



Full wwPDB EM Validation Report ⓘ

May 25, 2025 – 07:50 PM EDT

PDB ID : 8TQZ / pdb_00008tqz
EMDB ID : EMD-41566
Title : Eukaryotic translation initiation factor 2B with a mutation (L516A) in the delta subunit
Authors : Wang, L.; Lawrence, R.; Sangwan, S.; Anand, A.; Shoemaker, S.; Deal, A.; Marqusee, S.; Watler, P.
Deposited on : 2023-08-08
Resolution : 2.90 Å(reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

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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.dev118
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

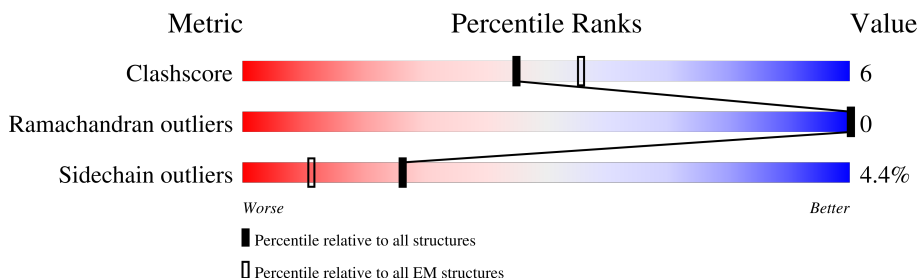
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.90 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	G	322	68% 13% 17%
1	H	322	64% 17% 19%
2	A	721	47% 10% 43%
2	B	721	47% 10% 43%
3	C	368	74% 12% 14%
3	D	368	71% 15% 14%
4	E	523	40% 9% 51%
4	F	523	57% 9% 34%

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Mol	Chain	Length	Quality of chain
5	I	452	8% .90%
5	J	452	38%11%50%

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 22334 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 Translation initiation factor eIF-2B subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	G	266	Total	C	N	O	S	0	0
			2039	1312	346	370	11		
1	H	260	Total	C	N	O	S	0	0
			2002	1293	336	364	9		

There are 36 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	-16	MET	-	initiating methionine	UNP Q14232
G	-15	HIS	-	expression tag	UNP Q14232
G	-14	HIS	-	expression tag	UNP Q14232
G	-13	HIS	-	expression tag	UNP Q14232
G	-12	HIS	-	expression tag	UNP Q14232
G	-11	HIS	-	expression tag	UNP Q14232
G	-10	HIS	-	expression tag	UNP Q14232
G	-9	GLY	-	expression tag	UNP Q14232
G	-8	GLY	-	expression tag	UNP Q14232
G	-7	GLY	-	expression tag	UNP Q14232
G	-6	SER	-	expression tag	UNP Q14232
G	-5	GLU	-	expression tag	UNP Q14232
G	-4	ASN	-	expression tag	UNP Q14232
G	-3	LEU	-	expression tag	UNP Q14232
G	-2	TYR	-	expression tag	UNP Q14232
G	-1	PHE	-	expression tag	UNP Q14232
G	0	GLN	-	expression tag	UNP Q14232
G	1	SER	-	expression tag	UNP Q14232
H	-16	MET	-	initiating methionine	UNP Q14232
H	-15	HIS	-	expression tag	UNP Q14232
H	-14	HIS	-	expression tag	UNP Q14232
H	-13	HIS	-	expression tag	UNP Q14232
H	-12	HIS	-	expression tag	UNP Q14232
H	-11	HIS	-	expression tag	UNP Q14232
H	-10	HIS	-	expression tag	UNP Q14232
H	-9	GLY	-	expression tag	UNP Q14232

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Chain	Residue	Modelled	Actual	Comment	Reference
H	-8	GLY	-	expression tag	UNP Q14232
H	-7	GLY	-	expression tag	UNP Q14232
H	-6	SER	-	expression tag	UNP Q14232
H	-5	GLU	-	expression tag	UNP Q14232
H	-4	ASN	-	expression tag	UNP Q14232
H	-3	LEU	-	expression tag	UNP Q14232
H	-2	TYR	-	expression tag	UNP Q14232
H	-1	PHE	-	expression tag	UNP Q14232
H	0	GLN	-	expression tag	UNP Q14232
H	1	SER	-	expression tag	UNP Q14232

- Molecule 2 is a protein called Translation initiation factor eIF-2B subunit epsilon.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	A	414	Total	C	N	O	S	0	0
			3244	2048	576	605	15		
2	B	413	Total	C	N	O	S	0	0
			3239	2046	576	602	15		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	587	VAL	ILE	conflict	UNP Q13144
B	587	VAL	ILE	conflict	UNP Q13144

- Molecule 3 is a protein called Translation initiation factor eIF-2B subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	D	318	Total	C	N	O	S	0	0
			2483	1570	437	461	15		
3	C	318	Total	C	N	O	S	0	0
			2486	1571	438	462	15		

There are 36 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	-16	MET	-	initiating methionine	UNP P49770
D	-15	HIS	-	expression tag	UNP P49770
D	-14	HIS	-	expression tag	UNP P49770
D	-13	HIS	-	expression tag	UNP P49770
D	-12	HIS	-	expression tag	UNP P49770
D	-11	HIS	-	expression tag	UNP P49770

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Chain	Residue	Modelled	Actual	Comment	Reference
D	-10	HIS	-	expression tag	UNP P49770
D	-9	GLY	-	expression tag	UNP P49770
D	-8	GLY	-	expression tag	UNP P49770
D	-7	GLY	-	expression tag	UNP P49770
D	-6	SER	-	expression tag	UNP P49770
D	-5	GLU	-	expression tag	UNP P49770
D	-4	ASN	-	expression tag	UNP P49770
D	-3	LEU	-	expression tag	UNP P49770
D	-2	TYR	-	expression tag	UNP P49770
D	-1	PHE	-	expression tag	UNP P49770
D	0	GLN	-	expression tag	UNP P49770
D	1	SER	-	expression tag	UNP P49770
C	-16	MET	-	initiating methionine	UNP P49770
C	-15	HIS	-	expression tag	UNP P49770
C	-14	HIS	-	expression tag	UNP P49770
C	-13	HIS	-	expression tag	UNP P49770
C	-12	HIS	-	expression tag	UNP P49770
C	-11	HIS	-	expression tag	UNP P49770
C	-10	HIS	-	expression tag	UNP P49770
C	-9	GLY	-	expression tag	UNP P49770
C	-8	GLY	-	expression tag	UNP P49770
C	-7	GLY	-	expression tag	UNP P49770
C	-6	SER	-	expression tag	UNP P49770
C	-5	GLU	-	expression tag	UNP P49770
C	-4	ASN	-	expression tag	UNP P49770
C	-3	LEU	-	expression tag	UNP P49770
C	-2	TYR	-	expression tag	UNP P49770
C	-1	PHE	-	expression tag	UNP P49770
C	0	GLN	-	expression tag	UNP P49770
C	1	SER	-	expression tag	UNP P49770

- Molecule 4 is a protein called Translation initiation factor eIF-2B subunit delta.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	E	256	Total	C	N	O	S	0	0
			1983	1254	356	363	10		
4	F	346	Total	C	N	O	S	0	0
			2690	1701	478	497	14		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	516	ALA	LEU	engineered mutation	UNP Q9UI10
F	516	ALA	LEU	engineered mutation	UNP Q9UI10

- Molecule 5 is a protein called Translation initiation factor eIF-2B subunit gamma.

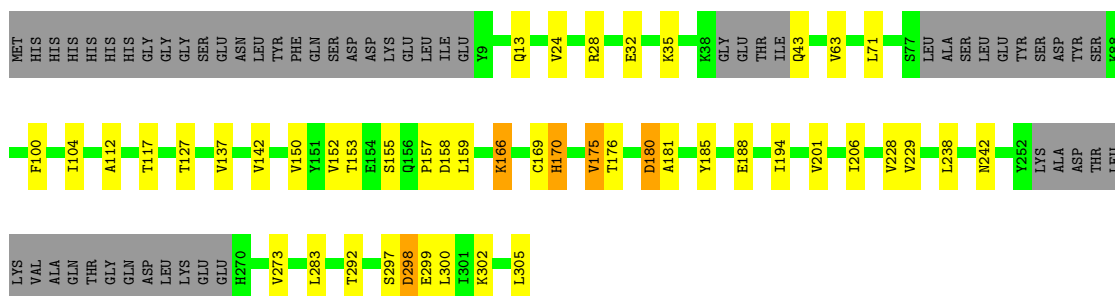
Mol	Chain	Residues	Atoms					AltConf	Trace
5	I	46	Total	C	N	O	S	0	0
			380	252	69	57	2		
5	J	226	Total	C	N	O	S	0	0
			1788	1159	300	314	15		

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.

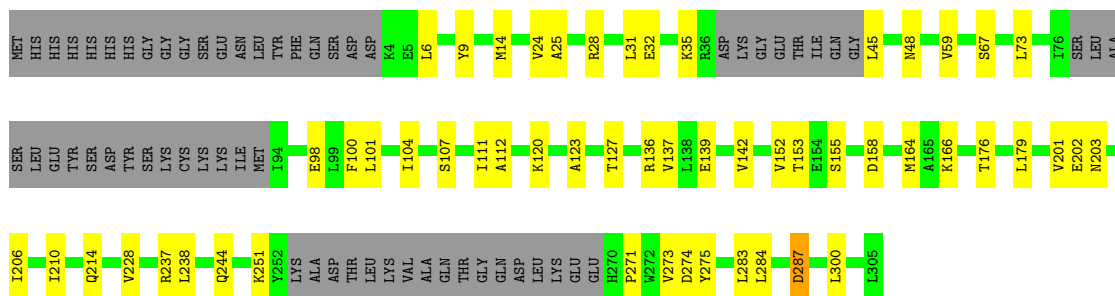
- Molecule 1: Translation initiation factor eIF-2B subunit alpha

Chain G: 

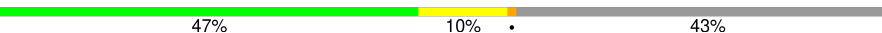


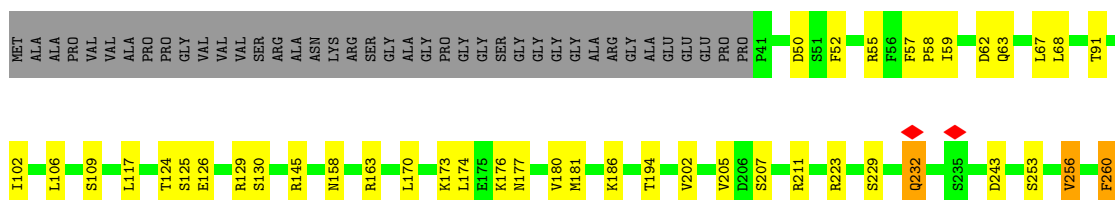
- Molecule 1: Translation initiation factor eIF-2B subunit alpha

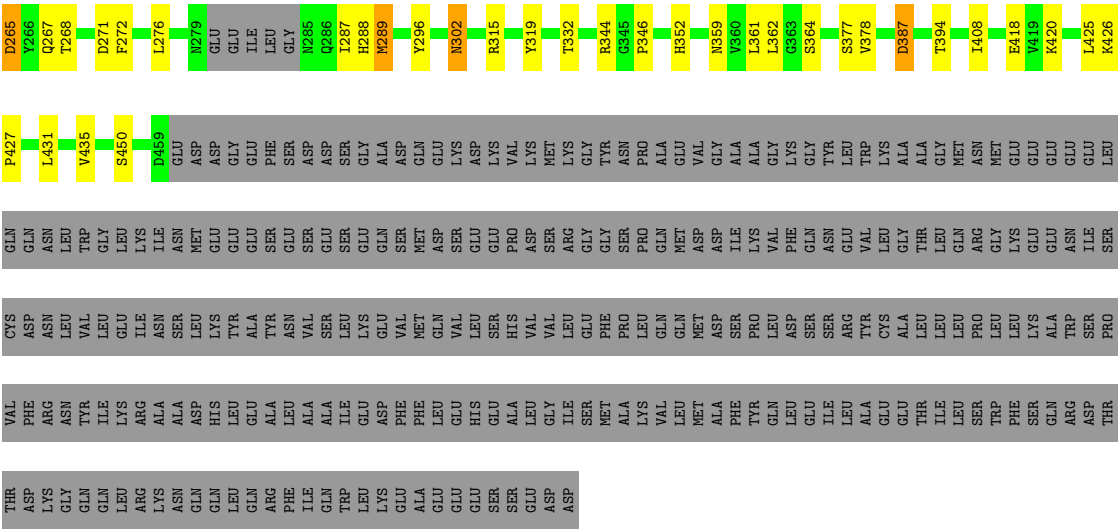
Chain H: 



