



wwPDB EM Validation Summary Report ⓘ

Feb 25, 2024 – 12:07 PM EST

PDB ID : 6XFM
EMDB ID : EMD-22169
Title : Molecular structure of the core of amyloid-like fibrils formed by residues 111-214 of FUS
Authors : Tycko, R.; Lee, M.; Ghosh, U.; Thurber, K.; Kato, M.
Deposited on : 2020-06-15
Resolution : 2.62 Å(reported)

This is a wwPDB EM 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/EMValidationReportHelp>

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:

EMDB validation analysis : 0.0.1.dev70
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

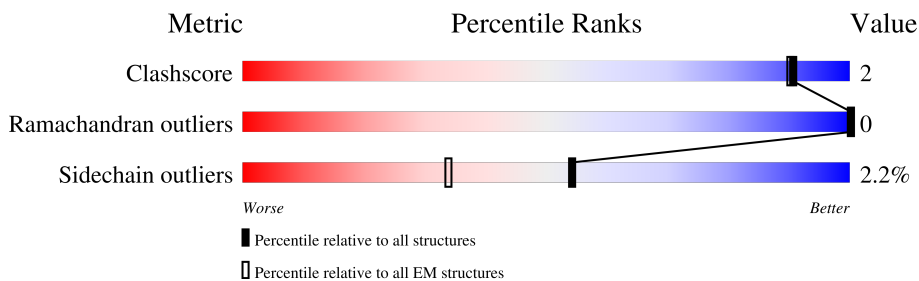
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.62 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) | EM structures (#Entries) |
|-----------------------|-----------------------------|-----------------------------|
| Clashscore | 158937 | 4297 |
| Ramachandran outliers | 154571 | 4023 |
| Sidechain outliers | 154315 | 3826 |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the 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 EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain | |
|-----|-------|--------|------------------|-----|
| 1 | 1-1 | 104 | 38% | 62% |
| 1 | 1-2 | 104 | 38% | 62% |
| 1 | 1-3 | 104 | 38% | 62% |
| 1 | 1-4 | 104 | 38% | 62% |
| 1 | 1-5 | 104 | 38% | 62% |
| 1 | 1-6 | 104 | 38% | 62% |
| 1 | 1-7 | 104 | 38% | 62% |
| 1 | 1-8 | 104 | 38% | 62% |


























Continued on next page...

Continued from previous page...

| Mol | Chain | Length | Quality of chain | |
|-----|-------|--------|--|--|
| 1 | 10-1 | 104 |  | |
| 1 | 10-2 | 104 |  | |
| 1 | 10-3 | 104 |  | |
| 1 | 10-4 | 104 |  | |
| 1 | 10-5 | 104 |  | |
| 1 | 10-6 | 104 |  | |
| 1 | 10-7 | 104 |  | |
| 1 | 10-8 | 104 |  | |
| 1 | 11-1 | 104 |  | |
| 1 | 11-2 | 104 |  | |
| 1 | 11-3 | 104 |  | |
| 1 | 11-4 | 104 |  | |
| 1 | 11-5 | 104 |  | |
| 1 | 11-6 | 104 |  | |
| 1 | 11-7 | 104 |  | |
| 1 | 11-8 | 104 |  | |
| 1 | 12-1 | 104 |  | |
| 1 | 12-2 | 104 |  | |
| 1 | 12-3 | 104 |  | |
| 1 | 12-4 | 104 |  | |
| 1 | 12-5 | 104 |  | |
| 1 | 12-6 | 104 |  | |
| 1 | 12-7 | 104 |  | |
| 1 | 12-8 | 104 |  | |
| 1 | 13-1 | 104 |  | |














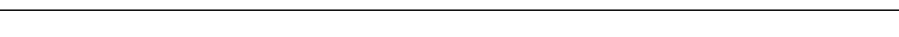
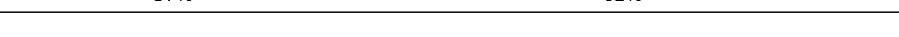
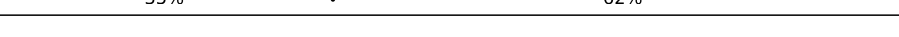



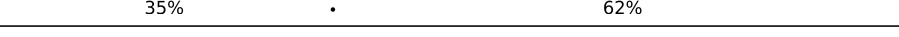





Continued on next page...

Continued from previous page...

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 1 | 13-2 | 104 |  35% 62% |
| 1 | 13-3 | 104 |  35% 62% |
| 1 | 13-4 | 104 |  36% 62% |
| 1 | 13-5 | 104 |  36% 62% |
| 1 | 13-6 | 104 |  36% 62% |
| 1 | 13-7 | 104 |  36% 62% |
| 1 | 13-8 | 104 |  36% 62% |
| 1 | 14-1 | 104 |  38% 62% |
| 1 | 14-2 | 104 |  38% 62% |
| 1 | 14-3 | 104 |  38% 62% |
| 1 | 14-4 | 104 |  38% 62% |
| 1 | 14-5 | 104 |  38% 62% |
| 1 | 14-6 | 104 |  38% 62% |
| 1 | 14-7 | 104 |  38% 62% |
| 1 | 14-8 | 104 |  38% 62% |
| 1 | 2-1 | 104 |  37% 62% |
| 1 | 2-2 | 104 |  37% 62% |
| 1 | 2-3 | 104 |  37% 62% |
| 1 | 2-4 | 104 |  38% 62% |
| 1 | 2-5 | 104 |  38% 62% |
| 1 | 2-6 | 104 |  37% 62% |
| 1 | 2-7 | 104 |  38% 62% |
| 1 | 2-8 | 104 |  38% 62% |
| 1 | 3-1 | 104 |  35% 62% |
| 1 | 3-2 | 104 |  35% 62% |














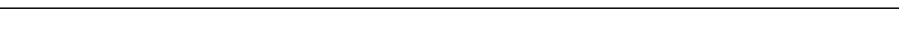
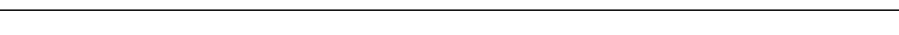
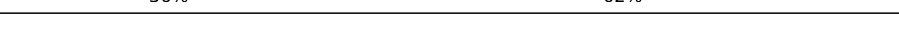

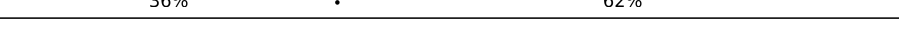







Continued on next page...

Continued from previous page...

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 1 | 3-3 | 104 |  35% 62% |
| 1 | 3-4 | 104 |  36% 62% |
| 1 | 3-5 | 104 |  35% 62% |
| 1 | 3-6 | 104 |  35% 62% |
| 1 | 3-7 | 104 |  36% 62% |
| 1 | 3-8 | 104 |  36% 62% |
| 1 | 4-1 | 104 |  37% 62% |
| 1 | 4-2 | 104 |  37% 62% |
| 1 | 4-3 | 104 |  37% 62% |
| 1 | 4-4 | 104 |  37% 62% |
| 1 | 4-5 | 104 |  37% 62% |
| 1 | 4-6 | 104 |  37% 62% |
| 1 | 4-7 | 104 |  37% 62% |
| 1 | 4-8 | 104 |  37% 62% |
| 1 | 5-1 | 104 |  35% 62% |
| 1 | 5-2 | 104 |  35% 62% |
| 1 | 5-3 | 104 |  35% 62% |
| 1 | 5-4 | 104 |  35% 62% |
| 1 | 5-5 | 104 |  35% 62% |
| 1 | 5-6 | 104 |  35% 62% |
| 1 | 5-7 | 104 |  35% 62% |
| 1 | 5-8 | 104 |  35% 62% |
| 1 | 6-1 | 104 |  37% 62% |
| 1 | 6-2 | 104 |  37% 62% |
| 1 | 6-3 | 104 |  37% 62% |





Continued on next page...

Continued from previous page...

| Mol | Chain | Length | Quality of chain | |
|-----|-------|--------|--|-----|
| 1 | 6-4 | 104 |  | 62% |
| 1 | 6-5 | 104 |  | 62% |
| 1 | 6-6 | 104 |  | 62% |
| 1 | 6-7 | 104 |  | 62% |
| 1 | 6-8 | 104 |  | 62% |
| 1 | 7-1 | 104 |  | 62% |
| 1 | 7-2 | 104 |  | 62% |
| 1 | 7-3 | 104 |  | 62% |
| 1 | 7-4 | 104 |  | 62% |
| 1 | 7-5 | 104 |  | 62% |
| 1 | 7-6 | 104 |  | 62% |
| 1 | 7-7 | 104 |  | 62% |
| 1 | 7-8 | 104 |  | 62% |
| 1 | 8-1 | 104 |  | 62% |
| 1 | 8-2 | 104 |  | 62% |
| 1 | 8-3 | 104 |  | 62% |
| 1 | 8-4 | 104 |  | 62% |
| 1 | 8-5 | 104 |  | 62% |
| 1 | 8-6 | 104 |  | 62% |
| 1 | 8-7 | 104 |  | 62% |
| 1 | 8-8 | 104 |  | 62% |
| 1 | 9-1 | 104 |  | 62% |
| 1 | 9-2 | 104 |  | 62% |
| 1 | 9-3 | 104 |  | 62% |
| 1 | 9-4 | 104 |  | 62% |

Continued on next page...

Continued from previous page...

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 1 | 9-5 | 104 |  |
| 1 | 9-6 | 104 |  |
| 1 | 9-7 | 104 |  |
| 1 | 9-8 | 104 |  |

2 Entry composition [i](#)

There is only 1 type of molecule in this entry. The entry contains 57680 atoms, of which 24640 are hydrogens and 0 are deuteriums.

In the tables below, 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 RNA-binding protein FUS.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---------|-------|
| | | | Total | C | H | N | O | | |
| 1 | 1-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 2-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 3-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 4-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 5-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 6-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 7-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 8-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 9-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 10-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 11-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 12-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 13-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 14-1 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 1-2 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 2-2 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |
| 1 | 3-2 | 39 | 515 | 174 | 220 | 51 | 70 | 0 | 0 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---------|-------|
| 1 | 4-2 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 5-2 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 6-2 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 7-2 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 8-2 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 9-2 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 10-2 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 11-2 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 12-2 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 13-2 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 14-2 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 1-3 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 2-3 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 3-3 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 4-3 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 5-3 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 6-3 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 7-3 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 8-3 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 9-3 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 10-3 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |

Continued on next page...

Continued from previous page...

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|---------|---------|---------|-------|
| 1 | 11-3 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 12-3 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 13-3 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 14-3 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 1-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 2-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 3-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 4-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 5-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 6-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 7-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 8-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 9-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 10-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 11-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 12-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 13-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 14-4 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 1-5 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 2-5 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |
| 1 | 3-5 | 39 | Total 515 | C 174 | H 220 | N 51 | O 70 | 0 | 0 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---------|-------|
| 1 | 4-5 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 5-5 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 6-5 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 7-5 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 8-5 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 9-5 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 10-5 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 11-5 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 12-5 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 13-5 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 14-5 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 1-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 2-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 3-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 4-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 5-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 6-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 7-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 8-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 9-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 10-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |

Continued on next page...

Continued from previous page...

