



Full wwPDB EM Validation Report ⓘ

Mar 8, 2026 – 05:07 AM UTC

PDB ID : 8PSG / pdb_00008psg
EMDB ID : EMD-17852
Title : Asymmetric unit of the yeast fatty acid synthase in the semi non-rotated state
with ACP at the acetyl transferase domain (FASx sample)
Authors : Singh, K.; Bunzel, G.; Graf, B.; Yip, K.M.; Stark, H.; Chari, A.
Deposited on : 2023-07-13
Resolution : 3.70 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.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
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) : 2.49

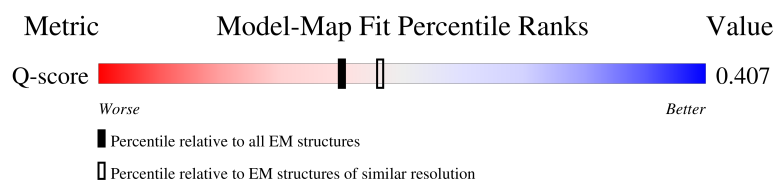
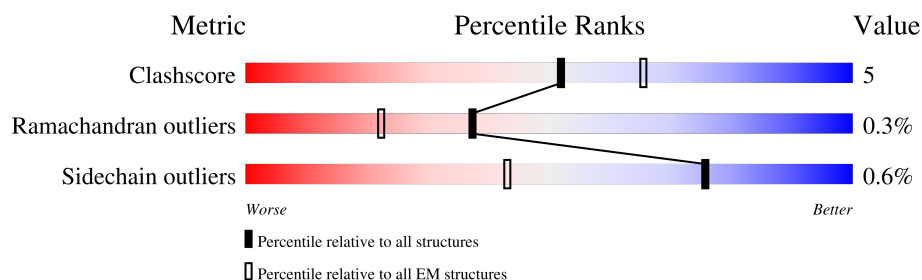
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.70 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	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	11569 (3.20 - 4.20)

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	A	1887	
1	B	1887	
2	G	2051	

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 29610 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.

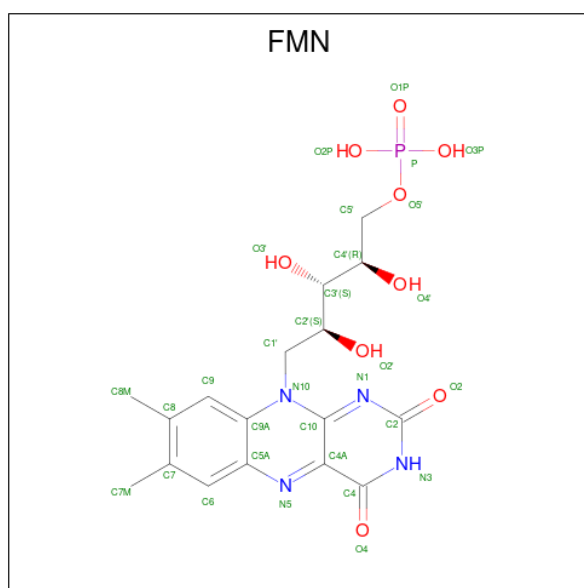
- Molecule 1 is a protein called Fatty acid synthase subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1579	Total	C	N	O	S	0	0
			12346	7817	2084	2398	47		
1	B	163	Total	C	N	O	S	0	0
			1223	775	205	240	3		

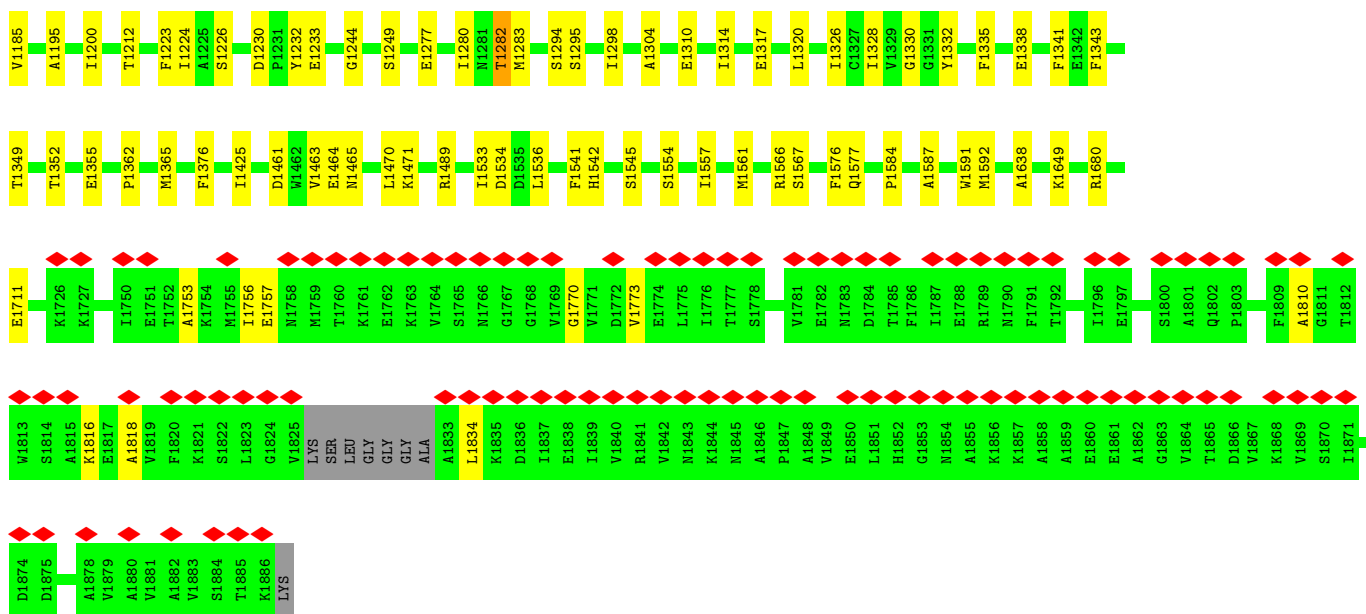
- Molecule 2 is a protein called Fatty acid synthase subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	G	2035	Total	C	N	O	S	0	0
			16010	10261	2662	3031	56		

- Molecule 3 is FLAVIN MONONUCLEOTIDE (CCD ID: FMN) (formula: $C_{17}H_{21}N_4O_9P$).