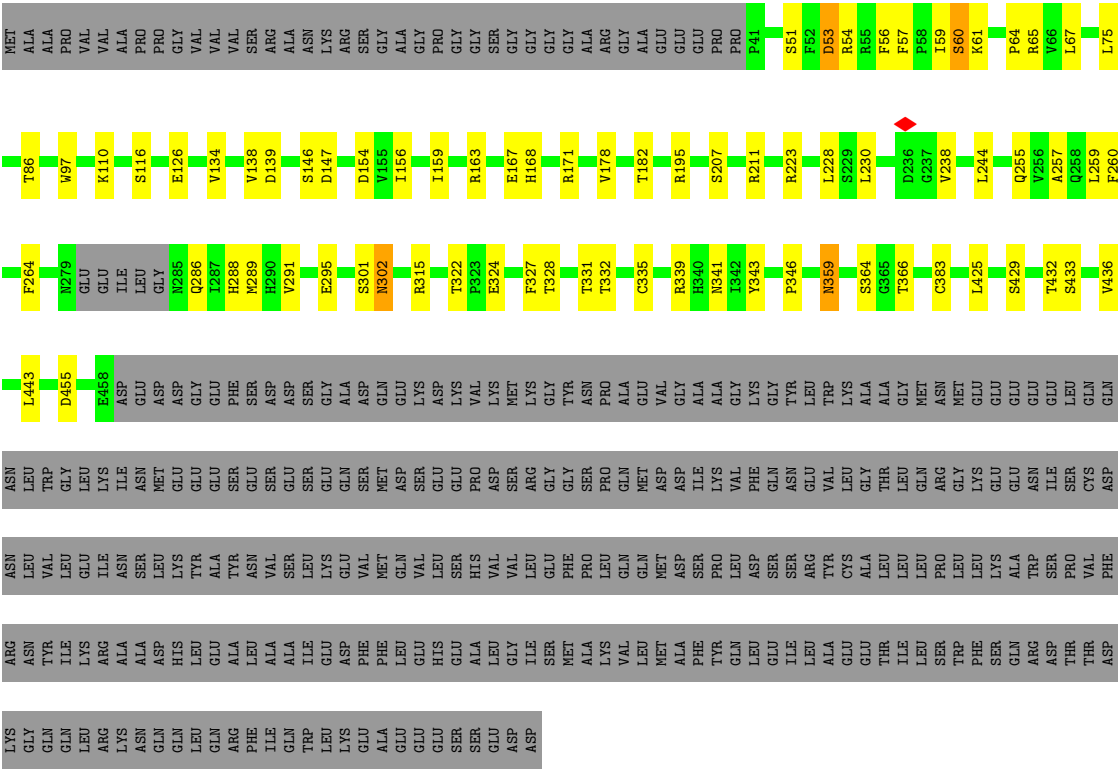
- Molecule 2: Translation initiation factor eIF-2B subunit epsilon

Chain A: 



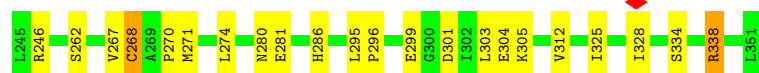


● Molecule 2: Translation initiation factor eIF-2B subunit epsilon

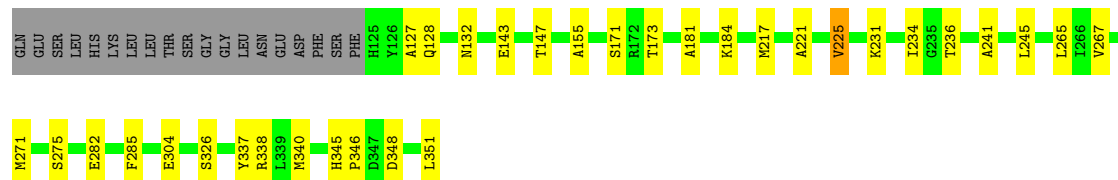


● Molecule 3: Translation initiation factor eIF-2B subunit beta

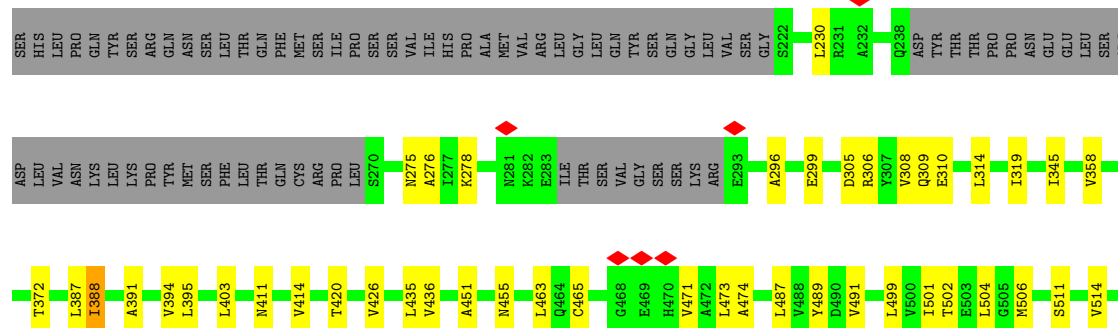
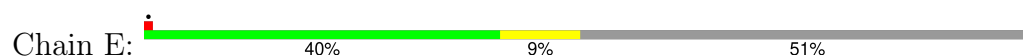




- Molecule 3: Translation initiation factor eIF-2B subunit beta

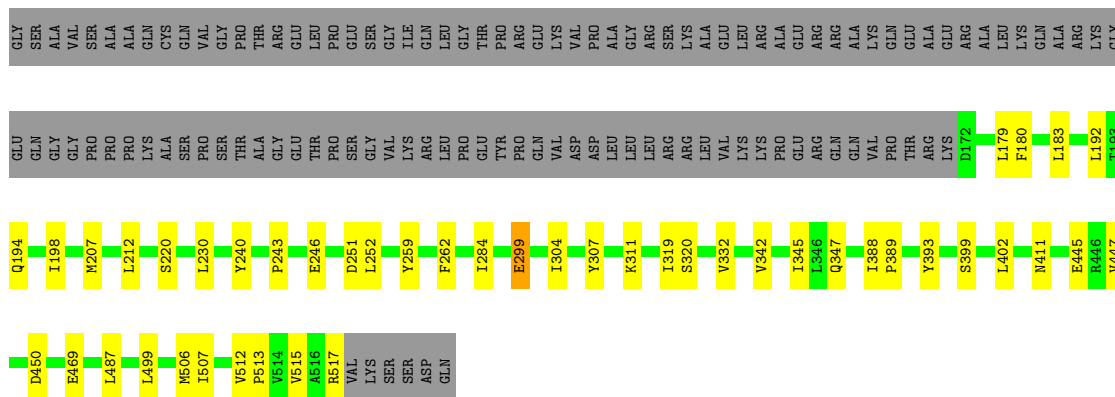


- Molecule 4: Translation initiation factor eIF-2B subunit delta

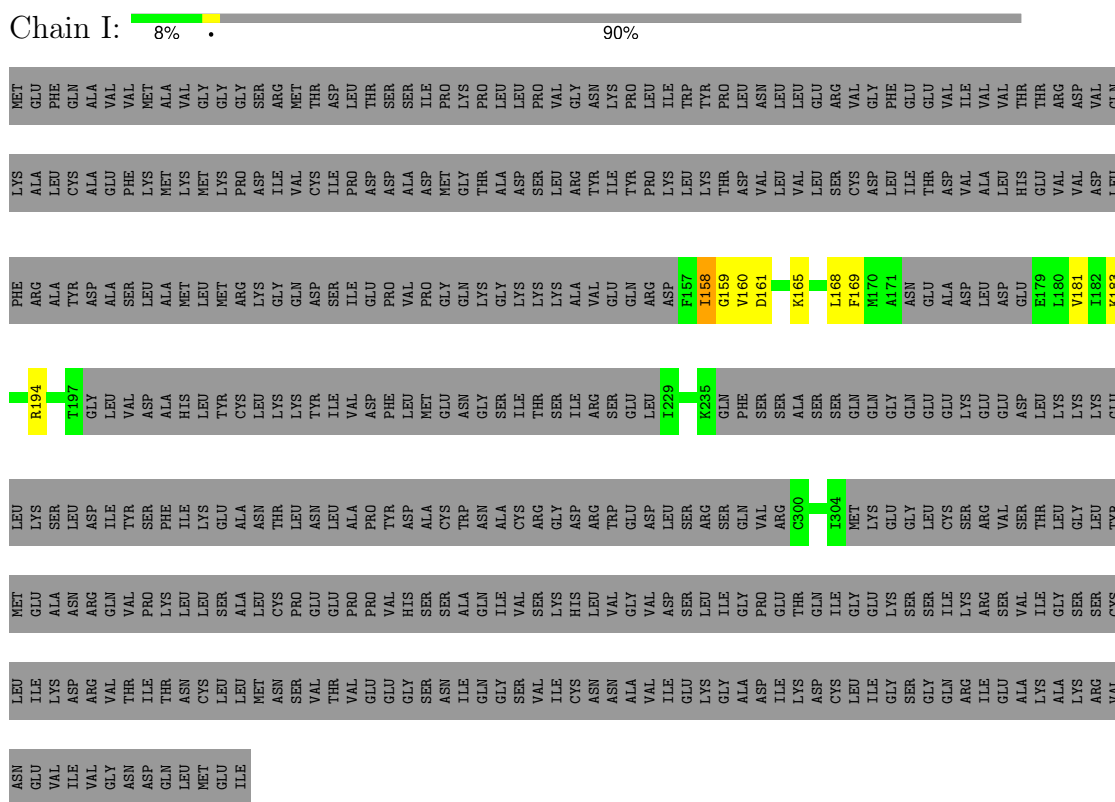


- Molecule 4: Translation initiation factor eIF-2B subunit delta

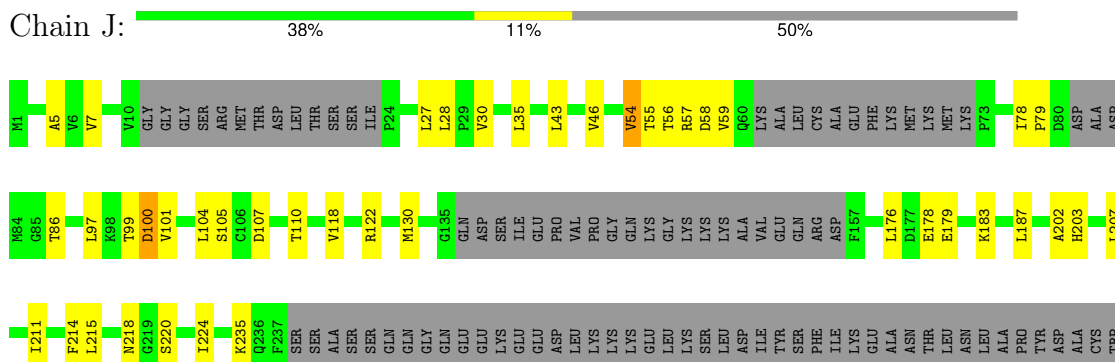




- Molecule 5: Translation initiation factor eIF-2B subunit gamma



- Molecule 5: Translation initiation factor eIF-2B subunit gamma



ASN	ALA	CYS	ARG	GLY	ASP	ARG	TRP	GLU	ASP	LEU	SER	ARG	SER	Q297	V302	C310	T315	Y319	M320	F321	A322	R323	R324	Q325	V326	P327	K328	C334	PRO	GLU	PRO	VAL	HIS	SER	SER	ALA	GLN	VAL	VAL	VAL	VAL	ASP	SER	LEU	GLY	PRO
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GLU	THR	GLN	ILE	GLY	GLU	LYS	SER	SER	ILE	LYS	ARG	SER	VAL	ILE	GLY	SER	SER	CYS	LEU	ILE	LYS	ASP	ARG	VAL	THR	ILE	THR	ASN	CYS	LEU	LEU	MET	ASN	SER	VAL	THR	VAL	GLU	GLY	SER	SER	ASN	ILE	GLN	GLY	SER	VAL	ILE	ILE	CYS	ASN	ASN	ALA	VAL	ILE	GLU	LYS	GLY	ALA	ASP
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ILE	LYS	ASP	CYS	LEU	ILE	GLY	SER	GLY	GLN	ARG	ILE	GLU	ALA	LYS	ALA	LYS	ARG	VAL	ASN	GLU	VAL	ILE	VAL	GLY	ASN	ASP	GLN	LEU	MET	GLU	ILE
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4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	327000	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 ($e^-/\text{\AA}^2$)	45.8	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.823	Depositor
Minimum map value	-1.005	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.043	Depositor
Recommended contour level	0.15	Depositor
Map size ($\text{\AA}$)	334.0, 334.0, 334.0	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.835, 0.835, 0.835	Depositor

