



Full wwPDB EM Validation Report ⓘ

Oct 12, 2024 – 11:14 PM EDT

PDB ID : 6DRA
EMDB ID : EMD-7991
Title : Low IP3 Ca²⁺ human type 3 1,4,5-inositol trisphosphate receptor
Authors : Hite, R.K.; Paknejad, N.
Deposited on : 2018-06-11
Resolution : 3.96 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.dev113
MolProbity : 4.02b-467
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) : 2.39

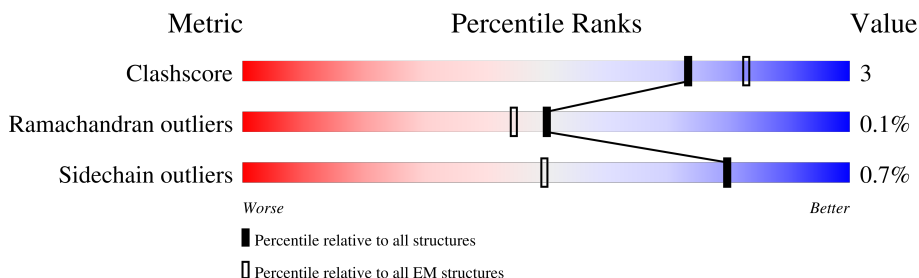
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.96 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	2671	
1	B	2671	
1	C	2671	
1	D	2671	

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 139084 atoms, of which 69544 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 Inositol 1,4,5-trisphosphate receptor type 3.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
1	A	2191	34768	11084	17386	2990	3202	106	0	0
1	B	2191	34768	11084	17386	2990	3202	106	0	0
1	C	2191	34768	11084	17386	2990	3202	106	0	0
1	D	2191	34768	11084	17386	2990	3202	106	0	0

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
2	A	1	1	1	0
2	B	1	1	1	0
2	C	1	1	1	0
2	D	1	1	1	0

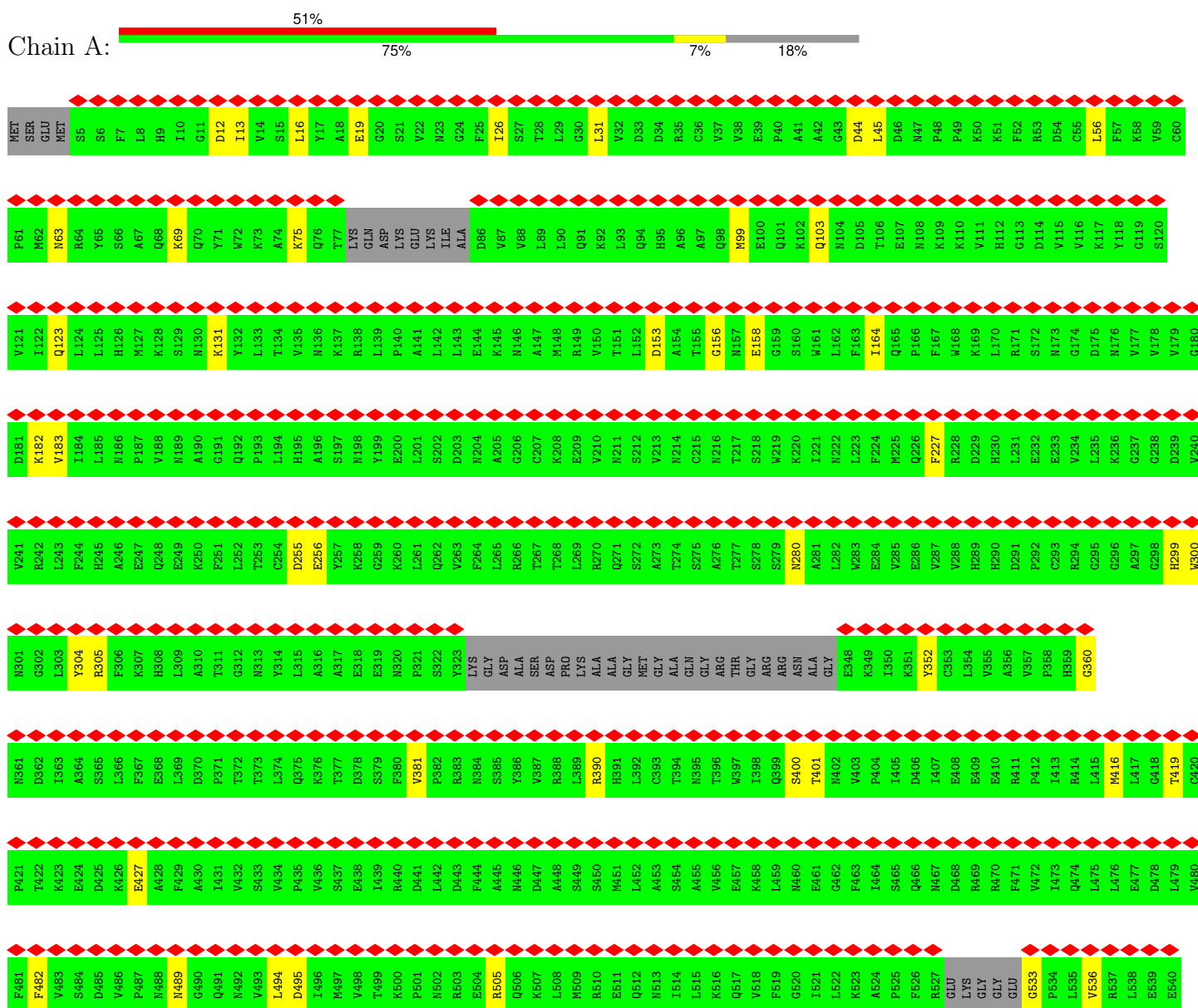
- Molecule 3 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		AltConf
			Total	Ca	
3	A	2	2	2	0
3	B	2	2	2	0
3	C	2	2	2	0
3	D	2	2	2	0

