



## Full wwPDB EM Validation Report ⓘ

Dec 11, 2022 – 12:19 pm GMT

PDB ID : 6SCT  
EMDB ID : EMD-0126  
Title : Cryo-EM structure of the consensus triskelion hub of the clathrin coat complex  
Authors : Morris, K.L.; Cameron, A.D.; Sessions, R.; Smith, C.J.  
Deposited on : 2019-07-25  
Resolution : 4.69 Å (reported)

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev43  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.3

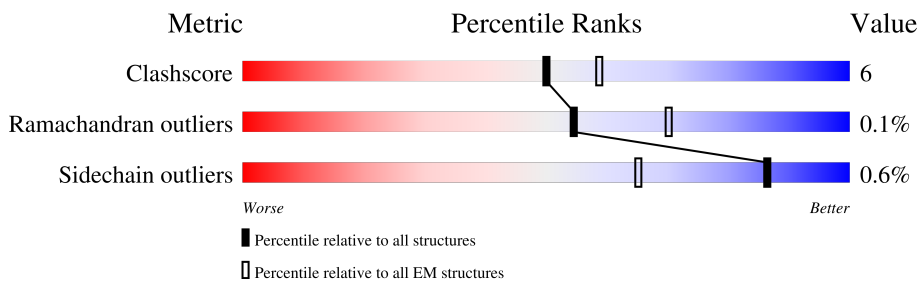
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 4.69 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1675	
1	B	1675	
1	C	1675	
1	F	1675	
1	G	1675	
1	H	1675	
1	K	1675	
1	L	1675	

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Mol	Chain	Length	Quality of chain
1	M	1675	
2	D	229	
2	E	229	
2	I	229	
2	J	229	
2	N	229	
2	O	229	

## 2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 40680 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 Clathrin heavy chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	379	Total 3168	C 2037	N 528	O 584	S 19	0	0
1	B	666	Total 5405	C 3438	N 927	O 1015	S 25	0	0
1	C	441	Total 3598	C 2293	N 615	O 675	S 15	0	0
1	F	379	Total 3168	C 2037	N 528	O 584	S 19	0	0
1	K	379	Total 3168	C 2037	N 528	O 584	S 19	0	0
1	G	666	Total 5405	C 3438	N 927	O 1015	S 25	0	0
1	L	666	Total 5405	C 3438	N 927	O 1015	S 25	0	0
1	H	441	Total 3598	C 2293	N 615	O 675	S 15	0	0
1	M	441	Total 3598	C 2293	N 615	O 675	S 15	0	0

- Molecule 2 is a protein called Clathrin light chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	D	104	Total 875	C 539	N 165	O 168	S 3	0	0
2	E	59	Total 514	C 312	N 101	O 101		0	0
2	J	59	Total 514	C 312	N 101	O 101		0	0
2	O	59	Total 514	C 312	N 101	O 101		0	0
2	I	104	Total 875	C 539	N 165	O 168	S 3	0	0
2	N	104	Total 875	C 539	N 165	O 168	S 3	0	0

























Y1451	F1391	K1331	Q1270	M1210	M1149	L1085	R1022	D901	S841	PHE
L1452	K1392	M1332	M1271	Y1211	V1150	I1086	N1023	S902	T842	ASP
R1453	D1393	R1333	C1272	D1212	E1151	E1087	N1026	R903	D843	GLN
S1454	I1394	E1334	G1273	A1213	L1152	H1088	N1026	R904	E244	VAL
V1455	I1395	H1335	L1274	A1214	L1153	I1089	L1027	V905	E344	HIS
Q1456	T1396	L1336	L1275	K1215	V1154	G1090	L1029	G906	L845	ASP
K1397	K1397	E1337	I1276	L1216	K1155	M1091	I1029	K907	V846	VAL
V1398	V1277	M1159	Q1158	L1217	Q1158	L1092	L1030	Y908	A847	PHE
H1458	L1278	M1159	M1159	L1218	M1159	D1093	L1030	Y908	LEU	
N1459	H1279	A1160	M1159	M1219	R1161	R1094	A1032	Y908	LEU	
M1460	A1280	A1160	R1161	M1220	R1161	A1095	A1032	Y908	LEU	
V1461	D1281	K1162	K1162	V1221	K1162	E1097	I1033	Y908	ALA	
S1462	L1283	K1163	K1163	M1223	K1163	F1098	A1035	Y908	ALA	
V1463	L1283	A1164	A1164	F1224	A1164	A1099	D1036	E910	ALA	
E1465	E1285	R1165	R1165	G1225	R1165	E1100	R1037	R852	ARG	
S1466	L1286	E1166	E1166	G1226	E1166	E1100	R1037	R853	GLN	
L1467	I1287	S1167	S1167	L1227	S1167	C1102	T1038	R854	THR	
M1468	M1288	V1168	V1168	L1228	V1168	C1102	T1038	L855	GLY	
N1469	M1289	Y1169	Y1169	A1228	Y1169	C1102	T1038	L856	GLN	
L1470	Y1290	E1170	E1170	S1229	E1170	E1104	E1042	L857	ILE	
F1471	Q1291	T1171	T1171	L1231	T1171	S1109	I1044	L858	ILE	
L1472	D1292	L1172	L1172	H1233	L1172	Q1110	R1045	L859	VAL	
E1473	R1293	L1173	L1173	H1233	L1173	Q1110	R1045	L860	VAL	
T1473	F1414	A1355	A1355	L1234	I1174	E1111	L1046	L861	VAL	
E1474	K1415	H1356	H1356	G1235	F1175	A1112	L1047	L862	VAL	
GLU	P1416	L1357	L1357	G1236	A1176	K1113	D1048	L863	ALA	
ASP	L1417	M1358	E1297	E1236	A1176	L1116	N1049	L864	ILE	
TYR	L1418	A1359	E1298	Q1238	A1178	L1116	Y1050	L865	ILE	
GLN	L1419	E1360	E1298	Q1238	A1178	Q1117	D1051	L866	VAL	
ALA	L1420	L1361	L1299	A1239	K1179	Q1118	A1052	L867	VAL	
LEU	M1420	V1362	I1300	A1240	T1180	K1118	A1052	L868	GLY	
ARG	D1421	F1363	T1301	A1241	M1181	G1119	P1053	L869	HIS	
THR	L1422	L1364	M1302	D1242	R1182	M1120	P1053	L870	GLY	
SER	L1423	Y1365	L1303	G1243	L1183	V1121	I1055	L871	ASN	
ASP	M1424	D1366	E1304	A1244	E1184	K1122	A1056	L872	ASN	
ALA	V1425	K1367	A1305	A1245	E1185	E1123	N1057	L873	ALA	
TRP	L1426	Y1368	A1306	K1246	L1186	E1123	N1057	L874	ALA	
ASP	S1427	L1369	L1307	A1247	L1187	E1123	N1057	L875	ALA	
ASN	P1428	E1370	G1308	M1248	E1188	I1125	I1060	L876	ALA	
ILE	R1429	Y1371	L1309	S1249	F1189	I1125	I1060	L877	ALA	
SER	D1430	N1372	E1310	T1250	I1190	D1126	S1061	L878	ALA	
LEU	L1431	N1373	R1311	R1251	G1192	S1127	N1062	L879	ALA	
ALA	H1432	A1374	A1312	M1252	M1191	Y1128	N1062	L880	ALA	
GLN	T1433	L1375	H1313	T1252	G1192	I1129	E1063	L881	ALA	
ARG	R1434	I1376	M1314	K1254	M1194	K1130	F1065	L882	ALA	
LEU	A1435	T1377	G1315	E1255	M1195	A1131	E1066	L883	ALA	
GLU	V1436	M1378	M1316	A1255	M1195	D1132	E1067	L884	ALA	
LYS	M1437	M1379	F1317	V1256	A1196	P1134	A1068	L885	ALA	
HIS	N1438	N1380	T1318	C1257	H1197	S1136	F1069	L886	ALA	
GLU	F1439	H1381	E1319	F1258	I1198	Y1137	A1070	L887	ALA	
ILE	S1440	T1382	L1320	A1259	Q1199	M1138	R1073	L888	ALA	
ARG	K1441	T1383	A1321	C1260	Q1200	L1139	R1073	L889	ALA	
ARG	V1442	L1384	I1322	V1261	L1201	Q1142	F1075	L890	ALA	
ARG	K1443	A1385	L1323	D1262	G1202	A1143	F1075	L891	ALA	
VAL	Q1444	W1386	Y1324	G1263	D1203	A1144	V1077	L892	ALA	
VAL	L1445	K1387	S1325	K1264	R1204	M1145	M1078	L893	ALA	
ASP	P1446	E1388	K1326	K1265	C1205	T1146	T1079	L894	ALA	
ASP	L1447	Q1389	F1327	F1266	Y1206	S1147	S1080	L895	ALA	
ARG	K1448	Q1390	Q1330	R1267	D1208	G1148	Q1083	L896	ALA	
ILE	K1449			A1268	K1209		V1084	L897	ALA	
	P1450							L961	Y900	

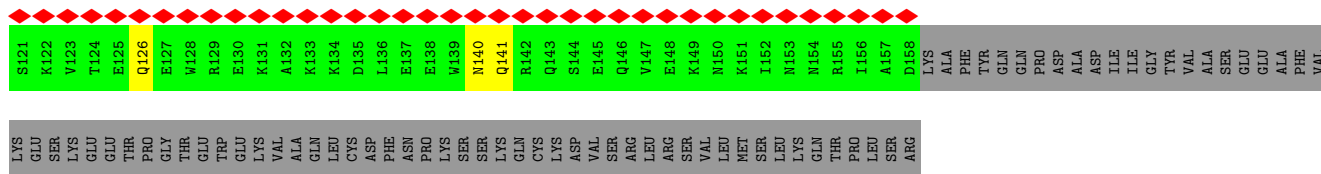




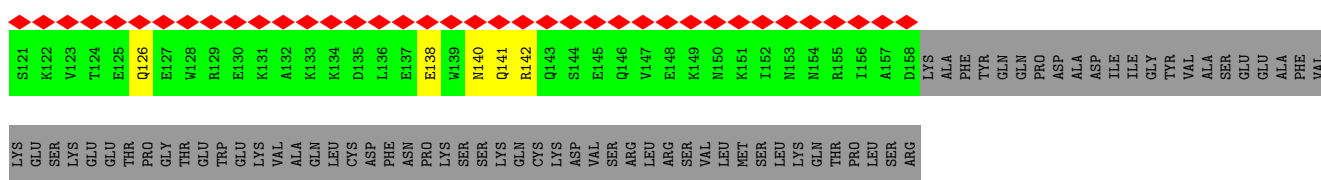
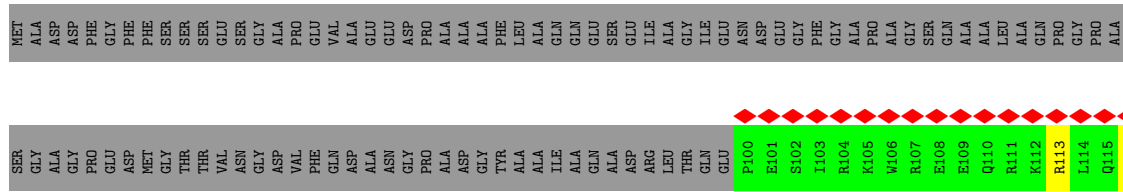




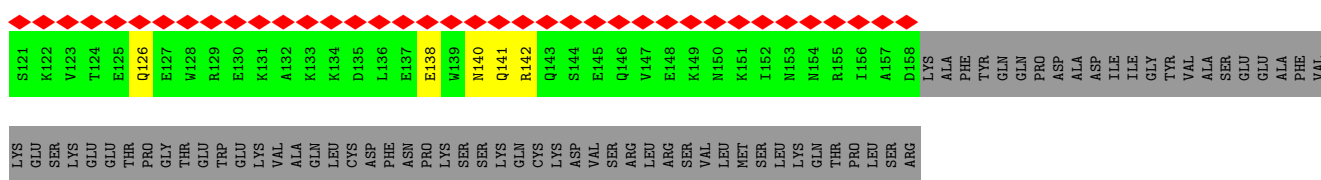
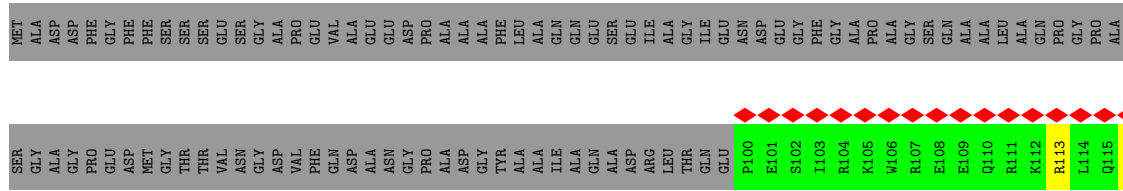




