



wwPDB EM Validation Summary Report ⓘ

Jun 26, 2025 – 02:51 PM JST

PDB ID : 5Y3R / pdb_00005y3r
EMDB ID : EMD-6803
Title : Cryo-EM structure of Human DNA-PK Holoenzyme
Authors : Yin, X.; Liu, M.; Tian, Y.; Wang, J.; Xu, Y.
Deposited on : 2017-07-29
Resolution : 6.60 Å(reported)

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.dev118
MolProbity : 4-5-2 with Phenix2.0rc1
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

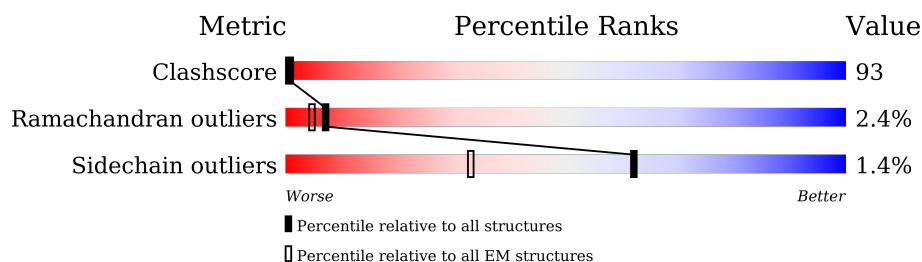
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 6.60 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	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 $\leq 5\%$. 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	501	9% 12% 82% ..
2	B	536	10% 20% 76% ..
3	K	15	53% 60% 40%
4	D	34	6% 94%
5	E	36	100%
6	C	4119	11% 11% 71% 5% 12%

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 38766 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 X-ray repair cross-complementing protein 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	493	Total	C	N	O	S	0	0
			3982	2550	675	739	18		

- Molecule 2 is a protein called X-ray repair cross-complementing protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	526	Total	C	N	O	S	0	0
			4210	2696	707	784	23		

- Molecule 3 is a protein called PRKDC-Helix.

Mol	Chain	Residues	Atoms				AltConf	Trace
3	K	15	Total	C	N	O	0	0
			75	45	15	15		

- Molecule 4 is a DNA chain called DNA (34-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	34	Total	C	N	O	P	0	0
			700	336	123	207	34		

- Molecule 5 is a DNA chain called DNA (36-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
5	E	36	Total	C	N	O	P	0	0
			733	354	132	212	35		

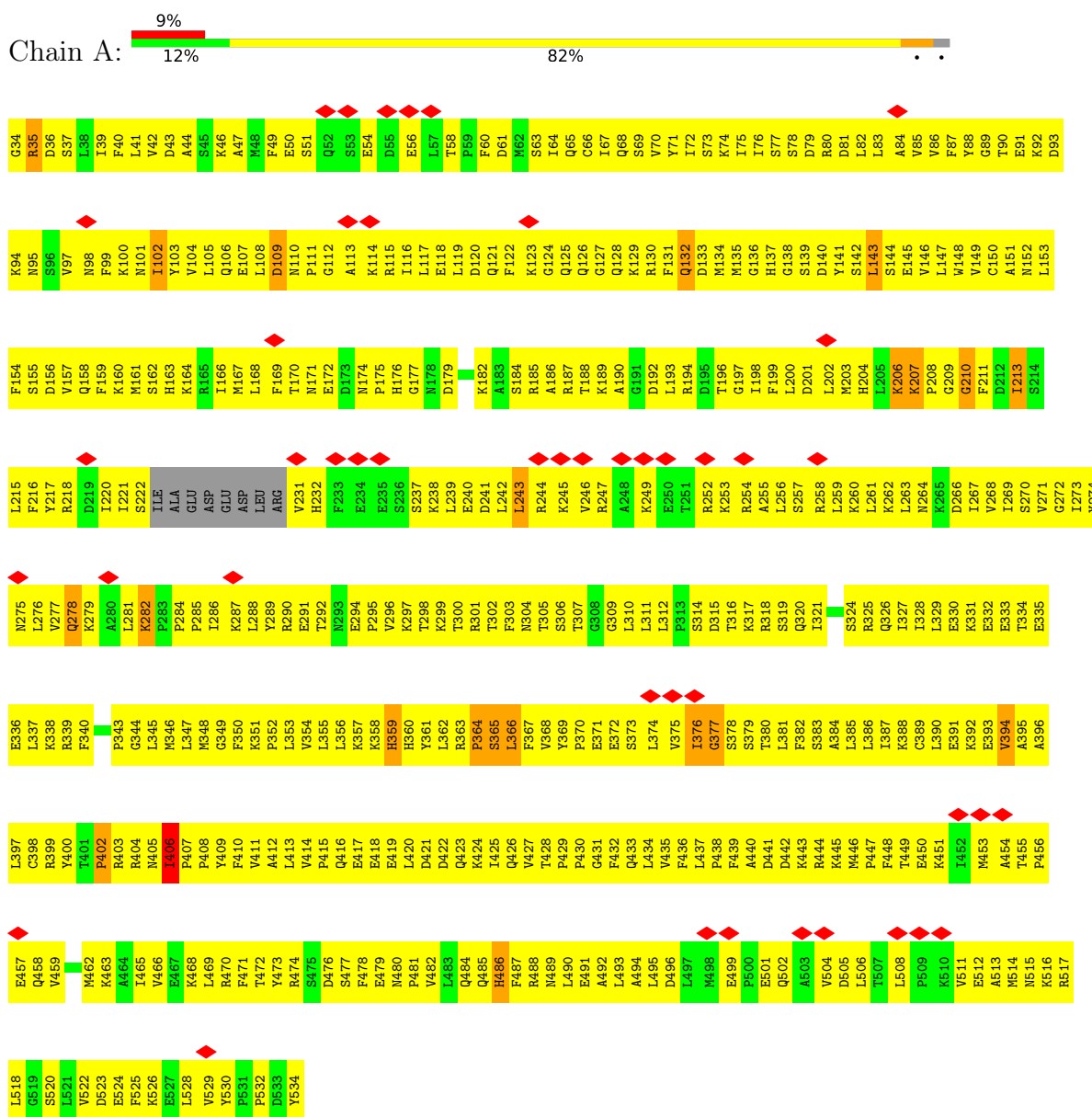
- Molecule 6 is a protein called DNA-dependent protein kinase catalytic subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	C	3636	Total	C	N	O	S	0	0
			29066	18608	4912	5356	190		

