



wwPDB EM Validation Summary Report ⓘ

Jan 16, 2025 – 12:15 PM EST

PDB ID : 9CX7
EMDB ID : EMD-45980
Title : Native human GABAA receptor of beta3-alpha1-gamma2-beta3-alpha2 assembly
Authors : Zhou, J.; Hibbs, R.E.; Noviello, C.M.
Deposited on : 2024-07-30
Resolution : 3.30 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:

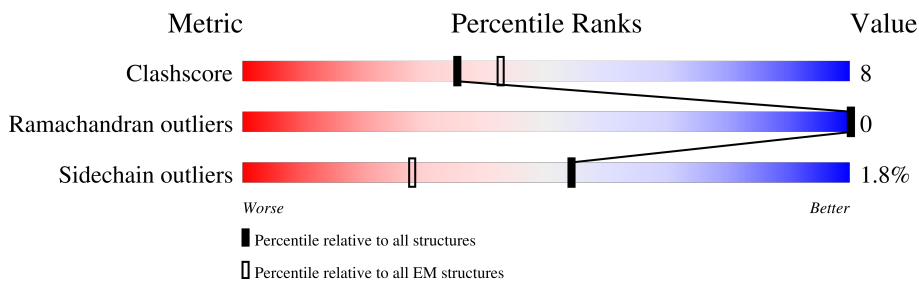
EMDB validation analysis : 0.0.1.dev113
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.40

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 3.30 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 | 210492 | 15764 |
| Ramachandran outliers | 207382 | 16835 |
| Sidechain outliers | 206894 | 16415 |

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 | A | 448 | 66% 8% 26% |
| 1 | D | 448 | 51% 20% 27% |
| 2 | B | 429 | 65% 12% 22% |
| 3 | C | 436 | 41% 7% 52% |
| 4 | E | 423 | 57% 19% 22% |
| 5 | K | 454 | 21% 74% |
| 6 | L | 213 | 45% 5% 50% |
| 7 | F | 2 | 50% 50% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 7 | H | 2 |  50% 50% |
| 7 | J | 2 |  50% 50% |
| 8 | G | 3 |  67% 33% |
| 8 | M | 3 |  33% 67% |
| 9 | I | 5 |  80% 20% |

2 Entry composition [i](#)

There are 12 unique types of molecules in this entry. The entry contains 14573 atoms, of which 0 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 Gamma-aminobutyric acid receptor subunit beta-3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 1 | A | 331 | Total | C | N | O | S | 0 | 0 |
| | | | 2716 | 1779 | 444 | 477 | 16 | | |
| 1 | D | 328 | Total | C | N | O | S | 0 | 0 |
| | | | 2693 | 1767 | 437 | 473 | 16 | | |

- Molecule 2 is a protein called Gamma-aminobutyric acid receptor subunit alpha-1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 2 | B | 333 | Total | C | N | O | S | 0 | 0 |
| | | | 2692 | 1740 | 451 | 485 | 16 | | |

- Molecule 3 is a protein called Gamma-aminobutyric acid receptor subunit gamma-2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 3 | C | 209 | Total | C | N | O | S | 0 | 0 |
| | | | 1730 | 1109 | 296 | 317 | 8 | | |

- Molecule 4 is a protein called Gamma-aminobutyric acid receptor subunit alpha-2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|----|---------|-------|
| | | | Total | C | N | O | S | | |
| 4 | E | 331 | Total | C | N | O | S | 0 | 0 |
| | | | 2672 | 1733 | 437 | 485 | 17 | | |

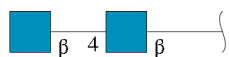
- Molecule 5 is a protein called IgG2b Fab_1F4 Heavy Chain.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 5 | K | 117 | Total | C | N | O | S | 0 | 0 |
| | | | 914 | 578 | 152 | 180 | 4 | | |

- Molecule 6 is a protein called Kappa Fab_1F4 Light Chain.

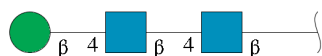
| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| | | | Total | C | N | O | S | | |
| 6 | L | 106 | 811 | 510 | 132 | 164 | 5 | 0 | 0 |

- Molecule 7 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



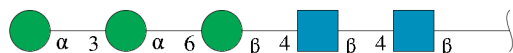
| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|----|---|----|---------|-------|
| | | | Total | C | N | O | | |
| 7 | F | 2 | 28 | 16 | 2 | 10 | 0 | 0 |
| 7 | H | 2 | 28 | 16 | 2 | 10 | 0 | 0 |
| 7 | J | 2 | 28 | 16 | 2 | 10 | 0 | 0 |

- Molecule 8 is an oligosaccharide called beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



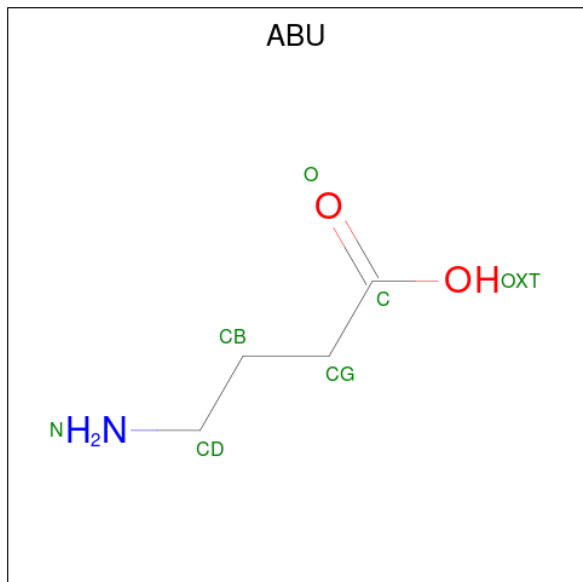
| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|----|---|----|---------|-------|
| | | | Total | C | N | O | | |
| 8 | G | 3 | 39 | 22 | 2 | 15 | 0 | 0 |
| 8 | M | 3 | 39 | 22 | 2 | 15 | 0 | 0 |

- Molecule 9 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-6)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



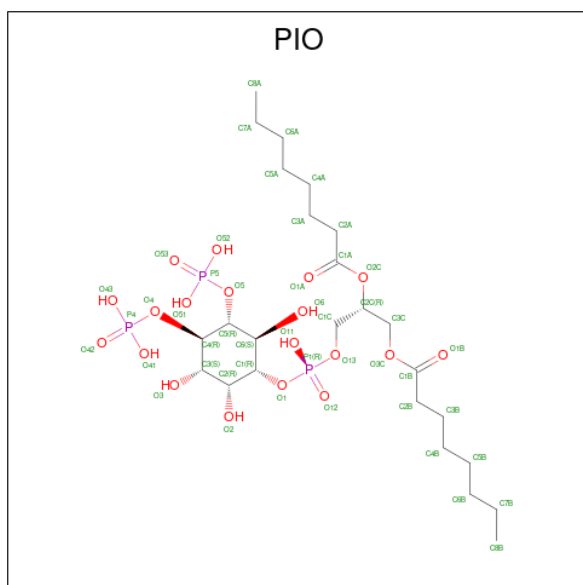
| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|----|---|----|---------|-------|
| | | | Total | C | N | O | | |
| 9 | I | 5 | 61 | 34 | 2 | 25 | 0 | 0 |

- Molecule 10 is GAMMA-AMINO-BUTANOIC ACID (three-letter code: ABU) (formula: $C_4H_9NO_2$) (labeled as "Ligand of Interest" by depositor).



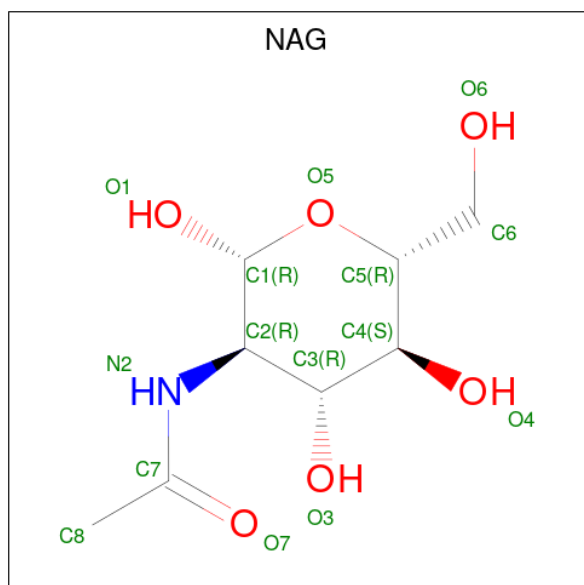
| Mol | Chain | Residues | Atoms | | | | AltConf |
|-----|-------|----------|-------|---|---|---|---------|
| | | | Total | C | N | O | |
| 10 | A | 1 | 7 | 4 | 1 | 2 | 0 |
| 10 | D | 1 | 7 | 4 | 1 | 2 | 0 |

- Molecule 11 is [(2R)-2-octanoyloxy-3-[oxidanyl-[(1R,2R,3S,4R,5R,6S)-2,3,6-tris(oxidanyl)-4,5-diphosphonoxy-cyclohexyl]oxy-phosphoryl]oxy-propyl] octanoate (three-letter code: PIO) (formula: $C_{25}H_{49}O_{19}P_3$) (labeled as "Ligand of Interest" by depositor).



| Mol | Chain | Residues | Atoms | | | | AltConf |
|-----|-------|----------|-------|----|----|---|---------|
| 11 | B | 1 | Total | C | O | P | 0 |
| | | | 47 | 25 | 19 | 3 | |
| 11 | E | 1 | Total | C | O | P | 0 |
| | | | 47 | 25 | 19 | 3 | |

- Molecule 12 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: C₈H₁₅NO₆) (labeled as "Ligand of Interest" by depositor).

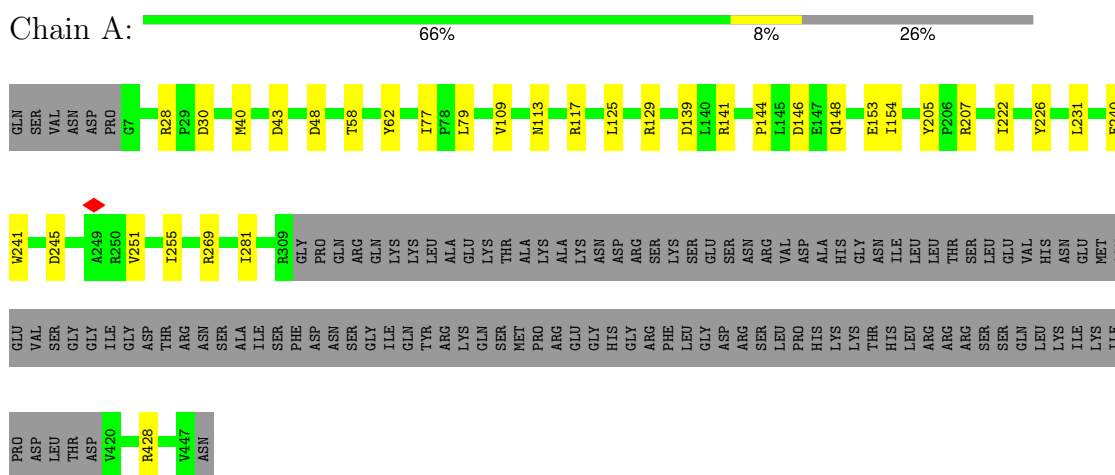


| Mol | Chain | Residues | Atoms | | | | AltConf |
|-----|-------|----------|-------|---|---|---|---------|
| 12 | C | 1 | Total | C | N | O | 0 |
| | | | 14 | 8 | 1 | 5 | |

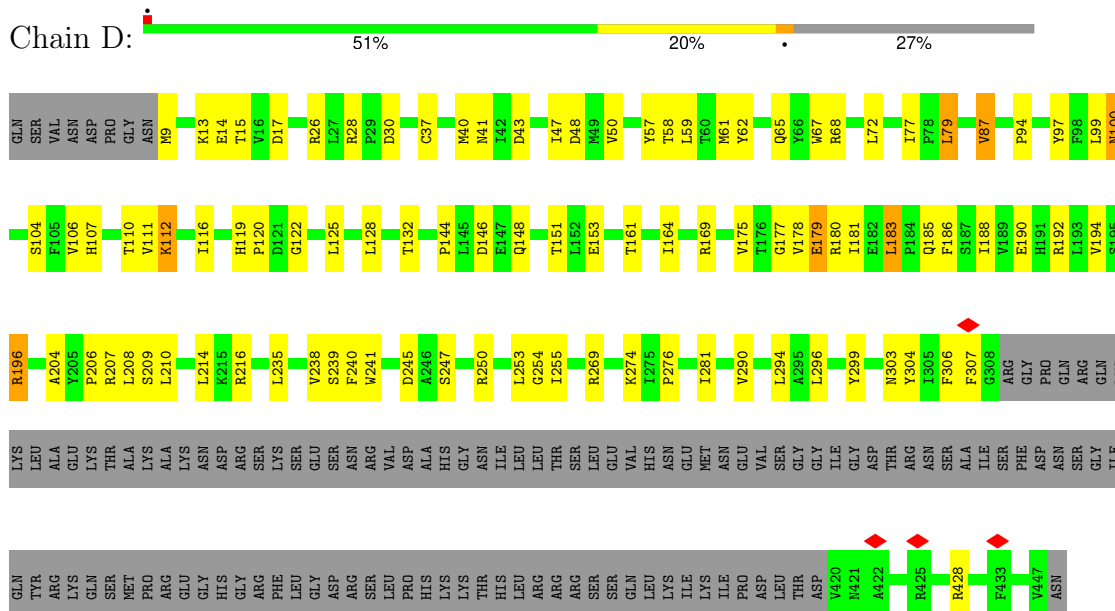
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Gamma-aminobutyric acid receptor subunit beta-3



