Full wwPDB EM Validation Report ⓘ

May 19, 2026 – 06:10 PM EDT

PDB ID	:	9OQ7 / pdb_00009oq7
EMDB ID	:	EMD-70742
Title	:	Chlamydia muridarum Major Outer Membrane Protein
Authors	:	Guo, Y.; Borek, D.; Center for Structural Biology of Infectious Diseases (CSBID)
Deposited on	:	2025-05-20
Resolution	:	2.96 Å(reported)

This is a Full wwPDB EM Validation 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:

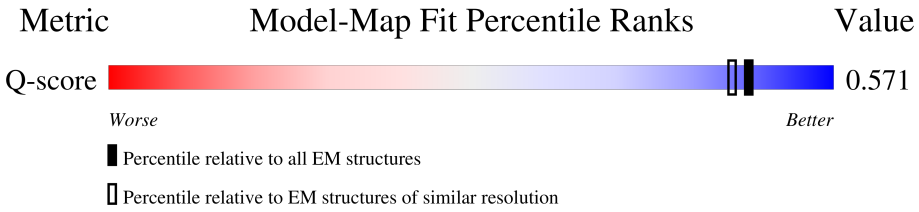
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	FAILED
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

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 2.96 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	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Q-score	25397	13155 (2.46 - 3.46)

MolProbity failed to run properly - the sequence quality summary graphics cannot be shown.

2 Entry composition

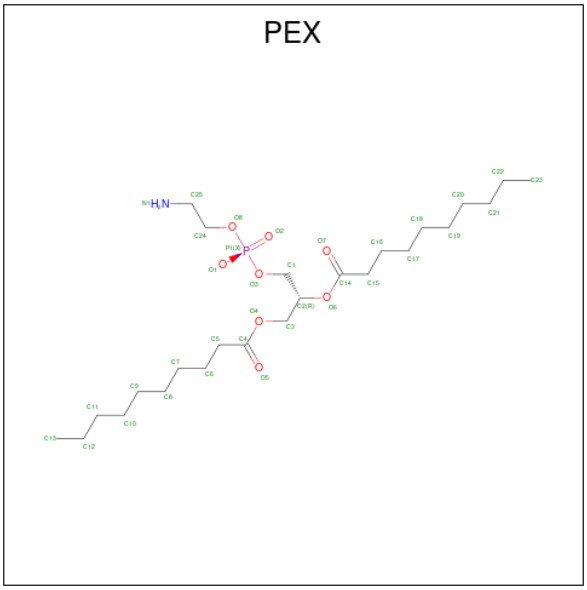
There are 7 unique types of molecules in this entry. The entry contains 9006 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Major outer membrane porin.

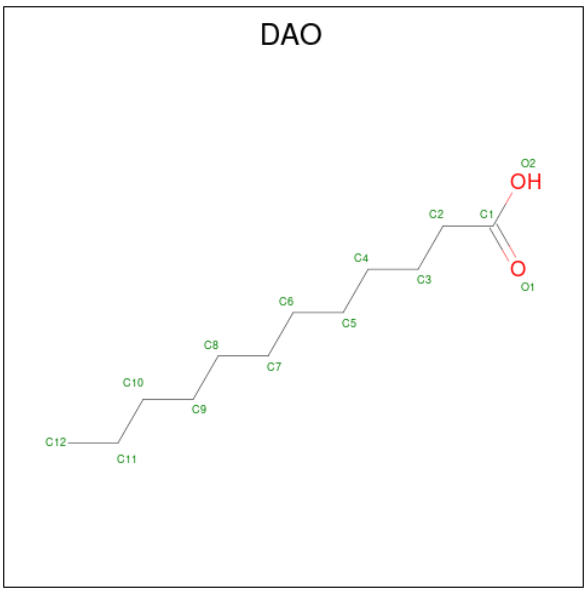
Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	365	Total	C	N	O	S	6	0
			2855	1812	475	552	16		
1	B	365	Total	C	N	O	S	6	0
			2855	1812	475	552	16		
1	G	365	Total	C	N	O	S	6	0
			2855	1812	475	552	16		

- Molecule 2 is 1,2-DIDECANOYL-SN-GLYCERO-3-PHOSPHOETHANOLAMINE (CCD ID: PEX) (formula: $C_{25}H_{49}NO_8P$).



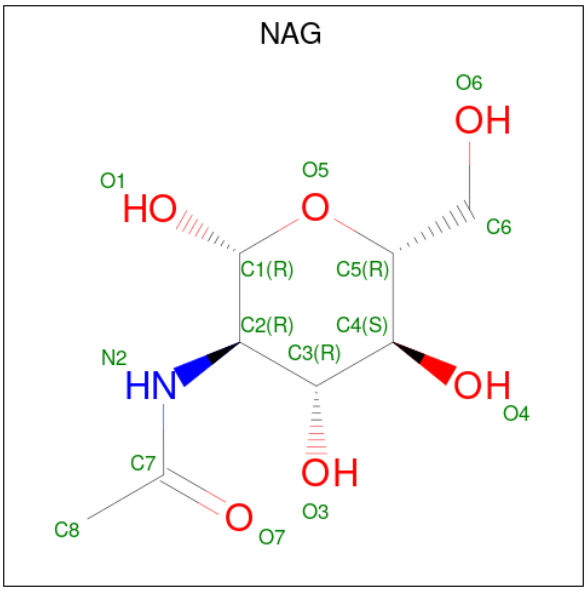
Mol	Chain	Residues	Atoms					AltConf
2	A	1	Total	C	N	O	P	0
			35	25	1	8	1	
2	B	1	Total	C	N	O	P	0
			35	25	1	8	1	
2	G	1	Total	C	N	O	P	0
			35	25	1	8	1	

- Molecule 3 is LAURIC ACID (CCD ID: DAO) (formula: $C_{12}H_{24}O_2$).



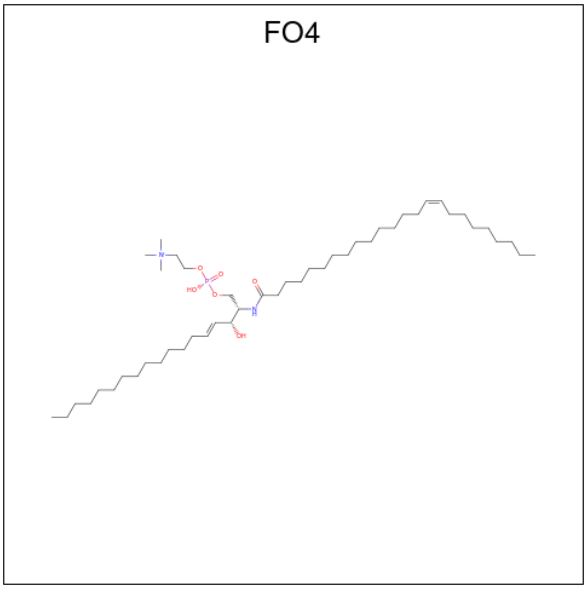
Mol	Chain	Residues	Atoms	AltConf
3	A	1	Total C O 14 12 2	0
3	A	1	Total C O 14 12 2	0
3	B	1	Total C O 14 12 2	0
3	B	1	Total C O 14 12 2	0
3	G	1	Total C O 14 12 2	0
3	G	1	Total C O 14 12 2	0

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms				AltConf
4	A	1	Total	C	N	O	0
			15	8	1	6	
4	B	1	Total	C	N	O	0
			15	8	1	6	
4	G	1	Total	C	N	O	0
			15	8	1	6	

- Molecule 5 is sphingomyelin (CCD ID: FO4) (formula: $C_{47}H_{94}N_2O_6P$).



Mol	Chain	Residues	Atoms					AltConf
5	A	1	Total	C	N	O	P	0
			56	47	2	6	1	

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Mol	Chain	Residues	Atoms					AltConf
5	B	1	Total	C	N	O	P	0
			56	47	2	6	1	
5	G	1	Total	C	N	O	P	0
			56	47	2	6	1	

- Molecule 6 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
6	A	1	Total	Mg	0
			1	1	
6	B	1	Total	Mg	0
			1	1	
6	G	1	Total	Mg	0
			1	1	

- Molecule 7 is water.

Mol	Chain	Residues	Atoms		AltConf
7	A	12	Total	O	0
			12	12	
7	B	12	Total	O	0
			12	12	
7	G	12	Total	O	0
			12	12	

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3 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	87699	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	80	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.963	Depositor
Minimum map value	-0.406	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.015	Depositor
Recommended contour level	0.22	Depositor
Map size (Å)	388.44, 388.44, 388.44	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.079, 1.079, 1.079	Depositor

4 Model quality

4.1 Standard geometry

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4.2 Too-close contacts

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4.3 Torsion angles

4.3.1 Protein backbone

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4.3.2 Protein sidechains

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4.3.3 RNA

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4.4 Non-standard residues in protein, DNA, RNA chains

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

4.5 Carbohydrates

There are no oligosaccharides in this entry.

4.6 Ligand geometry

Of 18 ligands modelled in this entry, 3 are monoatomic - leaving 15 for Mogul analysis.

