



wwPDB EM Validation Summary Report ⓘ

Jun 18, 2024 – 04:23 PM JST

PDB ID : 8ZJL
EMDB ID : EMD-60149
Title : Structure of DOCK5/ELMO1/Rac1 core (RhoG/DOCK5/ELMO1/Rac1 dataset, class 4)
Authors : Kukimoto-Niino, M.; Katsura, K.; Ishizuka-Katsura, Y.; Mishima-Tsumagari, C.; Yonemochi, M.; Inoue, M.; Nakagawa, R.; Kaushik, R.; Zhang, K.Y.J.; Shirouzu, M.
Deposited on : 2024-05-15
Resolution : 4.31 Å (reported)
Based on initial model : 7DPA

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev92
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

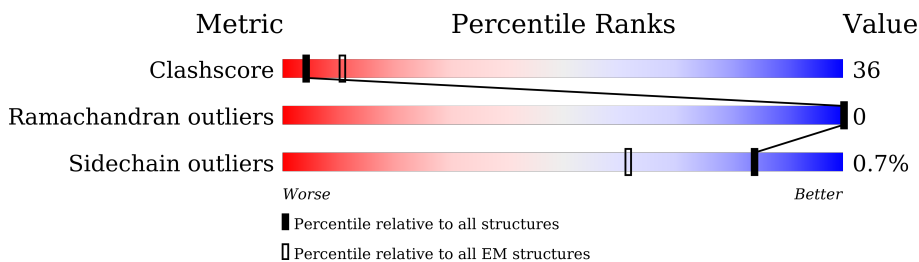
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.31 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 ≥ 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	733	 11% 16% 73%
1	D	733	 11% 15% 73%
2	B	1648	 7% 39% 60%
2	E	1648	 7% 38% 61%
3	C	184	 40% 56%
3	F	184	 38% 58%

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 32858 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 Engulfment and cell motility protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	198	Total	C	N	O	S	0	0
			1608	1018	277	303	10		
1	D	198	Total	C	N	O	S	0	0
			1608	1018	277	303	10		

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-5	GLY	-	expression tag	UNP Q92556
A	-4	GLY	-	expression tag	UNP Q92556
A	-3	SER	-	expression tag	UNP Q92556
A	-2	GLY	-	expression tag	UNP Q92556
A	-1	GLY	-	expression tag	UNP Q92556
A	0	SER	-	expression tag	UNP Q92556
D	-5	GLY	-	expression tag	UNP Q92556
D	-4	GLY	-	expression tag	UNP Q92556
D	-3	SER	-	expression tag	UNP Q92556
D	-2	GLY	-	expression tag	UNP Q92556
D	-1	GLY	-	expression tag	UNP Q92556
D	0	SER	-	expression tag	UNP Q92556

- Molecule 2 is a protein called Deducator of cytokinesis protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	1642	Total	C	N	O	S	0	0
			13436	8618	2264	2484	70		
2	E	1642	Total	C	N	O	S	0	0
			13436	8618	2264	2484	70		

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-5	GLY	-	expression tag	UNP Q9H7D0

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
B	-4	GLY	-	expression tag	UNP Q9H7D0
B	-3	SER	-	expression tag	UNP Q9H7D0
B	-2	GLY	-	expression tag	UNP Q9H7D0
B	-1	GLY	-	expression tag	UNP Q9H7D0
B	0	SER	-	expression tag	UNP Q9H7D0
B	1285	ARG	LYS	variant	UNP Q9H7D0
E	-5	GLY	-	expression tag	UNP Q9H7D0
E	-4	GLY	-	expression tag	UNP Q9H7D0
E	-3	SER	-	expression tag	UNP Q9H7D0
E	-2	GLY	-	expression tag	UNP Q9H7D0
E	-1	GLY	-	expression tag	UNP Q9H7D0
E	0	SER	-	expression tag	UNP Q9H7D0
E	1285	ARG	LYS	variant	UNP Q9H7D0

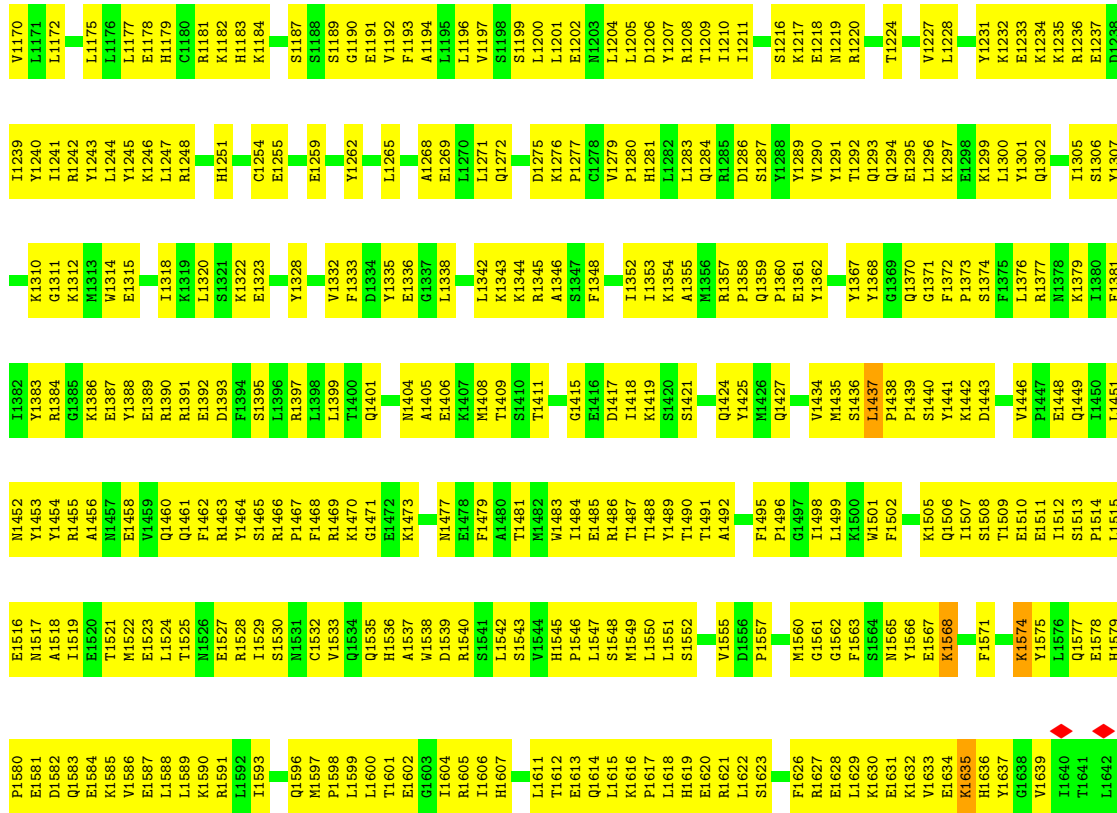
- Molecule 3 is a protein called Ras-related C3 botulinum toxin substrate 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	177	1385	890	228	259	8	0	0
3	F	177	1385	890	228	259	8	0	0

