



# wwPDB X-ray Structure Validation Summary Report ⓘ

Dec 14, 2023 – 04:57 am GMT

PDB ID : 3ZSF  
Title : Crystal structure of the L-cystine solute receptor of *Neisseria gonorrhoeae* in the unliganded open conformation  
Authors : Bulut, H.; Moniot, S.; Scheffel, F.; Gathmann, S.; Licht, A.; Saenger, W.; Schneider, E.  
Deposited on : 2011-06-27  
Resolution : 2.32 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

---

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

MolProbity : **FAILED**  
Xtrriage (Phenix) : 1.13  
EDS : **FAILED**  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
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 2.32 Å.

There are no overall percentile quality scores available for this entry.

## 2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 14685 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 ABC TRANSPORTER, PERIPLASMIC BINDING PROTEIN, AMINO ACID.

| Mol | Chain | Residues | Atoms         |           |          |          |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|-----------|----------|----------|--------|---------|---------|-------|
|     |       |          | Total         | C         | N        | O        | S      |         |         |       |
| 1   | A     | 237      | Total<br>1793 | C<br>1128 | N<br>302 | O<br>361 | S<br>2 | 0       | 2       | 0     |
| 1   | B     | 237      | Total<br>1756 | C<br>1102 | N<br>295 | O<br>357 | S<br>2 | 0       | 1       | 0     |
| 1   | C     | 235      | Total<br>1756 | C<br>1106 | N<br>297 | O<br>351 | S<br>2 | 0       | 0       | 0     |
| 1   | D     | 237      | Total<br>1763 | C<br>1108 | N<br>300 | O<br>353 | S<br>2 | 0       | 0       | 0     |
| 1   | E     | 237      | Total<br>1786 | C<br>1124 | N<br>302 | O<br>357 | S<br>3 | 0       | 1       | 0     |
| 1   | F     | 238      | Total<br>1757 | C<br>1103 | N<br>299 | O<br>353 | S<br>2 | 0       | 1       | 0     |
| 1   | G     | 235      | Total<br>1771 | C<br>1115 | N<br>299 | O<br>355 | S<br>2 | 0       | 3       | 0     |
| 1   | H     | 236      | Total<br>1724 | C<br>1084 | N<br>291 | O<br>347 | S<br>2 | 0       | 0       | 0     |

There are 200 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment        | Reference  |
|-------|---------|----------|--------|----------------|------------|
| A     | -7      | MET      | -      | expression tag | UNP Q5F9M1 |
| A     | -6      | GLY      | -      | expression tag | UNP Q5F9M1 |
| A     | -5      | HIS      | -      | expression tag | UNP Q5F9M1 |
| A     | -4      | HIS      | -      | expression tag | UNP Q5F9M1 |
| A     | -3      | HIS      | -      | expression tag | UNP Q5F9M1 |
| A     | -2      | HIS      | -      | expression tag | UNP Q5F9M1 |
| A     | -1      | HIS      | -      | expression tag | UNP Q5F9M1 |
| A     | 0       | HIS      | -      | expression tag | UNP Q5F9M1 |
| A     | 1       | HIS      | -      | expression tag | UNP Q5F9M1 |
| A     | 2       | HIS      | -      | expression tag | UNP Q5F9M1 |
| A     | 3       | HIS      | -      | expression tag | UNP Q5F9M1 |
| A     | 4       | HIS      | -      | expression tag | UNP Q5F9M1 |

