W O R L D W I D E
wwPDB
P R O T E I N   D A T A   B A N K

wwPDB EM Validation Summary Report (i)

May 19, 2025 – 10:38 PM EDT

PDB ID	:	8G5B / pdb_00008g5b
EMDB ID	:	EMD-29738
Title	:	Influenza A H3N2 X-31 Hemagglutinin in complex with FL-1061
Authors	:	Windsor, I.W.; Thornlow, D.; Schmidt, A.G.
Deposited on	:	2023-02-12
Resolution	:	3.10 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 (i) 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 (i)) were used in the production of this report:

|		
EMDB validation analysis	:	0.0.1.dev118
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0rc1
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)	:	2.43.1

1 Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.10 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	Percentile Ranks	Value
Clashscore		7
Ramachandran outliers		0
Sidechain outliers		0.7%

Worse   *Better*

▮ Percentile relative to all structures

▯ Percentile relative to all EM structures
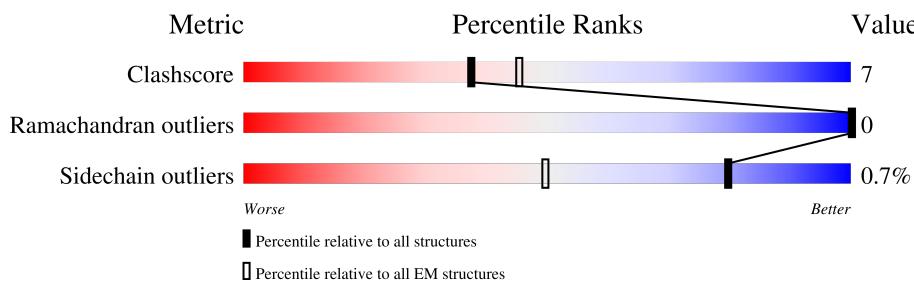
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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 <=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	386	• / 63% · 7% · 30%
2	H	265	9% / 39% 6% 54%
3	I	266	24% / 76% 8% 17%
4	J	241	• / 45% 9% 46%
5	L	241	11% / 37% 9% 54%
6	M	236	32% / 80% 10% 10%
7	N	210	• / 41% 8% 51%

WORLDWIDE wwPDB PROTEIN DATA BANK
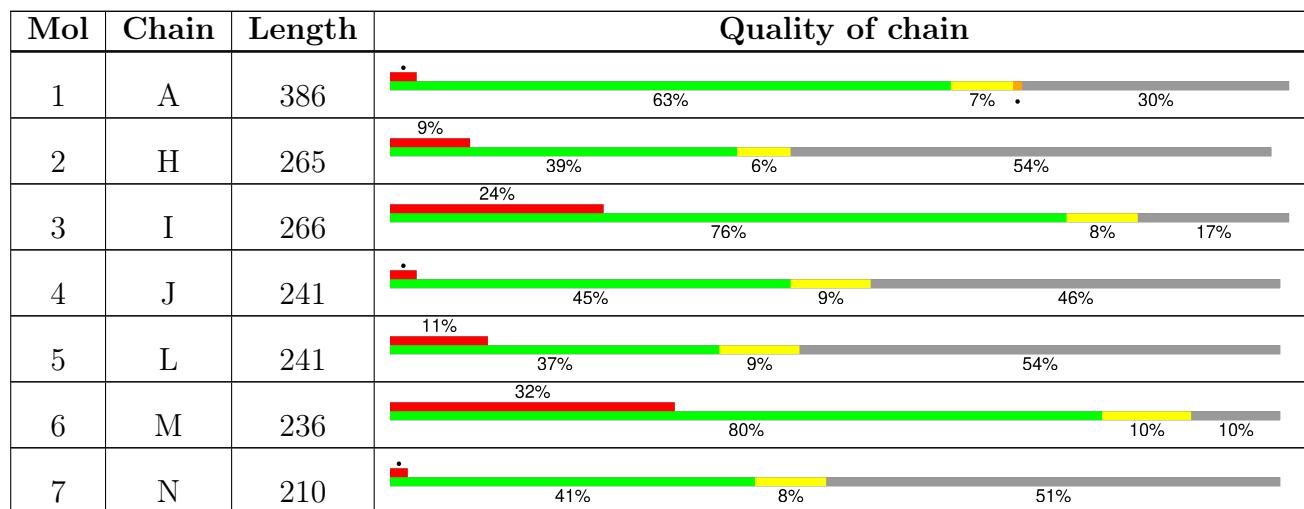
2   Entry composition ⓘ

There are 8 unique types of molecules in this entry. The entry contains 9009 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 Hemagglutinin.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	270	2100	1321	366	402	11	0	0

There are 104 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	MET	-	initiating methionine	UNP P03437
A	-1	LEU	-	expression tag	UNP P03437
A	0	LEU	-	expression tag	UNP P03437
A	1	VAL	-	expression tag	UNP P03437
A	2	ASN	-	expression tag	UNP P03437
A	3	GLN	-	expression tag	UNP P03437
A	4	SER	-	expression tag	UNP P03437
A	5	HIS	-	expression tag	UNP P03437
A	6	GLN	-	expression tag	UNP P03437
A	7	GLY	-	expression tag	UNP P03437
A	8	PHE	-	expression tag	UNP P03437
A	9	ASN	-	expression tag	UNP P03437
A	10	LYS	-	expression tag	UNP P03437
A	11	GLU	-	expression tag	UNP P03437
A	12	HIS	-	expression tag	UNP P03437
A	13	THR	-	expression tag	UNP P03437
A	14	SER	-	expression tag	UNP P03437
A	15	LYS	-	expression tag	UNP P03437
A	16	MET	-	expression tag	UNP P03437
A	17	VAL	-	expression tag	UNP P03437
A	18	SER	-	expression tag	UNP P03437
A	19	ALA	-	expression tag	UNP P03437
A	20	ILE	-	expression tag	UNP P03437
A	21	VAL	-	expression tag	UNP P03437
A	22	LEU	-	expression tag	UNP P03437
A	23	TYR	-	expression tag	UNP P03437
A	24	VAL	-	expression tag	UNP P03437
A	25	LEU	-	expression tag	UNP P03437

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Chain	Residue	Modelled	Actual	Comment	Reference
A	26	LEU	-	expression tag	UNP P03437
A	27	ALA	-	expression tag	UNP P03437
A	28	ALA	-	expression tag	UNP P03437
A	29	ALA	-	expression tag	UNP P03437
A	30	ALA	-	expression tag	UNP P03437
A	31	HIS	-	expression tag	UNP P03437
A	32	SER	-	expression tag	UNP P03437
A	33	ALA	-	expression tag	UNP P03437
A	34	PHE	-	expression tag	UNP P03437
A	35	ALA	-	expression tag	UNP P03437
A	36	SER	-	expression tag	UNP P03437
A	188	ASP	ASN	conflict	UNP P03437
A	320	ALA	-	expression tag	UNP P03437
A	321	GLY	-	expression tag	UNP P03437
A	322	GLY	-	expression tag	UNP P03437
A	323	ALA	-	expression tag	UNP P03437
A	324	GLY	-	expression tag	UNP P03437
A	325	SER	-	expression tag	UNP P03437
A	326	GLY	-	expression tag	UNP P03437
A	327	GLY	-	expression tag	UNP P03437
A	328	GLY	-	expression tag	UNP P03437
A	329	GLY	-	expression tag	UNP P03437
A	330	ALA	-	expression tag	UNP P03437
A	331	GLY	-	expression tag	UNP P03437
A	332	SER	-	expression tag	UNP P03437
A	333	GLY	-	expression tag	UNP P03437
A	334	GLY	-	expression tag	UNP P03437
A	335	PRO	-	expression tag	UNP P03437
A	336	GLY	-	expression tag	UNP P03437
A	337	SER	-	expression tag	UNP P03437
A	338	GLY	-	expression tag	UNP P03437
A	339	TYR	-	expression tag	UNP P03437
A	340	ILE	-	expression tag	UNP P03437
A	341	PRO	-	expression tag	UNP P03437
A	342	GLU	-	expression tag	UNP P03437
A	343	ALA	-	expression tag	UNP P03437
A	344	PRO	-	expression tag	UNP P03437
A	345	ARG	-	expression tag	UNP P03437
A	346	ASP	-	expression tag	UNP P03437
A	347	GLY	-	expression tag	UNP P03437
A	348	GLN	-	expression tag	UNP P03437
A	349	ALA	-	expression tag	UNP P03437