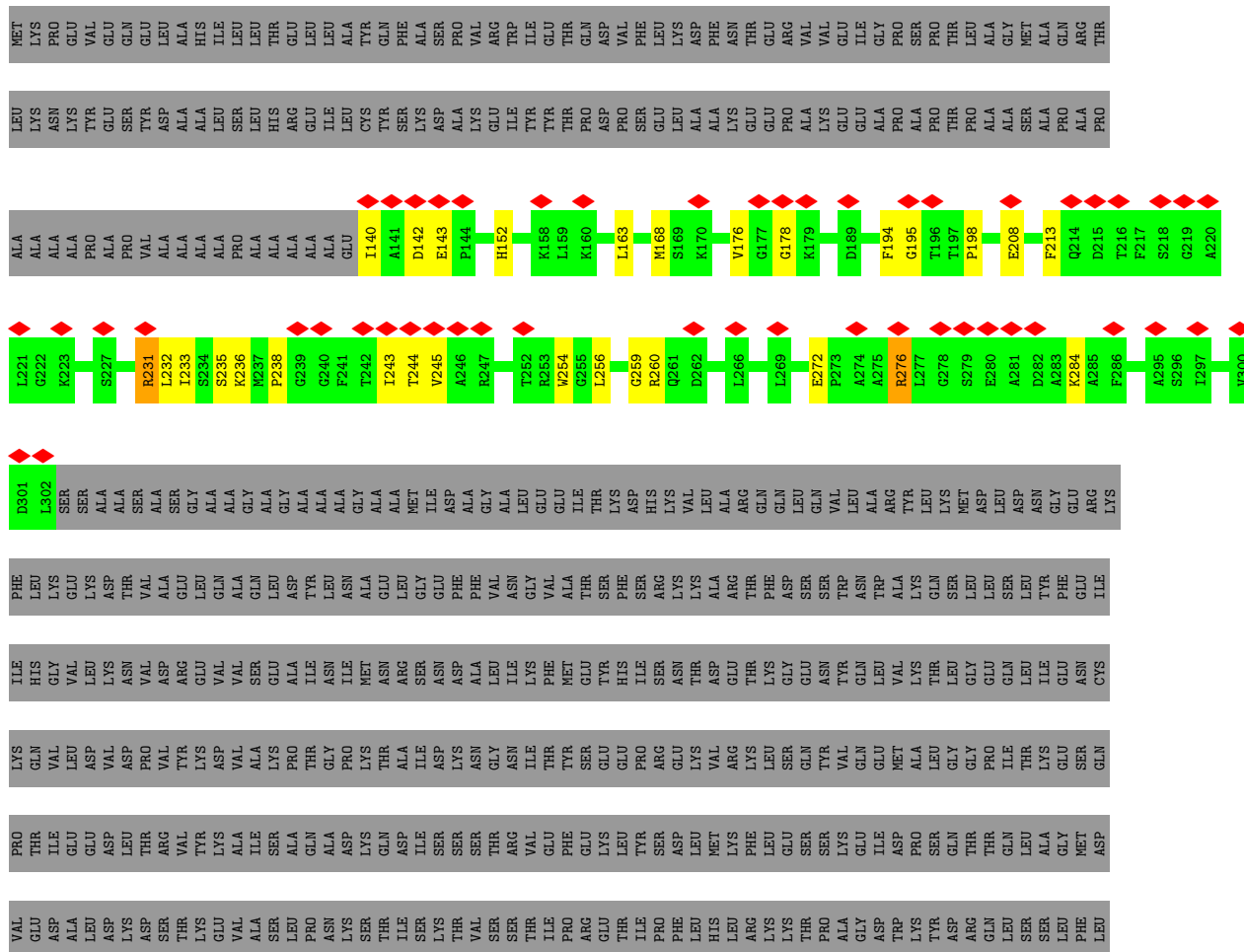


Mol	Chain	Residues	Atoms					AltConf
3	G	1	Total	C	N	O	P	0
			31	17	4	9	1	



- Molecule 1: Fatty acid synthase subunit alpha

Chain B: 7% 91%

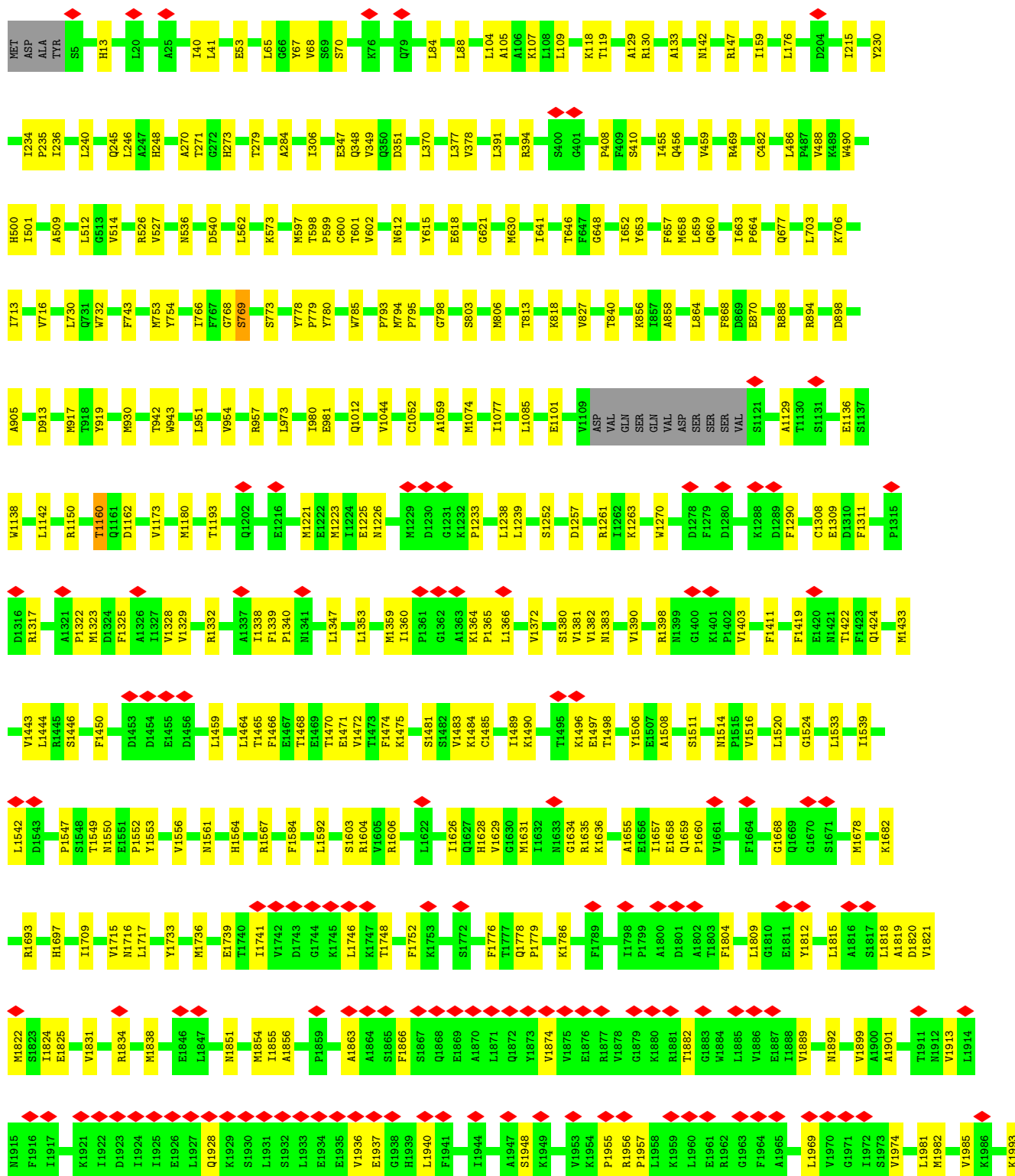


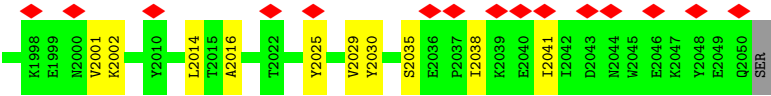


GLU
ALA
GLY
VAL
THR
ASP
VAL
LYS
VAL
SER
ILE
SER
HIS
ASP
ASP
LEU
GLN
ALA
VAL
VAL
ALA
VAL
ALA
VAL
VAL
VAL
SER
THR
LYS
LYS

• Molecule 2: Fatty acid synthase subunit beta

Chain G:  7% 83% 16%





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	31257	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 ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	5000	Depositor
Maximum defocus (nm)	25000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	0.124	Depositor
Minimum map value	-0.053	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.007	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	253.19998, 253.19998, 253.19998	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.055, 1.055, 1.055	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	1.02	2/12579 (0.0%)	1.52	15/17001 (0.1%)
1	B	1.04	0/1241	1.55	2/1675 (0.1%)
2	G	1.07	0/16375	1.52	14/22218 (0.1%)
All	All	1.05	2/30195 (0.0%)	1.52	31/40894 (0.1%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	1026	GLU	CD-OE1	6.79	1.38	1.25
1	A	1174	TYR	C-O	5.03	1.29	1.24

All (31) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	364	GLU	CB-CG-CD	8.94	127.80	112.60
1	A	1317	GLU	CB-CG-CD	7.15	124.76	112.60
1	A	1338	GLU	CB-CG-CD	6.94	124.40	112.60
1	A	1282	THR	CA-CB-OG1	-6.73	99.51	109.60
2	G	1820	ASP	CA-CB-CG	5.95	118.55	112.60
2	G	1982	MET	CA-C-N	5.60	127.79	120.28
2	G	1982	MET	C-N-CA	5.60	127.79	120.28
1	B	176	VAL	CA-C-N	5.60	127.19	120.13
1	B	176	VAL	C-N-CA	5.60	127.19	120.13
1	A	739	GLN	CA-C-N	5.52	126.23	119.99
1	A	739	GLN	C-N-CA	5.52	126.23	119.99
2	G	306	ILE	CA-C-N	5.52	126.21	120.03
2	G	306	ILE	C-N-CA	5.52	126.21	120.03
1	A	381	GLU	CB-CG-CD	5.35	121.70	112.60
1	A	1328	ILE	N-CA-C	-5.31	101.88	108.89
2	G	65	LEU	CA-C-N	5.28	125.84	119.98

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	G	65	LEU	C-N-CA	5.28	125.84	119.98
2	G	1160	THR	CB-CA-C	5.27	118.52	109.51
1	A	665	LYS	CA-C-N	5.18	127.22	120.28
1	A	665	LYS	C-N-CA	5.18	127.22	120.28
1	A	1711	GLU	CB-CG-CD	5.17	121.39	112.60
2	G	1955	PRO	CA-C-N	5.12	126.14	119.78
2	G	1955	PRO	C-N-CA	5.12	126.14	119.78
1	A	1376	PHE	CA-CB-CG	5.09	118.89	113.80
2	G	703	LEU	CA-C-N	5.08	124.80	119.92
2	G	703	LEU	C-N-CA	5.08	124.80	119.92
1	A	1810	ALA	CA-C-N	5.03	125.42	119.94
1	A	1810	ALA	C-N-CA	5.03	125.42	119.94
2	G	1937	GLU	CA-C-N	5.02	125.42	119.94
2	G	1937	GLU	C-N-CA	5.02	125.42	119.94
1	A	1330	GLY	CA-C-O	-5.00	118.57	122.52

