Full wwPDB EM Validation Report ⓘ

Nov 28, 2024 – 04:34 PM JST

PDB ID	:	8ZLU
EMDB ID	:	EMD-60233
Title	:	Cryo-EM strcuture of Cas5-HNH Cascade,Conf1
Authors	:	Liu, Y.N.; Wang, L.; Zhang, H.; Zhu, H.
Deposited on	:	2024-05-21
Resolution	:	2.47 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:

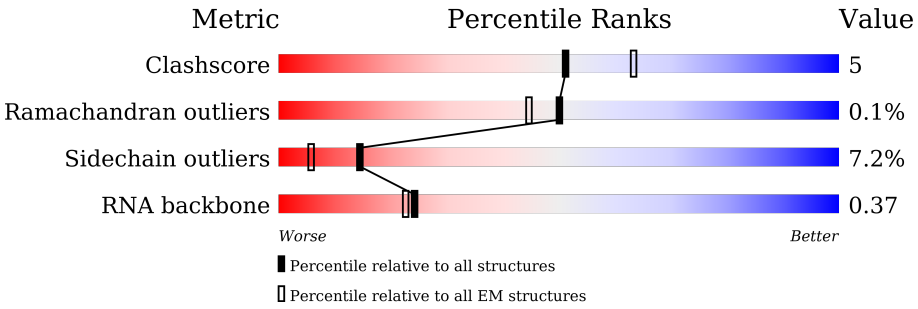
EMDB validation analysis	:	0.0.1.dev113
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	: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

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.47 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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	61	46% 36% 15%
2	C	546	68% 12% 19%
3	E	174	78% 17% 5%
4	F	378	82% 14%
4	G	378	56% 9% 34%
4	H	378	81% 15%
4	I	378	78% 16%

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Mol	Chain	Length	Quality of chain
4	J	378	
4	K	378	
5	B	388	
6	D	272	

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 27053 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 RNA chain called RNA (61-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	A	59	1258	562	225	413	58	0	0

- Molecule 2 is a protein called CRISPR-associated protein Cse1 (CRISPR_cse1).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	C	443	3495	2246	597	633	19	0	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	-10	MET	-	initiating methionine	UNP A0A1V6F8D1
C	-9	HIS	-	expression tag	UNP A0A1V6F8D1
C	-8	HIS	-	expression tag	UNP A0A1V6F8D1
C	-7	HIS	-	expression tag	UNP A0A1V6F8D1
C	-6	HIS	-	expression tag	UNP A0A1V6F8D1
C	-5	HIS	-	expression tag	UNP A0A1V6F8D1
C	-4	HIS	-	expression tag	UNP A0A1V6F8D1
C	-3	HIS	-	expression tag	UNP A0A1V6F8D1
C	-2	HIS	-	expression tag	UNP A0A1V6F8D1
C	-1	HIS	-	expression tag	UNP A0A1V6F8D1
C	0	HIS	-	expression tag	UNP A0A1V6F8D1
C	1	VAL	-	expression tag	UNP A0A1V6F8D1

- Molecule 3 is a protein called CRISPR-associated protein Cse2 (CRISPR_cse2).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	E	165	1352	875	238	233	6	0	0

- Molecule 4 is a protein called CRISPR system Cascade subunit CasC.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	F	367	Total	C	N	O	S	0	0
			2802	1773	485	532	12		
4	H	367	Total	C	N	O	S	0	0
			2833	1787	495	539	12		
4	I	364	Total	C	N	O	S	0	0
			2787	1762	485	528	12		
4	J	367	Total	C	N	O	S	0	0
			2804	1772	488	532	12		
4	K	352	Total	C	N	O	S	0	0
			2711	1714	476	510	11		
4	G	251	Total	C	N	O	S	0	0
			1919	1222	334	355	8		

- Molecule 5 is a protein called CRISPR system Cascade subunit CasD.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	B	378	Total	C	N	O	S	0	0
			2955	1866	546	522	21		

- Molecule 6 is a protein called CRISPR-associated endoribonuclease Cse3.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	D	268	Total	C	N	O	S	0	0
			2135	1369	383	379	4		

- Molecule 7 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

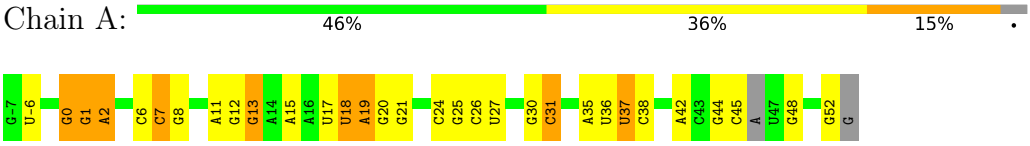
Mol	Chain	Residues	Atoms		AltConf
7	C	1	Total	Mg	0
			1	1	
7	B	1	Total	Mg	0
			1	1	

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.

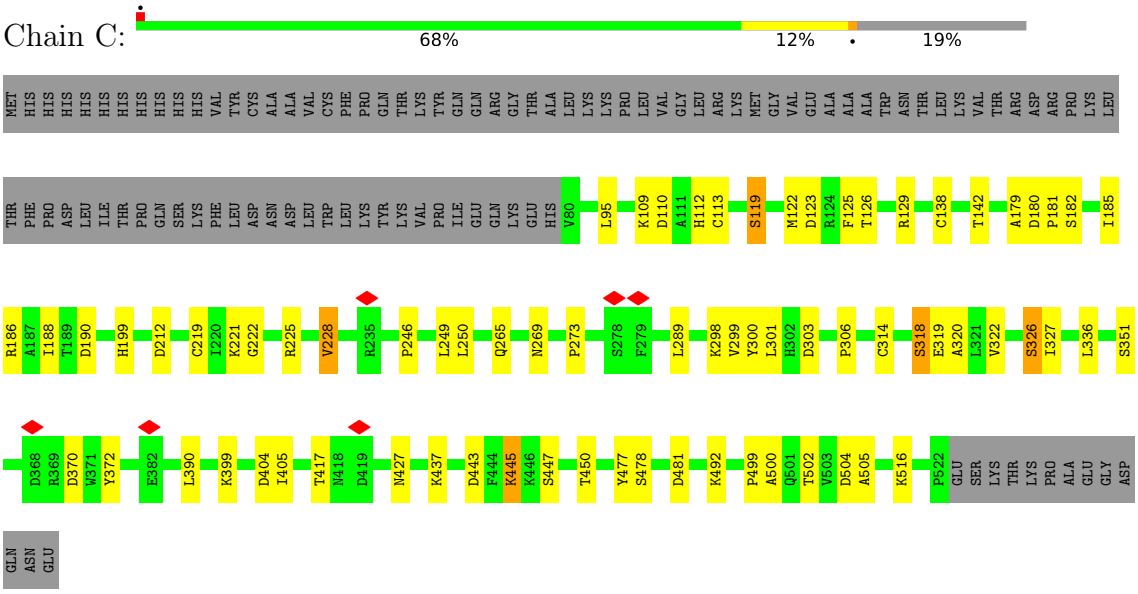
• Molecule 1: RNA (61-MER)

Chain A:



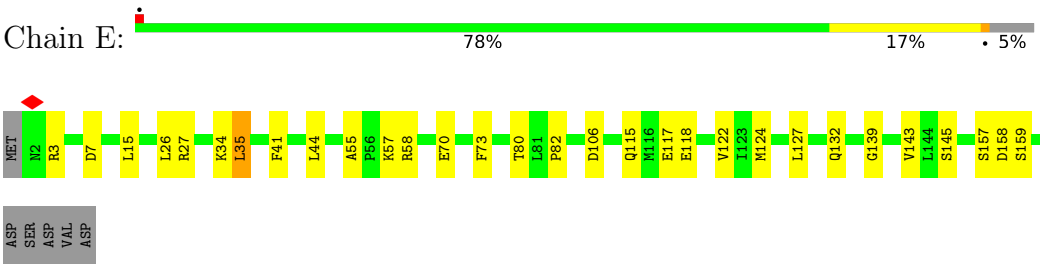
• Molecule 2: CRISPR-associated protein Cse1 (CRISPR_cse1)

Chain C:



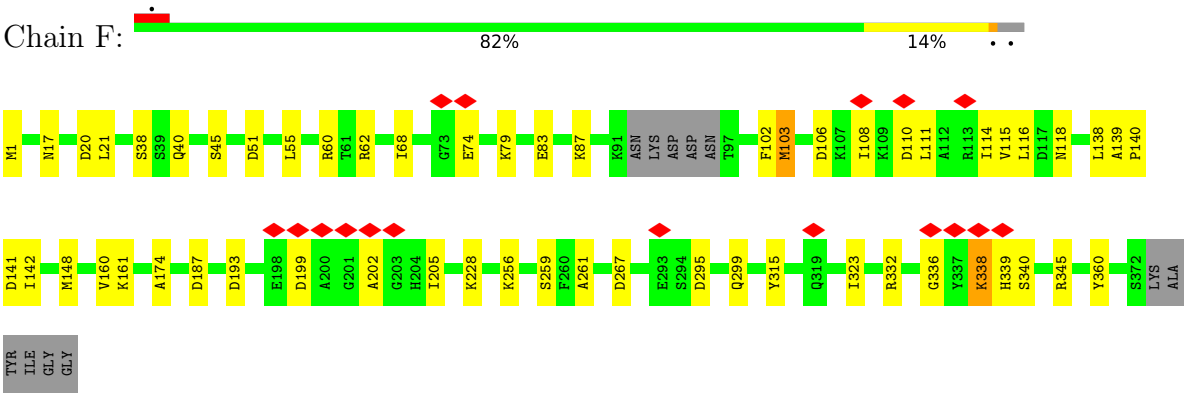
• Molecule 3: CRISPR-associated protein Cse2 (CRISPR_cse2)

Chain E:



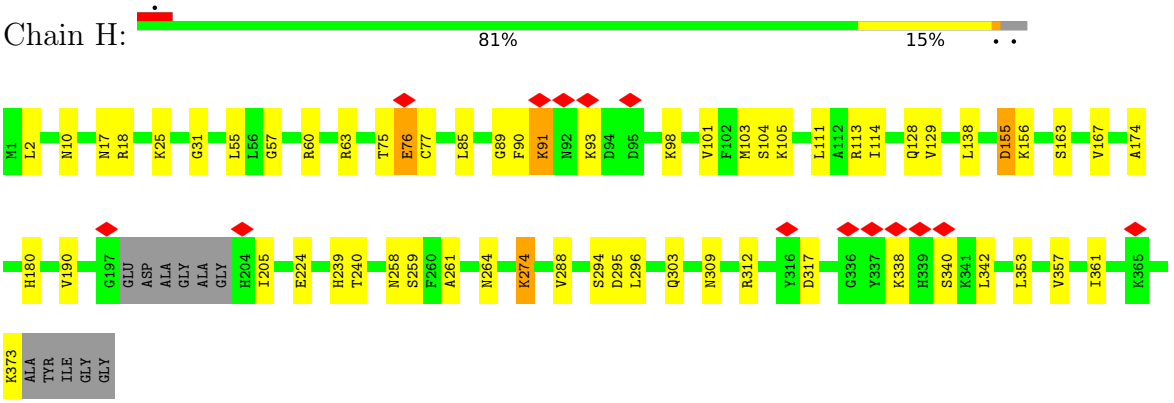
• Molecule 4: CRISPR system Cascade subunit CasC

