



Full wwPDB EM Validation Report ⓘ

Nov 20, 2022 – 03:42 PM EST

PDB ID : 7MLU
EMDB ID : EMD-23910
Title : Cryo-EM reveals partially and fully assembled native glycine receptors, homomeric pentamer
Authors : Zhu, H.; Gouaux, E.
Deposited on : 2021-04-29
Resolution : 4.10 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:

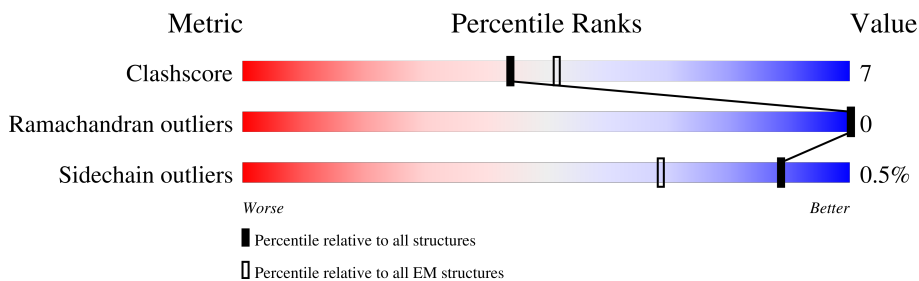
EMDB validation analysis : 0.0.1.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

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 4.10 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	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	I	107	42% (Poor fit), 75% (0 outliers), 21% (1 outlier), 0% (2 outliers), 0% (3+ outliers)
1	J	107	47% (Poor fit), 74% (0 outliers), 21% (1 outlier), 6% (2 outliers), 0% (3+ outliers)
1	K	107	58% (Poor fit), 77% (0 outliers), 19% (1 outlier), 5% (2 outliers), 0% (3+ outliers)
1	M	107	52% (Poor fit), 75% (0 outliers), 21% (1 outlier), 0% (2 outliers), 0% (3+ outliers)
1	O	107	50% (Poor fit), 79% (0 outliers), 17% (1 outlier), 5% (2 outliers), 0% (3+ outliers)
2	F	118	41% (Poor fit), 81% (0 outliers), 17% (1 outlier), 0% (2 outliers), 0% (3+ outliers)
2	G	118	36% (Poor fit), 79% (0 outliers), 19% (1 outlier), 0% (2 outliers), 0% (3+ outliers)
2	H	118	38% (Poor fit), 82% (0 outliers), 15% (1 outlier), 0% (2 outliers), 0% (3+ outliers)

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Mol	Chain	Length	Quality of chain
2	L	118	<p>38% 81% 17%</p>
2	N	118	<p>39% 82% 15%</p>
3	A	456	<p>17% 60% 12% 27%</p>
3	B	456	<p>16% 60% 12% 27%</p>
3	C	456	<p>18% 59% 13% 27%</p>
3	D	456	<p>17% 59% 14% 27%</p>
3	E	456	<p>19% 59% 14% 27%</p>

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 21886 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 3D1 Fab Light Chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	K	102	Total 782	C 490	N 135	O 153	S 4	0	0
1	J	101	Total 766	C 478	N 133	O 151	S 4	0	0
1	O	102	Total 782	C 490	N 135	O 153	S 4	0	0
1	M	103	Total 783	C 490	N 136	O 153	S 4	0	0
1	I	103	Total 783	C 490	N 136	O 153	S 4	0	0

- Molecule 2 is a protein called 3D1 Fab Heavy Chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	F	115	Total 891	C 565	N 150	O 171	S 5	0	0
2	G	115	Total 891	C 565	N 150	O 171	S 5	0	0
2	N	115	Total 891	C 565	N 150	O 171	S 5	0	0
2	L	115	Total 891	C 565	N 150	O 171	S 5	0	0
2	H	115	Total 891	C 565	N 150	O 171	S 5	0	0

- Molecule 3 is a protein called Glycine receptor alpha 1.

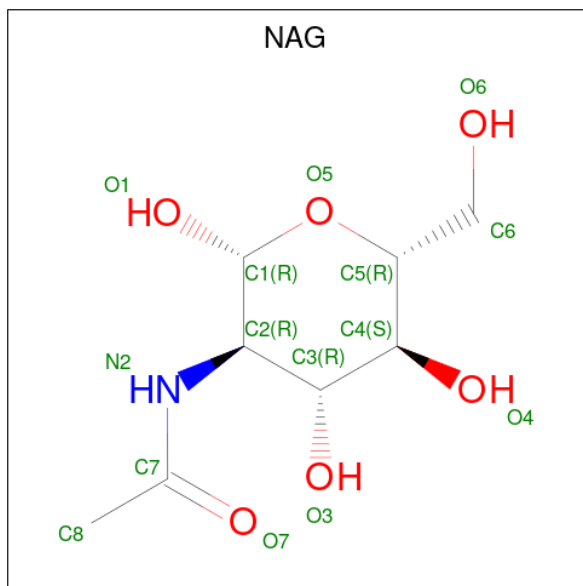
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	A	332	Total 2693	C 1752	N 440	O 481	S 20	0	0
3	E	332	Total 2693	C 1752	N 440	O 481	S 20	0	0
3	D	332	Total 2693	C 1752	N 440	O 481	S 20	0	0

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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	B	332	Total 2693	C 1752	N 440	O 481	S 20	0	0
3	C	332	Total 2693	C 1752	N 440	O 481	S 20	0	0

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

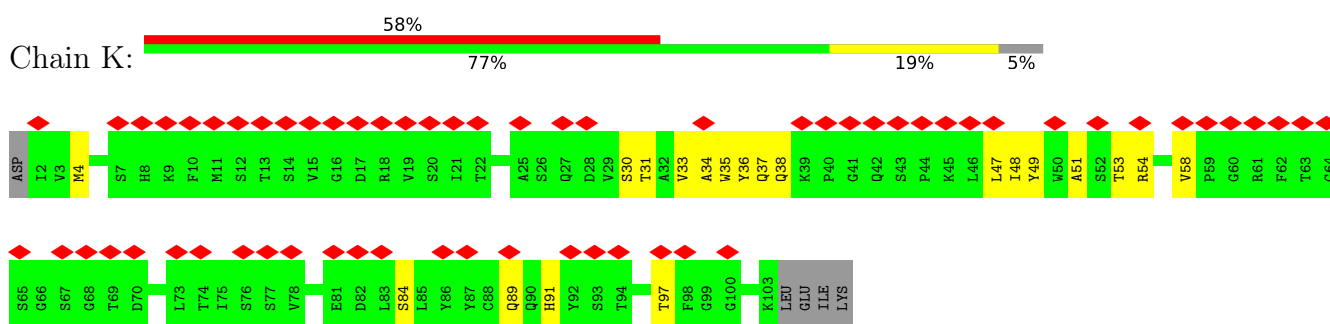


Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
4	A	1	Total 14	C 8	N 1	O 5	0
4	E	1	Total 14	C 8	N 1	O 5	0
4	D	1	Total 14	C 8	N 1	O 5	0
4	B	1	Total 14	C 8	N 1	O 5	0
4	C	1	Total 14	C 8	N 1	O 5	0

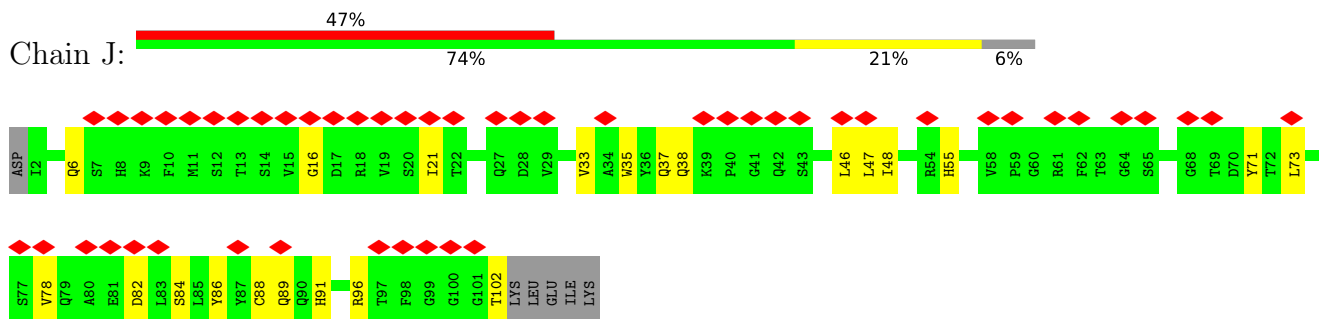
3 Residue-property plots [i](#)

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.