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	$\#\|Z\| > 2$
4	NAG	G	405	-	15,15,15	0.54	0	21,21,21	0.84	0
3	DAO	G	404	-	13,13,13	0.61	0	13,13,13	0.55	0
4	NAG	A	403	-	15,15,15	0.54	0	21,21,21	0.84	0
2	PEX	G	403	-	34,34,34	0.30	0	37,39,39	0.37	0
3	DAO	B	402	-	13,13,13	0.61	0	13,13,13	0.55	0
5	FO4	B	405	-	54,55,55	2.06	8 (14%)	60,63,63	1.32	4 (6%)
5	FO4	A	405	-	54,55,55	2.06	8 (14%)	60,63,63	1.32	4 (6%)
2	PEX	A	401	-	34,34,34	0.30	0	37,39,39	0.37	0
3	DAO	B	404	-	13,13,13	0.60	0	13,13,13	0.56	0
3	DAO	A	402	-	13,13,13	0.61	0	13,13,13	0.55	0
5	FO4	G	402	-	54,55,55	2.06	8 (14%)	60,63,63	1.31	4 (6%)
3	DAO	A	404	-	13,13,13	0.60	0	13,13,13	0.56	0
2	PEX	B	401	-	34,34,34	0.30	0	37,39,39	0.37	0
3	DAO	G	401	-	13,13,13	0.59	0	13,13,13	0.56	0
4	NAG	B	403	-	15,15,15	0.54	0	21,21,21	0.84	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
4	NAG	G	405	-	-	2/6/26/26	0/1/1/1
3	DAO	G	404	-	-	6/11/11/11	-
4	NAG	A	403	-	-	2/6/26/26	0/1/1/1
2	PEX	G	403	-	-	9/38/38/38	-
3	DAO	B	402	-	-	6/11/11/11	-
5	FO4	B	405	-	-	18/60/60/60	-
5	FO4	A	405	-	-	18/60/60/60	-
2	PEX	A	401	-	-	9/38/38/38	-
3	DAO	B	404	-	-	6/11/11/11	-
3	DAO	A	402	-	-	6/11/11/11	-
5	FO4	G	402	-	-	18/60/60/60	-
3	DAO	A	404	-	-	6/11/11/11	-
2	PEX	B	401	-	-	9/38/38/38	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	DAO	G	401	-	-	6/11/11/11	-
4	NAG	B	403	-	-	2/6/26/26	0/1/1/1

All (24) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	G	402	FO4	C17-N	8.20	1.51	1.34
5	A	405	FO4	C17-N	8.19	1.51	1.34
5	B	405	FO4	C17-N	8.17	1.51	1.34
5	G	402	FO4	C1-C2	6.23	1.57	1.31
5	A	405	FO4	C1-C2	6.23	1.57	1.31
5	B	405	FO4	C1-C2	6.22	1.57	1.31
5	B	405	FO4	C32-C31	4.31	1.56	1.31
5	A	405	FO4	C32-C31	4.30	1.56	1.31
5	G	402	FO4	C32-C31	4.30	1.56	1.31
5	G	402	FO4	C-C1	4.24	1.56	1.50
5	A	405	FO4	C-C1	4.22	1.56	1.50
5	B	405	FO4	C-C1	4.21	1.56	1.50
5	B	405	FO4	C18-C17	4.02	1.59	1.51
5	G	402	FO4	C18-C17	4.00	1.59	1.51
5	A	405	FO4	C18-C17	3.99	1.59	1.51
5	G	402	FO4	P-O2	2.66	1.69	1.59
5	A	405	FO4	P-O2	2.66	1.69	1.59
5	B	405	FO4	P-O2	2.66	1.69	1.59
5	G	402	FO4	P-O4	2.45	1.69	1.59
5	A	405	FO4	P-O4	2.45	1.69	1.59
5	B	405	FO4	P-O4	2.45	1.69	1.59
5	G	402	FO4	O1-C17	-2.36	1.18	1.23
5	A	405	FO4	O1-C17	-2.33	1.18	1.23
5	B	405	FO4	O1-C17	-2.32	1.18	1.23

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	G	402	FO4	C-C1-C2	-6.75	110.69	124.69
5	A	405	FO4	C-C1-C2	-6.75	110.70	124.69
5	B	405	FO4	C-C1-C2	-6.75	110.71	124.69
5	B	405	FO4	C3-C2-C1	-3.25	110.98	125.47
5	G	402	FO4	C3-C2-C1	-3.25	110.98	125.47
5	A	405	FO4	C3-C2-C1	-3.25	110.98	125.47
5	A	405	FO4	C18-C17-N	2.54	120.33	115.86
5	B	405	FO4	C18-C17-N	2.52	120.30	115.86

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	G	402	FO4	C18-C17-N	2.50	120.27	115.86
5	B	405	FO4	C30-C31-C32	-2.03	109.64	124.83
5	G	402	FO4	C30-C31-C32	-2.02	109.67	124.83
5	A	405	FO4	C30-C31-C32	-2.02	109.67	124.83

There are no chirality outliers.

All (123) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	401	PEX	C1-O3-P1-O1
2	A	401	PEX	C1-O3-P1-O8
2	A	401	PEX	C15-C14-O6-C2
2	B	401	PEX	C1-O3-P1-O1
2	B	401	PEX	C1-O3-P1-O8
2	B	401	PEX	C15-C14-O6-C2
2	G	403	PEX	C1-O3-P1-O1
2	G	403	PEX	C1-O3-P1-O8
2	G	403	PEX	C15-C14-O6-C2
5	A	405	FO4	C-C1-C2-C3
5	A	405	FO4	O4-C42-C43-N1
5	A	405	FO4	C1-C-C16-N
5	A	405	FO4	O-C-C16-N
5	A	405	FO4	C1-C-C16-C41
5	A	405	FO4	O-C-C16-C41
5	B	405	FO4	C-C1-C2-C3
5	B	405	FO4	O4-C42-C43-N1
5	B	405	FO4	C1-C-C16-N
5	B	405	FO4	O-C-C16-N
5	B	405	FO4	C1-C-C16-C41
5	B	405	FO4	O-C-C16-C41
5	G	402	FO4	C-C1-C2-C3
5	G	402	FO4	O4-C42-C43-N1
5	G	402	FO4	C1-C-C16-N
5	G	402	FO4	O-C-C16-N
5	G	402	FO4	C1-C-C16-C41
5	G	402	FO4	O-C-C16-C41
2	A	401	PEX	O7-C14-O6-C2
2	B	401	PEX	O7-C14-O6-C2
2	G	403	PEX	O7-C14-O6-C2
5	A	405	FO4	C30-C31-C32-C33
5	B	405	FO4	C30-C31-C32-C33
5	G	402	FO4	C30-C31-C32-C33

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Mol	Chain	Res	Type	Atoms
4	A	403	NAG	O5-C5-C6-O6
4	B	403	NAG	O5-C5-C6-O6
4	G	405	NAG	O5-C5-C6-O6
4	A	403	NAG	C4-C5-C6-O6
4	B	403	NAG	C4-C5-C6-O6
4	G	405	NAG	C4-C5-C6-O6
2	A	401	PEX	C5-C4-O4-C3
2	B	401	PEX	C5-C4-O4-C3
2	G	403	PEX	C5-C4-O4-C3
3	A	404	DAO	C11-C10-C9-C8
3	B	404	DAO	C11-C10-C9-C8
3	G	401	DAO	C11-C10-C9-C8
2	A	401	PEX	O5-C4-O4-C3
2	B	401	PEX	O5-C4-O4-C3
2	G	403	PEX	O5-C4-O4-C3
3	A	404	DAO	C7-C8-C9-C10
3	B	404	DAO	C7-C8-C9-C10
3	G	401	DAO	C7-C8-C9-C10
3	A	402	DAO	C11-C10-C9-C8
3	B	402	DAO	C11-C10-C9-C8
3	G	404	DAO	C11-C10-C9-C8
3	A	404	DAO	C4-C5-C6-C7
3	B	404	DAO	C4-C5-C6-C7
3	G	401	DAO	C4-C5-C6-C7
2	A	401	PEX	C14-C15-C16-C17
2	B	401	PEX	C14-C15-C16-C17
2	G	403	PEX	C14-C15-C16-C17
3	B	402	DAO	C5-C6-C7-C8
3	G	404	DAO	C5-C6-C7-C8
3	A	402	DAO	C5-C6-C7-C8
5	A	405	FO4	C24-C25-C26-C27
5	B	405	FO4	C24-C25-C26-C27
5	G	402	FO4	C24-C25-C26-C27
2	A	401	PEX	C4-C5-C6-C7
2	B	401	PEX	C4-C5-C6-C7
2	G	403	PEX	C4-C5-C6-C7
3	A	402	DAO	C7-C8-C9-C10
3	B	402	DAO	C7-C8-C9-C10
3	G	404	DAO	C7-C8-C9-C10
5	B	405	FO4	C4-C5-C6-C7
5	A	405	FO4	C4-C5-C6-C7
5	G	402	FO4	C4-C5-C6-C7

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Mol	Chain	Res	Type	Atoms
5	A	405	FO4	C27-C28-C29-C30
5	B	405	FO4	C27-C28-C29-C30
5	G	402	FO4	C27-C28-C29-C30
3	A	402	DAO	C4-C5-C6-C7
3	B	402	DAO	C4-C5-C6-C7
3	G	404	DAO	C4-C5-C6-C7
5	A	405	FO4	C2-C3-C4-C5
5	B	405	FO4	C2-C3-C4-C5
5	G	402	FO4	C2-C3-C4-C5
3	G	404	DAO	C9-C10-C11-C12
3	A	402	DAO	C9-C10-C11-C12
3	B	402	DAO	C9-C10-C11-C12
5	A	405	FO4	C42-O4-P-O3
5	B	405	FO4	C42-O4-P-O3
5	G	402	FO4	C42-O4-P-O3
2	A	401	PEX	C6-C7-C8-C9
2	G	403	PEX	C6-C7-C8-C9
2	B	401	PEX	C6-C7-C8-C9
3	A	404	DAO	C2-C3-C4-C5
3	B	404	DAO	C2-C3-C4-C5
3	G	401	DAO	C2-C3-C4-C5
5	A	405	FO4	C33-C34-C35-C36
5	B	405	FO4	C33-C34-C35-C36
5	G	402	FO4	C33-C34-C35-C36
5	A	405	FO4	C29-C30-C31-C32
5	B	405	FO4	C29-C30-C31-C32
5	G	402	FO4	C29-C30-C31-C32
3	A	404	DAO	O2-C1-C2-C3
3	B	404	DAO	O2-C1-C2-C3
3	G	401	DAO	O2-C1-C2-C3
5	A	405	FO4	C34-C35-C36-C37
5	B	405	FO4	C34-C35-C36-C37
5	G	402	FO4	C34-C35-C36-C37
3	A	404	DAO	O1-C1-C2-C3
3	B	404	DAO	O1-C1-C2-C3
3	G	401	DAO	O1-C1-C2-C3
3	A	402	DAO	C3-C4-C5-C6
3	B	402	DAO	C3-C4-C5-C6
3	G	404	DAO	C3-C4-C5-C6
5	A	405	FO4	C19-C20-C21-C22
5	A	405	FO4	C20-C21-C22-C23
5	B	405	FO4	C19-C20-C21-C22