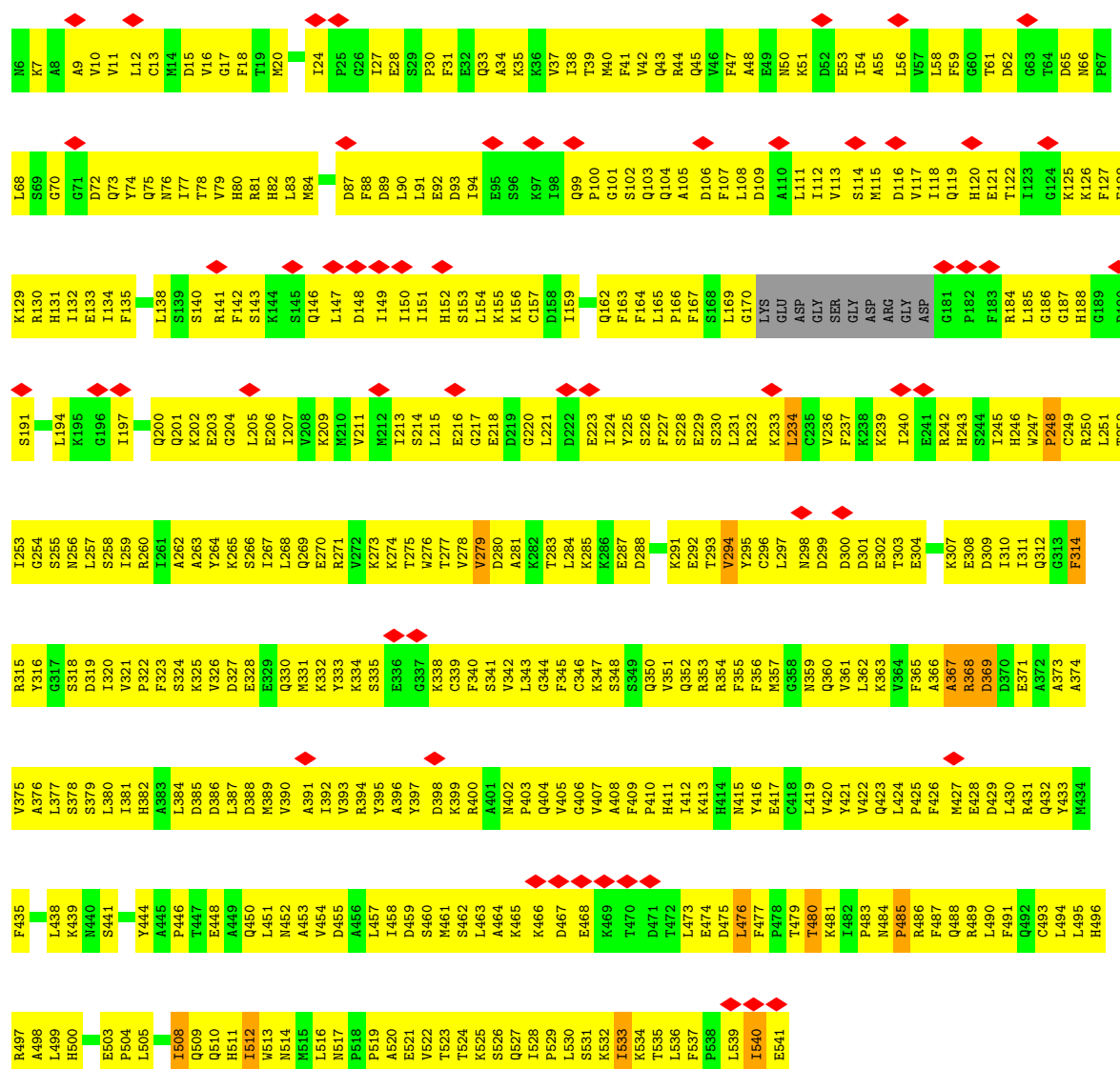
3 Residue-property plots

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.

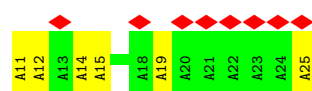
- Molecule 1: X-ray repair cross-complementing protein 6



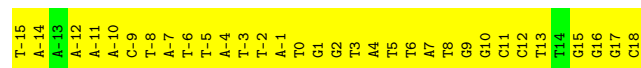
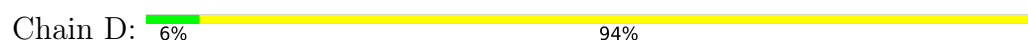
- Molecule 2: X-ray repair cross-complementing protein 5



• Molecule 3: PRKDC-Helix



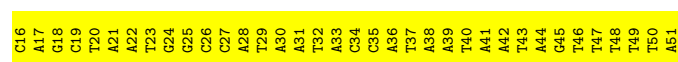
• Molecule 4: DNA (34-MER)



• Molecule 5: DNA (36-MER)

Chain E:

100%



● Molecule 6: DNA-dependent protein kinase catalytic subunit

Chain C:

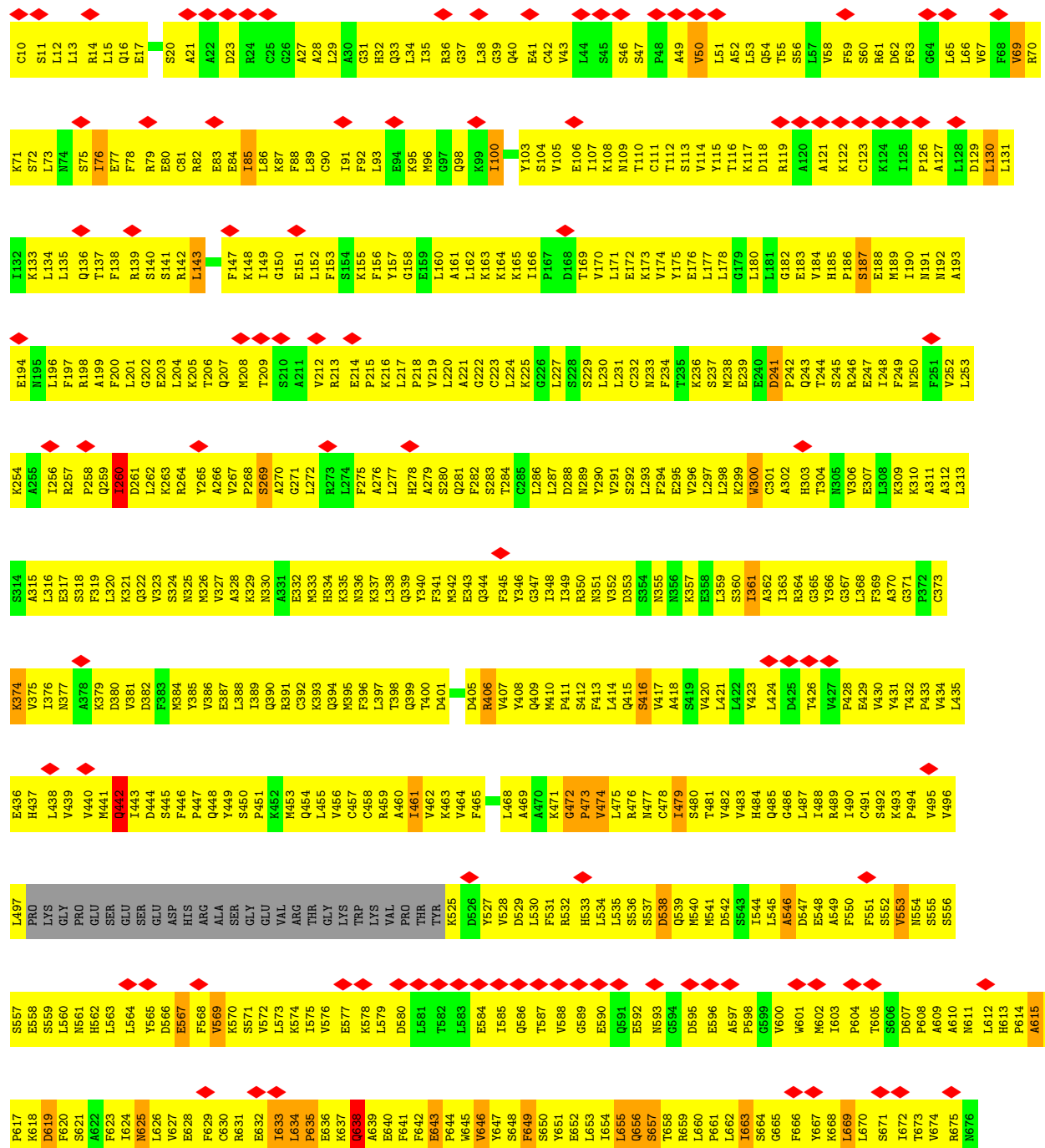
11%

11%

71%

5%

12%



A1405	L1406	L1407	M1408	S1409	P1410	Y1411	K1412	D1413	P1414	L1415	E1416	H1417	H1418	L1419	R1420	E1421	K1422	L1423	T1424	A1425	Q1426	S1427	I1428	E1429	E1430	L1431	C1432	A1433	V1434	N1435	L1436	Y1437	G1438	P1439	D1440	A1441	Q1442	V1443	D1444	R1445	S1446	R1447	L1448	S1453	K1456	Q1457	L1458	H1459	L1460	A1461	L1462	L1463	L1464	H1465	N1466	L1467	L1468					
T1345	T1346	T1347	L1348	L1349	M1350	T1351	S1352	P1353	E1354	G1355	W1356	F1357	L1358	L1359	K1360	K1361	D1362	L1363	L1364	N1365	T1366	H1367	L1368	M1369	R1370	V1371	L1372	V1373	Q1374	T1375	L1376	C1377	E1378	P1379	A1380	S1381	I1382	S1323	F1383	F1384	N1385	I1386	G1387	D1388	V1389	Q1390	V1391	M1392	A1393	H1394	L1395	P1396	L1397	V1398	C1399	M1400	L1401	L1402	M1403	K1404		
G1283	T1284	E1285	A1286	Q1287	S1288	L1291	K1292	A1295	F1296	F1297	L1298	E1299	S1300	T1301	A1302	M1303	H1304	D1305	T1306	I1307	A1308	ALA	GLU	LYS	CYS	PHE	GLY	THR	GLY	ALA	ALA	GLY	ASN	ARG	THR	S1323	P1324	Q1325	E1326	G1327	E1328	R1329	Y1330	M1331	Y1332	S1333	K1334	C1335	T1336	L1337	V1338	R1339	L1340	T1341	M1342	E1343	F1344					
F1219	L1220	I1221	N1222	T1223	F1224	G1227	G1228	C1229	G1230	Q1231	P1232	S1233	G1234	I1235	L1236	A1237	Q1238	P1239	T1240	L1241	L1242	Y1243	F1248	S1249	L1250	Q1251	A1252	T1253	L1254	C1255	W1256	L1257	D1258	L1259	L1260	L1261	A1262	A1263	E1265	C1266	Y1267	N1268	T1269	F1270	I1271	G1272	E1273	R1274	T1275	T1276	G1277	A1278	L1279	Q1280	V1281	L1282						
P1099	V1100	F1101	E1102	A1103	L1104	V1105	I1106	Y1107	M1108	E1109	S1110	L1111	A1112	L1113	A1114	H1115	A1116	E1117	E1118	K1119	S1120	L1121	G1122	T1123	H1124	Q1125	Q1126	C1127	A1128	L1129	A1130	I1131	D1132	H1133	L1134	C1135	R1136	I1137	I1138	E1139	K1140	K1141	H1142	V1143	S1144	L1145	N1146	K1147	A1148	K1149	K1150	R1151	L1152	L1153	P1154	L1155	F1156	F1157	P1158			
W1039	S1040	I1041	K1042	L1043	T1044	T1045	Q1046	Q1047	Q1048	Q1049	E1050	S1051	P1052	P1053	V1054	V1055	C1056	K1057	S1058	L1059	F1060	K1061	R1062	L1063	Y1064	S1065	L1066	A1067	L1068	H1069	P1070	I1071	A1072	F1073	K1074	L1075	L1076	G1077	A1078	S1079	L1080	A1081	F1082	N1083	I1085	Y1086	E1087	E1088	F1089	E1090	E1091	L1092	E1093	S1094	L1095	V1096	E1097	Q1098				
V0979	T980	Q981	Q982	L983	Y984	E985	P986	L987	V988	M989	Q990	L991	I992	H993	W994	T995	N996	N997	N998	K999	K1000	F1001	E1002	S1003	Q1004	D1005	T1006	V1007	A1008	L1009	L1010	E1011	A1012	I1013	L1014	D1015	G1016	I1017	V1018	D1019	L1020	M958	A955	Q960	L961	Y962	K963	R964	T965	F966	P967	V968	L969	L970	R971	L972	A973	D977	Q978			
L917	A918	L919	T920	A921	S922	D923	R924	Q925	T926	K927	N928	A929	A930	C931	E932	L933	H934	S935	M937	V938	M939	F940	M941	L942	G943	K944	A945	T946	A885	W886	D887	R888	E950	V889	G952	G953	G954	A955	P956	P957	M958	R959	Q960	L961	Y962	K963	R964	T965	F966	P967	V968	L969	L970	R971	L972	A973	D977	Q978				
Q857	M858	L859	G860	S861	L862	G863	G864	Q865	I866	N867	K868	N869	L870	L871	T872	V873	T874	S875	S876	D877	E878	M879	H880	K881	S882	L883	V884	A885	W886	D887	R888	E950	V889	G952	G953	G954	A955	P956	P957	M958	R959	Q960	L961	Y962	K963	R964	T965	F966	P967	V968	L969	L970	R971	L972	A973	D977	Q978					
P737	H738	N739	I740	E741	E742	L743	D744	V745	R746	A747	Y748	V749	P750	SER	L751	L752	Q753	M754	A755	F756	K757	L758	G759	L760	S761	Y762	C703	F704	A705	P764	L765	A766	E767	F768	G769	L770	N771	A772	L773	E774	E775	W776	S777	I778	Y779	L780	D781	R782	H783	V784	M785	Q786	F787	Y788	K789	L790	D791	T792	L793	P794	C795	L796
D797	G798	Y799	L800	K801	T802	S803	A804	L805	S806	D807	E808	T809	LYS	ASN	TRP	GLU	VAL	SER	ALA	LEU	SER	ARG	ALA	ALA	GLN	LYS	GLY	PHE	ASN	LYS	VAL	VAL	LEU	LYS	THR	LYS	ASN	LEU	SER	SER	ASN	GLU	ALA	I846	S847	L848	E849	E850	I851	R852	I853	R854	V855	L856								
A677	K678	K679	L680	K681	Y682	PHE	GLU	GLY	VAL	SER	PRO	LYS	SER	LEU	LYS	HIS	SER	PRO	GLU	ASP	PRO	GLU	K700	Y701	S702	C703	F704	A705	P764	L706	F707	W708	K709	F710	G711	K712	E713	L714	A715	K717	M718	K719	Q720	Y721	K722	D723	E724	L725	L726	A727	S728	C729	L730	T731	F732	L733	L734	S735	L736			





