W O R L D W I D E
wwPDB
P R O T E I N   D A T A   B A N K

Full wwPDB EM Validation Report ⓘ

Dec 5, 2022 – 12:12 PM EST

|		
PDB ID	:	8DMM
EMDB ID	:	EMD-27544
Title	:	Structure of the vanadate-trapped MsbA bound to KDL
Authors	:	Liu, C.; Lyu, J.; Laganowsky, A.D.; Zhao, M.
Deposited on	:	2022-07-08
Resolution	:	3.47 Å(reported)

1   Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY
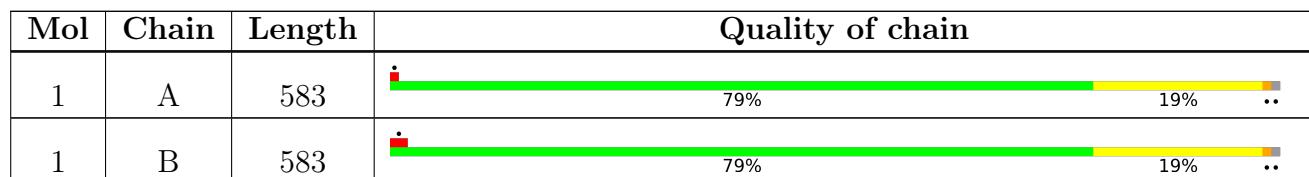
The reported resolution of this entry is 3.47 Å.

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

Metric	Percentile Ranks	Value
Clashscore		7
Ramachandran outliers		0
Sidechain outliers		3.6%

Worse   *Better*

▮ Percentile relative to all structures
▯ Percentile relative to all EM structures

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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	583	79% ▮▮▮▮ 19% ··
1	B	583	79% ▮▮▮▮ 19% ··

2 Entity composition ⓘ

There are 3 unique types of molecules in this entry. The entry contains 9314 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.
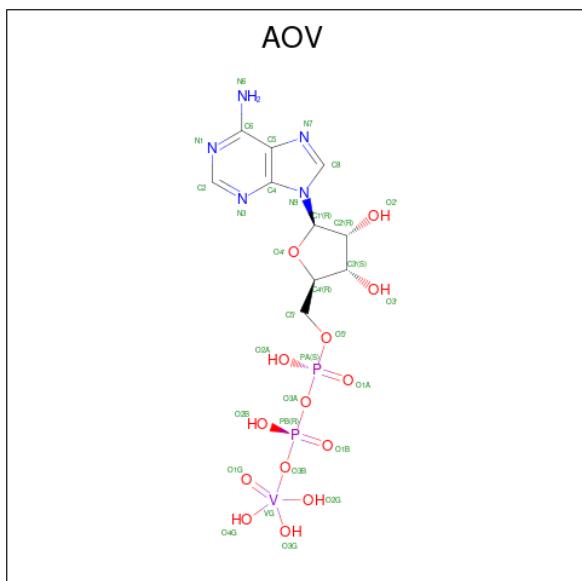
- Molecule 1 is a protein called ATP-binding transport protein MsbA.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	576	Total	C	N	O	S	0	0
			4472	2834	778	833	27		
1	B	576	Total	C	N	O	S	0	0
			4472	2834	778	833	27		

There are 4 discrepancies between the modelled and reference sequences:
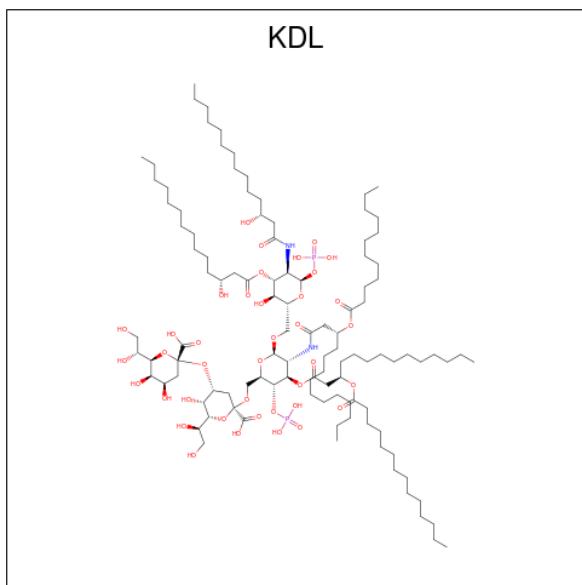
Chain	Residue	Modelled	Actual	Comment	Reference
A	0	GLY	-	expression tag	UNP C3TGA2
A	1	SER	-	expression tag	UNP C3TGA2
B	0	GLY	-	expression tag	UNP C3TGA2
B	1	SER	-	expression tag	UNP C3TGA2

- Molecule 2 is ADP ORTHOVANADATE (three-letter code: AOV) (formula: $C_{10}H_{17}N_5O_{14}P_2V$) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms						AltConf
2	A	1	Total	C	N	O	P	V	0
			32	10	5	14	2	1	
2	B	1	Total	C	N	O	P	V	0
			32	10	5	14	2	1	

- Molecule 3 is (2 {R},4 {R},5 {R},6 {R})-6-[(1 {R})-1,2-bis(oxidanyl)ethyl]-2-[(2 {R},4 {R},5 {R},6 {R})-6-[(1 {R})-1,2-bis(oxidanyl)ethyl]-2-carboxy-2-[[(2 {R},3 {S},4 {R},5 {R},6 {R})-5-[[(3 {R})-3-dodecanoyloxytetradecanoyl]amino]-6-[[(2 {R},3 {S},4 {R},5 {R},6 {R})-3-oxidanyl-5-[[(3 {R})-3-oxidanyltetradecanoyl]amino]-4-[(3 {R})-3-oxidanyltetradecanoyl]oxy-6-phosphonooxy-oxan-2-yl]methoxy]-3-phosphonooxy-4-[(3 {R})-3-tetradecanoyloxytetradecanoyl]oxy-oxan-2-yl]methoxy]-5-oxidanyl-oxan-4-yl]oxy-4,5-bis(oxidanyl)oxane-2-carboxylic acid (three-letter code: KDL) (formula: $C_{110}H_{202}N_2O_{39}P_2$).
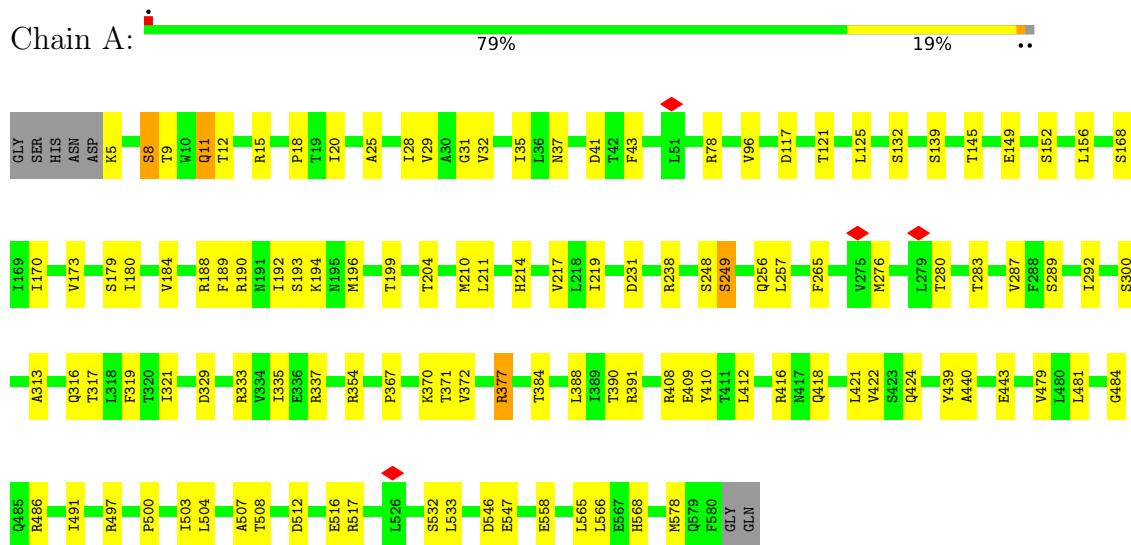
KDL

| Mol	Chain	Residues	Atoms					AltConf
3	A	1	Total	C	N	O	P	0
			153	110	2	39	2	
3	B	1	Total	C	N	O	P	0
			153	110	2	39	2	
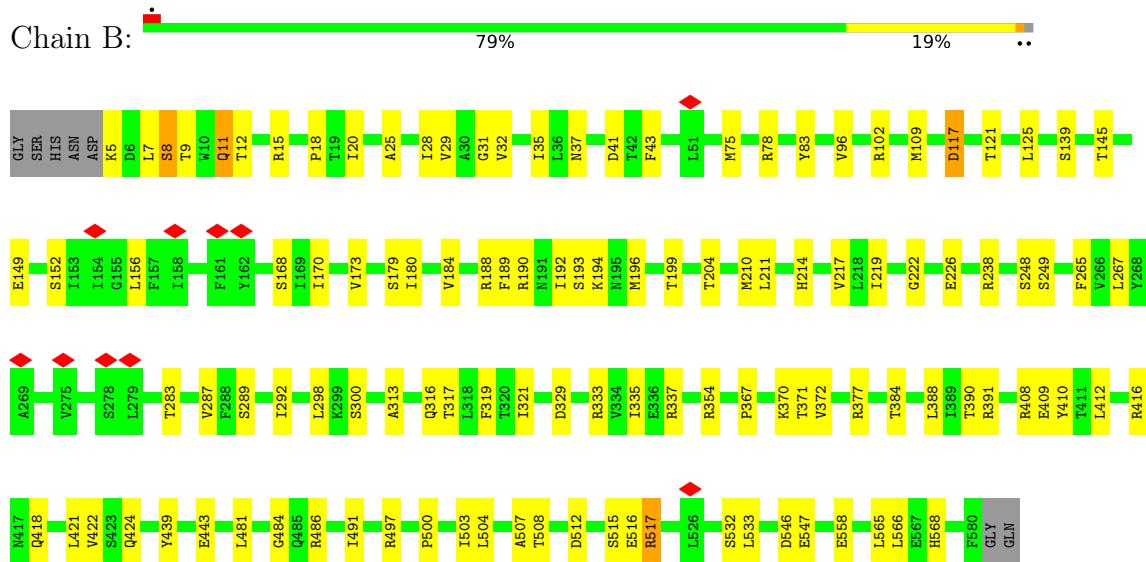
3 Residue-property plots ⓘ

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: ATP-binding transport protein MsbA

Chain A:

- Molecule 1: ATP-binding transport protein MsbA

Chain B:

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	340615	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	1.423	Depositor
Minimum map value	-1.003	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.044	Depositor
Recommended contour level	0.14	Depositor
Map size (Å)	213.00002, 213.00002, 213.00002	wwPDB
Map dimensions	200, 200, 200	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.065, 1.065, 1.065	Depositor

5　Model quality ⓘ

5.1　Standard geometry ⓘ

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

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	0.24	0/4538	0.49	0/6132
1	B	0.24	0/4538	0.49	0/6132
All	All	0.24	0/9076	0.49	0/12264

There are no bond length outliers.

There are no bond angle outliers.

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	4472	0	4597	73	0
1	B	4472	0	4597	76	0
2	A	32	0	11	3	0
2	B	32	0	11	3	0
3	A	153	0	0	3	0
3	B	153	0	0	3	0
All	All	9314	0	9216	136	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 7.

