 | GLN |
| 2 | D | 324 | HIS |

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 carbohydrates 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 [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 | 250/270 (92%) | 0.10 | 6 (2%) 59 59 | 23, 38, 64, 78 | 0 |
| 1 | C | 251/270 (92%) | 0.00 | 5 (1%) 65 66 | 23, 40, 65, 85 | 0 |
| 1 | E | 250/270 (92%) | 0.36 | 14 (5%) 24 23 | 30, 50, 77, 90 | 0 |
| 2 | B | 14/16 (87%) | 0.42 | 0 100 100 | 39, 50, 60, 70 | 0 |
| 2 | D | 14/16 (87%) | 0.54 | 1 (7%) 16 14 | 46, 52, 72, 74 | 0 |
| 2 | F | 11/16 (68%) | 4.07 | 11 (100%) 0 0 | 58, 71, 79, 84 | 0 |
| All | All | 790/858 (92%) | 0.22 | 37 (4%) 31 31 | 23, 43, 72, 90 | 0 |

The worst 5 of 37 RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 1 | E | 126 | LEU | 6.8 |
| 1 | E | 124 | GLU | 6.7 |
| 1 | E | 125 | GLN | 5.9 |
| 2 | F | 326 | ASN | 5.8 |
| 2 | F | 329 | SER | 5.7 |

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

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

6.3 Carbohydrates [i](#)

There are no carbohydrates in this entry.

6.4 Ligands [i](#)

There are no ligands in this entry.

6.5 Other polymers [i](#)

There are no such residues in this entry.