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---------|-------|
| 1 | 11-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 12-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 13-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 14-6 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 1-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 2-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 3-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 4-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 5-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 6-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 7-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 8-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 9-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 10-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 11-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 12-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 13-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 14-7 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 1-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 2-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 3-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |

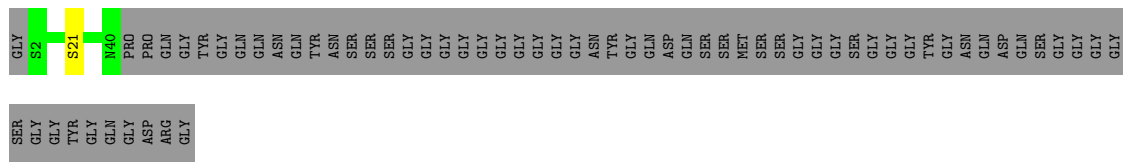
Continued on next page...

Continued from previous page...

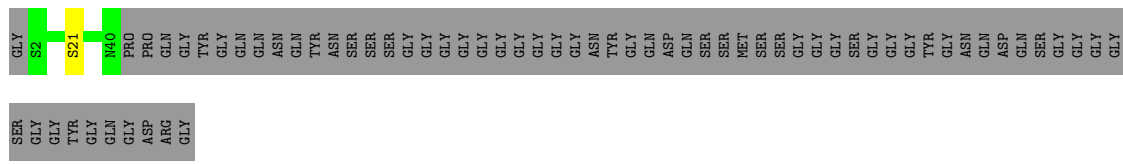
| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---------|-------|
| 1 | 4-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 5-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 6-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 7-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 8-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 9-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 10-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 11-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 12-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 13-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |
| 1 | 14-8 | 39 | Total | C | H | N | O | 0 | 0 |
| | | | 515 | 174 | 220 | 51 | 70 | | |

There are 8 discrepancies between the modelled and reference sequences:

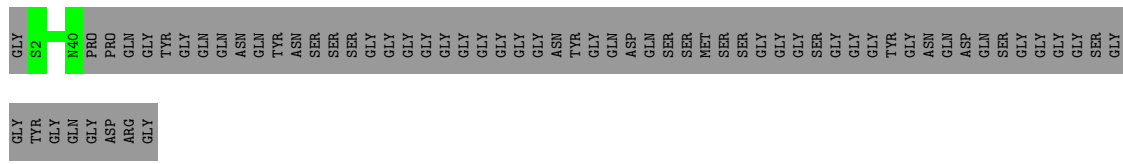
| Chain | Residue | Modelled | Actual | Comment | Reference |
|-------|---------|----------|--------|----------|------------|
| 1 | 101 | GLY | GLN | conflict | UNP P35637 |
| 2 | 101 | GLY | GLN | conflict | UNP P35637 |
| 3 | 101 | GLY | GLN | conflict | UNP P35637 |
| 4 | 101 | GLY | GLN | conflict | UNP P35637 |
| 5 | 101 | GLY | GLN | conflict | UNP P35637 |
| 6 | 101 | GLY | GLN | conflict | UNP P35637 |
| 7 | 101 | GLY | GLN | conflict | UNP P35637 |
| 8 | 101 | GLY | GLN | conflict | UNP P35637 |



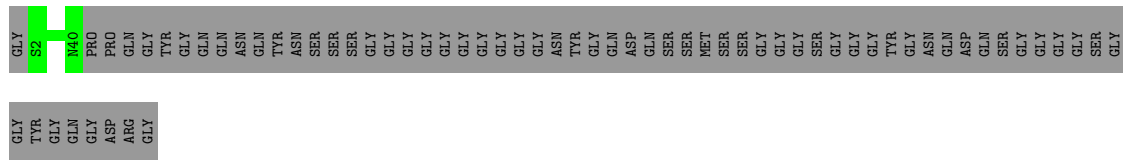
• Molecule 1: RNA-binding protein FUS



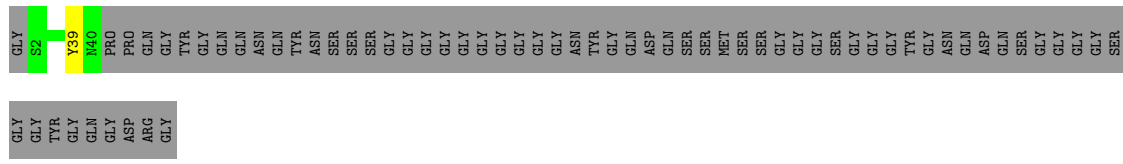
• Molecule 1: RNA-binding protein FUS



• Molecule 1: RNA-binding protein FUS



• Molecule 1: RNA-binding protein FUS



• Molecule 1: RNA-binding protein FUS



SER
GLY
GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

• Molecule 1: RNA-binding protein FUS



GLY S2 S21 Q36 R40 PRO PRO GLN GLY TYR GLY GLN ASN ASN TYR ASN SER SER SER GLY GLY GLY GLY GLY GLY TYR TYR ASN ASN ASP GLN SER MET SER SER GLY GLY SER SER GLY TYR TYR ASN ASN ASP GLN SER GLY

GLY
GLY
SER
GLY
GLY
TYR
GLY
GLN
GLY

• Molecule 1: RNA-binding protein FUS



GLY S2 S21 Q36 R40 PRO PRO GLN GLY TYR GLY GLN ASN ASN TYR ASN SER SER SER GLY GLY GLY GLY GLY GLY TYR TYR ASN ASN ASP GLN SER MET SER SER GLY GLY SER SER GLY TYR TYR ASN ASN ASP GLN SER GLY

GLY
GLY
SER
GLY
GLY
TYR
GLY
GLN
GLY

• Molecule 1: RNA-binding protein FUS



GLY S2 Q36 R40 PRO PRO GLN GLY TYR GLY GLN GLN ASN ASN TYR ASN SER SER SER GLY GLY GLY GLY GLY GLY TYR TYR ASN ASN ASP GLN SER MET SER SER GLY GLY GLY GLY TYR TYR ASN ASN ASP GLN SER GLY

SER
GLY
TYR
GLN
GLY
ASP
ARG
GLY

• Molecule 1: RNA-binding protein FUS



GLY S2 Q36 R40 PRO PRO GLN GLY TYR GLY GLN GLN ASN ASN TYR ASN SER SER SER GLY GLY GLY GLY GLY GLY TYR TYR ASN ASN ASP GLN SER MET SER SER GLY GLY GLY GLY TYR TYR ASN ASN ASP GLN SER GLY

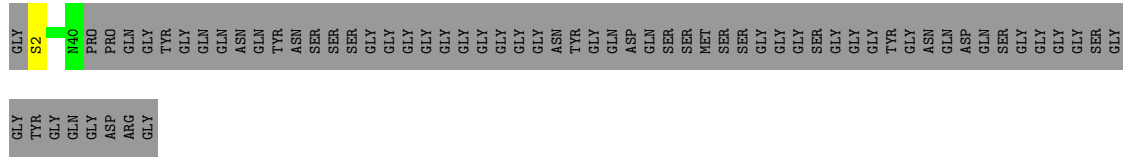
SER
GLY
TYR
GLN
GLY
ASP
ARG
GLY

• Molecule 1: RNA-binding protein FUS

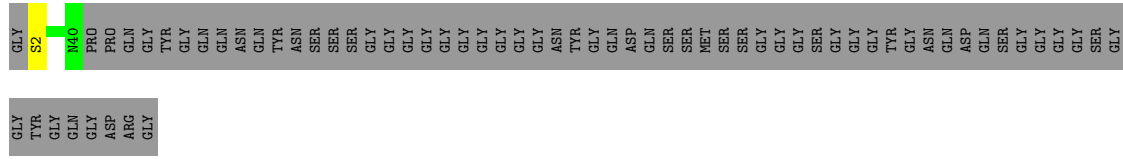


GLY S2 R40 PRO PRO GLN GLY TYR GLY GLN GLN ASN ASN TYR ASN SER SER SER GLY GLY GLY GLY GLY GLY TYR TYR ASN ASN ASP GLN SER MET SER SER GLY GLY GLY GLY TYR TYR ASN ASN ASP GLN SER GLY

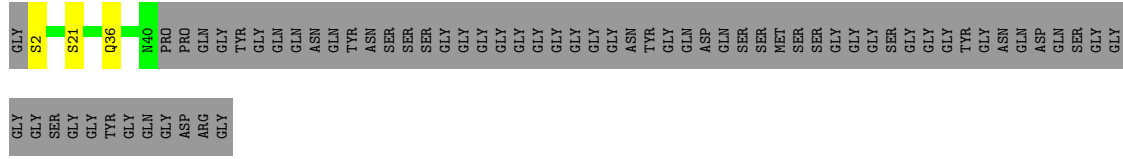
GLY
TYR
GLN
GLY
ASP
ARG
GLY



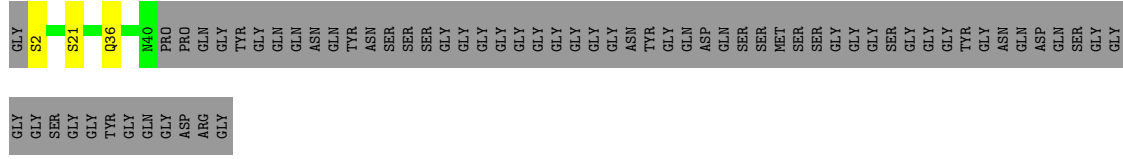
• Molecule 1: RNA-binding protein FUS



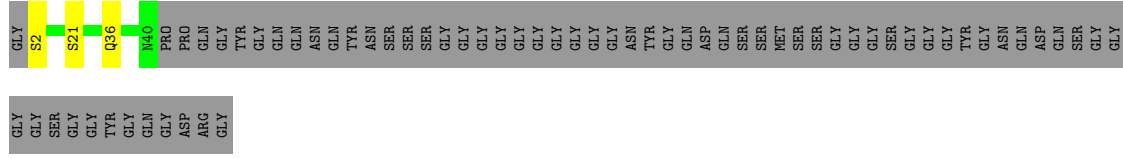
• Molecule 1: RNA-binding protein FUS



• Molecule 1: RNA-binding protein FUS

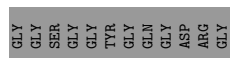
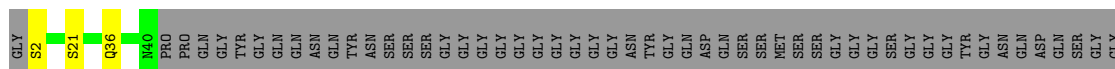


• Molecule 1: RNA-binding protein FUS

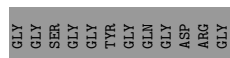
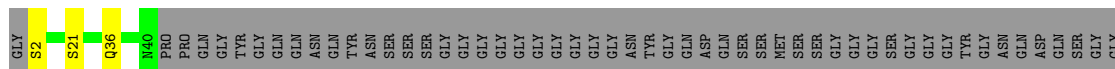


• Molecule 1: RNA-binding protein FUS

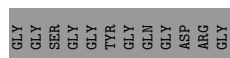
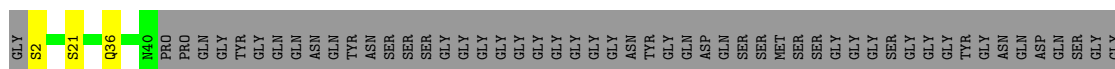