All (136) 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:391:ARG:HH21	1:A:412:LEU:HD21	1.51	0.76
1:B:391:ARG:HH21	1:B:412:LEU:HD21	1.51	0.75
1:B:335:ILE:HG13	1:B:418:GLN:HE22	1.52	0.75
1:A:335:ILE:HG13	1:A:418:GLN:HE22	1.52	0.72
1:B:188:ARG:O	1:B:192:ILE:HD12	1.92	0.70
1:A:188:ARG:O	1:A:192:ILE:HD12	1.92	0.69
1:B:8:SER:H	1:B:11:GLN:HE21	1.46	0.63
1:B:12:THR:HG21	1:B:316:GLN:HE21	1.64	0.62
1:B:337:ARG:HD2	1:B:500:PRO:HG3	1.81	0.62
1:A:12:THR:HG21	1:A:316:GLN:HE21	1.65	0.62
1:A:8:SER:H	1:A:11:GLN:HE21	1.46	0.61
1:A:367:PRO:HG2	1:A:370:LYS:HG3	1.82	0.61
2:A:801:AOV:O3G	1:B:484:GLY:N	2.31	0.61
1:A:337:ARG:HD2	1:A:500:PRO:HG3	1.81	0.61
1:B:367:PRO:HG2	1:B:370:LYS:HG3	1.82	0.60
1:A:372:VAL:HG12	1:A:547:GLU:HG2	1.84	0.60
1:B:372:VAL:HG12	1:B:547:GLU:HG2	1.84	0.60
1:A:231:ASP:OD2	1:B:102:ARG:NE	2.37	0.58
1:A:384:THR:O	1:A:388:LEU:HG	2.04	0.57
1:B:384:THR:O	1:B:388:LEU:HG	2.04	0.56
1:B:422:VAL:HG21	1:B:491:ILE:HD13	1.88	0.56
1:A:424:GLN:NE2	2:A:801:AOV:O2G	2.38	0.56
1:A:422:VAL:HG21	1:A:491:ILE:HD13	1.87	0.56
1:A:558:GLU:HB3	1:A:565:LEU:HD11	1.88	0.56
1:A:204:THR:HG23	1:B:125:LEU:HD21	1.87	0.55
1:B:424:GLN:NE2	2:B:801:AOV:O2G	2.38	0.55
1:B:558:GLU:HB3	1:B:565:LEU:HD11	1.88	0.55
1:A:440:ALA:HB1	1:B:222:GLY:HA3	1.89	0.54
1:B:20:ILE:HG12	1:B:96:VAL:HG21	1.90	0.54
1:B:504:LEU:HB3	1:B:507:ALA:HB2	1.91	0.53
1:A:504:LEU:HB3	1:A:507:ALA:HB2	1.91	0.52
1:A:8:SER:O	1:A:12:THR:HG22	2.09	0.52
1:B:491:ILE:HD11	1:B:507:ALA:HB1	1.91	0.52
1:A:20:ILE:HG12	1:A:96:VAL:HG21	1.90	0.52
1:A:491:ILE:HD11	1:A:507:ALA:HB1	1.91	0.52
1:B:8:SER:O	1:B:12:THR:HG22	2.09	0.51
1:A:333:ARG:NH1	1:A:409:GLU:OE1	2.42	0.51
1:B:238:ARG:NH2	3:B:802:KDL:OHE	2.41	0.51
1:B:512:ASP:OD1	1:B:512:ASP:N	2.44	0.51
1:B:333:ARG:NH1	1:B:409:GLU:OE1	2.42	0.51
1:A:512:ASP:N	1:A:512:ASP:OD1	2.43	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:578:MET:SD	1:B:517:ARG:HD3	2.51	0.50
1:B:421:LEU:HB2	1:B:503:ILE:HB	1.94	0.49
1:A:238:ARG:NH2	3:A:802:KDL:OHE	2.41	0.49
1:B:117:ASP:OD1	1:B:117:ASP:N	2.35	0.49
1:A:152:SER:O	1:A:156:LEU:HG	2.13	0.49
3:A:802:KDL:OCA	3:A:802:KDL:OBW	2.31	0.49
1:B:152:SER:O	1:B:156:LEU:HG	2.13	0.49
3:B:802:KDL:OCA	3:B:802:KDL:OBW	2.31	0.49
1:A:125:LEU:HD21	1:B:204:THR:HG23	1.94	0.48
1:A:421:LEU:HB2	1:A:503:ILE:HB	1.95	0.48
1:B:170:ILE:HA	1:B:173:VAL:HG12	1.96	0.48
1:B:508:THR:HG21	1:B:516:GLU:HG3	1.95	0.48
1:A:317:THR:O	1:A:321:ILE:HG22	2.14	0.48
1:B:180:ILE:O	1:B:184:VAL:HG12	2.14	0.47
1:B:317:THR:O	1:B:321:ILE:HG22	2.14	0.47
1:A:211:LEU:HB3	1:B:121:THR:HG23	1.96	0.47
1:A:508:THR:HG21	1:A:516:GLU:HG3	1.95	0.47
1:B:481:LEU:HD12	1:B:486:ARG:HG3	1.96	0.47
1:A:481:LEU:HD12	1:A:486:ARG:HG3	1.96	0.47
1:B:371:THR:HG23	1:B:546:ASP:H	1.80	0.47
1:A:180:ILE:O	1:A:184:VAL:HG12	2.14	0.47
1:B:283:THR:O	1:B:287:VAL:HG12	2.15	0.47
1:A:170:ILE:HA	1:A:173:VAL:HG12	1.96	0.46
1:A:283:THR:O	1:A:287:VAL:HG12	2.15	0.46
1:A:371:THR:HG23	1:A:546:ASP:H	1.80	0.46
1:B:568:HIS:O	1:B:568:HIS:HD2	1.99	0.46
1:A:439:TYR:OH	1:B:226:GLU:OE2	2.31	0.45
1:A:210:MET:HE3	1:A:210:MET:HB3	1.92	0.45
1:A:439:TYR:H	1:A:497:ARG:HH22	1.63	0.45
1:A:31:GLY:O	1:A:35:ILE:HG12	2.17	0.45
1:A:390:THR:HG21	1:B:219:ILE:HD13	1.99	0.45
1:A:9:THR:OG1	1:A:190:ARG:NH2	2.50	0.45
1:A:568:HIS:HD2	1:A:568:HIS:O	1.99	0.44
1:B:190:ARG:HG3	1:B:313:ALA:HB2	1.99	0.44
1:B:9:THR:OG1	1:B:190:ARG:NH2	2.50	0.44
1:B:37:ASN:HD22	1:B:78:ARG:HG3	1.83	0.44
1:A:412:LEU:HD12	1:A:416:ARG:NH1	2.33	0.44
1:B:31:GLY:O	1:B:35:ILE:HG12	2.17	0.44
1:B:439:TYR:H	1:B:497:ARG:HH22	1.63	0.44
1:B:267:LEU:HD23	1:B:267:LEU:HA	1.89	0.43
1:B:503:ILE:HG12	1:B:533:LEU:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:37:ASN:HD22	1:A:78:ARG:HG3	1.83	0.43
1:A:503:ILE:HG12	1:A:533:LEU:HB3	2.00	0.43
1:A:257:LEU:HA	1:B:75:MET:HE1	2.01	0.43
1:A:190:ARG:HG3	1:A:313:ALA:HB2	1.99	0.43
1:A:497:ARG:HD3	1:A:497:ARG:HA	1.77	0.43
1:B:5:LYS:HE3	1:B:194:LYS:HD3	2.00	0.43
1:A:249:SER:HB3	1:B:83:TYR:HD1	1.83	0.43
1:B:25:ALA:HA	1:B:28:ILE:HG12	2.01	0.43
1:B:354:ARG:HG3	2:B:801:AOV:H8	2.01	0.43
1:A:214:HIS:HA	1:A:217:VAL:HG12	2.00	0.43
1:B:391:ARG:HH11	1:B:391:ARG:HG2	1.84	0.43
1:A:276:MET:SD	1:A:280:THR:OG1	2.76	0.43
1:B:412:LEU:HD12	1:B:416:ARG:NH1	2.33	0.43
1:B:566:LEU:HD23	1:B:566:LEU:HA	1.83	0.43
1:A:121:THR:HG23	1:B:211:LEU:HB3	2.01	0.43
1:A:256:GLN:HB3	1:B:75:MET:HE2	2.00	0.43
1:A:145:THR:O	1:A:149:GLU:HG2	2.18	0.43
1:A:391:ARG:HH11	1:A:391:ARG:HG2	1.84	0.43
1:B:145:THR:O	1:B:149:GLU:HG2	2.18	0.42
1:B:214:HIS:HA	1:B:217:VAL:HG12	2.00	0.42
1:A:5:LYS:HE3	1:A:194:LYS:HD3	2.00	0.42
1:A:15:ARG:CZ	1:A:319:PHE:HB3	2.49	0.42
1:A:25:ALA:HA	1:A:28:ILE:HG12	2.01	0.42
1:A:479:VAL:HG11	1:B:117:ASP:HB3	2.01	0.42
1:B:298:LEU:HD12	1:B:298:LEU:HA	1.85	0.42
1:A:219:ILE:HD13	1:B:390:THR:HG21	2.02	0.42
1:B:96:VAL:HG11	1:B:139:SER:OG	2.20	0.42
1:B:439:TYR:O	1:B:497:ARG:NH2	2.52	0.42
1:A:96:VAL:HG11	1:A:139:SER:OG	2.20	0.42
1:A:439:TYR:O	1:A:497:ARG:NH2	2.52	0.42
1:A:196:MET:O	1:A:199:THR:HG22	2.19	0.42
1:B:29:VAL:HA	1:B:32:VAL:HG22	2.02	0.42
1:A:210:MET:SD	1:B:109:MET:HB2	2.59	0.42
1:A:566:LEU:HD23	1:A:566:LEU:HA	1.83	0.42
1:B:15:ARG:CZ	1:B:319:PHE:HB3	2.49	0.42
1:B:196:MET:O	1:B:199:THR:HG22	2.19	0.42
1:A:354:ARG:HG3	2:A:801:AOV:H8	2.01	0.41
1:B:7:LEU:HD12	1:B:7:LEU:HA	1.87	0.41
1:A:15:ARG:O	1:A:18:PRO:HD2	2.20	0.41
3:A:802:KDL:OBF	3:A:802:KDL:OAZ	2.39	0.41
1:B:15:ARG:O	1:B:18:PRO:HD2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:333:ARG:HB2	1:B:410:TYR:HA	2.03	0.41
3:B:802:KDL:OAZ	3:B:802:KDL:OBF	2.39	0.41
1:A:29:VAL:HA	1:A:32:VAL:HG22	2.02	0.41
1:A:484:GLY:N	2:B:801:AOV:O3G	2.41	0.41
1:B:497:ARG:HD3	1:B:497:ARG:HA	1.77	0.41
1:A:377:ARG:HH22	1:B:515:SER:HB3	1.86	0.41
1:B:289:SER:O	1:B:292:ILE:HG22	2.21	0.41
1:A:333:ARG:HB2	1:A:410:TYR:HA	2.03	0.41
1:A:214:HIS:NE2	1:B:109:MET:O	2.53	0.40
1:A:189:PHE:CZ	1:A:248:SER:HA	2.57	0.40
1:B:210:MET:HE3	1:B:210:MET:HB3	1.99	0.40
1:B:189:PHE:CZ	1:B:248:SER:HA	2.57	0.40
1:A:289:SER:O	1:A:292:ILE:HG22	2.21	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	574/583 (98%)	570 (99%)	4 (1%)	0	100	100
1	B	574/583 (98%)	570 (99%)	4 (1%)	0	100	100
All	All	1148/1166 (98%)	1140 (99%)	8 (1%)	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	A	491/496 (99%)	473 (96%)	18 (4%)	34	64
1	B	491/496 (99%)	474 (96%)	17 (4%)	36	66
All	All	982/992 (99%)	947 (96%)	35 (4%)	38	65

All (35) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	8	SER
1	A	11	GLN
1	A	41	ASP
1	A	43	PHE
1	A	117	ASP
1	A	132	SER
1	A	168	SER
1	A	179	SER
1	A	193	SER
1	A	249	SER
1	A	265	PHE
1	A	300	SER
1	A	329	ASP
1	A	377	ARG
1	A	408	ARG
1	A	443	GLU
1	A	517	ARG
1	A	532	SER
1	B	8	SER
1	B	11	GLN
1	B	41	ASP
1	B	43	PHE
1	B	117	ASP
1	B	168	SER
1	B	179	SER
1	B	193	SER
1	B	249	SER
1	B	265	PHE
1	B	300	SER
1	B	329	ASP
1	B	377	ARG
1	B	408	ARG
1	B	443	GLU

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Mol	Chain	Res	Type
1	B	517	ARG
1	B	532	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	11	GLN
1	A	37	ASN
1	A	166	GLN
1	A	418	GLN
1	A	568	HIS
1	B	11	GLN
1	B	37	ASN
1	B	166	GLN
1	B	418	GLN
1	B	568	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 ⓘ

There are no monosaccharides in this entry.

