



Full wwPDB EM Validation Report ⓘ

Jun 29, 2025 – 09:05 am BST

PDB ID : 6SCT / pdb_00006sct
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

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

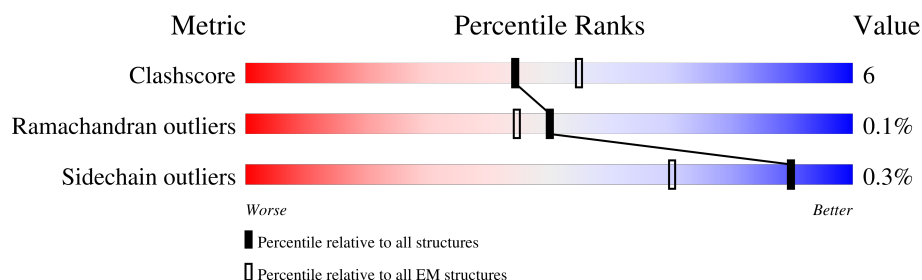
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 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	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	1675	17% 19% 77%
1	B	1675	35% 34% 6% 60%
1	C	1675	24% 22% 74%
1	F	1675	17% 20% 77%
1	G	1675	35% 33% 6% 60%
1	H	1675	24% 22% 74%
1	K	1675	17% 19% 77%
1	L	1675	35% 34% 6% 60%

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Mol	Chain	Length	Quality of chain
1	M	1675	24%22%5%74%
2	D	229	44%38%7%55%
2	E	229	26%23%.74%
2	I	229	44%37%8%55%
2	J	229	26%22%.74%
2	N	229	44%38%7%55%
2	O	229	26%22%.74%

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.

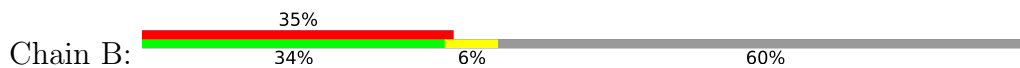
Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	379	Total	C	N	O	S	0	0
			3168	2037	528	584	19		
1	B	666	Total	C	N	O	S	0	0
			5405	3438	927	1015	25		
1	C	441	Total	C	N	O	S	0	0
			3598	2293	615	675	15		
1	F	379	Total	C	N	O	S	0	0
			3168	2037	528	584	19		
1	K	379	Total	C	N	O	S	0	0
			3168	2037	528	584	19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

- Molecule 2 is a protein called Clathrin light chain.

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

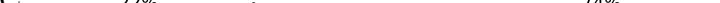
[illegible]

- Molecule 1: Clathrin heavy chain

[illegible]





Chain C:  24% 22% 74%



GLN	ALA	THR	GLU	THR	CYS	ILE	LEU	ALA	SER	GLU
ALA	ALA	THR	GLU	THR	PHE	GLU	PRO	TRP	LYS	PHE
THR	GLU	ALA	GLY	GLY	GLY	ARG	VAL	GLU	LYS	PHE
GLU	THR	CYS	ALA	ALA	ARG	ARG	VAL	GLY	PRO	LEU
THR	GLU	ALA	GLY	GLY	ILE	ILE	PRO	GLN	GLN	GLN
PRO	GLN	PRO	GLN	PHE	LEU	ALA	TYR	PHE	LYS	MET
ILE	ILE	THR	THR	THR	ALA	ALA	TYR	ALA	LEU	CYS
VAL	VAL	CYS	CYS	TYR	TYR	TYR	ARG	ILE	ASP	GLY
GLY	GLY	ASP	ASP	PHE	PHE	PHE	VAL	ILE	HIS	ILE
GLN	GLN	LEU	LEU	LEU	LEU	GLY	ASN	GLN	LEU	THR
PRO	PRO	LEU	LEU	LEU	LEU	GLY	ASN	LYS	GLU	VAL
GLN	GLN	ARG	ARG	ASN	ASN	ASN	HIS	VAL	LEU	LEU
GLN	GLN	LEU	LEU	PRO	ASN	ASN	HIS	VAL	LEU	VAL
LEU	LEU	LEU	PRO	ASN	ASN	ASN	ASN	ALA	PHE	HIS
MET	MET	ASP	ASP	VAL	TRP	TRP	VAL	ASN	TRP	ALA
LEU	LEU	VAL	VAL	VAL	LYS	LYS	SER	GLU	ARG	GLU
THR	THR	VAL	VAL	VAL	LYS	GLN	ASN	LEU	VAL	LEU
ALA	ALA	LEU	LEU	LEU	GLN	LYS	SER	ASN	ARG	GLU
GLY	GLY	GLU	GLU	GLU	SER	SER	ASN	TYR	VAL	GLU
PRO	PRO	THR	THR	THR	THR	VAL	GLU	TYR	ILE	GLU
SER	SER	ALA	ALA	ALA	GLU	GLU	SER	ARG	PRO	LEU
VAL	VAL	VAL	VAL	TRP	TRP	LEU	LEU	ALA	LYS	ILE
					ARG	CYS	ASN	ILE	VAL	ASN
					HIS	LYS	ASN	GLN	LEU	TYR
					ASN	LYS	LEU	PHE	ARG	TYR
					ILE	ASP	PHE	TYR	ALA	GLN
					MET	SER	ILE	LEU	ALA	ASP
					ALA	ASP	THR	GLU	GLY	ARG
					PHE	TYR	GLU	PHE	GLN	GLY
					ALA	LYS	GLU	LYS	ALA	TYR
					MET	ASP	ASP	LYS	ALA	

- Molecule 1: Clathrin heavy chain



GLU	GLY	GLU	ARG	LEU	GLU	GLU	GLU	THR	GLN	GLN	PRO	MET	LEU	PRO	MET
ASP	ASN	PRO	ALA	LEU	GLU	GLU	THR	THR	PRO	PHE	THR	GLN	VAL	ILE	ALA
SER	ASN	LEU	ASN	ASP	GLN	GLN	ILE	ILE	ASN	GLN	GLN	LEU	THR	ARG	GLY
LEU	MET	ALA	VAL	GLN	PHE	ALA	VAL	PHE	VAL	LYS	PRO	SER	ASP	PRO	ILE
GLU	THR	ILE	ASN	GLN	ARG	ARG	THR	THR	LYS	ALA	LYS	VAL	ALA	ILE	PRO
CYS	HIS	THR	LYS	GLN	GLN	THR	ALA	ALA	ALA	PHE	THR	ASP	VAL	SER	PRO
LEU	HIS	THR	VAL	LEU	PHE	PHE	ALA	PRO	PHE	GLN	VAL	ASP	THR	ILE	ILE
ARG	THR	GLN	VAL	ASN	LEU	GLU	PRO	GLY	GLN	GLN	VAL	THR	THR	ALA	ARG
ALA	ILE	PHE	ALA	LEU	ALA	GLN	ALA	ALA	PRO	PRO	PRO	PRO	GLU	MET	LEU
ASN	ALA	MET	GLU	GLU	GLN	GLY	GLY	ILE	PRO	GLY	GLY	ILE	GLY	ASN	GLN
ILE	GLN	GLU	THR	LEU	GLN	ILE	ILE	ILE	GLY	GLY	GLY	GLY	GLU	PRO	LEU
ARG	LEU	TYR	GLY	CYS	ASN	TYR	GLY	GLY	ALA	GLN	VAL	HIS	GLN	ALA	ASN
GLN	CYS	ASN	GLN	ARG	VAL	THR	VAL	VAL	ASN	ASN	ASN	ALA	PRO	LYS	LEU
ASN	GLY	LEU	VAL	PRO	GLU	GLU	ASN	ASN	ASP	ASP	VAL	ALA	VAL	VAL	LEU
LEU	LYS	ILE	GLN	VAL	GLN	ALA	GLN	ARG	ASN	PHE	GLN	ALA	VAL	LYS	LEU
GLN	ALA	GLN	ILE	LEU	ALA	ALA	GLN	ASN	ASN	PHE	GLN	HIS	VAL	VAL	GLY
ILE	GLY	GLN	ILE	LEU	ALA	ALA	ARG	ARG	PHE	SER	PHE	LYS	LYS	ILE	ILE
CYS	LEU	CYS	VAL	GLN	GLY	VAL	GLY	GLY	PRO	VAL	VAL	GLY	PHE	ALA	ASN
VAL	LEU	THR	THR	GLY	VAL	VAL	VAL	VAL	ALA	GLN	ALA	ARG	ASP	LYS	PRO
GLN	GLN	ALA	TYR	ARG	ALA	ALA	VAL	VAL	GLN						

- Molecule 1: Clathrin heavy chain

[illegible]