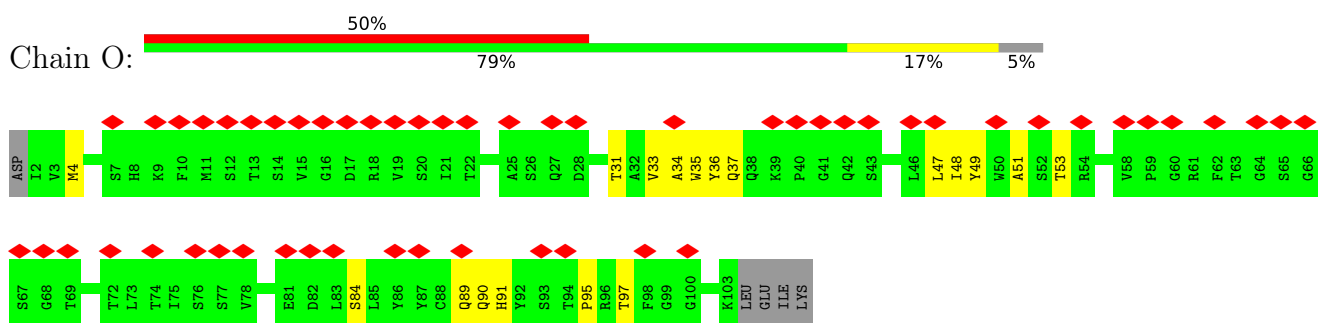
- Molecule 1: 3D1 Fab Light Chain



- Molecule 1: 3D1 Fab Light Chain

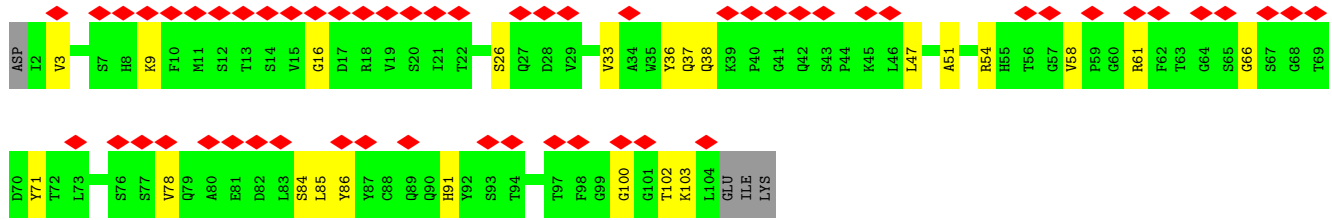


- Molecule 1: 3D1 Fab Light Chain

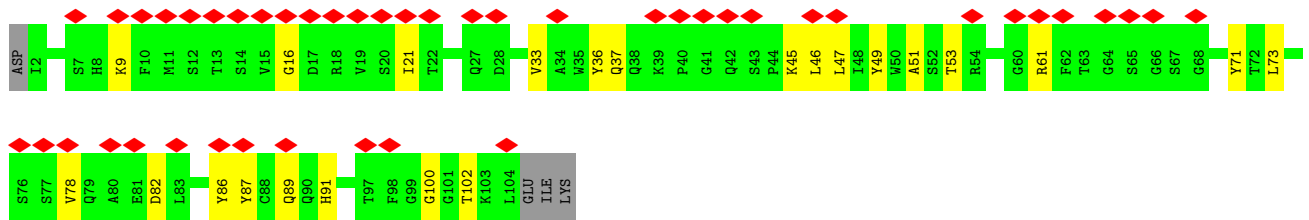
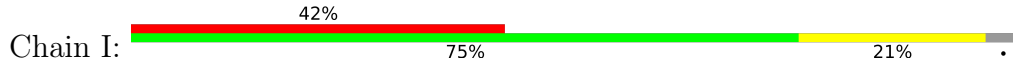


- Molecule 1: 3D1 Fab Light Chain

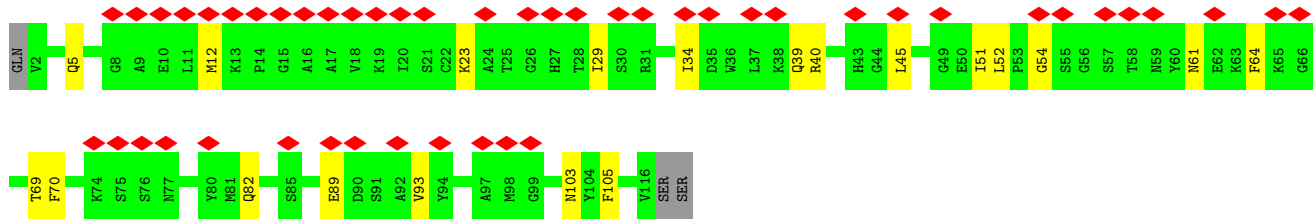
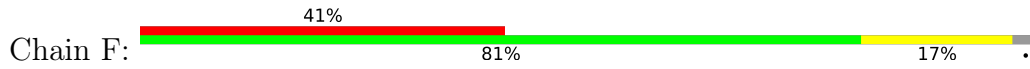




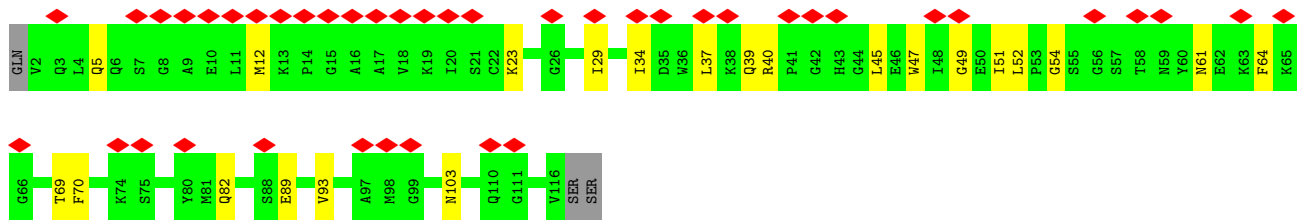
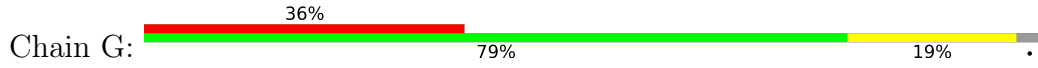
• Molecule 1: 3D1 Fab Light Chain



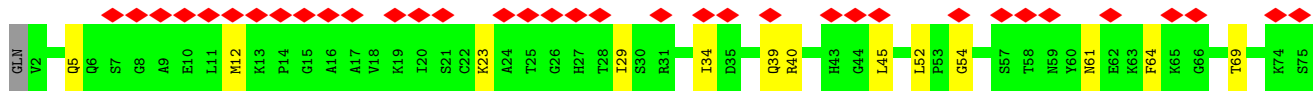
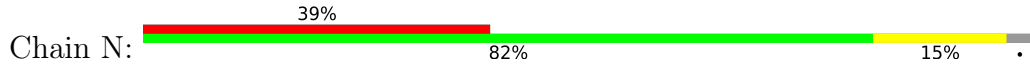
• Molecule 2: 3D1 Fab Heavy Chain

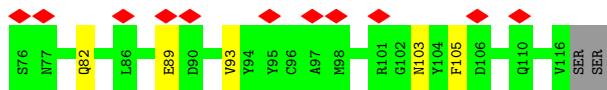


• Molecule 2: 3D1 Fab Heavy Chain

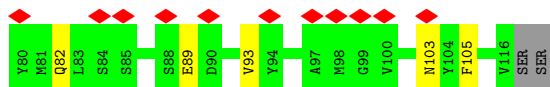
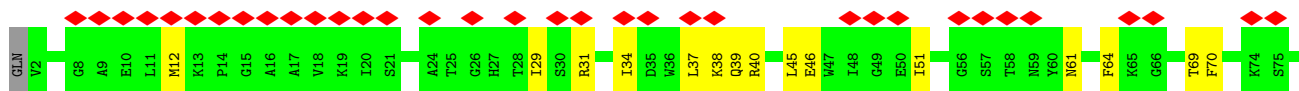
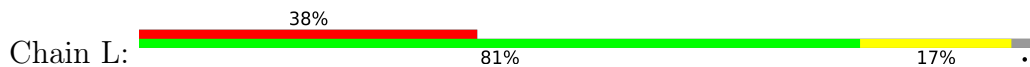


• Molecule 2: 3D1 Fab Heavy Chain

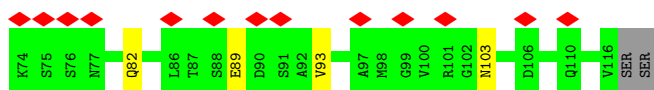
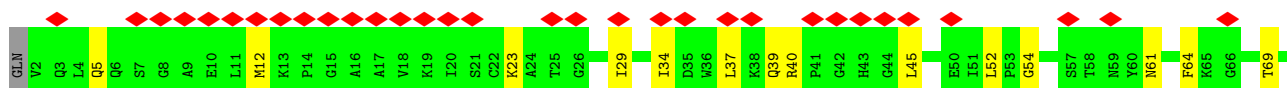
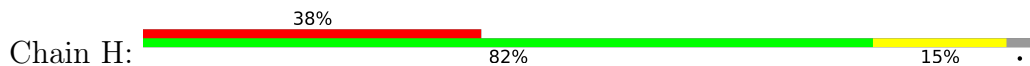




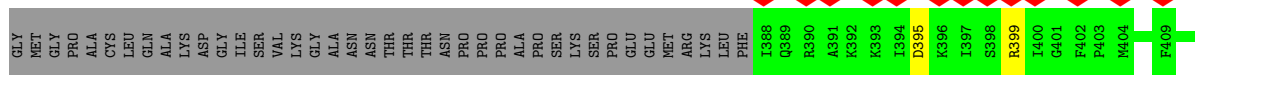
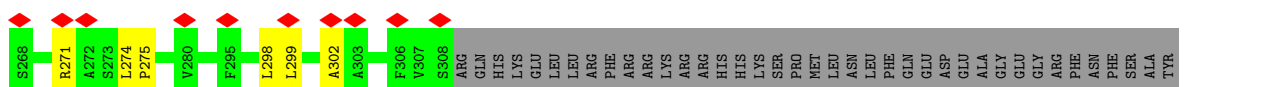
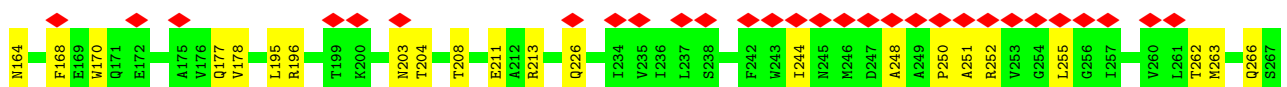
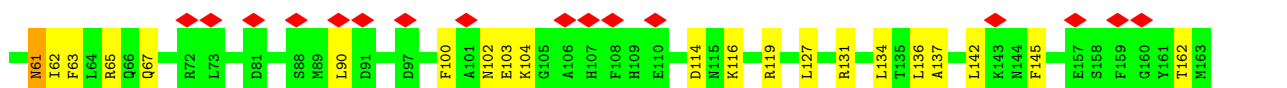
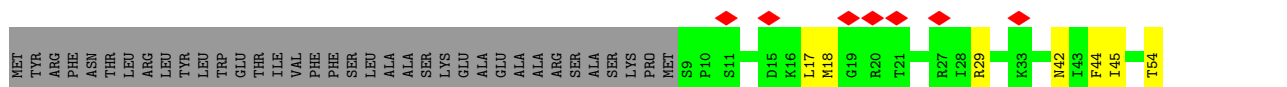
• Molecule 2: 3D1 Fab Heavy Chain



• Molecule 2: 3D1 Fab Heavy Chain



• Molecule 3: Glycine receptor alpha 1



GLU	I394	GLU	I388
ASP	D395	ASP	Q389
GLU	K396	GLU	R390
ALA	I397	ALA	A391
GLY	S398	GLY	K392
GLU	R399	GLY	K393
GLY	I400	ARG	
ARG	G401	ASN	
PHE	M404	PHE	
ASN		SER	
ASN		ALA	
SER		ALA	
ALA		TYR	
ALA		GLY	
TYR		MET	
GLY	M411	GLY	
MET	F412	GLY	
GLY		PRO	
PRO		ALA	
ALA		CYS	
ALA		LEU	
CYS		GLN	
LEU		ALA	
GLN		LYS	
ALA		ASP	
LYS		GLY	
LYS		ILE	
ASP		SER	
GLY		VAL	
ILE		LYS	
SER		GLY	
VAL		ALA	
LYS		ASN	
GLY		ASN	
ALA		THR	
ASN		THR	
ASN		THR	
PRO		ASN	
PRO		PRO	
PRO		PRO	
ALA		PRO	
ALA		PRO	
PRO		SER	
SER		LYS	
LYS		SER	
SER		PRO	
PRO		GLU	
GLU		GLU	
MET		MET	
ARG		ARG	
LYS		LYS	
LEU		LEU	
LEU		PHE	
PHE			