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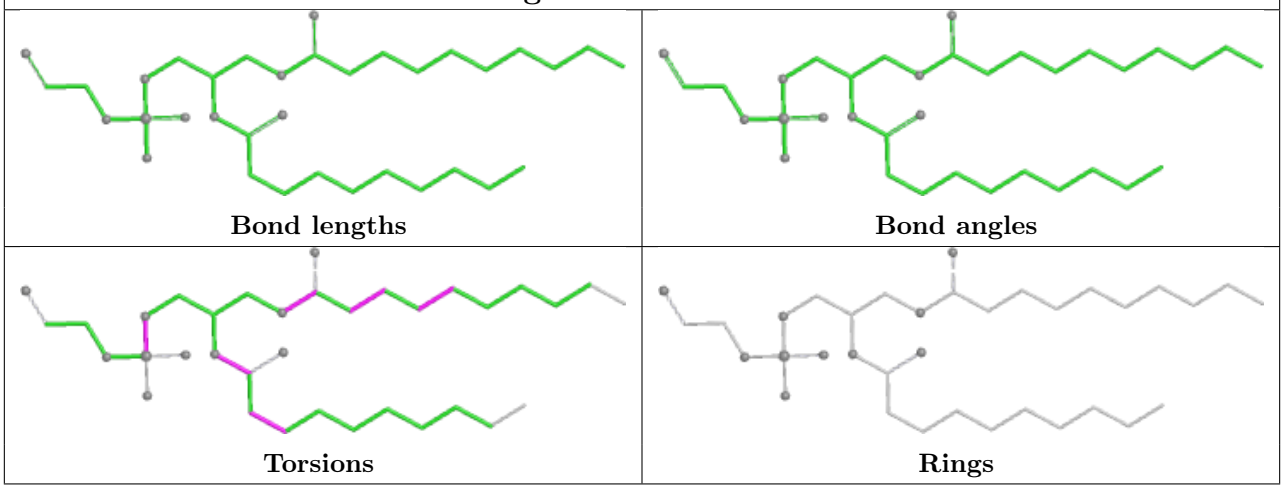
Mol	Chain	Res	Type	Atoms
5	B	405	FO4	C20-C21-C22-C23
5	G	402	FO4	C20-C21-C22-C23
5	G	402	FO4	C19-C20-C21-C22
5	A	405	FO4	C25-C26-C27-C28
5	B	405	FO4	C25-C26-C27-C28
5	G	402	FO4	C25-C26-C27-C28

There are no ring outliers.

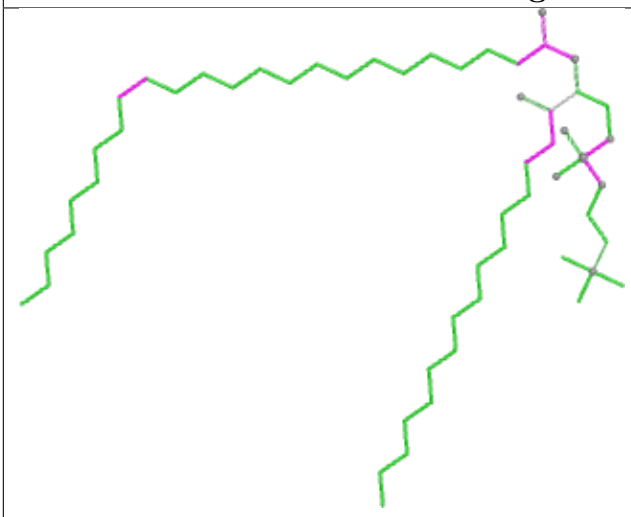
No monomer is involved in short contacts.

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 then 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.