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Chain	Residue	Modelled	Actual	Comment	Reference
A	350	TYR	-	expression tag	UNP P03437
A	351	VAL	-	expression tag	UNP P03437
A	352	ARG	-	expression tag	UNP P03437
A	353	LYS	-	expression tag	UNP P03437
A	354	ASP	-	expression tag	UNP P03437
A	355	GLY	-	expression tag	UNP P03437
A	356	GLU	-	expression tag	UNP P03437
A	357	TRP	-	expression tag	UNP P03437
A	358	VAL	-	expression tag	UNP P03437
A	359	LEU	-	expression tag	UNP P03437
A	360	LEU	-	expression tag	UNP P03437
A	361	SER	-	expression tag	UNP P03437
A	362	THR	-	expression tag	UNP P03437
A	363	PHE	-	expression tag	UNP P03437
A	364	LEU	-	expression tag	UNP P03437
A	365	GLY	-	expression tag	UNP P03437
A	366	GLY	-	expression tag	UNP P03437
A	367	GLY	-	expression tag	UNP P03437
A	368	LEU	-	expression tag	UNP P03437
A	369	GLU	-	expression tag	UNP P03437
A	370	VAL	-	expression tag	UNP P03437
A	371	LEU	-	expression tag	UNP P03437
A	372	PHE	-	expression tag	UNP P03437
A	373	GLN	-	expression tag	UNP P03437
A	374	GLY	-	expression tag	UNP P03437
A	375	PRO	-	expression tag	UNP P03437
A	376	GLY	-	expression tag	UNP P03437
A	377	GLY	-	expression tag	UNP P03437
A	378	HIS	-	expression tag	UNP P03437
A	379	HIS	-	expression tag	UNP P03437
A	380	HIS	-	expression tag	UNP P03437
A	381	HIS	-	expression tag	UNP P03437
A	382	HIS	-	expression tag	UNP P03437
A	383	HIS	-	expression tag	UNP P03437

- Molecule 2 is a protein called FL-1086 heavy chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	H	121	947	600	152	190	5	0	0

- Molecule 3 is a protein called FL-1061 heavy chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	I	221	Total 1639	C 1035	N 271	O 326	S 7	0	0

- Molecule 4 is a protein called S5V2-29 heavy chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	J	131	Total 1012	C 647	N 167	O 193	S 5	0	0

- Molecule 5 is a protein called FL-1086 light chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	L	112	Total 861	C 545	N 144	O 168	S 4	0	0

- Molecule 6 is a protein called FL-1061 light chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	M	213	Total 1647	C 1035	N 271	O 335	S 6	0	0

- Molecule 7 is a protein called S5V2-29 light chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	N	103	Total 775	C 483	N 130	O 159	S 3	0	0

- Molecule 8 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).

NAG

O6
OH

O1　　　　　　O5
HO　　　　　　O

C1(R)　　　C5(R)
C2(R)　　　C4(S)
C3(R)

N2
HN

OH
O4

C7
OH
O3

C8　　　　O
O7
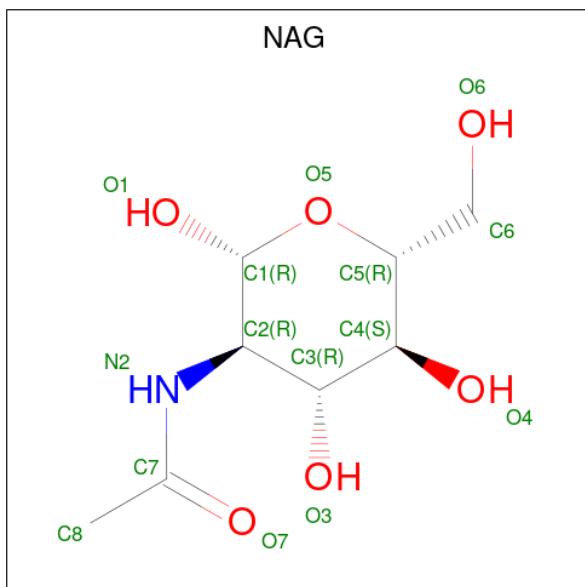
Mol	Chain	Residues	Atoms				AltConf
8	A	1	Total	C	N	O	0
			14	8	1	5	
8	A	1	Total	C	N	O	0
			14	8	1	5	

3 Residue-property plots ⓘ

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: Hemagglutinin

Chain A:

63% 7% 30%

MET LEU LEU VAL ASN GLN SER HIS GLN GLY PHE ASN LYS GLU HIS THR SER LYS MET VAL SER ALA ILE VAL LEU TYR VAL LEU LEU ALA ALA ALA ALA HIS SER ALA PHE ALA SER THR ASN ALA THR E41 L42 I62 T65 L71 T83 Y98 T117 W127

T131 A138 P143 W153 L154 T155 K156 S159 L164 I179 W180 G181 I182 E190 Y195 V204 R208 S209 P215 L226 D241 V242 C281 I282 D291 K292 P293 N296 C305 P306 V309 K310 GLN ASN THR LEU LYS LEU ALA THR GLY ALA

GLY GLY ALA GLY SER GLY GLY GLY ALA GLY SER GLY GLY PRO GLY SER GLY GLY TYR ILE PRO GLU ALA PRO ARG ASP GLY GLN ALA TYR VAL ARG LYS ASP GLY GLU TRP VAL LEU LEU SER THR PHE LEU GLY GLY LEU GLU VAL LEU PHE GLN GLY PRO GLY HIS HIS HIS

HIS HIS HIS

• Molecule 2: FL-1086 heavy chain

Chain H:

9%
39% 6% 54%

MET LYS ARG GLY LEU CYS CYS VAL LEU LEU LEU CYS GLY ALA VAL PHE VAL SER PRO SER ALA SER E1 V2 Q3 L4 Q5 E6 S7 G8 A9 E10 L11 V12 M13 P14 G15 A16 K23 W33 K38 P41 G42 Q43 I48 K67 D73 K74 S75 S76 M81 Q82

L83 N84 S85 L86 T87 S88 E89 R98 N99 S102 S103 D108 T114 G119 A120 S121 THR LYS GLY PRO SER VAL PHE PRO LEU ALA PRO SER SER LYS SER THR SER GLY GLY THR ALA ALA LEU GLY CYS LEU VAL LYS ASP TYR PHE PRO GLU PRO VAL THR VAL SER TRP

ASN SER GLY ALA LEU THR SER GLY VAL HIS THR PHE PRO ALA VAL LEU GLN SER SER GLY LEU TYR SER LEU SER SER VAL VAL THR VAL PRO SER SER SER LEU GLY THR GLN THR TYR ILE CYS ASN VAL ASN HIS LYS PRO SER ASN THR LYS VAL ASP LYS ARG VAL GLU PRO LYS

SER CYS ASP LYS SER GLY SER LEU GLU VAL LEU PHE GLN GLY PRO LEU GLY HIS HIS HIS HIS HIS HIS

• Molecule 3: FL-1061 heavy chain

Chain I:

24%
76% 8% 17%

• Molecule 4: S5V2-29 heavy chain

Chain J: 45%   9%   46%
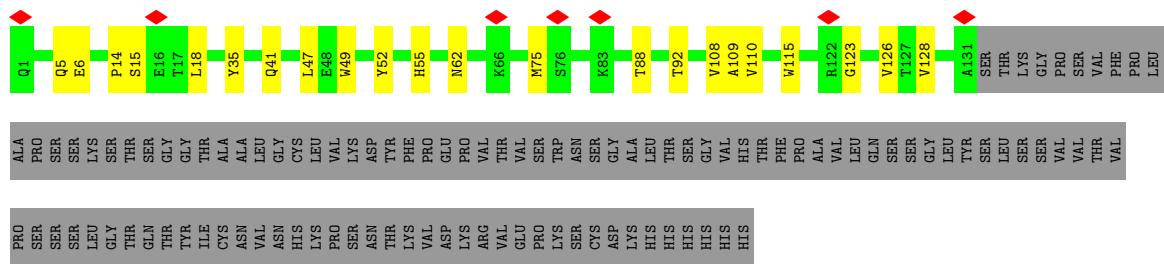
• Molecule 5: FL-1086 light chain