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C5	Depositor
Number of particles used	20660	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 ($e^-/\text{\AA}^2$)	28.2	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	16.613	Depositor
Minimum map value	-5.728	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	0.986	Depositor
Recommended contour level	6.79	Depositor
Map size (\AA)	330.4, 330.4, 330.4	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	0.826, 0.826, 0.826	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: 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	I	0.27	0/801	0.53	0/1087
1	J	0.27	0/784	0.55	0/1065
1	K	0.28	0/801	0.53	0/1087
1	M	0.26	0/801	0.53	0/1087
1	O	0.28	0/801	0.54	0/1087
2	F	0.26	0/913	0.53	1/1235 (0.1%)
2	G	0.26	0/913	0.53	1/1235 (0.1%)
2	H	0.26	0/913	0.53	1/1235 (0.1%)
2	L	0.26	0/913	0.53	1/1235 (0.1%)
2	N	0.26	0/913	0.53	1/1235 (0.1%)
3	A	0.28	0/2761	0.54	0/3743
3	B	0.28	0/2761	0.54	0/3743
3	C	0.28	0/2761	0.54	0/3743
3	D	0.28	0/2761	0.54	0/3743
3	E	0.28	0/2761	0.54	0/3743
All	All	0.28	0/22358	0.54	5/30303 (0.0%)

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	12	MET	C-N-CA	5.94	136.55	121.70
2	N	12	MET	C-N-CA	5.83	136.27	121.70
2	F	12	MET	C-N-CA	5.80	136.21	121.70
2	G	12	MET	C-N-CA	5.78	136.14	121.70
2	L	12	MET	C-N-CA	5.54	135.55	121.70

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	I	783	0	760	15	0
1	J	766	0	736	13	0
1	K	782	0	756	13	0
1	M	783	0	760	15	0
1	O	782	0	756	11	0
2	F	891	0	859	12	0
2	G	891	0	859	13	0
2	H	891	0	859	10	0
2	L	891	0	859	13	0
2	N	891	0	859	10	0
3	A	2693	0	2685	41	0
3	B	2693	0	2685	40	0
3	C	2693	0	2685	41	0
3	D	2693	0	2685	46	0
3	E	2693	0	2685	49	0
4	A	14	0	13	0	0
4	B	14	0	13	0	0
4	C	14	0	13	0	0
4	D	14	0	13	0	0
4	E	14	0	13	0	0
All	All	21886	0	21553	300	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.