3 Residue-property plots

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3

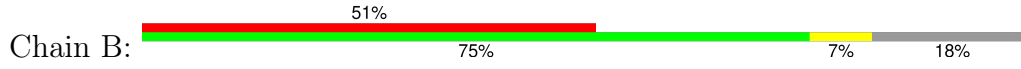


H1293	H1294	R1295	H1296	V1297	Q1298	Y1299	L1300	D1301	F1302	L1303	H1304	I1307	K1308	A1309	E1310	G1311	K1312	Y1313	V1314	V1314	F1253	K1316	L1254	L1254	P1256	G1257	L1258	L1259	E1260	A1261	E1262	T1263	E1324	L1325	T1326	N1327	A1328	G1329	D1330	D1331	V1332	V1333	V1334	F1335	Y1336	D1338	K1339	A1340	L1342	A1343	H1344	L1345	L1346	D1347	M1348	M1349	K1350	A1352	R1353
Q1230	F1231	L1232	Q1233	K1234	F1235	C1236	A1237	G1238	M1239	P1240	G1241	G1242	Q1243	A1244	K1248	H1249	L1250	H1251	L1252	F1253	L1254	L1254	P1256	G1257	L1258	L1259	E1260	A1261	E1262	T1263	M1264	Q1265	H1266	I1267	M1270	M1271	Y1272	Q1273	L1274	C1275	S1276	E1277	I1278	S1279	P1281	V1282	L1283	Q1284	H1285	F1286	V1287	H1288	L1289	L1290	A1291	T1292			
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F1036	G1037	V1038	G1039	LYS	SER	S1043	M1044	L1045	E1046	V1047	D1048	D1049	E1050	G1051	R1052	M1054	F1055	H1061	M1064	H1065	D1066	Y1067	P1069	VAL	GLU	VAL	GLU	ALA	ALA	ALA	ASP	GLY	ALA	ALA	ASP	GLY	ALA	THR	THR	ALA	M1022	M1023	N1024	L1025	D1026	R1027	I1028	G1029	E1030	Q1031	A1032	E1033	A1034	M1035					
E973	I974	L975	Q976	L979	L983	D984	Y985	R986	I987	S988	Y989	L990	L991	S992	V993	F994	K995	K996	E997	F998	Y999	E1000	V1001	F1002	P1003	M1004	GLN	ASP	GLY	ALA	ALA	ASP	GLY	ALA	ALA	THR	THR	ALA	M1022	M1023	N1024	L1025	D1026	R1027	I1028	G1029	E1030	Q1031	A1032	E1033	A1034	M1035							
LYS	ASN	VAL	ARG	SER	ILE	GLN	VAL	GLY	HIS	MET	SER	THR	MET	VAL	LEU	SER	ARG	ARG	LYS	GLN	SER	VAL	PHE	SER	ALA	ALA	PRO	SER	LEU	LEU	PRO	ASP	GLY	ALA	ALA	ASP	GLY	THR	THR	ALA	M1022	M1023	N1024	L1025	D1026	R1027	I1028	G1029	E1030	Q1031	A1032	E1033	A1034	M1035					
V846	E947	A948	V949	P950	A952	N953	E954	E955	K956	N957	K958	L959	T960	F961	V964	H968	N969	L970	I971	Y972	F973	G974	F975	Y976	S977	F978	S979	E980	R983	R986	T987	L988	L989	G990	D993	C994	VAL	GLN	GLY	PRO	PRO	ALA	MET	LEU	GLN	ALA	TYR	GLU	ASP	PRO	GLY	GLY							
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N601	R603	K604	L605	E607	K608	H609	I610	T611	K612	T613	E614	V615	E616	T617	F618	V619	S620	L621	H622	R623	K624	N625	E626	Y627	P628	K629	F630	L631	D632	Y633	L634	S635	D636	L637	C638	V639	S640	N641	H642	I643	A644	I645	P646	V647	T648	Q649	E650	L651	I652	C653	T654	C655	I656	L657	D658	P659	K660		
L541	S542	D543	Q544	K545	N546	A547	P548	Y549	Q550	H551	M552	F553	R554	L555	C556	Y557	R558	V559	L560	R561	H562	S563	Q564	E565	D566	Y567	R568	K569	M570	Q571	E572	H573	I574	A575	K576	Q577	F578	G579	M580	M581	Q582	S583	Q584	I585	G586	Y587	D588	I589	L590	A591	E592	D593	I595	T596	A597	L598	L599	H600	

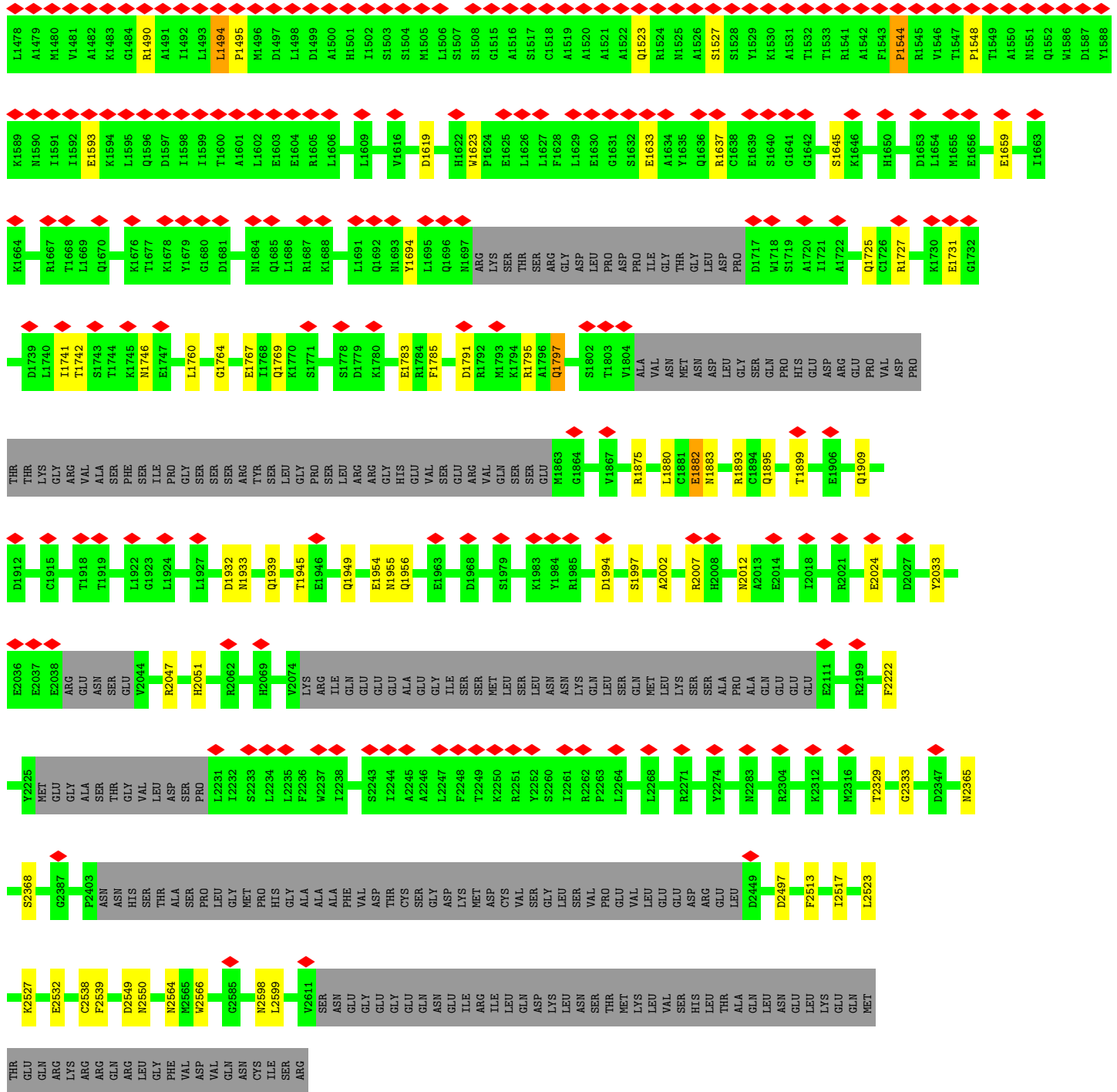
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VAL	ALA	SER	PHE	ILE	PRO	GLY	SER	SER	ARG	TYR	SER	LEU	PRO	SER	LEU	ARG	GLY	HIS	GLU	VAL	SER	ARG	ARG	VAL	VAL	ALA	ASN	GLN	SER	SER	GLY	M1863	G1864	V1867	R1875	L1880	C1881	E1882	N1883	R1893	G1894	Q1895	T1899	E1906	Q1909	D1912	C1915	T1918											
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MET	THR	GLU	GLN	ARG	LYS	ARG	ARG	GLN	ARG	LEU	GLY	PHE	VAL	ASP	GLN	ASN	CYS	ILE	SER	ARG
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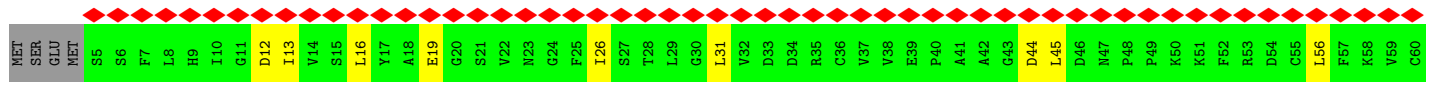
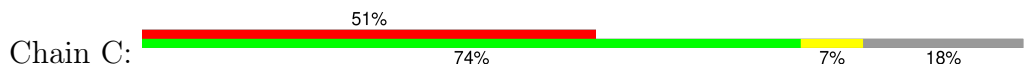
• Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3