Q1270	M1210	W1150	E1087	R1022	E962	S901	S841	PHE	PHE	GLU	GLY	GLU	ARG	LEU
M1271	Y1211	E1151	H1088	M1023	S963	S902	T842	ASP	ASP	PRO	ASN	PRO	ALA	LEU
C1272	D1212	E1152	I1089		N964	R903	D843	VAL	VAL	ASP	GLN	ASP	VAL	ASP
A1213	A1213	L1153	G1090	N1026	P965	V904	E844	HIS	HIS	PRO	PHE	GLY	PRO	GLY
A1214	A1214	V1154	N1091	L1027	Y966	V905	L845	ASP	ASP	VAL	THR	ASN	LYS	GLN
H1275	K1215	K1155	L1092	L1028	R967	G906	V846	LEU	LEU	VAL	HIS	THR	VAL	LEU
L1216	L1216	Y1156	D1093	I1029	R968	K907	A847	VAL	VAL	HIS	TYR	GLN	VAL	ASN
L1217	L1217	L1157	L1094	L1030	P969	Y908	E848	TYR	TYR	LYS	ARG	VAL	ILE	ALA
Y1218	Y1218	Q1158	A1095	T1031	L970	C909	V849	LEU	LEU	GLY	ASP	VAL	CYS	GLY
N1219	N1219	M1159	Y1096	A1032	I971	E910	E850	THR	THR	ILE	HIS	VAL	PHE	SER
N1220	N1220	A1160	E1097	I1033	D972	K911	K851	ALA	ALA	GLN	ILE	ALA	GLU	LEU
D1281	D1281	R1161	F1098	K1034	Q973	R912	R852	ASN	ASN	ALA	GLN	THR	THR	LEU
E1282	S1222	K1162	A1099	A1035	V974	D913	N853	GLN	GLN	CYS	LEU	GLN	CYS	LEU
L1283	M1223	K1163	E1100	D1036	Q975	P914	R854	LYS	LYS	THR	ASN	VAL	VAL	PRO
E1284	F1224	A1164	R1101	R1037	T977	H915	L855	GLY	GLY	THR	GLU	ILE	GLN	VAL
E1285	G1225	R1165	G1102	T1038	A978	L916	K856	ILE	ILE	GLN	ALA	GLN	ILE	LEU
L1286	L1226	E1166	N1103	R1039	L979	C918	L857	LYS	LYS	VAL	LEU	GLY	VAL	GLY
I1287	L1227	S1167	E1104	E1042	S980	V919	L858	VAL	VAL	GLU	GLN	ALA	TYR	ARG
N1288	A1228	Y1168	P1105		E981	A920	P860	LYS	LYS	ARG	ALA	ALA	LYS	GLN
Y1289	S1229	Y1169		M1045	T982	Y921	W861	ASN	ASN	ILE	SER	LEU	LYS	LEU
Y1290	T1230	E1170	W1108	R1046	Q983	E922	L862	VAL	VAL	CYS	SER	LEU	VAL	LEU
Q1291	L1231	T1171	S1109	R1047	D984	R923	L863	ILE	ILE	TYR	THR	GLY	VAL	LEU
R1292	V1232	E1172	Q1110	L1047	P985	R924	E863	ARG	ARG	GLY	THR	ALA	GLY	GLY
H1293	H1233	L1173	L1111	D1048	E986	Q925	A864	GLY	GLY	THR	LYS	THR	LYS	TRP
G1294	L1234	I1174	A1112	M1049	E987	C926	R865	ASN	ASN	PRO	ASP	PRO	PRO	LEU
Y1295	G1235	F1175	K1113	Y1050	V988	D927	L866	CYS	CYS	TRP	THR	TRP	TRP	LEU
E1296	E1236	A1176	L1116	D1051	S989	L928	R867	ARG	ARG	TYR	TYR	ARG	ARG	GLY
E1297	Y1237	L1177	Q1117	P1053	V990	E929	E868	ILE	ILE	ASP	ASP	ILE	PHE	LEU
E1298	Q1238	A1178	K1118	D1054	T991	L930	G869	VAL	VAL	PRO	GLY	GLY	LEU	GLY
L1299	A1239	K1179	G1119	I1055	V992	R931	C870	ARG	ARG	ARG	LYS	PRO	LEU	CYS
I1300	A1240	T1180	M1120	A1056	K993	N932	E871	VAL	VAL	LYS	VAL	ASN	ASN	GLY
T1301	V1241	N1181	V1121	I1055	A994	N933	E872	ASN	ASN	GLY	VAL	VAL	GLY	GLY
M1302	D1242	R1182	K1122	M1057	F995	V933	P873	THR	THR	LEU	THR	THR	THR	GLY
L1303	G1243	L1183	E1123	I1060	T997	E935	A874	LYS	LYS	GLY	GLY	GLY	GLY	GLY
A1304	A1244	A1184	I1124	S1061	N996	N936	T875	ALA	ALA	PHE	PHE	PHE	PHE	ASP
A1306	R1245	E1185	I1125	N1062	A998	E936	H876	LEU	LEU	GLY	GLY	GLY	GLY	GLY
K1246	L1246	L1186	D1126	E1063	D999	N937	W822	VAL	VAL	LEU	LEU	LEU	LEU	LEU
A1247	A1247	E1187	S1127	E1063	E999	N937	D823	THR	THR	LEU	LEU	LEU	LEU	LEU
N1248	N1248	E1188	Y1128	F1065	L1000	S938	N877	ASP	ASP	GLY	GLY	GLY	GLY	GLY
S1249	T1249	F1189	I1129	E1066	P1001	L939	L879	GLN	GLN	GLY	GLY	GLY	GLY	GLY
R1251	R1251	I1190	K1130	E1066	N1002	F940	A880	LEU	LEU	LEU	LEU	LEU	LEU	LEU
T1252	T1252	N1191	A1131	E1067	E1003	K941	R881	THR	THR	THR	THR	THR	THR	THR
W1253	W1253	G1192	D1132	A1068	I1004	S944	V828	PRO	PRO	PRO	PRO	PRO	PRO	PRO
K1254	K1254	P1193	D1133	F1069	I1005	R945	Y883	ILE	ILE	ILE	ILE	ILE	ILE	ILE
E1255	E1255	N1194	P1134	I1070	L1007	Y946	L884	VAL	VAL	VAL	VAL	VAL	VAL	VAL
V1256	V1256	N1195	S1135	I1071	L1008	L947	D885	GLY	GLY	GLY	GLY	GLY	GLY	GLY
F1257	F1257	A1196	S1136	F1072	E1009	V948	S886	ASP	ASP	ASP	ASP	ASP	ASP	ASP
C1258	C1258	H1197	Y1137	R1073	K1010	R949	N887	GLN	GLN	GLN	GLN	GLN	GLN	GLN
F1259	F1259	I1198	M1138	K1074	I1011	R950	W836	LEU	LEU	LEU	LEU	LEU	LEU	LEU
A1259	A1259	Q1199	E1139	F1075	V1012	K951	V835	VAL	VAL	VAL	VAL	VAL	VAL	VAL
C1260	C1260	Q1200	Q1142	D1076	L1013	P953	R837	THR	THR	THR	THR	THR	THR	THR
V1261	V1261	V1201	A1143	V1077	D1014	R954	W836	ASP	ASP	ASP	ASP	ASP	ASP	ASP
I1322	I1322	G1202	A1144	M1078	N1015	L955	R837	GLY	GLY	GLY	GLY	GLY	GLY	GLY
L1323	L1323	D1203	N1145	T1079	S1016	Y956	Q838	LEU	LEU	LEU	LEU	LEU	LEU	LEU
Y1324	Y1324	D1203	T1146	T1079	V1017	W956	D839	VAL	VAL	VAL	VAL	VAL	VAL	VAL
S1325	S1325	C1205	G1148	E1019	F1018	Q957	L894	CYS	CYS	CYS	CYS	CYS	CYS	CYS
K1326	K1326	Y1206	S1147	S1080	V1017	V958	R895	ILE	ILE	ILE	ILE	ILE	ILE	ILE
F1327	F1327	D1207	L1085	V1084	E1020	V959	E896	ASP	ASP	ASP	ASP	ASP	ASP	ASP
Q1330	Q1330	E1208	N1149	I1086	H1021	L961	Y900	ARG	ARG	ARG	ARG	ARG	ARG	ARG

PRO	ILE	VAL	TYR	GLY	GLN	PRO	GLN	LEU	MET	LEU	THR	ALA	GLY	PRO	SER	VAL	ALA	VAL	PRO	GLN	ALA	PRO	PHE	GLY	TYR	GLY	TYR	THR	ALA	PRO	PRO	TYR	GLY	GLN	PRO	GLN	PRO	GLY	PHE	GLY	TYR	SER	MET
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- Molecule 1: Clathrin heavy chain



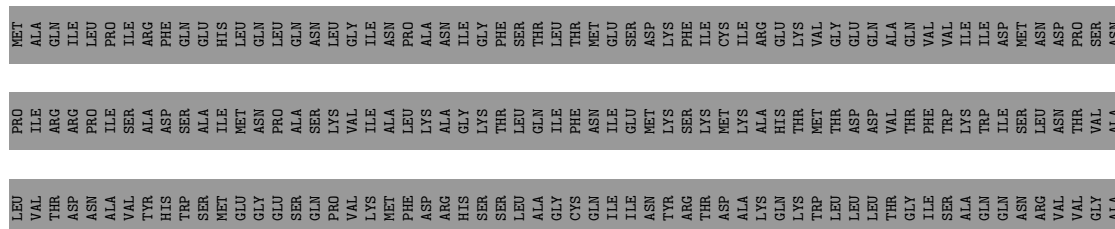
GLU PRO LEU LEU ALA ASP ILE THR GLN ILE VAL VAL ASP PHE MET GLU TYR ASN LEU LEU ILE GLN GLN CYS THR THR ALA ALA PHE LEU LEU LEU ASP ALA LEU LEU LYS ASN ASN ARG ARG SER PRO GLU GLY PRO PRO LEU LEU GLN THR ARG ARG LEU LEU GLU MET MET ASN LEU MET HIS MET ALA ALA PRO ALA GLN VAL ASP ALA ALA ILE LEU