All (300) 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)
3:A:44:PHE:HB2	3:A:63:PHE:HB2	1.71	0.73
3:B:44:PHE:HB2	3:B:63:PHE:HB2	1.71	0.72
3:C:44:PHE:HB2	3:C:63:PHE:HB2	1.71	0.72
3:E:44:PHE:HB2	3:E:63:PHE:HB2	1.71	0.72
3:D:44:PHE:HB2	3:D:63:PHE:HB2	1.71	0.71
3:C:100:PHE:HB2	3:C:103:GLU:HB3	1.76	0.68
3:D:100:PHE:HB2	3:D:103:GLU:HB3	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:100:PHE:HB2	3:A:103:GLU:HB3	1.76	0.67
3:C:196:ARG:HD2	3:C:213:ARG:HH21	1.60	0.67
3:B:100:PHE:HB2	3:B:103:GLU:HB3	1.76	0.66
3:D:196:ARG:HD2	3:D:213:ARG:HH21	1.61	0.66
3:B:196:ARG:HD2	3:B:213:ARG:HH21	1.61	0.66
3:E:100:PHE:HB2	3:E:103:GLU:HB3	1.76	0.66
3:E:119:ARG:HB3	3:E:127:LEU:HB3	1.78	0.66
3:E:196:ARG:HD2	3:E:213:ARG:HH21	1.61	0.66
3:A:119:ARG:HB3	3:A:127:LEU:HB3	1.78	0.65
3:A:196:ARG:HD2	3:A:213:ARG:HH21	1.61	0.65
3:D:119:ARG:HB3	3:D:127:LEU:HB3	1.78	0.65
3:C:119:ARG:HB3	3:C:127:LEU:HB3	1.78	0.64
3:B:119:ARG:HB3	3:B:127:LEU:HB3	1.78	0.64
1:J:91:HIS:HB2	2:G:103:ASN:HB2	1.80	0.63
1:J:86:TYR:HB2	1:J:102:THR:HB	1.84	0.60
1:K:91:HIS:HB2	2:F:103:ASN:HB2	1.84	0.59
1:M:91:HIS:HB2	2:L:103:ASN:HB2	1.84	0.59
1:I:91:HIS:HB2	2:H:103:ASN:HB2	1.84	0.59
1:M:3:VAL:H	1:M:26:SER:HB3	1.68	0.58
3:C:248:ALA:HB1	3:C:251:ALA:HB3	1.85	0.58
3:B:67:GLN:HE21	3:B:127:LEU:HD13	1.69	0.58
3:C:67:GLN:HE21	3:C:127:LEU:HD13	1.69	0.58
1:O:31:THR:OG1	3:D:35:PRO:HG3	2.03	0.58
2:L:29:ILE:HD11	2:L:34:ILE:HD11	1.85	0.58
3:A:67:GLN:HE21	3:A:127:LEU:HD13	1.68	0.57
3:D:248:ALA:HB1	3:D:251:ALA:HB3	1.85	0.57
1:K:31:THR:OG1	3:E:35:PRO:HG3	2.04	0.57
1:O:91:HIS:HB2	2:N:103:ASN:HB2	1.85	0.57
3:D:67:GLN:HE21	3:D:127:LEU:HD13	1.69	0.57
3:B:248:ALA:HB1	3:B:251:ALA:HB3	1.85	0.57
1:K:34:ALA:HB3	1:K:89:GLN:HB3	1.86	0.57
3:A:248:ALA:HB1	3:A:251:ALA:HB3	1.85	0.57
1:O:34:ALA:HB3	1:O:89:GLN:HB3	1.87	0.56
3:E:67:GLN:HE21	3:E:127:LEU:HD13	1.69	0.56
2:H:29:ILE:HD11	2:H:34:ILE:HD11	1.87	0.56
3:E:248:ALA:HB1	3:E:251:ALA:HB3	1.85	0.56
3:B:203:ASN:HB2	3:C:177:GLN:HE22	1.71	0.56
2:F:39:GLN:HB3	2:F:93:VAL:HB	1.88	0.56
1:I:89:GLN:HE22	1:I:91:HIS:HB3	1.71	0.55
3:E:104:LYS:HD2	3:E:137:ALA:HB2	1.88	0.55
3:C:104:LYS:HD2	3:C:137:ALA:HB2	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:104:LYS:HD2	3:B:137:ALA:HB2	1.88	0.55
2:F:69:THR:HB	2:F:82:GLN:HB3	1.88	0.55
3:D:104:LYS:HD2	3:D:137:ALA:HB2	1.88	0.55
3:D:127:LEU:HD21	3:C:204:THR:HG22	1.89	0.54
1:O:4:MET:HG2	1:O:97:THR:HG23	1.90	0.54
3:A:104:LYS:HD2	3:A:137:ALA:HB2	1.88	0.54
3:A:203:ASN:HB2	3:B:177:GLN:HE22	1.73	0.53
2:H:69:THR:HB	2:H:82:GLN:HB3	1.90	0.53
3:E:127:LEU:HD21	3:D:204:THR:HG22	1.90	0.53
3:C:162:THR:OG1	3:C:164:ASN:OD1	2.27	0.53
2:N:29:ILE:HD11	2:N:34:ILE:HD11	1.91	0.53
3:B:211:GLU:OE2	3:B:213:ARG:NH2	2.42	0.53
3:A:127:LEU:HD21	3:E:204:THR:HG22	1.89	0.53
3:D:162:THR:OG1	3:D:164:ASN:OD1	2.27	0.53
2:N:69:THR:HB	2:N:82:GLN:HB3	1.91	0.52
3:C:211:GLU:OE2	3:C:213:ARG:NH2	2.42	0.52
3:A:204:THR:HG22	3:B:127:LEU:HD21	1.91	0.52
3:D:211:GLU:OE2	3:D:213:ARG:NH2	2.42	0.52
1:O:33:VAL:HB	1:O:51:ALA:HB2	1.92	0.52
2:N:39:GLN:HB3	2:N:93:VAL:HB	1.92	0.52
3:A:211:GLU:OE2	3:A:213:ARG:NH2	2.42	0.52
3:B:168:PHE:H	3:B:208:THR:HG21	1.75	0.52
3:C:168:PHE:H	3:C:208:THR:HG21	1.75	0.52
1:O:37:GLN:HE21	1:O:84:SER:HB3	1.74	0.52
3:A:17:LEU:HG	3:A:18:MET:HG3	1.92	0.52
3:E:211:GLU:OE2	3:E:213:ARG:NH2	2.42	0.52
2:G:69:THR:HB	2:G:82:GLN:HB3	1.92	0.51
3:A:168:PHE:H	3:A:208:THR:HG21	1.75	0.51
3:A:162:THR:OG1	3:A:164:ASN:OD1	2.27	0.51
3:B:61:ASN:OD1	3:B:131:ARG:NH2	2.44	0.51
3:E:102:ASN:ND2	3:E:137:ALA:O	2.43	0.51
2:G:29:ILE:HD11	2:G:34:ILE:HD11	1.92	0.51
3:D:168:PHE:H	3:D:208:THR:HG21	1.75	0.51
3:B:17:LEU:HG	3:B:18:MET:HG3	1.92	0.51
3:A:61:ASN:OD1	3:A:131:ARG:NH2	2.44	0.51
3:B:102:ASN:ND2	3:B:137:ALA:O	2.43	0.51
1:M:85:LEU:HA	1:M:103:LYS:HA	1.91	0.51
3:E:61:ASN:OD1	3:E:131:ARG:NH2	2.44	0.51
3:D:102:ASN:ND2	3:D:137:ALA:O	2.43	0.51
3:B:162:THR:OG1	3:B:164:ASN:OD1	2.27	0.51
3:C:17:LEU:HG	3:C:18:MET:HG3	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:168:PHE:H	3:E:208:THR:HG21	1.75	0.51
3:C:61:ASN:OD1	3:C:131:ARG:NH2	2.44	0.51
3:C:102:ASN:ND2	3:C:137:ALA:O	2.43	0.51
2:F:29:ILE:HD11	2:F:34:ILE:HD11	1.93	0.50
3:D:61:ASN:OD1	3:D:131:ARG:NH2	2.44	0.50
1:J:38:GLN:O	1:J:84:SER:OG	2.30	0.50
1:M:54:ARG:HB3	1:M:58:VAL:HG11	1.93	0.50
2:L:40:ARG:NH2	2:L:89:GLU:OE1	2.45	0.50
3:E:17:LEU:HG	3:E:18:MET:HG3	1.92	0.50
2:H:40:ARG:NH2	2:H:89:GLU:OE1	2.44	0.50
1:K:33:VAL:HB	1:K:51:ALA:HB2	1.94	0.50
2:F:40:ARG:NH2	2:F:89:GLU:OE1	2.44	0.50
2:G:40:ARG:NH2	2:G:89:GLU:OE1	2.44	0.50
1:M:37:GLN:HE21	1:M:84:SER:HB3	1.77	0.50
1:M:36:TYR:OH	2:L:105:PHE:N	2.44	0.50
1:I:36:TYR:HB2	1:I:87:TYR:HB2	1.94	0.50
3:A:102:ASN:ND2	3:A:137:ALA:O	2.43	0.50
1:M:9:LYS:NZ	1:M:100:GLY:O	2.44	0.50
2:L:69:THR:HB	2:L:82:GLN:HB3	1.92	0.50
3:D:17:LEU:HG	3:D:18:MET:HG3	1.92	0.50
1:J:89:GLN:HE22	1:J:91:HIS:HB3	1.77	0.50
1:J:37:GLN:HB2	1:J:47:LEU:HD11	1.93	0.49
3:E:45:ILE:HD11	3:E:178:VAL:HG13	1.94	0.49
3:E:54:THR:HA	3:E:275:PRO:HB3	1.94	0.49
3:C:45:ILE:HD11	3:C:178:VAL:HG13	1.94	0.49
3:C:54:THR:HA	3:C:275:PRO:HB3	1.94	0.49
1:M:16:GLY:H	1:M:78:VAL:HB	1.76	0.49
3:A:177:GLN:HE22	3:E:203:ASN:HB2	1.77	0.49
3:E:162:THR:OG1	3:E:164:ASN:OD1	2.27	0.49
3:D:45:ILE:HD11	3:D:178:VAL:HG13	1.94	0.49
1:K:4:MET:HG2	1:K:97:THR:HG23	1.95	0.49
1:M:33:VAL:HB	1:M:51:ALA:HB2	1.94	0.49
1:J:16:GLY:H	1:J:78:VAL:HB	1.78	0.49
3:A:54:THR:HA	3:A:275:PRO:HB3	1.94	0.49
3:B:54:THR:HA	3:B:275:PRO:HB3	1.94	0.49
3:A:45:ILE:HD11	3:A:178:VAL:HG13	1.94	0.49
3:E:251:ALA:HA	3:D:253:VAL:HG11	1.95	0.49
3:B:204:THR:HG22	3:C:127:LEU:HD21	1.95	0.49
2:N:40:ARG:NH2	2:N:89:GLU:OE1	2.45	0.48
3:D:54:THR:HA	3:D:275:PRO:HB3	1.94	0.48
1:I:61:ARG:NH2	1:I:82:ASP:OD1	2.43	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:J:96:ARG:NH2	2:G:103:ASN:OD1	2.46	0.48
1:I:16:GLY:H	1:I:78:VAL:HB	1.78	0.48
2:H:37:LEU:HB3	2:H:45:LEU:HD12	1.95	0.48
3:E:255:LEU:HA	3:D:257:ILE:HD13	1.95	0.48
2:L:39:GLN:HB3	2:L:93:VAL:HB	1.96	0.48
1:I:86:TYR:N	1:I:102:THR:O	2.45	0.48
3:E:395:ASP:O	3:E:399:ARG:N	2.45	0.48
1:M:86:TYR:N	1:M:102:THR:O	2.47	0.48
3:E:90:LEU:HD11	3:E:116:LYS:HD3	1.96	0.47
1:I:33:VAL:HB	1:I:51:ALA:HB2	1.96	0.47
3:E:250:PRO:HG2	3:D:250:PRO:HB3	1.95	0.47
3:C:90:LEU:HD11	3:C:116:LYS:HD3	1.96	0.47
3:B:45:ILE:HD11	3:B:178:VAL:HG13	1.94	0.47
3:E:226:GLN:HE22	3:D:271:ARG:HG2	1.80	0.47
2:G:37:LEU:HB3	2:G:45:LEU:HD12	1.96	0.47
3:A:90:LEU:HD11	3:A:116:LYS:HD3	1.96	0.47
3:D:90:LEU:HD11	3:D:116:LYS:HD3	1.96	0.47
3:C:142:LEU:HD22	3:C:145:PHE:HD1	1.80	0.47
1:K:37:GLN:HB2	1:K:47:LEU:HD11	1.97	0.47
3:B:45:ILE:HG22	3:B:62:ILE:HG22	1.97	0.47
3:C:45:ILE:HG22	3:C:62:ILE:HG22	1.97	0.47
1:K:38:GLN:HE22	2:F:39:GLN:HE22	1.63	0.47
2:F:39:GLN:HB2	2:F:45:LEU:HD13	1.97	0.47
3:E:45:ILE:HG22	3:E:62:ILE:HG22	1.97	0.47
3:E:142:LEU:HD22	3:E:145:PHE:HD1	1.80	0.47
3:D:42:ASN:OD1	3:D:65:ARG:NE	2.47	0.47
3:D:395:ASP:O	3:D:399:ARG:N	2.45	0.47
1:O:90:GLN:NE2	1:O:95:PRO:O	2.48	0.46
3:A:103:GLU:HA	3:A:136:LEU:HD23	1.97	0.46
3:A:142:LEU:HD22	3:A:145:PHE:HD1	1.80	0.46
3:D:170:TRP:CD2	3:D:195:LEU:HD23	2.50	0.46
3:B:90:LEU:HD11	3:B:116:LYS:HD3	1.96	0.46
1:K:36:TYR:OH	2:F:105:PHE:N	2.45	0.46
3:A:170:TRP:CD2	3:A:195:LEU:HD23	2.50	0.46
3:D:45:ILE:HG22	3:D:62:ILE:HG22	1.97	0.46
3:C:170:TRP:CD2	3:C:195:LEU:HD23	2.50	0.46
1:O:36:TYR:OH	2:N:105:PHE:N	2.47	0.46
3:A:45:ILE:HG22	3:A:62:ILE:HG22	1.97	0.46
3:D:226:GLN:HE22	3:C:271:ARG:HG2	1.78	0.46
2:G:39:GLN:HB3	2:G:93:VAL:HB	1.97	0.46
1:I:37:GLN:HB2	1:I:47:LEU:HD11	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:170:TRP:CD2	3:E:195:LEU:HD23	2.50	0.46
3:B:170:TRP:CD2	3:B:195:LEU:HD23	2.50	0.46
3:C:103:GLU:HA	3:C:136:LEU:HD23	1.97	0.46
1:J:82:ASP:O	1:J:86:TYR:OH	2.34	0.46
1:M:37:GLN:HB2	1:M:47:LEU:HD11	1.98	0.46
2:L:37:LEU:HB3	2:L:45:LEU:HD12	1.97	0.46
3:D:103:GLU:HA	3:D:136:LEU:HD23	1.97	0.46
3:C:42:ASN:OD1	3:C:65:ARG:NE	2.47	0.46
3:B:103:GLU:HA	3:B:136:LEU:HD23	1.97	0.46
3:A:226:GLN:HE22	3:E:271:ARG:HG2	1.81	0.46
3:E:42:ASN:OD1	3:E:65:ARG:NE	2.47	0.46
3:B:142:LEU:HD22	3:B:145:PHE:HD1	1.80	0.46
3:E:112:THR:OG1	3:D:98:LEU:O	2.29	0.46
3:C:134:LEU:HD13	3:C:136:LEU:HD21	1.98	0.46
3:A:134:LEU:HD13	3:A:136:LEU:HD21	1.98	0.46
3:E:103:GLU:HA	3:E:136:LEU:HD23	1.97	0.46
3:B:134:LEU:HD13	3:B:136:LEU:HD21	1.98	0.46
3:B:395:ASP:O	3:B:399:ARG:N	2.45	0.46
3:D:142:LEU:HD22	3:D:145:PHE:HD1	1.80	0.46
2:F:61:ASN:HB3	2:F:64:PHE:HB2	1.98	0.45
2:H:39:GLN:HB3	2:H:93:VAL:HB	1.98	0.45
3:D:134:LEU:HD13	3:D:136:LEU:HD21	1.98	0.45
3:D:263:MET:HA	3:D:266:GLN:HB2	1.98	0.45
3:A:271:ARG:HG2	3:B:226:GLN:HE22	1.81	0.45
3:D:299:LEU:HA	3:D:302:ALA:HB3	1.98	0.45
1:K:37:GLN:HE21	1:K:84:SER:HB3	1.80	0.45
3:E:134:LEU:HD13	3:E:136:LEU:HD21	1.98	0.45
2:G:39:GLN:HB2	2:G:45:LEU:HD13	1.99	0.45
3:B:271:ARG:HG3	3:B:274:LEU:HD22	1.99	0.45
1:J:21:ILE:HD12	1:J:73:LEU:HD23	1.99	0.45
3:C:299:LEU:HA	3:C:302:ALA:HB3	1.98	0.45
3:A:271:ARG:HG3	3:A:274:LEU:HD22	1.99	0.45
3:E:299:LEU:HA	3:E:302:ALA:HB3	1.98	0.45
3:C:298:LEU:O	3:C:302:ALA:N	2.48	0.44
3:B:42:ASN:OD1	3:B:65:ARG:NE	2.47	0.44
1:O:49:TYR:O	1:O:53:THR:OG1	2.30	0.44
3:E:263:MET:HA	3:E:266:GLN:HB2	1.98	0.44
3:C:244:ILE:HD11	3:C:252:ARG:HB2	2.00	0.44
3:B:244:ILE:HD11	3:B:252:ARG:HB2	2.00	0.44
3:B:263:MET:HA	3:B:266:GLN:HB2	1.98	0.44
3:E:244:ILE:HD11	3:E:252:ARG:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:177:GLN:HE22	3:C:203:ASN:HB2	1.82	0.44
3:C:271:ARG:HG3	3:C:274:LEU:HD22	1.99	0.44
3:A:263:MET:HA	3:A:266:GLN:HB2	1.98	0.44
3:A:299:LEU:HA	3:A:302:ALA:HB3	1.98	0.44
3:C:263:MET:HA	3:C:266:GLN:HB2	1.98	0.44
1:M:38:GLN:HE22	2:L:39:GLN:HE22	1.66	0.44
3:A:244:ILE:HD11	3:A:252:ARG:HB2	2.00	0.44
3:E:240:ILE:HD12	3:D:298:LEU:HD12	2.00	0.44
3:E:271:ARG:HG3	3:E:274:LEU:HD22	1.99	0.44
3:B:262:THR:O	3:B:266:GLN:N	2.47	0.44
3:A:42:ASN:OD1	3:A:65:ARG:NE	2.47	0.43
3:D:244:ILE:HD11	3:D:252:ARG:HB2	2.00	0.43
1:M:84:SER:OG	1:M:85:LEU:N	2.51	0.43
3:B:299:LEU:HA	3:B:302:ALA:HB3	1.98	0.43
2:N:61:ASN:HB3	2:N:64:PHE:HB2	2.00	0.43
3:A:251:ALA:HA	3:E:253:VAL:HG11	2.00	0.43
3:B:271:ARG:HG2	3:C:226:GLN:HE22	1.83	0.43
3:B:114:ASP:HB3	3:B:116:LYS:HD2	2.01	0.43
2:G:47:TRP:NE1	2:G:49:GLY:O	2.51	0.43
1:I:46:LEU:HD21	1:I:49:TYR:HB3	2.01	0.43
3:D:271:ARG:HG3	3:D:274:LEU:HD22	1.99	0.43
2:N:39:GLN:HB2	2:N:45:LEU:HD13	2.01	0.43
1:J:46:LEU:HD23	1:J:55:HIS:HD2	1.83	0.43
1:I:9:LYS:NZ	1:I:100:GLY:O	2.49	0.43
3:C:114:ASP:HB3	3:C:116:LYS:HD2	2.01	0.43
1:K:30:SER:HB3	3:E:34:GLY:HA2	2.00	0.42
2:N:52:LEU:HD23	2:N:54:GLY:H	1.84	0.42
3:B:298:LEU:O	3:B:302:ALA:N	2.48	0.42
1:K:49:TYR:O	1:K:53:THR:OG1	2.31	0.42
2:F:5:GLN:O	2:F:23:LYS:N	2.52	0.42
1:J:6:GLN:HE21	1:J:88:CYS:H	1.68	0.42
1:J:33:VAL:HG21	1:J:71:TYR:CG	2.54	0.42
2:H:61:ASN:HB3	2:H:64:PHE:HB2	2.00	0.42
3:D:114:ASP:HB3	3:D:116:LYS:HD2	2.01	0.42
1:M:66:GLY:HA3	1:M:71:TYR:HA	2.01	0.42
3:C:262:THR:O	3:C:266:GLN:N	2.47	0.42
2:G:52:LEU:HD23	2:G:54:GLY:H	1.84	0.42
1:I:37:GLN:O	1:I:45:LYS:N	2.51	0.42
3:B:276:LYS:HG2	3:C:222:TYR:CZ	2.55	0.42
3:C:395:ASP:O	3:C:399:ARG:N	2.45	0.42
3:A:114:ASP:HB3	3:A:116:LYS:HD2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:177:GLN:HE22	3:D:203:ASN:HB2	1.84	0.42
1:J:35:TRP:HD1	1:J:48:ILE:HB	1.85	0.42
2:L:39:GLN:HB2	2:L:45:LEU:HD13	2.01	0.42
1:O:37:GLN:HB2	1:O:47:LEU:HD11	2.01	0.42
3:A:250:PRO:HG2	3:E:250:PRO:HB3	2.01	0.42
3:A:255:LEU:HA	3:E:257:ILE:HD13	2.00	0.42
1:I:33:VAL:HG21	1:I:71:TYR:CG	2.55	0.42
3:A:298:LEU:O	3:A:302:ALA:N	2.48	0.42
1:K:35:TRP:HD1	1:K:48:ILE:HB	1.85	0.41
1:M:33:VAL:HG21	1:M:71:TYR:CG	2.55	0.41
2:L:38:LYS:N	2:L:46:GLU:O	2.39	0.41
1:I:21:ILE:HD12	1:I:73:LEU:HD23	2.02	0.41
3:A:262:THR:O	3:A:266:GLN:N	2.47	0.41
3:E:53:GLU:CD	3:D:276:LYS:NZ	2.74	0.41
3:E:114:ASP:HB3	3:E:116:LYS:HD2	2.01	0.41
3:D:298:LEU:O	3:D:302:ALA:N	2.48	0.41
2:L:31:ARG:HD2	3:B:180:ASP:OD2	2.21	0.41
2:L:51:ILE:HD12	2:L:70:PHE:HB3	2.01	0.41
3:D:119:ARG:HD2	3:D:127:LEU:HD23	2.03	0.41
2:F:51:ILE:HD12	2:F:70:PHE:HB3	2.02	0.41
2:F:52:LEU:HD23	2:F:54:GLY:H	1.86	0.41
3:E:119:ARG:HD2	3:E:127:LEU:HD23	2.03	0.41
3:D:112:THR:OG1	3:C:98:LEU:O	2.30	0.41
2:G:61:ASN:HB3	2:G:64:PHE:HB2	2.01	0.41
2:N:5:GLN:O	2:N:23:LYS:N	2.54	0.41
2:L:61:ASN:HB3	2:L:64:PHE:HB2	2.02	0.41
3:A:119:ARG:HD2	3:A:127:LEU:HD23	2.03	0.41
3:E:244:ILE:HG13	3:E:252:ARG:HH11	1.86	0.41
2:G:5:GLN:O	2:G:23:LYS:N	2.54	0.41
2:H:5:GLN:O	2:H:23:LYS:N	2.54	0.41
2:H:52:LEU:HD23	2:H:54:GLY:H	1.86	0.41
3:A:244:ILE:HG13	3:A:252:ARG:HH11	1.86	0.41
2:H:39:GLN:HB2	2:H:45:LEU:HD13	2.02	0.41
3:D:244:ILE:HG13	3:D:252:ARG:HH11	1.86	0.41
1:I:49:TYR:O	1:I:53:THR:OG1	2.36	0.41
1:I:86:TYR:O	1:I:102:THR:N	2.49	0.41
3:E:34:GLY:HA3	3:E:35:PRO:HD3	1.93	0.41
3:C:34:GLY:HA3	3:C:35:PRO:HD3	1.93	0.41
1:K:54:ARG:HB3	1:K:58:VAL:HG11	2.03	0.41
1:O:35:TRP:HD1	1:O:48:ILE:HB	1.86	0.41
3:C:119:ARG:HD2	3:C:127:LEU:HD23	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:51:ILE:HD12	2:G:70:PHE:HB3	2.03	0.40
3:A:395:ASP:O	3:A:399:ARG:N	2.45	0.40
3:D:222:TYR:CZ	3:C:276:LYS:HG2	2.57	0.40
3:B:244:ILE:HG13	3:B:252:ARG:HH11	1.86	0.40
3:E:48:PHE:HA	3:E:60:VAL:HG23	2.03	0.40
3:B:119:ARG:HD2	3:B:127:LEU:HD23	2.02	0.40