5.6　Ligand geometry ⓘ

4 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
3	KDL	A	802	-	153,156,156	2.16	34 (22%)	184,201,201	1.38	23 (12%)
2	AOV	B	801	-	27,34,34	6.36	9 (33%)	26,56,56	1.47	2 (7%)
2	AOV	A	801	-	27,34,34	6.36	9 (33%)	26,56,56	1.47	2 (7%)
3	KDL	B	802	-	153,156,156	2.16	34 (22%)	184,201,201	1.38	23 (12%)

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	KDL	A	802	-	-	74/156/234/234	0/4/4/4
2	AOV	B	801	-	-	6/12/39/39	0/3/3/3
2	AOV	A	801	-	-	6/12/39/39	0/3/3/3
3	KDL	B	802	-	-	74/156/234/234	0/4/4/4

All (86) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	801	AOV	O1G-VG	27.61	2.10	1.61
2	A	801	AOV	O1G-VG	27.61	2.10	1.61
2	A	801	AOV	C2'-C3'	-10.93	1.23	1.53
2	B	801	AOV	C2'-C3'	-10.92	1.23	1.53
3	A	802	KDL	C7-N2	9.85	1.55	1.34
3	B	802	KDL	C7-N2	9.84	1.55	1.34
2	B	801	AOV	O4'-C1'	8.11	1.52	1.41
2	A	801	AOV	O4'-C1'	8.11	1.52	1.41
3	B	802	KDL	CDO-NAO	7.46	1.50	1.34
3	A	802	KDL	CDO-NAO	7.45	1.49	1.34
2	A	801	AOV	O4'-C4'	-7.42	1.28	1.45
2	B	801	AOV	O4'-C4'	-7.42	1.28	1.45
3	B	802	KDL	CFL-CFK	6.45	1.63	1.50
3	A	802	KDL	CFL-CFK	6.45	1.63	1.50
2	B	801	AOV	C3'-C4'	5.78	1.67	1.53
2	A	801	AOV	C3'-C4'	5.78	1.67	1.53
3	B	802	KDL	C2-N2	5.33	1.54	1.45
3	A	802	KDL	C2-N2	5.32	1.54	1.45
3	A	802	KDL	O3-CFK	5.11	1.48	1.34
3	B	802	KDL	O3-CFK	5.11	1.48	1.34
3	A	802	KDL	PHG-OAM	4.73	1.68	1.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	802	KDL	PHG-OAM	4.73	1.68	1.59
3	A	802	KDL	OBH-CBG	4.50	1.51	1.44
3	B	802	KDL	OBH-CBG	4.50	1.51	1.44
3	A	802	KDL	OBW-CBV	4.49	1.51	1.44
3	A	802	KDL	CEF-CEE	4.49	1.59	1.50
3	B	802	KDL	OBW-CBV	4.49	1.51	1.44
3	A	802	KDL	OBH-CBA	4.49	1.48	1.42
3	B	802	KDL	CEF-CEE	4.49	1.59	1.50
3	B	802	KDL	OBH-CBA	4.49	1.48	1.42
3	A	802	KDL	CAN-NAO	4.49	1.53	1.45
3	B	802	KDL	CAN-NAO	4.48	1.53	1.45
3	A	802	KDL	OAU-CAL	4.40	1.53	1.41
3	B	802	KDL	OAU-CAL	4.40	1.53	1.41
3	B	802	KDL	OAQ-CEE	4.24	1.46	1.34
3	A	802	KDL	OAQ-CEE	4.24	1.46	1.34
2	A	801	AOV	O2'-C2'	4.03	1.52	1.43
2	B	801	AOV	O2'-C2'	4.03	1.52	1.43
3	A	802	KDL	OBW-CBP	3.96	1.47	1.42
3	B	802	KDL	OBW-CBP	3.96	1.47	1.42
3	A	802	KDL	CAP-CAN	-3.88	1.46	1.53
3	B	802	KDL	CAP-CAN	-3.88	1.46	1.53
3	B	802	KDL	OFJ-CGB	3.86	1.45	1.34
3	A	802	KDL	OFJ-CGB	3.85	1.45	1.34
3	B	802	KDL	O3-C3	3.66	1.50	1.44
3	A	802	KDL	O3-C3	3.66	1.50	1.44
3	A	802	KDL	O5-C1	3.65	1.51	1.41
3	B	802	KDL	O5-C1	3.65	1.51	1.41
2	A	801	AOV	C6-N6	3.49	1.46	1.34
2	B	801	AOV	C6-N6	3.49	1.46	1.34
3	A	802	KDL	OAQ-CAP	3.44	1.50	1.44
3	B	802	KDL	OAQ-CAP	3.44	1.50	1.44
2	A	801	AOV	C2'-C1'	3.36	1.58	1.53
2	B	801	AOV	C2'-C1'	3.35	1.58	1.53
3	B	802	KDL	OFZ-CFM	-3.27	1.38	1.46
3	A	802	KDL	OFZ-CFM	-3.27	1.38	1.46
3	B	802	KDL	C8-C7	3.23	1.59	1.51
3	A	802	KDL	C8-C7	3.22	1.59	1.51
3	A	802	KDL	C3-C2	-3.18	1.47	1.53
3	B	802	KDL	C3-C2	-3.18	1.47	1.53
3	A	802	KDL	CGC-CGB	2.66	1.58	1.50
3	B	802	KDL	CGC-CGB	2.66	1.58	1.50
3	B	802	KDL	OFZ-CGN	2.59	1.41	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	802	KDL	OFZ-CGN	2.59	1.41	1.34
3	A	802	KDL	PHC-O4	2.55	1.64	1.59
3	B	802	KDL	PHC-O4	2.55	1.64	1.59
2	A	801	AOV	O3'-C3'	2.53	1.48	1.43
2	B	801	AOV	O3'-C3'	2.52	1.48	1.43
3	B	802	KDL	CFL-CFM	2.35	1.56	1.51
3	A	802	KDL	CFL-CFM	2.34	1.56	1.51
3	A	802	KDL	OFJ-CEW	-2.34	1.40	1.46
3	B	802	KDL	OFJ-CEW	-2.34	1.40	1.46
3	B	802	KDL	CBR-CBT	-2.33	1.49	1.52
3	A	802	KDL	CBR-CBT	-2.33	1.49	1.52
3	A	802	KDL	O6-C6	2.23	1.48	1.42
3	B	802	KDL	O6-C6	2.23	1.48	1.42
3	A	802	KDL	OBD-CBC	2.22	1.50	1.43
3	B	802	KDL	OBD-CBC	2.22	1.50	1.43
3	A	802	KDL	CBE-CBC	-2.16	1.48	1.53
3	A	802	KDL	O7-C7	-2.16	1.18	1.23
3	B	802	KDL	O7-C7	-2.16	1.18	1.23
3	B	802	KDL	CBE-CBC	-2.16	1.48	1.53
3	B	802	KDL	O1-CAV	2.13	1.47	1.43
3	A	802	KDL	O1-CAV	2.13	1.47	1.43
3	A	802	KDL	CFO-CFN	2.00	1.60	1.52
3	B	802	KDL	CFO-CFN	2.00	1.60	1.52

All (50) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	801	AOV	N3-C2-N1	-5.02	120.83	128.68
2	A	801	AOV	N3-C2-N1	-5.02	120.83	128.68
3	A	802	KDL	O3-CFK-CFL	4.97	120.59	111.46
3	B	802	KDL	O3-CFK-CFL	4.97	120.59	111.46
3	A	802	KDL	CBQ-CBR-CBT	4.77	115.50	110.84
3	B	802	KDL	CBQ-CBR-CBT	4.76	115.49	110.84
3	A	802	KDL	OBW-CBV-CBT	4.71	115.21	108.52
3	B	802	KDL	OBW-CBV-CBT	4.71	115.21	108.52
3	A	802	KDL	OFZ-CGN-CGP	4.12	120.39	111.50
3	B	802	KDL	OFZ-CGN-CGP	4.12	120.39	111.50
3	B	802	KDL	OAQ-CEE-CEF	4.07	118.93	111.46
3	A	802	KDL	OAQ-CEE-CEF	4.06	118.92	111.46
3	B	802	KDL	OBD-CBC-CBB	4.03	118.78	109.75
3	A	802	KDL	OBD-CBC-CBB	4.02	118.77	109.75
3	B	802	KDL	OFJ-CGB-CGC	3.96	120.03	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	802	KDL	OFJ-CGB-CGC	3.95	120.02	111.50
3	A	802	KDL	OBH-CBG-CBE	3.70	113.78	108.52
3	B	802	KDL	OBH-CBG-CBE	3.70	113.78	108.52
2	A	801	AOV	PA-O3A-PB	-3.15	122.02	132.83
2	B	801	AOV	PA-O3A-PB	-3.15	122.03	132.83
3	B	802	KDL	OAU-CAL-CAN	3.08	116.59	110.58
3	A	802	KDL	OAU-CAL-CAN	3.08	116.59	110.58
3	A	802	KDL	CDP-CDO-NAO	2.84	120.04	116.33
3	B	802	KDL	CDP-CDO-NAO	2.83	120.04	116.33
3	B	802	KDL	CBX-CBV-CBT	-2.82	109.35	114.03
3	A	802	KDL	CBX-CBV-CBT	-2.82	109.35	114.03
3	B	802	KDL	OES-CEE-CEF	-2.68	118.81	124.73
3	A	802	KDL	OES-CEE-CEF	-2.68	118.81	124.73
3	B	802	KDL	CBI-CBG-CBE	-2.65	109.63	114.03
3	A	802	KDL	CBI-CBG-CBE	-2.65	109.64	114.03
3	B	802	KDL	O5-C5-C4	2.61	115.26	109.75
3	A	802	KDL	O5-C5-C4	2.61	115.25	109.75
3	B	802	KDL	CBP-CBQ-CBR	2.53	115.77	110.66
3	A	802	KDL	CBP-CBQ-CBR	2.53	115.77	110.66
3	A	802	KDL	C3-O3-CFK	-2.49	113.39	117.53
3	B	802	KDL	C3-O3-CFK	-2.49	113.39	117.53
3	A	802	KDL	OFY-CFK-CFL	-2.48	119.25	124.73
3	B	802	KDL	OFY-CFK-CFL	-2.48	119.25	124.73
3	A	802	KDL	OAU-CAT-CAR	2.33	113.93	109.69
3	B	802	KDL	OAU-CAT-CAR	2.33	113.93	109.69
3	A	802	KDL	C6-C5-C4	-2.24	107.77	113.33
3	B	802	KDL	C6-C5-C4	-2.24	107.77	113.33
3	B	802	KDL	CBR-CBT-CBV	2.22	114.87	110.41
3	A	802	KDL	CBR-CBT-CBV	2.22	114.86	110.41
3	A	802	KDL	OBH-CBA-CBB	2.17	114.36	111.24
3	B	802	KDL	OBH-CBA-CBB	2.16	114.35	111.24
3	A	802	KDL	CAL-OAU-CAT	2.16	117.93	113.69
3	B	802	KDL	CAL-OAU-CAT	2.16	117.93	113.69
3	B	802	KDL	OAQ-CAP-CAN	2.09	111.82	107.91
3	A	802	KDL	OAQ-CAP-CAN	2.09	111.81	107.91

There are no chirality outliers.