Chain F:



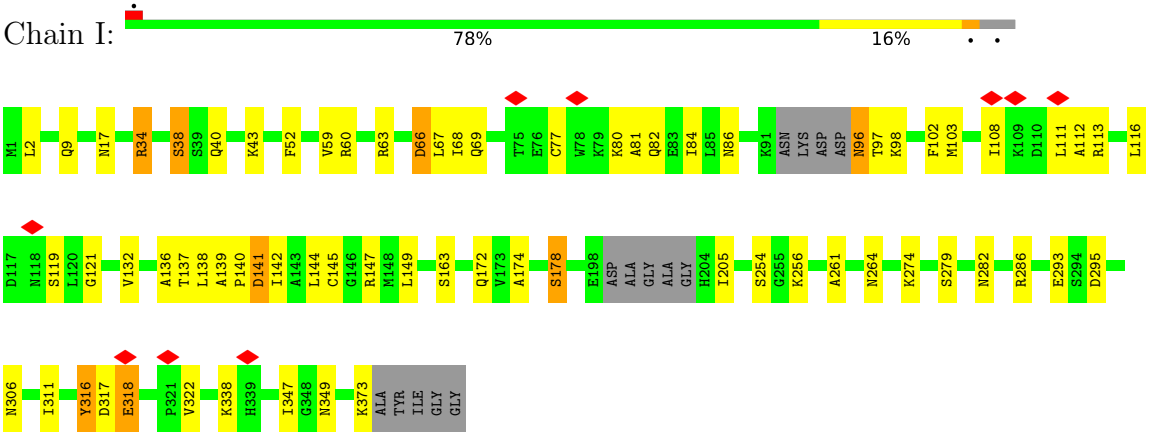
• Molecule 4: CRISPR system Cascade subunit CasC

Chain H:



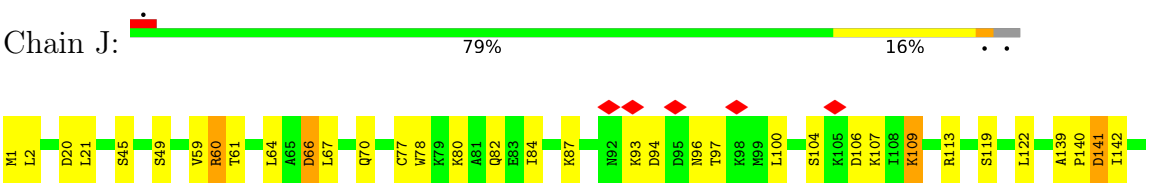
• Molecule 4: CRISPR system Cascade subunit CasC

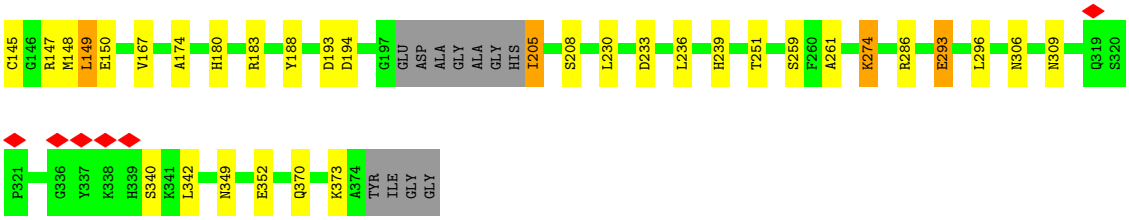
Chain I:



• Molecule 4: CRISPR system Cascade subunit CasC

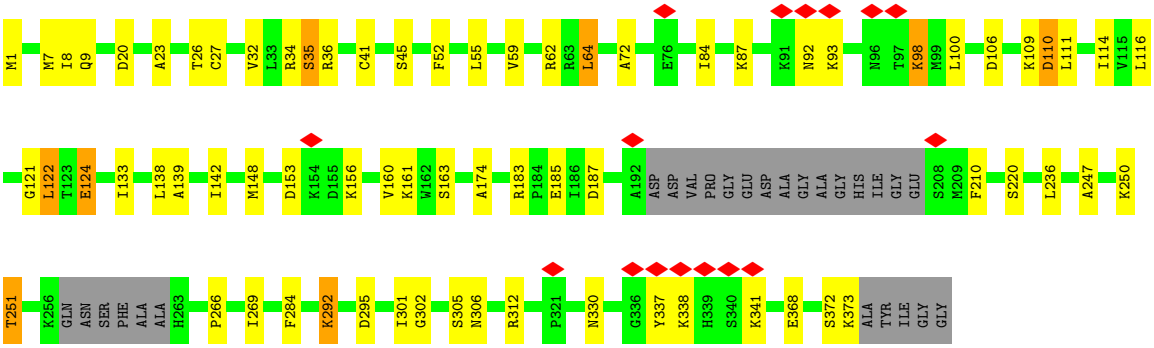
Chain J:





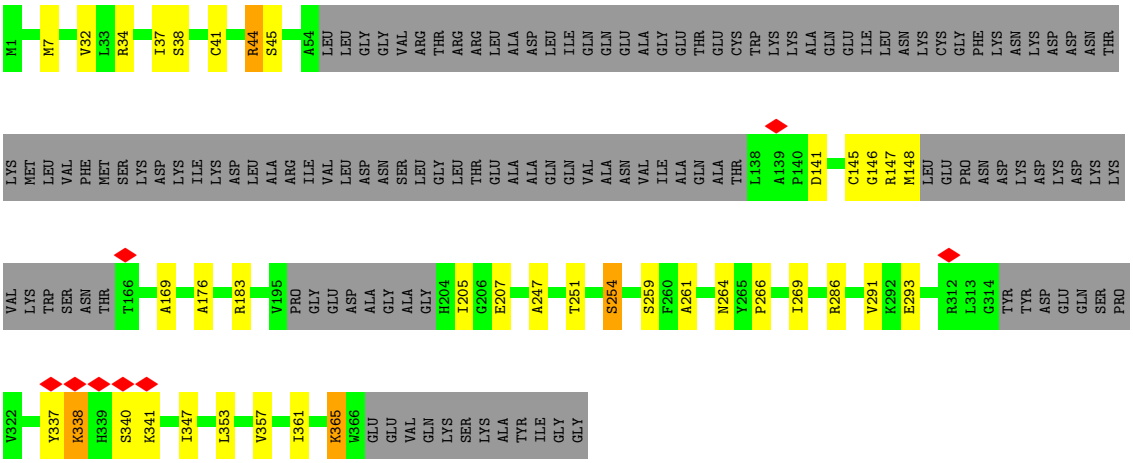
• Molecule 4: CRISPR system Cascade subunit CasC

Chain K:



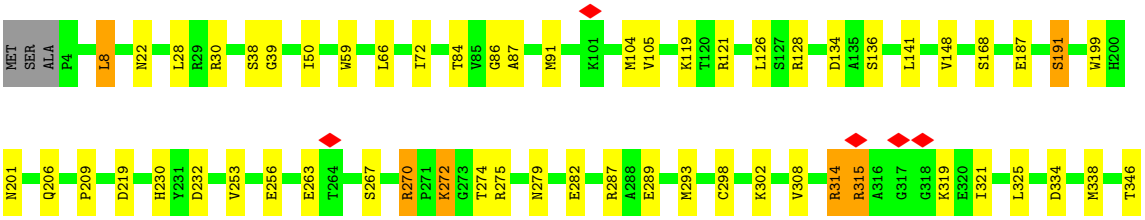
• Molecule 4: CRISPR system Cascade subunit CasC

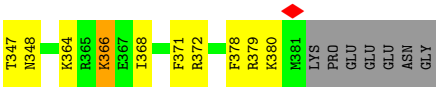
Chain G:



• Molecule 5: CRISPR system Cascade subunit CasD

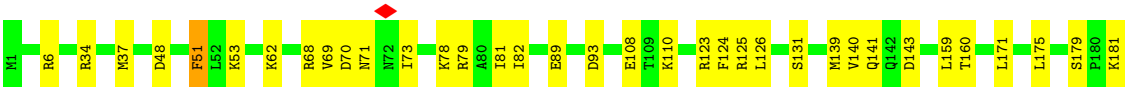
Chain B:

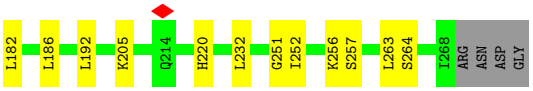




• Molecule 6: CRISPR-associated endoribonuclease Cse3

Chain D:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	181932	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	12000	Depositor
Maximum defocus (nm)	25000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	2.168	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.029	Depositor
Recommended contour level	0.0931	Depositor
Map size (Å)	332.0, 332.0, 332.0	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.83, 0.83, 0.83	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.20	0/1405	0.90	7/2187 (0.3%)
2	C	0.24	0/3596	0.48	0/4901
3	E	0.24	0/1382	0.48	0/1862
4	F	0.24	0/2857	0.46	0/3876
4	G	0.24	0/1960	0.47	0/2658
4	H	0.24	0/2888	0.45	0/3913
4	I	0.24	0/2842	0.48	0/3856
4	J	0.24	0/2858	0.48	0/3876
4	K	0.24	0/2762	0.47	0/3740
5	B	0.24	0/3028	0.53	0/4107
6	D	0.24	0/2193	0.52	0/2976
All	All	0.24	0/27771	0.52	7/37952 (0.0%)

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	24	C	C2-N1-C1'	7.08	126.59	118.80
1	A	24	C	N1-C2-O2	6.62	122.87	118.90
1	A	18	U	C2-N1-C1'	6.31	125.27	117.70
1	A	18	U	N1-C2-O2	5.54	126.68	122.80
1	A	24	C	N3-C2-O2	-5.52	118.04	121.90
1	A	18	U	N3-C2-O2	-5.27	118.51	122.20
1	A	24	C	C6-N1-C2	-5.03	118.29	120.30

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	A	1258	0	638	20	0
2	C	3495	0	3402	33	0
3	E	1352	0	1387	16	0
4	F	2802	0	2730	27	0
4	G	1919	0	1852	18	0
4	H	2833	0	2771	32	0
4	I	2787	0	2695	41	0
4	J	2804	0	2723	35	0
4	K	2711	0	2661	38	0
5	B	2955	0	2966	38	0
6	D	2135	0	2096	30	0
7	B	1	0	0	0	0
7	C	1	0	0	0	0
All	All	27053	0	25921	283	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 5.

