Full wwPDB EM Validation Report ⓘ

Dec 1, 2025 – 12:14 PM JST

PDB ID	:	9VKW / pdb_00009vkw
EMDB ID	:	EMD-65145
Title	:	Cryo-EM structure of the NuA3 complex bound to Ace-coenzyme A
Authors	:	Zhang, H.Q.; Wang, Y.R.
Deposited on	:	2025-06-24
Resolution	:	3.13 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:

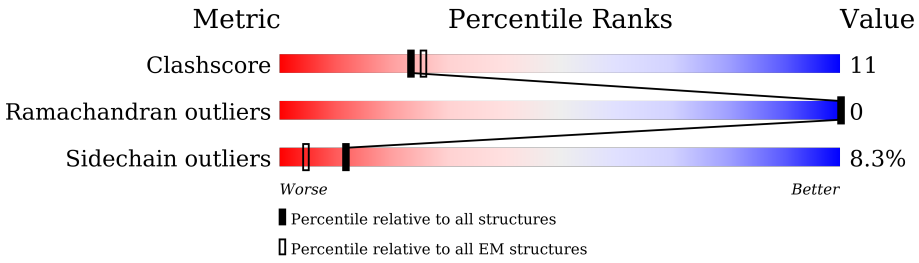
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

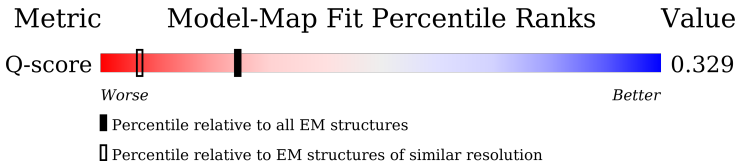
1 Overall quality at a glance

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

The reported resolution of this entry is 3.13 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	14478 (2.63 - 3.63)

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	831	8% 42% 16% • 40%
2	B	748	15% 51% 18% • 28%
3	C	219	5% 32% 11% • 56%
4	E	244	• 20% 9% • 70%

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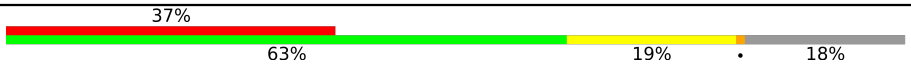
Mol	Chain	Length	Quality of chain
5	D	113	

2 Entry composition

There are 7 unique types of molecules in this entry. The entry contains 10735 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 Histone acetyltransferase SAS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	498	Total	C	N	O	S	0	0
			4169	2693	698	759	19		

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	452	GLN	GLU	conflict	UNP P34218

- Molecule 2 is a protein called NuA3 HAT complex component NTO1.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	540	Total	C	N	O	S	0	0
			4385	2789	754	809	33		

- Molecule 3 is a protein called Protein YNG1.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	97	Total	C	N	O	S	0	0
			795	500	135	156	4		

- Molecule 4 is a protein called Transcription initiation factor TFIID subunit 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	E	72	Total	C	N	O	S	0	0
			568	361	87	118	2		

- Molecule 5 is a protein called Chromatin modification-related protein EAF6.

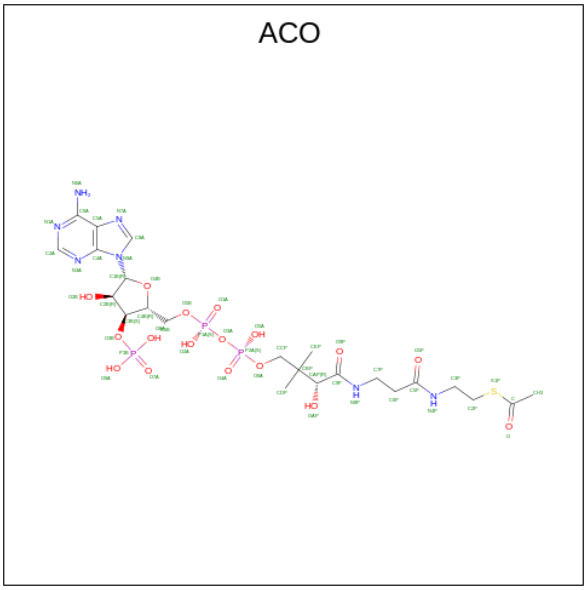
Mol	Chain	Residues	Atoms				AltConf	Trace
5	D	93	Total	C	N	O	0	0
			763	465	140	158		

- Molecule 6 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by

depositor).

Mol	Chain	Residues	Atoms	AltConf
6	A	1	Total Zn 1 1	0
6	B	3	Total Zn 3 3	0

- Molecule 7 is ACETYL COENZYME *A (CCD ID: ACO) (formula: $C_{23}H_{38}N_7O_{17}P_3S$) (labeled as "Ligand of Interest" by depositor).

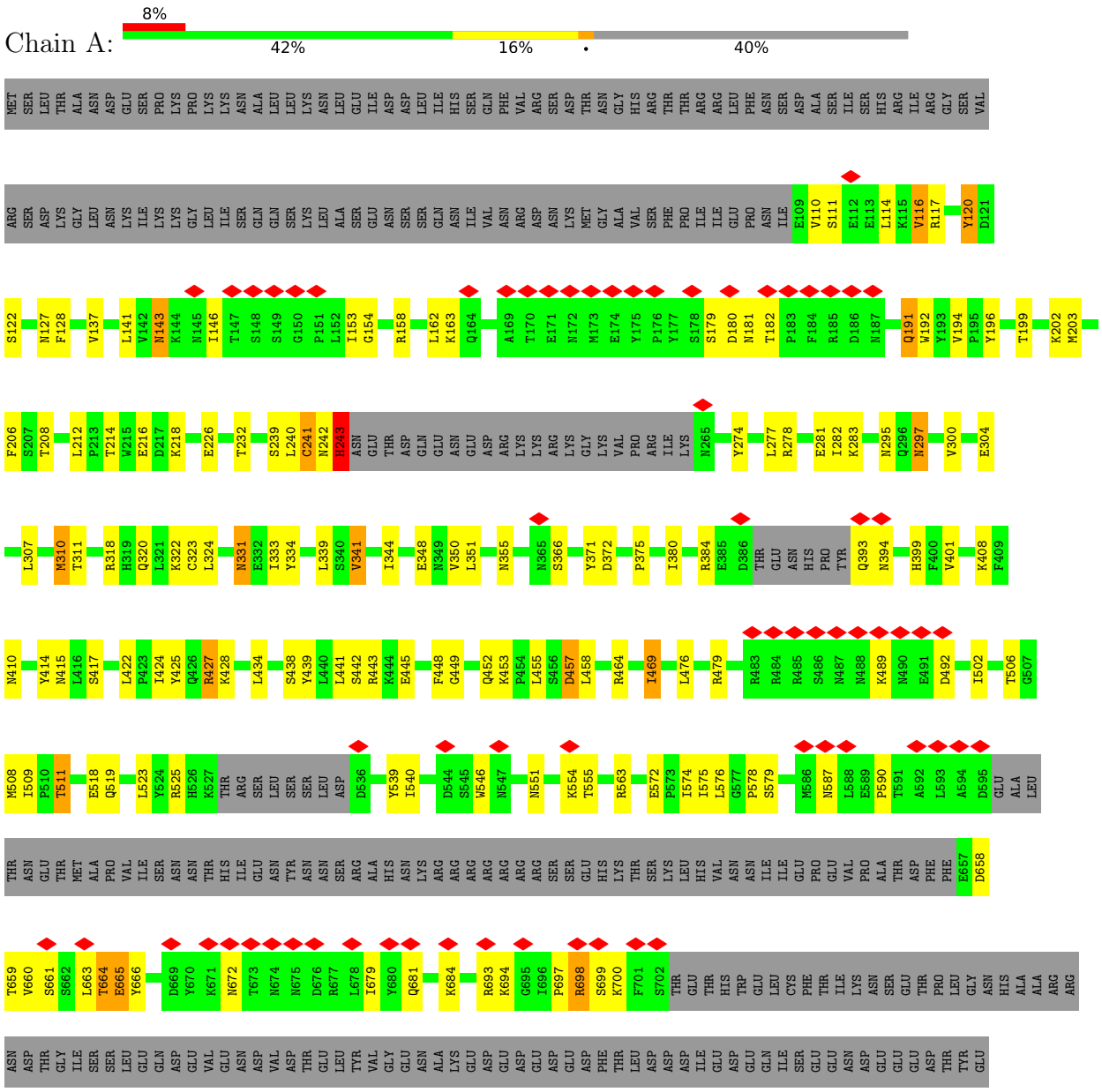


Mol	Chain	Residues	Atoms	AltConf
7	A	1	Total C N O P S 51 23 7 17 3 1	0

3 Residue-property plots (i)

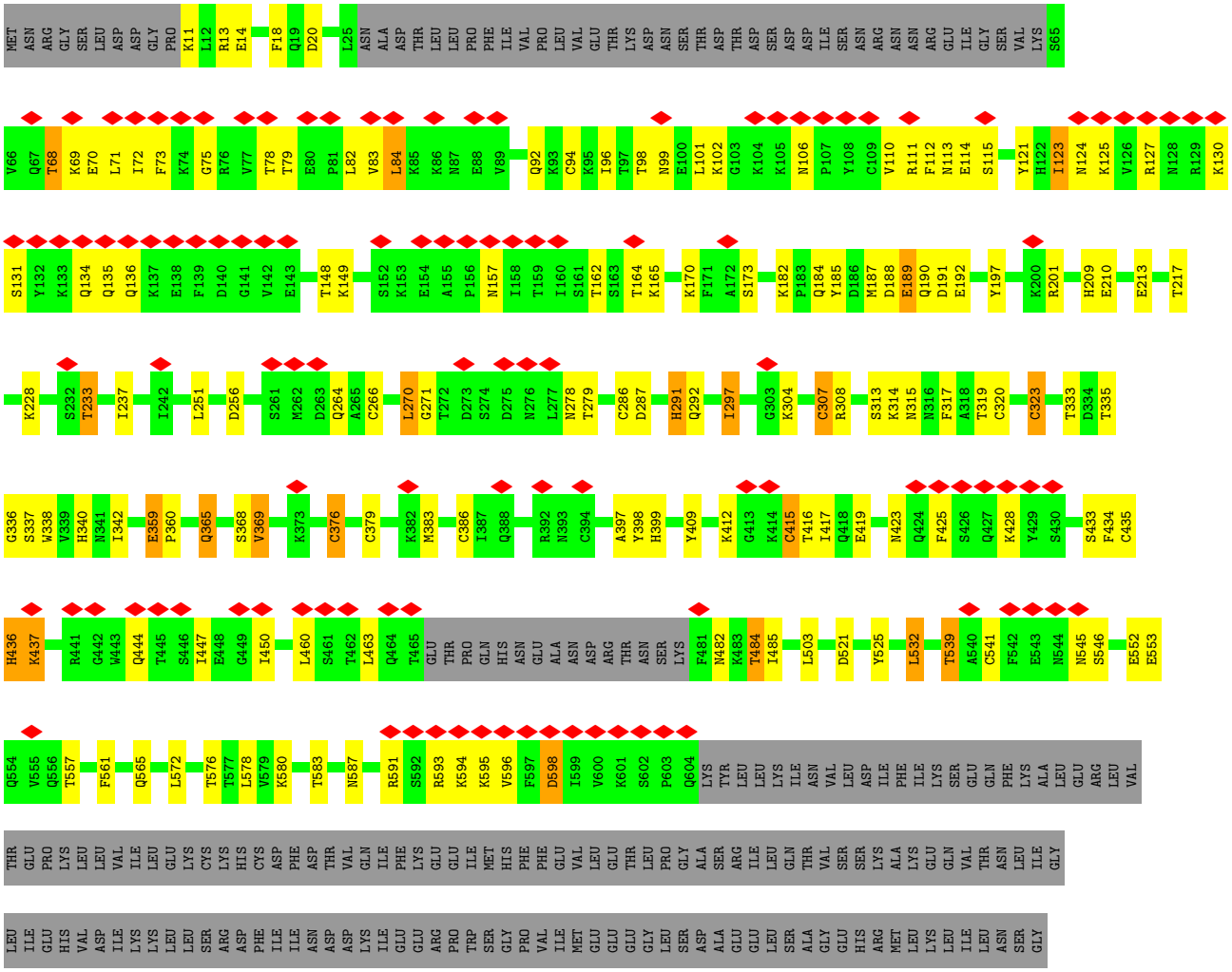
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: Histone acetyltransferase SAS3