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	12346	0	12279	117	0
1	B	1223	0	1265	14	0
2	G	16010	0	15989	194	0
3	G	31	0	19	3	0
All	All	29610	0	29552	318	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 (318) 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)
1:A:440:MET:HE1	1:A:479:ASN:HB3	1.41	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:413:LEU:HD11	1:A:451:MET:SD	2.15	0.85
1:A:1057:MET:HE1	1:A:1097:ILE:HA	1.62	0.80
2:G:888:ARG:NH2	2:G:913:ASP:OD1	2.20	0.75
1:B:254:TRP:HB3	1:B:256:LEU:HD23	1.71	0.71
2:G:1786:LYS:HG2	2:G:1824:ILE:HD13	1.71	0.70
1:B:152:HIS:NE2	1:B:163:LEU:O	2.23	0.69
1:B:256:LEU:HD12	1:B:260:ARG:HG3	1.75	0.68
2:G:1381:VAL:HG13	2:G:1422:THR:HA	1.78	0.66
1:A:630:ILE:O	1:A:653:ARG:NH2	2.29	0.65
1:A:1362:PRO:HA	1:A:1365:MET:HE2	1.78	0.65
1:A:61:LEU:HA	1:A:65:TYR:HB2	1.79	0.65
2:G:1308:CYS:HB3	2:G:1311:PHE:CD2	2.32	0.64
2:G:894:ARG:NH1	2:G:898:ASP:OD2	2.32	0.62
2:G:1889:VAL:HG11	2:G:1901:ALA:HB3	1.81	0.62
2:G:1309:GLU:O	2:G:1317:ARG:NH2	2.31	0.62
2:G:1364:LYS:O	2:G:1398:ARG:NH2	2.33	0.62
1:A:1249:SER:HB2	1:A:1332:TYR:CE2	2.34	0.62
2:G:370:LEU:HD13	2:G:488:VAL:HB	1.80	0.61
2:G:1709:ILE:HD11	2:G:1717:LEU:HD22	1.82	0.61
2:G:653:TYR:HA	2:G:659:LEU:HD11	1.83	0.61
2:G:1854:MET:HB2	2:G:1969:LEU:HB2	1.83	0.61
2:G:234:ILE:HG13	2:G:235:PRO:HD3	1.84	0.60
2:G:159:ILE:HA	2:G:271:THR:O	2.02	0.60
2:G:1142:LEU:O	2:G:1150:ARG:NH2	2.34	0.60
2:G:754:TYR:OH	2:G:795:PRO:O	2.17	0.60
1:A:500:LYS:HD2	1:A:514:GLU:HG3	1.83	0.60
2:G:370:LEU:HB2	2:G:378:VAL:HB	1.82	0.60
2:G:713:ILE:HG21	2:G:753:MET:HG2	1.83	0.60
2:G:1821:VAL:HG12	2:G:2001:VAL:HA	1.85	0.59
2:G:652:ILE:HG12	2:G:658:MET:HE1	1.86	0.58
1:A:1036:ARG:NH1	1:A:1040:GLU:OE1	2.37	0.58
2:G:1339:PHE:N	2:G:1340:PRO:HD2	2.18	0.58
2:G:599:PRO:O	2:G:602:VAL:HG22	2.03	0.57
2:G:1819:ALA:HB1	2:G:1821:VAL:HG13	1.84	0.57
1:A:9:LEU:HD11	2:G:2041:ILE:HG21	1.85	0.57
1:A:436:ALA:O	1:A:440:MET:HG2	2.04	0.57
2:G:1365:PRO:HG3	2:G:1603:SER:HA	1.86	0.57
2:G:348:GLN:O	2:G:351:ASP:HB3	2.05	0.57
1:A:17:LEU:HD23	2:G:2014:LEU:HD23	1.86	0.57
1:A:1577:GLN:HE22	1:A:1591:TRP:C	2.13	0.57
2:G:1433:MET:HE1	2:G:1444:LEU:HD21	1.85	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:1380:SER:HB3	2:G:1424:GLN:HA	1.85	0.57
2:G:1483:VAL:HG21	2:G:1511:SER:HB2	1.86	0.57
1:A:1294:SER:OG	1:A:1295:SER:N	2.38	0.57
1:A:500:LYS:NZ	1:A:514:GLU:HB2	2.20	0.56
2:G:13:HIS:HB2	2:G:41:LEU:HD21	1.87	0.56
2:G:1383:ASN:HB2	2:G:1419:PHE:CE1	2.40	0.56
2:G:1366:LEU:HD22	2:G:1372:VAL:HG21	1.87	0.56
1:A:409:ALA:HB1	1:A:447:LEU:HD12	1.86	0.56
2:G:1804:PHE:CD1	2:G:1818:LEU:HG	2.41	0.56
1:B:194:PHE:HD2	1:B:213:PHE:CD1	2.23	0.56
1:A:945:LYS:HA	1:A:948:VAL:HG12	1.86	0.56
2:G:1173:VAL:O	2:G:1567:ARG:NH2	2.38	0.56
1:A:888:ILE:HD11	1:A:940:THR:HG22	1.88	0.55
1:B:143:GLU:O	1:B:260:ARG:NH2	2.39	0.55
2:G:1668:GLY:HA2	2:G:1809:LEU:HB2	1.87	0.55
1:A:679:LEU:HD12	1:A:704:VAL:O	2.06	0.55
2:G:1338:ILE:HG22	2:G:1390:VAL:HG21	1.89	0.55
1:A:1534:ASP:OD2	1:A:1567:SER:OG	2.22	0.55
2:G:856:LYS:NZ	2:G:1052:CYS:SG	2.61	0.55
2:G:766:ILE:HD12	2:G:798:GLY:HA3	1.89	0.55
1:A:1542:HIS:HA	1:A:1592:MET:HE1	1.89	0.55
2:G:780:TYR:HA	2:G:785:TRP:CD1	2.42	0.54
1:A:1244:GLY:N	1:A:1326:ILE:O	2.38	0.54
2:G:905:ALA:HA	2:G:917:MET:CE	2.38	0.54
2:G:1863:ALA:HB3	2:G:1866:PHE:HB2	1.90	0.54
1:A:641:ARG:NH2	1:A:925:ASP:OD2	2.41	0.54
2:G:1323:MET:HE2	2:G:1365:PRO:HB3	1.89	0.54
2:G:1928:GLN:HB3	2:G:1936:VAL:HG21	1.89	0.54
1:A:440:MET:CE	1:A:479:ASN:HB3	2.27	0.53
1:A:740:GLY:O	1:A:793:ARG:NH1	2.40	0.53
1:A:1310:GLU:O	1:A:1314:ILE:HG12	2.08	0.53
1:A:1464:GLU:HG3	1:A:1773:VAL:HG22	1.91	0.53
2:G:1263:LYS:HZ3	2:G:1347:LEU:HD11	1.73	0.53
1:A:56:MET:HE3	2:G:1892:ASN:HB3	1.90	0.53
2:G:600:CYS:SG	2:G:806:MET:HE3	2.49	0.53
2:G:706:LYS:NZ	3:G:2101:FMN:O2'	2.42	0.53
2:G:1520:LEU:O	2:G:1524:GLY:N	2.42	0.53
1:A:671:VAL:HG21	1:A:910:THR:HG22	1.91	0.53
1:A:702:LYS:HG3	1:A:731:THR:HB	1.91	0.53
1:A:872:THR:HA	1:A:896:PHE:O	2.07	0.53
2:G:1736:MET:HE2	2:G:1752:PHE:HE2	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:1359:MET:HB3	2:G:1606:ARG:HA	1.91	0.53
1:A:883:ILE:HG13	1:A:884:ILE:HG23	1.91	0.52
1:A:340:ARG:O	1:A:344:GLN:HG2	2.10	0.52
1:A:529:MET:HE1	1:A:894:ARG:HG2	1.92	0.52
2:G:1270:TRP:O	2:G:1332:ARG:NH1	2.40	0.52
2:G:273:HIS:HB2	2:G:512:LEU:HD22	1.90	0.52
1:A:873:ARG:NH1	1:A:895:THR:O	2.43	0.52
2:G:562:LEU:HD12	2:G:793:PRO:HG2	1.92	0.52
2:G:1380:SER:CB	2:G:1424:GLN:HA	2.40	0.52
2:G:105:ALA:HB1	2:G:119:THR:HB	1.92	0.52
1:A:1283:MET:SD	1:A:1283:MET:N	2.84	0.51
2:G:773:SER:HA	2:G:1077:ILE:HD12	1.92	0.51
1:A:1542:HIS:N	1:A:1592:MET:HE1	2.26	0.51
2:G:1539:ILE:HD11	2:G:1628:HIS:HB2	1.92	0.51
2:G:1360:ILE:O	2:G:1606:ARG:NH2	2.44	0.51
2:G:1856:ALA:HB2	2:G:1969:LEU:HD21	1.93	0.50
1:A:1541:PHE:C	1:A:1592:MET:HE1	2.37	0.50
1:A:438:ASN:OD1	1:A:698:GLN:NE2	2.45	0.50
1:A:1119:LYS:HE2	1:A:1341:PHE:CG	2.47	0.50
1:A:15:THR:HG21	2:G:1993:LYS:HE3	1.92	0.50
1:A:1277:GLU:HA	1:A:1282:THR:HG21	1.94	0.50
2:G:1129:ALA:HB3	2:G:1180:MET:HB2	1.94	0.50
2:G:1322:PRO:HG2	2:G:1325:PHE:HB2	1.94	0.50
1:A:28:TRP:CZ3	1:A:31:THR:HG21	2.46	0.50
2:G:942:THR:HB	2:G:1012:GLN:HB2	1.93	0.50
1:A:1280:ILE:HA	1:A:1283:MET:HE1	1.94	0.49
1:A:1249:SER:HB3	1:A:1280:ILE:HG23	1.93	0.49
2:G:615:TYR:CE2	2:G:1074:MET:HB3	2.46	0.49
2:G:1129:ALA:HB2	2:G:1138:TRP:CH2	2.47	0.49
2:G:1739:GLU:HG2	2:G:1748:THR:HA	1.92	0.49
2:G:1981:LEU:O	2:G:1985:VAL:HG23	2.12	0.49
1:A:409:ALA:HB1	1:A:447:LEU:CD1	2.42	0.49
2:G:573:LYS:HG3	2:G:1101:GLU:HA	1.95	0.49
1:B:142:ASP:HA	1:B:260:ARG:HH12	1.78	0.49
1:A:1542:HIS:CA	1:A:1592:MET:HE1	2.42	0.49
2:G:109:LEU:HG	2:G:119:THR:HG21	1.95	0.49
1:A:500:LYS:HD2	1:A:514:GLU:CG	2.42	0.49
2:G:1678:MET:O	2:G:1682:LYS:HG3	2.13	0.49
1:A:1470:LEU:HD13	1:A:1489:ARG:HG2	1.94	0.49
1:A:1561:MET:CE	1:A:1566:ARG:HD3	2.42	0.48
2:G:657:PHE:O	2:G:660:GLN:HG3	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:827:VAL:HG11	2:G:840:THR:HG22	1.95	0.48
2:G:1223:MET:HE1	2:G:1238:LEU:HG	1.94	0.48
2:G:1424:GLN:HB3	2:G:1472:VAL:HB	1.94	0.48
1:A:819:PRO:HB3	1:A:860:ASN:O	2.13	0.48
1:B:198:PRO:HD3	1:B:213:PHE:HE2	1.78	0.48
2:G:1553:TYR:HA	2:G:1556:VAL:HG22	1.95	0.48
2:G:1635:ARG:HG2	2:G:1658:GLU:HA	1.95	0.48
2:G:2030:TYR:HB2	2:G:2038:ILE:HG21	1.95	0.48
1:A:58:GLN:HG3	1:A:78:ILE:HG21	1.96	0.48
1:A:752:ILE:HA	1:A:761:LEU:HD12	1.95	0.48
1:A:826:MET:HE1	1:A:850:PHE:CE2	2.48	0.48
2:G:246:LEU:HD22	2:G:279:THR:HG23	1.95	0.48
1:A:795:MET:O	1:A:799:ILE:HD12	2.14	0.48
2:G:142:ASN:O	2:G:147:ARG:NH2	2.45	0.48
2:G:713:ILE:HD11	2:G:732:TRP:CE3	2.48	0.48
2:G:1490:LYS:HB3	2:G:1498:THR:HB	1.95	0.48
2:G:1496:LYS:HD3	2:G:2002:LYS:HE2	1.95	0.47
2:G:1561:ASN:HB3	2:G:1564:HIS:CD2	2.49	0.47
1:A:706:THR:HB	1:A:737:PHE:HB3	1.96	0.47
2:G:1466:PHE:HB3	2:G:1468:THR:HG23	1.96	0.47
1:A:499:PRO:HD3	1:A:873:ARG:CZ	2.45	0.47
2:G:1226:ASN:HA	2:G:1233:PRO:HB3	1.96	0.47
1:A:1066:ASN:HA	1:A:1071:PRO:HA	1.97	0.47
1:A:1233:GLU:OE1	1:A:1680:ARG:NH2	2.42	0.47
2:G:597:MET:HA	3:G:2101:FMN:N5	2.29	0.47
2:G:813:THR:HG23	2:G:818:LYS:HG3	1.96	0.47
2:G:864:LEU:HD11	2:G:868:PHE:CZ	2.49	0.47
2:G:1634:GLY:O	2:G:1659:GLN:NE2	2.48	0.47
2:G:1604:ARG:NH1	2:G:1660:PRO:HG3	2.30	0.47
2:G:284:ALA:HB1	2:G:455:ILE:HG23	1.96	0.47
3:G:2101:FMN:O3P	3:G:2101:FMN:O4'	2.32	0.47
2:G:905:ALA:HA	2:G:917:MET:HE3	1.97	0.47
2:G:1471:GLU:HG3	2:G:1484:LYS:HB3	1.97	0.47
2:G:1741:ILE:HD11	2:G:1746:LEU:HD23	1.96	0.47
2:G:1221:MET:HE1	2:G:1223:MET:SD	2.55	0.46
2:G:1539:ILE:HD12	2:G:1626:ILE:HG22	1.96	0.46
2:G:391:LEU:O	2:G:394:ARG:HG2	2.16	0.46
1:A:20:TYR:HA	1:A:23:ALA:HB3	1.97	0.46
2:G:1776:PHE:C	2:G:1779:PRO:HD2	2.41	0.46
1:A:679:LEU:O	1:A:679:LEU:HG	2.16	0.46
1:A:1223:PHE:O	1:A:1224:ILE:C	2.59	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1471:LYS:HB2	1:A:1756:ILE:HD11	1.97	0.46
1:A:1533:ILE:HG13	1:A:1561:MET:HE1	1.98	0.46
2:G:456:GLN:O	2:G:469:ARG:NH1	2.48	0.46
1:A:1230:ASP:C	1:A:1230:ASP:OD1	2.59	0.46
2:G:536:ASN:ND2	2:G:540:ASP:OD1	2.48	0.46
2:G:1239:LEU:H	2:G:1261:ARG:HH12	1.63	0.46
1:A:681:THR:OG1	1:A:770:PRO:HA	2.16	0.46
1:A:828:PRO:HG3	1:A:927:ASN:OD1	2.16	0.45
2:G:1550:ASN:ND2	2:G:1564:HIS:O	2.37	0.45
2:G:716:VAL:HG11	2:G:730:LEU:HD12	1.97	0.45
2:G:612:ASN:HD21	2:G:641:ILE:HA	1.81	0.45
2:G:618:GLU:HA	2:G:648:GLY:O	2.16	0.45
2:G:754:TYR:CB	2:G:794:MET:HE3	2.46	0.45
2:G:778:TYR:HE2	2:G:1085:LEU:HD12	1.82	0.45
2:G:482:CYS:HA	2:G:486:LEU:HB2	1.98	0.45
1:A:30:GLU:OE2	2:G:2016:ALA:HB3	2.17	0.45
1:B:231:ARG:HE	1:B:231:ARG:HB3	1.45	0.45
2:G:501:ILE:HB	2:G:527:VAL:HG22	1.99	0.45
1:A:1232:TYR:O	1:A:1233:GLU:C	2.59	0.45
2:G:1325:PHE:O	2:G:1328:VAL:HB	2.16	0.45
2:G:1733:TYR:HD1	2:G:1752:PHE:CE2	2.34	0.45
2:G:1715:VAL:HG23	2:G:1716:ASN:HD22	1.80	0.45
2:G:234:ILE:N	2:G:235:PRO:CD	2.80	0.45
2:G:270:ALA:O	2:G:459:VAL:HA	2.17	0.45
2:G:646:THR:OG1	2:G:677:GLN:HB2	2.17	0.45
1:A:1298:ILE:HG13	1:A:1298:ILE:O	2.18	0.44
2:G:1382:VAL:HG12	2:G:1474:PHE:CZ	2.52	0.44
1:A:753:TYR:CZ	1:A:764:ASP:HA	2.53	0.44
1:A:1117:GLU:O	1:A:1180:ARG:HD3	2.17	0.44
2:G:1697:HIS:CD2	2:G:1825:GLU:HB3	2.52	0.44
1:A:516:ARG:O	1:A:517:GLU:C	2.61	0.44
1:A:652:ASP:OD1	1:A:654:GLN:N	2.51	0.44
2:G:1150:ARG:HD2	2:G:1193:THR:HG21	1.99	0.44
2:G:1812:TYR:HE2	2:G:1834:ARG:HD3	1.83	0.44
1:B:194:PHE:CD2	1:B:213:PHE:CD1	3.04	0.44
2:G:1160:THR:HB	2:G:1252:SER:HA	2.00	0.44
2:G:1353:LEU:HD11	2:G:1411:PHE:HB2	2.00	0.44
2:G:1475:LYS:HD3	2:G:1481:SER:HB3	1.99	0.44
2:G:1485:CYS:HB3	2:G:1516:VAL:HG21	1.99	0.44
1:A:21:GLN:HA	1:A:21:GLN:NE2	2.33	0.44
2:G:778:TYR:HB3	2:G:779:PRO:HD3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:919:TYR:CD2	2:G:954:VAL:HG22	2.53	0.44
1:A:1064:ASN:OD1	1:A:1073:THR:HG22	2.18	0.43
2:G:1993:LYS:HE2	2:G:1993:LYS:HA	2.00	0.43
1:A:57:ALA:O	1:A:61:LEU:HG	2.18	0.43
1:A:1536:LEU:HA	1:A:1638:ALA:HB3	2.00	0.43
1:B:238:PRO:HA	1:B:276:ARG:HH22	1.83	0.43
2:G:40:ILE:HG13	2:G:67:TYR:CE1	2.52	0.43
2:G:1459:LEU:HD22	2:G:1464:LEU:HD11	2.00	0.43
2:G:215:ILE:HG21	2:G:240:LEU:HD21	1.99	0.43
1:A:938:GLU:HA	1:A:941:ALA:HB3	2.00	0.43
1:A:1463:VAL:HB	1:A:1773:VAL:HG21	2.01	0.43
1:A:1816:LYS:HB3	1:A:1834:LEU:HD12	1.99	0.43
2:G:621:GLY:HA2	2:G:630:MET:HE1	1.99	0.43
2:G:1433:MET:HE3	2:G:1444:LEU:HD11	2.00	0.43
2:G:768:GLY:O	2:G:769:SER:OG	2.26	0.43
2:G:1547:PRO:HD3	2:G:1584:PHE:CE1	2.54	0.43
1:A:640:LEU:N	1:A:656:SER:OG	2.46	0.43
1:A:1332:TYR:HA	1:A:1587:ALA:HB2	2.01	0.43
1:A:1770:GLY:HA3	1:A:1818:ALA:O	2.19	0.43
2:G:597:MET:HB2	2:G:601:THR:HG23	2.01	0.43
2:G:754:TYR:HB3	2:G:794:MET:HE3	2.01	0.43
2:G:1360:ILE:HG12	2:G:1403:VAL:O	2.19	0.43
1:A:768:ILE:HD11	1:A:806:VAL:HG21	1.99	0.43
1:A:869:ILE:HA	1:A:901:MET:CE	2.49	0.43
2:G:980:ILE:O	2:G:981:GLU:C	2.62	0.43
1:A:13:LEU:HD11	2:G:2029:VAL:HG21	2.01	0.43
1:A:1057:MET:CE	1:A:1059:PHE:HE2	2.31	0.43
2:G:1542:LEU:HD13	2:G:1592:LEU:HD22	2.01	0.43
2:G:1838:MET:O	2:G:1974:VAL:HG21	2.19	0.43
1:A:36:LEU:O	1:A:76:ARG:NH2	2.52	0.42
1:A:688:ILE:O	1:A:689:GLY:C	2.62	0.42
2:G:347:GLU:N	2:G:347:GLU:OE1	2.49	0.42
2:G:1815:LEU:HD23	2:G:1822:MET:HE1	2.01	0.42
2:G:1854:MET:HE3	2:G:1974:VAL:O	2.18	0.42
2:G:1074:MET:HA	2:G:1074:MET:HE2	1.99	0.42
2:G:509:ALA:O	2:G:514:VAL:HG21	2.20	0.42
2:G:1778:GLN:N	2:G:1779:PRO:CD	2.82	0.42
2:G:500:HIS:HA	2:G:526:ARG:O	2.19	0.42
2:G:67:TYR:O	2:G:70:SER:OG	2.35	0.42
2:G:1693:ARG:NH2	2:G:1825:GLU:OE1	2.49	0.42
1:A:702:LYS:HB3	1:A:763:TRP:CH2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:259:GLY:HA3	1:B:260:ARG:NH2	2.34	0.42
2:G:1851:ASN:OD1	2:G:1956:ARG:O	2.37	0.42
1:A:1051:VAL:O	1:A:1052:GLU:C	2.62	0.42
1:A:1109:GLU:H	1:A:1109:GLU:CD	2.27	0.42
2:G:652:ILE:H	2:G:658:MET:HE3	1.85	0.42
2:G:1778:GLN:OE1	2:G:1831:VAL:HB	2.19	0.42
1:A:18:LEU:HD11	2:G:1815:LEU:HD22	2.02	0.42
2:G:1465:THR:OG1	2:G:1490:LYS:HB2	2.20	0.42
2:G:245:GLN:HB3	2:G:279:THR:HG21	2.01	0.42
2:G:663:ILE:HB	2:G:664:PRO:HD3	2.02	0.42
2:G:1506:TYR:CZ	2:G:1508:ALA:HB2	2.55	0.42
2:G:2025:TYR:O	2:G:2029:VAL:HG23	2.20	0.42
1:A:20:TYR:CE1	2:G:1985:VAL:HG11	2.55	0.42
1:B:276:ARG:HD2	1:B:276:ARG:HA	1.32	0.42
2:G:1470:THR:HG22	2:G:1472:VAL:HG23	2.02	0.42
1:A:405:SER:OG	1:A:406:TRP:N	2.53	0.41
1:A:884:ILE:HG22	1:A:947:LEU:HD12	2.02	0.41
2:G:490:TRP:CH2	2:G:512:LEU:HD21	2.54	0.41
2:G:1290:PHE:CD2	2:G:1329:VAL:HA	2.55	0.41
1:A:1226:SER:O	1:A:1226:SER:OG	2.32	0.41
2:G:1549:THR:HG23	2:G:1552:PRO:HD3	2.01	0.41
2:G:1631:MET:HE1	2:G:1636:LYS:HG2	2.01	0.41
1:A:1104:ARG:O	1:A:1185:VAL:HG13	2.20	0.41
1:A:1461:ASP:O	1:A:1465:ASN:ND2	2.53	0.41
1:A:997:PRO:HD2	1:A:1000:GLN:CD	2.46	0.41
1:A:1212:THR:OG1	1:A:1283:MET:HG3	2.20	0.41
2:G:88:LEU:HD21	2:G:130:ARG:HA	2.02	0.41
2:G:930:MET:HG2	2:G:943:TRP:CE3	2.56	0.41
2:G:1470:THR:OG1	2:G:1514:ASN:ND2	2.49	0.41
2:G:1874:VAL:HG13	2:G:1913:VAL:HG11	2.03	0.41
2:G:1882:THR:HG22	2:G:1948:SER:CB	2.50	0.41
1:A:444:ASN:OD1	1:A:446:ALA:N	2.54	0.41
1:A:616:LEU:N	1:A:617:PRO:CD	2.84	0.41
1:A:939:PHE:CZ	1:A:943:LEU:HD11	2.56	0.41
1:A:1030:TRP:O	1:A:1053:MET:SD	2.78	0.41
1:A:1184:LEU:HB2	1:A:1352:THR:HG21	2.02	0.41
1:A:1343:PHE:HB3	1:A:1349:THR:HG23	2.03	0.41
1:B:140:ILE:HD13	1:B:256:LEU:HD22	2.02	0.41
2:G:230:TYR:CZ	2:G:236:ILE:HD11	2.55	0.41
1:A:767:ALA:HA	1:A:821:GLN:O	2.21	0.41
1:A:1019:ILE:HD11	1:A:1320:LEU:HD23	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1111:PHE:CZ	1:A:1335:PHE:CD1	3.08	0.41
1:A:1195:ALA:HB1	1:A:1200:ILE:HD12	2.02	0.41
2:G:53:GLU:O	2:G:118:LYS:NZ	2.40	0.41
2:G:176:LEU:HD11	2:G:248:HIS:CE1	2.56	0.41
2:G:1443:VAL:O	2:G:1446:SER:OG	2.38	0.41
1:A:1554:SER:HA	1:A:1557:ILE:HG22	2.02	0.41
2:G:349:VAL:HG21	2:G:377:LEU:HD22	2.03	0.41
2:G:408:PRO:HA	2:G:743:PHE:HB3	2.03	0.41
2:G:1136:GLU:OE1	2:G:1136:GLU:N	2.54	0.41
2:G:1655:ALA:HB1	2:G:1657:ILE:HD11	2.03	0.41
2:G:1225:GLU:C	2:G:1225:GLU:CD	2.89	0.41
2:G:1533:LEU:N	2:G:1629:VAL:O	2.53	0.41
2:G:1936:VAL:O	2:G:1940:LEU:HB2	2.21	0.41
2:G:803:SER:HB2	2:G:1059:ALA:HB3	2.02	0.40
2:G:957:ARG:HG3	2:G:957:ARG:O	2.21	0.40
2:G:1450:PHE:CE1	2:G:1489:ILE:HD13	2.55	0.40
1:A:863:THR:HB	1:A:917:CYS:HB3	2.03	0.40
1:A:1753:ALA:O	1:A:1757:GLU:HB2	2.22	0.40
2:G:1855:ILE:O	2:G:1899:VAL:HA	2.22	0.40
1:A:1425:ILE:HD12	1:A:1425:ILE:HA	1.92	0.40
1:A:1576:PHE:CD1	1:A:1576:PHE:N	2.90	0.40
2:G:129:ALA:O	2:G:133:ALA:N	2.55	0.40
2:G:1956:ARG:HB2	2:G:1957:PRO:HD3	2.02	0.40
1:B:152:HIS:ND1	1:B:168:MET:HE1	2.36	0.40
2:G:104:LEU:HD13	2:G:107:LYS:HE3	2.03	0.40
2:G:598:THR:HA	2:G:599:PRO:HA	1.86	0.40
2:G:951:LEU:CD1	2:G:973:LEU:HD21	2.52	0.40
2:G:68:VAL:HG12	2:G:84:LEU:HD12	2.03	0.40
2:G:615:TYR:CZ	2:G:1074:MET:HB3	2.56	0.40
2:G:1257:ASP:O	2:G:1261:ARG:NE	2.53	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1569/1887 (83%)	1444 (92%)	119 (8%)	6 (0%)	30	60
1	B	161/1887 (8%)	151 (94%)	8 (5%)	2 (1%)	10	40
2	G	2031/2051 (99%)	1879 (92%)	148 (7%)	4 (0%)	43	72
All	All	3761/5825 (65%)	3474 (92%)	275 (7%)	12 (0%)	37	65