- Molecule 1: Gamma-aminobutyric acid receptor subunit beta-3



- Molecule 2: Gamma-aminobutyric acid receptor subunit alpha-1

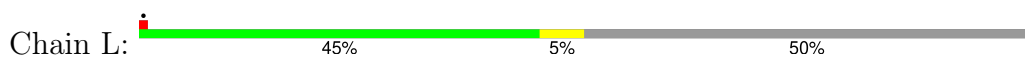
SER
PRO

• Molecule 5: IgG2b Fab_1F4 Heavy Chain



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| GLU V2 | GLY L11 | GLY A16 | GLY S17 | GLY V18 | GLY K19 | GLY L20 | GLY T23 | GLY D31 | GLY W36 | GLY Q39 | GLY R40 | GLY R50 | GLY I61 | GLY D52 | GLY T69 | GLY L81 | GLY Q82 | GLY L83 | GLY T91 | GLY A92 | GLY V93 | GLY C96 | GLY D106 | GLY S113 | GLY V116 | GLY S117 | GLY T118 | GLY ALA | GLY LYS | GLY THR | GLY THR | GLY PRO | GLY PRO | GLY SER | GLY VAL | GLY THR | GLY TYR | GLY PRO | GLY LEU | GLY ALA | GLY PRO | GLY THR | GLY TRP | GLY CYS | | | |
| GLY ASP | GLY THR | GLY THR | GLY THR | GLY LEU | GLY ALA | GLY LEU | GLY VAL | GLY LYS | GLY PHE | GLY PRO | GLY SER | GLY VAL | GLY THR | GLY TRP | GLY ASN | GLY SER | GLY SER | GLY LEU | GLY SER | GLY VAL | GLY HIS | GLY THR | GLY PHE | GLY PRO | GLY ALA | GLY LEU | GLY LEU | GLY GLN | GLY SER | GLY TYR | GLY MET | GLY THR | GLY SER | GLY SER | GLY VAL | GLY THR | GLY VAL | GLY TYR | GLY PRO | GLY LEU | GLY PHE | GLY SER | GLY THR | GLY TRP | GLY CYS | | |
| PRO SER | GLN THR | VAL THR | VAL THR | VAL THR | HIS PRO | PRO LYS | ALA SER | VAL SER | VAL THR | VAL PHE | LYS ASP | LYS SER | GLY THR | GLY TRP | PRO ASN | ILE SER | THR SER | ILE LEU | ASN SER | PRO SER | CYS VAL | PRO HIS | LYS PHE | GLY PRO | CYS ALA | LYS LEU | CYS GLN | PRO SER | ALA TYR | PRO HIS | GLY LEU | THR GLU | ASP MET | GLY THR | GLY SER | GLY VAL | GLY THR | GLY VAL | GLY ARG | GLY ILE | GLY THR | GLY SER | GLY PHE | GLY PRO | GLY THR | GLY TRP | GLY ASN |
| ILE LYS | ASP VAL | LEU THR | MET THR | ILE SER | LEU THR | PRO HIS | VAL SER | VAL THR | VAL PHE | VAL ASP | VAL SER | PRO ASP | PRO SER | ASP THR | VAL ASN | ILE SER | ILE THR | TRP SER | PHE ASN | VAL SER | ASN VAL | GLY THR | HIS VAL | GLY PRO | HIS ALA | LYS LEU | CYS GLN | THR LEU | THR HIS | PRO PRO | ARG GLY | ASP LEU | TYR GLY | ASN TRP | GLY LEU | SER THR | VAL THR | ARG THR | ILE SER | VAL ASP | VAL PHE | THR SER | THR CYS | LEU THR | ASN VAL | | |
| PRO ILE | GLN HIS | ASP VAL | TRP MET | THR SER | GLY LEU | ASP THR | GLY VAL | LYS THR | ASN VAL | ASN VAL | LYS ASP | ASP SER | ILE SER | ILE THR | ARG GLN | THR SER | ILE PRO | THR SER | LEU VAL | ASN SER | VAL SER | VAL THR | ARG THR | HIS ALA | GLY PRO | GLN VAL | THR LEU | THR ILE | PRO PRO | PRO GLY | ASP ALA | GLY LEU | GLY TRP | GLY LEU | GLY THR | LYS THR | THR SER | ARG THR | ASP SER | VAL PHE | VAL SER | THR CYS | LEU THR | THR ASN | | | |
| CYS LEU | VAL VAL | VAL GLY | PHE ASN | PRO GLY | ASP THR | ILE LEU | VAL SER | GLY THR | ASN SER | GLY SER | HIS THR | THR GLY | THR GLU | ASN TYR | LYS LEU | ASP THR | ALA PRO | ALA VAL | VAL LEU | ASP SER | GLY SER | THR TYR | PHE THR | ILE THR | LYS SER | LYS THR | ASN MET | THR VAL | THR VAL | THR CYS | SER PHE | THR LEU | LYS ASN | THR TRP | GLY LEU | LYS THR | THR SER | THR SER | ASP PHE | ASP SER | ILE CYS | THR SER | THR ASN | VAL VAL | ASN VAL | | |
| VAL ARG | HIS GLY | LEU GLY | LEU LYS | TYR ASN | TYR LEU | LEU LYS | THR LYS | ILE THR | SER SER | ARG SER | PRO GLY | LYS LYS | THR GLY | ASN TYR | LYS LEU | ASP THR | ALA PRO | ALA VAL | VAL LEU | ASN SER | GLY SER | THR TYR | PHE THR | ILE THR | LYS SER | LYS THR | ASN MET | THR VAL | THR VAL | THR CYS | SER PHE | THR LEU | LYS ASN | THR TRP | GLY LEU | LYS THR | THR SER | THR SER | ASP PHE | ASP SER | ILE CYS | THR SER | THR ASN | VAL VAL | ASN VAL | | |

• Molecule 6: Kappa Fab_1F4 Light Chain



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-----|-----|-----|
| H1 | L21 | V29 | L46 | L47 | L48 | Y49 | R61 | L73 | A80 | E81 | Y92 | K106 | ARG | ALA | ASP | ALA | ALA | PRO | THR | THR | VAL | VAL | ILE | PHE | PRO | PRO | PRO | SER | SER | GLY | GLN | LEU | THR | THR | SER | ARG | HIS | ASN | SER | VAL | VAL | VAL | CYS | PHE | THR | ASN | ASN | THR | THR | TYR | THR | PRO | LYS | THR | SER | THR | THR | ILE | VAL |
| LYS TRP | LYS ILE | ASP GLY | SER GLY | ARG GLU | ARG GLN | ASN Y49 | GLY VAL | VAL LEU | ASN SER | SER TRP | THR THR | GLN ASP | ASP SER | LYS SER | ASP SER | THR THR | ALA VAL | PRO THR | THR SER | SER SER | VAL VAL | VAL SER | ILE SER | PHE THR | PRO LEU | PRO THR | PRO LEU | SER THR | SER THR | GLY THR | GLN THR | LEU THR | THR SER | ARG GLY | HIS ASN | ASN SER | SER THR | VAL VAL | VAL VAL | VAL VAL | CYS GLY | PHE ALA | THR THR | ASN HIS | ASN LYS | THR THR | THR THR | TYR THR | THR SER | PRO SER | LYS SER | THR SER | THR SER | THR SER | ILE PHE | VAL VAL | | | |
| LYS SER | PHE ASN | ARG ASN | ASN CYS | GLY CYS | ARG GLY | ASN GLY | VAL VAL | LEU VAL | ASN SER | SER TRP | THR THR | GLN ASP | ASP SER | LYS SER | ASP SER | THR THR | ALA VAL | PRO THR | THR SER | SER SER | VAL VAL | VAL SER | ILE SER | PHE THR | PRO LEU | PRO THR | PRO LEU | SER THR | SER THR | GLY THR | GLN THR | LEU THR | THR SER | ARG GLY | HIS ASN | ASN SER | SER THR | VAL VAL | VAL VAL | VAL VAL | CYS GLY | PHE ALA | THR THR | ASN HIS | ASN LYS | THR THR | THR THR | TYR THR | THR SER | PRO SER | LYS SER | THR SER | THR SER | THR SER | ILE PHE | VAL VAL | | | |

• Molecule 7: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



MAG1
MAG2


• Molecule 7: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose





MAG1
MAG2

- Molecule 7: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain J:  50% 50%



MAG1
MAG2

- Molecule 8: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain G:  67% 33%



MAG1
MAG2
BMA3


- Molecule 8: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain M:  33% 67%



MAG1
MAG2
BMA3

- Molecule 9: alpha-D-mannopyranose-(1-3)-alpha-D-mannopyranose-(1-6)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain I:  80% 20%



MAG1
MAG2
BMA3
MAN4
MAN5

4 Experimental information

| Property | Value | Source |
|--------------------------------------|---|-----------|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of particles used | 29584 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | FEI TITAN KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 50 | Depositor |
| Minimum defocus (nm) | 1000 | Depositor |
| Maximum defocus (nm) | 2200 | Depositor |
| Magnification | Not provided | |
| Image detector | FEI FALCON IV (4k x 4k) | Depositor |
| Maximum map value | 1.242 | Depositor |
| Minimum map value | -0.802 | Depositor |
| Average map value | 0.003 | Depositor |
| Map value standard deviation | 0.038 | Depositor |
| Recommended contour level | 0.084 | Depositor |
| Map size (Å) | 239.36, 239.36, 239.36 | wwPDB |
| Map dimensions | 256, 256, 256 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 0.935, 0.935, 0.935 | Depositor |

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: BMA, PIO, MAN, NAG, ABU

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|---------|-------------|---------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 1 | A | 0.30 | 0/2788 | 0.54 | 0/3792 |
| 1 | D | 0.50 | 0/2765 | 0.68 | 0/3762 |
| 2 | B | 0.36 | 0/2759 | 0.60 | 0/3750 |
| 3 | C | 0.33 | 0/1775 | 0.57 | 0/2412 |
| 4 | E | 0.46 | 0/2740 | 0.64 | 0/3724 |
| 5 | K | 0.27 | 0/935 | 0.57 | 0/1270 |
| 6 | L | 0.28 | 0/829 | 0.55 | 0/1123 |
| All | All | 0.39 | 0/14591 | 0.61 | 0/19833 |

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1 | D | 0 | 5 |
| 2 | B | 0 | 2 |
| 3 | C | 0 | 2 |
| 4 | E | 0 | 1 |
| All | All | 0 | 10 |

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 10 planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 2 | B | 164 | ARG | Sidechain |
| 2 | B | 31 | ARG | Sidechain |

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| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 3 | C | 207 | ARG | Sidechain |
| 3 | C | 97 | ARG | Sidechain |
| 4 | E | 30 | ARG | Sidechain |

5.2 Too-close contacts [i](#)

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | A | 2716 | 0 | 2710 | 22 | 0 |
| 1 | D | 2693 | 0 | 2688 | 76 | 0 |
| 2 | B | 2692 | 0 | 2681 | 35 | 0 |
| 3 | C | 1730 | 0 | 1695 | 23 | 0 |
| 4 | E | 2672 | 0 | 2658 | 72 | 0 |
| 5 | K | 914 | 0 | 884 | 11 | 0 |
| 6 | L | 811 | 0 | 784 | 5 | 0 |
| 7 | F | 28 | 0 | 25 | 1 | 0 |
| 7 | H | 28 | 0 | 25 | 0 | 0 |
| 7 | J | 28 | 0 | 25 | 1 | 0 |
| 8 | G | 39 | 0 | 34 | 0 | 0 |
| 8 | M | 39 | 0 | 34 | 1 | 0 |
| 9 | I | 61 | 0 | 52 | 1 | 0 |
| 10 | A | 7 | 0 | 0 | 0 | 0 |
| 10 | D | 7 | 0 | 0 | 1 | 0 |
| 11 | B | 47 | 0 | 44 | 0 | 0 |
| 11 | E | 47 | 0 | 44 | 3 | 0 |
| 12 | C | 14 | 0 | 13 | 0 | 0 |
| All | All | 14573 | 0 | 14396 | 223 | 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 8.

The worst 5 of 223 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:D:185:GLN:HE21 | 1:D:216:ARG:HD3 | 1.42 | 0.84 |
| 3:C:164:SER:OG | 3:C:207:ARG:NH2 | 2.13 | 0.81 |

Continued on next page...

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-----------------|------------------|--------------------------|-------------------|
| 4:E:170:TRP:CD1 | 4:E:197:ILE:HD12 | 2.19 | 0.77 |
| 4:E:247:ASN:HB2 | 1:D:307:PHE:HD2 | 1.53 | 0.73 |
| 1:D:87:VAL:HG12 | 1:D:116:ILE:HG21 | 1.69 | 0.73 |

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 | A | 327/448 (73%) | 320 (98%) | 7 (2%) | 0 | 100 | 100 |
| 1 | D | 324/448 (72%) | 301 (93%) | 23 (7%) | 0 | 100 | 100 |
| 2 | B | 329/429 (77%) | 315 (96%) | 14 (4%) | 0 | 100 | 100 |
| 3 | C | 207/436 (48%) | 196 (95%) | 11 (5%) | 0 | 100 | 100 |
| 4 | E | 327/423 (77%) | 293 (90%) | 34 (10%) | 0 | 100 | 100 |
| 5 | K | 115/454 (25%) | 111 (96%) | 4 (4%) | 0 | 100 | 100 |
| 6 | L | 104/213 (49%) | 96 (92%) | 8 (8%) | 0 | 100 | 100 |
| All | All | 1733/2851 (61%) | 1632 (94%) | 101 (6%) | 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 | A | 297/400 (74%) | 297 (100%) | 0 | 100 | 100 |
| 1 | D | 295/400 (74%) | 283 (96%) | 12 (4%) | 26 | 54 |
| 2 | B | 298/382 (78%) | 294 (99%) | 4 (1%) | 65 | 79 |
| 3 | C | 194/400 (48%) | 192 (99%) | 2 (1%) | 73 | 84 |
| 4 | E | 298/376 (79%) | 288 (97%) | 10 (3%) | 32 | 59 |
| 5 | K | 98/407 (24%) | 98 (100%) | 0 | 100 | 100 |
| 6 | L | 90/188 (48%) | 90 (100%) | 0 | 100 | 100 |
| All | All | 1570/2553 (62%) | 1542 (98%) | 28 (2%) | 54 | 74 |

5 of 28 residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4 | E | 257 | PHE |
| 1 | D | 190 | GLU |
| 1 | D | 37 | CYS |
| 1 | D | 132 | THR |
| 1 | D | 14 | GLU |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 8 such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | D | 303 | ASN |
| 1 | D | 185 | GLN |
| 1 | D | 107 | HIS |
| 4 | E | 9 | ASN |
| 1 | D | 119 | HIS |

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](#)