*Continued on next page...*

*Continued from previous page...*

| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| A     | 5       | SER      | -      | expression tag      | UNP Q5F9M1 |
| A     | 6       | SER      | -      | expression tag      | UNP Q5F9M1 |
| A     | 7       | GLY      | -      | expression tag      | UNP Q5F9M1 |
| A     | 8       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| A     | 9       | ILE      | -      | expression tag      | UNP Q5F9M1 |
| A     | 10      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| A     | 11      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| A     | 12      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| A     | 13      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| A     | 14      | LYS      | -      | expression tag      | UNP Q5F9M1 |
| A     | 15      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| A     | 16      | MET      | -      | expression tag      | UNP Q5F9M1 |
| A     | 19      | ALA      | CYS    | engineered mutation | UNP Q5F9M1 |
| B     | -7      | MET      | -      | expression tag      | UNP Q5F9M1 |
| B     | -6      | GLY      | -      | expression tag      | UNP Q5F9M1 |
| B     | -5      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | -4      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | -3      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | -2      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | -1      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | 0       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | 1       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | 2       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | 3       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | 4       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | 5       | SER      | -      | expression tag      | UNP Q5F9M1 |
| B     | 6       | SER      | -      | expression tag      | UNP Q5F9M1 |
| B     | 7       | GLY      | -      | expression tag      | UNP Q5F9M1 |
| B     | 8       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | 9       | ILE      | -      | expression tag      | UNP Q5F9M1 |
| B     | 10      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| B     | 11      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| B     | 12      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| B     | 13      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| B     | 14      | LYS      | -      | expression tag      | UNP Q5F9M1 |
| B     | 15      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| B     | 16      | MET      | -      | expression tag      | UNP Q5F9M1 |
| B     | 19      | ALA      | CYS    | engineered mutation | UNP Q5F9M1 |
| C     | -7      | MET      | -      | expression tag      | UNP Q5F9M1 |
| C     | -6      | GLY      | -      | expression tag      | UNP Q5F9M1 |
| C     | -5      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| C     | -4      | HIS      | -      | expression tag      | UNP Q5F9M1 |

*Continued on next page...*

*Continued from previous page...*

| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| C     | -3      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| C     | -2      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| C     | -1      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| C     | 0       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| C     | 1       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| C     | 2       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| C     | 3       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| C     | 4       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| C     | 5       | SER      | -      | expression tag      | UNP Q5F9M1 |
| C     | 6       | SER      | -      | expression tag      | UNP Q5F9M1 |
| C     | 7       | GLY      | -      | expression tag      | UNP Q5F9M1 |
| C     | 8       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| C     | 9       | ILE      | -      | expression tag      | UNP Q5F9M1 |
| C     | 10      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| C     | 11      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| C     | 12      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| C     | 13      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| C     | 14      | LYS      | -      | expression tag      | UNP Q5F9M1 |
| C     | 15      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| C     | 16      | MET      | -      | expression tag      | UNP Q5F9M1 |
| C     | 19      | ALA      | CYS    | engineered mutation | UNP Q5F9M1 |
| D     | -7      | MET      | -      | expression tag      | UNP Q5F9M1 |
| D     | -6      | GLY      | -      | expression tag      | UNP Q5F9M1 |
| D     | -5      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | -4      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | -3      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | -2      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | -1      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | 0       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | 1       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | 2       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | 3       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | 4       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | 5       | SER      | -      | expression tag      | UNP Q5F9M1 |
| D     | 6       | SER      | -      | expression tag      | UNP Q5F9M1 |
| D     | 7       | GLY      | -      | expression tag      | UNP Q5F9M1 |
| D     | 8       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | 9       | ILE      | -      | expression tag      | UNP Q5F9M1 |
| D     | 10      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| D     | 11      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| D     | 12      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| D     | 13      | ASP      | -      | expression tag      | UNP Q5F9M1 |

*Continued on next page...*

*Continued from previous page...*

| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| D     | 14      | LYS      | -      | expression tag      | UNP Q5F9M1 |
| D     | 15      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| D     | 16      | MET      | -      | expression tag      | UNP Q5F9M1 |
| D     | 19      | ALA      | CYS    | engineered mutation | UNP Q5F9M1 |
| E     | -7      | MET      | -      | expression tag      | UNP Q5F9M1 |
| E     | -6      | GLY      | -      | expression tag      | UNP Q5F9M1 |
| E     | -5      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | -4      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | -3      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | -2      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | -1      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | 0       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | 1       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | 2       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | 3       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | 4       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | 5       | SER      | -      | expression tag      | UNP Q5F9M1 |
| E     | 6       | SER      | -      | expression tag      | UNP Q5F9M1 |
| E     | 7       | GLY      | -      | expression tag      | UNP Q5F9M1 |
| E     | 8       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | 9       | ILE      | -      | expression tag      | UNP Q5F9M1 |
| E     | 10      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| E     | 11      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| E     | 12      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| E     | 13      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| E     | 14      | LYS      | -      | expression tag      | UNP Q5F9M1 |
| E     | 15      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| E     | 16      | MET      | -      | expression tag      | UNP Q5F9M1 |
| E     | 19      | ALA      | CYS    | engineered mutation | UNP Q5F9M1 |
| F     | -7      | MET      | -      | expression tag      | UNP Q5F9M1 |
| F     | -6      | GLY      | -      | expression tag      | UNP Q5F9M1 |
| F     | -5      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | -4      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | -3      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | -2      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | -1      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | 0       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | 1       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | 2       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | 3       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | 4       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | 5       | SER      | -      | expression tag      | UNP Q5F9M1 |

