Full wwPDB EM Validation Report (i)

Mar 17, 2026 – 06:26 PM EDT

PDB ID	:	1OFO / pdb_000010fo
EMDB ID	:	EMD-75138
Title	:	SK5B-Germline in complex with GluN1-GluN2B, full refinement
Authors	:	Kleeman, S.O.; Furukawa, H.F.
Deposited on	:	2026-01-16
Resolution	:	4.46 Å(reported)

The following versions of software and data (see references (i)) were used in the production of this report:

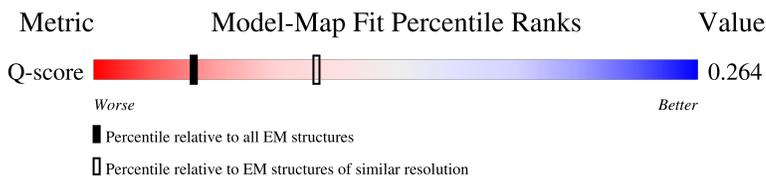|		
EMDB validation analysis	:	0.0.1.dev132
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.48.1

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 4.46 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		11
Ramachandran outliers		0.6%
Sidechain outliers		0.0%

Worse *Better*

▮ Percentile relative to all structures

▯ Percentile relative to all EM structures

Metric	Model-Map Fit Percentile Ranks	Value
Q-score		0.264

Worse *Better*

▮ Percentile relative to all EM structures

▯ Percentile relative to EM structures of similar resolution

Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	3001 (3.96 - 4.96)

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	844	59% / 69% 25% 5%
1	C	844	55% / 72% 23% 5%
2	B	826	56% / 70% 21% 9%
2	D	826	54% / 72% 18% 9%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
3	E	111	100% 60% 39%
4	F	121	100% 59% 40%

2 Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 24462 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	800	Total	C	N	O	S	0	0
			5940	3808	1025	1079	28		
1	C	800	Total	C	N	O	S	0	0
			5752	3676	1000	1048	28		

There are 22 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	5	HIS	ARG	conflict	UNP Q05586
A	9	PHE	LEU	conflict	UNP Q05586
A	17	PHE	VAL	conflict	UNP Q05586
A	22	SER	CYS	conflict	UNP Q05586
A	212	ARG	LYS	conflict	UNP Q05586
A	267	ILE	LEU	conflict	UNP Q05586
A	556	ASN	GLN	conflict	UNP Q05586
A	819	ILE	LEU	conflict	UNP Q05586
A	839	SER	-	expression tag	UNP Q05586
A	840	ARG	-	expression tag	UNP Q05586
A	841	ALA	-	expression tag	UNP Q05586
C	5	HIS	ARG	conflict	UNP Q05586
C	9	PHE	LEU	conflict	UNP Q05586
C	17	PHE	VAL	conflict	UNP Q05586
C	22	SER	CYS	conflict	UNP Q05586
C	212	ARG	LYS	conflict	UNP Q05586
C	267	ILE	LEU	conflict	UNP Q05586
C	556	ASN	GLN	conflict	UNP Q05586
C	819	ILE	LEU	conflict	UNP Q05586
C	839	SER	-	expression tag	UNP Q05586
C	840	ARG	-	expression tag	UNP Q05586
C	841	ALA	-	expression tag	UNP Q05586

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	752	Total 5565	C 3572	N 922	O 1037	S 34	0	0
2	D	749	Total 5428	C 3480	N 896	O 1022	S 30	0	0

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	271	SER	ALA	conflict	UNP Q13224
B	437	GLU	GLN	conflict	UNP Q13224
B	588	SER	CYS	conflict	UNP Q13224
B	838	SER	CYS	conflict	UNP Q13224
B	849	SER	CYS	conflict	UNP Q13224
D	271	SER	ALA	conflict	UNP Q13224
D	437	GLU	GLN	conflict	UNP Q13224
D	588	SER	CYS	conflict	UNP Q13224
D	838	SER	CYS	conflict	UNP Q13224
D	849	SER	CYS	conflict	UNP Q13224

- Molecule 3 is a protein called Light chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	E	111	Total 848	C 531	N 141	O 173	S 3	0	0

- Molecule 4 is a protein called Heavy chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	F	121	Total 929	C 583	N 152	O 190	S 4	0	0

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

• Molecule 1: Glutamate receptor ionotropic, NMDA 1

Chain C:

55%

72%   23%   5%

• Molecule 2: Glutamate receptor ionotropic, NMDA 2B

Chain B:

• Molecule 2: Glutamate receptor ionotropic, NMDA 2B

Chain D:

ARG SER GLN LYS SER PRO PRO SER ILE GLY ILE ALA VAL ILE LEU VAL GLY THR SER ASP GLU VAL ALA ILE LYS ASP ALA HIS GLU LYS ASP ASP F59 H60 H61 L62 S63 V64 V65 P66 R67 V68 E69 L70 V71 A72 M73 N74 E75 T76 D77 P78 K79 S80 I81 I82 T83 R84 I85 C86

D87 L88 M89 S90 D91 R92 K93 I94 Q95 G96 V97 V98 F99 A100 D101 D102 T103 D104 Q105 E106 A107 I108 A109 Q110 I111 L112 D113 F114 I115 S116 A117 Q118 T119 L120 T121 P122 I123 L124 G125 I126 H127 G128 G129 S130 S131 M132 I133 M134 A135 D136 K137 D138 E139 S140 S141 M142 F143 F144 Q145 F146

G147 P148 S149 I150 E151 Q152 Q153 A154 S155 V156 M157 L158 N159 I160 M161 E162 E163 Y164 D165 W166 Y167 ILE F169 S170 I171 V172 T173 T174 Y175 F176 P177 G178 Y179 Q180 D181 F182 V183 N184 K185 I186 R187 S188 T189 I190 E191 N192 S193 F194 V195 G196 W197 E198 L199 GLU GLU VAL LEU LEU LEU D206

M207 S208 L209 D210 D211 G212 D213 S214 K215 I216 Q217 N218 Q219 L220 K221 K222 L223 Q224 S225 P226 I227 I228 L229 L230 Y231 C232 T233 K234 E235 E236 A237 T238 I239 I240 F241 E242 V243 A244 N245 S246 V247 G248 L249 T250 G251 Y252 G253 Y254 T255 W256 I257 V258 P259 S260 L261 V262 A263 G264 D265 T266

D267 T268 V269 P270 S271 E272 F273 P274 T275 G276 L277 I278 S279 V280 S281 Y282 D283 E284 W285 D286 Y287 G288 L289 P290 A291 R292 V293 D295 G296 I297 A298 I299 I300 T301 T302 A303 A304 S305 D306 M307 L308 S309 E310 H311 S312 F313 I314 P315 E316 P317 K318 S319 S320 C321 Y322 N323 T324 H325 E326

K327 R328 I329 Y330 Q331 S332 N333 M334 L335 N336 R337 Y338 L339 I340 N341 V342 T343 F344 E345 G346 R347 N348 L349 S350 F351 S352 E353 D354 G355 Y356 Q357 M358 H359 P360 K361 L362 V363 I364 I365 L366 L367 N368 K369 E370 R371 K372 W373 E374 R375 V376 G377 K378 W379 K380 D381 K382 S383 L384 Q385 M386

K387 Y388 Y389 V390 W391 PRO ARG MET CYS PRO GLU THR GLU GLU GLN GLU D403 D404 H405 E412 E413 A414 S421 V422 D423 P424 L425 S426 G427 T428 C429 M430 R439 I440 V441 T442 E443 N444 K445 T446 D447 E448 E449 P450 C456 C461 K466 K470 G484 K489

W494 Y507 M508 A509 V510 I515 ASN E517 V523 D524 F525 M537 N542 G543 T544 V545 S546 P547 S548 A549 F550 F554 S555 A556 D557 V558 W559 V560 M561 M562 F563 V564 M565 L566 L567 I568 V569 S570 A571 V572 A573 V574 F575 V576 F577 E578 Y579 PHE SER PRO VAL GLY TYR ASN

ARG SER LEU ALA ASP GLY ARG GLU PRO GLY PRO S599 F600 G603 K604 S617 V618 P619 V620 Q621 N622 P623 K624 S628 K629 I630 M631 F637 F638 A639 F653 M654 I655 Q656 E657 E658 Y659 V660 D661 Q662 V663 S664 F671 A704 K708 D715 R742 D743 E744

K747 G752 S759 A765 K773 L781 D786 E793 L797 T798 G799 H802 N803 E804 K805 N806 E807 V808 M809 S810 S811 Q812 D816 N817 M818 A819 G820 V821 F822 Y823 M824 L825 G826 A827 A828 M829 A830 L831 S832 L833 I834 T835 F836 I837 S838 E839 H840 L841 F842

Y843 W844 Q845 PHE ARG HIS SER PHE MET GLY

● Molecule 3: Light chain

Chain E:

D21 I22 V23 L24 T25 Q26 S27 P28 A29 S30 L31 A32 V33 S34 L35 G36 Q37 R38 A39 T40 I41 S42 C43 R44 A45 S46 E47 S48 V49 D50 S51 Y52 G53 N54 S55 F56 M57 H58 W59 Y60 Q61 Q62 K63 P64 G65 Q66 P67 P68 K69 L70 L71 I72 Y73 L74 A75 S76 N77 L78 E79 S80

G81 V82 P83 A84 R85 F86 S87 G88 S89 G90 S91 R92 T93 D94 F95 T96 L97 T98 I99 D100 P101 V102 E103 A104 D105 D106 A107 A108 T109 Y110 Y111 C112 Q113 Q114 N115 N116 E117 D118 P119 F120 T121 F122 G123 S124 G125 T126 K127 L128 E129 I130 K131

• Molecule 4: Heavy chain

Chain F:

100%

59%

40%

E20 V21 Q22 L23 Q24 Q25 S26 G27 A28 E29 L30 V31 K32 P33 G34 A35 S36 V37 K38 L39 S40 C41 T42 A43 S44 G45 F46 N47 I48 K49 D50 T51 Y52 M53 H54 W55 V56 K57 Q58 R59 P60 E61 Q62 G63 L64 E65 W66 I67 G68 R69 I70 D71 P72 A73 N74 G75 N76 T77 K78 Y79

D80 P81 K82 F83 Q84 G85 K86 A87 T88 I89 T90 A91 D92 T93 S94 S95 N96 T97 A98 Y99 L100 Q101 L102 S103 S104 L105 T106 S107 E108 D109 T110 A111 V112 Y113 Y114 C115 A116 L117 Y118 G119 N120 Y121 E122 G123 G124 Y125 A126 M127 D128 Y129 W130 G131 Q132 G133 T134 S135 V136 T137 V138 S139

S140

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	52452	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/Å^2)$	71.7	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOCONTINUUM (6k x 4k)	Depositor
Maximum map value	0.415	Depositor
Minimum map value	-0.223	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.008	Depositor
Recommended contour level	0.1	Depositor
Map size (Å)	400.0, 400.0, 400.0	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.0, 1.0, 1.0	Depositor

WORLDWIDE
wwPDB
PROTEIN DATA BANK

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	0.27	0/6077	0.65	0/8289
1	C	0.24	0/5883	0.62	5/8043 (0.1%)
2	B	0.26	0/5684	0.68	0/7731
2	D	0.25	0/5542	0.65	0/7546
3	E	0.28	0/867	0.72	0/1179
4	F	0.31	0/950	0.77	0/1291
All	All	0.26	0/25003	0.66	5/34079 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	1
2	D	0	1
All	All	0	2

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	96	PRO	CA-C-N	6.74	138.23	121.80
1	C	96	PRO	C-N-CA	6.74	138.23	121.80
1	C	181	GLU	N-CA-CB	5.87	119.97	110.40
1	C	104	PRO	CA-C-N	-5.62	116.55	122.28
1	C	104	PRO	C-N-CA	-5.62	116.55	122.28

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	95	PRO	Peptide
2	D	165	ASP	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	5940	0	5660	142	0
1	C	5752	0	5295	128	0
2	B	5565	0	5200	119	0
2	D	5428	0	4955	97	0
3	E	848	0	808	30	0
4	F	929	0	878	47	0
All	All	24462	0	22796	538	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 11.