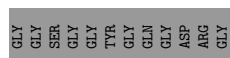
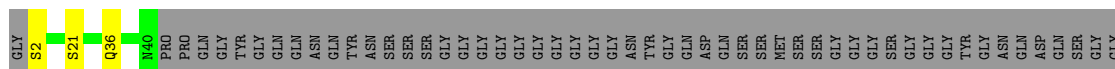
• Molecule 1: RNA-binding protein FUS



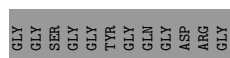
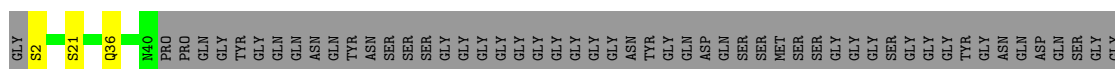
• Molecule 1: RNA-binding protein FUS



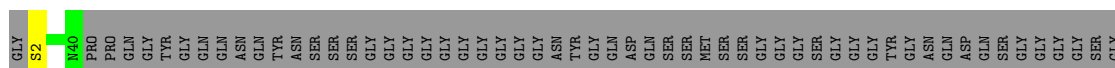
• Molecule 1: RNA-binding protein FUS



• Molecule 1: RNA-binding protein FUS



• Molecule 1: RNA-binding protein FUS



GLY
GLY
GLY
SER
GLY
GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

● Molecule 1: RNA-binding protein FUS



GLY S2 S21 Q36 N40 PRO PRO GLN GLN TYR TYR GLY GLY GLN GLN ASN ASN TYR ASN SER SER SER SER GLY GLY GLY GLY GLY GLY GLY GLY TYR ASN TYR ASN ASN ASP GLN SER MET SER SER GLY GLY SER SER GLY TYR TYR ASN ASN ASP GLN SER GLY GLY

GLY
GLY
SER
GLY
TYR
GLY
GLN
GLY
GLY
ASP
ARG
GLY

● Molecule 1: RNA-binding protein FUS



GLY S2 Q36 N40 PRO PRO GLN TYR TYR GLY GLY GLN GLN ASN ASN TYR ASN SER SER SER SER GLY GLY GLY GLY GLY GLY GLY GLY TYR ASN TYR ASN ASN ASP GLN SER MET SER SER GLY GLY SER SER GLY TYR TYR ASN ASN ASP GLN SER GLY GLY

SER
GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

● Molecule 1: RNA-binding protein FUS



GLY S2 Q14 P15 N40 PRO PRO GLN TYR TYR GLY GLY GLN GLN ASN ASN TYR ASN SER SER SER SER GLY GLY GLY GLY GLY GLY GLY GLY TYR ASN TYR ASN ASN ASP GLN SER MET SER SER GLY GLY SER SER GLY TYR TYR ASN ASN ASP GLN SER GLY GLY

GLY
SER
GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

● Molecule 1: RNA-binding protein FUS



GLY S2 Q14 P15 S21 N40 PRO PRO GLN TYR TYR GLY GLY GLN GLN ASN ASN TYR ASN SER SER SER SER GLY GLY GLY GLY GLY GLY GLY GLY TYR ASN TYR ASN ASN ASP GLN SER MET SER SER GLY GLY SER SER GLY TYR TYR ASN ASN ASP GLN SER GLY GLY

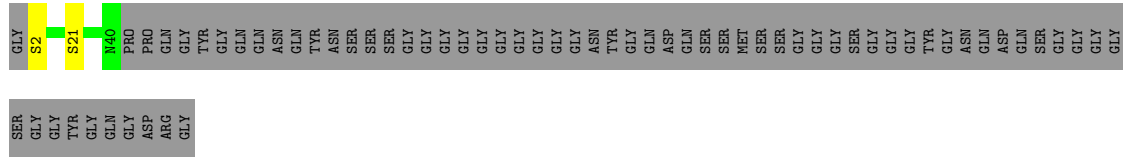
GLY
GLY
SER
GLY
GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

● Molecule 1: RNA-binding protein FUS

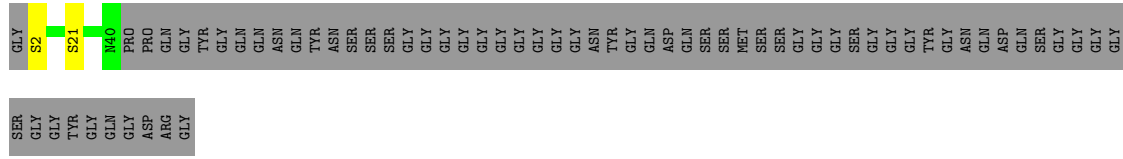


GLY S2 Q14 P15 S21 N40 PRO PRO GLN TYR TYR GLY GLY GLN GLN ASN ASN TYR ASN SER SER SER SER GLY GLY GLY GLY GLY GLY GLY GLY TYR ASN TYR ASN ASN ASP GLN SER MET SER SER GLY GLY SER SER GLY TYR TYR ASN ASN ASP GLN SER GLY GLY

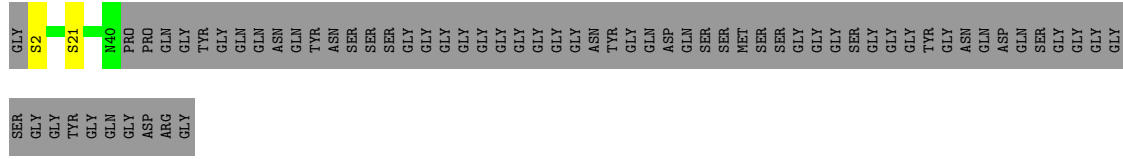
GLY
GLY
SER
GLY
GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY



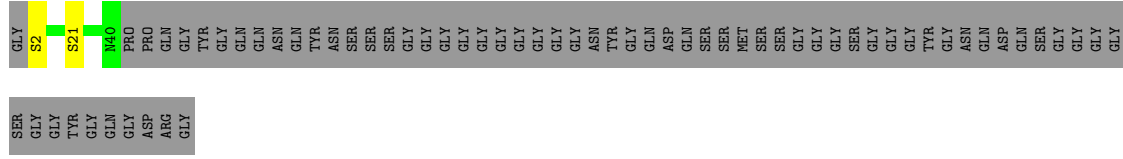
• Molecule 1: RNA-binding protein FUS



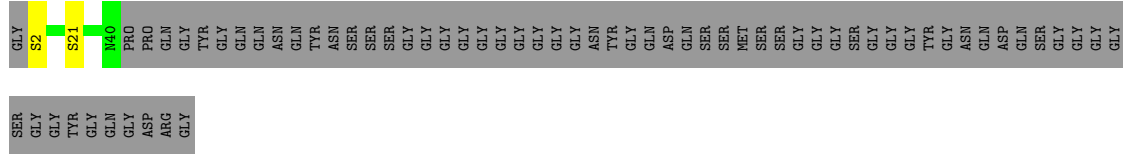
• Molecule 1: RNA-binding protein FUS



• Molecule 1: RNA-binding protein FUS

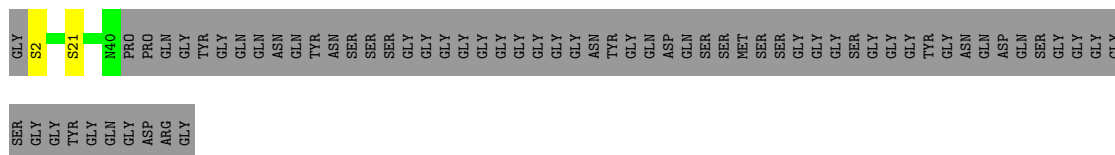


• Molecule 1: RNA-binding protein FUS

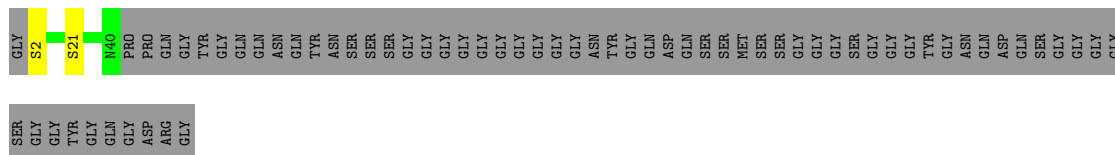


• Molecule 1: RNA-binding protein FUS

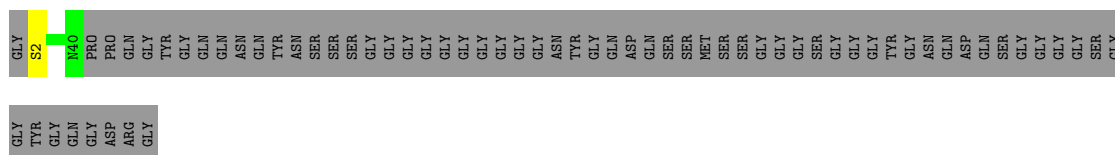




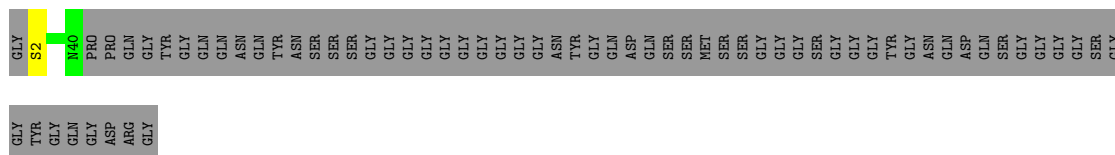
- Molecule 1: RNA-binding protein FUS



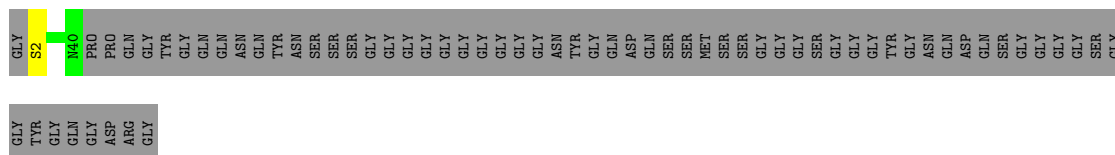
- Molecule 1: RNA-binding protein FUS



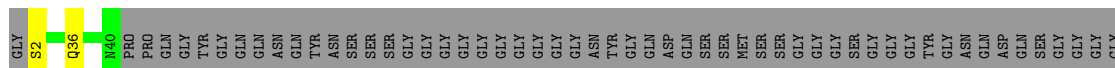
- Molecule 1: RNA-binding protein FUS



- Molecule 1: RNA-binding protein FUS



- Molecule 1: RNA-binding protein FUS



SER
GLY
GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

• Molecule 1: RNA-binding protein FUS



GLY
S2
N40
PRO
GLN
GLY
TYR
GLN
GLN
ASN
GLN
TYR
ASN
SER
SER
SER
GLY
GLY
GLY
GLY
GLY
GLY
GLY
GLY
ASN
TYR
GLY
GLN
ASP
GLN
SER
SER
MET
SER
SER
GLY
GLY
GLY
SER
GLY
GLY
TYR
ASN
GLN
ASP
GLN
SER
SER
GLY
GLY
GLY
TYR
ASN
GLN
ASP
GLN
SER
SER
GLY
GLY
GLY
SER
GLY

GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

• Molecule 1: RNA-binding protein FUS



GLY
S2
N40
PRO
GLN
GLY
TYR
GLN
GLN
ASN
GLN
TYR
ASN
SER
SER
SER
GLY
GLY
GLY
GLY
GLY
GLY
GLY
GLY
ASN
TYR
GLY
GLN
ASP
GLN
SER
SER
MET
SER
SER
GLY
GLY
GLY
SER
GLY
GLY
TYR
ASN
GLN
ASP
GLN
SER
SER
GLY
GLY
GLY
SER
GLY

GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

• Molecule 1: RNA-binding protein FUS



GLY
S2
N40
PRO
GLN
GLY
TYR
GLN
GLN
ASN
GLN
TYR
ASN
SER
SER
SER
GLY
GLY
GLY
GLY
GLY
GLY
GLY
GLY
ASN
TYR
GLY
GLN
ASP
GLN
SER
SER
MET
SER
SER
GLY
GLY
GLY
SER
GLY
GLY
TYR
ASN
GLN
ASP
GLN
SER
SER
GLY
GLY
GLY
SER
GLY

GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

• Molecule 1: RNA-binding protein FUS



GLY
S2
Q36
N40
PRO
GLN
GLY
TYR
GLN
GLN
ASN
GLN
TYR
ASN
SER
SER
SER
SER
SER
GLY
GLY
GLY
GLY
GLY
GLY
GLY
GLY
ASN
TYR
GLY
GLN
ASP
GLN
SER
SER
MET
SER
SER
SER
GLY
GLY
GLY
SER
GLY
GLY
TYR
ASN
GLN
ASP
GLN
SER
SER
GLY
GLY
GLY
SER
GLY

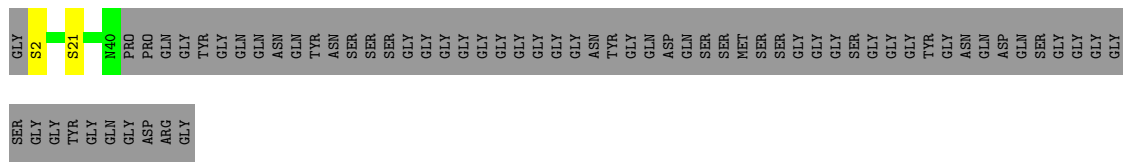
SER
GLY
GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

• Molecule 1: RNA-binding protein FUS

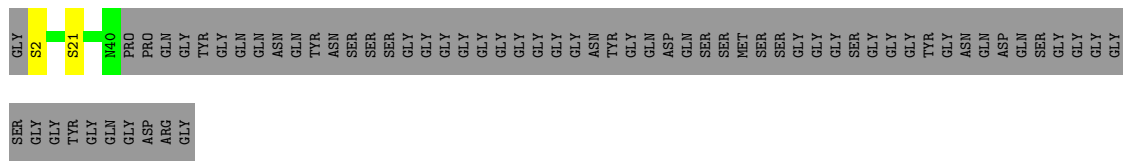


GLY
S2
N40
PRO
GLN
GLY
TYR
GLN
GLN
ASN
GLN
TYR
ASN
SER
SER
SER
SER
SER
GLY
GLY
GLY
GLY
GLY
GLY
GLY
GLY
ASN
TYR
GLY
GLN
ASP
GLN
SER
SER
MET
SER
SER
SER
GLY
GLY
GLY
SER
GLY
GLY
TYR
ASN
GLN
ASP
GLN
SER
SER
GLY
GLY
GLY
SER
GLY

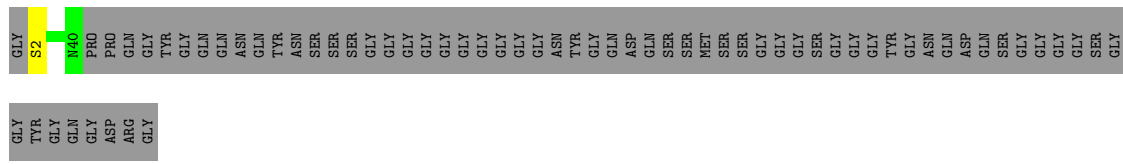
GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY



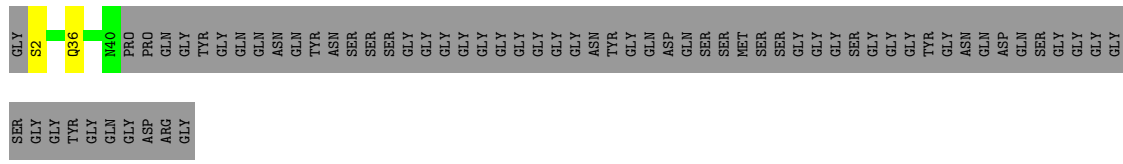
• Molecule 1: RNA-binding protein FUS



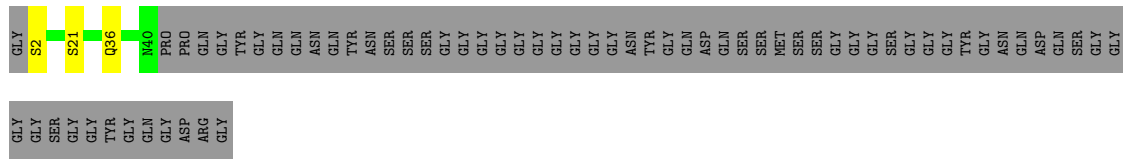
• Molecule 1: RNA-binding protein FUS



• Molecule 1: RNA-binding protein FUS

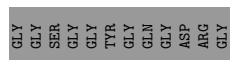
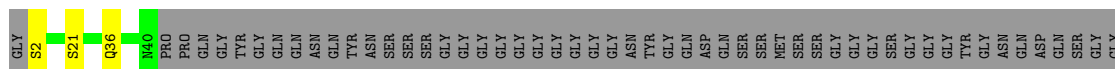


• Molecule 1: RNA-binding protein FUS

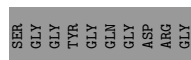
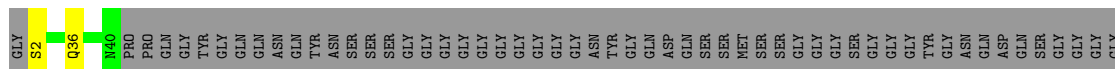


• Molecule 1: RNA-binding protein FUS

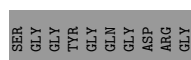
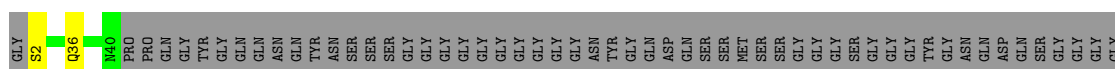




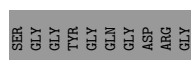
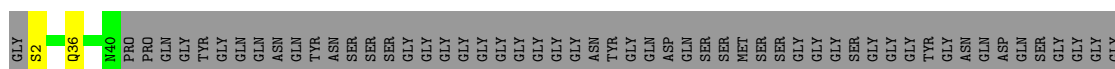
• Molecule 1: RNA-binding protein FUS



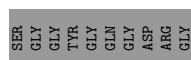
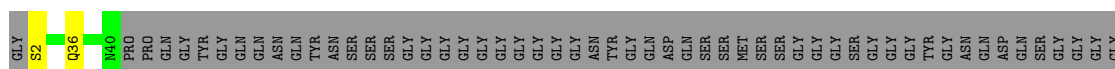
• Molecule 1: RNA-binding protein FUS



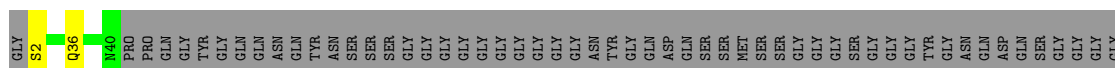
• Molecule 1: RNA-binding protein FUS



• Molecule 1: RNA-binding protein FUS

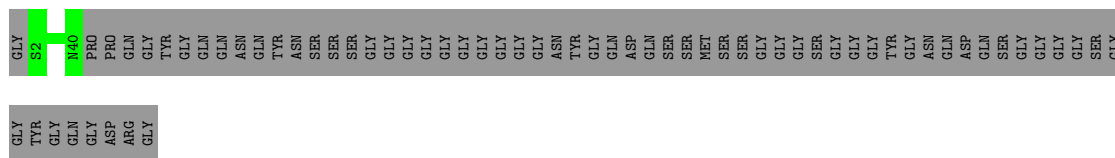


• Molecule 1: RNA-binding protein FUS



- Molecule 1: RNA-binding protein FUS

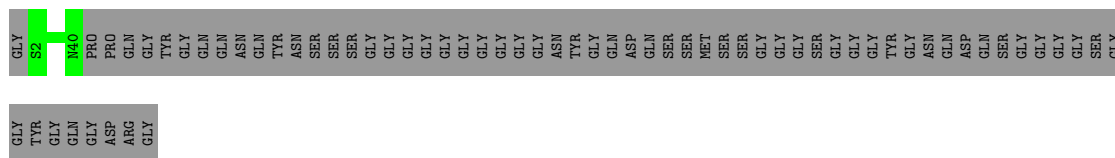
Chain 14-6:  38% 62%



GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

- Molecule 1: RNA-binding protein FUS

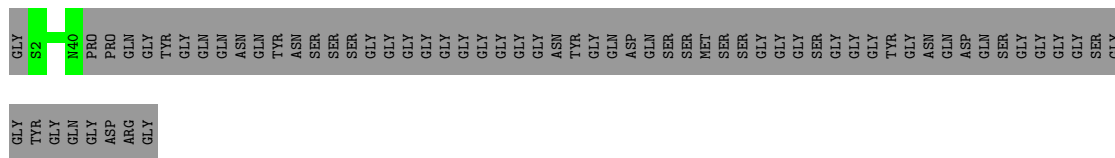
Chain 14-7:  38% 62%



GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

- Molecule 1: RNA-binding protein FUS

Chain 14-8:  38% 62%



GLY
TYR
GLY
GLN
GLY
ASP
ARG
GLY

4 Experimental information

| Property | Value | Source |
|--------------------------------------|---------------------------|-----------|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, C1 | Depositor |
| Number of particles used | 275520 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | NONE; Getf | Depositor |
| Microscope | FEI TITAN KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 47 | Depositor |
| Minimum defocus (nm) | 1000 | Depositor |
| Maximum defocus (nm) | 2500 | Depositor |
| Magnification | 130000 | Depositor |
| Image detector | GATAN K2 SUMMIT (4k x 4k) | Depositor |
| Maximum map value | 0.197 | Depositor |
| Minimum map value | -0.103 | Depositor |
| Average map value | 0.000 | Depositor |
| Map value standard deviation | 0.003 | Depositor |
| Recommended contour level | 0.02 | Depositor |
| Map size (\AA) | 429.6, 429.6, 429.6 | wwPDB |
| Map dimensions | 400, 400, 400 | wwPDB |
| Map angles ($^\circ$) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (\AA) | 1.074, 1.074, 1.074 | Depositor |