C3837	E3838	Y3839	K3840	D3841	S3842	L3843	T3844	K3845	S3846	S3847	S3848	S3849	S3850	D3851	G3852	G3853	S3854	S3855	S3856	L3857	S3858	Y3859	K3860	G3861	K3862	K3863	S3864	S3865	L3866	S3867	S3868	S3869	S3870	S3871	S3872	S3873	S3874	S3875	S3876	S3877	S3878	S3879	D3880	D3881	L3882	L3883	K3884	K3885	F3886	S3887	S3888	K3889	K3890	S3891	S3892	S3893	S3894	F3895	
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R4082	K4022	F3961	A3899
G4083	K4023	R3962	L3900
S4084	G4024	L3963	R3901
K4085	G4025	T3964	S3902
D4086	S4026	R3965	H3903
H4087	W4027	Q3966	F3904
H4088	W4028	F3967	A3905
I4089	I4028	I3968	S3906
R4090	Q4029	N3969	S3907
A4091	E4030	L3970	H3908
Q4092	I4031	M3971	A3909
E4093	M4032	L3972	L3910
P4094	M4033	P3973	L3911
E4095	V4034	M3974	C3912
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G4097	K4036	E3976	S3914
L4098	M4037	T3977	H3915
S4099	W4038	G3978	W3916
E4100	Y4039	L3979	I3917
E4101	P4040	M3980	L3918
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Q4103	Q4042	S3982	I3920
V4104	K4043	I3983	G3921
K4105	T4044	M3984	D3922
C4106	C4045	V3985	R3923
L4107	Y4046	H3986	H3924
M4108	A4047	A3987	L3925
D4109	K4048	L3988	I3926
Q4110	R4049	R3989	N3927
A4111	K4050	A3990	F3928
T4112	L4051	F3991	N3929
D4113	A4052	R3992	V3930
P4114	G4053	S3993	A3931
N4115	A4054	D3994	M3932
I4116	M4055	L3997	E3933
L4117	P4056	L3998	T3934
G4118	A4057	T3999	G3935
R4119	V4058	N4000	G3936
T4120	I4059	T4001	V3937
W4121	T4060	M4002	I3938
E4122	C4061	D4003	C3939
G4123	D4062	V4004	I3940
W4124	E4063	F4005	D3941
E4125	L4064	V4006	F3942
P4126	L4065	K4007	G3943
W4127	L4066	E4008	H3944
M4128	G4067	P4009	G3947
	H4068	S4010	S3948
	E4069	F4011	A3949
	K4070	D4012	T3950
	A4071	W4013	Q3951
	P4072	K4014	F3952
	A4073	N4015	V3955
	F4074	F4016	P3956
	R4075	E4017	E3957
	D4076	Q4018	L3958
	Y4077	K4019	R3959
	V4078	M4020	
	A4079		
	V4080		

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	53451	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1700	Depositor
Maximum defocus (nm)	4700	Depositor
Magnification	18000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.139	Depositor
Minimum map value	-0.053	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.03	Depositor
Map size ($\text{\AA}$)	390.0, 390.0, 390.0	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.3, 1.3, 1.3	Depositor

5 Model quality

5.1 Standard geometry

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.50	0/4060	0.86	7/5468 (0.1%)
2	B	0.41	0/4297	0.76	3/5798 (0.1%)
3	K	0.25	0/74	0.38	0/102
4	D	0.63	0/784	0.65	0/1209
5	E	0.59	0/822	0.66	0/1266
6	C	0.55	0/29665	0.87	26/40094 (0.1%)
All	All	0.54	0/39702	0.85	36/53937 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	12
2	B	0	8
6	C	0	89
All	All	0	109

There are no bond length outliers.

The worst 5 of 36 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	C	472	GLY	CA-C-N	11.24	133.89	119.84
6	C	472	GLY	C-N-CA	11.24	133.89	119.84
6	C	2372	PRO	N-CA-C	9.93	122.82	110.70
1	A	207	LYS	N-CA-C	-8.26	98.18	110.24
6	C	2372	PRO	CA-C-N	-7.65	110.28	119.84

There are no chirality outliers.

5 of 109 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	102	ILE	Peptide
1	A	109	ASP	Peptide
1	A	206	LYS	Peptide
1	A	268	VAL	Peptide
1	A	35	ARG	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3982	0	4064	925	0
2	B	4210	0	4250	729	0
3	K	75	0	74	5	0
4	D	700	0	388	182	0
5	E	733	0	410	214	0
6	C	29066	0	29396	5491	0
All	All	38766	0	38582	7198	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 93.

The worst 5 of 7198 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)
6:C:3809:THR:HA	6:C:3930:VAL:O	1.25	1.32
6:C:3740:ILE:HB	6:C:3748:HIS:O	1.38	1.22
1:A:378:SER:O	1:A:382:PHE:HB3	1.39	1.21
6:C:700:LYS:N	6:C:703:CYS:HG	1.35	1.21
2:B:264:TYR:HB2	2:B:363:LYS:O	1.43	1.19

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	489/501 (98%)	411 (84%)	74 (15%)	4 (1%)	16	55
2	B	522/536 (97%)	444 (85%)	71 (14%)	7 (1%)	10	43
3	K	13/15 (87%)	12 (92%)	1 (8%)	0	100	100
6	C	3608/4119 (88%)	2742 (76%)	764 (21%)	102 (3%)	4	24
All	All	4632/5171 (90%)	3609 (78%)	910 (20%)	113 (2%)	7	27

5 of 113 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	368	ARG
6	C	430	VAL
6	C	473	PRO
6	C	905	ILE
6	C	1977	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	448/455 (98%)	444 (99%)	4 (1%)	75	83
2	B	474/481 (98%)	473 (100%)	1 (0%)	92	94
6	C	3238/3667 (88%)	3186 (98%)	52 (2%)	58	74
All	All	4160/4603 (90%)	4103 (99%)	57 (1%)	62	75

5 of 57 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	C	2330	VAL
6	C	4028	ILE
6	C	2785	ILE
6	C	3940	ILE
6	C	3701	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 107 such sidechains are listed below:

Mol	Chain	Res	Type
6	C	1897	ASN
6	C	2390	HIS
6	C	3704	GLN
6	C	1931	ASN
6	C	2135	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 oligosaccharides 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-6803. These allow visual inspection of the internal detail of the map and identification of artifacts.