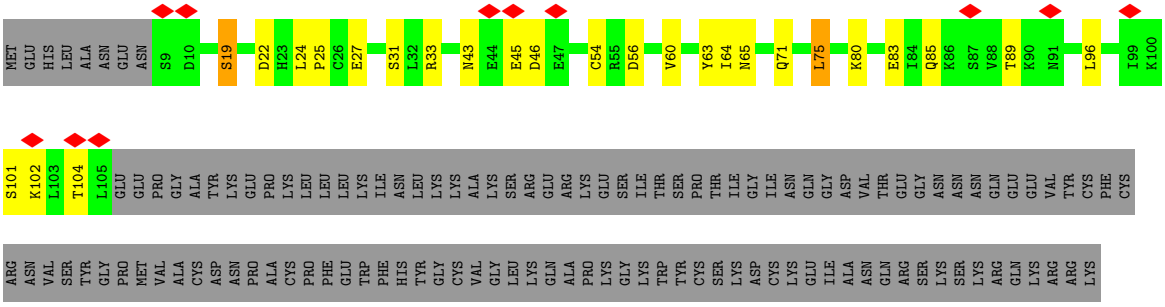
• Molecule 2: NuA3 HAT complex component NTO1

Chain B:



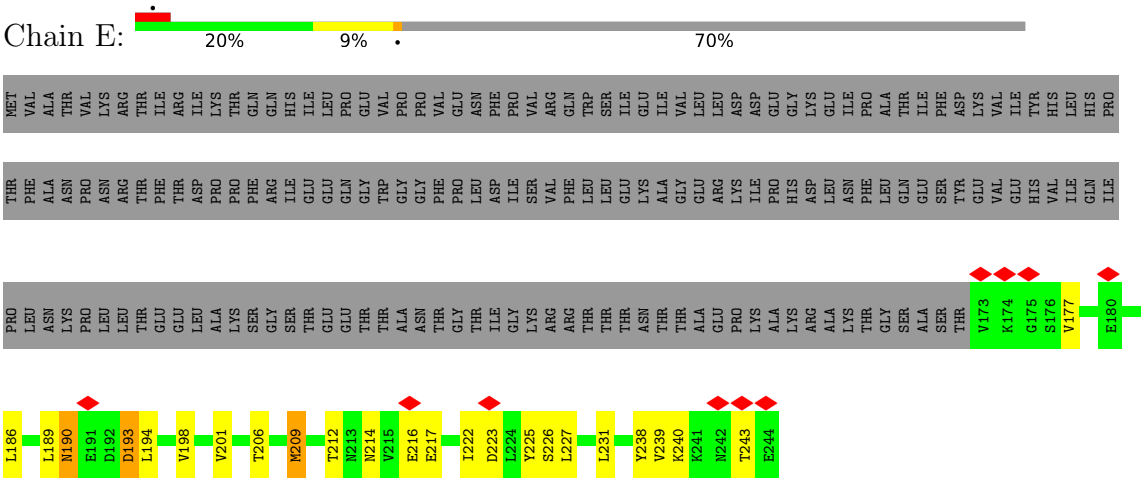
• Molecule 3: Protein YNG1

Chain C:



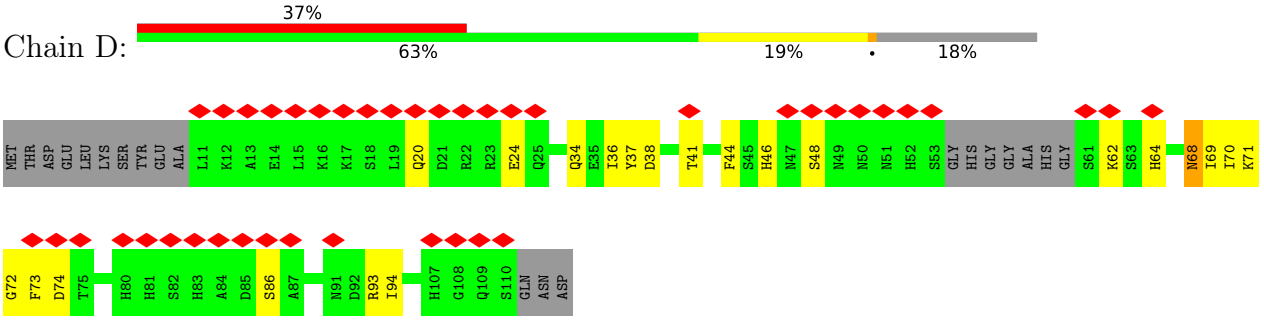
• Molecule 4: Transcription initiation factor TFIID subunit 14

Chain E:



• Molecule 5: Chromatin modification-related protein EAF6

Chain D:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	134246	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	2.340	Depositor
Minimum map value	-1.785	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.047	Depositor
Recommended contour level	0.18	Depositor
Map size (Å)	270.004, 270.004, 270.004	wwPDB
Map dimensions	280, 280, 280	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.9643, 0.9643, 0.9643	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.25	1/4274 (0.0%)	0.43	2/5770 (0.0%)
2	B	0.16	0/4487	0.35	0/6052
3	C	0.18	0/805	0.31	0/1082
4	E	0.12	0/575	0.26	0/777
5	D	0.14	0/778	0.34	0/1041
All	All	0.20	1/10919 (0.0%)	0.38	2/14722 (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
1	A	0	1
2	B	0	1
All	All	0	2

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	239	SER	C-O	-5.59	1.17	1.24

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	243	HIS	CA-CB-CG	5.10	118.90	113.80
1	A	427	ARG	CB-CG-CD	-5.03	99.72	111.30

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	120	TYR	Peptide
2	B	359	GLU	Peptide

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	4169	0	4126	97	0
2	B	4385	0	4318	113	0
3	C	795	0	804	20	0
4	E	568	0	567	16	0
5	D	763	0	694	15	0
6	A	1	0	0	0	0
6	B	3	0	0	0	0
7	A	51	0	33	9	0
All	All	10735	0	10542	229	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 11.