GLY	ASN	GLN	MET	PHE	THR	HIS	TYR	ASP	ARG	ALA	HIS	ILE	ALA	GLN	LEU	GLY	CYS	GLU	LYS	ALA	GLY	LEU	GLN	ARG	ALA	LEU	GLU	HIS	PHE	THR	ASP	LEU	TYR	D635	T636	R637	R638	A639	V640	V641	H642	T643	H644	L645	L646	N647	P648	E649	V650	L651	V652	N653	V654	F655	G656	S657	L658	S659	V660
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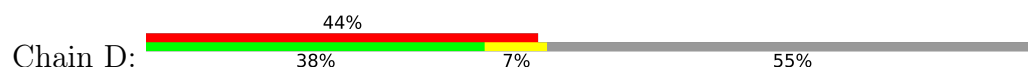
E661	D662	S663	L664	E665	C666	L667	A668	M670	L671	A673	L675	R676	Q677	M678	L679	Q680	L681	C682	V683	Q684	V685	A686	S687	K688	V689	H690	E691	Q692	L693	S694	T695	Q696	S697	L698	I699	E700	L701	F702	E703	S704	F705	K706	S707	F708	E709	G710	L711	F712	Y713	F714	L715	G716	S717	V718	V719	M720
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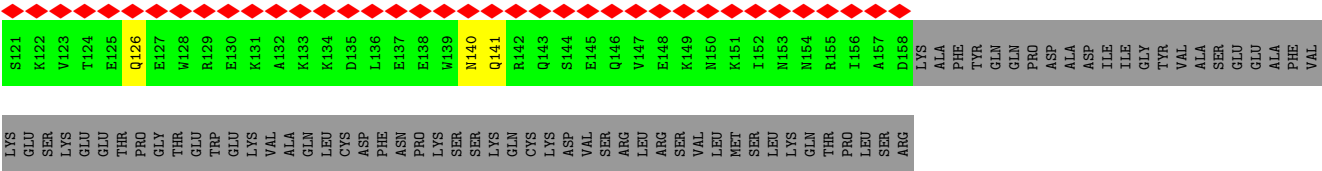
F721	S722	D723	D724	F725	D726	F727	H728	F729	K730	F731	F732	Q733	A734	A735	C736	K737	T738	G739	Q740	I741	K742	E743	V744	E745	F746	I747	C748	R749	E750	S751	N752	C753	F754	D755	F756	F757	R758	F759	K760	N761	F762	L763	K764	E765	A766	K767	L768	T769	D770	Q771	L772	F773	L774	I775	V776	V777	C778	D779
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F781	D782	F783	F784	F785	D786	L789	F790	L791	F792	R793	N794	N795	L796	F797	F798	F799	L800	E801	L802	Q805	K806	F807	N808	F809	F810	S810	R811	L812	F813	F814	V815	L816	G817	G818	L819	L820	D821	F822	D823	C824	S825	E826	D827	V828	L829	K830	N831	L832	L833	L834	V835	V836	F837	G838	Q839	F840	S841	T842
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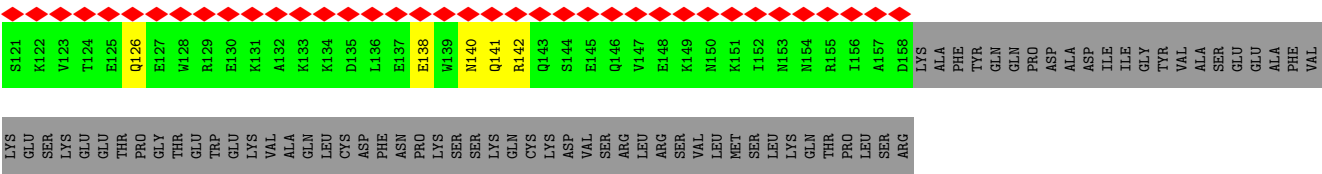
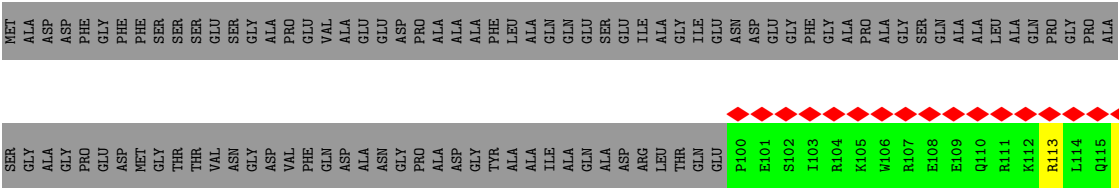




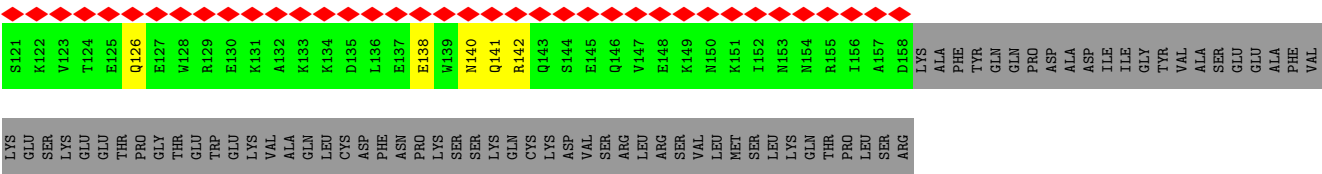
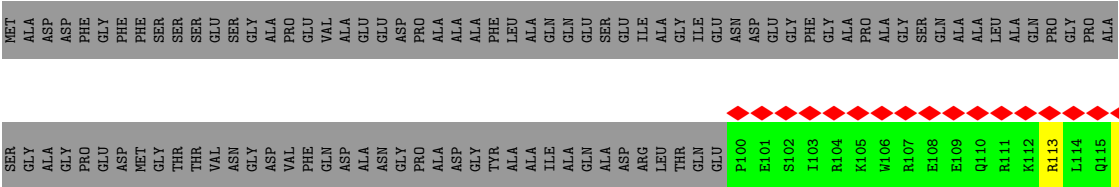




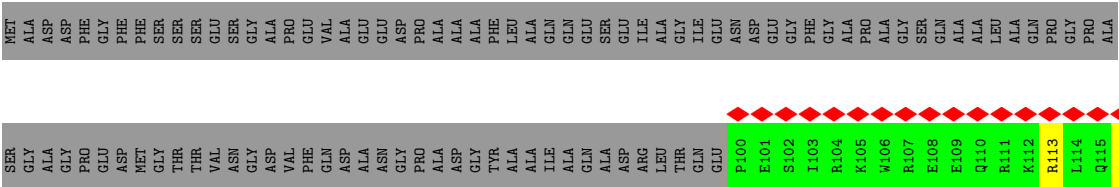
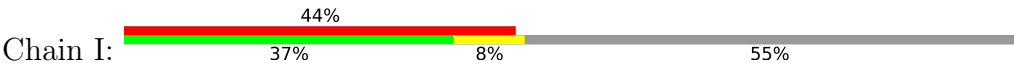
• Molecule 2: Clathrin light chain



• Molecule 2: Clathrin light chain



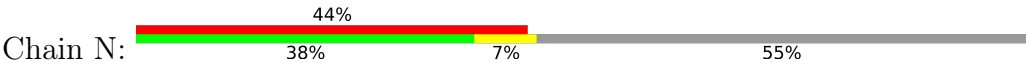
• Molecule 2: Clathrin light chain



S121	K122	V123	T124	E125	Q126	E127	W128	R129	E130	K131	A132	K133	K134	D135	L136	E137	E138	W139	N140	Q141	R142	Q143	S144	E145	Q146	V147	E148	K149	N150	K151	I152	N153	R155	I156	A157	D158	K159	A160	F161	Y162	Q163	Q164	P165	D166	ALA	ASP	ILE	ILE	GLY	TYR	VAL	ALA	SER	GLU	GLU	ALA	PHE	VAL
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LYS	GLU	SER	LYS	GLU	GLU	THR	PRO	G189	T190	E191	W192	E193	K194	V195	A196	Q197	L198	C199	D200	F201	N202	P203	K204	S205	S206	K207	Q208	C209	K210	D211	V212	S213	R214	L215	R216	S217	V218	L219	M220	S221	L222	K223	Q224	T225	PRO	LEU	SER	ARG
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• Molecule 2: Clathrin light chain