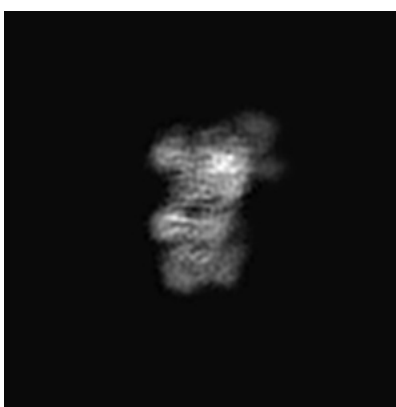
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

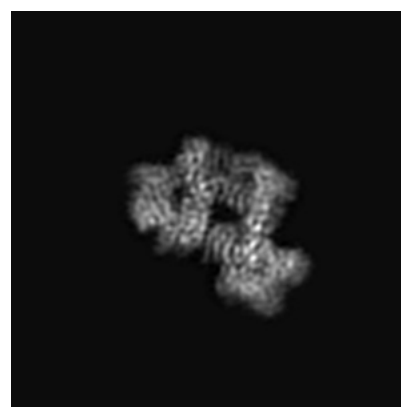
6.1.1 Primary map



X



Y

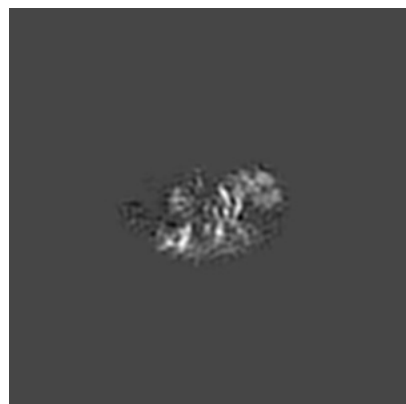


Z

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

6.2 Central slices [i](#)

6.2.1 Primary map



X Index: 150



Y Index: 150



Z Index: 150

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: 181



Y Index: 136

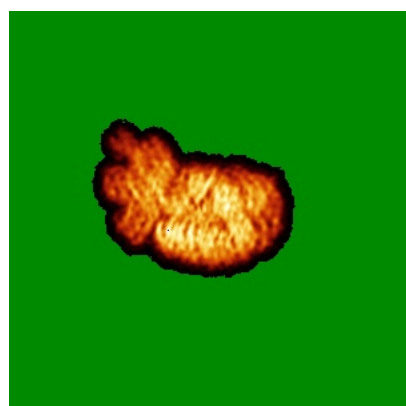


Z Index: 159

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

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

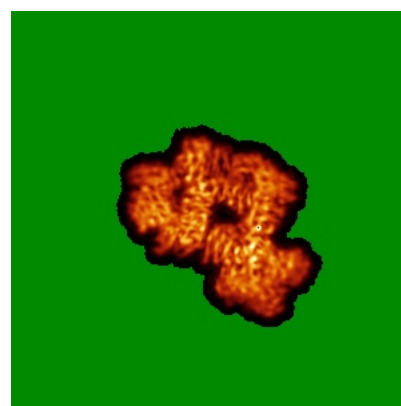
6.4.1 Primary map



X



Y

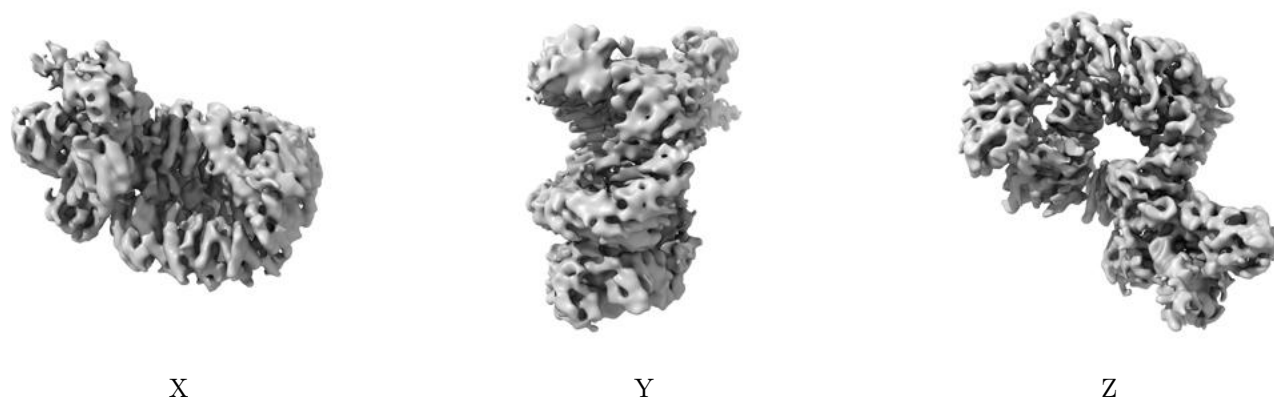


Z

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 0.03. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

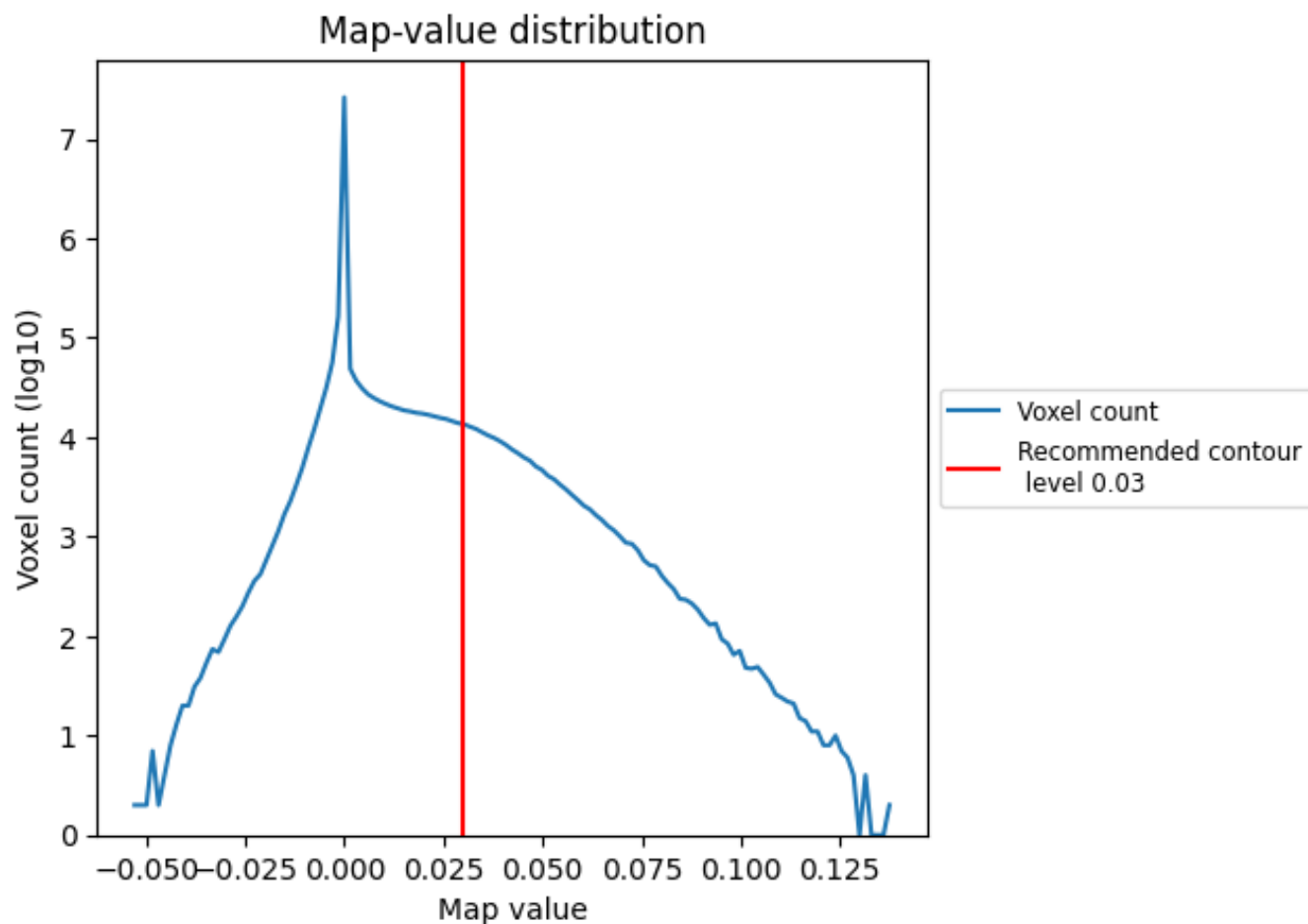
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