All (283) 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)
4:F:338:LYS:HD2	4:F:339:HIS:H	1.34	0.92
5:B:274:THR:HG22	5:B:275:ARG:H	1.53	0.74
4:I:81:ALA:HB2	4:I:116:LEU:HD21	1.68	0.74
4:I:60:ARG:HH22	4:I:142:ILE:HG12	1.53	0.73
4:J:2:LEU:HB2	4:J:274:LYS:O	1.88	0.73
4:I:293:GLU:N	4:I:293:GLU:OE1	2.24	0.71
4:F:338:LYS:HD2	4:F:339:HIS:N	2.05	0.69
4:K:292:LYS:H	4:K:292:LYS:HD3	1.56	0.69
4:K:187:ASP:OD2	6:D:6:ARG:NH1	2.26	0.68
4:G:146:GLY:H	4:G:169:ALA:HB2	1.60	0.67
2:C:199:HIS:O	5:B:121:ARG:NH2	2.27	0.67
2:C:318:SER:OG	2:C:319:GLU:N	2.26	0.66
4:I:136:ALA:O	4:I:138:LEU:N	2.28	0.66
4:I:141:ASP:OD1	4:I:141:ASP:N	2.28	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:110:ASP:O	2:C:112:HIS:ND1	2.29	0.66
6:D:68:ARG:NH2	6:D:264:SER:OG	2.29	0.66
4:H:114:ILE:HD13	4:H:128:GLN:HB3	1.79	0.65
4:I:261:ALA:HB3	4:J:174:ALA:HB2	1.77	0.65
4:J:188:TYR:HB3	4:J:205:ILE:HD13	1.79	0.64
6:D:179:SER:HA	6:D:182:LEU:HD12	1.79	0.64
4:J:60:ARG:HG2	4:J:100:LEU:HD22	1.80	0.64
4:J:141:ASP:OD1	4:J:141:ASP:N	2.24	0.64
4:G:41:CYS:O	4:G:45:SER:HB3	1.99	0.63
2:C:122:MET:O	2:C:126:THR:HG23	1.97	0.63
4:K:153:ASP:HA	4:K:156:LYS:HB2	1.80	0.63
4:H:2:LEU:HB2	4:H:274:LYS:O	1.97	0.63
4:I:141:ASP:O	4:I:145:CYS:HB2	1.99	0.62
4:K:247:ALA:O	4:K:251:THR:OG1	2.13	0.62
5:B:199:TRP:NE1	5:B:201:ASN:O	2.32	0.62
4:K:306:ASN:OD1	4:K:337:TYR:OH	2.17	0.62
4:F:199:ASP:OD1	4:H:63:ARG:NH2	2.33	0.61
4:H:261:ALA:HB3	4:I:174:ALA:HB2	1.83	0.61
2:C:122:MET:HG3	2:C:405:ILE:HD13	1.82	0.60
4:J:104:SER:HB3	4:J:142:ILE:HD11	1.83	0.60
2:C:138:CYS:O	2:C:142:THR:HB	2.01	0.60
4:F:261:ALA:HB3	4:H:174:ALA:HB2	1.83	0.60
2:C:188:ILE:HG21	2:C:322:VAL:HG23	1.83	0.60
4:H:10:ASN:ND2	4:I:282:ASN:OD1	2.35	0.59
4:F:38:SER:OG	4:F:40:GLN:NE2	2.35	0.59
4:I:2:LEU:HB2	4:I:274:LYS:O	2.01	0.59
6:D:73:ILE:HG13	6:D:81:ILE:HD11	1.84	0.59
4:H:353:LEU:O	4:H:357:VAL:HG23	2.02	0.58
4:J:309:ASN:HB2	4:J:342:LEU:HD11	1.86	0.58
5:B:334:ASP:O	5:B:338:MET:HG3	2.04	0.58
4:F:20:ASP:OD1	4:F:21:LEU:N	2.38	0.57
4:I:9:GLN:NE2	4:I:264:ASN:O	2.37	0.57
4:K:236:LEU:HD12	4:K:372:SER:HB3	1.86	0.57
3:E:41:PHE:HE2	3:E:58:ARG:HG2	1.68	0.57
4:F:83:GLU:O	4:F:87:LYS:HG2	2.05	0.57
3:E:55:ALA:O	5:B:275:ARG:NH2	2.38	0.56
3:E:139:GLY:O	3:E:143:VAL:HG23	2.05	0.56
4:F:55:LEU:HB3	4:F:140:PRO:HG2	1.87	0.56
4:K:110:ASP:O	4:K:114:ILE:HD12	2.05	0.56
2:C:273:PRO:HG3	2:C:289:LEU:HD13	1.88	0.56
6:D:48:ASP:OD1	6:D:51:PHE:N	2.38	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:8:ILE:HD13	4:K:301:ILE:HD13	1.89	0.55
4:F:295:ASP:N	4:F:295:ASP:OD1	2.39	0.55
4:G:37:ILE:HB	4:G:176:ALA:HB3	1.88	0.55
4:J:78:TRP:O	4:J:82:GLN:HB2	2.07	0.55
3:E:35:LEU:HD21	5:B:368:ILE:HA	1.90	0.54
4:F:141:ASP:OD1	4:F:141:ASP:N	2.39	0.54
4:I:34:ARG:HB3	4:I:178:SER:HB2	1.89	0.54
2:C:179:ALA:HB3	2:C:298:LYS:HB3	1.90	0.54
2:C:299:VAL:HG22	2:C:327:ILE:HG12	1.88	0.54
4:I:60:ARG:NH2	4:I:142:ILE:HG12	2.22	0.54
2:C:119:SER:O	5:B:22:ASN:ND2	2.41	0.54
5:B:187:GLU:O	5:B:191:SER:OG	2.26	0.54
2:C:306:PRO:HA	2:C:320:ALA:HB2	1.91	0.53
4:I:59:VAL:HG11	4:I:67:LEU:HD11	1.91	0.53
4:J:109:LYS:O	4:J:113:ARG:HG3	2.09	0.53
4:G:254:SER:O	4:G:254:SER:OG	2.26	0.53
4:I:295:ASP:OD1	4:I:295:ASP:N	2.41	0.53
4:K:62:ARG:HH21	4:K:100:LEU:HD11	1.74	0.53
1:A:27:U:H2'	4:K:148:MET:HE2	1.91	0.53
4:F:174:ALA:HB2	4:G:261:ALA:HB3	1.89	0.53
4:I:80:LYS:O	4:I:84:ILE:HG13	2.09	0.53
4:H:357:VAL:O	4:H:361:ILE:HG13	2.08	0.52
4:K:139:ALA:HB3	4:K:142:ILE:HG13	1.92	0.52
5:B:86:GLY:HA3	5:B:91:MET:SD	2.50	0.52
1:A:7:C:H5	4:F:20:ASP:HA	1.74	0.52
6:D:6:ARG:HB3	6:D:108:GLU:HG3	1.91	0.52
4:F:187:ASP:OD1	4:H:25:LYS:NZ	2.38	0.52
4:I:293:GLU:O	4:J:286:ARG:NH2	2.39	0.52
4:G:357:VAL:O	4:G:361:ILE:HD13	2.10	0.52
4:I:102:PHE:O	4:I:147:ARG:HD2	2.09	0.52
4:J:66:ASP:O	4:J:70:GLN:HG3	2.10	0.52
5:B:366:LYS:NZ	5:B:366:LYS:HB3	2.24	0.52
4:H:85:LEU:HD22	4:H:90:PHE:HE2	1.74	0.51
4:J:20:ASP:OD1	4:J:20:ASP:N	2.43	0.51
4:I:254:SER:O	4:I:254:SER:OG	2.23	0.51
4:K:27:CYS:HB3	4:K:36:ARG:HD3	1.92	0.51
2:C:246:PRO:HB3	2:C:351:SER:HB2	1.93	0.51
1:A:13:G:N1	4:F:202:ALA:O	2.37	0.51
4:J:107:LYS:H	4:J:107:LYS:HD2	1.75	0.51
5:B:72:ILE:HB	5:B:209:PRO:HG2	1.92	0.51
4:J:261:ALA:HB3	4:K:174:ALA:HB2	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:I:69:GLN:OE1	4:I:77:CYS:N	2.43	0.51
4:K:23:ALA:HB2	6:D:71:ASN:HB3	1.91	0.51
4:F:17:ASN:HD22	4:F:38:SER:H	1.58	0.51
4:J:230:LEU:HD22	4:J:236:LEU:HD23	1.93	0.50
1:A:17:U:OP1	4:I:43:LYS:NZ	2.41	0.50
4:J:139:ALA:O	4:J:141:ASP:N	2.45	0.50
4:K:26:THR:HG22	4:K:35:SER:HA	1.93	0.50
5:B:289:GLU:O	5:B:293:MET:HG3	2.12	0.50
6:D:124:PHE:HA	6:D:264:SER:O	2.11	0.50
2:C:370:ASP:OD1	2:C:370:ASP:N	2.41	0.50
1:A:12:G:O2'	1:A:13:G:H4'	2.12	0.50
4:H:89:GLY:HA2	4:H:156:LYS:HB3	1.93	0.50
4:J:142:ILE:HG22	4:J:167:VAL:HG11	1.94	0.50
4:K:302:GLY:O	4:K:305:SER:OG	2.27	0.50
4:H:264:ASN:ND2	4:I:279:SER:OG	2.45	0.50
3:E:127:LEU:HD22	3:E:132:GLN:HG3	1.94	0.50
4:H:309:ASN:HD22	4:H:342:LEU:HD21	1.76	0.50
6:D:68:ARG:NH1	6:D:70:ASP:OD2	2.45	0.50
6:D:175:LEU:HD23	6:D:186:LEU:HD11	1.93	0.50
4:K:266:PRO:HG2	4:K:269:ILE:HD11	1.93	0.49
6:D:171:LEU:HD23	6:D:232:LEU:HD21	1.94	0.49
4:J:180:HIS:CD2	4:J:296:LEU:HD21	2.48	0.49
4:K:185:GLU:OE2	6:D:125:ARG:NH2	2.46	0.49
4:F:323:ILE:HD11	4:F:360:TYR:CE2	2.48	0.49
4:K:84:ILE:HD11	4:K:122:LEU:HD22	1.94	0.49
4:H:295:ASP:N	4:H:295:ASP:OD1	2.46	0.48
4:K:160:VAL:O	4:K:160:VAL:HG13	2.13	0.48
4:H:55:LEU:HD13	4:H:240:THR:HA	1.96	0.48
4:J:293:GLU:N	4:J:293:GLU:OE2	2.45	0.48
4:K:111:LEU:HD11	4:K:133:ILE:HD11	1.95	0.48
5:B:334:ASP:OD2	5:B:372:ARG:NH2	2.33	0.48
1:A:42:A:C2	1:A:48:G:N1	2.80	0.48
2:C:95:LEU:HD12	2:C:113:CYS:HA	1.94	0.48
4:F:336:GLY:HA3	4:F:340:SER:O	2.14	0.48
4:H:55:LEU:HD11	4:H:239:HIS:CG	2.49	0.48
4:F:68:ILE:HG21	4:F:116:LEU:HD13	1.96	0.48
4:I:108:ILE:O	4:I:112:ALA:HB3	2.14	0.48
1:A:42:A:N1	1:A:48:G:O6	2.46	0.48
4:J:148:MET:HB3	4:J:149:LEU:HD23	1.96	0.47
2:C:447:SER:OG	4:G:207:GLU:OE2	2.24	0.47
4:J:97:THR:HG22	4:J:97:THR:O	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:31:C:C5	4:J:205:ILE:HG13	2.48	0.47
3:E:26:LEU:HD11	3:E:34:LYS:HB2	1.96	0.47
4:H:113:ARG:HG2	4:H:113:ARG:HH11	1.78	0.47
4:I:66:ASP:N	4:I:66:ASP:OD1	2.48	0.47
4:F:256:LYS:HE3	4:F:256:LYS:HB3	1.71	0.47
4:K:72:ALA:HB1	4:K:116:LEU:HD11	1.96	0.47
4:H:93:LYS:HG2	4:H:98:LYS:HZ1	1.80	0.47
4:I:347:ILE:HG22	4:I:349:ASN:H	1.79	0.47
4:K:121:GLY:N	4:K:124:GLU:OE2	2.41	0.47
4:I:316:TYR:HD1	4:I:317:ASP:H	1.63	0.47
4:G:337:TYR:O	5:B:272:LYS:NZ	2.48	0.47