*Continued on next page...*

*Continued from previous page...*

| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| F     | 6       | SER      | -      | expression tag      | UNP Q5F9M1 |
| F     | 7       | GLY      | -      | expression tag      | UNP Q5F9M1 |
| F     | 8       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | 9       | ILE      | -      | expression tag      | UNP Q5F9M1 |
| F     | 10      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| F     | 11      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| F     | 12      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| F     | 13      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| F     | 14      | LYS      | -      | expression tag      | UNP Q5F9M1 |
| F     | 15      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| F     | 16      | MET      | -      | expression tag      | UNP Q5F9M1 |
| F     | 19      | ALA      | CYS    | engineered mutation | UNP Q5F9M1 |
| G     | -7      | MET      | -      | expression tag      | UNP Q5F9M1 |
| G     | -6      | GLY      | -      | expression tag      | UNP Q5F9M1 |
| G     | -5      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | -4      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | -3      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | -2      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | -1      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | 0       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | 1       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | 2       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | 3       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | 4       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | 5       | SER      | -      | expression tag      | UNP Q5F9M1 |
| G     | 6       | SER      | -      | expression tag      | UNP Q5F9M1 |
| G     | 7       | GLY      | -      | expression tag      | UNP Q5F9M1 |
| G     | 8       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | 9       | ILE      | -      | expression tag      | UNP Q5F9M1 |
| G     | 10      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| G     | 11      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| G     | 12      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| G     | 13      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| G     | 14      | LYS      | -      | expression tag      | UNP Q5F9M1 |
| G     | 15      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| G     | 16      | MET      | -      | expression tag      | UNP Q5F9M1 |
| G     | 19      | ALA      | CYS    | engineered mutation | UNP Q5F9M1 |
| H     | -7      | MET      | -      | expression tag      | UNP Q5F9M1 |
| H     | -6      | GLY      | -      | expression tag      | UNP Q5F9M1 |
| H     | -5      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| H     | -4      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| H     | -3      | HIS      | -      | expression tag      | UNP Q5F9M1 |

*Continued on next page...*

Continued from previous page...

| Chain | Residue | Modelled | Actual | Comment             | Reference  |
|-------|---------|----------|--------|---------------------|------------|
| H     | -2      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| H     | -1      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| H     | 0       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| H     | 1       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| H     | 2       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| H     | 3       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| H     | 4       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| H     | 5       | SER      | -      | expression tag      | UNP Q5F9M1 |
| H     | 6       | SER      | -      | expression tag      | UNP Q5F9M1 |
| H     | 7       | GLY      | -      | expression tag      | UNP Q5F9M1 |
| H     | 8       | HIS      | -      | expression tag      | UNP Q5F9M1 |
| H     | 9       | ILE      | -      | expression tag      | UNP Q5F9M1 |
| H     | 10      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| H     | 11      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| H     | 12      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| H     | 13      | ASP      | -      | expression tag      | UNP Q5F9M1 |
| H     | 14      | LYS      | -      | expression tag      | UNP Q5F9M1 |
| H     | 15      | HIS      | -      | expression tag      | UNP Q5F9M1 |
| H     | 16      | MET      | -      | expression tag      | UNP Q5F9M1 |
| H     | 19      | ALA      | CYS    | engineered mutation | UNP Q5F9M1 |

- Molecule 2 is water.