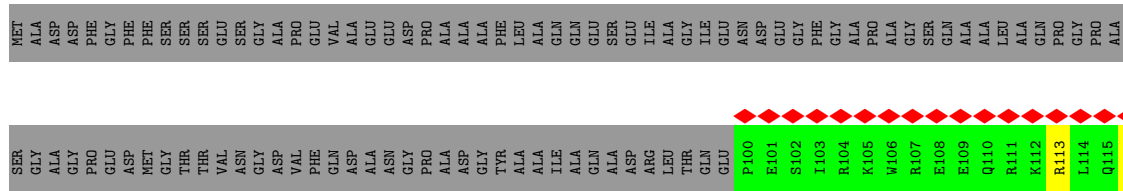
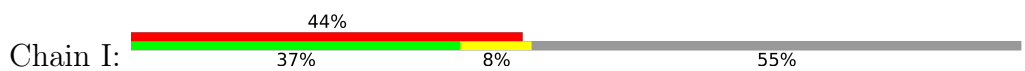
• Molecule 2: Clathrin light chain



• Molecule 2: Clathrin light chain

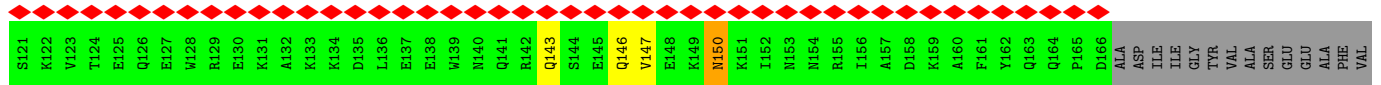
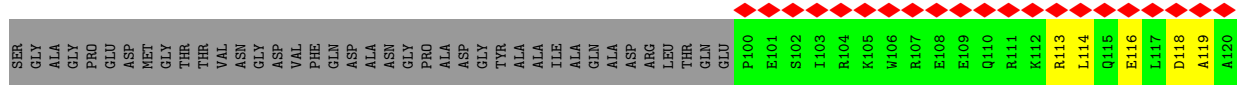
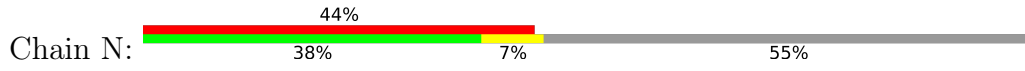


• Molecule 2: Clathrin light chain





• Molecule 2: Clathrin light chain



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C3	Depositor
Number of particles used	313406	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	69	Depositor
Minimum defocus (nm)	1800	Depositor
Maximum defocus (nm)	2800	Depositor
Magnification	82111	Depositor
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.374	Depositor
Minimum map value	-0.157	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.016	Depositor
Recommended contour level	0.195	Depositor
Map size (Å)	436.48, 436.48, 436.48	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.705, 1.705, 1.705	Depositor

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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	0.30	0/3240	0.50	0/4375
1	B	0.28	0/5513	0.49	0/7468
1	C	0.29	0/3667	0.52	0/4970
1	F	0.30	0/3240	0.50	0/4375
1	G	0.29	0/5513	0.49	0/7468
1	H	0.29	0/3667	0.52	0/4970
1	K	0.30	0/3240	0.50	0/4375
1	L	0.29	0/5513	0.49	0/7468
1	M	0.29	0/3667	0.52	0/4970
2	D	0.28	0/887	0.51	0/1183
2	E	0.27	0/520	0.57	0/692
2	I	0.28	0/887	0.51	0/1183
2	J	0.28	0/520	0.56	0/692
2	N	0.28	0/887	0.51	0/1183
2	O	0.28	0/520	0.56	0/692
All	All	0.29	0/41481	0.51	0/56064

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [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	3168	0	3118	36	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	5405	0	5359	61	0
1	C	3598	0	3592	58	0
1	F	3168	0	3118	35	0
1	G	5405	0	5359	65	0
1	H	3598	0	3592	53	0
1	K	3168	0	3118	36	0
1	L	5405	0	5359	65	0
1	M	3598	0	3592	56	0
2	D	875	0	872	8	0
2	E	514	0	508	4	0
2	I	875	0	872	9	0
2	J	514	0	508	5	0
2	N	875	0	872	8	0
2	O	514	0	508	5	0
All	All	40680	0	40347	488	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 6.