5 Model quality

5.1 Standard geometry

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	G	0.10	0/2071	0.25	0/2797
1	H	0.09	0/2034	0.27	0/2752
2	A	0.10	0/3311	0.29	0/4507
2	B	0.08	0/3306	0.24	0/4500
3	C	0.09	0/2533	0.26	0/3426
3	D	0.09	0/2530	0.25	0/3422
4	E	0.09	0/2015	0.24	0/2738
4	F	0.09	0/2741	0.23	0/3726
5	I	0.13	0/386	0.33	0/513
5	J	0.12	0/1816	0.32	1/2449 (0.0%)
All	All	0.10	0/22743	0.26	1/30830 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
2	B	0	1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	J	79	PRO	CA-N-CD	-5.90	103.74	112.00

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	57	PHE	Peptide

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	G	2039	0	2094	22	0
1	H	2002	0	2060	30	0
2	A	3244	0	3222	44	0
2	B	3239	0	3221	38	0
3	C	2486	0	2500	26	0
3	D	2483	0	2496	33	0
4	E	1983	0	2025	26	0
4	F	2690	0	2739	29	0
5	I	380	0	407	11	0
5	J	1788	0	1863	33	0
All	All	22334	0	22627	274	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 6.

All (274) 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:I:159:GLY:N	5:I:169:PHE:O	2.05	0.89
2:B:168:HIS:HA	2:B:171:ARG:HE	1.51	0.75
3:D:201:HIS:ND1	4:E:465:CYS:SG	2.61	0.74
1:H:101:LEU:HA	1:H:104:ILE:HG12	1.70	0.72
3:D:128:GLN:N	3:D:128:GLN:OE1	2.24	0.70
2:A:265:ASP:OD1	2:A:265:ASP:N	2.24	0.69
2:B:315:ARG:HH22	3:C:304:GLU:HA	1.59	0.68
3:C:338:ARG:O	3:C:338:ARG:NH1	2.27	0.68
3:C:128:GLN:OE1	3:C:128:GLN:N	2.25	0.68
2:A:302:ASN:OD1	2:A:302:ASN:N	2.27	0.66
2:A:223:ARG:HH12	5:I:183:LYS:HA	1.61	0.65
2:B:168:HIS:HD1	2:B:182:THR:HG1	1.44	0.65
2:A:205:VAL:HG11	2:A:289:MET:HE2	1.78	0.64
4:E:455:ASN:ND2	4:E:489:TYR:O	2.31	0.64
2:B:139:ASP:HB2	2:B:257:ALA:HB1	1.80	0.64
5:J:322:ALA:O	5:J:326:VAL:HG23	1.98	0.62
3:D:195:ALA:HB1	4:E:387:LEU:HD13	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:207:MET:HG2	4:F:259:TYR:HB3	1.81	0.62
4:F:240:TYR:OH	4:F:251:ASP:OD2	2.17	0.62
1:H:206:ILE:HG21	1:H:228:VAL:HG11	1.81	0.61
3:C:128:GLN:O	3:C:132:ASN:ND2	2.32	0.61
3:D:171:SER:HB3	3:D:174:VAL:HB	1.82	0.61
1:G:180:ASP:OD1	1:G:180:ASP:N	2.34	0.61
1:G:150:VAL:HB	1:G:175:VAL:HG23	1.81	0.61
5:J:178:GLU:HG3	5:J:179:GLU:HG2	1.82	0.61
2:A:57:PHE:CD1	2:A:58:PRO:HD3	2.35	0.61
3:C:53:ASN:ND2	3:C:56:GLU:OE1	2.34	0.61
1:H:25:ALA:HA	1:H:28:ARG:HD2	1.83	0.60
2:A:55:ARG:HH21	2:A:302:ASN:HB3	1.67	0.60
2:B:56:PHE:O	2:B:60:SER:OG	2.14	0.59
4:E:471:VAL:HB	4:E:474:ALA:HB2	1.85	0.58
2:B:302:ASN:OD1	2:B:302:ASN:N	2.36	0.58
4:F:512:VAL:HG23	4:F:513:PRO:HD3	1.85	0.58
2:B:126:GLU:OE1	2:B:126:GLU:N	2.34	0.58
5:J:99:THR:HG22	5:J:100:ASP:H	1.67	0.58
1:G:188:GLU:OE2	1:H:244:GLN:NE2	2.37	0.57
1:H:202:GLU:OE2	1:H:237:ARG:NH1	2.37	0.57
2:A:315:ARG:NH1	3:D:303:LEU:O	2.35	0.57
5:J:130:MET:HB3	5:J:302:VAL:HG23	1.86	0.57
1:G:201:VAL:HG12	1:G:238:LEU:HB2	1.87	0.57
2:A:186:LYS:HE2	2:A:296:TYR:HA	1.87	0.57
1:H:287:ASP:N	1:H:287:ASP:OD1	2.33	0.57
2:A:163:ARG:HB2	2:A:163:ARG:NH1	2.18	0.57
4:E:395:LEU:HD11	4:E:426:VAL:HG13	1.87	0.57
3:C:28:PRO:HD2	3:C:34:MET:HE3	1.87	0.57
2:B:366:THR:HG23	2:B:383:CYS:HB2	1.87	0.57
1:H:45:LEU:HA	1:H:48:ASN:HD21	1.68	0.56
2:B:339:ARG:NH2	4:F:393:TYR:O	2.38	0.56
1:G:71:LEU:HD13	1:G:305:LEU:HD12	1.86	0.56
1:G:112:ALA:HA	1:G:137:VAL:HG22	1.87	0.56
1:G:206:ILE:HG21	1:G:228:VAL:HG11	1.87	0.56
2:B:432:THR:HG22	2:B:433:SER:H	1.70	0.56
1:G:299:GLU:HA	1:G:302:LYS:HG2	1.88	0.56
2:B:65:ARG:NH2	2:B:154:ASP:OD2	2.40	0.55
2:A:170:LEU:O	2:A:174:LEU:HD22	2.06	0.55
3:D:130:GLN:O	3:D:134:ILE:HG12	2.06	0.55
4:F:499:LEU:HD11	4:F:506:MET:HG2	1.89	0.55
1:G:100:PHE:O	1:G:104:ILE:HD12	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:53:ASP:OD1	2:B:65:ARG:NH1	2.40	0.54
4:F:469:GLU:N	4:F:469:GLU:OE2	2.40	0.54
4:E:306:ARG:HB2	4:E:306:ARG:NH1	2.23	0.54
4:E:435:LEU:HD23	4:E:501:ILE:HD11	1.88	0.54
5:J:7:VAL:HG12	5:J:7:VAL:O	2.07	0.54
2:A:181:MET:HB3	2:A:287:ILE:HD13	1.90	0.54
2:A:361:LEU:HB3	2:A:378:VAL:HG22	1.90	0.54
2:A:426:LYS:HG3	2:A:427:PRO:HD2	1.90	0.54
2:B:223:ARG:HH12	5:J:183:LYS:HG2	1.72	0.54
5:J:56:THR:OG1	5:J:57:ARG:N	2.41	0.54
1:H:203:ASN:ND2	1:H:275:TYR:OH	2.41	0.54
2:A:180:VAL:HG22	2:A:256:VAL:HG23	1.88	0.54
4:E:411:ASN:O	4:E:411:ASN:ND2	2.38	0.53
3:D:271:MET:HA	3:D:271:MET:HE3	1.89	0.53
4:F:198:ILE:O	5:J:122:ARG:NH2	2.41	0.53
2:B:289:MET:HE1	2:B:291:VAL:HG23	1.90	0.53
3:C:62:ARG:NH1	3:C:351:LEU:O	2.41	0.53
5:J:105:SER:HB2	5:J:203:HIS:HB3	1.90	0.53
2:A:346:PRO:HD2	2:A:364:SER:HB2	1.90	0.53
2:B:59:ILE:HG23	2:B:432:THR:HG23	1.91	0.53
1:H:120:LYS:HG3	1:H:123:ALA:HB2	1.91	0.52
3:C:78:VAL:O	3:C:82:VAL:HG23	2.09	0.52
2:A:176:LYS:O	2:A:177:ASN:ND2	2.42	0.52
3:D:74:SER:O	3:D:246:ARG:NH1	2.42	0.52
2:A:268:THR:OG1	2:A:271:ASP:OD2	2.23	0.52
5:J:100:ASP:OD1	5:J:100:ASP:N	2.43	0.51
2:A:272:PHE:HE1	2:A:276:LEU:HD22	1.76	0.51
2:A:211:ARG:HA	2:A:288:HIS:HA	1.92	0.51
4:E:319:ILE:HG22	4:E:345:ILE:HD11	1.93	0.51
2:B:195:ARG:NH2	2:B:244:LEU:O	2.44	0.51
5:I:159:GLY:HA3	5:I:169:PHE:H	1.75	0.50
2:B:61:LYS:NZ	2:B:455:ASP:OD2	2.44	0.50
4:F:445:GLU:OE1	4:F:517:ARG:NH2	2.42	0.50
2:A:229:SER:HA	2:A:232:GLN:HB2	1.93	0.50
2:A:243:ASP:OD1	2:A:243:ASP:N	2.43	0.50
1:H:210:ILE:HD12	1:H:274:ASP:HB3	1.93	0.50
2:A:130:SER:OG	2:A:267:GLN:O	2.29	0.50
3:C:241:ALA:HA	3:C:340:MET:HE1	1.94	0.49
4:E:403:LEU:HD13	4:E:420:THR:HG23	1.93	0.49
1:G:153:THR:HG22	1:G:155:SER:H	1.78	0.49
3:D:239:ILE:HB	3:D:274:LEU:HD12	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:320:SER:HA	4:F:345:ILE:HG12	1.94	0.49
3:C:282:GLU:HB3	3:C:285:PHE:HB2	1.94	0.49
4:F:299:GLU:OE1	4:F:299:GLU:N	2.45	0.49
1:H:9:TYR:HD2	1:H:9:TYR:O	1.95	0.49
3:D:304:GLU:HG3	3:D:305:LYS:HG3	1.94	0.49
2:B:56:PHE:HB2	2:B:65:ARG:HD2	1.95	0.49
3:C:90:ARG:NH1	3:C:348:ASP:OD1	2.46	0.49
4:F:230:LEU:HD22	4:F:304:ILE:HG23	1.95	0.49
4:F:319:ILE:HG22	4:F:345:ILE:HD11	1.93	0.49
4:F:243:PRO:HG2	4:F:246:GLU:HB3	1.95	0.48
5:J:55:THR:OG1	5:J:56:THR:N	2.46	0.48
2:A:106:LEU:O	2:A:109:SER:OG	2.27	0.48
3:D:129:LEU:O	3:D:133:ILE:HG12	2.13	0.48
5:I:158:ILE:HG22	5:I:160:VAL:HG23	1.95	0.48
3:C:217:MET:HE1	3:C:225:VAL:HG11	1.94	0.48
5:J:214:PHE:O	5:J:218:ASN:ND2	2.46	0.48
4:F:342:VAL:HG13	4:F:402:LEU:HD23	1.96	0.48
2:A:67:LEU:HD21	2:A:102:ILE:HG23	1.96	0.48
2:A:431:LEU:HB3	2:A:435:VAL:HG21	1.95	0.48
3:D:218:THR:HG23	4:E:463:LEU:HD21	1.95	0.48
5:J:97:LEU:HD22	5:J:101:VAL:HG11	1.96	0.48
5:I:159:GLY:HA3	5:I:169:PHE:N	2.28	0.48
3:D:147:THR:HG21	3:D:270:PRO:HB3	1.96	0.47
2:A:418:GLU:OE2	2:A:420:LYS:NZ	2.47	0.47
4:E:502:THR:HG22	4:E:504:LEU:H	1.79	0.47
4:F:332:VAL:H	4:F:399:SER:HB3	1.79	0.47
3:C:76:THR:O	3:C:80:ASN:ND2	2.46	0.47
4:F:388:ILE:HG22	4:F:389:PRO:HD3	1.96	0.47
4:E:305:ASP:O	4:E:309:GLN:HG2	2.14	0.47
5:I:158:ILE:HD12	5:I:158:ILE:HA	1.74	0.47
1:H:136:ARG:HA	1:H:139:GLU:HG2	1.97	0.47
5:I:161:ASP:HB3	5:I:168:LEU:HD13	1.97	0.47
4:E:363:SER:HB2	4:E:388:ILE:HG13	1.97	0.46
2:B:64:PRO:HD2	2:B:67:LEU:HD12	1.96	0.46
2:A:207:SER:OG	5:I:194:ARG:NH2	2.48	0.46
3:D:138:ASN:O	3:D:142:VAL:HG12	2.16	0.46
5:J:320:MET:HB3	5:J:324:ARG:HH22	1.80	0.46
3:D:271:MET:HE2	3:D:274:LEU:HD22	1.96	0.46
4:E:275:ASN:HA	4:E:278:LYS:HD3	1.97	0.46