MET	ALA	ASP	GLY	PHE	GLY	PHE	SER	SER	THR	GLU	SER	GLY	ALA	GLU	VAL	GLU	ALA	ASP	PRO	ALA	ALA	PHE	LEU	ALA	GLN	GLU	SER	GLU	ASP	ILE	ALA	GLY	ILE	GLU	ASN	S213	R214	L215	R216	PHE	GLY	GLY	ALA	PRO	ALA	GLY	SER	GLN	ALA	LEU	ALA	GLN	PRO	GLY	PRO	ALA
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SER	GLY	ALA	GLY	PRO	GLU	ASP	MET	THR	VAL	ASN	GLY	VAL	PHE	GLN	ASP	ALA	GLY	TYR	ALA	ILE	ALA	GLN	GLU	ALA	GLN	ASP	ARG	LEU	THR	GLN	GLU	P100	E101	S102	I103	R104	K105	W106	R107	E108	E109	Q110	R111	K112	R113	L114	Q115	E116	L117	D118	A119	A120
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S121	K122	V123	T124	E125	Q126	E127	W128	R129	E130	K131	A132	K133	K134	D135	L136	E137	E138	W139	N140	Q141	R142	Q143	S144	E145	Q146	V147	E148	K149	N150	K151	I152	N153	R155	I156	A157	D158	K159	A160	F161	Y162	Q163	Q164	P165	D166	ALA	ASP	ILE	ILE	GLY	TYR	VAL	ALA	SER	GLU	GLU	ALA	PHE	VAL
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LYS	GLU	SER	LYS	GLU	GLU	THR	PRO	G189	T190	E191	W192	E193	K194	V195	A196	Q197	L198	C199	D200	F201	N202	P203	K204	S205	S206	K207	Q208	C209	K210	D211	V212	S213	R214	L215	R216	S217	V218	L219	M220	S221	L222	K223	Q224	T225	PRO	LEU	SER	ARG
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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 ($\text{\AA}$)	436.48, 436.48, 436.48	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.705, 1.705, 1.705	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	0.22	0/3240	0.45	0/4375
1	B	0.20	0/5513	0.43	0/7468
1	C	0.23	0/3667	0.48	1/4970 (0.0%)
1	F	0.22	0/3240	0.45	0/4375
1	G	0.21	0/5513	0.43	0/7468
1	H	0.23	0/3667	0.48	1/4970 (0.0%)
1	K	0.22	0/3240	0.45	0/4375
1	L	0.21	0/5513	0.43	0/7468
1	M	0.23	0/3667	0.48	1/4970 (0.0%)
2	D	0.20	0/887	0.40	0/1183
2	E	0.21	0/520	0.45	0/692
2	I	0.20	0/887	0.40	0/1183
2	J	0.21	0/520	0.45	0/692
2	N	0.20	0/887	0.40	0/1183
2	O	0.21	0/520	0.45	0/692
All	All	0.21	0/41481	0.45	3/56064 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	769	THR	CB-CA-C	5.30	120.97	110.42
1	C	769	THR	CB-CA-C	5.29	120.94	110.42
1	M	769	THR	CB-CA-C	5.27	120.91	110.42

There are no chirality outliers.

There are no planarity outliers.

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	3168	0	3118	37	0
1	B	5405	0	5359	64	0
1	C	3598	0	3592	58	0
1	F	3168	0	3118	34	0
1	G	5405	0	5359	68	0
1	H	3598	0	3592	55	0
1	K	3168	0	3118	36	0
1	L	5405	0	5359	66	0
1	M	3598	0	3592	59	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	500	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 (500) 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:771:GLN:H	1:H:771:GLN:CD	1.87	0.82
1:H:768:LEU:HD12	1:H:768:LEU:H	1.43	0.82
1:M:771:GLN:H	1:M:771:GLN:CD	1.87	0.80
1:C:771:GLN:CD	1:C:771:GLN:H	1.87	0.79
1:A:1408:ILE:HD12	1:A:1419:LEU:HD11	1.68	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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:C:825:SER:OG	1:C:827:ASP:OD2	2.11	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
1:A:1519:ASN:ND2	1:B:1101:ARG:O	2.34	0.60
1:C:771:GLN:CD	1:C:771:GLN:N	2.59	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:H:771:GLN:CD	1:H:771:GLN:N	2.59	0.59
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: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:L:1322:ILE:O	1:L:1325:SER:OG	2.14	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:B:1129:ILE:HA	1:B:1159:MET:HE1	1.88	0.56
1:C:768:LEU:H	1:C:768:LEU:CD1	2.18	0.56
1:H:908:TYR:O	1:H:912:ARG:NH1	2.39	0.56
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:G:1129:ILE:HA	1:G:1159:MET:HE1	1.88	0.55
1:L:971:ILE:HA	1:L:974:VAL:HG12	1.88	0.55
1:L:1129:ILE:HA	1:L:1159:MET:HE1	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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: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: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:B:1304:GLU:OE2	1:B:1331:LYS:NZ	2.35	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
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:M:771:GLN:CD	1:M:771:GLN:N	2.59	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:M:883:TYR:O	1:M:886:SER:OG	2.25	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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
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:L:1304:GLU:OE2	1:L:1331:LYS:NZ	2.35	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:K:1257:CYS:SG	1:K:1258:PHE:N	2.90	0.45
1:A:1488:ASP:OD1	1:A:1488:ASP:N	2.47	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:G:1060:ILE:HD13	1:G:1084:VAL:HG13	1.97	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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
2:N:143:GLN:O	2:N:147:VAL:HG23	2.17	0.45
1:A:1322:ILE:O	1:A:1325:SER:OG	2.34	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:G:934:CYS:O	1:G:938:SER:OG	2.26	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:M:770:ASP:OD2	1:M:770:ASP:C	2.61	0.44
1:B:934:CYS:O	1:B:938:SER:OG	2.26	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:C:770:ASP:OD2	1:C:770:ASP:C	2.61	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:H:770:ASP:OD2	1:H:770:ASP:C	2.61	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:H:770:ASP:O	1:H:771:GLN:C	2.61	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:C:770:ASP:O	1:C:771:GLN:C	2.61	0.43
1:F:1360:GLU:OE1	1:F:1360:GLU:N	2.44	0.43
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:M:770:ASP:O	1:M:771:GLN:C	2.61	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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
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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1457:ASN:OD1	1:A:1458:HIS:N	2.54	0.41
1:B:1460:ASN:OD1	1:B:1462:SER:OG	2.38	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
2:O:140:ASN:OD1	2:O:141:GLN:N	2.54	0.40
1:G:1304:GLU:OE2	1:G:1331:LYS:NZ	2.35	0.40
1:G:1319:GLU:O	1:G:1323:LEU:HD13	2.22	0.40
1:G:1340:TRP:O	1:G:1368:TYR:OH	2.38	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

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	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%)	25	64
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%)	25	64
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%)	25	64
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%)	50	83

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 ⓘ

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%)	342 (100%)	0	100	100
1	B	587/1471 (40%)	586 (100%)	1 (0%)	92	94
1	C	405/1471 (28%)	403 (100%)	2 (0%)	86	90
1	F	342/1471 (23%)	342 (100%)	0	100	100
1	G	587/1471 (40%)	586 (100%)	1 (0%)	92	94
1	H	405/1471 (28%)	403 (100%)	2 (0%)	86	90
1	K	342/1471 (23%)	342 (100%)	0	100	100
1	L	587/1471 (40%)	586 (100%)	1 (0%)	92	94
1	M	405/1471 (28%)	403 (100%)	2 (0%)	86	90
2	D	96/184 (52%)	95 (99%)	1 (1%)	73	82
2	E	55/184 (30%)	55 (100%)	0	100	100
2	I	96/184 (52%)	95 (99%)	1 (1%)	73	82
2	J	55/184 (30%)	55 (100%)	0	100	100
2	N	96/184 (52%)	95 (99%)	1 (1%)	73	82
2	O	55/184 (30%)	55 (100%)	0	100	100
All	All	4455/14343 (31%)	4443 (100%)	12 (0%)	90	92

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	887	ASN
1	C	767	LYS
1	C	772	LEU
2	D	205	SER
1	G	887	ASN
1	L	887	ASN
1	H	767	LYS
1	H	772	LEU
1	M	767	LYS
1	M	772	LEU

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Mol	Chain	Res	Type
2	I	205	SER
2	N	205	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (24) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	887	ASN
1	B	973	GLN
1	B	1021	HIS
1	B	1049	ASN
1	B	1279	HIS
1	B	1458	HIS
1	C	876	HIS
1	C	1049	ASN
2	D	153	ASN
1	G	887	ASN
1	G	973	GLN
1	G	1279	HIS
1	G	1458	HIS
1	L	887	ASN
1	L	973	GLN
1	L	1458	HIS
1	H	761	ASN
1	H	876	HIS
1	H	1049	ASN
1	M	876	HIS
1	M	1049	ASN
2	I	110	GLN
2	I	150	ASN
2	N	153	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

5.5 Carbohydrates [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.

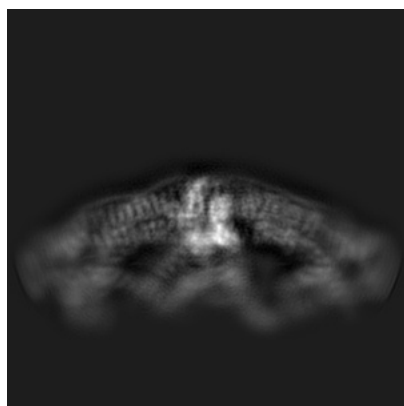
6 Map visualisation [i](#)

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

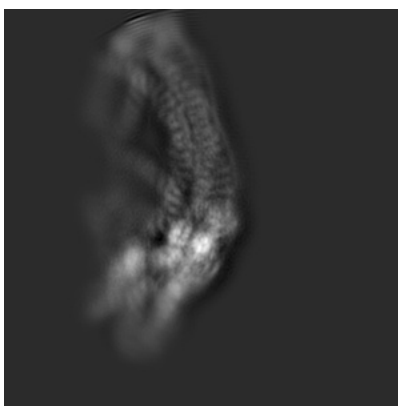
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