All (488) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:772:LEU:H	1:C:773:PRO:HD2	1.22	1.03
1:H:772:LEU:H	1:H:773:PRO:HD2	1.22	1.00
1:M:772:LEU:H	1:M:773:PRO:HD2	1.22	1.00
1:H:763:LEU:HB3	1:H:768:LEU:HD11	1.46	0.97
1:C:763:LEU:HB3	1:C:768:LEU:HD11	1.46	0.97
1:M:763:LEU:HB3	1:M:768:LEU:HD11	1.46	0.96
1:C:772:LEU:H	1:C:773:PRO:CD	1.89	0.85
1:M:768:LEU:HD12	1:M:768:LEU:H	1.43	0.84
1:H:772:LEU:H	1:H:773:PRO:CD	1.89	0.84
1:M:772:LEU:H	1:M:773:PRO:CD	1.89	0.83
1:C:768:LEU:HD12	1:C:768:LEU:H	1.43	0.82
1:H:768:LEU:HD12	1:H:768:LEU:H	1.43	0.82
1:H:771:GLN:H	1:H:771:GLN:CD	1.87	0.77
1:A:1408:ILE:HD12	1:A:1419:LEU:HD11	1.68	0.75
1:M:771:GLN:H	1:M:771:GLN:CD	1.87	0.75
1:C:771:GLN:CD	1:C:771:GLN:H	1.87	0.75
1:K:1408:ILE:HD12	1:K:1419:LEU:HD11	1.68	0.75
1:F:1408:ILE:HD12	1:F:1419:LEU:HD11	1.68	0.74
1:B:908:TYR:O	1:B:912:ARG:NH1	2.22	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:908:TYR:O	1:G:912:ARG:NH1	2.22	0.73
1:C:749:ARG:O	1:C:780:ARG:NH2	2.22	0.73
1:H:749:ARG:O	1:H:780:ARG:NH2	2.22	0.73
1:L:1380:ASN:OD1	1:L:1381:HIS:ND1	2.22	0.72
1:G:1380:ASN:OD1	1:G:1381:HIS:ND1	2.22	0.72
1:M:772:LEU:N	1:M:773:PRO:HD2	2.03	0.72
1:M:749:ARG:O	1:M:780:ARG:NH2	2.22	0.72
1:L:908:TYR:O	1:L:912:ARG:NH1	2.21	0.72
1:M:848:GLU:OE2	1:M:852:ARG:NH1	2.24	0.71
1:C:848:GLU:OE2	1:C:852:ARG:NH1	2.24	0.71
1:H:848:GLU:OE2	1:H:852:ARG:NH1	2.24	0.70
1:C:635:ASP:O	1:C:638:ARG:NH1	2.25	0.70
1:B:1380:ASN:OD1	1:B:1381:HIS:ND1	2.22	0.70
1:H:771:GLN:N	1:H:771:GLN:OE1	2.25	0.70
1:L:1199:GLN:OE1	1:L:1226:ARG:NH1	2.25	0.70
1:H:635:ASP:O	1:H:638:ARG:NH1	2.25	0.70
1:B:1199:GLN:OE1	1:B:1226:ARG:NH1	2.25	0.70
1:M:771:GLN:N	1:M:771:GLN:OE1	2.25	0.70
1:K:1461:LYS:NZ	1:K:1465:GLU:OE2	2.26	0.69
1:A:1461:LYS:NZ	1:A:1465:GLU:OE2	2.26	0.69
1:C:771:GLN:N	1:C:771:GLN:OE1	2.25	0.69
1:C:772:LEU:N	1:C:773:PRO:HD2	2.03	0.69
1:G:1199:GLN:OE1	1:G:1226:ARG:NH1	2.25	0.69
1:F:1461:LYS:NZ	1:F:1465:GLU:OE2	2.26	0.69
1:M:635:ASP:O	1:M:638:ARG:NH1	2.25	0.69
1:A:1278:VAL:O	1:A:1311:ARG:NH1	2.27	0.68
1:B:1248:ASN:OD1	1:C:854:ARG:NH2	2.26	0.68
1:K:1278:VAL:O	1:K:1311:ARG:NH1	2.27	0.68
1:F:1278:VAL:O	1:F:1311:ARG:NH1	2.27	0.68
2:I:146:GLN:O	2:I:150:ASN:ND2	2.27	0.68
1:C:865:ARG:NH1	1:C:872:GLU:OE1	2.27	0.67
1:H:865:ARG:NH1	1:H:872:GLU:OE1	2.27	0.67
1:H:772:LEU:N	1:H:773:PRO:CD	2.58	0.67
1:B:1097:GLU:N	1:B:1097:GLU:OE1	2.28	0.66
1:L:1097:GLU:N	1:L:1097:GLU:OE1	2.28	0.66
1:M:865:ARG:NH1	1:M:872:GLU:OE1	2.27	0.66
1:C:723:GLN:N	1:C:723:GLN:OE1	2.29	0.66
1:G:1097:GLU:N	1:G:1097:GLU:OE1	2.28	0.66
1:K:1519:ASN:ND2	1:L:1101:ARG:O	2.29	0.66
1:L:1012:VAL:O	1:L:1016:SER:OG	2.14	0.66
1:M:723:GLN:N	1:M:723:GLN:OE1	2.29	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:772:LEU:N	1:C:773:PRO:CD	2.58	0.65
1:G:1012:VAL:O	1:G:1016:SER:OG	2.14	0.65
1:G:936:GLU:OE2	1:G:936:GLU:N	2.30	0.65
1:L:936:GLU:N	1:L:936:GLU:OE2	2.30	0.65
1:H:723:GLN:N	1:H:723:GLN:OE1	2.29	0.65
1:G:1304:GLU:OE2	1:G:1324:TYR:OH	2.15	0.65
1:B:1304:GLU:OE2	1:B:1324:TYR:OH	2.15	0.65
1:B:936:GLU:OE2	1:B:936:GLU:N	2.30	0.64
1:B:1012:VAL:O	1:B:1016:SER:OG	2.14	0.64
1:H:772:LEU:N	1:H:773:PRO:HD2	2.03	0.64
1:M:825:SER:OG	1:M:827:ASP:OD2	2.11	0.64
1:F:1464:ASN:O	1:F:1468:ASN:ND2	2.31	0.64
1:H:825:SER:OG	1:H:827:ASP:OD2	2.11	0.64
1:L:1304:GLU:OE2	1:L:1324:TYR:OH	2.15	0.64
1:G:837:ARG:NH1	1:G:838:GLY:O	2.32	0.63
1:L:837:ARG:NH1	1:L:838:GLY:O	2.32	0.63
1:K:1464:ASN:O	1:K:1468:ASN:ND2	2.31	0.63
1:L:852:ARG:O	1:L:854:ARG:NH1	2.32	0.63
1:F:1519:ASN:ND2	1:G:1101:ARG:O	2.31	0.63
1:B:852:ARG:O	1:B:854:ARG:NH1	2.32	0.62
1:A:1464:ASN:O	1:A:1468:ASN:ND2	2.31	0.62
1:F:1457:ASN:OD1	1:F:1458:HIS:ND1	2.31	0.62
1:G:852:ARG:O	1:G:854:ARG:NH1	2.32	0.62
1:A:1457:ASN:OD1	1:A:1458:HIS:ND1	2.31	0.62
2:E:113:ARG:NH2	2:E:116:GLU:OE1	2.33	0.62
1:B:1220:ASN:O	1:C:793:ARG:NH1	2.32	0.62
1:B:837:ARG:NH1	1:B:838:GLY:O	2.32	0.62
2:O:113:ARG:NH2	2:O:116:GLU:OE1	2.33	0.62
1:L:1170:GLU:N	1:L:1170:GLU:OE1	2.33	0.62
1:H:768:LEU:HD12	1:H:768:LEU:N	2.15	0.61
2:J:113:ARG:NH2	2:J:116:GLU:OE1	2.33	0.61
1:C:778:CYS:O	1:C:782:ASP:N	2.34	0.61
1:L:1248:ASN:OD1	1:M:854:ARG:NH2	2.34	0.61
1:M:778:CYS:O	1:M:782:ASP:N	2.34	0.61
1:G:1170:GLU:N	1:G:1170:GLU:OE1	2.33	0.61
1:M:986:GLU:N	1:M:986:GLU:OE1	2.34	0.61
1:C:986:GLU:OE1	1:C:986:GLU:N	2.34	0.61
1:G:1411:TYR:O	1:G:1415:LYS:N	2.34	0.61
1:H:986:GLU:OE1	1:H:986:GLU:N	2.34	0.61
1:B:1170:GLU:N	1:B:1170:GLU:OE1	2.33	0.60
1:G:1248:ASN:OD1	1:H:854:ARG:NH2	2.34	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1519:ASN:ND2	1:B:1101:ARG:O	2.34	0.60
1:H:778:CYS:O	1:H:782:ASP:N	2.34	0.60
1:K:1457:ASN:OD1	1:K:1458:HIS:ND1	2.31	0.60
1:B:1411:TYR:O	1:B:1415:LYS:N	2.34	0.60
1:F:1584:GLU:OE2	1:F:1588:ARG:NH2	2.35	0.60
1:C:768:LEU:HD12	1:C:768:LEU:N	2.15	0.60
1:A:1584:GLU:OE2	1:A:1588:ARG:NH2	2.35	0.59
1:G:1220:ASN:O	1:H:793:ARG:NH1	2.34	0.59
1:K:1584:GLU:OE2	1:K:1588:ARG:NH2	2.35	0.59
1:L:1388:GLU:N	1:L:1388:GLU:OE1	2.36	0.59
1:C:825:SER:OG	1:C:827:ASP:OD2	2.11	0.59
1:L:1393:ASP:O	1:L:1397:LYS:NZ	2.36	0.59
1:H:794:ASN:OD1	1:H:795:ASN:N	2.35	0.59
1:L:1411:TYR:O	1:L:1415:LYS:N	2.34	0.59
1:B:1388:GLU:N	1:B:1388:GLU:OE1	2.36	0.59
1:A:1284:GLU:O	1:A:1288:ASN:ND2	2.35	0.58
2:D:217:SER:O	2:D:221:SER:N	2.36	0.58
1:F:1284:GLU:O	1:F:1288:ASN:ND2	2.35	0.58
1:L:1120:MET:O	1:L:1124:ALA:N	2.36	0.58
1:M:768:LEU:HD12	1:M:768:LEU:N	2.15	0.58
2:N:217:SER:O	2:N:221:SER:N	2.36	0.58
1:B:1393:ASP:O	1:B:1397:LYS:NZ	2.36	0.58
1:K:1284:GLU:O	1:K:1288:ASN:ND2	2.36	0.58
1:B:1120:MET:O	1:B:1124:ALA:N	2.36	0.58
2:I:217:SER:O	2:I:221:SER:N	2.36	0.58
1:M:794:ASN:OD1	1:M:795:ASN:N	2.35	0.58
1:B:1352:ALA:HB3	1:B:1361:LEU:HD21	1.86	0.57
1:G:1120:MET:O	1:G:1124:ALA:N	2.36	0.57
1:L:1352:ALA:HB3	1:L:1361:LEU:HD21	1.86	0.57
1:L:1220:ASN:O	1:M:793:ARG:NH1	2.37	0.57
1:M:954:GLU:OE2	1:M:954:GLU:N	2.38	0.57
1:G:1393:ASP:O	1:G:1397:LYS:NZ	2.36	0.57
1:G:1388:GLU:N	1:G:1388:GLU:OE1	2.36	0.57
1:H:954:GLU:OE2	1:H:954:GLU:N	2.38	0.57
1:C:954:GLU:OE2	1:C:954:GLU:N	2.38	0.56
1:M:772:LEU:N	1:M:773:PRO:CD	2.58	0.56
1:G:1352:ALA:HB3	1:G:1361:LEU:HD21	1.86	0.56
1:C:794:ASN:OD1	1:C:795:ASN:N	2.35	0.56
1:C:768:LEU:H	1:C:768:LEU:CD1	2.18	0.56
1:C:771:GLN:CD	1:C:771:GLN:N	2.59	0.56
1:H:908:TYR:O	1:H:912:ARG:NH1	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:724:ASP:OD2	1:C:726:ASP:N	2.40	0.55
1:C:849:VAL:O	1:C:853:ASN:N	2.40	0.55
1:F:1508:ARG:NH1	1:F:1531:ASP:OD2	2.40	0.55
1:F:1523:GLN:O	1:F:1527:LEU:N	2.38	0.55
1:H:724:ASP:OD2	1:H:726:ASP:N	2.40	0.55
1:L:1333:ARG:NH1	1:L:1359:ALA:O	2.40	0.55
1:M:724:ASP:OD2	1:M:726:ASP:N	2.40	0.55
1:L:971:ILE:HA	1:L:974:VAL:HG12	1.88	0.55
1:M:921:TYR:O	1:M:925:GLN:N	2.39	0.55
1:K:1508:ARG:NH1	1:K:1531:ASP:OD2	2.40	0.55
1:L:954:GLU:OE2	1:L:954:GLU:N	2.39	0.55
1:L:1304:GLU:OE2	1:L:1331:LYS:NZ	2.35	0.55
1:B:1460:ASN:ND2	1:B:1461:LYS:N	2.55	0.55
1:C:908:TYR:O	1:C:912:ARG:NH1	2.39	0.55
1:G:954:GLU:OE2	1:G:954:GLU:N	2.39	0.55
1:H:921:TYR:O	1:H:925:GLN:N	2.40	0.55
2:I:213:SER:OG	2:I:216:ARG:NH1	2.40	0.55
1:A:1298:GLU:OE1	1:A:1298:GLU:N	2.40	0.55
1:K:1298:GLU:OE1	1:K:1298:GLU:N	2.40	0.55
1:G:971:ILE:HA	1:G:974:VAL:HG12	1.89	0.55
1:H:772:LEU:O	1:H:776:ILE:HD12	2.07	0.55
1:M:772:LEU:O	1:M:776:ILE:HD12	2.07	0.55
2:D:213:SER:OG	2:D:216:ARG:NH1	2.40	0.55
1:H:849:VAL:O	1:H:853:ASN:N	2.40	0.55
1:A:1508:ARG:NH1	1:A:1531:ASP:OD2	2.40	0.54
1:M:849:VAL:O	1:M:853:ASN:N	2.40	0.54
1:F:1298:GLU:OE1	1:F:1298:GLU:N	2.40	0.54
1:G:1460:ASN:ND2	1:G:1461:LYS:N	2.55	0.54
1:M:768:LEU:H	1:M:768:LEU:CD1	2.17	0.54
1:M:908:TYR:O	1:M:912:ARG:NH1	2.39	0.54
1:A:1520:ARG:NH2	1:A:1523:GLN:OE1	2.41	0.54
2:I:113:ARG:NH2	2:I:116:GLU:OE1	2.41	0.54
1:B:971:ILE:HA	1:B:974:VAL:HG12	1.89	0.54
2:N:113:ARG:NH2	2:N:116:GLU:OE1	2.41	0.54
1:C:772:LEU:O	1:C:776:ILE:HD12	2.07	0.54
1:L:1460:ASN:ND2	1:L:1461:LYS:N	2.55	0.54
1:L:1460:ASN:O	1:L:1464:ASN:N	2.40	0.54
1:G:1460:ASN:O	1:G:1464:ASN:N	2.40	0.54
1:C:1063:GLU:N	1:C:1063:GLU:OE1	2.41	0.54
2:D:113:ARG:NH2	2:D:116:GLU:OE1	2.41	0.54
1:F:1520:ARG:NH2	1:F:1523:GLN:OE1	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:213:SER:OG	2:N:216:ARG:NH1	2.40	0.54
1:K:1520:ARG:NH2	1:K:1523:GLN:OE1	2.41	0.54
1:G:1194:ASN:OD1	1:G:1195:ASN:N	2.42	0.53
1:A:1523:GLN:O	1:A:1527:LEU:N	2.38	0.53
1:B:913:ASP:OD1	1:B:916:LEU:N	2.41	0.53
1:G:1333:ARG:NH1	1:G:1359:ALA:O	2.40	0.53
1:M:743:GLU:N	1:M:743:GLU:OE1	2.42	0.53
1:C:921:TYR:O	1:C:925:GLN:N	2.40	0.53
1:B:1054:ASP:OD1	1:B:1055:ILE:N	2.42	0.53
1:H:1063:GLU:N	1:H:1063:GLU:OE1	2.41	0.53
1:M:771:GLN:CD	1:M:771:GLN:N	2.59	0.53
1:B:1194:ASN:OD1	1:B:1195:ASN:N	2.42	0.52
2:O:126:GLN:O	2:O:126:GLN:NE2	2.42	0.52
1:G:913:ASP:OD1	1:G:916:LEU:N	2.41	0.52
1:G:1054:ASP:OD1	1:G:1055:ILE:N	2.42	0.52
1:L:1250:THR:OG1	1:L:1251:ARG:NH1	2.43	0.52
1:L:1460:ASN:ND2	1:L:1461:LYS:H	2.07	0.52
1:M:1063:GLU:N	1:M:1063:GLU:OE1	2.41	0.52
2:I:149:LYS:O	2:I:153:ASN:ND2	2.42	0.52
1:C:743:GLU:OE1	1:C:743:GLU:N	2.42	0.52
1:K:1523:GLN:O	1:K:1527:LEU:N	2.38	0.52
1:G:1460:ASN:ND2	1:G:1461:LYS:H	2.07	0.52
1:L:1253:TRP:HB2	1:L:1276:ILE:HD11	1.91	0.52
1:M:900:TYR:O	1:M:923:ARG:NH2	2.41	0.52
1:A:1605:GLU:O	1:A:1608:THR:OG1	2.21	0.52
1:B:1460:ASN:O	1:B:1464:ASN:N	2.40	0.52
1:M:850:GLU:OE2	1:M:881:LYS:NZ	2.43	0.52
1:B:1333:ARG:NH1	1:B:1359:ALA:O	2.40	0.52
1:L:1054:ASP:OD1	1:L:1055:ILE:N	2.42	0.52
2:E:126:GLN:O	2:E:126:GLN:NE2	2.42	0.52
1:G:1250:THR:OG1	1:G:1251:ARG:NH1	2.43	0.52
1:L:1194:ASN:OD1	1:L:1195:ASN:N	2.42	0.52
1:H:743:GLU:OE1	1:H:743:GLU:N	2.42	0.52
1:B:1250:THR:OG1	1:B:1251:ARG:NH1	2.43	0.52
1:K:1460:ASN:OD1	1:K:1461:LYS:N	2.42	0.52
1:L:1460:ASN:HD22	1:L:1461:LYS:H	1.58	0.52
1:B:1322:ILE:O	1:B:1325:SER:OG	2.14	0.52
1:B:1460:ASN:ND2	1:B:1461:LYS:H	2.07	0.52
1:C:900:TYR:O	1:C:923:ARG:NH2	2.41	0.52
1:H:850:GLU:OE2	1:H:881:LYS:NZ	2.43	0.52
2:J:126:GLN:O	2:J:126:GLN:NE2	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1460:ASN:OD1	1:A:1461:LYS:N	2.42	0.51
1:F:1460:ASN:OD1	1:F:1461:LYS:N	2.42	0.51
1:L:913:ASP:OD1	1:L:916:LEU:N	2.41	0.51
1:H:768:LEU:H	1:H:768:LEU:CD1	2.18	0.51
1:H:971:ILE:HA	1:H:974:VAL:HG22	1.92	0.51
1:B:1253:TRP:HB2	1:B:1276:ILE:HD11	1.91	0.51
1:B:1304:GLU:OE2	1:B:1331:LYS:NZ	2.35	0.51
1:H:900:TYR:O	1:H:923:ARG:NH2	2.41	0.51
1:M:877:ASN:OD1	1:M:878:ALA:N	2.44	0.51
1:G:1460:ASN:HD22	1:G:1461:LYS:H	1.58	0.51
1:G:1304:GLU:OE2	1:G:1331:LYS:NZ	2.35	0.51
1:M:724:ASP:O	1:M:728:HIS:ND1	2.44	0.51
1:G:1253:TRP:HB2	1:G:1276:ILE:HD11	1.91	0.51
1:C:877:ASN:OD1	1:C:878:ALA:N	2.44	0.51
1:G:1322:ILE:O	1:G:1325:SER:OG	2.14	0.51
1:M:971:ILE:HA	1:M:974:VAL:HG22	1.92	0.51
1:H:877:ASN:OD1	1:H:878:ALA:N	2.44	0.51
1:A:1439:PHE:O	1:A:1443:LYS:N	2.43	0.50
1:A:1411:TYR:O	1:A:1415:LYS:N	2.45	0.50
1:B:1460:ASN:HD22	1:B:1461:LYS:H	1.58	0.50
1:C:971:ILE:HA	1:C:974:VAL:HG22	1.92	0.50
1:A:1253:TRP:HB2	1:A:1276:ILE:HD11	1.94	0.50
1:B:981:GLU:OE1	1:B:982:THR:N	2.45	0.50
1:C:724:ASP:O	1:C:728:HIS:ND1	2.44	0.50
1:L:981:GLU:OE1	1:L:982:THR:N	2.45	0.50
1:H:724:ASP:O	1:H:728:HIS:ND1	2.44	0.50