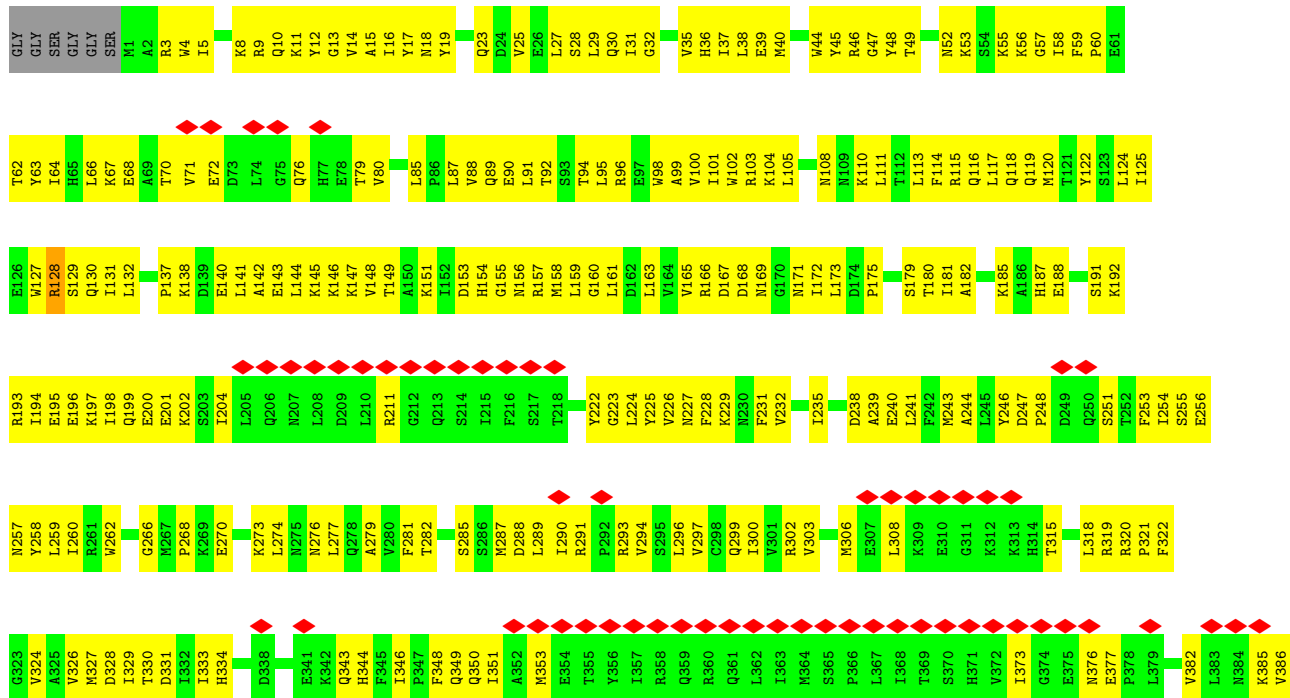
There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	-6	GLY	-	expression tag	UNP P63000
C	-5	SER	-	expression tag	UNP P63000
C	-4	SER	-	expression tag	UNP P63000
C	-3	GLY	-	expression tag	UNP P63000
C	-2	SER	-	expression tag	UNP P63000
C	-1	SER	-	expression tag	UNP P63000
C	0	GLY	-	expression tag	UNP P63000
C	15	ALA	GLY	engineered mutation	UNP P63000
F	-6	GLY	-	expression tag	UNP P63000
F	-5	SER	-	expression tag	UNP P63000
F	-4	SER	-	expression tag	UNP P63000
F	-3	GLY	-	expression tag	UNP P63000
F	-2	SER	-	expression tag	UNP P63000
F	-1	SER	-	expression tag	UNP P63000
F	0	GLY	-	expression tag	UNP P63000
F	15	ALA	GLY	engineered mutation	UNP P63000

M1105	Q1035	Q962	Q889	1823	L753	L673	A602	1527	K461	A389	F322	N957	R193	E126
V1106	A1036	Q963	L890	1824	F754	L767	S603	R828	T462	K390	G323	Y258	I194	M127
G1107	S1037	M964	D891	M825	F677	F676	S604	F529	P463	E391	V324	I260	E195	R128
P1108	F1038	D965	D892	D826	N677	N678	R604	T530	V464	V392	M327	I261	K197	S129
L1109	E1039	D966	N893	N827	N679	N680	R605	F531	N465	N393	V326	R262	Q130	K198
E1111	G1041	H968	S894	L829	L760	M680	L606	R534	V466	H394	D328	V261	I198	I131
V1112	H1042	F969	N895	V830	K761	M681	V607	R535	E467	K395	I329	N265	Q199	L132
T1113	M1043	S970	K996	V831	Y762	E682	T608	S536	V468	G396	T330	G266	E201	P137
L1114	N1044	H971	V832	P833	L763	M683	F609	Q537	T469	G397	I332	M267	K138	K139
T1115	M1045	E835	H899	V834	F764	S684	T610	E538	N470	G398	I333	P268	E140	E140
P1116	N1046	R973	R991	E836	R765	S685	P611	S471	S472	G399	I334	K269	L141	L141
E1117	H1048	S974	Q904	L836	F766	L692	P612	N473	N474	L399	H334	E270	A142	A142
V1118	V1051	T975	Q904	S837	I767	V693	S612	H473	H474	M400	E341	K273	E143	E143
E1119	A1052	F976	V838	V838	I768	F694	K613	D474	D474	S402	K342	L274	K138	K138
L1120	F1053	R979	L839	V839	Q769	D695	D614	G477	K478	L403	Q343	N275	N207	N207
R1121	F1054	R979	F940	V840	S770	A696	S615	K478	K478	A550	Q344	N276	L208	L208
K1122	L1054	N909	C841	C841	R771	L697	T616	L479	L479	L405	H344	N277	D209	D209
A1123	T1055	L910	K942	K942	N772	V772	V652	L480	L480	L406	F345	Q278	L210	L210
T1124	H1056	E911	F843	F843	L773	I700	K617	E481	E481	D409	P347	A279	R211	R211
L1125	V1057	E912	F844	F844	Y774	I701	D618	K553	K553	L410	F348	V280	G212	G212
N1126	S1058	F991	Q845	Q845	L775	S702	S619	L554	L554	L410	Q349	F281	A150	A150
F1127	L1059	M992	S846	S846	R776	L703	F620	M555	M555	L411	Q350	T282	K151	K151
F1128	Q1060	F993	L847	L847	R777	I704	Q621	N556	N556	Q412	Q351	T282	I152	I152
F1129	L1061	K994	I847	I847	S781	I705	Q621	P857	P857	Y413	I351	S285	D153	D153
D1130	E1062	D995	K782	K782	K782	I707	T624	D558	D558	Q414	A352	S286	H154	H154
M1131	F1063	L996	D783	D783	D783	K708	T625	G559	G559	A488	M352	M287	G156	G156
M1132	F1064	F997	F709	F709	F709	F709	L625	T560	T560	A488	M353	M287	G157	G157
E1135	S1065	Q710	Q710	Q710	Q710	Q710	L626	G489	G489	H419	E354	D288	R157	R157
F1138	A1003	H924	E786	E786	E786	V715	C627	L561	L561	L420	T355	L289	M158	M158
S1139	K1004	R925	F787	F787	F787	L716	S628	G663	G663	V421	T356	I290	L159	L159
F1144	D1005	K856	N788	N788	N788	L717	T629	D564	D564	D422	I356	R291	G160	G160
H1145	M1006	L857	N789	N789	N789	L718	K630	G565	G565	R423	I357	P292	D161	D161
L1146	M1007	S928	S790	S790	S790	L719	T631	R666	R666	S424	A358	R293	D162	D162
F1147	M1008	K859	V1007	V1007	V1007	L720	L632	Y497	Y497	R429	R358	R294	L163	L163
E1148	M1009	M860	R792	R792	R792	L721	Q633	S498	S498	K430	R359	V295	V164	V164
M1149	M1010	T661	Q793	Q793	Q793	L722	N634	V499	V499	M431	R360	L296	V165	V165
L1150	M1011	K862	K722	K722	K722	L723	N634	V500	V500	M431	R361	V297	R166	R166
L1151	M1012	L863	H723	H723	H723	L724	L637	Y501	Y501	E435	L362	C298	D167	D167
T1152	M1013	S866	T727	T727	T727	L725	L638	G574	G574	I436	I363	Q299	D168	D168
L1153	M1014	T867	L728	L728	L728	L726	L639	D575	D575	I437	I363	Q299	G170	G170
L1154	M1015	L868	A729	A729	A729	L727	L640	N576	N576	L438	M364	I300	M171	M171
L1155	M1016	F869	V730	V730	V730	L728	L641	K505	K505	P439	P366	R302	L172	L172
L1156	M1017	R870	V731	V731	V731	L729	L642	Q506	Q506	G440	P366	V303	L173	L173
L1157	M1018	K871	K732	K732	K732	L730	L643	P507	P507	D442	L367	M306	P175	P175
L1158	M1019	E807	L733	L733	L733	L731	L644	C508	C508	V442	I368	E307	D238	D238
L1159	M1020	E808	S734	S734	S734	L732	L645	M509	M509	R444	T369	E307	A239	A239
L1160	M1021	C874	A809	A809	A809	L733	L646	Y510	Y510	R444	T369	E307	E240	E240
L1161	M1022	R875	V810	V810	V810	L734	L647	E511	E511	D445	S370	K309	L241	L241
L1162	M1023	E876	K611	K611	K611	L735	L650	K514	K514	I446	H371	E310	F942	F942
L1163	M1024	E877	F738	F738	F738	L736	L651	V515	V515	Y447	G311	G311	M243	M243
L1164	M1025	L878	V740	V740	V740	L737	L652	S516	S516	L450	I373	I373	L245	L245
L1165	M1026	L879	V741	V741	V741	L738	L653	I517	I517	I451	G374	K312	Y246	Y246
L1166	M1027	L880	V742	V742	V742	L739	L654	A518	A518	E454	E375	K313	D247	D247
L1167	M1028	L881	A743	A743	A743	L740	L655	I519	I519	E454	E375	K313	P248	P248
L1168	M1029	L882	N743	N743	N743	L741	L656	E520	E520	D456	N376	T315	D249	D249
L1169	M1030	L883	K318	K318	K318	L742	L657	V522	V522	K457	E377	E377	Q250	Q250
L1170	M1031	L884	V819	V819	V819	L743	L658	E521	E521	K457	E377	E377	Q251	Q251
L1171	M1032	L885	L820	L820	L820	L744	L659	E522	E522	K457	E377	E377	T252	T252
L1172	M1033	L886	P821	P821	P821	L745	L660	E523	E523	K457	E377	E377	F253	F253
L1173	M1034	L887	S822	S822	S822	L746	L661	E524	E524	K457	E377	E377	L254	L254
L1174	M1035	L888	Q885	Q885	Q885	L747	L662	E525	E525	K457	E377	E377	S255	S255
L1175	M1036	L889	Q885	Q885	Q885	L748	L663	E526	E526	K457	E377	E377	S256	S256