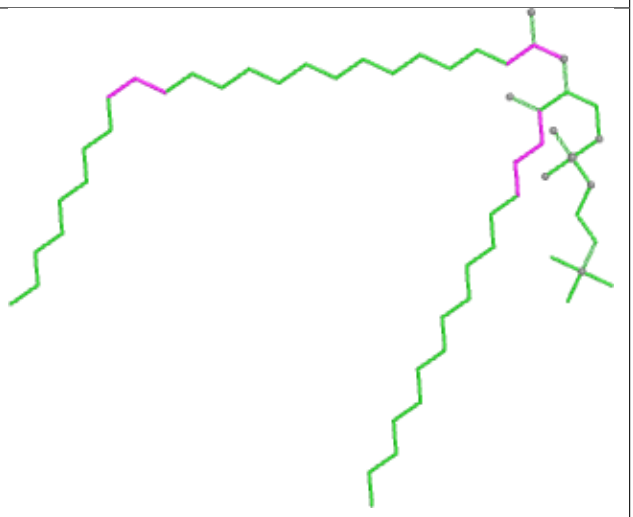
Ligand PEX G 403



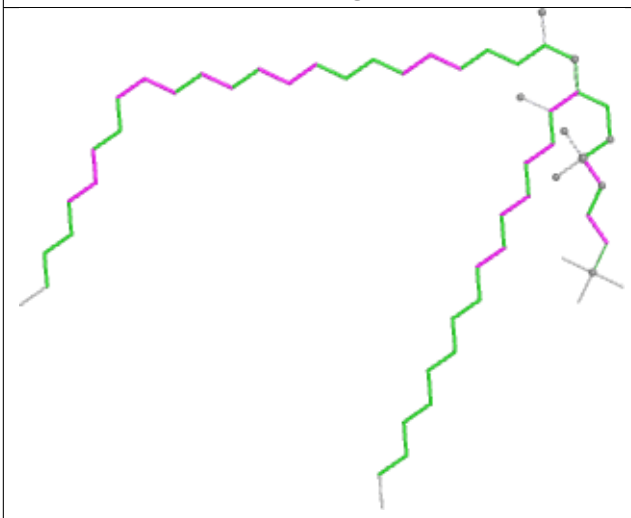
Ligand FO4 B 405



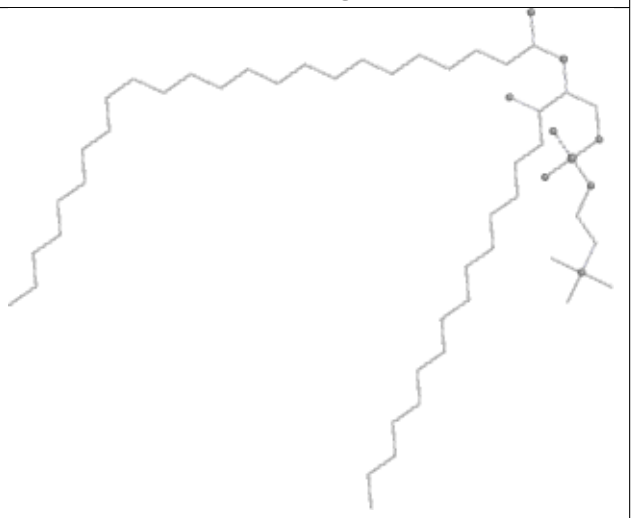
Bond lengths



Bond angles

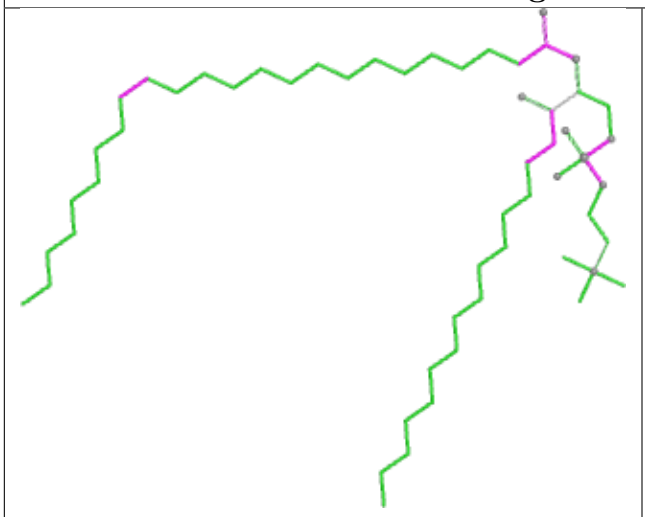


Torsions

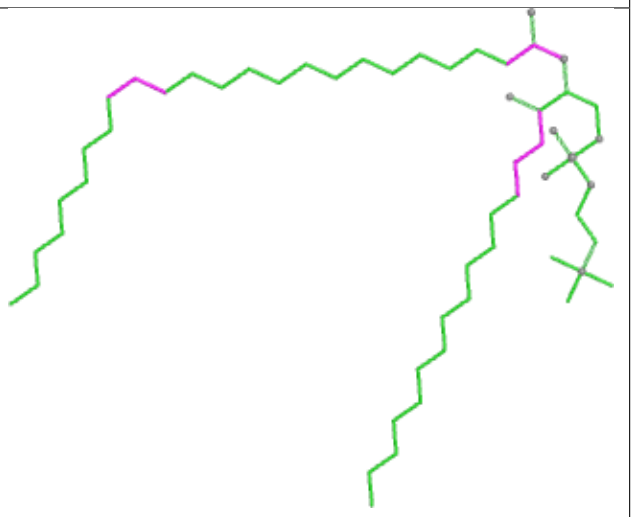


Rings

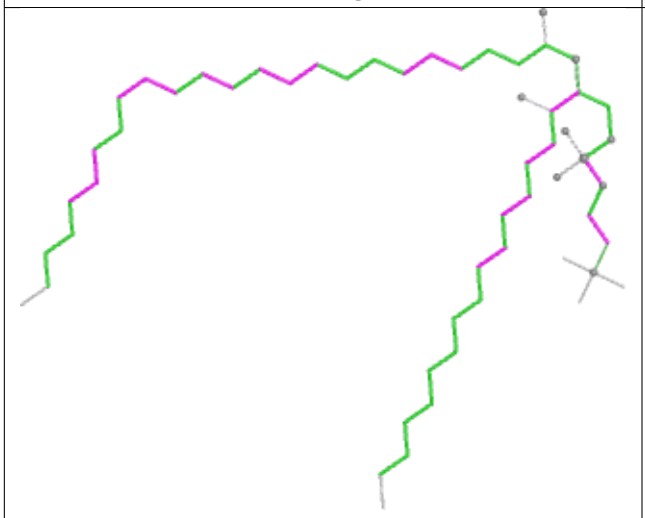
Ligand FO4 A 405



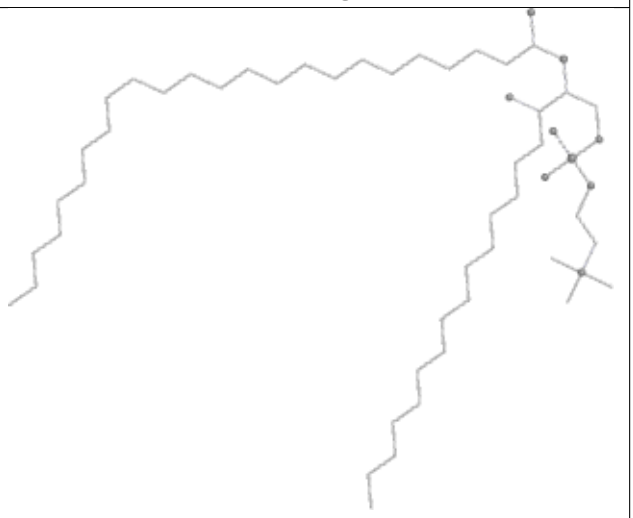
Bond lengths



Bond angles

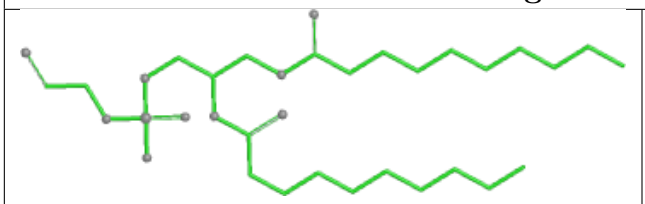


Torsions

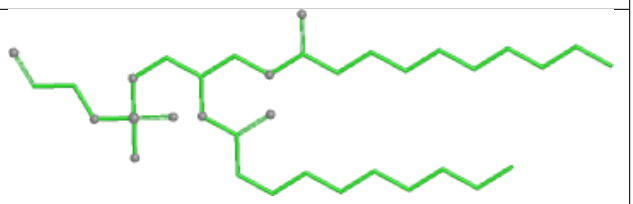


Rings

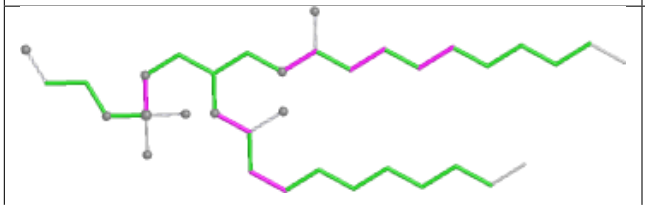
Ligand PEX A 401



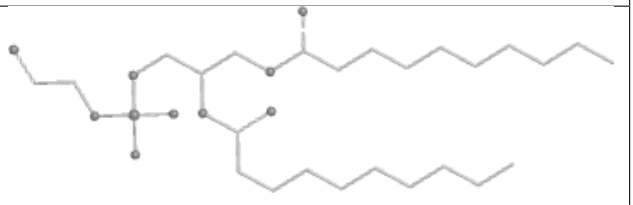
Bond lengths



Bond angles

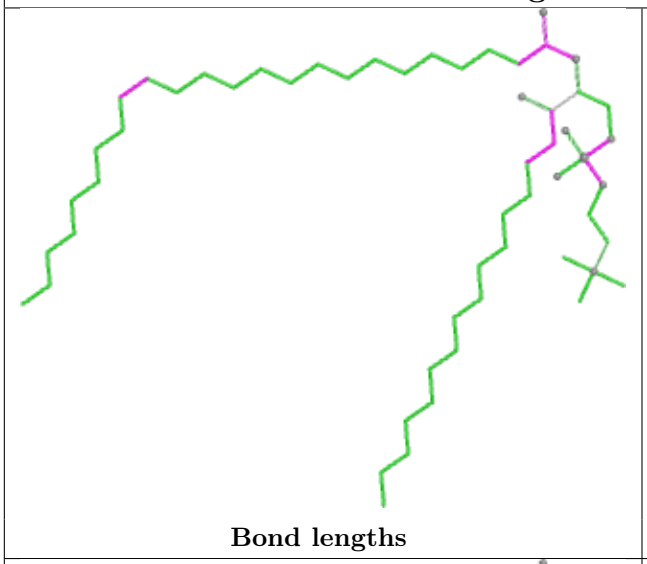


Torsions

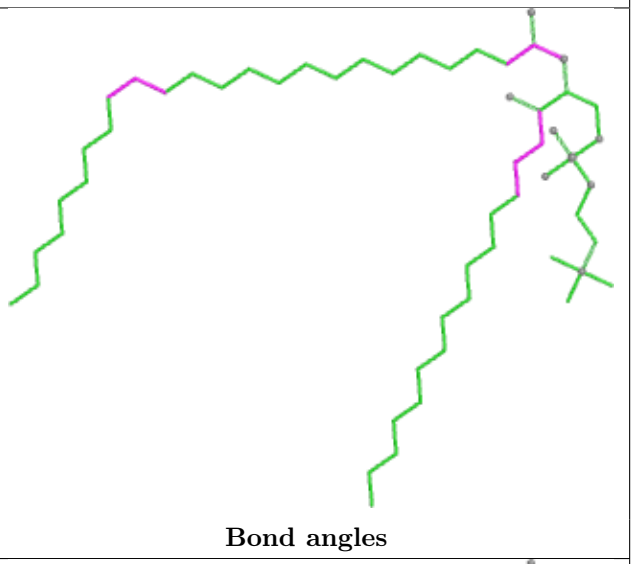


Rings

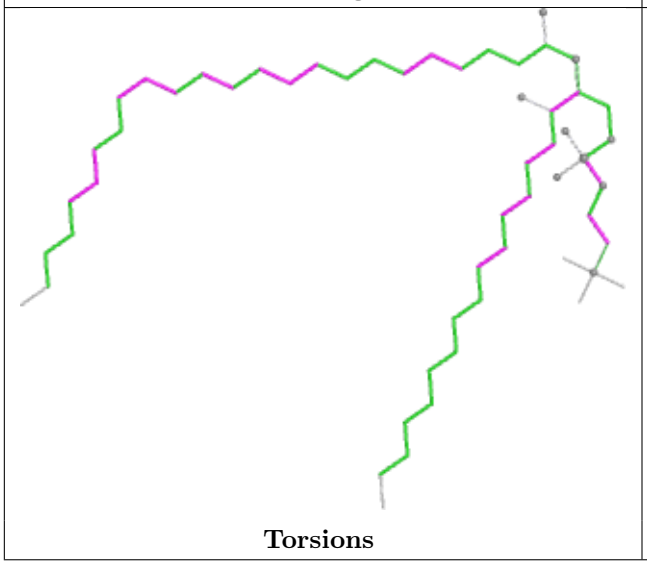
Ligand FO4 G 402



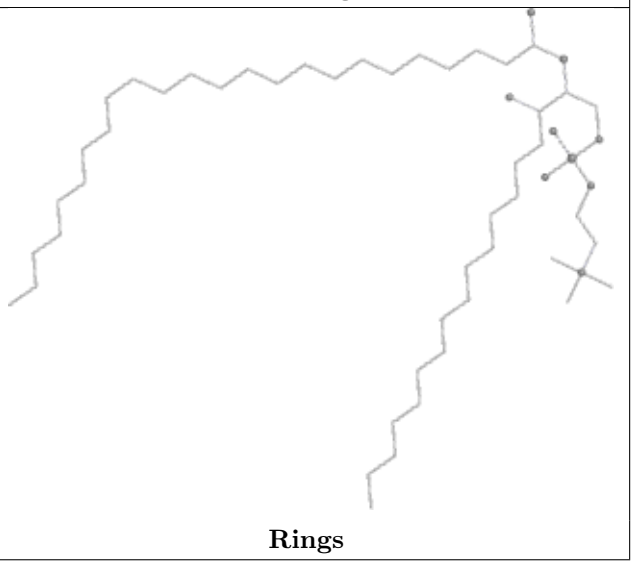
Bond lengths



Bond angles

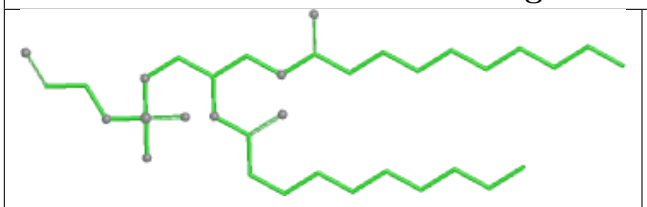


Torsions

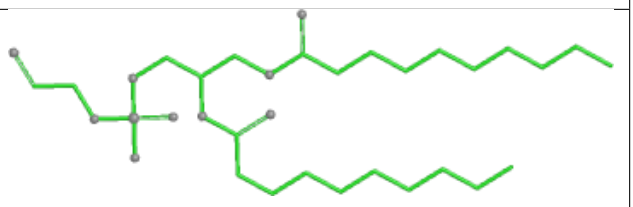


Rings

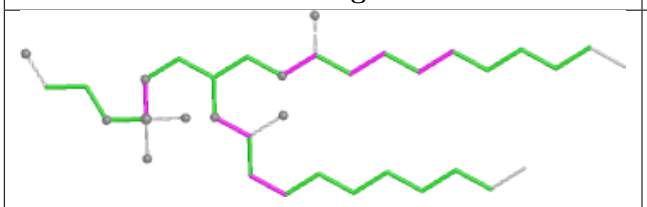
Ligand PEX B 401



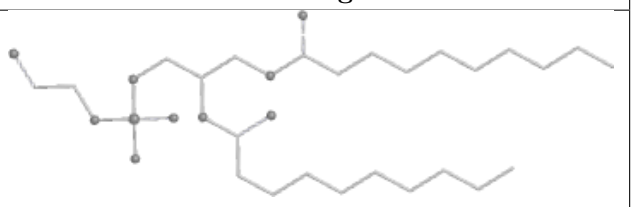
Bond lengths



Bond angles



Torsions



Rings

4.7 Other polymers (i)

There are no such residues in this entry.

4.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

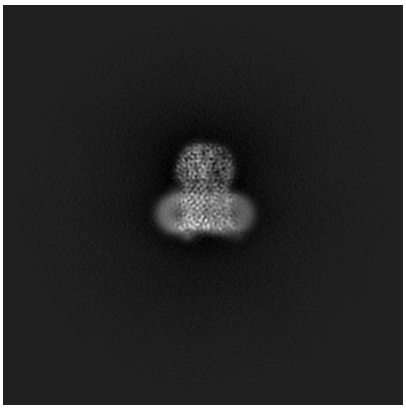
5 Map visualisation

This section contains visualisations of the EMDB entry EMD-70742. These allow visual inspection of the internal detail of the map and identification of artifacts.

