WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Jan 13, 2025 – 01:47 PM JST

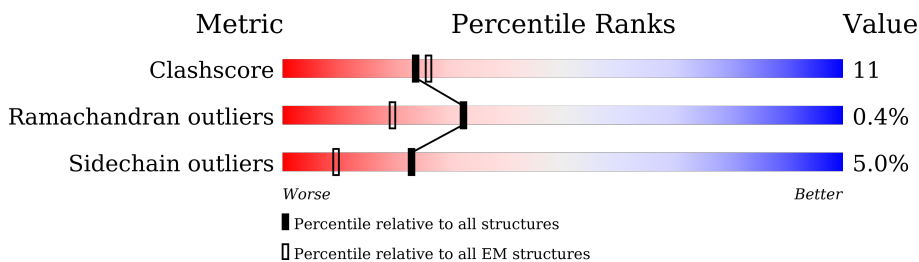|		
PDB ID	:	8XXT
EMDB ID	:	EMD-38760
Title	:	ASFV RNAP M1249L C-tail occupied complex2 (MCOC2)
Authors	:	Zhu, G.L.; Zhu, Y.; Zhu, Z.X.; Sun, F.; Zheng, H.X.
Deposited on	:	2024-01-19
Resolution	:	2.85 Å(reported)

1　Overall quality at a glance　ⓘ

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

The reported resolution of this entry is 2.85 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.
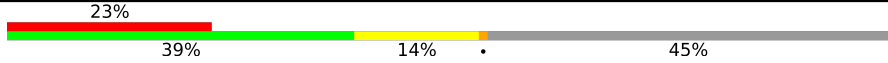
Metric	Percentile Ranks	Value
Clashscore		11
Ramachandran outliers		0.4%
Sidechain outliers		5.0%

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	1441	75% 22%
2	B	1235	6% · 68% 29% · ·
3	C	358	· 76% 23% ·
4	D	205	7% 71% 28% ·
5	E	139	15% 68% 24% · 7%
6	F	334	32% 63% 34% ·
7	G	105	10% 70% 28% ·
8	H	80	· 62% 22% · 14%

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Mol	Chain	Length	Quality of chain
9	I	1170	

23%

39%   14%   ·   45%

2 Entry composition ⓘ

There are 11 unique types of molecules in this entry. The entry contains 35783 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 DNA-directed RNA polymerase subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1415	Total 11244	C 7135	N 1955	O 2092	S 62	0	0

- Molecule 2 is a protein called DNA-directed RNA polymerase subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	1226	Total 9701	C 6124	N 1706	O 1819	S 52	0	0

- Molecule 3 is a protein called DNA-directed RNA polymerase RPB3-11 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	358	Total 2907	C 1885	N 481	O 529	S 12	0	0

- Molecule 4 is a protein called DNA-directed RNA polymerase RPB5 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	205	Total 1669	C 1088	N 278	O 295	S 8	0	0

- Molecule 5 is a protein called C147L.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	129	Total 1021	C 648	N 167	O 200	S 6	0	0

- Molecule 6 is a protein called D339L.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	F	334	Total 2687	C 1726	N 444	O 503	S 14	0	0

- Molecule 7 is a protein called C122R.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	105	Total 816	C 507	N 141	O 153	S 15	0	0

- Molecule 8 is a protein called DNA-directed RNA polymerase RPB10 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	69	Total 553	C 362	N 89	O 95	S 7	0	0

- Molecule 9 is a protein called M1249L.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	638	Total 5177	C 3329	N 858	O 968	S 22	0	0

- Molecule 10 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

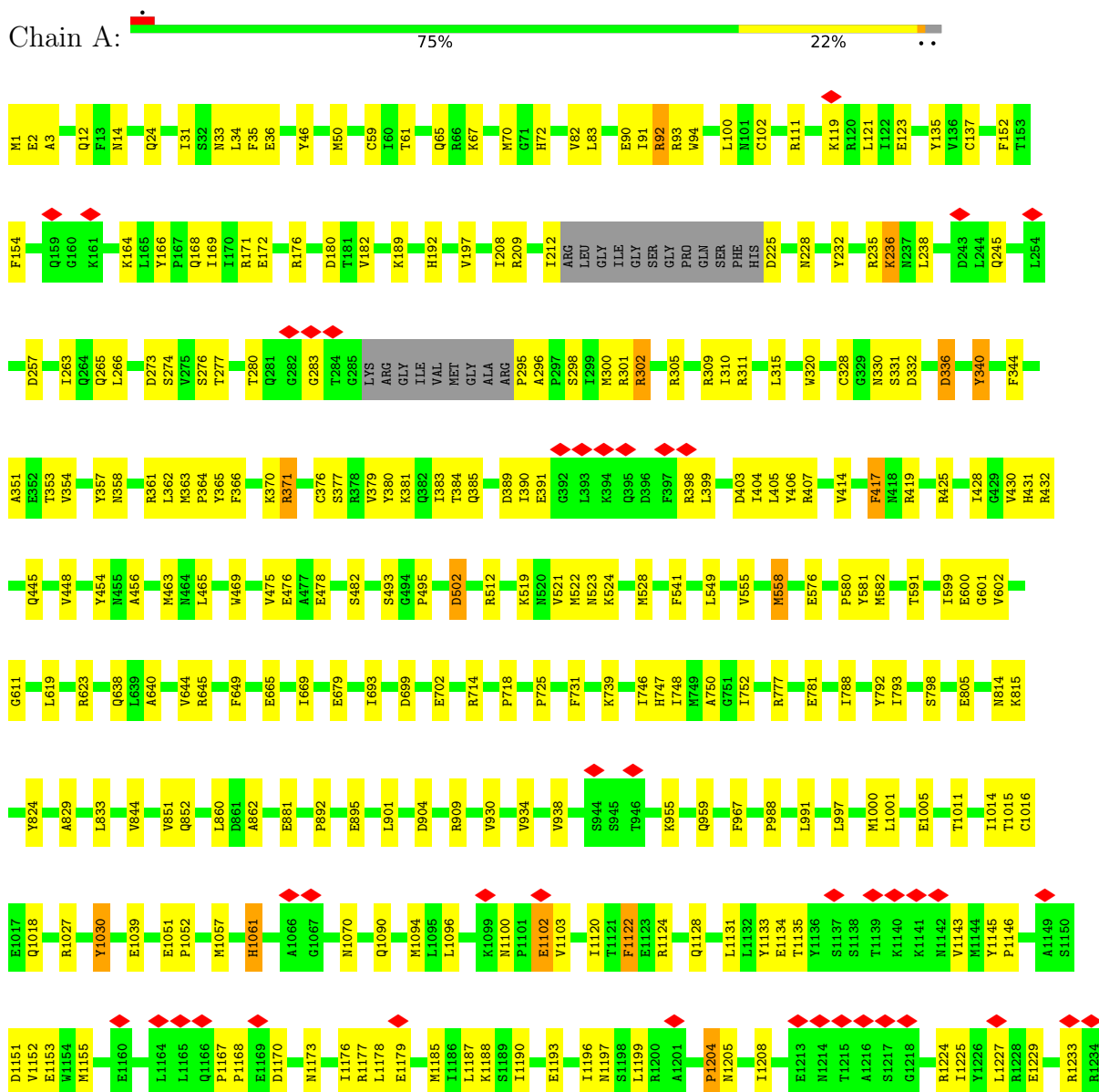| Mol	Chain	Residues	Atoms		AltConf
10	A	3	Total 3	Zn 3	0
10	B	1	Total 1	Zn 1	0
10	G	2	Total 2	Zn 2	0
10	H	1	Total 1	Zn 1	0

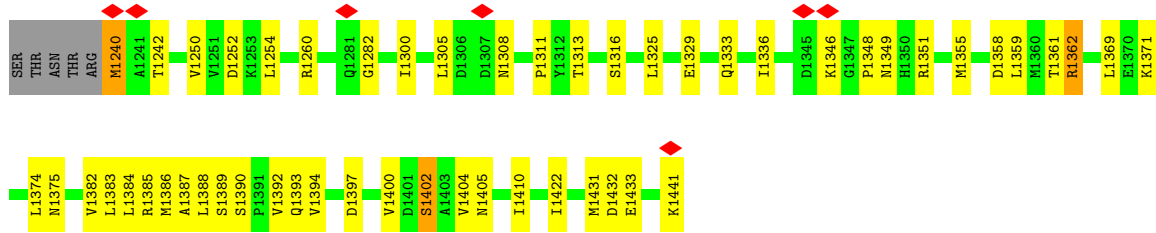- Molecule 11 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

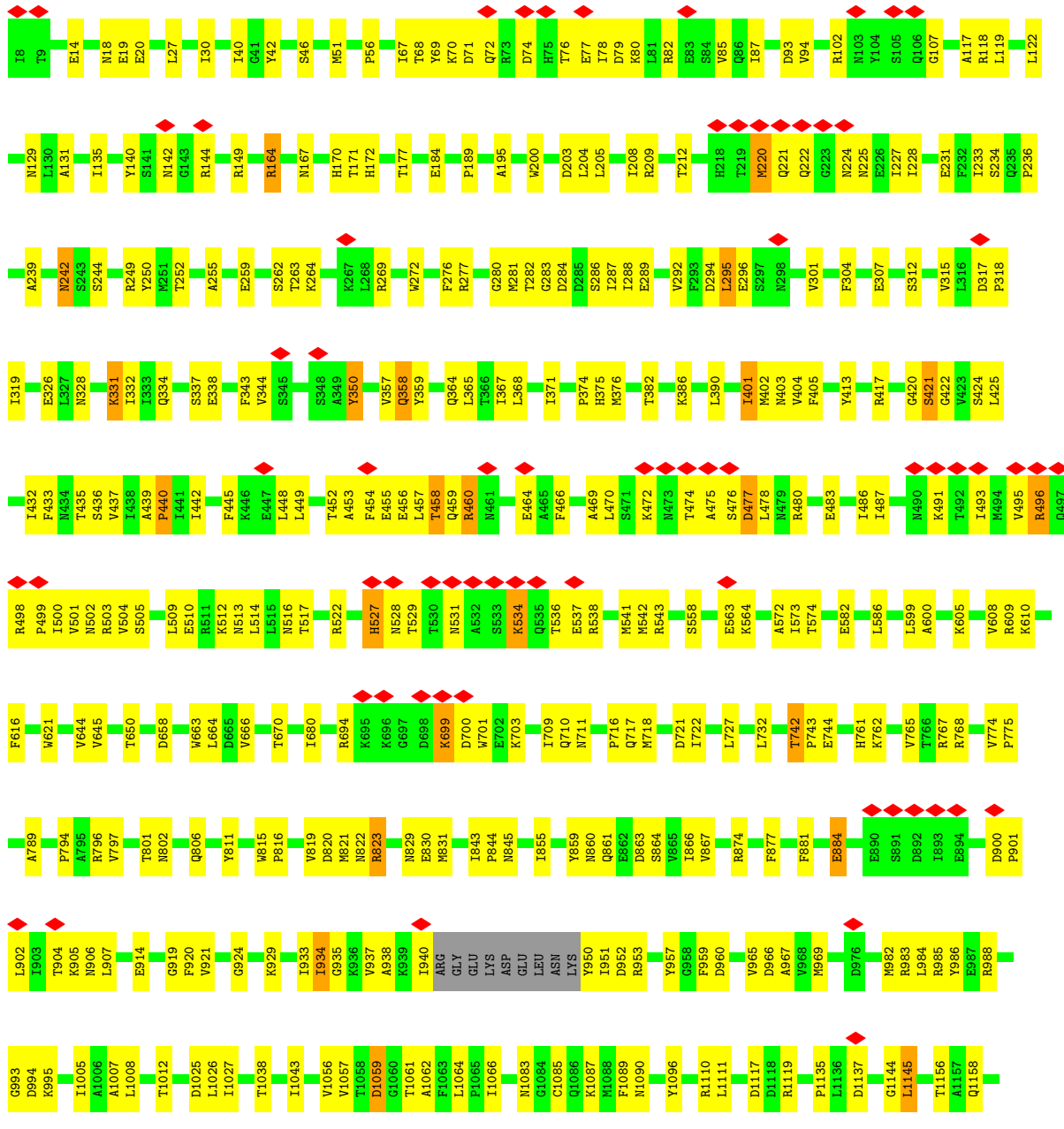| Mol	Chain	Residues	Atoms		AltConf
11	A	1	Total 1	Mg 1	0

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.
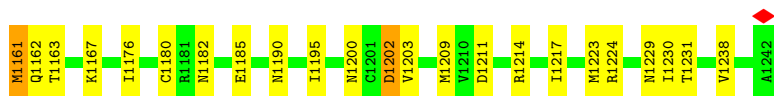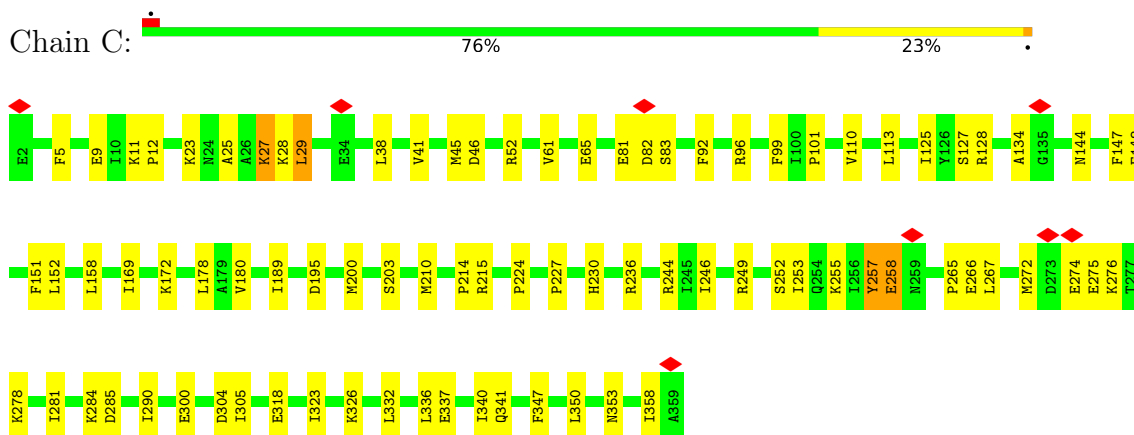
• Molecule 1: DNA-directed RNA polymerase subunit
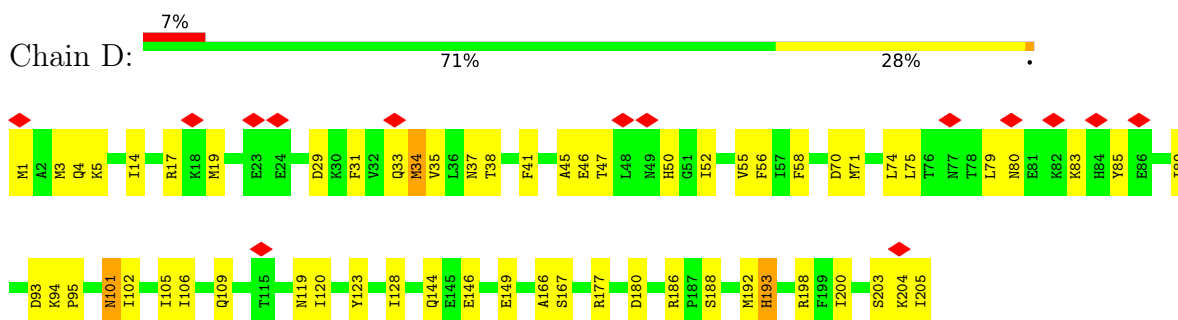
• Molecule 2: DNA-directed RNA polymerase subunit beta

Chain B:

M1161 Q1162 T1163 K1167 I1176 C1180 R1181 N1182 E1185 N1190 I1195 N1200 C1201 D1202 V1203 M1209 V1210 D1211 R1214 I1217 M1223 R1224 N1229 I1230 T1231 V1238 A1242

- Molecule 3: DNA-directed RNA polymerase RPB3-11 homolog

Chain C: 76% 23%

E2 F5 E9 I10 K11 P12 K23 N24 A25 A26 K27 K28 L29 E34 L38 V41 M45 D46 R52 V61 E65 E81 D82 S83 F92 R96 F99 I100 P101 V110 L113 I125 Y126 S127 R128 A134 G135 N144 F147 E148

F151 L152 L158 I169 K172 L178 A179 V180 I189 D195 M200 S203 M210 P214 R215 P224 P227 H230 R236 R244 I246 R249 S252 I253 Q254 K255 I256 Y257 E258 N259 P265 E266 L267 M272 D273 E274 E275 K276 T277

K278 I281 K284 D285 I290 E300 D304 I305 E318 I323 K326 L332 L336 E337 I340 Q341 F347 L350 N353 I358 A359

- Molecule 4: DNA-directed RNA polymerase RPB5 homolog

Chain D: 7% 71% 28%

M1 A2 M3 Q4 K5 I14 R17 K18 M19 E23 E24 D29 K30 F31 V32 Q33 M34 V35 L36 M37 T38 F41 A45 E46 T47 L48 N49 H50 G51 I52 V55 F56 I57 F58 D70 M71 L74 L75 T76 N77 T78 L79 N80 E81 K82 K83 H84 Y85 E86 I89