All (160) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	801	AOV	C5'-O5'-PA-O1A
2	A	801	AOV	C5'-O5'-PA-O2A

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Mol	Chain	Res	Type	Atoms
2	A	801	AOV	C3'-C4'-C5'-O5'
2	B	801	AOV	C5'-O5'-PA-O1A
2	B	801	AOV	C5'-O5'-PA-O2A
2	B	801	AOV	C3'-C4'-C5'-O5'
3	A	802	KDL	OAU-CAL-OAM-PHG
3	A	802	KDL	CAN-CAP-OAQ-CEE
3	A	802	KDL	OAY-CAX-CBA-OBH
3	A	802	KDL	CAX-CBA-O6-C6
3	A	802	KDL	CBB-CBA-O6-C6
3	A	802	KDL	OBH-CBA-O6-C6
3	A	802	KDL	CBB-CBC-OBD-CBP
3	A	802	KDL	OBN-CBM-CBP-CBQ
3	A	802	KDL	OBN-CBM-CBP-OBD
3	A	802	KDL	OBN-CBM-CBP-OBW
3	A	802	KDL	OBO-CBM-CBP-CBQ
3	A	802	KDL	OBW-CBP-OBD-CBC
3	A	802	KDL	CBT-CBV-CBX-CBZ
3	A	802	KDL	CBT-CBV-CBX-OBY
3	A	802	KDL	OBW-CBV-CBX-CBZ
3	A	802	KDL	OBW-CBV-CBX-OBY
3	A	802	KDL	CDO-CDP-CDQ-OED
3	A	802	KDL	CDP-CDQ-CDR-CDS
3	A	802	KDL	CEE-CEF-CEG-CEH
3	A	802	KDL	CEE-CEF-CEG-OET
3	A	802	KDL	CFK-CFL-CFM-CFN
3	A	802	KDL	CFK-CFL-CFM-OFZ
3	A	802	KDL	CFL-CFM-CFN-CFO
3	A	802	KDL	CFN-CFM-OFZ-CGN
3	A	802	KDL	CGP-CGN-OFZ-CFM
3	B	802	KDL	OAU-CAL-OAM-PHG
3	B	802	KDL	CAN-CAP-OAQ-CEE
3	B	802	KDL	OAY-CAX-CBA-OBH
3	B	802	KDL	CAX-CBA-O6-C6
3	B	802	KDL	CBB-CBA-O6-C6
3	B	802	KDL	OBH-CBA-O6-C6
3	B	802	KDL	CBB-CBC-OBD-CBP
3	B	802	KDL	OBN-CBM-CBP-CBQ
3	B	802	KDL	OBN-CBM-CBP-OBD
3	B	802	KDL	OBN-CBM-CBP-OBW
3	B	802	KDL	OBO-CBM-CBP-CBQ
3	B	802	KDL	OBW-CBP-OBD-CBC
3	B	802	KDL	CBT-CBV-CBX-CBZ

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Mol	Chain	Res	Type	Atoms
3	B	802	KDL	CBT-CBV-CBX-OBY
3	B	802	KDL	OBW-CBV-CBX-CBZ
3	B	802	KDL	OBW-CBV-CBX-OBY
3	B	802	KDL	CDO-CDP-CDQ-OED
3	B	802	KDL	CDP-CDQ-CDR-CDS
3	B	802	KDL	CEE-CEF-CEG-CEH
3	B	802	KDL	CEE-CEF-CEG-OET
3	B	802	KDL	CFK-CFL-CFM-CFN
3	B	802	KDL	CFK-CFL-CFM-OFZ
3	B	802	KDL	CFL-CFM-CFN-CFO
3	B	802	KDL	CFN-CFM-OFZ-CGN
3	B	802	KDL	CGP-CGN-OFZ-CFM
3	A	802	KDL	OGO-CGN-OFZ-CFM
3	B	802	KDL	OGO-CGN-OFZ-CFM
3	A	802	KDL	OAU-CAT-CAV-O1
3	B	802	KDL	OAU-CAT-CAV-O1
3	A	802	KDL	CAR-CAT-CAV-O1
3	B	802	KDL	CAR-CAT-CAV-O1
3	A	802	KDL	CGT-CGU-CGV-CGW
3	B	802	KDL	CGT-CGU-CGV-CGW
3	A	802	KDL	CGC-CGD-CGE-CGF
3	B	802	KDL	CGC-CGD-CGE-CGF
3	A	802	KDL	CGX-CGY-CGZ-CHA
3	B	802	KDL	CGX-CGY-CGZ-CHA
2	A	801	AOV	O4'-C4'-C5'-O5'
2	B	801	AOV	O4'-C4'-C5'-O5'
3	A	802	KDL	CEK-CEL-CEM-CEN
3	B	802	KDL	CEK-CEL-CEM-CEN
3	A	802	KDL	OFZ-CFM-CFN-CFO
3	B	802	KDL	OFZ-CFM-CFN-CFO
3	A	802	KDL	O5-C5-C6-O6
3	B	802	KDL	O5-C5-C6-O6
3	A	802	KDL	CDT-CDU-CDV-CDW
3	B	802	KDL	CDT-CDU-CDV-CDW
3	A	802	KDL	CGC-CGB-OFJ-CEW
3	B	802	KDL	CGC-CGB-OFJ-CEW
3	A	802	KDL	CEZ-CFA-CFB-CFC
3	B	802	KDL	CEZ-CFA-CFB-CFC
3	A	802	KDL	CDS-CDT-CDU-CDV
3	A	802	KDL	CEH-CEI-CEJ-CEK
3	B	802	KDL	CDS-CDT-CDU-CDV
3	B	802	KDL	CEH-CEI-CEJ-CEK

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Mol	Chain	Res	Type	Atoms
3	A	802	KDL	OGA-CGB-OFJ-CEW
3	B	802	KDL	OGA-CGB-OFJ-CEW
3	A	802	KDL	CFR-CFS-CFT-CFU
3	B	802	KDL	CFR-CFS-CFT-CFU
3	A	802	KDL	CGG-CGH-CGI-CGJ
3	B	802	KDL	CGG-CGH-CGI-CGJ
3	A	802	KDL	CDW-CDX-CDY-CDZ
3	A	802	KDL	CEY-CEZ-CFA-CFB
3	B	802	KDL	CDW-CDX-CDY-CDZ
3	B	802	KDL	CEY-CEZ-CFA-CFB
3	A	802	KDL	CDU-CDV-CDW-CDX
3	A	802	KDL	CGU-CGV-CGW-CGX
3	A	802	KDL	CGV-CGW-CGX-CGY
3	B	802	KDL	CDU-CDV-CDW-CDX
3	B	802	KDL	CGU-CGV-CGW-CGX
3	B	802	KDL	CGV-CGW-CGX-CGY
3	A	802	KDL	CFC-CFD-CFE-CFF
3	B	802	KDL	CFC-CFD-CFE-CFF
3	A	802	KDL	CFQ-CFR-CFS-CFT
3	B	802	KDL	CFQ-CFR-CFS-CFT
3	A	802	KDL	OED-CDQ-CDR-CDS
3	B	802	KDL	OED-CDQ-CDR-CDS
3	A	802	KDL	CFU-CFV-CFW-CFX
3	B	802	KDL	CFU-CFV-CFW-CFX
3	A	802	KDL	CBG-CBI-CBK-OBL
3	B	802	KDL	CBG-CBI-CBK-OBL
3	A	802	KDL	CGR-CGS-CGT-CGU
3	B	802	KDL	CGR-CGS-CGT-CGU
3	A	802	KDL	CFE-CFF-CFG-CFH
3	B	802	KDL	CFE-CFF-CFG-CFH
3	A	802	KDL	CGJ-CGK-CGL-CGM
3	B	802	KDL	CGJ-CGK-CGL-CGM
3	A	802	KDL	CFL-CFK-O3-C3
3	B	802	KDL	CFL-CFK-O3-C3
2	A	801	AOV	C4'-C5'-O5'-PA
2	B	801	AOV	C4'-C5'-O5'-PA
3	A	802	KDL	CFB-CFC-CFD-CFE
3	B	802	KDL	CFB-CFC-CFD-CFE
3	A	802	KDL	CEM-CEN-CEO-CEP
3	B	802	KDL	CEM-CEN-CEO-CEP
3	A	802	KDL	CFP-CFQ-CFR-CFS
3	B	802	KDL	CFP-CFQ-CFR-CFS