2:N:146:GLN:O	2:N:150:ASN:OD1	2.30	0.50
1:B:851:LYS:O	1:B:853:ASN:ND2	2.45	0.50
1:G:981:GLU:OE1	1:G:982:THR:N	2.45	0.50
1:G:1349:LEU:HD13	1:G:1361:LEU:HD23	1.94	0.50
1:K:1603:MET:O	1:K:1607:LEU:HD13	2.12	0.49
1:K:1605:GLU:O	1:K:1608:THR:OG1	2.21	0.49
1:G:851:LYS:O	1:G:853:ASN:ND2	2.45	0.49
1:L:1396:THR:O	1:L:1429:ARG:NH1	2.45	0.49
1:L:851:LYS:O	1:L:853:ASN:ND2	2.45	0.49
1:A:1603:MET:O	1:A:1607:LEU:HD13	2.12	0.49
1:B:1349:LEU:HD13	1:B:1361:LEU:HD23	1.94	0.49
1:C:782:ASP:OD1	1:C:811:ARG:NH2	2.46	0.49
1:F:1603:MET:O	1:F:1607:LEU:HD13	2.12	0.49
1:G:849:VAL:O	1:G:853:ASN:N	2.44	0.49
2:D:146:GLN:O	2:D:150:ASN:OD1	2.30	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:1411:TYR:O	1:F:1415:LYS:N	2.45	0.49
1:B:954:GLU:OE2	1:B:954:GLU:N	2.39	0.49
1:K:1411:TYR:O	1:K:1415:LYS:N	2.45	0.49
1:B:849:VAL:O	1:B:853:ASN:N	2.44	0.49
1:F:1605:GLU:O	1:F:1608:THR:OG1	2.21	0.49
1:L:1349:LEU:HD13	1:L:1361:LEU:HD23	1.94	0.49
1:L:1464:ASN:O	1:L:1468:ASN:OD1	2.31	0.49
1:H:782:ASP:OD1	1:H:811:ARG:NH2	2.46	0.49
1:M:666:CYS:SG	1:M:667:LEU:N	2.86	0.49
1:K:1397:LYS:O	1:L:976:GLN:NE2	2.46	0.49
1:A:1460:ASN:O	1:A:1464:ASN:OD1	2.31	0.48
1:C:666:CYS:SG	1:C:667:LEU:N	2.86	0.48
1:F:1253:TRP:HB2	1:F:1276:ILE:HD11	1.94	0.48
1:K:1253:TRP:HB2	1:K:1276:ILE:HD11	1.94	0.48
1:M:782:ASP:OD1	1:M:811:ARG:NH2	2.46	0.48
1:F:1439:PHE:O	1:F:1443:LYS:N	2.43	0.48
1:K:1460:ASN:O	1:K:1464:ASN:OD1	2.31	0.48
1:H:666:CYS:SG	1:H:667:LEU:N	2.86	0.48
1:C:883:TYR:O	1:C:886:SER:OG	2.25	0.48
1:G:1464:ASN:O	1:G:1468:ASN:OD1	2.31	0.48
1:H:903:ARG:NE	1:H:926:CYS:SG	2.87	0.48
1:C:850:GLU:OE2	1:C:881:LYS:NZ	2.43	0.48
1:L:934:CYS:O	1:L:938:SER:OG	2.26	0.48
1:A:1360:GLU:OE1	1:A:1360:GLU:N	2.44	0.48
1:M:903:ARG:NE	1:M:926:CYS:SG	2.87	0.48
1:B:1152:GLU:N	1:B:1152:GLU:OE1	2.47	0.47
1:B:1396:THR:O	1:B:1429:ARG:NH1	2.45	0.47
1:C:903:ARG:NE	1:C:926:CYS:SG	2.87	0.47
1:F:1460:ASN:O	1:F:1464:ASN:OD1	2.31	0.47
1:H:770:ASP:O	1:H:772:LEU:HB2	2.14	0.47
1:C:770:ASP:O	1:C:772:LEU:HB2	2.14	0.47
1:L:1152:GLU:N	1:L:1152:GLU:OE1	2.48	0.47
1:A:1330:GLN:OE1	1:A:1330:GLN:N	2.45	0.47
1:M:770:ASP:O	1:M:772:LEU:HB2	2.14	0.47
1:B:1310:GLU:OE1	1:B:1310:GLU:N	2.48	0.47
2:J:118:ASP:OD1	2:J:119:ALA:N	2.48	0.47
1:L:1310:GLU:N	1:L:1310:GLU:OE1	2.48	0.47
1:K:1488:ASP:OD1	1:K:1488:ASP:N	2.47	0.47
1:A:1488:ASP:OD1	1:A:1488:ASP:N	2.47	0.47
1:G:1152:GLU:N	1:G:1152:GLU:OE1	2.47	0.47
1:B:1060:ILE:HD13	1:B:1084:VAL:HG13	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:1310:GLU:OE1	1:F:1310:GLU:N	2.45	0.46
1:G:1310:GLU:N	1:G:1310:GLU:OE1	2.48	0.46
1:G:1365:TYR:O	1:G:1370:GLU:N	2.44	0.46
1:M:640:VAL:O	1:M:643:THR:HG22	2.16	0.46
1:B:1464:ASN:O	1:B:1468:ASN:OD1	2.31	0.46
1:B:1139:GLU:OE1	1:B:1139:GLU:N	2.48	0.46
1:C:640:VAL:O	1:C:643:THR:HG22	2.16	0.46
2:O:118:ASP:OD1	2:O:119:ALA:N	2.48	0.46
1:B:1365:TYR:O	1:B:1370:GLU:N	2.44	0.46
1:L:1060:ILE:HD13	1:L:1084:VAL:HG13	1.97	0.46
1:C:866:ILE:HD12	1:C:876:HIS:CE1	2.51	0.46
1:G:1002:ASN:ND2	1:G:1034:LYS:O	2.48	0.46
1:A:1248:ASN:OD1	1:A:1253:TRP:NE1	2.49	0.46
1:B:1002:ASN:ND2	1:B:1034:LYS:O	2.48	0.46
1:H:640:VAL:O	1:H:643:THR:HG22	2.16	0.46
1:F:1397:LYS:O	1:G:976:GLN:NE2	2.46	0.46
1:K:1310:GLU:OE1	1:K:1310:GLU:N	2.45	0.46
1:G:1009:GLU:HA	1:G:1012:VAL:HG12	1.98	0.46
1:L:1139:GLU:N	1:L:1139:GLU:OE1	2.48	0.46
1:L:1300:ILE:O	1:L:1304:GLU:N	2.49	0.46
1:B:1300:ILE:O	1:B:1304:GLU:N	2.49	0.46
1:F:1488:ASP:OD1	1:F:1488:ASP:N	2.47	0.46
1:H:866:ILE:HD12	1:H:876:HIS:CE1	2.51	0.46
1:A:1257:CYS:SG	1:A:1258:PHE:N	2.90	0.45
1:B:1009:GLU:HA	1:B:1012:VAL:HG12	1.98	0.45
1:C:690:HIS:O	1:C:694:SER:OG	2.33	0.45
1:K:1257:CYS:SG	1:K:1258:PHE:N	2.90	0.45
1:K:1356:HIS:NE2	2:N:114:LEU:HD22	2.32	0.45
1:G:1139:GLU:N	1:G:1139:GLU:OE1	2.48	0.45
1:F:1248:ASN:OD1	1:F:1253:TRP:NE1	2.49	0.45
1:L:1322:ILE:O	1:L:1325:SER:OG	2.14	0.45
1:G:1060:ILE:HD13	1:G:1084:VAL:HG13	1.97	0.45
1:F:1532:SER:O	1:F:1532:SER:OG	2.33	0.45
1:H:767:LYS:HE3	1:H:767:LYS:HB2	1.72	0.45
1:K:1304:GLU:OE2	1:K:1324:TYR:OH	2.32	0.45
1:L:1002:ASN:ND2	1:L:1034:LYS:O	2.48	0.45
1:L:1365:TYR:O	1:L:1370:GLU:N	2.44	0.45
2:D:143:GLN:O	2:D:147:VAL:HG23	2.17	0.45
1:F:1372:ASP:OD1	1:F:1373:ASN:N	2.50	0.45
1:M:866:ILE:HD12	1:M:876:HIS:CE1	2.51	0.45
1:M:910:GLU:HG2	1:M:933:VAL:HG13	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:143:GLN:O	2:N:147:VAL:HG23	2.17	0.45
2:E:118:ASP:OD1	2:E:119:ALA:N	2.48	0.45
1:F:1433:THR:OG1	1:F:1460:ASN:ND2	2.50	0.45
1:G:1396:THR:O	1:G:1429:ARG:NH1	2.45	0.45
1:A:1372:ASP:OD1	1:A:1373:ASN:N	2.50	0.45
1:F:1257:CYS:SG	1:F:1258:PHE:N	2.90	0.45
1:K:1439:PHE:O	1:K:1443:LYS:N	2.43	0.45
1:H:762:PHE:O	1:H:766:ALA:N	2.43	0.45
1:K:1372:ASP:OD1	1:K:1373:ASN:N	2.50	0.45
1:L:1009:GLU:HA	1:L:1012:VAL:HG12	1.98	0.45
2:D:118:ASP:OD1	2:D:119:ALA:N	2.50	0.44
1:H:910:GLU:HG2	1:H:933:VAL:HG13	1.99	0.44
1:K:1360:GLU:OE1	1:K:1360:GLU:N	2.44	0.44
2:N:118:ASP:OD1	2:N:119:ALA:N	2.50	0.44
1:K:1330:GLN:OE1	1:K:1330:GLN:N	2.45	0.44
1:M:988:VAL:O	1:M:992:VAL:HG23	2.17	0.44
2:I:143:GLN:O	2:I:147:VAL:HG23	2.17	0.44
1:F:1304:GLU:OE2	1:F:1324:TYR:OH	2.32	0.44
1:L:849:VAL:O	1:L:853:ASN:N	2.44	0.44
1:C:642:HIS:O	1:C:646:LEU:N	2.48	0.44
1:C:988:VAL:O	1:C:992:VAL:HG23	2.17	0.44
1:G:1091:ASN:OD1	1:G:1094:ARG:N	2.49	0.44
1:H:988:VAL:O	1:H:992:VAL:HG23	2.17	0.44
1:A:1433:THR:OG1	1:A:1460:ASN:ND2	2.50	0.44
1:G:839:GLN:N	1:G:839:GLN:OE1	2.49	0.44
1:G:1300:ILE:O	1:G:1304:GLU:N	2.49	0.44
1:M:690:HIS:O	1:M:694:SER:OG	2.33	0.44
2:I:118:ASP:OD1	2:I:119:ALA:N	2.50	0.44
1:A:1310:GLU:OE1	1:A:1310:GLU:N	2.45	0.44
1:F:1582:VAL:HG11	1:F:1598:TYR:CE2	2.53	0.44
1:B:1405:TYR:CE1	1:B:1430:LEU:HD11	2.54	0.43
1:M:767:LYS:HE2	1:M:767:LYS:H	1.83	0.43
1:C:767:LYS:HE3	1:C:767:LYS:HB2	1.72	0.43
1:M:968:ARG:HD2	1:M:971:ILE:HD11	2.00	0.43
1:C:925:GLN:OE1	1:C:946:TYR:OH	2.29	0.43
1:K:1433:THR:OG1	1:K:1460:ASN:ND2	2.49	0.43
1:L:1405:TYR:CE1	1:L:1430:LEU:HD11	2.54	0.43
1:H:767:LYS:HE2	1:H:767:LYS:H	1.83	0.43
1:M:827:ASP:OD2	1:M:828:VAL:N	2.51	0.43
1:A:1582:VAL:HG11	1:A:1598:TYR:CE2	2.53	0.43
1:F:1360:GLU:OE1	1:F:1360:GLU:N	2.44	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1431:ASP:OD1	1:G:1432:HIS:N	2.51	0.43
1:H:827:ASP:OD2	1:H:828:VAL:N	2.51	0.43
1:M:762:PHE:O	1:M:766:ALA:N	2.43	0.43
1:A:1356:HIS:NE2	2:D:114:LEU:HD22	2.33	0.43
1:L:839:GLN:OE1	1:L:839:GLN:N	2.49	0.43
1:C:827:ASP:OD2	1:C:828:VAL:N	2.51	0.43
1:B:1431:ASP:OD1	1:B:1432:HIS:N	2.51	0.43
1:C:968:ARG:HD2	1:C:971:ILE:HD11	2.00	0.43
1:G:1405:TYR:CE1	1:G:1430:LEU:HD11	2.53	0.43
1:H:883:TYR:O	1:H:886:SER:OG	2.25	0.43
1:B:839:GLN:OE1	1:B:839:GLN:N	2.49	0.43
1:K:1582:VAL:HG11	1:K:1598:TYR:CE2	2.53	0.43
1:G:1253:TRP:CB	1:G:1276:ILE:HD11	2.49	0.43
1:H:968:ARG:HD2	1:H:971:ILE:HD11	2.00	0.43
1:B:1253:TRP:CB	1:B:1276:ILE:HD11	2.49	0.43
1:C:910:GLU:HG2	1:C:933:VAL:HG13	1.99	0.43
1:L:1431:ASP:OD1	1:L:1432:HIS:N	2.51	0.43
1:C:767:LYS:HE2	1:C:767:LYS:H	1.83	0.42
1:C:949:ARG:NH2	1:G:896:GLU:OE2	2.50	0.42
1:K:1248:ASN:OD1	1:K:1253:TRP:NE1	2.49	0.42
1:B:1091:ASN:OD1	1:B:1094:ARG:N	2.49	0.42
1:A:1304:GLU:OE2	1:A:1324:TYR:OH	2.32	0.42
1:G:877:ASN:OD1	1:G:878:ALA:N	2.53	0.42
1:L:988:VAL:O	1:L:992:VAL:HG22	2.19	0.42
1:H:937:ASN:OD1	1:H:937:ASN:N	2.53	0.42
2:N:214:ARG:O	2:N:218:VAL:HG12	2.20	0.42
1:B:896:GLU:OE2	1:M:949:ARG:NH2	2.52	0.42
1:G:988:VAL:O	1:G:992:VAL:HG22	2.19	0.42
2:I:138:GLU:OE2	2:I:142:ARG:NH2	2.50	0.42
1:C:937:ASN:N	1:C:937:ASN:OD1	2.53	0.42
1:F:1330:GLN:OE1	1:F:1330:GLN:N	2.45	0.42
1:L:1253:TRP:CB	1:L:1276:ILE:HD11	2.49	0.42
1:H:771:GLN:HB3	1:H:774:LEU:HD21	2.01	0.42
1:L:877:ASN:OD1	1:L:878:ALA:N	2.53	0.42
2:O:138:GLU:OE2	2:O:142:ARG:NH2	2.44	0.42
1:G:1030:LEU:HA	1:G:1033:ILE:HD12	2.02	0.42
1:G:1360:GLU:OE1	1:G:1360:GLU:N	2.53	0.42
1:L:1298:GLU:HA	1:L:1301:THR:HG22	2.02	0.42
1:B:877:ASN:OD1	1:B:878:ALA:N	2.53	0.42
1:C:771:GLN:HB3	1:C:774:LEU:HD21	2.01	0.42
2:D:214:ARG:O	2:D:218:VAL:HG12	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1582:VAL:HG11	1:A:1598:TYR:CD2	2.55	0.41
1:B:1360:GLU:OE1	1:B:1360:GLU:N	2.53	0.41
1:F:1582:VAL:HG11	1:F:1598:TYR:CD2	2.55	0.41
1:G:1298:GLU:HA	1:G:1301:THR:HG22	2.02	0.41
1:B:901:ASP:OD1	1:B:901:ASP:N	2.53	0.41
1:B:988:VAL:O	1:B:992:VAL:HG22	2.19	0.41
1:B:1298:GLU:HA	1:B:1301:THR:HG22	2.02	0.41
1:K:1582:VAL:HG11	1:K:1598:TYR:CD2	2.55	0.41
1:G:1013:LEU:HD22	1:G:1028:LEU:HD22	2.03	0.41
1:B:1030:LEU:HA	1:B:1033:ILE:HD12	2.02	0.41
1:L:1360:GLU:OE1	1:L:1360:GLU:N	2.53	0.41
2:J:138:GLU:OE2	2:J:142:ARG:NH2	2.44	0.41
1:L:901:ASP:OD1	1:L:901:ASP:N	2.53	0.41
1:H:690:HIS:O	1:H:694:SER:OG	2.33	0.41
1:A:1397:LYS:O	1:B:976:GLN:NE2	2.49	0.41
1:A:1502:HIS:O	1:A:1502:HIS:ND1	2.54	0.41
1:C:950:ARG:O	1:C:952:ASP:N	2.54	0.41
1:M:925:GLN:OE1	1:M:946:TYR:OH	2.29	0.41
1:M:950:ARG:O	1:M:952:ASP:N	2.54	0.41
1:L:1177:LEU:HD23	1:L:1182:ARG:HB2	2.02	0.41
1:L:1423:LEU:HD21	1:L:1451:TYR:CD2	2.56	0.41
1:H:950:ARG:O	1:H:952:ASP:N	2.54	0.41
1:M:771:GLN:HB3	1:M:774:LEU:HD21	2.01	0.41
2:I:214:ARG:O	2:I:218:VAL:HG12	2.20	0.41
1:B:1013:LEU:HD22	1:B:1028:LEU:HD22	2.02	0.41
1:F:1502:HIS:ND1	1:F:1502:HIS:O	2.54	0.41
1:K:1502:HIS:ND1	1:K:1502:HIS:O	2.54	0.41
2:E:140:ASN:OD1	2:E:141:GLN:N	2.54	0.41
1:M:642:HIS:O	1:M:646:LEU:N	2.48	0.41
1:A:1457:ASN:OD1	1:A:1458:HIS:N	2.54	0.41
1:C:762:PHE:O	1:C:766:ALA:N	2.43	0.41
1:K:1457:ASN:OD1	1:K:1458:HIS:N	2.54	0.41
1:G:1177:LEU:HD23	1:G:1182:ARG:HB2	2.02	0.41
1:L:1030:LEU:HA	1:L:1033:ILE:HD12	2.02	0.41
1:L:1323:LEU:O	1:L:1327:PHE:N	2.45	0.41
1:M:937:ASN:OD1	1:M:937:ASN:N	2.53	0.41
1:M:1041:MET:O	1:M:1045:ASN:OD1	2.39	0.41
1:F:1547:THR:HG22	1:F:1548:GLU:N	2.36	0.41
1:F:1574:TYR:OH	1:F:1601:GLN:OE1	2.10	0.41
1:K:1547:THR:HG22	1:K:1548:GLU:N	2.36	0.41
1:G:1423:LEU:HD21	1:G:1451:TYR:CD2	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:140:ASN:OD1	2:O:141:GLN:N	2.54	0.40
1:G:1319:GLU:O	1:G:1323:LEU:HD13	2.22	0.40
1:B:1423:LEU:HD21	1:B:1451:TYR:CD2	2.56	0.40
1:G:1323:LEU:O	1:G:1327:PHE:N	2.45	0.40
1:G:1336:LEU:HD11	1:G:1364:LEU:HD21	2.03	0.40
1:L:1319:GLU:O	1:L:1323:LEU:HD13	2.22	0.40
1:L:1091:ASN:OD1	1:L:1094:ARG:N	2.49	0.40
1:H:1041:MET:O	1:H:1045:ASN:OD1	2.39	0.40
1:M:752:ASN:OD1	1:M:780:ARG:NH2	2.54	0.40
1:A:1411:TYR:HB2	1:A:1419:LEU:HD13	2.04	0.40
1:A:1420:ASN:HA	1:A:1423:LEU:HD12	2.04	0.40
1:C:1041:MET:O	1:C:1045:ASN:OD1	2.39	0.40
2:J:140:ASN:OD1	2:J:141:GLN:N	2.54	0.40
1:L:1013:LEU:HD22	1:L:1028:LEU:HD22	2.02	0.40
1:C:956:TRP:HA	1:C:959:VAL:HG12	2.04	0.40
1:K:1369:GLU:OE1	1:K:1371:TYR:OH	2.35	0.40
1:G:921:TYR:O	1:G:925:GLN:N	2.55	0.40
1:L:973:GLN:O	1:L:977:THR:HG23	2.22	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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	377/1675 (22%)	351 (93%)	26 (7%)	0	100	100
1	B	664/1675 (40%)	620 (93%)	44 (7%)	0	100	100
1	C	439/1675 (26%)	389 (89%)	48 (11%)	2 (0%)	29	68
1	F	377/1675 (22%)	351 (93%)	26 (7%)	0	100	100
1	G	664/1675 (40%)	620 (93%)	44 (7%)	0	100	100
1	H	439/1675 (26%)	391 (89%)	46 (10%)	2 (0%)	29	68