D93 K94 P95 N101 I102 I105 I106 Q109 T115 N119 I120 Y123 I128 Q144 E145 E146 E149 A166 S167 R177 D180 R186 P187 S188 M192 H193 R198 F199 I200 S203 K204 I205

- Molecule 5: C147L

Chain E: 15% 68% 24% 7%

L9 I10 M11 D12 D13 L14 V15 E16 V19 E20 T21 E22 E23 E24 N25 L26 V27 ASP SER GLU GLU GLU SER GLU ASP LYS ASP E38 I39 V40 E41 S42 P43 S44 I45 C46 E47 G48 Q51 Q55 T67 A76 R83 T93 M94 L95 K96 K97 K98 Y99 I103

K114 I115 P116 C122 I123 K124 V125 T126 Q130 V133 E134 I135 W136 R139 E140 M141 L146 D147

- Molecule 6: D339L

Chain F: 32% 63% 34%

M1 T9 D14 T17 T21 N22 V23 E24 A25 L28 K29 Y35 C39 F40 K41 F44 I45 L46 G50 R54 I59 R67 M70 V77 V78 S79 D85 L86 I87 A88 A89 V90 I93 K94 N95 D96 S97 N98 I99 I100 L101 G102 L105

• Molecule 7: C122R

Chain G:

• Molecule 8: DNA-directed RNA polymerase RPB10 homolog

Chain H:

• Molecule 9: M1249L

Chain I:
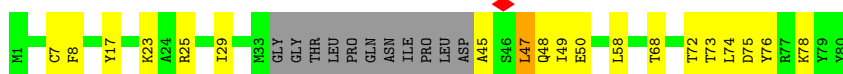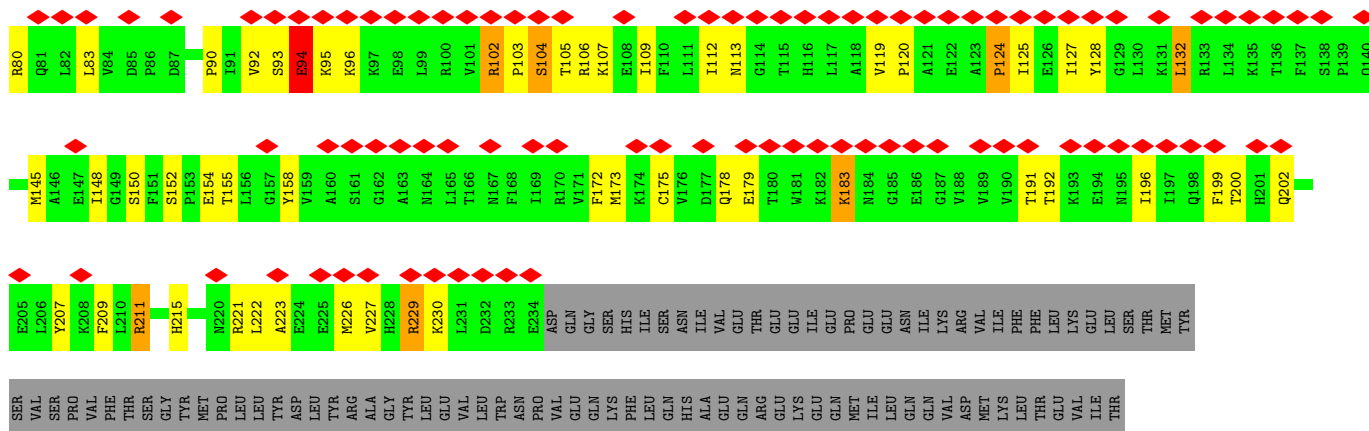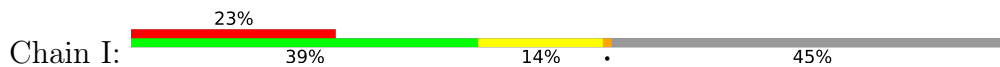
4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	83920	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	2.226	Depositor
Minimum map value	-1.107	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.072	Depositor
Recommended contour level	0.4	Depositor
Map size (Å)	419.84, 419.84, 419.84	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.82, 0.82, 0.82	Depositor

5 Model quality (i)

5.1 Standard geometry (i)

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

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	0.29	0/11462	0.50	1/15525 (0.0%)
2	B	0.30	0/9896	0.51	1/13394 (0.0%)
3	C	0.30	0/2969	0.48	0/4012
4	D	0.28	0/1708	0.51	0/2311
5	E	0.28	0/1033	0.49	0/1398
6	F	0.29	0/2740	0.52	0/3709
7	G	0.31	0/828	0.56	1/1109 (0.1%)
8	H	0.32	0/563	0.61	2/758 (0.3%)
9	I	0.27	0/5298	0.51	2/7172 (0.0%)
All	All	0.29	0/36497	0.51	7/49388 (0.0%)