All (229) 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)
7:A:902:ACO:N1A	2:B:84:LEU:CD1	2.30	0.94
2:B:320:CYS:HB2	2:B:323:CYS:H	1.36	0.90
7:A:902:ACO:N1A	2:B:84:LEU:HD11	1.91	0.86
1:A:242:ASN:HB2	4:E:216:GLU:OE1	1.81	0.79
2:B:184:GLN:H	2:B:217:THR:HG21	1.48	0.79
7:A:902:ACO:N1A	2:B:84:LEU:HD12	1.99	0.77
1:A:331:ASN:N	1:A:331:ASN:OD1	2.19	0.75
1:A:242:ASN:CB	4:E:216:GLU:OE1	2.34	0.74
2:B:587:ASN:ND2	3:C:54:CYS:SG	2.60	0.74
2:B:130:LYS:HG3	2:B:135:GLN:HE21	1.53	0.73
5:D:68:ASN:HD22	5:D:69:ILE:H	1.37	0.72
2:B:320:CYS:SG	2:B:340:HIS:ND1	2.63	0.72
2:B:435:CYS:SG	2:B:436:HIS:N	2.63	0.71
2:B:359:GLU:HB3	2:B:360:PRO:HD3	1.71	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:681:GLN:HA	1:A:684:LYS:HE3	1.73	0.69
1:A:297:ASN:OD1	1:A:311:THR:OG1	2.10	0.69
1:A:518:GLU:OE1	2:B:13:ARG:NH2	2.27	0.68
2:B:292:GLN:HA	2:B:297:ILE:HB	1.75	0.67
1:A:410:ASN:HD21	1:A:414:TYR:HB2	1.60	0.67
4:E:214:ASN:ND2	4:E:217:GLU:OE2	2.25	0.66
1:A:415:ASN:HD22	1:A:449:GLY:HA3	1.60	0.65
3:C:85:GLN:NE2	3:C:89:THR:OG1	2.30	0.65
2:B:307:CYS:SG	2:B:308:ARG:N	2.70	0.64
1:A:572:GLU:OE2	3:C:33:ARG:NH1	2.30	0.63
7:A:902:ACO:C6A	2:B:84:LEU:HD12	2.28	0.63
7:A:902:ACO:N6A	2:B:84:LEU:HD12	2.13	0.63
2:B:376:CYS:HB2	2:B:398:TYR:HA	1.80	0.63
3:C:43:ASN:ND2	3:C:46:ASP:OD1	2.32	0.63
1:A:127:ASN:OD1	1:A:128:PHE:N	2.32	0.62
1:A:448:PHE:HB3	1:A:509:ILE:HG22	1.81	0.62
1:A:443:ARG:NH1	1:A:506:THR:O	2.32	0.62
1:A:417:SER:OG	1:A:452:GLN:NE2	2.33	0.62
1:A:464:ARG:NH1	2:B:14:GLU:OE2	2.31	0.61
2:B:412:LYS:NZ	2:B:415:CYS:O	2.33	0.61
1:A:162:LEU:HD22	2:B:532:LEU:HD12	1.82	0.61
1:A:243:HIS:CD2	2:B:92:GLN:OE1	2.54	0.61
2:B:99:ASN:O	2:B:102:LYS:NZ	2.24	0.61
1:A:214:THR:HG22	1:A:216:GLU:H	1.66	0.60
1:A:457:ASP:HB3	2:B:82:LEU:HD11	1.84	0.60
2:B:264:GLN:NE2	2:B:287:ASP:O	2.33	0.60
3:C:27:GLU:OE1	3:C:63:TYR:OH	2.17	0.60
5:D:34:GLN:NE2	5:D:38:ASP:OD1	2.34	0.60
2:B:593:ARG:HA	2:B:596:VAL:HG12	1.84	0.59
2:B:233:THR:HA	2:B:237:ILE:HD11	1.85	0.59
2:B:425:PHE:HA	2:B:428:LYS:HG2	1.84	0.59
2:B:213:GLU:O	2:B:217:THR:HG23	2.03	0.59
2:B:409:TYR:HB3	2:B:434:PHE:HB2	1.84	0.59
1:A:665:GLU:OE2	1:A:666:TYR:N	2.36	0.59
5:D:37:TYR:O	5:D:41:THR:HG23	2.02	0.58
2:B:68:THR:OG1	2:B:70:GLU:O	2.19	0.57
2:B:121:TYR:OH	2:B:213:GLU:OE2	2.22	0.57
7:A:902:ACO:OAP	7:A:902:ACO:O6A	2.21	0.57
3:C:101:SER:OG	3:C:102:LYS:NZ	2.37	0.57
1:A:153:ILE:HG22	1:A:154:GLY:H	1.69	0.56
2:B:13:ARG:HH11	2:B:69:LYS:HE3	1.70	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:197:TYR:OH	2:B:201:ARG:NH1	2.34	0.56
2:B:313:SER:OG	2:B:314:LYS:N	2.38	0.56
2:B:376:CYS:SG	2:B:379:CYS:N	2.78	0.56
1:A:394:ASN:HB3	2:B:135:GLN:HE22	1.70	0.56
2:B:123:ILE:HG13	2:B:125:LYS:HE2	1.88	0.56
2:B:188:ASP:OD1	2:B:189:GLU:N	2.32	0.56
1:A:698:ARG:HH11	1:A:699:SER:HB3	1.71	0.56
1:A:179:SER:OG	2:B:317:PHE:O	2.24	0.55
1:A:458:LEU:HD11	7:A:902:ACO:N6A	2.21	0.55
1:A:322:LYS:NZ	2:B:185:TYR:O	2.36	0.55
2:B:110:VAL:HG12	2:B:112:PHE:H	1.72	0.55
2:B:266:CYS:HB3	2:B:271:GLY:H	1.72	0.55
1:A:415:ASN:OD1	1:A:438:SER:OG	2.25	0.55
2:B:539:THR:HG23	2:B:541:CYS:H	1.72	0.54
2:B:552:GLU:N	2:B:552:GLU:OE1	2.38	0.54
2:B:304:LYS:HD3	2:B:546:SER:HB2	1.90	0.54
2:B:591:ARG:HD3	2:B:594:LYS:HZ3	1.72	0.54
1:A:282:ILE:HD11	1:A:424:ILE:HD11	1.90	0.54
3:C:45:GLU:OE2	3:C:45:GLU:N	2.41	0.54
2:B:553:GLU:OE1	2:B:553:GLU:N	2.39	0.54
2:B:78:THR:OG1	2:B:79:THR:N	2.41	0.53
2:B:11:LYS:N	2:B:71:LEU:O	2.42	0.53
2:B:416:THR:HG23	2:B:419:GLU:H	1.73	0.52
1:A:304:GLU:OE2	1:A:399:HIS:ND1	2.38	0.52
1:A:394:ASN:H	2:B:127:ARG:HH21	1.57	0.52
2:B:84:LEU:HD23	2:B:84:LEU:H	1.74	0.52
2:B:191:ASP:OD1	2:B:525:TYR:OH	2.19	0.52
2:B:131:SER:O	2:B:135:GLN:HG3	2.10	0.52
1:A:241:CYS:SG	1:A:281:GLU:CD	2.93	0.52
3:C:46:ASP:OD1	3:C:46:ASP:N	2.34	0.52
5:D:70:ILE:HD13	5:D:94:ILE:HD11	1.92	0.51
2:B:127:ARG:HH12	2:B:130:LYS:HE3	1.75	0.51
2:B:192:GLU:OE2	2:B:209:HIS:NE2	2.34	0.51
2:B:20:ASP:N	2:B:20:ASP:OD1	2.43	0.51
2:B:71:LEU:HB2	2:B:75:GLY:HA3	1.93	0.51
2:B:376:CYS:HB3	2:B:399:HIS:CE1	2.45	0.51
1:A:243:HIS:CE1	1:A:274:TYR:CE1	2.98	0.51
2:B:591:ARG:HD3	2:B:594:LYS:NZ	2.26	0.51
4:E:222:ILE:HD11	4:E:227:LEU:HD21	1.92	0.51
1:A:240:LEU:HB3	2:B:94:CYS:SG	2.50	0.51
1:A:393:GLN:HE22	2:B:157:ASN:HD21	1.59	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:492:ASP:HA	1:A:698:ARG:HB3	1.92	0.51
7:A:902:ACO:C2A	2:B:84:LEU:HD11	2.40	0.51
2:B:72:ILE:HG13	2:B:73:PHE:N	2.25	0.51
1:A:141:LEU:HD21	4:E:238:TYR:HA	1.94	0.50
2:B:435:CYS:SG	2:B:437:LYS:NZ	2.84	0.50
2:B:210:GLU:N	2:B:210:GLU:OE2	2.45	0.50
2:B:170:LYS:O	2:B:173:SER:OG	2.28	0.50
4:E:190:ASN:OD1	4:E:190:ASN:N	2.34	0.49
1:A:348:GLU:OE1	2:B:149:LYS:NZ	2.37	0.49
1:A:665:GLU:CD	1:A:666:TYR:H	2.20	0.49
1:A:415:ASN:HD21	1:A:442:SER:HB2	1.77	0.49
4:E:193:ASP:N	4:E:193:ASP:OD1	2.45	0.49
2:B:368:SER:OG	2:B:369:VAL:N	2.47	0.48
1:A:366:SER:O	1:A:366:SER:OG	2.30	0.48
1:A:143:ASN:HB2	1:A:146:ILE:HG12	1.96	0.48
1:A:242:ASN:HB3	4:E:216:GLU:OE1	2.13	0.48
1:A:551:ASN:O	1:A:555:THR:HG23	2.14	0.48
1:A:453:LYS:O	1:A:455:LEU:N	2.47	0.48
2:B:359:GLU:HB3	2:B:360:PRO:CD	2.43	0.48
5:D:68:ASN:ND2	5:D:69:ILE:H	2.08	0.48
1:A:191:GLN:HE21	1:A:191:GLN:HB3	1.57	0.47
5:D:68:ASN:HD22	5:D:69:ILE:N	2.07	0.47
4:E:189:LEU:HD11	4:E:239:VAL:HG12	1.95	0.47
4:E:201:VAL:HG22	4:E:231:LEU:HD21	1.97	0.47
1:A:110:VAL:HG22	1:A:117:ARG:HB2	1.97	0.47
2:B:398:TYR:OH	2:B:433:SER:OG	2.27	0.47
1:A:344:ILE:HD13	1:A:380:ILE:HD12	1.97	0.47
1:A:457:ASP:OD1	1:A:457:ASP:N	2.45	0.47
2:B:447:ILE:O	2:B:450:ILE:HG13	2.15	0.47
1:A:243:HIS:HD2	2:B:92:GLN:OE1	1.96	0.47
2:B:482:ASN:OD1	2:B:482:ASN:N	2.47	0.47
1:A:489:LYS:HD2	1:A:489:LYS:HA	1.77	0.46
5:D:20:GLN:O	5:D:24:GLU:HG2	2.14	0.46
2:B:278:ASN:O	2:B:278:ASN:ND2	2.49	0.46
2:B:127:ARG:HH22	2:B:130:LYS:HD2	1.81	0.46
3:C:24:LEU:HB3	3:C:25:PRO:HD3	1.98	0.46
1:A:334:TYR:HB3	1:A:341:VAL:CG1	2.46	0.46
2:B:333:THR:HG23	2:B:335:THR:H	1.80	0.46
1:A:311:THR:OG1	1:A:311:THR:O	2.33	0.45
3:C:80:LYS:O	3:C:83:GLU:HG2	2.16	0.45
1:A:428:LYS:HE2	1:A:428:LYS:HB2	1.69	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:315:ASN:ND2	2:B:315:ASN:O	2.49	0.45
2:B:111:ARG:HB3	2:B:114:GLU:HG2	1.99	0.45
7:A:902:ACO:H61A	2:B:84:LEU:HD12	1.82	0.45
2:B:291:HIS:H	2:B:291:HIS:CD2	2.34	0.45
4:E:194:LEU:O	4:E:198:VAL:HG23	2.16	0.45
1:A:192:TRP:CD2	2:B:485:ILE:HG22	2.52	0.45
2:B:576:THR:HG21	3:C:65:ASN:HA	1.99	0.45
5:D:48:SER:OG	5:D:86:SER:OG	2.32	0.45
2:B:113:ASN:O	2:B:113:ASN:ND2	2.49	0.45
5:D:44:PHE:HE1	5:D:71:LYS:HB2	1.82	0.45
2:B:333:THR:HG22	2:B:336:GLY:O	2.17	0.45
3:C:96:LEU:O	3:C:96:LEU:HD23	2.17	0.44
1:A:202:LYS:HD2	1:A:202:LYS:HA	1.84	0.44
2:B:386:CYS:HB3	2:B:397:ALA:HB1	2.00	0.44
5:D:41:THR:HG22	5:D:93:ARG:NH1	2.31	0.44
1:A:384:ARG:CZ	2:B:136:GLN:HE22	2.30	0.44
2:B:162:THR:HA	2:B:165:LYS:HG2	1.99	0.44
2:B:338:TRP:CD1	2:B:338:TRP:H	2.35	0.44
2:B:398:TYR:HH	2:B:433:SER:HG	1.50	0.44
1:A:681:GLN:O	1:A:684:LYS:HG2	2.18	0.44
1:A:111:SER:HA	1:A:116:VAL:HA	2.00	0.43
3:C:19:SER:O	3:C:71:GLN:NE2	2.51	0.43
2:B:578:LEU:HB3	5:D:36:ILE:HG12	1.99	0.43
1:A:163:LYS:NZ	1:A:226:GLU:OE2	2.39	0.43
2:B:561:PHE:O	2:B:565:GLN:HG3	2.18	0.43
1:A:469:ILE:HD13	1:A:469:ILE:HA	1.82	0.43
1:A:297:ASN:HD22	1:A:297:ASN:HA	1.55	0.43
2:B:187:MET:HE1	2:B:209:HIS:HA	2.00	0.43
2:B:553:GLU:O	2:B:557:THR:HG23	2.19	0.43
2:B:106:ASN:O	2:B:106:ASN:ND2	2.52	0.43
4:E:223:ASP:O	4:E:226:SER:OG	2.37	0.43
1:A:203:MET:HA	1:A:206:PHE:CE2	2.53	0.43
1:A:278:ARG:HH21	1:A:399:HIS:CE1	2.37	0.43
1:A:371:TYR:HD2	2:B:308:ARG:HE	1.67	0.43
1:A:479:ARG:HG3	1:A:546:TRP:CZ2	2.53	0.43
2:B:70:GLU:HG3	2:B:75:GLY:H	1.84	0.42
2:B:595:LYS:HA	2:B:598:ASP:OD1	2.18	0.42
3:C:60:VAL:O	3:C:64:ILE:HG23	2.19	0.42
1:A:525:ARG:HG3	1:A:539:TYR:CE2	2.54	0.42
1:A:341:VAL:HA	1:A:380:ILE:O	2.19	0.42
1:A:551:ASN:HA	1:A:554:LYS:HG2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:693:ARG:HG3	1:A:694:LYS:N	2.33	0.42
2:B:383:MET:HE2	2:B:383:MET:HB2	1.97	0.42
5:D:68:ASN:O	5:D:72:GLY:HA3	2.19	0.42
1:A:283:LYS:HE3	1:A:283:LYS:HB2	1.83	0.42
1:A:476:LEU:HA	1:A:476:LEU:HD12	1.83	0.42
1:A:579:SER:OG	3:C:22:ASP:OD2	2.32	0.42
2:B:572:LEU:HD23	2:B:572:LEU:HA	1.91	0.42
2:B:82:LEU:HD12	2:B:82:LEU:HA	1.72	0.42
3:C:19:SER:O	3:C:19:SER:OG	2.37	0.42
1:A:196:TYR:O	1:A:199:THR:HG22	2.19	0.42
1:A:307:LEU:O	1:A:355:ASN:ND2	2.53	0.42
1:A:351:LEU:HD12	1:A:351:LEU:HA	1.83	0.42
1:A:658:ASP:O	1:A:660:VAL:N	2.51	0.42
2:B:463:LEU:HD23	2:B:463:LEU:HA	1.84	0.42
3:C:75:LEU:HD12	3:C:75:LEU:HA	1.82	0.42
1:A:114:LEU:HD23	4:E:225:TYR:CE1	2.55	0.42
1:A:659:THR:O	5:D:73:PHE:HB2	2.20	0.42
2:B:580:LYS:O	2:B:583:THR:OG1	2.32	0.42
1:A:120:TYR:CE1	4:E:198:VAL:HG11	2.55	0.41
1:A:181:ASN:OD1	1:A:182:THR:N	2.53	0.41
4:E:240:LYS:HB2	4:E:240:LYS:HE2	1.81	0.41
5:D:62:LYS:HG3	5:D:64:HIS:CD2	2.55	0.41
1:A:508:MET:H	1:A:508:MET:HG2	1.62	0.41
1:A:661:SER:O	1:A:664:THR:HG23	2.20	0.41
2:B:365:GLN:HE21	2:B:365:GLN:HB3	1.56	0.41
1:A:208:THR:HG21	2:B:485:ILE:O	2.20	0.41
1:A:509:ILE:HG13	1:A:511:THR:HG23	2.02	0.41
2:B:270:LEU:HD12	2:B:270:LEU:HA	1.78	0.41
2:B:314:LYS:HD3	2:B:314:LYS:HA	1.86	0.41
1:A:578:PRO:HD2	3:C:22:ASP:OD1	2.20	0.41
2:B:124:ASN:C	2:B:125:LYS:HD3	2.45	0.41
2:B:115:SER:HB2	2:B:164:THR:HG22	2.02	0.41
2:B:148:THR:HG21	3:C:63:TYR:CD1	2.56	0.41
4:E:206:THR:OG1	4:E:209:MET:SD	2.72	0.41
1:A:659:THR:OG1	5:D:74:ASP:OD2	2.26	0.41
1:A:697:PRO:HB2	1:A:700:LYS:NZ	2.36	0.41
1:A:180:ASP:OD1	1:A:181:ASN:N	2.54	0.41
1:A:214:THR:O	1:A:218:LYS:HG3	2.20	0.41
1:A:295:ASN:ND2	2:B:335:THR:O	2.49	0.41
1:A:318:ARG:HD3	1:A:318:ARG:HA	1.81	0.41
1:A:422:LEU:HD23	1:A:422:LEU:HA	1.89	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:375:PRO:O	1:A:408:LYS:HB2	2.21	0.40
1:A:439:TYR:HD1	1:A:439:TYR:HA	1.80	0.40
2:B:484:THR:O	2:B:484:THR:OG1	2.33	0.40
1:A:310:MET:H	1:A:310:MET:HG2	1.78	0.40
3:C:56:ASP:O	3:C:60:VAL:HG23	2.20	0.40
1:A:441:LEU:HD23	1:A:441:LEU:HA	1.91	0.40
1:A:587:ASN:O	1:A:590:PRO:HD2	2.22	0.40
1:A:212:LEU:HD23	1:A:212:LEU:HA	1.79	0.40
2:B:123:ILE:O	2:B:125:LYS:N	2.55	0.40
2:B:545:ASN:OD1	2:B:545:ASN:N	2.54	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	A	488/831 (59%)	448 (92%)	40 (8%)	0	100	100
2	B	534/748 (71%)	485 (91%)	49 (9%)	0	100	100
3	C	95/219 (43%)	93 (98%)	2 (2%)	0	100	100
4	E	70/244 (29%)	69 (99%)	1 (1%)	0	100	100
5	D	89/113 (79%)	81 (91%)	8 (9%)	0	100	100
All	All	1276/2155 (59%)	1176 (92%)	100 (8%)	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	A	467/777 (60%)	422 (90%)	45 (10%)	7 23
2	B	491/683 (72%)	449 (91%)	42 (9%)	8 28
3	C	94/201 (47%)	90 (96%)	4 (4%)	25 51
4	E	66/219 (30%)	59 (89%)	7 (11%)	5 19
5	D	86/100 (86%)	84 (98%)	2 (2%)	45 67
All	All	1204/1980 (61%)	1104 (92%)	100 (8%)	12 29