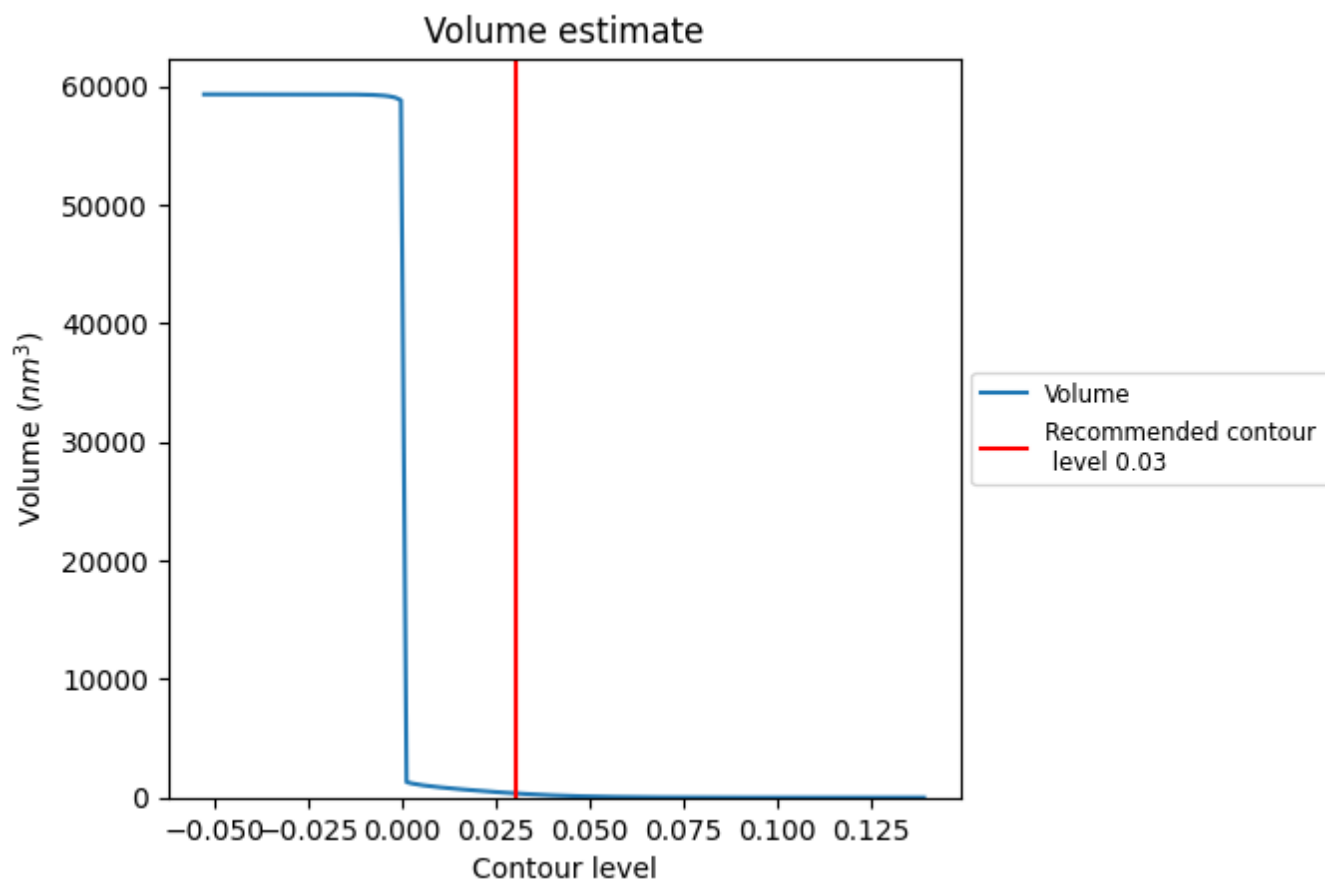
This section contains the results of statistical analysis of the map.

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.