All (12) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1545	SER
1	A	1304	ALA
1	A	1649	LYS
1	A	937	LYS
2	G	769	SER
2	G	1044	VAL
2	G	1162	ASP
1	B	195	GLY
2	G	858	ALA
1	A	726	GLY
1	A	689	GLY
1	B	178	GLY

5.3.2 Protein sidechains ⓘ

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1336/1566 (85%)	1331 (100%)	5 (0%)	84	81
1	B	135/1566 (9%)	123 (91%)	12 (9%)	9	33
2	G	1774/1789 (99%)	1770 (100%)	4 (0%)	87	86
All	All	3245/4921 (66%)	3224 (99%)	21 (1%)	76	79

All (21) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	9	LEU
1	A	452	GLU
1	A	1096	SER
1	A	1355	GLU
1	A	1584	PRO
1	B	208	GLU
1	B	231	ARG
1	B	232	LEU
1	B	233	ILE
1	B	235	SER
1	B	236	LYS
1	B	243	ILE
1	B	244	THR
1	B	245	VAL
1	B	272	GLU
1	B	276	ARG
1	B	284	LYS
2	G	410	SER
2	G	870	GLU
2	G	1497	GLU
2	G	2035	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (50) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	21	GLN
1	A	40	ASN
1	A	457	ASN
1	A	506	ASN
1	A	508	ASN
1	A	527	GLN
1	A	698	GLN
1	A	758	ASN
1	A	1380	GLN
1	A	1465	ASN
1	A	1494	HIS
1	A	1542	HIS
1	A	1577	GLN
1	A	1652	GLN
1	A	1703	HIS
1	A	1734	ASN
1	A	1802	GLN
1	B	157	HIS