2:C:499:PRO:HG3	4:G:183:ARG:HG2	1.96	0.47
1:A:12:G:H2'	1:A:12:G:N3	2.28	0.46
4:F:110:ASP:O	4:F:114:ILE:HG23	2.14	0.46
4:I:140:PRO:O	4:I:144:LEU:HG	2.15	0.46
2:C:125:PHE:HE2	2:C:228:VAL:HG11	1.80	0.46
3:E:115:GLN:NE2	4:H:31:GLY:O	2.49	0.46
4:J:59:VAL:HG22	4:J:61:THR:HG23	1.97	0.46
5:B:66:LEU:HD23	5:B:141:LEU:HB3	1.97	0.46
5:B:119:LYS:HE2	5:B:119:LYS:HB3	1.67	0.46
4:F:103:MET:SD	4:F:108:ILE:HB	2.55	0.46
4:J:66:ASP:OD1	4:J:66:ASP:N	2.49	0.46
6:D:69:VAL:HG22	6:D:82:ILE:HG12	1.96	0.46
4:F:114:ILE:HG13	4:F:115:VAL:N	2.31	0.46
1:A:30:G:O2'	4:K:41:CYS:SG	2.73	0.46
6:D:141:GLN:HG3	6:D:143:ASP:H	1.81	0.46
6:D:139:MET:SD	6:D:139:MET:N	2.89	0.46
4:I:68:ILE:HG23	4:I:113:ARG:HG2	1.97	0.45
4:G:286:ARG:HG3	5:B:267:SER:HB2	1.98	0.45
4:G:7:MET:HG2	4:G:269:ILE:HG12	1.97	0.45
5:B:366:LYS:HB3	5:B:366:LYS:HZ1	1.81	0.45
4:I:82:GLN:HE22	4:I:98:LYS:HE3	1.79	0.45
5:B:346:THR:OG1	5:B:347:THR:N	2.48	0.45
1:A:15:A:OP2	4:H:18:ARG:NH2	2.49	0.45
3:E:34:LYS:HA	3:E:34:LYS:HD3	1.54	0.45
5:B:315:ARG:NH1	5:B:321:ILE:HG23	2.31	0.45
4:I:139:ALA:HB3	4:I:142:ILE:HG13	1.97	0.45
4:I:316:TYR:HE1	4:I:318:GLU:HG3	1.81	0.45
4:K:110:ASP:N	4:K:110:ASP:OD1	2.48	0.45
5:B:270:ARG:HD3	5:B:270:ARG:HA	1.61	0.45
2:C:445:LYS:H	2:C:445:LYS:HG2	1.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:118:GLU:O	3:E:122:VAL:HG13	2.17	0.45
6:D:78:LYS:O	6:D:79:ARG:NH1	2.50	0.45
4:J:349:ASN:HB3	4:J:352:GLU:HG2	1.99	0.45
4:I:119:SER:O	4:I:121:GLY:N	2.50	0.44
4:J:87:LYS:HZ2	4:J:122:LEU:HB3	1.82	0.44
4:J:107:LYS:HB3	4:J:109:LYS:HE3	1.99	0.44
5:B:232:ASP:OD1	5:B:232:ASP:N	2.50	0.44
2:C:478:SER:H	2:C:481:ASP:HB2	1.83	0.44
4:H:75:THR:O	4:H:75:THR:HG22	2.18	0.44
5:B:84:THR:HG22	5:B:126:LEU:HD23	1.99	0.44
4:H:180:HIS:CD2	4:H:296:LEU:HD21	2.51	0.44
2:C:222:GLY:HA2	2:C:225:ARG:HD3	1.99	0.44
2:C:265:GLN:H	2:C:265:GLN:HG3	1.55	0.44
6:D:6:ARG:NE	6:D:108:GLU:OE2	2.35	0.44
6:D:126:LEU:HD13	6:D:252:ILE:HD12	2.00	0.44
2:C:185:ILE:HD13	2:C:185:ILE:HA	1.85	0.44
2:C:219:CYS:HB3	2:C:301:LEU:HD21	1.98	0.44
4:I:111:LEU:HD23	4:I:132:VAL:HG22	2.00	0.44
5:B:8:LEU:HB3	5:B:148:VAL:HG13	1.99	0.44
4:K:87:LYS:HE3	4:K:122:LEU:HB3	2.00	0.44
4:K:106:ASP:O	4:K:109:LYS:NZ	2.48	0.44
4:K:124:GLU:H	4:K:124:GLU:HG3	1.49	0.44
6:D:181:LYS:HZ3	6:D:181:LYS:HB2	1.83	0.44
6:D:251:GLY:HA3	6:D:256:LYS:HD3	2.00	0.44
1:A:13:G:O6	4:F:205:ILE:HD11	2.18	0.44
1:A:21:G:N2	4:J:147:ARG:HH21	2.16	0.44
2:C:299:VAL:HA	2:C:326:SER:O	2.18	0.44
4:K:62:ARG:HD3	4:K:98:LYS:HE3	1.99	0.44
6:D:34:ARG:HD3	6:D:37:MET:HE2	2.00	0.44
4:I:17:ASN:HD22	4:I:38:SER:H	1.65	0.43
4:K:92:ASN:OD1	4:K:92:ASN:N	2.43	0.43
5:B:274:THR:HG22	5:B:275:ARG:N	2.26	0.43
6:D:252:ILE:O	6:D:252:ILE:HG22	2.19	0.43
1:A:1:G:H1'	1:A:2:A:C2	2.54	0.43
6:D:181:LYS:HB2	6:D:181:LYS:NZ	2.32	0.43
2:C:500:ALA:HB3	2:C:505:ALA:HB2	2.00	0.43
4:G:347:ILE:HD12	4:G:353:LEU:HD12	2.00	0.43
4:H:57:GLY:O	4:H:105:LYS:N	2.48	0.43
1:A:19:A:C8	4:H:205:ILE:HD11	2.54	0.43
4:I:102:PHE:O	4:I:103:MET:HB3	2.19	0.43
5:B:253:VAL:HG13	5:B:256:GLU:HG2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:109:LYS:HB2	2:C:109:LYS:HE3	1.81	0.42
4:H:155:ASP:N	4:H:155:ASP:OD1	2.52	0.42
4:K:7:MET:HG2	4:K:269:ILE:HG12	2.01	0.42
4:K:64:LEU:HD23	4:K:64:LEU:HA	1.80	0.42
6:D:159:LEU:HD12	6:D:160:THR:N	2.33	0.42
3:E:73:PHE:HE2	3:E:124:MET:HG2	1.84	0.42
4:I:205:ILE:HD12	4:I:205:ILE:HA	1.86	0.42
5:B:314:ARG:NH2	5:B:348:ASN:OD1	2.52	0.42
6:D:48:ASP:OD2	6:D:53:LYS:HB2	2.19	0.42
1:A:0:G:H5"	5:B:84:THR:O	2.19	0.42
5:B:50:ILE:N	5:B:50:ILE:HD12	2.34	0.42
1:A:37:U:O4	6:D:131:SER:HB3	2.19	0.42
2:C:181:PRO:HG3	2:C:300:TYR:CE1	2.54	0.42
2:C:502:THR:HB	3:E:106:ASP:OD2	2.19	0.42
4:G:44:ARG:NH2	5:B:87:ALA:O	2.53	0.42
4:J:94:ASP:HB3	4:J:96:ASN:HD21	1.85	0.42
4:K:292:LYS:HG2	4:K:295:ASP:HB2	2.02	0.42
4:G:247:ALA:O	4:G:251:THR:OG1	2.19	0.42
5:B:308:VAL:HG11	5:B:325:LEU:HD13	2.02	0.42
1:A:7:C:C4	4:G:205:ILE:HD11	2.55	0.42
6:D:205:LYS:NZ	6:D:205:LYS:HB3	2.35	0.42
3:E:80:THR:OG1	3:E:82:PRO:HD2	2.20	0.42
4:I:96:ASN:HB3	4:I:97:THR:H	1.55	0.42
4:I:149:LEU:HD12	4:I:149:LEU:HA	1.86	0.42
2:C:269:ASN:OD1	2:C:269:ASN:N	2.51	0.41
4:H:111:LEU:HD22	4:H:129:VAL:HG22	2.01	0.41
4:K:34:ARG:NH1	4:K:284:PHE:O	2.41	0.41
4:F:295:ASP:O	4:F:299:GLN:HG3	2.20	0.41
6:D:126:LEU:HD13	6:D:263:LEU:HD13	2.03	0.41
1:A:35:A:H4'	1:A:36:U:H5"	2.03	0.41
3:E:27:ARG:HD2	3:E:70:GLU:HB2	2.02	0.41
4:H:258:ASN:HA	4:I:172:GLN:HG2	2.02	0.41
1:A:-6:U:H1'	5:B:39:GLY:HA2	2.03	0.41
2:C:336:LEU:HD23	2:C:336:LEU:HA	1.88	0.41
4:F:315:TYR:OH	4:G:266:PRO:O	2.38	0.41
4:H:60:ARG:HA	4:H:101:VAL:O	2.19	0.41
4:J:21:LEU:HD11	5:B:379:ARG:HB2	2.02	0.41
4:J:80:LYS:O	4:J:84:ILE:HG13	2.19	0.41
4:K:210:PHE:CE2	6:D:192:LEU:HD21	2.55	0.41
5:B:298:CYS:O	5:B:302:LYS:HD3	2.20	0.41
4:J:193:ASP:OD1	4:J:194:ASP:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:K:9:GLN:HE21	4:K:266:PRO:HD3	1.85	0.41
2:C:249:LEU:HD23	2:C:390:LEU:HD21	2.03	0.41
5:B:28:LEU:HD12	5:B:28:LEU:HA	1.89	0.41
5:B:315:ARG:NH1	5:B:319:LYS:HB3	2.36	0.41
2:C:123:ASP:OD2	2:C:221:LYS:HD2	2.20	0.41
3:E:35:LEU:HD22	5:B:371:PHE:HB2	2.02	0.41
4:F:60:ARG:HG3	4:F:102:PHE:HB2	2.02	0.41
3:E:3:ARG:HD3	3:E:3:ARG:HA	1.83	0.41
4:H:288:VAL:HG22	4:H:303:GLN:NE2	2.36	0.41
4:I:274:LYS:HE3	4:I:274:LYS:HB3	1.79	0.41
4:J:205:ILE:HD12	4:K:20:ASP:HB3	2.03	0.41
4:K:32:VAL:HG23	4:K:34:ARG:HE	1.85	0.41
4:G:338:LYS:HA	4:G:338:LYS:HD3	1.38	0.41
3:E:15:LEU:HD11	3:E:44:LEU:HD11	2.03	0.41
4:F:139:ALA:HB3	4:F:142:ILE:HG13	2.03	0.41
4:H:91:LYS:HA	4:H:91:LYS:HD2	1.71	0.41
4:J:370:GLN:O	4:J:373:LYS:NZ	2.36	0.41
4:G:365:LYS:HD3	4:G:365:LYS:HA	1.89	0.41
4:J:342:LEU:HD23	4:J:342:LEU:HA	1.96	0.40
4:H:76:GLU:HB3	4:H:77:CYS:H	1.69	0.40
5:B:302:LYS:HG3	6:D:51:PHE:CZ	2.56	0.40
4:H:224:GLU:H	4:H:224:GLU:HG2	1.64	0.40
4:I:311:ILE:HD13	4:I:311:ILE:HA	1.95	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	
2	C	441/546 (81%)	401 (91%)	40 (9%)	0	100	100
3	E	163/174 (94%)	158 (97%)	5 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	F	363/378 (96%)	344 (95%)	19 (5%)	0	100	100
4	G	241/378 (64%)	224 (93%)	17 (7%)	0	100	100
4	H	363/378 (96%)	340 (94%)	22 (6%)	1 (0%)	37	54
4	I	358/378 (95%)	326 (91%)	30 (8%)	2 (1%)	22	36
4	J	363/378 (96%)	336 (93%)	26 (7%)	1 (0%)	37	54
4	K	346/378 (92%)	318 (92%)	28 (8%)	0	100	100
5	B	376/388 (97%)	355 (94%)	21 (6%)	0	100	100
6	D	266/272 (98%)	256 (96%)	10 (4%)	0	100	100
All	All	3280/3648 (90%)	3058 (93%)	218 (7%)	4 (0%)	50	67