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	I	101/107 (94%)	94 (93%)	7 (7%)	0	100 100
1	J	99/107 (92%)	86 (87%)	13 (13%)	0	100 100
1	K	100/107 (94%)	93 (93%)	7 (7%)	0	100 100
1	M	101/107 (94%)	90 (89%)	11 (11%)	0	100 100
1	O	100/107 (94%)	91 (91%)	9 (9%)	0	100 100
2	F	113/118 (96%)	103 (91%)	10 (9%)	0	100 100
2	G	113/118 (96%)	103 (91%)	10 (9%)	0	100 100
2	H	113/118 (96%)	102 (90%)	11 (10%)	0	100 100
2	L	113/118 (96%)	103 (91%)	10 (9%)	0	100 100
2	N	113/118 (96%)	103 (91%)	10 (9%)	0	100 100
3	A	328/456 (72%)	314 (96%)	14 (4%)	0	100 100
3	B	328/456 (72%)	313 (95%)	15 (5%)	0	100 100
3	C	328/456 (72%)	313 (95%)	15 (5%)	0	100 100
3	D	328/456 (72%)	313 (95%)	15 (5%)	0	100 100
3	E	328/456 (72%)	313 (95%)	15 (5%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
All	All	2706/3405 (80%)	2534 (94%)	172 (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	I	87/92 (95%)	87 (100%)	0	100	100
1	J	85/92 (92%)	85 (100%)	0	100	100
1	K	87/92 (95%)	87 (100%)	0	100	100
1	M	87/92 (95%)	86 (99%)	1 (1%)	73	84
1	O	87/92 (95%)	87 (100%)	0	100	100
2	F	93/96 (97%)	93 (100%)	0	100	100
2	G	93/96 (97%)	93 (100%)	0	100	100
2	H	93/96 (97%)	93 (100%)	0	100	100
2	L	93/96 (97%)	93 (100%)	0	100	100
2	N	93/96 (97%)	93 (100%)	0	100	100
3	A	297/403 (74%)	295 (99%)	2 (1%)	84	90
3	B	297/403 (74%)	295 (99%)	2 (1%)	84	90
3	C	297/403 (74%)	295 (99%)	2 (1%)	84	90
3	D	297/403 (74%)	295 (99%)	2 (1%)	84	90
3	E	297/403 (74%)	295 (99%)	2 (1%)	84	90
All	All	2383/2955 (81%)	2372 (100%)	11 (0%)	89	93

All (11) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	M	61	ARG
3	A	29	ARG

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Mol	Chain	Res	Type
3	A	61	ASN
3	E	29	ARG
3	E	61	ASN
3	D	29	ARG
3	D	61	ASN
3	B	29	ARG
3	B	61	ASN
3	C	29	ARG
3	C	61	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (25) such sidechains are listed below:

Mol	Chain	Res	Type
1	K	8	HIS
1	K	38	GLN
1	J	8	HIS
1	J	38	GLN
1	J	55	HIS
1	O	38	GLN
1	M	38	GLN
1	I	8	HIS
1	I	38	GLN
1	I	89	GLN
3	A	67	GLN
3	A	125	ASN
3	A	177	GLN
3	E	67	GLN
3	E	125	ASN
3	E	177	GLN
3	D	67	GLN
3	D	125	ASN
3	D	177	GLN
3	B	67	GLN
3	B	125	ASN
3	B	177	GLN
3	C	67	GLN
3	C	125	ASN
3	C	177	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

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
4	NAG	C	501	3	14,14,15	0.85	1 (7%)	17,19,21	2.23	3 (17%)
4	NAG	A	501	3	14,14,15	0.85	1 (7%)	17,19,21	2.24	3 (17%)
4	NAG	E	501	3	14,14,15	0.85	1 (7%)	17,19,21	2.24	3 (17%)
4	NAG	D	501	3	14,14,15	0.85	1 (7%)	17,19,21	2.23	3 (17%)
4	NAG	B	501	3	14,14,15	0.85	1 (7%)	17,19,21	2.24	3 (17%)

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	C	501	3	-	5/6/23/26	0/1/1/1
4	NAG	A	501	3	-	5/6/23/26	0/1/1/1
4	NAG	E	501	3	-	5/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	D	501	3	-	5/6/23/26	0/1/1/1
4	NAG	B	501	3	-	5/6/23/26	0/1/1/1

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	D	501	NAG	C1-C2	2.56	1.56	1.52
4	E	501	NAG	C1-C2	2.53	1.56	1.52
4	C	501	NAG	C1-C2	2.52	1.56	1.52
4	A	501	NAG	C1-C2	2.52	1.56	1.52
4	B	501	NAG	C1-C2	2.50	1.56	1.52

All (15) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	501	NAG	C2-N2-C7	7.82	134.03	122.90
4	E	501	NAG	C2-N2-C7	7.82	134.03	122.90
4	B	501	NAG	C2-N2-C7	7.81	134.02	122.90
4	D	501	NAG	C2-N2-C7	7.79	134.00	122.90
4	C	501	NAG	C2-N2-C7	7.79	133.99	122.90
4	B	501	NAG	C1-C2-N2	3.78	116.94	110.49
4	C	501	NAG	C1-C2-N2	3.77	116.93	110.49
4	D	501	NAG	C1-C2-N2	3.77	116.93	110.49
4	A	501	NAG	C1-C2-N2	3.77	116.92	110.49
4	E	501	NAG	C1-C2-N2	3.74	116.87	110.49
4	C	501	NAG	C8-C7-N2	2.14	119.73	116.10
4	B	501	NAG	C8-C7-N2	2.14	119.72	116.10
4	D	501	NAG	C8-C7-N2	2.13	119.70	116.10
4	E	501	NAG	C8-C7-N2	2.12	119.69	116.10
4	A	501	NAG	C8-C7-N2	2.12	119.68	116.10

There are no chirality outliers.

All (25) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	501	NAG	C4-C5-C6-O6
4	E	501	NAG	C4-C5-C6-O6
4	D	501	NAG	C4-C5-C6-O6
4	B	501	NAG	C4-C5-C6-O6
4	C	501	NAG	C4-C5-C6-O6
4	A	501	NAG	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
4	E	501	NAG	O5-C5-C6-O6
4	D	501	NAG	O5-C5-C6-O6
4	B	501	NAG	O5-C5-C6-O6
4	C	501	NAG	O5-C5-C6-O6
4	A	501	NAG	C8-C7-N2-C2
4	A	501	NAG	O7-C7-N2-C2
4	E	501	NAG	C8-C7-N2-C2
4	E	501	NAG	O7-C7-N2-C2
4	D	501	NAG	C8-C7-N2-C2
4	D	501	NAG	O7-C7-N2-C2
4	B	501	NAG	C8-C7-N2-C2
4	B	501	NAG	O7-C7-N2-C2
4	C	501	NAG	C8-C7-N2-C2
4	C	501	NAG	O7-C7-N2-C2
4	A	501	NAG	C3-C2-N2-C7
4	E	501	NAG	C3-C2-N2-C7
4	D	501	NAG	C3-C2-N2-C7
4	B	501	NAG	C3-C2-N2-C7
4	C	501	NAG	C3-C2-N2-C7

There are no ring outliers.

No monomer is involved in short contacts.

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.

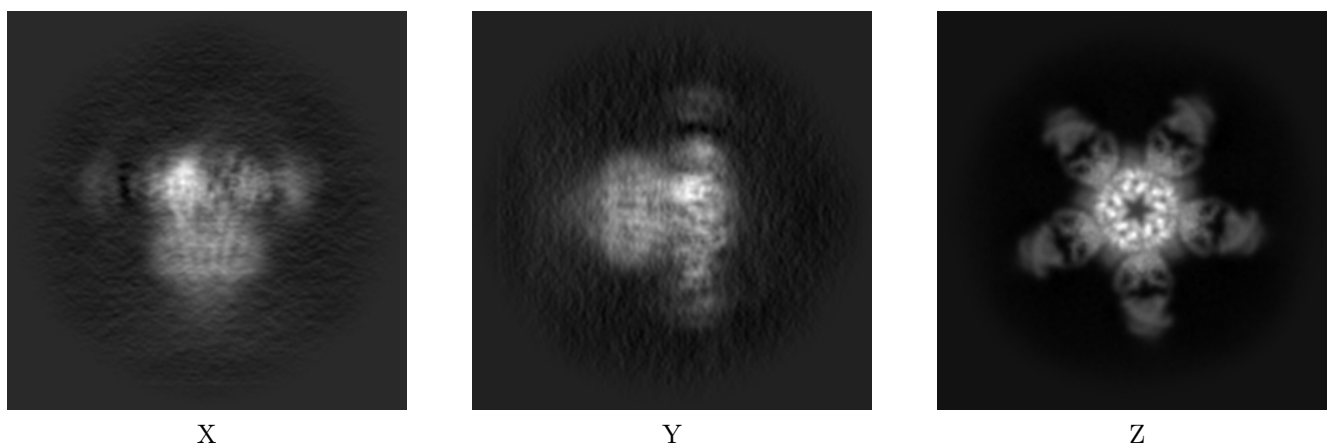
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-23910. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections [i](#)

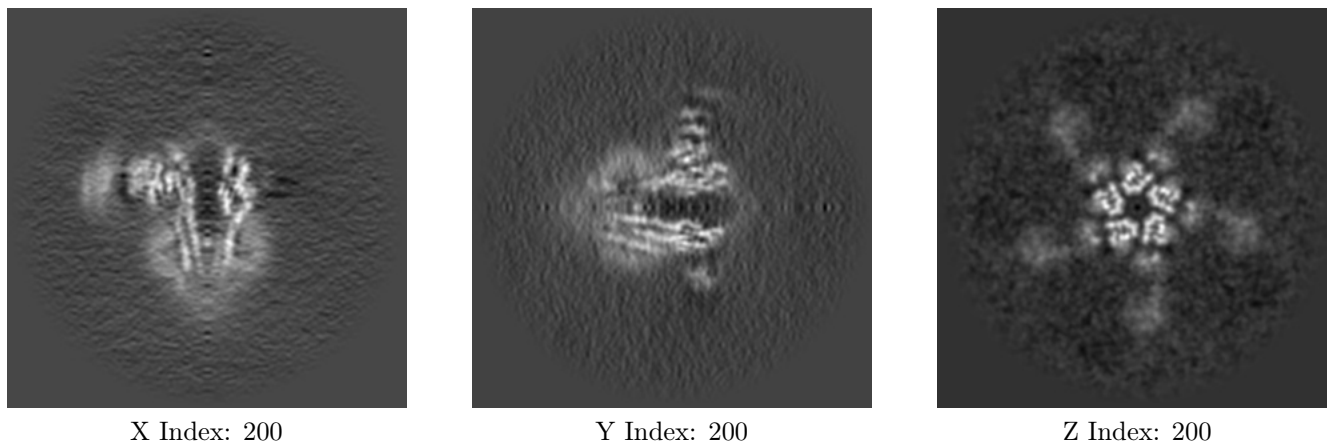
6.1.1 Primary map



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

6.2 Central slices [i](#)

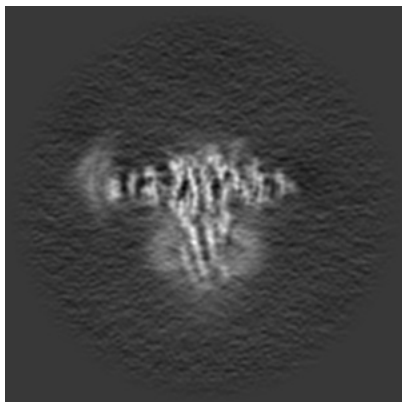
6.2.1 Primary map



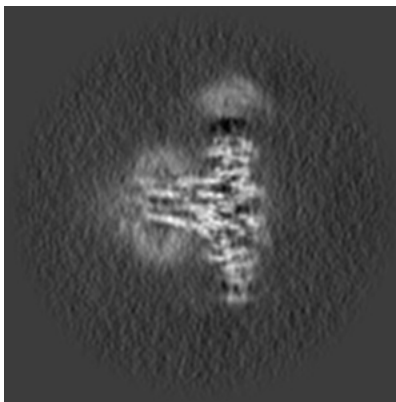
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

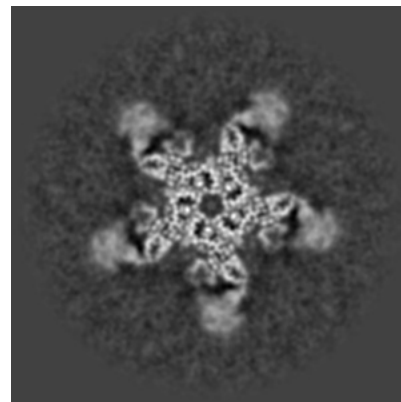
6.3.1 Primary map



X Index: 222



Y Index: 183



Z Index: 218

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

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 6.79. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