2:A:387:ASP:N	2:A:387:ASP:OD1	2.48	0.46
4:F:192:LEU:HD11	4:F:262:PHE:HE1	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:170:HIS:ND1	1:G:170:HIS:C	2.73	0.46
4:F:252:LEU:HD23	4:F:284:ILE:HG12	1.98	0.46
4:F:507:ILE:HD13	4:F:515:VAL:HG11	1.98	0.46
3:D:128:GLN:O	3:D:131:SER:OG	2.34	0.46
1:G:32:GLU:HA	1:G:35:LYS:HE2	1.98	0.46
2:A:145:ARG:HB3	2:A:145:ARG:NH1	2.31	0.46
3:D:268:CYS:HA	3:D:325:ILE:HB	1.96	0.46
5:J:110:THR:HG22	5:J:310:CYS:HA	1.98	0.46
2:B:51:SER:OG	2:B:53:ASP:OD1	2.34	0.45
2:B:346:PRO:HG2	2:B:364:SER:HB2	1.97	0.45
4:F:411:ASN:HD22	4:F:447:VAL:HG13	1.81	0.45
2:B:255:GLN:O	2:B:259:LEU:HD13	2.15	0.45
5:J:5:ALA:HB1	5:J:43:LEU:HD13	1.98	0.45
2:B:211:ARG:HA	2:B:288:HIS:HA	1.98	0.45
5:J:235:LYS:HD2	5:J:235:LYS:HA	1.64	0.45
5:J:325:GLN:HA	5:J:328:LYS:HZ1	1.82	0.45
2:A:129:ARG:HA	2:A:129:ARG:HD3	1.79	0.45
3:D:338:ARG:HA	3:D:338:ARG:HD3	1.66	0.45
4:E:499:LEU:HD11	4:E:506:MET:HB3	1.99	0.45
2:B:425:LEU:HG	2:B:443:LEU:HD12	1.98	0.45
5:J:27:LEU:HD11	5:J:58:ASP:HB2	1.99	0.45
4:E:391:ALA:HA	4:E:394:VAL:HG12	1.98	0.45
4:F:450:ASP:OD1	4:F:450:ASP:N	2.50	0.45
1:H:201:VAL:HG12	1:H:238:LEU:HB2	1.99	0.44
1:H:14:MET:HE3	1:H:14:MET:HB3	1.83	0.44
2:A:276:LEU:HD23	2:A:287:ILE:HD11	1.99	0.44
2:B:178:VAL:HG12	2:B:286:GLN:HG3	1.99	0.44
3:C:155:ALA:HB1	3:C:181:ALA:HB2	1.98	0.44
1:H:107:SER:O	1:H:111:ILE:HG13	2.18	0.44
2:B:324:GLU:H	2:B:324:GLU:HG3	1.66	0.44
5:J:320:MET:HE3	5:J:320:MET:HA	1.99	0.44
1:H:98:GLU:O	1:H:101:LEU:HD23	2.17	0.44
2:B:228:LEU:HD11	5:J:176:LEU:HD11	1.98	0.44
3:C:231:LYS:HE3	3:C:231:LYS:HB2	1.61	0.44
3:D:295:LEU:HG	3:D:299:GLU:HG3	1.99	0.44
2:B:238:VAL:HG22	2:B:238:VAL:O	2.17	0.44
2:B:341:ASN:HB2	2:B:359:ASN:HB3	2.00	0.44
2:A:63:GLN:HG2	2:A:68:LEU:HD23	2.00	0.43
3:D:10:GLU:O	3:D:13:GLU:HG2	2.18	0.43
1:H:32:GLU:HA	1:H:35:LYS:HE2	2.00	0.43
2:A:276:LEU:HD12	2:A:276:LEU:HA	1.80	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:E:487:LEU:HA	4:E:487:LEU:HD23	1.81	0.43
5:I:165:LYS:HD3	5:I:165:LYS:N	2.33	0.43
4:F:179:LEU:H	4:F:179:LEU:HD12	1.83	0.43
3:D:159:ILE:O	3:D:185:ARG:NH1	2.51	0.43
4:E:414:VAL:HG11	4:E:436:VAL:HG11	1.99	0.43
1:H:35:LYS:H	1:H:35:LYS:HD2	1.83	0.43
1:H:112:ALA:HA	1:H:137:VAL:HG22	2.01	0.43
2:A:344:ARG:HG2	2:A:362:LEU:HD12	2.00	0.43
1:G:242:ASN:N	1:G:242:ASN:OD1	2.51	0.43
3:C:143:GLU:O	3:C:147:THR:HG23	2.19	0.43
1:H:283:LEU:HD12	1:H:283:LEU:HA	1.91	0.43
5:I:159:GLY:CA	5:I:169:PHE:O	2.67	0.43
3:C:221:ALA:HB1	4:F:487:LEU:HD13	2.00	0.43
4:F:198:ILE:HD12	5:J:118:VAL:HG11	2.01	0.43
1:H:24:VAL:HG12	1:H:28:ARG:HE	1.84	0.43
4:F:307:TYR:O	4:F:311:LYS:HB2	2.19	0.43
1:G:298:ASP:OD2	3:C:337:TYR:OH	2.25	0.42
2:A:272:PHE:CE1	2:A:276:LEU:HD22	2.54	0.42
1:G:181:ALA:HA	1:H:214:GLN:HE22	1.83	0.42
5:J:325:GLN:HA	5:J:328:LYS:NZ	2.34	0.42
1:G:13:GLN:OE1	1:G:13:GLN:N	2.50	0.42
1:G:158:ASP:N	1:G:158:ASP:OD1	2.52	0.42
2:A:173:LYS:HB2	2:A:173:LYS:HE2	1.75	0.42
2:A:260:PHE:HD1	2:A:260:PHE:HA	1.67	0.42
3:D:194:CYS:HB2	3:D:197:PHE:O	2.19	0.42
5:J:101:VAL:HG23	5:J:207:LEU:HB2	2.00	0.42
3:D:301:ASP:OD1	3:D:301:ASP:N	2.43	0.42
4:E:310:GLU:HA	4:E:314:LEU:HD12	2.01	0.42
3:D:240:LEU:HD12	3:D:244:ALA:HB3	2.01	0.42
2:B:163:ARG:O	2:B:167:GLU:HG2	2.18	0.42
5:J:30:VAL:HG21	5:J:35:LEU:HD13	2.01	0.42
3:D:42:LEU:HD13	3:D:85:VAL:HG21	2.01	0.42
1:G:166:LYS:HB2	1:G:166:LYS:HE2	1.90	0.42
2:A:59:ILE:N	2:A:59:ILE:HD12	2.34	0.42
3:D:148:MET:HE3	3:D:148:MET:HB2	1.72	0.42
3:D:234:ILE:HG13	3:D:267:VAL:HG22	2.00	0.42
4:E:296:ALA:O	4:E:299:GLU:HG3	2.20	0.42
2:B:54:ARG:HD3	2:B:54:ARG:HA	1.80	0.42
2:A:50:ASP:C	2:A:52:PHE:H	2.28	0.42
3:D:280:ASN:C	3:D:281:GLU:HG3	2.44	0.42
2:B:335:CYS:SG	2:B:343:TYR:HB3	2.60	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:234:ILE:HD11	3:C:265:LEU:HD21	2.00	0.42
3:C:271:MET:HE2	3:C:271:MET:HA	2.02	0.42
5:J:28:LEU:HD13	5:J:319:TYR:CE1	2.54	0.42
3:D:67:ARG:HE	3:D:67:ARG:HB3	1.62	0.42
3:D:174:VAL:HG12	3:D:203:MET:HE1	2.01	0.42
5:J:57:ARG:HA	5:J:57:ARG:HD2	1.87	0.42
5:J:207:LEU:HD22	5:J:211:ILE:HG21	2.02	0.42
1:H:203:ASN:OD1	1:H:203:ASN:N	2.49	0.41
2:A:125:SER:OG	2:A:126:GLU:N	2.53	0.41
1:G:24:VAL:O	1:G:28:ARG:HG2	2.20	0.41
1:H:251:LYS:HA	1:H:273:VAL:HG22	2.02	0.41
2:A:408:ILE:HG23	2:A:425:LEU:HD12	2.01	0.41
2:B:154:ASP:OD1	2:B:154:ASP:N	2.51	0.41
5:J:54:VAL:HG13	5:J:78:ILE:HG23	2.02	0.41
1:G:185:TYR:CE2	1:H:271:PRO:HG3	2.56	0.41
4:E:305:ASP:HA	4:E:308:VAL:HG22	2.03	0.41
5:J:187:LEU:HD23	5:J:187:LEU:HA	1.90	0.41
1:H:153:THR:HG22	1:H:155:SER:H	1.85	0.41
3:D:129:LEU:CD2	3:D:133:ILE:HD11	2.51	0.41
3:C:127:ALA:HB3	3:C:128:GLN:OE1	2.20	0.41
1:H:100:PHE:O	1:H:104:ILE:HG23	2.21	0.41
1:H:158:ASP:OD1	1:H:158:ASP:N	2.50	0.41
3:D:207:LEU:HB3	3:D:214:THR:HG21	2.03	0.41
1:G:283:LEU:HD23	1:G:283:LEU:HA	1.89	0.41
2:B:230:LEU:H	2:B:230:LEU:HD12	1.86	0.41
4:F:240:TYR:CD1	4:F:240:TYR:C	2.99	0.41
4:E:511:SER:O	4:E:511:SER:OG	2.38	0.41
2:B:146:SER:OG	2:B:147:ASP:N	2.53	0.41
3:C:245:LEU:HD21	3:C:267:VAL:HG21	2.03	0.41
3:C:345:HIS:ND1	3:C:346:PRO:HD2	2.36	0.41
4:F:194:GLN:H	4:F:194:GLN:HG2	1.59	0.41
4:F:212:LEU:HD12	4:F:212:LEU:HA	1.96	0.41
5:J:86:THR:HG1	5:J:224:ILE:H	1.68	0.41
4:E:230:LEU:HD21	4:E:276:ALA:HB1	2.03	0.41
4:E:451:ALA:HA	4:E:491:VAL:HG22	2.02	0.41
2:B:75:LEU:HD22	2:B:156:ILE:HD11	2.02	0.41
2:B:110:LYS:NZ	2:B:327:PHE:O	2.44	0.41
3:C:22:LEU:HG	3:C:72:GLN:HB2	2.02	0.41
2:A:352:HIS:ND1	2:A:352:HIS:C	2.79	0.40
3:D:296:PRO:HG2	3:D:299:GLU:HG2	2.02	0.40
2:B:159:ILE:HG12	2:B:295:GLU:HB2	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:234:ILE:HG13	3:C:267:VAL:HG22	2.03	0.40
1:H:28:ARG:HA	1:H:31:LEU:CD2	2.51	0.40
2:A:158:ASN:ND2	2:A:319:TYR:O	2.50	0.40
4:E:387:LEU:HA	4:E:387:LEU:HD23	1.86	0.40
5:I:158:ILE:CG2	5:I:160:VAL:HG23	2.50	0.40
3:C:236:THR:HB	3:C:245:LEU:HD22	2.04	0.40
5:J:202:ALA:HB2	5:J:310:CYS:SG	2.61	0.40
4:F:180:PHE:HD1	4:F:183:LEU:HD12	1.87	0.40
5:J:215:LEU:HD23	5:J:215:LEU:HA	1.91	0.40
1:G:157:PRO:HG3	1:H:179:LEU:HD13	2.04	0.40
2:A:426:LYS:HB2	2:A:426:LYS:HE2	1.96	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	G	258/322 (80%)	251 (97%)	7 (3%)	0	100	100
1	H	252/322 (78%)	243 (96%)	9 (4%)	0	100	100
2	A	410/721 (57%)	389 (95%)	21 (5%)	0	100	100
2	B	409/721 (57%)	393 (96%)	16 (4%)	0	100	100
3	C	314/368 (85%)	303 (96%)	11 (4%)	0	100	100
3	D	314/368 (85%)	303 (96%)	11 (4%)	0	100	100
4	E	250/523 (48%)	245 (98%)	5 (2%)	0	100	100
4	F	344/523 (66%)	338 (98%)	6 (2%)	0	100	100
5	I	38/452 (8%)	38 (100%)	0	0	100	100
5	J	214/452 (47%)	202 (94%)	12 (6%)	0	100	100
All	All	2803/4772 (59%)	2705 (96%)	98 (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	G	219/274 (80%)	199 (91%)	20 (9%)	7	25
1	H	216/274 (79%)	203 (94%)	13 (6%)	16	44
2	A	366/626 (58%)	347 (95%)	19 (5%)	19	50
2	B	365/626 (58%)	346 (95%)	19 (5%)	19	50
3	C	270/312 (86%)	263 (97%)	7 (3%)	41	74
3	D	269/312 (86%)	257 (96%)	12 (4%)	23	56
4	E	217/443 (49%)	212 (98%)	5 (2%)	45	77
4	F	301/443 (68%)	298 (99%)	3 (1%)	73	91
5	I	42/398 (11%)	40 (95%)	2 (5%)	21	54
5	J	200/398 (50%)	192 (96%)	8 (4%)	27	61
All	All	2465/4106 (60%)	2357 (96%)	108 (4%)	26	57