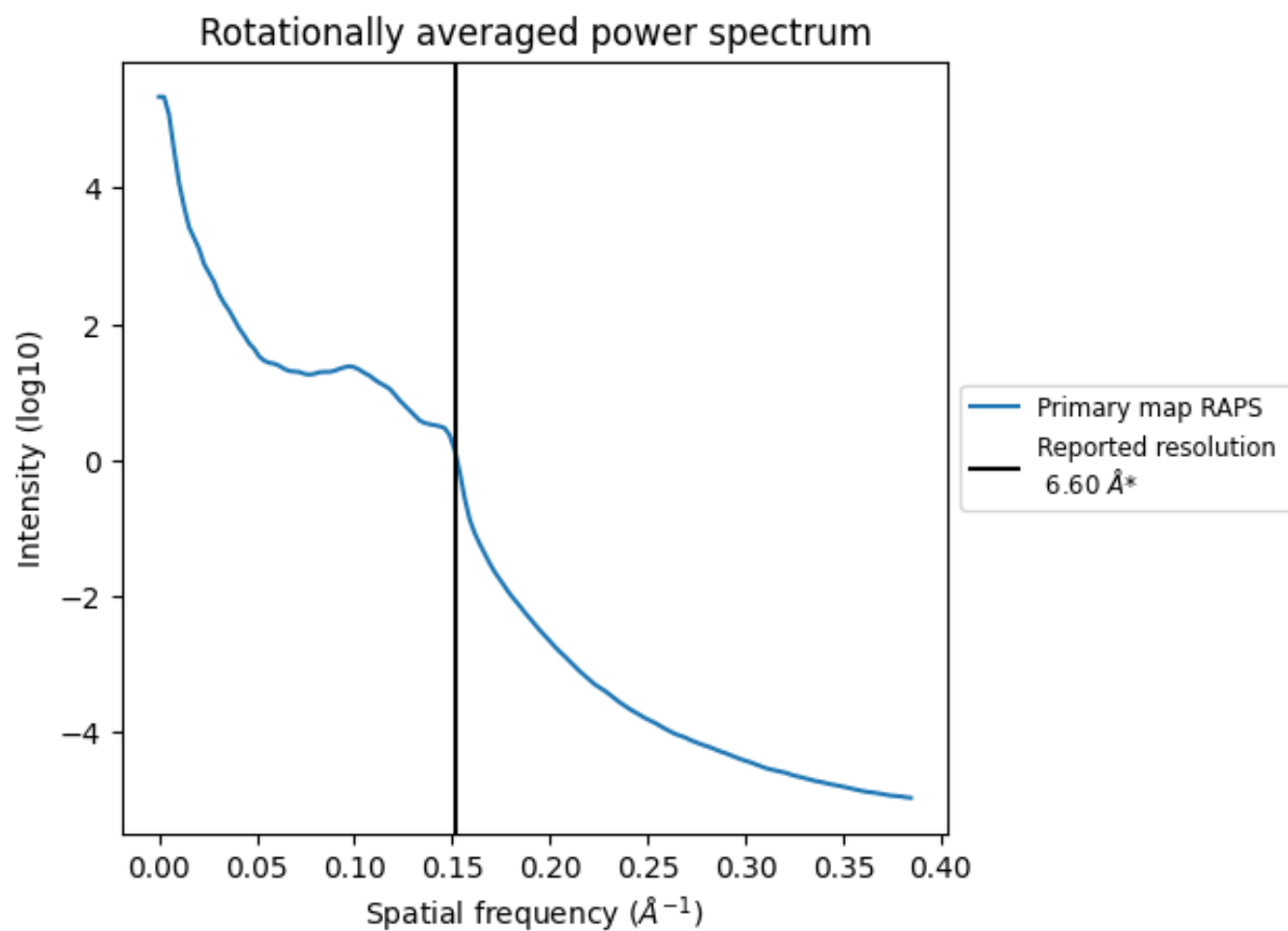
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 356 nm³; this corresponds to an approximate mass of 322 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 ⓘ

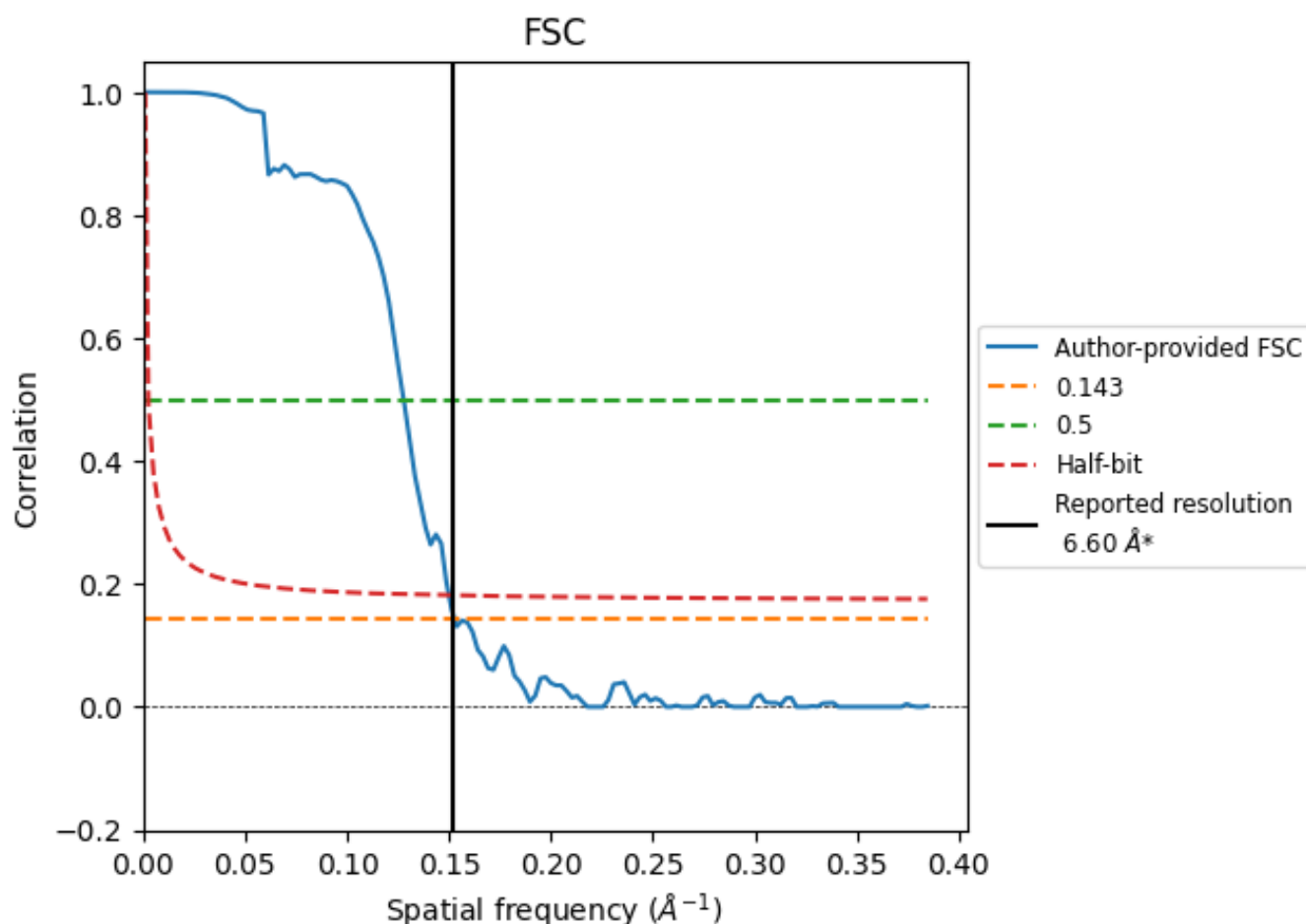


*Reported resolution corresponds to spatial frequency of 0.152 Å⁻¹

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 0.152 Å⁻¹

8.2 Resolution estimates [i](#)

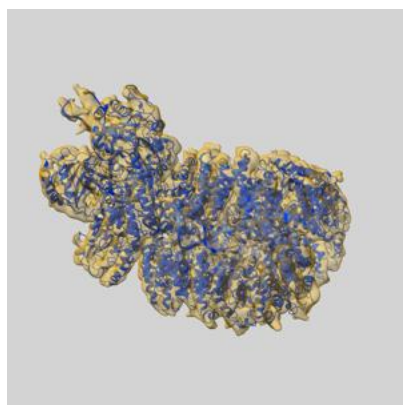
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	6.60	-	-
Author-provided FSC curve	6.55	7.82	6.67
Unmasked-calculated*	-	-	-

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

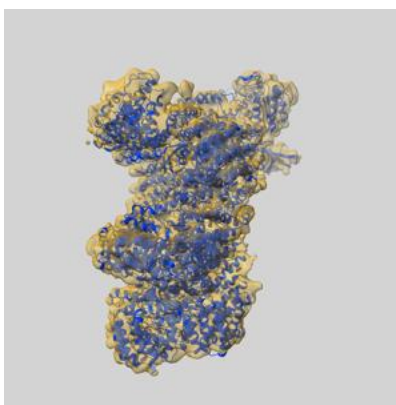
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-6803 and PDB model 5Y3R. Per-residue inclusion information can be found in [section 3](#) on [page 4](#).