All (100) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	116	VAL
1	A	122	SER
1	A	137	VAL
1	A	143	ASN
1	A	158	ARG
1	A	191	GLN
1	A	194	VAL
1	A	232	THR
1	A	241	CYS
1	A	243	HIS
1	A	277	LEU
1	A	297	ASN
1	A	300	VAL
1	A	310	MET
1	A	320	GLN
1	A	323	CYS
1	A	324	LEU
1	A	331	ASN
1	A	333	ILE
1	A	339	LEU
1	A	341	VAL
1	A	350	VAL
1	A	372	ASP
1	A	401	VAL
1	A	425	TYR
1	A	427	ARG
1	A	434	LEU
1	A	445	GLU

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Mol	Chain	Res	Type
1	A	457	ASP
1	A	469	ILE
1	A	502	ILE
1	A	511	THR
1	A	519	GLN
1	A	523	LEU
1	A	540	ILE
1	A	563	ARG
1	A	574	ILE
1	A	575	ILE
1	A	576	LEU
1	A	663	LEU
1	A	664	THR
1	A	665	GLU
1	A	672	ASN
1	A	679	ILE
1	A	698	ARG
2	B	18	PHE
2	B	68	THR
2	B	83	VAL
2	B	84	LEU
2	B	96	ILE
2	B	98	THR
2	B	101	LEU
2	B	123	ILE
2	B	134	GLN
2	B	182	LYS
2	B	189	GLU
2	B	190	GLN
2	B	228	LYS
2	B	233	THR
2	B	251	LEU
2	B	256	ASP
2	B	270	LEU
2	B	279	THR
2	B	286	CYS
2	B	291	HIS
2	B	297	ILE
2	B	307	CYS
2	B	319	THR
2	B	323	CYS
2	B	337	SER

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Mol	Chain	Res	Type
2	B	342	ILE
2	B	365	GLN
2	B	369	VAL
2	B	376	CYS
2	B	415	CYS
2	B	417	ILE
2	B	423	ASN
2	B	436	HIS
2	B	437	LYS
2	B	444	GLN
2	B	460	LEU
2	B	484	THR
2	B	503	LEU
2	B	521	ASP
2	B	532	LEU
2	B	539	THR
2	B	598	ASP
3	C	19	SER
3	C	31	SER
3	C	75	LEU
3	C	104	THR
4	E	177	VAL
4	E	186	LEU
4	E	190	ASN
4	E	193	ASP
4	E	209	MET
4	E	212	THR
4	E	243	THR
5	D	46	HIS
5	D	68	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (38) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	191	GLN
1	A	243	HIS
1	A	279	ASN
1	A	297	ASN
1	A	393	GLN
1	A	410	ASN
1	A	412	ASN
1	A	426	GLN

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Mol	Chain	Res	Type
1	A	452	GLN
1	A	526	HIS
1	A	674	ASN
1	A	681	GLN
1	A	691	HIS
2	B	113	ASN
2	B	134	GLN
2	B	135	GLN
2	B	136	GLN
2	B	278	ASN
2	B	315	ASN
2	B	316	ASN
2	B	365	GLN
2	B	393	ASN
2	B	438	HIS
2	B	464	GLN
2	B	490	ASN
2	B	587	ASN
3	C	36	GLN
3	C	71	GLN
3	C	77	GLN
3	C	85	GLN
5	D	31	ASN
5	D	33	GLN
5	D	34	GLN
5	D	47	ASN
5	D	51	ASN
5	D	68	ASN
5	D	81	HIS
5	D	83	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 5 ligands modelled in this entry, 4 are monoatomic - leaving 1 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
7	ACO	A	902	-	45,53,53	3.57	22 (48%)	56,79,79	3.32	24 (42%)

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
7	ACO	A	902	-	-	21/47/67/67	0/3/3/3

All (22) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	902	ACO	O4B-C1B	12.12	1.58	1.41
7	A	902	ACO	C2B-C3B	-9.38	1.32	1.52
7	A	902	ACO	O4B-C4B	-7.72	1.27	1.45
7	A	902	ACO	C9P-N8P	6.11	1.46	1.33
7	A	902	ACO	OAP-CAP	-5.56	1.32	1.42
7	A	902	ACO	O5P-C5P	-5.06	1.13	1.23
7	A	902	ACO	P1A-O2A	-4.27	1.35	1.55
7	A	902	ACO	C5P-N4P	4.11	1.42	1.33
7	A	902	ACO	C5A-C4A	-3.96	1.30	1.40
7	A	902	ACO	O9P-C9P	-3.83	1.15	1.23
7	A	902	ACO	C3B-C4B	3.46	1.62	1.52
7	A	902	ACO	C5A-N7A	-3.27	1.27	1.39
7	A	902	ACO	P1A-O1A	-3.02	1.40	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	902	ACO	CDP-CBP	-2.97	1.47	1.53
7	A	902	ACO	P2A-O4A	-2.80	1.41	1.50
7	A	902	ACO	C2A-N3A	2.52	1.36	1.32
7	A	902	ACO	C6A-C5A	-2.38	1.34	1.43
7	A	902	ACO	C4A-N3A	-2.27	1.32	1.35
7	A	902	ACO	P3B-O9A	-2.26	1.46	1.54
7	A	902	ACO	P2A-O6A	2.25	1.68	1.59
7	A	902	ACO	P2A-O5A	-2.22	1.44	1.55
7	A	902	ACO	C7P-C6P	2.20	1.58	1.51