Chain L: 11%   37%   9%   54%
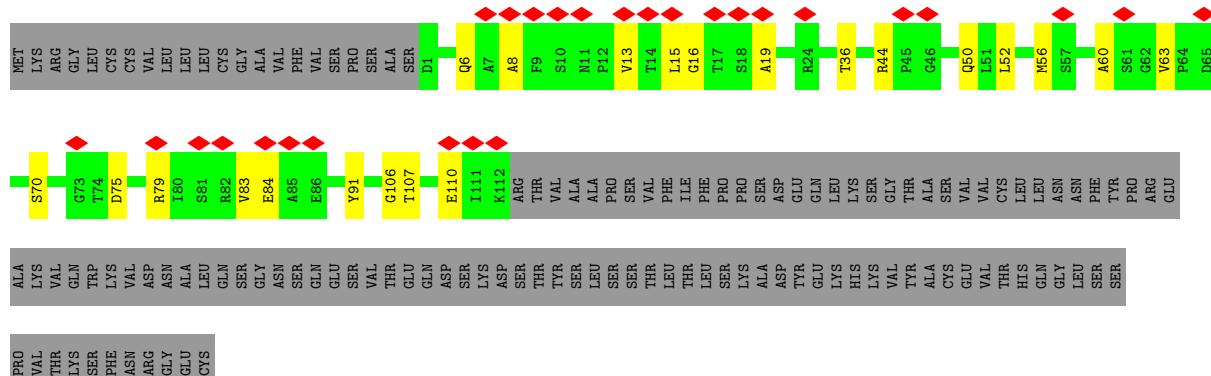
• Molecule 6: FL-1061 light chain

Chain M: 32%   80%   10%   10%

C194 E195 Q199 G200 L201 S202 S203 P204 V205 T206 K207 S208 F209 N210 R211 G212 E213 CYS

• Molecule 7: S5V2-29 light chain

Chain N: 41%   8%   51%

D1 I2 Q3 M4 L11 D17 R18 V19 C23 L33 N34 A51 R61 S65 G66 F71 E81 D82 F83 C88 K103 ARG THR VAL ALA ALA PRO SER VAL PHE ILE PHE PRO PRO ASP GLU GLN LEU LYS SER GLY THR ALA SER VAL VAL CYS LEU

LEU ASN ASN PHE TYR PRO ARG GLU ALA LYS VAL GLN TRP LYS VAL ASP ASN ALA LEU GLN SER GLY ASN SER GLN GLU SER VAL THR GLU GLN ASP SER LYS ASP SER THR TYR SER LEU SER SER THR LEU THR LEU SER LYS ALA ASP TYR GLU LYS HIS LYS VAL TYR ALA CYS GLU

VAL THR HIS GLN GLY LEU SER SER PRO VAL THR LYS SER PHE ASN ARG GLY GLU CYS

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	396166	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 $(e^-/\text{Å}^2)$	1.06	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.194	Depositor
Minimum map value	-0.127	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.03	Depositor
Map size (Å)	198.0, 198.0, 198.0	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.825, 0.825, 0.825	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: NAG

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	0.32	0/2152	0.38	0/2930
2	H	0.25	0/972	0.32	0/1319
3	I	0.25	0/1680	0.34	0/2288
4	J	0.27	0/1037	0.40	0/1409
5	L	0.36	0/880	0.44	0/1195
6	M	0.27	0/1684	0.39	0/2283
7	N	0.28	0/790	0.35	0/1070
All	All	0.29	0/9195	0.37	0/12494

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 ⓘ

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	2100	0	2043	28	0
2	H	947	0	891	11	0
3	I	1639	0	1596	17	0
4	J	1012	0	993	20	0
5	L	861	0	844	29	0
6	M	1647	0	1596	19	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	N	775	0	750	12	0
8	A	28	0	26	0	0
All	All	9009	0	8739	129	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 7.

The worst 5 of 129 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)
5:L:8:ALA:HB3	5:L:107:THR:OG1	1.68	0.93
5:L:8:ALA:HB1	5:L:107:THR:HG23	1.51	0.91
1:A:131:THR:HG22	1:A:155:THR:HB	1.54	0.87
5:L:8:ALA:CB	5:L:107:THR:HG23	2.03	0.87
3:I:48:ILE:HD13	3:I:81:MET:HE1	1.60	0.83

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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	268/386 (69%)	259 (97%)	9 (3%)	0	100	100
2	H	119/265 (45%)	116 (98%)	3 (2%)	0	100	100
3	I	219/266 (82%)	213 (97%)	6 (3%)	0	100	100
4	J	129/241 (54%)	127 (98%)	2 (2%)	0	100	100
5	L	110/241 (46%)	103 (94%)	7 (6%)	0	100	100
6	M	211/236 (89%)	202 (96%)	9 (4%)	0	100	100
7	N	101/210 (48%)	96 (95%)	5 (5%)	0	100	100
All	All	1157/1845 (63%)	1116 (96%)	41 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	239/319 (75%)	237 (99%)	2 (1%)	79	89
2	H	102/226 (45%)	101 (99%)	1 (1%)	73	86
3	I	180/218 (83%)	179 (99%)	1 (1%)	84	91
4	J	111/208 (53%)	111 (100%)	0	100	100
5	L	96/210 (46%)	95 (99%)	1 (1%)	73	86
6	M	187/206 (91%)	185 (99%)	2 (1%)	70	84
7	N	86/182 (47%)	86 (100%)	0	100	100
All	All	1001/1569 (64%)	994 (99%)	7 (1%)	80	90

5 of 7 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	I	214	ARG
5	L	110	GLU
6	M	93	GLU
6	M	21	ILE
2	H	67	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 7 such sidechains are listed below:

Mol	Chain	Res	Type
4	J	62	ASN
5	L	11	ASN
7	N	34	ASN
5	L	55	GLN
3	I	99	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

2 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	$\#\|Z\| > 2$
8	NAG	A	401	1	14,14,15	0.24	0	17,19,21	0.41	0
8	NAG	A	402	1	14,14,15	0.18	0	17,19,21	0.45	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
8	NAG	A	401	1	-	4/6/23/26	0/1/1/1
8	NAG	A	402	1	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 6 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
8	A	402	NAG	O5-C5-C6-O6
8	A	402	NAG	C4-C5-C6-O6
8	A	401	NAG	C4-C5-C6-O6
8	A	401	NAG	O5-C5-C6-O6
8	A	401	NAG	C1-C2-N2-C7

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6　Map visualisation　(i)

This section contains visualisations of the EMDB entry EMD-29738. 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
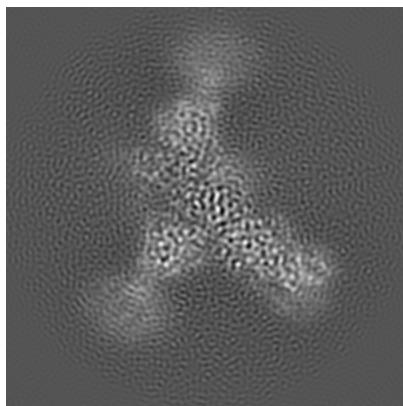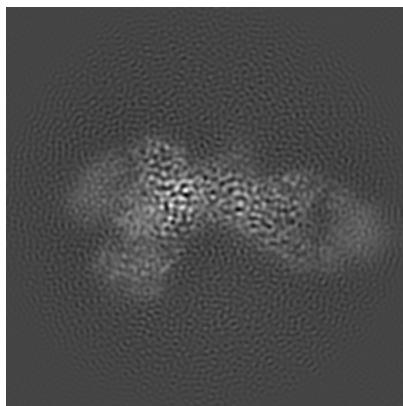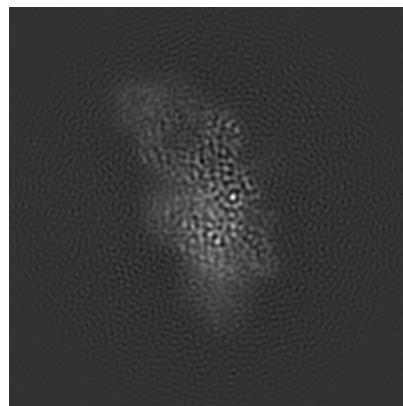
X　　　　　　　　　　　Y　　　　　　　　　　　Z

