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 (i)

Oct 6, 2024 – 09:12 PM EDT

PDB ID	:	8VUT
EMDB ID	:	EMD-43539
Title	:	Human GluN1-2A with IgG 008-218
Authors	:	Michalski, K.; Furukawa, H.
Deposited on	:	2024-01-29
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 (i) 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 (i)) were used in the production of this report:
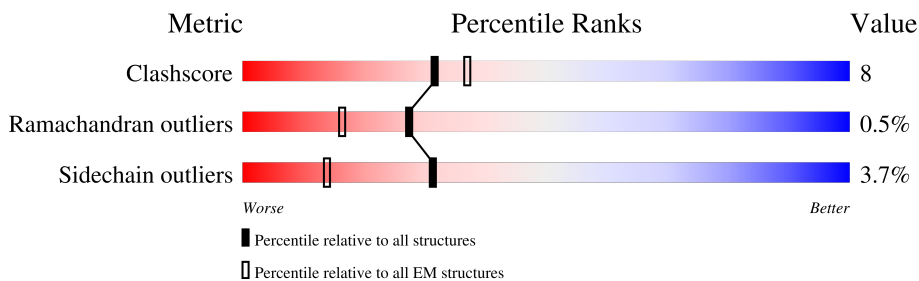
EMDB validation analysis	:	0.0.1.dev113
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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	Percentile Ranks	Value
Clashscore		8
Ramachandran outliers		0.5%
Sidechain outliers		3.7%

Worse   *Better*

▮ Percentile relative to all structures

▯ Percentile relative to all EM structures

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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=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	817	6% / 77% / 18% · ·
1	C	817	6% / 76% / 19% · ·
2	B	808	8% / 78% / 18% ·
2	D	808	7% / 80% / 15% · ·
3	H	220	30% / 71% / 28% ·
3	I	220	42% / 81% / 18%
4	L	209	36% / 70% / 29% ·
4	M	209	39% / 78% / 22%

2 Entity composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 28819 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 Glutamate receptor ionotropic, NMDA 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	789	Total	C	N	O	S	0	0
			5810	3691	1028	1063	28		
1	C	789	Total	C	N	O	S	0	0
			5640	3583	1008	1024	25		

- Molecule 2 is a protein called Glutamate receptor ionotropic, NMDA 2A.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	781	Total	C	N	O	S	0	0
			5537	3564	949	997	27		
2	D	781	Total	C	N	O	S	0	0
			5490	3544	938	982	26		

- Molecule 3 is a protein called 008-218 Heavy.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	H	220	Total	C	N	O	S	0	0
			1617	1022	272	316	7		
3	I	220	Total	C	N	O	S	0	0
			1617	1022	272	316	7		

- Molecule 4 is a protein called 008-218 Light.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	L	209	Total	C	N	O	S	0	0
			1554	965	265	319	5		
4	M	209	Total	C	N	O	S	0	0
			1554	965	265	319	5		

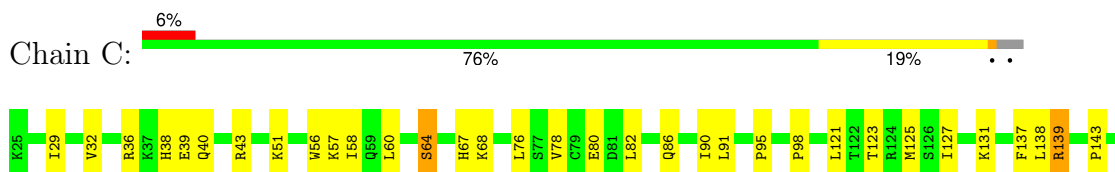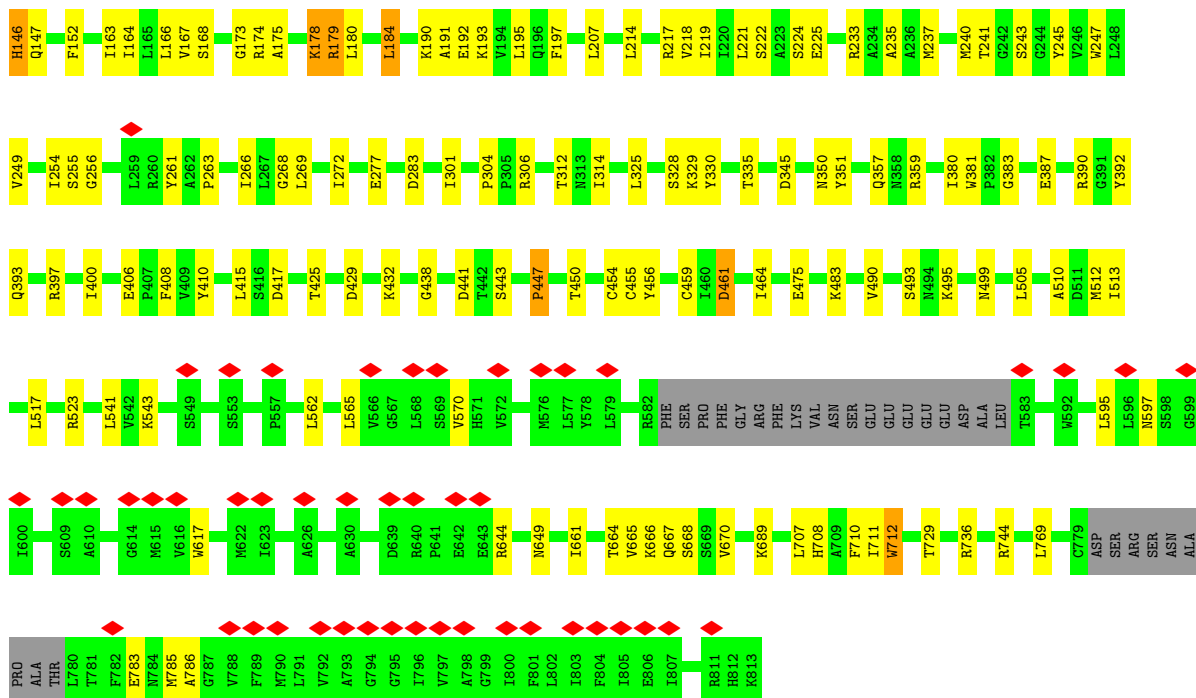# 3 Residue-property plots ⓘ

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.
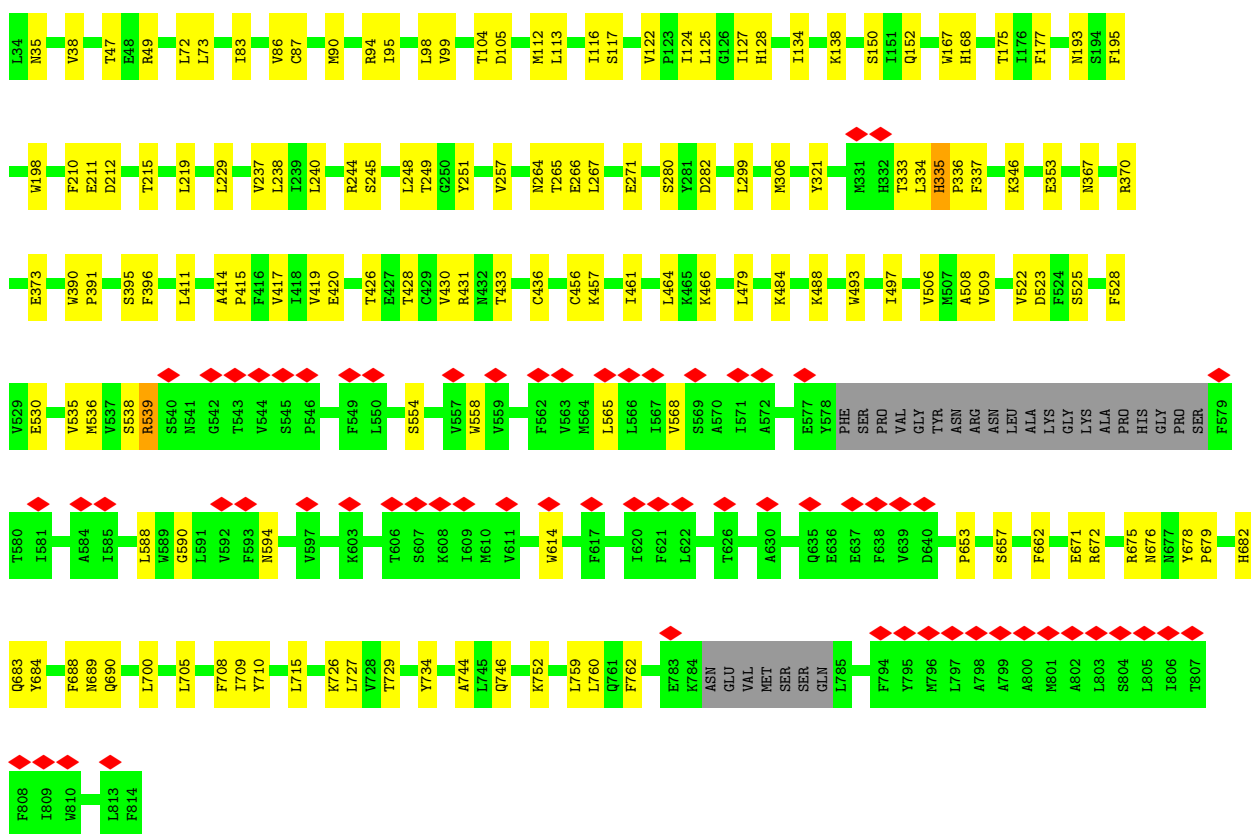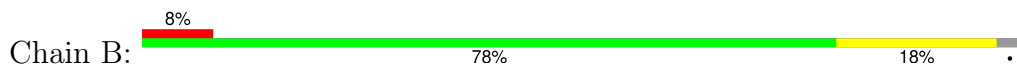
• Molecule 1: Glutamate receptor ionotropic, NMDA 1
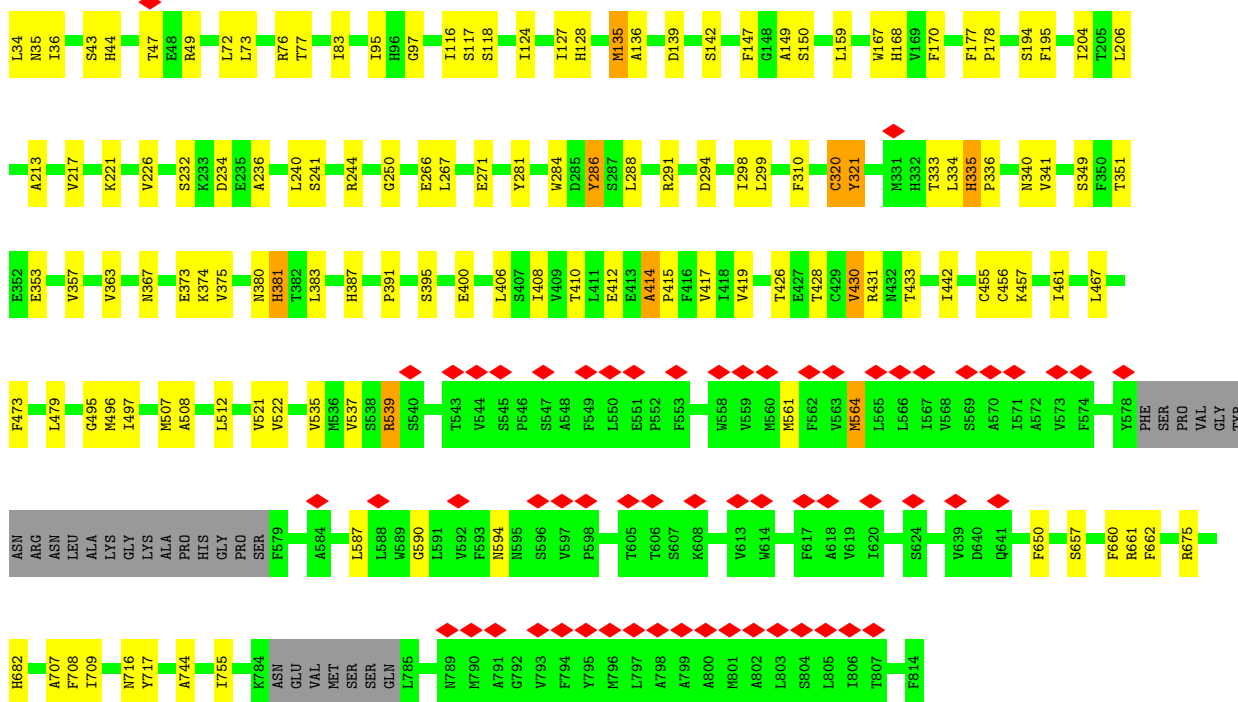

Chain A:

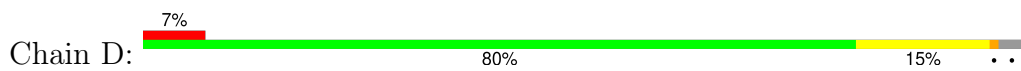• Molecule 1: Glutamate receptor ionotropic, NMDA 1