17 monosaccharides are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 7 | NAG | F | 1 | 1,7 | 14,14,15 | 0.39 | 0 | 17,19,21 | 1.52 | 3 (17%) |
| 7 | NAG | F | 2 | 7 | 14,14,15 | 0.39 | 0 | 17,19,21 | 0.63 | 1 (5%) |
| 8 | NAG | G | 1 | 8,1 | 14,14,15 | 0.36 | 0 | 17,19,21 | 0.58 | 0 |
| 8 | NAG | G | 2 | 8 | 14,14,15 | 0.26 | 0 | 17,19,21 | 0.64 | 0 |
| 8 | BMA | G | 3 | 8 | 11,11,12 | 0.72 | 0 | 15,15,17 | 0.87 | 1 (6%) |
| 7 | NAG | H | 1 | 2,7 | 14,14,15 | 0.37 | 0 | 17,19,21 | 0.53 | 0 |
| 7 | NAG | H | 2 | 7 | 14,14,15 | 0.41 | 0 | 17,19,21 | 0.95 | 1 (5%) |
| 9 | NAG | I | 1 | 4,9 | 14,14,15 | 0.38 | 0 | 17,19,21 | 0.81 | 0 |
| 9 | NAG | I | 2 | 9 | 14,14,15 | 0.37 | 0 | 17,19,21 | 0.51 | 0 |
| 9 | BMA | I | 3 | 9 | 11,11,12 | 0.46 | 0 | 15,15,17 | 0.68 | 0 |
| 9 | MAN | I | 4 | 9 | 11,11,12 | 0.63 | 0 | 15,15,17 | 0.65 | 0 |
| 9 | MAN | I | 5 | 9 | 11,11,12 | 0.30 | 0 | 15,15,17 | 0.54 | 0 |
| 7 | NAG | J | 1 | 1,7 | 14,14,15 | 0.41 | 0 | 17,19,21 | 1.79 | 3 (17%) |
| 7 | NAG | J | 2 | 7 | 14,14,15 | 0.40 | 0 | 17,19,21 | 0.63 | 1 (5%) |
| 8 | NAG | M | 1 | 8,1 | 14,14,15 | 0.36 | 0 | 17,19,21 | 0.58 | 0 |
| 8 | NAG | M | 2 | 8 | 14,14,15 | 0.27 | 0 | 17,19,21 | 0.65 | 0 |
| 8 | BMA | M | 3 | 8 | 11,11,12 | 0.72 | 0 | 15,15,17 | 0.86 | 1 (6%) |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|-----------|---------|
| 7 | NAG | F | 1 | 1,7 | - | 3/6/23/26 | 0/1/1/1 |
| 7 | NAG | F | 2 | 7 | - | 2/6/23/26 | 0/1/1/1 |
| 8 | NAG | G | 1 | 8,1 | - | 0/6/23/26 | 0/1/1/1 |
| 8 | NAG | G | 2 | 8 | - | 2/6/23/26 | 0/1/1/1 |
| 8 | BMA | G | 3 | 8 | - | 1/2/19/22 | 0/1/1/1 |
| 7 | NAG | H | 1 | 2,7 | - | 2/6/23/26 | 0/1/1/1 |
| 7 | NAG | H | 2 | 7 | - | 2/6/23/26 | 0/1/1/1 |
| 9 | NAG | I | 1 | 4,9 | - | 2/6/23/26 | 0/1/1/1 |

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| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|-----------|---------|
| 9 | NAG | I | 2 | 9 | - | 2/6/23/26 | 0/1/1/1 |
| 9 | BMA | I | 3 | 9 | - | 1/2/19/22 | 0/1/1/1 |
| 9 | MAN | I | 4 | 9 | - | 0/2/19/22 | 0/1/1/1 |
| 9 | MAN | I | 5 | 9 | - | 2/2/19/22 | 0/1/1/1 |
| 7 | NAG | J | 1 | 1,7 | - | 3/6/23/26 | 0/1/1/1 |
| 7 | NAG | J | 2 | 7 | - | 2/6/23/26 | 0/1/1/1 |
| 8 | NAG | M | 1 | 8,1 | - | 0/6/23/26 | 0/1/1/1 |
| 8 | NAG | M | 2 | 8 | - | 2/6/23/26 | 0/1/1/1 |
| 8 | BMA | M | 3 | 8 | - | 1/2/19/22 | 0/1/1/1 |

There are no bond length outliers.

The worst 5 of 11 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 7 | J | 1 | NAG | C2-N2-C7 | 5.55 | 130.34 | 122.90 |
| 7 | F | 1 | NAG | C2-N2-C7 | 4.98 | 129.57 | 122.90 |
| 7 | J | 1 | NAG | C1-C2-N2 | 3.32 | 115.66 | 110.43 |
| 7 | J | 1 | NAG | O5-C1-C2 | -2.48 | 107.45 | 111.29 |
| 7 | F | 1 | NAG | O5-C1-C2 | -2.36 | 107.64 | 111.29 |

There are no chirality outliers.

5 of 27 torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-------------|
| 7 | F | 1 | NAG | C8-C7-N2-C2 |
| 7 | F | 1 | NAG | O7-C7-N2-C2 |
| 7 | J | 1 | NAG | C8-C7-N2-C2 |
| 7 | J | 1 | NAG | O7-C7-N2-C2 |
| 7 | H | 1 | NAG | C8-C7-N2-C2 |

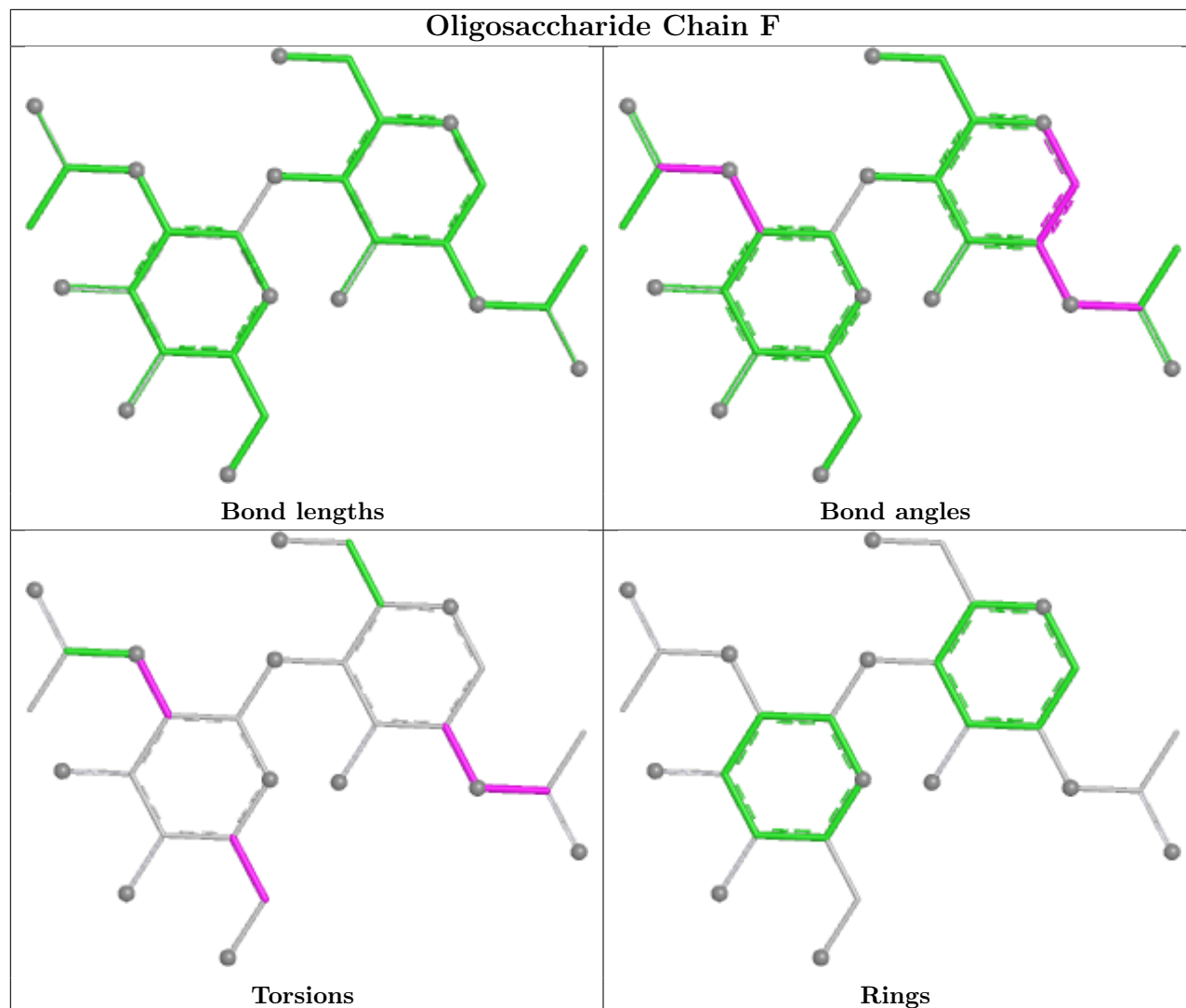
There are no ring outliers.

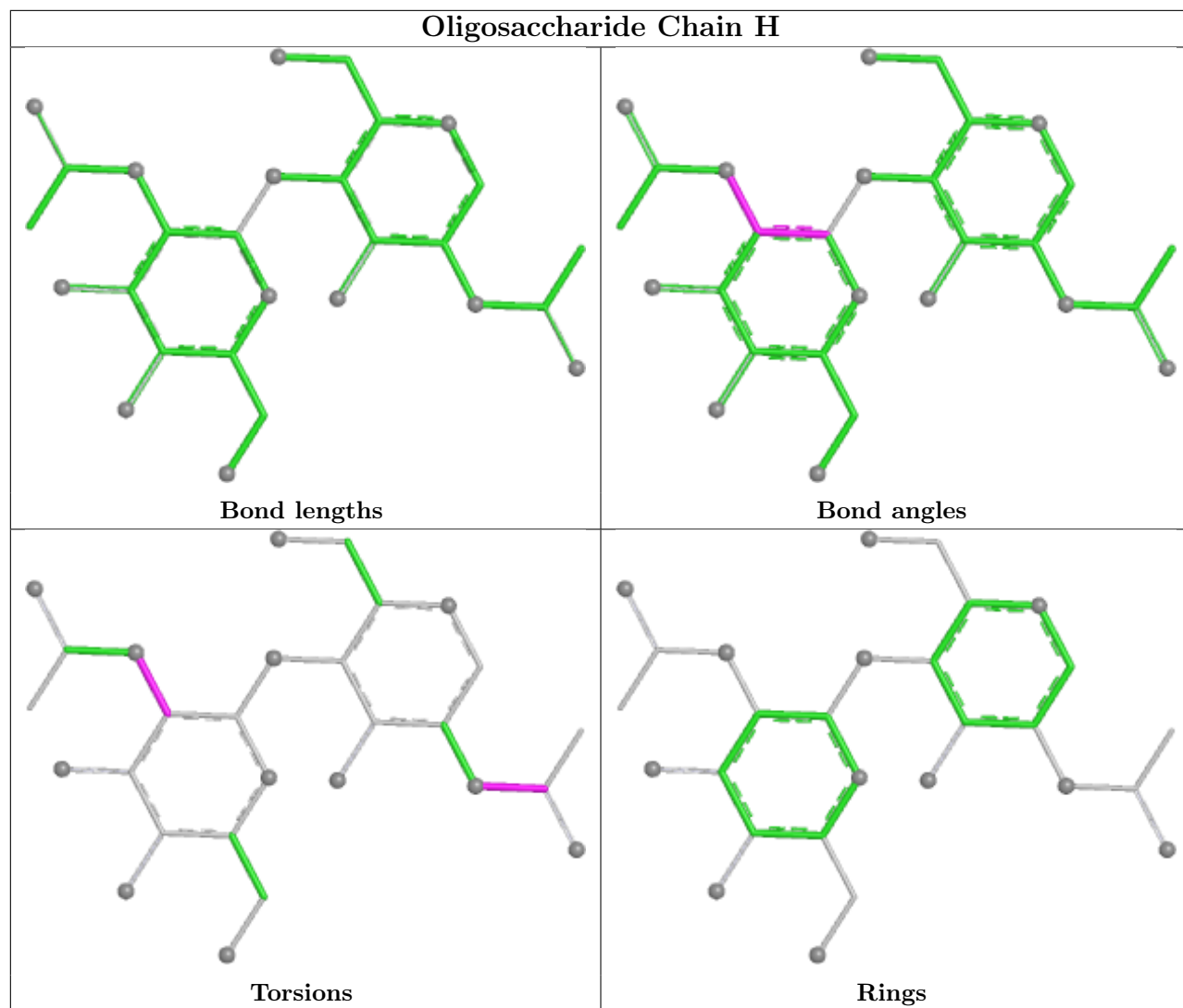
4 monomers are involved in 4 short contacts:

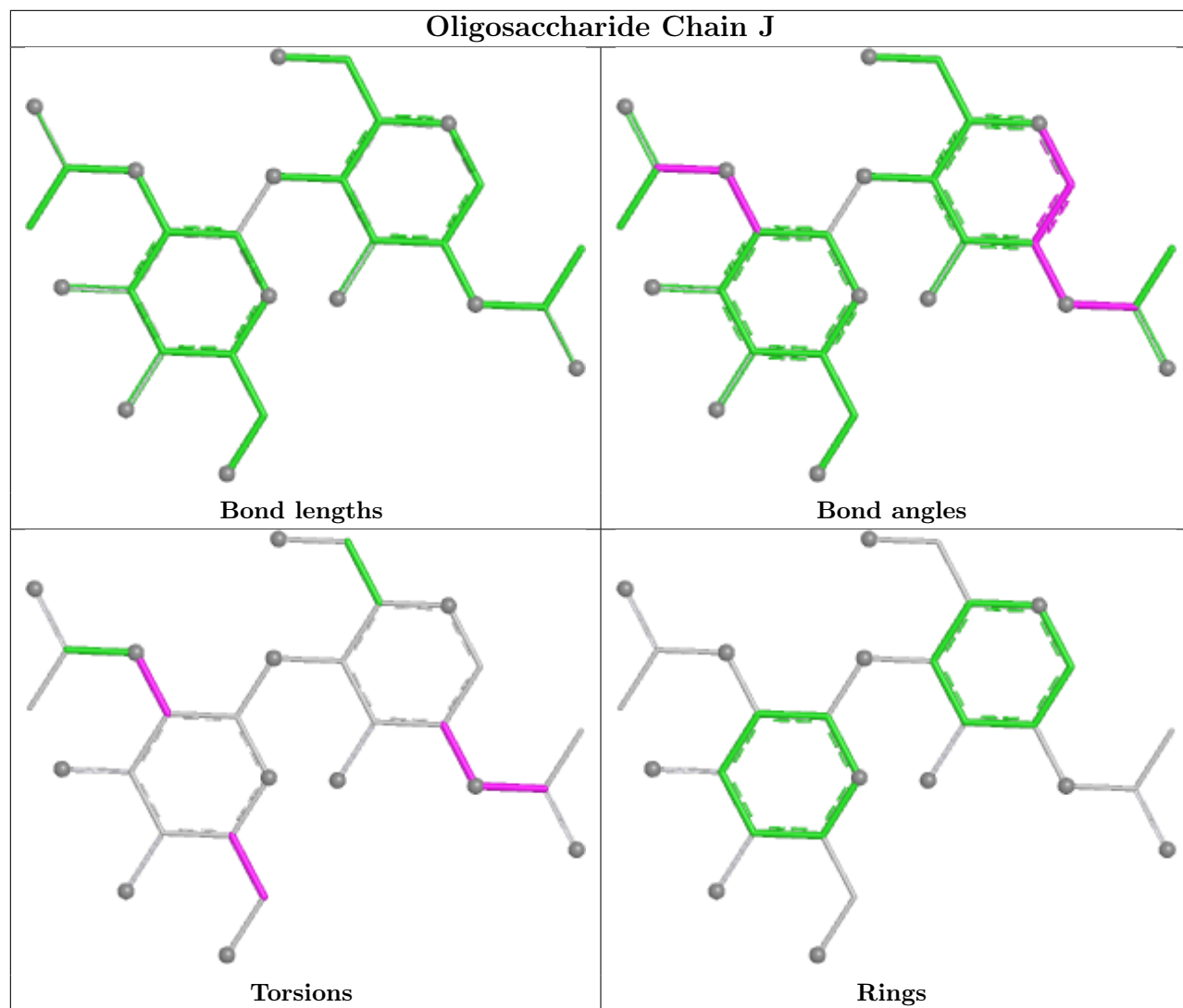
| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 7 | F | 1 | NAG | 1 | 0 |
| 8 | M | 2 | NAG | 1 | 0 |
| 7 | J | 1 | NAG | 1 | 0 |
| 9 | I | 5 | MAN | 1 | 0 |