All (108) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	G	43	GLN
1	G	63	VAL
1	G	117	THR
1	G	127	THR
1	G	142	VAL
1	G	152	VAL
1	G	159	LEU
1	G	166	LYS
1	G	169	CYS
1	G	170	HIS
1	G	175	VAL
1	G	176	THR
1	G	180	ASP
1	G	194	ILE

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Mol	Chain	Res	Type
1	G	229	VAL
1	G	273	VAL
1	G	292	THR
1	G	297	SER
1	G	298	ASP
1	G	300	LEU
1	H	6	LEU
1	H	59	VAL
1	H	67	SER
1	H	73	LEU
1	H	127	THR
1	H	142	VAL
1	H	152	VAL
1	H	164	MET
1	H	166	LYS
1	H	176	THR
1	H	284	LEU
1	H	287	ASP
1	H	300	LEU
2	A	62	ASP
2	A	91	THR
2	A	117	LEU
2	A	124	THR
2	A	194	THR
2	A	202	VAL
2	A	232	GLN
2	A	253	SER
2	A	256	VAL
2	A	260	PHE
2	A	265	ASP
2	A	289	MET
2	A	302	ASN
2	A	332	THR
2	A	359	ASN
2	A	377	SER
2	A	387	ASP
2	A	394	THR
2	A	450	SER
3	D	16	GLU
3	D	140	LEU
3	D	157	GLU
3	D	173	THR

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Mol	Chain	Res	Type
3	D	218	THR
3	D	262	SER
3	D	268	CYS
3	D	286	HIS
3	D	312	VAL
3	D	328	ILE
3	D	334	SER
3	D	338	ARG
4	E	358	VAL
4	E	372	THR
4	E	388	ILE
4	E	473	LEU
4	E	514	VAL
5	I	158	ILE
5	I	181	VAL
2	B	53	ASP
2	B	60	SER
2	B	86	THR
2	B	97	TRP
2	B	116	SER
2	B	134	VAL
2	B	138	VAL
2	B	207	SER
2	B	260	PHE
2	B	264	PHE
2	B	301	SER
2	B	302	ASN
2	B	322	THR
2	B	328	THR
2	B	331	THR
2	B	332	THR
2	B	359	ASN
2	B	429	SER
2	B	436	VAL
3	C	12	SER
3	C	171	SER
3	C	173	THR
3	C	184	LYS
3	C	225	VAL
3	C	275	SER
3	C	326	SER
4	F	220	SER

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Mol	Chain	Res	Type
4	F	299	GLU
4	F	347	GLN
5	J	46	VAL
5	J	54	VAL
5	J	59	VAL
5	J	100	ASP
5	J	104	LEU
5	J	107	ASP
5	J	220	SER
5	J	315	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (35) such sidechains are listed below:

Mol	Chain	Res	Type
1	G	156	GLN
1	H	48	ASN
1	H	128	HIS
1	H	156	GLN
1	H	213	ASN
1	H	214	GLN
1	H	222	GLN
1	H	242	ASN
2	A	340	HIS
2	A	341	ASN
2	A	371	ASN
2	A	376	ASN
2	A	388	ASN
3	D	97	HIS
3	D	160	HIS
3	D	162	ASN
3	D	261	HIS
4	E	235	GLN
4	E	275	ASN
4	E	411	ASN
4	E	431	ASN
4	E	470	HIS
4	E	475	ASN
2	B	248	HIS
2	B	340	HIS
2	B	388	ASN
2	B	452	HIS
3	C	80	ASN

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Mol	Chain	Res	Type
4	F	234	GLN
4	F	235	GLN
4	F	254	ASN
4	F	431	ASN
4	F	479	HIS
5	J	203	HIS
5	J	303	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

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.

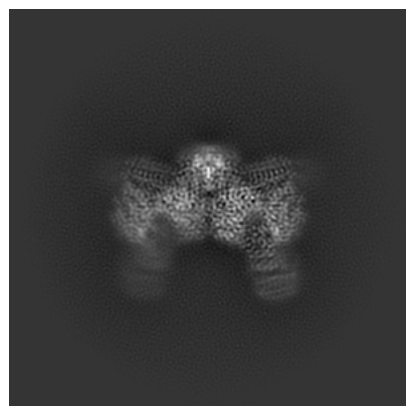
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-41566. These allow visual inspection of the internal detail of the map and identification of artifacts.

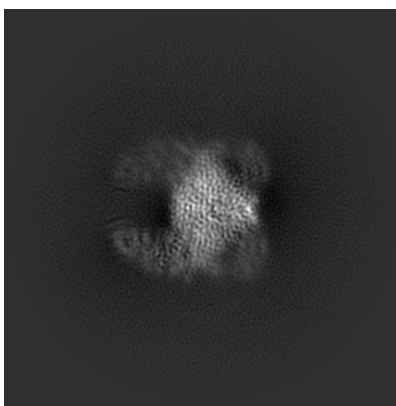
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

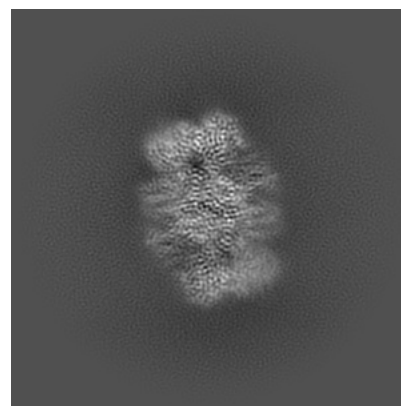
6.1.1 Primary map



X

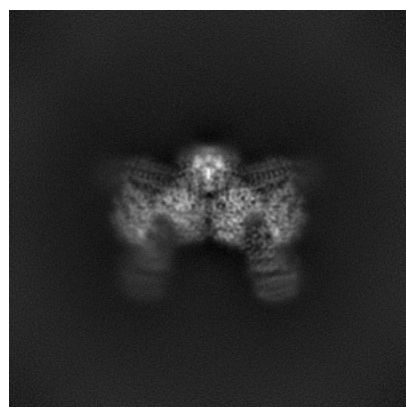


Y

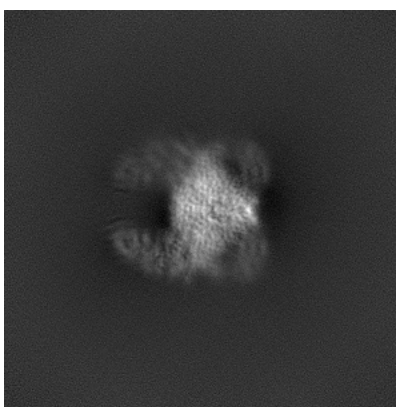


Z

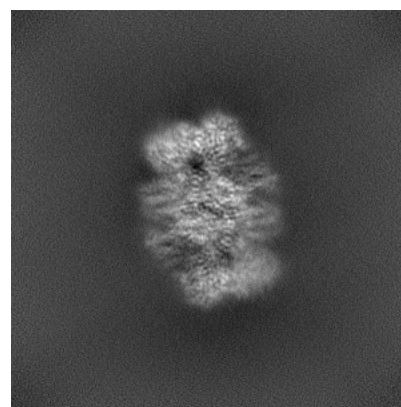
6.1.2 Raw map



X



Y

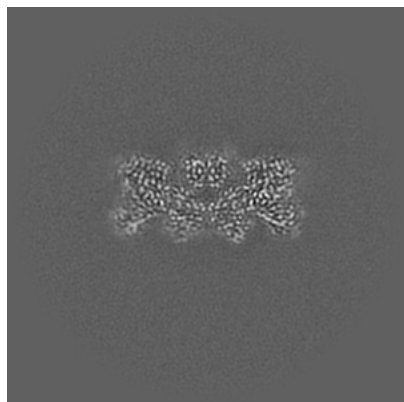


Z

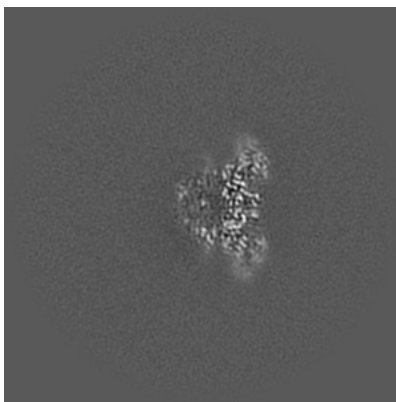
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