Chain C:

• Molecule 2: Glutamate receptor ionotropic, NMDA 2A
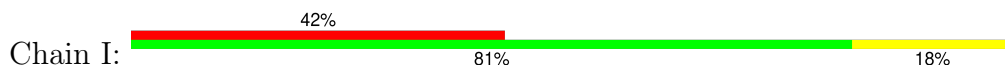
Chain B:

• Molecule 2: Glutamate receptor ionotropic, NMDA 2A

Chain D:

7%

80%

15%

• •

• Molecule 3: 008-218 Heavy

Chain H:

30%

71%

28%

•

• Molecule 3: 008-218 Heavy

Chain I:

42%

81%

18%

P194 S195 S196 S197 L198 G199 T200 Q201 T202 Y203 I204 C205 N206 V207 N208 H209 K210 P211 S212 N213 T214 K215 V216 D217 K218 K219 V220

• Molecule 4: 008-218 Light

Chain L:

36%

70% 29%

N1 F2 M3 L4 T5 S13 K16 T19 C22 T23 R24 S25 S26 G27 S31 N32 Y33 W36 Y37 Q38 Q39 R40 P41 G42 S43 T47 V48 I49 Y50 D51 D52 N53 P56 N61 R62 F63 I67 D68 S69 I77 I78 T83 E84 D85 E86 A87 D88 Y89

K102 Q108 P109 K110 A111 A112 P113 S114 L117 F118 P119 P120 S121 S122 E123 E124 L125 Q126 A127 N128 K129 A130 T131 L132 V133 C134 L135 I136 F139 G142 A143 V144 T145 V146 A147 W148 K149 A150 D151 S152 S153 P154 V155 K156 A157 G158 V159 E160 T161 T162 T163 S168 N169 N170

K171 A174 S175 S176 Y177 L178 S179 L180 T181 P182 E183 Q184 W185 K186 S187 H188 R189 S190 Y191 S192 C193 Q194 V195 T196 H197 E198 G199 S200 T201 V202 E203 K204 T205 V206 A207 P208 T209

• Molecule 4: 008-218 Light

Chain M:

39%

78% 22%

N1 F2 M3 Q6 P7 H8 T19 C22 T23 R24 S25 S26 G27 S28 Y33 W36 Y37 G42 S43 T47 V48 I49 Y50 Q54 R55 P56 R62 S69 L76 I77 I78 T83 E84 C91 R95 G100 T101 K102 L106 G107 Q108 P109 K110

S114 L117 F118 P119 P120 S121 S122 E123 E124 L125 Q126 A127 N128 K129 A130 T131 L132 V133 C134 L135 I136 F139 Y140 P141 G142 A143 V144 T145 V146 A147 W148 K149 A150 D151 S152 S153 P154 V155 K156 A157 G158 V159 E160 T161 T162 T163 P164 S165 K166 Q167 S168 N169 N170 K171 Y172 A173 A174 S175

S176 Y177 L178 S179 L180 T181 P182 E183 Q184 W185 K186 S187 H188 R189 S190 Y191 S192 C193 Q194 V195 T196 H197 E198 G199 S200 T201 V202 E203 K204 T205 V206 A207 P208 T209

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	287872	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	60	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.806	Depositor
Minimum map value	-0.477	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.017	Depositor
Recommended contour level	0.0562	Depositor
Map size (Å)	342.4, 342.4, 342.4	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.856, 0.856, 0.856	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
1	A	0.31	0/5932	0.52	1/8077 (0.0%)
1	C	0.29	1/5759 (0.0%)	0.54	3/7868 (0.0%)
2	B	0.29	0/5663	0.48	0/7750
2	D	0.29	0/5619	0.48	0/7699
3	H	0.26	0/1657	0.50	0/2260
3	I	0.25	0/1657	0.49	0/2260
4	L	0.25	0/1591	0.50	0/2174
4	M	0.25	0/1591	0.48	0/2174
All	All	0.28	1/29469 (0.0%)	0.50	4/40262 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	447	PRO	CG-CD	-8.88	1.21	1.50

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	447	PRO	CA-N-CD	-12.83	93.54	111.50
1	C	447	PRO	N-CD-CG	-11.50	85.95	103.20
1	C	447	PRO	CA-CB-CG	-6.54	91.58	104.00
1	A	304	PRO	CA-N-CD	-5.10	104.36	111.50

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.

W O R L D W I D E
wwPDB
PROTEIN DATA BANK

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5810	0	5480	89	0
1	C	5640	0	5160	97	0
2	B	5537	0	4986	87	0
2	D	5490	0	4861	77	0
3	H	1617	0	1562	38	0
3	I	1617	0	1562	23	0
4	L	1554	0	1485	40	0
4	M	1554	0	1485	30	0
All	All	28819	0	26581	471	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 8.

All (471) 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)
2:D:430:VAL:HG12	2:D:431:ARG:H	1.40	0.86
4:L:130:ALA:HB3	4:L:180:LEU:O	1.80	0.82
1:A:505:LEU:HD22	1:A:513:ILE:HD11	1.71	0.73
1:C:483:LYS:NZ	1:C:666:LYS:O	2.21	0.73
1:A:131:LYS:NZ	1:A:137:PHE:O	2.20	0.72
1:C:410:TYR:HB2	1:C:456:TYR:O	1.90	0.72
1:C:312:THR:OG1	2:D:77:THR:O	2.09	0.71
2:B:175:THR:HG23	2:B:177:PHE:H	1.57	0.69
3:H:91:THR:HG22	3:H:120:VAL:H	1.58	0.69
1:C:272:ILE:HD12	1:C:350:ASN:HB3	1.74	0.69
2:D:521:VAL:HG23	2:D:522:VAL:HG13	1.74	0.69
3:H:2:VAL:HG13	3:H:111:VAL:HG11	1.76	0.68
1:C:415:LEU:HG	1:C:417:ASP:H	1.59	0.67
2:D:495:GLY:O	2:D:497:ILE:N	2.28	0.67
2:D:95:ILE:HG22	2:D:97:GLY:H	1.58	0.67
1:A:664:THR:HG21	1:A:670:VAL:HG11	1.76	0.66
2:B:83:ILE:HG12	2:B:116:ILE:HD11	1.78	0.66
2:B:530:GLU:OE2	1:C:736:ARG:NH1	2.29	0.66
2:B:710:TYR:HB3	2:B:715:LEU:HD21	1.77	0.65
1:A:489:ARG:HB2	2:B:195:PHE:HE2	1.62	0.64
2:B:411:LEU:HD11	2:B:484:LYS:HG2	1.79	0.64
2:D:367:ASN:ND2	2:D:373:GLU:OE1	2.30	0.64
3:H:6:GLU:OE2	3:H:115:GLY:N	2.31	0.64
1:C:263:PRO:O	1:C:359:ARG:NH2	2.31	0.64
4:M:120:PRO:HB3	4:M:131:THR:H	1.63	0.64
2:B:523:ASP:OD2	2:B:752:LYS:NZ	2.18	0.63