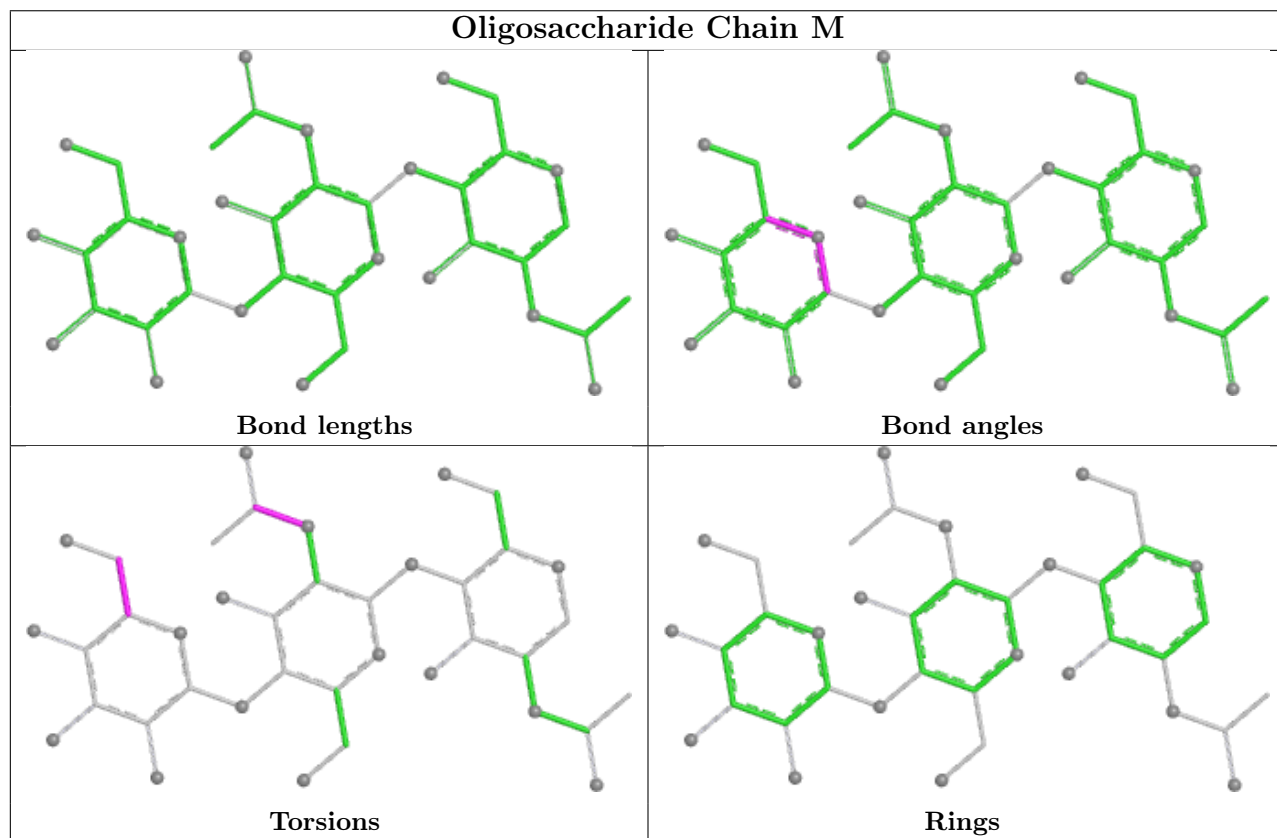
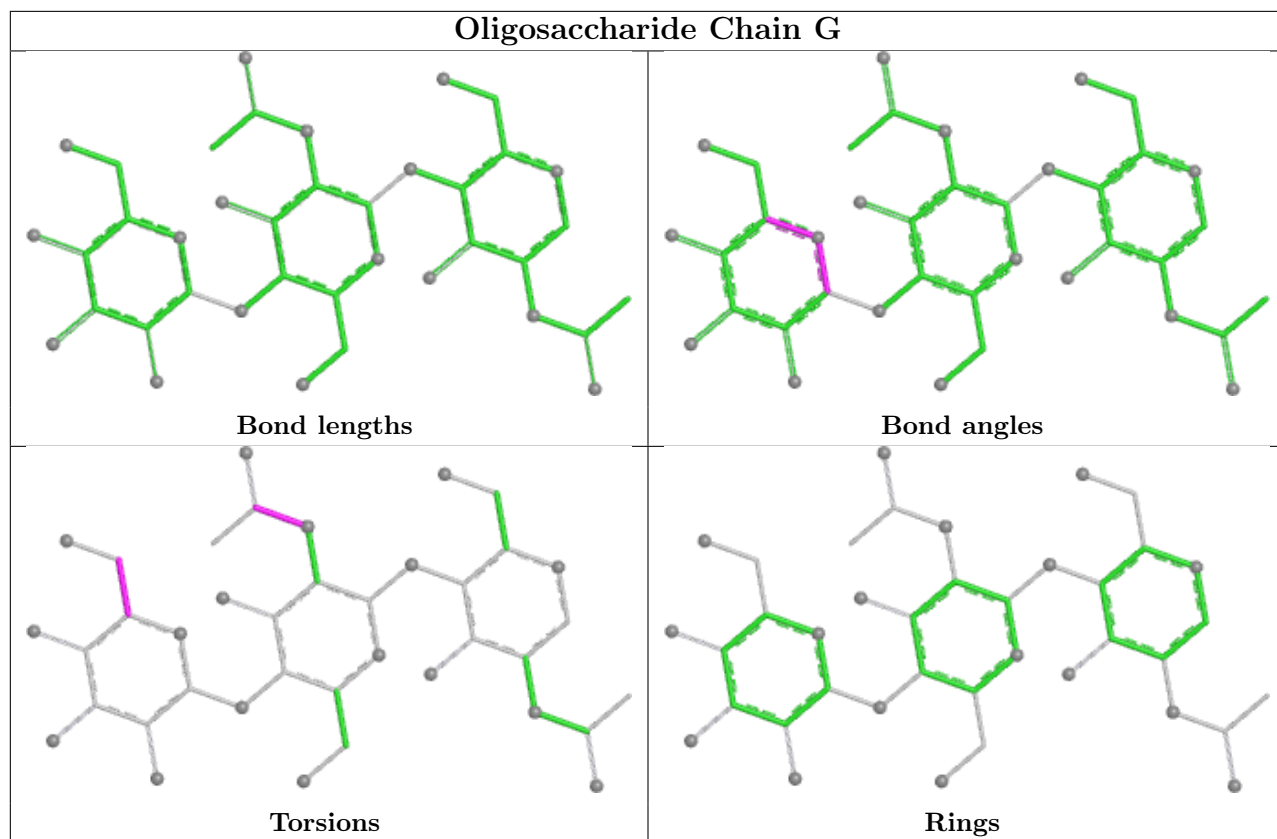
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths,

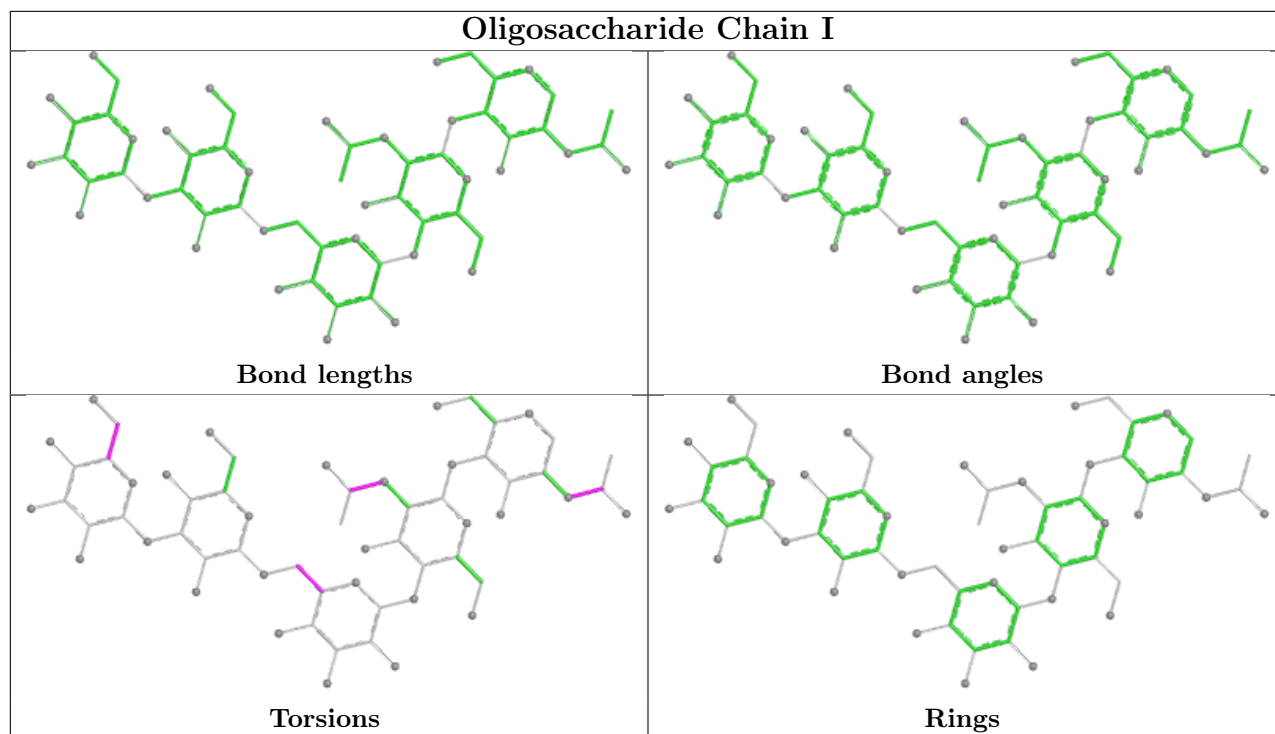
bond angles, torsion angles, and ring geometry for oligosaccharide.











5.6 Ligand geometry [i](#)

5 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|-------------|-------------|------|-------------|
| | | | | | Counts | RMSZ | $\# Z > 2$ | Counts | RMSZ | $\# Z > 2$ |
| 10 | ABU | A | 501 | - | 6,6,6 | 0.89 | 0 | 6,6,6 | 0.97 | 0 |
| 11 | PIO | B | 601 | - | 47,47,47 | 0.58 | 1 (2%) | 62,65,65 | 0.45 | 0 |
| 12 | NAG | C | 500 | 3 | 14,14,15 | 0.39 | 0 | 17,19,21 | 1.20 | 3 (17%) |
| 10 | ABU | D | 501 | - | 6,6,6 | 0.78 | 0 | 6,6,6 | 0.81 | 0 |
| 11 | PIO | E | 501 | - | 47,47,47 | 0.50 | 0 | 62,65,65 | 0.44 | 0 |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|------------|---------|
| 10 | ABU | A | 501 | - | - | 2/4/4/4 | - |
| 11 | PIO | B | 601 | - | - | 1/44/68/68 | 0/1/1/1 |
| 12 | NAG | C | 500 | 3 | - | 3/6/23/26 | 0/1/1/1 |
| 10 | ABU | D | 501 | - | - | 2/4/4/4 | - |
| 11 | PIO | E | 501 | - | - | 5/44/68/68 | 0/1/1/1 |

All (1) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|------|-------------|----------|
| 11 | B | 601 | PIO | P5-O5 | 2.01 | 1.63 | 1.59 |

All (3) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|------|-------------|----------|
| 12 | C | 500 | NAG | C2-N2-C7 | 3.06 | 127.00 | 122.90 |
| 12 | C | 500 | NAG | C1-C2-N2 | 3.04 | 115.22 | 110.43 |
| 12 | C | 500 | NAG | C1-O5-C5 | 2.21 | 115.14 | 112.19 |

There are no chirality outliers.

5 of 13 torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms |
|-----|-------|-----|------|-------------|
| 11 | E | 501 | PIO | C4-C5-O5-P5 |
| 11 | E | 501 | PIO | C6-C5-O5-P5 |
| 12 | C | 500 | NAG | C1-C2-N2-C7 |
| 12 | C | 500 | NAG | C8-C7-N2-C2 |
| 12 | C | 500 | NAG | O7-C7-N2-C2 |