6.1.2　Raw map

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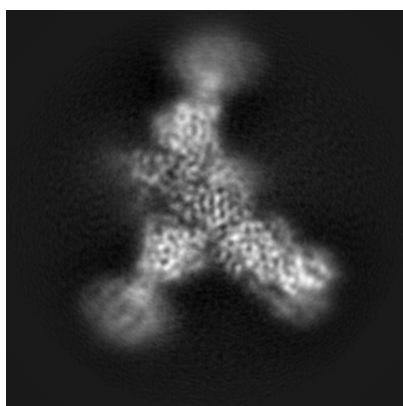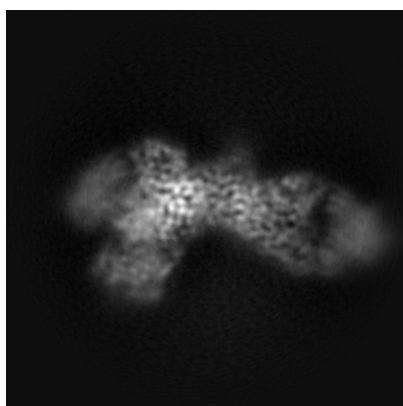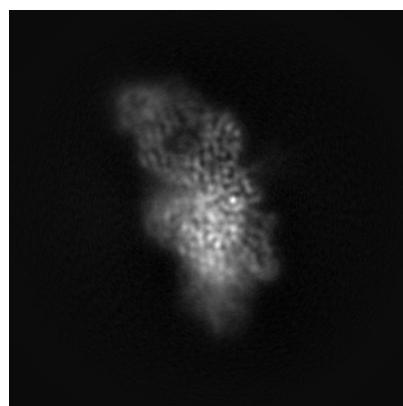
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
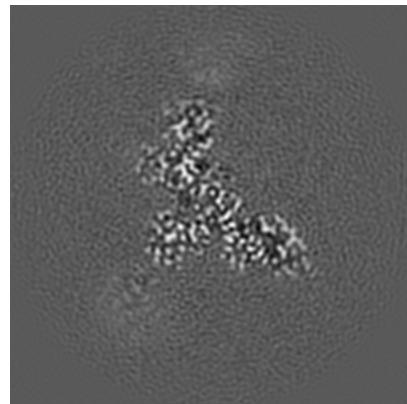
6.2.1 Primary map
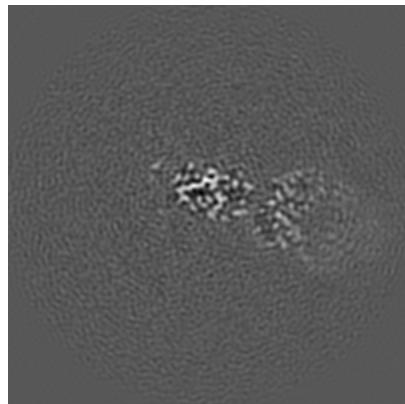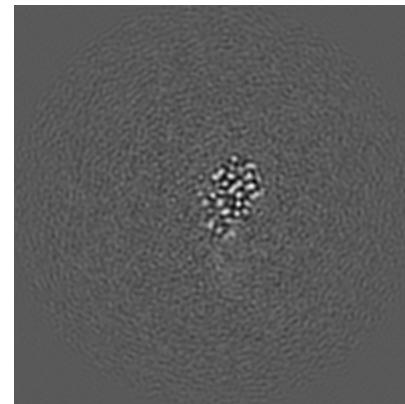
| X Index: 120 | Y Index: 120 | Z Index: 120 |

6.2.2 Raw map
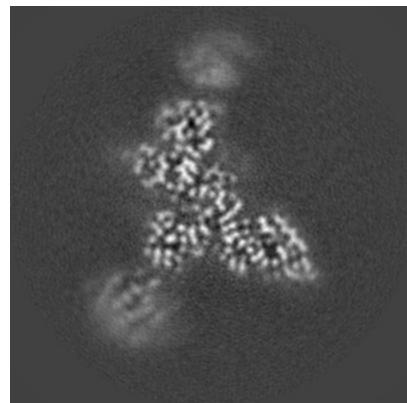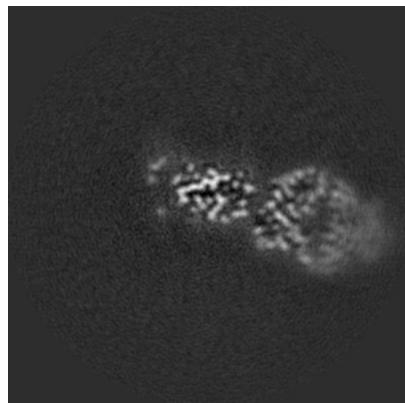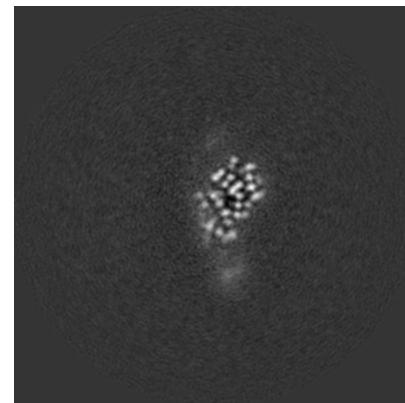
| X Index: 120 | Y Index: 120 | Z Index: 120 |

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

6.3   Largest variance slices   ⓘ

6.3.1   Primary map
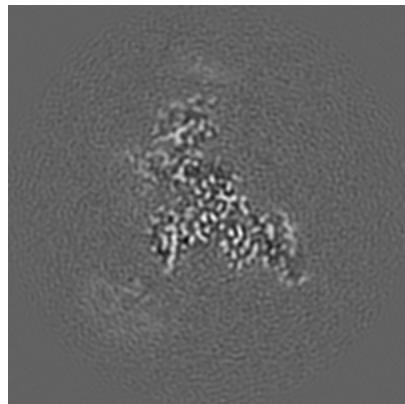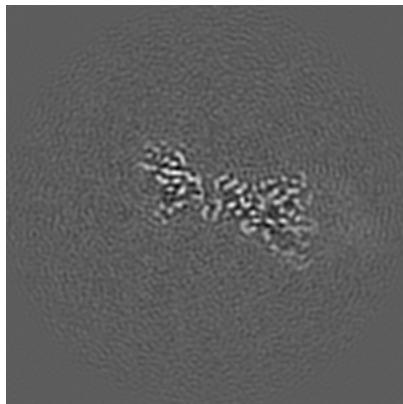
X Index: 125   Y Index: 108   Z Index: 103
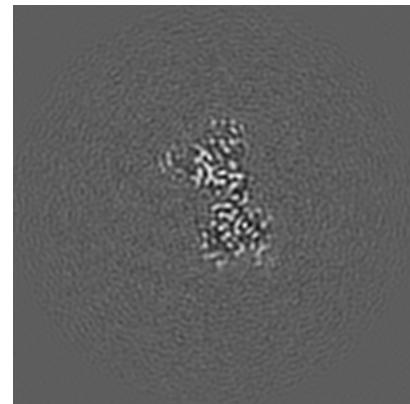
6.3.2   Raw map
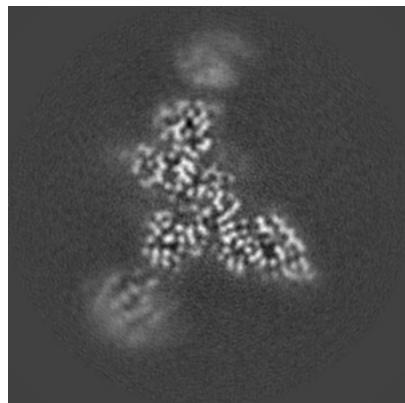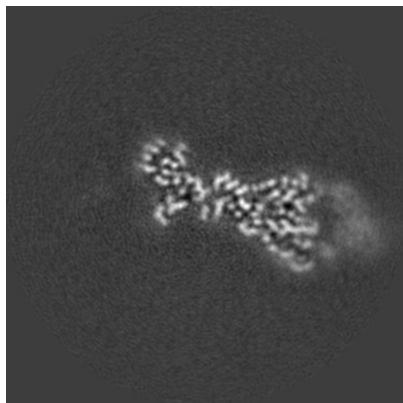
X Index: 120   Y Index: 109   Z Index: 98
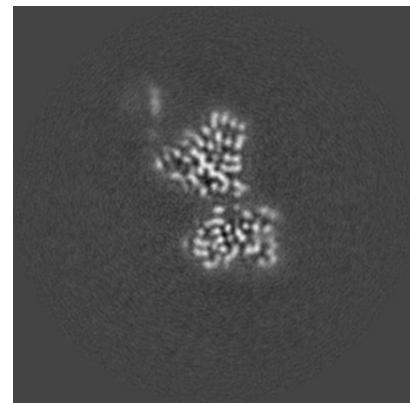
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map