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:47:TRP:NE1	3:H:49:SER:O	2.31	0.63
2:B:420:GLU:OE2	2:B:457:LYS:NZ	2.29	0.62
1:C:461:ASP:HB3	1:C:769:LEU:HD11	1.81	0.62
2:D:380:ASN:O	2:D:381:HIS:ND1	2.23	0.62
4:L:120:PRO:HB3	4:L:131:THR:H	1.64	0.62
2:B:367:ASN:ND2	2:B:373:GLU:OE1	2.33	0.62
1:A:665:VAL:HG12	1:A:667:GLN:H	1.63	0.62
2:D:508:ALA:HB3	2:D:744:ALA:HB3	1.82	0.62
2:B:211:GLU:HG2	2:B:212:ASP:H	1.66	0.61
4:M:6:GLN:OE1	4:M:100:GLY:N	2.30	0.61
1:A:555:MET:O	1:A:563:TRP:NE1	2.31	0.61
4:M:108:GLN:NE2	4:M:170:ASN:O	2.34	0.61
4:M:6:GLN:HB3	4:M:22:CYS:HB3	1.81	0.61
1:A:499:ASN:ND2	1:A:667:GLN:OE1	2.32	0.61
1:C:131:LYS:NZ	1:C:137:PHE:O	2.33	0.61
1:A:405:GLN:HE22	1:A:716:VAL:HG21	1.66	0.60
4:M:83:THR:OG1	4:M:84:GLU:N	2.34	0.60
2:B:590:GLY:O	2:B:594:ASN:N	2.35	0.60
1:C:78:VAL:HG23	1:C:82:LEU:HD22	1.84	0.60
1:C:82:LEU:HD23	1:C:90:ILE:HD12	1.84	0.60
1:C:570:VAL:HG13	1:C:617:TRP:HH2	1.66	0.60
1:A:304:PRO:HD3	1:A:315:TRP:CE2	2.37	0.59
1:A:526:TYR:O	1:A:527:ILE:HG13	2.02	0.59
1:A:38:HIS:ND1	1:A:277:GLU:OE1	2.35	0.59
2:B:138:LYS:NZ	2:B:353:GLU:O	2.36	0.59
3:H:178:VAL:HB	4:L:162:THR:HG22	1.82	0.59
1:A:800:ILE:HA	1:A:803:ILE:HD12	1.85	0.59
4:M:3:MET:O	4:M:25:SER:OG	2.20	0.59
1:C:425:THR:HG22	1:C:429:ASP:H	1.67	0.59
1:C:483:LYS:HD3	1:C:499:ASN:HD21	1.67	0.59
1:A:148:SER:HA	1:A:151:TRP:CD1	2.38	0.59
1:A:415:LEU:HD23	1:A:417:ASP:H	1.67	0.58
2:D:414:ALA:HB1	2:D:415:PRO:HD2	1.86	0.58
2:B:528:PHE:HB3	2:B:759:LEU:HD21	1.84	0.58
2:D:43:SER:OG	2:D:44:HIS:N	2.37	0.58
4:L:136:ILE:HD12	4:L:195:VAL:HG11	1.84	0.58
3:H:128:PRO:HB3	3:H:154:TYR:HB3	1.86	0.58
4:L:61:ASN:O	4:L:63:PHE:N	2.37	0.58
1:A:495:LYS:HB2	2:B:193:ASN:HD21	1.69	0.58
4:L:19:THR:HG22	4:L:77:ILE:HG23	1.85	0.58
1:C:670:VAL:HG11	1:C:711:ILE:HD12	1.86	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:193:LYS:HB3	1:C:214:LEU:HD11	1.85	0.58
1:C:241:THR:HG23	1:C:245:TYR:HB2	1.84	0.58
2:B:333:THR:OG1	2:B:334:LEU:N	2.35	0.58
3:H:109:MET:SD	3:H:109:MET:N	2.75	0.58
1:A:668:SER:OG	1:A:669:SER:N	2.35	0.57
2:B:210:PHE:HB2	2:B:215:THR:OG1	2.04	0.57
1:C:541:LEU:HD13	1:C:729:THR:HG22	1.85	0.57
2:D:241:SER:HB2	2:D:271:GLU:HG2	1.86	0.57
1:A:481:ASP:OD1	1:A:481:ASP:N	2.37	0.57
2:D:194:SER:OG	2:D:195:PHE:N	2.37	0.57
1:A:700:GLN:NE2	1:A:704:ASP:OD2	2.35	0.57
2:B:90:MET:HE1	2:B:122:VAL:HG11	1.87	0.57
1:C:543:LYS:O	1:C:644:ARG:NH2	2.31	0.57
3:H:70:ILE:HD11	3:H:79:LEU:HD11	1.87	0.57
1:C:76:LEU:O	1:C:80:GLU:HG2	2.04	0.57
2:D:234:ASP:N	2:D:234:ASP:OD1	2.37	0.57
4:L:40:ARG:HH12	4:L:86:GLU:H	1.53	0.57
1:C:243:SER:HA	1:C:383:GLY:HA3	1.87	0.56
1:C:432:LYS:HD2	1:C:464:ILE:HG21	1.85	0.56
1:C:661:ILE:HD12	1:C:707:LEU:HD13	1.87	0.56
4:L:108:GLN:NE2	4:L:170:ASN:O	2.37	0.56
1:A:124:ARG:NH1	1:A:251:GLU:OE1	2.34	0.56
1:A:328:SER:OG	1:A:329:LYS:N	2.39	0.56
2:D:333:THR:OG1	2:D:334:LEU:N	2.36	0.56
1:A:170:ASP:OD1	1:A:170:ASP:N	2.37	0.56
1:C:32:VAL:HG12	1:C:67:HIS:HD2	1.71	0.56
1:C:447:PRO:HD2	1:C:447:PRO:O	2.06	0.56
4:L:159:VAL:HG12	4:L:178:LEU:HD13	1.88	0.56
1:A:217:ARG:NH1	1:A:245:TYR:OH	2.39	0.56
3:I:34:MET:HB2	3:I:79:LEU:HD11	1.88	0.56
1:A:302:THR:O	1:A:315:TRP:NE1	2.33	0.56
2:B:535:VAL:HB	2:B:709:ILE:HG22	1.87	0.56
3:I:5:VAL:HA	3:I:114:GLN:HE22	1.71	0.55
4:M:24:ARG:NE	4:M:26:SER:O	2.38	0.55
3:I:126:LYS:HD3	3:I:153:ASP:HB3	1.87	0.55
1:C:217:ARG:HD2	1:C:245:TYR:CD1	2.42	0.55
2:D:408:ILE:HG12	2:D:507:MET:HB2	1.89	0.55
3:H:65:LYS:HE2	3:H:65:LYS:HA	1.89	0.55
4:M:37:TYR:HE2	4:M:47:THR:HG22	1.71	0.55
1:A:307:GLY:O	1:A:311:ASN:ND2	2.36	0.55
1:A:572:VAL:O	1:A:576:MET:HG2	2.07	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:135:MET:SD	2:D:136:ALA:N	2.80	0.54
2:D:400:GLU:N	2:D:400:GLU:OE1	2.38	0.54
4:L:83:THR:OG1	4:L:84:GLU:N	2.40	0.54
1:C:40:GLN:OE1	1:C:43:ARG:NH1	2.38	0.54
2:D:363:VAL:HG13	2:D:375:VAL:O	2.08	0.54
4:L:87:ALA:HA	4:L:102:LYS:HE3	1.89	0.54
1:A:86:GLN:OE1	1:A:306:ARG:NH1	2.40	0.54
4:M:62:ARG:NH1	4:M:78:ILE:HD11	2.22	0.54
3:H:73:ASP:OD1	3:H:73:ASP:N	2.40	0.54
2:D:351:THR:HG23	2:D:353:GLU:H	1.73	0.54
4:M:108:GLN:HE21	4:M:171:LYS:HD2	1.73	0.54
2:B:539:ARG:NH1	2:B:726:LYS:O	2.41	0.54
2:B:690:GLN:N	2:B:690:GLN:OE1	2.40	0.54
1:C:441:ASP:OD1	1:C:441:ASP:N	2.40	0.54
3:H:35:HIS:NE2	3:H:99:ASP:OD2	2.37	0.54
1:A:662:TYR:HB3	1:A:709:ALA:HB3	1.89	0.53
1:C:664:THR:HA	1:C:711:ILE:HD11	1.91	0.53
1:A:90:ILE:HB	1:A:118:VAL:HG12	1.89	0.53
2:B:248:LEU:H	2:B:248:LEU:HD23	1.74	0.53
1:A:82:LEU:HD23	1:A:90:ILE:HD12	1.90	0.53
2:D:34:LEU:HD12	2:D:36:ILE:HD11	1.90	0.53
1:A:664:THR:OG1	1:A:665:VAL:N	2.41	0.53
2:B:134:ILE:HG21	2:B:150:SER:HA	1.89	0.53
2:B:414:ALA:HB3	2:B:415:PRO:HD3	1.90	0.53
1:C:597:ASN:OD1	2:D:594:ASN:ND2	2.41	0.53
3:I:39:GLN:HG3	3:I:45:LEU:HG	1.91	0.53
3:I:48:VAL:HG13	3:I:64:VAL:HG21	1.91	0.53
4:L:50:TYR:HD1	4:L:51:ASP:HB2	1.74	0.53
4:L:40:ARG:HD3	4:L:41:PRO:HD3	1.90	0.53
4:L:53:ASN:OD1	4:L:53:ASN:N	2.41	0.53
2:D:167:TRP:HB3	2:D:226:VAL:HG21	1.90	0.53
4:L:39:GLN:NE2	4:L:88:ASP:HB3	2.23	0.53
2:B:245:SER:O	2:B:245:SER:OG	2.23	0.53
2:B:508:ALA:HB3	2:B:744:ALA:HB3	1.91	0.53
1:C:163:ILE:HG22	1:C:218:VAL:HG21	1.90	0.53
1:C:195:LEU:HB2	1:C:207:LEU:HD12	1.91	0.52
1:C:328:SER:OG	1:C:329:LYS:N	2.42	0.52
1:A:76:LEU:O	1:A:80:GLU:HG2	2.09	0.52
2:D:232:SER:OG	2:D:234:ASP:OD1	2.27	0.52
4:L:3:MET:O	4:L:25:SER:OG	2.26	0.52
2:B:417:VAL:HG12	2:B:461:ILE:HG12	1.91	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:M:62:ARG:HH12	4:M:78:ILE:HD11	1.74	0.52
3:I:99:ASP:OD1	3:I:100:ARG:N	2.34	0.52
2:B:113:LEU:HD22	2:B:124:ILE:HG21	1.91	0.52
2:B:244:ARG:HD2	2:B:396:PHE:CE2	2.44	0.52
2:B:38:VAL:HG12	2:B:99:VAL:HB	1.91	0.52
2:B:653:PRO:HG2	2:B:684:TYR:HE1	1.74	0.52
1:C:175:ALA:O	1:C:178:LYS:HG3	2.10	0.52
1:A:224:SER:OG	1:A:225:GLU:N	2.42	0.52
4:M:136:ILE:HD11	4:M:195:VAL:HG11	1.91	0.52
2:D:298:ILE:HG13	2:D:341:VAL:HG11	1.91	0.51
1:C:38:HIS:NE2	1:C:277:GLU:OE2	2.44	0.51
2:D:539:ARG:O	2:D:539:ARG:NE	2.42	0.51
2:B:536:MET:HA	2:B:729:THR:HA	1.93	0.51
1:C:381:TRP:NE1	1:C:387:GLU:O	2.42	0.51
2:D:430:VAL:HG12	2:D:431:ARG:N	2.18	0.51
1:A:255:SER:H	1:A:258:ALA:HB2	1.76	0.51
2:B:536:MET:HG2	2:B:708:PHE:HB3	1.91	0.51
4:M:36:TRP:HB2	4:M:49:ILE:HB	1.93	0.51
4:M:36:TRP:CZ3	4:M:91:CYS:HB3	2.45	0.51
1:C:166:LEU:HD12	1:C:195:LEU:HD11	1.90	0.51
1:A:124:ARG:HB3	1:A:143:PRO:HA	1.91	0.51
4:M:120:PRO:HG3	4:M:130:ALA:HB1	1.92	0.51
2:D:650:PHE:HA	2:D:662:PHE:HZ	1.76	0.51
3:I:133:LEU:HD22	4:M:118:PHE:HB3	1.93	0.51
2:B:672:ARG:HH21	2:B:675:ARG:HH22	1.59	0.51
1:C:164:ILE:HG22	1:C:192:GLU:HB3	1.92	0.50
1:C:224:SER:OG	1:C:225:GLU:N	2.43	0.50
4:M:36:TRP:CE2	4:M:76:LEU:HD21	2.46	0.50
3:H:206:ASN:HB3	3:H:215:LYS:HZ1	1.76	0.50
4:L:4:LEU:HD13	4:L:22:CYS:HB2	1.92	0.50
2:B:488:LYS:HB3	2:B:493:TRP:CE3	2.46	0.50
2:B:653:PRO:HG2	2:B:684:TYR:CE1	2.47	0.50
3:I:52:SER:HB2	3:I:57:SER:HB2	1.92	0.50
4:M:36:TRP:CD1	4:M:76:LEU:HD21	2.46	0.50
1:A:408:PHE:HD1	1:A:458:PHE:HD2	1.60	0.50
2:B:83:ILE:HD11	2:B:112:MET:HE1	1.94	0.50
4:L:5:THR:OG1	4:L:23:THR:OG1	2.24	0.50
4:L:144:VAL:HG12	4:L:197:HIS:HB2	1.94	0.50
1:C:283:ASP:OD1	1:C:335:THR:HG22	2.11	0.50
3:H:89:GLU:OE2	3:H:89:GLU:N	2.30	0.50
1:C:29:ILE:HD12	1:C:60:LEU:HD21	1.93	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:249:THR:O	2:B:395:SER:OG	2.27	0.49
2:D:675:ARG:HD3	2:D:682:HIS:CE1	2.46	0.49
1:C:123:THR:O	1:C:139:ARG:NH2	2.27	0.49
1:A:498:TRP:HE1	1:A:526:TYR:HH	1.58	0.49
3:I:180:GLN:HG2	3:I:181:SER:H	1.76	0.49
3:H:207:VAL:HB	3:H:216:VAL:HG22	1.94	0.49
3:I:2:VAL:HG13	3:I:111:VAL:HG21	1.94	0.49
1:A:397:ARG:NH2	1:A:475:GLU:OE2	2.37	0.49
1:A:381:TRP:NE1	1:A:387:GLU:O	2.46	0.49
2:B:690:GLN:NE2	2:B:705:LEU:HD11	2.28	0.49
1:C:255:SER:OG	1:C:256:GLY:N	2.45	0.49
3:H:109:MET:SD	4:L:37:TYR:OH	2.63	0.49
4:M:122:SER:HA	4:M:125:LEU:HD12	1.93	0.48
2:D:288:LEU:HA	2:D:291:ARG:HG3	1.96	0.48
4:L:13:SER:HB2	4:L:16:LYS:HE2	1.95	0.48
2:B:419:VAL:HG12	2:B:456:CYS:HB3	1.94	0.48
2:B:104:THR:OG1	2:B:105:ASP:N	2.46	0.48
1:C:195:LEU:HD12	1:C:207:LEU:HD12	1.96	0.48
1:C:505:LEU:HA	1:C:510:ALA:HA	1.95	0.48
2:D:412:GLU:HA	2:D:417:VAL:HG23	1.94	0.48
4:L:36:TRP:HB2	4:L:49:ILE:HB	1.96	0.48
1:C:345:ASP:OD1	1:C:345:ASP:N	2.45	0.48
1:A:657:SER:OG	1:A:658:ASP:N	2.46	0.48
2:B:215:THR:HG23	2:B:219:LEU:HD12	1.95	0.48
2:D:417:VAL:HG12	2:D:461:ILE:HG12	1.94	0.48
1:A:219:ILE:HD11	1:A:247:TRP:CZ3	2.48	0.48
4:M:36:TRP:NE1	4:M:76:LEU:HD21	2.28	0.48
2:D:250:GLY:O	2:D:395:SER:OG	2.31	0.48
2:D:535:VAL:HG22	2:D:709:ILE:HG22	1.96	0.48
3:H:2:VAL:HG23	3:H:27:PHE:CD1	2.48	0.48
3:H:209:HIS:O	3:H:213:ASN:N	2.46	0.48
2:B:271:GLU:N	2:B:271:GLU:OE1	2.47	0.48
2:B:506:VAL:HG12	2:B:746:GLN:HB2	1.95	0.48
2:B:679:PRO:O	2:B:683:GLN:HG2	2.14	0.48
2:B:689:ASN:OD1	2:B:689:ASN:N	2.45	0.48
1:C:441:ASP:O	1:C:443:SER:N	2.46	0.48
1:A:368:ASN:OD1	1:A:369:GLY:N	2.41	0.47
1:A:394:MET:O	1:A:396:THR:HG23	2.14	0.47
2:B:264:ASN:O	2:B:266:GLU:N	2.47	0.47
2:B:497:ILE:HD12	2:B:522:VAL:HG11	1.96	0.47
1:A:74:MET:O	1:A:78:VAL:HG12	2.13	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:415:LEU:HD23	1:A:417:ASP:N	2.30	0.47
1:A:800:ILE:O	1:A:803:ILE:HB	2.14	0.47
2:B:662:PHE:H	2:B:688:PHE:HD2	1.63	0.47
1:C:146:HIS:CE1	1:C:179:ARG:HH22	2.32	0.47
3:H:177:ALA:HA	3:H:187:LEU:HB3	1.95	0.47
4:L:38:GLN:HB2	4:L:89:TYR:HE2	1.79	0.47
1:A:645:ILE:HG21	1:A:653:LEU:HD13	1.96	0.47
1:C:408:PHE:HB3	1:C:459:CYS:SG	2.54	0.47
1:A:805:ILE:O	1:A:809:TYR:N	2.46	0.47
2:B:86:VAL:HG22	2:B:98:LEU:HD21	1.96	0.47
3:H:38:ARG:HB3	3:H:94:TYR:CD2	2.50	0.47
4:L:38:GLN:HB2	4:L:89:TYR:CE2	2.49	0.47
4:M:50:TYR:HD1	4:M:56:PRO:HG3	1.79	0.47
1:C:147:GLN:HG2	1:C:269:LEU:HD13	1.96	0.47
3:H:67:ARG:NH2	3:H:85:SER:OG	2.47	0.47
1:A:178:LYS:HE3	1:A:178:LYS:HB2	1.54	0.47
2:B:117:SER:HB2	2:B:124:ILE:HG13	1.96	0.47
1:C:180:LEU:O	1:C:184:LEU:HG	2.15	0.47
3:H:29:PHE:CD2	3:H:77:ASN:HA	2.49	0.47
1:A:543:LYS:NZ	1:A:703:ARG:O	2.48	0.47
1:C:125:MET:HB3	1:C:127:ILE:HG22	1.97	0.47
1:A:507:SER:O	1:A:507:SER:OG	2.29	0.47
2:B:267:LEU:HD23	2:B:267:LEU:HA	1.80	0.47