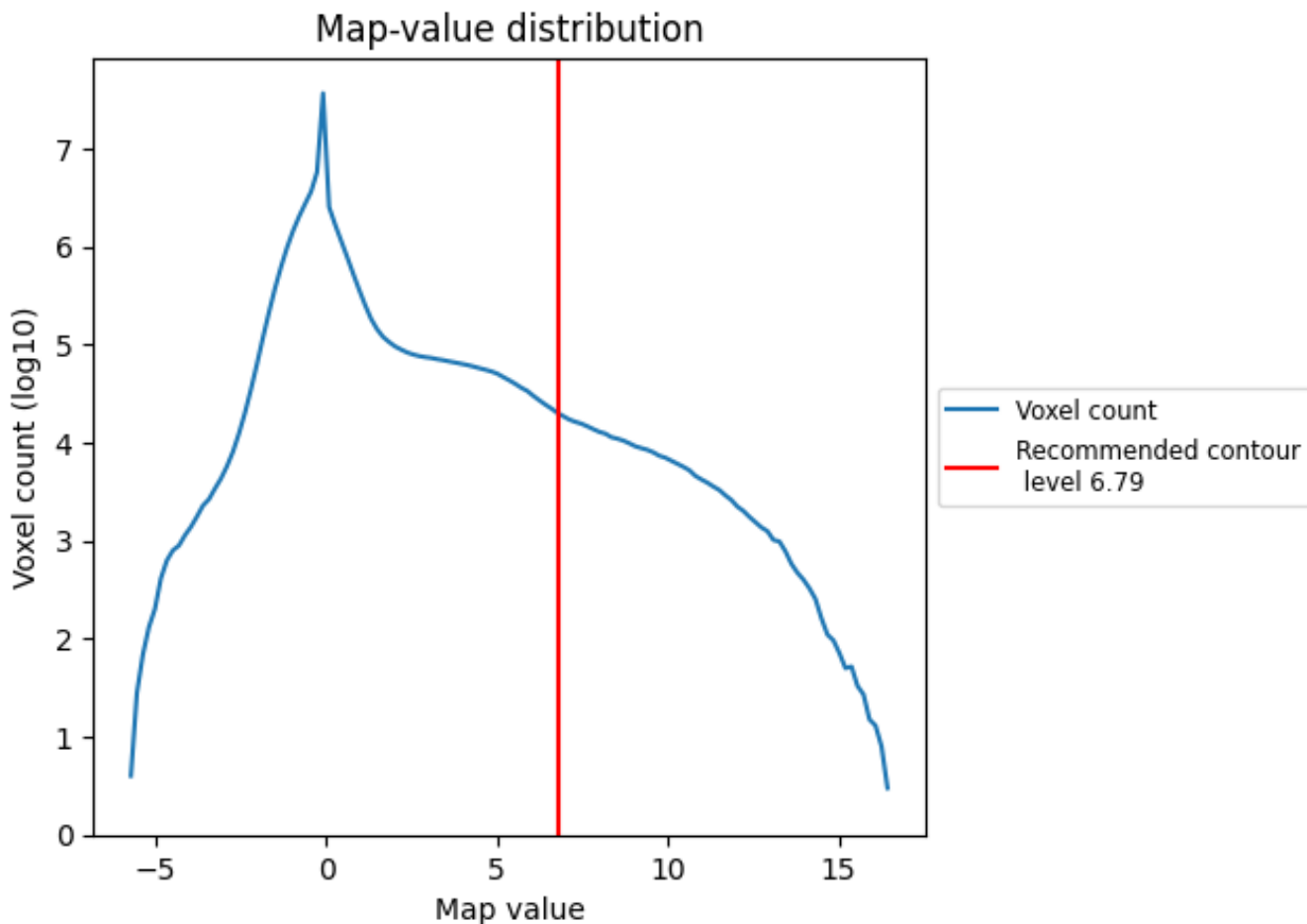
6.5 Mask visualisation

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

7 Map analysis [i](#)

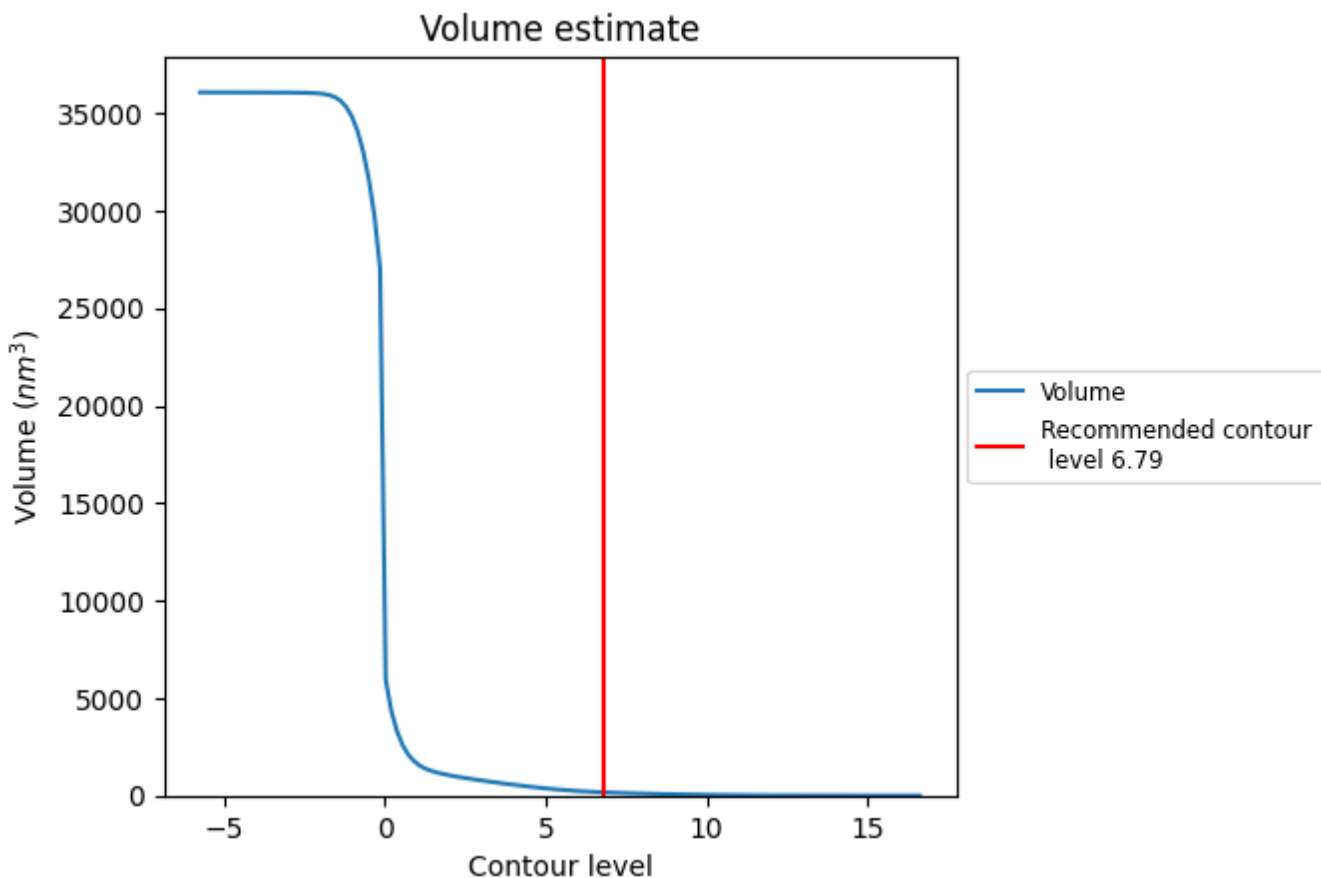
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

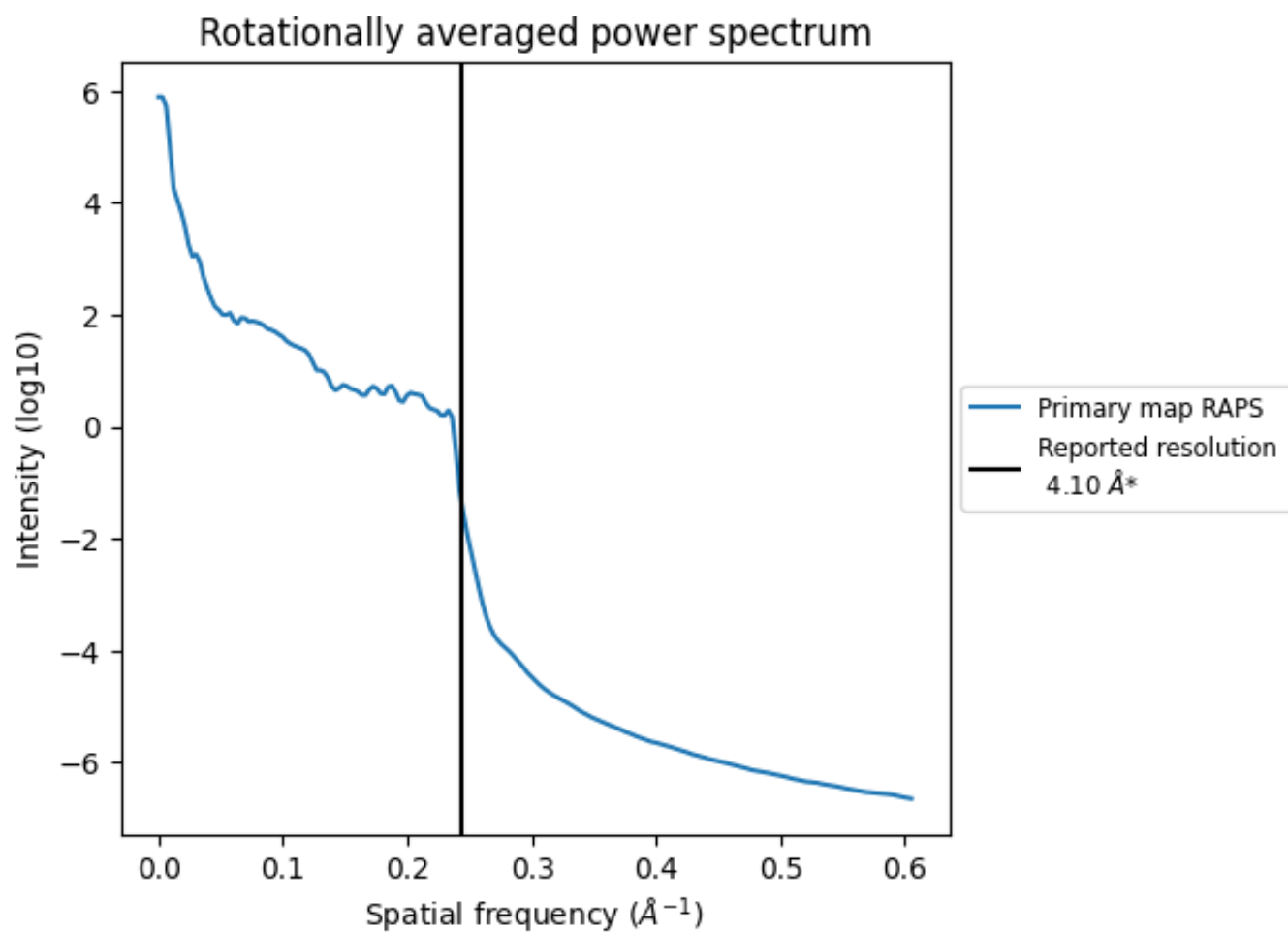
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 165 nm³; this corresponds to an approximate mass of 149 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 0.244 \AA^{-1}