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	I	137	THR
4	I	322	VAL
4	H	76	GLU
4	J	140	PRO

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	
2	C	370/470 (79%)	344 (93%)	26 (7%)	12	23
3	E	143/153 (94%)	135 (94%)	8 (6%)	17	33
4	F	292/313 (93%)	271 (93%)	21 (7%)	12	22
4	G	199/313 (64%)	182 (92%)	17 (8%)	8	16
4	H	300/313 (96%)	283 (94%)	17 (6%)	17	32
4	I	290/313 (93%)	272 (94%)	18 (6%)	15	29
4	J	291/313 (93%)	264 (91%)	27 (9%)	7	13
4	K	285/313 (91%)	259 (91%)	26 (9%)	7	14

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
5	B	308/322 (96%)	282 (92%)	26 (8%)	9 17
6	D	223/238 (94%)	214 (96%)	9 (4%)	27 48
All	All	2701/3061 (88%)	2506 (93%)	195 (7%)	14 22

All (195) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	C	119	SER
2	C	129	ARG
2	C	180	ASP
2	C	182	SER
2	C	186	ARG
2	C	190	ASP
2	C	212	ASP
2	C	228	VAL
2	C	250	LEU
2	C	303	ASP
2	C	314	CYS
2	C	318	SER
2	C	326	SER
2	C	372	TYR
2	C	399	LYS
2	C	404	ASP
2	C	417	THR
2	C	427	ASN
2	C	437	LYS
2	C	443	ASP
2	C	445	LYS
2	C	450	THR
2	C	477	TYR
2	C	492	LYS
2	C	504	ASP
2	C	516	LYS
3	E	7	ASP
3	E	35	LEU
3	E	57	LYS
3	E	117	GLU
3	E	145	SER
3	E	157	SER
3	E	158	ASP
3	E	159	SER

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Mol	Chain	Res	Type
4	F	1	MET
4	F	45	SER
4	F	51	ASP
4	F	62	ARG
4	F	74	GLU
4	F	79	LYS
4	F	103	MET
4	F	106	ASP
4	F	111	LEU
4	F	118	ASN
4	F	138	LEU
4	F	148	MET
4	F	160	VAL
4	F	161	LYS
4	F	193	ASP
4	F	228	LYS
4	F	259	SER
4	F	267	ASP
4	F	332	ARG
4	F	338	LYS
4	F	345	ARG
4	H	17	ASN
4	H	91	LYS
4	H	103	MET
4	H	104	SER
4	H	138	LEU
4	H	155	ASP
4	H	163	SER
4	H	167	VAL
4	H	190	VAL
4	H	259	SER
4	H	274	LYS
4	H	294	SER
4	H	312	ARG
4	H	317	ASP
4	H	338	LYS
4	H	340	SER
4	H	373	LYS
4	I	34	ARG
4	I	38	SER
4	I	40	GLN
4	I	52	PHE

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Mol	Chain	Res	Type
4	I	63	ARG
4	I	66	ASP
4	I	86	ASN
4	I	96	ASN
4	I	141	ASP
4	I	163	SER
4	I	178	SER
4	I	256	LYS
4	I	286	ARG
4	I	306	ASN
4	I	316	TYR
4	I	318	GLU
4	I	338	LYS
4	I	373	LYS
4	J	1	MET
4	J	45	SER
4	J	49	SER
4	J	60	ARG
4	J	64	LEU
4	J	66	ASP
4	J	67	LEU
4	J	77	CYS
4	J	93	LYS
4	J	106	ASP
4	J	109	LYS
4	J	119	SER
4	J	141	ASP
4	J	145	CYS
4	J	149	LEU
4	J	150	GLU
4	J	183	ARG
4	J	205	ILE
4	J	208	SER
4	J	233	ASP
4	J	239	HIS
4	J	251	THR
4	J	259	SER
4	J	274	LYS
4	J	293	GLU
4	J	306	ASN
4	J	340	SER
4	K	1	MET

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Mol	Chain	Res	Type
4	K	35	SER
4	K	45	SER
4	K	52	PHE
4	K	55	LEU
4	K	59	VAL
4	K	64	LEU
4	K	93	LYS
4	K	98	LYS
4	K	110	ASP
4	K	122	LEU
4	K	124	GLU
4	K	138	LEU
4	K	161	LYS
4	K	163	SER
4	K	183	ARG
4	K	220	SER
4	K	250	LYS
4	K	251	THR
4	K	292	LYS
4	K	312	ARG
4	K	330	ASN
4	K	338	LYS
4	K	341	LYS
4	K	368	GLU
4	K	373	LYS
4	G	32	VAL
4	G	34	ARG
4	G	38	SER
4	G	44	ARG
4	G	141	ASP
4	G	145	CYS
4	G	147	ARG
4	G	148	MET
4	G	254	SER
4	G	259	SER
4	G	264	ASN
4	G	291	VAL
4	G	293	GLU
4	G	338	LYS
4	G	340	SER
4	G	341	LYS
4	G	365	LYS

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Mol	Chain	Res	Type
5	B	8	LEU
5	B	30	ARG
5	B	38	SER
5	B	59	TRP
5	B	104	MET
5	B	105	VAL
5	B	128	ARG
5	B	134	ASP
5	B	136	SER
5	B	168	SER
5	B	191	SER
5	B	206	GLN
5	B	219	ASP
5	B	230	HIS
5	B	263	GLU
5	B	270	ARG
5	B	272	LYS
5	B	279	ASN
5	B	282	GLU
5	B	287	ARG
5	B	314	ARG
5	B	315	ARG
5	B	364	LYS
5	B	366	LYS
5	B	378	PHE
5	B	380	LYS
6	D	51	PHE
6	D	62	LYS
6	D	89	GLU
6	D	93	ASP
6	D	110	LYS
6	D	123	ARG
6	D	140	VAL
6	D	220	HIS
6	D	257	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
4	F	40	GLN
4	H	306	ASN
4	H	309	ASN

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Mol	Chain	Res	Type
4	H	339	HIS

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	A	57/61 (93%)	19 (33%)	0

All (19) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	A	0	G
1	A	1	G
1	A	2	A
1	A	6	C
1	A	7	C
1	A	8	G
1	A	11	A
1	A	13	G
1	A	18	U
1	A	19	A
1	A	20	G
1	A	25	G
1	A	26	C
1	A	31	C
1	A	37	U
1	A	38	C
1	A	44	G
1	A	45	C
1	A	52	G

There are no RNA pucker outliers to report.

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 oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 2 ligands modelled in this entry, 2 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

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.

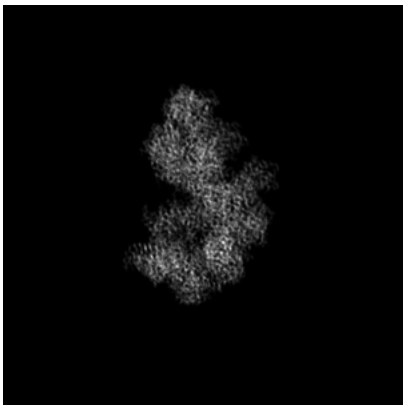
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-60233. These allow visual inspection of the internal detail of the map and identification of artifacts.

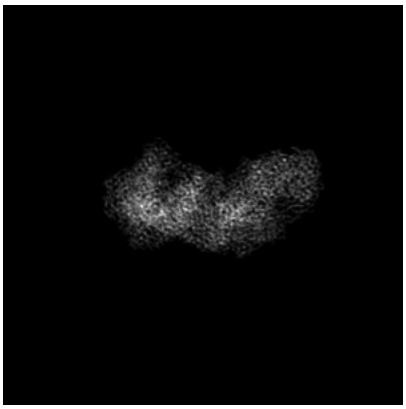
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