2:D:590:GLY:O	2:D:594:ASN:N	2.48	0.47
4:L:24:ARG:HH21	4:L:27:GLY:HA3	1.80	0.47
1:A:438:GLY:HA3	1:A:478:LEU:HB2	1.97	0.46
2:D:149:ALA:H	2:D:281:TYR:HE1	1.62	0.46
2:D:204:ILE:HG22	2:D:206:LEU:H	1.79	0.46
3:H:72:ARG:NH2	3:H:74:ASN:OD1	2.47	0.46
1:A:53:HIS:CE1	1:A:293:HIS:HD1	2.34	0.46
1:A:232:TYR:OH	1:A:249:VAL:HG11	2.14	0.46
1:C:712:TRP:HA	1:C:712:TRP:CE3	2.50	0.46
2:D:271:GLU:N	2:D:271:GLU:OE1	2.49	0.46
2:B:675:ARG:HG3	2:B:682:HIS:ND1	2.30	0.46
2:D:286:TYR:CD1	2:D:291:ARG:HG2	2.50	0.46
2:B:335:HIS:H	2:B:336:PRO:HD2	1.80	0.46
1:A:689:LYS:HE3	1:A:689:LYS:HB2	1.61	0.46
2:D:430:VAL:CG1	2:D:431:ARG:H	2.20	0.46
2:B:72:LEU:HD23	2:B:73:LEU:N	2.31	0.46
1:C:32:VAL:HG12	1:C:67:HIS:CD2	2.51	0.46
1:C:138:LEU:HD11	1:C:325:LEU:HD23	1.97	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:783:GLU:HA	1:C:786:ALA:HB3	1.97	0.46
2:D:47:THR:O	2:D:49:ARG:N	2.49	0.46
4:M:19:THR:HA	4:M:76:LEU:O	2.15	0.46
2:B:565:LEU:HG	2:B:588:LEU:HD21	1.97	0.46
2:D:512:LEU:HD23	2:D:512:LEU:HA	1.80	0.46
1:A:167:VAL:HG22	1:A:168:SER:O	2.16	0.46
2:B:466:LYS:HB3	2:B:762:PHE:CE2	2.50	0.46
1:C:357:GLN:NE2	1:C:380:ILE:HG12	2.31	0.46
3:I:191:VAL:HG22	3:I:193:VAL:HG13	1.98	0.46
2:B:433:THR:HG23	2:B:457:LYS:HB3	1.98	0.46
2:D:177:PHE:CG	2:D:178:PRO:HD2	2.51	0.46
4:L:24:ARG:NE	4:L:26:SER:O	2.49	0.46
1:A:37:LYS:HB3	1:A:37:LYS:HE3	1.61	0.45
1:C:190:LYS:NZ	1:C:191:ALA:O	2.38	0.45
1:C:410:TYR:O	1:C:455:CYS:HA	2.16	0.45
3:I:144:THR:HA	3:I:194:PRO:HA	1.98	0.45
1:A:443:SER:O	1:A:446:SER:OG	2.23	0.45
1:A:526:TYR:O	1:A:526:TYR:HD1	2.00	0.45
3:H:132:PRO:HG3	3:H:218:LYS:HD2	1.98	0.45
3:I:6:GLU:OE2	3:I:115:GLY:N	2.37	0.45
2:B:152:GLN:N	2:B:152:GLN:OE1	2.50	0.45
2:B:488:LYS:HE3	2:B:488:LYS:HB2	1.72	0.45
2:D:320:CYS:SG	2:D:321:TYR:N	2.89	0.45
2:D:406:LEU:HD21	2:D:473:PHE:CD2	2.51	0.45
1:A:128:TYR:HB2	1:A:139:ARG:NH1	2.32	0.45
2:D:661:ARG:O	2:D:707:ALA:HB3	2.17	0.45
4:L:40:ARG:HB3	4:L:43:SER:HB3	1.98	0.45
1:C:219:ILE:HD11	1:C:247:TRP:CE2	2.51	0.45
2:D:72:LEU:HD12	2:D:73:LEU:H	1.81	0.45
1:A:420:CYS:O	1:A:421:LYS:HG2	2.17	0.45
1:C:312:THR:HG22	1:C:312:THR:O	2.17	0.45
2:D:236:ALA:O	2:D:240:LEU:HD12	2.17	0.45
1:C:400:ILE:HG22	1:C:512:MET:H	1.81	0.45
1:A:496:LYS:HE3	1:A:496:LYS:HB3	1.84	0.45
2:D:561:MET:HA	2:D:564:MET:HG3	1.99	0.45
3:H:70:ILE:HD12	3:H:71:SER:H	1.82	0.45
1:A:352:SER:O	1:A:352:SER:OG	2.31	0.45
1:C:490:VAL:HG23	1:C:493:SER:HB2	1.98	0.45
1:A:221:LEU:HB3	1:A:249:VAL:HG12	1.99	0.44
2:B:419:VAL:HG11	2:B:479:LEU:HD11	1.99	0.44
2:D:467:LEU:HD13	2:D:755:ILE:HD12	2.00	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L:122:SER:HA	4:L:125:LEU:HD12	1.99	0.44
1:A:163:ILE:HG22	1:A:218:VAL:HG13	1.99	0.44
2:B:538:SER:HB3	2:B:700:LEU:HD21	2.00	0.44
1:C:91:LEU:HD21	1:C:121:LEU:HD11	2.00	0.44
1:A:485:GLY:HA2	1:A:499:ASN:O	2.17	0.44
2:B:211:GLU:HG2	2:B:212:ASP:N	2.31	0.44
1:A:218:VAL:HG23	1:A:246:VAL:HG13	2.00	0.44
1:A:645:ILE:HG13	1:A:652:ARG:NH2	2.32	0.44
1:C:707:LEU:HD12	1:C:708:HIS:N	2.33	0.44
1:C:397:ARG:HH21	1:C:475:GLU:HG3	1.82	0.44
2:B:229:LEU:HB3	2:B:257:VAL:HG12	1.99	0.44
3:I:205:CYS:SG	3:I:218:LYS:HB3	2.58	0.44
2:B:210:PHE:HE2	2:B:238:LEU:HD22	1.83	0.44
1:A:195:LEU:HD13	1:A:207:LEU:HD11	2.00	0.44
1:A:531:LYS:HD3	1:A:531:LYS:HA	1.82	0.44
1:C:510:ALA:HB1	1:C:744:ARG:HE	1.82	0.44
2:D:266:GLU:HG2	2:D:267:LEU:HD12	2.00	0.44
2:D:410:THR:O	2:D:479:LEU:HA	2.18	0.44
3:I:65:LYS:HE2	3:I:65:LYS:HB2	1.77	0.44
3:I:209:HIS:CD2	3:I:211:PRO:HD2	2.53	0.44
4:L:2:PHE:HB2	4:L:25:SER:HB2	1.99	0.44
1:C:438:GLY:O	1:C:450:THR:HA	2.18	0.43
1:C:95:PRO:HB2	1:C:98:PRO:HD2	1.99	0.43
1:C:562:LEU:HA	1:C:565:LEU:HD12	1.99	0.43
4:L:50:TYR:CD2	4:L:56:PRO:HG3	2.54	0.43
4:M:50:TYR:O	4:M:54:GLN:HB2	2.18	0.43
2:B:426:THR:O	2:B:426:THR:OG1	2.33	0.43
2:D:415:PRO:HG3	2:D:717:TYR:CD1	2.54	0.43
3:H:52:SER:HB2	3:H:57:SER:HB3	2.00	0.43
1:A:790:MET:O	1:A:794:GLY:N	2.47	0.43
2:B:390:TRP:HA	2:B:391:PRO:HD3	1.84	0.43
1:C:235:ALA:O	1:C:240:MET:HB2	2.19	0.43
2:D:335:HIS:H	2:D:336:PRO:HD2	1.83	0.43
2:D:426:THR:O	2:D:426:THR:OG1	2.35	0.43
2:D:139:ASP:O	2:D:142:SER:OG	2.25	0.43
2:D:537:VAL:HG12	2:D:707:ALA:HA	1.99	0.43
3:I:209:HIS:O	3:I:213:ASN:N	2.52	0.43
4:M:140:TYR:HB3	4:M:171:LYS:HZ2	1.84	0.43
2:D:127:ILE:HG22	2:D:147:PHE:CD2	2.54	0.43
2:D:349:SER:O	2:D:357:VAL:HG23	2.19	0.43
2:D:419:VAL:HG12	2:D:456:CYS:HB3	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:587:LEU:HD23	2:D:587:LEU:HA	1.84	0.43
3:H:145:ALA:HB3	3:H:193:VAL:HG23	2.01	0.43
4:L:120:PRO:HG3	4:L:130:ALA:HB1	2.00	0.43
2:B:760:LEU:HD23	2:B:760:LEU:HA	1.84	0.43
1:C:168:SER:O	1:C:173:GLY:HA3	2.19	0.43
4:L:40:ARG:HH12	4:L:86:GLU:N	2.17	0.43
4:M:145:THR:HB	4:M:196:THR:HB	2.00	0.43
2:D:340:ASN:HA	2:D:349:SER:HB2	2.01	0.42
1:A:94:HIS:ND1	1:A:95:PRO:HD2	2.35	0.42
2:B:464:LEU:HD13	2:B:509:VAL:HG21	2.01	0.42
1:A:664:THR:O	1:A:665:VAL:HG23	2.19	0.42
1:A:714:SER:O	1:A:718:GLU:HG2	2.19	0.42
2:B:47:THR:O	2:B:49:ARG:N	2.52	0.42
2:B:240:LEU:HD23	2:B:240:LEU:HA	1.83	0.42
3:H:209:HIS:CD2	3:H:211:PRO:HD2	2.54	0.42
1:A:27:VAL:HG23	1:A:88:TYR:CD1	2.54	0.42
2:B:536:MET:HE2	2:B:727:LEU:HD12	2.02	0.42
3:H:34:MET:HG2	3:H:98:LYS:HG2	2.01	0.42
3:I:51:ILE:HG21	3:I:72:ARG:HD2	2.01	0.42
1:C:595:LEU:HD21	1:C:617:TRP:CZ3	2.55	0.42
3:H:98:LYS:HB3	3:H:98:LYS:HE3	1.64	0.42
3:H:98:LYS:HD2	3:H:99:ASP:O	2.19	0.42
4:L:78:ILE:HD12	4:L:78:ILE:HA	1.82	0.42
1:A:487:GLN:HB2	1:A:498:TRP:CE3	2.55	0.42
2:B:99:VAL:HG22	2:B:125:LEU:HD21	2.01	0.42
2:B:426:THR:O	2:B:428:THR:N	2.53	0.42
1:C:86:GLN:HB3	1:C:304:PRO:HG2	2.01	0.42
2:B:588:LEU:HG	2:B:614:TRP:NE1	2.35	0.42
1:C:241:THR:HG1	1:C:247:TRP:HE1	1.68	0.42
1:C:785:MET:H	1:C:785:MET:HG2	1.64	0.42
2:B:299:LEU:HD23	2:B:299:LEU:HA	1.80	0.42
2:D:299:LEU:HD23	2:D:299:LEU:HA	1.87	0.42
1:A:78:VAL:O	1:A:82:LEU:HB2	2.19	0.42
2:B:94:ARG:HA	2:B:94:ARG:HD3	1.89	0.42
2:B:306:MET:HG2	2:B:337:PHE:CE2	2.54	0.42
1:C:139:ARG:HD3	1:C:345:ASP:HB3	2.02	0.42
2:D:159:LEU:HD13	2:D:159:LEU:HA	1.86	0.42
3:I:180:GLN:HG2	3:I:181:SER:N	2.34	0.42
2:B:539:ARG:H	2:B:539:ARG:HD3	1.83	0.42
1:C:68:LYS:HE3	1:C:68:LYS:HB3	1.93	0.42
3:H:1:GLU:O	3:H:26:GLY:HA3	2.20	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:364:VAL:O	1:A:375:ASN:HB2	2.20	0.41
2:B:35:ASN:HB2	2:B:95:ILE:HA	2.02	0.41
1:C:668:SER:O	1:C:670:VAL:N	2.51	0.41
1:A:359:ARG:HA	1:A:359:ARG:HD3	1.78	0.41
1:C:233:ARG:NH2	1:C:261:TYR:OH	2.49	0.41
2:D:35:ASN:O	2:D:95:ILE:HG23	2.19	0.41
2:D:117:SER:HB2	2:D:124:ILE:HG22	2.02	0.41
2:D:419:VAL:HG11	2:D:479:LEU:HD21	2.02	0.41
2:B:237:VAL:HG23	2:B:271:GLU:HB2	2.02	0.41
2:D:373:GLU:O	2:D:374:LYS:HG3	2.19	0.41
2:D:426:THR:O	2:D:428:THR:N	2.47	0.41
3:H:206:ASN:HB3	3:H:215:LYS:NZ	2.34	0.41
4:M:155:VAL:HG21	4:M:191:TYR:HE2	1.85	0.41
1:C:36:ARG:H	1:C:36:ARG:HG2	1.65	0.41
1:C:51:LYS:HE3	4:M:33:TYR:HE1	1.85	0.41
1:C:314:ILE:H	1:C:314:ILE:HG12	1.67	0.41
2:D:661:ARG:O	2:D:662:PHE:HD2	2.04	0.41
3:H:51:ILE:HD12	3:H:51:ILE:HA	1.91	0.41
4:L:52:ASP:HB3	4:L:67:ILE:HD13	2.02	0.41
4:L:171:LYS:HE2	4:L:171:LYS:HB2	1.86	0.41
1:A:557:PRO:HB3	1:A:635:PHE:CE2	2.55	0.41
1:C:167:VAL:HG23	1:C:222:SER:HB3	2.02	0.41
3:I:57:SER:C	3:I:104:TRP:HE1	2.24	0.41
4:M:167:GLN:N	4:M:171:LYS:O	2.38	0.41
1:A:145:SER:O	1:A:148:SER:N	2.54	0.41
1:A:300:ASN:C	1:A:301:ILE:HD13	2.41	0.41
2:B:488:LYS:HB3	2:B:493:TRP:CD2	2.55	0.41
1:C:56:TRP:O	1:C:58:ILE:N	2.53	0.41
2:D:433:THR:OG1	2:D:455:CYS:HB2	2.20	0.41
4:L:37:TYR:CE2	4:L:47:THR:HG22	2.55	0.41
1:A:51:LYS:HG2	4:L:33:TYR:CE1	2.56	0.41
1:C:390:ARG:NH2	1:C:392:TYR:O	2.53	0.41
2:D:294:ASP:O	2:D:298:ILE:HG22	2.20	0.41
1:A:139:ARG:NH2	1:A:345:ASP:HB3	2.36	0.41
1:A:193:LYS:HE3	1:A:193:LYS:HB2	1.94	0.41
2:B:554:SER:HA	2:B:558:TRP:CE3	2.56	0.41
1:C:266:ILE:HD13	1:C:266:ILE:HA	1.93	0.41
2:D:170:PHE:HB3	2:D:226:VAL:HB	2.02	0.41
1:A:240:MET:HE2	1:A:240:MET:HB2	1.94	0.41
1:A:341:ASN:HB3	1:A:347:LYS:HD3	2.03	0.41
1:A:661:ILE:HD11	1:A:690:HIS:CD2	2.56	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:430:VAL:HG12	2:B:431:ARG:N	2.36	0.41
2:B:565:LEU:HD12	2:B:614:TRP:HZ2	1.86	0.41
2:D:83:ILE:HD13	2:D:116:ILE:HD11	2.03	0.41
2:D:127:ILE:HG13	2:D:128:HIS:H	1.86	0.41
2:D:387:HIS:CE1	2:D:391:PRO:HG3	2.56	0.41
3:I:91:THR:OG1	3:I:119:THR:HA	2.20	0.41
4:L:145:THR:HB	4:L:196:THR:OG1	2.21	0.41
1:C:301:ILE:HA	1:C:301:ILE:HD13	1.86	0.41
4:M:139:PHE:CE2	4:M:142:GLY:HA2	2.56	0.41
1:C:217:ARG:HD2	1:C:245:TYR:HD1	1.85	0.40
1:C:254:ILE:HD13	1:C:268:GLY:HA3	2.02	0.40
1:C:505:LEU:HD22	1:C:513:ILE:HG21	2.03	0.40
3:H:36:TRP:CE2	3:H:81:LEU:HD12	2.56	0.40
3:H:99:ASP:HA	3:H:109:MET:HA	2.03	0.40
3:I:145:ALA:N	3:I:193:VAL:O	2.44	0.40
1:A:54:GLY:O	1:A:56:TRP:N	2.54	0.40
1:C:517:LEU:HD12	1:C:517:LEU:HA	1.84	0.40
3:H:58:ILE:HD12	3:H:58:ILE:HA	1.85	0.40
3:H:64:VAL:O	3:H:64:VAL:HG12	2.21	0.40
4:L:139:PHE:CE2	4:L:142:GLY:HA2	2.56	0.40
1:A:543:LYS:NZ	1:A:705:ASN:OD1	2.42	0.40
2:B:568:VAL:HG11	2:B:614:TRP:CE3	2.56	0.40
1:C:221:LEU:HB3	1:C:249:VAL:HG12	2.04	0.40
1:C:495:LYS:HE2	1:C:495:LYS:HB2	1.88	0.40
4:L:120:PRO:HB3	4:L:131:THR:N	2.34	0.40
2:B:127:ILE:HG13	2:B:128:HIS:H	1.86	0.40
1:C:483:LYS:NZ	1:C:667:GLN:O	2.32	0.40
2:D:213:ALA:O	2:D:217:VAL:HG12	2.22	0.40
3:H:60:TYR:OH	3:H:70:ILE:HG22	2.21	0.40
3:I:67:ARG:H	3:I:67:ARG:HG2	1.61	0.40
2:B:370:ARG:HA	2:B:370:ARG:HD2	1.95	0.40
1:C:39:GLU:OE1	1:C:64:SER:HB2	2.21	0.40
1:C:86:GLN:OE1	1:C:306:ARG:NH1	2.55	0.40
2:D:383:LEU:HD12	2:D:383:LEU:HA	1.83	0.40
4:M:204:LYS:HD3	4:M:204:LYS:HA	1.85	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	783/817 (96%)	674 (86%)	105 (13%)	4 (0%)	25	57
1	C	783/817 (96%)	685 (88%)	94 (12%)	4 (0%)	25	57
2	B	775/808 (96%)	654 (84%)	118 (15%)	3 (0%)	30	62
2	D	775/808 (96%)	662 (85%)	107 (14%)	6 (1%)	16	49
3	H	218/220 (99%)	205 (94%)	12 (6%)	1 (0%)	25	57
3	I	218/220 (99%)	207 (95%)	10 (5%)	1 (0%)	25	57
4	L	207/209 (99%)	189 (91%)	17 (8%)	1 (0%)	25	57
4	M	207/209 (99%)	188 (91%)	19 (9%)	0	100	100
All	All	3966/4108 (96%)	3464 (87%)	482 (12%)	20 (0%)	27	57