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	I	124	PRO	CA-N-CD	-8.92	99.01	111.50
1	A	1204	PRO	CA-N-CD	-8.27	99.92	111.50
8	H	47	LEU	CA-CB-CG	6.48	130.20	115.30
2	B	440	PRO	CA-N-CD	-5.58	103.68	111.50
8	H	47	LEU	CB-CG-CD1	5.37	120.13	111.00
9	I	1028	ASP	CB-CG-OD1	5.34	123.11	118.30
7	G	49	MET	CA-CB-CG	5.30	122.32	113.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	11244	0	11362	214	0
2	B	9701	0	9657	285	0
3	C	2907	0	2982	52	0
4	D	1669	0	1713	42	0
5	E	1021	0	1054	25	0
6	F	2687	0	2721	84	0
7	G	816	0	814	21	0
8	H	553	0	580	27	0
9	I	5177	0	5136	130	0
10	A	3	0	0	0	0
10	B	1	0	0	0	0
10	G	2	0	0	0	0
10	H	1	0	0	0	0
11	A	1	0	0	0	0
All	All	35783	0	36019	770	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 (770) 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)
8:H:48:GLN:HB2	9:I:821:PHE:H	1.24	1.03
3:C:29:LEU:HD22	8:H:23:LYS:HD3	1.54	0.88
4:D:192:MET:O	4:D:193:HIS:ND1	2.08	0.86
2:B:491:LYS:HE2	2:B:527:HIS:HB3	1.60	0.84
2:B:1161:MET:O	2:B:1163:THR:N	2.13	0.81
9:I:912:ASN:HD22	9:I:915:LYS:HE2	1.46	0.80
9:I:952:LYS:HG3	9:I:954:GLY:H	1.47	0.80
1:A:1227:LEU:HD11	1:A:1250:VAL:HG11	1.65	0.77
1:A:419:ARG:HG3	1:A:463:MET:HG2	1.66	0.77
9:I:840:GLU:HG3	9:I:842:LYS:HG3	1.65	0.77
9:I:222:LEU:O	9:I:226:MET:HG3	1.85	0.76
6:F:157:PRO:HB2	6:F:209:THR:HG22	1.68	0.75
8:H:48:GLN:H	9:I:820:GLY:HA3	1.53	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:33:ASP:O	7:G:35:GLN:NE2	2.20	0.73
2:B:276:PHE:HB3	2:B:287:ILE:HD12	1.68	0.73
2:B:249:ARG:NH1	2:B:259:GLU:OE1	2.22	0.73
9:I:1070:ASP:OD2	9:I:1074:ARG:NH2	2.22	0.72
9:I:817:ALA:O	9:I:819:GLN:NE2	2.22	0.72
1:A:1070:ASN:ND2	1:A:1090:GLN:OE1	2.21	0.72
2:B:328:ASN:HA	9:I:1075:ILE:HD11	1.72	0.71
2:B:14:GLU:HG3	2:B:709:ILE:HG21	1.73	0.71
2:B:20:GLU:HG2	2:B:716:PRO:HG2	1.72	0.71
1:A:693:ILE:HD12	1:A:693:ILE:H	1.55	0.71
1:A:59:CYS:SG	1:A:72:HIS:CD2	2.84	0.71
6:F:1:MET:SD	6:F:298:LYS:NZ	2.64	0.71
1:A:1128:GLN:HB3	7:G:43:VAL:HG13	1.74	0.70
3:C:83:SER:HB2	9:I:703:HIS:HA	1.72	0.70
1:A:1441:LYS:HD2	6:F:21:THR:HB	1.73	0.70
2:B:20:GLU:N	2:B:20:GLU:OE1	2.22	0.70
6:F:221:LYS:HG3	6:F:227:LYS:HD2	1.75	0.69
2:B:164:ARG:NH1	2:B:171:THR:OG1	2.26	0.69
2:B:938:ALA:HB3	2:B:951:ILE:HG22	1.76	0.68
2:B:543:ARG:NH2	2:B:563:GLU:OE1	2.26	0.68
2:B:586:LEU:HD23	2:B:664:LEU:HD11	1.74	0.68
1:A:189:LYS:NZ	5:E:41:GLU:O	2.25	0.68
1:A:331:SER:O	1:A:638:GLN:NE2	2.28	0.67
6:F:157:PRO:HD2	6:F:330:ILE:HD11	1.74	0.67
2:B:135:ILE:HG13	2:B:149:ARG:HG2	1.74	0.67
1:A:824:TYR:OH	9:I:1232:SER:OG	2.11	0.67
1:A:1329:GLU:OE2	4:D:186:ARG:NH2	2.28	0.67
2:B:558:SER:O	2:B:802:ASN:ND2	2.28	0.67
9:I:1155:ILE:HD12	9:I:1165:VAL:HG11	1.76	0.67
1:A:328:CYS:HB2	2:B:1007:ALA:HB2	1.75	0.66
2:B:404:VAL:O	7:G:52:LYS:NZ	2.24	0.66
2:B:1238:VAL:HG12	5:E:55:GLN:HB2	1.77	0.66
3:C:127:SER:HB2	3:C:147:PHE:HB2	1.77	0.66
2:B:929:LYS:NZ	2:B:960:ASP:OD1	2.28	0.66
1:A:12:GLN:HG3	1:A:1404:VAL:HG22	1.76	0.66
3:C:61:VAL:HA	3:C:65:GLU:HB2	1.77	0.66
6:F:46:LEU:HD11	6:F:79:SER:HB3	1.78	0.66
8:H:23:LYS:HB3	8:H:23:LYS:HZ3	1.61	0.66
7:G:21:ILE:HA	7:G:31:GLN:HA	1.78	0.66
9:I:1029:ILE:HD13	9:I:1033:VAL:HB	1.78	0.66
6:F:243:LEU:HD11	6:F:297:LEU:HD11	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:239:ALA:HB2	2:B:666:VAL:HG11	1.79	0.65
2:B:118:ARG:NH2	2:B:184:GLU:OE2	2.29	0.65
2:B:476:SER:OG	2:B:480:ARG:NH1	2.30	0.65
1:A:232:TYR:HB3	1:A:266:LEU:HD21	1.77	0.65
1:A:50:MET:SD	1:A:209:ARG:NH2	2.70	0.65
2:B:417:ARG:NH1	2:B:744:GLU:OE2	2.27	0.64
2:B:877:PHE:HB3	2:B:1110:ARG:HD2	1.79	0.64
4:D:52:ILE:HG21	4:D:83:LYS:HD3	1.79	0.64
1:A:176:ARG:HE	9:I:120:PRO:HD3	1.63	0.64
1:A:166:TYR:H	1:A:169:ILE:HD12	1.61	0.64
8:H:17:TYR:HB3	8:H:58:LEU:HD22	1.80	0.64
2:B:19:GLU:OE2	2:B:762:LYS:NZ	2.26	0.64
2:B:877:PHE:O	2:B:1110:ARG:NH1	2.29	0.64
4:D:1:MET:HE2	4:D:3:MET:H	1.63	0.64
2:B:227:ILE:HG22	2:B:228:ILE:H	1.63	0.63
3:C:266:GLU:N	3:C:266:GLU:OE2	2.31	0.63
8:H:75:ASP:HB3	8:H:78:LYS:HD3	1.79	0.63
4:D:93:ASP:OD1	4:D:94:LYS:N	2.31	0.63
2:B:844:PRO:HD2	8:H:74:LEU:HD11	1.80	0.63
1:A:938:VAL:HG13	1:A:1014:ILE:HD11	1.81	0.62
1:A:576:GLU:HG3	9:I:880:ARG:HG2	1.81	0.62
2:B:510:GLU:O	2:B:516:ASN:ND2	2.31	0.62
1:A:475:VAL:HG22	5:E:103:ILE:HG23	1.81	0.62
6:F:200:ILE:HD12	6:F:200:ILE:H	1.65	0.62
3:C:249:ARG:O	3:C:253:ILE:HD12	1.99	0.62
2:B:453:ALA:HB3	2:B:456:GLU:HB3	1.82	0.61
2:B:491:LYS:HD2	2:B:529:THR:HG22	1.82	0.61
6:F:208:TYR:OH	6:F:262:ASN:O	2.18	0.61
7:G:73:CYS:HB2	7:G:81:LEU:HD21	1.80	0.61
2:B:474:THR:HG23	2:B:477:ASP:HB2	1.82	0.61
6:F:322:ARG:O	6:F:322:ARG:NH1	2.33	0.61
2:B:220:MET:SD	2:B:220:MET:N	2.73	0.61
6:F:179:THR:HA	6:F:182:VAL:HG12	1.82	0.61
1:A:523:ASN:ND2	3:C:210:MET:O	2.34	0.61
2:B:289:GLU:HB2	2:B:295:LEU:HD11	1.83	0.60
2:B:67:ILE:HD11	9:I:1198:PHE:HB2	1.82	0.60
7:G:35:GLN:CD	7:G:35:GLN:H	2.04	0.60
7:G:61:PRO:O	7:G:97:ARG:NH1	2.34	0.60
2:B:722:ILE:HD11	2:B:732:LEU:HD11	1.83	0.60
1:A:33:ASN:ND2	1:A:36:GLU:OE2	2.35	0.60
1:A:1196:ILE:HG23	1:A:1208:ILE:HG21	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1305:LEU:HA	4:D:5:LYS:HD2	1.84	0.60
6:F:176:LEU:O	6:F:179:THR:HG22	2.02	0.60
2:B:522:ARG:NH2	2:B:572:ALA:O	2.34	0.60
2:B:1057:VAL:HB	8:H:47:LEU:HG	1.83	0.60
6:F:182:VAL:HA	6:F:185:ILE:HG22	1.84	0.59
2:B:866:ILE:HB	2:B:1027:ILE:HB	1.84	0.59
3:C:236:ARG:HG3	3:C:358:ILE:HB	1.84	0.59
9:I:932:PHE:O	9:I:936:ARG:NH1	2.30	0.59
1:A:904:ASP:HB3	1:A:1000:MET:HG3	1.83	0.59
2:B:203:ASP:N	2:B:505:SER:O	2.28	0.59
2:B:821:MET:HB2	2:B:884:GLU:HG3	1.83	0.59
1:A:353:THR:O	1:A:358:ASN:ND2	2.29	0.59
2:B:432:ILE:HG22	2:B:478:LEU:HD12	1.85	0.59
2:B:82:ARG:HH22	2:B:455:GLU:CD	2.06	0.59
1:A:844:VAL:HB	1:A:852:GLN:HB2	1.85	0.59
2:B:420:GLY:O	2:B:422:GLY:N	2.35	0.59
2:B:452:THR:HG23	2:B:456:GLU:HG2	1.84	0.59
9:I:792:ALA:HB3	9:I:795:PHE:HB2	1.84	0.59
2:B:493:ILE:HD13	2:B:502:ASN:HB2	1.84	0.59
6:F:180:LYS:HA	6:F:180:LYS:HE2	1.84	0.59
2:B:221:GLN:HA	2:B:224:ASN:HD21	1.67	0.59
1:A:208:ILE:O	1:A:302:ARG:NH2	2.36	0.59
1:A:493:SER:OG	1:A:1349:ASN:ND2	2.36	0.59
6:F:217:ILE:HD12	6:F:218:LEU:HD23	1.85	0.59
1:A:1187:LEU:HG	1:A:1188:LYS:HG2	1.84	0.58
2:B:404:VAL:HG12	2:B:405:PHE:HD1	1.67	0.58
2:B:994:ASP:OD2	2:B:1110:ARG:NH2	2.36	0.58
4:D:204:LYS:HG2	4:D:205:ILE:HG13	1.86	0.58
1:A:332:ASP:OD2	2:B:859:TYR:OH	2.21	0.58
2:B:205:LEU:HD23	2:B:505:SER:HB2	1.86	0.58
3:C:284:LYS:HD2	3:C:318:GLU:HB3	1.84	0.58
2:B:40:ILE:HG13	2:B:189:PRO:HG3	1.85	0.58
2:B:326:GLU:HG3	2:B:328:ASN:H	1.67	0.58
1:A:300:MET:HE2	1:A:1392:VAL:HG13	1.85	0.58
2:B:491:LYS:HB3	2:B:529:THR:HA	1.86	0.58
8:H:48:GLN:HB2	9:I:821:PHE:N	2.08	0.58
1:A:448:VAL:HG11	2:B:861:GLN:HB3	1.86	0.57
2:B:242:ASN:OD1	2:B:242:ASN:N	2.31	0.57
9:I:106:ARG:NH2	9:I:119:VAL:O	2.37	0.57
1:A:1204:PRO:HD2	1:A:1205:ASN:N	2.19	0.57
2:B:272:TRP:HE1	2:B:312:SER:HG	1.52	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:92:VAL:HG22	9:I:125:ILE:HG21	1.85	0.57
3:C:9:GLU:HG3	3:C:11:LYS:HE2	1.87	0.57
6:F:195:LYS:HB2	6:F:200:ILE:HD11	1.87	0.57
6:F:209:THR:OG1	6:F:261:PRO:O	2.22	0.57
6:F:263:LEU:HD11	6:F:271:TYR:CE2	2.39	0.57
9:I:918:THR:OG1	9:I:921:LYS:NZ	2.37	0.57
2:B:404:VAL:HA	7:G:52:LYS:HD2	1.85	0.57
6:F:263:LEU:HD11	6:F:271:TYR:HE2	1.70	0.57
1:A:798:SER:HB2	2:B:775:PRO:HB3	1.85	0.57
1:A:1015:THR:HG23	1:A:1018:GLN:H	1.69	0.57
3:C:305:ILE:HD11	3:C:323:ILE:HG23	1.86	0.57
4:D:101:ASN:O	4:D:105:ILE:HG12	2.03	0.57
1:A:1240:MET:SD	1:A:1240:MET:N	2.78	0.57
2:B:343:PHE:HA	9:I:1196:GLU:HG3	1.87	0.57
2:B:650:THR:HB	2:B:663:TRP:HB2	1.87	0.57
1:A:1011:THR:HG22	1:A:1014:ILE:HD12	1.85	0.57
2:B:82:ARG:HB2	2:B:140:TYR:CD2	2.40	0.57
2:B:255:ALA:HB2	2:B:315:VAL:HG11	1.87	0.57
2:B:296:GLU:OE1	2:B:609:ARG:NH2	2.38	0.57
6:F:171:THR:HG22	6:F:174:GLN:HG3	1.87	0.57
1:A:431:HIS:NE2	1:A:454:TYR:OH	2.29	0.57
4:D:58:PHE:O	4:D:123:TYR:OH	2.21	0.56
4:D:180:ASP:HB3	4:D:200:ILE:HD12	1.87	0.56
2:B:509:LEU:HD11	2:B:517:THR:HG23	1.86	0.56
1:A:168:GLN:HE22	1:A:245:GLN:HA	1.70	0.56
2:B:404:VAL:HG12	2:B:405:PHE:CD1	2.40	0.56
6:F:204:GLU:HG3	6:F:264:LEU:HD21	1.87	0.56
2:B:573:ILE:HG23	2:B:574:THR:HG23	1.86	0.56
2:B:830:GLU:HG2	8:H:73:THR:HA	1.87	0.56
9:I:106:ARG:NH2	9:I:120:PRO:O	2.39	0.56
1:A:377:SER:HA	1:A:390:ILE:HB	1.88	0.56
1:A:383:ILE:HG13	1:A:384:THR:HG23	1.88	0.56
1:A:1177:ARG:HG3	1:A:1224:ARG:HG2	1.87	0.56
2:B:700:ASP:OD1	2:B:700:ASP:N	2.36	0.56
2:B:904:THR:HG23	2:B:907:LEU:HD13	1.88	0.56
3:C:113:LEU:HD21	3:C:125:ILE:HG21	1.87	0.56
4:D:75:LEU:O	4:D:79:LEU:HG	2.05	0.56
9:I:221:ARG:HG2	9:I:221:ARG:HH11	1.71	0.56
1:A:959:GLN:NE2	1:A:1016:CYS:SG	2.78	0.56
1:A:1300:ILE:HB	1:A:1325:LEU:HG	1.87	0.56
2:B:600:ALA:HB1	9:I:1060:SER:HB2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1385:ARG:HH21	5:E:24:GLU:HG2	1.71	0.56
2:B:77:GLU:HA	2:B:80:LYS:HD2	1.88	0.56
9:I:695:ARG:NH2	9:I:703:HIS:O	2.39	0.56
1:A:336:ASP:OD1	1:A:432:ARG:NH2	2.37	0.55
6:F:320:ILE:O	6:F:327:TRP:NE1	2.27	0.55
2:B:69:TYR:OH	2:B:442:ILE:HG23	2.07	0.55
2:B:498:ARG:NH2	9:I:1209:ASP:OD1	2.39	0.55
9:I:1239:SER:HB3	9:I:1242:VAL:HG22	1.88	0.55
1:A:599:ILE:HD12	1:A:600:GLU:HG2	1.87	0.55
1:A:1120:ILE:HG23	1:A:1124:ARG:HD3	1.89	0.55
1:A:1120:ILE:HG23	1:A:1124:ARG:HH11	1.70	0.55
2:B:988:ARG:NH2	2:B:1117:ASP:OD1	2.36	0.55
2:B:40:ILE:HG21	2:B:189:PRO:HB2	1.87	0.55
1:A:425:ARG:NH2	1:A:1039:GLU:OE2	2.36	0.55
2:B:301:VAL:HG23	2:B:402:MET:SD	2.47	0.55
2:B:531:ASN:ND2	9:I:1221:GLU:O	2.39	0.55
3:C:81:GLU:HG2	3:C:82:ASP:H	1.72	0.55
5:E:126:THR:HB	5:E:130:GLN:HB3	1.87	0.55
1:A:1371:LYS:HD3	1:A:1388:LEU:HD23	1.88	0.55
4:D:34:MET:O	4:D:38:THR:OG1	2.22	0.54
2:B:512:LYS:HD2	2:B:806:GLN:HA	1.90	0.54
5:E:83:ARG:HD3	5:E:116:PRO:HD2	1.89	0.54
1:A:1170:ASP:HB2	1:A:1229:GLU:HG2	1.88	0.54
2:B:200:TRP:CE2	2:B:487:ILE:HG13	2.42	0.54
1:A:100:LEU:O	1:A:176:ARG:NH1	2.38	0.54
1:A:1311:PRO:HB2	4:D:128:ILE:HD12	1.88	0.54
2:B:277:ARG:HB2	2:B:282:THR:HG22	1.89	0.54
2:B:768:ARG:NH2	7:G:68:GLN:HE22	2.05	0.54
9:I:124:PRO:HD2	9:I:124:PRO:O	2.08	0.54
2:B:231:GLU:HG3	9:I:1219:PHE:CE1	2.43	0.54
2:B:796:ARG:HG3	2:B:1038:THR:HG22	1.90	0.54
9:I:1233:ILE:HG23	9:I:1236:VAL:HB	1.88	0.54
1:A:70:MET:HG2	2:B:1217:ILE:HG21	1.90	0.54
2:B:281:MET:HG2	2:B:281:MET:O	2.08	0.54
2:B:866:ILE:HG23	2:B:1008:LEU:HB3	1.91	0.54
9:I:132:LEU:HD22	9:I:173:MET:HG3	1.90	0.54
3:C:265:PRO:HD2	3:C:266:GLU:OE2	2.08	0.53
6:F:241:SER:HA	6:F:244:TYR:HD1	1.71	0.53
9:I:695:ARG:NE	9:I:702:MET:O	2.41	0.53
2:B:906:ASN:HB3	2:B:952:ASP:H	1.72	0.53
6:F:204:GLU:CG	6:F:264:LEU:HD21	2.37	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:1019:LYS:HD2	9:I:1150:LEU:HD21	1.89	0.53
1:A:65:GLN:O	1:A:67:LYS:N	2.41	0.53
2:B:236:PRO:HG3	2:B:374:PRO:HB2	1.90	0.53
9:I:966:GLN:HB2	9:I:967:PRO:HD3	1.90	0.53
1:A:997:LEU:HD13	4:D:192:MET:HB2	1.90	0.53
2:B:93:ASP:HB3	2:B:131:ALA:HB3	1.90	0.53
2:B:797:VAL:O	2:B:801:THR:HG23	2.08	0.53
5:E:123:ILE:O	5:E:124:LYS:HB2	2.09	0.53
1:A:330:ASN:ND2	1:A:445:GLN:OE1	2.41	0.53
8:H:29:ILE:CD1	8:H:49:ILE:HD13	2.39	0.53
9:I:884:ILE:HG23	9:I:885:LYS:HD2	1.90	0.53
1:A:1386:MET:HG2	1:A:1394:VAL:HG23	1.89	0.53
1:A:714:ARG:NH1	9:I:905:GLN:HE22	2.07	0.53
1:A:1383:LEU:H	1:A:1405:ASN:ND2	2.06	0.53
5:E:67:THR:OG1	5:E:134:GLU:OE1	2.24	0.53
1:A:892:PRO:HA	1:A:895:GLU:HG2	1.90	0.53
1:A:1057:MET:SD	1:A:1057:MET:N	2.81	0.53
8:H:68:THR:O	8:H:72:THR:OG1	2.18	0.53
1:A:862:ALA:HB2	1:A:1351:ARG:HD2	1.90	0.53
2:B:382:THR:O	2:B:386:LYS:HG3	2.09	0.53
4:D:75:LEU:HD13	4:D:109:GLN:HG3	1.91	0.53
1:A:430:VAL:HB	1:A:482:SER:HA	1.91	0.52
2:B:344:VAL:HA	9:I:1194:PHE:HB3	1.91	0.52
9:I:83:LEU:HD12	9:I:107:LYS:HE3	1.91	0.52
2:B:829:ASN:ND2	2:B:845:ASN:HA	2.24	0.52
2:B:937:VAL:HG23	2:B:940:ILE:HD11	1.91	0.52
6:F:324:GLU:HA	6:F:327:TRP:CD1	2.43	0.52
7:G:52:LYS:HE3	7:G:53:TYR:CZ	2.44	0.52
1:A:320:TRP:CE2	2:B:1135:PRO:HG3	2.44	0.52
2:B:829:ASN:ND2	2:B:844:PRO:O	2.39	0.52