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Mol	Chain	Res	Type
2	G	36	GLN
2	G	85	ASN
2	G	178	GLN
2	G	248	HIS
2	G	275	GLN
2	G	316	ASN
2	G	376	ASN
2	G	384	GLN
2	G	456	GLN
2	G	640	GLN
2	G	677	GLN
2	G	718	ASN
2	G	723	HIS
2	G	900	GLN
2	G	908	ASN
2	G	910	GLN
2	G	1012	GLN
2	G	1055	HIS
2	G	1078	HIS
2	G	1186	ASN
2	G	1306	ASN
2	G	1355	ASN
2	G	1451	GLN
2	G	1532	ASN
2	G	1574	ASN
2	G	1659	GLN
2	G	1716	ASN
2	G	1807	HIS
2	G	1858	ASN
2	G	1895	ASN
2	G	2020	GLN
2	G	2027	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

1 ligand is modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	FMN	G	2101	-	33,33,33	1.42	5 (15%)	48,50,50	1.44	8 (16%)

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
3	FMN	G	2101	-	-	2/18/18/18	0/3/3/3

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	G	2101	FMN	C5A-N5	-3.72	1.32	1.39
3	G	2101	FMN	C9A-C5A	3.30	1.46	1.41
3	G	2101	FMN	C8-C7	3.23	1.48	1.40
3	G	2101	FMN	C2-N3	-2.82	1.32	1.39
3	G	2101	FMN	C4-N3	-2.60	1.34	1.38

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	G	2101	FMN	O5'-P-O1P	-2.81	98.84	106.44
3	G	2101	FMN	C4-C4A-N5	2.75	122.01	118.21
3	G	2101	FMN	C10-N1-C2	2.66	122.60	116.85
3	G	2101	FMN	C4A-C4-N3	2.53	119.70	113.25

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	G	2101	FMN	O5'-C5'-C4'	-2.53	102.61	109.36
3	G	2101	FMN	C4A-C10-N1	-2.47	118.53	124.59
3	G	2101	FMN	O4-C4-C4A	-2.32	120.40	126.53
3	G	2101	FMN	O4'-C4'-C5'	-2.30	104.92	109.99

There are no chirality outliers.

All (2) torsion outliers are listed below:

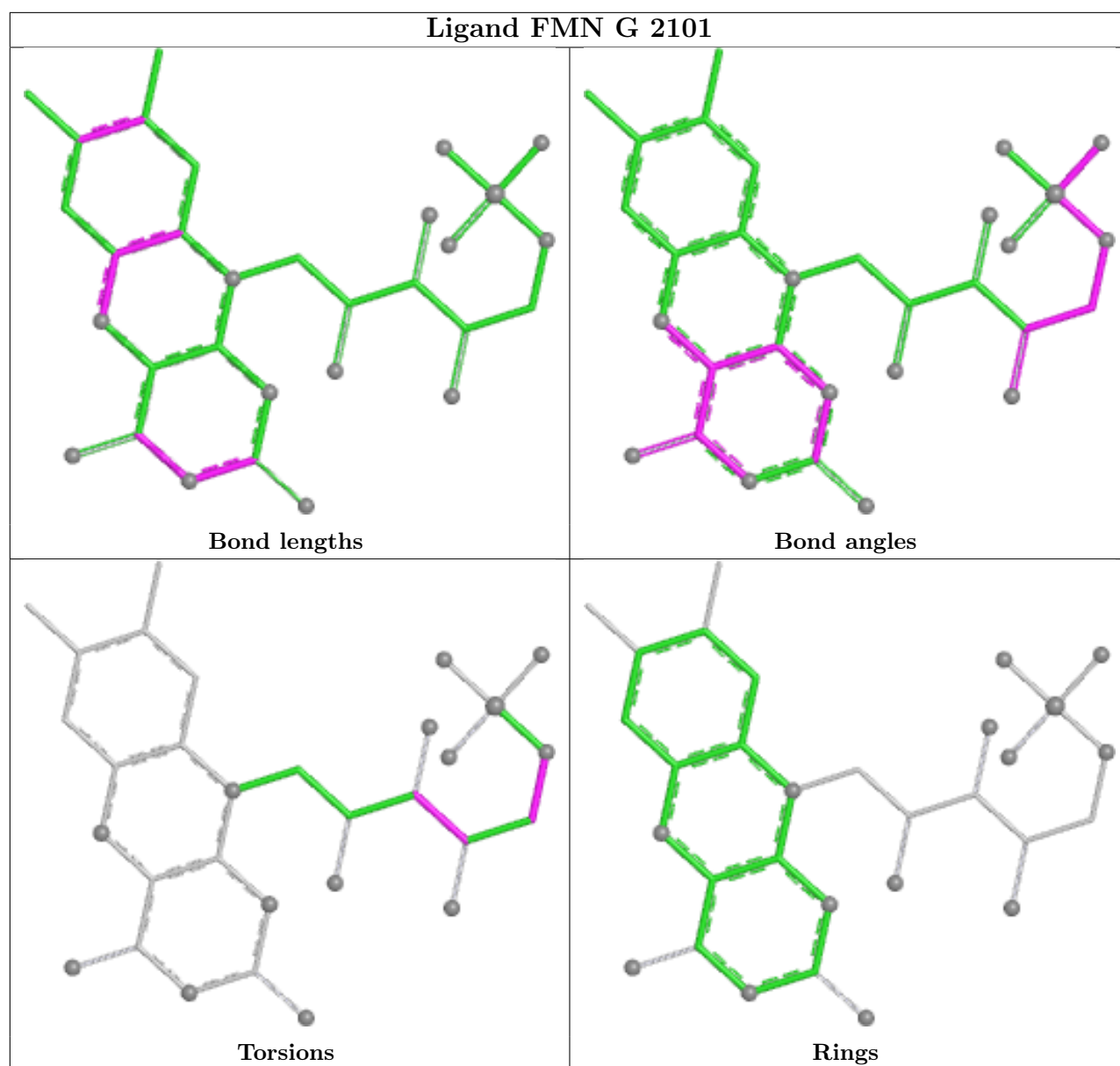
Mol	Chain	Res	Type	Atoms
3	G	2101	FMN	C4'-C5'-O5'-P
3	G	2101	FMN	O3'-C3'-C4'-C5'

There are no ring outliers.

1 monomer is involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	G	2101	FMN	3	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 than 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.



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.

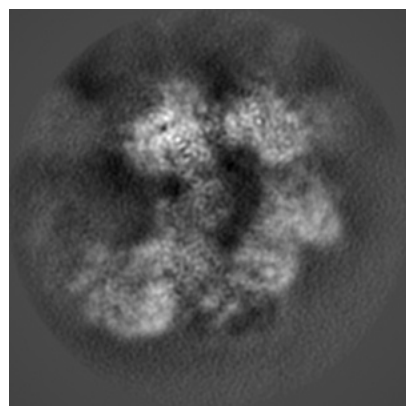
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-17852. These allow visual inspection of the internal detail of the map and identification of artifacts.

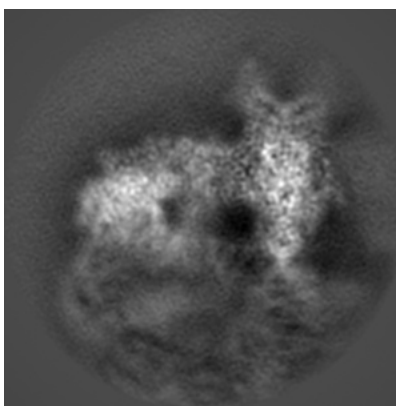
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

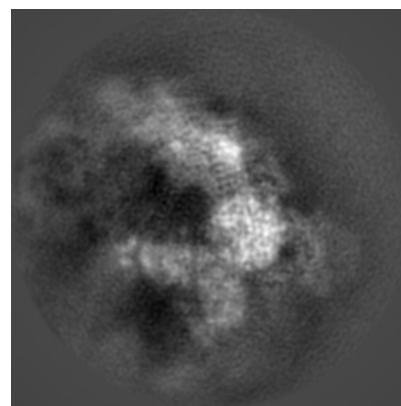
6.1.1 Primary map



X

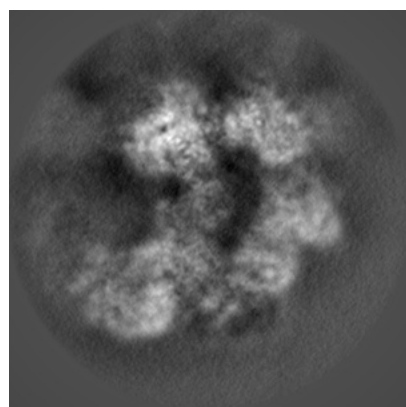


Y

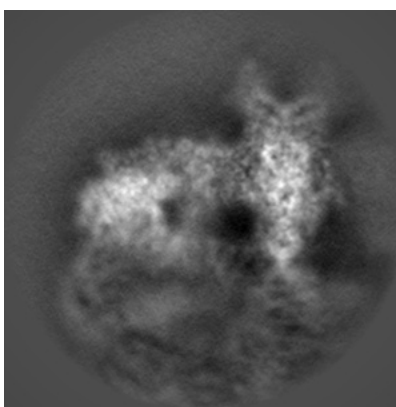


Z

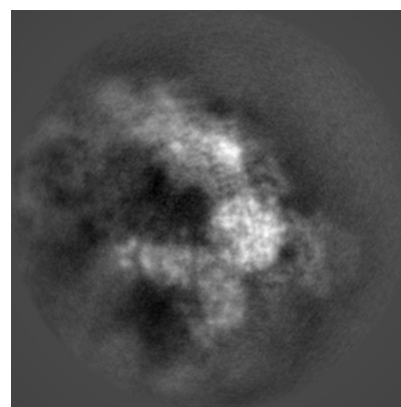
6.1.2 Raw map



X



Y

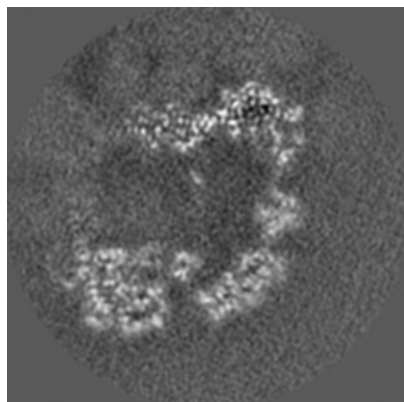


Z

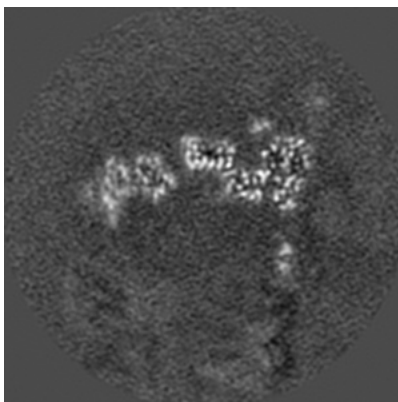
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