All (20) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	406	GLU
2	D	430	VAL
2	D	442	ILE
2	D	496	MET
1	A	143	PRO
1	A	476	VAL
2	B	265	THR
2	B	335	HIS
1	C	57	LYS
2	D	335	HIS
1	A	57	LYS
1	C	143	PRO
2	D	657	SER
3	I	111	VAL
2	B	657	SER
2	D	414	ALA
1	A	406	GLU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	L	52	ASP
1	C	665	VAL
3	H	111	VAL

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	564/705 (80%)	538 (95%)	26 (5%)	23	49
1	C	514/705 (73%)	494 (96%)	20 (4%)	27	53
2	B	497/706 (70%)	481 (97%)	16 (3%)	34	57
2	D	475/706 (67%)	456 (96%)	19 (4%)	27	52
3	H	176/182 (97%)	166 (94%)	10 (6%)	17	45
3	I	176/182 (97%)	173 (98%)	3 (2%)	56	73
4	L	176/182 (97%)	172 (98%)	4 (2%)	45	64
4	M	176/182 (97%)	172 (98%)	4 (2%)	45	64
All	All	2754/3550 (78%)	2652 (96%)	102 (4%)	31	54

All (102) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	138	LEU
1	A	160	TRP
1	A	187	ARG
1	A	203	ASN
1	A	240	MET
1	A	282	SER
1	A	313	ASN
1	A	352	SER
1	A	375	ASN
1	A	392	TYR
1	A	421	LYS
1	A	458	PHE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	487	GLN
1	A	507	SER
1	A	525	GLN
1	A	526	TYR
1	A	530	SER
1	A	584	LEU
1	A	662	TYR
1	A	680	LEU
1	A	681	SER
1	A	685	ARG
1	A	746	ASP
1	A	760	SER
1	A	763	ASN
1	A	776	TYR
2	B	87	CYS
2	B	167	TRP
2	B	168	HIS
2	B	198	TRP
2	B	251	TYR
2	B	280	SER
2	B	282	ASP
2	B	321	TYR
2	B	346	LYS
2	B	436	CYS
2	B	525	SER
2	B	539	ARG
2	B	671	GLU
2	B	676	ASN
2	B	678	TYR
2	B	734	TYR
1	C	64	SER
1	C	139	ARG
1	C	146	HIS
1	C	152	PHE
1	C	174	ARG
1	C	178	LYS
1	C	179	ARG
1	C	184	LEU
1	C	197	PHE
1	C	237	MET
1	C	330	TYR
1	C	351	TYR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	C	393	GLN
1	C	454	CYS
1	C	461	ASP
1	C	523	ARG
1	C	649	ASN
1	C	689	LYS
1	C	710	PHE
1	C	712	TRP
2	D	76	ARG
2	D	118	SER
2	D	135	MET
2	D	150	SER
2	D	168	HIS
2	D	221	LYS
2	D	244	ARG
2	D	284	TRP
2	D	286	TYR
2	D	310	PHE
2	D	320	CYS
2	D	321	TYR
2	D	381	HIS
2	D	457	LYS
2	D	539	ARG
2	D	564	MET
2	D	660	PHE
2	D	708	PHE
2	D	716	ASN
3	H	30	ASP
3	H	45	LEU
3	H	76	LYS
3	H	85	SER
3	H	100	ARG
3	H	107	TYR
3	H	138	LYS
3	H	150	LEU
3	H	173	HIS
3	H	180	GLN
3	I	63	SER
3	I	96	CYS
3	I	132	PRO
4	L	31	SER
4	L	38	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
4	L	69	SER
4	L	189	ARG
4	M	28	SER
4	M	69	SER
4	M	95	ARG
4	M	102	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	405	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 ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

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 (i)

This section contains visualisations of the EMDB entry EMD-43539. 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
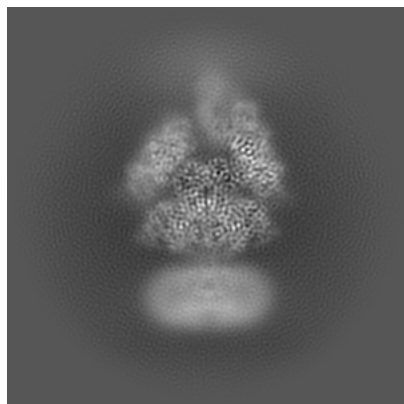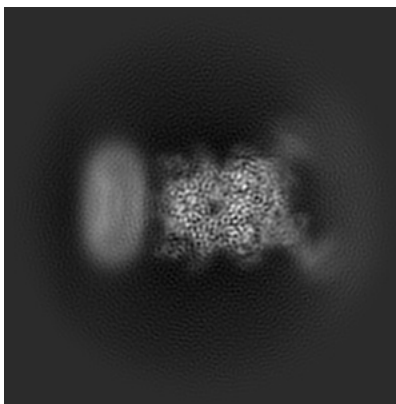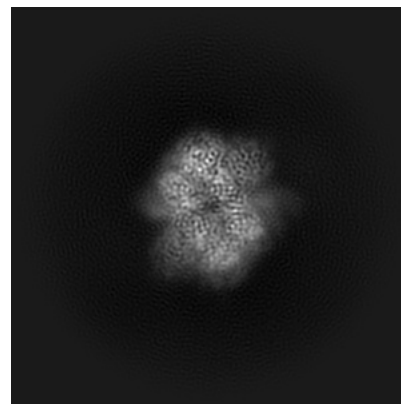
| X | Y | Z |

6.1.2 Raw map

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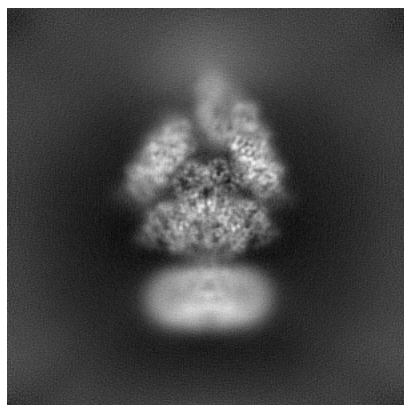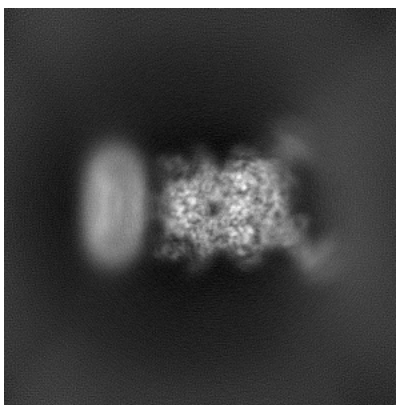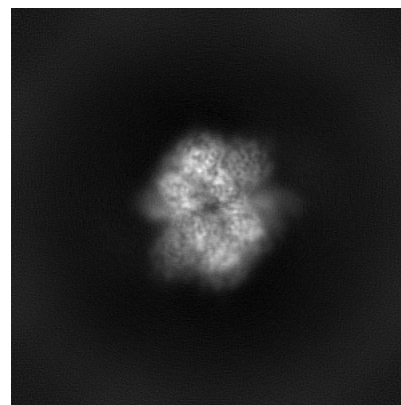
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
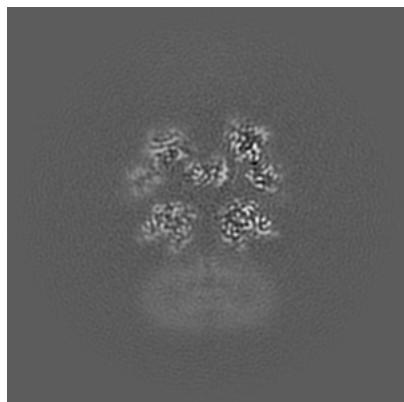
6.2.1 Primary map
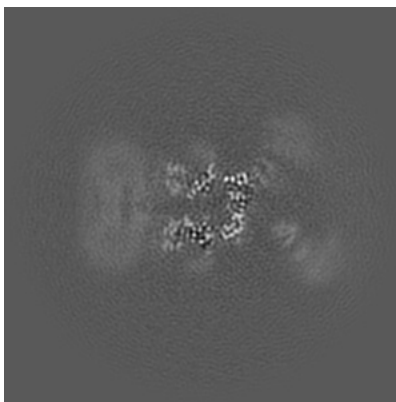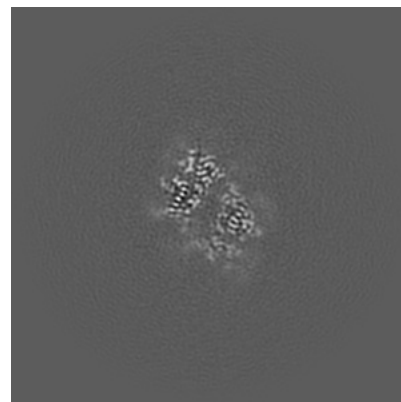
X Index: 200   Y Index: 200   Z Index: 200