• Molecule 2: Dedicator of cytokinesis protein 5



R1377	R1378	K1379	I1380	F1381	G1311	K1312	M1313	R1384	G1385	K1386	E1315	E1387	Y1388	E1389	R1390	R1391	E1392	D1393	S1395	L1386	R1397	L1398	L1399	T1400	F1401	Q1401	M1404	A1405	E1406	K1407	M1408	G1415	E1416	D1417	I1418	K1419	S1420	S1421	Q1424	Y1425	A1436	L1437	P1438	P1439	S1440	K1442	D1443	V1446	P1447	E1448	Q1449	
Q1167	Y1168	K1169	V1170	L1171	G1107	F1108	I1109	L1176	L1177	E1111	V1112	H1179	C1180	R1181	K1182	H1183	K1184	Y1185	S1187	S1188	S1189	G1190	E1191	V1192	F1193	A1194	S1199	L1200	E1201	K1276	P1277	G1278	V1279	P1280	H1281	L1282	L1283	M1284	E1285	D1286	S1216	K1217	E1218	M1219	R1220	T1224	V1227	L1228	Y1231	K1232	L1233	K1234
K1235	R1236	D1238	I1239	Y1240	I1241	R1242	L1243	L1244	E1245	K1246	L1247	R1248	H1251	C1254	E1255	E1259	Y1262	T1263	L1264	L1265	A1268	E1269	L1270	L1271	Q1272	D1275	K1276	P1277	G1278	V1279	P1280	H1281	L1282	L1283	M1284	E1285	D1286	V1290	Y1291	T1292	Q1293	Q1294	E1295	L1296	K1297	L1298	E1298	L1299	L1300	L1301	Q1302	
I1305	S1306	Y1307	K1310	G1311	K1312	M1313	R1314	E1315	E1318	Y1319	K1319	L1320	S1321	K1322	E1323	L1324	T1327	Y1328	V1332	F1333	D1334	Y1335	E1336	G1337	L1338	F1339	Q1401	M1404	A1405	E1406	K1407	M1408	G1415	E1416	D1417	I1418	K1419	S1420	S1421	Q1424	Y1425	A1436	L1437	P1438	P1439	S1440	K1442	D1443	V1446	P1447	E1448	Q1449
Q1167	Y1168	K1169	V1170	L1171	G1107	F1108	I1109	L1176	L1177	E1111	V1112	H1179	C1180	R1181	K1182	H1183	K1184	Y1185	S1187	S1188	S1189	G1190	E1191	V1192	F1193	A1194	S1199	L1200	E1201	K1276	P1277	G1278	V1279	P1280	H1281	L1282	L1283	M1284	E1285	D1286	S1216	K1217	E1218	M1219	R1220	T1224	V1227	L1228	Y1231	K1232	L1233	K1234
K1235	R1236	D1238	I1239	Y1240	I1241	R1242	L1243	L1244	E1245	K1246	L1247	R1248	H1251	C1254	E1255	E1259	Y1262	T1263	L1264	L1265	A1268	E1269	L1270	L1271	Q1272	D1275	K1276	P1277	G1278	V1279	P1280	H1281	L1282	L1283	M1284	E1285	D1286	V1290	Y1291	T1292	Q1293	Q1294	E1295	L1296	K1297	L1298	E1298	L1299	L1300	L1301	Q1302	
I1305	S1306	Y1307	K1310	G1311	K1312	M1313	R1314	E1315	E1318	Y1319	K1319	L1320	S1321	K1322	E1323	L1324	T1327	Y1328	V1332	F1333	D1334	Y1335	E1336	G1337	L1338	F1339	Q1401	M1404	A1405	E1406	K1407	M1408	G1415	E1416	D1417	I1418	K1419	S1420	S1421	Q1424	Y1425	A1436	L1437	P1438	P1439	S1440	K1442	D1443	V1446	P1447	E1448	Q1449

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	123816	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 ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	64000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.058	Depositor
Minimum map value	-0.017	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.01	Depositor
Map size (Å)	452.2, 452.2, 452.2	wwPDB
Map dimensions	340, 340, 340	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.33, 1.33, 1.33	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	0.29	0/1641	0.52	1/2218 (0.0%)
1	D	0.29	0/1641	0.52	1/2218 (0.0%)
2	B	0.34	0/13722	0.51	1/18514 (0.0%)
2	E	0.33	0/13722	0.51	1/18514 (0.0%)
3	C	0.33	0/1415	0.49	0/1924
3	F	0.33	0/1415	0.49	0/1924
All	All	0.33	0/33556	0.51	4/45312 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	536	LEU	CB-CG-CD2	-5.42	101.79	111.00
1	A	536	LEU	CB-CG-CD2	-5.40	101.81	111.00
2	E	1437	LEU	CA-CB-CG	5.25	127.36	115.30
2	B	1437	LEU	CA-CB-CG	5.24	127.35	115.30

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	1608	0	1617	127	0
1	D	1608	0	1617	123	0
2	B	13436	0	13516	987	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	E	13436	0	13516	1003	0
3	C	1385	0	1407	106	0
3	F	1385	0	1407	111	0
All	All	32858	0	33080	2381	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 36.

The worst 5 of 2381 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:1217:LYS:HA	2:E:1220:ARG:HE	1.30	0.96
2:B:1217:LYS:HA	2:B:1220:ARG:HE	1.30	0.95
2:B:46:ARG:HB3	2:B:58:ILE:HG13	1.54	0.89
2:E:4:TRP:HB3	2:E:39:GLU:HB3	1.55	0.88
3:F:9:VAL:HG22	3:F:78:PHE:HZ	1.39	0.88

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	196/733 (27%)	174 (89%)	22 (11%)	0	100	100
1	D	196/733 (27%)	174 (89%)	22 (11%)	0	100	100
2	B	1640/1648 (100%)	1493 (91%)	147 (9%)	0	100	100
2	E	1640/1648 (100%)	1493 (91%)	147 (9%)	0	100	100
3	C	175/184 (95%)	164 (94%)	11 (6%)	0	100	100
3	F	175/184 (95%)	164 (94%)	11 (6%)	0	100	100
All	All	4022/5130 (78%)	3662 (91%)	360 (9%)	0	100	100

There are no Ramachandran outliers to report.

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	183/664 (28%)	181 (99%)	2 (1%)	73	85
1	D	183/664 (28%)	181 (99%)	2 (1%)	73	85
2	B	1495/1497 (100%)	1486 (99%)	9 (1%)	86	92
2	E	1495/1497 (100%)	1486 (99%)	9 (1%)	86	92
3	C	153/157 (98%)	151 (99%)	2 (1%)	69	82
3	F	153/157 (98%)	151 (99%)	2 (1%)	69	82
All	All	3662/4636 (79%)	3636 (99%)	26 (1%)	84	90

5 of 26 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	570	ARG
2	E	854	ARG
3	F	66	ARG
2	E	644	ARG
2	E	935	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 33 such sidechains are listed below:

Mol	Chain	Res	Type
2	E	1359	GLN
2	E	1401	GLN
3	F	2	GLN
2	B	1401	GLN
2	B	1359	GLN

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.