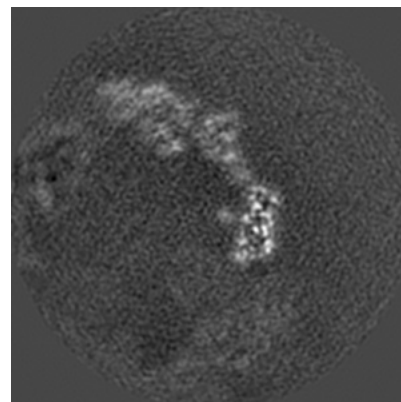
6.2.1 Primary map



X Index: 120

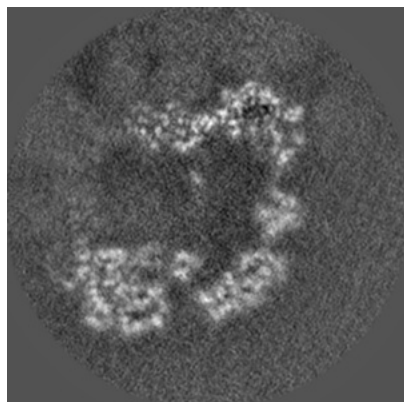


Y Index: 120

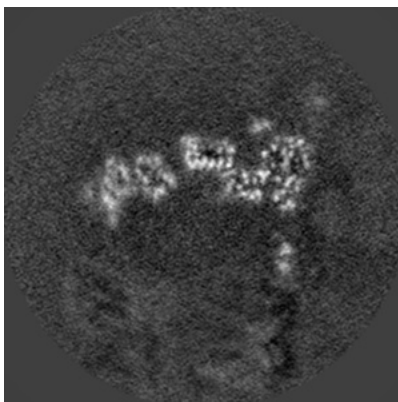


Z Index: 120

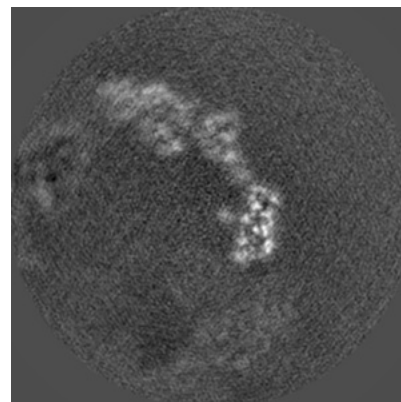
6.2.2 Raw map



X Index: 120



Y Index: 120

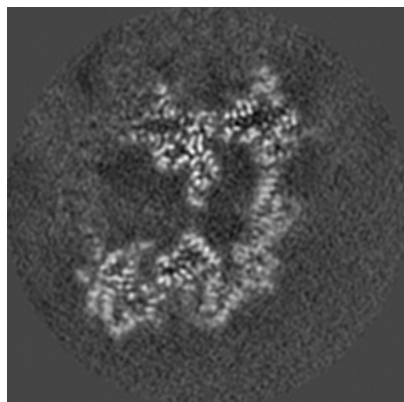


Z Index: 120

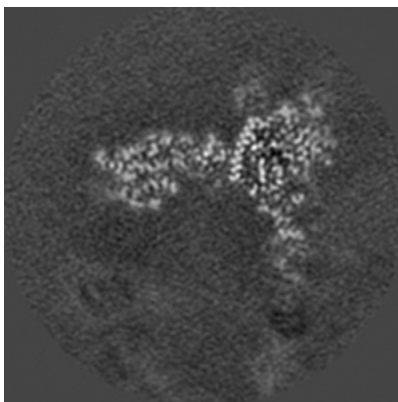
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

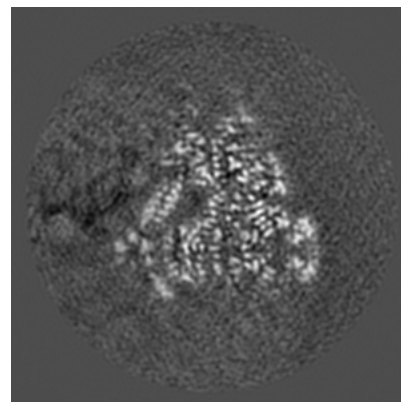
6.3.1 Primary map



X Index: 129

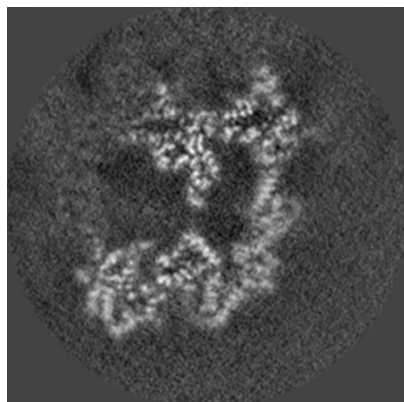


Y Index: 107

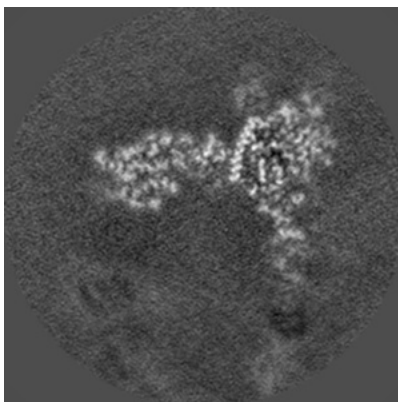


Z Index: 169

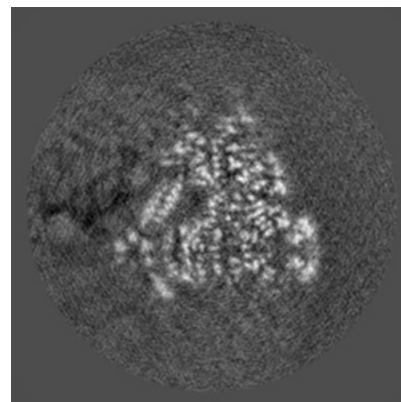
6.3.2 Raw map



X Index: 129



Y Index: 107

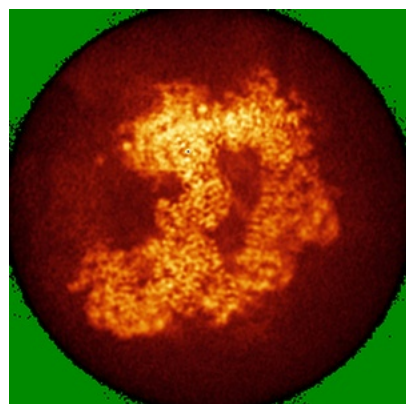


Z Index: 169

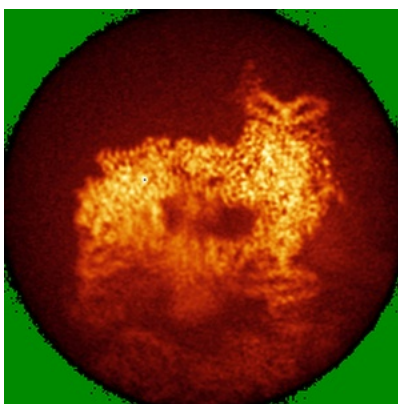
The images above show the largest variance slices of the map in three orthogonal directions.

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

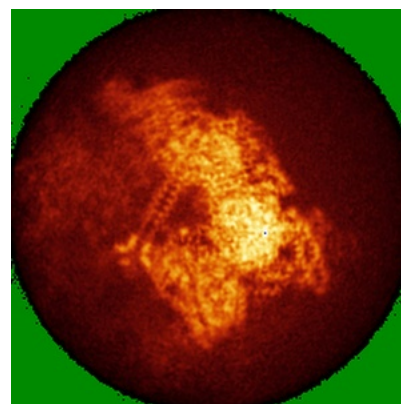
6.4.1 Primary map



X

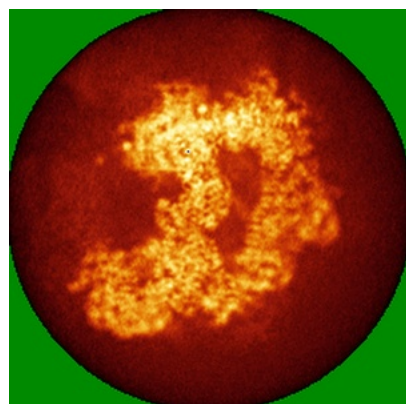


Y

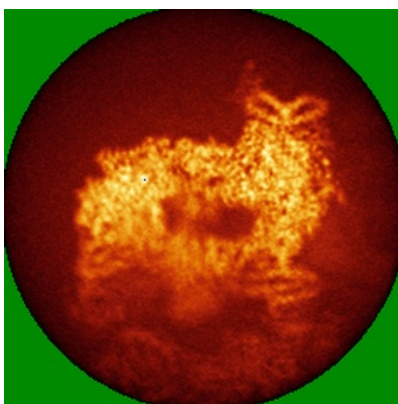


Z

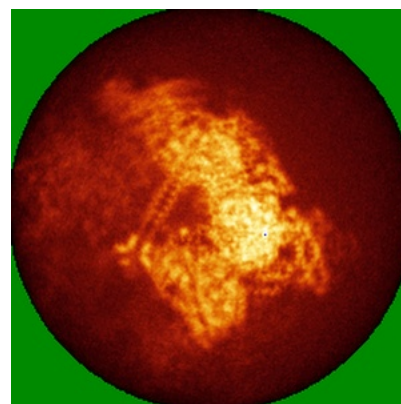
6.4.2 Raw map



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.

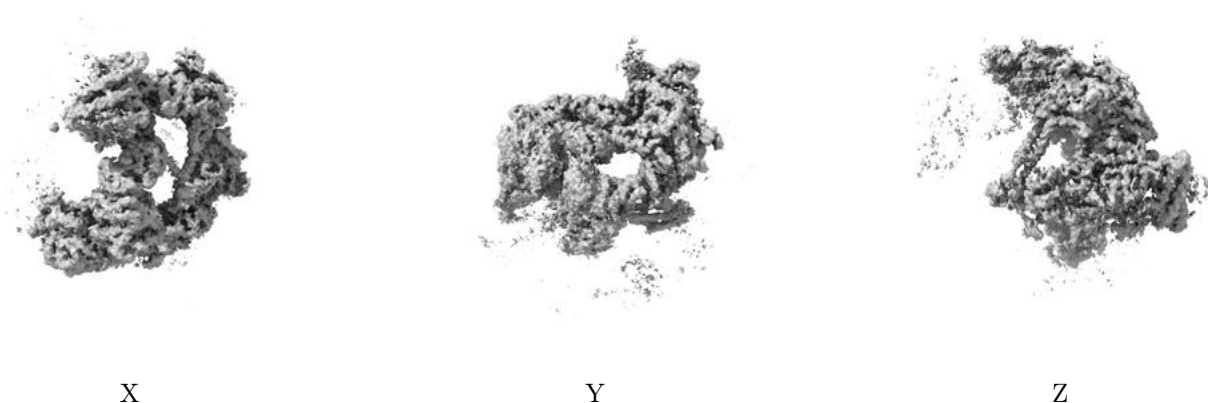
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.02. 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.