All (24) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	902	ACO	C1B-N9A-C4A	11.79	147.36	126.64
7	A	902	ACO	O4B-C1B-C2B	-6.92	96.81	106.93
7	A	902	ACO	OAP-CAP-CBP	-6.08	95.92	110.25
7	A	902	ACO	C5A-C6A-N6A	6.01	129.49	120.35
7	A	902	ACO	N3A-C2A-N1A	-5.48	120.11	128.68
7	A	902	ACO	CAP-C9P-N8P	5.38	127.29	116.58
7	A	902	ACO	CEP-CBP-CCP	-5.27	99.64	108.23
7	A	902	ACO	O9P-C9P-N8P	-5.18	111.86	122.99
7	A	902	ACO	C7P-C6P-C5P	-5.15	103.78	112.36
7	A	902	ACO	O2A-P1A-O1A	-4.77	88.65	112.24
7	A	902	ACO	CEP-CBP-CAP	4.67	116.91	108.82
7	A	902	ACO	C2P-C3P-N4P	-4.36	103.26	112.42
7	A	902	ACO	N6A-C6A-N1A	-4.09	110.09	118.57
7	A	902	ACO	C6P-C7P-N8P	-3.76	104.30	111.90
7	A	902	ACO	O5A-P2A-O4A	-3.69	93.97	112.24
7	A	902	ACO	O5B-P1A-O1A	3.68	123.45	109.07
7	A	902	ACO	C6P-C5P-N4P	3.58	122.45	116.42
7	A	902	ACO	C3P-N4P-C5P	-2.87	117.50	122.84
7	A	902	ACO	O5P-C5P-N4P	-2.72	117.88	123.01
7	A	902	ACO	O6A-P2A-O4A	2.37	118.33	109.07
7	A	902	ACO	C2P-S1P-C	2.35	114.03	101.68
7	A	902	ACO	O4B-C4B-C3B	-2.32	99.90	104.87
7	A	902	ACO	C7P-N8P-C9P	-2.29	118.50	122.59
7	A	902	ACO	P2A-O3A-P1A	-2.17	125.38	132.83

There are no chirality outliers.

All (21) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	A	902	ACO	C5B-O5B-P1A-O3A
7	A	902	ACO	CDP-CBP-CCP-O6A
7	A	902	ACO	CEP-CBP-CCP-O6A
7	A	902	ACO	CAP-CBP-CCP-O6A
7	A	902	ACO	O9P-C9P-CAP-CBP
7	A	902	ACO	N8P-C9P-CAP-CBP
7	A	902	ACO	N8P-C9P-CAP-OAP
7	A	902	ACO	C3P-C2P-S1P-C
7	A	902	ACO	O-C-S1P-C2P
7	A	902	ACO	CH3-C-S1P-C2P
7	A	902	ACO	O4B-C4B-C5B-O5B
7	A	902	ACO	C3B-C4B-C5B-O5B
7	A	902	ACO	O9P-C9P-CAP-OAP
7	A	902	ACO	CCP-O6A-P2A-O5A
7	A	902	ACO	S1P-C2P-C3P-N4P
7	A	902	ACO	C3B-O3B-P3B-O7A
7	A	902	ACO	C9P-CAP-CBP-CEP
7	A	902	ACO	C3B-O3B-P3B-O8A
7	A	902	ACO	C3B-O3B-P3B-O9A
7	A	902	ACO	CCP-O6A-P2A-O3A
7	A	902	ACO	C5B-O5B-P1A-O1A

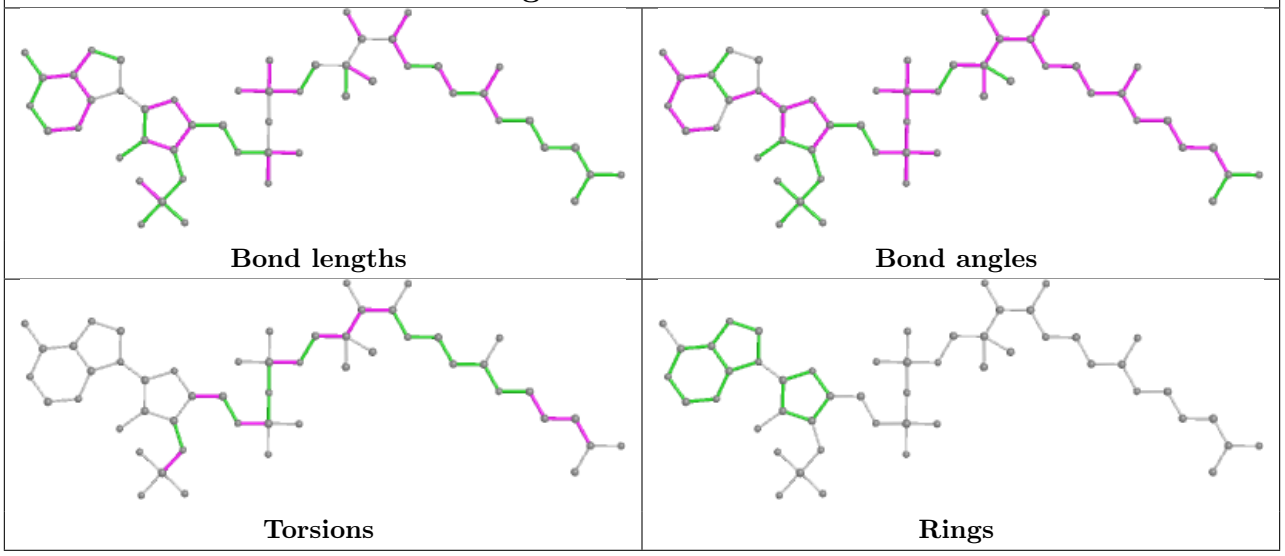
There are no ring outliers.

1 monomer is involved in 9 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	A	902	ACO	9	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand ACO A 902



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.

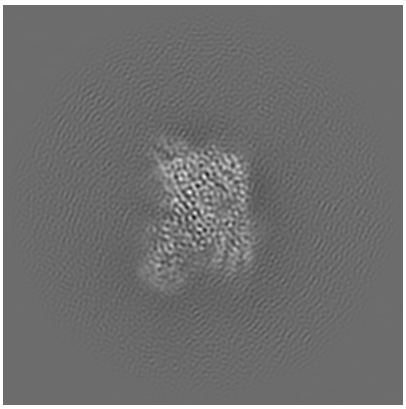
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-65145. These allow visual inspection of the internal detail of the map and identification of artifacts.

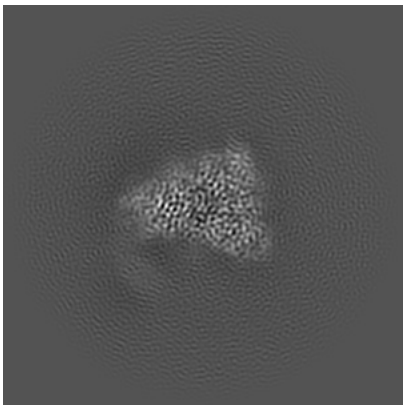
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

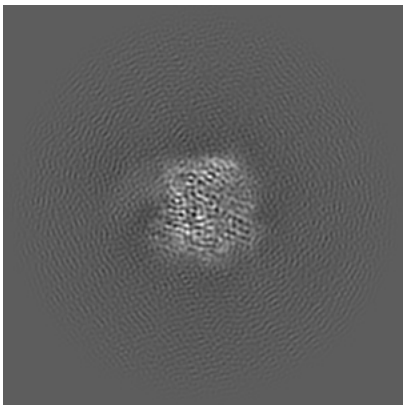
6.1.1 Primary map



X

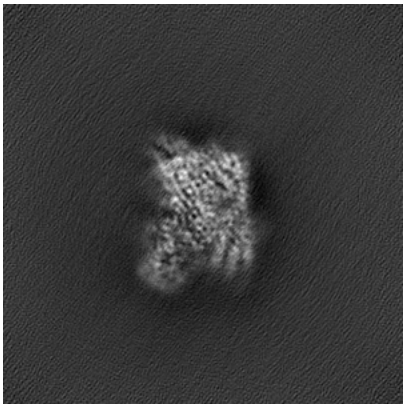


Y

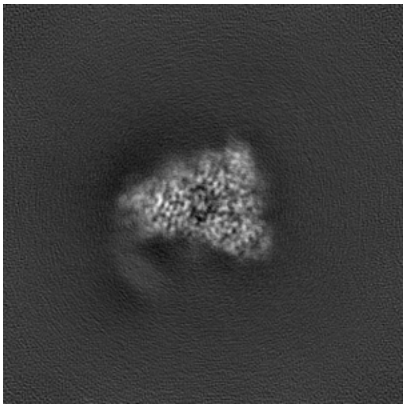


Z

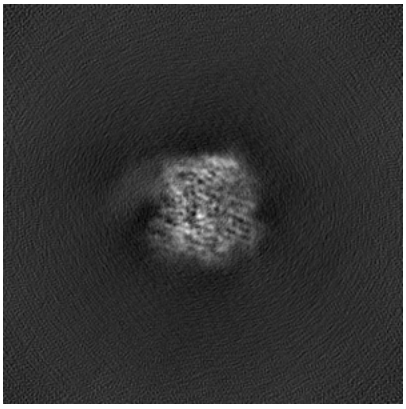
6.1.2 Raw map



X



Y

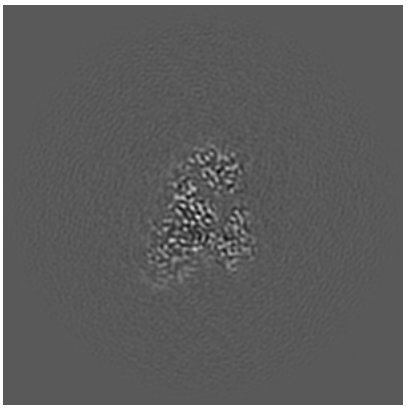


Z

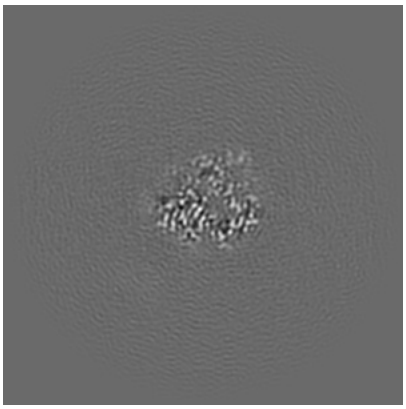
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