| Mol | Chain | Residues | Atoms            | ZeroOcc | AltConf |
|-----|-------|----------|------------------|---------|---------|
| 2   | A     | 83       | Total O<br>83 83 | 0       | 0       |
| 2   | B     | 60       | Total O<br>60 60 | 0       | 0       |
| 2   | C     | 74       | Total O<br>74 74 | 0       | 0       |
| 2   | D     | 63       | Total O<br>63 63 | 0       | 0       |
| 2   | E     | 85       | Total O<br>85 85 | 0       | 0       |
| 2   | F     | 64       | Total O<br>64 64 | 0       | 0       |
| 2   | G     | 83       | Total O<br>83 83 | 0       | 0       |
| 2   | H     | 67       | Total O<br>67 67 | 0       | 0       |

SEQUENCE-PLOTS INFOmissingINFO



### 3 Data and refinement statistics i

EDS failed to run properly - this section is therefore incomplete.

| Property   | Value   | Source    |
|--|---|-----------|
| Space group  | P 1 21 1  | Depositor |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$ | 74.09Å 99.83Å 128.83Å<br>90.00° 91.50° 90.00°               | Depositor |
| Resolution (Å)   | 48.00 – 2.32  | Depositor |
| % Data completeness<br>(in resolution range)             | 100.0 (48.00-2.32)  | Depositor |
| $R_{merge}$  | 0.11  | Depositor |
| $R_{sym}$  | (Not available)   | Depositor |
| $\langle I/\sigma(I) \rangle$ <sup>1</sup>               | 2.55 (at 2.32Å)   | Xtriage   |
| Refinement program                                       | REFMAC 5.5.0109   | Depositor |
| R, $R_{free}$  | 0.217 , 0.267   | Depositor |
| Wilson B-factor (Å <sup>2</sup> )                        | 27.1  | Xtriage   |
| Anisotropy   | 0.725   | Xtriage   |
| L-test for twinning <sup>2</sup>                         | $\langle  L  \rangle = 0.50$ , $\langle L^2 \rangle = 0.33$ | Xtriage   |
| Estimated twinning fraction                              | 0.178 for h,-k,-l   | Xtriage   |
| Total number of atoms                                    | 14685   | wwPDB-VP  |
| Average B, all atoms (Å <sup>2</sup> )                   | 33.0  | wwPDB-VP  |

Xtriage's analysis on translational NCS is as follows: *The analyses of the Patterson function reveals a significant off-origin peak that is 35.40 % of the origin peak, indicating pseudo-translational symmetry. The chance of finding a peak of this or larger height randomly in a structure without pseudo-translational symmetry is equal to 5.8659e-04. The detected translational NCS is most likely also responsible for the elevated intensity ratio.*

<sup>1</sup>Intensities estimated from amplitudes.

<sup>2</sup>Theoretical 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.

## 4 Model quality [i](#)

### 4.1 Standard geometry [i](#)

MolProbity failed to run properly - this section is therefore empty.

### 4.2 Too-close contacts [i](#)

MolProbity failed to run properly - this section is therefore empty.

### 4.3 Torsion angles [i](#)

#### 4.3.1 Protein backbone [i](#)

MolProbity failed to run properly - this section is therefore empty.

#### 4.3.2 Protein sidechains [i](#)

MolProbity failed to run properly - this section is therefore empty.

#### 4.3.3 RNA [i](#)

MolProbity failed to run properly - this section is therefore empty.

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

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

### 4.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 4.6 Ligand geometry [i](#)

There are no ligands in this entry.

### 4.7 Other polymers [i](#)

There are no such residues in this entry.

## 4.8 Polymer linkage issues

There are no chain breaks in this entry.

## 5 Fit of model and data [i](#)

### 5.1 Protein, DNA and RNA chains [i](#)

EDS failed to run properly - this section is therefore empty.

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

EDS failed to run properly - this section is therefore empty.

### 5.3 Carbohydrates [i](#)

EDS failed to run properly - this section is therefore empty.

### 5.4 Ligands [i](#)

EDS failed to run properly - this section is therefore empty.

### 5.5 Other polymers [i](#)

EDS failed to run properly - this section is therefore empty.