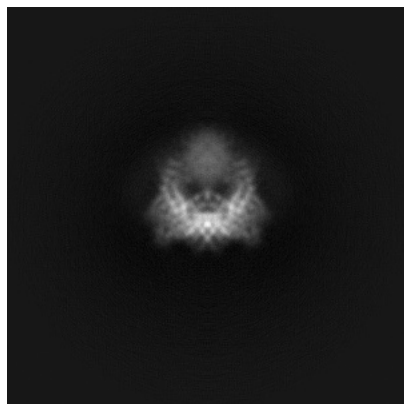
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-60149. These allow visual inspection of the internal detail of the map and identification of artifacts.

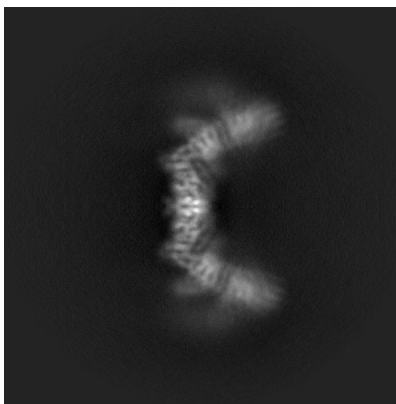
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

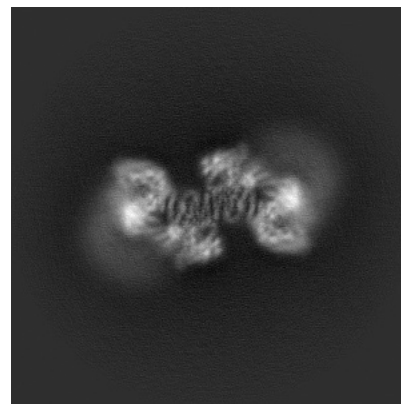
6.1.1 Primary map



X

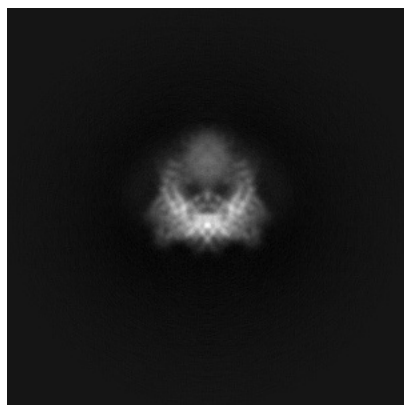


Y

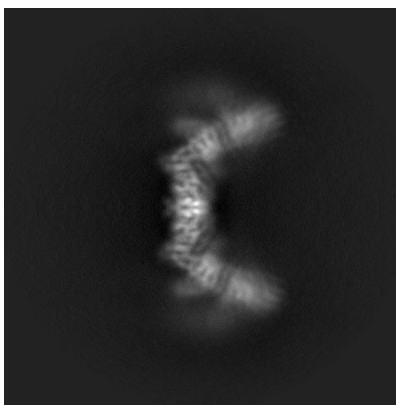


Z

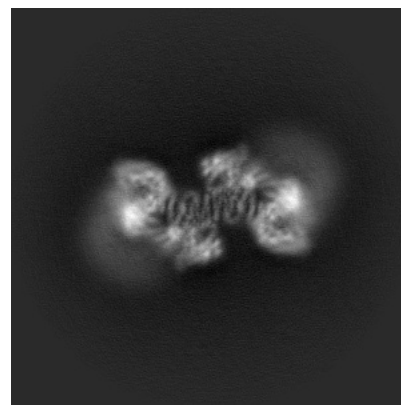
6.1.2 Raw map



X



Y

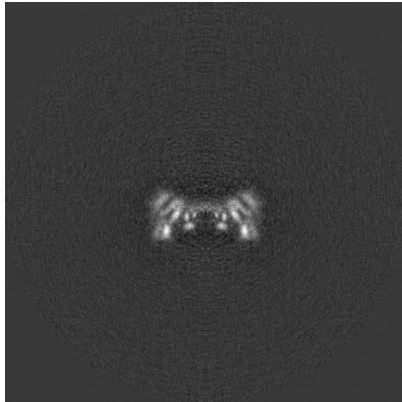


Z

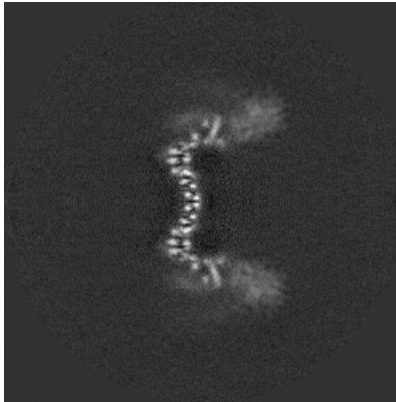
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

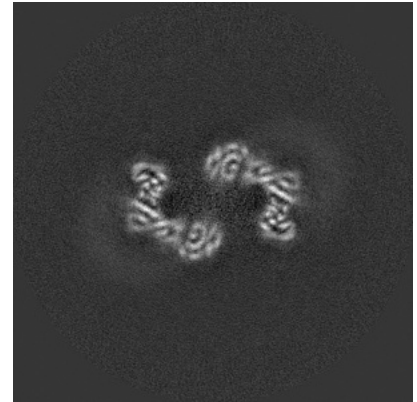
6.2.1 Primary map



X Index: 170

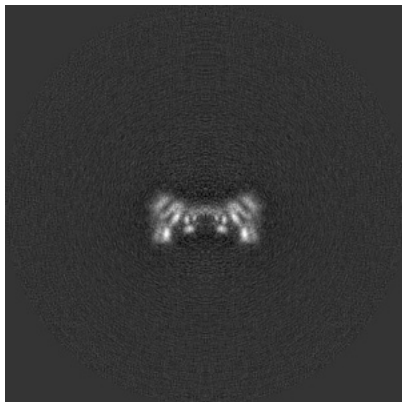


Y Index: 170

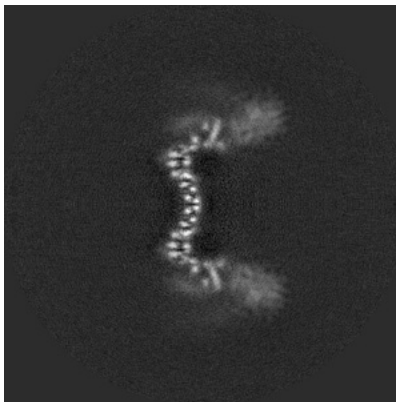


Z Index: 170

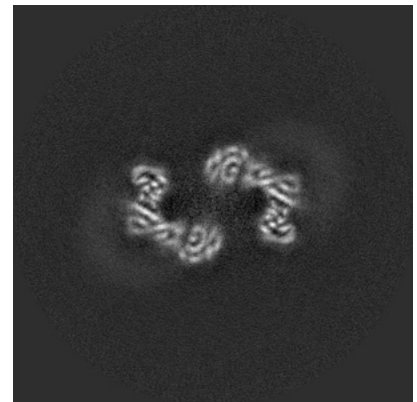
6.2.2 Raw map



X Index: 170



Y Index: 170

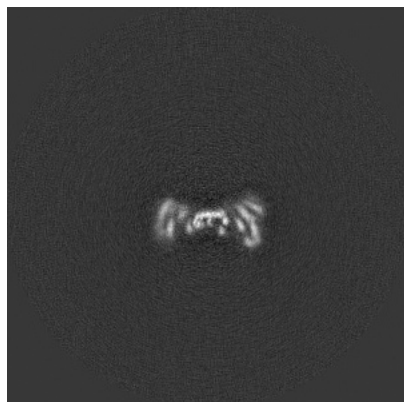


Z Index: 170

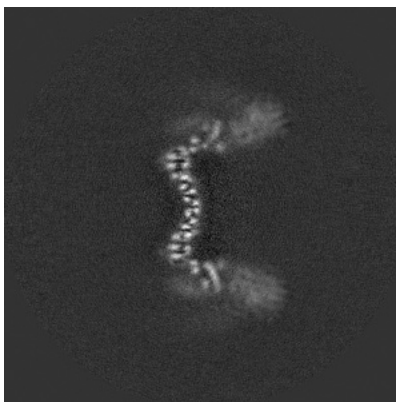
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