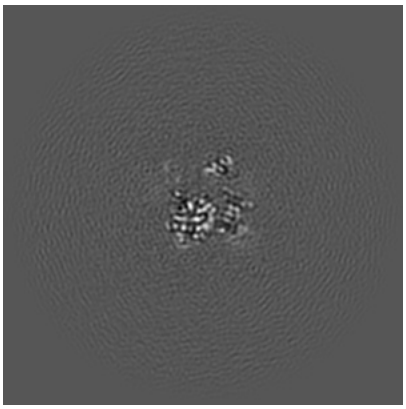
6.2.1 Primary map



X Index: 140

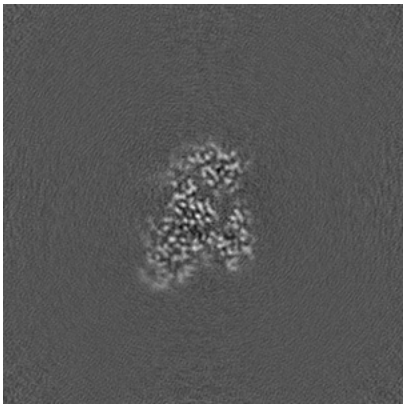


Y Index: 140

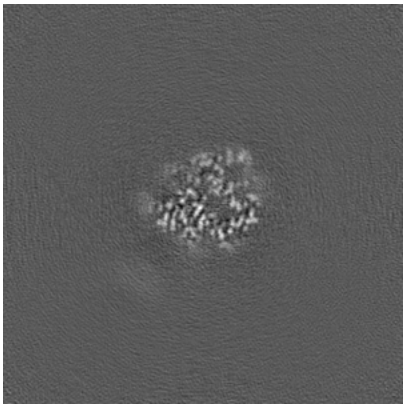


Z Index: 140

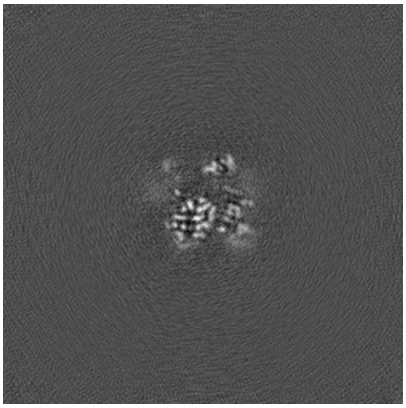
6.2.2 Raw map



X Index: 140



Y Index: 140

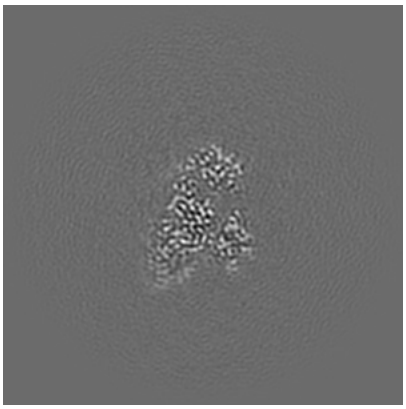


Z Index: 140

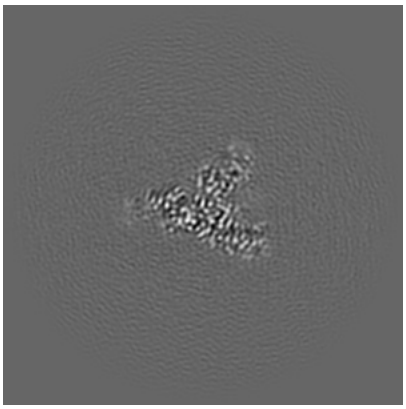
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

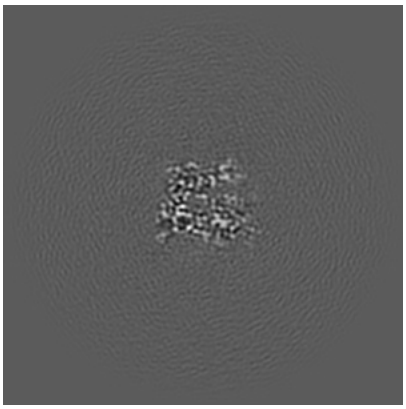
6.3.1 Primary map



X Index: 139

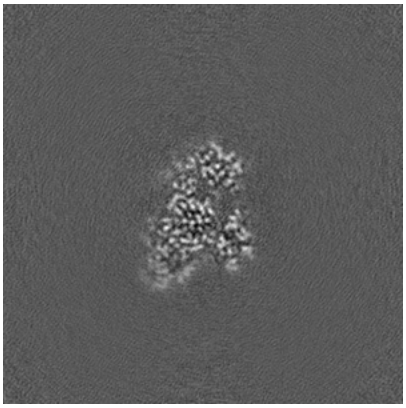


Y Index: 125

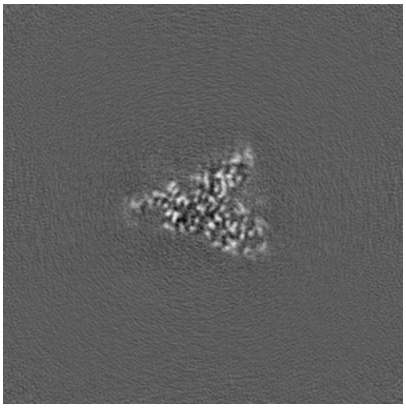


Z Index: 154

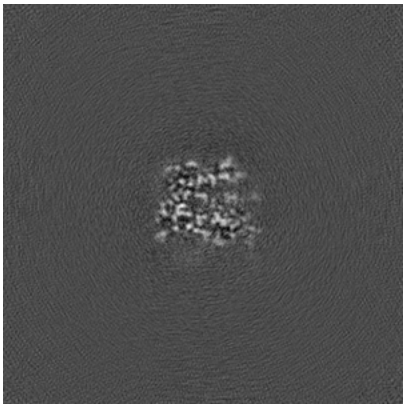
6.3.2 Raw map



X Index: 139



Y Index: 128

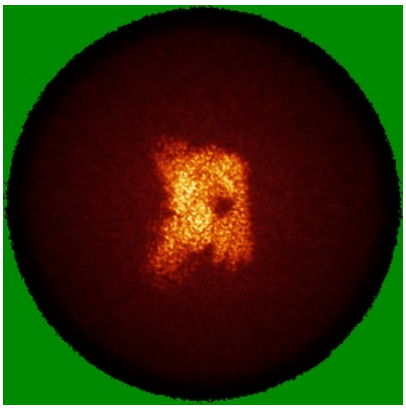


Z Index: 154

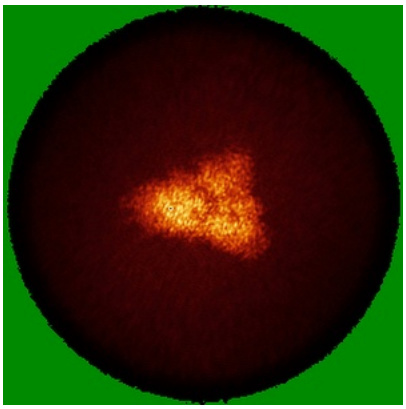
The images above show the largest variance slices of the map in three orthogonal directions.

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

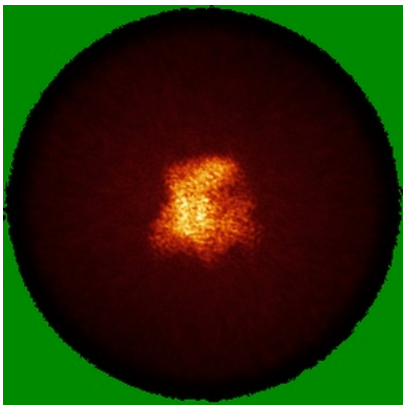
6.4.1 Primary map



X

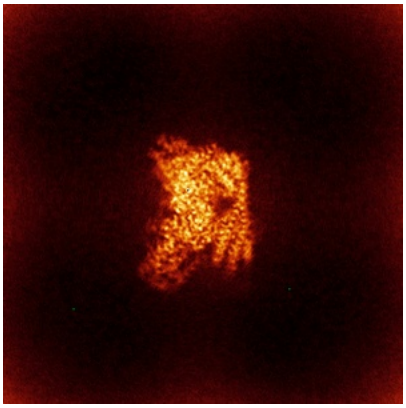


Y

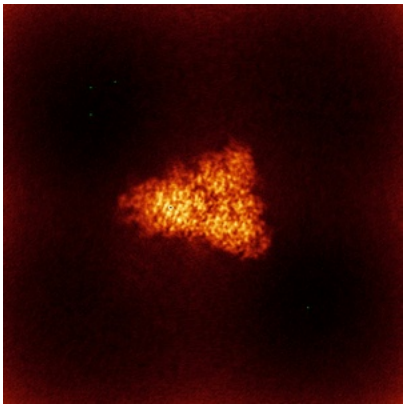


Z

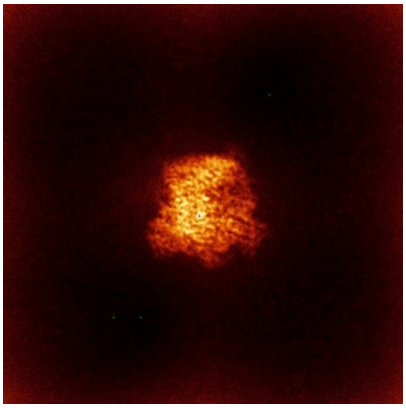
6.4.2 Raw map



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 0.18. 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.

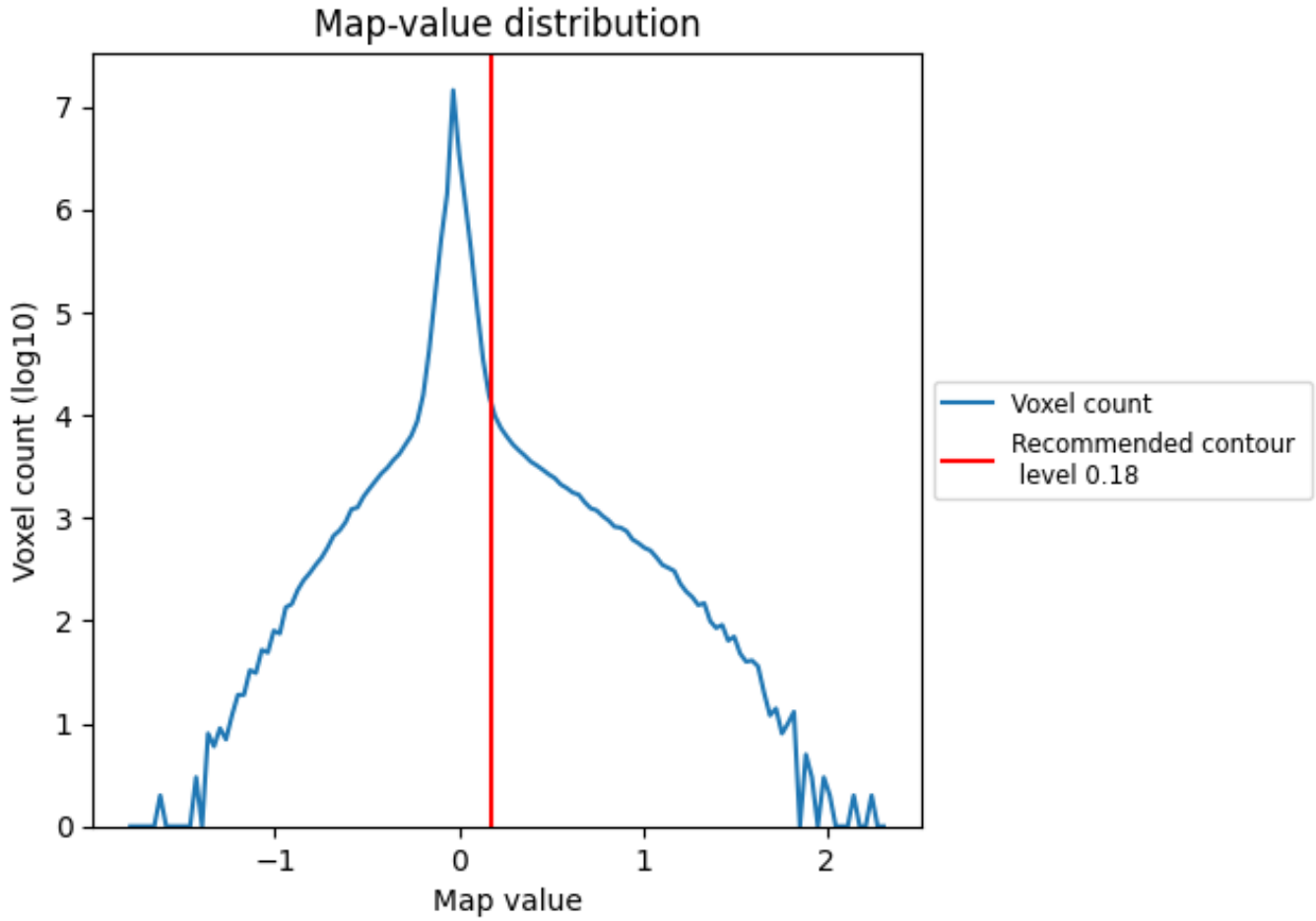
6.6 Mask visualisation (i)