MET	SER	GLU	MET	S5	S6	F7	L8	H9	I10	G11	D12	I13	V14	S15	L16	Y17	A18	E19	G20	S21	V22	N23	G24	F25	I26	S27	T28	L29	G30	L31	V32	D33	D34	R35	C36	V37	V38	E39	P40	A41	A42	G43	D44	L45	D46	M47	P48	P49	K50	K51	F52	R53	D54	C55	L56	F57	K58	V59	C60	
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P421	T422	K423	E424	D425	K426	E427	A428	F429	A430	I431	V432	S433	V434	P435	V436	S437	E438	I439	R440	D441	L442	D443	F444	A445	N446	D447	A448	S449	S450	M451	L452	A453	S454	A455	V456	E457	K458	L459	N460	E461	G462	F463	I464	S465	D466	M467	D468	R469	R470	F471	V472	I473	Q474	L475	L476	E477	D478	L479	V480	
F481	F482	V483	S484	K485	V486	P487	M488	M489	G490	Q491	M492	V493	L494	D495	I496	M497	V498	T499	K500	P501	N502	R503	E504	R505	Q506	K507	L508	M509	R510	E511	Q512	M513	I514	L515	K516	Q517	V518	F519	G520	I521	L522	K523	A524	P525	F526	R527	GLU	LYS	GLY	GLY	GLU	G533	P534	L535	V536	R537	L538	E539	E540	
L541	S542	D543	Q544	K545	N546	A547	P548	Y549	Q550	H551	M552	F553	R554	L555	C556	Y557	R558	V559	L560	R561	H562	S563	Q564	E565	D566	Y567	R568	K569	N570	Q571	E572	H573	I574	A575	K576	Q577	F578	G579	M580	M581	Q582	S583	Q584	I585	G586	Y587	D588	I589	L590	L591	E592	D593	K594	T594	I595	T596	A597	L598	L599	H600
M601	N602	R603	K604	L605	E606	K608	H609	I610	T611	K612	T613	E614	V615	E616	T617	V618	V619	S620	L621	V622	R623	K624	M625	R626	E627	P628	R629	F630	L631	D632	Y633	L634	S635	D636	L637	C638	V639	S640	M641	H642	I643	A644	I645	P646	V647	T648	Q649	E650	L651	I652	C653	K654	C655	V656	L657	D658	P659	K660		
N661	S662	D663	I664	L665	I666	T668	E669	L670	R671	P672	V673	K674	GLU	MET	ALA	SER	HIS	GLU	TRP	LEU	SER	ILE	GLU	TYR	SER	E690	E691	V692	M693	L694	T695	M696	T697	D698	K699	N700	N701	E702	H703	E705	K706	S707	V708	R709	Q710	L711	A712	Q713	E714	R715	A716	A717	G718	N719	A720					



● Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3

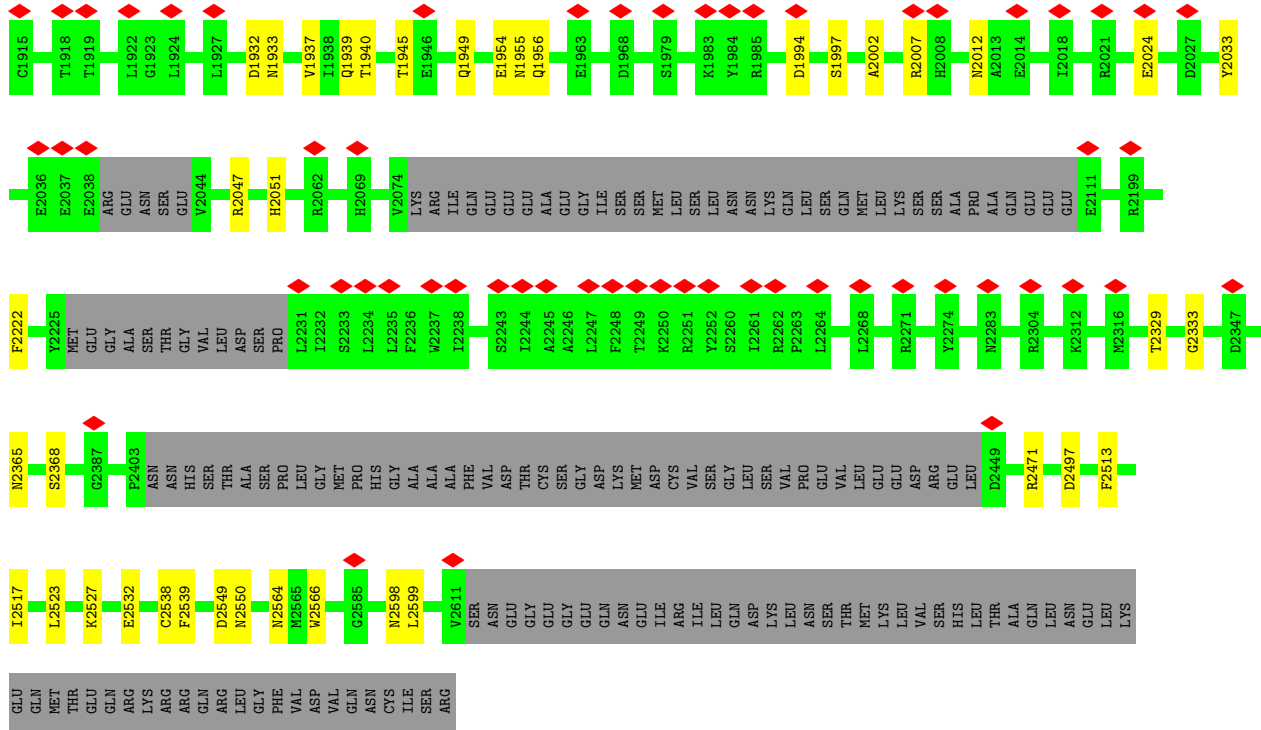


V845	V846	E847	A848	V849	P850	F851	A852	N853	E854	E855	K856	N857	K858	L859	T860	F861	V864	H868	N869	L870	I871	Y872	F873	I874	F875	Y876	Y877	S878	Y879	E880	E883	R886	T887	L888	L889	G890	I891	I892	D893	C894	VAL	GLN	GLY	PRO	PRO	PRO	ALA	MET	LEU	GLN	ALA	TYR	GLU	ASP	PRO	PRO	GLY	H844									
M781	L782	H783	V784	H785	V786	D787	R788	D789	F790	E791	E792	L793	F799	A800	R801	L802	H803	T804	E805	I806	P807	T808	T809	C740	L741	D742	R743	Q744	Y745	L746	A747	I748	D749	E750	I751	S752	Q753	Q754	L755	L756	G757	S758	L759	I760	K826	K827	M828	K829	F830	A831	N832	H833	M834	E835	F770	E714	A715	A716	D772	L773	R774	A775	S776	F777	C778	H779	L780
M661	S662	D663	I664	L665	L666	R667	T668	E669	L670	R671	P672	V673	GLU	MET	ALA	GLN	SER	HIS	GLU	TYR	LEU	SER	ILE	GLU	TYR	SER	E690	E691	V692	H693	L694	T695	V696	T697	D698	K699	N700	N701	E702	H703	H704	E705	K706	S707	V708	R709	Q710	L711	A712	Q713	E714	A715	A716	E592	D593	T594	L595	T596	L597	E598	P659	K660					
N601	N602	R603	K604	L605	L606	E607	K608	H609	L610	T611	K612	T613	E614	V615	E616	T617	R618	V619	S620	L621	H622	R623	K624	N625	R626	E627	P628	R629	L630	L631	D632	H633	L634	S635	D636	L637	C638	V639	S640	M641	H642	L643	A644	L645	P646	V647	T648	Q649	E650	L651	L652	C653	D654	A655	C656	V656	L657	D658	P659	K660							
L541	S542	D543	Q544	K545	N546	A547	P548	Y549	Q550	H551	M552	F553	R554	L555	C556	H557	R558	V559	L560	R561	H562	S563	Q564	E565	D566	Y567	R568	K569	N570	Q571	E572	H573	L574	A575	K576	Q577	F578	G579	M580	M581	L582	S583	O584	L585	P586	G586	Y587	D588	L589	L590	A591	E592	D593	T594	L595	T596	A597	E598	L599	H600							
F481	F482	V483	S484	D485	V486	P487	N488	N489	G490	Q491	N492	V493	L494	D495	I496	M497	V498	T499	K500	P501	N502	R503	E504	R505	Q506	K507	L508	M509	R510	E511	Q512	N513	L514	L515	K516	Q517	F518	I519	G520	L521	L522	K523	A524	P525	F526	R527	GLU	GLY	GLY	GLU	C533	P534	L535	V536	R537	L538	E539	E540									
F421	T422	K423	E424	D425	K426	E427	A428	F429	A430	I431	V432	S433	V434	P435	V436	S437	E438	I439	R440	D441	L442	D443	F444	A445	N446	D447	A448	S449	S450	M451	L452	A453	S454	A455	V456	E457	K458	L459	N460	G461	E462	F463	T464	S465	Q466	N467	D468	R469	E470	R471	A472	I473	R474	L475	L476	D477	E478	L479	V480								
M361	D362	I363	A364	S365	L366	F367	E368	L369	D370	P371	T372	T373	L374	Q375	K376	T377	D378	S379	F380	V381	P382	R383	N384	S385	V386	V387	R388	L389	R390	H391	L392	C393	T394	N395	T396	W397	I398	Q399	S400	T401	N402	V403	P404	I405	I406	A406	I407	E408	A409	E410	A356	R411	P412	I413	R414	L415	M416	L417	G418	T419	C420						
N301	G302	L303	Y304	R305	F306	K307	H308	L309	A310	T311	G312	N313	Y314	L315	A316	A317	E318	E319	N320	P321	S322	Y323	L324	GLY	ASP	ALA	SER	PRO	L325	ALA	ALA	GLY	MET	GLY	GLN	GLY	ARG	THR	GLY	ARG	ASN	ALA	GLY	E348	K349	I350	K351	Y352	C353	L354	V355	E356	V357	P358	H359	C360											
V241	R242	L243	F244	H245	A246	Q248	E249	K250	Q251	F251	L252	T253	C254	D255	E256	Y257	K258	G259	K260	L261	Q262	V263	F264	L265	R266	T267	T268	L269	R270	Q271	S272	A273	T274	S275	A276	T277	S278	S279	N280	A281	N282	W283	E284	M285	E286	V287	V288	H289	H290	D291	P292	C293	R294	G295	G296	A297	G298	H299	W300								
D181	K182	V183	I184	L185	N186	P187	V188	N189	A190	Q191	Q192	P193	L194	H195	A196	S197	N198	Y199	E200	L201	S202	D203	N204	A205	G206	C207	K208	E209	V210	N211	S212	V213	N214	C215	N216	T217	S218	W219	K220	L221	L222	F224	M225	Q226	F227	R228	D229	H230	L231	E232	E233	V234	L235	K236	G237	D238	D239	V240									
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P61	M62	M63	R64	Y65	S66	A67	Q68	K69	Q70	Y71	W72	K73	A74	K75	Q76	T77	L78	GLN	ASP	L79	L80	L81	L82	L83	L84	L85	L86	L87	L88	L89	L90	L91	L92	L93	L94	L95	L96	L97	L98	L99	E100	Q101	K102	Q103	H104	D105	T106	E107	N108	K109	K110	V111	H112	G113	D114	V115	V116	K117	Y118	G119	S120						