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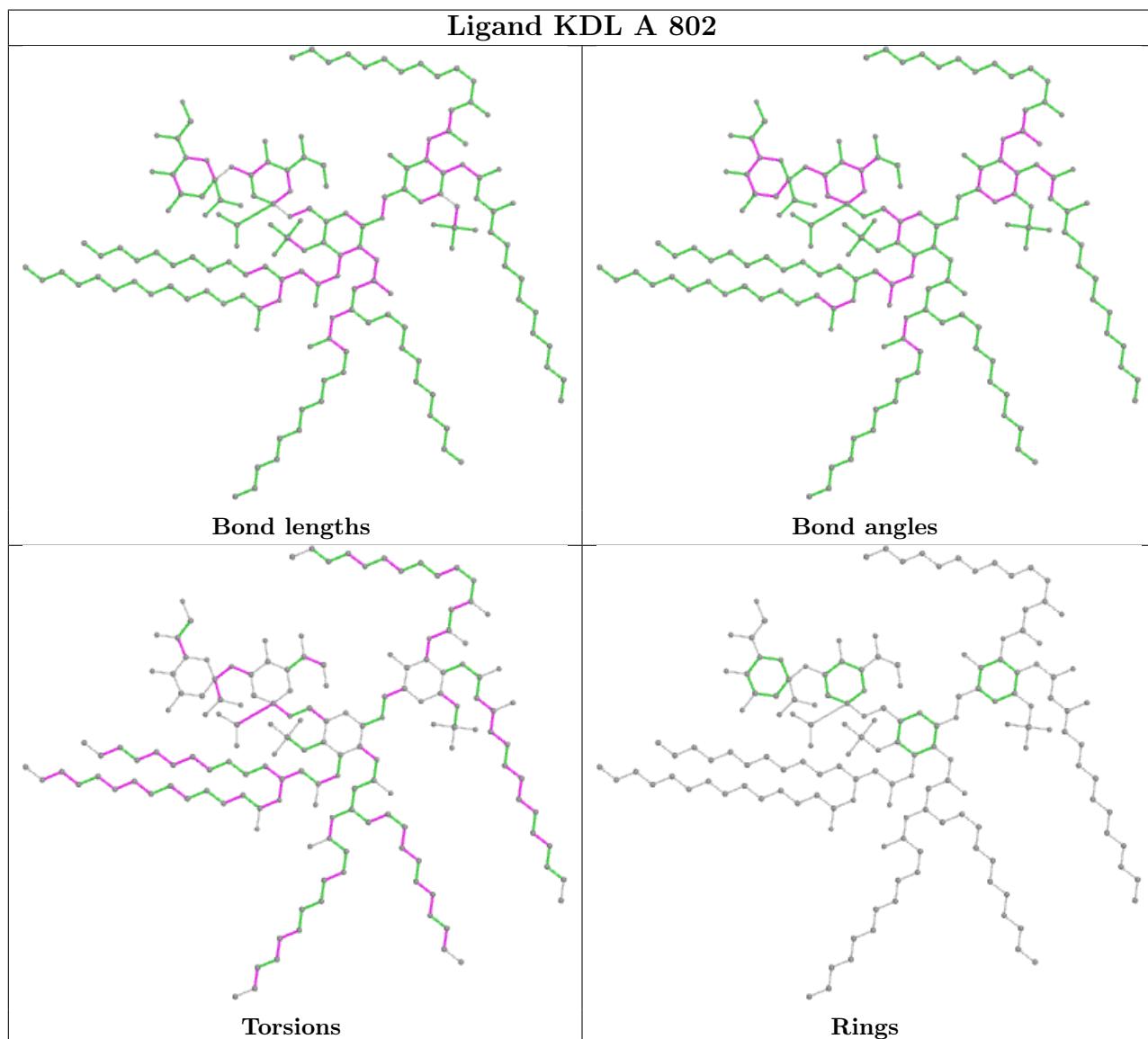
Mol	Chain	Res	Type	Atoms
3	A	802	KDL	CGH-CGI-CGJ-CGK
3	B	802	KDL	CGH-CGI-CGJ-CGK
3	A	802	KDL	OFY-CFK-O3-C3
3	B	802	KDL	OFY-CFK-O3-C3
3	A	802	KDL	C3-C2-N2-C7
3	B	802	KDL	C3-C2-N2-C7
3	A	802	KDL	OES-CEE-OAQ-CAP
3	B	802	KDL	OES-CEE-OAQ-CAP
3	A	802	KDL	CDO-CDP-CDQ-CDR
3	B	802	KDL	CDO-CDP-CDQ-CDR
3	A	802	KDL	CDQ-CDR-CDS-CDT
3	B	802	KDL	CDQ-CDR-CDS-CDT
3	A	802	KDL	CEF-CEE-OAQ-CAP
3	B	802	KDL	CEF-CEE-OAQ-CAP
3	A	802	KDL	CGN-CGP-CGQ-CGR
3	B	802	KDL	CGN-CGP-CGQ-CGR
3	A	802	KDL	C1-C2-N2-C7
3	B	802	KDL	C1-C2-N2-C7
3	A	802	KDL	CEW-CEX-CEY-CEZ
3	B	802	KDL	CEW-CEX-CEY-CEZ
3	A	802	KDL	CGY-CGZ-CHA-CHB
3	B	802	KDL	CGY-CGZ-CHA-CHB
3	A	802	KDL	CBE-CBC-OBD-CBP
3	B	802	KDL	CBE-CBC-OBD-CBP
3	A	802	KDL	OBO-CBM-CBP-OBW
3	B	802	KDL	OBO-CBM-CBP-OBW
3	A	802	KDL	CFS-CFT-CFU-CFV
3	B	802	KDL	CFS-CFT-CFU-CFV
3	A	802	KDL	OBJ-CBI-CBK-OBL
3	B	802	KDL	OBJ-CBI-CBK-OBL
2	A	801	AOV	C5'-O5'-PA-O3A
2	B	801	AOV	C5'-O5'-PA-O3A
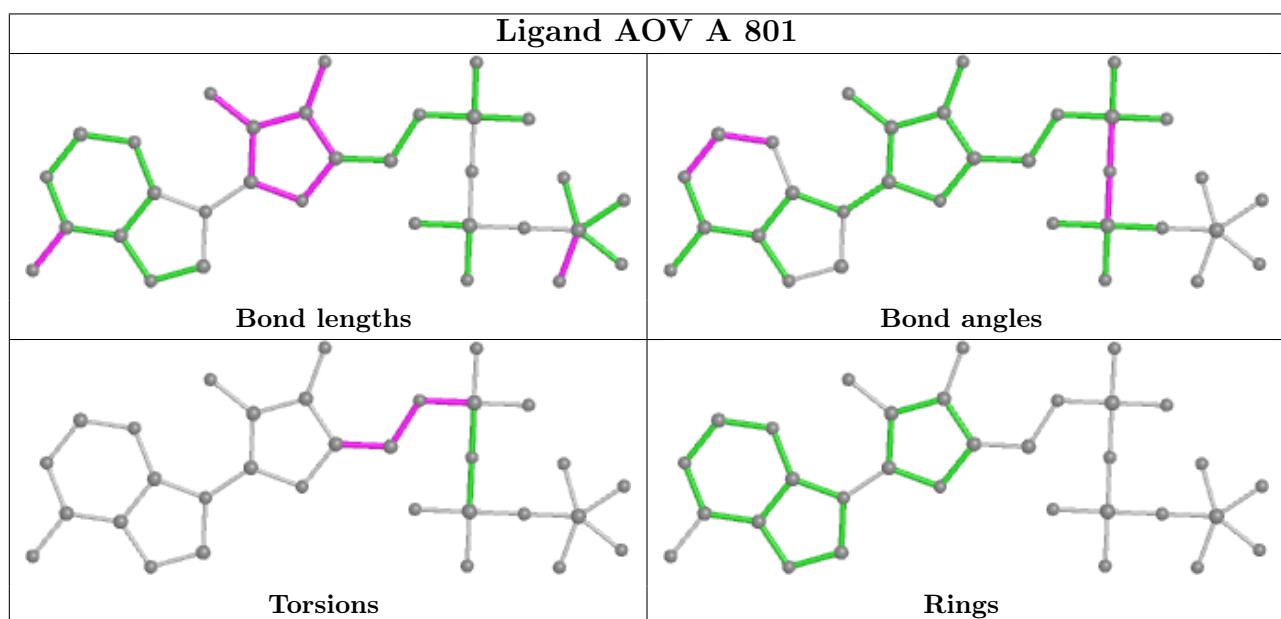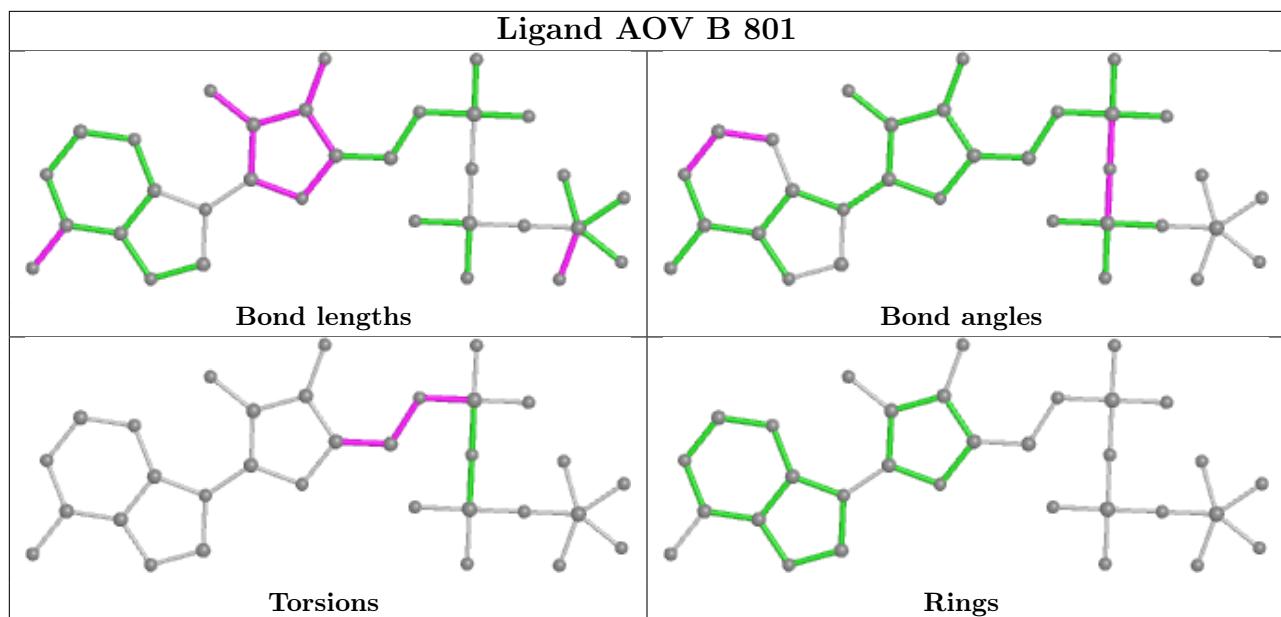
There are no ring outliers.
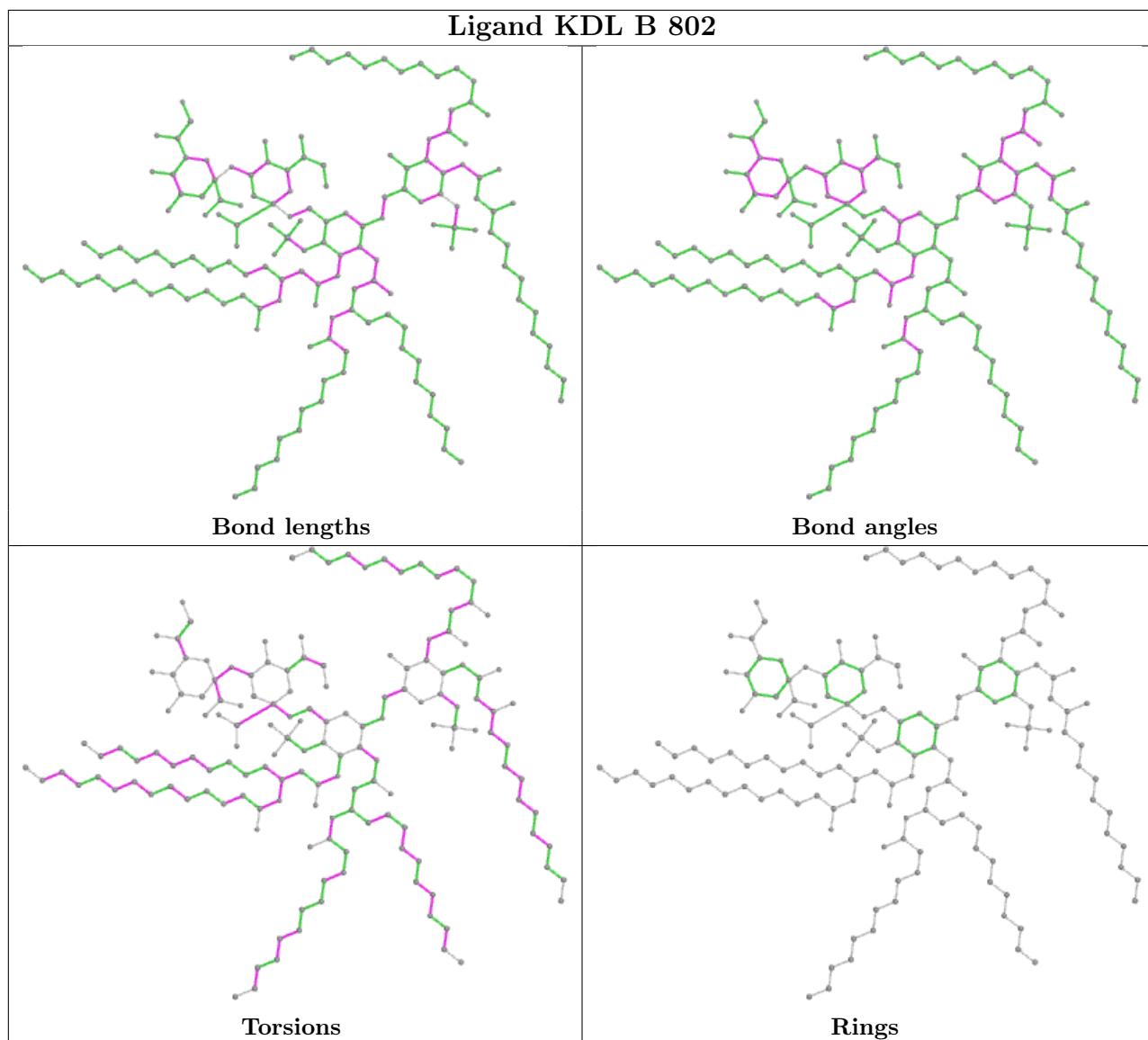
4 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	802	KDL	3	0
2	B	801	AOV	3	0
2	A	801	AOV	3	0
3	B	802	KDL	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 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 KDL A 802

Bond lengths

Bond angles

Torsions

Rings

Ligand AOV B 801

Bond lengths

Bond angles

Torsions

Rings

Ligand AOV A 801

Bond lengths

Bond angles

Torsions

Rings

Ligand KDL B 802

Bond lengths

Bond angles

Torsions

Rings

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.
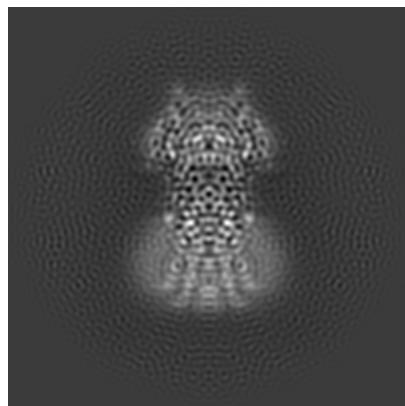
6　Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-27544. These allow visual inspection of the internal detail of the map and identification of artifacts.
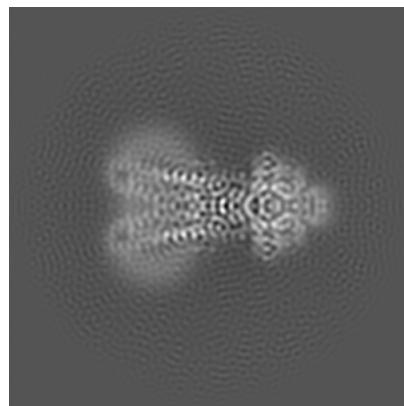
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1　Orthogonal projections ⓘ
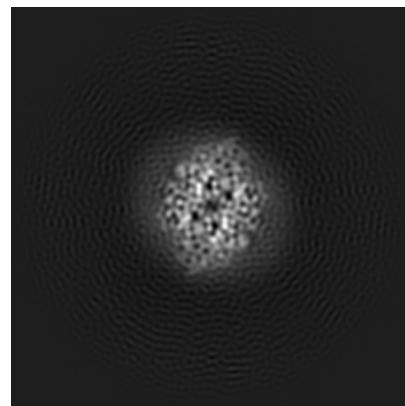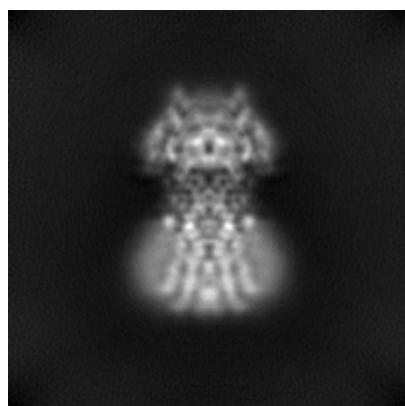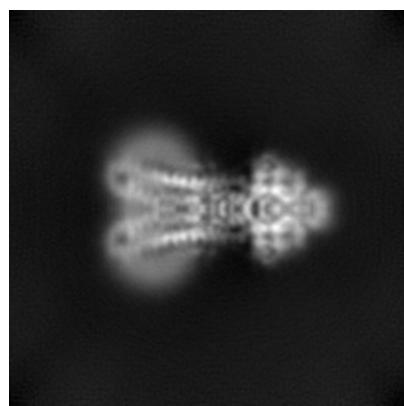
6.1.1　Primary map