All (538) 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:137:LYS:HD3	2:D:145:GLN:HE22	1.47	0.78
1:A:262:ALA:HB1	1:A:266:ILE:HG13	1.66	0.76
2:D:364:ILE:HG12	2:D:379:TRP:HB2	1.67	0.76
3:E:51:SER:HB3	3:E:56:PHE:HB3	1.68	0.76
1:A:78:VAL:HG23	1:A:82:LEU:HD12	1.68	0.75
1:C:438:GLY:O	1:C:450:THR:HA	1.86	0.75
1:A:96:PRO:HD3	1:A:104:PRO:HD3	1.69	0.74
1:A:576:MET:O	1:A:580:LEU:HB2	1.86	0.74
1:C:338:VAL:HA	1:C:346:ARG:HE	1.54	0.71
2:D:366:LEU:HD12	2:D:388:TYR:H	1.54	0.71
2:D:327:LYS:HG3	2:D:328:ARG:HG2	1.72	0.70
2:B:223:LEU:HD21	2:B:228:ILE:HG12	1.74	0.70
2:B:558:VAL:HA	2:B:561:MET:HG3	1.74	0.70
1:C:33:LEU:HA	1:C:93:SER:H	1.57	0.69
4:F:102:LEU:HB2	4:F:105:LEU:HD13	1.73	0.69
2:B:439:ARG:HB2	2:B:450:PRO:HB2	1.75	0.69

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:87:VAL:H	1:A:304:PRO:HG2	1.57	0.68
1:C:221:LEU:HB3	1:C:249:VAL:HG12	1.75	0.68
1:A:485:GLY:HA2	1:A:499:ASN:O	1.93	0.68
1:A:121:LEU:HD11	1:A:284:ALA:HB2	1.75	0.68
2:D:139:GLU:O	2:D:336:ASN:ND2	2.27	0.68
1:C:73:GLN:O	1:C:77:SER:HB3	1.94	0.67
2:D:234:LYS:HD3	2:D:263:ALA:HA	1.77	0.67
3:E:92:ARG:NH1	3:E:93:THR:OG1	2.28	0.66
1:A:348:PHE:HA	1:A:369:GLY:HA3	1.76	0.66
2:B:433:THR:HG23	2:B:458:LYS:HB3	1.78	0.65
4:F:54:HIS:H	4:F:118:TYR:HB3	1.60	0.65
1:A:46:VAL:HG11	1:A:62:ALA:HB2	1.77	0.65
1:C:204:VAL:HG11	1:C:231:VAL:HG22	1.76	0.65
1:C:31:ALA:HB2	1:C:90:ILE:HB	1.78	0.65
3:E:118:ASP:HB3	4:F:80:ASP:HB2	1.79	0.65
1:A:271:LEU:HG	1:A:274:GLY:HA3	1.78	0.64
2:B:685:THR:HG22	2:B:730:ILE:HB	1.80	0.64
2:B:514:THR:O	2:B:519:ARG:NH1	2.30	0.64
1:C:169:ASP:HB2	1:C:199:PRO:HD3	1.80	0.64
2:D:187:ARG:HE	2:D:190:ILE:HD12	1.63	0.64
1:C:357:GLN:HG2	1:C:380:ILE:HB	1.80	0.64
1:C:139:ARG:HB2	1:C:345:ASP:HA	1.80	0.63
1:C:195:LEU:HD21	1:C:207:LEU:HB2	1.79	0.63
2:D:232:CYS:SG	2:D:233:THR:N	2.72	0.63
2:D:793:GLU:HG2	2:D:797:LEU:HD12	1.81	0.63
1:A:264:ASP:HA	1:A:357:GLN:HA	1.81	0.62
3:E:70:LEU:H	3:E:79:GLU:HG3	1.63	0.62
1:A:780:HIS:NE2	2:D:759:SER:O	2.31	0.62
1:C:86:GLN:HA	1:C:304:PRO:HB2	1.82	0.62
1:C:78:VAL:O	1:C:83:ILE:N	2.31	0.62
1:C:108:SER:O	1:C:112:GLY:N	2.32	0.62
1:A:121:LEU:HD12	1:A:280:HIS:HB3	1.80	0.62
1:A:685:LYS:HB3	1:A:686:GLN:HG3	1.80	0.62
1:C:117:PRO:HB3	1:C:322:LYS:HE3	1.82	0.62
1:C:212:ARG:HH22	1:C:238:LEU:HB3	1.64	0.62
1:C:206:ALA:O	1:C:209:MET:HB3	2.00	0.62
2:D:181:ASP:O	2:D:185:LYS:NZ	2.33	0.61
4:F:70:ILE:HG21	4:F:89:ILE:HG21	1.82	0.61
2:D:441:VAL:HA	2:D:450:PRO:HA	1.83	0.61
3:E:67:PRO:HB2	4:F:130:TRP:HE1	1.65	0.61
4:F:53:MET:O	4:F:69:ARG:NH1	2.33	0.61