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 | 1-1 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 1-2 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 1-3 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 1-4 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 1-5 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 1-6 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 1-7 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 1-8 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 2-1 | 0.57 | 0/302 | 0.77 | 0/406 |
| 1 | 2-2 | 0.58 | 0/302 | 0.78 | 0/406 |
| 1 | 2-3 | 0.57 | 0/302 | 0.78 | 0/406 |
| 1 | 2-4 | 0.57 | 0/302 | 0.77 | 0/406 |
| 1 | 2-5 | 0.57 | 0/302 | 0.77 | 0/406 |
| 1 | 2-6 | 0.57 | 0/302 | 0.78 | 0/406 |
| 1 | 2-7 | 0.57 | 0/302 | 0.78 | 0/406 |
| 1 | 2-8 | 0.57 | 0/302 | 0.78 | 0/406 |
| 1 | 3-1 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 3-2 | 0.55 | 0/302 | 0.79 | 0/406 |
| 1 | 3-3 | 0.55 | 0/302 | 0.79 | 0/406 |
| 1 | 3-4 | 0.55 | 0/302 | 0.79 | 0/406 |
| 1 | 3-5 | 0.55 | 0/302 | 0.79 | 0/406 |
| 1 | 3-6 | 0.55 | 0/302 | 0.79 | 0/406 |
| 1 | 3-7 | 0.55 | 0/302 | 0.79 | 0/406 |
| 1 | 3-8 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 4-1 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 4-2 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 4-3 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 4-4 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 4-5 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 4-6 | 0.54 | 0/302 | 0.78 | 0/406 |
| 1 | 4-7 | 0.54 | 0/302 | 0.78 | 0/406 |
| 1 | 4-8 | 0.53 | 0/302 | 0.77 | 0/406 |
| 1 | 5-1 | 0.57 | 0/302 | 0.78 | 0/406 |
| 1 | 5-2 | 0.58 | 0/302 | 0.78 | 0/406 |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|---------|-------------|---------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 1 | 5-3 | 0.58 | 0/302 | 0.79 | 0/406 |
| 1 | 5-4 | 0.58 | 0/302 | 0.78 | 0/406 |
| 1 | 5-5 | 0.58 | 0/302 | 0.78 | 0/406 |
| 1 | 5-6 | 0.58 | 0/302 | 0.79 | 0/406 |
| 1 | 5-7 | 0.58 | 0/302 | 0.78 | 0/406 |
| 1 | 5-8 | 0.58 | 0/302 | 0.78 | 0/406 |
| 1 | 6-1 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 6-2 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 6-3 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 6-4 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 6-5 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 6-6 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 6-7 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 6-8 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 7-1 | 0.58 | 0/302 | 0.77 | 0/406 |
| 1 | 7-2 | 0.58 | 0/302 | 0.77 | 0/406 |
| 1 | 7-3 | 0.59 | 0/302 | 0.77 | 0/406 |
| 1 | 7-4 | 0.59 | 0/302 | 0.77 | 0/406 |
| 1 | 7-5 | 0.58 | 0/302 | 0.77 | 0/406 |
| 1 | 7-6 | 0.58 | 0/302 | 0.77 | 0/406 |
| 1 | 7-7 | 0.59 | 0/302 | 0.78 | 0/406 |
| 1 | 7-8 | 0.58 | 0/302 | 0.77 | 0/406 |
| 1 | 8-1 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 8-2 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 8-3 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 8-4 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 8-5 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 8-6 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 8-7 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 8-8 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 9-1 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 9-2 | 0.56 | 0/302 | 0.77 | 0/406 |
| 1 | 9-3 | 0.56 | 0/302 | 0.77 | 0/406 |
| 1 | 9-4 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 9-5 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 9-6 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 9-7 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 9-8 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 10-1 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 10-2 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 10-3 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 10-4 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 10-5 | 0.56 | 0/302 | 0.78 | 0/406 |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|---------|-------------|---------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 1 | 10-6 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 10-7 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 10-8 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 11-1 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 11-2 | 0.54 | 0/302 | 0.78 | 0/406 |
| 1 | 11-3 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 11-4 | 0.54 | 0/302 | 0.78 | 0/406 |
| 1 | 11-5 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 11-6 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 11-7 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 11-8 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 12-1 | 0.55 | 0/302 | 0.78 | 0/406 |
| 1 | 12-2 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 12-3 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 12-4 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 12-5 | 0.56 | 0/302 | 0.77 | 0/406 |
| 1 | 12-6 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 12-7 | 0.56 | 0/302 | 0.78 | 0/406 |
| 1 | 12-8 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 13-1 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 13-2 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 13-3 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 13-4 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 13-5 | 0.55 | 0/302 | 0.76 | 0/406 |
| 1 | 13-6 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 13-7 | 0.55 | 0/302 | 0.77 | 0/406 |
| 1 | 13-8 | 0.54 | 0/302 | 0.76 | 0/406 |
| 1 | 14-1 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 14-2 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 14-3 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 14-4 | 0.54 | 0/302 | 0.78 | 0/406 |
| 1 | 14-5 | 0.54 | 0/302 | 0.76 | 0/406 |
| 1 | 14-6 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 14-7 | 0.54 | 0/302 | 0.77 | 0/406 |
| 1 | 14-8 | 0.54 | 0/302 | 0.77 | 0/406 |
| All | All | 0.56 | 0/33824 | 0.78 | 0/45472 |

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 | 1-1 | 295 | 220 | 244 | 0 | 0 |
| 1 | 1-2 | 295 | 220 | 244 | 0 | 0 |
| 1 | 1-3 | 295 | 220 | 244 | 0 | 0 |
| 1 | 1-4 | 295 | 220 | 244 | 0 | 0 |
| 1 | 1-5 | 295 | 220 | 244 | 0 | 0 |
| 1 | 1-6 | 295 | 220 | 244 | 0 | 0 |
| 1 | 1-7 | 295 | 220 | 244 | 0 | 0 |
| 1 | 1-8 | 295 | 220 | 244 | 0 | 0 |
| 1 | 2-1 | 295 | 220 | 244 | 1 | 0 |
| 1 | 2-2 | 295 | 220 | 244 | 1 | 0 |
| 1 | 2-3 | 295 | 220 | 244 | 1 | 0 |
| 1 | 2-4 | 295 | 220 | 244 | 0 | 0 |
| 1 | 2-5 | 295 | 220 | 244 | 0 | 0 |
| 1 | 2-6 | 295 | 220 | 244 | 1 | 0 |
| 1 | 2-7 | 295 | 220 | 244 | 0 | 0 |
| 1 | 2-8 | 295 | 220 | 244 | 0 | 0 |
| 1 | 3-1 | 295 | 220 | 244 | 3 | 0 |
| 1 | 3-2 | 295 | 220 | 244 | 6 | 0 |
| 1 | 3-3 | 295 | 220 | 244 | 5 | 0 |
| 1 | 3-4 | 295 | 220 | 244 | 2 | 0 |
| 1 | 3-5 | 295 | 220 | 244 | 3 | 0 |
| 1 | 3-6 | 295 | 220 | 244 | 5 | 0 |
| 1 | 3-7 | 295 | 220 | 244 | 4 | 0 |
| 1 | 3-8 | 295 | 220 | 244 | 2 | 0 |
| 1 | 4-1 | 295 | 220 | 244 | 0 | 0 |
| 1 | 4-2 | 295 | 220 | 244 | 0 | 0 |
| 1 | 4-3 | 295 | 220 | 244 | 0 | 0 |
| 1 | 4-4 | 295 | 220 | 244 | 0 | 0 |
| 1 | 4-5 | 295 | 220 | 244 | 0 | 0 |
| 1 | 4-6 | 295 | 220 | 244 | 0 | 0 |
| 1 | 4-7 | 295 | 220 | 244 | 0 | 0 |
| 1 | 4-8 | 295 | 220 | 244 | 0 | 0 |
| 1 | 5-1 | 295 | 220 | 244 | 3 | 0 |
| 1 | 5-2 | 295 | 220 | 244 | 6 | 0 |
| 1 | 5-3 | 295 | 220 | 244 | 6 | 0 |
| 1 | 5-4 | 295 | 220 | 244 | 3 | 0 |
| 1 | 5-5 | 295 | 220 | 244 | 3 | 0 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | 5-6 | 295 | 220 | 244 | 6 | 0 |
| 1 | 5-7 | 295 | 220 | 244 | 6 | 0 |
| 1 | 5-8 | 295 | 220 | 244 | 3 | 0 |
| 1 | 6-1 | 295 | 220 | 244 | 0 | 0 |
| 1 | 6-2 | 295 | 220 | 244 | 0 | 0 |
| 1 | 6-3 | 295 | 220 | 244 | 0 | 0 |
| 1 | 6-4 | 295 | 220 | 244 | 0 | 0 |
| 1 | 6-5 | 295 | 220 | 244 | 0 | 0 |
| 1 | 6-6 | 295 | 220 | 244 | 0 | 0 |
| 1 | 6-7 | 295 | 220 | 244 | 0 | 0 |
| 1 | 6-8 | 295 | 220 | 244 | 0 | 0 |
| 1 | 7-1 | 295 | 220 | 244 | 1 | 0 |
| 1 | 7-2 | 295 | 220 | 244 | 2 | 0 |
| 1 | 7-3 | 295 | 220 | 244 | 2 | 0 |
| 1 | 7-4 | 295 | 220 | 244 | 1 | 0 |
| 1 | 7-5 | 295 | 220 | 244 | 2 | 0 |
| 1 | 7-6 | 295 | 220 | 244 | 2 | 0 |
| 1 | 7-7 | 295 | 220 | 244 | 1 | 0 |
| 1 | 7-8 | 295 | 220 | 244 | 1 | 0 |
| 1 | 8-1 | 295 | 220 | 244 | 4 | 0 |
| 1 | 8-2 | 295 | 220 | 244 | 6 | 0 |
| 1 | 8-3 | 295 | 220 | 244 | 6 | 0 |
| 1 | 8-4 | 295 | 220 | 244 | 3 | 0 |
| 1 | 8-5 | 295 | 220 | 244 | 2 | 0 |
| 1 | 8-6 | 295 | 220 | 244 | 6 | 0 |
| 1 | 8-7 | 295 | 220 | 244 | 5 | 0 |
| 1 | 8-8 | 295 | 220 | 244 | 2 | 0 |
| 1 | 9-1 | 295 | 220 | 244 | 1 | 0 |
| 1 | 9-2 | 295 | 220 | 244 | 2 | 0 |
| 1 | 9-3 | 295 | 220 | 244 | 2 | 0 |
| 1 | 9-4 | 295 | 220 | 244 | 1 | 0 |
| 1 | 9-5 | 295 | 220 | 244 | 1 | 0 |
| 1 | 9-6 | 295 | 220 | 244 | 2 | 0 |
| 1 | 9-7 | 295 | 220 | 244 | 3 | 0 |
| 1 | 9-8 | 295 | 220 | 244 | 1 | 0 |
| 1 | 10-1 | 295 | 220 | 244 | 1 | 0 |
| 1 | 10-2 | 295 | 220 | 244 | 2 | 0 |
| 1 | 10-3 | 295 | 220 | 244 | 2 | 0 |
| 1 | 10-4 | 295 | 220 | 244 | 1 | 0 |
| 1 | 10-5 | 295 | 220 | 244 | 1 | 0 |
| 1 | 10-6 | 295 | 220 | 244 | 2 | 0 |
| 1 | 10-7 | 295 | 220 | 244 | 1 | 0 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | 10-8 | 295 | 220 | 244 | 0 | 0 |
| 1 | 11-1 | 295 | 220 | 244 | 0 | 0 |
| 1 | 11-2 | 295 | 220 | 244 | 0 | 0 |
| 1 | 11-3 | 295 | 220 | 244 | 1 | 0 |
| 1 | 11-4 | 295 | 220 | 244 | 1 | 0 |
| 1 | 11-5 | 295 | 220 | 244 | 0 | 0 |
| 1 | 11-6 | 295 | 220 | 244 | 0 | 0 |
| 1 | 11-7 | 295 | 220 | 244 | 1 | 0 |
| 1 | 11-8 | 295 | 220 | 244 | 1 | 0 |
| 1 | 12-1 | 295 | 220 | 244 | 1 | 0 |
| 1 | 12-2 | 295 | 220 | 244 | 2 | 0 |
| 1 | 12-3 | 295 | 220 | 244 | 2 | 0 |
| 1 | 12-4 | 295 | 220 | 244 | 1 | 0 |
| 1 | 12-5 | 295 | 220 | 244 | 1 | 0 |
| 1 | 12-6 | 295 | 220 | 244 | 2 | 0 |
| 1 | 12-7 | 295 | 220 | 244 | 1 | 0 |
| 1 | 12-8 | 295 | 220 | 244 | 0 | 0 |
| 1 | 13-1 | 295 | 220 | 244 | 2 | 0 |
| 1 | 13-2 | 295 | 220 | 244 | 5 | 0 |
| 1 | 13-3 | 295 | 220 | 244 | 5 | 0 |
| 1 | 13-4 | 295 | 220 | 244 | 2 | 0 |
| 1 | 13-5 | 295 | 220 | 244 | 2 | 0 |
| 1 | 13-6 | 295 | 220 | 244 | 4 | 0 |
| 1 | 13-7 | 295 | 220 | 244 | 4 | 0 |
| 1 | 13-8 | 295 | 220 | 244 | 2 | 0 |
| 1 | 14-1 | 295 | 220 | 244 | 0 | 0 |
| 1 | 14-2 | 295 | 220 | 244 | 0 | 0 |
| 1 | 14-3 | 295 | 220 | 244 | 0 | 0 |
| 1 | 14-4 | 295 | 220 | 244 | 0 | 0 |
| 1 | 14-5 | 295 | 220 | 244 | 0 | 0 |
| 1 | 14-6 | 295 | 220 | 244 | 0 | 0 |
| 1 | 14-7 | 295 | 220 | 244 | 0 | 0 |
| 1 | 14-8 | 295 | 220 | 244 | 0 | 0 |
| All | All | 33040 | 24640 | 27328 | 98 | 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 2.