| X | Y | Z |

6.4.2 Raw map

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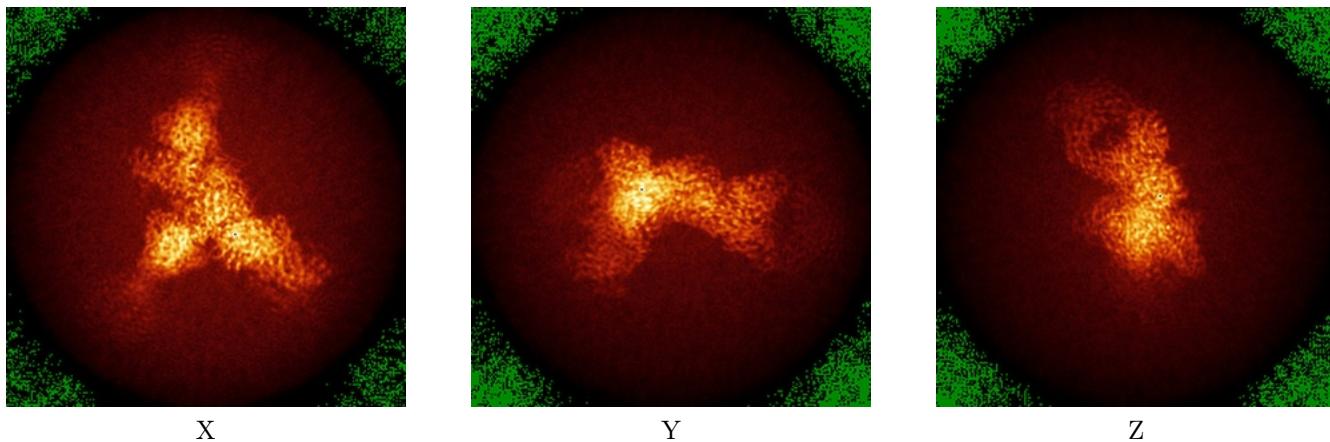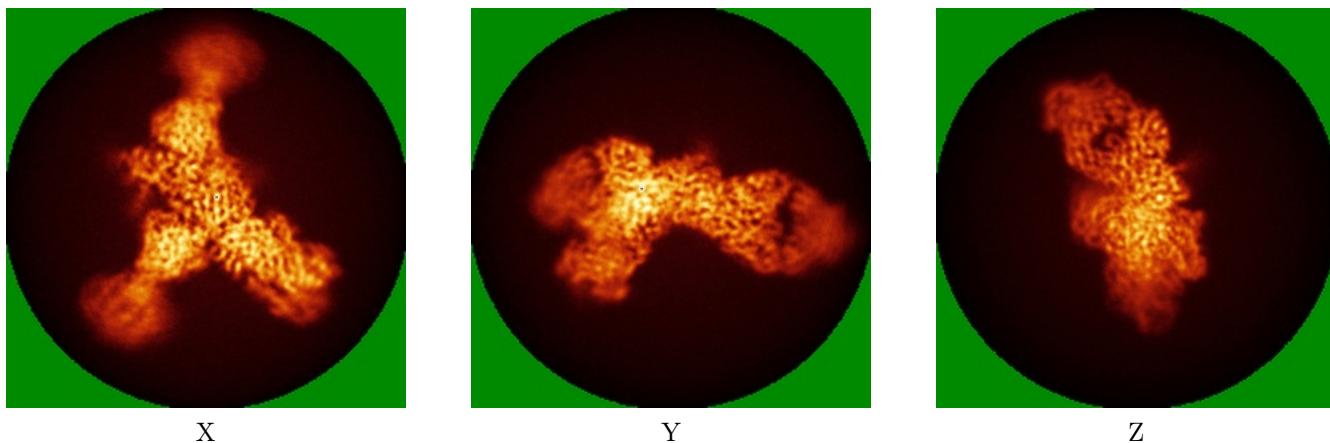
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

| X | Y | Z |
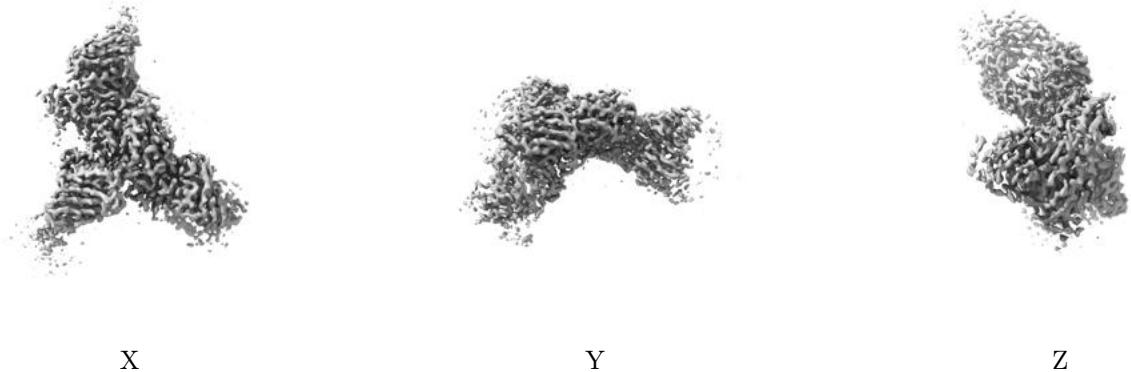
The images above show the 3D surface view of the map at the recommended contour level 0.03. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

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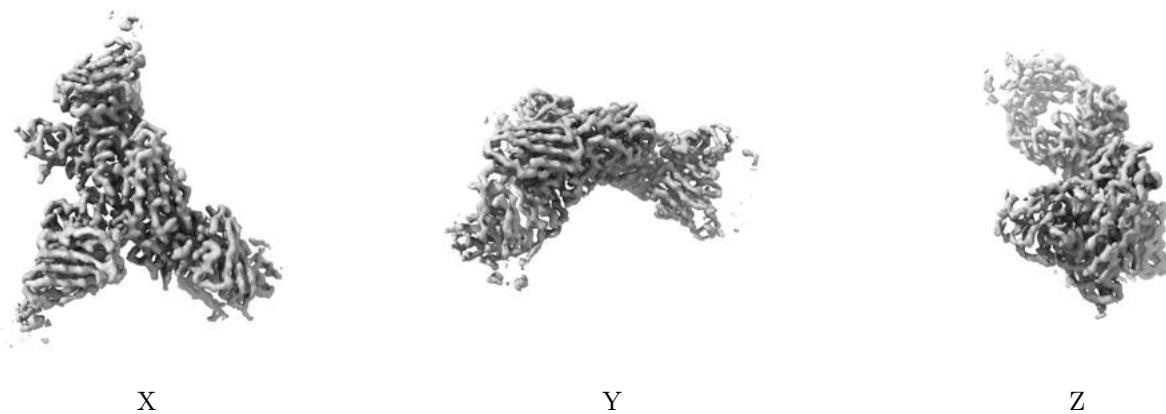
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