L972	E973	I974	L975	Q976	L979	L983	D984	Y985	R986	I987	S988	Y989	L990	L991	S992	Y993	F994	R995	K996	E997	F998	Y999	E1000	V1001	F1002	P1003	M1004	G1005	A1006	P1007	A1008	A1009	A1010	A1011	A1012	A1013	A1014	A1015	A1016	A1017	A1018	A1019	A1020	A1021	A1022	A1023	A1024	L1025	D1026	I1028	I1029	E1030	Q1031	A1032	E1033	A1034	M1035	F1036	G1037	V1038	G1039	L1040	S1043	M1044	L1045	M1046	V1047	D1048	E1050	G1051	R1052	M1054	F1055	L1056	R1057	H1061	M1064	H1065	D1066	Y1067	A1068	P1069	L1070	V1071	S1072	Q1076	F1079	K1080	H1081	F1082	S1083	R1084	Q1086	H1090	T1091	F1092	K1093	Q1094	I1095	Q1096	L1097	H1098	I1099	S1100	A1101	Q1102	D1103	V1104	E1105	M1106	Y1107	I1110	K1111	S1112	E1113	L1114	D1115	R1116	T1119	M1120	V1121	G1122	K1123	S1124	E1125	L1126	M1127	V1128	D1129	K1130	L1131	G1132	L1133	L1134	L1135	L1136	L1137	L1138	L1139	L1140	L1141	L1142	L1143	L1144	L1145	L1146	L1147	L1148	L1149	L1150	L1151	L1152	L1153	L1154	L1155	L1156	L1157	L1158	L1159	L1160	L1161	L1162	L1163	L1164	L1165	L1166	L1167	L1168	L1169	L1170	L1171	L1172	L1173	L1174	L1175	L1176	L1177	L1178	L1179	L1180	L1181	L1182	L1183	L1184	L1185	L1186	L1187	L1188	L1189	L1190	L1191	L1192	L1193	L1194	L1195	L1196	L1197	L1198	L1199	L1200	L1201	L1202	L1203	L1204	L1205	L1206	L1207	L1208	L1209	L1210	L1211	L1212	L1213	L1214	L1215	L1216	L1217	L1218	L1219	L1220	L1221	L1222	E1223	S1166	E1167	M1168	Y1169	Q1170	I1171	V1172	G1173	L1174	I1175	L1176	E1177	R1178	L1179	M1180	K1181	M1182	C1183	G1184	V1185	G1186	E1187	Q1188	M1189	R1190	K1191	K1192	Q1193	Q1194	R1195	L1196	L1197	K1198	M1199	M1200	L1201	A1202	H1203	L1204	V1205	L1206	L1207	D1208	L1209	L1210	Q1211	I1212	P1213	Y1214	D1215	L1216	G1217	L1218	A1219	K1220	M1221	M1222	E1223	R1226	Y1227	T1228	H1229	Q1230	F1231	K1234	F1235	C1236	A1237	G1238	M1239	P1240	G1241	M1242	Q1243	A1244	L1245	K1248	H1249	L1250	H1251	L1252	F1253	L1254	T1255	P1256	L1258	L1259	E1260	A1261	E1262	T1263	M1264	Q1265	H1266	I1267	N1270	N1271	Y1272	Q1273	L1274	C1275	S1276	I1277	E1278	S1279	E1280	F1281	V1282	L1283	Q1284	H1285	F1286	V1287	H1288	L1289	L1290	A1291	T1292	H1293	G1294	R1295	H1296	V1297	Q1298	V1299	L1300	F1301	F1302	L1303	H1304	T1305	V1306	I1307	K1308	A1309	E1310	G1311	K1312	Y1313	V1314	K1315	K1316	C1317	Q1318	D1319	L1320	I1321	M1322	L1323	E1324	L1325	T1326	M1327	A1328	G1329	D1330	D1331	V1332	V1333	V1334	F1335	Y1336	M1337	D1338	K1339	A1340	S1341	L1342	A1343	H1344	L1345	L1346	D1347	M1348	M1349	K1350	A1351	A1352	D1353	G1354	G1355	V1356	E1357	D1358	H1359	S1360	P1361	L1362	M1363	Y1364	H1365	I1366	S1367	L1368	L1369	D1370	L1371	L1372	A1373	C1374	C1375	E1376	L1377	K1378	M1379	N1380	L1381	Y1382	T1383	E1384	I1385	K1386	C1387	L1388	S1389	L1390	L1391	P1392	L1393	E1394	D1395	V1396	L1397	S1398	V1399	L1400	T1401	H1402	E1403	D1404	C1405	L1406	T1407	E1408	V1409	K1410	M1411	A1412	Y1413	V1414	M1415	F1416	V1417	M1418	H1419	C1420	Y1421	V1422	D1423	THR	GLU	VAL	ASN	GLU	THR	LYS	ILE	TRP	THR	LEU	PHE	GLN	HIS	GLN	THR	ILE	VAL	GLN	LEU	LEU	GLN	THR	THR	ARG	LEU	LEU	GLU	ARG	LYS	ARG	VAL	CYS	LYS	ARG	VAL	A1434	D1435	P1436	T1437	E1438	E1439	K1440	Y1441	V1442	L1443	S1444	V1445	V1446	L1447	D1448	T1449	M1450	M1451	A1452	F1453	F1454	SER	PRO	PHE	SER	GLU	ASN	SER	THR	SER	LEU	GLN	THR	S1503	S1504	M1505	L1506	S1507	S1508	G1515	A1516	S1517	C1518	A1519	A1520	A1521	A1522	Q1523	R1524	M1525	A1526	S1527	S1528	Y1529	K1530	A1531	T1532	T1533	R1541	A1542	F1543	P1544	R1545	V1546	T1547	P1548	T1549	A1550	M1551	Q1552	W1556	D1557	Y1558	K1559	M1560	I1561	E1562	I1563	L1564	M1565	E1566	E1569	I1563	K1664	M1569	I1591	T1592	E1593	K1594	L1595	Q1596	D1597	I1598	I1599	T1600	A1601	L1602	E1603	E1604	R1605	L1606	L1609	Q1692	M1693	Y1694	L1695	Q1696	M1697	ARG	LYS	SER	THR	SER	ARG	GLY	ASP	LEU	PRO	ASP	PRO	ILE	GLY	THR	GLY	LEU	ASP	D1717	W1718	S1719	A1720	I1721	A1722	Q1725	C1726	R1727	K1730	E1731	G1732