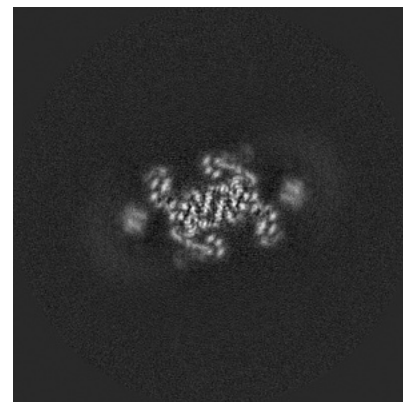
6.3.1 Primary map



X Index: 173

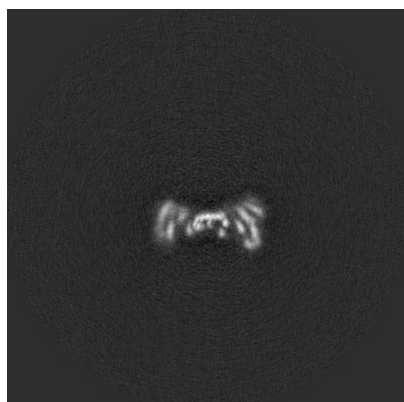


Y Index: 169

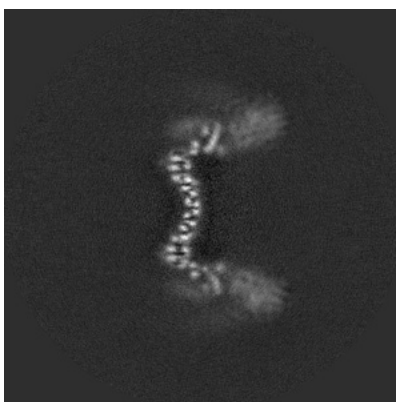


Z Index: 155

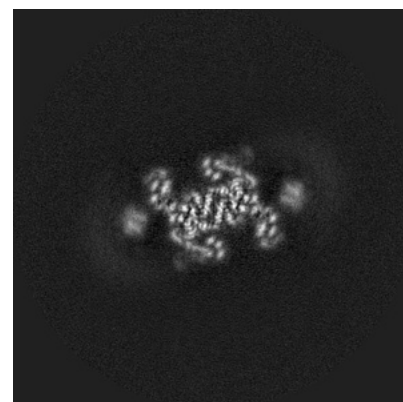
6.3.2 Raw map



X Index: 173



Y Index: 171

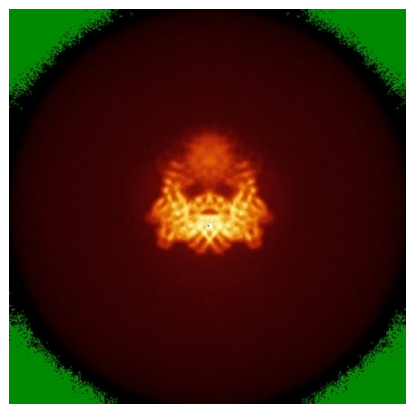


Z Index: 155

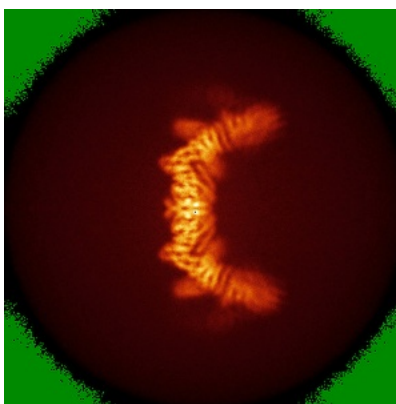
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

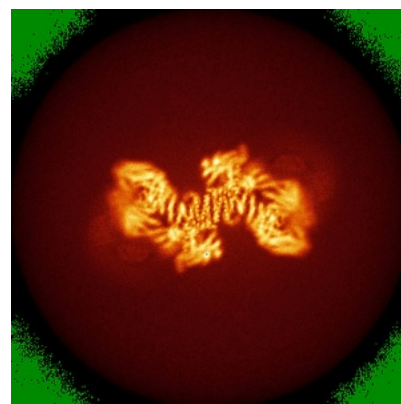
6.4.1 Primary map



X



Y



Z

6.4.2 Raw map



X



Y

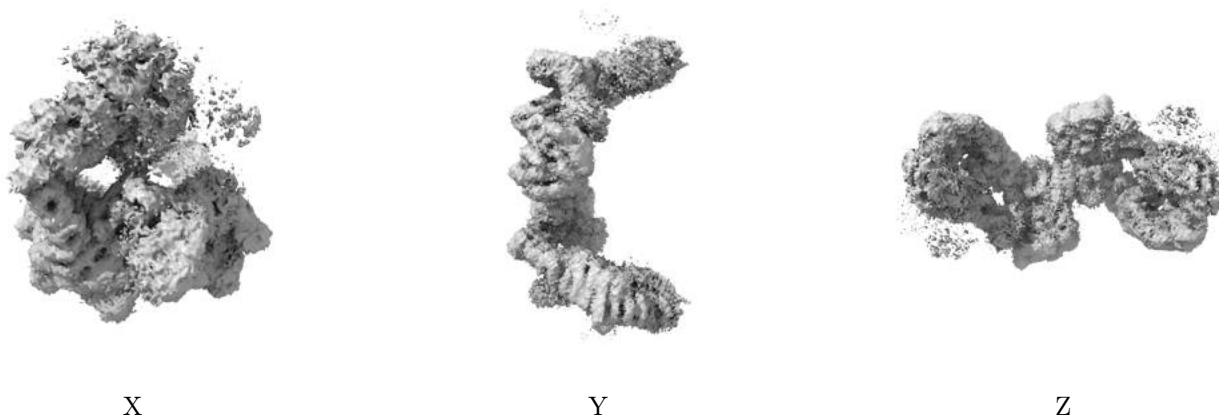


Z

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

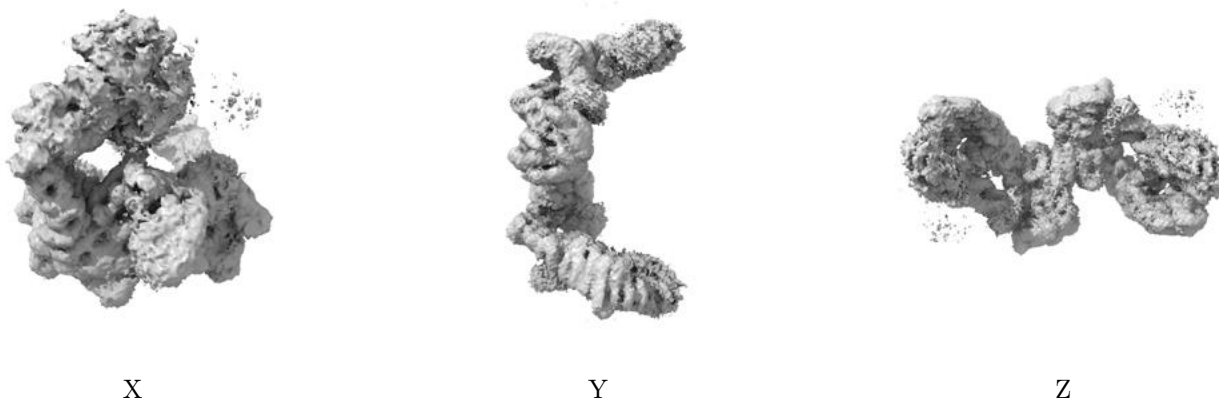
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.01. 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