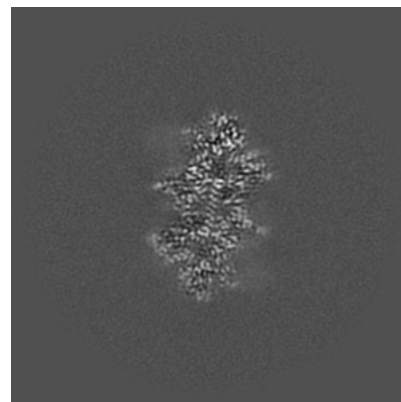
6.2.1 Primary map



X Index: 200

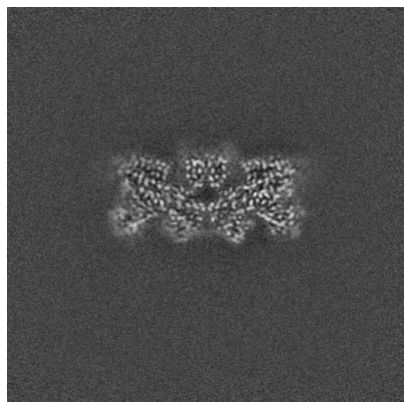


Y Index: 200

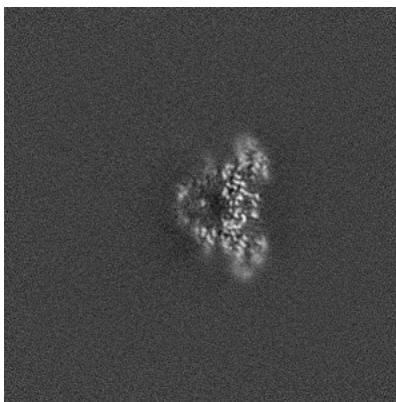


Z Index: 200

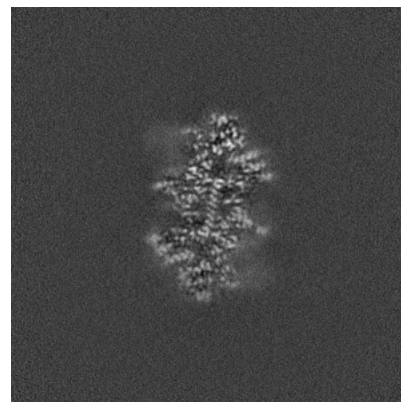
6.2.2 Raw map



X Index: 200



Y Index: 200

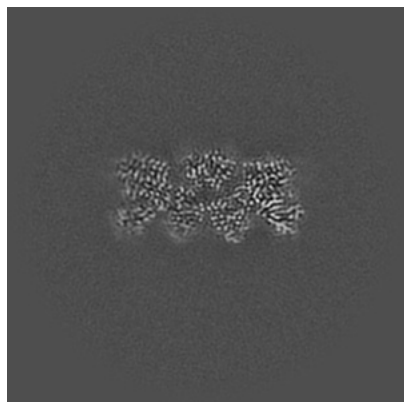


Z Index: 200

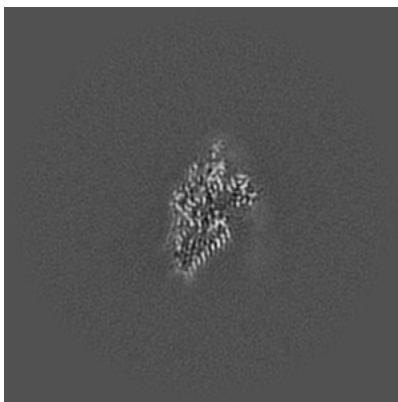
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

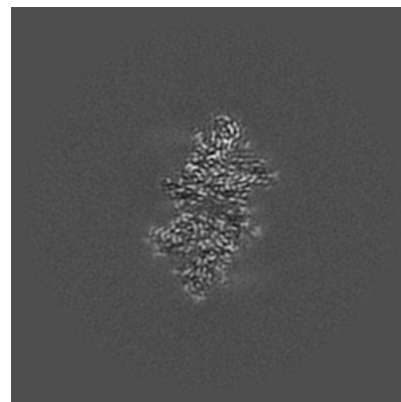
6.3.1 Primary map



X Index: 202

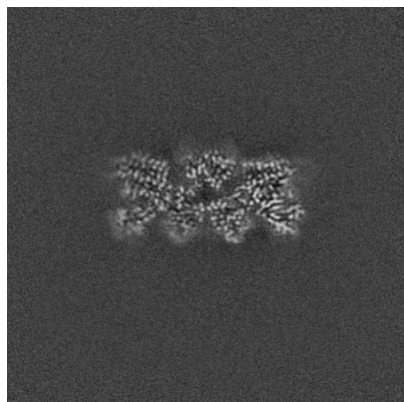


Y Index: 221

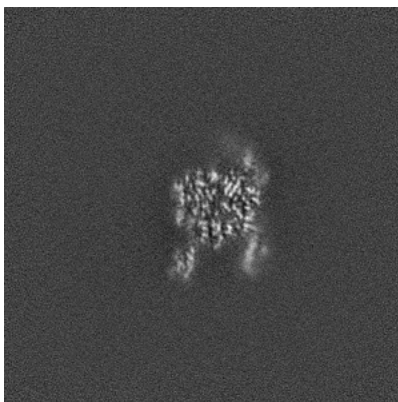


Z Index: 206

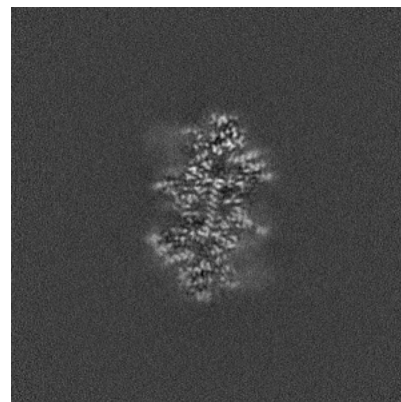
6.3.2 Raw map



X Index: 202



Y Index: 210

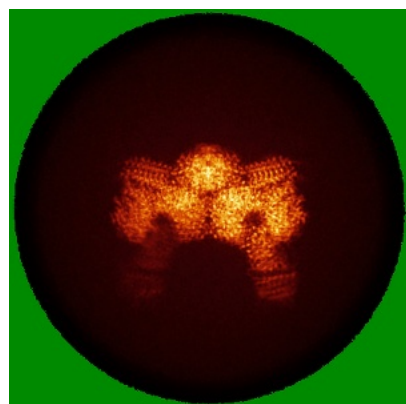


Z Index: 200

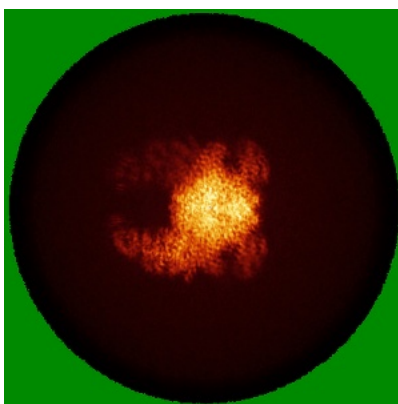
The images above show the largest variance slices of the map in three orthogonal directions.

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

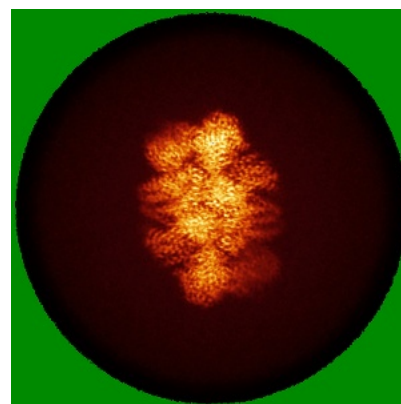
6.4.1 Primary map



X

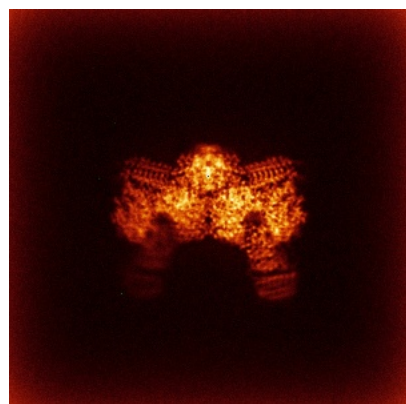


Y

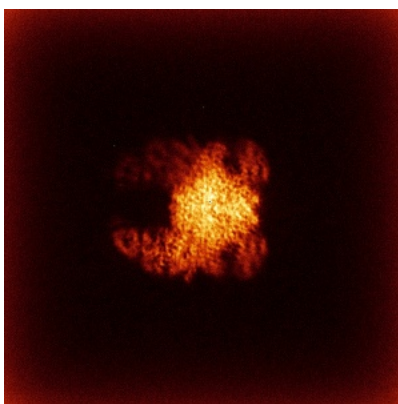


Z

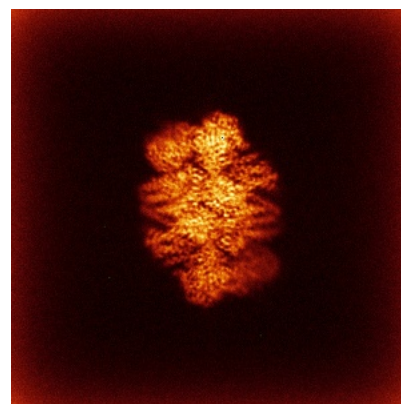
6.4.2 Raw map



X



Y

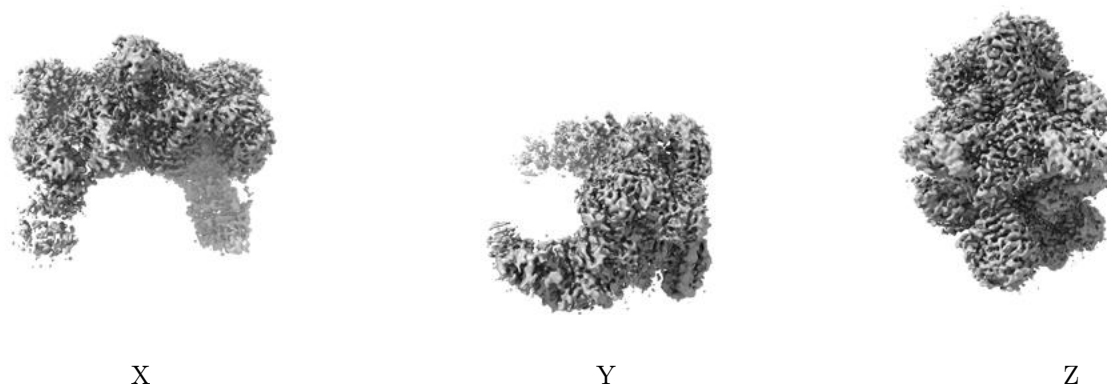


Z

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.

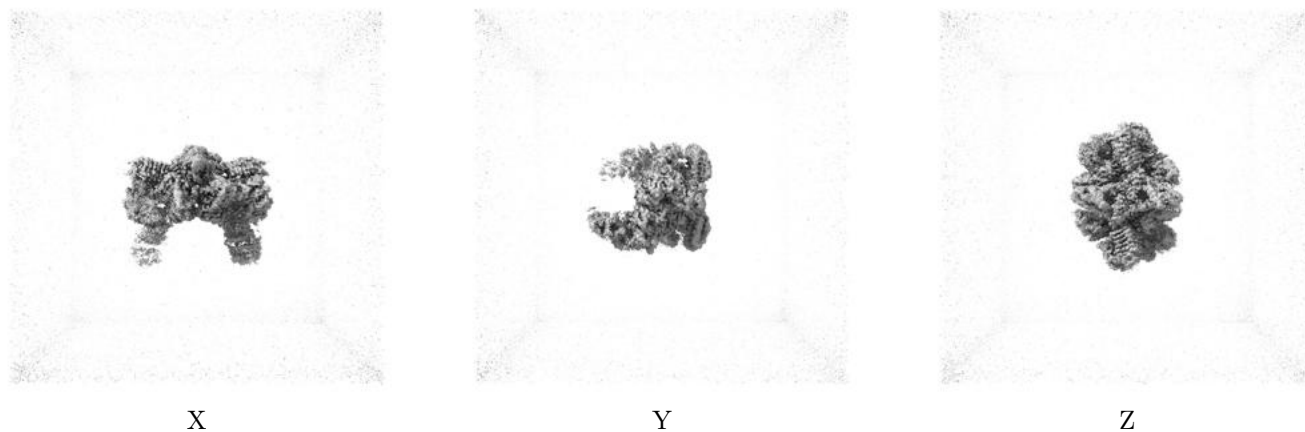
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.15. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