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V241	R242	L243	F244	H245	A246	E247	Q248	E249	K250	F251	L252	T253	C254	D255	E256	Y257	K258	G259	K260	L261	O262	V263	F264	L265	R266	T267	T268	L269	R270	Q271	S272	A273	T274	S275	A276	T277	S278	S279	N280	A281	W282	E283	E284	V285	E286	V287	V288	H289	H290	H291	P292	C293	R294	G295	G296	A297	G298	H299	W300				
N301	G302	L303	Y304	R305	F306	K307	H308	L309	A310	T311	G312	N313	Y314	L315	A316	A317	E318	E319	N320	P321	S322	Y323	LYS	GLY	ASP	ALA	SER	ASP	PRO	LYS	ALA	ALA	GLY	MET	GLY	ALA	GLN	GLY	GLM	N395	T396	ARG	THR	GLY	ARG	ARG	ASN	ALA	ALA	GLY	E348	K349	I350	K351	Y352	C353	L354	V355	A356	P357	P358	H359	C360
N361	D362	I363	A364	S365	L366	F367	E368	L369	D370	P371	T372	L373	L374	Q375	K376	F377	D378	S379	F380	V381	R382	R383	N384	S385	M446	Y387	R388	L389	R390	H391	L392	C393	T394	S453	N395	T396	V456	E457	I398	Q399	S400	T401	N402	V403	P404	I405	I406	I407	E408	E409	E410	R411	P412	I413	R414	L415	M416	L417	G418	T419	C420		
P421	T422	K423	E424	D425	K426	E427	A428	F429	A430	I431	V432	S433	V434	P435	V436	S437	E438	I439	R440	D441	L442	D443	F444	A445	M446	D447	A448	S449	S450	M451	L452	C393	A453	A454	A455	V456	E457	K458	L459	M460	E461	G462	F463	I464	S465	I466	M467	D468	R469	R470	F471	V472	I473	Q474	R475	L476	L477	D478	L479	V480			
F481	F482	V483	S484	D485	V486	P487	M488	M489	G490	Q491	M492	V493	L494	D495	I496	M497	V498	T499	K500	P501	N502	R503	E504	R505	Q506	K507	L508	M509	R510	E511	Q512	N513	I514	L515	K516	Q517	V518	F519	G520	I521	L522	K523	A524	P525	F526	R527	GLU	GLY	GLY	GLU	G533	P534	I535	V536	R537	L538	E539	E540					
L541	S542	D543	Q544	K545	N546	A547	P548	Y549	Q550	H551	M552	F553	R554	L555	C556	Y557	R558	V559	L560	R561	H562	S563	Q564	E565	D566	Y567	R568	K569	N570	Q571	E572	H573	I574	A575	K576	Q577	F578	G579	M580	M581	Q582	S583	Q584	I585	I586	R587	D588	L589	L590	A591	E592	D593	T594	L595	T596	A597	L598	L599	H600				
N601	N602	R603	K604	L605	L606	E607	K608	H609	L610	T611	K612	T613	E614	V615	E616	T617	F618	V619	S620	L621	V622	R623	K624	N625	R626	E627	P628	R629	F630	L631	D632	Y633	L634	S635	D636	L637	L638	C639	S640	M641	H642	I643	A644	I645	P646	V647	T648	Q649	E650	L651	L652	C653	K654	C655	V656	L657	D658	P659	K660				
N661	S662	D663	L664	L665	L666	R667	T668	E669	L670	R671	P672	V673	GLU	ALA	GLN	SER	HIS	GLY	TYR	LEU	SER	ILE	GLU	TYR	SER	E690	E691	V692	M693	L694	T695	M696	T697	D698	K699	N700	N701	E702	H703	H704	E705	K706	S707	V708	R709	Q710	L711	A712	Q713	E714	A715	R716	A717	G718	N719	A720							
H721	D722	E723	N724	V725	L726	S727	Y728	Y729	R730	Y731	Q732	L733	K734	L735	F736	A737	R738	M739	C740	L741	D742	R743	Q744	Y745	L746	A747	I748	D749	E750	I751	Q752	Q753	Q754	L755	G756	V757	D758	L759	I760	F761	L762	C763	M764	A765	D766	E767	M768	L769	P770	F771	D772	L773	R774	A775	S776	F777	C778	L780					
M781	L782	H783	V784	H785	V786	D787	K788	D789	F790	Q791	E792	L793	F799	A800	R801	L802	M803	T804	E805	I806	H868	N869	L870	I871	V872	F873	G874	S877	F878	S879	E880	R883	R886	T887	L888	L889	G890	I891	I892	D893	C894	VAL	GLN	GLY	PRO	PRO	PRO	ALA	ALA	LEU	LEU	ALA	ALA	TYR	E838	D839	Y840	L841	N842	N843	V844		
W845	S846	E847	A848	H849	P850	F851	A852	N853	E854	E855	I856	N857	K858	L859	T860	F861	V864	H868	N869	L870	I871	V872	F873	G874	S877	F878	S879	E880	R883	R886	T887	L888	L889	G890	I891	I892	D893	C894	VAL	GLN	GLY	PRO	PRO	PRO	ALA	ALA	LEU	LEU	ALA	ALA	TYR	E838	D839	Y840	L841	N842	N843	V844					
GLY	LYS	ASN	VAL	ARG	ARG	SER	ILE	GLN	VAL	GLY	HIS	MET	MET	THR	MET	VAL	LEU	LYS	GLN	SER	VAL	PHE	SER	PRO	ALA	ALA	ALA	ALA	ALA	PRO	LEU	LEU	ASP	ARG	SER	ASN	GLU	D961	I962	V963	V964	H965	E966	T967	I971																		
L972	E973	I974	L975	Q976	L979	L983	D984	Y985	R986	I987	S988	Y989	L990	L991	S992	V993	F994	K995	K996	E997	F998	V999	I1000	V1001	F1002	P1003	M1004	GLN	ASP	GLY	ALA	ALA	ASP	THR	ALA	ALA	PRO	PHE	GLU	ASN	D961	I962	V963	V964	H965	E966	T967	I971															
N1022	M1023	N1024	L1025	D1026	R1027	I1028	G1029	E1030	Q1031	A1032	E1033	A1034																																																			