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	K	377/1675 (22%)	351 (93%)	26 (7%)	0	100	100
1	L	664/1675 (40%)	620 (93%)	44 (7%)	0	100	100
1	M	439/1675 (26%)	389 (89%)	48 (11%)	2 (0%)	29	68
2	D	100/229 (44%)	95 (95%)	5 (5%)	0	100	100
2	E	57/229 (25%)	57 (100%)	0	0	100	100
2	I	100/229 (44%)	95 (95%)	5 (5%)	0	100	100
2	J	57/229 (25%)	57 (100%)	0	0	100	100
2	N	100/229 (44%)	95 (95%)	5 (5%)	0	100	100
2	O	57/229 (25%)	57 (100%)	0	0	100	100
All	All	4911/16449 (30%)	4538 (92%)	367 (8%)	6 (0%)	54	85

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	C	772	LEU
1	H	772	LEU
1	M	772	LEU
1	C	773	PRO
1	H	773	PRO
1	M	773	PRO

### 5.3.2 Protein sidechains [i](#)

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	342/1471 (23%)	341 (100%)	1 (0%)	92	95
1	B	587/1471 (40%)	585 (100%)	2 (0%)	92	95
1	C	405/1471 (28%)	401 (99%)	4 (1%)	76	86
1	F	342/1471 (23%)	341 (100%)	1 (0%)	92	95
1	G	587/1471 (40%)	585 (100%)	2 (0%)	92	95
1	H	405/1471 (28%)	401 (99%)	4 (1%)	76	86