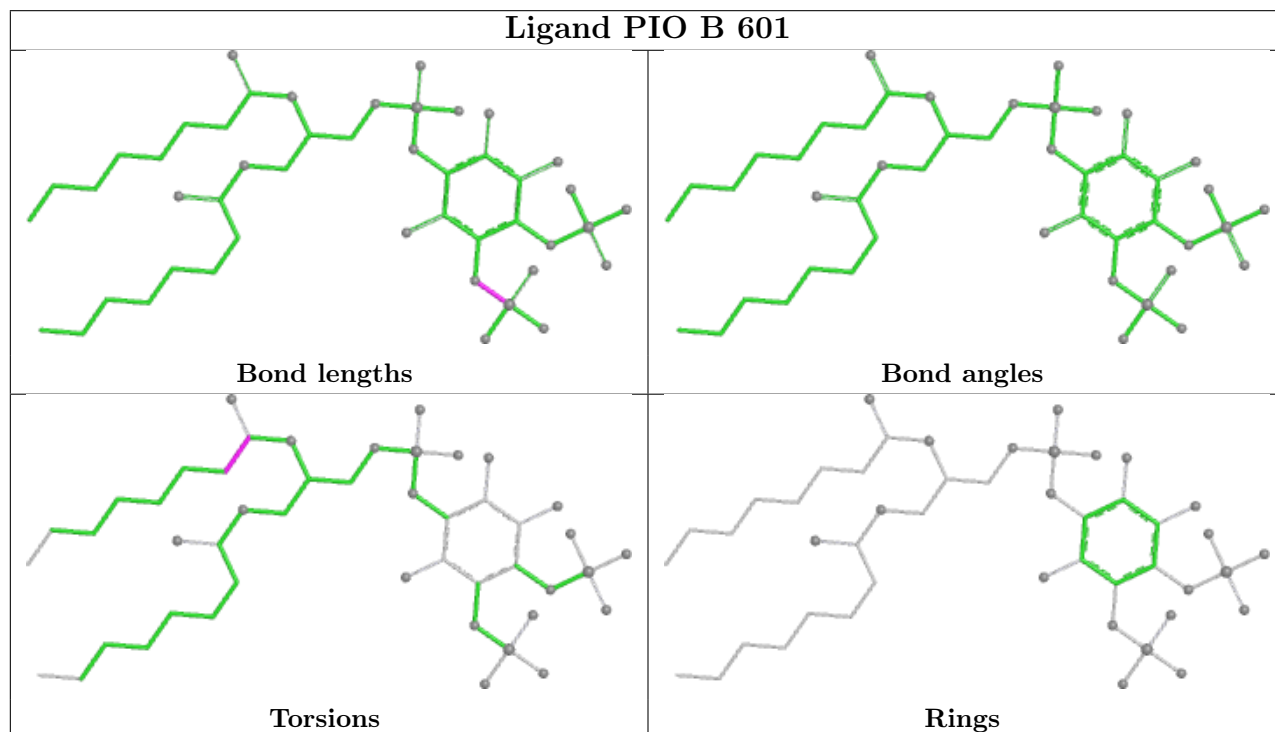
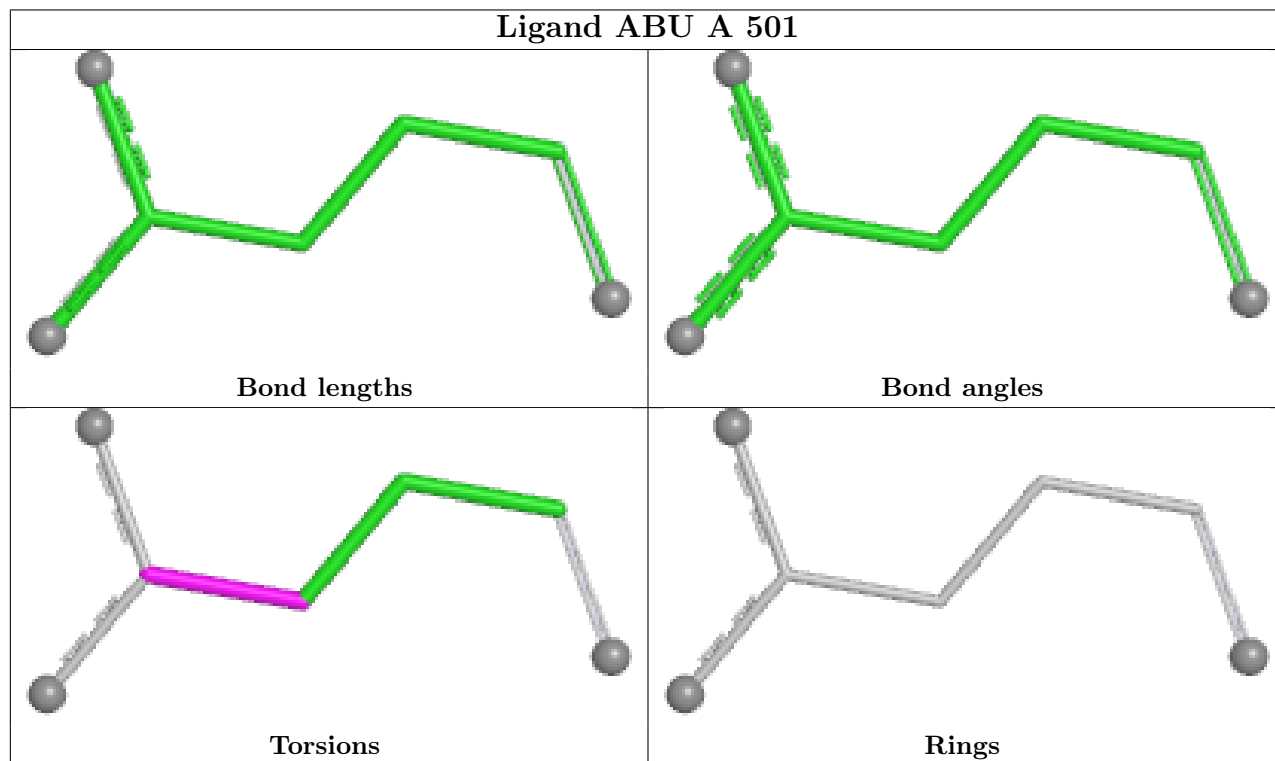
There are no ring outliers.

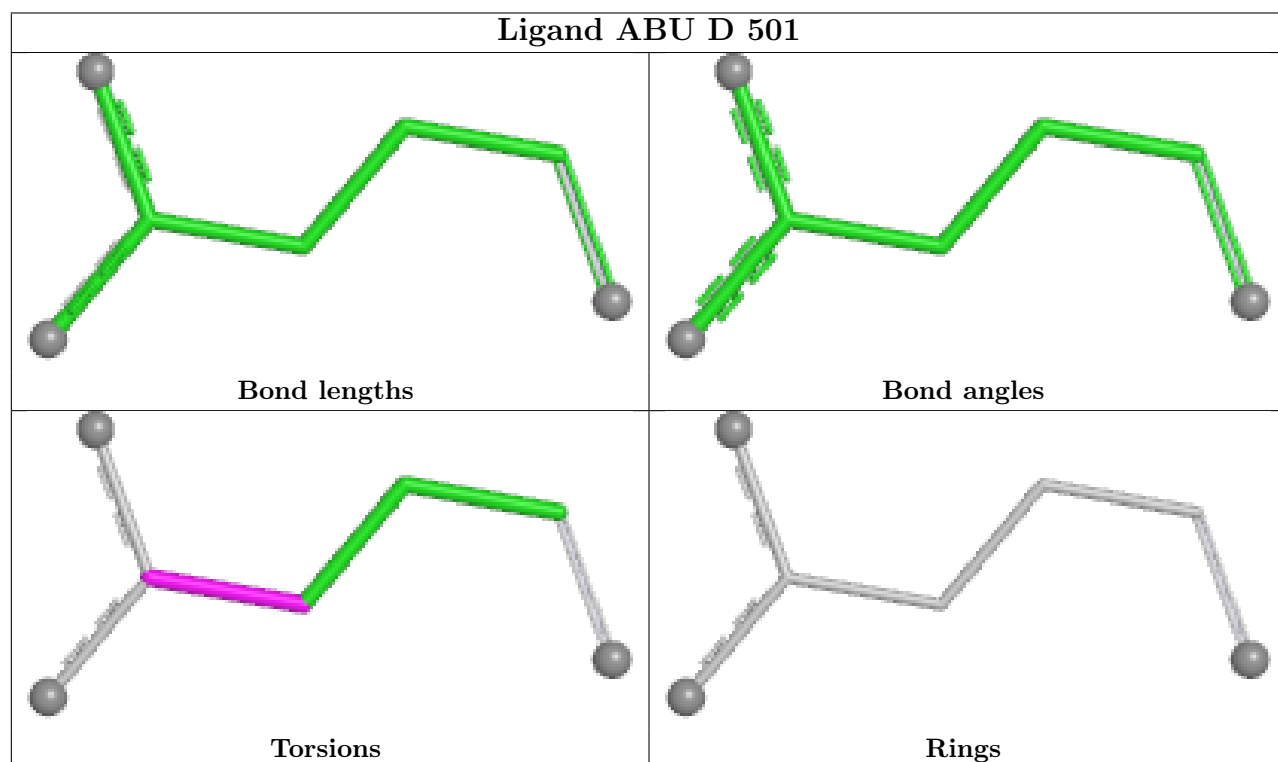
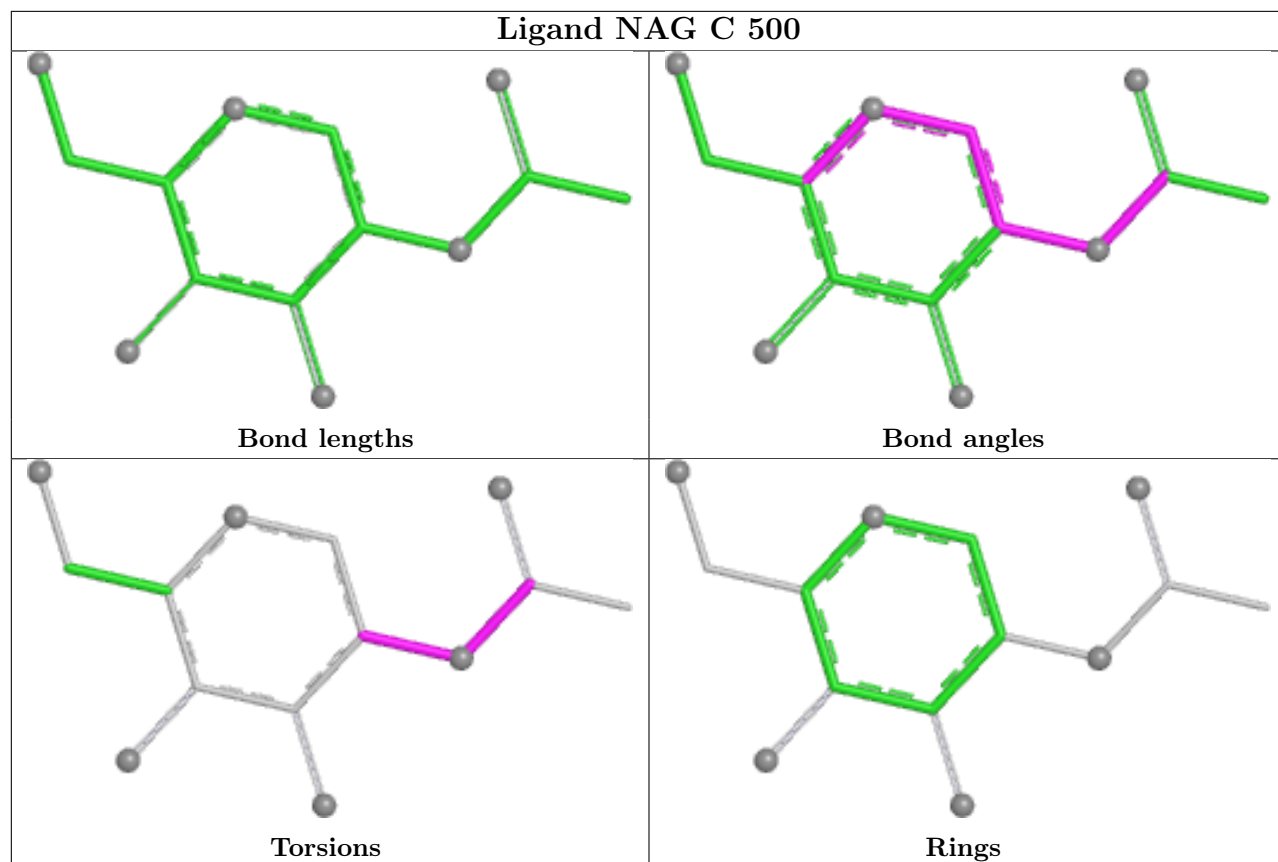
2 monomers are involved in 4 short contacts:

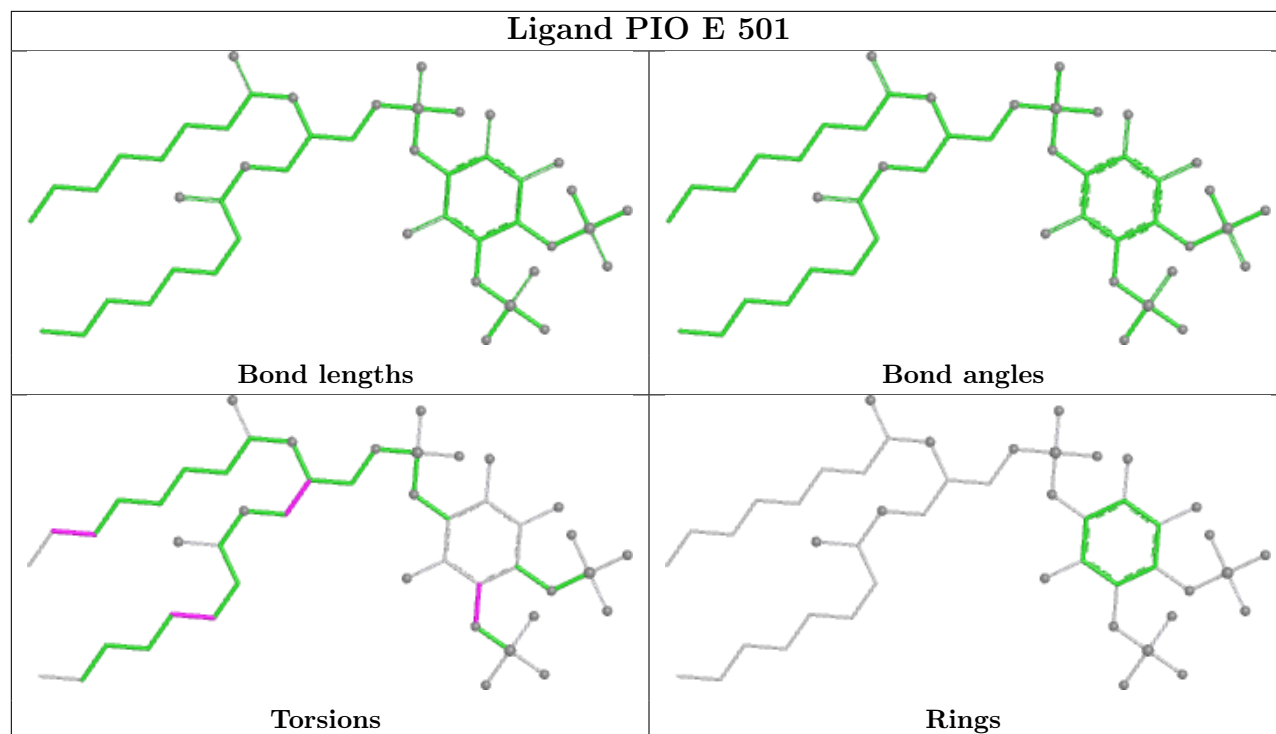
| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 10 | D | 501 | ABU | 1 | 0 |
| 11 | E | 501 | PIO | 3 | 0 |

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be

highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.







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.