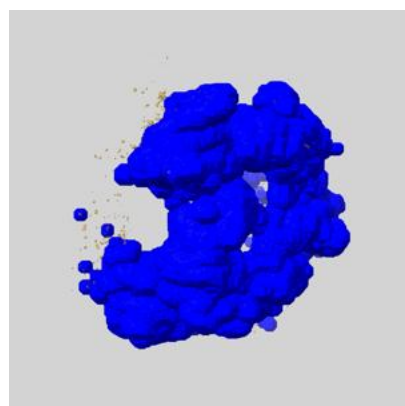
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

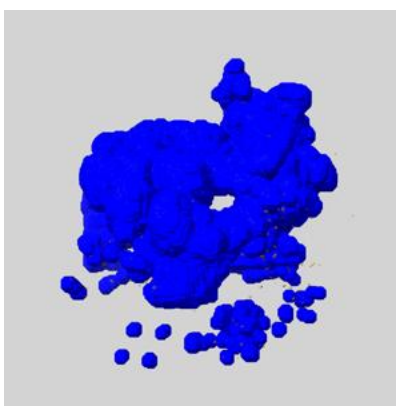
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

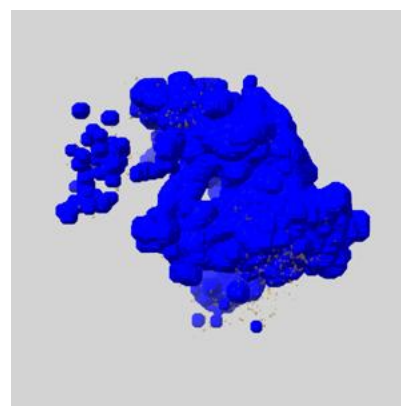
6.6.1 emd_17852_msk_1.map [i](#)



X



Y

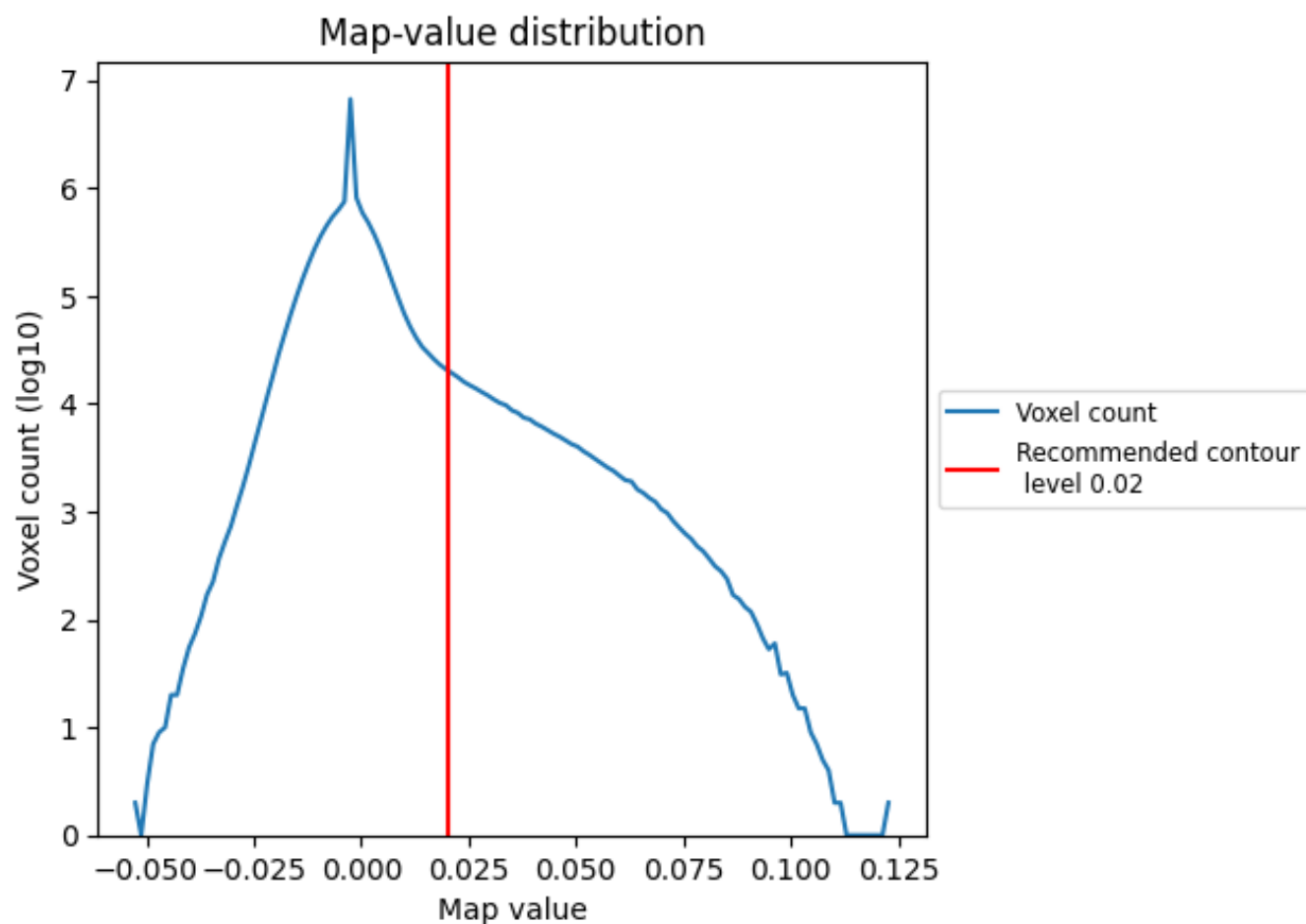


Z

7 Map analysis [i](#)

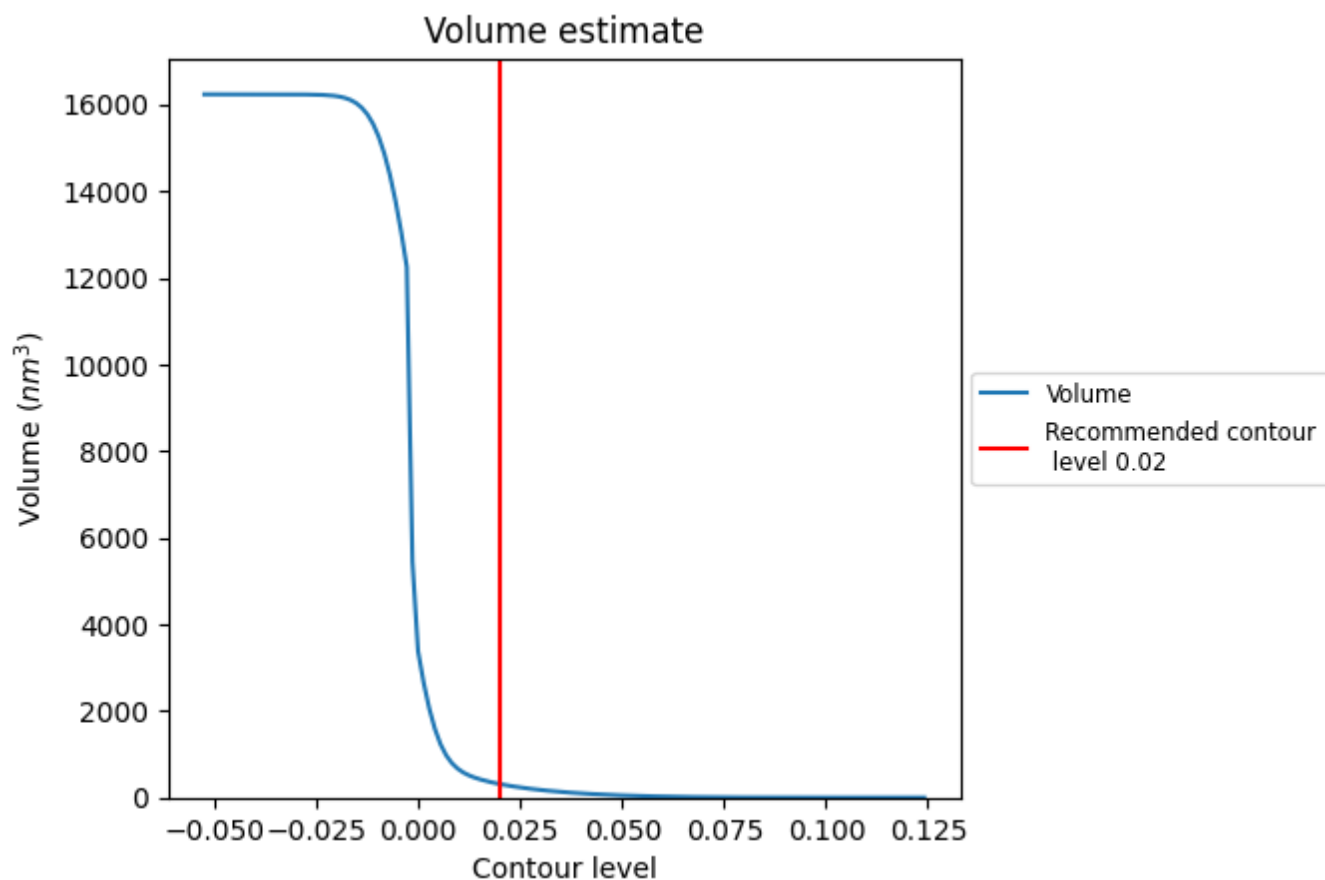
This section contains the results of statistical analysis of the map.

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.

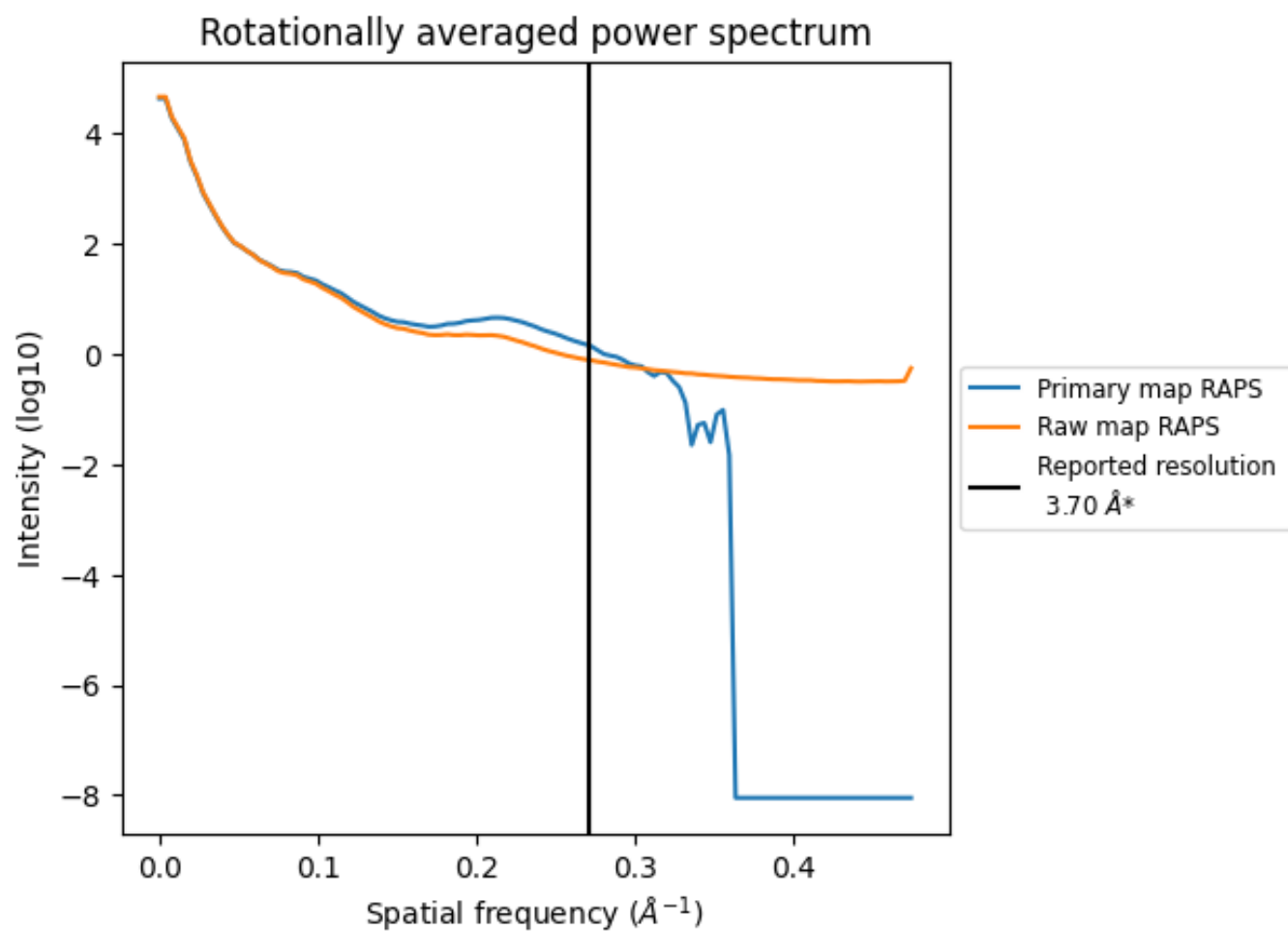
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 311 nm³; this corresponds to an approximate mass of 281 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 ⓘ