2:B:1059:ASP:OD1	2:B:1061:THR:OG1	2.25	0.52
3:C:110:VAL:H	3:C:134:ALA:HB3	1.74	0.52
6:F:191:SER:OG	6:F:308:ASN:ND2	2.43	0.52
7:G:49:MET:HE1	7:G:57:ILE:HD11	1.90	0.52
1:A:171:ARG:HB2	1:A:197:VAL:HG11	1.92	0.52
1:A:414:VAL:HG11	1:A:478:GLU:HB3	1.92	0.52
2:B:234:SER:OG	2:B:375:HIS:ND1	2.41	0.52
4:D:146:GLU:HA	4:D:149:GLU:HG2	1.91	0.52
9:I:132:LEU:HB2	9:I:199:PHE:HZ	1.75	0.52
2:B:170:HIS:ND1	9:I:788:TYR:OH	2.37	0.52
2:B:644:VAL:HG23	2:B:645:VAL:HG23	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:955:LEU:HD13	9:I:963:HIS:CE1	2.44	0.52
1:A:1094:MET:HE2	1:A:1096:LEU:HD21	1.91	0.52
6:F:220:LEU:HD11	6:F:229:LYS:HG2	1.92	0.52
9:I:1090:ASN:OD1	9:I:1091:LYS:N	2.43	0.52
1:A:502:ASP:OD2	2:B:861:GLN:HG3	2.10	0.51
2:B:460:ARG:NH2	2:B:464:GLU:HG2	2.24	0.51
6:F:105:LEU:HD23	6:F:105:LEU:H	1.75	0.51
6:F:185:ILE:HD13	6:F:301:ILE:HD13	1.92	0.51
9:I:172:PHE:O	9:I:202:GLN:NE2	2.41	0.51
9:I:223:ALA:O	9:I:227:VAL:HG13	2.11	0.51
9:I:866:ALA:HB2	9:I:874:ALA:HA	1.92	0.51
9:I:885:LYS:HD2	9:I:885:LYS:N	2.26	0.51
1:A:1193:GLU:O	1:A:1197:ASN:ND2	2.34	0.51
1:A:311:ARG:HH22	9:I:1235:ASP:HA	1.75	0.51
1:A:1134:GLU:OE2	1:A:1224:ARG:NH2	2.40	0.51
2:B:921:VAL:HG21	2:B:933:ILE:HG22	1.92	0.51
2:B:1057:VAL:H	8:H:47:LEU:HD12	1.74	0.51
2:B:1223:MET:HE3	2:B:1230:ILE:HG12	1.93	0.51
6:F:298:LYS:HA	6:F:301:ILE:HG12	1.92	0.51
9:I:1162:VAL:HG12	9:I:1166:ARG:HD2	1.90	0.51
2:B:69:TYR:O	2:B:85:VAL:N	2.43	0.51
2:B:359:TYR:OH	9:I:1200:CYS:O	2.24	0.51
1:A:315:LEU:HD11	1:A:1387:ALA:HB1	1.93	0.51
2:B:819:VAL:HG13	2:B:983:ARG:HB2	1.91	0.51
3:C:276:LYS:HG3	3:C:326:LYS:HD3	1.93	0.51
9:I:832:ALA:O	9:I:834:GLN:NE2	2.44	0.51
2:B:965:VAL:HG22	2:B:984:LEU:HD23	1.91	0.51
9:I:895:ASP:OD2	9:I:904:LEU:HB3	2.11	0.51
9:I:903:VAL:HG11	9:I:911:LEU:HD21	1.93	0.51
3:C:28:LYS:HD2	8:H:23:LYS:HZ1	1.76	0.51
1:A:752:ILE:HB	1:A:788:ILE:HB	1.92	0.51
9:I:686:MET:N	9:I:686:MET:SD	2.83	0.51
9:I:1023:THR:HG23	9:I:1149:PHE:CD2	2.45	0.51
1:A:419:ARG:HD3	1:A:456:ALA:HB2	1.92	0.51
4:D:193:HIS:ND1	4:D:193:HIS:O	2.44	0.51
1:A:591:THR:HA	1:A:601:GLY:HA3	1.94	0.50
1:A:591:THR:OG1	1:A:602:VAL:O	2.25	0.50
1:A:829:ALA:HA	1:A:1369:LEU:HD13	1.94	0.50
1:A:1225:ILE:HD12	1:A:1225:ILE:O	2.11	0.50
2:B:995:LYS:HG2	2:B:1111:LEU:HD12	1.92	0.50
5:E:115:ILE:O	5:E:139:ARG:NH1	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:320:TRP:O	2:B:1167:LYS:NZ	2.44	0.50
1:A:1371:LYS:NZ	1:A:1389:SER:O	2.45	0.50
1:A:1433:GLU:HG2	6:F:23:VAL:HG21	1.93	0.50
9:I:1098:ARG:O	9:I:1101:LYS:HD2	2.11	0.50
1:A:645:ARG:HG2	2:B:1090:ASN:ND2	2.26	0.50
2:B:503:ARG:NH2	9:I:1216:PRO:HA	2.26	0.50
1:A:1204:PRO:HD2	1:A:1205:ASN:H	1.77	0.50
3:C:332:LEU:O	3:C:336:LEU:HG	2.10	0.50
6:F:118:GLU:HG3	6:F:121:ASN:HD21	1.75	0.50
6:F:233:ARG:NH1	6:F:234:LEU:H	2.09	0.50
8:H:25:ARG:O	8:H:29:ILE:HG12	2.11	0.50
9:I:92:VAL:HG12	9:I:94:GLU:H	1.77	0.50
1:A:815:LYS:NZ	9:I:1248:PRO:HD3	2.27	0.50
1:A:1390:SER:O	1:A:1394:VAL:HG22	2.11	0.50
2:B:46:SER:OG	2:B:421:SER:OG	2.29	0.50
2:B:334:GLN:NE2	2:B:357:VAL:HG13	2.26	0.50
2:B:514:LEU:HD23	2:B:843:ILE:HD11	1.94	0.50
2:B:402:MET:HB3	2:B:404:VAL:HG23	1.94	0.50
2:B:874:ARG:NE	8:H:8:PHE:O	2.38	0.49
6:F:164:TYR:N	6:F:257:TRP:O	2.42	0.49
1:A:1313:THR:O	1:A:1313:THR:HG22	2.12	0.49
2:B:85:VAL:HB	2:B:454:PHE:CE2	2.47	0.49
2:B:670:THR:HG22	2:B:742:THR:HG23	1.93	0.49
2:B:1190:ASN:HB3	2:B:1195:ILE:HG22	1.94	0.49
3:C:82:ASP:HB3	9:I:704:LYS:HD3	1.95	0.49
6:F:197:PHE:HA	6:F:200:ILE:HD13	1.94	0.49
4:D:29:ASP:N	4:D:29:ASP:OD1	2.45	0.49
6:F:25:ALA:O	6:F:29:LYS:HG2	2.11	0.49
2:B:469:ALA:HA	2:B:472:LYS:HE2	1.94	0.49
3:C:110:VAL:HB	3:C:134:ALA:HB2	1.95	0.49
2:B:796:ARG:NH1	9:I:1249:GLN:OXT	2.38	0.49
4:D:166:ALA:HB3	4:D:203:SER:HB2	1.94	0.49
6:F:46:LEU:N	6:F:77:VAL:O	2.35	0.49
2:B:67:ILE:HG21	2:B:442:ILE:HD12	1.95	0.49
2:B:292:VAL:HG23	2:B:294:ASP:H	1.76	0.49
2:B:368:LEU:HA	2:B:371:ILE:HG22	1.93	0.49
2:B:491:LYS:O	2:B:501:VAL:HG23	2.13	0.49
2:B:1144:GLY:O	2:B:1145:LEU:HB2	2.13	0.49
1:A:92:ARG:HB2	1:A:154:PHE:HZ	1.77	0.49
1:A:860:LEU:HD21	1:A:1030:TYR:HE1	1.77	0.49
2:B:742:THR:HG22	2:B:743:PRO:HD2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:9:THR:OG1	6:F:35:TYR:OH	2.25	0.49
1:A:380:TYR:HB3	1:A:404:ILE:HB	1.94	0.49
2:B:445:PHE:HE2	2:B:466:PHE:HD2	1.59	0.49
1:A:580:PRO:O	9:I:864:TYR:OH	2.21	0.49
1:A:1382:VAL:O	1:A:1386:MET:HG3	2.13	0.49
2:B:616:PHE:CE2	2:B:621:TRP:HB2	2.47	0.49
3:C:61:VAL:HG21	3:C:246:ILE:HG12	1.95	0.49
3:C:12:PRO:HA	3:C:41:VAL:HA	1.95	0.49
9:I:94:GLU:OE2	9:I:94:GLU:N	2.46	0.49
1:A:1131:LEU:HD13	1:A:1176:ILE:HG12	1.96	0.48
9:I:684:ASP:HB3	9:I:686:MET:SD	2.53	0.48
3:C:5:PHE:CE1	3:C:45:MET:HB3	2.49	0.48
1:A:1410:ILE:HG12	2:B:1156:THR:HG21	1.95	0.48
8:H:45:ALA:HA	9:I:821:PHE:HA	1.95	0.48
9:I:1037:ILE:HB	9:I:1142:ILE:HD11	1.94	0.48
2:B:599:LEU:HD11	2:B:621:TRP:O	2.14	0.48
2:B:904:THR:HG23	2:B:907:LEU:HB2	1.94	0.48
2:B:1056:VAL:HA	8:H:47:LEU:HD11	1.96	0.48
3:C:101:PRO:HD2	3:C:147:PHE:CZ	2.49	0.48
3:C:38:LEU:HB2	3:C:144:ASN:ND2	2.29	0.48
6:F:166:VAL:HG11	6:F:289:ALA:HB2	1.96	0.48
9:I:1016:ASP:OD2	9:I:1019:LYS:NZ	2.37	0.48
2:B:337:SER:HB3	2:B:364:GLN:HB2	1.96	0.48
2:B:401:ILE:HD13	2:B:401:ILE:HA	1.74	0.48
2:B:694:ARG:HD3	2:B:701:TRP:CD1	2.49	0.48
3:C:178:LEU:O	3:C:224:PRO:HD3	2.14	0.48
1:A:580:PRO:HA	9:I:883:VAL:HG11	1.96	0.48
1:A:988:PRO:HD2	1:A:991:LEU:HD12	1.96	0.48
2:B:222:GLN:HB3	9:I:1226:ARG:NH1	2.29	0.48
3:C:257:TYR:HD2	3:C:340:ILE:HD12	1.78	0.48
1:A:833:LEU:HG	1:A:1359:LEU:HD22	1.96	0.47
2:B:1089:PHE:HA	2:B:1096:TYR:HA	1.96	0.47
3:C:189:ILE:HD11	3:C:214:PRO:HB3	1.95	0.47
4:D:56:PHE:CE2	4:D:74:LEU:HD21	2.48	0.47
9:I:229:ARG:HH12	9:I:230:LYS:HB2	1.79	0.47
2:B:263:THR:HG23	9:I:1209:ASP:H	1.79	0.47
2:B:359:TYR:HA	9:I:1186:PRO:HG3	1.96	0.47
6:F:182:VAL:O	6:F:186:GLU:HG3	2.14	0.47
9:I:871:GLN:HG3	9:I:873:PRO:HD2	1.95	0.47
1:A:31:ILE:HG13	1:A:33:ASN:H	1.79	0.47
1:A:1128:GLN:NE2	1:A:1179:GLU:OE1	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:164:TYR:HB3	6:F:292:MET:HG3	1.97	0.47
7:G:14:THR:HG22	7:G:14:THR:O	2.14	0.47
8:H:47:LEU:O	9:I:822:TYR:HB2	2.14	0.47
1:A:235:ARG:HA	1:A:238:LEU:HD12	1.96	0.47
1:A:1133:TYR:OH	7:G:17:ASP:O	2.32	0.47
2:B:376:MET:HB3	2:B:386:LYS:HG2	1.96	0.47
4:D:14:ILE:HD13	4:D:45:ALA:HB2	1.96	0.47
1:A:305:ARG:HG3	1:A:305:ARG:HH11	1.78	0.47
2:B:227:ILE:HD11	2:B:252:THR:HA	1.96	0.47
4:D:37:ASN:ND2	4:D:38:THR:HG23	2.30	0.47
1:A:189:LYS:NZ	5:E:43:PRO:HD2	2.29	0.47
2:B:367:ILE:O	2:B:371:ILE:HG22	2.14	0.47
2:B:860:ASN:OD1	2:B:860:ASN:N	2.47	0.47
4:D:188:SER:HB3	4:D:193:HIS:H	1.78	0.47
9:I:879:THR:HG22	9:I:880:ARG:H	1.80	0.47
1:A:14:ASN:O	2:B:1229:ASN:N	2.38	0.47
1:A:644:VAL:HG11	2:B:855:ILE:HD12	1.97	0.47
1:A:665:GLU:HG2	1:A:718:PRO:HG3	1.97	0.47
1:A:777:ARG:NH2	7:G:65:THR:OG1	2.47	0.47
2:B:1087:LYS:HG3	3:C:203:SER:HB2	1.96	0.47
6:F:14:ASP:HA	6:F:67:ARG:HD2	1.97	0.47
6:F:178:LEU:O	6:F:182:VAL:HG12	2.15	0.47
1:A:1397:ASP:HA	1:A:1400:VAL:HG22	1.97	0.47
2:B:365:LEU:HD23	2:B:365:LEU:HA	1.79	0.47
4:D:19:MET:HG2	4:D:47:THR:HG22	1.97	0.47
1:A:725:PRO:HB3	1:A:731:PHE:CE2	2.50	0.47
6:F:158:LYS:O	6:F:160:THR:N	2.39	0.47
9:I:806:GLU:O	9:I:810:GLY:N	2.45	0.47
1:A:276:SER:HB2	5:E:19:VAL:HA	1.97	0.47
1:A:428:ILE:O	2:B:1158:GLN:NE2	2.39	0.47
1:A:669:ILE:HG12	1:A:714:ARG:NH2	2.30	0.47
2:B:208:ILE:HD11	2:B:233:ILE:HD12	1.97	0.47
2:B:874:ARG:HG2	3:C:99:PHE:CE2	2.50	0.47
3:C:151:PHE:CZ	8:H:76:TYR:HB3	2.50	0.47
1:A:379:VAL:HG22	1:A:405:LEU:HD12	1.96	0.46
7:G:13:ARG:HD3	7:G:15:TYR:OH	2.16	0.46
8:H:47:LEU:HD22	8:H:49:ILE:HD11	1.97	0.46
1:A:851:VAL:HG22	1:A:1362:ARG:HD2	1.98	0.46
2:B:358:GLN:HB3	9:I:1186:PRO:HB3	1.97	0.46
4:D:1:MET:CE	4:D:3:MET:H	2.28	0.46
6:F:41:LYS:HD2	9:I:150:SER:HB2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:826:ASP:HB2	9:I:833:ASP:HA	1.97	0.46
1:A:645:ARG:HG2	2:B:1090:ASN:HD21	1.79	0.46
6:F:90:VAL:HG11	6:F:112:ILE:HG21	1.97	0.46
6:F:179:THR:HA	6:F:182:VAL:CG1	2.45	0.46
1:A:164:LYS:HE3	1:A:164:LYS:HB2	1.83	0.46
1:A:555:VAL:HA	1:A:558:MET:HG3	1.98	0.46
2:B:1223:MET:HB3	2:B:1230:ILE:HD11	1.96	0.46
5:E:12:ASP:OD1	5:E:13:ASP:N	2.45	0.46
7:G:70:LYS:NZ	7:G:79:ASP:HB3	2.30	0.46
2:B:437:VAL:HA	2:B:470:LEU:HD21	1.96	0.46
2:B:513:ASN:HA	2:B:811:TYR:HA	1.98	0.46
2:B:718:MET:HB3	2:B:727:LEU:HD22	1.97	0.46
2:B:1087:LYS:NZ	3:C:203:SER:O	2.45	0.46
1:A:302:ARG:O	1:A:309:ARG:N	2.45	0.46
2:B:42:TYR:HE1	2:B:204:LEU:HD21	1.81	0.46
6:F:112:ILE:HG12	6:F:132:VAL:HG11	1.97	0.46
6:F:265:LYS:HD3	6:F:265:LYS:HA	1.62	0.46
8:H:23:LYS:HB3	8:H:23:LYS:NZ	2.28	0.46
9:I:93:SER:O	9:I:95:LYS:N	2.49	0.46
1:A:417:PHE:CZ	1:A:463:MET:HE2	2.51	0.46
1:A:909:ARG:NH1	1:A:1282:GLY:O	2.42	0.46
1:A:1135:THR:HB	1:A:1173:ASN:HA	1.96	0.46
2:B:71:ASP:OD1	2:B:72:GLN:N	2.45	0.46
2:B:900:ASP:OD2	2:B:902:LEU:HB2	2.16	0.46
9:I:1079:ASN:HB2	9:I:1172:GLU:OE2	2.16	0.46
1:A:24:GLN:NE2	2:B:1185:GLU:OE2	2.48	0.46
1:A:748:ILE:HA	1:A:792:TYR:HB2	1.96	0.46
2:B:70:LYS:HB2	2:B:70:LYS:HE2	1.76	0.46
1:A:305:ARG:HG3	1:A:305:ARG:NH1	2.31	0.46
2:B:262:SER:OG	2:B:263:THR:N	2.48	0.46
1:A:12:GLN:OE1	1:A:14:ASN:ND2	2.38	0.45
1:A:1375:ASN:HD21	5:E:24:GLU:HG3	1.81	0.45
2:B:920:PHE:CD2	2:B:934:ILE:HG22	2.51	0.45
6:F:259:ARG:NH2	6:F:265:LYS:O	2.47	0.45
9:I:209:PHE:CZ	9:I:215:HIS:HB2	2.51	0.45
9:I:1233:ILE:O	9:I:1233:ILE:HG22	2.17	0.45
1:A:83:LEU:HD22	1:A:91:ILE:HD13	1.98	0.45
1:A:389:ASP:OD1	1:A:390:ILE:N	2.49	0.45
1:A:502:ASP:HB2	2:B:861:GLN:CD	2.36	0.45
2:B:225:ASN:N	2:B:225:ASN:OD1	2.50	0.45
4:D:3:MET:HG3	4:D:31:PHE:CE2	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:310:ILE:HG21	1:A:1387:ALA:HA	1.98	0.45
2:B:1161:MET:SD	2:B:1161:MET:N	2.88	0.45
4:D:55:VAL:HG22	4:D:89:ILE:HD12	1.98	0.45
1:A:301:ARG:HD2	1:A:301:ARG:HA	1.77	0.45
2:B:860:ASN:HA	2:B:864:SER:HB2	1.98	0.45
1:A:1120:ILE:HD13	1:A:1260:ARG:HE	1.80	0.45
2:B:940:ILE:HA	2:B:950:TYR:CE1	2.52	0.45
4:D:46:GLU:OE2	4:D:50:HIS:ND1	2.44	0.45
9:I:145:MET:HA	9:I:148:ILE:HD12	1.99	0.45
3:C:215:ARG:NH1	3:C:300:GLU:OE2	2.47	0.45
1:A:340:TYR:CE1	1:A:465:LEU:HD22	2.52	0.45
1:A:363:MET:HE3	1:A:366:PHE:HB3	1.99	0.45
1:A:1102:GLU:HG2	1:A:1103:VAL:N	2.32	0.45
2:B:195:ALA:HB1	2:B:483:GLU:HG2	1.99	0.45
2:B:822:ASN:HA	2:B:881:PHE:CZ	2.52	0.45
3:C:92:PHE:O	3:C:96:ARG:HG2	2.17	0.45
8:H:47:LEU:C	9:I:822:TYR:HB2	2.37	0.45
1:A:361:ARG:O	1:A:364:PRO:HD2	2.17	0.45
2:B:142:ASN:OD1	2:B:144:ARG:HG3	2.17	0.45
2:B:867:VAL:HG22	2:B:1026:LEU:HD22	1.99	0.45
2:B:1008:LEU:HD12	2:B:1008:LEU:HA	1.81	0.45
5:E:76:ALA:HB1	5:E:146:LEU:HD11	1.99	0.45
6:F:171:THR:HG23	6:F:173:GLU:H	1.82	0.45
6:F:310:LEU:HD23	6:F:310:LEU:HA	1.82	0.45
9:I:221:ARG:HG2	9:I:221:ARG:NH1	2.32	0.45
2:B:85:VAL:HB	2:B:454:PHE:HE2	1.81	0.45
3:C:272:MET:HE1	3:C:278:LYS:HD2	1.99	0.45
6:F:328:MET:SD	6:F:329:LEU:N	2.89	0.45
1:A:370:LYS:HG3	1:A:377:SER:HB3	1.98	0.45
1:A:1190:ILE:N	1:A:1190:ILE:HD12	2.32	0.45
2:B:69:TYR:HB2	2:B:85:VAL:HG13	1.98	0.45
2:B:234:SER:HB3	2:B:374:PRO:HD2	1.99	0.45
2:B:368:LEU:HA	2:B:368:LEU:HD23	1.80	0.45
2:B:209:ARG:NE	2:B:212:THR:OG1	2.45	0.44
2:B:263:THR:HB	2:B:264:LYS:HD2	1.99	0.44
2:B:680:ILE:HD12	2:B:680:ILE:HA	1.84	0.44
3:C:267:LEU:HD13	3:C:281:ILE:HG13	1.98	0.44
9:I:895:ASP:HB3	9:I:906:HIS:CD2	2.52	0.44
1:A:93:ARG:HH11	1:A:121:LEU:HD12	1.82	0.44
1:A:119:LYS:HG2	1:A:123:GLU:HG3	2.00	0.44
2:B:343:PHE:HB3	9:I:1198:PHE:CE1	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:1083:ASN:ND2	2:B:1085:CYS:SG	2.90	0.44
6:F:28:LEU:HD21	6:F:50:GLY:HA2	1.99	0.44
6:F:242:PHE:HA	6:F:245:ASP:OD2	2.16	0.44
9:I:777:ILE:HG21	9:I:809:TYR:CE2	2.52	0.44
9:I:1027:LEU:O	9:I:1029:ILE:HG23	2.18	0.44
1:A:381:LYS:O	1:A:385:GLN:N	2.49	0.44
2:B:85:VAL:HG11	2:B:449:LEU:HD13	1.99	0.44
2:B:448:LEU:HD21	2:B:457:LEU:HD21	1.98	0.44
3:C:5:PHE:HE1	3:C:45:MET:HB3	1.82	0.44
6:F:304:LEU:O	6:F:307:ILE:HG13	2.17	0.44