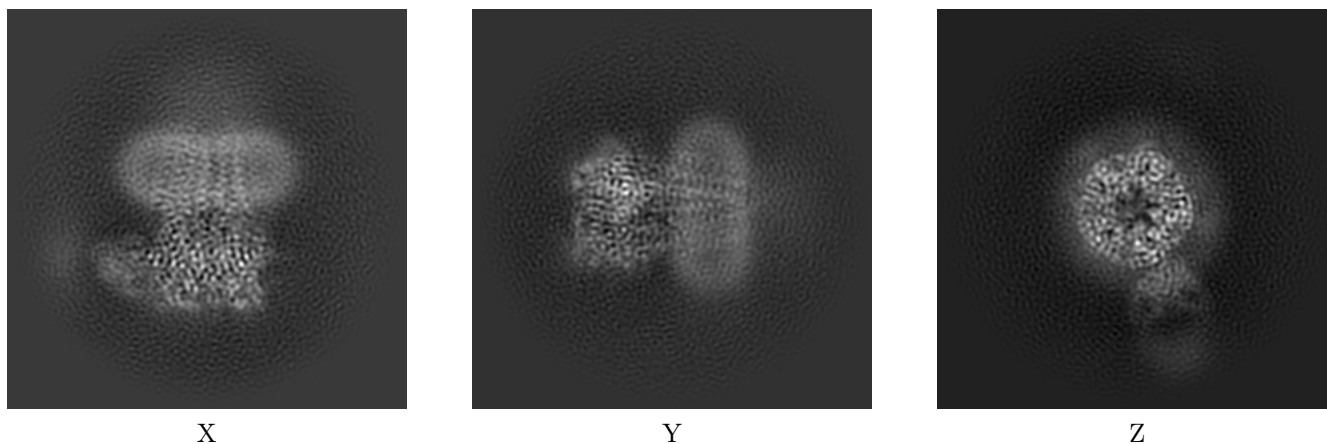
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-45980. These allow visual inspection of the internal detail of the map and identification of artifacts.

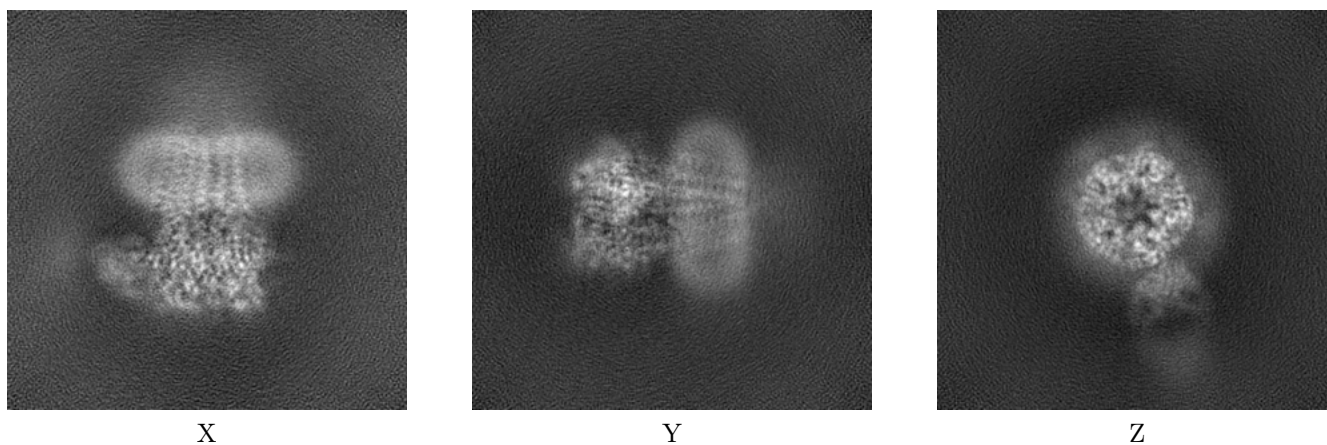
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

6.1.1 Primary map



6.1.2 Raw map



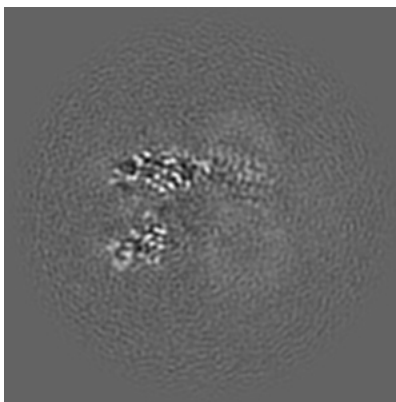
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

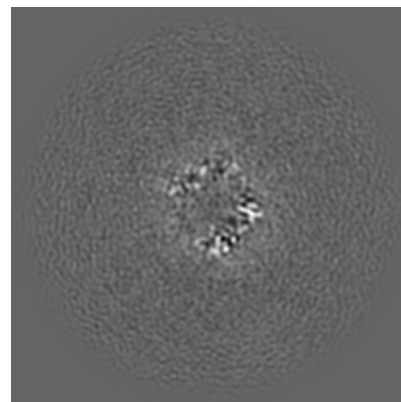
6.2.1 Primary map



X Index: 128

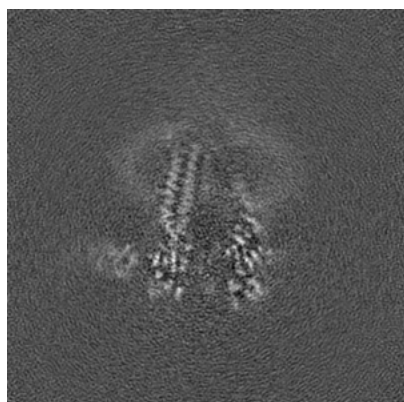


Y Index: 128

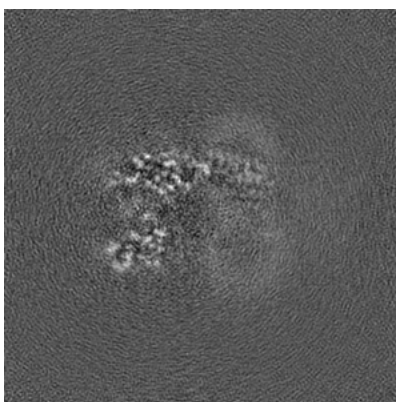


Z Index: 128

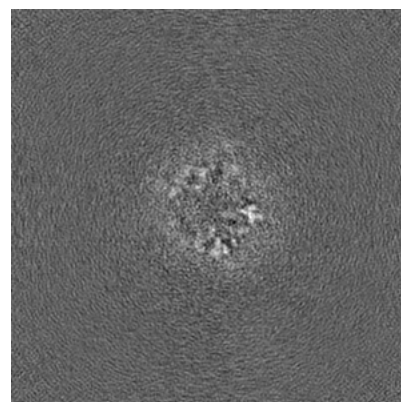
6.2.2 Raw map



X Index: 128



Y Index: 128

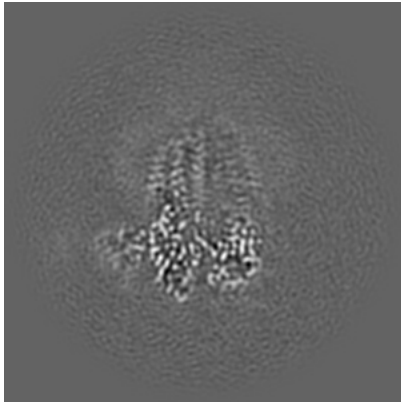


Z Index: 128

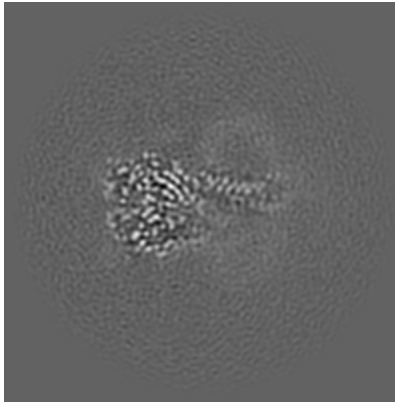
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

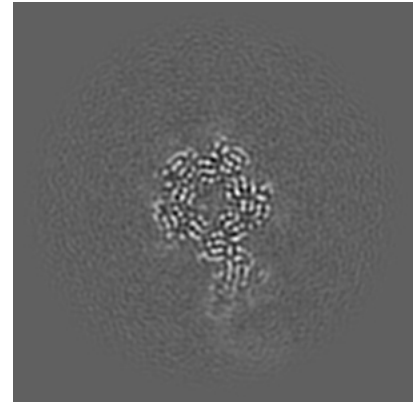
6.3.1 Primary map



X Index: 139

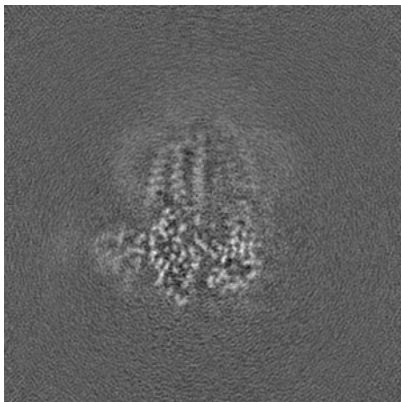


Y Index: 111

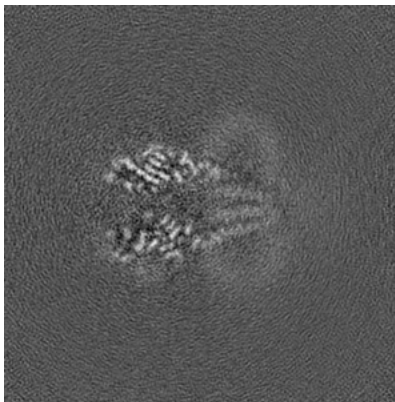


Z Index: 98

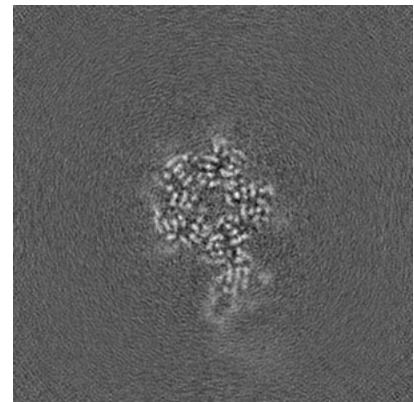
6.3.2 Raw map



X Index: 139



Y Index: 136

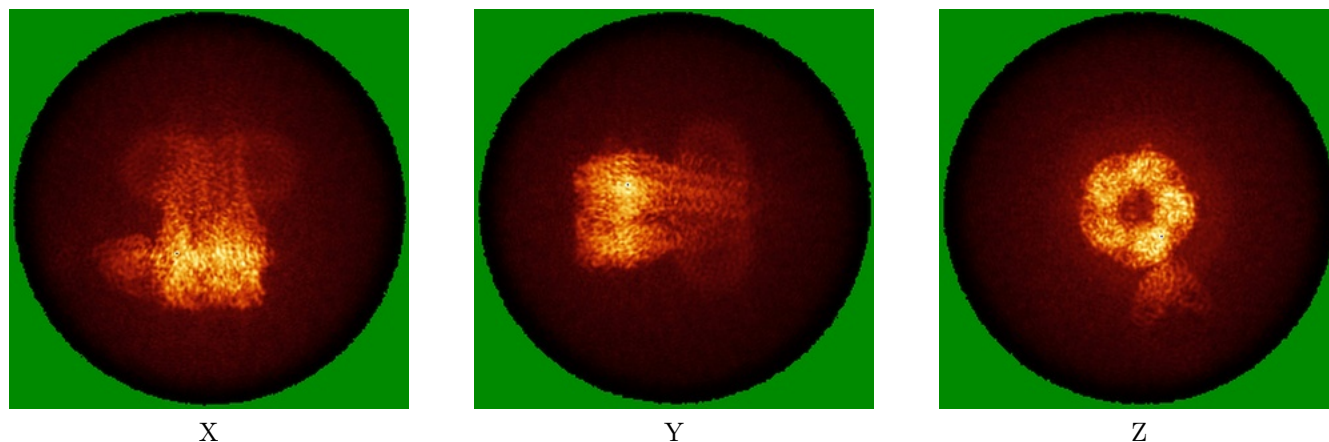


Z Index: 99

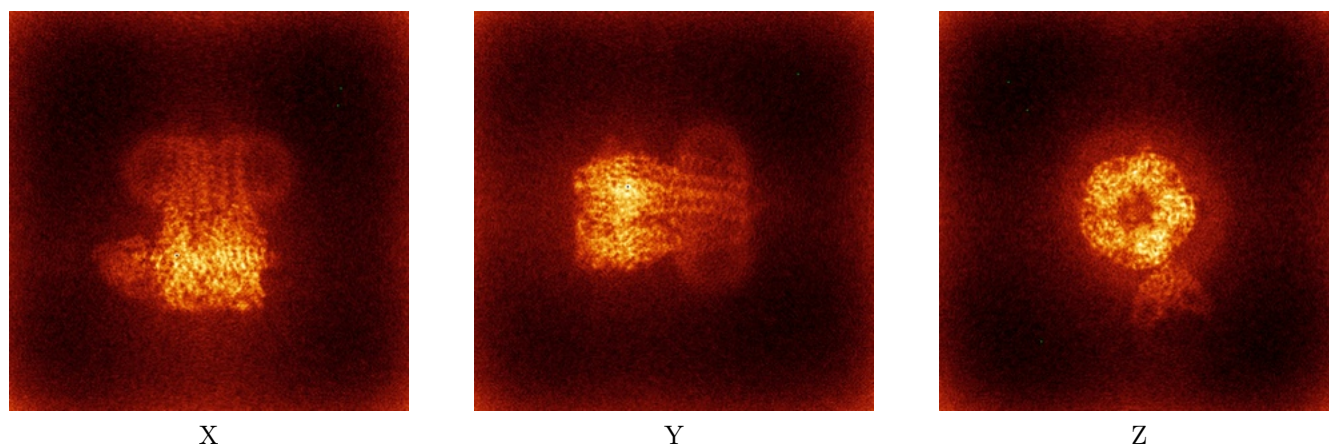
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



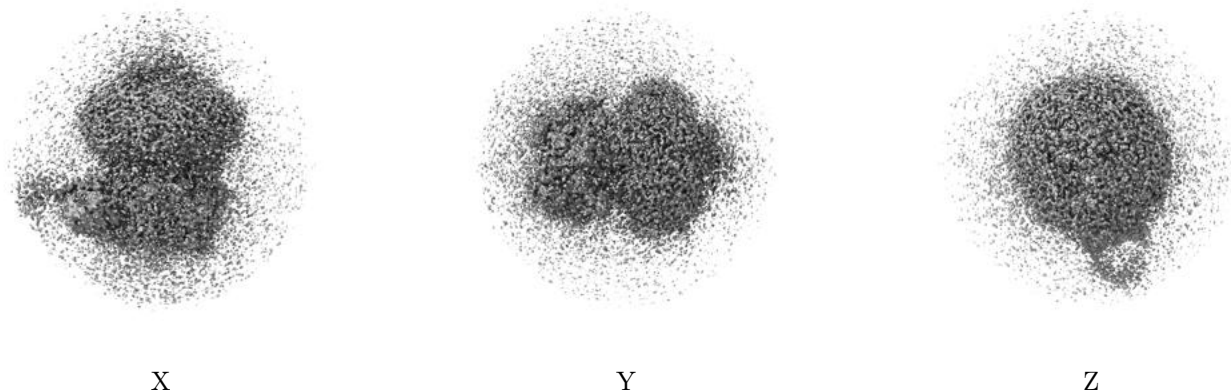
6.4.2 Raw map



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.