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

7 Map analysis

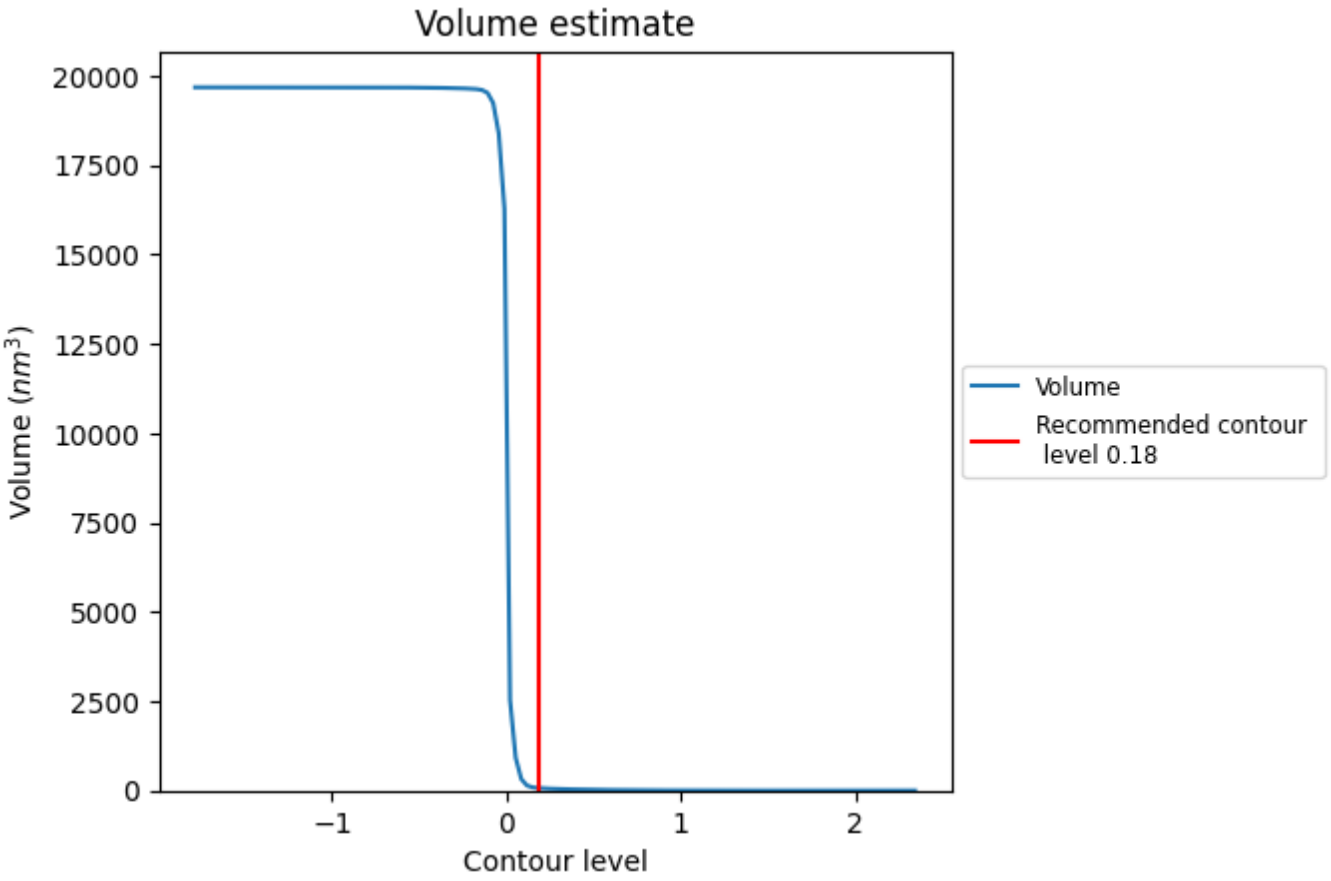
This section contains the results of statistical analysis of the map.

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.

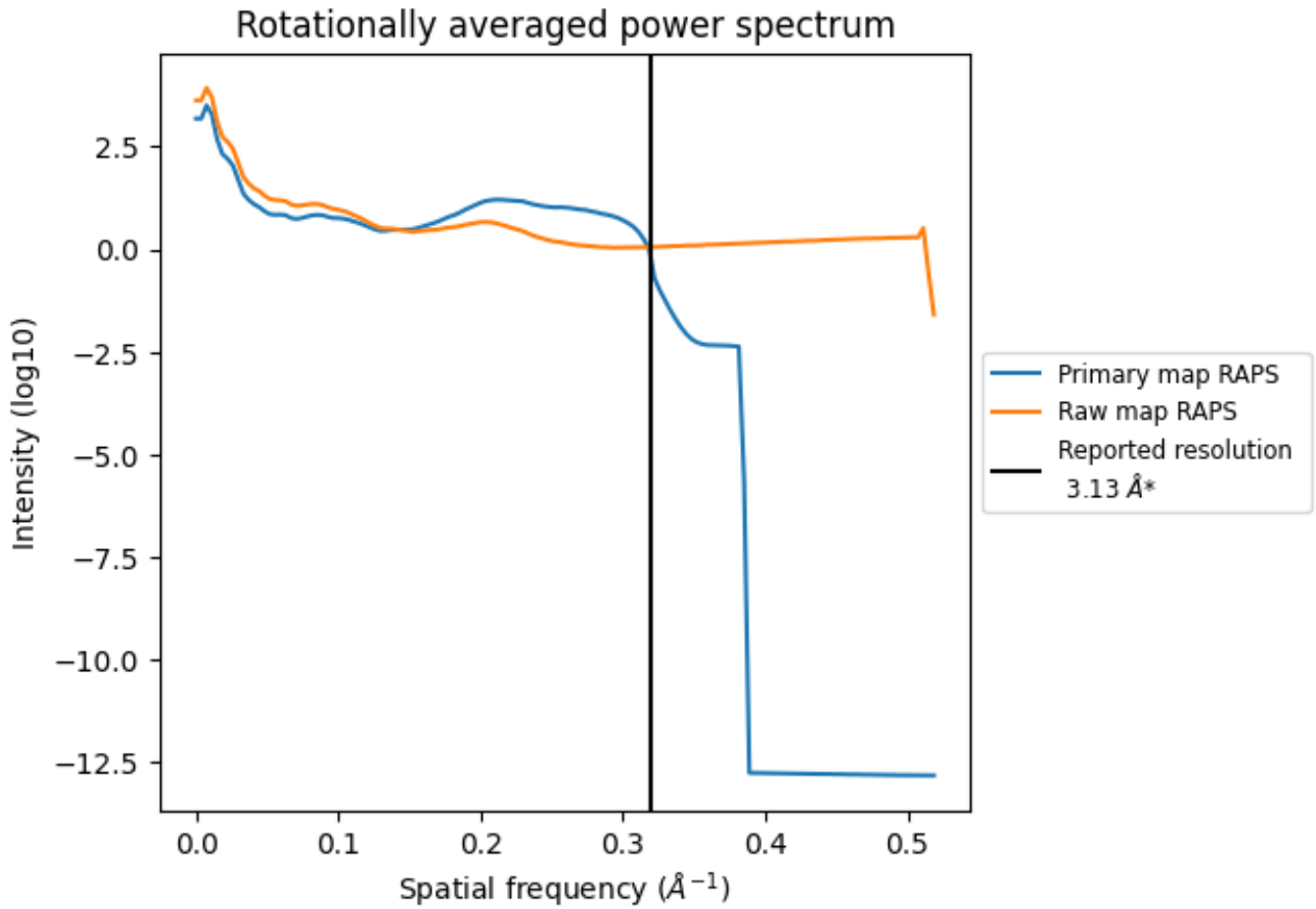
7.2 Volume estimate



The volume at the recommended contour level is 71 nm^3; this corresponds to an approximate mass of 65 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)