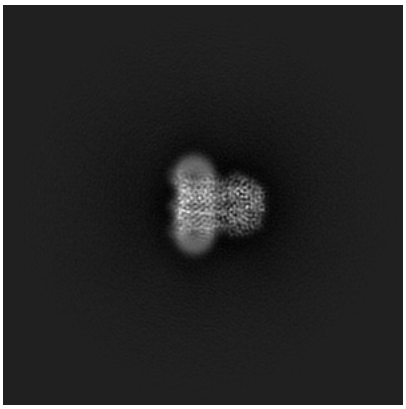
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

5.1 Orthogonal projections

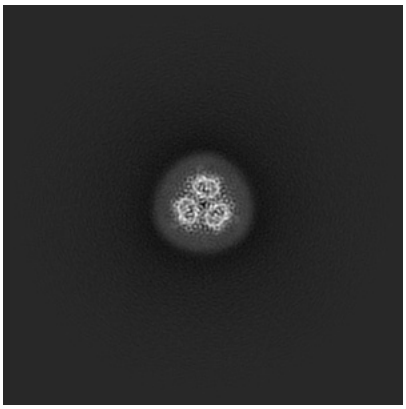
5.1.1 Primary map



X

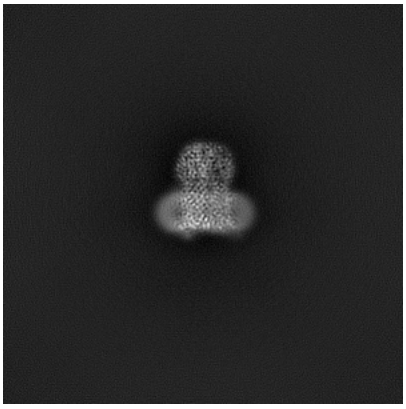


Y

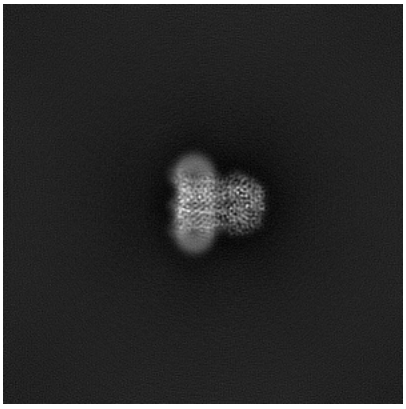


Z

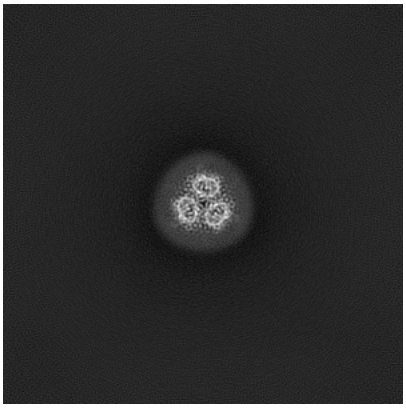
5.1.2 Raw map



X



Y

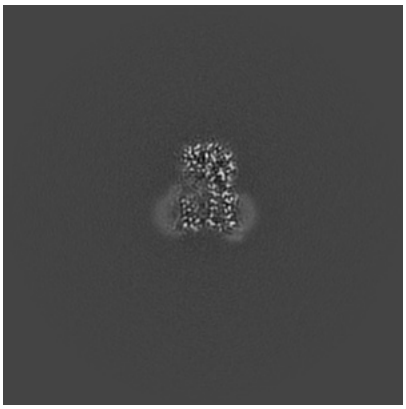


Z

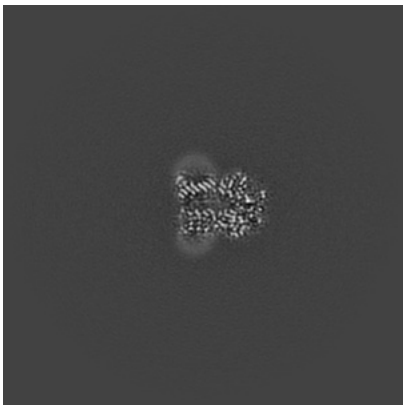
The images above show the map projected in three orthogonal directions.

5.2 Central slices (i)

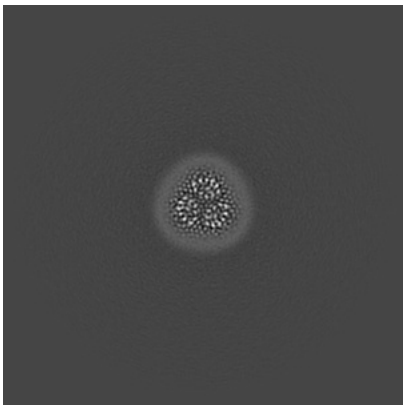
5.2.1 Primary map



X Index: 180

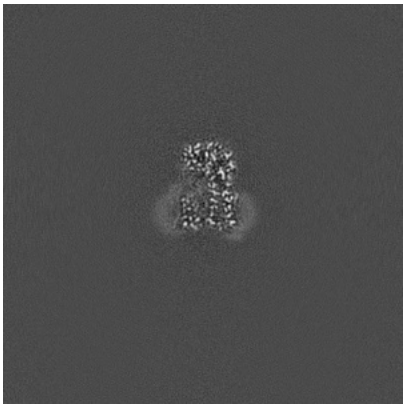


Y Index: 180

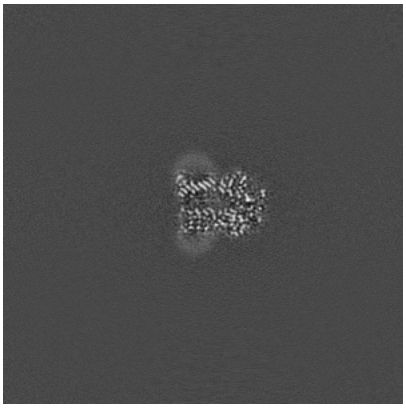


Z Index: 180

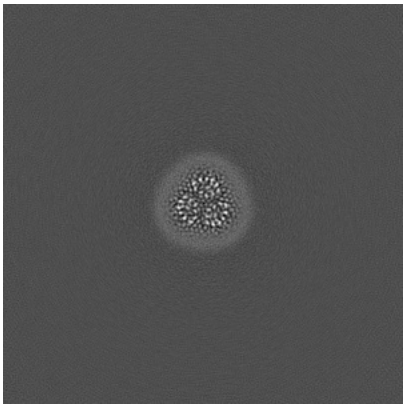
5.2.2 Raw map



X Index: 180



Y Index: 180

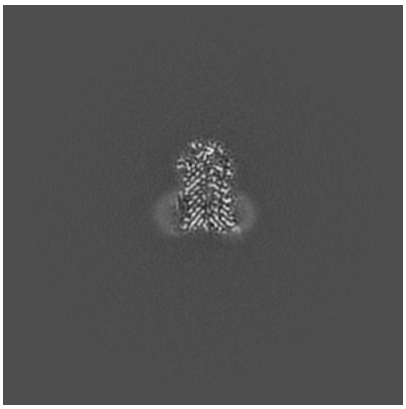


Z Index: 180

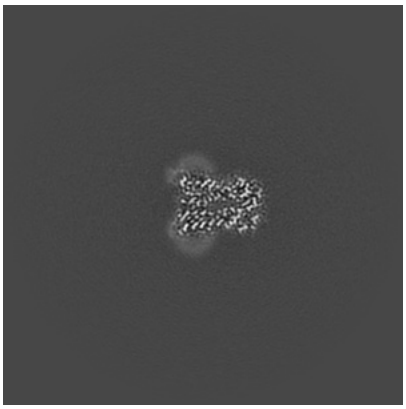
The images above show central slices of the map in three orthogonal directions.

5.3 Largest variance slices (i)

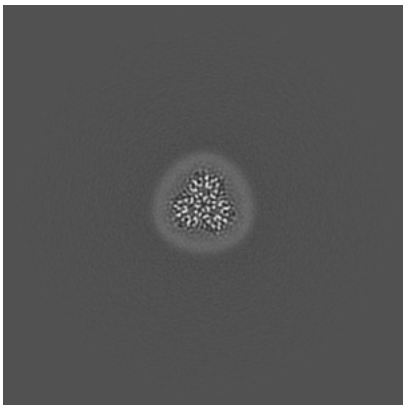
5.3.1 Primary map



X Index: 174

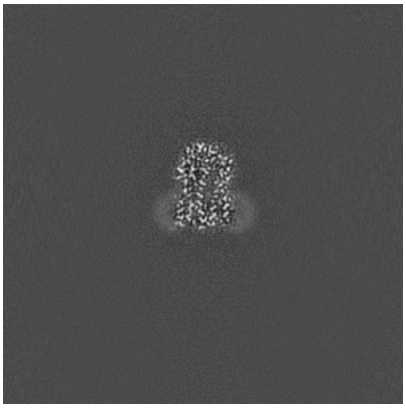


Y Index: 167

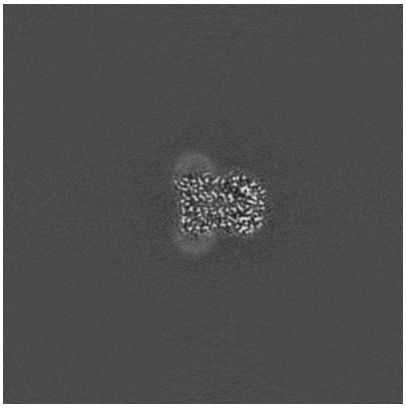


Z Index: 166

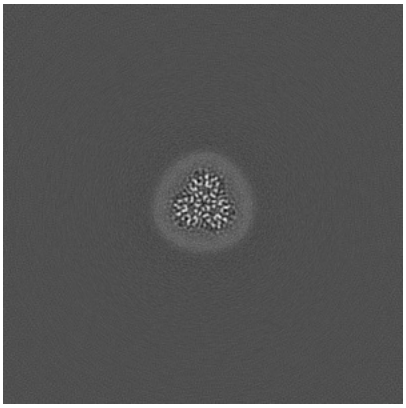
5.3.2 Raw map



X Index: 190



Y Index: 175

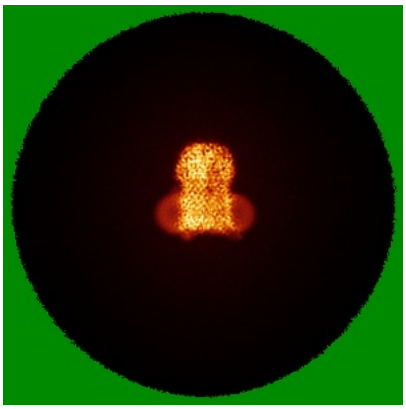


Z Index: 166

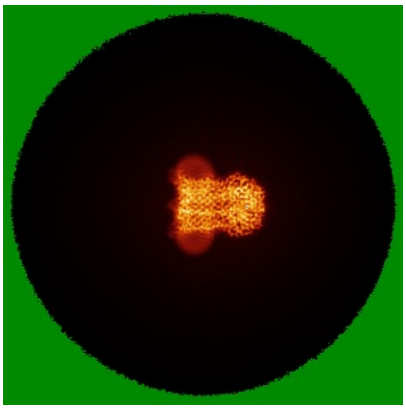
The images above show the largest variance slices of the map in three orthogonal directions.