9:I:1076:PHE:HZ	9:I:1152:LEU:HD22	1.82	0.44
2:B:710:GLN:NE2	2:B:767:ARG:O	2.51	0.44
3:C:195:ASP:OD1	3:C:195:ASP:N	2.42	0.44
6:F:164:TYR:HB3	6:F:292:MET:HE2	1.98	0.44
1:A:640:ALA:O	1:A:644:VAL:HG23	2.17	0.44
1:A:1361:THR:O	4:D:198:ARG:NH2	2.44	0.44
2:B:42:TYR:OH	2:B:522:ARG:HA	2.18	0.44
2:B:501:VAL:HG11	2:B:503:ARG:CZ	2.48	0.44
2:B:966:ASP:OD2	2:B:985:ARG:NE	2.42	0.44
6:F:88:ALA:HA	6:F:131:PRO:HB3	1.99	0.44
6:F:88:ALA:HB1	6:F:310:LEU:HG	2.00	0.44
1:A:330:ASN:HB2	1:A:445:GLN:HB3	1.99	0.44
1:A:805:GLU:HG2	2:B:794:PRO:HB3	1.98	0.44
2:B:70:LYS:HE3	9:I:1192:MET:HA	1.99	0.44
2:B:283:GLY:O	2:B:287:ILE:HG12	2.18	0.44
2:B:1043:ILE:HG21	2:B:1066:ILE:HD11	1.98	0.44
3:C:23:LYS:O	3:C:27:LYS:HG2	2.17	0.44
5:E:25:ASN:OD1	5:E:25:ASN:N	2.51	0.44
1:A:168:GLN:O	1:A:172:GLU:HG2	2.18	0.44
1:A:1225:ILE:HD12	1:A:1225:ILE:C	2.38	0.44
1:A:1422:ILE:CD1	2:B:1156:THR:HG23	2.48	0.44
2:B:76:THR:H	2:B:79:ASP:HB2	1.82	0.44
2:B:304:PHE:O	2:B:307:GLU:HG2	2.17	0.44
2:B:564:LYS:HB3	2:B:564:LYS:HE2	1.69	0.44
2:B:967:ALA:HB3	2:B:983:ARG:H	1.82	0.44
2:B:993:GLY:HA2	2:B:1005:ILE:HG23	1.99	0.44
4:D:144:GLN:NE2	4:D:180:ASP:OD1	2.51	0.44
1:A:176:ARG:HE	9:I:120:PRO:CD	2.27	0.44
1:A:967:PHE:HE1	1:A:1027:ARG:HE	1.65	0.44
1:A:1176:ILE:HG13	1:A:1225:ILE:HD11	1.99	0.44
3:C:257:TYR:CD2	3:C:340:ILE:HD12	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:500:ILE:HG21	9:I:1210:ILE:HD13	2.00	0.44
2:B:1007:ALA:O	2:B:1008:LEU:HB2	2.18	0.44
3:C:169:ILE:HG12	3:C:172:LYS:HG2	2.00	0.44
4:D:34:MET:HE2	4:D:34:MET:HB2	1.93	0.44
6:F:235:LYS:H	6:F:235:LYS:HG2	1.64	0.44
6:F:292:MET:O	6:F:296:LEU:HG	2.17	0.44
6:F:297:LEU:O	6:F:301:ILE:HG12	2.18	0.44
1:A:814:ASN:HD21	1:A:1061:HIS:HB3	1.82	0.43
1:A:1402:SER:O	1:A:1402:SER:OG	2.26	0.43
2:B:227:ILE:HB	2:B:250:TYR:HD1	1.83	0.43
2:B:820:ASP:HB3	2:B:823:ARG:HG2	2.00	0.43
4:D:71:MET:HE2	4:D:75:LEU:HG	1.99	0.43
7:G:84:ILE:CG2	7:G:86:ILE:HD13	2.48	0.43
9:I:897:ARG:HB2	9:I:904:LEU:HD13	2.00	0.43
9:I:951:VAL:O	9:I:958:TYR:HB3	2.17	0.43
1:A:781:GLU:OE1	2:B:767:ARG:NH2	2.43	0.43
1:A:1152:VAL:HA	1:A:1155:MET:HB2	2.01	0.43
9:I:102:ARG:HA	9:I:103:PRO:HD3	1.87	0.43
1:A:814:ASN:ND2	1:A:1061:HIS:HB3	2.34	0.43
2:B:51:MET:HE2	2:B:51:MET:HA	2.00	0.43
2:B:244:SER:HB2	2:B:262:SER:HB2	2.00	0.43
2:B:294:ASP:HB2	2:B:608:VAL:HG21	1.99	0.43
6:F:182:VAL:HG23	6:F:240:LEU:HG	2.00	0.43
6:F:219:ASP:OD1	6:F:220:LEU:N	2.52	0.43
1:A:90:GLU:HG3	1:A:94:TRP:HD1	1.84	0.43
2:B:82:ARG:NH2	2:B:455:GLU:OE1	2.37	0.43
2:B:477:ASP:OD1	2:B:480:ARG:NH2	2.51	0.43
2:B:717:GLN:NE2	2:B:721:ASP:OD1	2.52	0.43
4:D:17:ARG:HB2	4:D:19:MET:HE2	1.99	0.43
4:D:52:ILE:HB	4:D:85:TYR:H	1.84	0.43
4:D:83:LYS:HB2	4:D:85:TYR:CE2	2.53	0.43
1:A:777:ARG:NH2	7:G:63:ASP:OD2	2.50	0.43
2:B:458:THR:OG1	2:B:459:GLN:N	2.51	0.43
2:B:474:THR:O	2:B:476:SER:N	2.45	0.43
2:B:881:PHE:HB3	2:B:986:TYR:HB2	2.01	0.43
3:C:304:ASP:OD1	3:C:304:ASP:N	2.46	0.43
6:F:205:LYS:HE3	6:F:205:LYS:HB3	1.90	0.43
9:I:226:MET:HE3	9:I:229:ARG:HH21	1.83	0.43
1:A:182:VAL:HG21	1:A:192:HIS:CD2	2.53	0.43
1:A:649:PHE:HB3	2:B:855:ILE:HG13	2.00	0.43
1:A:793:ILE:HD12	1:A:793:ILE:HA	1.91	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:I:102:ARG:HH22	9:I:104:SER:HB3	1.84	0.43
1:A:376:CYS:SG	1:A:405:LEU:HD11	2.59	0.43
2:B:455:GLU:OE1	2:B:455:GLU:N	2.23	0.43
2:B:1224:ARG:HG3	2:B:1230:ILE:HD12	2.00	0.43
4:D:5:LYS:HE3	4:D:5:LYS:HB3	1.90	0.43
4:D:19:MET:HB3	4:D:45:ALA:HB1	2.00	0.43
1:A:92:ARG:HB2	1:A:154:PHE:CZ	2.54	0.43
1:A:1422:ILE:HD13	2:B:1156:THR:HG23	1.99	0.43
2:B:610:LYS:HD3	2:B:610:LYS:N	2.33	0.43
2:B:957:TYR:CZ	2:B:959:PHE:HB2	2.54	0.43
3:C:255:LYS:O	3:C:258:GLU:HG3	2.18	0.43
9:I:229:ARG:NH1	9:I:230:LYS:HB2	2.33	0.43
1:A:102:CYS:HB3	1:A:137:CYS:SG	2.58	0.43
1:A:1145:TYR:CG	1:A:1146:PRO:HD2	2.53	0.43
2:B:30:ILE:HD11	2:B:774:VAL:HB	2.01	0.43
2:B:56:PRO:HA	2:B:94:VAL:HG11	2.00	0.43
2:B:453:ALA:O	2:B:457:LEU:HD12	2.19	0.43
2:B:953:ARG:HD3	2:B:953:ARG:HA	1.79	0.43
2:B:1203:VAL:HA	6:F:143:PRO:HD3	1.99	0.43
6:F:166:VAL:HG22	6:F:292:MET:HG2	2.00	0.43
6:F:182:VAL:O	6:F:185:ILE:HG22	2.18	0.43
1:A:34:LEU:HD13	1:A:46:TYR:HE2	1.84	0.43
1:A:46:TYR:CZ	1:A:212:ILE:HG12	2.54	0.43
1:A:236:LYS:HB3	1:A:263:ILE:CD1	2.49	0.43
2:B:538:ARG:O	2:B:542:MET:HG2	2.19	0.43
2:B:901:PRO:O	2:B:904:THR:OG1	2.35	0.43
4:D:33:GLN:HA	4:D:33:GLN:OE1	2.19	0.43
6:F:299:GLU:HA	6:F:302:ASN:OD1	2.19	0.43
9:I:112:ILE:O	9:I:183:LYS:NZ	2.52	0.43
9:I:145:MET:H	9:I:145:MET:HG2	1.69	0.43
1:A:512:ARG:HA	1:A:602:VAL:HG12	2.00	0.42
2:B:78:ILE:HD12	2:B:78:ILE:HA	1.82	0.42
2:B:460:ARG:CZ	2:B:464:GLU:HG2	2.49	0.42
5:E:136:TRP:HB3	5:E:141:MET:SD	2.59	0.42
9:I:864:TYR:O	9:I:875:GLU:HA	2.19	0.42
1:A:1122:PHE:CE2	1:A:1199:LEU:HD11	2.53	0.42
2:B:1176:ILE:HD11	2:B:1209:MET:CG	2.49	0.42
9:I:178:GLN:HE21	9:I:192:THR:HG23	1.84	0.42
9:I:179:GLU:OE1	9:I:179:GLU:N	2.52	0.42
9:I:196:ILE:O	9:I:200:THR:HG22	2.18	0.42
9:I:693:VAL:HG11	9:I:782:TYR:CE2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:276:SER:O	1:A:280:THR:OG1	2.19	0.42
1:A:1333:GLN:HA	1:A:1336:ILE:HD12	2.02	0.42
2:B:863:ASP:OD2	9:I:1249:GLN:HG2	2.19	0.42
2:B:1202:ASP:OD1	2:B:1203:VAL:N	2.43	0.42
5:E:93:THR:OG1	5:E:94:MET:N	2.52	0.42
6:F:156:ILE:HG22	6:F:158:LYS:H	1.84	0.42
6:F:241:SER:HA	6:F:244:TYR:CD1	2.53	0.42
1:A:351:ALA:H	1:A:469:TRP:HB2	1.84	0.42
1:A:1167:PRO:HA	1:A:1168:PRO:HD3	1.91	0.42
3:C:152:LEU:HD21	3:C:158:LEU:HB2	2.00	0.42
6:F:101:LEU:HD12	6:F:101:LEU:HA	1.82	0.42
2:B:27:LEU:HD11	2:B:1064:LEU:HD11	2.01	0.42
2:B:498:ARG:HD2	2:B:499:PRO:HD2	2.01	0.42
2:B:537:GLU:O	2:B:541:MET:HG2	2.20	0.42
3:C:25:ALA:O	3:C:29:LEU:HD23	2.20	0.42
5:E:124:LYS:HD2	5:E:124:LYS:HA	1.60	0.42
1:A:1:MET:HB3	1:A:2:GLU:H	1.68	0.42
1:A:35:PHE:HE2	1:A:212:ILE:HG21	1.83	0.42
1:A:119:LYS:HE3	1:A:119:LYS:HB2	1.77	0.42
1:A:371:ARG:HA	1:A:371:ARG:HD3	1.71	0.42
2:B:276:PHE:CE1	2:B:390:LEU:HD23	2.54	0.42
2:B:710:GLN:NE2	2:B:761:HIS:O	2.42	0.42
9:I:1076:PHE:HD1	9:I:1172:GLU:HG2	1.84	0.42
1:A:59:CYS:O	1:A:61:THR:N	2.46	0.42
2:B:167:ASN:HA	2:B:172:HIS:CG	2.54	0.42
2:B:433:PHE:O	2:B:437:VAL:HB	2.18	0.42
2:B:460:ARG:HH21	2:B:464:GLU:N	2.17	0.42
7:G:2:LYS:HZ2	7:G:30:VAL:HG11	1.84	0.42
9:I:93:SER:HB2	9:I:96:LYS:HB3	2.00	0.42
1:A:619:LEU:O	1:A:623:ARG:HG2	2.20	0.42
1:A:1432:ASP:OD2	5:E:139:ARG:NH2	2.36	0.42
2:B:432:ILE:HD11	5:E:10:ILE:HD11	2.01	0.42
9:I:1076:PHE:CZ	9:I:1152:LEU:HD22	2.55	0.42
9:I:1100:VAL:HG13	9:I:1103:LEU:HD12	2.01	0.42
2:B:94:VAL:HA	2:B:129:ASN:O	2.20	0.42
4:D:94:LYS:HB3	4:D:95:PRO:HD3	2.01	0.42
6:F:39:CYS:HA	6:F:44:PHE:HA	2.00	0.42
1:A:265:GLN:O	1:A:265:GLN:NE2	2.51	0.42
1:A:1052:PRO:HG2	1:A:1348:PRO:HD3	2.02	0.42
2:B:331:LYS:N	2:B:331:LYS:HD2	2.33	0.42
2:B:404:VAL:HG13	7:G:52:LYS:HG3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:424:SER:HB3	2:B:504:VAL:HA	2.01	0.42
2:B:924:GLY:N	2:B:965:VAL:O	2.29	0.42
3:C:290:ILE:HD13	3:C:290:ILE:HA	1.87	0.42
6:F:183:ASN:HA	6:F:186:GLU:OE1	2.20	0.42
1:A:3:ALA:O	2:B:1209:MET:HE3	2.20	0.41
1:A:340:TYR:CZ	1:A:344:PHE:HB3	2.55	0.41
1:A:528:MET:HG2	1:A:541:PHE:CD2	2.55	0.41
2:B:69:TYR:CD1	2:B:87:ILE:HD12	2.55	0.41
4:D:83:LYS:HB2	4:D:85:TYR:CZ	2.55	0.41
9:I:1029:ILE:HD11	9:I:1034:ILE:HG12	2.02	0.41
1:A:93:ARG:NH1	1:A:121:LEU:HD12	2.35	0.41
1:A:521:VAL:HG21	1:A:549:LEU:HD13	2.03	0.41
2:B:164:ARG:NH2	2:B:184:GLU:HB3	2.34	0.41
2:B:277:ARG:HA	2:B:280:GLY:O	2.20	0.41
2:B:328:ASN:O	2:B:332:ILE:HG13	2.20	0.41
2:B:436:SER:OG	2:B:477:ASP:HB3	2.19	0.41
4:D:102:ILE:HD12	4:D:102:ILE:H	1.83	0.41
1:A:1151:ASP:OD2	1:A:1177:ARG:HD2	2.20	0.41
2:B:74:ASP:N	2:B:74:ASP:OD1	2.52	0.41
2:B:281:MET:O	2:B:287:ILE:HD11	2.19	0.41
2:B:318:PRO:HB2	2:B:319:ILE:HD13	2.02	0.41
2:B:534:LYS:HB2	9:I:1227:LEU:HB2	2.02	0.41
2:B:920:PHE:CE2	2:B:934:ILE:HG22	2.55	0.41
5:E:122:CYS:HA	5:E:133:VAL:HG12	2.02	0.41
6:F:325:ASN:O	6:F:325:ASN:ND2	2.52	0.41
6:F:326:ILE:O	6:F:330:ILE:HG22	2.20	0.41
9:I:80:ARG:HD2	9:I:80:ARG:HA	1.68	0.41
9:I:691:ALA:O	9:I:695:ARG:HG3	2.20	0.41
9:I:788:TYR:HB2	9:I:795:PHE:CZ	2.55	0.41
2:B:18:ASN:ND2	2:B:711:ASN:OD1	2.53	0.41
2:B:67:ILE:HD12	2:B:68:THR:H	1.84	0.41
2:B:815:TRP:CG	2:B:816:PRO:HD3	2.54	0.41
6:F:161:PHE:CG	6:F:260:PRO:HA	2.56	0.41
1:A:70:MET:SD	2:B:1214:ARG:NH1	2.94	0.41
1:A:1374:LEU:HD11	1:A:1384:LEU:HD21	2.02	0.41
4:D:106:ILE:HD12	4:D:106:ILE:HA	1.84	0.41
6:F:221:LYS:O	6:F:223:TRP:N	2.46	0.41
9:I:90:PRO:HD2	9:I:109:ILE:HG22	2.02	0.41
1:A:524:LYS:HE3	1:A:541:PHE:HB3	2.02	0.41
1:A:1233:ARG:O	1:A:1233:ARG:NE	2.53	0.41
2:B:495:VAL:HG12	2:B:500:ILE:HG12	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:227:PRO:HG2	3:C:230:HIS:HB2	2.01	0.41
3:C:274:GLU:C	3:C:276:LYS:H	2.23	0.41
6:F:174:GLN:O	6:F:178:LEU:HD22	2.20	0.41
1:A:376:CYS:HB2	1:A:406:TYR:O	2.21	0.41
1:A:1431:MET:SD	6:F:59:ILE:HD11	2.61	0.41
2:B:357:VAL:CG1	9:I:1182:LEU:HD22	2.51	0.41
2:B:435:THR:HG23	2:B:496:ARG:HD3	2.03	0.41
2:B:445:PHE:HE2	2:B:466:PHE:CD2	2.39	0.41
2:B:881:PHE:HB2	2:B:988:ARG:HG3	2.01	0.41
9:I:207:TYR:O	9:I:211:ARG:HD3	2.21	0.41
1:A:354:VAL:N	1:A:403:ASP:O	2.41	0.41
1:A:934:VAL:HB	1:A:1005:GLU:HG3	2.03	0.41
5:E:83:ARG:HD3	5:E:115:ILE:HG13	2.03	0.41
6:F:141:TYR:CE1	6:F:148:ALA:HB2	2.55	0.41
1:A:295:PRO:HB2	1:A:296:ALA:H	1.65	0.41
1:A:930:VAL:HG21	1:A:1001:LEU:HD22	2.03	0.41
1:A:1441:LYS:HB3	1:A:1441:LYS:HE3	1.71	0.41
2:B:350:TYR:HA	9:I:1193:ILE:HG12	2.03	0.41
2:B:1180:CYS:C	2:B:1182:ASN:H	2.23	0.41
3:C:5:PHE:HB3	3:C:353:ASN:CB	2.51	0.41
8:H:45:ALA:HA	9:I:821:PHE:HD1	1.85	0.41
8:H:47:LEU:O	8:H:47:LEU:HD13	2.21	0.41
2:B:789:ALA:HB3	2:B:1062:ALA:HB2	2.02	0.41
2:B:829:ASN:HD21	2:B:845:ASN:HA	1.85	0.41
3:C:350:LEU:HD23	3:C:350:LEU:HA	1.94	0.41
8:H:48:GLN:NE2	9:I:821:PHE:HB3	2.35	0.41
1:A:189:LYS:NZ	5:E:42:SER:HA	2.35	0.40
1:A:1393:GLN:HB2	5:E:20:GLU:OE1	2.21	0.40
2:B:831:MET:O	8:H:72:THR:HB	2.22	0.40
2:B:1089:PHE:CE2	2:B:1096:TYR:HB3	2.55	0.40
3:C:246:ILE:HD12	3:C:347:PHE:CE1	2.56	0.40
1:A:362:LEU:HA	1:A:365:TYR:HD2	1.87	0.40
1:A:398:ARG:HA	1:A:398:ARG:HD2	1.89	0.40
1:A:495:PRO:O	1:A:611:GLY:HA2	2.21	0.40
1:A:1145:TYR:CD1	1:A:1146:PRO:HD2	2.56	0.40
2:B:919:GLY:O	2:B:935:GLY:N	2.54	0.40
1:A:357:TYR:HB2	5:E:99:TYR:O	2.21	0.40
2:B:117:ALA:HA	2:B:122:LEU:HB2	2.04	0.40
2:B:281:MET:HG3	2:B:286:SER:HB3	2.03	0.40
2:B:284:ASP:O	2:B:288:ILE:HG12	2.21	0.40
1:A:273:ASP:HB3	1:A:298:SER:HB3	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:262:SER:HB3	2:B:371:ILE:HD11	2.02	0.40
2:B:425:LEU:HD21	2:B:486:ILE:HD11	2.04	0.40
2:B:439:ALA:HB3	2:B:440:PRO:HD2	2.02	0.40
2:B:699:LYS:HA	2:B:699:LYS:HD3	1.90	0.40
3:C:96:ARG:NH2	3:C:148:GLU:O	2.28	0.40
7:G:7:CYS:HG	9:I:1078:TYR:HD1	1.66	0.40
9:I:90:PRO:HB3	9:I:127:ILE:HG21	2.02	0.40
9:I:128:TYR:CG	9:I:128:TYR:O	2.74	0.40
9:I:951:VAL:HG13	9:I:952:LYS:N	2.37	0.40
1:A:67:LYS:HE2	1:A:67:LYS:HB2	1.91	0.40
1:A:225:ASP:OD1	1:A:228:ASN:ND2	2.54	0.40
1:A:746:ILE:HG23	1:A:750:ALA:HB3	2.04	0.40
2:B:102:ARG:NH2	2:B:107:GLY:O	2.55	0.40
2:B:304:PHE:CE2	2:B:402:MET:HG3	2.57	0.40
2:B:904:THR:HG22	2:B:905:LYS:N	2.36	0.40
6:F:145:ARG:HA	6:F:145:ARG:HD2	1.71	0.40
6:F:273:GLN:OE1	6:F:276:ASN:N	2.54	0.40
6:F:309:ASP:N	6:F:309:ASP:OD1	2.55	0.40
9:I:1177:ILE:O	9:I:1181:LYS:N	2.41	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	1407/1441 (98%)	1351 (96%)	51 (4%)	5 (0%)	30	49
2	B	1222/1235 (99%)	1130 (92%)	86 (7%)	6 (0%)	25	43
3	C	356/358 (99%)	338 (95%)	18 (5%)	0	100	100
4	D	203/205 (99%)	196 (97%)	7 (3%)	0	100	100
5	E	125/139 (90%)	108 (86%)	17 (14%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	F	332/334 (99%)	298 (90%)	30 (9%)	4 (1%)	11	23
7	G	103/105 (98%)	95 (92%)	7 (7%)	1 (1%)	13	26
8	H	65/80 (81%)	59 (91%)	6 (9%)	0	100	100
9	I	630/1170 (54%)	588 (93%)	40 (6%)	2 (0%)	37	55
All	All	4443/5067 (88%)	4163 (94%)	262 (6%)	18 (0%)	32	49