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:41:CYS:H	4:F:97:THR:HG23	1.66	0.61
1:A:223:ALA:HB1	1:A:227:ASP:HB2	1.82	0.61
1:A:308:CYS:HB3	2:B:78:PRO:HG2	1.82	0.61
1:A:528:GLU:HB2	1:A:764:LYS:HG3	1.81	0.61
1:A:68:LYS:NZ	2:B:322:TYR:OH	2.26	0.61
3:E:83:PRO:HB2	3:E:85:ARG:HG3	1.83	0.61
4:F:25:GLN:HB2	4:F:132:GLN:HB3	1.82	0.60
1:C:298:LYS:H	1:C:301:ILE:HD11	1.65	0.60
4:F:93:THR:O	4:F:96:ASN:ND2	2.34	0.60
1:A:738:PHE:O	1:A:742:GLN:NE2	2.35	0.60
1:C:125:MET:O	1:C:139:ARG:NH1	2.34	0.60
2:B:95:GLN:HG2	2:B:328:ARG:HH22	1.67	0.60
2:D:149:SER:HB3	2:D:152:GLN:HB2	1.83	0.59
1:C:114:TYR:HB3	1:C:315:TRP:HB3	1.83	0.59
2:D:151:GLU:HG3	2:D:185:LYS:HD2	1.85	0.59
2:D:260:SER:HB3	2:D:281:SER:HA	1.84	0.59
1:A:762:MET:HE1	1:A:768:TRP:HB2	1.84	0.58
1:A:512:MET:HB3	1:A:514:VAL:HG23	1.84	0.58
2:B:95:GLN:NE2	2:B:316:GLU:O	2.36	0.58
1:C:130:ASP:HB3	1:C:343:ASP:HA	1.86	0.58
1:A:204:VAL:HG21	1:A:231:VAL:HG22	1.86	0.58
1:A:31:ALA:HB2	1:A:90:ILE:HB	1.86	0.58
2:B:187:ARG:HE	2:B:190:ILE:HD12	1.68	0.58
1:C:260:ARG:O	1:C:359:ARG:NH1	2.37	0.58
1:A:94:HIS:HD1	1:A:122:THR:HG1	1.51	0.57
1:A:34:SER:HA	1:A:67:HIS:HD2	1.69	0.57
3:E:86:PHE:HD1	3:E:99:ILE:HG22	1.70	0.57
1:A:91:LEU:HD22	1:A:284:ALA:HB1	1.86	0.57
1:A:830:LEU:HD23	1:A:833:ILE:HD11	1.87	0.57
1:C:403:ILE:HG12	1:C:484:PHE:HE1	1.70	0.57
1:A:541:LEU:HD21	1:A:746:LEU:HD12	1.85	0.57
2:D:303:ALA:HB3	2:D:339:LEU:HD23	1.85	0.57
2:B:529:PHE:HA	2:B:784:PHE:HZ	1.70	0.57
4:F:39:LEU:HD22	4:F:100:LEU:HD21	1.85	0.57
4:F:57:LYS:HG3	4:F:113:TYR:HD1	1.69	0.57
1:C:119:LEU:HD13	1:C:138:LEU:HD21	1.87	0.56
1:C:681:TYR:HB3	1:C:728:ALA:HB3	1.87	0.56
2:D:161:MET:HE2	2:D:169:PHE:HB3	1.87	0.56
2:D:289:LEU:HD13	2:D:292:ARG:HD2	1.85	0.56
3:E:85:ARG:HD3	3:E:100:ASP:HB2	1.87	0.56
1:A:514:VAL:HG22	1:A:760:ILE:HG23	1.86	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:105:GLN:HE22	2:D:108:ILE:HB	1.69	0.56
4:F:48:ILE:HG21	4:F:96:ASN:HB3	1.87	0.56
1:C:68:LYS:HG2	1:C:74:MET:HE2	1.87	0.56
2:B:187:ARG:O	2:B:191:GLU:N	2.24	0.56
2:D:149:SER:O	2:D:153:GLN:N	2.33	0.56
2:D:61:HIS:HB3	2:D:64:VAL:HG23	1.88	0.56
2:D:311:HIS:NE2	2:D:338:TYR:OH	2.37	0.56
1:A:94:HIS:HD2	1:A:96:PRO:HD2	1.71	0.56
3:E:73:TYR:HB2	3:E:77:ASN:HB3	1.88	0.56
2:B:349:LEU:HB2	2:B:357:GLN:HB2	1.88	0.56
4:F:58:GLN:NE2	4:F:59:ARG:O	2.39	0.56
1:C:78:VAL:HG12	1:C:82:LEU:HD12	1.88	0.55
3:E:28:PRO:HB2	3:E:40:THR:HG22	1.89	0.55
1:A:72:ILE:HD11	2:B:118:GLN:HG2	1.88	0.55
2:B:188:SER:HA	2:B:191:GLU:HG3	1.88	0.55
1:C:265:GLY:H	1:C:357:GLN:HA	1.71	0.55
4:F:31:VAL:HG12	4:F:37:VAL:HB	1.89	0.55
2:B:354:ASP:HB2	2:B:356:TYR:HE2	1.72	0.55
1:C:144:TYR:OH	1:C:253:GLU:OE1	2.24	0.55
4:F:107:SER:O	4:F:110:THR:OG1	2.24	0.55
2:D:257:ILE:HA	2:D:278:ILE:HB	1.89	0.55
1:A:578:TYR:O	1:A:582:ARG:NH1	2.40	0.54
1:A:544:LYS:NZ	1:A:746:LEU:O	2.40	0.54
2:B:173:THR:HG22	2:B:231:TYR:HB3	1.90	0.54
2:D:744:GLU:O	2:D:747:LYS:NZ	2.39	0.54
2:D:177:PRO:HD3	2:D:207:MET:HE2	1.89	0.54
1:A:147:GLN:HE22	1:A:251:GLU:H	1.54	0.54
2:B:786:ASP:OD1	1:C:695:ARG:NH2	2.39	0.54
1:C:107:VAL:O	1:C:111:ALA:N	2.36	0.54
1:C:139:ARG:NE	1:C:344:GLY:O	2.40	0.54
1:C:505:LEU:O	1:C:763:ARG:NH1	2.41	0.54
1:A:250:GLY:H	1:A:253:GLU:HB2	1.72	0.54
1:A:335:THR:O	1:A:350:ASN:ND2	2.40	0.54
3:E:113:GLN:HE22	3:E:115:ASN:HB3	1.73	0.54
2:B:228:ILE:HD13	2:B:256:TRP:HE1	1.73	0.53
2:B:268:THR:O	2:B:373:TRP:NE1	2.41	0.53
2:D:85:ILE:HG22	2:D:89:MET:HE2	1.89	0.53
2:B:138:ASP:OD1	2:B:138:ASP:N	2.41	0.53
1:C:181:GLU:HA	1:C:184:LEU:HG	1.91	0.53
1:C:312:THR:HA	2:D:77:ASP:HB3	1.89	0.53
1:C:484:PHE:O	1:C:523:ARG:NH2	2.42	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:365:ILE:HA	2:B:376:VAL:H	1.74	0.53
1:C:713:SER:O	1:C:715:ALA:N	2.42	0.53
2:D:334:MET:HG3	2:D:337:ARG:HE	1.74	0.53
1:C:148:SER:HB3	1:C:176:ALA:HB1	1.89	0.53
2:D:256:TRP:HE3	2:D:277:LEU:HB2	1.74	0.53
3:E:72:ILE:HB	3:E:75:ALA:HA	1.90	0.53
2:B:126:ILE:HA	2:B:131:SER:HB2	1.91	0.53
2:B:439:ARG:HG2	2:B:479:TYR:HE1	1.73	0.53
1:A:470:MET:HB3	1:A:768:TRP:HZ3	1.73	0.53
1:C:26:ILE:HB	1:C:61:ASN:HD22	1.74	0.53
4:F:107:SER:HB3	4:F:140:SER:HB2	1.91	0.53
2:B:488:LYS:NZ	2:B:489:LYS:O	2.42	0.53
2:B:502:VAL:HG22	2:B:522:VAL:HG11	1.91	0.53
4:F:113:TYR:HD2	4:F:134:THR:HB	1.74	0.53
4:F:117:LEU:HD12	4:F:129:TYR:HA	1.90	0.53
1:C:533:PHE:HB3	1:C:776:ILE:HD11	1.90	0.53
1:C:613:VAL:HA	2:D:617:SER:HB2	1.91	0.52
2:B:242:GLU:HG2	2:B:243:VAL:HG13	1.91	0.52
2:B:228:ILE:HB	2:B:256:TRP:CD1	2.45	0.52
2:D:798:THR:OG1	2:D:799:GLY:N	2.40	0.52
1:A:698:GLU:CD	1:A:699:LEU:H	2.17	0.52
1:C:124:ARG:NH1	1:C:142:PRO:O	2.41	0.52
2:D:315:PRO:HB2	2:D:328:ARG:HD2	1.91	0.52
1:A:93:SER:HA	1:A:121:LEU:HB2	1.92	0.52
2:B:440:ILE:HG22	2:B:451:GLY:H	1.75	0.52
2:B:487:GLY:HA2	2:B:495:ASN:O	2.10	0.52
1:A:440:ASN:HB2	1:A:451:VAL:HG12	1.92	0.52
1:C:55:SER:OG	1:C:58:ILE:O	2.21	0.52
1:C:352:SER:HB2	1:C:354:MET:HE2	1.92	0.52
1:C:305:PRO:HA	1:C:311:ASN:HD22	1.75	0.52
3:E:128:LEU:HB3	3:E:131:LYS:HZ2	1.75	0.52
2:B:148:PRO:O	2:B:152:GLN:NE2	2.43	0.52
1:A:197:PHE:HZ	1:A:223:ALA:HB2	1.75	0.51
1:C:114:TYR:HD1	1:C:315:TRP:H	1.58	0.51
1:A:805:PRO:HB2	2:D:653:PHE:CE1	2.45	0.51
1:C:269:LEU:HD13	1:C:353:ILE:HG22	1.91	0.51
1:A:265:GLY:HA3	1:A:382:PRO:HD3	1.92	0.51
1:C:28:ASN:HA	1:C:61:ASN:HB3	1.93	0.51
1:C:381:TRP:HE1	1:C:388:LYS:H	1.58	0.51
1:A:680:ILE:HG13	1:A:681:TYR:H	1.75	0.51
1:C:324:VAL:O	1:C:328:SER:N	2.38	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:318:LYS:HG3	2:B:326:GLU:HB2	1.92	0.51
2:B:364:ILE:HG23	2:B:376:VAL:HB	1.93	0.51
2:D:113:ASP:OD1	2:D:141:SER:OG	2.27	0.51
3:E:119:PRO:HD2	4:F:80:ASP:HB3	1.92	0.51
1:A:208:LEU:HD12	1:A:240:MET:HG3	1.91	0.51
1:A:414:THR:OG1	1:A:419:THR:O	2.25	0.51
2:B:489:LYS:HD3	2:B:494:TRP:CE2	2.46	0.51
2:D:124:LEU:HD13	2:D:297:ILE:HG12	1.93	0.51
4:F:53:MET:HE3	4:F:116:ALA:HB1	1.91	0.51
2:B:268:THR:HG1	2:B:373:TRP:CD1	2.28	0.51
1:C:30:GLY:HA2	1:C:91:LEU:HG	1.93	0.51
2:D:66:PRO:HB3	2:D:301:THR:HG21	1.93	0.51
2:D:105:GLN:OE1	2:D:107:ALA:N	2.43	0.51
2:D:704:ALA:O	2:D:708:LYS:NZ	2.44	0.51
2:B:171:ILE:HG13	2:B:173:THR:HG23	1.92	0.51
3:E:49:VAL:HG13	3:E:116:ASN:HD22	1.75	0.51
2:B:191:GLU:HA	2:B:194:PHE:CE1	2.46	0.51
3:E:24:LEU:HD11	3:E:114:GLN:HE21	1.76	0.50
3:E:78:LEU:HD12	3:E:82:VAL:HG23	1.92	0.50
1:A:96:PRO:HG3	1:A:125:MET:HE1	1.94	0.50
2:B:231:TYR:HA	2:B:262:VAL:HG21	1.93	0.50
1:A:57:LYS:HG3	1:A:58:ILE:HG13	1.93	0.50
4:F:88:THR:HG23	4:F:101:GLN:HB3	1.93	0.50
1:C:144:TYR:OH	1:C:252:ARG:N	2.44	0.50
2:D:69:GLU:HG2	2:D:92:ARG:HE	1.76	0.50
2:D:572:VAL:HB	2:D:631:MET:HE1	1.93	0.50
1:A:332:ASP:H	1:A:337:ARG:HA	1.76	0.50
2:B:216:ILE:HG23	2:B:244:ALA:HA	1.93	0.50
2:D:379:TRP:NE1	2:D:381:ASP:OD1	2.22	0.50
2:B:89:MET:HE2	2:B:318:LYS:HB3	1.93	0.50
2:B:228:ILE:HD13	2:B:256:TRP:NE1	2.27	0.50
4:F:71:ASP:HB3	4:F:75:GLY:H	1.77	0.50
4:F:113:TYR:HE2	4:F:136:VAL:HB	1.76	0.50
2:B:343:THR:HA	2:B:348:ASN:HA	1.94	0.49
2:B:786:ASP:HA	1:C:695:ARG:HH12	1.77	0.49
2:D:572:VAL:O	2:D:576:VAL:N	2.42	0.49
1:A:541:LEU:HD13	1:A:736:LEU:HD22	1.93	0.49
2:D:247:VAL:HA	2:D:250:THR:HB	1.95	0.49
1:A:400:ILE:HD11	1:A:476:VAL:HG22	1.94	0.49
1:A:634:MET:HG3	2:B:610:TRP:CD1	2.47	0.49
1:C:116:ILE:HA	1:C:315:TRP:HZ3	1.78	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:60:TYR:HA	3:E:70:LEU:HD13	1.95	0.49
1:A:609:PHE:O	1:A:613:VAL:HG23	2.13	0.49
1:A:624:PRO:HB2	1:A:630:ARG:HG2	1.95	0.49
1:C:77:SER:HA	1:C:80:GLU:HB2	1.95	0.49
3:E:41:ILE:HD13	3:E:110:TYR:HA	1.94	0.49
1:A:791:THR:HG1	1:A:792:TRP:CD1	2.31	0.48
2:D:209:LEU:O	2:D:215:LYS:NZ	2.43	0.48
1:C:463:LEU:HD12	1:C:514:VAL:HG21	1.95	0.48
3:E:24:LEU:HD22	3:E:43:CYS:HB3	1.95	0.48
1:A:150:VAL:HG12	1:A:154:MET:HE2	1.95	0.48
1:A:614:LEU:HD12	1:A:636:TRP:HH2	1.79	0.48
1:A:779:SER:HB2	1:A:784:PHE:HD2	1.78	0.48
4:F:53:MET:HB3	4:F:70:ILE:O	2.14	0.48
1:A:218:VAL:HG13	1:A:246:VAL:HB	1.95	0.48
1:A:408:PHE:O	1:A:458:PHE:N	2.45	0.48
2:D:227:ILE:H	2:D:254:TYR:HA	1.78	0.48
2:D:525:PHE:O	2:D:773:LYS:NZ	2.47	0.48
1:A:148:SER:HB3	1:A:176:ALA:HB1	1.94	0.48
1:A:287:VAL:HG12	1:A:330:TYR:H	1.78	0.48
1:C:510:ALA:O	1:C:763:ARG:NH2	2.46	0.48
1:C:123:THR:HB	1:C:139:ARG:HD3	1.96	0.48
4:F:59:ARG:HB2	4:F:62:GLN:HB2	1.94	0.48
1:A:140:THR:HG23	1:A:338:VAL:HG11	1.95	0.48
1:A:357:GLN:HE21	1:A:378:LYS:HB3	1.79	0.48
1:A:548:ARG:HE	1:A:551:LEU:HD13	1.78	0.48
2:B:156:VAL:HG22	2:B:379:TRP:CE2	2.49	0.48
2:D:290:PRO:HA	2:D:293:VAL:HG22	1.95	0.48
1:A:75:ALA:O	1:A:78:VAL:HG12	2.13	0.48
1:A:557:PRO:HB3	1:A:654:PHE:HE1	1.78	0.48
2:B:296:GLY:HA2	2:B:299:ILE:HD12	1.96	0.48
1:A:35:THR:H	1:A:38:HIS:HB2	1.79	0.47
2:B:241:PHE:HE1	2:B:256:TRP:HE3	1.61	0.47
2:B:331:GLN:O	2:B:335:LEU:HB2	2.12	0.47
1:C:351:TYR:HB2	1:C:367:TYR:HB3	1.96	0.47
1:A:691:ILE:HA	1:A:694:ARG:HG2	1.96	0.47
1:C:289:ALA:O	1:C:293:HIS:ND1	2.42	0.47
2:D:335:LEU:O	2:D:339:LEU:HG	2.14	0.47
1:C:184:LEU:HD13	1:C:190:LYS:HA	1.96	0.47
1:A:400:ILE:HG21	1:A:463:LEU:HD11	1.96	0.47
2:B:136:ASP:OD1	2:B:136:ASP:N	2.46	0.47
2:B:367:LEU:HA	2:B:373:TRP:HA	1.96	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:138:ASP:OD1	2:D:138:ASP:N	2.45	0.47
2:D:380:LYS:O	2:D:383:SER:N	2.48	0.47
1:A:401:VAL:HG21	1:A:504:GLU:HG2	1.96	0.47
1:A:25:LYS:NZ	1:A:56:TRP:O	2.46	0.47
1:A:81:ASP:OD1	1:A:82:LEU:N	2.48	0.47
1:A:215:GLU:HA	1:A:393:GLN:HB3	1.95	0.47
1:A:358:ASN:O	1:A:360:LYS:NZ	2.45	0.47
1:A:492:ASN:N	2:B:192:ASN:OD1	2.46	0.47
2:B:626:THR:HA	2:B:629:LYS:HE2	1.96	0.47
1:C:212:ARG:NH1	1:C:240:MET:SD	2.88	0.47
1:C:350:ASN:HA	1:C:368:ASN:HA	1.96	0.47
1:C:541:LEU:HD13	1:C:736:LEU:HD22	1.96	0.47
2:D:101:ASP:HB3	2:D:128:GLY:H	1.80	0.47
2:B:557:ASP:N	2:B:557:ASP:OD2	2.47	0.47
4:F:125:TYR:HA	4:F:129:TYR:HB2	1.96	0.47
2:B:98:VAL:HA	2:B:124:LEU:HB2	1.97	0.47
2:B:347:ARG:NH1	2:B:349:LEU:HD22	2.30	0.47
1:A:92:VAL:HG11	1:A:107:VAL:HG11	1.96	0.46
2:B:834:ILE:HA	2:B:837:ILE:HG22	1.96	0.46
1:A:356:LEU:HD13	1:A:361:LEU:HD13	1.98	0.46
2:B:599:SER:O	2:B:604:LYS:NZ	2.44	0.46
1:C:154:MET:HE1	1:C:267:ILE:HG21	1.97	0.46
1:C:309:VAL:HG12	2:D:80:SER:HB3	1.96	0.46
2:D:489:LYS:HA	2:D:494:TRP:HA	1.95	0.46
1:A:364:VAL:HG12	1:A:377:ARG:HB3	1.97	0.46
1:A:780:HIS:HE2	2:D:759:SER:N	2.14	0.46
1:C:458:PHE:HZ	1:C:785:MET:HE1	1.81	0.46
1:A:51:LYS:HA	1:A:56:TRP:HZ3	1.81	0.46
2:B:328:ARG:HB2	2:B:331:GLN:HB3	1.97	0.46
1:C:205:THR:HB	1:C:238:LEU:HD11	1.98	0.46
1:C:308:CYS:SG	2:D:79:LYS:HB3	2.56	0.46
2:B:93:LYS:HG2	2:B:317:PRO:HG3	1.98	0.46
2:B:171:ILE:HG12	2:B:186:ILE:HD11	1.96	0.46
1:C:138:LEU:HD13	1:C:340:PHE:CE1	2.51	0.46
1:A:94:HIS:CG	1:A:122:THR:HG1	2.34	0.46
2:D:93:LYS:NZ	2:D:317:PRO:O	2.42	0.46
2:D:231:TYR:CZ	2:D:261:LEU:HD11	2.51	0.46
2:B:148:PRO:HG2	2:B:153:GLN:HE21	1.81	0.45
1:C:107:VAL:O	1:C:110:THR:HB	2.17	0.45
2:D:102:ASP:OD1	2:D:102:ASP:N	2.46	0.45