6.6 Mask visualisation (i)

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

7 Map analysis ⓘ

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

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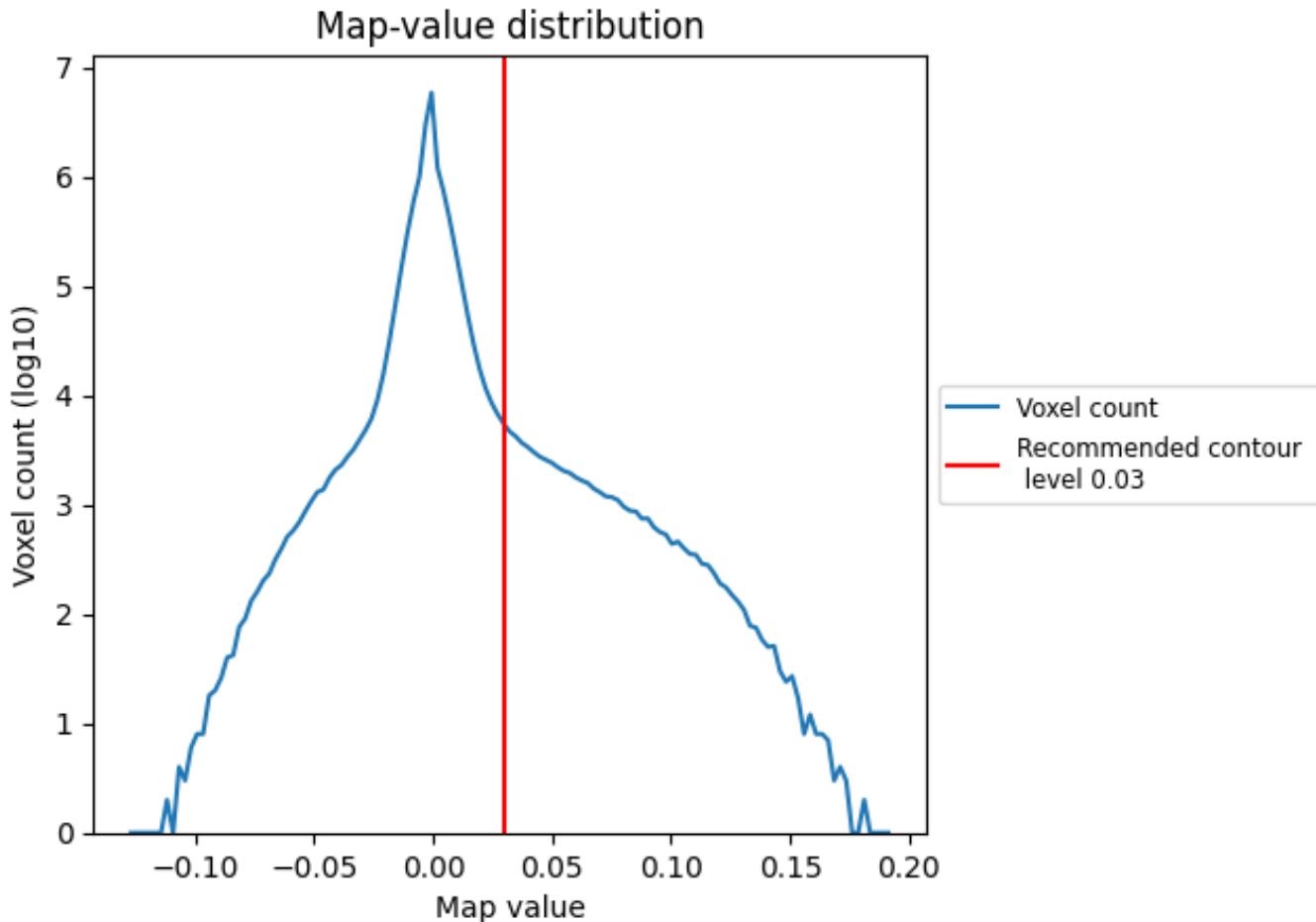
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2 Volume estimate ⓘ
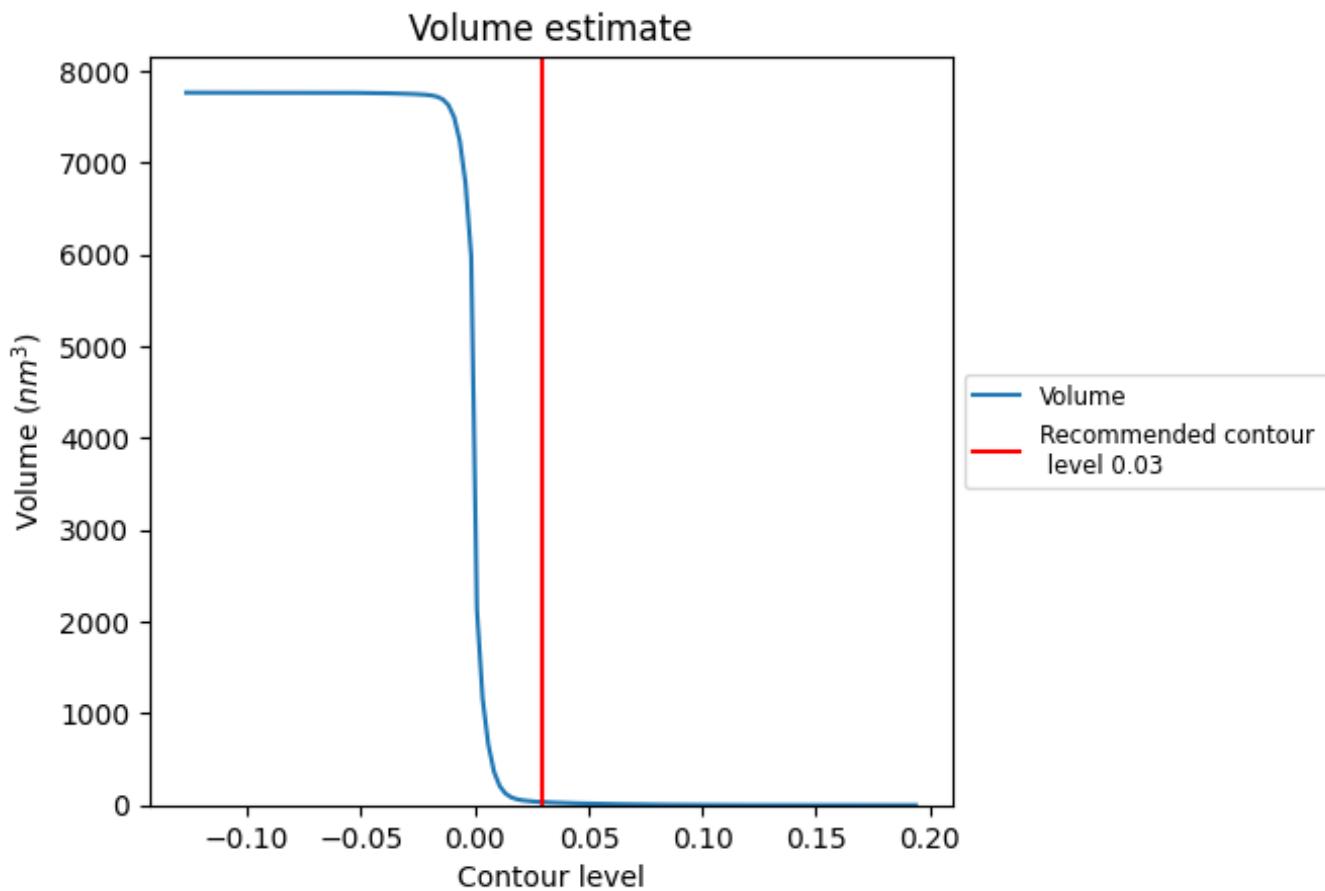
The volume at the recommended contour level is 33 nm^3; this corresponds to an approximate mass of 30 kDa.