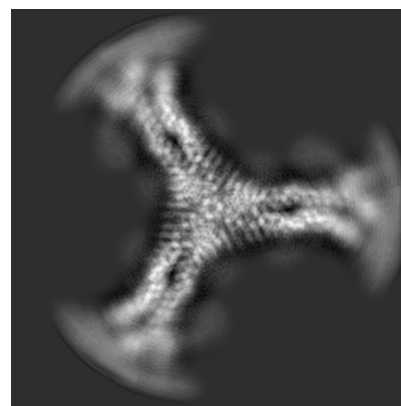
6.1.1 Primary map



X

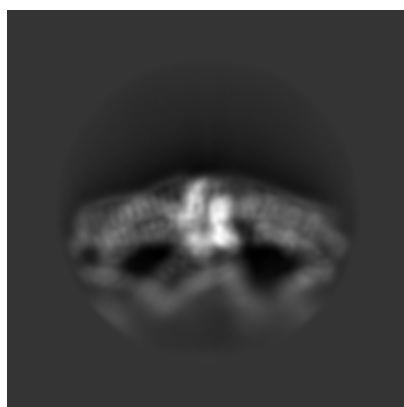


Y

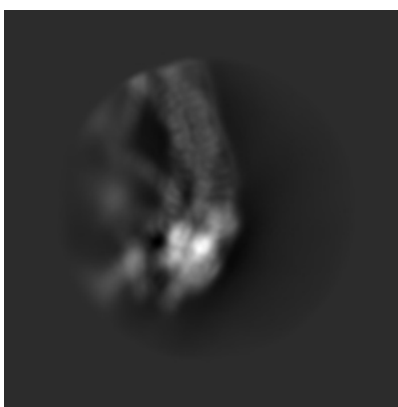


Z

6.1.2 Raw map



X



Y

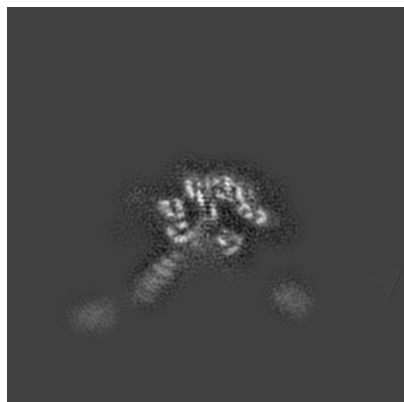


Z

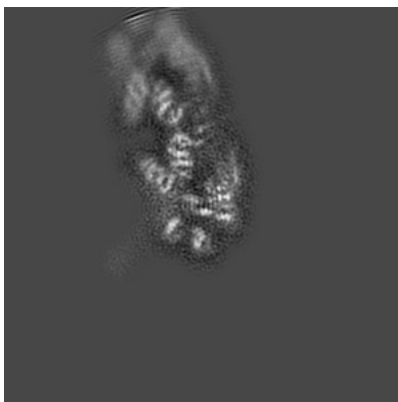
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

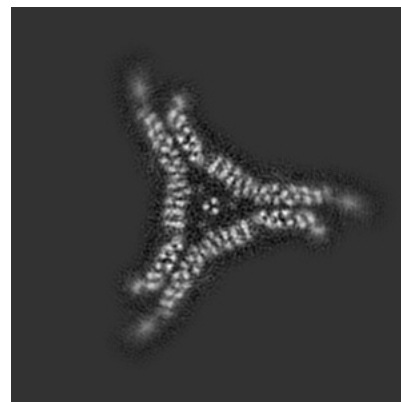
6.2.1 Primary map



X Index: 128

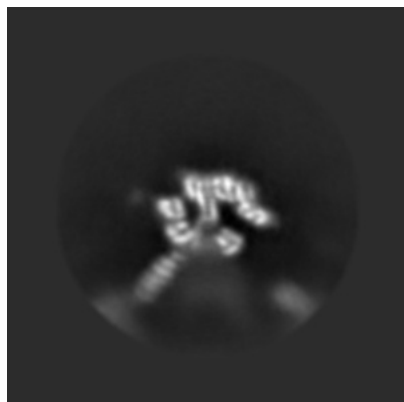


Y Index: 128

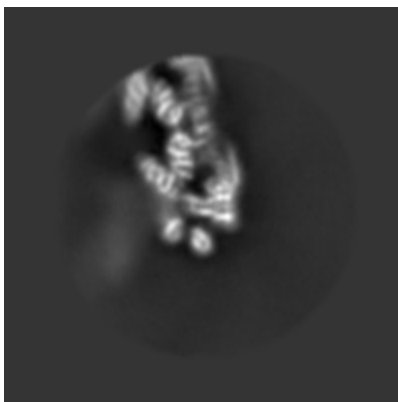


Z Index: 128

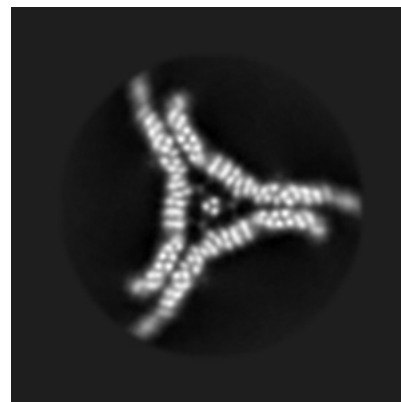
6.2.2 Raw map



X Index: 128



Y Index: 128

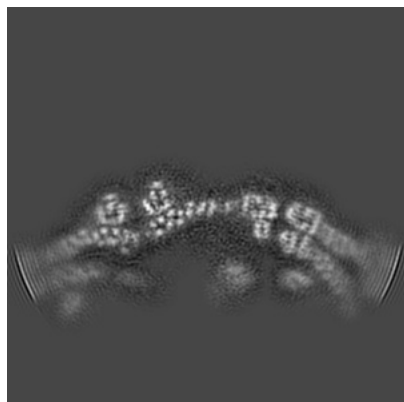


Z Index: 128

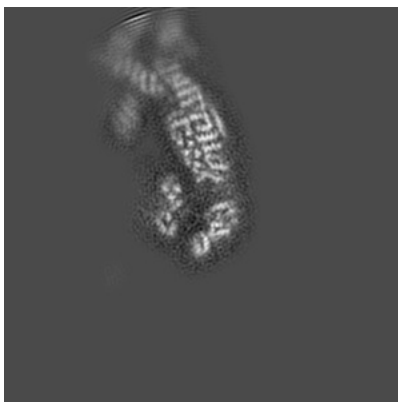
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

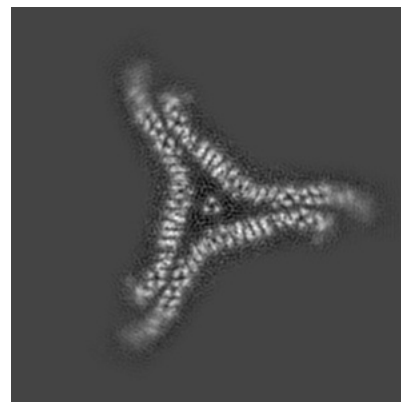
6.3.1 Primary map



X Index: 101



Y Index: 117



Z Index: 124

6.3.2 Raw map



X Index: 100



Y Index: 120



Z Index: 124

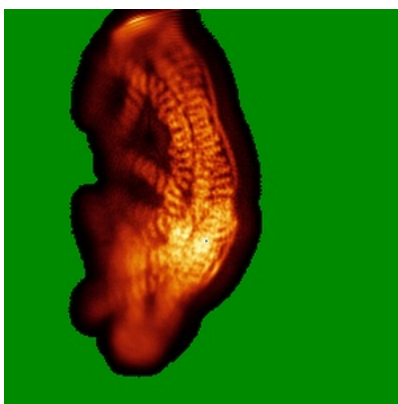
The images above show the largest variance slices of the map in three orthogonal directions.

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

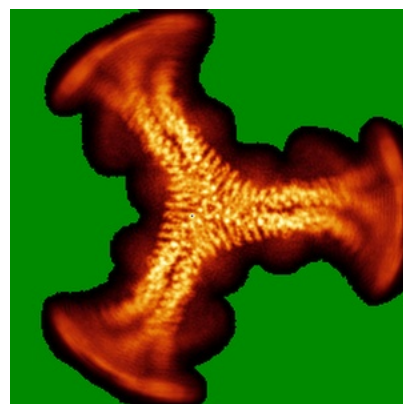
6.4.1 Primary map



X



Y

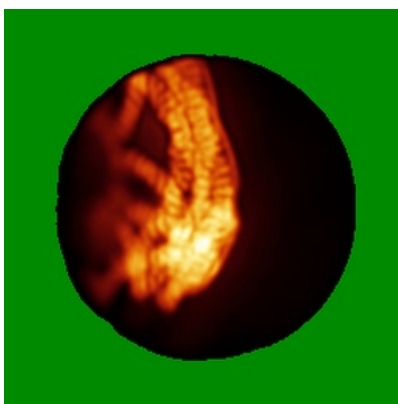


Z

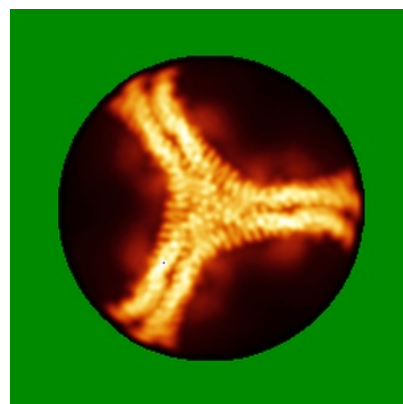
6.4.2 Raw map



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 0.195. 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.