6.2.2 Raw map
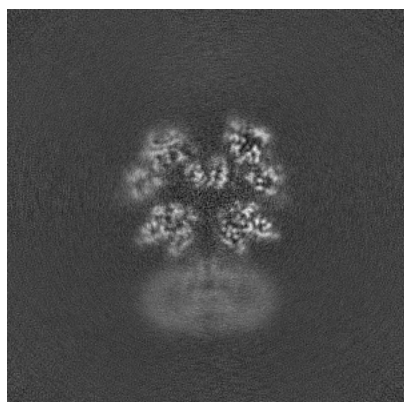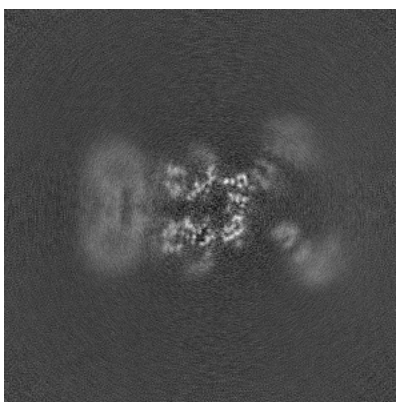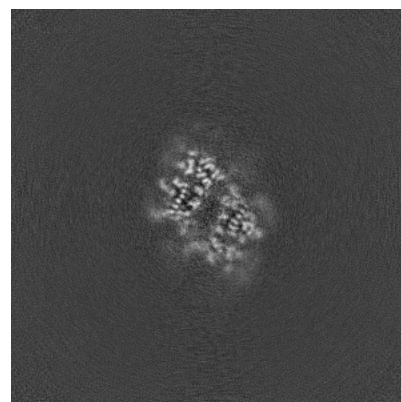
X Index: 200   Y Index: 200   Z Index: 200

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

6.3 Largest variance slices (i)

6.3.1 Primary map
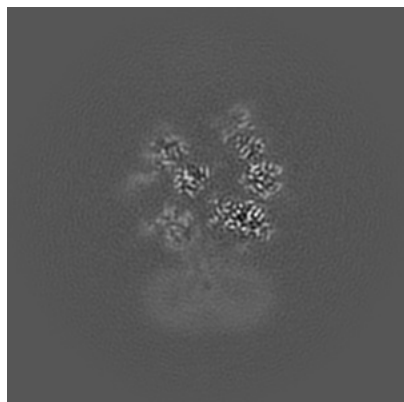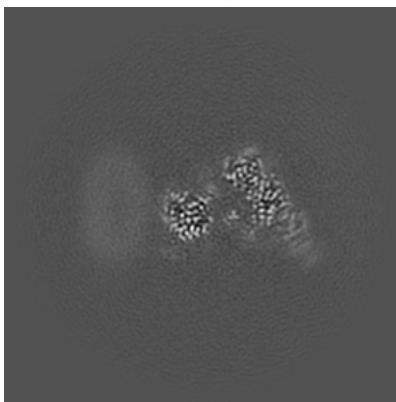
| X Index: 191 | Y Index: 236 | Z Index: 228 |
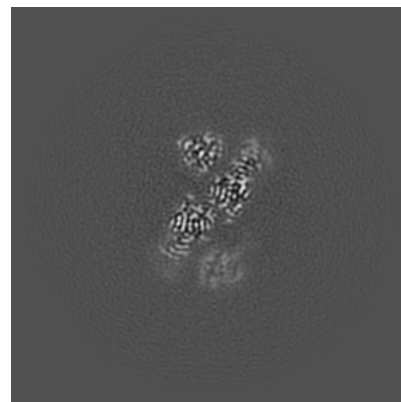
6.3.2 Raw map
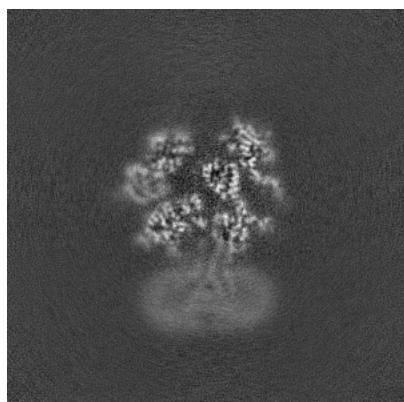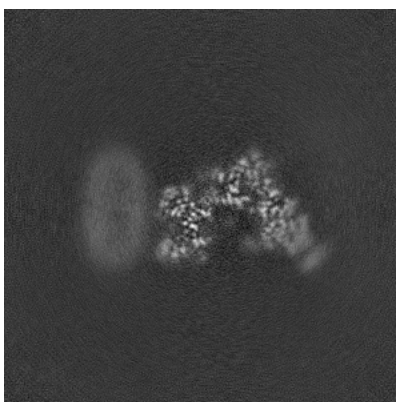
| X Index: 208 | Y Index: 229 | Z Index: 235 |
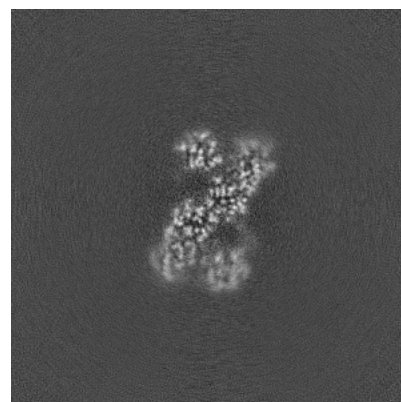
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map
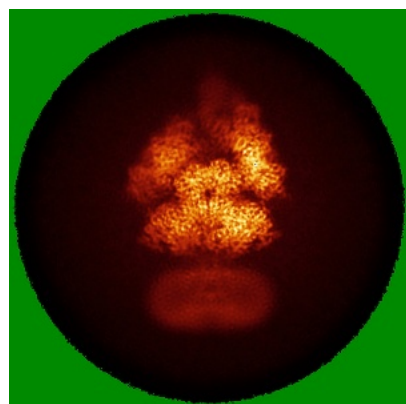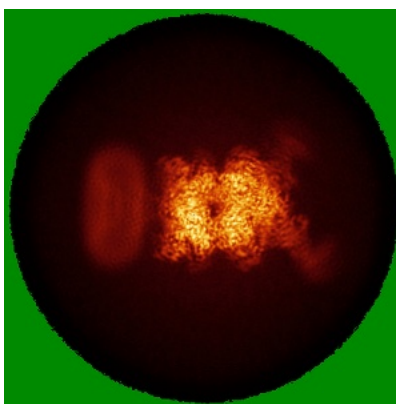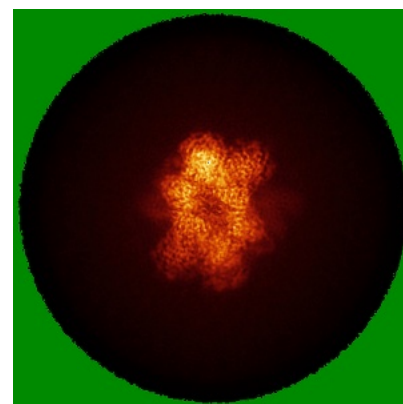
X	Y	Z

6.4.2 Raw map

X	Y	Z
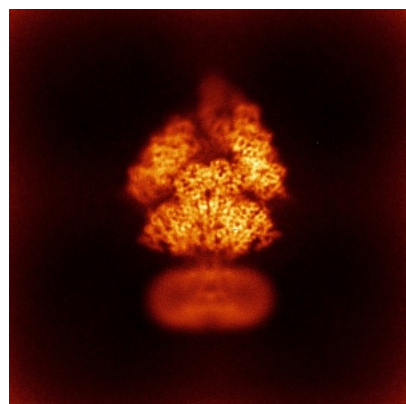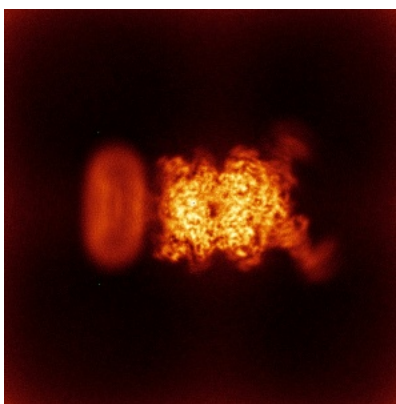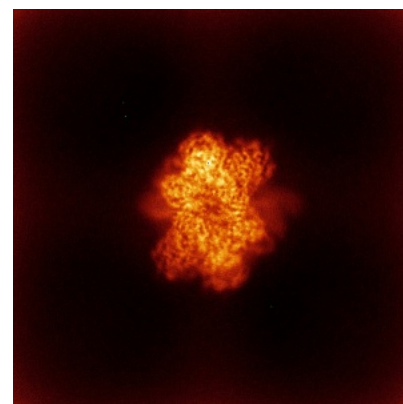
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5　Orthogonal surface views ⓘ

6.5.1　Primary map

| X | Y | Z |
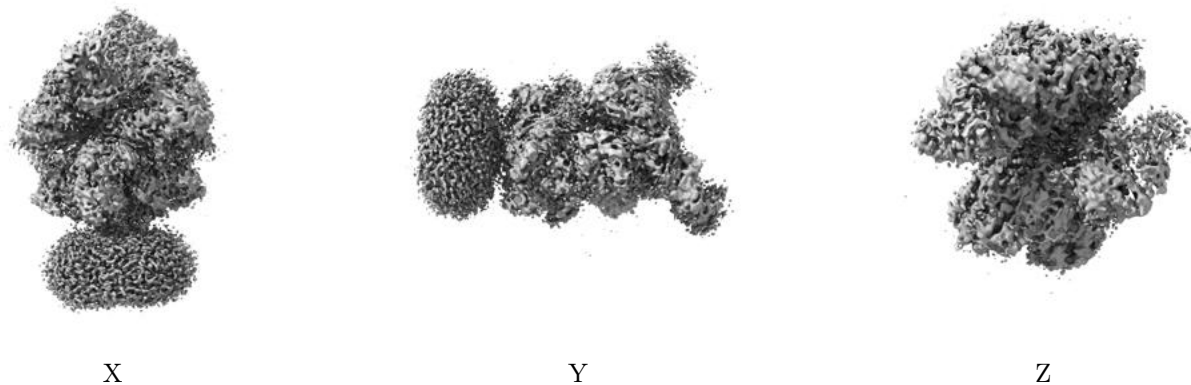
The images above show the 3D surface view of the map at the recommended contour level 0.0562. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2　Raw map

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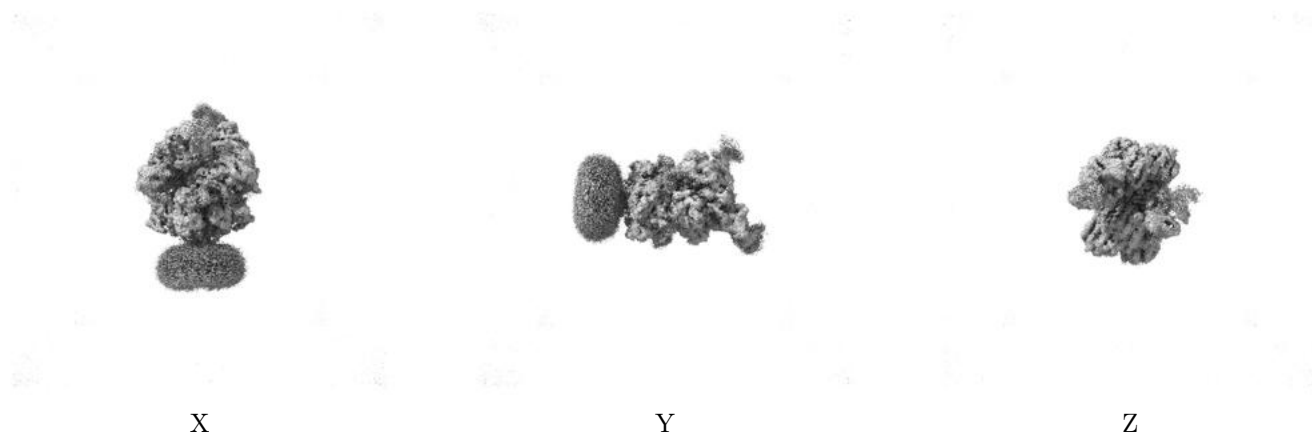
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