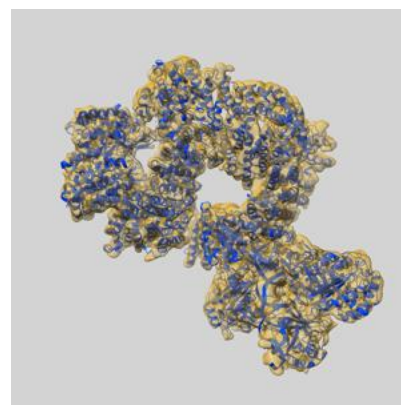
9.1 Map-model overlay [i](#)



X



Y



Z

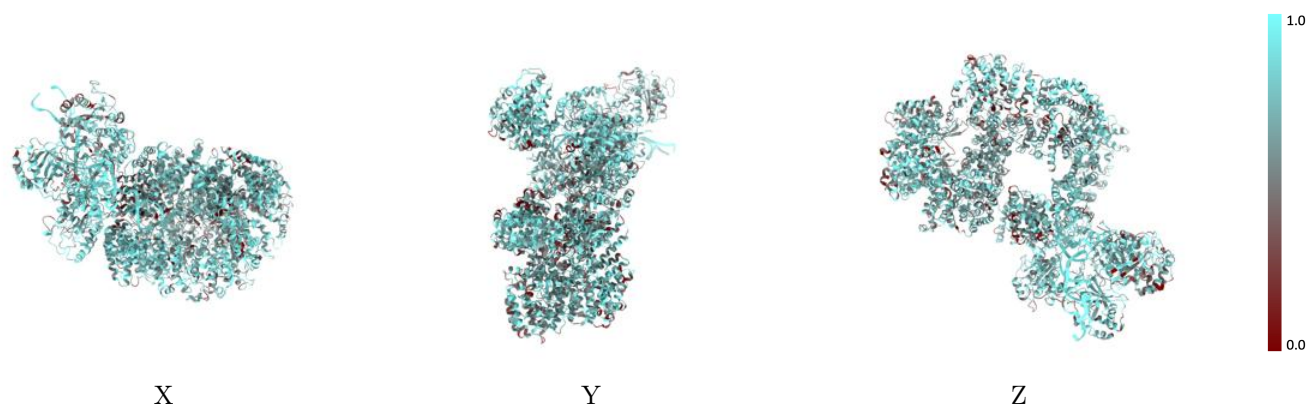
The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



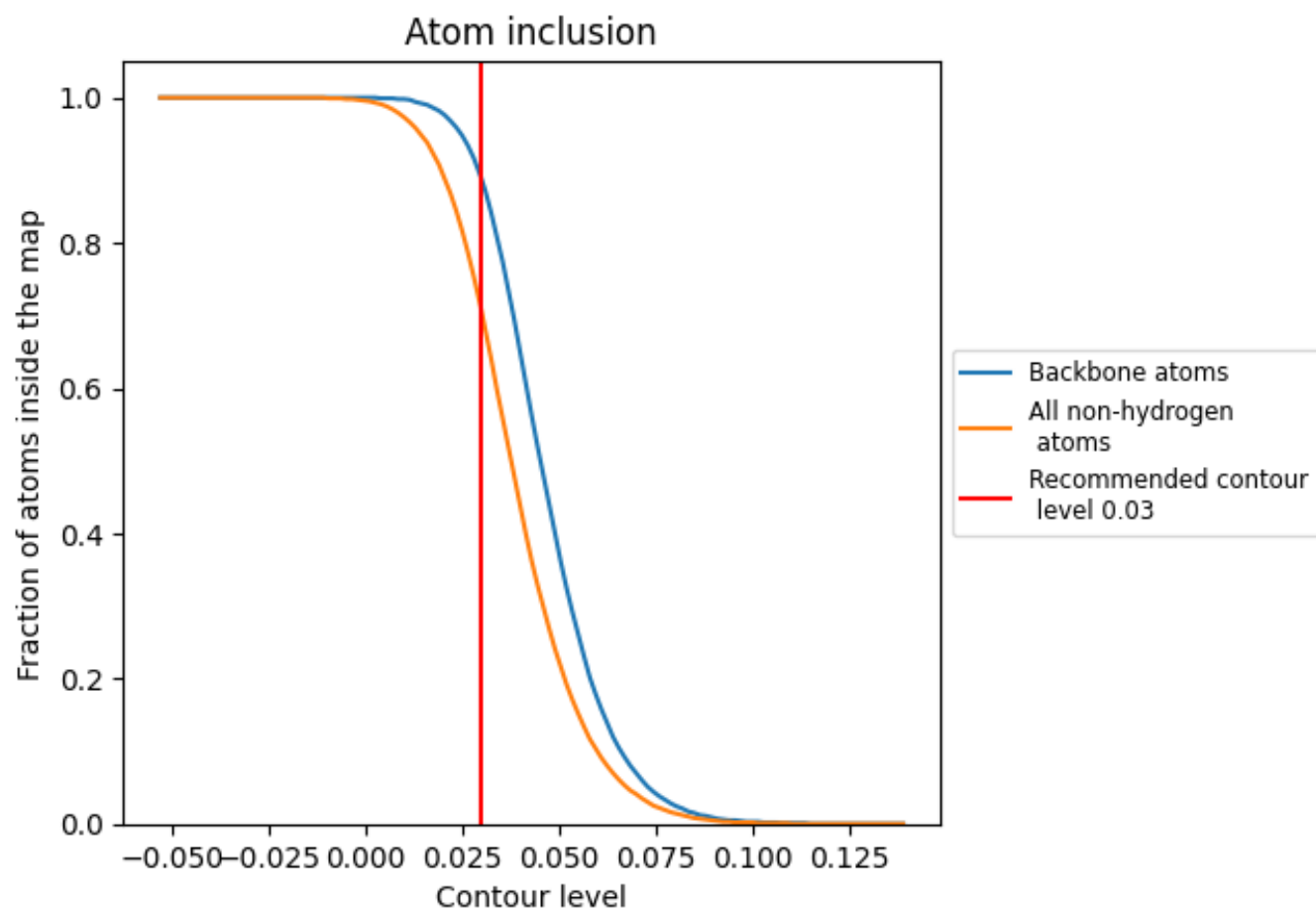
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.03).

9.4 Atom inclusion ⓘ



At the recommended contour level, 89% of all backbone atoms, 71% 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 (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7080	0.2170
A	0.7480	0.2360
B	0.7070	0.2250
C	0.6940	0.2110
D	0.9200	0.2680
E	0.8910	0.2590
K	0.4400	0.2940

1.0

0.0

<0.0