All (18) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	582	MET
2	B	421	SER
2	B	1162	GLN
2	B	1202	ASP
9	I	94	GLU
6	F	70	MET
7	G	34	SER
1	A	277	THR
2	B	475	ALA
6	F	100	ILE
6	F	138	SER
6	F	45	ILE
9	I	183	LYS
1	A	283	GLY
1	A	1143	VAL
2	B	1145	LEU
1	A	1100	ASN
2	B	934	ILE

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	1250/1270 (98%)	1200 (96%)	50 (4%)	27	51
2	B	1066/1074 (99%)	1022 (96%)	44 (4%)	26	50

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
3	C	327/327 (100%)	312 (95%)	15 (5%)	23	44
4	D	185/185 (100%)	173 (94%)	12 (6%)	14	29
5	E	119/129 (92%)	113 (95%)	6 (5%)	20	40
6	F	308/308 (100%)	283 (92%)	25 (8%)	9	20
7	G	96/96 (100%)	90 (94%)	6 (6%)	15	30
8	H	61/70 (87%)	59 (97%)	2 (3%)	33	59
9	I	572/1057 (54%)	534 (93%)	38 (7%)	14	28
All	All	3984/4516 (88%)	3786 (95%)	198 (5%)	23	40

All (198) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	82	VAL
1	A	92	ARG
1	A	111	ARG
1	A	135	TYR
1	A	152	PHE
1	A	180	ASP
1	A	236	LYS
1	A	257	ASP
1	A	274	SER
1	A	302	ARG
1	A	336	ASP
1	A	340	TYR
1	A	371	ARG
1	A	391	GLU
1	A	399	LEU
1	A	407	ARG
1	A	417	PHE
1	A	476	GLU
1	A	502	ASP
1	A	519	LYS
1	A	522	MET
1	A	558	MET
1	A	581	TYR
1	A	679	GLU
1	A	699	ASP
1	A	702	GLU
1	A	739	LYS
1	A	747	HIS

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Mol	Chain	Res	Type
1	A	881	GLU
1	A	901	LEU
1	A	955	LYS
1	A	1030	TYR
1	A	1051	GLU
1	A	1061	HIS
1	A	1102	GLU
1	A	1122	PHE
1	A	1153	GLU
1	A	1178	LEU
1	A	1185	MET
1	A	1240	MET
1	A	1242	THR
1	A	1252	ASP
1	A	1254	LEU
1	A	1308	ASN
1	A	1316	SER
1	A	1346	LYS
1	A	1355	MET
1	A	1358	ASP
1	A	1362	ARG
1	A	1402	SER
2	B	119	LEU
2	B	164	ARG
2	B	177	THR
2	B	220	MET
2	B	242	ASN
2	B	269	ARG
2	B	295	LEU
2	B	317	ASP
2	B	331	LYS
2	B	338	GLU
2	B	350	TYR
2	B	358	GLN
2	B	401	ILE
2	B	403	ASN
2	B	413	TYR
2	B	458	THR
2	B	460	ARG
2	B	477	ASP
2	B	496	ARG
2	B	527	HIS

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Mol	Chain	Res	Type
2	B	528	ASN
2	B	534	LYS
2	B	536	THR
2	B	582	GLU
2	B	605	LYS
2	B	658	ASP
2	B	699	LYS
2	B	703	LYS
2	B	742	THR
2	B	765	VAL
2	B	823	ARG
2	B	884	GLU
2	B	914	GLU
2	B	969	MET
2	B	982	MET
2	B	1012	THR
2	B	1025	ASP
2	B	1059	ASP
2	B	1119	ARG
2	B	1137	ASP
2	B	1161	MET
2	B	1200	ASN
2	B	1211	ASP
2	B	1231	THR
3	C	27	LYS
3	C	29	LEU
3	C	46	ASP
3	C	52	ARG
3	C	128	ARG
3	C	180	VAL
3	C	200	MET
3	C	244	ARG
3	C	252	SER
3	C	257	TYR
3	C	258	GLU
3	C	275	GLU
3	C	285	ASP
3	C	337	GLU
3	C	341	GLN
4	D	4	GLN
4	D	34	MET
4	D	35	VAL

Continued from previous page...

Mol	Chain	Res	Type
4	D	41	PHE
4	D	70	ASP
4	D	80	ASN
4	D	101	ASN
4	D	119	ASN
4	D	120	ILE
4	D	167	SER
4	D	177	ARG
4	D	193	HIS
5	E	25	ASN
5	E	46	CYS
5	E	51	GLN
5	E	93	THR
5	E	98	LYS
5	E	114	LYS
6	F	17	THR
6	F	39	CYS
6	F	54	ARG
6	F	85	ASP
6	F	93	ILE
6	F	121	ASN
6	F	145	ARG
6	F	147	GLN
6	F	155	PHE
6	F	187	MET
6	F	198	LYS
6	F	204	GLU
6	F	205	LYS
6	F	210	TYR
6	F	215	ASP
6	F	221	LYS
6	F	235	LYS
6	F	244	TYR
6	F	245	ASP
6	F	292	MET
6	F	309	ASP
6	F	311	CYS
6	F	315	ASN
6	F	328	MET
6	F	334	LYS
7	G	9	SER
7	G	25	SER

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Mol	Chain	Res	Type
7	G	34	SER
7	G	35	GLN
7	G	40	SER
7	G	72	ASP
8	H	7	CYS
8	H	50	GLU
9	I	94	GLU
9	I	102	ARG
9	I	104	SER
9	I	105	THR
9	I	113	ASN
9	I	132	LEU
9	I	152	SER
9	I	154	GLU
9	I	155	THR
9	I	158	TYR
9	I	175	CYS
9	I	191	THR
9	I	211	ARG
9	I	229	ARG
9	I	684	ASP
9	I	686	MET
9	I	689	TYR
9	I	775	THR
9	I	780	ARG
9	I	794	ASN
9	I	834	GLN
9	I	836	THR
9	I	847	SER
9	I	875	GLU
9	I	876	ILE
9	I	888	ASP
9	I	983	LYS
9	I	1061	MET
9	I	1097	GLU
9	I	1101	LYS
9	I	1161	VAL
9	I	1192	MET
9	I	1198	PHE
9	I	1207	MET
9	I	1208	ASP
9	I	1214	SER

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Mol	Chain	Res	Type
9	I	1225	ASP
9	I	1226	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	360	ASN
1	A	385	GLN
1	A	667	GLN
1	A	721	ASN
1	A	959	GLN
1	A	1062	HIS
1	A	1078	GLN
1	A	1128	GLN
1	A	1349	ASN
2	B	334	GLN
2	B	1029	ASN
3	C	144	ASN
4	D	37	ASN
6	F	121	ASN
6	F	147	GLN
6	F	325	ASN
8	H	48	GLN
8	H	69	HIS
9	I	819	GLN
9	I	905	GLN
9	I	912	ASN
9	I	1085	HIS
9	I	1174	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 ⓘ

Of 8 ligands modelled in this entry, 8 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-38760. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections ⓘ
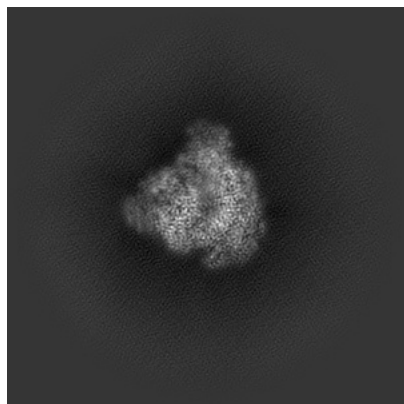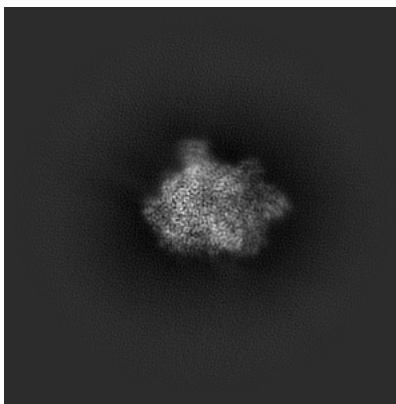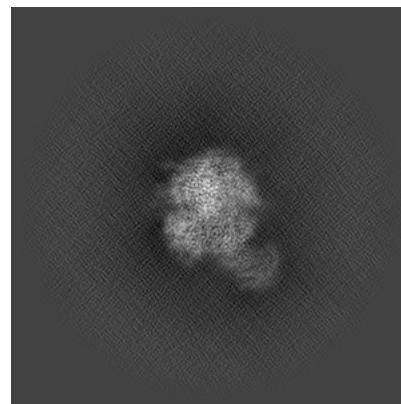
6.1.1 Primary map

X   Y   Z

6.1.2 Raw map

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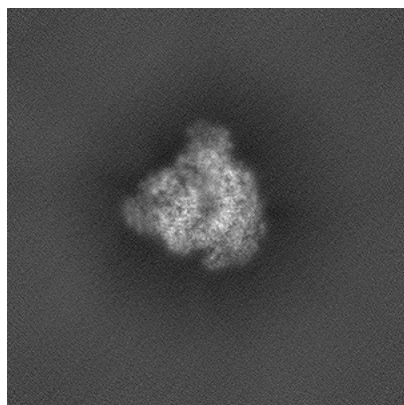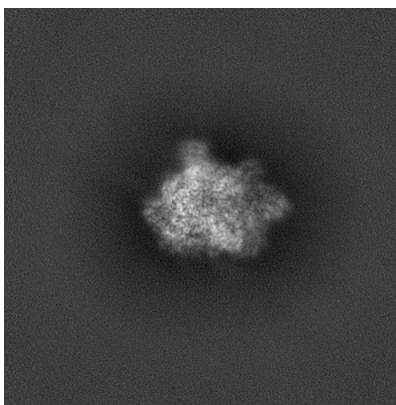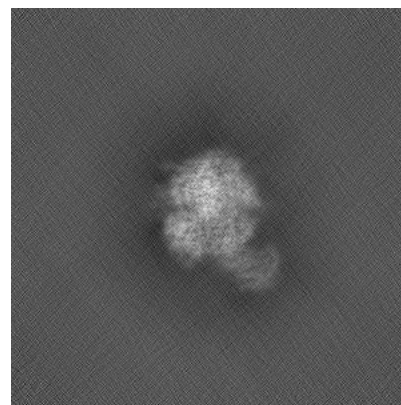
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
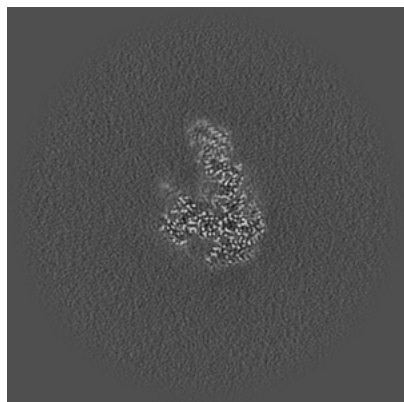
6.2.1 Primary map
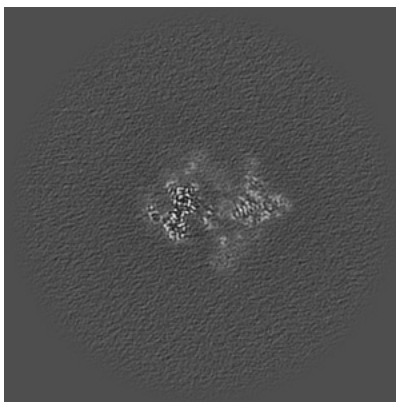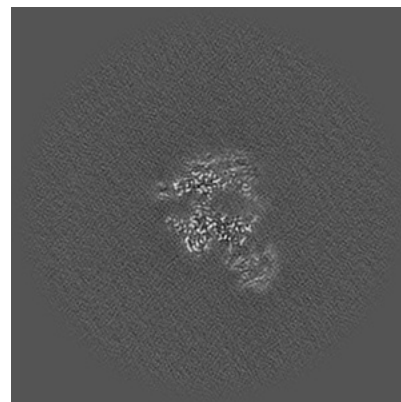
X Index: 256   Y Index: 256   Z Index: 256

6.2.2 Raw map
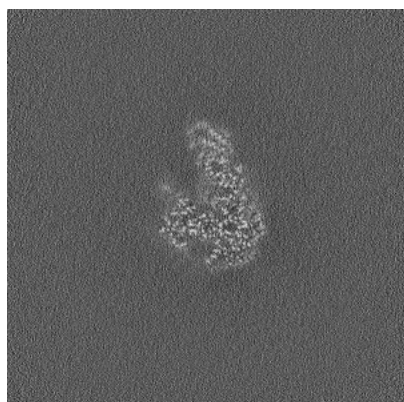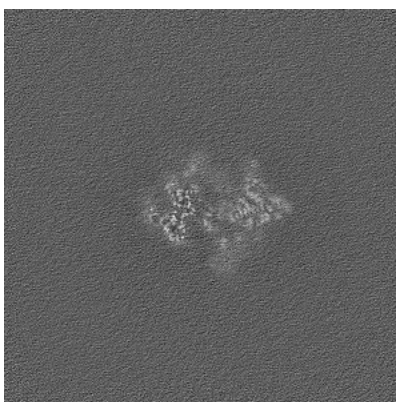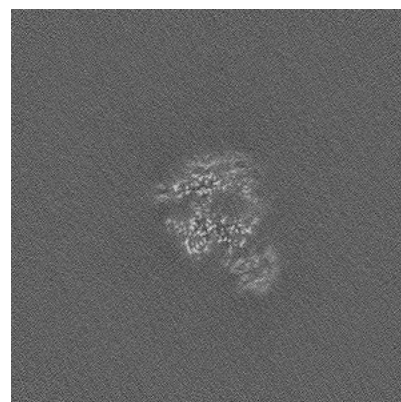
X Index: 256   Y Index: 256   Z Index: 256