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	K	342/1471 (23%)	341 (100%)	1 (0%)	92	95
1	L	587/1471 (40%)	585 (100%)	2 (0%)	92	95
1	M	405/1471 (28%)	401 (99%)	4 (1%)	76	86
2	D	96/184 (52%)	94 (98%)	2 (2%)	53	72
2	E	55/184 (30%)	55 (100%)	0	100	100
2	I	96/184 (52%)	95 (99%)	1 (1%)	76	86
2	J	55/184 (30%)	55 (100%)	0	100	100
2	N	96/184 (52%)	94 (98%)	2 (2%)	53	72
2	O	55/184 (30%)	55 (100%)	0	100	100
All	All	4455/14343 (31%)	4429 (99%)	26 (1%)	86	92

All (26) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1509	ARG
1	B	887	ASN
1	B	907	LYS
1	C	767	LYS
1	C	772	LEU
1	C	907	LYS
1	C	1045	ASN
2	D	150	ASN
2	D	205	SER
1	F	1509	ARG
1	K	1509	ARG
1	G	887	ASN
1	G	907	LYS
1	L	887	ASN
1	L	907	LYS
1	H	767	LYS
1	H	772	LEU
1	H	907	LYS
1	H	1045	ASN
1	M	767	LYS
1	M	772	LEU
1	M	907	LYS
1	M	1045	ASN
2	I	205	SER
2	N	150	ASN

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Mol	Chain	Res	Type
2	N	205	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	H	889	ASN
1	M	889	ASN
2	I	150	ASN
2	I	153	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

### 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

### 5.7 Other polymers [i](#)

There are no such residues in this entry.

### 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.



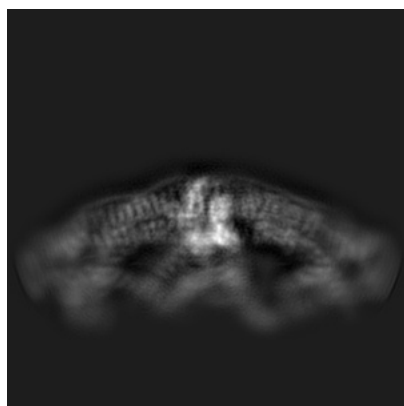
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-0126. These allow visual inspection of the internal detail of the map and identification of artifacts.

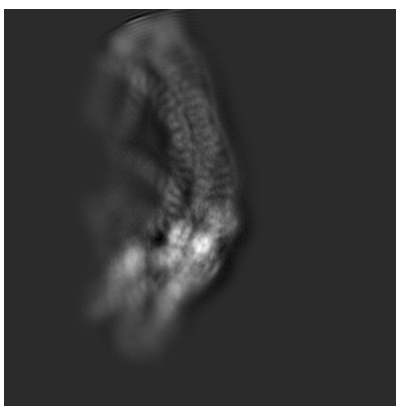
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

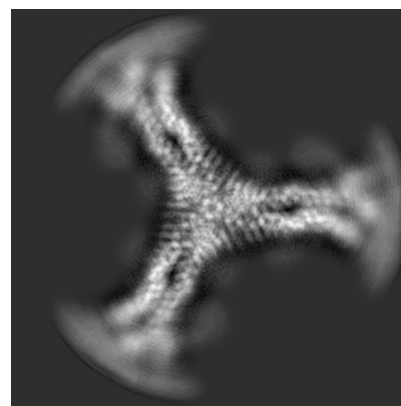
#### 6.1.1 Primary map



X



Y

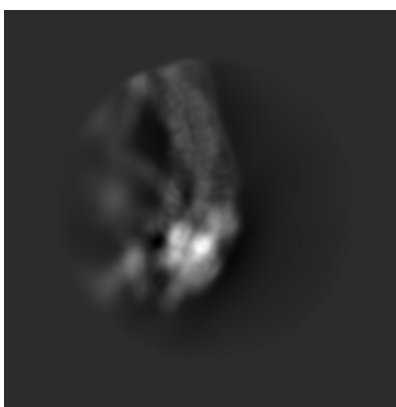


Z

#### 6.1.2 Raw map



X



Y

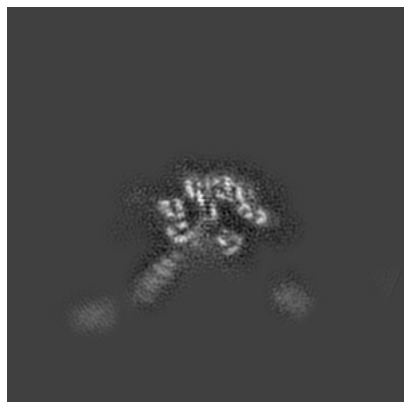


Z

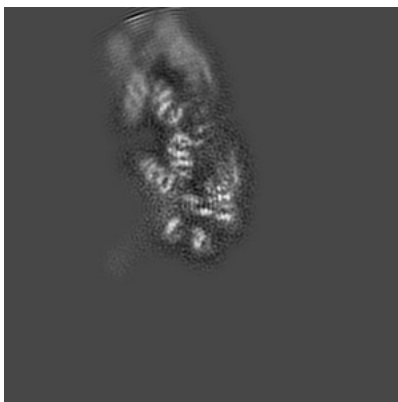
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

### 6.2.1 Primary map



X Index: 128

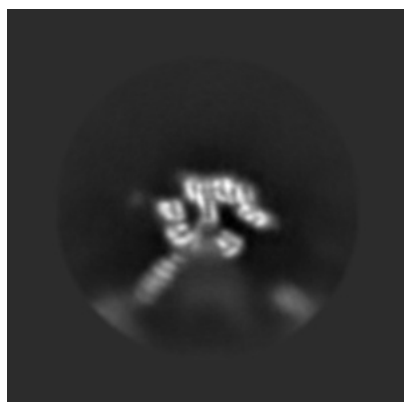


Y Index: 128

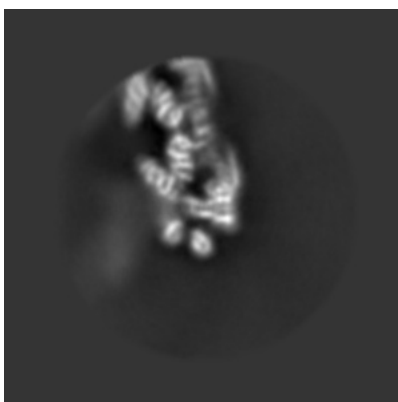


Z Index: 128

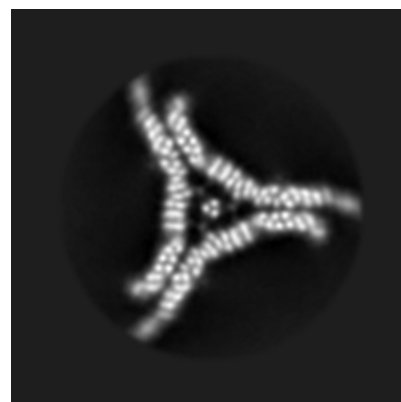
### 6.2.2 Raw map



X Index: 128



Y Index: 128

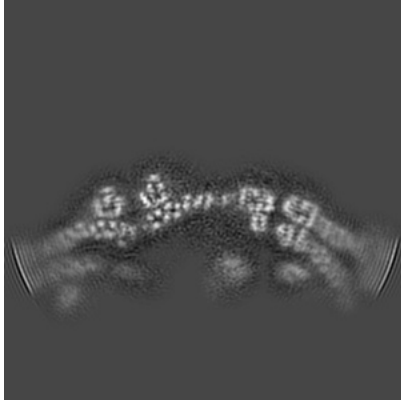


Z Index: 128

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

## 6.3 Largest variance slices [i](#)

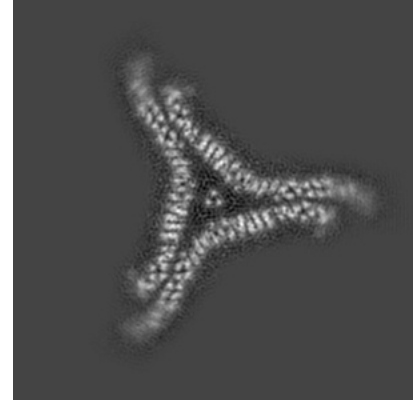
### 6.3.1 Primary map



X Index: 101



Y Index: 117



Z Index: 124

### 6.3.2 Raw map



X Index: 100



Y Index: 120



Z Index: 124

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

## 6.4 Orthogonal surface views [i](#)

### 6.4.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.195. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.4.2 Raw map



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

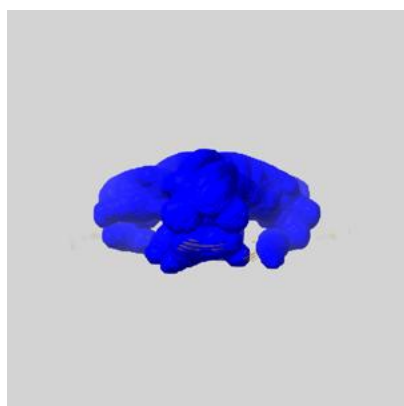
## 6.5 Mask visualisation [i](#)

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

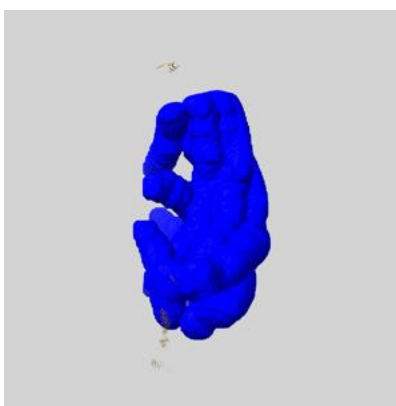
A mask typically either:

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

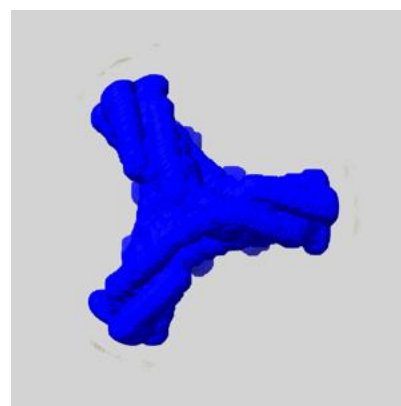
### 6.5.1 emd\_0126\_msk\_1.map [i](#)