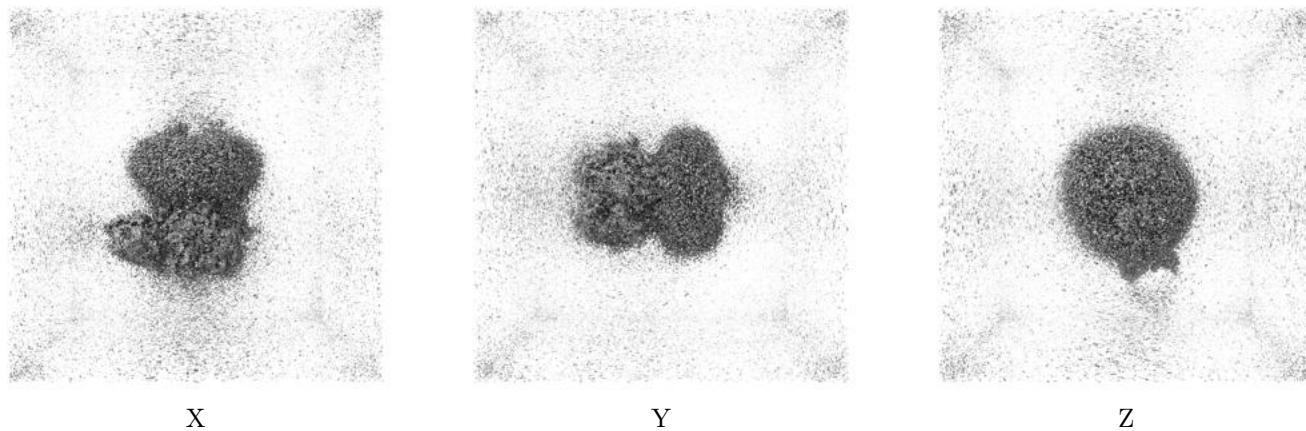
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.084. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

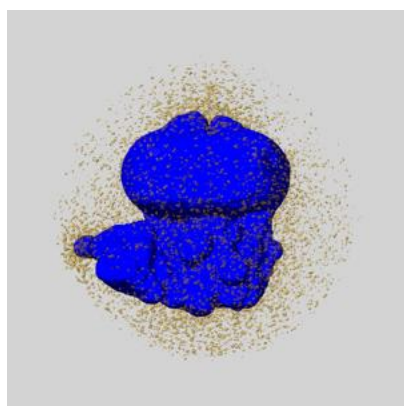
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

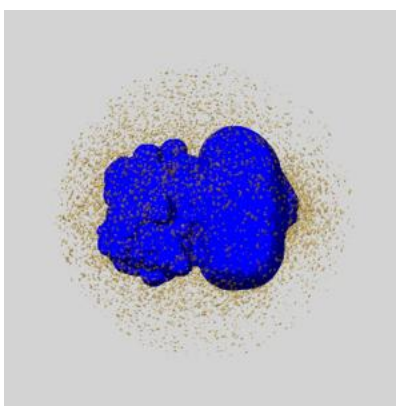
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

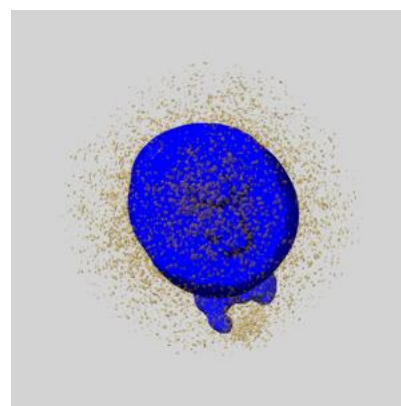
6.6.1 emd_45980_msk_1.map [i](#)



X



Y

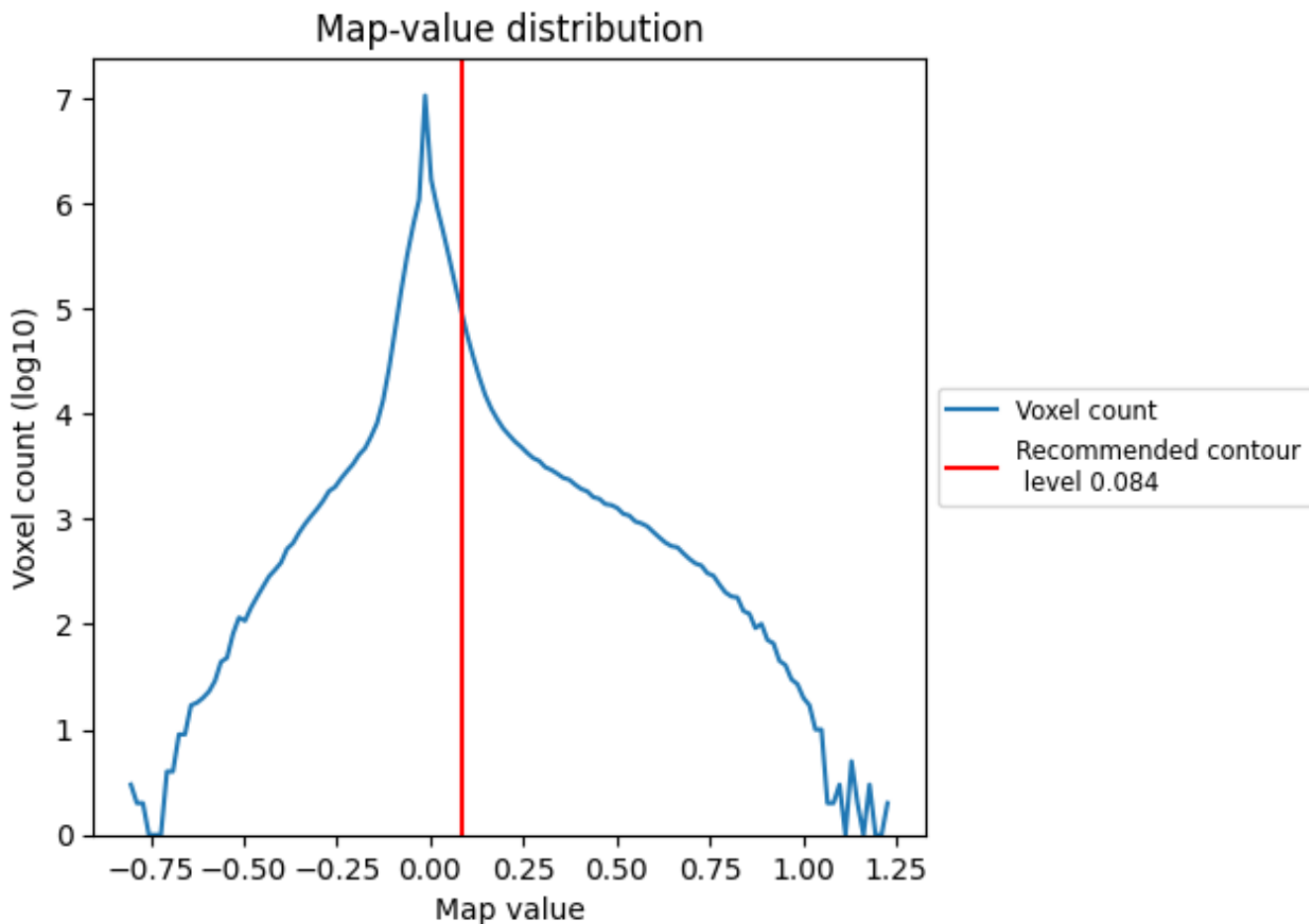


Z

7 Map analysis [i](#)

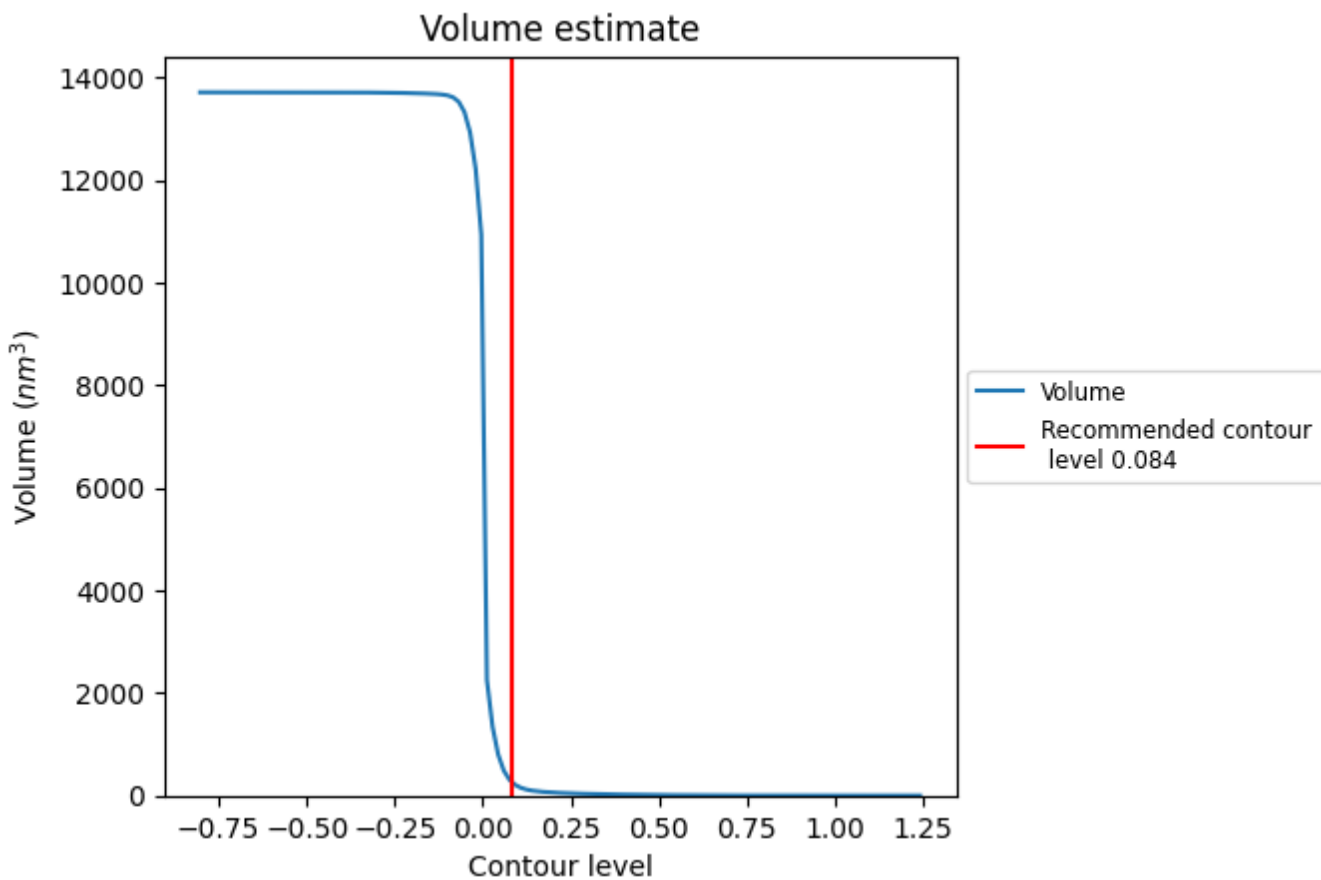
This section contains the results of statistical analysis of the map.

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.

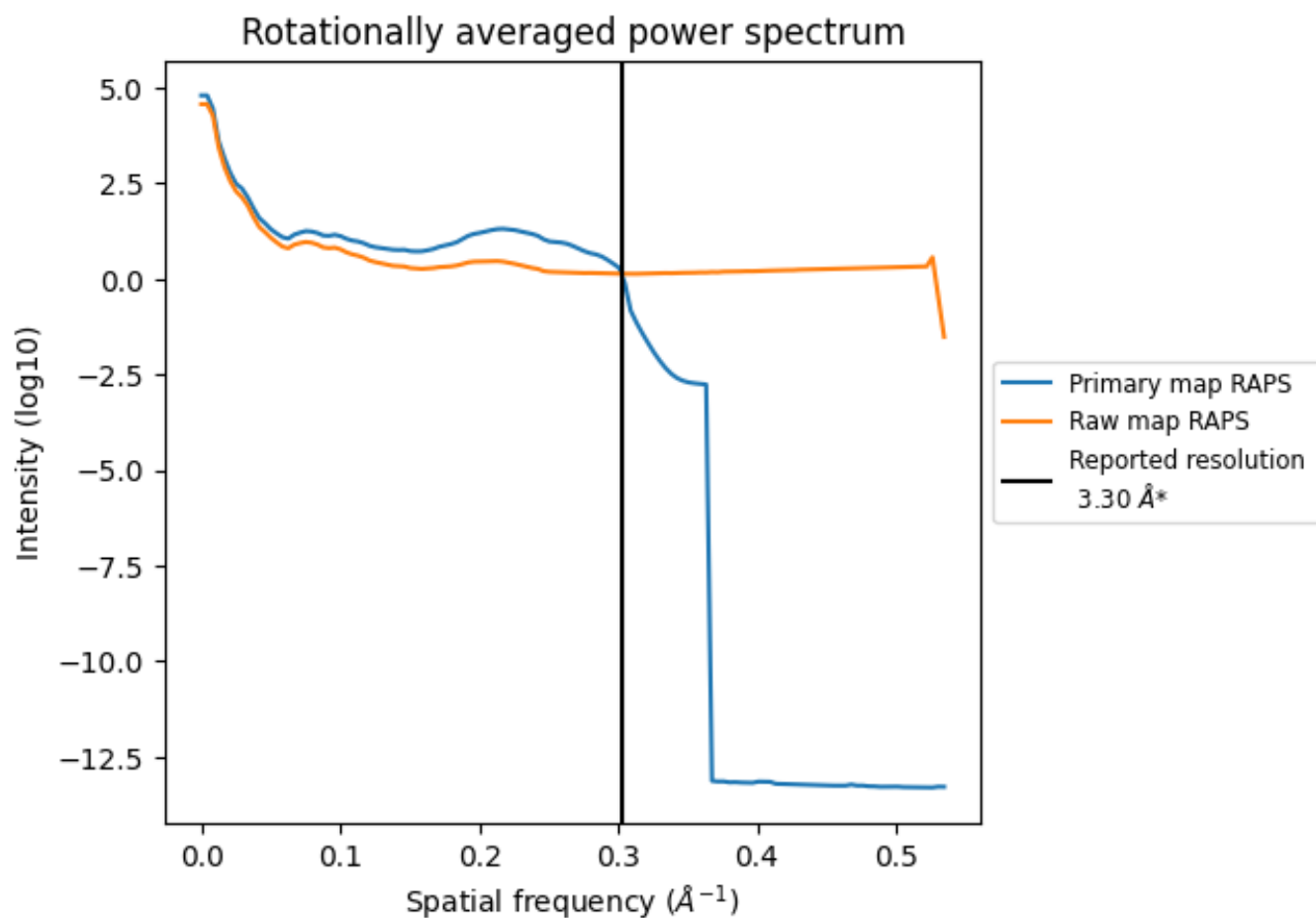
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 259 nm³; this corresponds to an approximate mass of 234 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](#)