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)
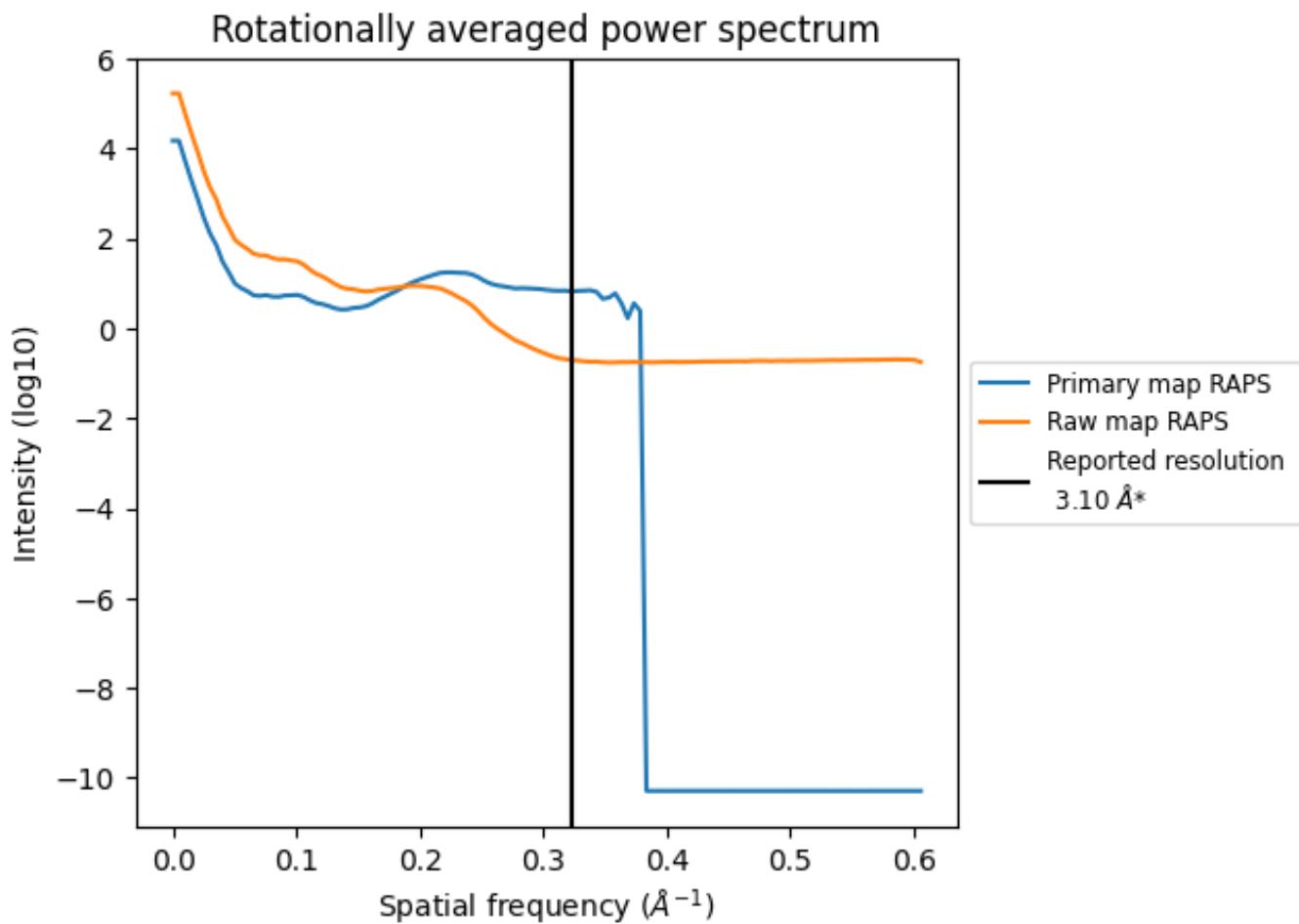
*Reported resolution corresponds to spatial frequency of 0.323 Å^{-1}

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)
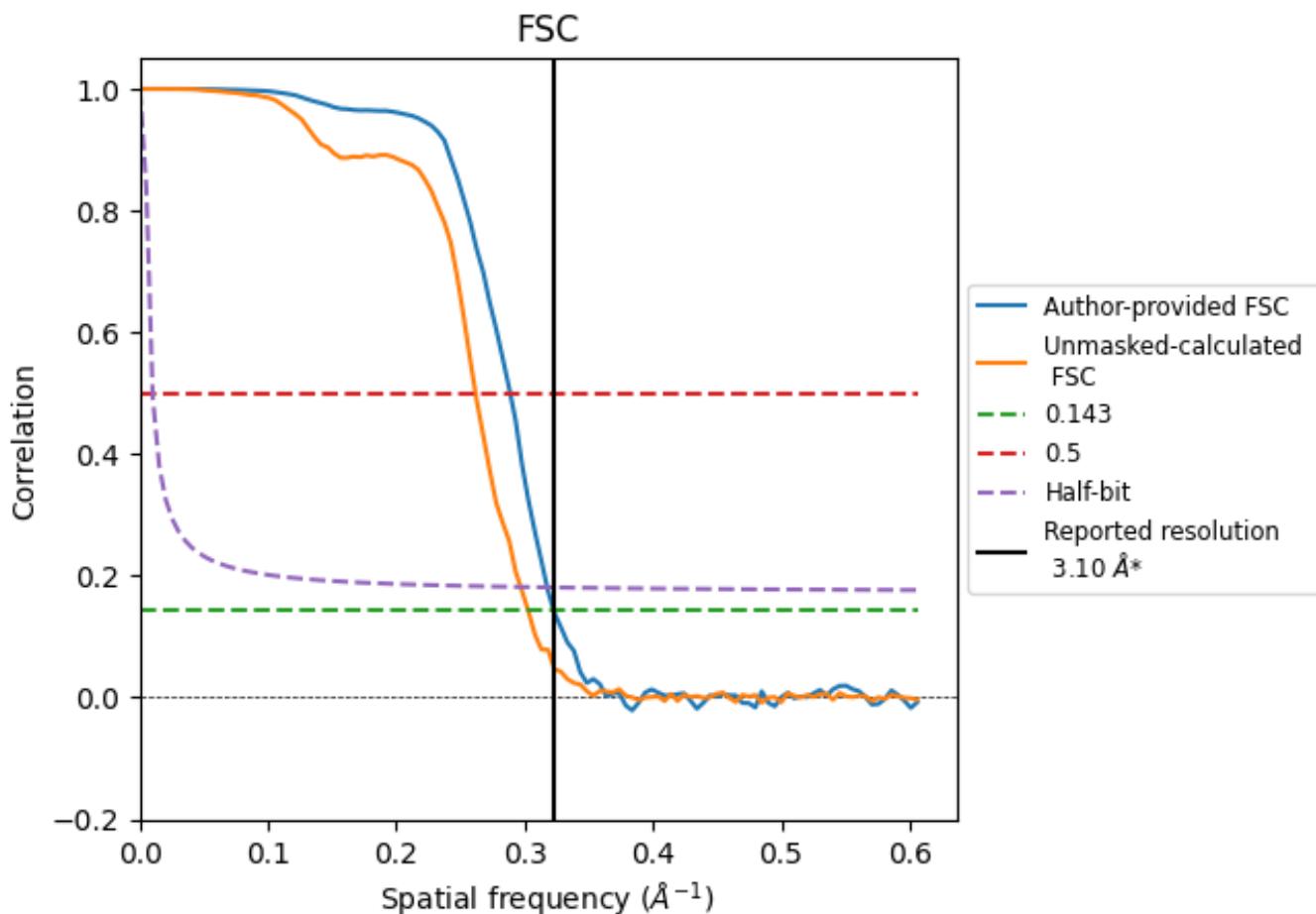
*Reported resolution corresponds to spatial frequency of 0.323 Å^{-1}

8.2   Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	3.10	3.46	3.15
Unmasked-calculated*	3.30	3.82	3.37

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-29738 and PDB model 8G5B. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlay ⓘ


|		
X	Y	Z
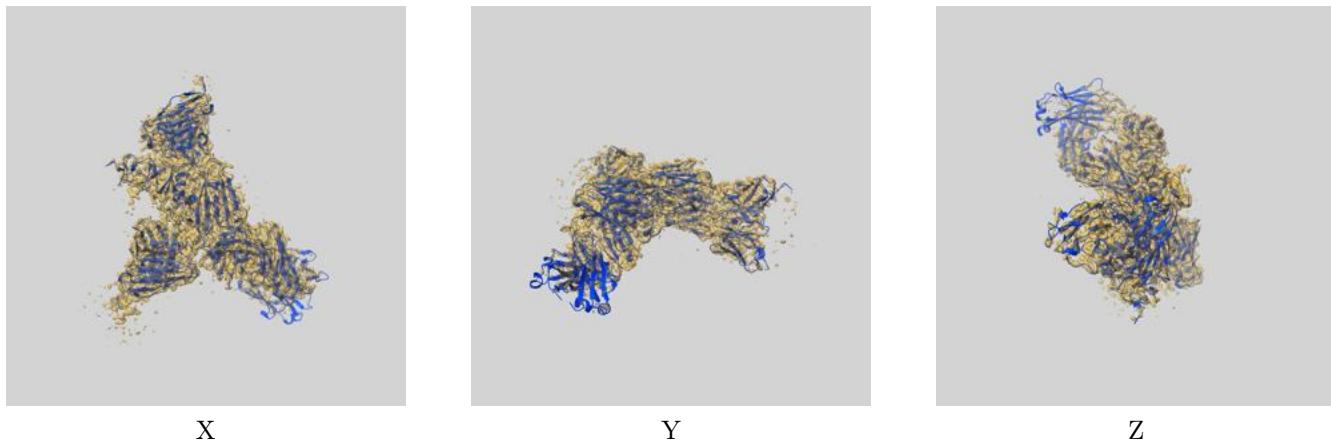
The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ

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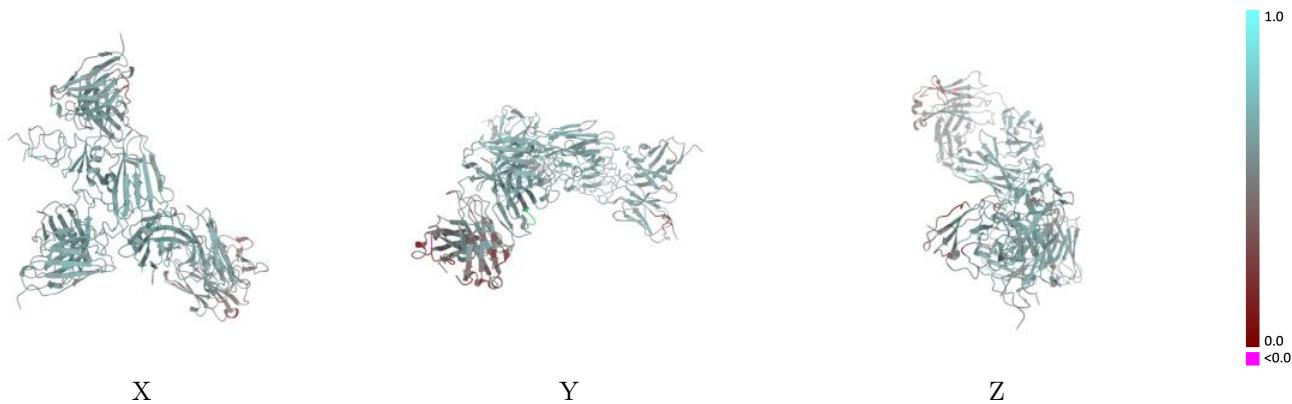
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model ⓘ

X   Y   Z
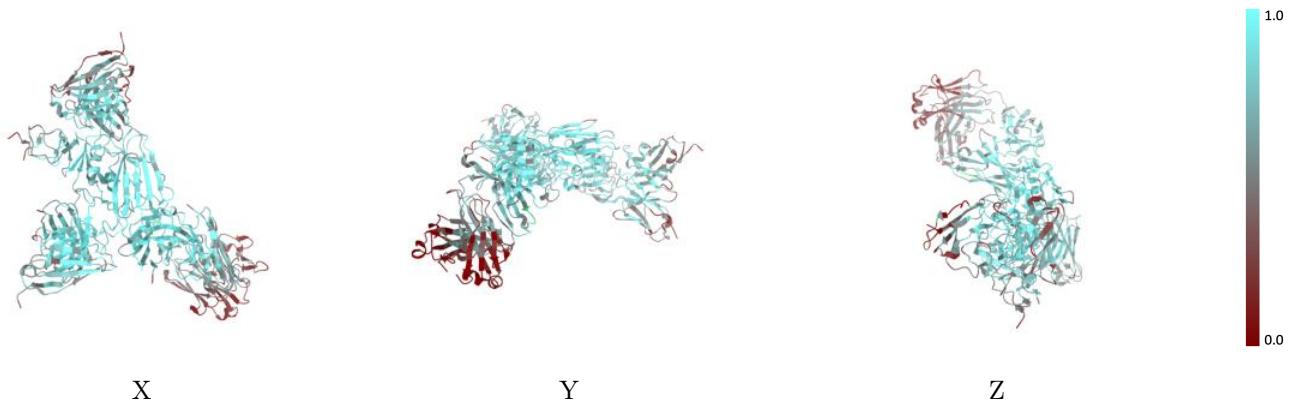
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.03).

9.4 Atom inclusion ⓘ
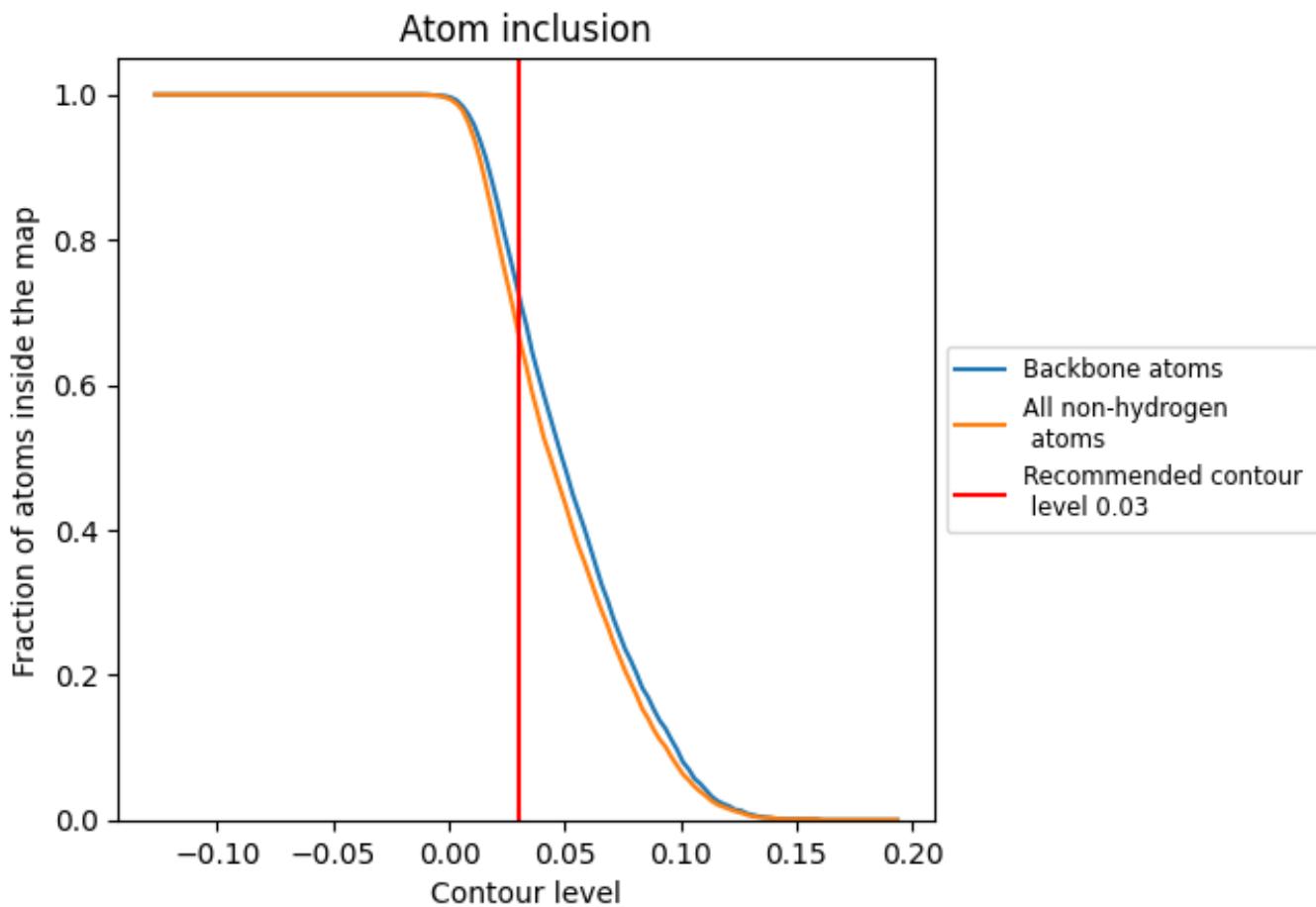
At the recommended contour level, 73% of all backbone atoms, 67% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6710	0.5640
A	0.8030	0.6020
H	0.6530	0.5660
I	0.6010	0.5460
J	0.7340	0.5890
L	0.6130	0.5270
M	0.5220	0.5250
N	0.7760	0.5880

1.0

0.0
<0.0