The worst 5 of 98 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) |
|----------------|-----------------|--------------------------|-------------------|
| 1:7:36:GLN:HG3 | 1:8:36:GLN:HE22 | 1.60 | 0.67 |
| 1:6:36:GLN:HG3 | 1:7:36:GLN:HE22 | 1.61 | 0.66 |
| 1:5:36:GLN:HG3 | 1:6:36:GLN:HE22 | 1.62 | 0.65 |
| 1:2:36:GLN:HG3 | 1:3:36:GLN:HE22 | 1.61 | 0.65 |
| 1:5:36:GLN:HG3 | 1:6:36:GLN:HE22 | 1.62 | 0.64 |

There are no symmetry-related clashes.

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 PDB entries followed by that with respect to all EM entries.

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 | 1-1 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 1-2 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 1-3 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 1-4 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 1-5 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 1-6 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 1-7 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 1-8 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 2-1 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 2-2 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 2-3 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 2-4 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 2-5 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 2-6 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 2-7 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 2-8 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|--------------|----------|---------|----------|-------------|-----|
| 1 | 3-1 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 3-2 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 3-3 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 3-4 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 3-5 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 3-6 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 3-7 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 3-8 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 4-1 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 4-2 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 4-3 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 4-4 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 4-5 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 4-6 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 4-7 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 4-8 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 5-1 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 5-2 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 5-3 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 5-4 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 5-5 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 5-6 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 5-7 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 5-8 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 6-1 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 6-2 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 6-3 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 6-4 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 6-5 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 6-6 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 6-7 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|--------------|----------|---------|----------|-------------|-----|
| 1 | 6-8 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 7-1 | 37/104 (36%) | 33 (89%) | 4 (11%) | 0 | 100 | 100 |
| 1 | 7-2 | 37/104 (36%) | 33 (89%) | 4 (11%) | 0 | 100 | 100 |
| 1 | 7-3 | 37/104 (36%) | 33 (89%) | 4 (11%) | 0 | 100 | 100 |
| 1 | 7-4 | 37/104 (36%) | 33 (89%) | 4 (11%) | 0 | 100 | 100 |
| 1 | 7-5 | 37/104 (36%) | 33 (89%) | 4 (11%) | 0 | 100 | 100 |
| 1 | 7-6 | 37/104 (36%) | 33 (89%) | 4 (11%) | 0 | 100 | 100 |
| 1 | 7-7 | 37/104 (36%) | 33 (89%) | 4 (11%) | 0 | 100 | 100 |
| 1 | 7-8 | 37/104 (36%) | 33 (89%) | 4 (11%) | 0 | 100 | 100 |
| 1 | 8-1 | 37/104 (36%) | 36 (97%) | 1 (3%) | 0 | 100 | 100 |
| 1 | 8-2 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 8-3 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 8-4 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 8-5 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 8-6 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 8-7 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 8-8 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 9-1 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 9-2 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 9-3 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 9-4 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 9-5 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 9-6 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 9-7 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 9-8 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 10-1 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 10-2 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 10-3 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 10-4 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 10-5 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 10-6 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|--------------|----------|---------|----------|-------------|-----|
| 1 | 10-7 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 10-8 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 11-1 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 11-2 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 11-3 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 11-4 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 11-5 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 11-6 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 11-7 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 11-8 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 12-1 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 12-2 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 12-3 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 12-4 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 12-5 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 12-6 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 12-7 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 12-8 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 13-1 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 13-2 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 13-3 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 13-4 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 13-5 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 13-6 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 13-7 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 13-8 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 14-1 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 14-2 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 14-3 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 14-4 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| 1 | 14-5 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|------------------|------------|----------|----------|-------------|-----|
| 1 | 14-6 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 14-7 | 37/104 (36%) | 34 (92%) | 3 (8%) | 0 | 100 | 100 |
| 1 | 14-8 | 37/104 (36%) | 35 (95%) | 2 (5%) | 0 | 100 | 100 |
| All | All | 4144/11648 (36%) | 3868 (93%) | 276 (7%) | 0 | 100 | 100 |

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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 | 1-1 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 1-2 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 1-3 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 1-4 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 1-5 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 1-6 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 1-7 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 1-8 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 2-1 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 2-2 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 2-3 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 2-4 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 2-5 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 2-6 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 2-7 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 2-8 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 3-1 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 3-2 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-------------|-----------|----------|-------------|----|
| 1 | 3-3 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 3-4 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 3-5 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 3-6 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 3-7 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 3-8 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 4-1 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 4-2 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 4-3 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 4-4 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 4-5 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 4-6 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 4-7 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 4-8 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 5-1 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 5-2 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 5-3 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 5-4 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 5-5 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 5-6 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 5-7 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 5-8 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 6-1 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 6-2 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 6-3 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 6-4 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 6-5 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 6-6 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 6-7 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 6-8 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 7-1 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-------------|-----------|----------|-------------|-----|
| 1 | 7-2 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 7-3 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 7-4 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 7-5 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 7-6 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 7-7 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 7-8 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 8-1 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 8-2 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 8-3 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 8-4 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 8-5 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 8-6 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 8-7 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 8-8 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 9-1 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 9-2 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 9-3 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 9-4 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 9-5 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 9-6 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 9-7 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 9-8 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 10-1 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 10-2 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 10-3 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 10-4 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 10-5 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 10-6 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 10-7 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 10-8 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-------------|-----------|----------|-------------|-----|
| 1 | 11-1 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 11-2 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 11-3 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 11-4 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 11-5 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 11-6 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 11-7 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 11-8 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 12-1 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 12-2 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 12-3 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 12-4 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 12-5 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 12-6 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 12-7 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 12-8 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 13-1 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 13-2 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 13-3 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 13-4 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 13-5 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 13-6 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 13-7 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 13-8 | 33/68 (48%) | 32 (97%) | 1 (3%) | 41 | 66 |
| 1 | 14-1 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 14-2 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 14-3 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 14-4 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 14-5 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 14-6 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| 1 | 14-7 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |

Continued on next page...

Continued from previous page...

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|-----------------|------------|----------|-------------|-----|
| 1 | 14-8 | 33/68 (48%) | 33 (100%) | 0 | 100 | 100 |
| All | All | 3696/7616 (48%) | 3616 (98%) | 80 (2%) | 54 | 74 |

5 of 80 residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | 11-2 | 2 | SER |
| 1 | 12-8 | 2 | SER |
| 1 | 11-4 | 2 | SER |
| 1 | 12-2 | 2 | SER |
| 1 | 13-4 | 2 | SER |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 226 such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | 7-6 | 31 | GLN |
| 1 | 13-7 | 31 | GLN |
| 1 | 9-1 | 31 | GLN |
| 1 | 13-7 | 22 | GLN |
| 1 | 12-7 | 31 | GLN |

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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.

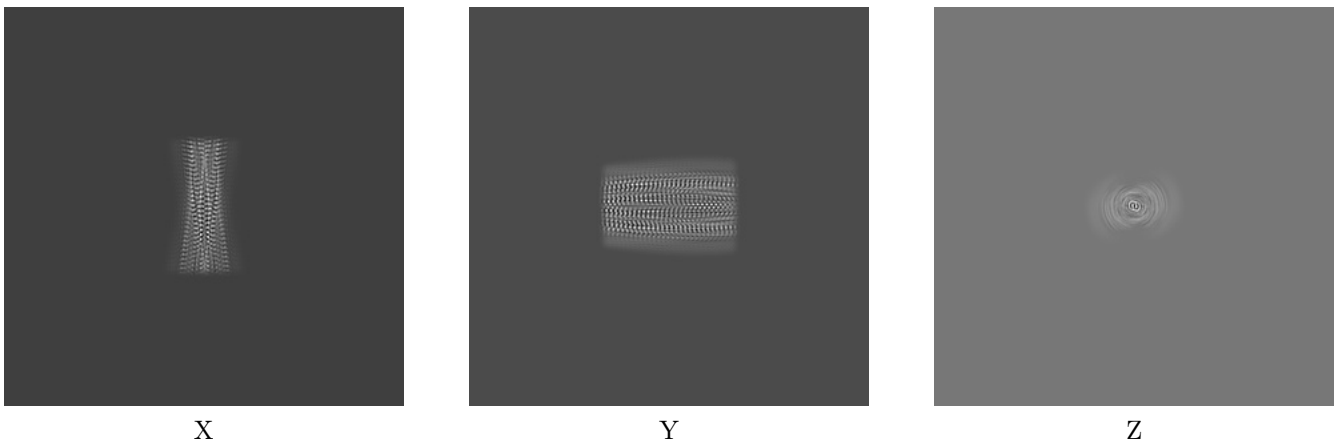
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-22169. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