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

6.3 Largest variance slices (i)

6.3.1 Primary map
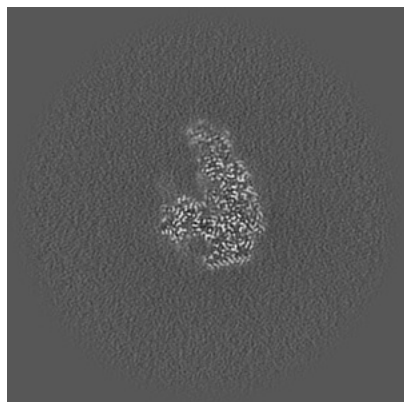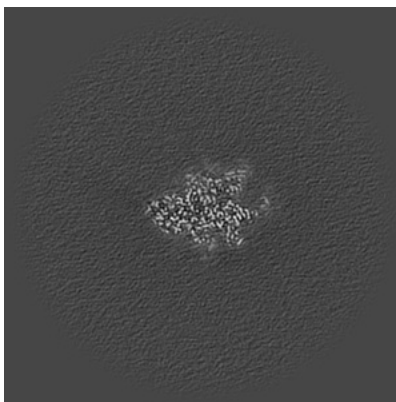
X Index: 252 | Y Index: 287 | Z Index: 236
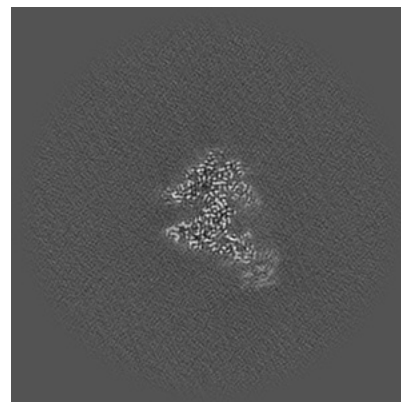
6.3.2 Raw map
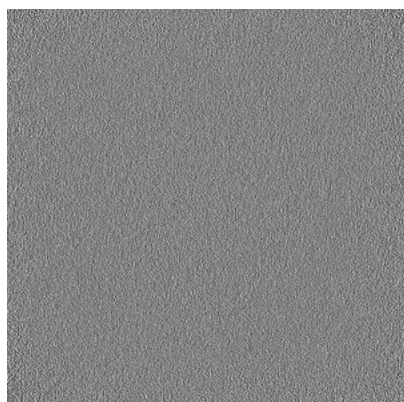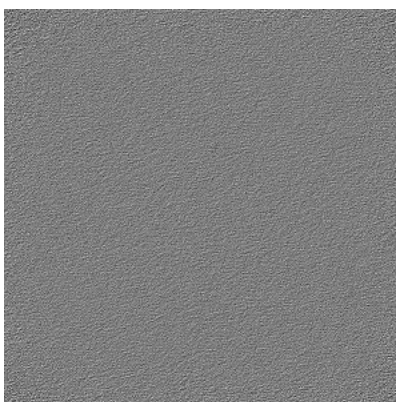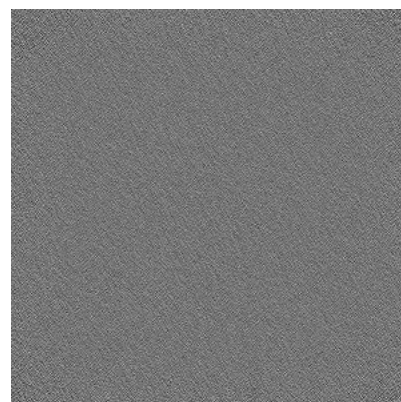
X Index: 0 | Y Index: 0 | Z Index: 0

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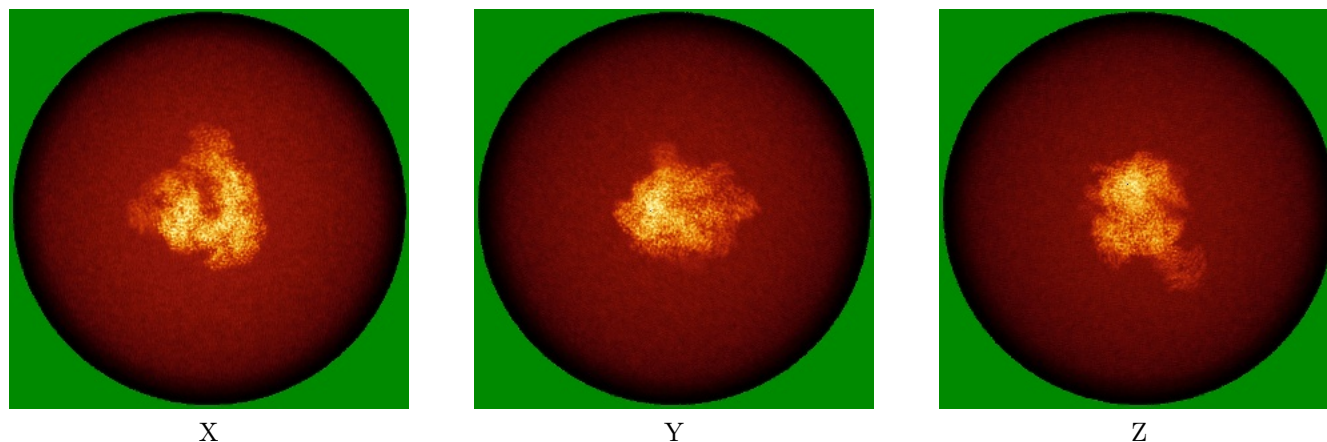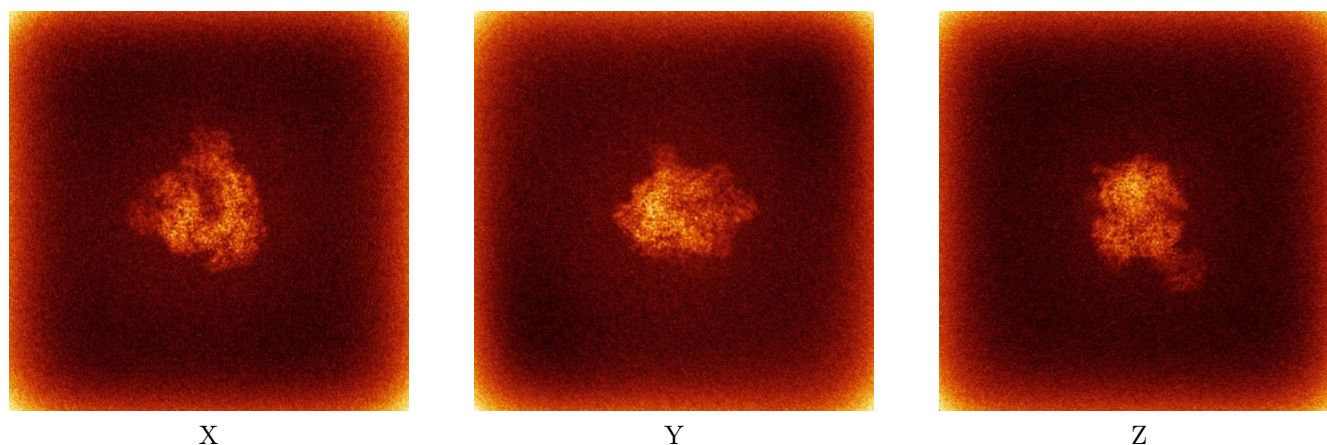
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ

6.5.1 Primary map

| X | Y | Z |
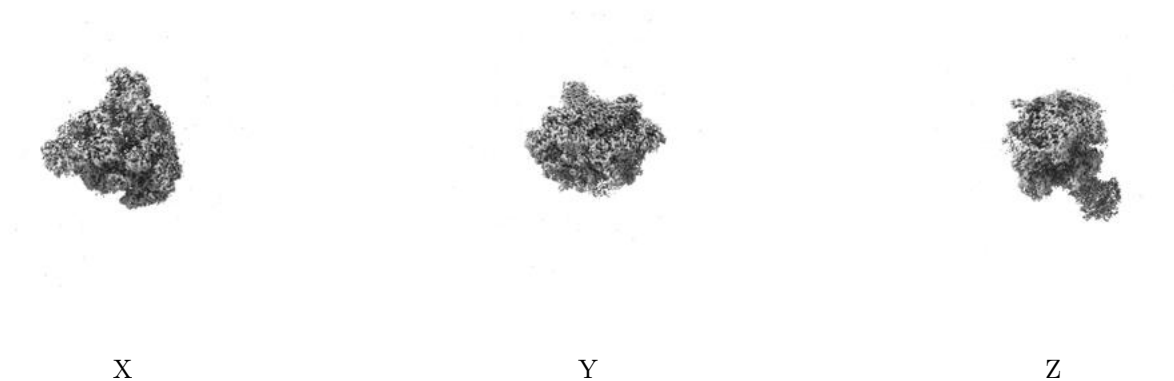
The images above show the 3D surface view of the map at the recommended contour level 0.4. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

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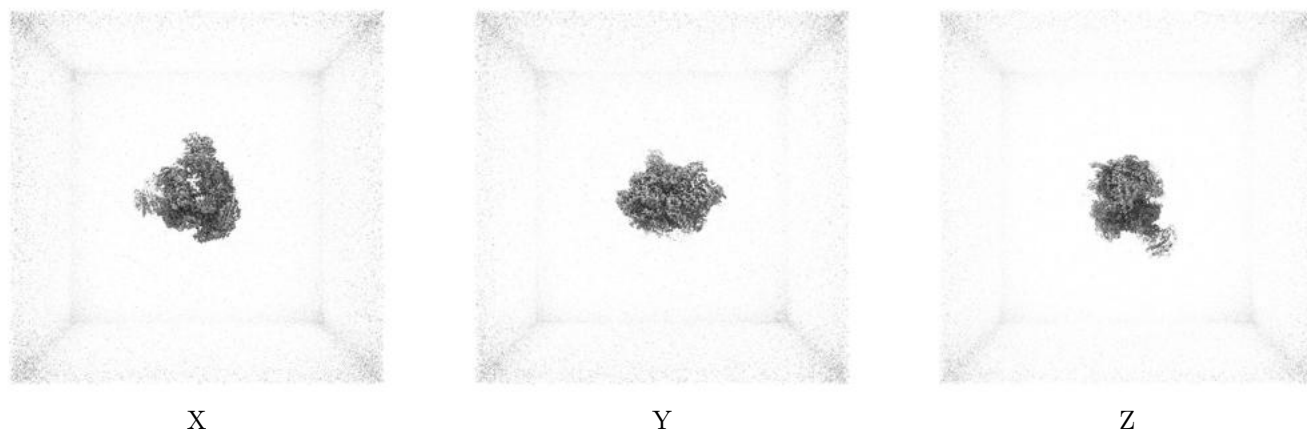
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

6.6 Mask visualisation ⓘ

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

A mask typically either:

- Encompasses the whole structure

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

6.6.1 emd_38760_msk_1.map ⓘ

X　　　　　　　　　　　　　Y　　　　　　　　　　　　　Z
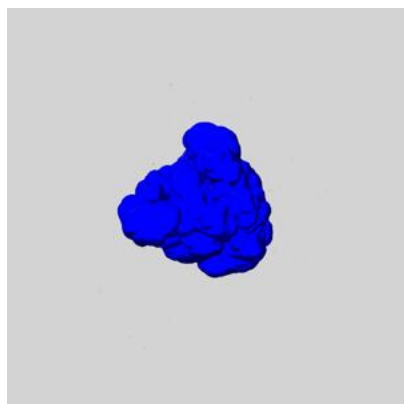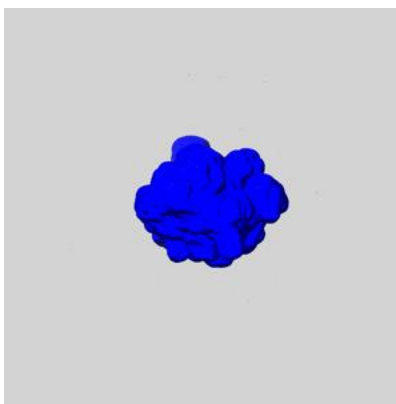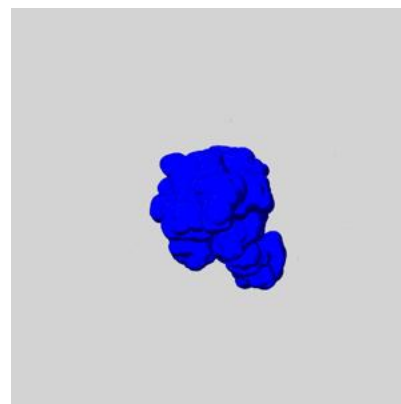
7 Map analysis ⓘ

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 ⓘ
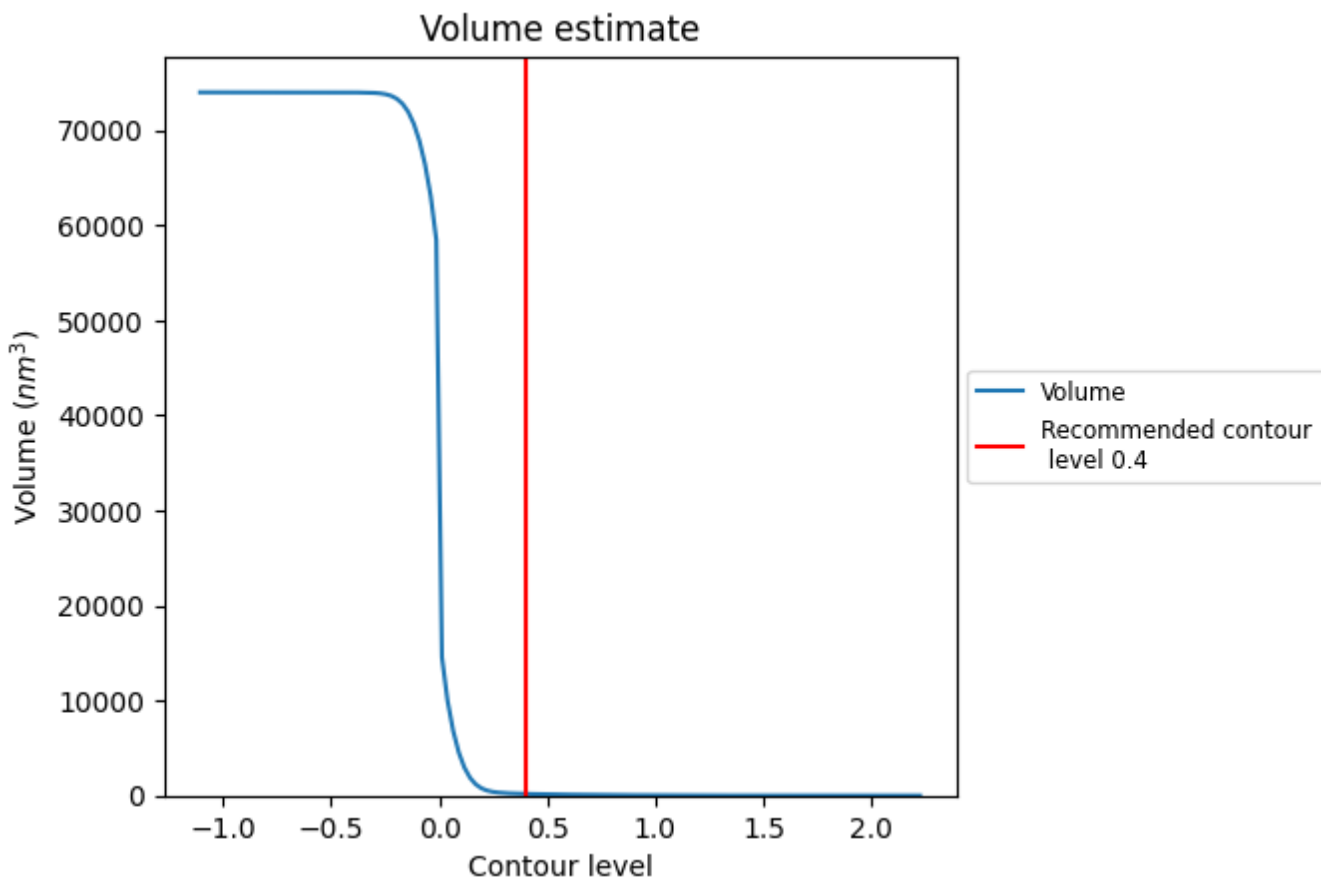
The volume at the recommended contour level is 179 nm^3; this corresponds to an approximate mass of 162 kDa.