2:B:187:ARG:NH2	2:B:199:LEU:O	2.49	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:334:MET:HB2	2:B:337:ARG:HH21	1.81	0.45
2:B:408:ILE:HG13	2:B:508:MET:HB2	1.99	0.45
2:B:498:ILE:HD13	2:B:519:ARG:HE	1.82	0.45
1:C:165:LEU:HD22	1:C:180:LEU:HD23	1.98	0.45
2:D:277:LEU:HD22	2:D:367:LEU:HD13	1.97	0.45
1:C:277:GLU:HA	1:C:280:HIS:CD2	2.52	0.45
1:C:307:GLY:O	1:C:311:ASN:N	2.46	0.45
1:A:139:ARG:HE	1:A:143:PRO:HD3	1.82	0.45
2:B:328:ARG:HD3	2:B:331:GLN:HB3	1.98	0.45
1:C:243:SER:HB2	1:C:384:GLY:H	1.81	0.45
2:D:149:SER:HA	2:D:356:TYR:HB2	1.98	0.45
2:D:345:GLU:CD	2:D:346:GLY:H	2.25	0.45
4:F:25:GLN:OE1	4:F:132:GLN:N	2.49	0.45
1:A:147:GLN:HE22	1:A:251:GLU:HG3	1.82	0.45
1:A:147:GLN:NE2	1:A:251:GLU:HG3	2.31	0.45
2:B:237:ALA:HA	2:B:240:ILE:HG12	1.98	0.45
1:C:500:GLY:O	1:C:502:MET:N	2.50	0.45
2:D:256:TRP:O	2:D:278:ILE:N	2.48	0.45
1:A:684:VAL:HG23	1:A:712:GLU:HA	1.98	0.45
2:B:510:VAL:HG12	2:B:764:ILE:HG23	1.98	0.45
1:C:777:LEU:HD23	1:C:777:LEU:HA	1.85	0.45
2:D:715:ASP:N	2:D:715:ASP:OD1	2.48	0.45
3:E:50:ASP:OD1	3:E:50:ASP:N	2.50	0.45
2:B:190:ILE:HD11	2:B:199:LEU:H	1.81	0.45
2:D:221:LYS:NZ	2:D:245:ASN:OD1	2.35	0.45
2:B:104:ASP:OD2	2:B:127:HIS:NE2	2.50	0.45
1:C:147:GLN:NE2	1:C:251:GLU:OE2	2.49	0.45
2:D:328:ARG:HG3	2:D:332:SER:HB3	1.99	0.45
1:A:679:PHE:CG	1:A:727:HIS:HB2	2.52	0.45
1:C:144:TYR:HE2	1:C:251:GLU:HB2	1.81	0.45
1:C:270:GLN:O	1:C:352:SER:N	2.50	0.45
2:D:156:VAL:HG22	2:D:379:TRP:CZ2	2.52	0.45
1:C:385:GLU:HG2	1:C:389:PRO:HB3	1.98	0.44
1:C:741:SER:OG	1:C:796:GLN:O	2.34	0.44
2:D:236:GLU:HG2	2:D:239:TYR:HE2	1.82	0.44
4:F:57:LYS:HE2	4:F:67:ILE:HG13	1.98	0.44
4:F:119:GLY:H	4:F:125:TYR:HB2	1.82	0.44
1:A:113:PHE:HB2	2:B:111:ILE:HD11	1.99	0.44
1:A:694:ARG:NH1	1:A:703:TYR:OH	2.50	0.44
2:B:195:VAL:HG22	2:B:196:GLY:H	1.82	0.44
1:C:162:HIS:ND1	1:C:192:GLU:OE2	2.51	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:541:LEU:HB2	1:C:736:LEU:HD13	1.97	0.44
1:A:264:ASP:OD1	1:A:264:ASP:N	2.50	0.44
1:A:445:GLY:O	1:A:448:ARG:CB	2.65	0.44
2:B:744:GLU:O	2:B:747:LYS:NZ	2.42	0.44
1:C:113:PHE:HB2	2:D:111:ILE:HD11	1.98	0.44
3:E:21:ASP:N	3:E:21:ASP:OD1	2.49	0.44
4:F:31:VAL:HG11	4:F:102:LEU:HD21	1.99	0.44
1:A:333:GLY:N	1:A:336:GLY:O	2.50	0.44
2:B:67:ARG:HH12	2:B:92:ARG:HH21	1.64	0.44
1:C:224:SER:OG	1:C:226:ASP:OD1	2.32	0.44
1:A:663:ARG:O	1:A:671:ARG:NH2	2.50	0.44
1:C:248:LEU:HA	1:C:267:ILE:HB	1.98	0.44
2:D:195:VAL:HG23	2:D:197:TRP:H	1.83	0.44
1:A:232:TYR:CE2	1:A:262:ALA:HB2	2.53	0.44
2:D:565:MET:O	2:D:569:VAL:HG23	2.18	0.44
4:F:69:ARG:HB3	4:F:78:LYS:H	1.82	0.44
1:A:200:GLY:N	1:A:227:ASP:OD1	2.47	0.44
1:A:363:GLN:HG3	1:A:375:ASN:HD21	1.82	0.44
2:B:79:LYS:HA	2:B:82:ILE:HD12	1.99	0.44
2:B:189:THR:O	2:B:193:SER:OG	2.30	0.44
1:C:195:LEU:HD12	1:C:196:GLN:H	1.82	0.44
1:C:210:GLU:O	1:C:213:GLU:HG3	2.18	0.44
2:D:277:LEU:HD22	2:D:367:LEU:HD22	1.99	0.44
2:D:273:PHE:HB2	2:D:371:ARG:HD2	1.99	0.44
4:F:58:GLN:HB2	4:F:64:LEU:HD12	1.99	0.44
4:F:134:THR:HG22	4:F:136:VAL:HG23	2.00	0.44
1:A:394:MET:HG3	1:A:395:SER:H	1.81	0.44
1:A:641:MET:HG3	2:B:614:PHE:HD1	1.83	0.44
1:C:131:LYS:HA	1:C:135:LEU:HA	1.98	0.44
2:D:334:MET:HA	2:D:337:ARG:HG2	2.00	0.44
1:A:125:MET:HE2	1:A:128:TYR:HE2	1.83	0.43
2:B:218:ASN:HA	2:B:221:LYS:HE3	2.00	0.43
1:C:75:ALA:HA	1:C:107:VAL:HG12	2.00	0.43
1:C:338:VAL:HG13	1:C:346:ARG:HD2	2.00	0.43
2:D:352:SER:HB3	2:D:358:MET:HE3	2.00	0.43
2:D:370:GLU:HG2	2:D:372:LYS:HG2	2.00	0.43
1:A:333:GLY:O	1:A:335:THR:N	2.52	0.43
1:A:407:PRO:HG2	1:A:408:PHE:HD1	1.83	0.43
1:C:381:TRP:NE1	1:C:388:LYS:H	2.15	0.43
3:E:60:TYR:OH	4:F:64:LEU:O	2.28	0.43
3:E:120:PHE:CZ	3:E:122:PHE:HB2	2.52	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:F:119:GLY:N	4:F:125:TYR:HB2	2.33	0.43
2:B:236:GLU:HA	2:B:239:TYR:CD1	2.52	0.43
2:D:157:MET:HE2	2:D:257:ILE:HD13	2.00	0.43
1:A:117:PRO:HB3	1:A:322:LYS:HE2	2.01	0.43
1:A:198:ASP:HB3	1:A:201:THR:HB	2.00	0.43
2:D:170:SER:N	2:D:227:ILE:O	2.50	0.43
1:A:162:HIS:NE2	1:A:391:GLY:O	2.46	0.43
2:B:230:LEU:HD11	2:B:240:ILE:HD11	2.00	0.43
2:B:344:PHE:O	2:B:347:ARG:NH1	2.49	0.43
1:C:33:LEU:H	1:C:92:VAL:HG23	1.83	0.43
1:C:535:TYR:HA	1:C:757:GLY:HA3	2.00	0.43
4:F:56:VAL:HB	4:F:64:LEU:HG	2.01	0.43
4:F:59:ARG:NH1	4:F:65:GLU:OE1	2.51	0.43
1:A:92:VAL:HG21	1:A:107:VAL:HG21	2.00	0.43
1:A:179:ARG:HH22	1:A:183:LEU:HD11	1.83	0.43
2:B:331:GLN:HA	2:B:334:MET:HG3	2.00	0.43
1:C:341:ASN:HB3	1:C:347:LYS:HE2	2.01	0.43
1:C:538:LEU:HD21	1:C:689:VAL:HG13	2.00	0.43
2:B:559:TRP:HA	2:B:562:MET:HE3	1.99	0.43
1:C:145:SER:HA	1:C:176:ALA:HB2	2.01	0.43
2:B:786:ASP:HA	1:C:695:ARG:NH1	2.33	0.43
1:C:230:THR:HA	1:C:233:ARG:HD2	2.01	0.43
2:D:175:TYR:O	2:D:180:GLN:NE2	2.51	0.43
1:A:65:VAL:HG23	1:A:82:LEU:HD21	2.00	0.43
1:A:403:ILE:HB	1:A:501:MET:SD	2.59	0.43
2:D:288:GLY:O	2:D:292:ARG:HG3	2.19	0.43
3:E:62:GLN:HA	3:E:68:PRO:HB3	2.00	0.43
1:A:197:PHE:HB3	1:A:207:LEU:HD22	1.99	0.43
1:A:485:GLY:CA	1:A:499:ASN:O	2.65	0.43
2:B:106:GLU:HA	2:B:109:ALA:HB3	2.01	0.43
2:B:365:ILE:HG22	2:B:375:ARG:HG2	2.00	0.43
4:F:29:GLU:HB2	4:F:136:VAL:HG13	2.00	0.43
4:F:128:ASP:OD1	4:F:128:ASP:N	2.52	0.43
1:A:408:PHE:HA	1:A:458:PHE:HB3	2.01	0.42
1:A:731:TRP:HB3	1:A:736:LEU:HD21	2.00	0.42
1:C:53:HIS:NE2	1:C:55:SER:HB2	2.34	0.42
2:D:273:PHE:HD2	2:D:371:ARG:HG2	1.83	0.42
1:C:32:VAL:HG12	1:C:65:VAL:HB	2.01	0.42
1:C:268:GLY:O	1:C:354:MET:N	2.51	0.42
3:E:61:GLN:HB3	3:E:69:LYS:O	2.19	0.42
1:A:26:ILE:O	1:A:86:GLN:NE2	2.51	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:156:VAL:HG21	2:B:362:LEU:HD12	2.00	0.42
1:A:550:THR:HB	1:A:812:ASN:H	1.84	0.42
4:F:118:TYR:HA	4:F:125:TYR:CD1	2.54	0.42
2:B:274:PRO:HD2	2:B:277:LEU:HD22	2.01	0.42
2:B:679:PRO:HA	2:B:680:PRO:HD3	1.86	0.42
1:C:120:GLY:O	1:C:139:ARG:HA	2.19	0.42
3:E:39:ALA:H	3:E:98:THR:HA	1.85	0.42
1:A:526:TYR:HB2	1:A:527:ILE:HD12	2.01	0.42
2:B:498:ILE:HG21	2:B:519:ARG:HD3	2.02	0.42
2:B:566:LEU:HG	2:B:609:LEU:HD23	2.02	0.42
2:B:651:ALA:O	2:B:655:ILE:HG12	2.19	0.42
3:E:51:SER:HB2	3:E:116:ASN:HA	2.02	0.42
2:B:553:PRO:HG2	2:B:650:LEU:HA	2.00	0.42
1:C:81:ASP:OD1	1:C:82:LEU:N	2.53	0.42
2:D:215:LYS:HB2	2:D:216:ILE:HD12	2.01	0.42
4:F:25:GLN:HE21	4:F:41:CYS:HB3	1.85	0.42
1:A:680:ILE:HG13	1:A:681:TYR:N	2.35	0.42
2:B:209:LEU:HG	2:B:236:GLU:HB2	2.02	0.42
1:C:125:MET:HB2	1:C:128:TYR:HD1	1.85	0.42
1:C:202:LYS:HD2	1:C:203:ASN:HB2	2.01	0.42
2:D:193:SER:HB2	2:D:195:VAL:HG22	2.01	0.42
2:D:556:ALA:HA	2:D:559:TRP:CD1	2.55	0.42
1:A:106:PRO:O	1:A:110:THR:HG23	2.20	0.42
2:B:127:HIS:NE2	2:B:289:LEU:HD12	2.34	0.42
2:B:275:THR:HB	2:B:369:LYS:HA	2.01	0.42
1:C:78:VAL:HG11	1:C:107:VAL:HG21	2.02	0.42
4:F:29:GLU:O	4:F:136:VAL:HA	2.20	0.42
4:F:54:HIS:HB2	4:F:118:TYR:CG	2.55	0.42
4:F:113:TYR:CE2	4:F:136:VAL:HB	2.55	0.42
2:B:97:VAL:HB	2:B:123:ILE:HG13	2.01	0.42
2:B:554:PHE:N	1:C:807:THR:OG1	2.53	0.42
2:D:523:VAL:HG11	2:D:765:ALA:HB1	2.02	0.42
3:E:110:TYR:HB2	3:E:128:LEU:HB2	2.00	0.42
1:A:113:PHE:CE2	1:A:312:THR:HB	2.55	0.41
1:A:145:SER:O	1:A:148:SER:OG	2.35	0.41
1:A:169:ASP:HB2	1:A:198:ASP:HA	2.02	0.41
1:A:359:ARG:HD3	1:A:359:ARG:HA	1.80	0.41
1:A:479:VAL:HG22	1:A:481:ASP:H	1.85	0.41
1:C:144:TYR:OH	1:C:251:GLU:N	2.53	0.41
1:C:220:ILE:HD12	1:C:248:LEU:HD23	2.02	0.41
1:C:348:PHE:HA	1:C:369:GLY:HA3	2.02	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:156:VAL:HG21	2:D:362:LEU:HD12	2.02	0.41
2:D:507:TYR:CD2	2:D:508:MET:HG2	2.55	0.41
4:F:57:LYS:HE3	4:F:59:ARG:CZ	2.50	0.41
1:A:346:ARG:HD3	1:A:349:ALA:HB2	2.01	0.41
2:B:134:MET:HE1	2:B:143:PHE:HE2	1.85	0.41
2:B:674:PRO:HB3	2:B:680:PRO:HB3	2.01	0.41
1:C:731:TRP:CG	1:C:732:ASP:H	2.38	0.41
2:D:349:LEU:HD11	2:D:357:GLN:HE21	1.84	0.41
1:A:30:GLY:HA2	1:A:91:LEU:HG	2.01	0.41
1:A:34:SER:HA	1:A:67:HIS:CD2	2.53	0.41
1:C:505:LEU:HB2	1:C:513:ILE:HD11	2.00	0.41
2:B:88:LEU:HB3	2:B:94:ILE:HD11	2.03	0.41
2:B:365:ILE:HA	2:B:375:ARG:HA	2.03	0.41
2:D:106:GLU:HA	2:D:109:ALA:HB3	2.03	0.41
1:A:151:TRP:HA	1:A:154:MET:HE3	2.01	0.41
2:B:110:GLN:H	2:B:110:GLN:HG3	1.70	0.41
1:C:263:PRO:HG2	1:C:266:ILE:HD11	2.02	0.41
1:C:576:MET:HE1	1:C:632:LEU:HD22	2.03	0.41
2:B:363:VAL:HG12	2:B:378:LYS:HA	2.02	0.41
1:C:117:PRO:HA	1:C:136:SER:HB3	2.03	0.41
1:C:251:GLU:HG2	1:C:270:GLN:HA	2.03	0.41
1:C:527:ILE:HB	1:C:762:MET:O	2.21	0.41
1:C:787:ASP:O	1:C:791:THR:OG1	2.33	0.41
2:D:430:MET:N	2:D:456:CYS:SG	2.86	0.41
2:B:131:SER:HA	2:B:146:PHE:H	1.85	0.41
1:A:67:HIS:HB3	1:A:99:ASN:OD1	2.21	0.41
1:A:91:LEU:HA	1:A:119:LEU:HB3	2.03	0.41
1:A:372:VAL:HG12	1:A:374:PRO:HD3	2.02	0.41
2:B:299:ILE:HG23	2:B:342:VAL:HG21	2.03	0.41
4:F:82:LYS:HG3	4:F:83:PHE:CD2	2.56	0.41
1:A:300:ASN:OD1	1:A:300:ASN:N	2.53	0.41
1:A:830:LEU:HA	1:A:833:ILE:HG12	2.03	0.41
2:B:186:ILE:O	2:B:189:THR:OG1	2.27	0.41
2:B:267:ASP:OD1	2:B:268:THR:N	2.54	0.41
2:B:299:ILE:HD11	2:B:347:ARG:HH22	1.85	0.41
2:B:607:TRP:CZ2	2:B:618:VAL:HG21	2.55	0.41
2:B:771:GLY:H	2:B:773:LYS:NZ	2.18	0.41
2:D:220:LEU:HB2	2:D:245:ASN:HD22	1.85	0.41
1:A:248:LEU:HA	1:A:267:ILE:HB	2.02	0.41
1:A:273:ASN:HD21	1:A:334:VAL:HG12	1.86	0.41
1:A:277:GLU:O	1:A:281:ILE:HG13	2.21	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:407:PRO:HB3	1:A:738:PHE:CG	2.56	0.41
1:C:90:ILE:O	1:C:119:LEU:N	2.51	0.41
1:C:380:ILE:HG23	1:C:386:THR:HG22	2.03	0.41
2:D:95:GLN:HB2	2:D:122:PRO:HD2	2.03	0.41
2:D:781:LEU:HD23	2:D:781:LEU:HA	1.88	0.41
1:A:123:THR:OG1	1:A:124:ARG:N	2.54	0.40
1:A:232:TYR:OH	1:A:249:VAL:HG11	2.22	0.40
2:B:540:ARG:HB2	2:B:747:LYS:HA	2.03	0.40
2:B:555:SER:HB3	2:B:558:VAL:HG22	2.02	0.40
1:C:363:GLN:O	1:C:375:ASN:ND2	2.50	0.40
1:C:552:ASP:OD2	1:C:556:ASN:N	2.54	0.40
3:E:73:TYR:OH	4:F:126:ALA:HA	2.21	0.40
1:A:148:SER:HB2	1:A:180:LEU:HD12	2.03	0.40
1:A:680:ILE:HD11	1:A:708:LYS:HE3	2.02	0.40
2:B:141:SER:O	2:B:142:MET:HE2	2.21	0.40
2:B:170:SER:HB3	2:B:225:SER:HB2	2.03	0.40
2:D:71:VAL:HG11	2:D:84:ARG:HD3	2.04	0.40
2:B:78:PRO:HB3	2:B:111:ILE:HD13	2.02	0.40
2:D:461:CYS:HB3	2:D:510:VAL:HG22	2.04	0.40
2:D:489:LYS:HB2	2:D:494:TRP:CE3	2.56	0.40
2:B:150:ILE:HG13	2:B:185:LYS:HE3	2.02	0.40
1:C:541:LEU:HD11	1:C:746:LEU:HD23	2.04	0.40
1:A:157:VAL:HG12	1:A:158:TYR:HD1	1.87	0.40
1:A:305:PRO:HB3	1:A:311:ASN:O	2.21	0.40
1:A:580:LEU:HD23	1:A:629:ALA:HA	2.02	0.40
2:B:433:THR:HG21	2:B:456:CYS:HB3	2.04	0.40
1:C:111:ALA:HB1	1:C:116:ILE:HB	2.03	0.40
1:C:238:LEU:HB2	1:C:240:MET:HE1	2.04	0.40
1:C:559:GLN:N	2:D:812:GLN:O	2.50	0.40
2:D:190:ILE:HG12	2:D:199:LEU:HA	2.02	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	796/844 (94%)	727 (91%)	65 (8%)	4 (0%)	25	64
1	C	796/844 (94%)	730 (92%)	63 (8%)	3 (0%)	30	68
2	B	742/826 (90%)	666 (90%)	68 (9%)	8 (1%)	12	46
2	D	737/826 (89%)	640 (87%)	94 (13%)	3 (0%)	30	68
3	E	109/111 (98%)	91 (84%)	17 (16%)	1 (1%)	14	51
4	F	119/121 (98%)	92 (77%)	26 (22%)	1 (1%)	16	54
All	All	3299/3572 (92%)	2946 (89%)	333 (10%)	20 (1%)	24	60