6.6　Mask visualisation ⓘ

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

7 Map analysis (i)

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

7.1 Map-value distribution (i)
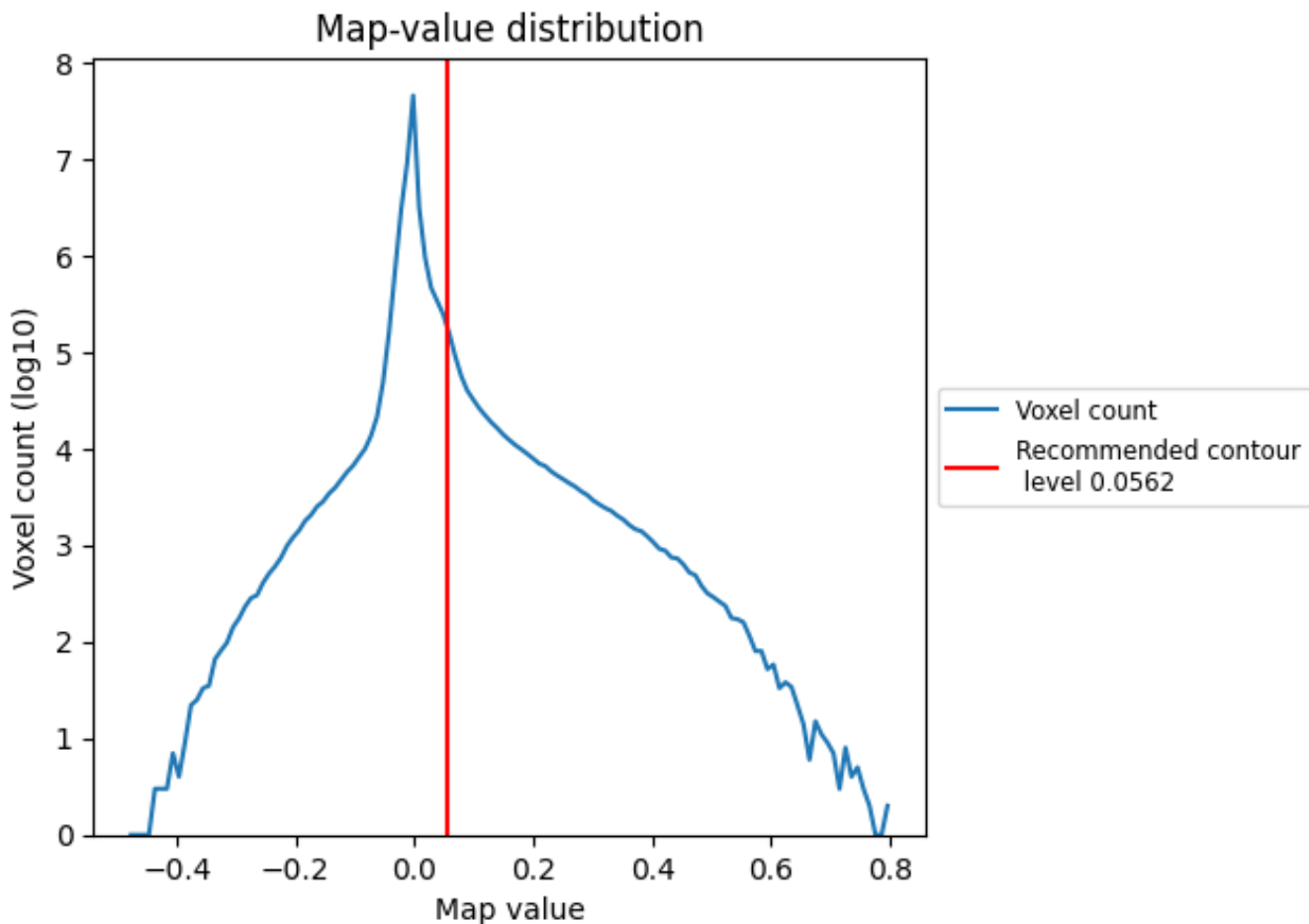
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2 Volume estimate ⓘ
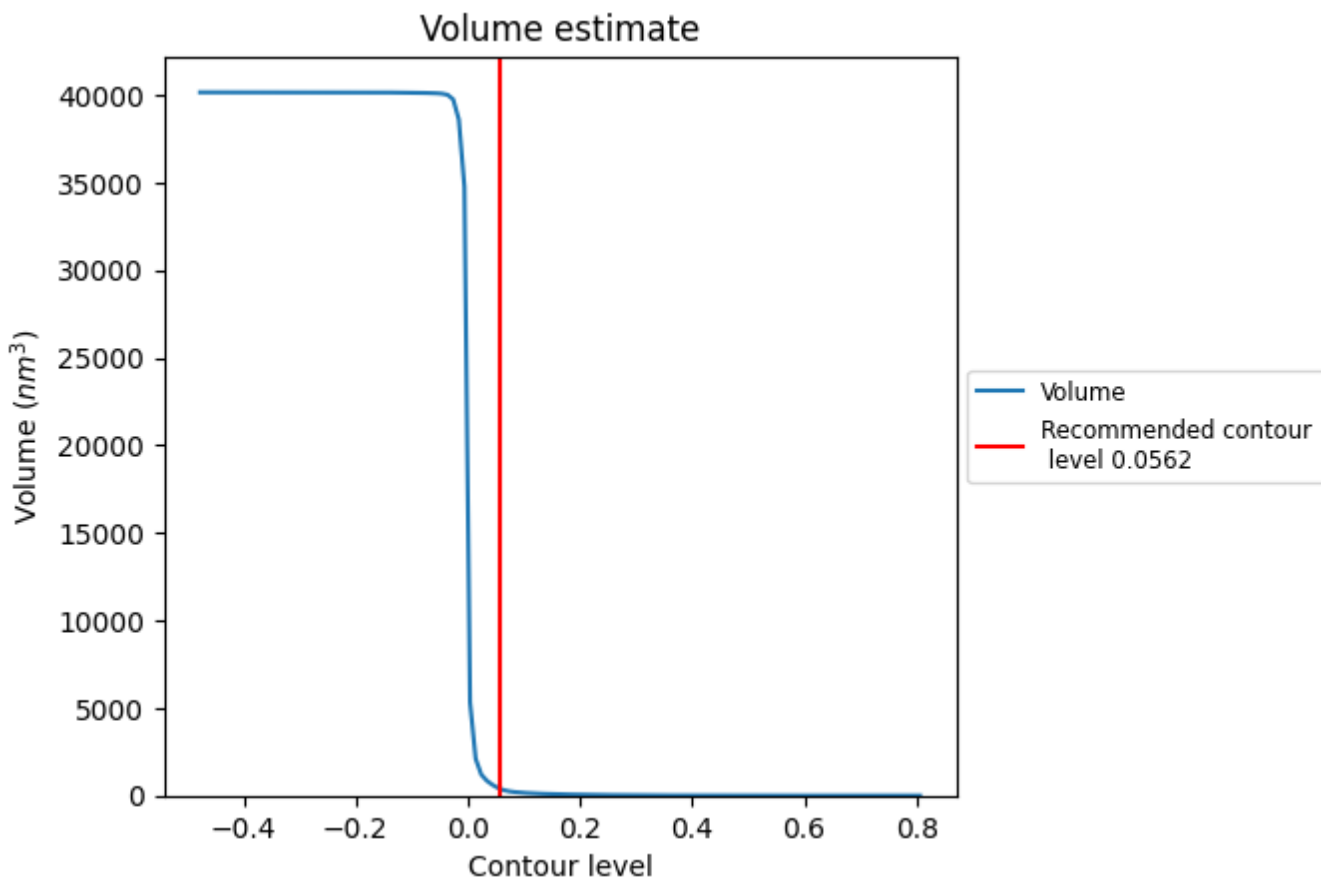
The volume at the recommended contour level is 406 nm^3; this corresponds to an approximate mass of 367 kDa.

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 ⓘ
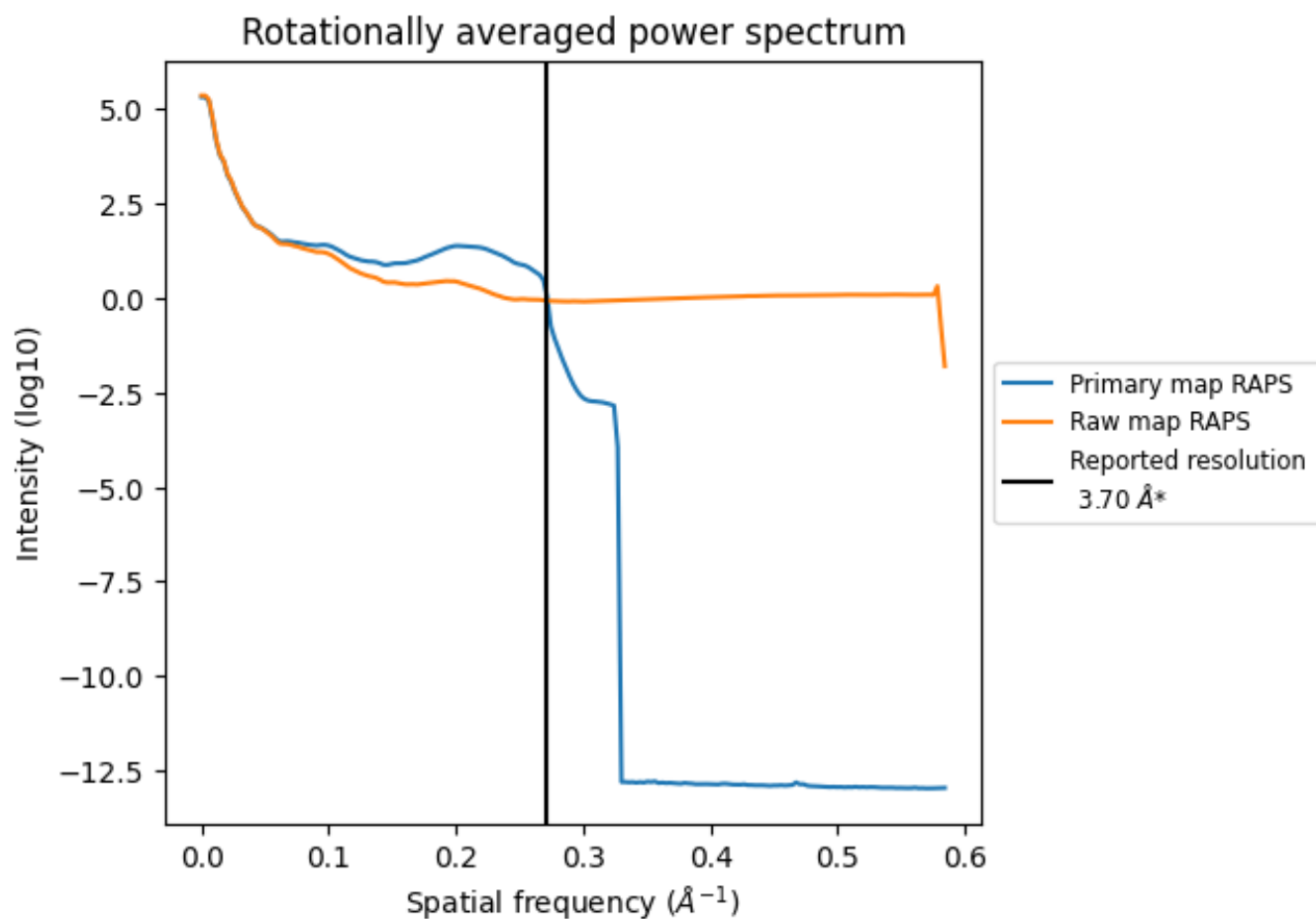
*Reported resolution corresponds to spatial frequency of 0.270 Å^{-1}