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 ⓘ
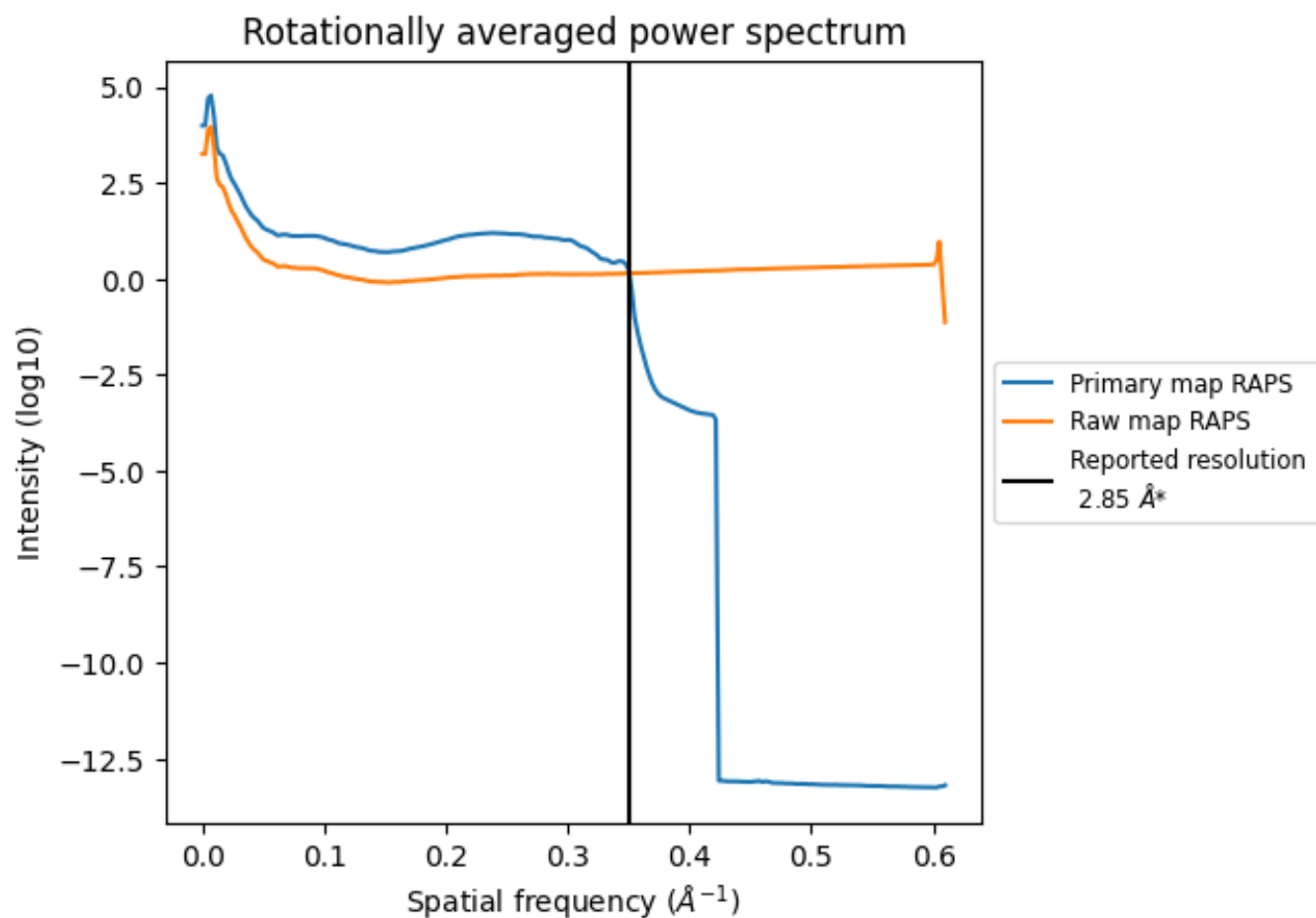
*Reported resolution corresponds to spatial frequency of 0.351 $Å^{-1}$

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 ⓘ
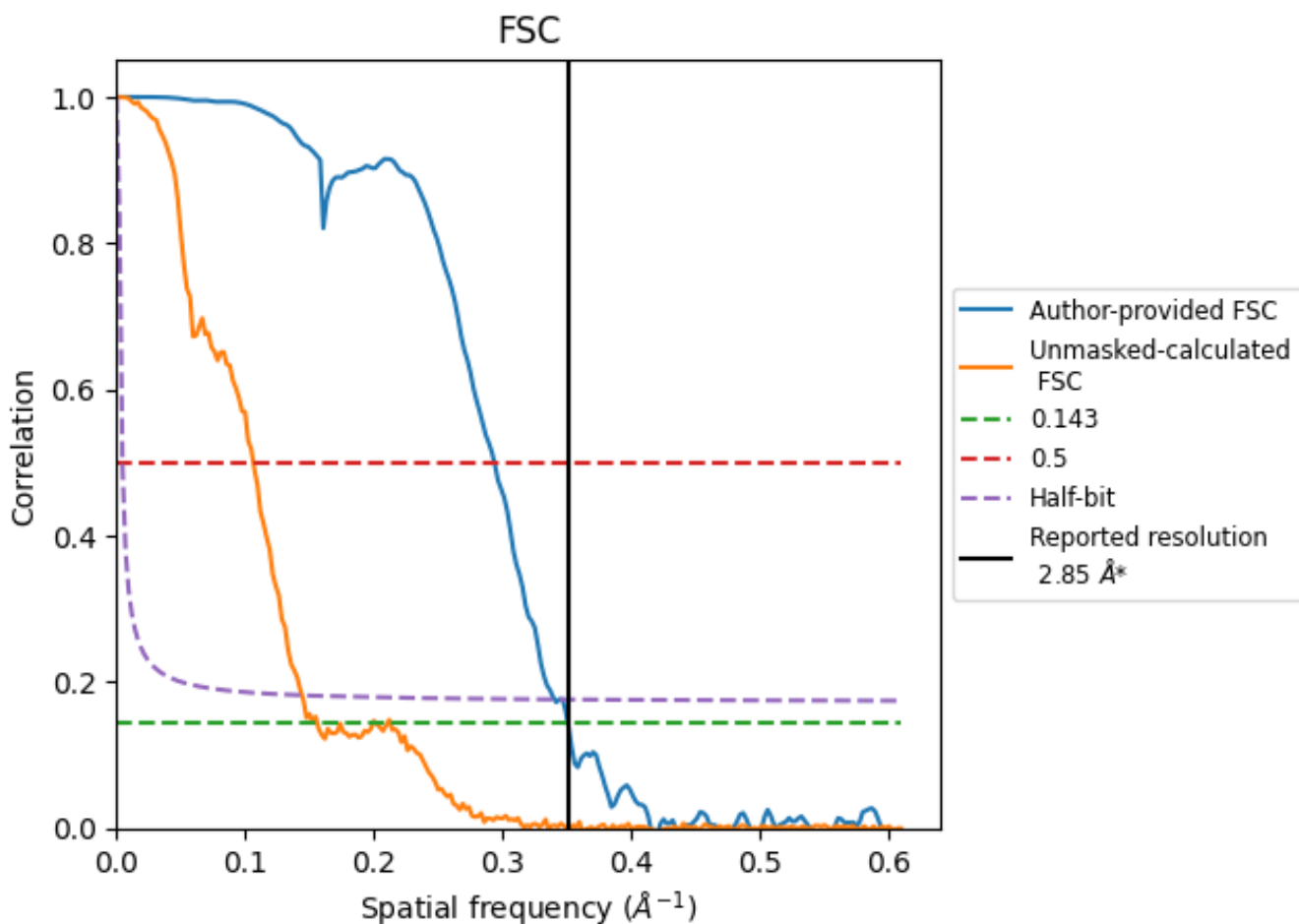
*Reported resolution corresponds to spatial frequency of 0.351 Å^{-1}

8.2　Resolution estimates ⓘ

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.85	-	-
Author-provided FSC curve	2.85	3.41	2.94
Unmasked-calculated*	6.41	9.40	6.93

*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 6.41 differs from the reported value 2.85 by more than 10 %

9 Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-38760 and PDB model 8XXT. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay ⓘ

| X | Y | Z |
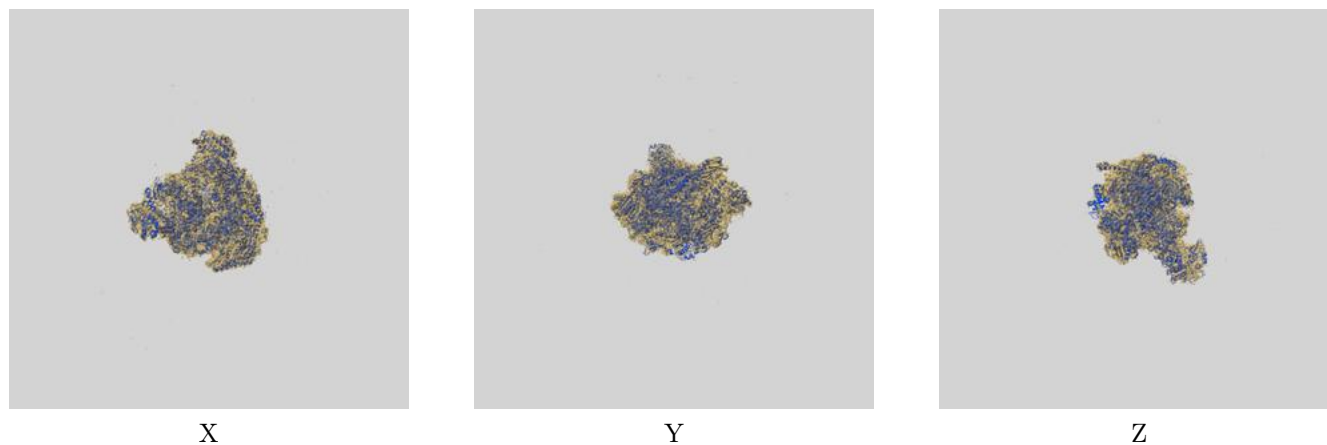
The images above show the 3D surface view of the map at the recommended contour level 0.4 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2   Q-score mapped to coordinate model ⓘ

X   Y   Z
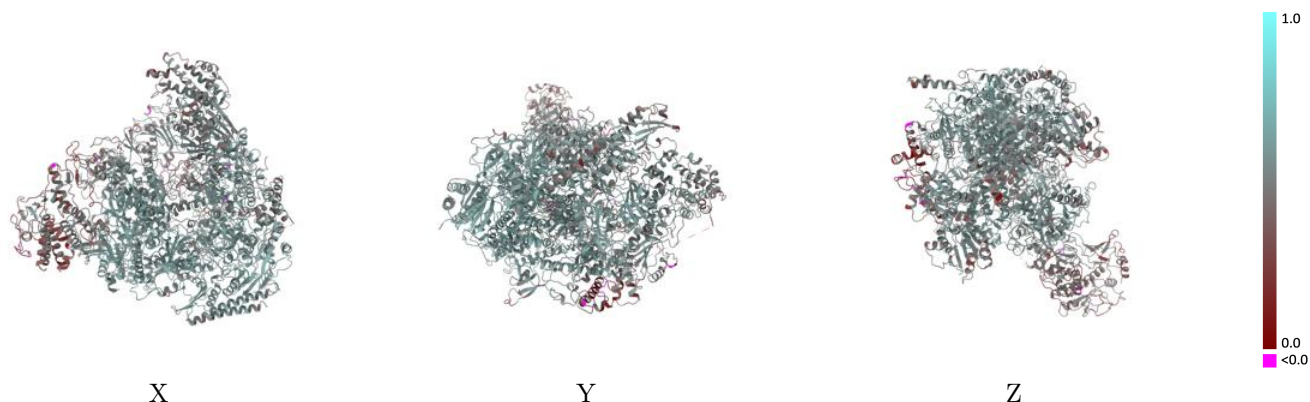
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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
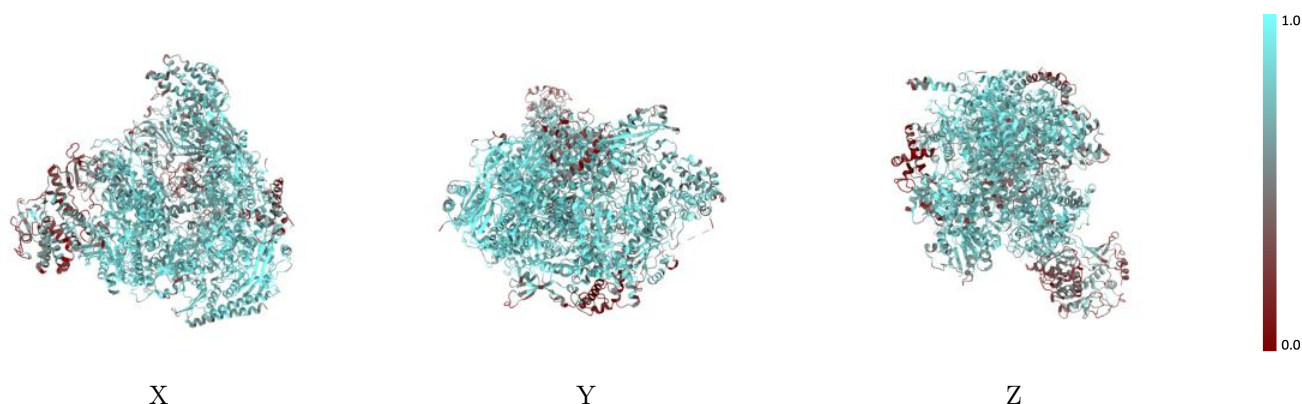
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.4).

9.4　Atom inclusion ⓘ
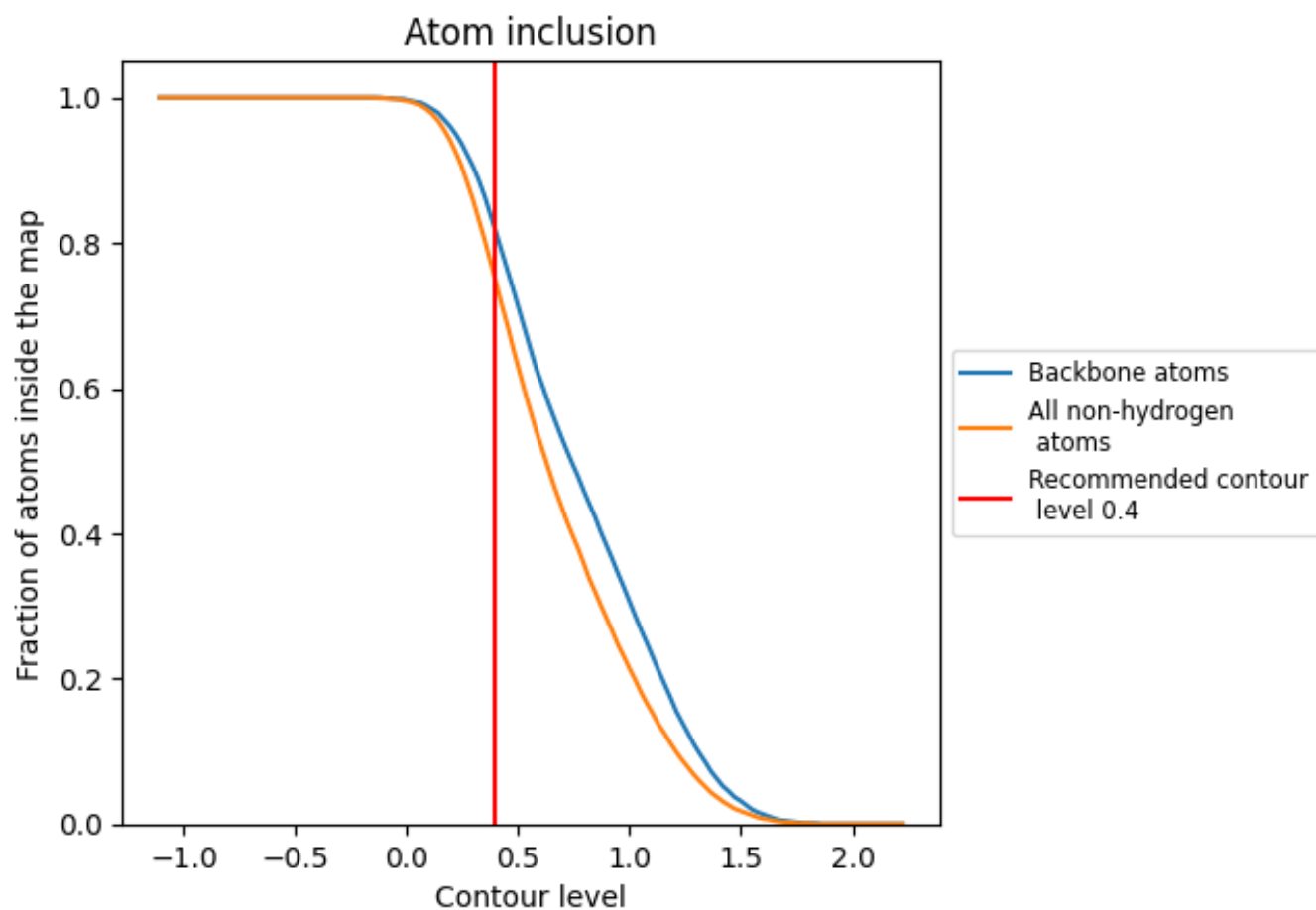
At the recommended contour level, 82% of all backbone atoms, 75% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7480	0.5250
A	0.8320	0.5600
B	0.8140	0.5490
C	0.8440	0.5700
D	0.7550	0.5130
E	0.7370	0.5400
F	0.5570	0.4370
G	0.7750	0.5230
H	0.8730	0.5620
I	0.4670	0.4200

1.0

0.0
<0.0