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

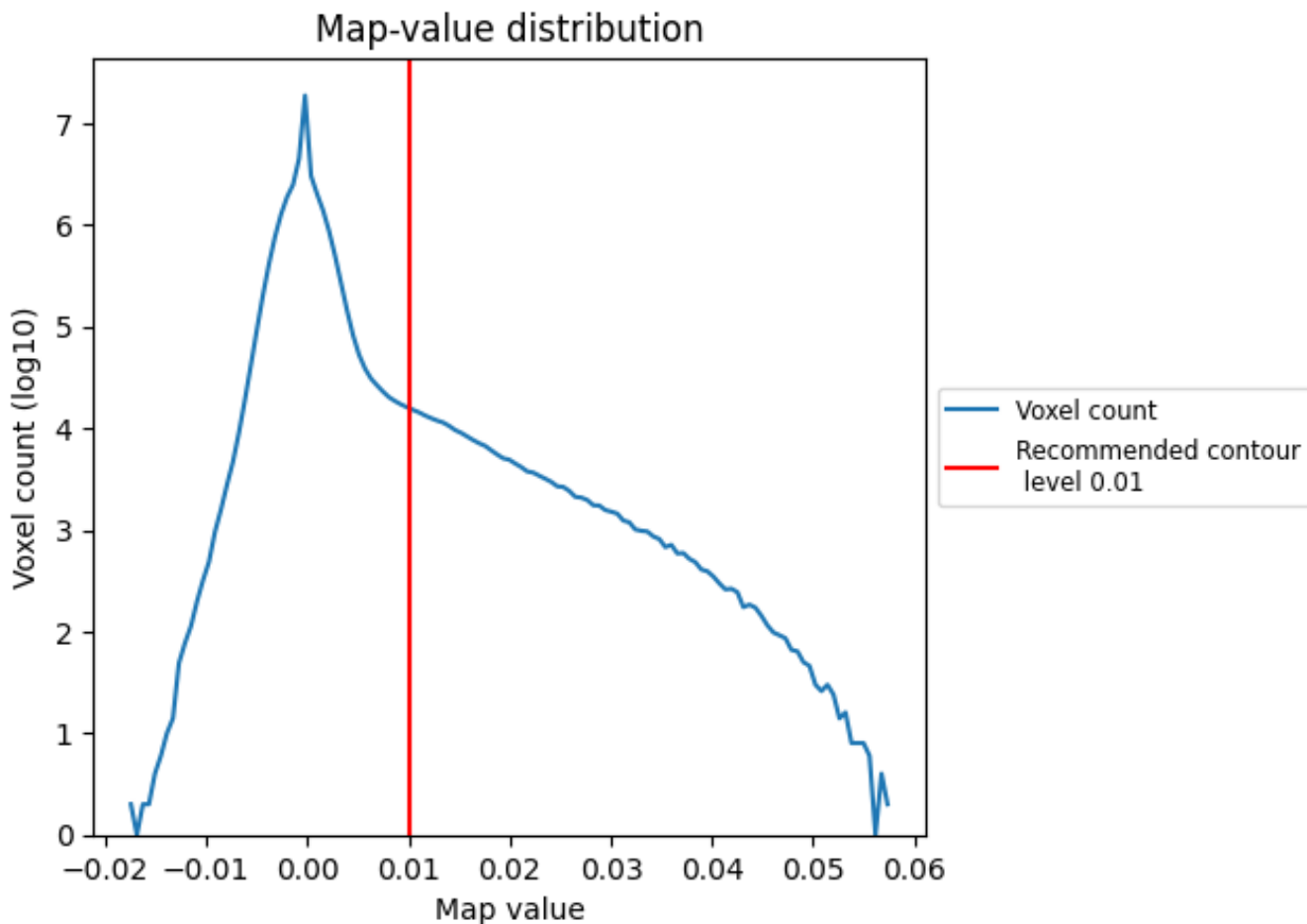
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

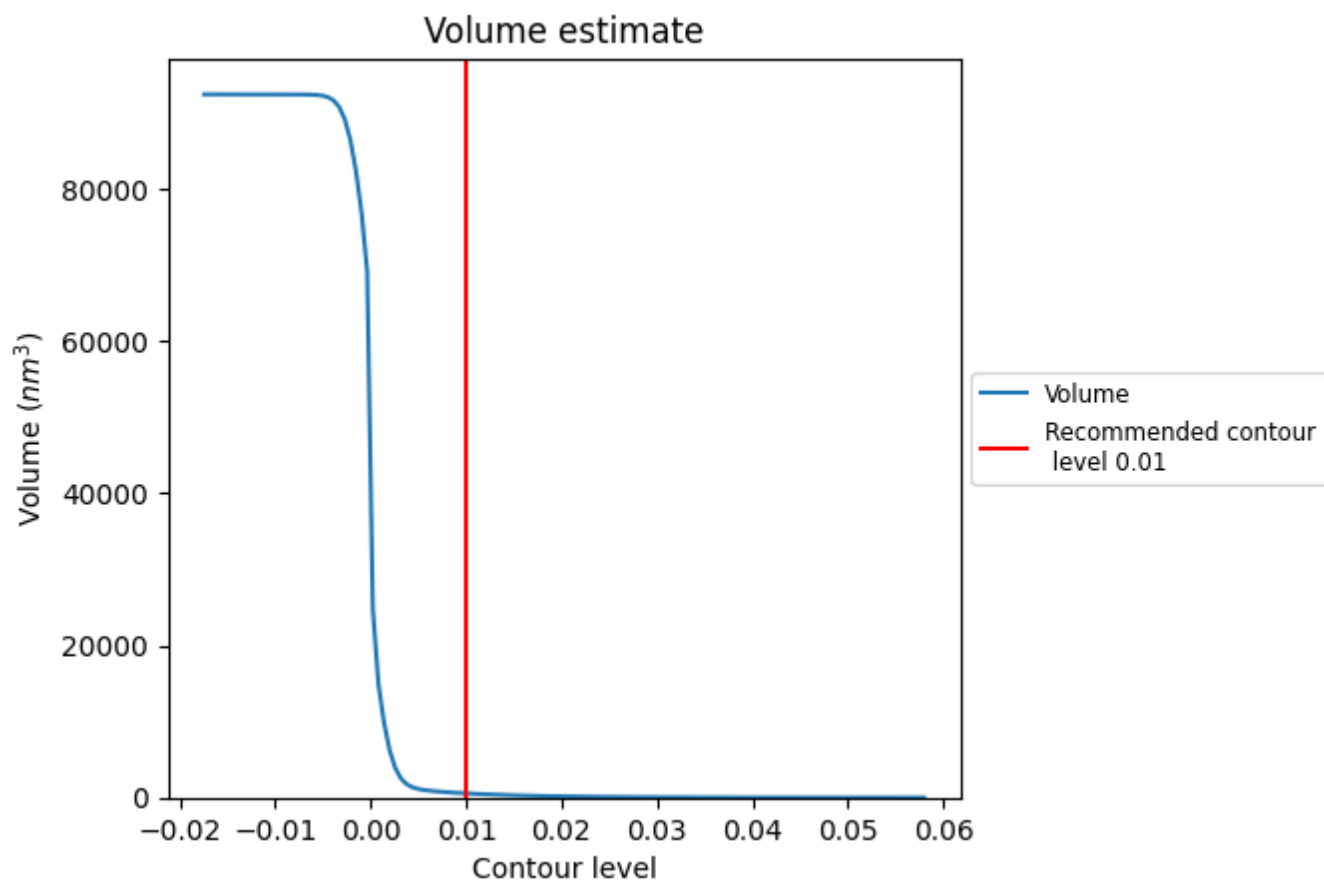
This section contains the results of statistical analysis of the map.

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.