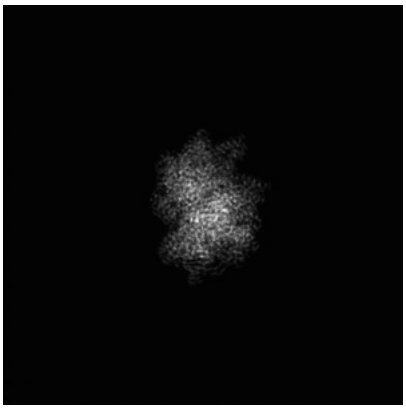
6.1.1 Primary map



X

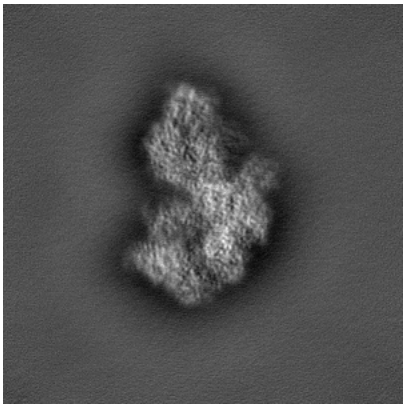


Y

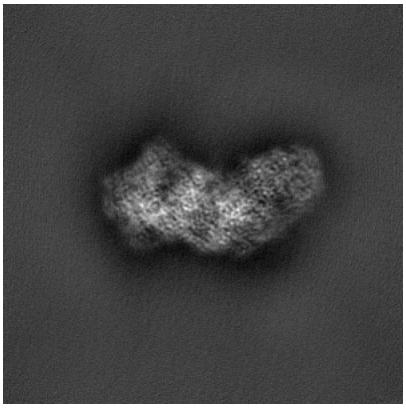


Z

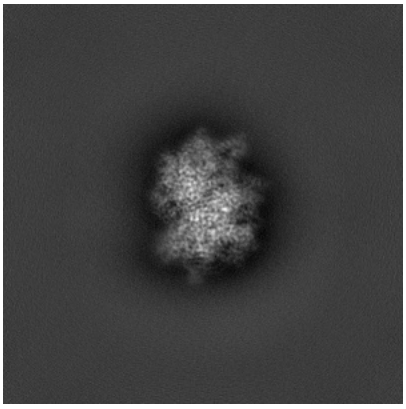
6.1.2 Raw map



X



Y



Z

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

6.2 Central slices (i)

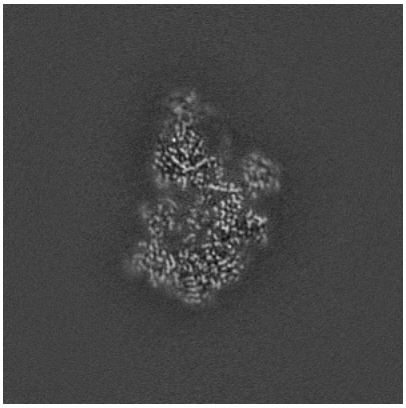
6.2.1 Primary map

X Index: 200

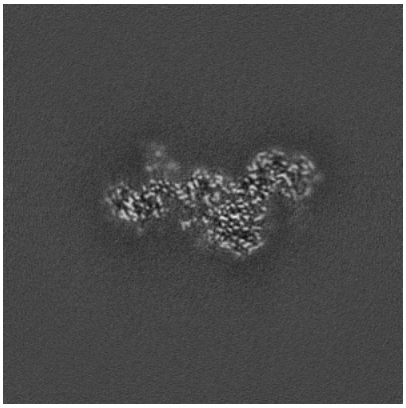
Y Index: 200

Z Index: 200

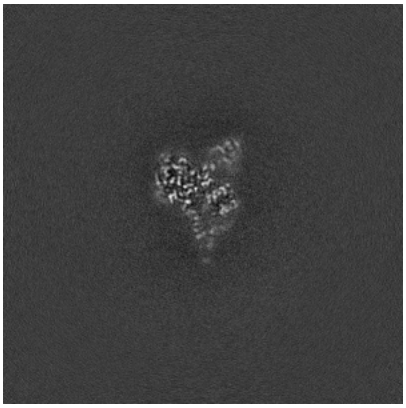
6.2.2 Raw map



X Index: 200



Y Index: 200



Z Index: 200

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

6.3 Largest variance slices (i)

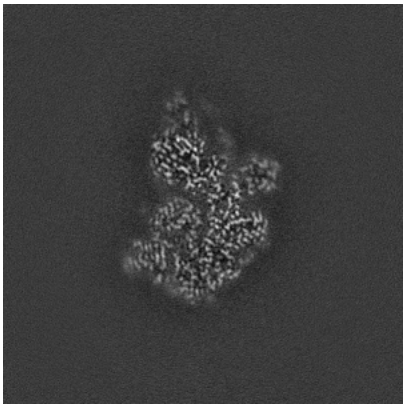
6.3.1 Primary map

X Index: 194

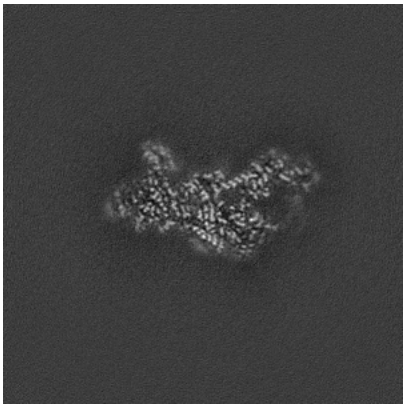
Y Index: 189

Z Index: 147

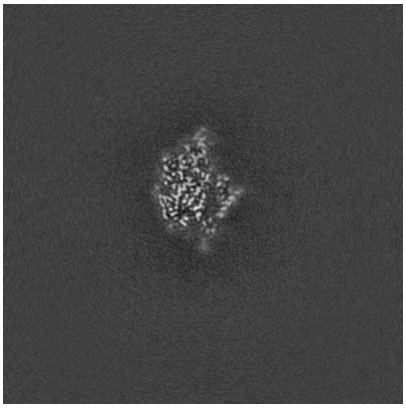
6.3.2 Raw map



X Index: 195



Y Index: 207

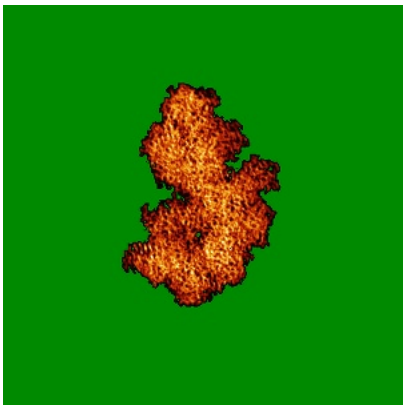


Z Index: 218

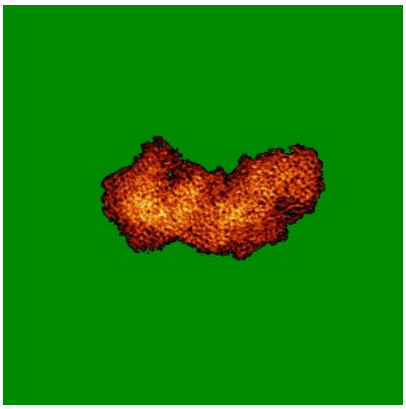
The images above show the largest variance slices of the map in three orthogonal directions.

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

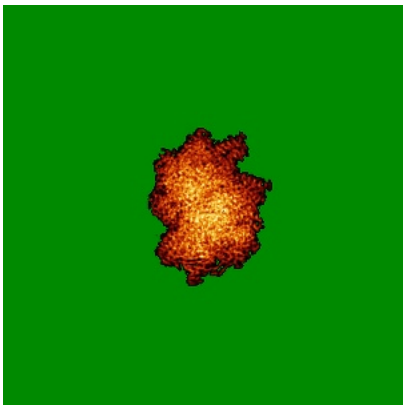
6.4.1 Primary map



X

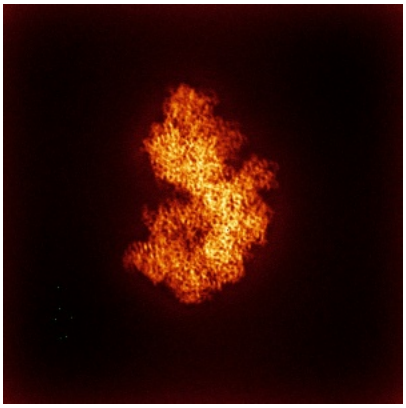


Y

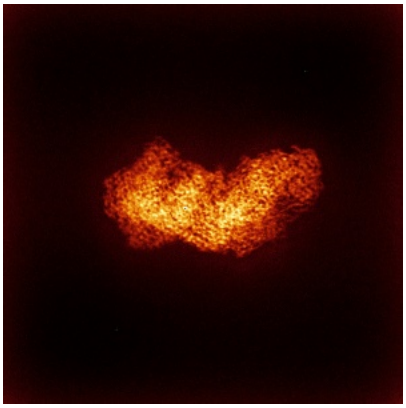


Z

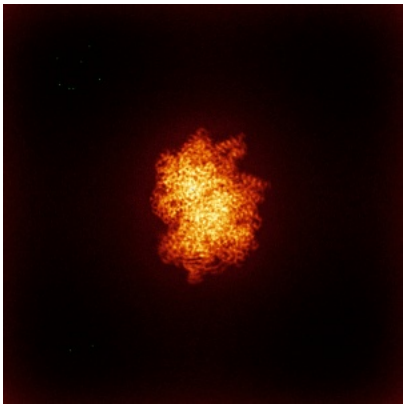
6.4.2 Raw map



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 0.0931. 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.

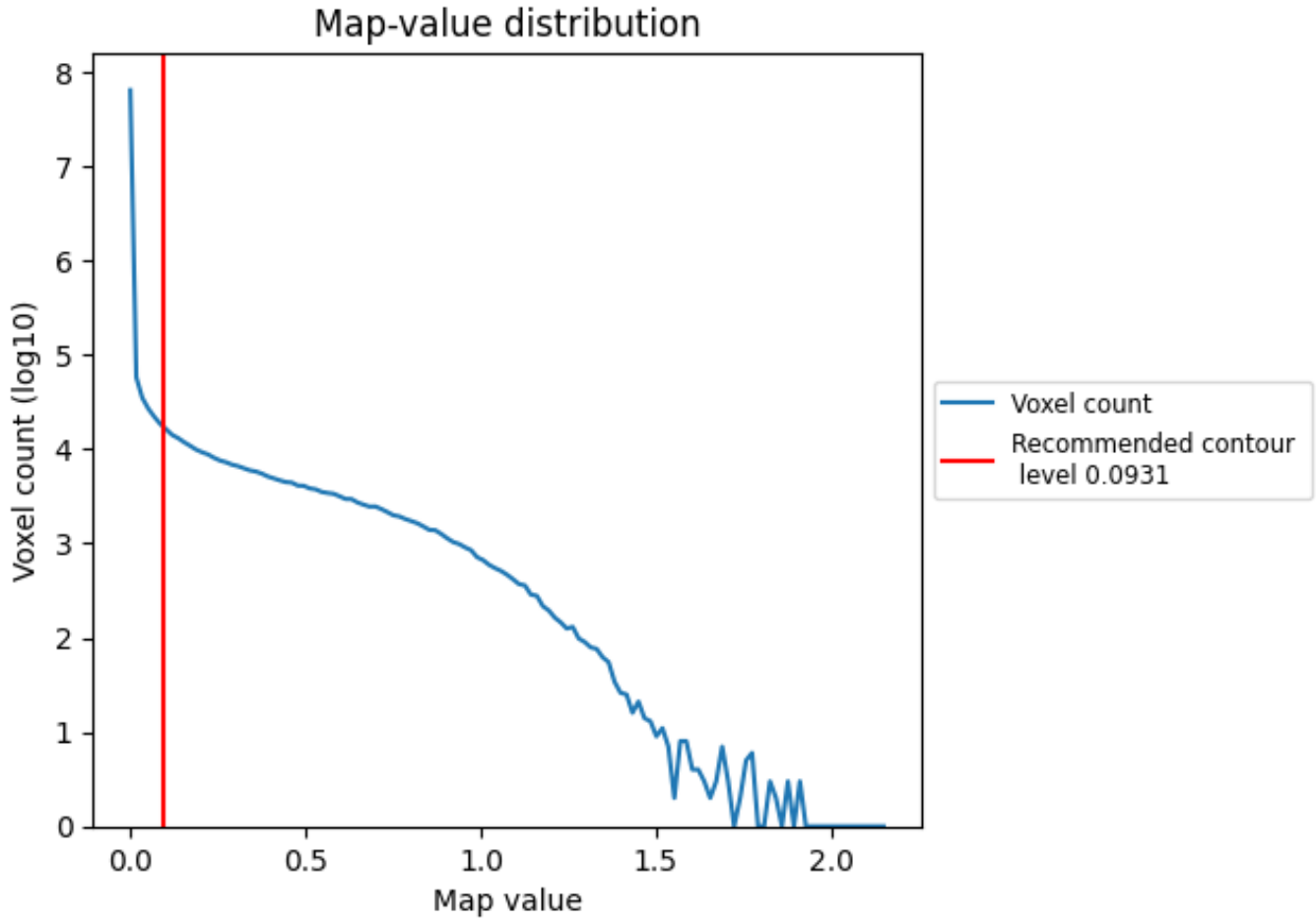
6.6 Mask visualisation (i)