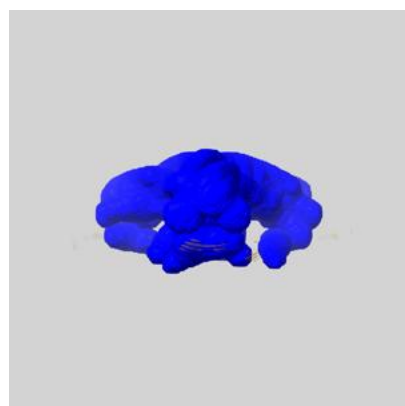
6.6 Mask visualisation [i](#)

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

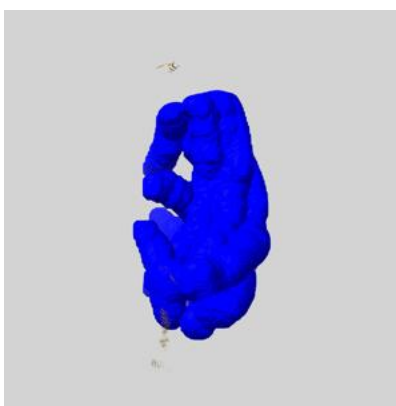
A mask typically either:

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

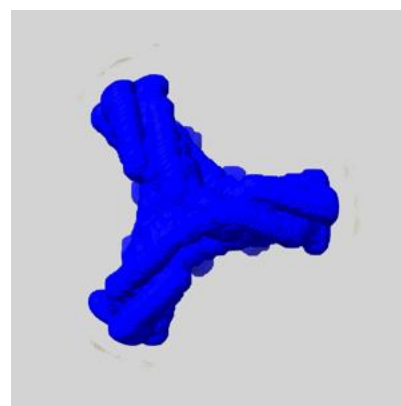
6.6.1 emd_0126_msk_1.map [i](#)



X



Y

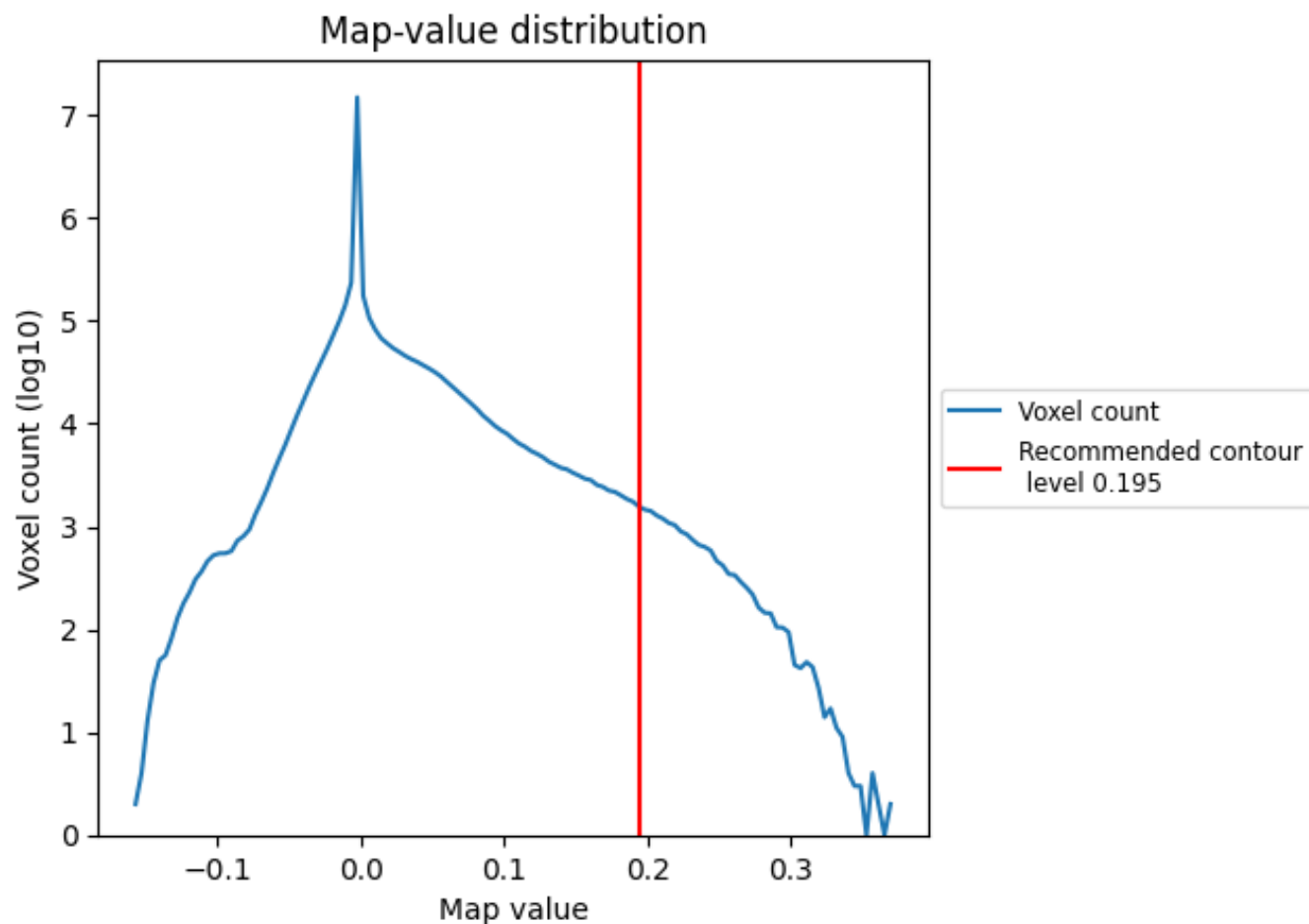


Z

7 Map analysis [i](#)

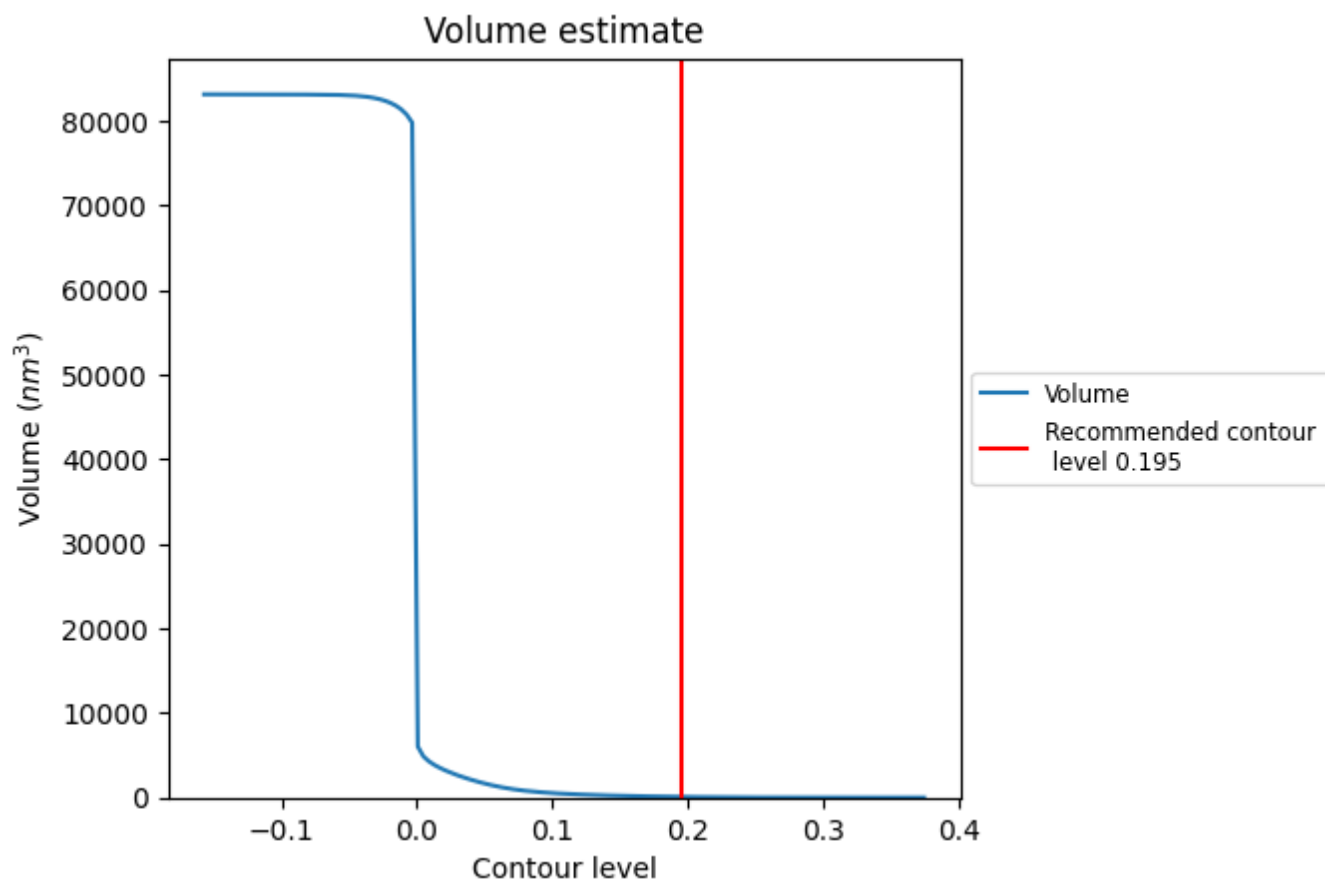
This section contains the results of statistical analysis of the map.