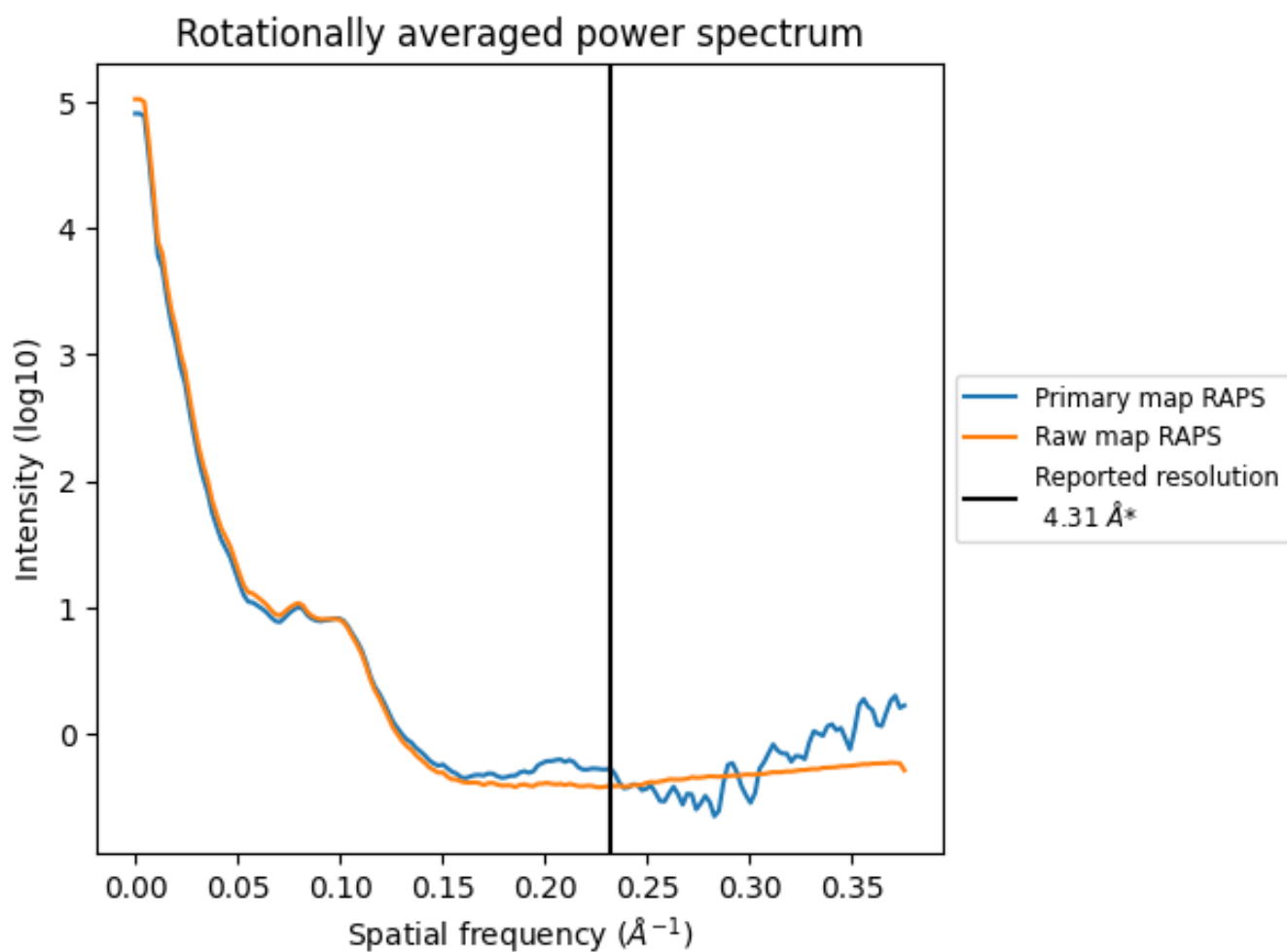
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 550 nm^3 ; this corresponds to an approximate mass of 497 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](#)

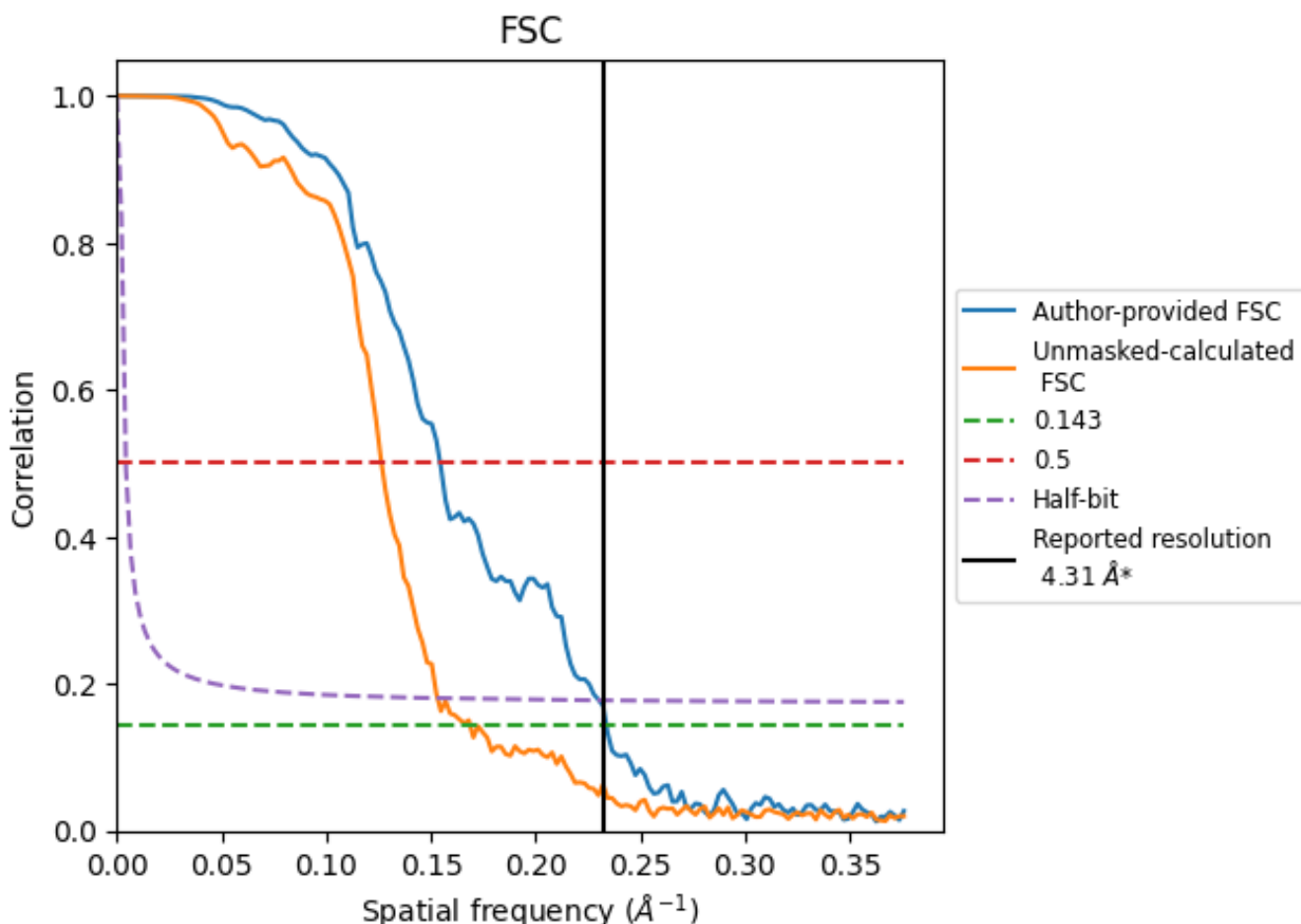


*Reported resolution corresponds to spatial frequency of 0.232 Å⁻¹

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 0.232 Å⁻¹

8.2 Resolution estimates [i](#)

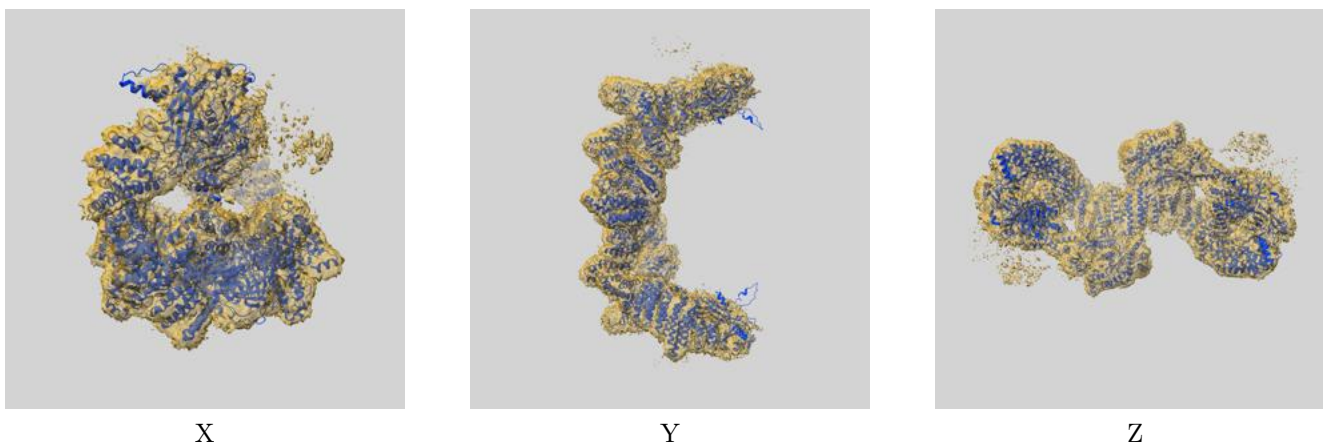
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.31	-	-
Author-provided FSC curve	4.28	6.47	4.34
Unmasked-calculated*	5.93	7.91	6.53