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

7 Map analysis

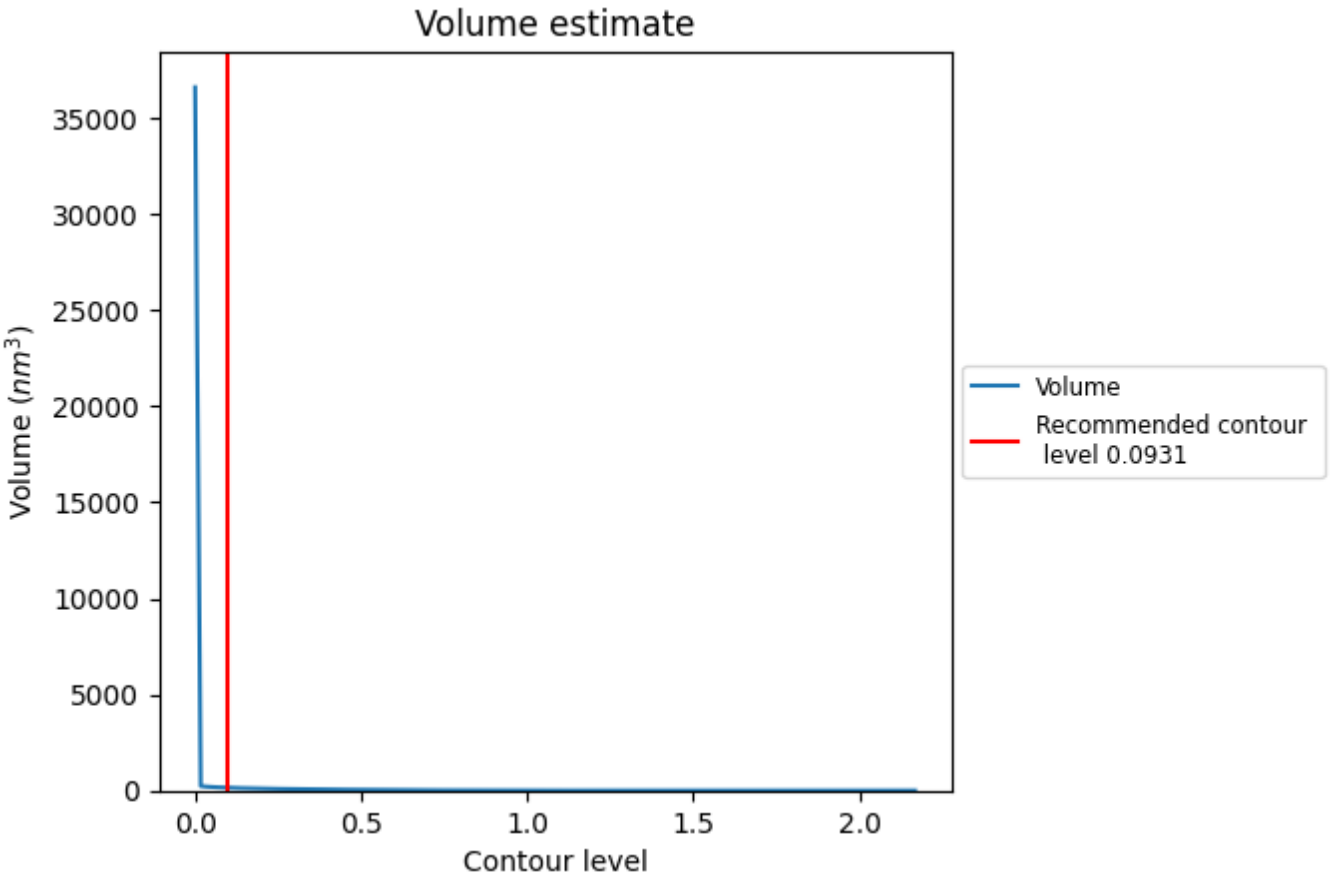
This section contains the results of statistical analysis of the map.

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.

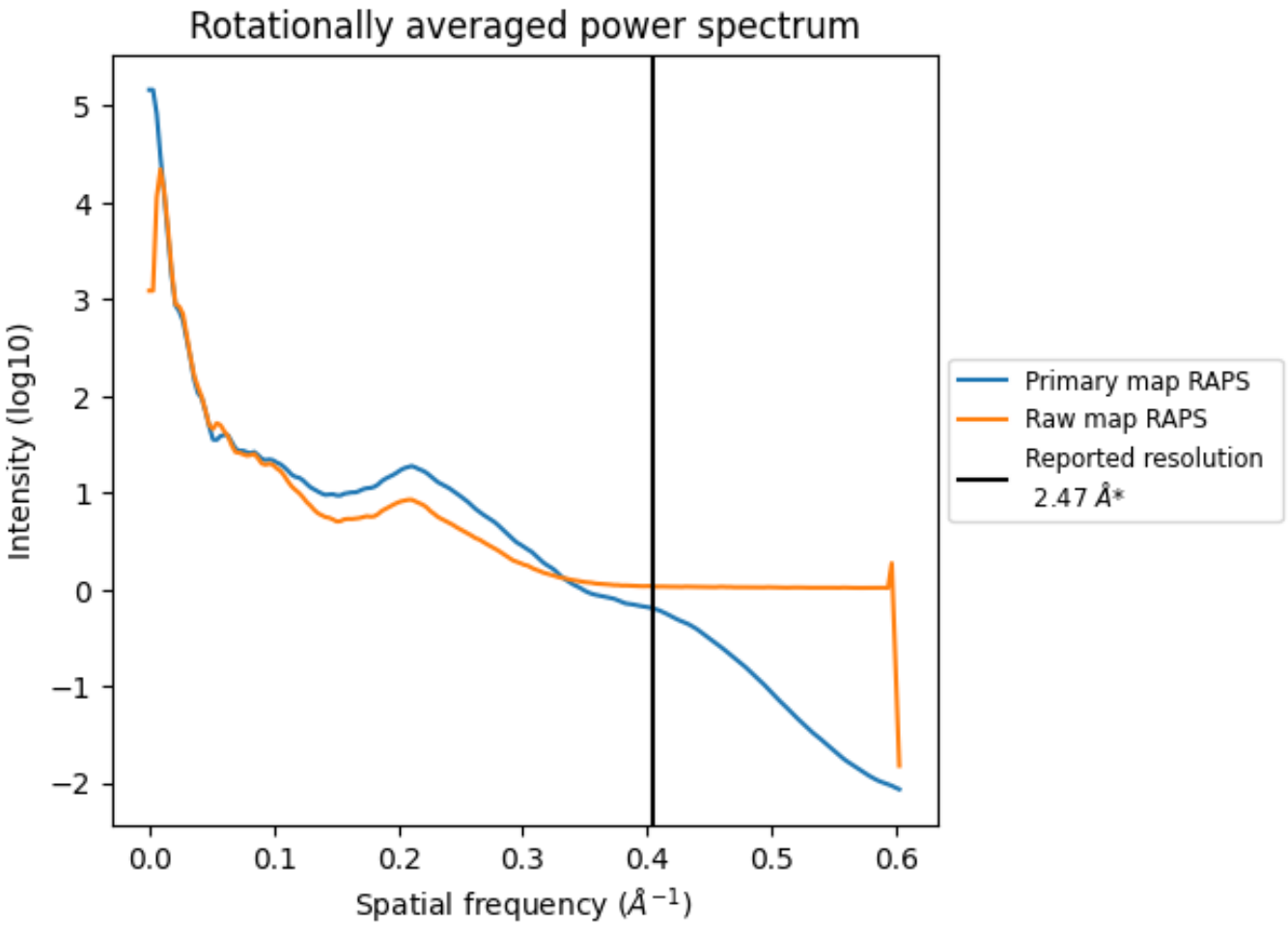
7.2 Volume estimate



The volume at the recommended contour level is 149 nm^3; this corresponds to an approximate mass of 135 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)