5.4 Orthogonal standard-deviation projections (False-color) (i)

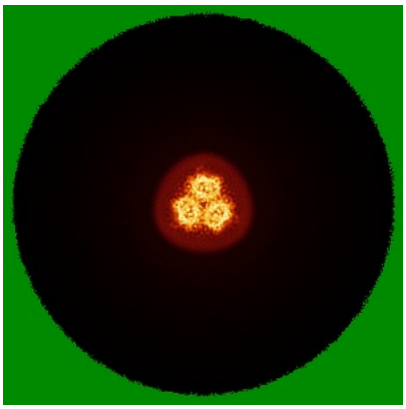
5.4.1 Primary map



X

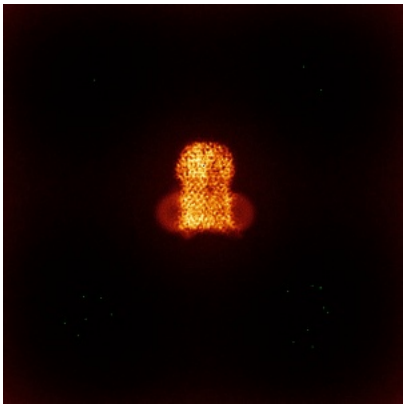


Y

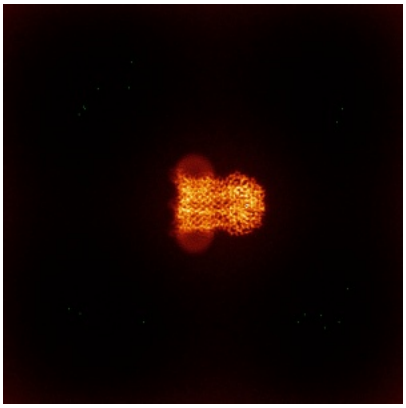


Z

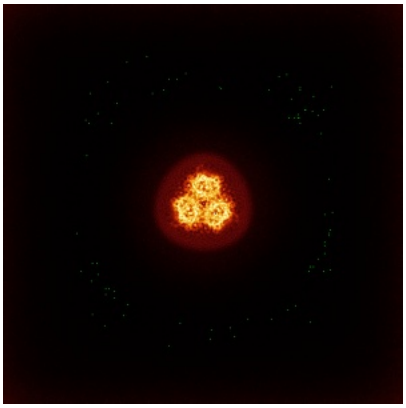
5.4.2 Raw map



X



Y

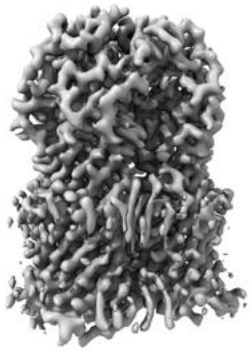


Z

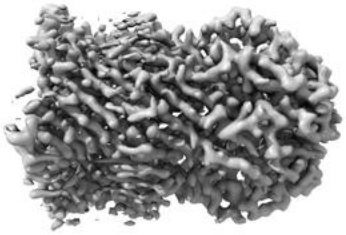
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

5.5 Orthogonal surface views (i)

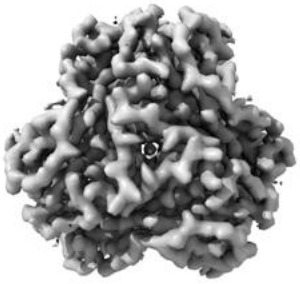
5.5.1 Primary map



X



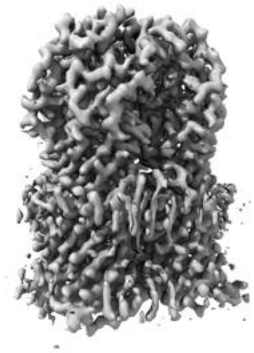
Y



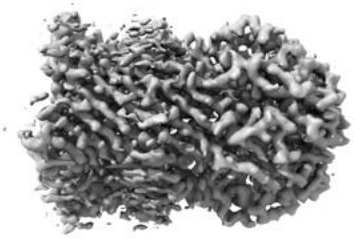
Z

The images above show the 3D surface view of the map at the recommended contour level 0.22. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

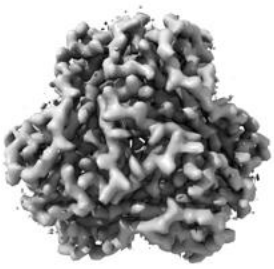
5.5.2 Raw map



X



Y



Z

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.

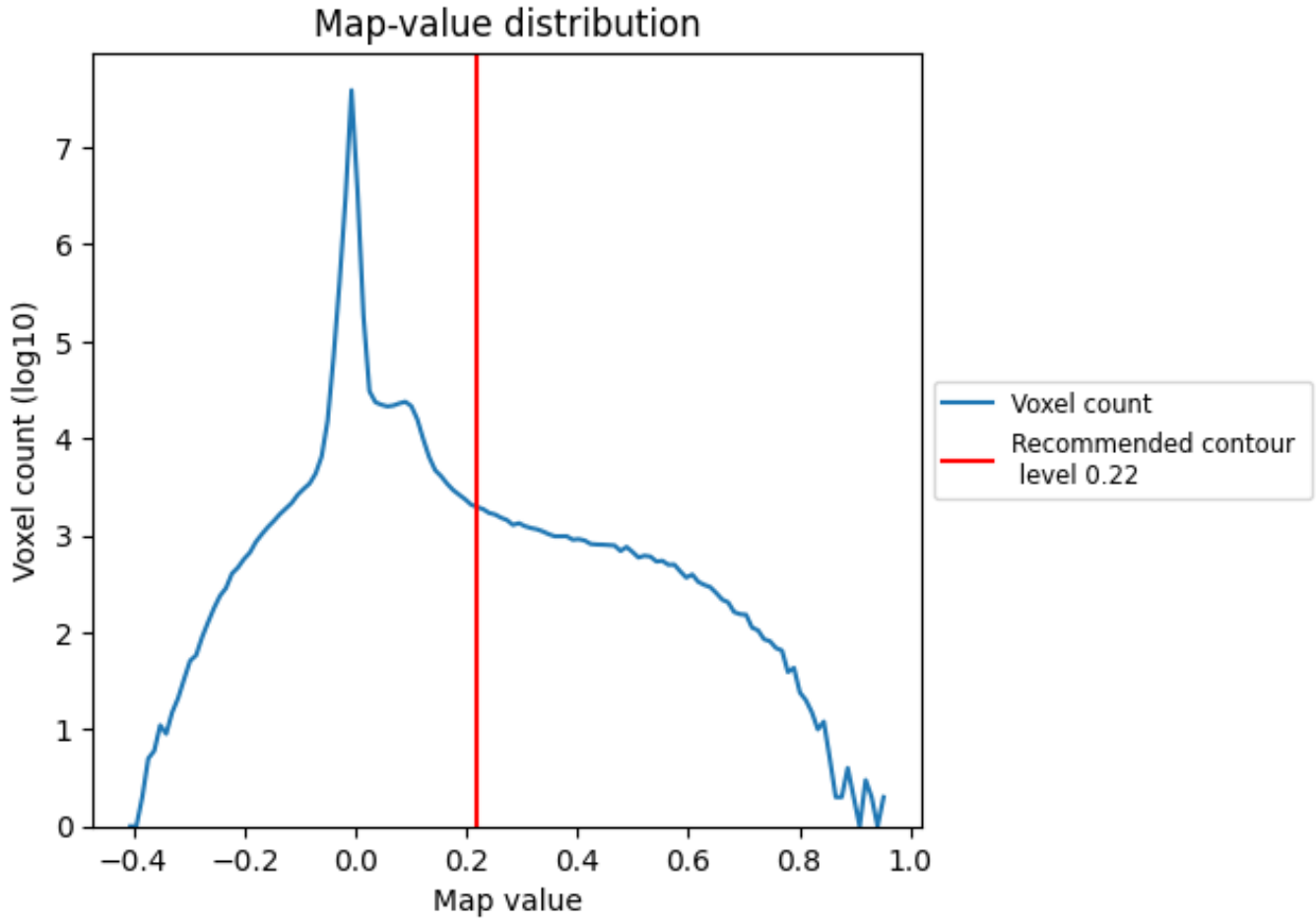
5.6 Mask visualisation (i)