X　　　　　　　　　　　　　　　　Y　　　　　　　　　　　　　　　　Z
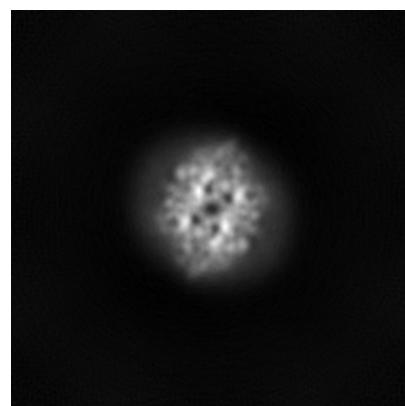
6.1.2　Raw map

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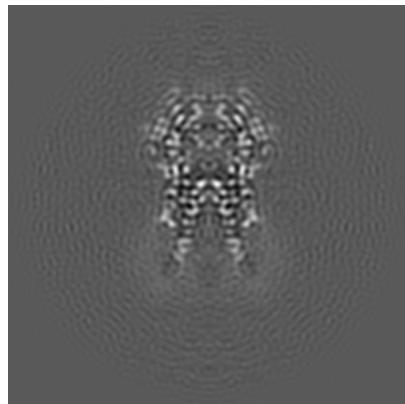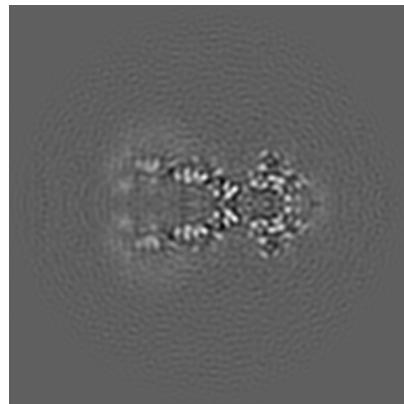
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
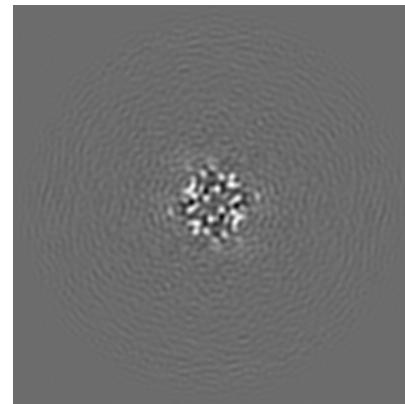
6.2.1 Primary map
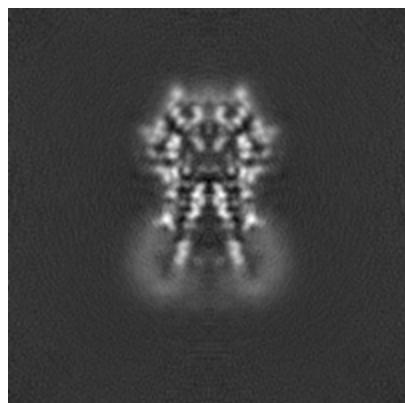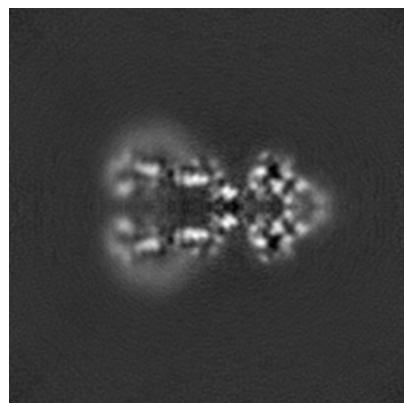
| X Index: 100 | Y Index: 100 | Z Index: 100 |
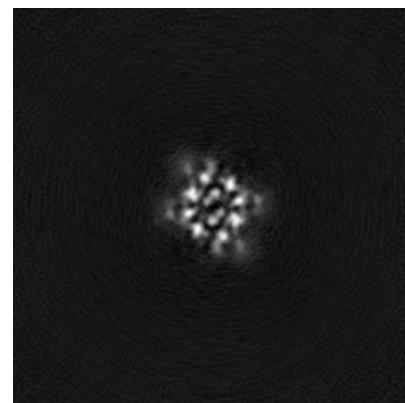
6.2.2 Raw map
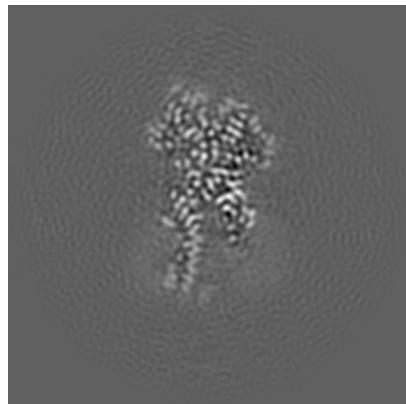
| X Index: 100 | Y Index: 100 | Z Index: 100 |
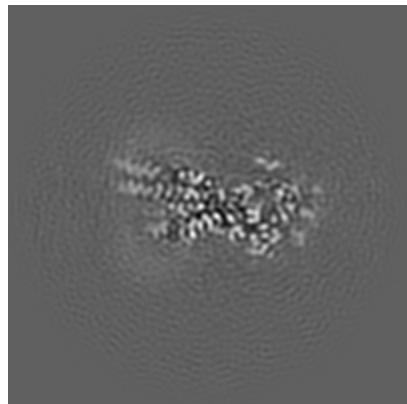
The images above show central slices of the map in three orthogonal directions.

6.3   Largest variance slices (i)
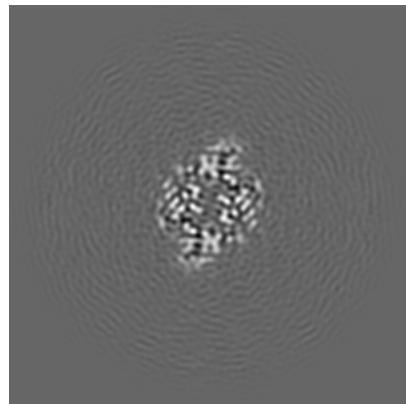
6.3.1   Primary map
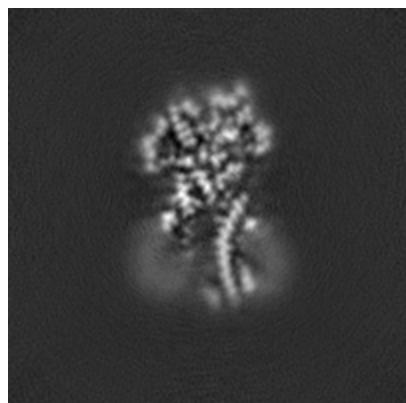
X Index: 106   Y Index: 90   Z Index: 126
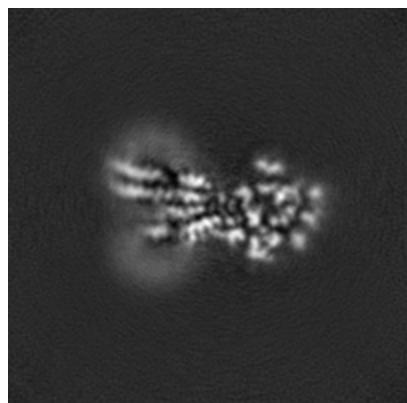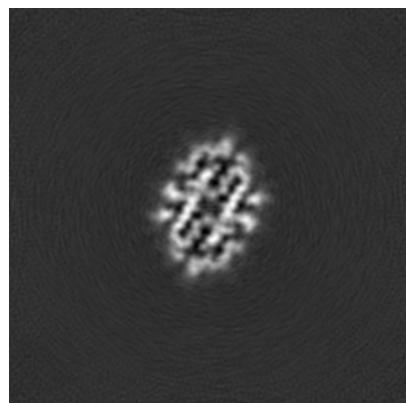
6.3.2   Raw map
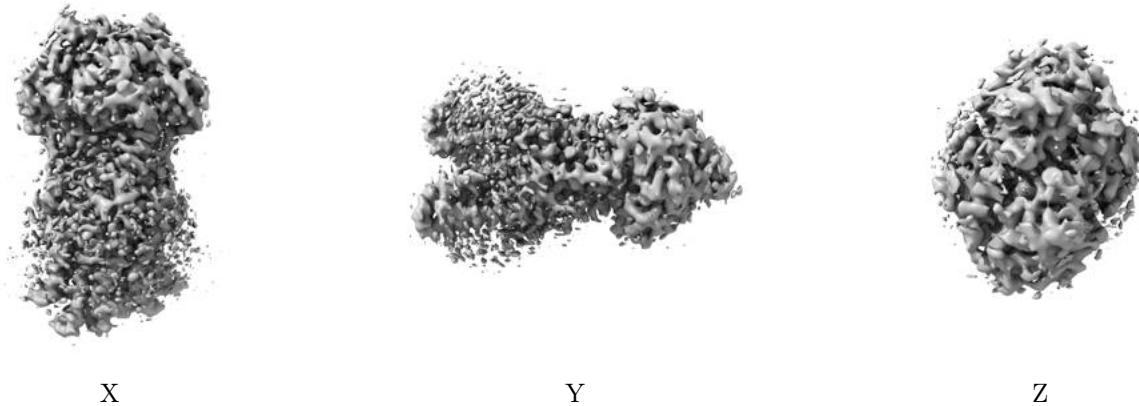
X Index: 94   Y Index: 90   Z Index: 134

The images above show the largest variance slices of the map in three orthogonal directions.
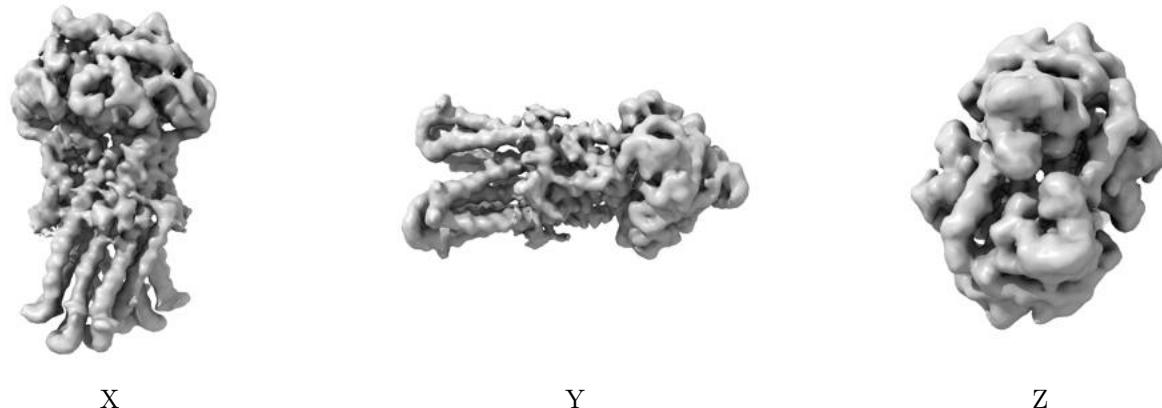
6.4 Orthogonal surface views (i)