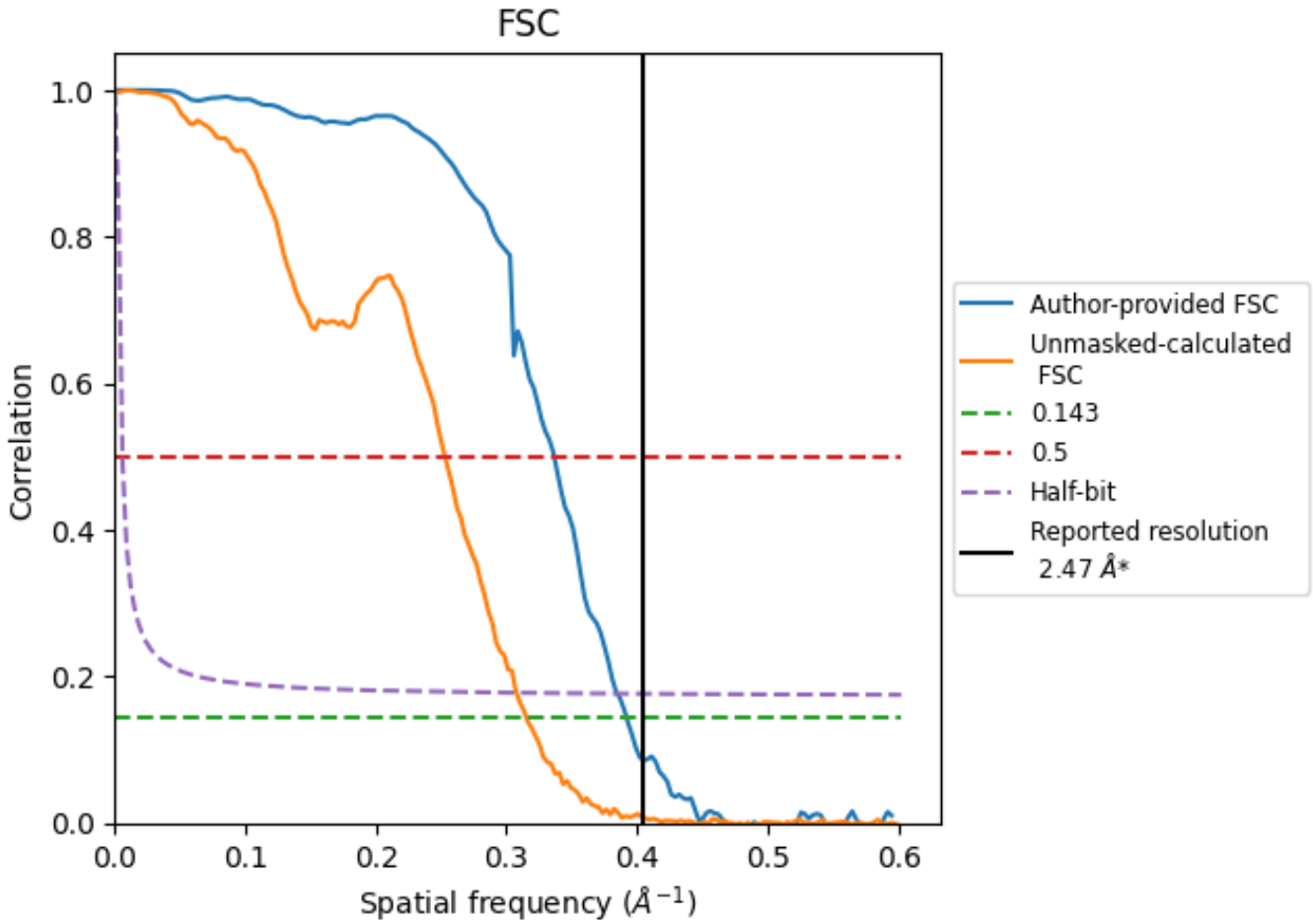


*Reported resolution corresponds to spatial frequency of 0.405 Å^{-1}

8 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.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.405 Å^{-1}

8.2 Resolution estimates (i)

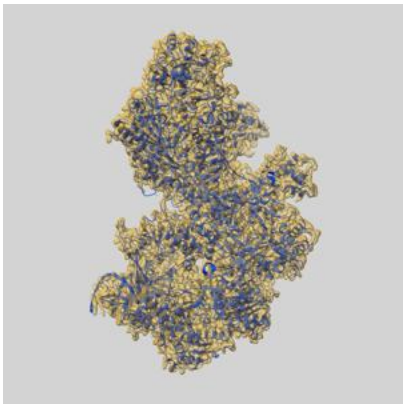
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.47	-	-
Author-provided FSC curve	2.55	2.97	2.60
Unmasked-calculated*	3.17	3.95	3.25

*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 3.17 differs from the reported value 2.47 by more than 10 %

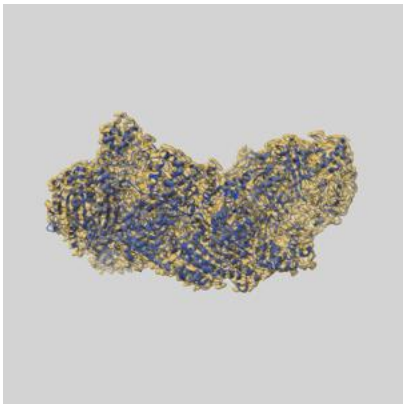
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-60233 and PDB model 8ZLU. Per-residue inclusion information can be found in section 3 on page 6.

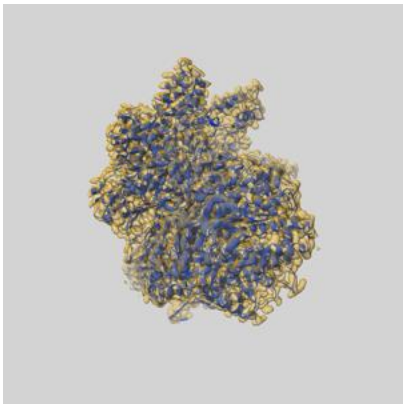
9.1 Map-model overlay



X



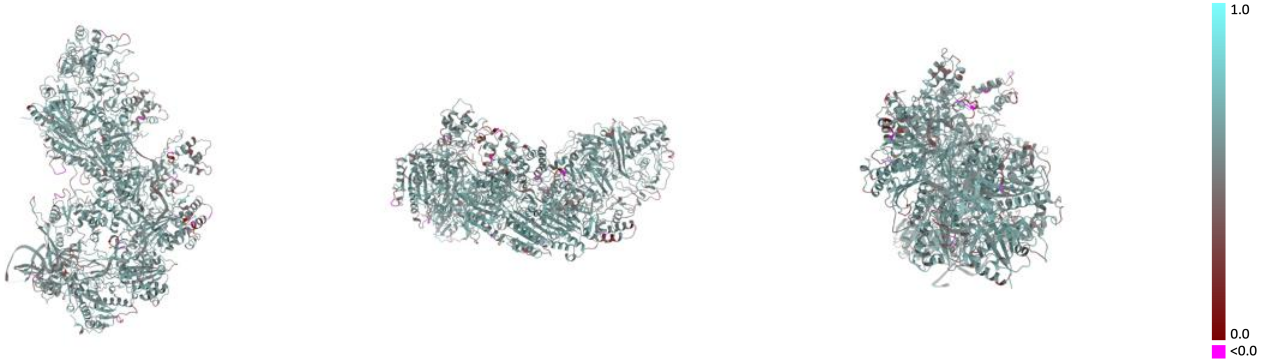
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0931 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.

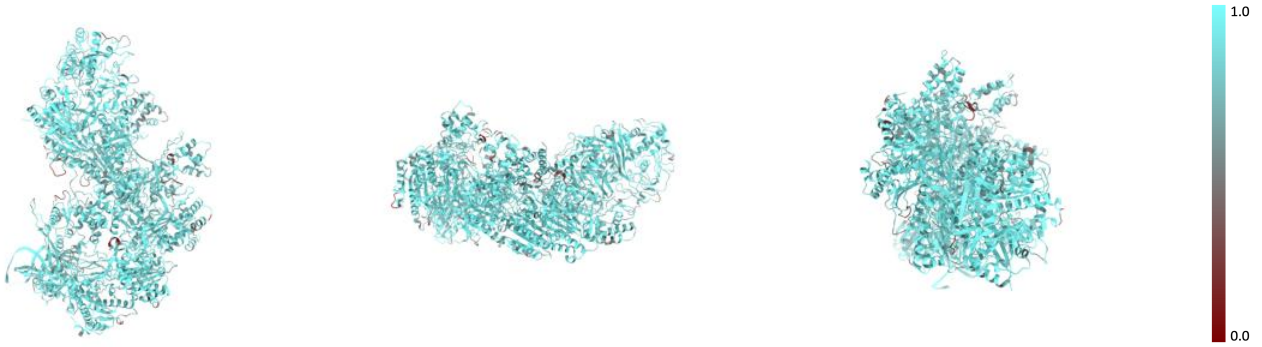
9.2 Q-score mapped to coordinate model (i)



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.

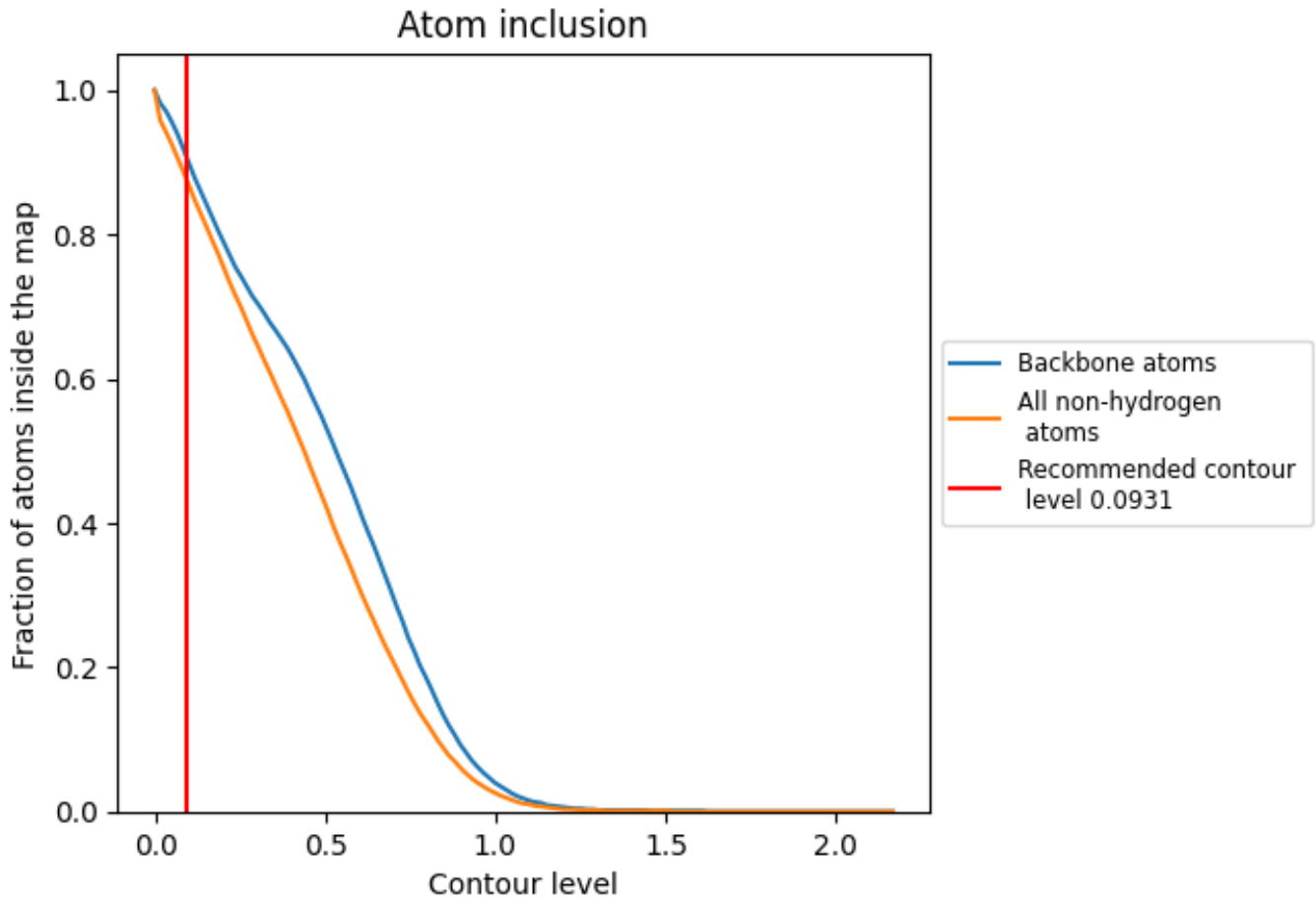
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.0931).

9.4 Atom inclusion (i)



At the recommended contour level, 91% of all backbone atoms, 88% 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 (0.0931) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8760	0.5660
A	0.9170	0.5350
B	0.8750	0.5720
C	0.8820	0.5650
D	0.8770	0.5660
E	0.8810	0.5880
F	0.8720	0.5700
G	0.8920	0.5830
H	0.8720	0.5730
I	0.8780	0.5700
J	0.8820	0.5680
K	0.8360	0.5350