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

6 Map analysis

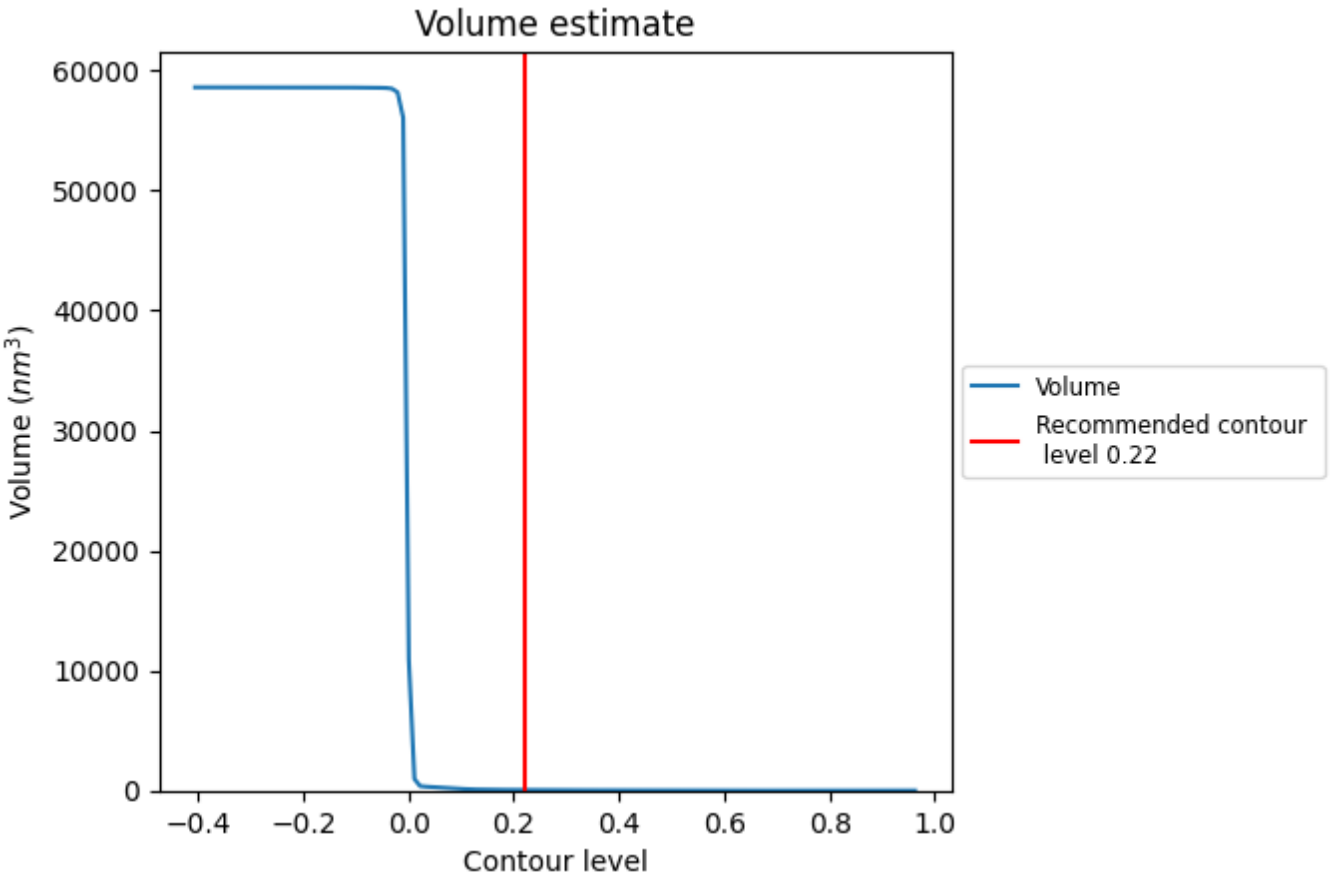
This section contains the results of statistical analysis of the map.

6.1 Map-value distribution



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.

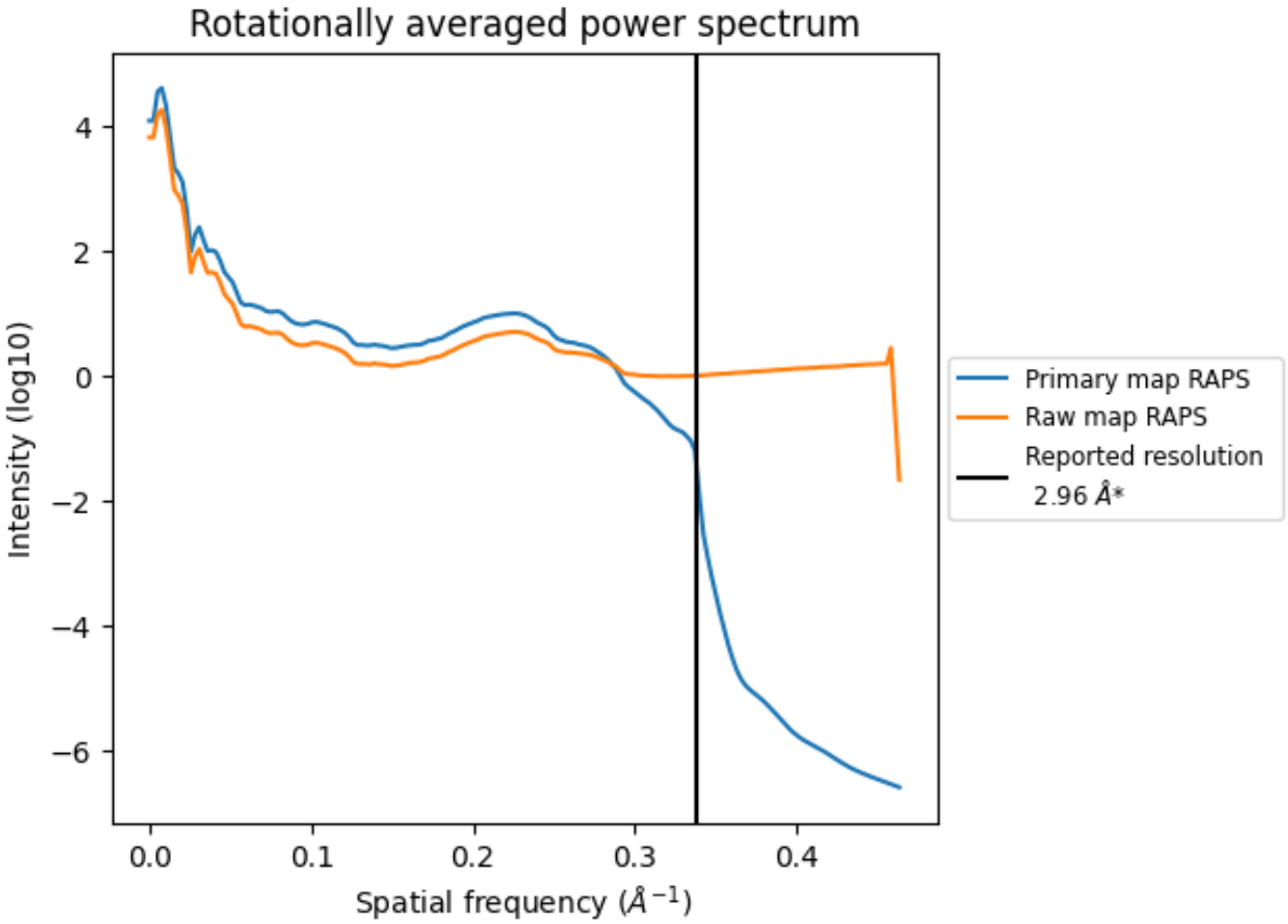
6.2 Volume estimate (i)



The volume at the recommended contour level is 48 nm^3; this corresponds to an approximate mass of 43 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.

6.3 Rotationally averaged power spectrum (i)

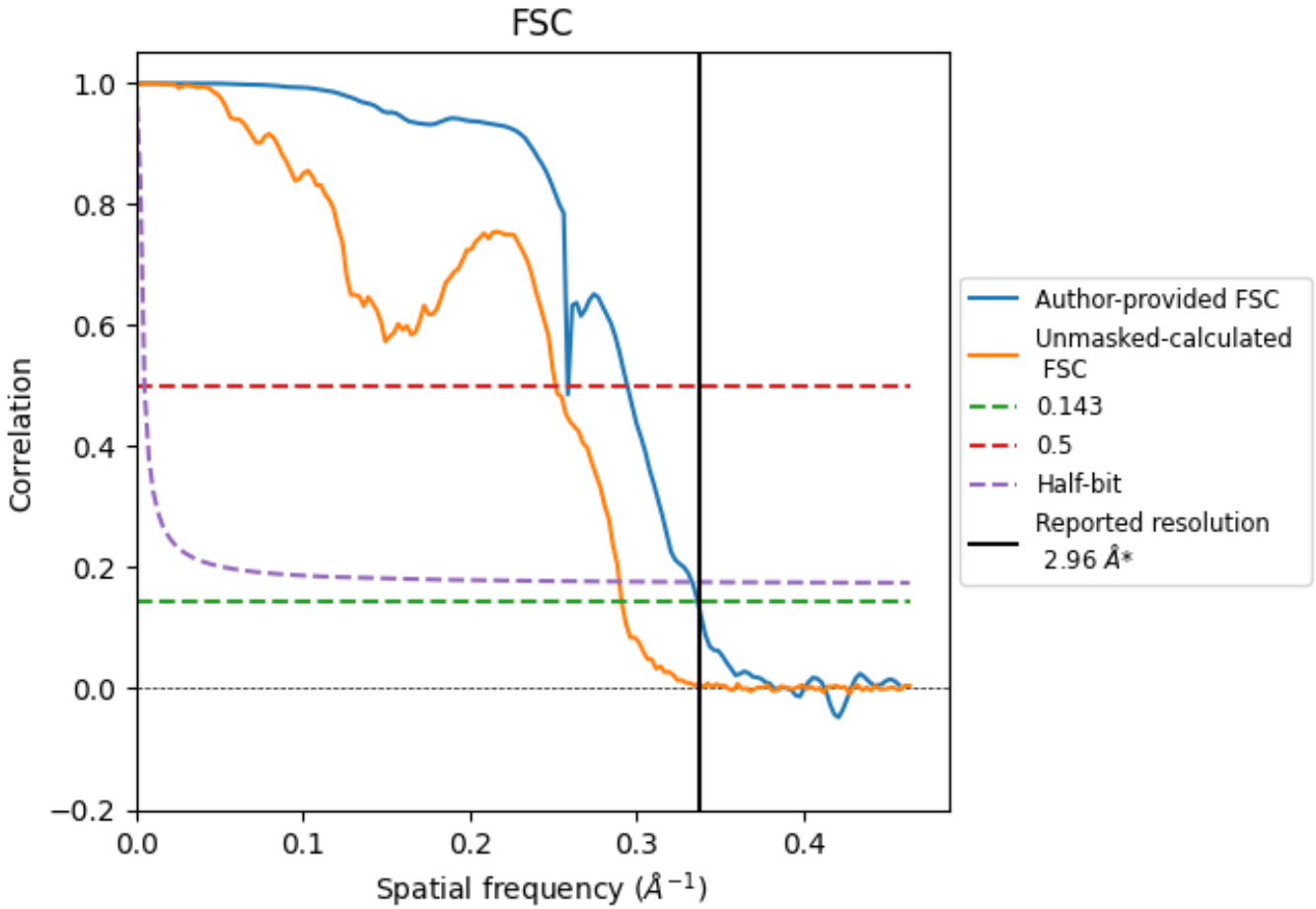


*Reported resolution corresponds to spatial frequency of 0.338 Å^{-1}

7 Fourier-Shell correlation

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.