6.4.1 Primary map

X   Y   Z

The images above show the 3D surface view of the map at the recommended contour level 0.14. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 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.
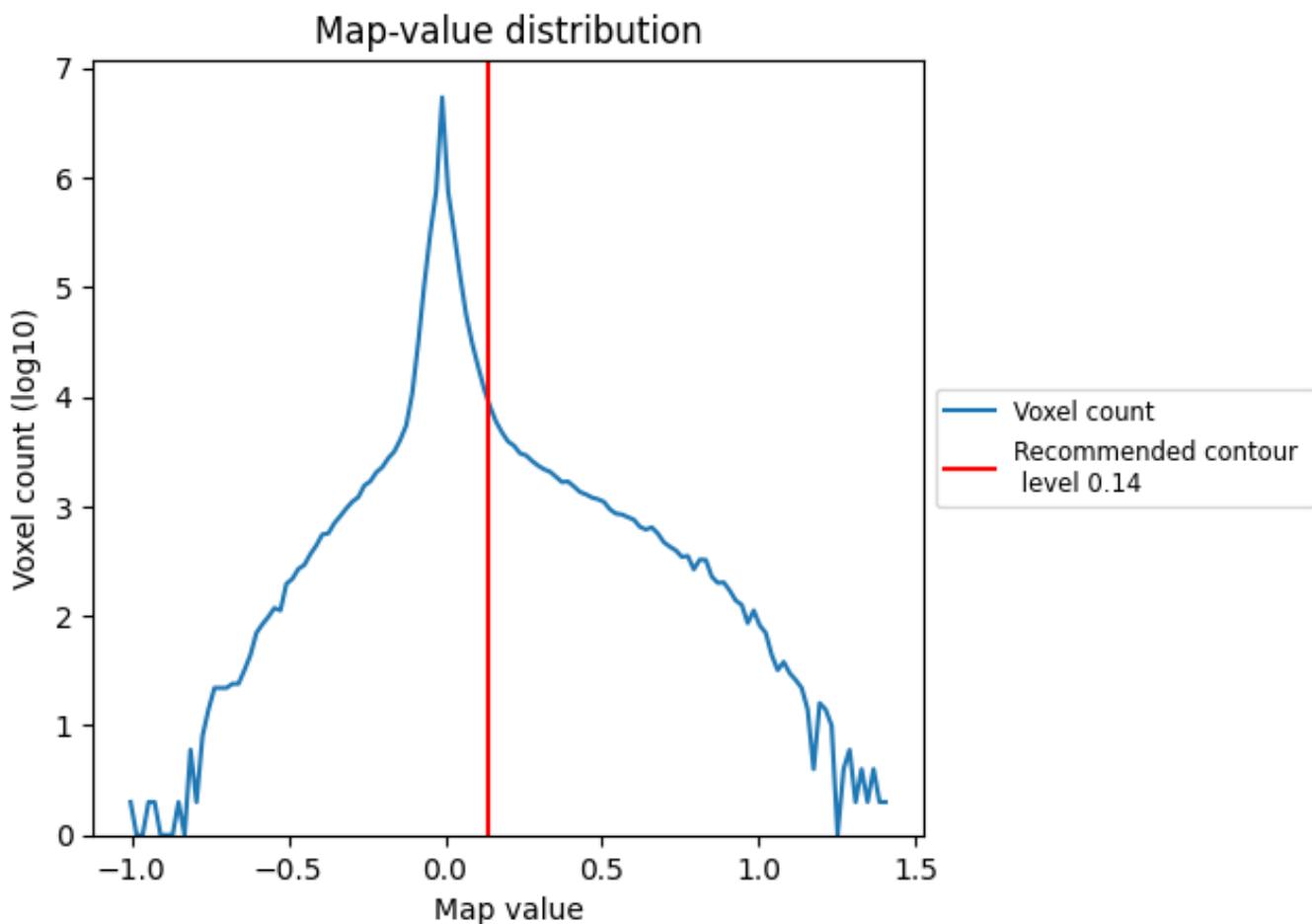
6.5 Mask visualisation (i)

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

7   Map analysis ⓘ
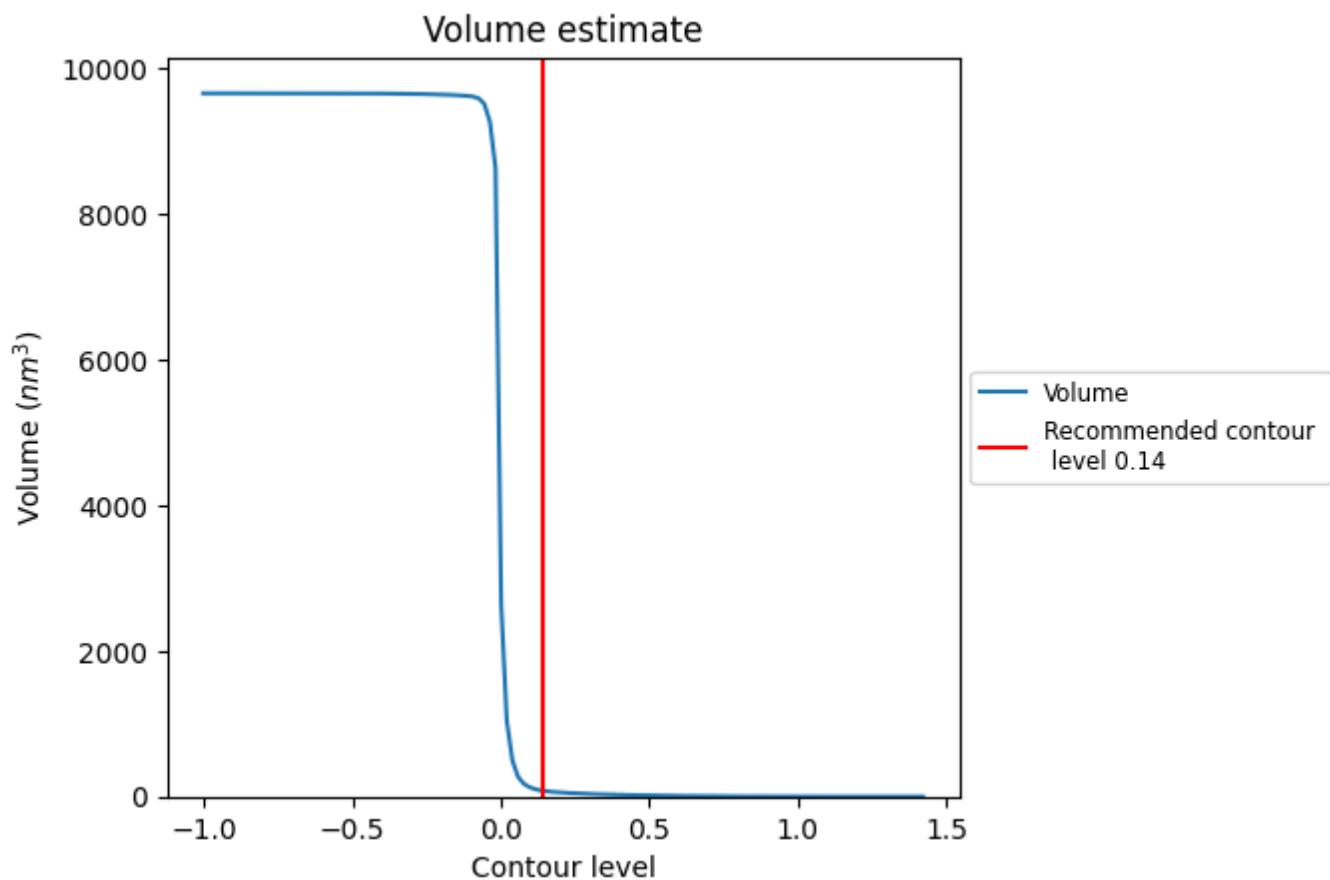
This section contains the results of statistical analysis of the map.

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.
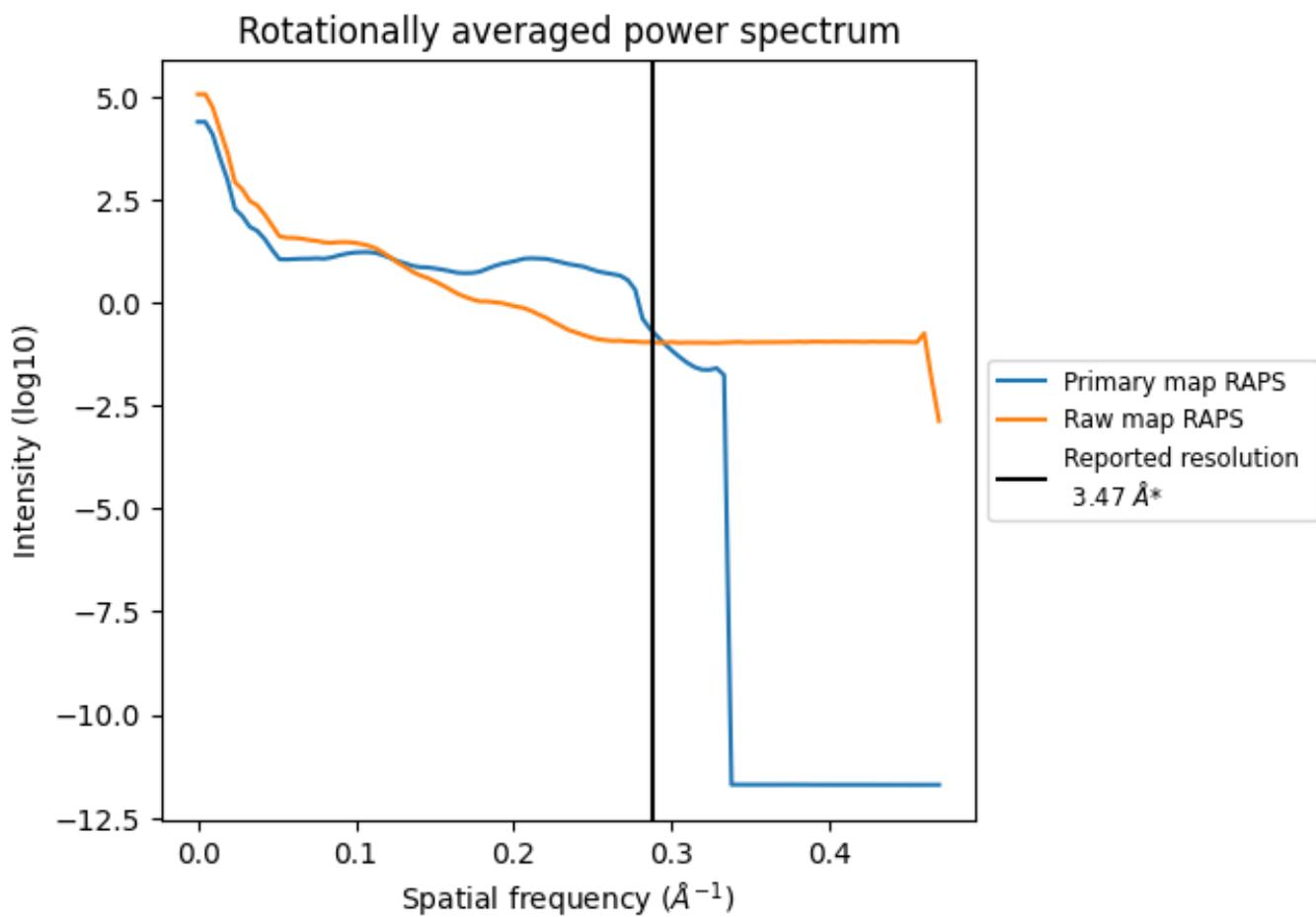
7.2 Volume estimate (i)