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 ⓘ
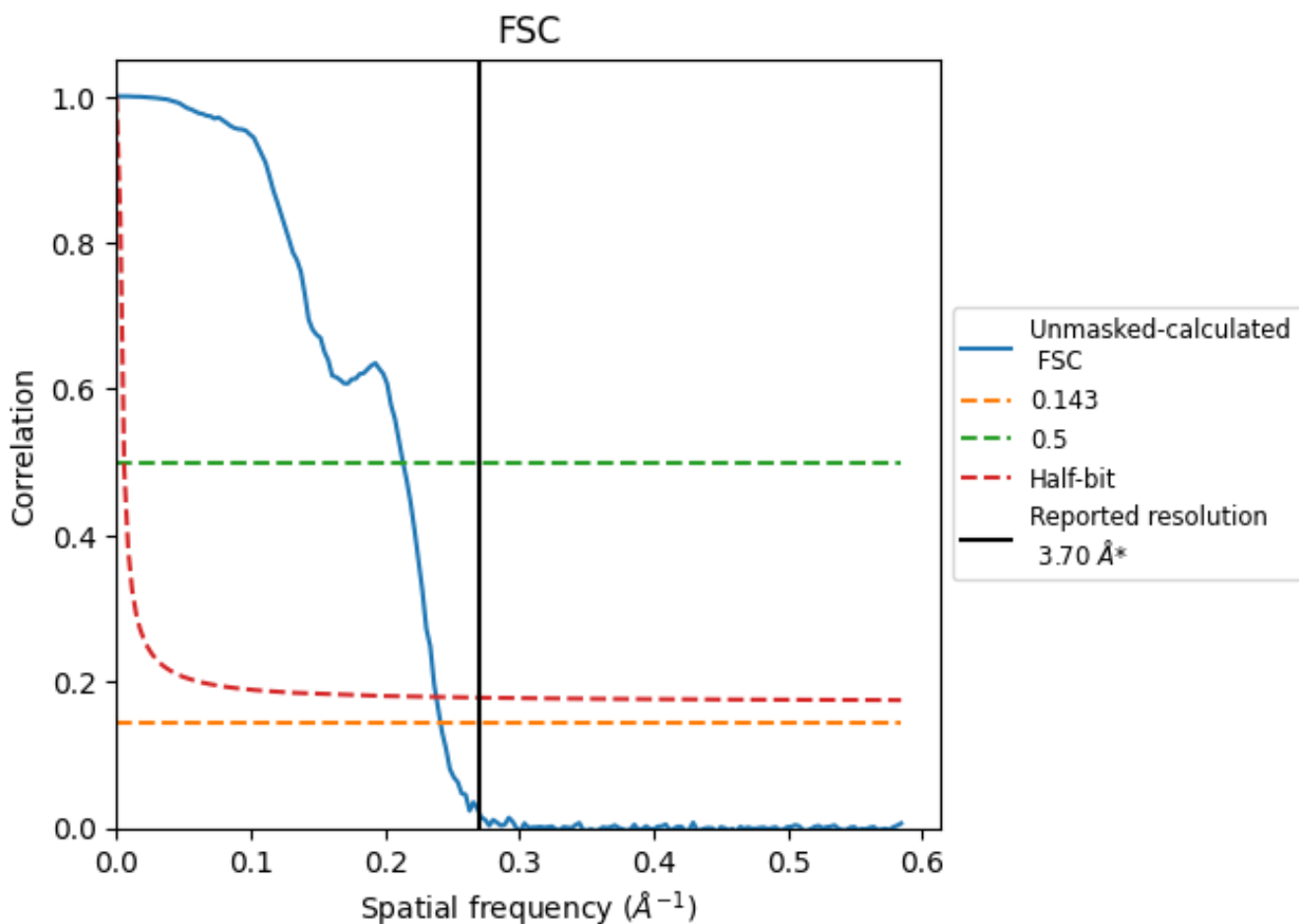
*Reported resolution corresponds to spatial frequency of 0.270 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.14	4.69	4.20

*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 4.14 differs from the reported value 3.7 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-43539 and PDB model 8VUT. Per-residue inclusion information can be found in section 3 on page 4.

9.1 Map-model overlay ⓘ
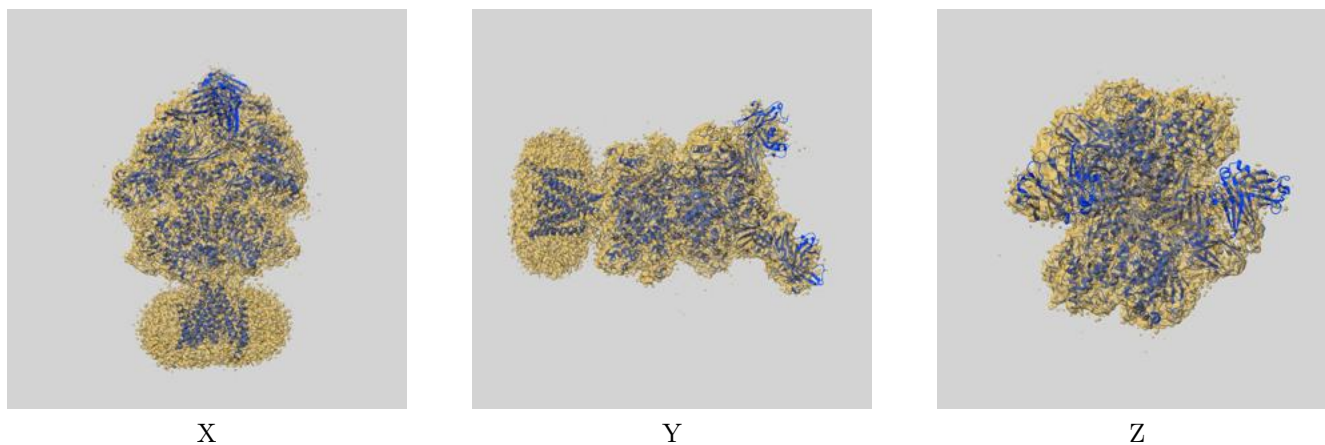
| X | Y | Z |

The images above show the 3D surface view of the map at the recommended contour level 0.0562 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
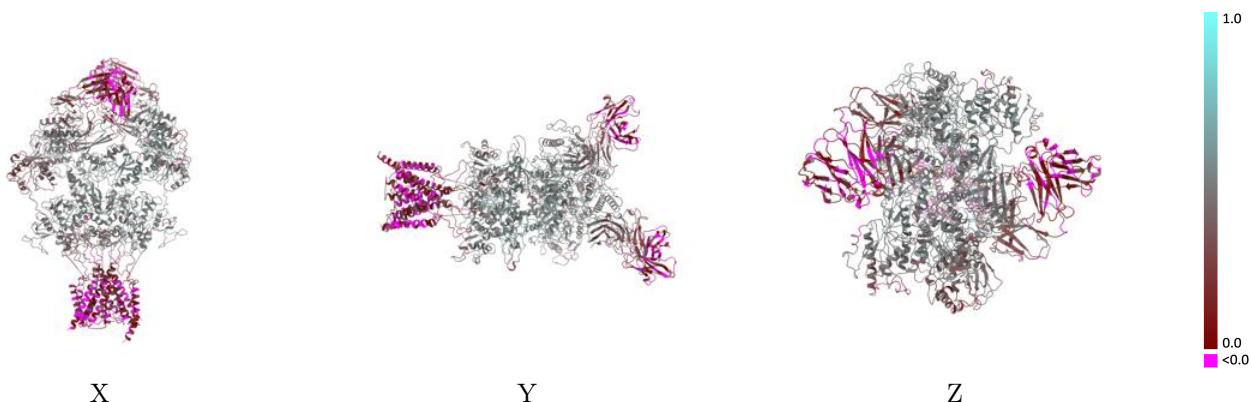
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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
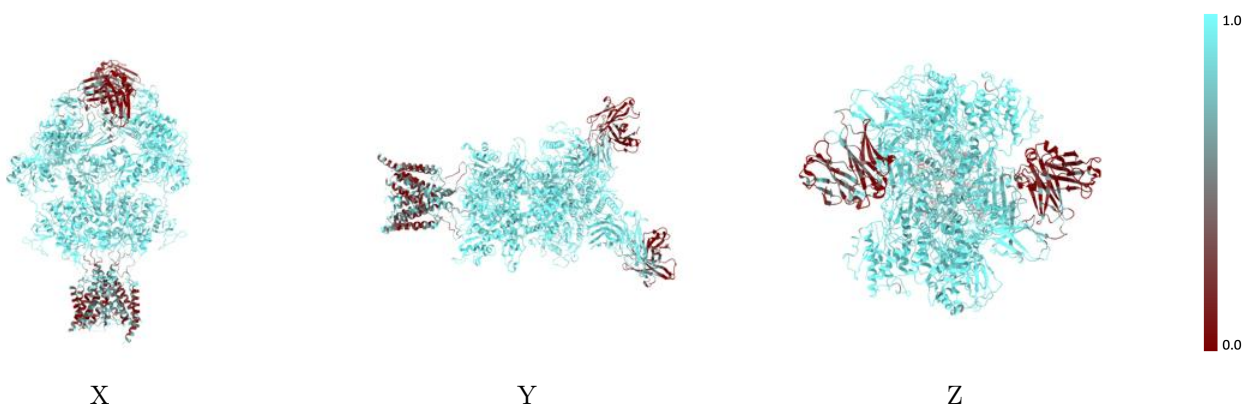
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0562).

9.4 Atom inclusion ⓘ
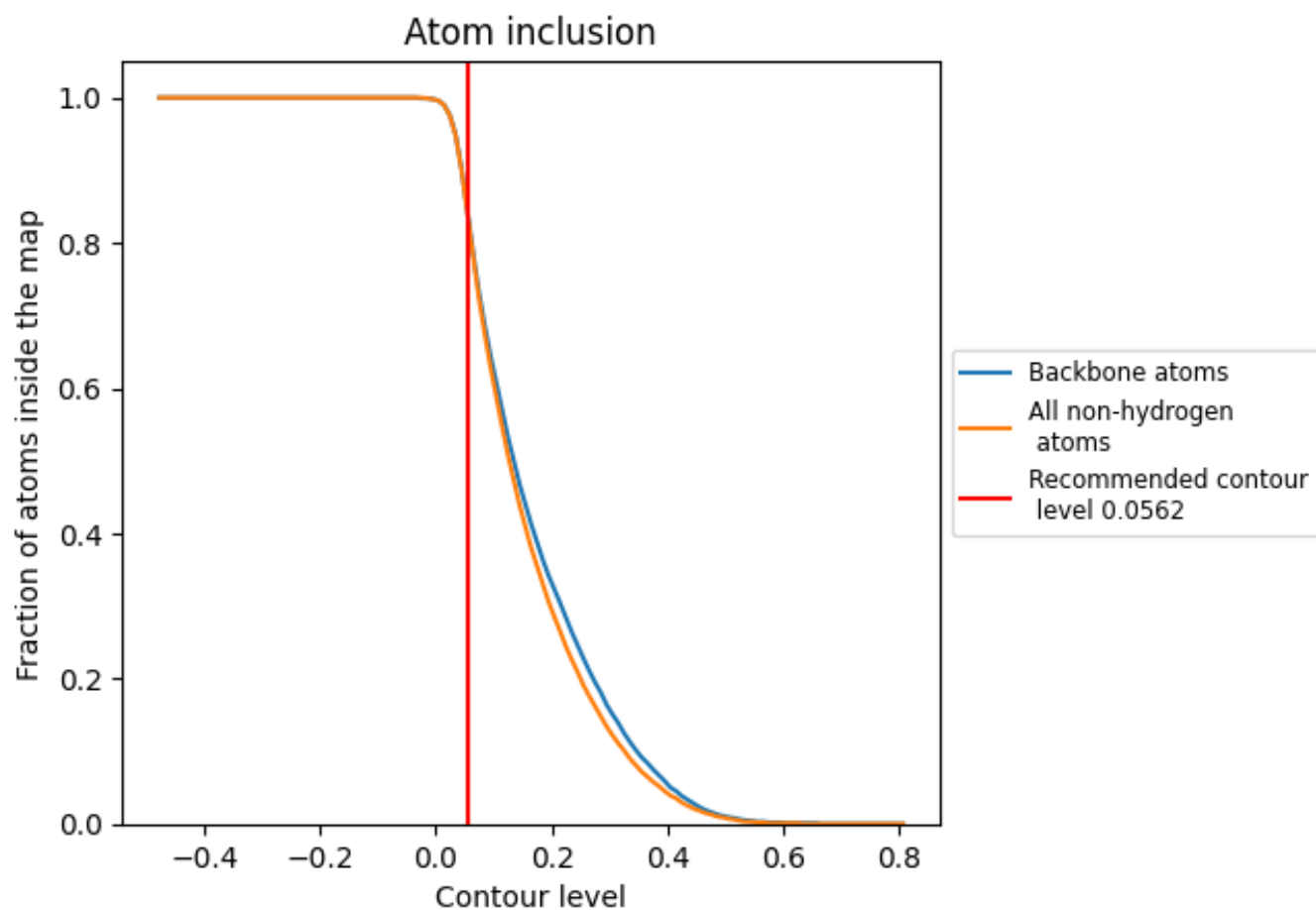
At the recommended contour level, 83% of all backbone atoms, 83% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0562) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8290	0.3850
A	0.9080	0.4460
B	0.8980	0.4350
C	0.9000	0.3890
D	0.8930	0.4290
H	0.6580	0.2550
I	0.5220	0.2920
L	0.6050	0.1920
M	0.5310	0.2260

1.0

0.0
<0.0