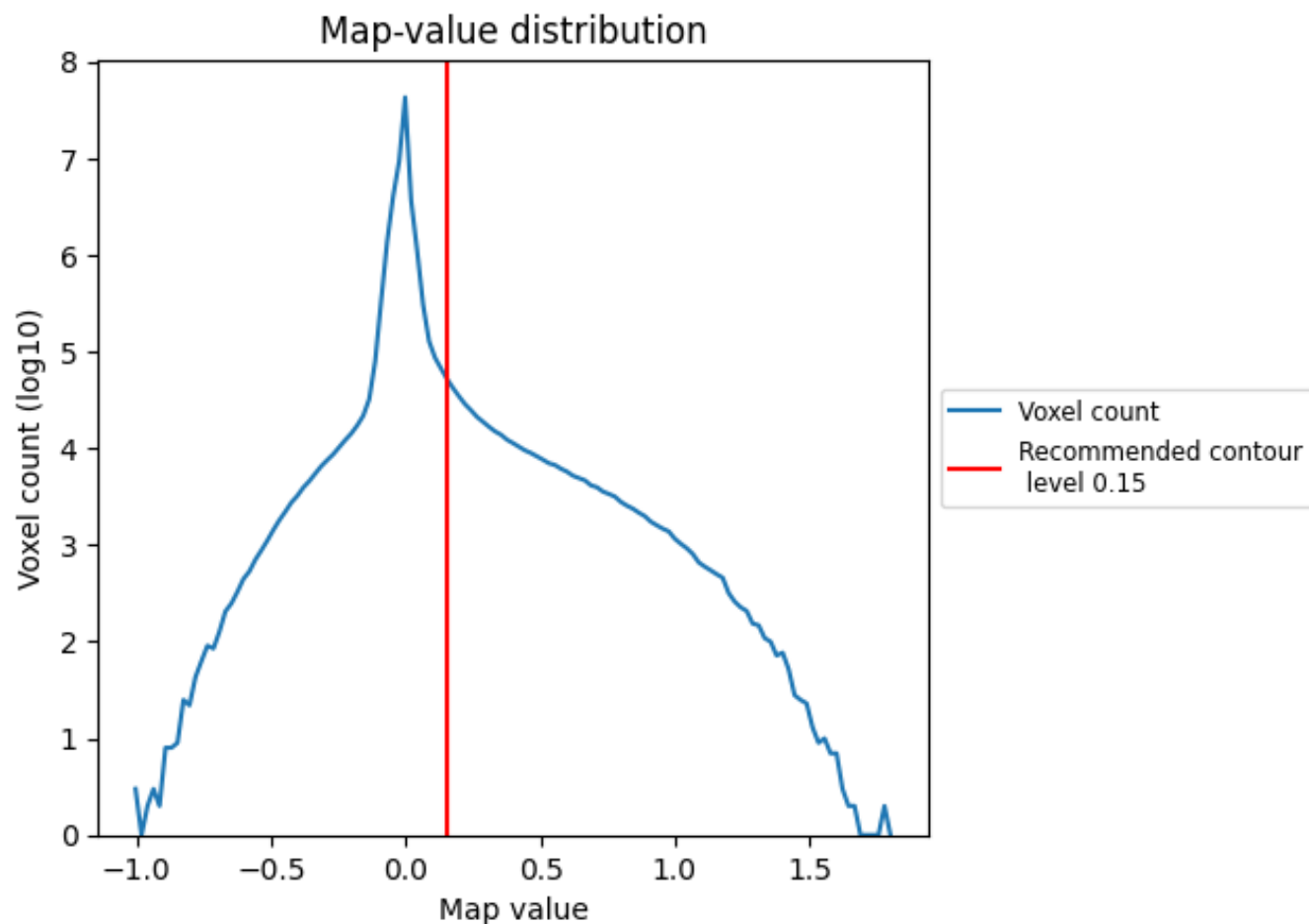
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

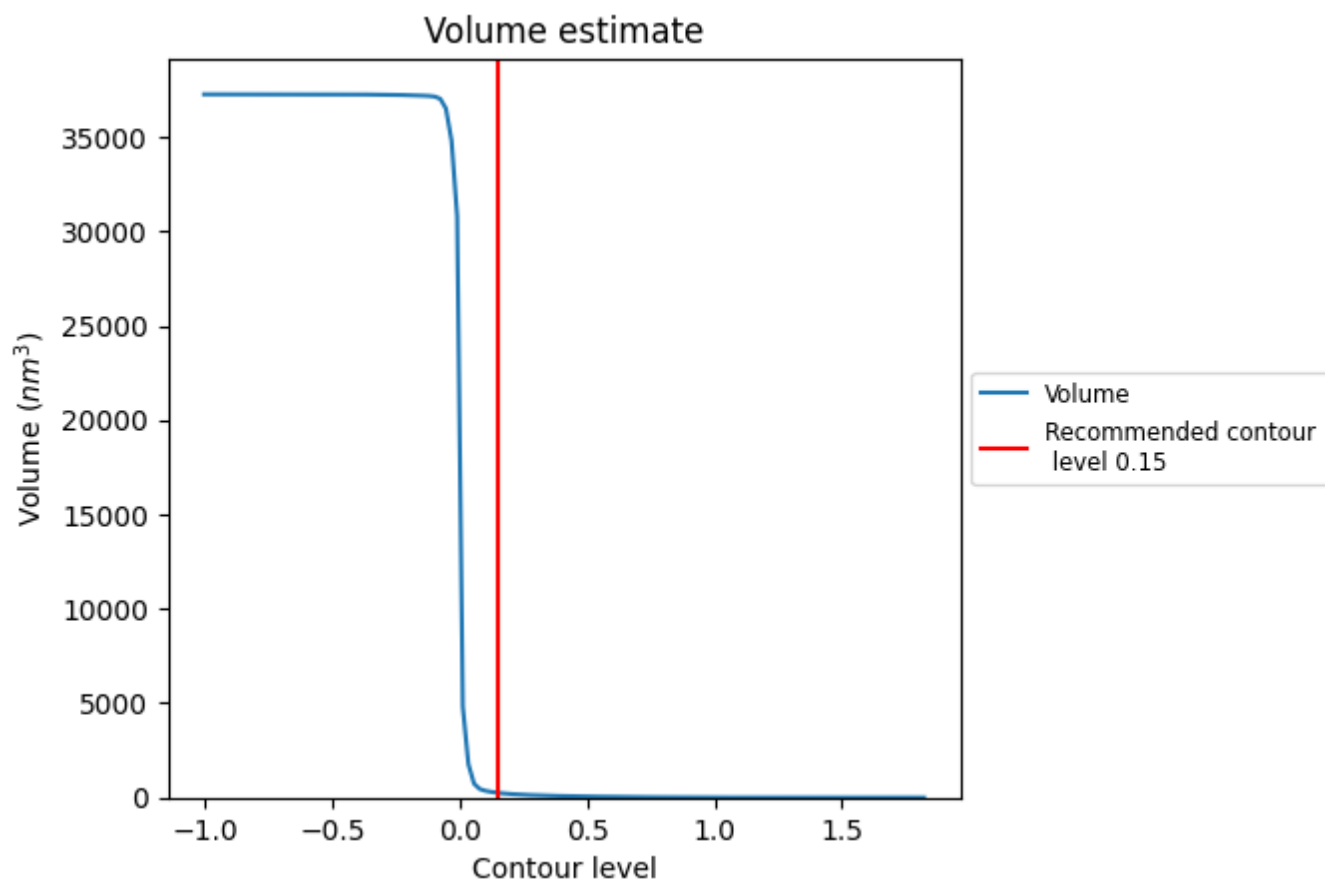
This section contains the results of statistical analysis of the map.

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.

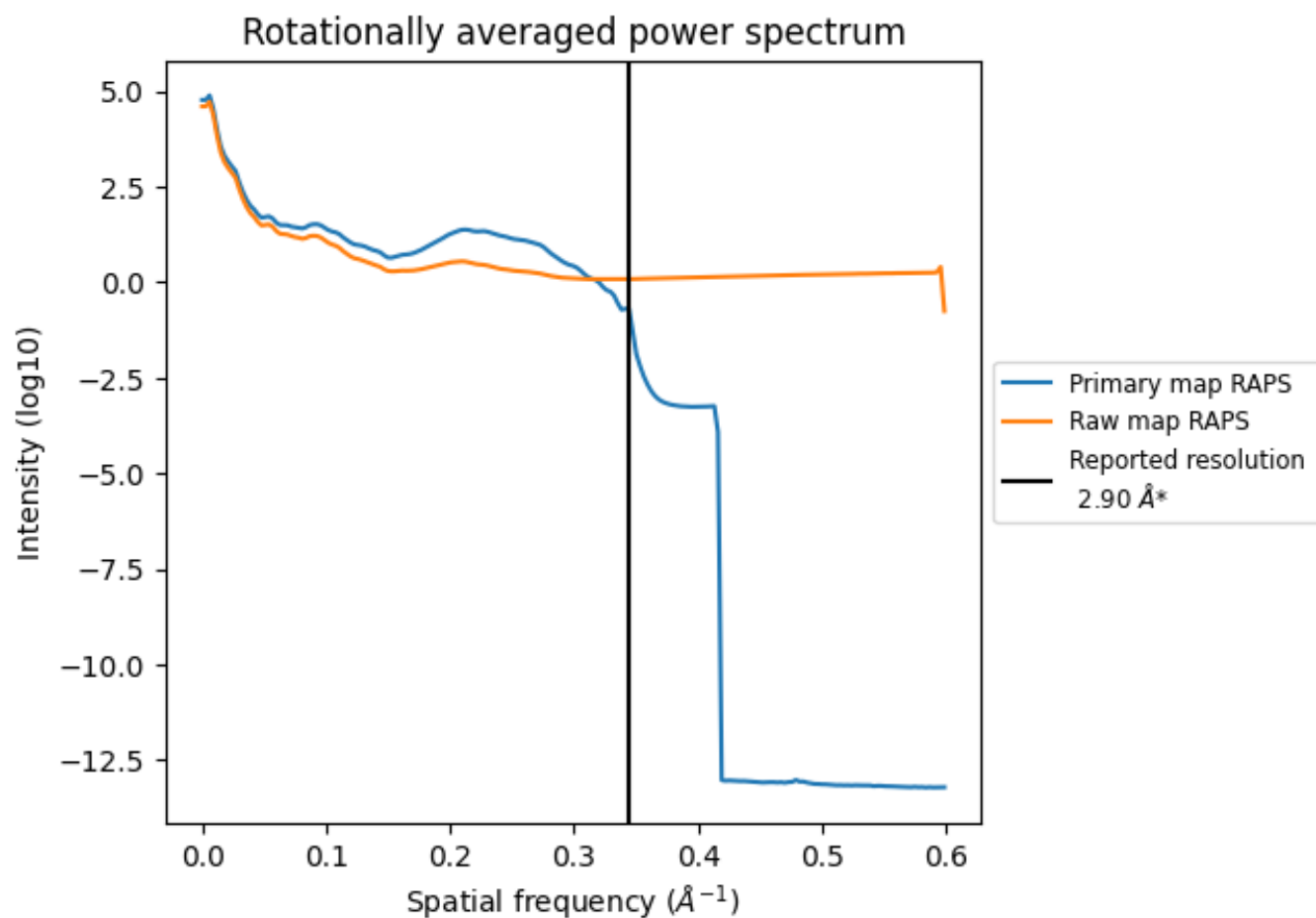
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 251 nm³; this corresponds to an approximate mass of 227 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 ⓘ