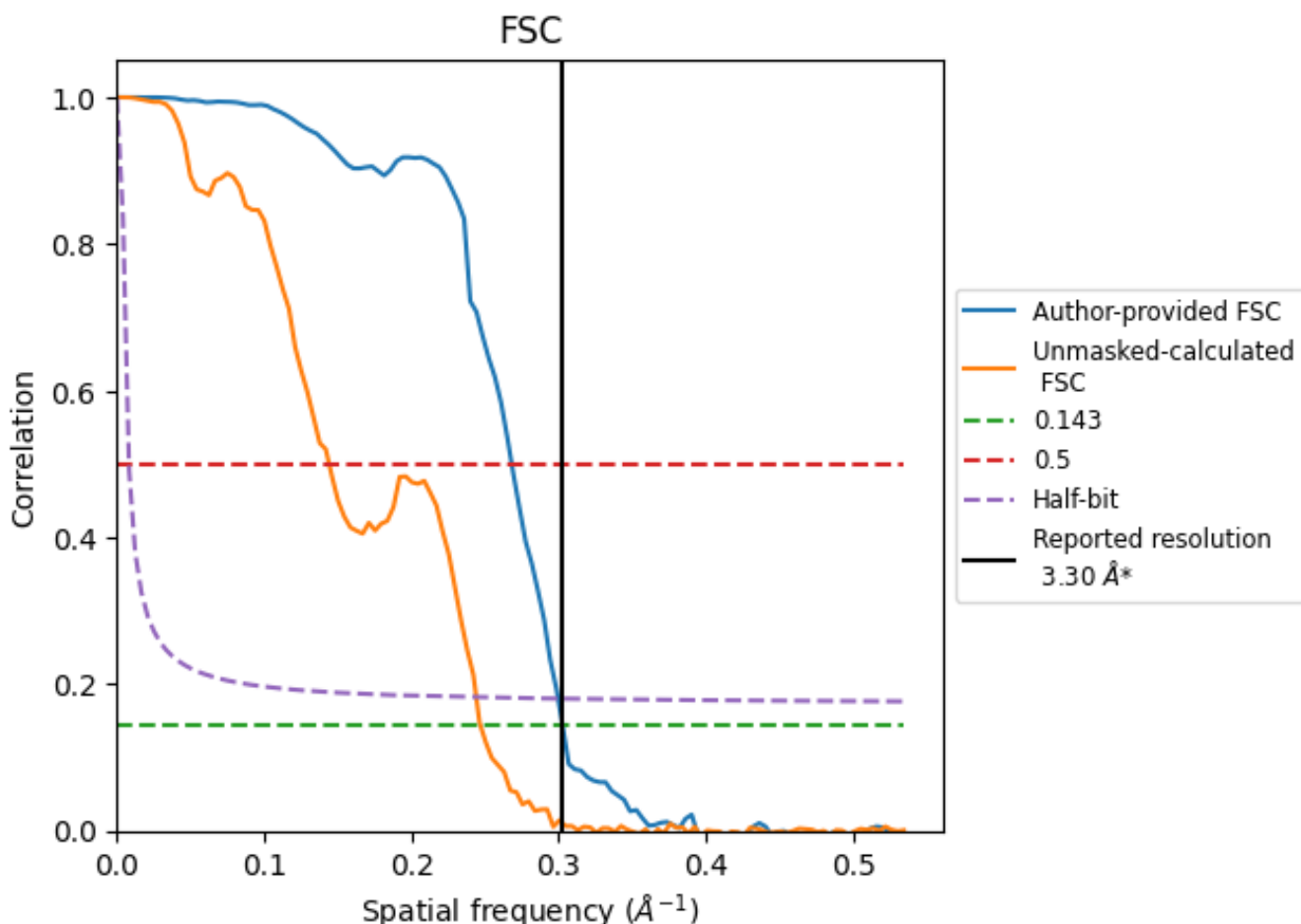


*Reported resolution corresponds to spatial frequency of 0.303 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.303 Å⁻¹

8.2 Resolution estimates [i](#)

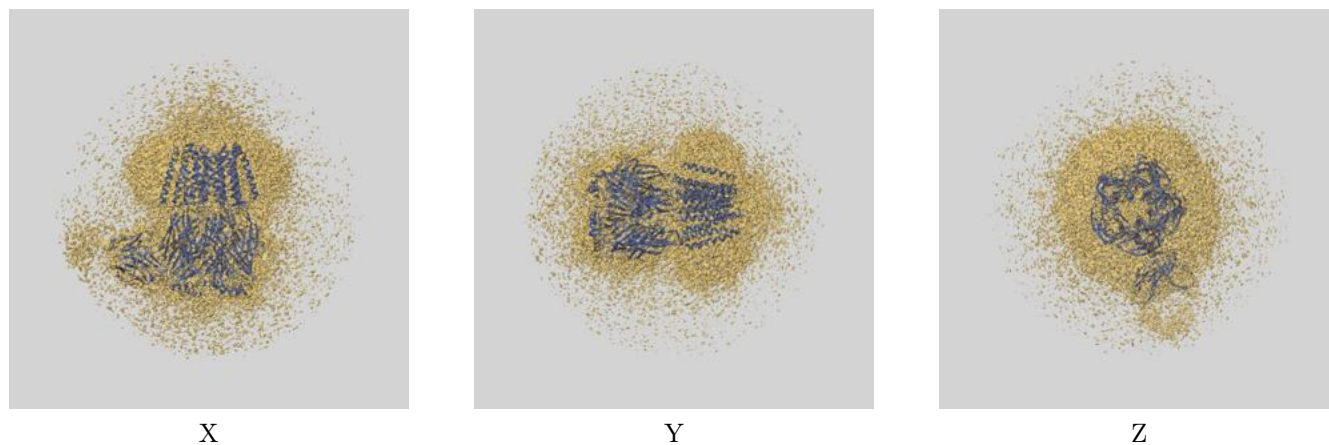
| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---------------------------|------------------------------------|------|----------|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 3.30 | - | - |
| Author-provided FSC curve | 3.30 | 3.73 | 3.34 |
| Unmasked-calculated* | 4.05 | 6.93 | 4.09 |

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.05 differs from the reported value 3.3 by more than 10 %

9 Map-model fit [i](#)

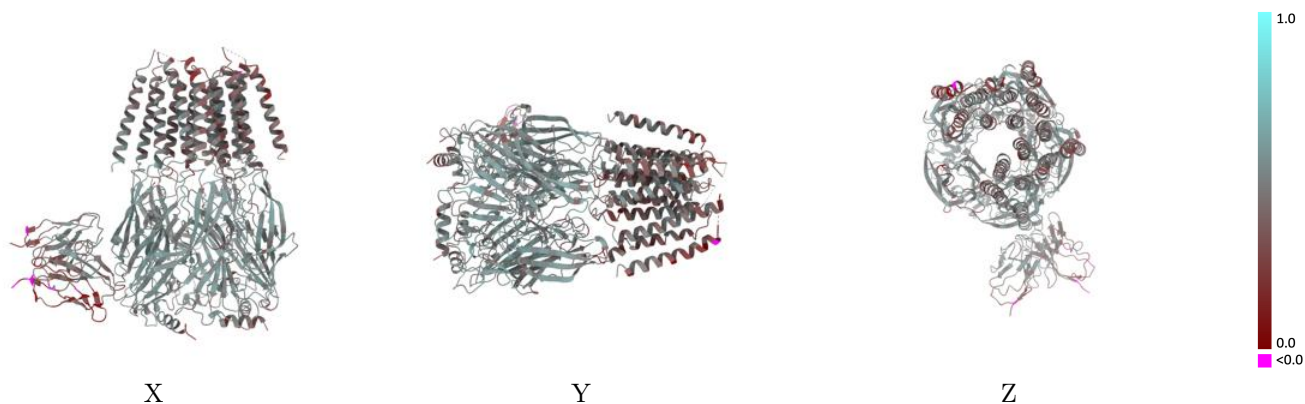
This section contains information regarding the fit between EMDB map EMD-45980 and PDB model 9CX7. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlay [i](#)



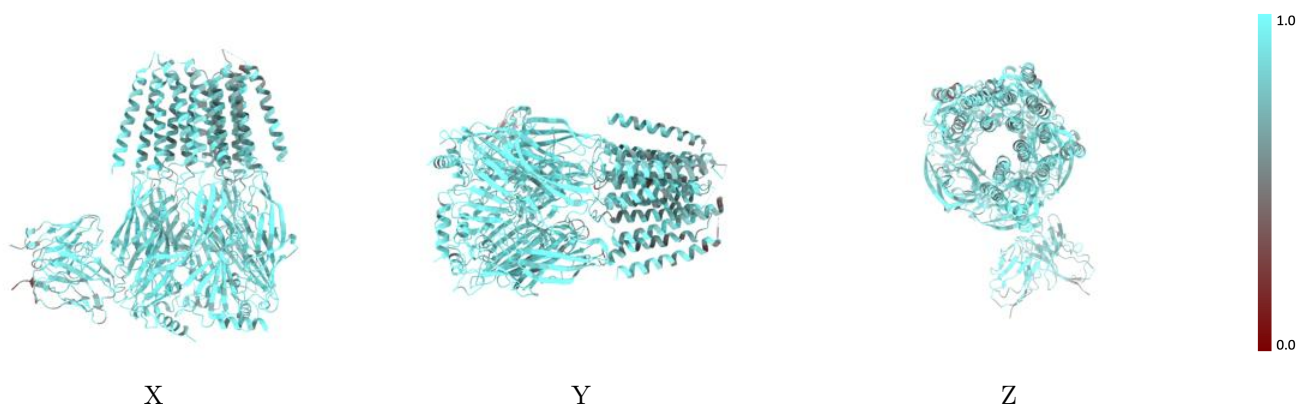
The images above show the 3D surface view of the map at the recommended contour level 0.084 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



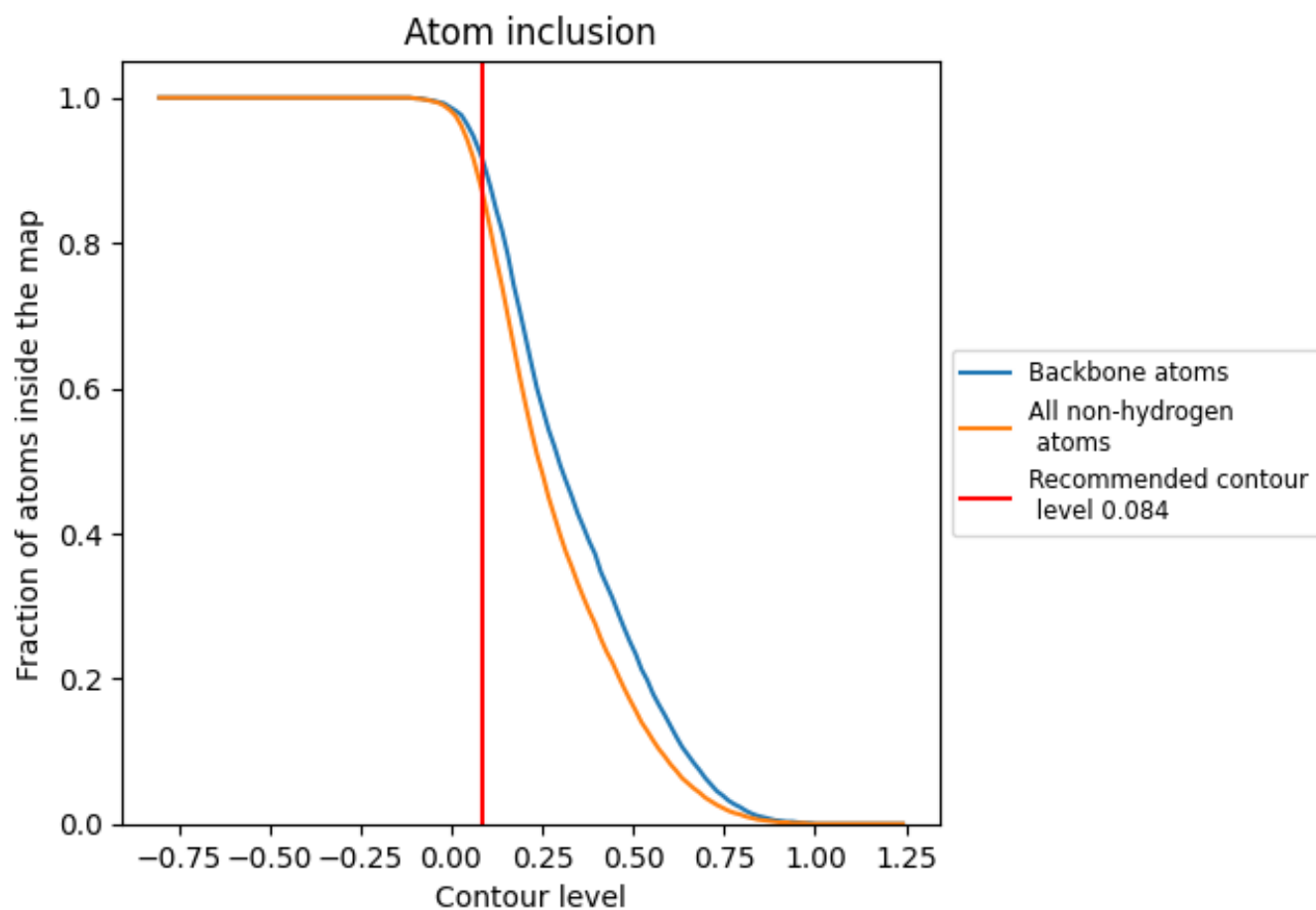
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

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 (0.084).





























9.4 Atom inclusion [i](#)



At the recommended contour level, 92% of all backbone atoms, 87% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.084) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|-------|--|--|
| All |  0.8730 |  0.4670 |
| A |  0.8850 |  0.4810 |
| B |  0.8980 |  0.4990 |
| C |  0.8920 |  0.4850 |
| D |  0.8570 |  0.4610 |
| E |  0.8720 |  0.4750 |
| F |  0.9290 |  0.3670 |
| G |  0.9490 |  0.4280 |
| H |  0.7500 |  0.4300 |
| I |  0.8850 |  0.4670 |
| J |  0.6790 |  0.2080 |
| K |  0.7920 |  0.3360 |
| L |  0.8510 |  0.4210 |
| M |  0.9230 |  0.4320 |