LYS	D1739	K1664	K1889	L1478	L1443	V1409	M1349	L1289	R1226	SER	D1103	H1035
GLY	L1740	R1667	M1590	A1479	S1444	K1410	K1350	L1290	Y1227	S1166	V1104	F1036
VAL	L1741	T1668	I1591	M1480	V1445	M1411	A1351	A1291	T1228	E1167	E1105	G1037
ALA	T1742	T1669	I1592	V1481	V1446	M1412	A1352	T1292	H1229	M1168	N1106	V1038
SER	S1743	Q1670	E1593	A1482	L1447	Y1413	R1353	H1293	Q1230	Y1169	Y1107	G1039
THR	T1744	K1676	K1594	K1483	D1448	V1414	D1354	G1294	F1231	Q1170	THR	LYS
PHE	K1745	T1677	L1595	G1484	T1449	M1415	G1355	R1295	K1234	I1171	I1110	SER
ILE	N1746	T1678	L1596	R1490	T1450	F1416	V1356	H1296	F1235	I1172	K1111	S1043
PRO	E1747	K1679	D1597	A1491	M1451	V1417	E1357	Q1298	C1236	K1173	S1112	M1044
GLY	L1760	Y1678	I1598	I1492	M1452	V1418	E1358	Q1299	A1237	L1174	E1113	L1045
SER	E1767	G1680	I1599	A1493	F1453	H1419	H1359	Y1299	G1238	L1175	D1114	E1046
SER	I1768	D1681	T1600	L1494	F1454	C1420	S1360	L1300	L1239	L1176	D1115	V1047
ARG	E1768	M1681	A1495	P1495	SER	Y1421	S1361	D1301	P1240	E1177	R1116	D1048
TYR	Q1768	N1684	A1601	M1496	SER	V1422	L1362	F1302	L1178	R1178	T1119	D1049
SER	Q1770	Q1685	L1602	D1497	PRO	D1423	L1363	F1303	L1179	L1179	M1120	E1050
LEU	K1771	L1686	E1603	D1498	PHE	THR	M1363	L1303	G1241	M1180	V1121	G1051
GLY	S1771	R1687	E1604	L1498	SER	GLU	Y1364	H1304	Q1243	K1181	E1122	G1052
PRO		R1687	L1605	D1499	GLU	VAL	H1365	T1305	Q1243	M182	V1122	R1053
SER		K1688	L1606	D1499	ASN	GLU	I1366	V1306	L1245	C1183	K1123	R1054
LEU		L1688	L1606	A1500	SER	GLU	I1366	I1307	G1245	G1184	S1124	M1054
ARG		L1691	L1609	H1501	THR	MET	S1367	I1308	K1248	V1185	E1125	F1055
GLY		Q1692	L1609	L1502	SER	LYS	L1368	A1309	H1249	G1186	L1126	L1056
HIS		Q1692	L1609	L1502	LEU	GLY	L1368	A1309	K1249	G1187	W1127	R1057
GLU		L1693	L1610	S1503	LEU	ILE	V1369	E1310	L1250	E1188	D1128	H1061
VAL		Y1694	V1616	S1504	GLN	THR	T1370	E1310	L1250	M1189	K1130	M1064
SER		Y1694	V1616	S1504	HIS	THR	L1371	K1311	H1251	R1190	GLY	H1065
ARG		L1696	D1619	M1505	THR	SER	L1372	K1312	H1252	K1191	GLY	D1066
GLY		Q1696	H1622	S1507	THR	ASN	L1373	K1313	L1252	Q1193	LYS	Y1067
ASP		N1697	W1623	S1508	ILE	ILE	A1374	V1314	L1254	Q1194	GLY	A1068
LEU		N1697	P1624	G1515	VAL	TRP	C1375	V1314	T1255	R1195	GLU	F1069
PRO		LYS	P1624	G1515	VAL	THR	C1375	K1316	P1256	R1196	VAL	L1070
ASN		SER	E1625	A1516	GLN	LEU	E1376	K1316	G1257	L1197	VAL	V1071
THR		THR	L1626	S1517	LEU	PHE	E1377	C1317	G1258	L1197	GLU	S1072
SER		THR	L1627	C1518	LEU	GLU	E1378	Q1318	L1258	K1198	ALA	Q1076
ARG		THR	F1628	L1629	GLN	ASN	G1378	D1319	L1259	M1199	ALA	F1079
GLY		ASP	L1629	A1519	SER	PHE	K1379	M1320	E1260	M1200	ALA	H1080
LEU		LEU	E1630	A1520	THR	THR	M1380	I1321	A1261	D1201	LYS	F1082
PRO		PRO	E1631	A1521	ARG	LEU	I1381	I1322	E1262	A1202	ASP	S1083
ASP		PRO	S1632	A1522	LEU	ASP	Y1382	M1322	T1283	M1206	ARG	Q1084
LEU		PRO	E1633	Q1523	LEU	ALA	T1383	E1324	M1284	L1207	THR	R1085
GLY		THR	E1634	R1524	PRO	VAL	E1384	L1325	Q1265	L1207	THR	R1085
THR		THR	Y1635	M1525	CYS	VAL	I1385	L1326	H1286	L1209	ASP	Q1086
GLY		THR	Q1636	A1526	VAL	CYS	K1386	T1326	I1267	D1208	GLY	H1090
LEU		PRO	R1637	S1527	PRO	SER	C1387	M1327	I1267	L1209	GLY	T1091
ASP		PRO	C1638	S1528	L1463	LYS	C1388	A1328	M1270	L1209	GLY	F1092
PRO		PRO	E1639	Y1529	Q1464	ARG	S1389	G1329	M1271	L1210	GLY	K1093
GLY		PRO	S1640	K1530	Q1466	GLU	L1390	D1330	Y1272	L1210	GLY	F1094
GLY		PRO	G1641	A1531	H1467	LYS	L1391	D1331	Q1273	L1211	PHE	M1099
GLN		PRO	G1642	T1532	K1468	VAL	L1391	V1332	Q1273	L1211	GLY	L1098
PRO		PRO	S1645	T1533	S1470	A1434	L1392	V1333	C1275	L1212	GLY	Q1096
PRO		PRO	K1646	E1471	D1435	D1436	L1393	V1333	C1275	L1212	GLY	L1097
PRO		PRO	H1650	E1472	P1436	T1437	E1394	V1334	E1277	L1212	PHE	F1099
THR		THR	H1650	A1473	T1438	L1438	D1395	F1335	E1278	L1212	GLY	K1093
THR		THR	H1650	C1474	E1439	K1440	V1396	V1336	I1278	L1212	GLY	F1094
THR		THR	H1650	P1544	K1440	V1397	V1397	M1337	S1279	L1212	GLY	Q1096
THR		THR	H1650	L1475	K1441	S1398	S1398	D1338	E1280	L1212	GLY	L1097
THR		THR	H1650	R1476	V1441	V1399	V1399	K1339	F1281	L1212	GLY	L1098
THR		THR	H1650	A1476	V1442	V1400	V1400	A1340	P1281	L1212	GLY	L1099
THR		THR	H1650	L1477	V1442	T1401	T1401	S1341	F1281	L1212	GLY	S1100
THR		THR	H1650	H1402	V1442	H1402	H1402	L1283	P1281	L1212	GLY	L1099
THR		THR	H1650	E1403	V1442	E1403	E1403	Q1284	F1281	L1212	GLY	S1100
THR		THR	H1650	D1404	V1442	D1404	D1404	H1285	F1281	L1212	GLY	A1101
THR		THR	H1650	C1405	V1442	C1405	C1405	V1287	M1221	L1212	GLY	Q1096
THR		THR	H1650	T1407	V1442	T1407	T1407	H1288	M1221	L1212	GLY	L1097
THR		THR	H1650	L1406	V1442	L1406	L1406	V1287	M1221	L1212	GLY	L1098
THR		THR	H1650	L1407	V1442	L1407	L1407	H1288	M1221	L1212	GLY	L1099
THR		THR	H1650	L1408	V1442	L1408	L1408	H1288	M1221	L1212	GLY	S1100
THR		THR	H1650	L1408	V1442	L1408	L1408	H1288	M1221	L1212	GLY	A1101
THR		THR	H1650	L1408	V1442	L1408	L1408	H1288	M1221	L1212	GLY	Q1102