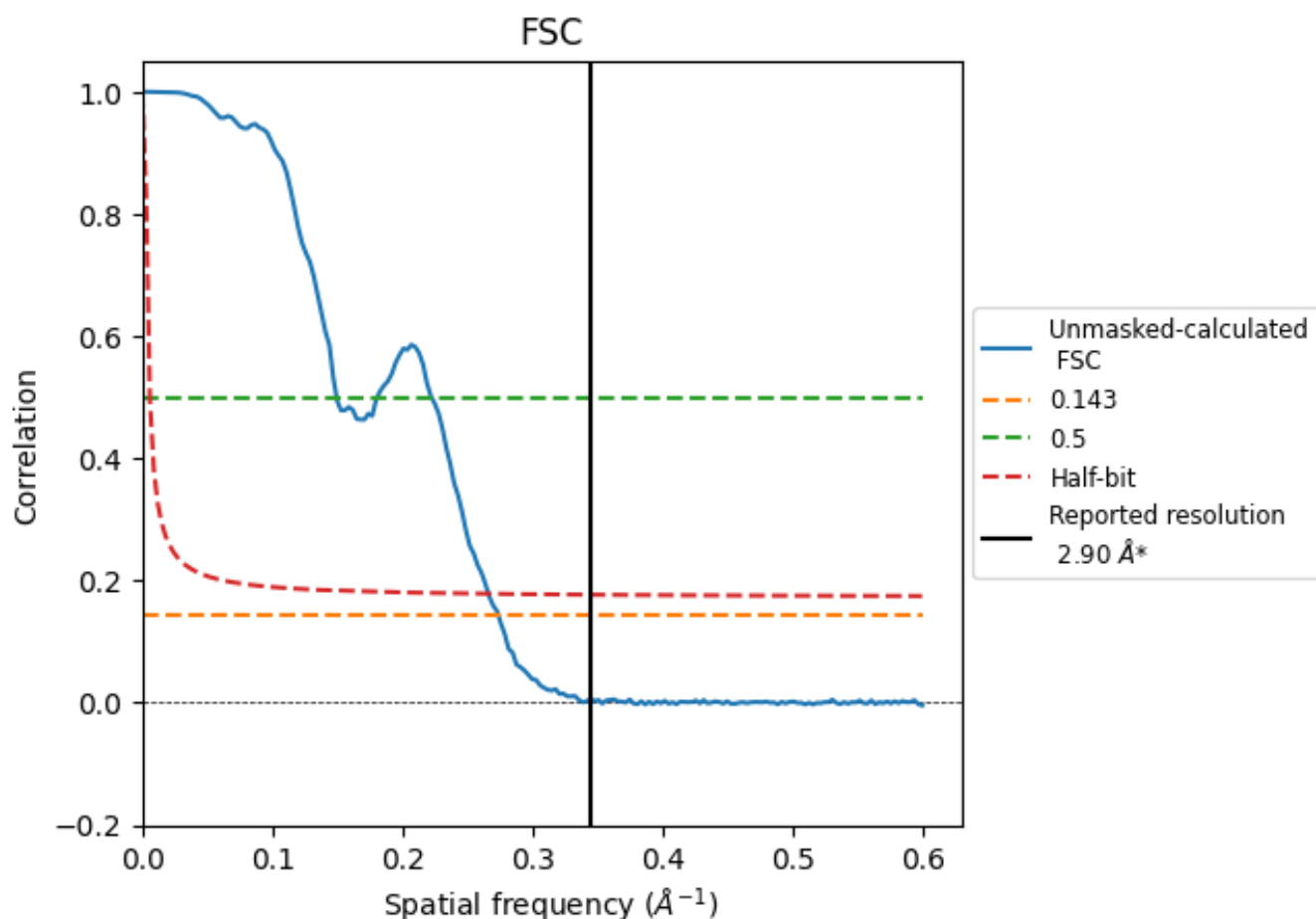


*Reported resolution corresponds to spatial frequency of 0.345 Å⁻¹

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 0.345 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

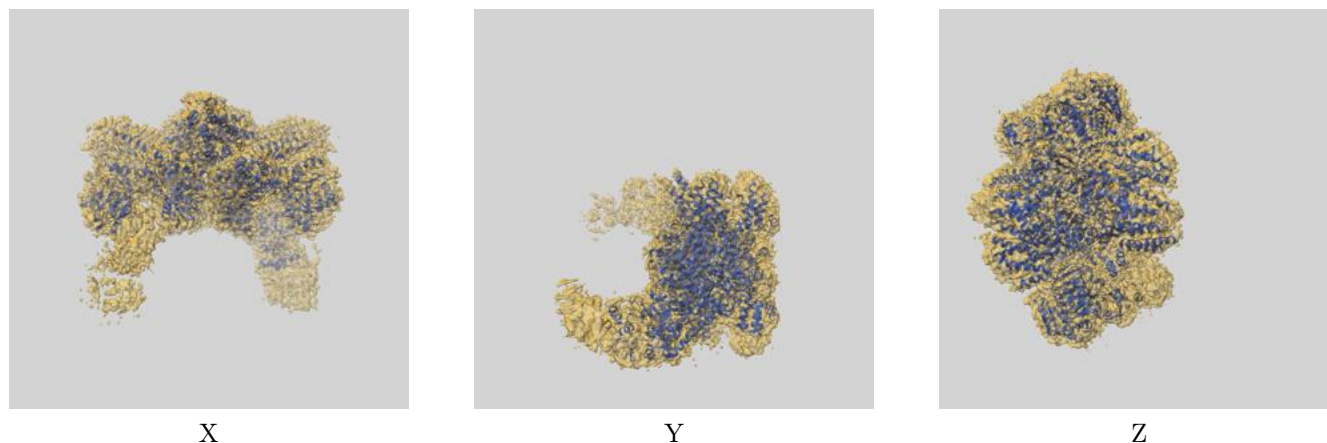
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.90	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.66	6.70	3.76

*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 3.66 differs from the reported value 2.9 by more than 10 %

9 Map-model fit [i](#)

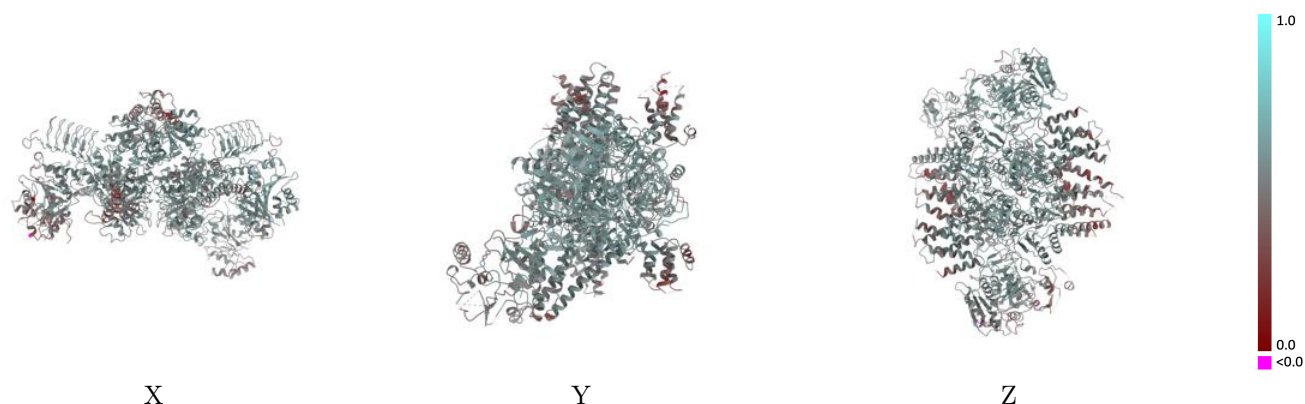
This section contains information regarding the fit between EMDB map EMD-41566 and PDB model 8TQZ. Per-residue inclusion information can be found in section [3](#) on page [8](#).

9.1 Map-model overlay [i](#)



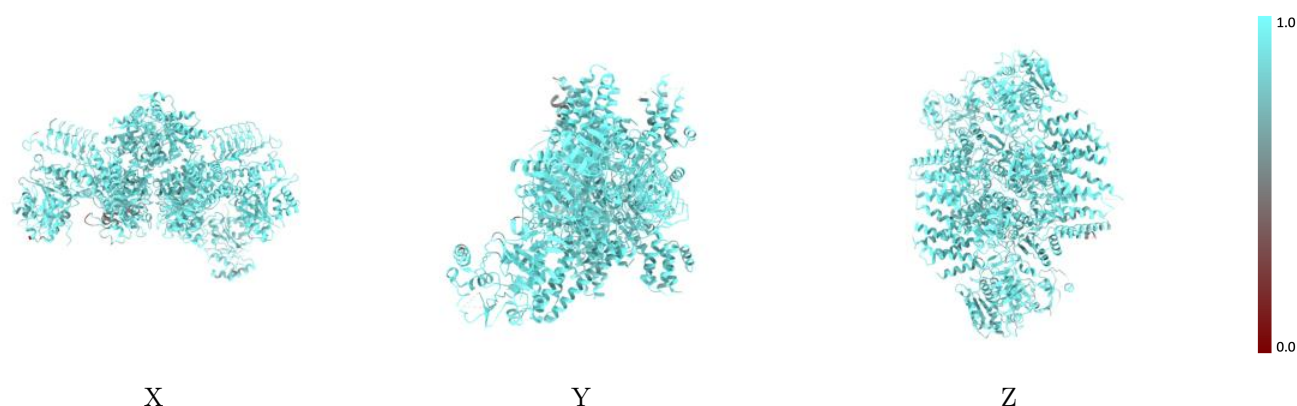
The images above show the 3D surface view of the map at the recommended contour level 0.15 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



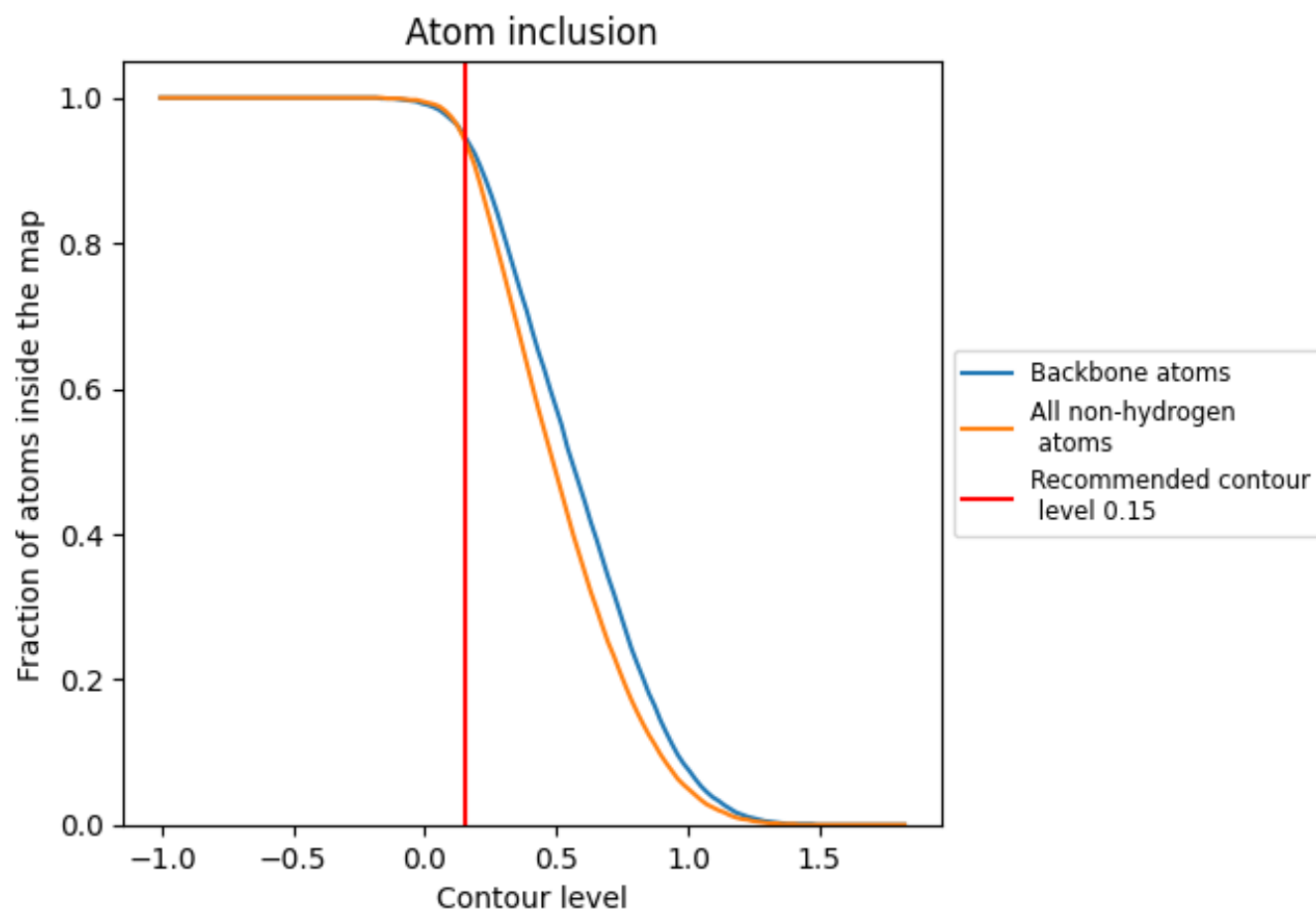
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.15).

9.4 Atom inclusion [i](#)



At the recommended contour level, 95% of all backbone atoms, 94% 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 (0.15) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9430	0.5190
A	0.9190	0.4980
B	0.9640	0.5480
C	0.9580	0.5270
D	0.9440	0.5180
E	0.8990	0.5060
F	0.9550	0.5430
G	0.9560	0.5190
H	0.9590	0.5160
I	0.9080	0.4150
J	0.9370	0.5010

1.0

0.0

<0.0