All (20) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	314	ILE
1	A	444	PRO
2	B	210	ASP
1	C	95	PRO
1	C	714	ALA
1	A	334	VAL
2	B	135	ALA
2	B	391	TRP
2	B	518	GLU
1	C	501	MET
4	F	37	VAL
2	D	576	VAL
2	B	271	SER
2	D	227	ILE
1	A	698	GLU
2	B	149	SER
3	E	120	PHE
2	B	227	ILE
2	D	414	ALA
2	B	449	GLU

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	590/727 (81%)	590 (100%)	0	100	100
1	C	539/727 (74%)	539 (100%)	0	100	100
2	B	550/722 (76%)	550 (100%)	0	100	100
2	D	518/722 (72%)	517 (100%)	1 (0%)	92	93
3	E	94/94 (100%)	94 (100%)	0	100	100
4	F	99/99 (100%)	99 (100%)	0	100	100
All	All	2390/3091 (77%)	2389 (100%)	1 (0%)	100	100

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	D	656	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (28) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	50	ASN
1	A	86	GLN
1	A	101	HIS
1	A	290	GLN
1	A	311	ASN
1	A	375	ASN
1	A	405	GLN
1	A	616	ASN
1	A	686	GLN
1	A	742	GLN
1	A	770	GLN
1	A	782	ASN
2	B	60	HIS
2	B	812	GLN
1	C	28	ASN
1	C	73	GLN
1	C	257	ASN
1	C	280	HIS
1	C	509	GLN
1	C	770	GLN
2	D	145	GLN

Continued from previous page...

Mol	Chain	Res	Type
2	D	159	ASN
2	D	368	ASN
2	D	698	ASN
3	E	26	GLN
3	E	58	HIS
3	E	114	GLN
4	F	96	ASN

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-75138. 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
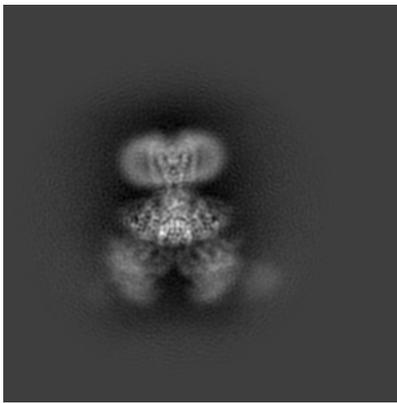
X
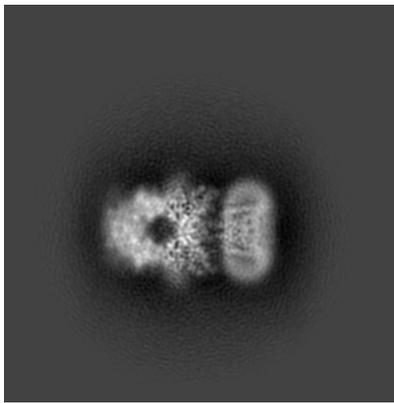
Y
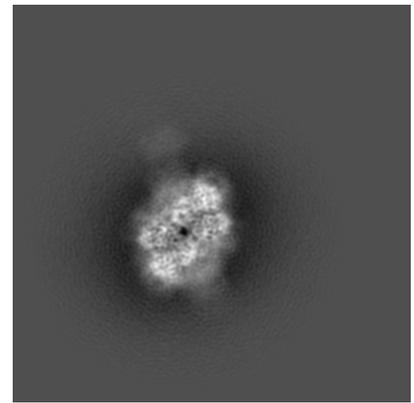
Z

6.1.2 Raw map

X

Y

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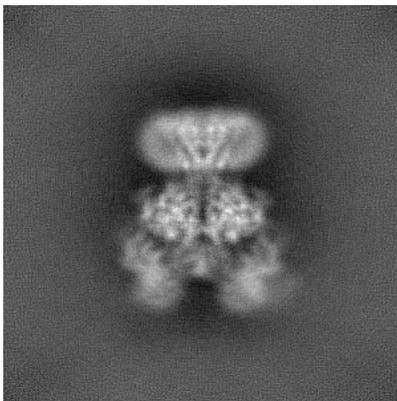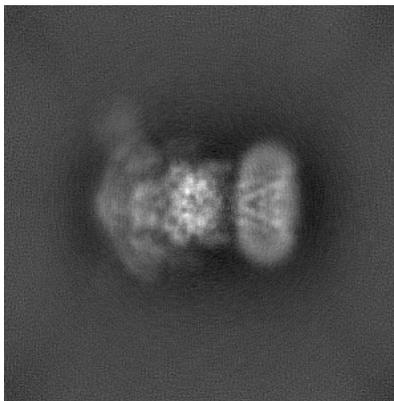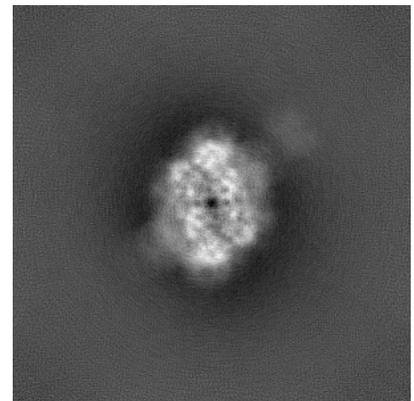
The images above show the map projected in three orthogonal directions.