The volume at the recommended contour level is 81 nm^3; this corresponds to an approximate mass of 73 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　ⓘ
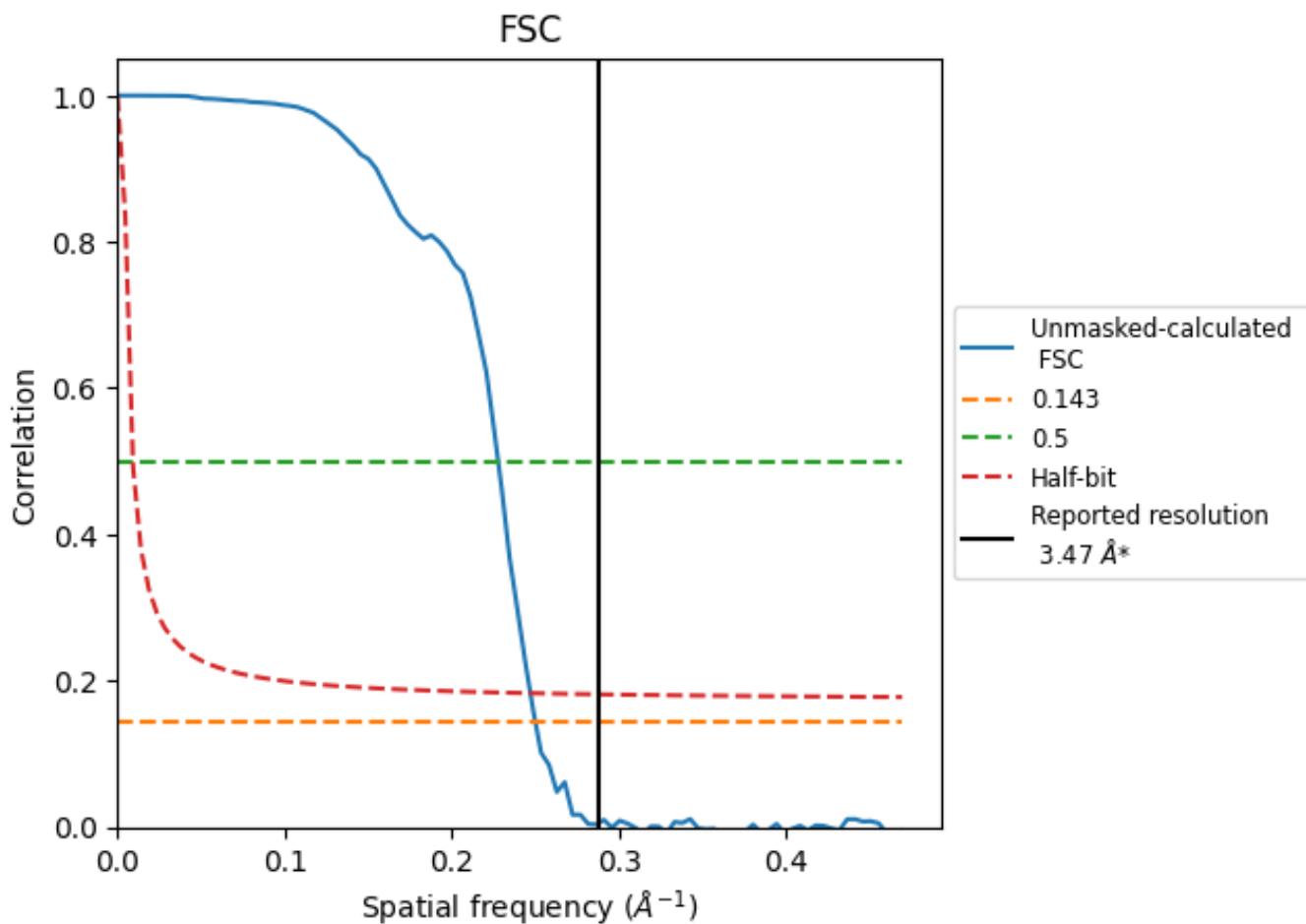
*Reported resolution corresponds to spatial frequency of 0.288 Å^{-1}

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 0.288 Å^{-1}

8.2 Resolution estimates ⓘ
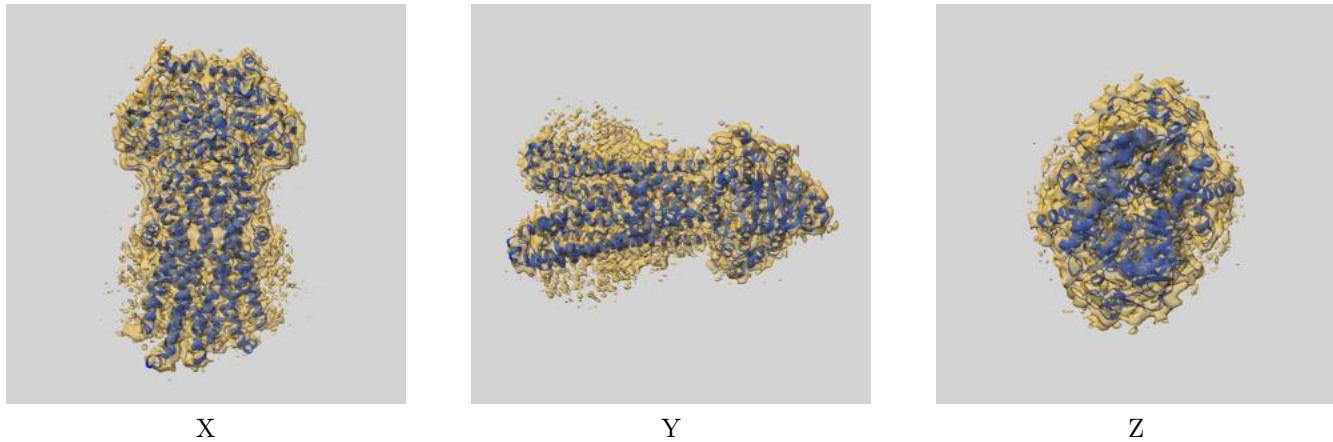
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.47	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.00	4.39	4.05

*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 4.00 differs from the reported value 3.47 by more than 10 %

9 Map-model fit ⓘ
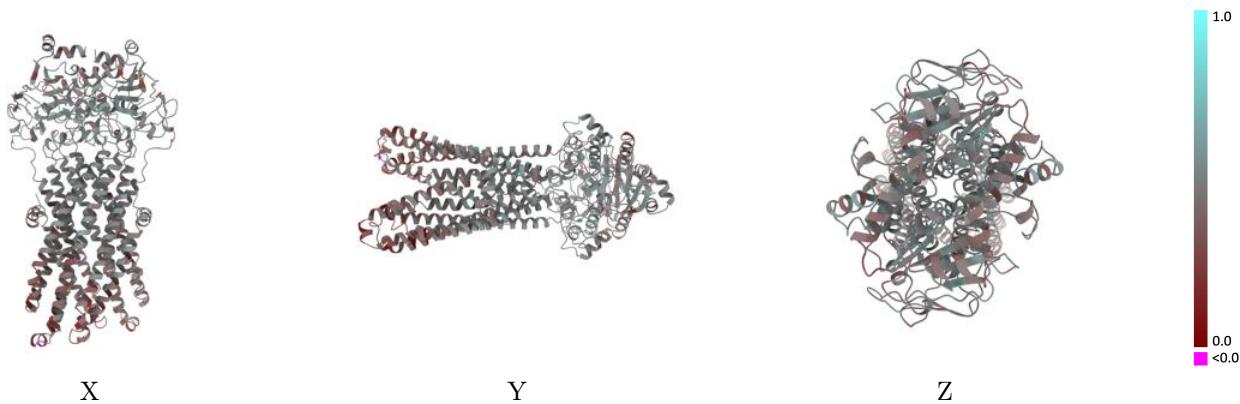
This section contains information regarding the fit between EMDB map EMD-27544 and PDB model 8DMM. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay ⓘ

| X | Y | Z |
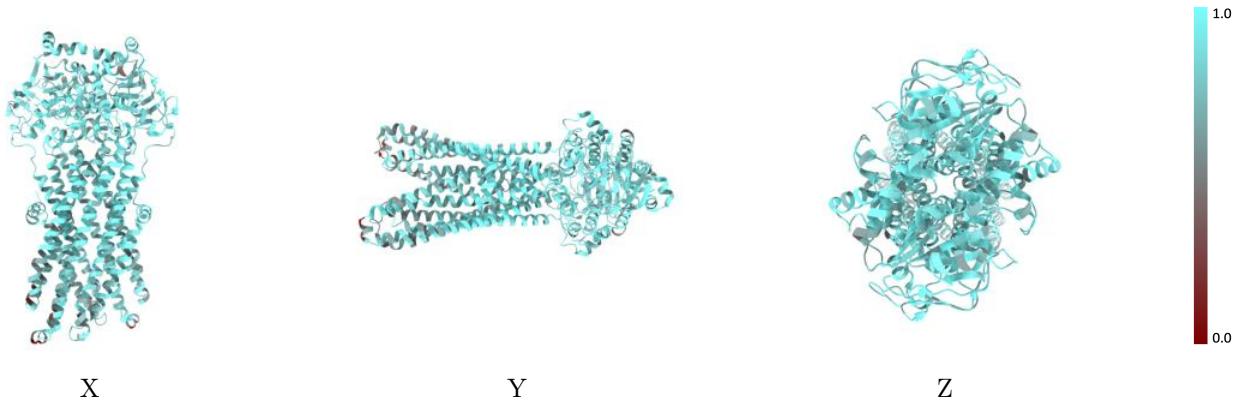
The images above show the 3D surface view of the map at the recommended contour level 0.14 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ

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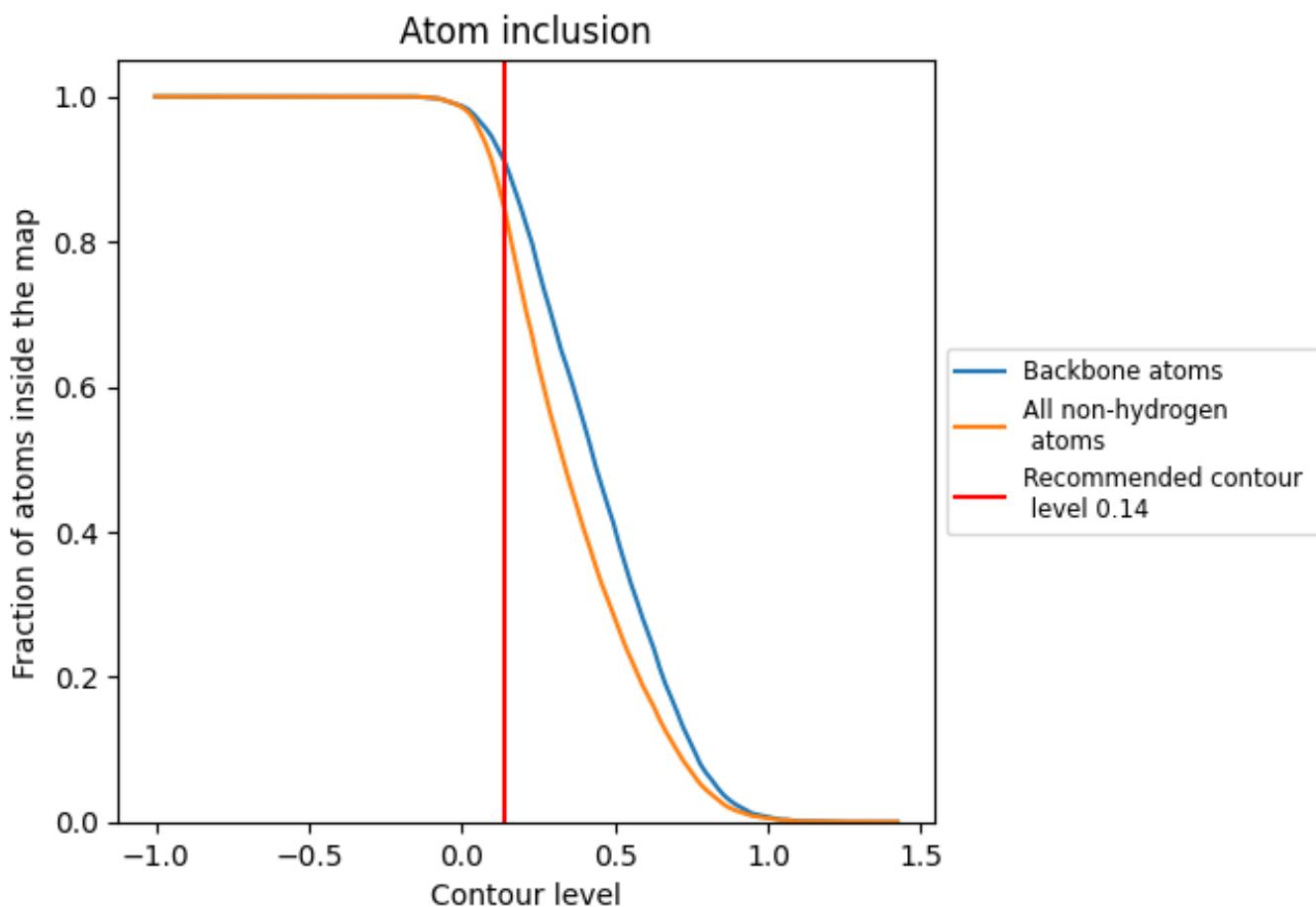
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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 (0.14).

9.4 Atom inclusion ⓘ

At the recommended contour level, 91% of all backbone atoms, 84% 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 (0.14) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8418	0.4500
A	0.8485	0.4550
B	0.8351	0.4440

1.0

0.0

<0.0