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.

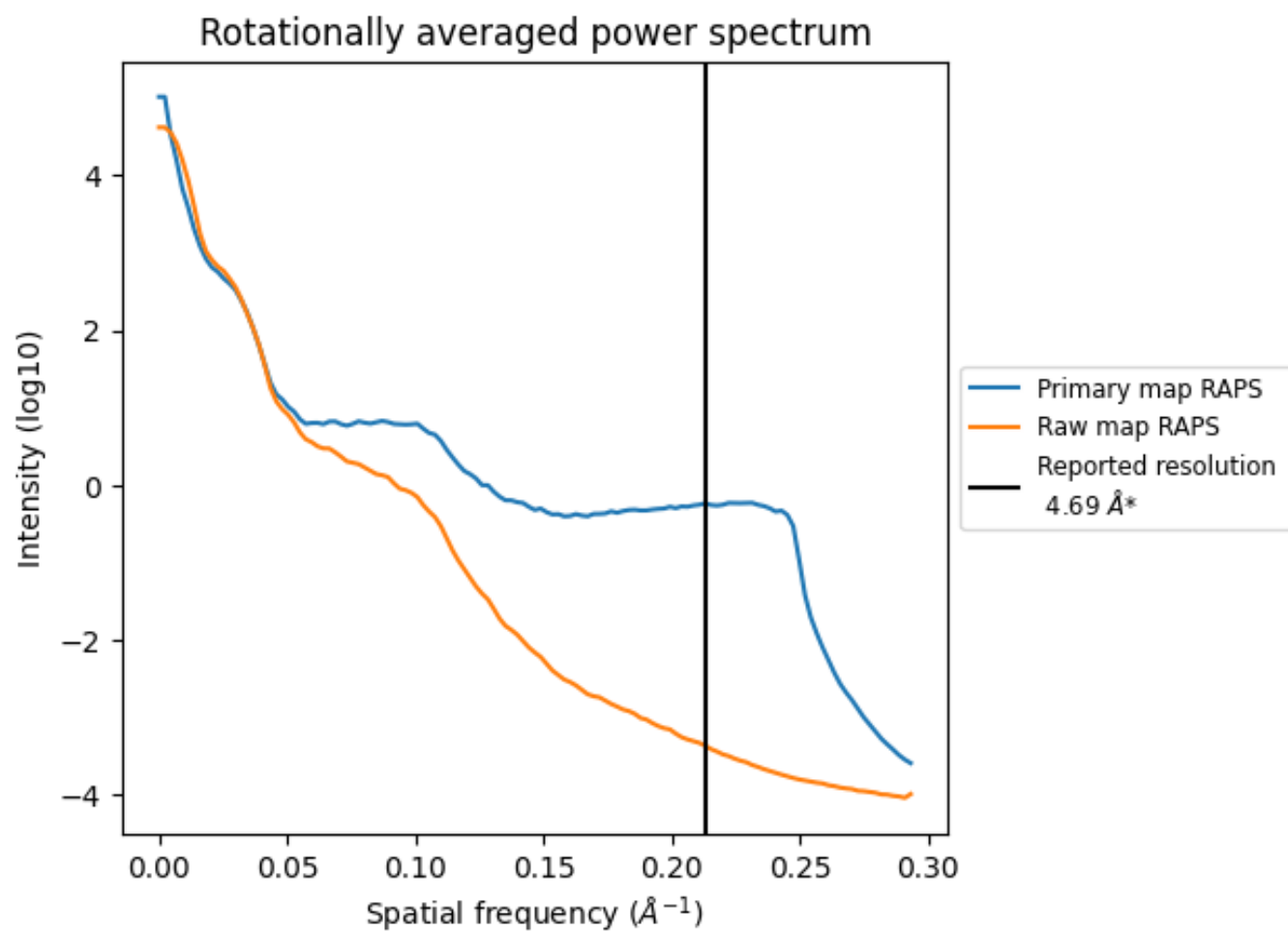
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 82 nm³; 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 ⓘ

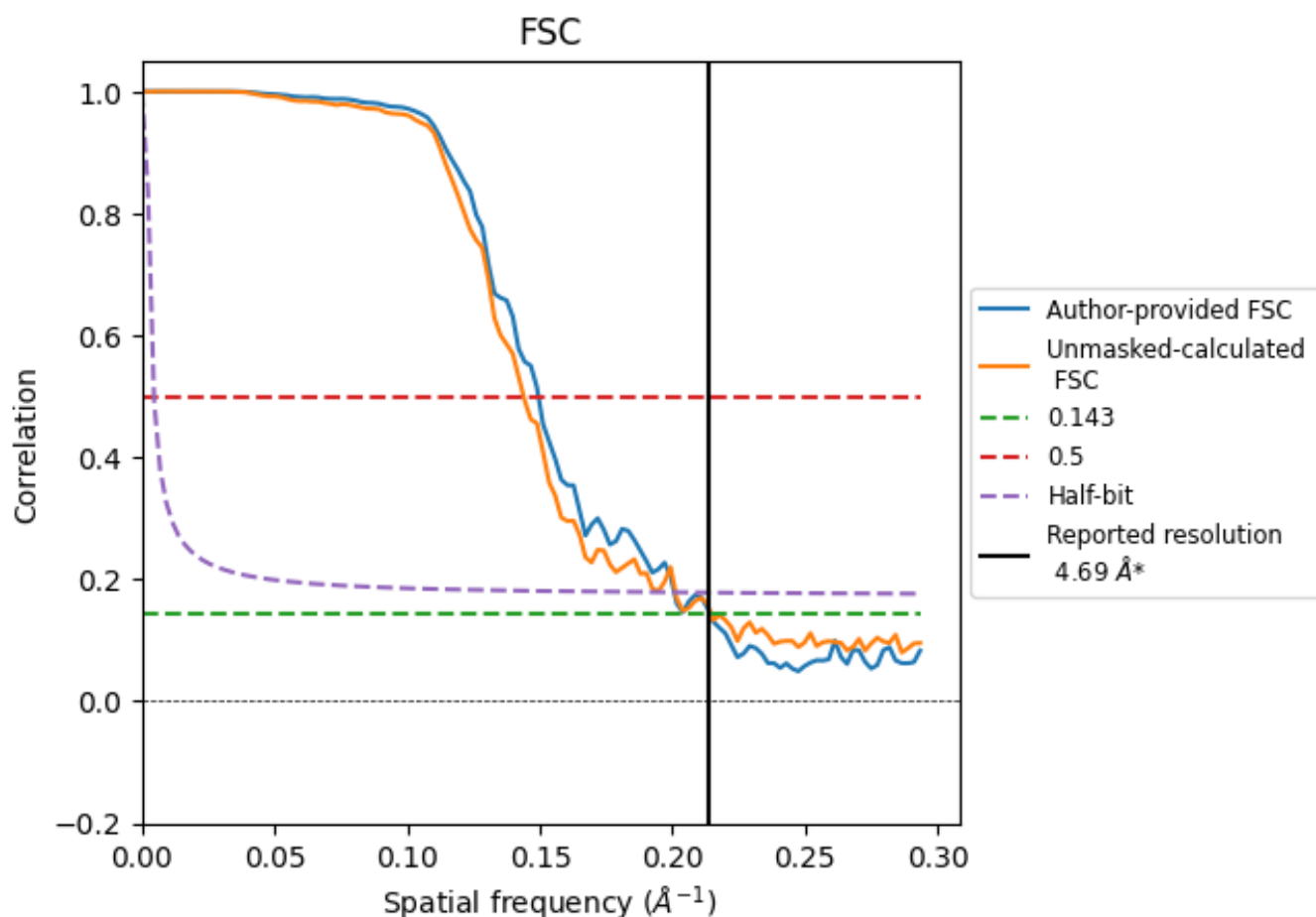


*Reported resolution corresponds to spatial frequency of 0.213 Å⁻¹

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 0.213 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