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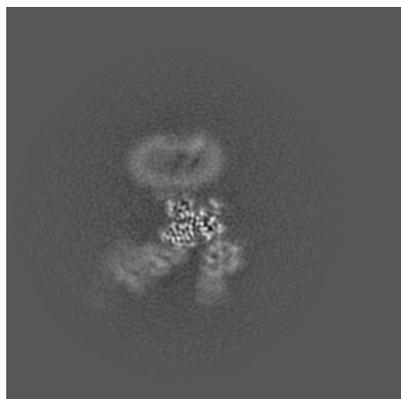
6.2.1　Primary map
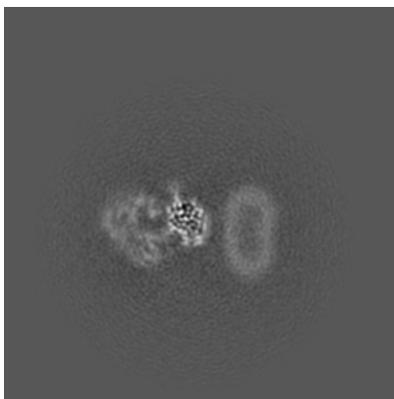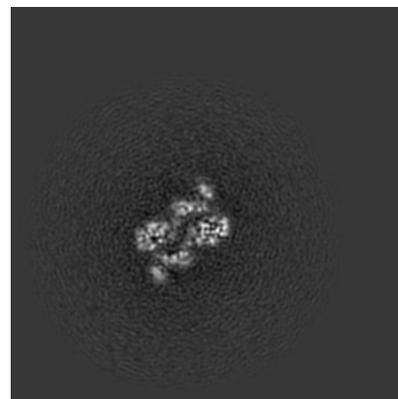
| X Index: 200 | Y Index: 200 | Z Index: 200 |

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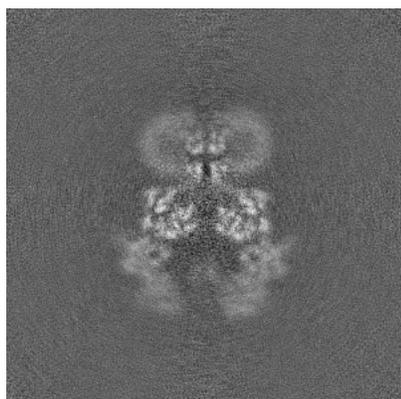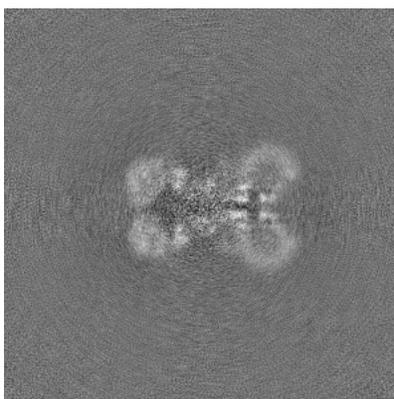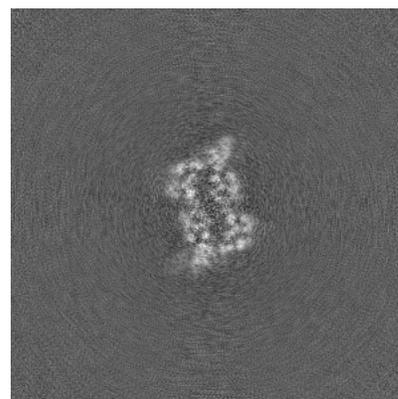
| X Index: 200 | Y Index: 200 | Z Index: 200 |

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

6.3　Largest variance slices　ⓘ

6.3.1　Primary map
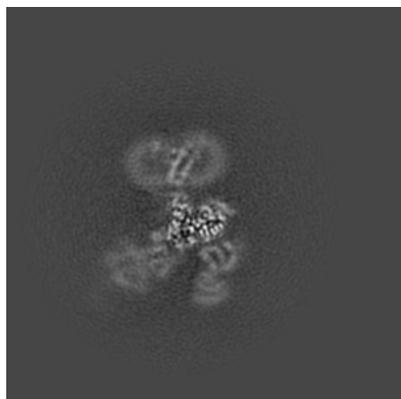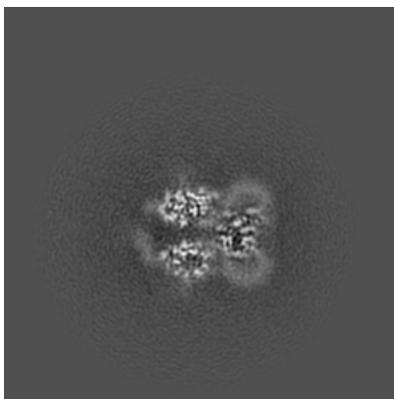
| X Index: 193 | Y Index: 174 | Z Index: 178 |
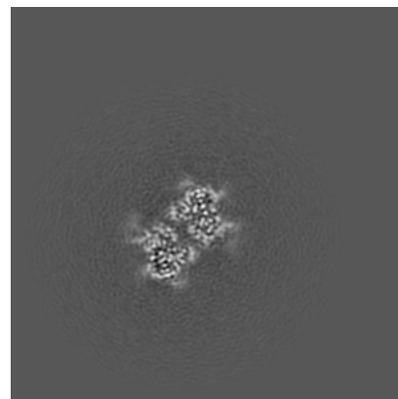
6.3.2　Raw map
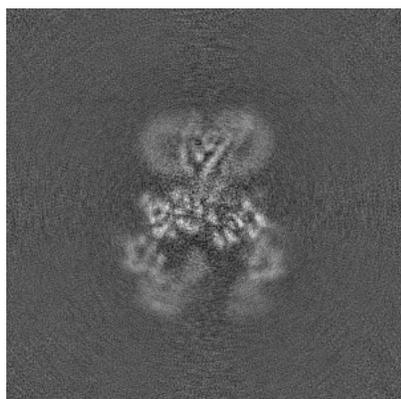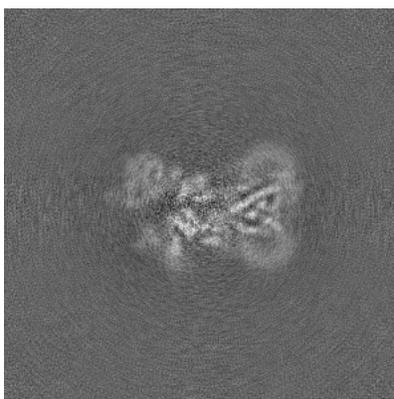
| X Index: 190 | Y Index: 209 | Z Index: 185 |
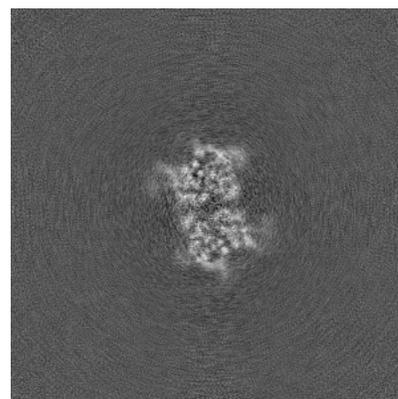
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map

X　　　　Y　　　　Z

6.4.2 Raw map

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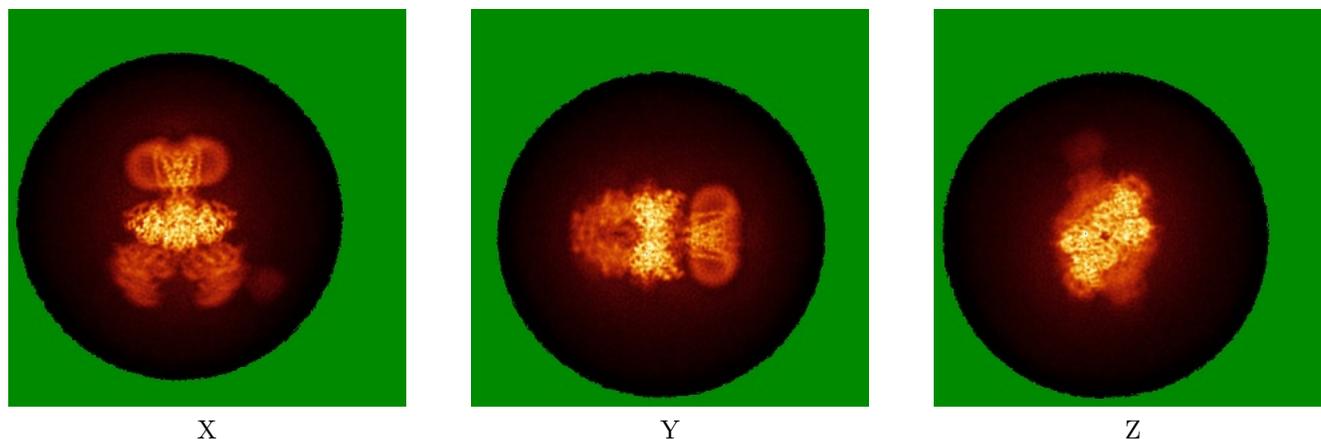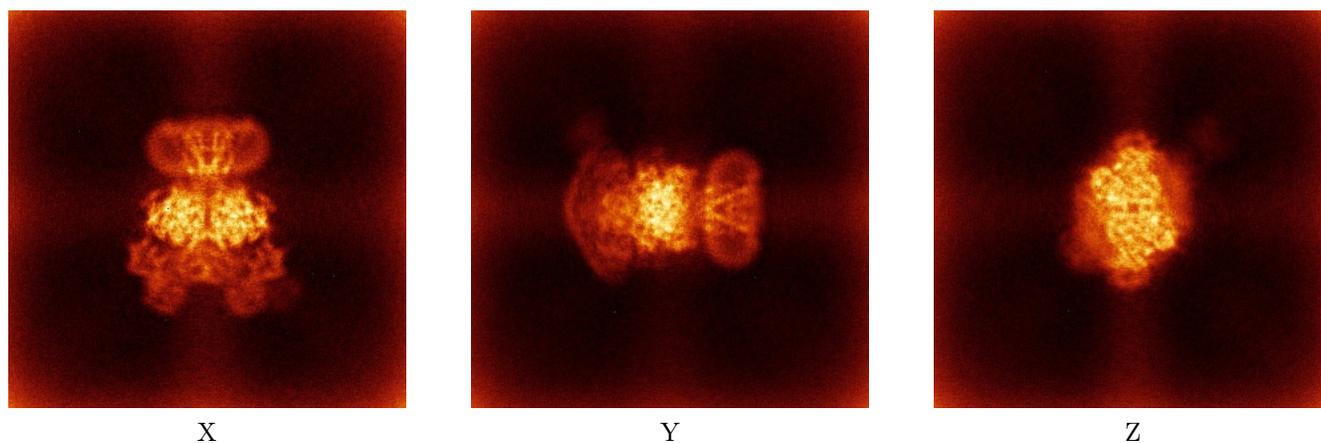
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

| X | Y | Z |

The images above show the 3D surface view of the map at the recommended contour level 0.1. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