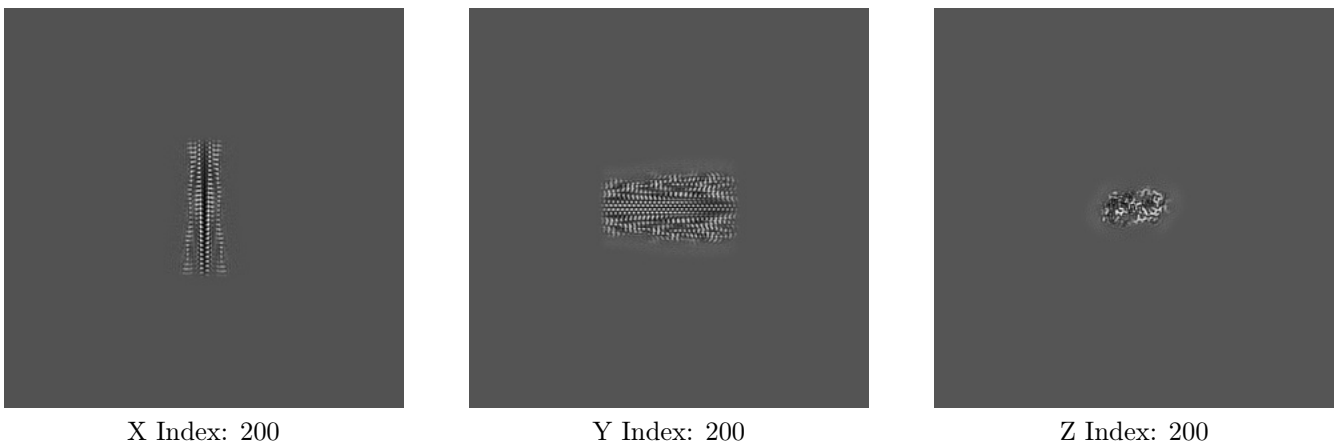
6.1.1 Primary map



The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

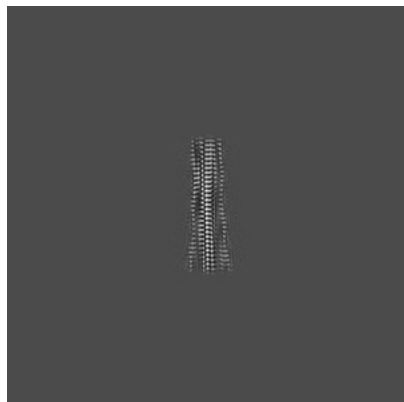
6.2.1 Primary map



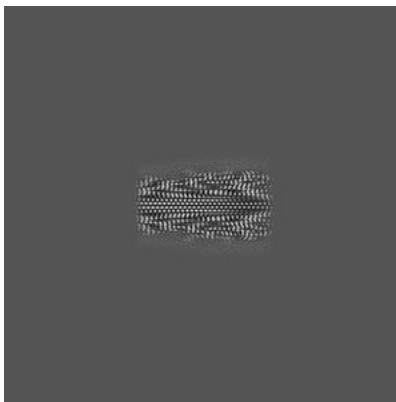
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 202



Y Index: 200

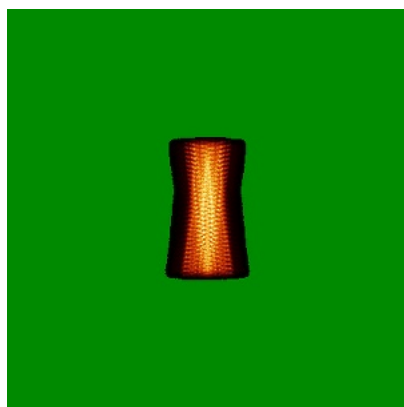


Z Index: 192

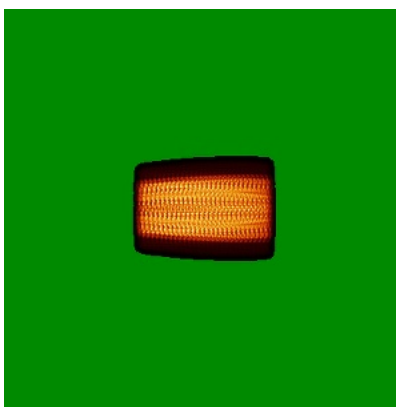
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

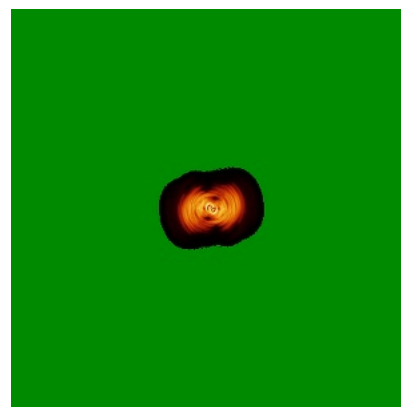
6.4.1 Primary map



X



Y



Z

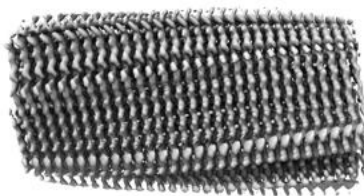
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.02. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

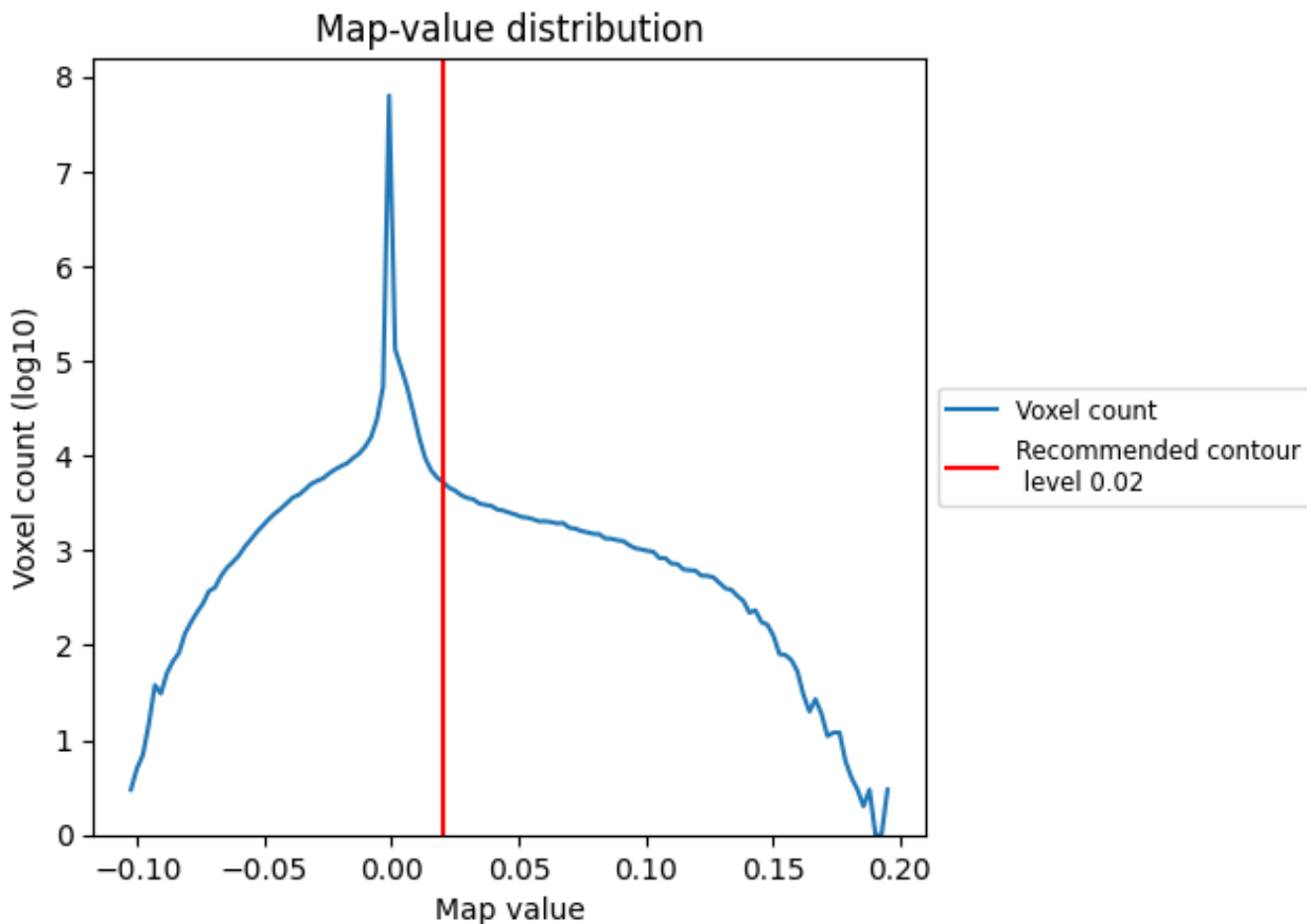
6.6 Mask visualisation [i](#)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis [i](#)

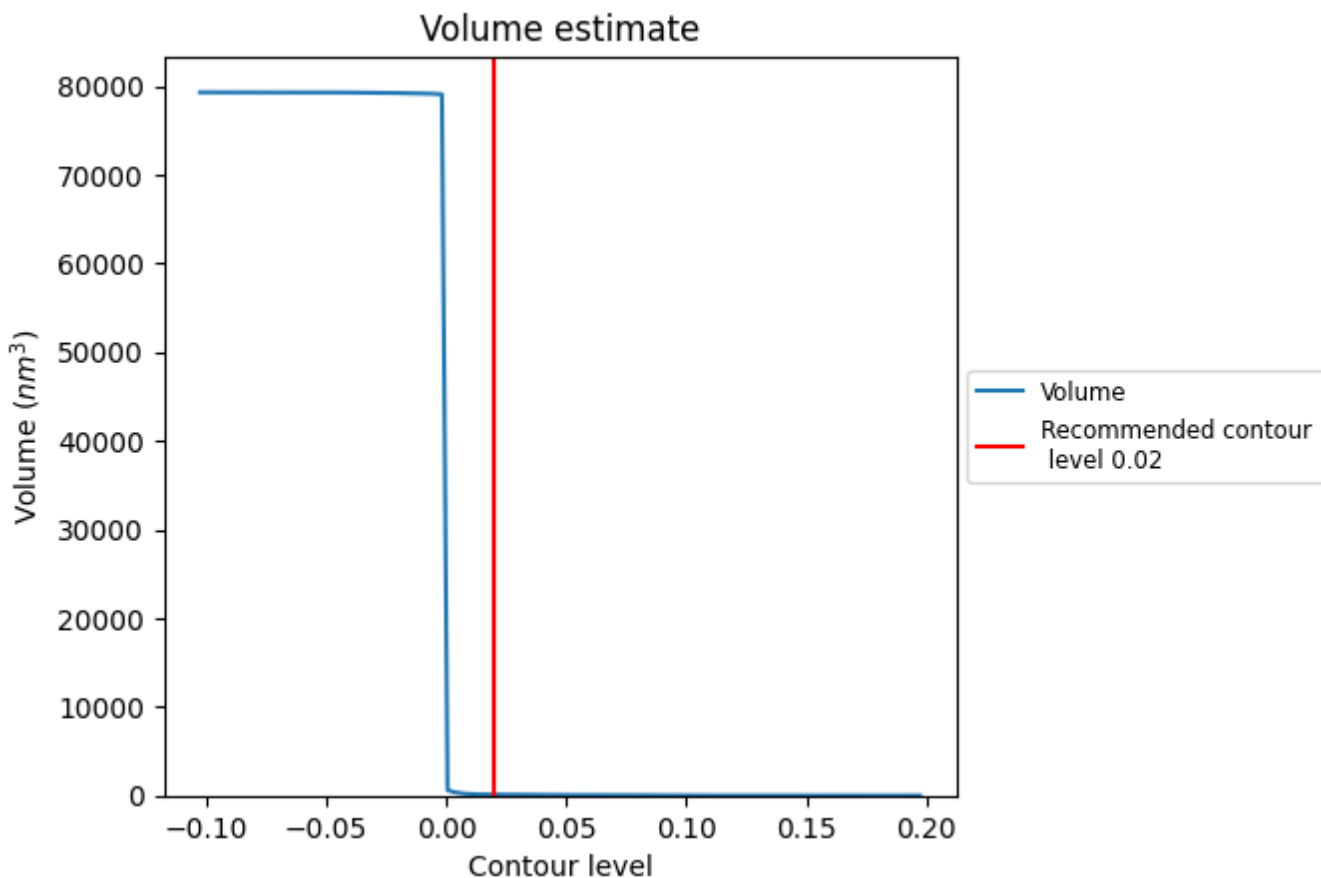
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