*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 5.93 differs from the reported value 4.31 by more than 10 %

9 Map-model fit [i](#)

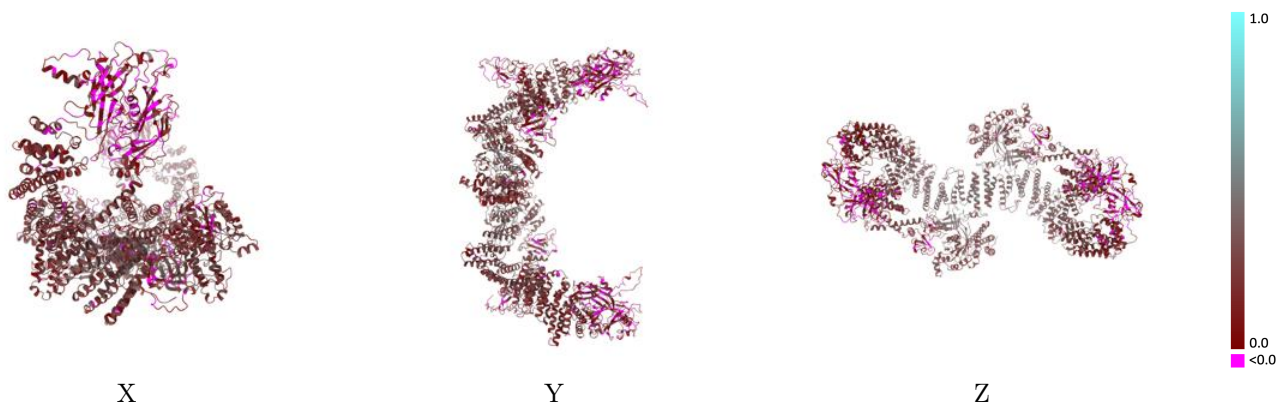
This section contains information regarding the fit between EMDB map EMD-60149 and PDB model 8ZJL. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay [i](#)



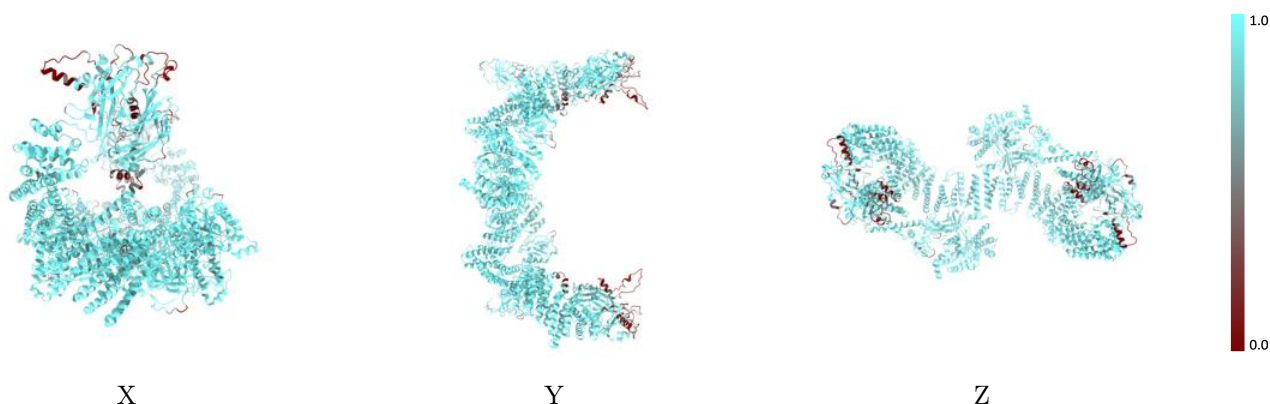
The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



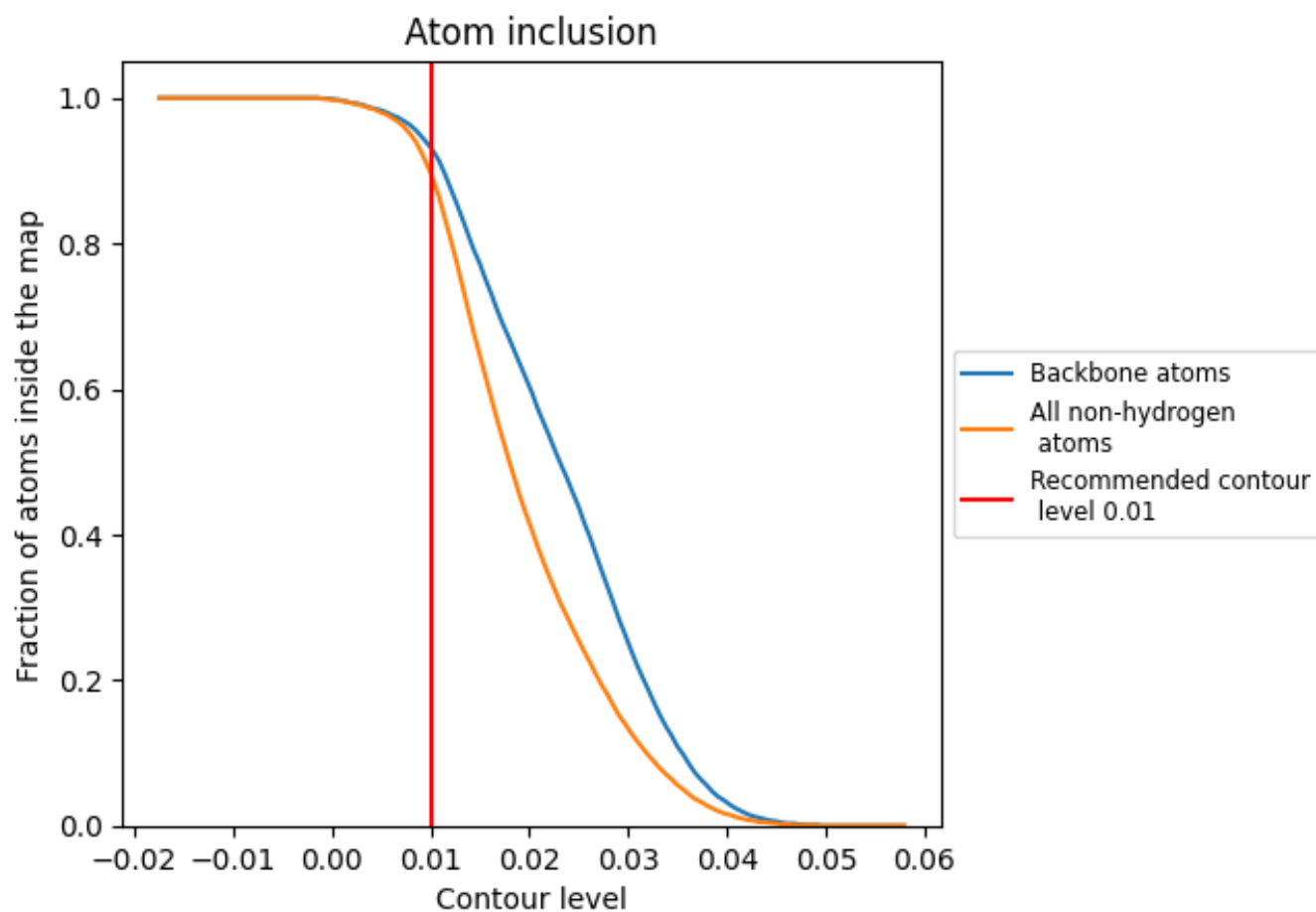
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.01).















9.4 Atom inclusion [i](#)



At the recommended contour level, 93% of all backbone atoms, 90% 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 (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8970	 0.2110
A	 0.9040	 0.1550
B	 0.8860	 0.2130
C	 0.9740	 0.2670
D	 0.9080	 0.1620
E	 0.8890	 0.2090
F	 0.9750	 0.2690