| X | Y | Z |

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

6.6 Mask visualisation (i)

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

7 Map analysis ⓘ

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

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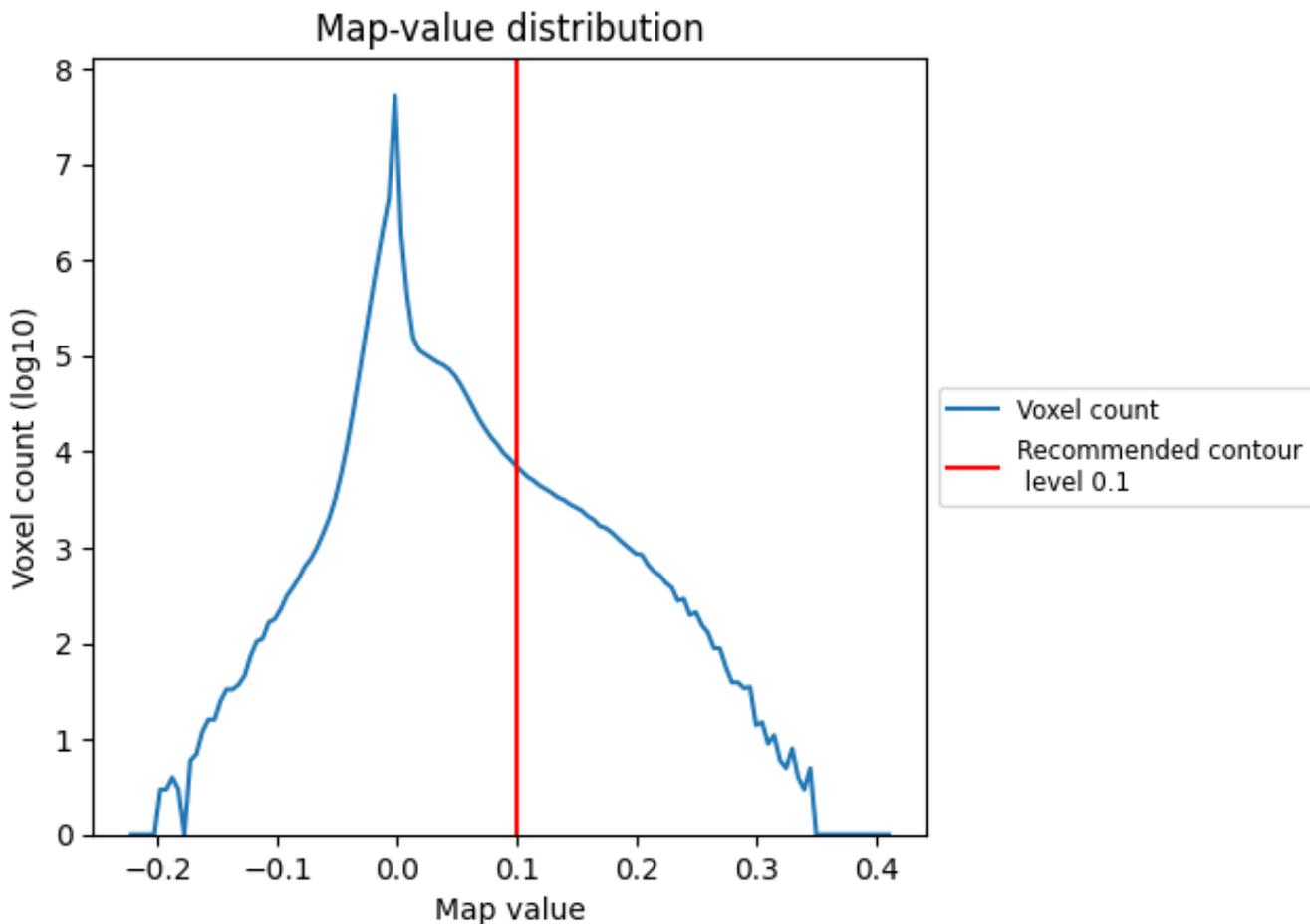
The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

7.2 Volume estimate ⓘ
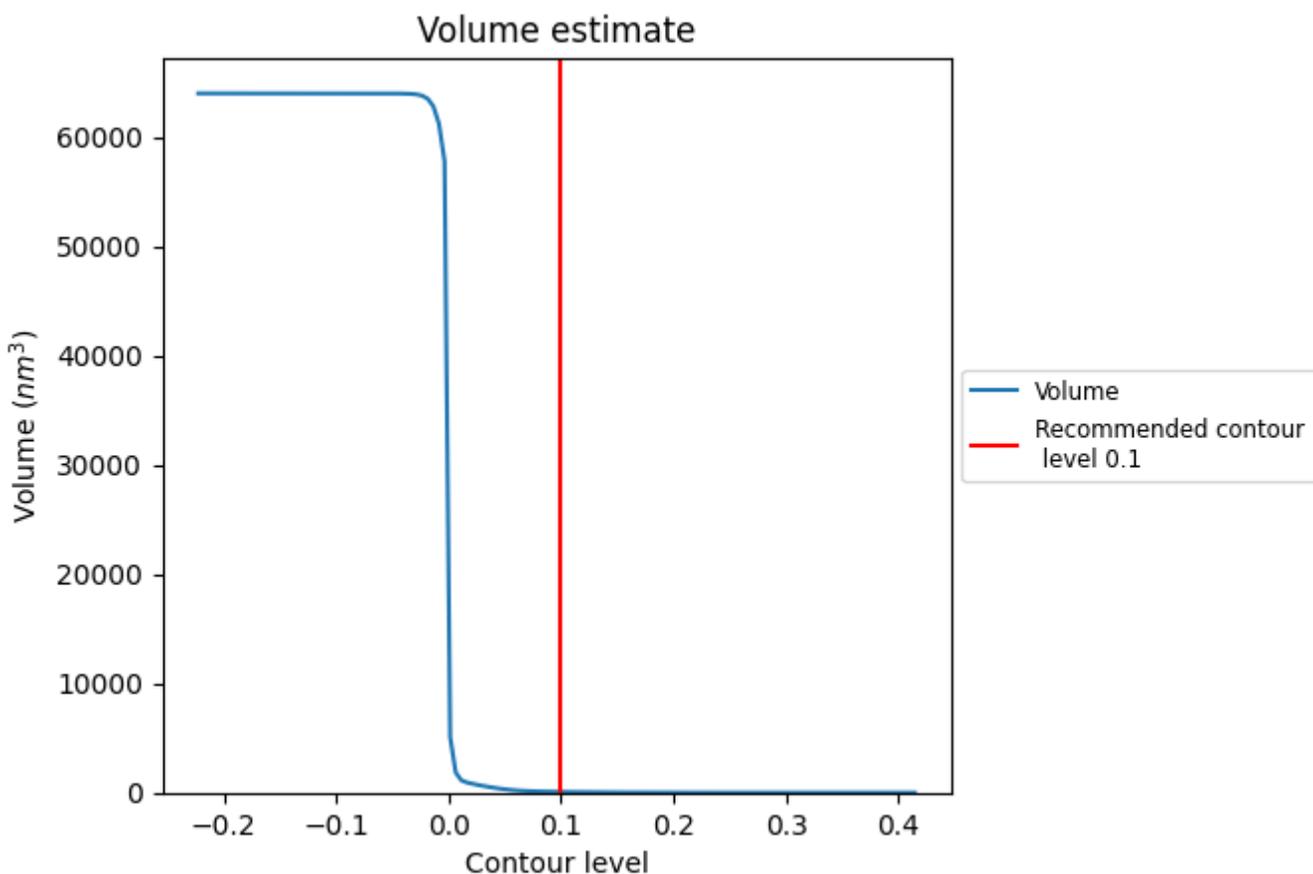
The volume at the recommended contour level is 66 nm^3; this corresponds to an approximate mass of 60 kDa.

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 ⓘ
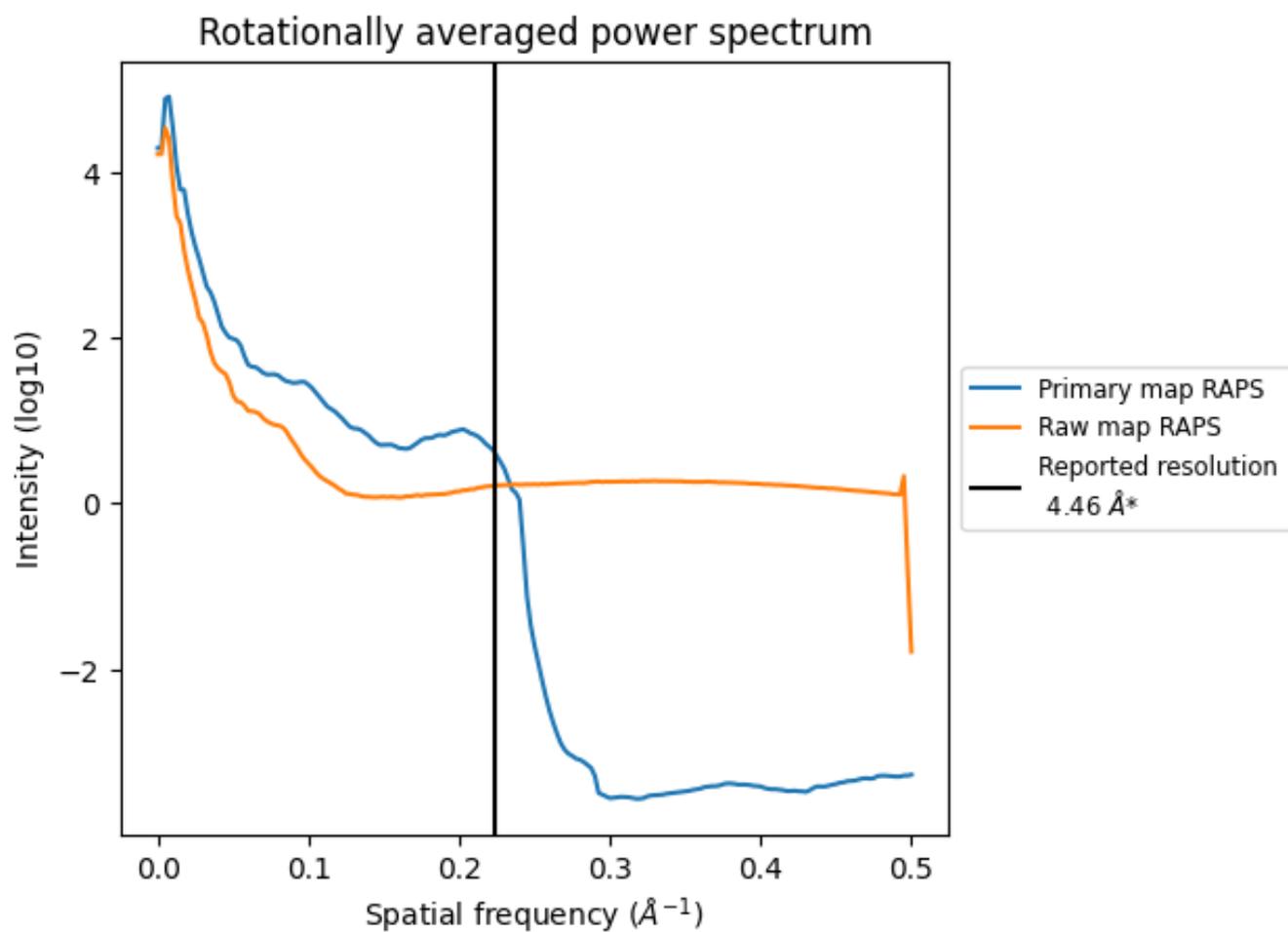
*Reported resolution corresponds to spatial frequency of 0.224 Å^{-1}