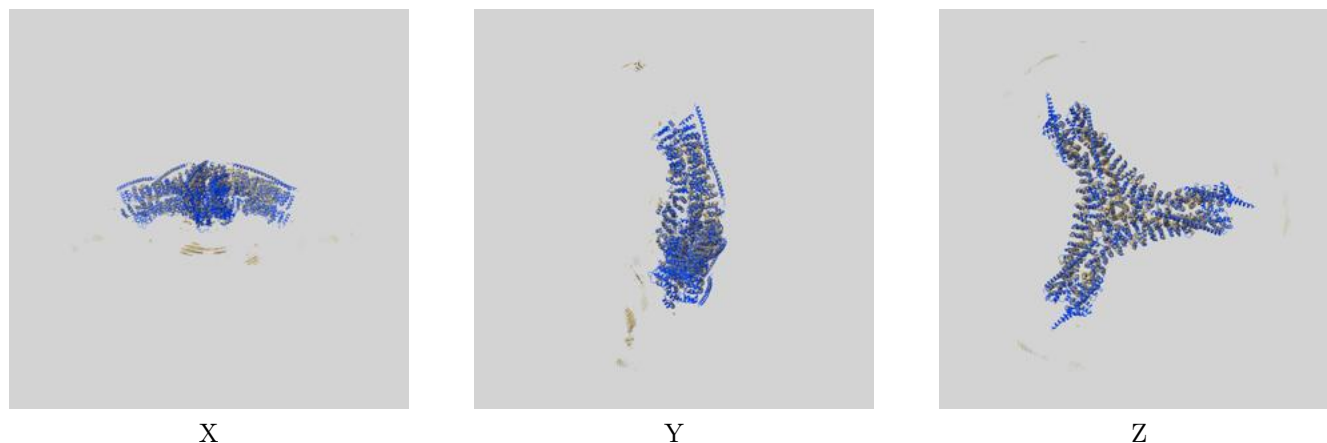
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.69	-	-
Author-provided FSC curve	4.67	6.69	4.98
Unmasked-calculated*	4.66	6.95	4.97

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

9 Map-model fit [i](#)

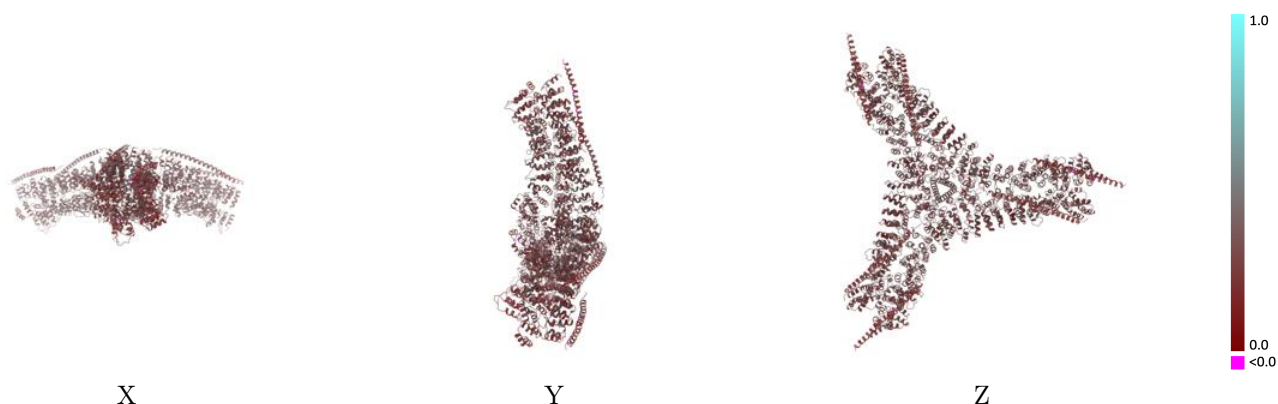
This section contains information regarding the fit between EMDB map EMD-0126 and PDB model 6SCT. Per-residue inclusion information can be found in section [3](#) on page [5](#).

9.1 Map-model overlay [i](#)



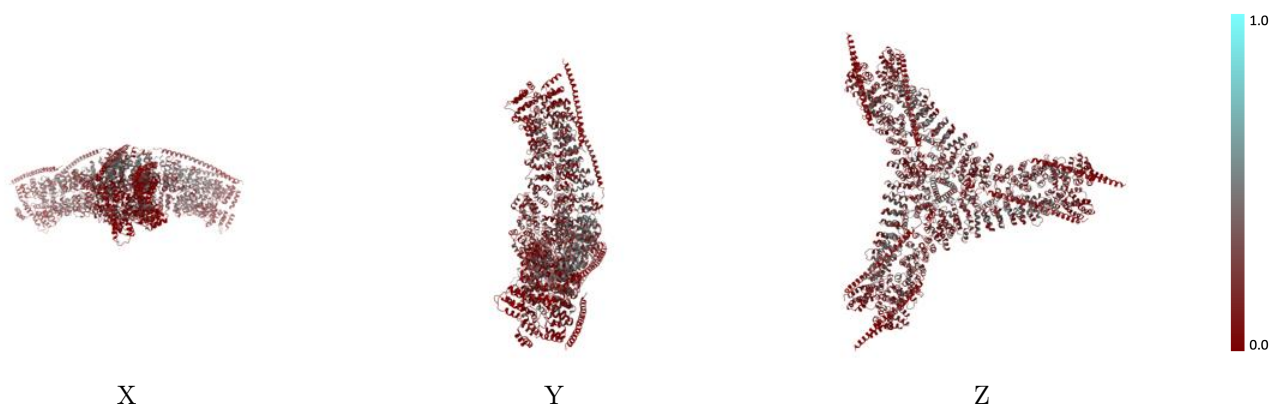
The images above show the 3D surface view of the map at the recommended contour level 0.195 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



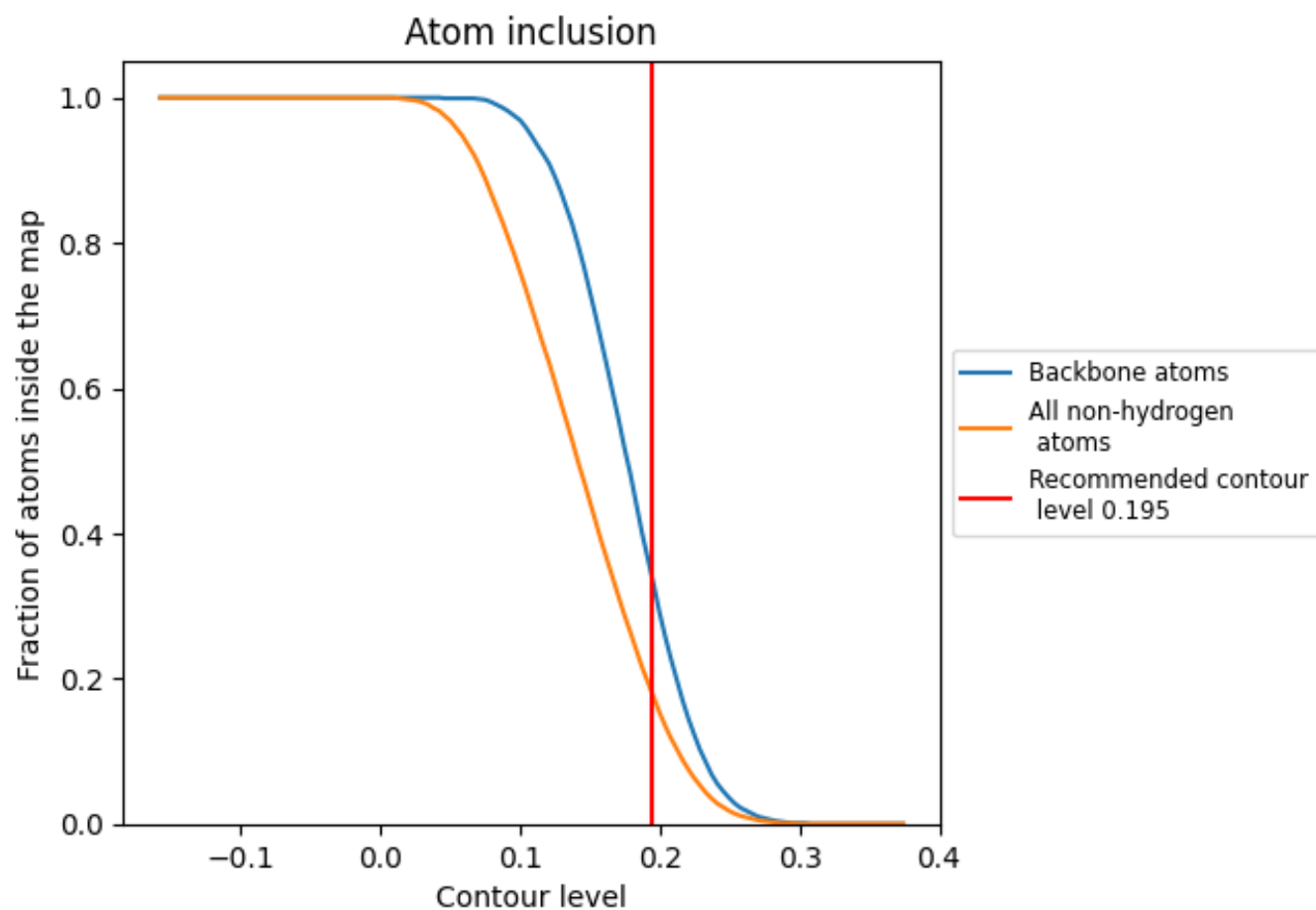
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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	0.1780	0.2970
A	0.2840	0.3140
B	0.1680	0.2980
C	0.1370	0.2890
D	0.1160	0.2920
E	0.0220	0.2180
F	0.2860	0.3160
G	0.1690	0.2990
H	0.1360	0.2910
I	0.1150	0.2890
J	0.0260	0.2210
K	0.2860	0.3170
L	0.1680	0.2980
M	0.1390	0.2890
N	0.1100	0.2910
O	0.0340	0.2180

1.0

0.0

<0.0