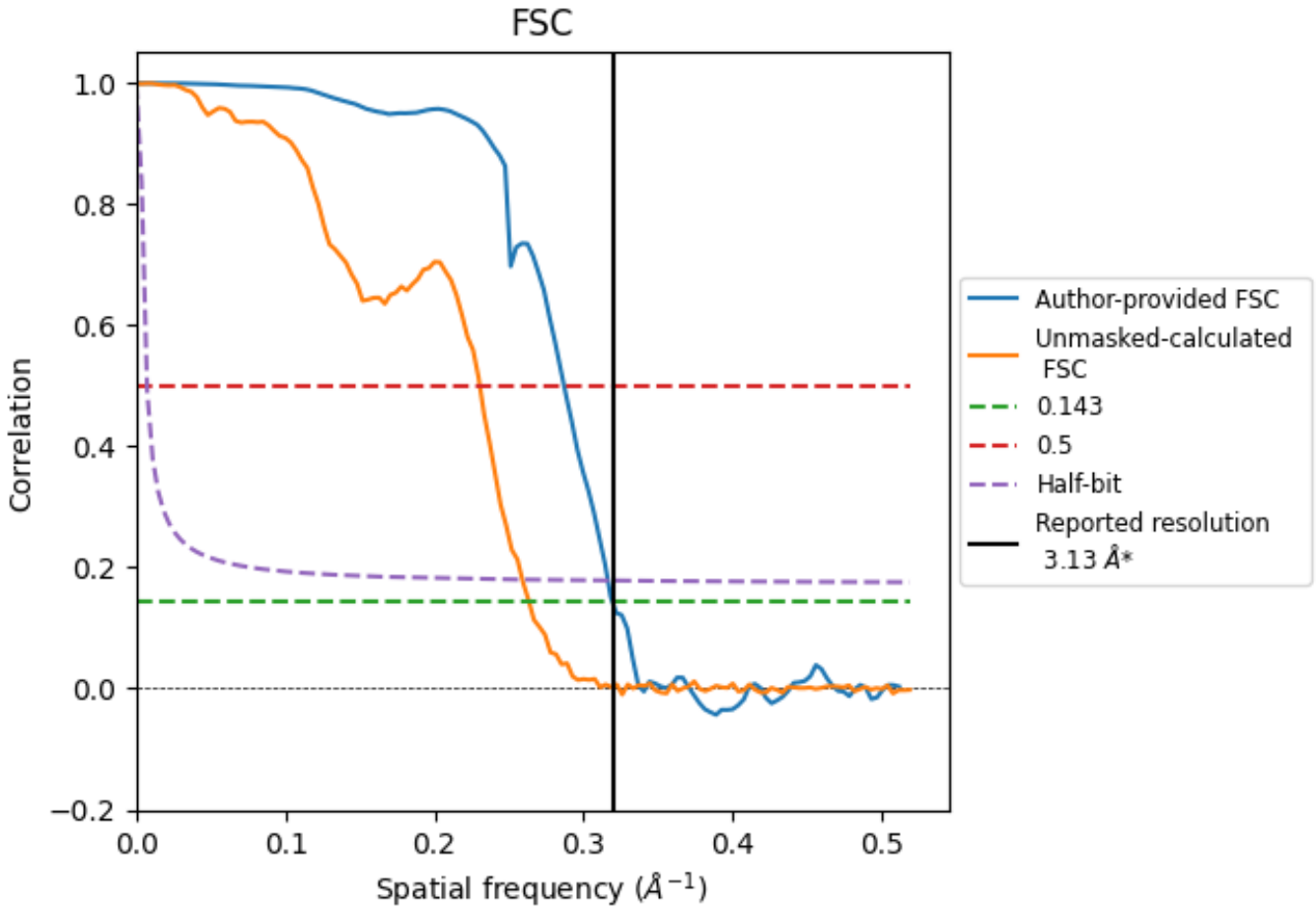


*Reported resolution corresponds to spatial frequency of 0.319 $Å^{-1}$

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 0.319 $Å^{-1}$

8.2 Resolution estimates (i)

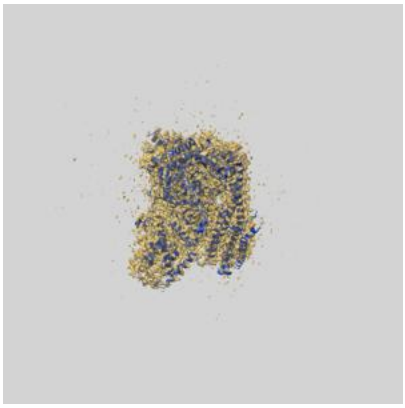
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.13	-	-
Author-provided FSC curve	3.13	3.49	3.16
Unmasked-calculated*	3.80	4.34	3.86

*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 3.80 differs from the reported value 3.13 by more than 10 %

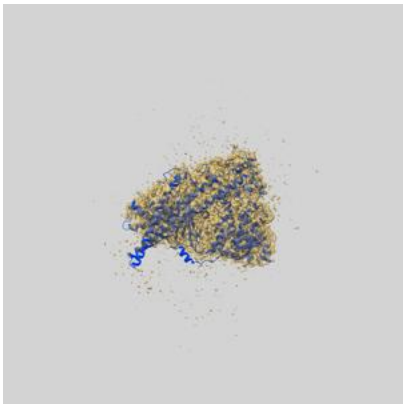
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-65145 and PDB model 9VKW. Per-residue inclusion information can be found in section 3 on page 6.

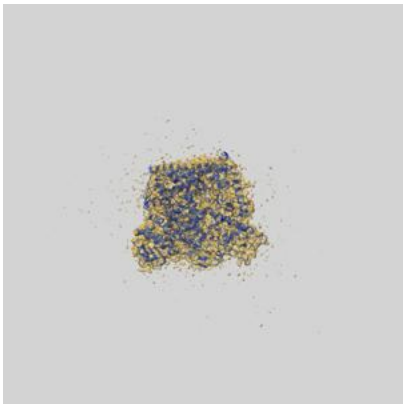
9.1 Map-model overlay



X



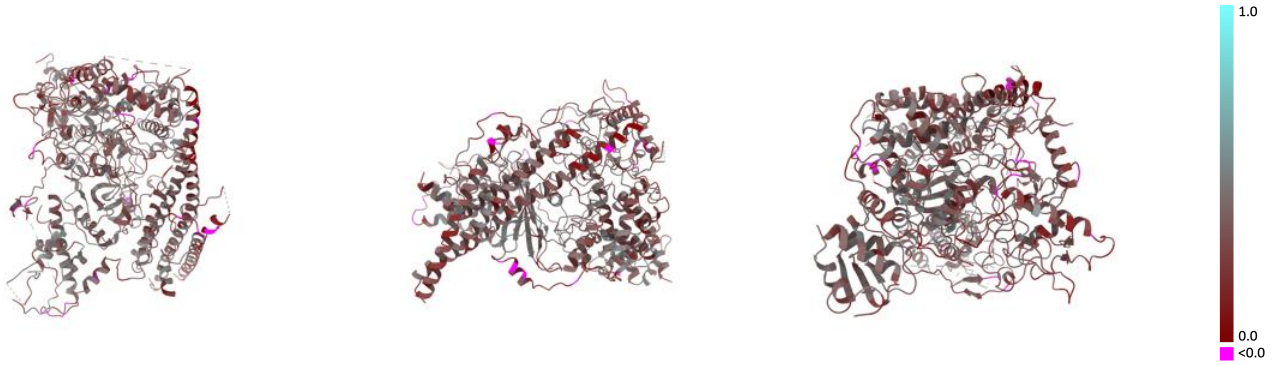
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.18 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.

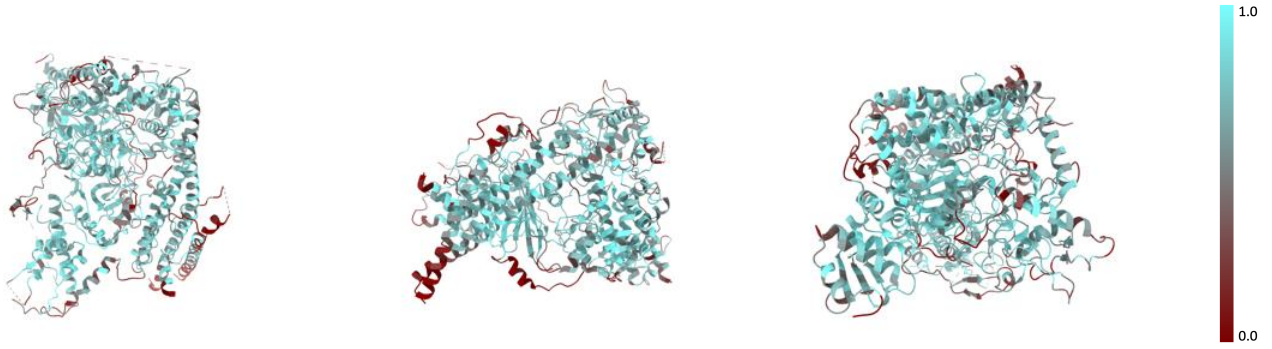
9.2 Q-score mapped to coordinate model (i)



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.

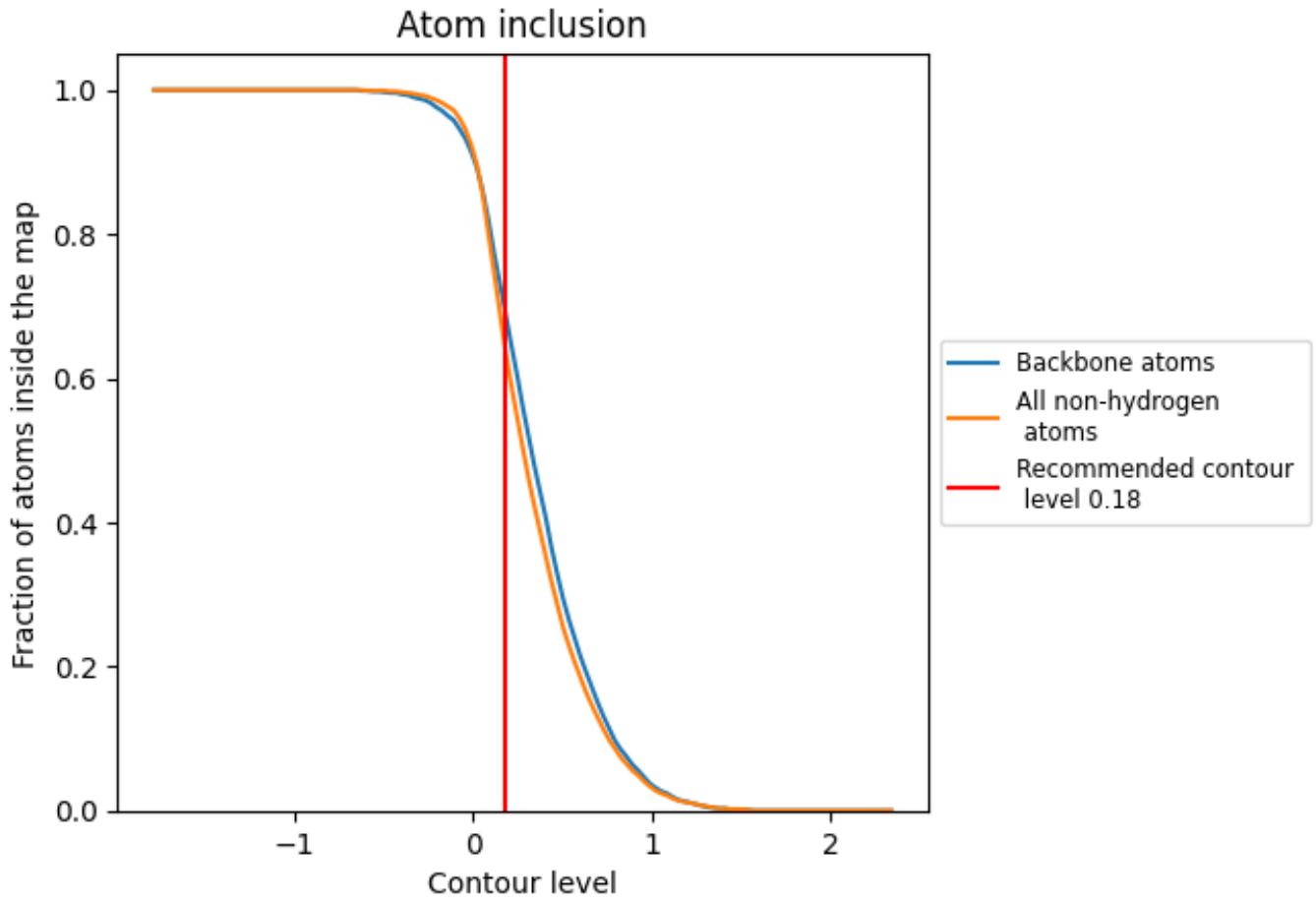
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.18).

9.4 Atom inclusion (i)



At the recommended contour level, 69% of all backbone atoms, 64% 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 (0.18) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6370	0.3290
A	0.6970	0.3550
B	0.6120	0.3120
C	0.6580	0.3090
D	0.4370	0.2790
E	0.6340	0.3620