X



Y

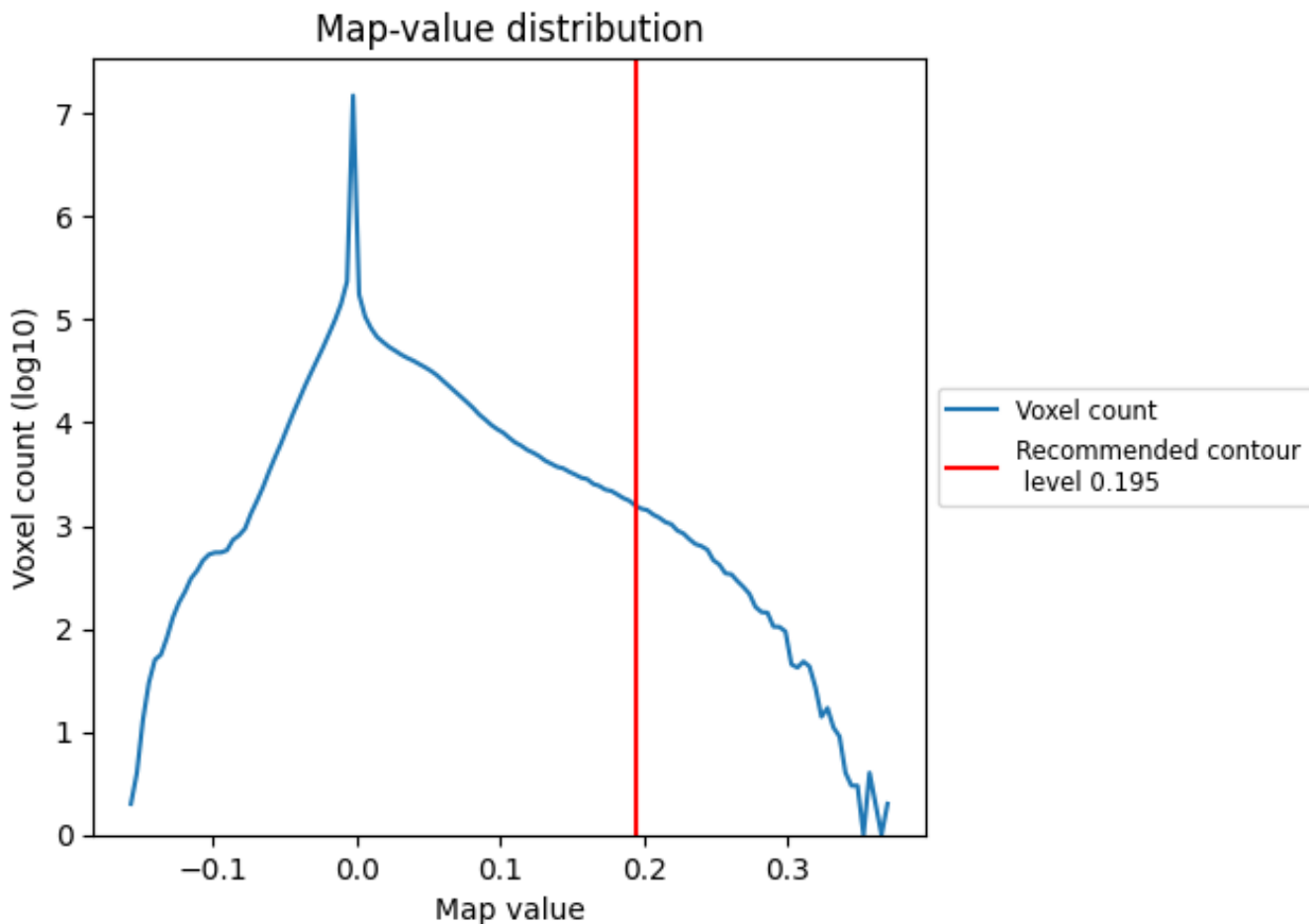


Z

## 7 Map analysis [i](#)

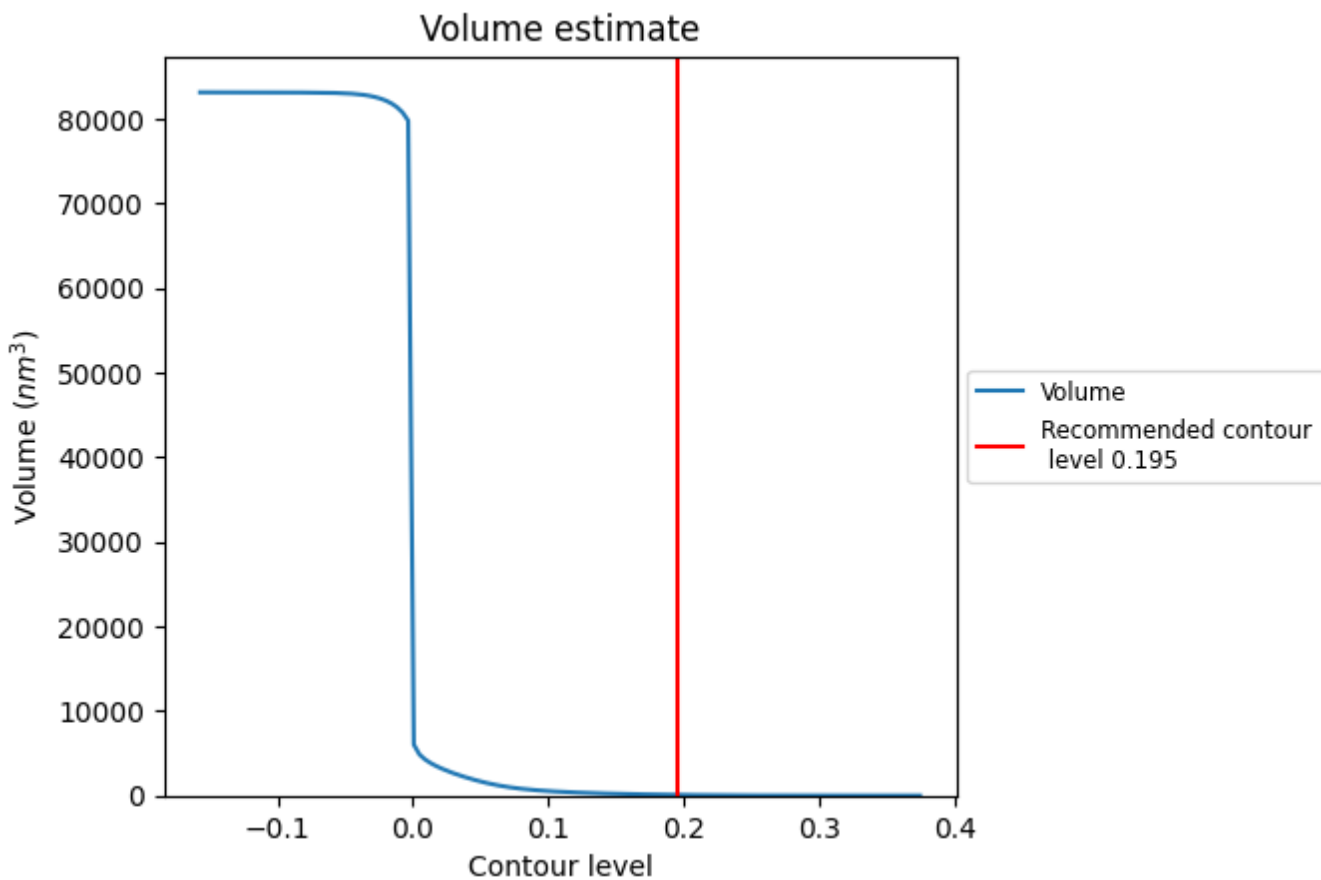
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



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

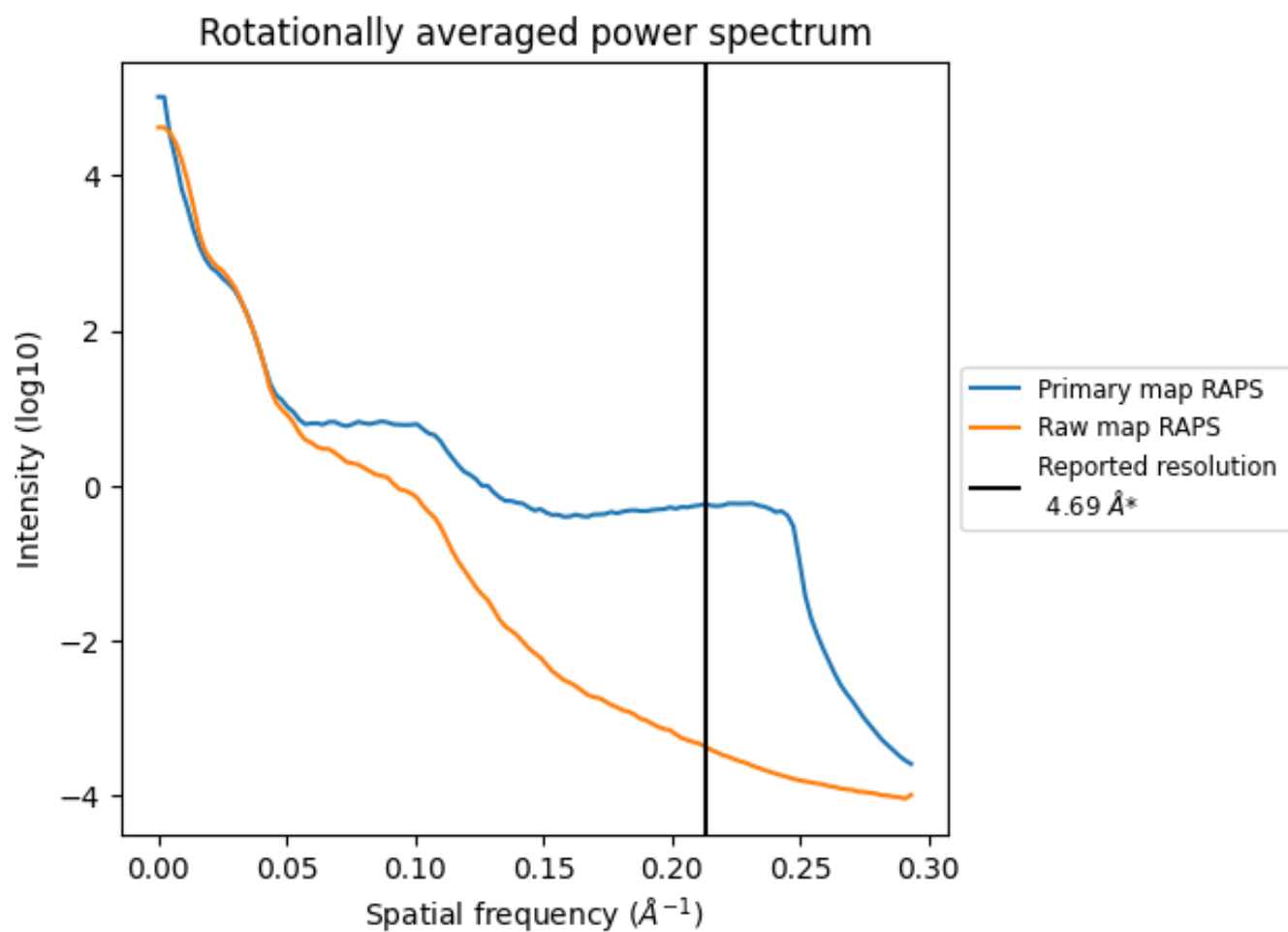
## 7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 82 nm<sup>3</sup>; this corresponds to an approximate mass of 74 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 i



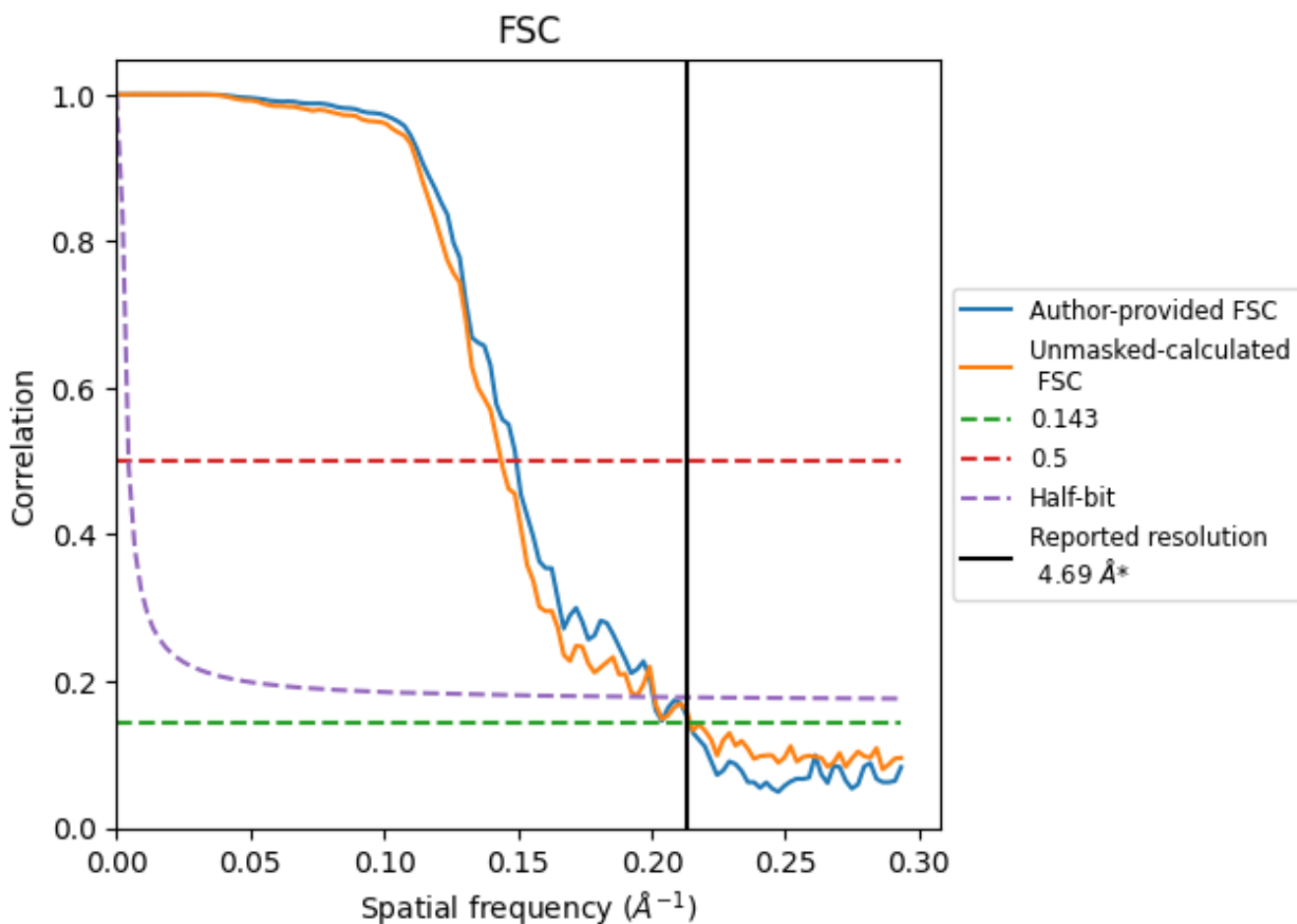
\*Reported resolution corresponds to spatial frequency of 0.213 Å<sup>-1</sup>