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 ⓘ
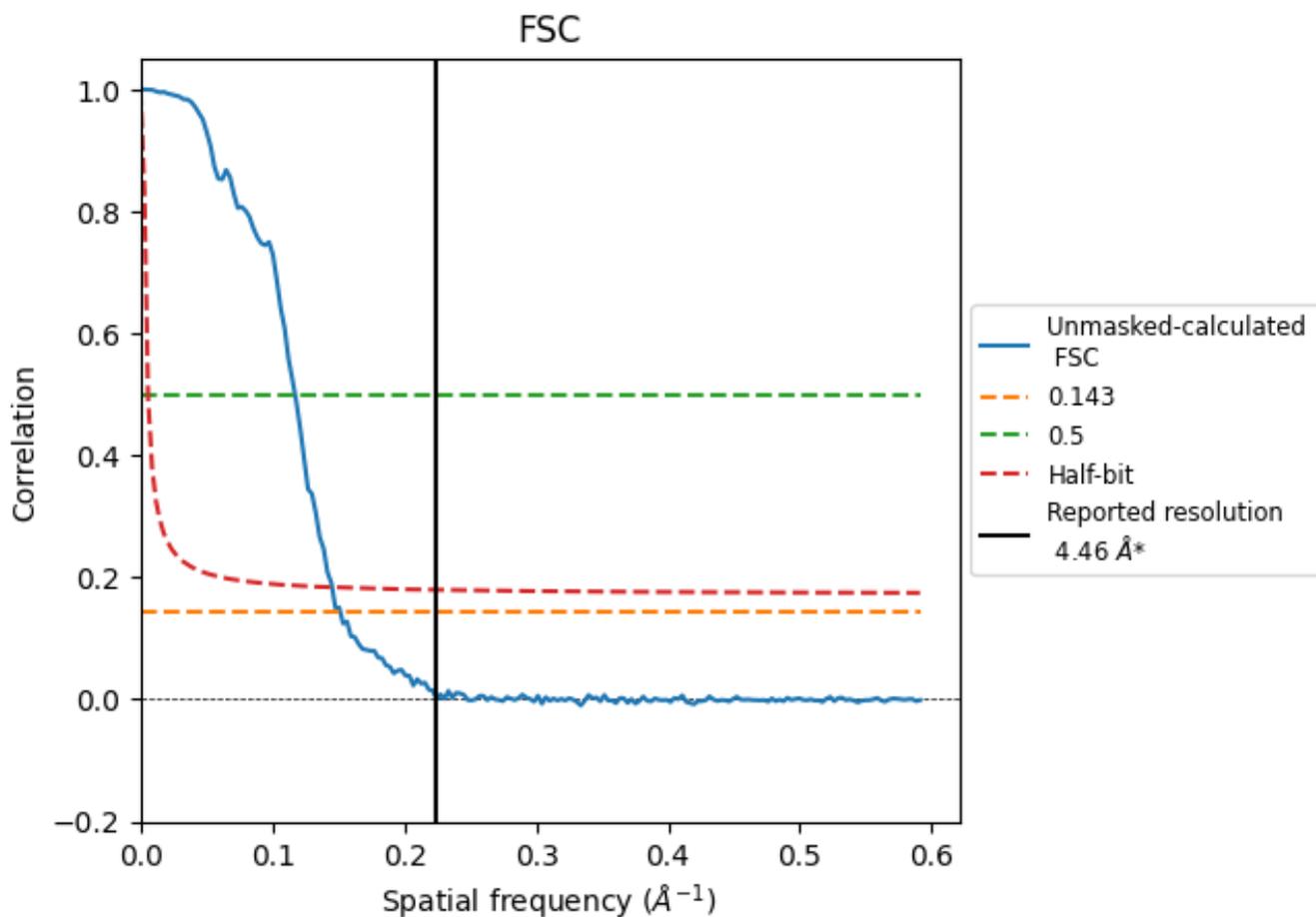
*Reported resolution corresponds to spatial frequency of 0.224 Å^{-1}

8.2 Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.46	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	6.60	8.53	6.88

*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 6.60 differs from the reported value 4.46 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-75138 and PDB model 1OFO. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay ⓘ

| X | Y | Z |
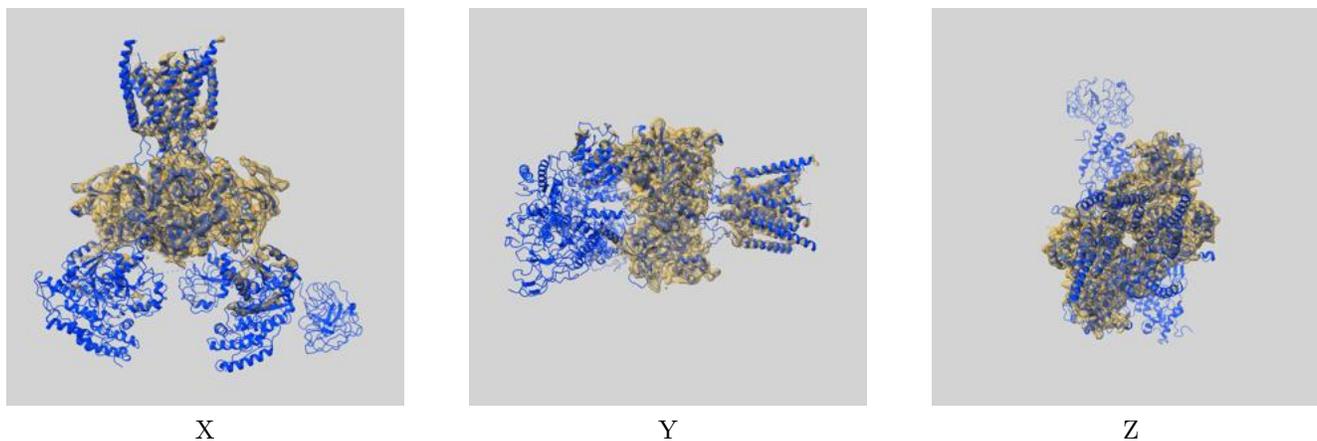
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model ⓘ

X   Y   Z
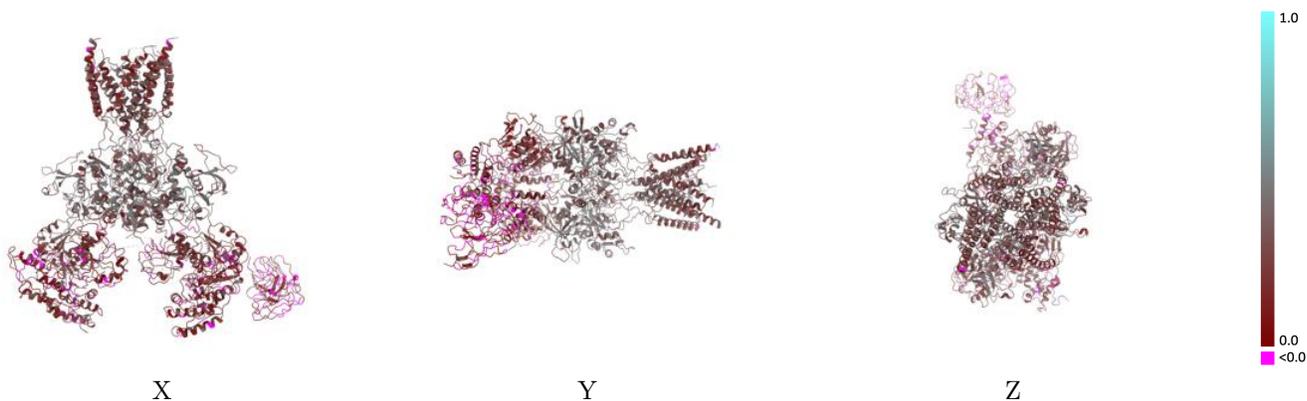
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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
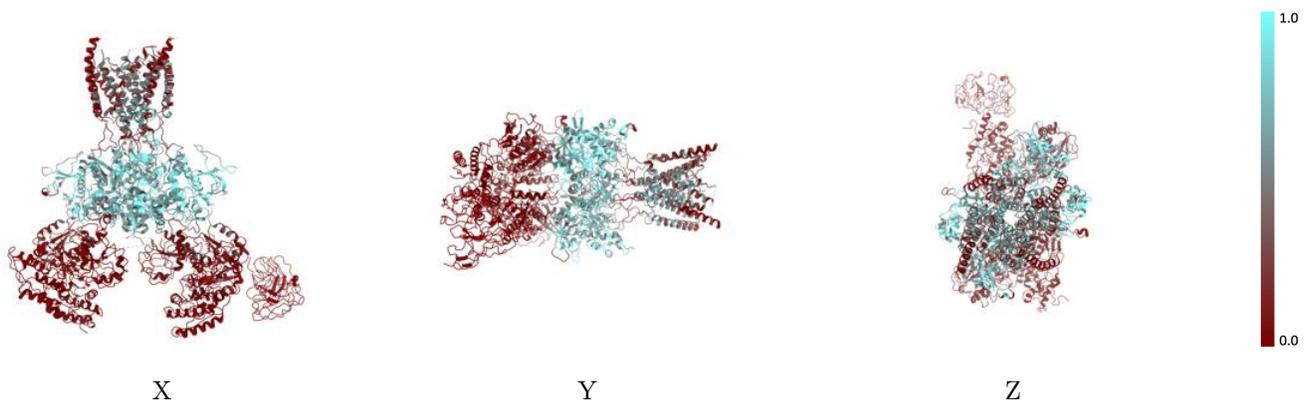
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.1).

9.4 Atom inclusion ⓘ
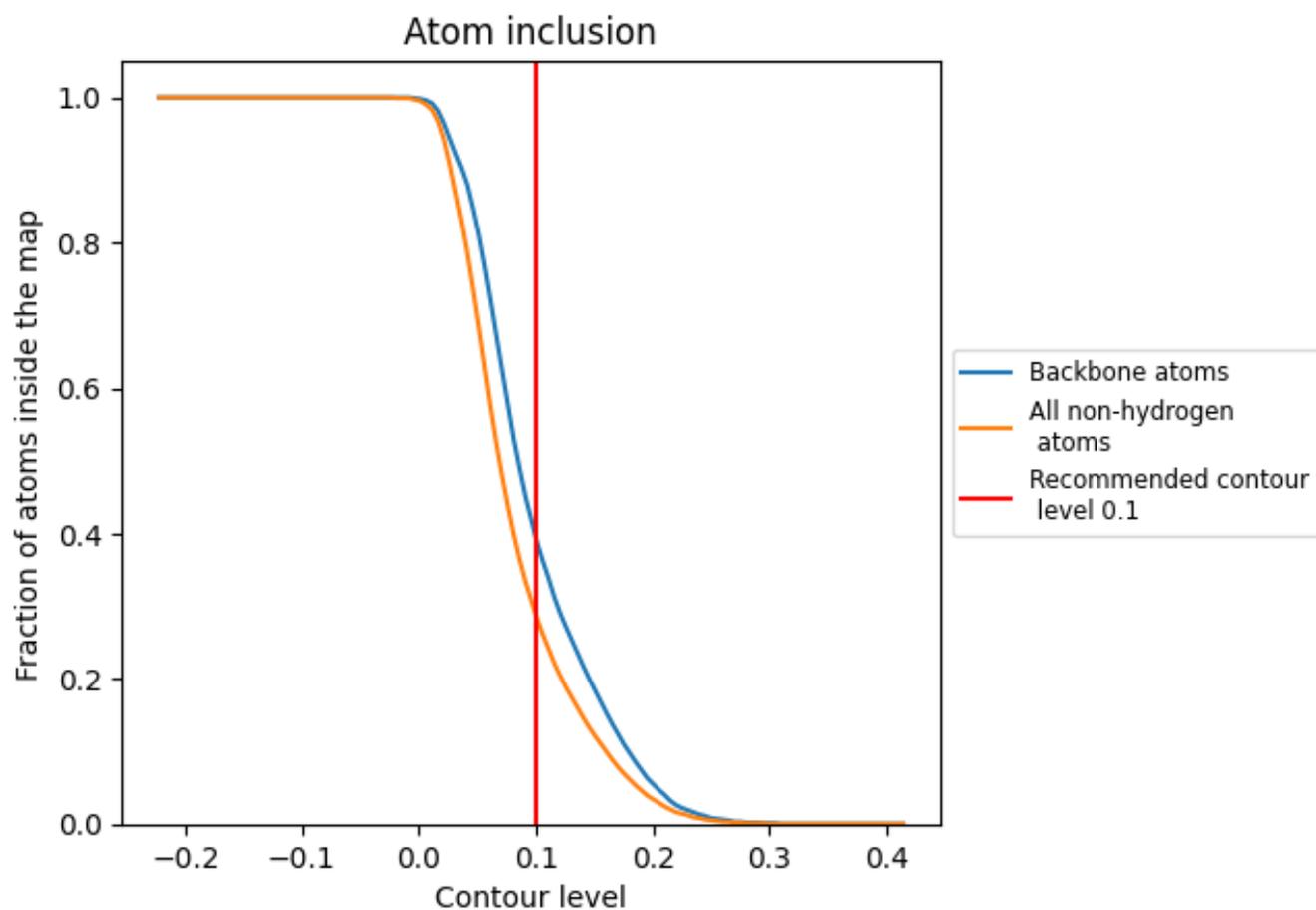
At the recommended contour level, 39% of all backbone atoms, 29% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.2870	0.2640
A	0.3010	0.2760
B	0.3000	0.2740
C	0.3460	0.2930
D	0.2920	0.2700
E	0.0000	0.0500
F	0.0000	0.0990

1.0

0.0
<0.0