7.1 FSC



*Reported resolution corresponds to spatial frequency of 0.338 Å^{-1}

7.2 Resolution estimates (i)

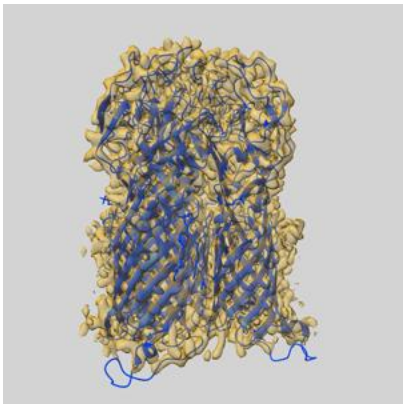
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.96	-	-
Author-provided FSC curve	2.97	3.87	3.00
Unmasked-calculated*	3.44	3.98	3.45

*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 3.44 differs from the reported value 2.96 by more than 10 %

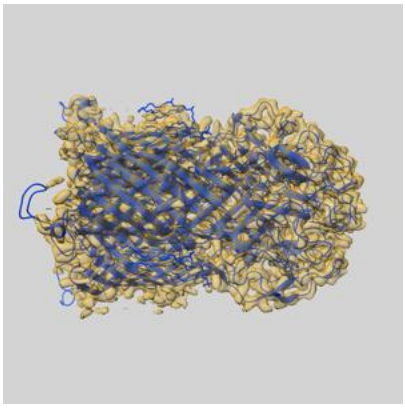
8 Map-model fit

This section contains information regarding the fit between EMDB map EMD-70742 and PDB model 9OQ7. Per-residue inclusion information can be found in section ?? on page ??.

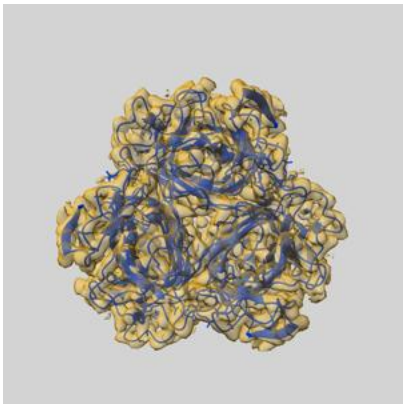
8.1 Map-model overlay



X



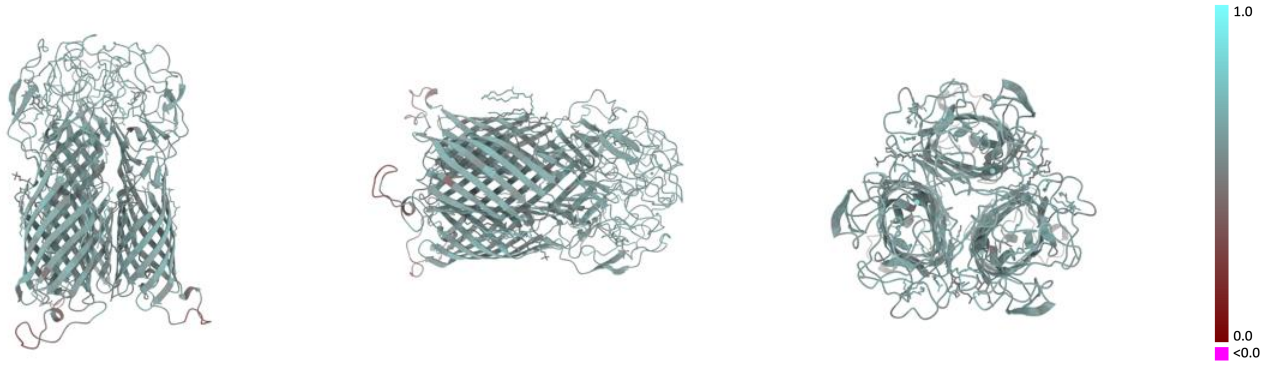
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.22 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.

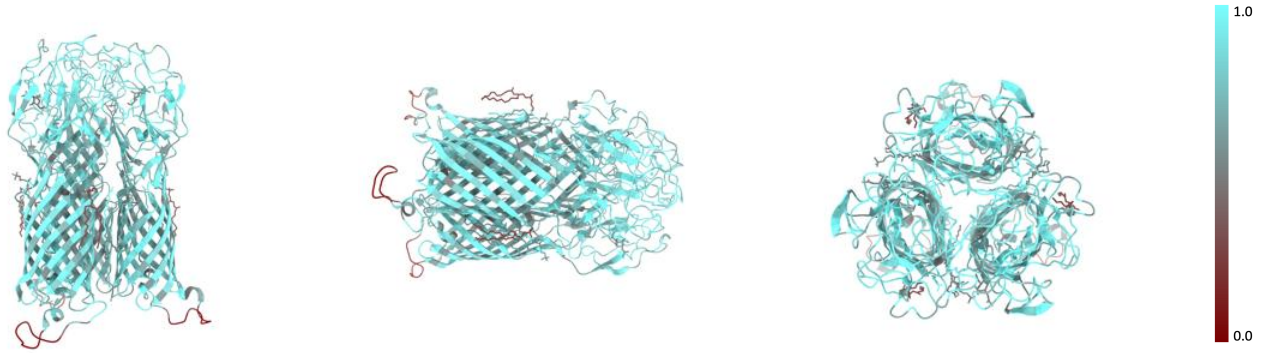
8.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according 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.

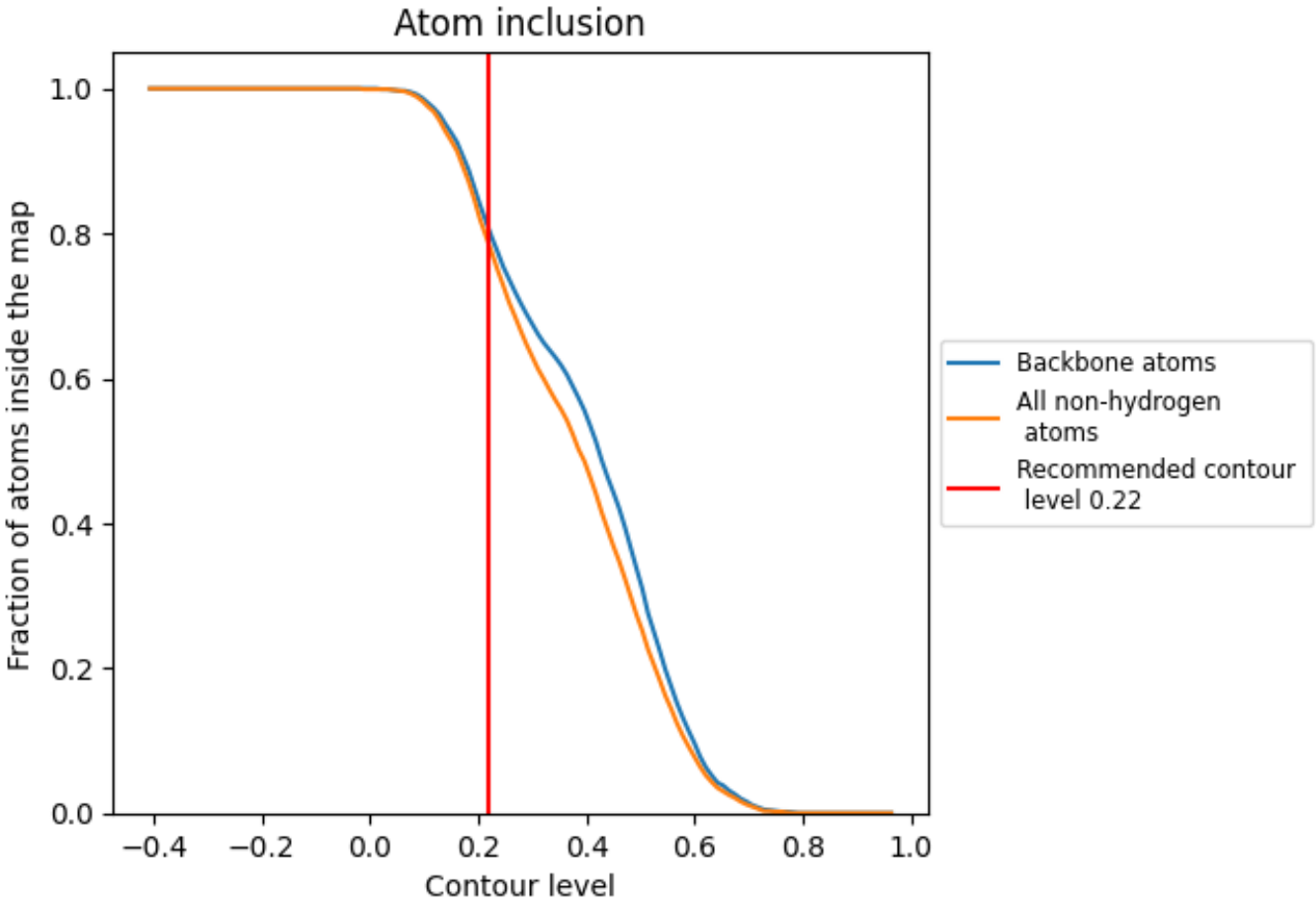
8.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.22).

8.4 Atom inclusion (i)



At the recommended contour level, 81% of all backbone atoms, 78% of all non-hydrogen atoms, are inside the map.

8.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.22) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7850	0.5710
A	0.7870	0.5730
B	0.7890	0.5700
G	0.7870	0.5710