## 8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

### 8.1 FSC [i](#)



\*Reported resolution corresponds to spatial frequency of 0.213 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

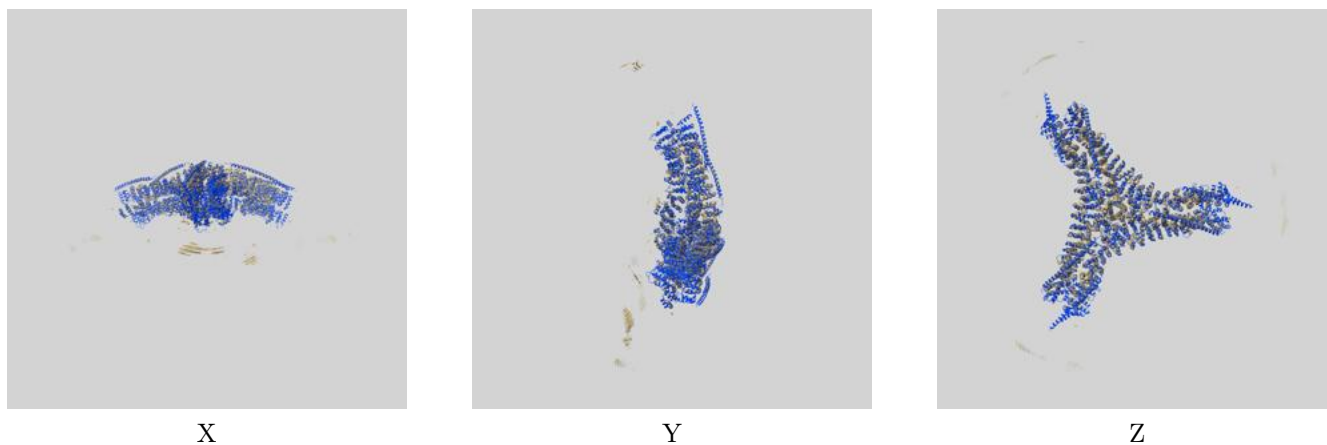
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.69	-	-
Author-provided FSC curve	4.67	6.69	4.98
Unmasked-calculated*	4.66	6.95	4.97

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

## 9 Map-model fit [i](#)

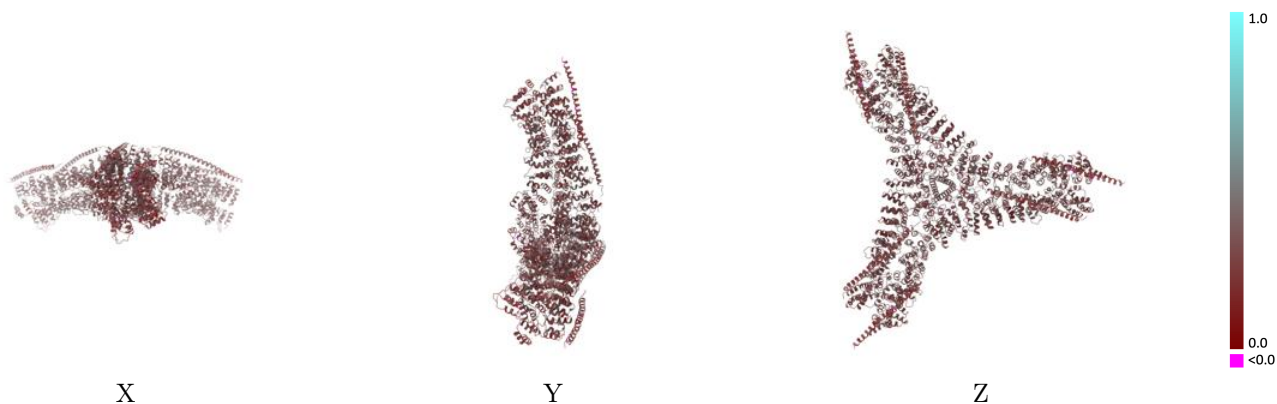
This section contains information regarding the fit between EMDB map EMD-0126 and PDB model 6SCT. Per-residue inclusion information can be found in section 3 on page 5.

### 9.1 Map-model overlay [i](#)



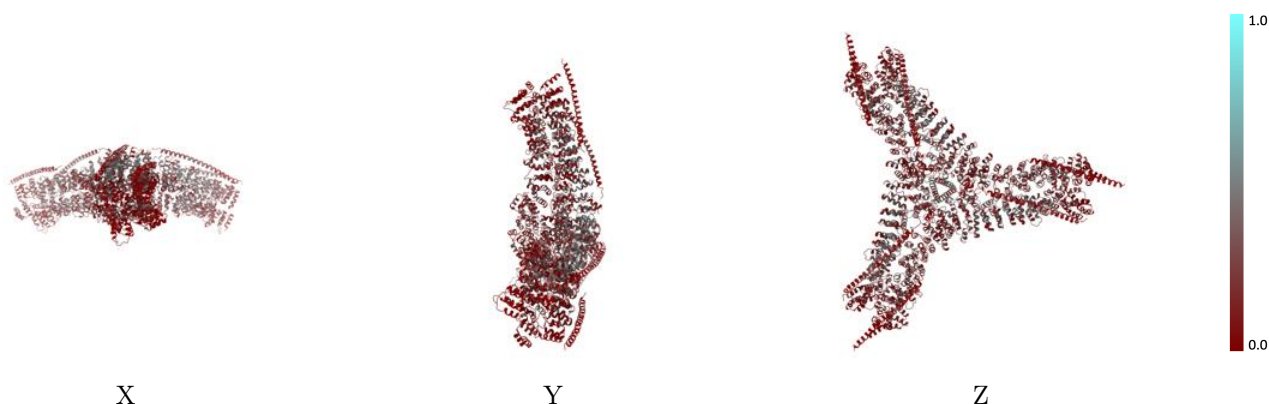
The images above show the 3D surface view of the map at the recommended contour level 0.195 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 9.2 Q-score mapped to coordinate model [i](#)



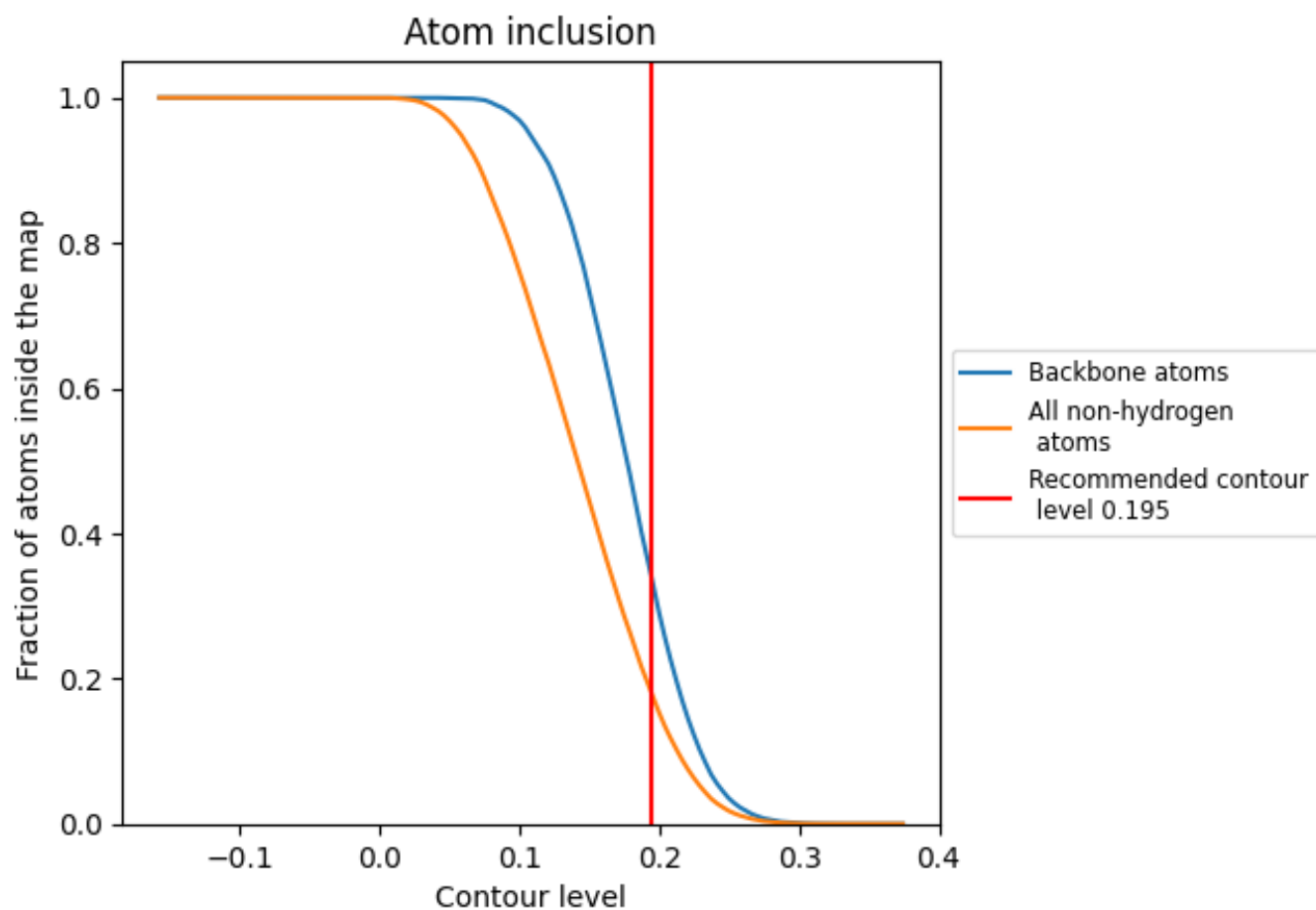
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

## 9.3 Atom inclusion mapped to coordinate model [i](#)



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 (0.195).

































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 34% of all backbone atoms, 18% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.195) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.1785	 0.2970
A	 0.2841	 0.3140
B	 0.1677	 0.2980
C	 0.1366	 0.2890
D	 0.1162	 0.2920
E	 0.0221	 0.2180
F	 0.2857	 0.3160
G	 0.1687	 0.2990
H	 0.1355	 0.2910
I	 0.1150	 0.2890
J	 0.0262	 0.2210
K	 0.2864	 0.3170
L	 0.1677	 0.2980
M	 0.1386	 0.2890
N	 0.1103	 0.2910
O	 0.0342	 0.2180