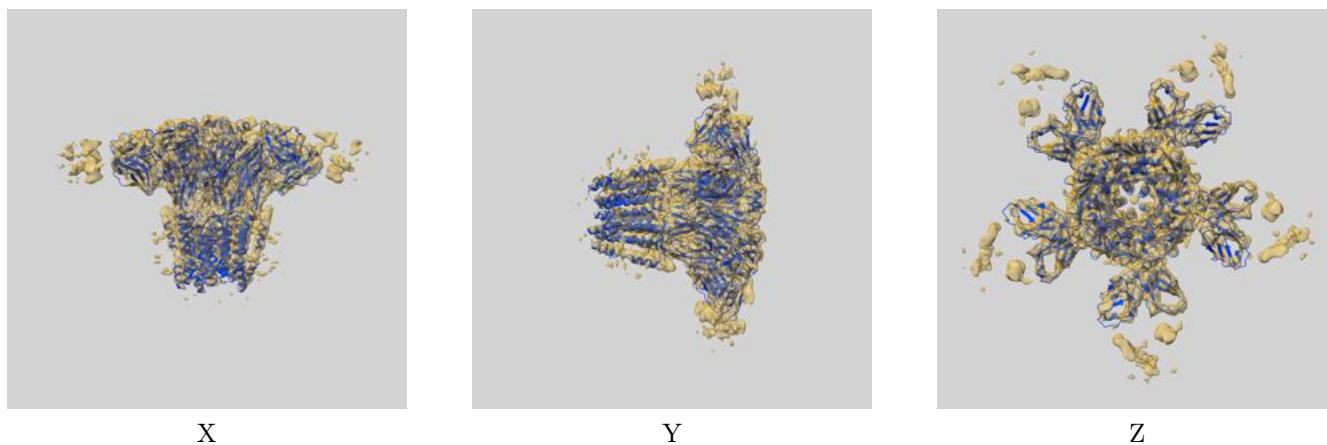
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

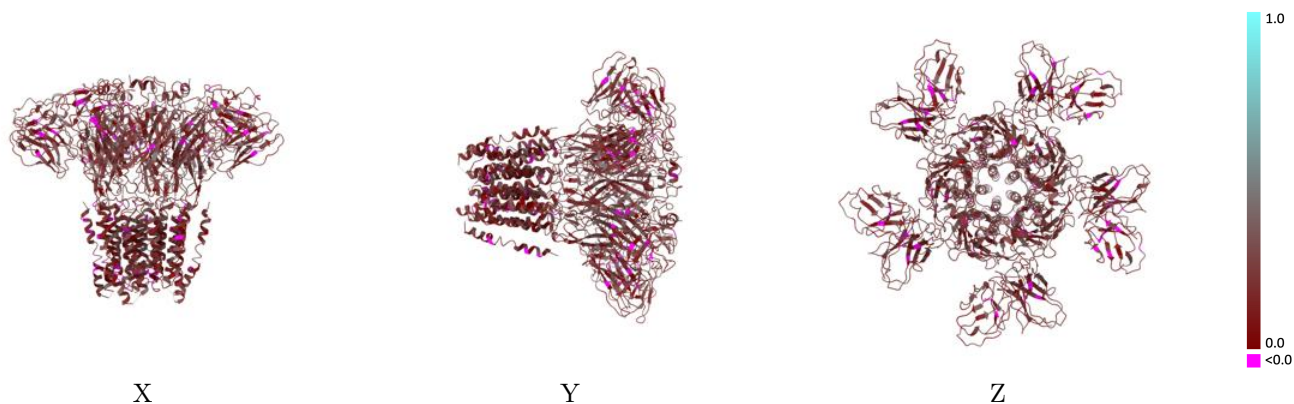
This section contains information regarding the fit between EMDB map EMD-23910 and PDB model 7MLU. Per-residue inclusion information can be found in section [3](#) on page [6](#).

9.1 Map-model overlay [i](#)



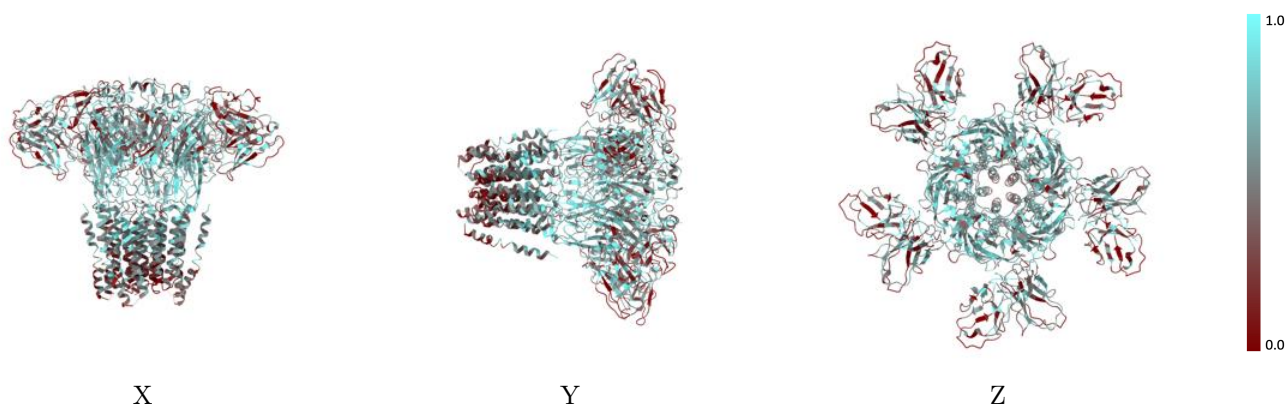
The images above show the 3D surface view of the map at the recommended contour level 6.79 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



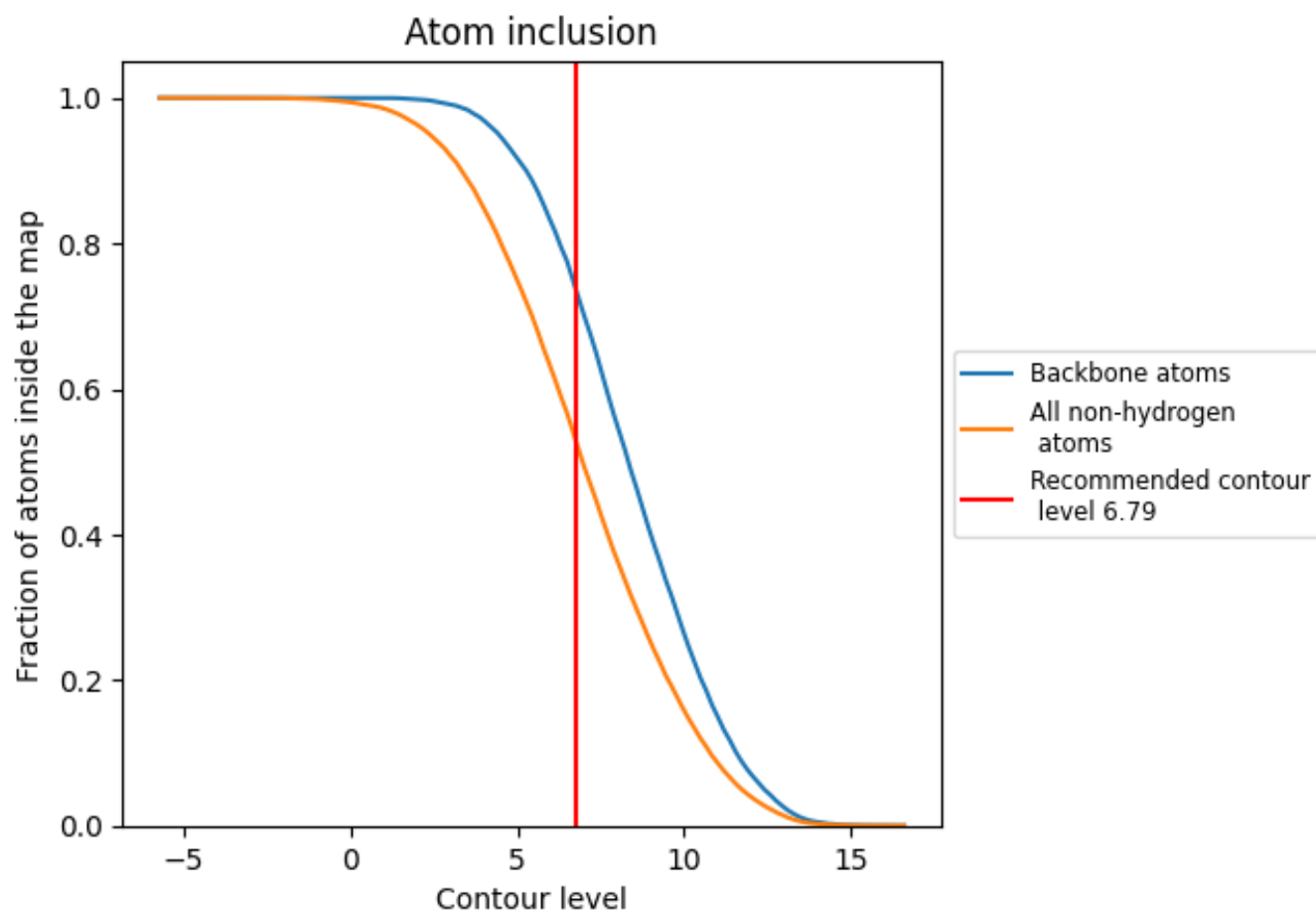
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (6.79).

































9.4 Atom inclusion [i](#)



At the recommended contour level, 73% of all backbone atoms, 53% 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 (6.79) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5253	 0.2120
A	 0.5831	 0.2130
B	 0.5835	 0.2110
C	 0.5835	 0.2100
D	 0.5748	 0.2110
E	 0.5654	 0.2150
F	 0.4680	 0.2130
G	 0.4851	 0.2250
H	 0.4817	 0.2230
I	 0.4388	 0.2200
J	 0.4128	 0.2290
K	 0.3473	 0.1910
L	 0.4863	 0.2130
M	 0.3815	 0.2040
N	 0.4760	 0.2190
O	 0.3916	 0.1810