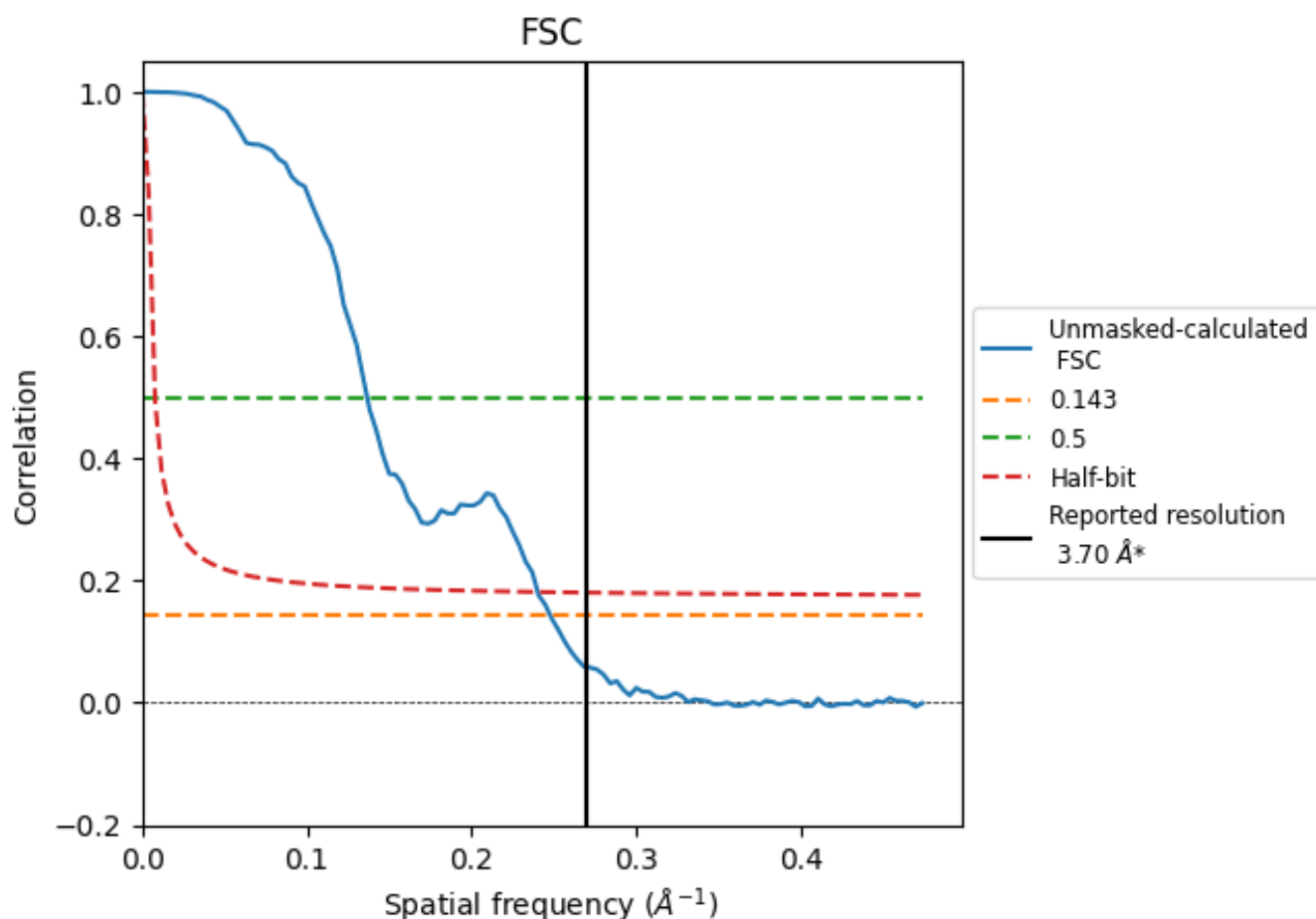


*Reported resolution corresponds to spatial frequency of 0.270 $\text{\AA}^{-1}$

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 0.270 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

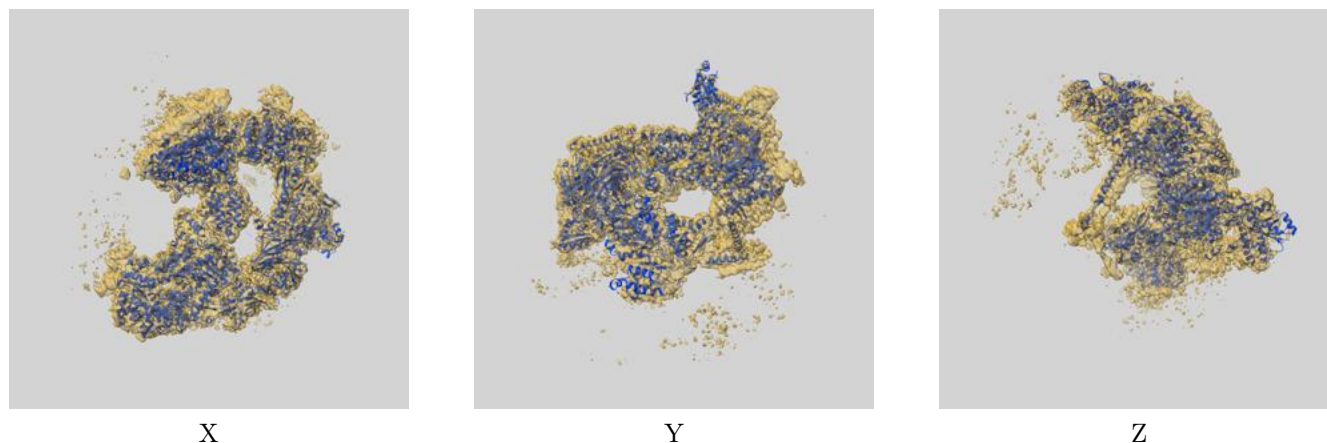
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.03	7.32	4.16

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

9 Map-model fit [i](#)

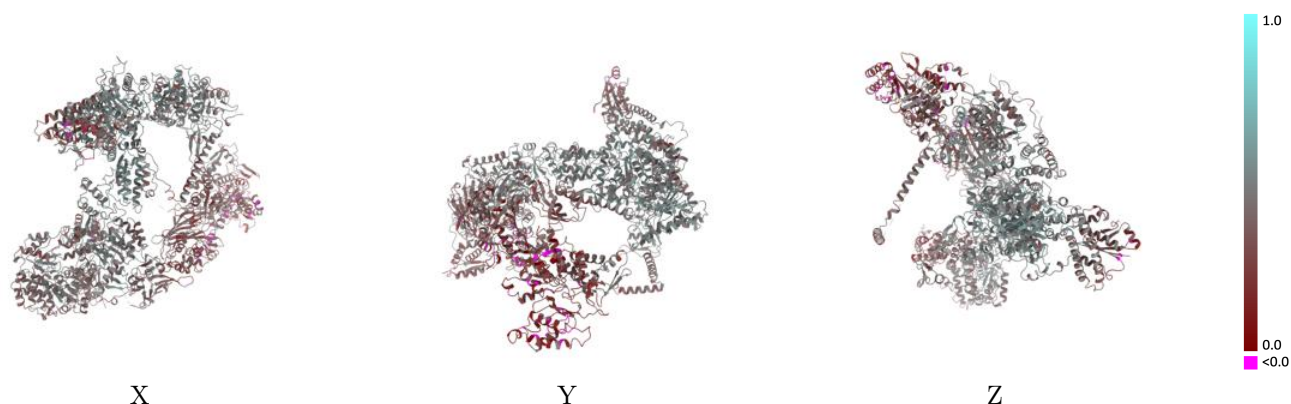
This section contains information regarding the fit between EMDB map EMD-17852 and PDB model 8PSG. Per-residue inclusion information can be found in [section 3](#) on [page 4](#).

9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 0.02 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](#)

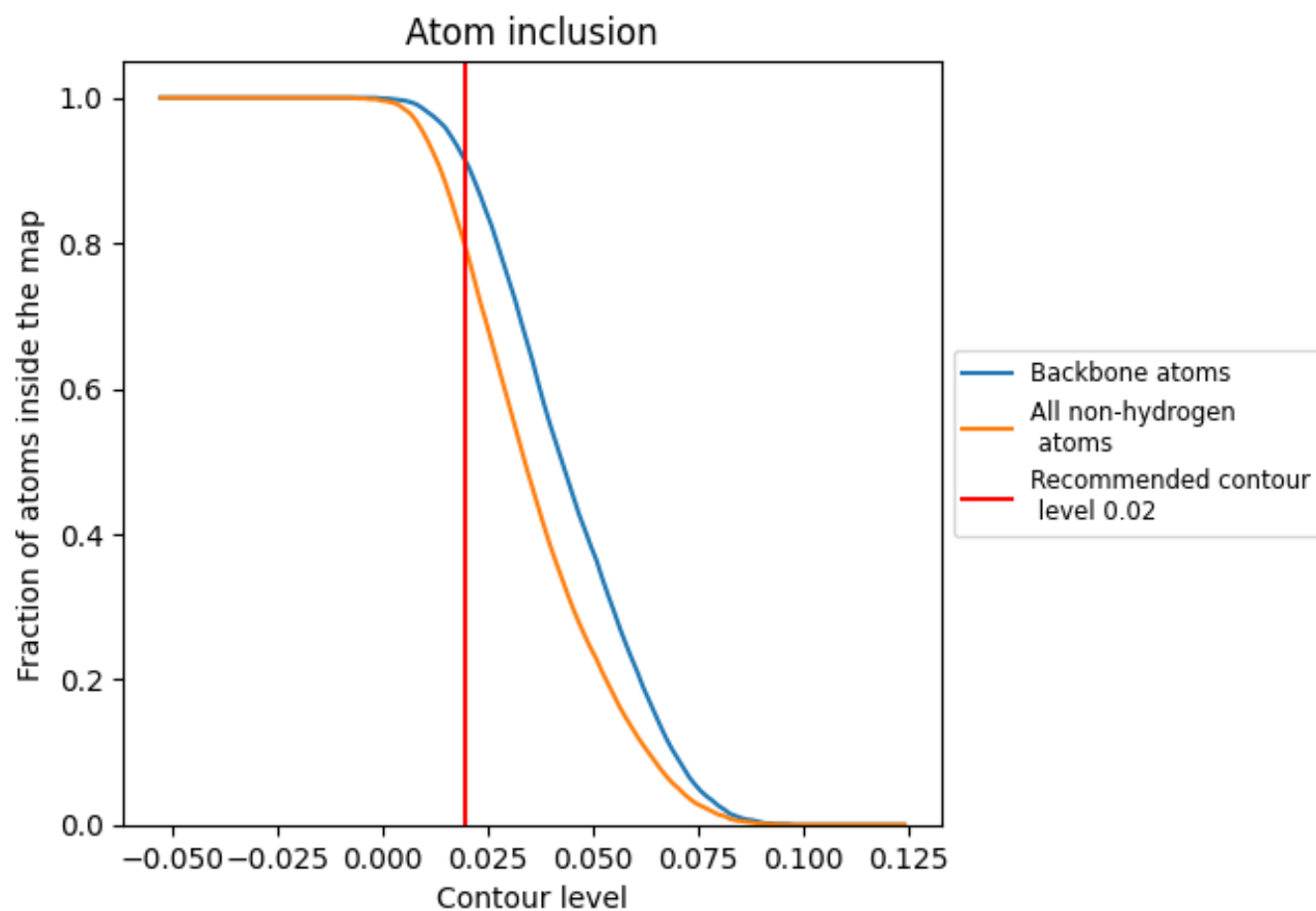


The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

This section was not generated.

9.4 Atom inclusion [i](#)



At the recommended contour level, 91% of all backbone atoms, 79% 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 (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7910	0.4070
A	0.7970	0.4580
B	0.5210	0.2820
G	0.8060	0.3780