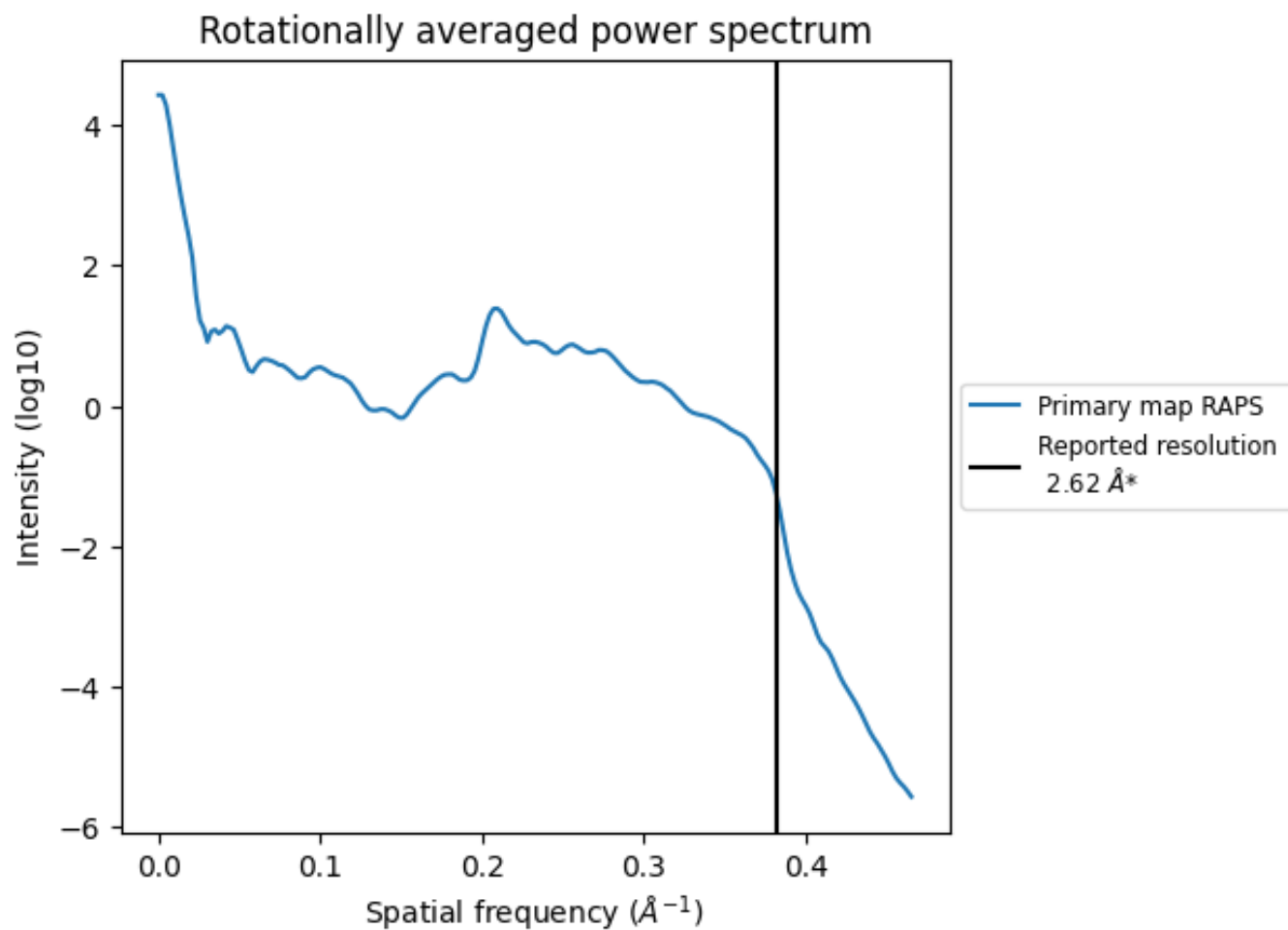
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 114 nm³; this corresponds to an approximate mass of 103 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum [i](#)



*Reported resolution corresponds to spatial frequency of 0.382\AA^{-1}

8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-22169 and PDB model 6XFM. Per-residue inclusion information can be found in section [3](#) on page [14](#).

9.1 Map-model overlay [i](#)

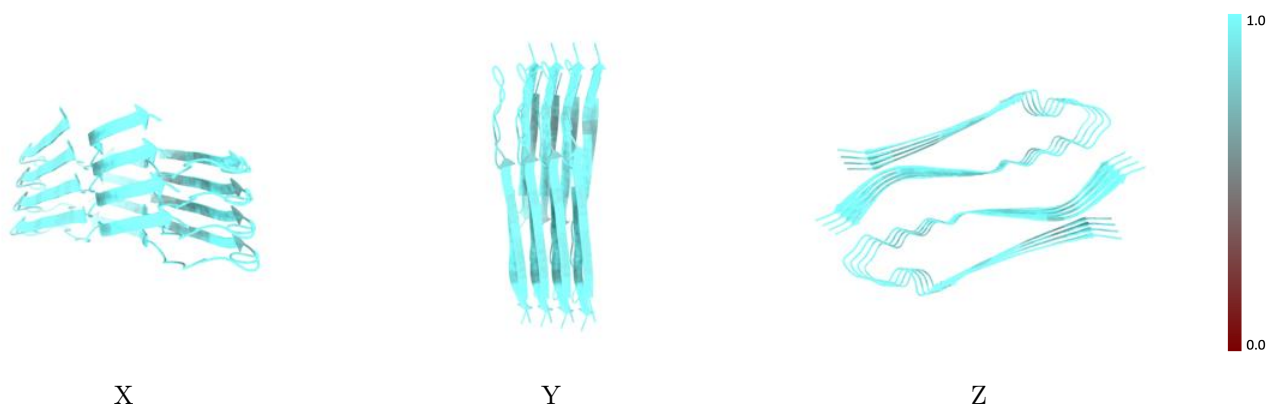


The images above show the 3D surface view of the map at the recommended contour level 0.02 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)

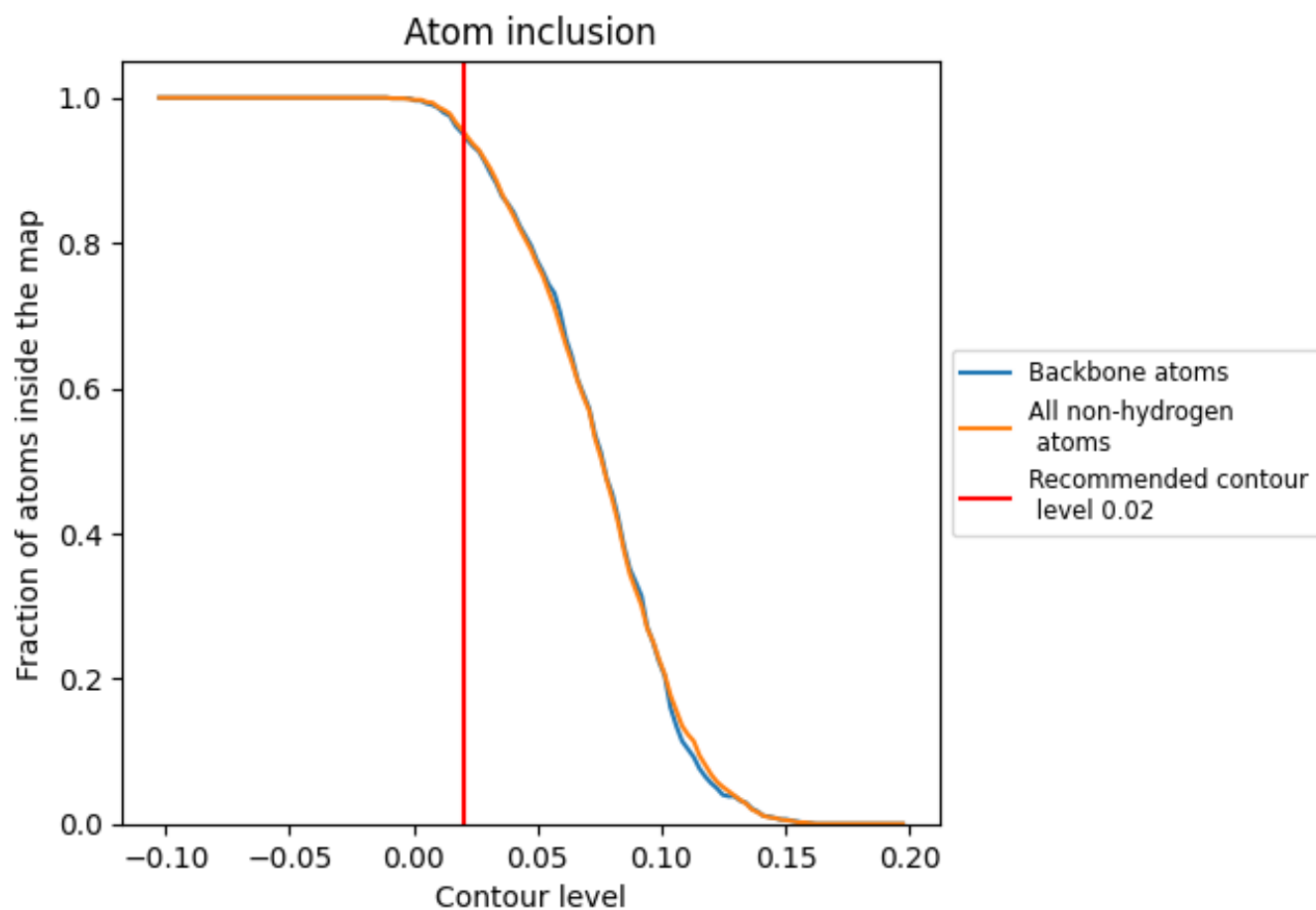
This section was not generated.

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.02).










9.4 Atom inclusion [i](#)



At the recommended contour level, 95% of all backbone atoms, 95% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.02) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion |
|-------|--|
| All |  0.9540 |
| 1 |  0.9590 |
| 2 |  0.9650 |
| 3 |  0.9590 |
| 4 |  0.9450 |
| 5 |  0.9520 |
| 6 |  0.9590 |
| 7 |  0.9620 |
| 8 |  0.9590 |