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	49087	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 ($e^-/\text{\AA}^2$)	61	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	Not provided	
Magnification	22500	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	22.614	Depositor
Minimum map value	-17.513	Depositor
Average map value	-0.008	Depositor
Map value standard deviation	0.623	Depositor
Recommended contour level	2.8	Depositor
Map size (\AA)	417.79202, 417.79202, 417.79202	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.088, 1.088, 1.088	Depositor

5 Model quality i

5.1 Standard geometry i

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

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	0.25	0/17689	0.45	4/23903 (0.0%)
1	B	0.25	0/17689	0.45	4/23903 (0.0%)
1	C	0.25	0/17689	0.45	4/23903 (0.0%)
1	D	0.25	0/17689	0.45	4/23903 (0.0%)
All	All	0.25	0/70756	0.45	16/95612 (0.0%)

There are no bond length outliers.

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1544	PRO	N-CA-CB	5.80	110.26	103.30
1	B	1544	PRO	N-CA-CB	5.80	110.26	103.30
1	D	1544	PRO	N-CA-CB	5.80	110.26	103.30
1	C	1544	PRO	N-CA-CB	5.77	110.22	103.30
1	B	1495	PRO	N-CA-CB	5.70	110.14	103.30
1	C	1495	PRO	N-CA-CB	5.70	110.14	103.30
1	D	1495	PRO	N-CA-CB	5.70	110.14	103.30
1	A	1495	PRO	N-CA-CB	5.69	110.12	103.30
1	A	1548	PRO	N-CA-CB	5.61	110.03	103.30
1	D	1548	PRO	N-CA-CB	5.61	110.03	103.30
1	B	1548	PRO	N-CA-CB	5.58	110.00	103.30
1	C	1548	PRO	N-CA-CB	5.58	110.00	103.30
1	A	1436	PRO	N-CA-CB	5.53	109.93	103.30
1	B	1436	PRO	N-CA-CB	5.52	109.93	103.30
1	C	1436	PRO	N-CA-CB	5.52	109.93	103.30
1	D	1436	PRO	N-CA-CB	5.52	109.92	103.30

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	17382	17386	17215	105	0
1	B	17382	17386	17215	106	0
1	C	17382	17386	17215	109	0
1	D	17382	17386	17215	107	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
3	A	2	0	0	0	0
3	B	2	0	0	0	0
3	C	2	0	0	0	0
3	D	2	0	0	0	0
All	All	69540	69544	68860	424	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 3.

All (424) 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:A:1214:TYR:OH	1:A:1222:MET:SD	2.46	0.74
1:D:1214:TYR:OH	1:D:1222:MET:SD	2.46	0.74
1:A:75:LYS:NZ	1:A:489:ASN:O	2.21	0.74
1:B:1893:ARG:NH1	1:B:1955:ASN:OD1	2.21	0.74
1:A:1893:ARG:NH1	1:A:1955:ASN:OD1	2.21	0.73
1:C:1893:ARG:NH1	1:C:1955:ASN:OD1	2.21	0.73
1:D:75:LYS:NZ	1:D:489:ASN:O	2.21	0.73
1:C:75:LYS:NZ	1:C:489:ASN:O	2.21	0.73
1:D:1893:ARG:NH1	1:D:1955:ASN:OD1	2.21	0.73
1:B:1214:TYR:OH	1:B:1222:MET:SD	2.46	0.73
1:B:75:LYS:NZ	1:B:489:ASN:O	2.21	0.72
1:C:1214:TYR:OH	1:C:1222:MET:SD	2.46	0.72
1:D:1725:GLN:NE2	1:D:1760:LEU:O	2.24	0.71
1:A:1725:GLN:NE2	1:A:1760:LEU:O	2.23	0.71
1:C:482:PHE:O	1:C:505:ARG:NH1	2.24	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:482:PHE:O	1:A:505:ARG:NH1	2.24	0.70
1:B:1725:GLN:NE2	1:B:1760:LEU:O	2.24	0.70
1:C:1725:GLN:NE2	1:C:1760:LEU:O	2.24	0.70
1:D:801:ARG:NH2	1:D:984:ASP:OD1	2.24	0.70
1:B:482:PHE:O	1:B:505:ARG:NH1	2.24	0.70
1:A:1945:THR:O	1:A:1949:GLN:N	2.25	0.70
1:B:1945:THR:O	1:B:1949:GLN:N	2.25	0.70
1:D:482:PHE:O	1:D:505:ARG:NH1	2.24	0.70
1:A:801:ARG:NH2	1:A:984:ASP:OD1	2.24	0.70
1:D:352:TYR:O	1:D:419:THR:OG1	2.09	0.70
1:C:561:ARG:NH1	1:C:593:ASP:O	2.25	0.70
1:C:801:ARG:NH2	1:C:984:ASP:OD1	2.24	0.70
1:A:561:ARG:NH1	1:A:593:ASP:O	2.25	0.70
1:B:1783:GLU:OE2	1:B:1899:THR:OG1	2.09	0.70
1:D:561:ARG:NH1	1:D:593:ASP:O	2.25	0.70
1:A:1783:GLU:OE2	1:A:1899:THR:OG1	2.09	0.69
1:C:1945:THR:O	1:C:1949:GLN:N	2.25	0.69
1:D:1783:GLU:OE2	1:D:1899:THR:OG1	2.09	0.69
1:A:305:ARG:NH1	1:A:360:GLY:O	2.26	0.69
1:B:305:ARG:NH1	1:B:360:GLY:O	2.26	0.69
1:D:1945:THR:O	1:D:1949:GLN:N	2.25	0.69
1:B:352:TYR:O	1:B:419:THR:OG1	2.09	0.69
1:B:801:ARG:NH2	1:B:984:ASP:OD1	2.25	0.69
1:D:1391:LEU:O	1:D:1421:TYR:OH	2.10	0.69
1:C:1783:GLU:OE2	1:C:1899:THR:OG1	2.09	0.69
1:B:561:ARG:NH1	1:B:593:ASP:O	2.25	0.69
1:B:1391:LEU:O	1:B:1421:TYR:OH	2.10	0.69
1:A:1391:LEU:O	1:A:1421:TYR:OH	2.10	0.69
1:C:305:ARG:NH1	1:C:360:GLY:O	2.26	0.69
1:C:1391:LEU:O	1:C:1421:TYR:OH	2.10	0.68
1:C:2523:LEU:O	1:C:2527:LYS:N	2.26	0.68
1:A:2523:LEU:O	1:A:2527:LYS:N	2.26	0.68
1:C:1645:SER:N	1:C:1731:GLU:OE2	2.27	0.68
1:D:1645:SER:N	1:D:1731:GLU:OE2	2.27	0.68
1:D:495:ASP:OD1	1:D:558:ARG:NH2	2.27	0.68
1:A:495:ASP:OD1	1:A:558:ARG:NH2	2.27	0.68
1:D:2523:LEU:O	1:D:2527:LYS:N	2.26	0.68
1:B:1645:SER:N	1:B:1731:GLU:OE2	2.27	0.68
1:D:305:ARG:NH1	1:D:360:GLY:O	2.26	0.68
1:A:352:TYR:O	1:A:419:THR:OG1	2.09	0.68
1:A:1645:SER:N	1:A:1731:GLU:OE2	2.27	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2523:LEU:O	1:B:2527:LYS:N	2.26	0.67
1:C:401:THR:OG1	1:C:416:MET:O	2.13	0.67
1:A:2033:TYR:O	1:A:2047:ARG:NH1	2.28	0.67
1:B:495:ASP:OD1	1:B:558:ARG:NH2	2.27	0.67
1:C:2033:TYR:O	1:C:2047:ARG:NH1	2.28	0.67
1:B:2033:TYR:O	1:B:2047:ARG:NH1	2.28	0.67
1:D:401:THR:OG1	1:D:416:MET:O	2.13	0.67
1:C:495:ASP:OD1	1:C:558:ARG:NH2	2.27	0.67
1:D:2033:TYR:O	1:D:2047:ARG:NH1	2.28	0.67
1:C:352:TYR:O	1:C:419:THR:OG1	2.09	0.66
1:A:401:THR:OG1	1:A:416:MET:O	2.13	0.66
1:B:401:THR:OG1	1:B:416:MET:O	2.13	0.66
1:A:1128:VAL:O	1:A:1169:TYR:OH	2.15	0.64
1:C:1128:VAL:O	1:C:1169:TYR:OH	2.15	0.64
1:B:1128:VAL:O	1:B:1169:TYR:OH	2.15	0.64
1:B:19:GLU:OE1	1:B:182:LYS:NZ	2.27	0.63
1:D:1128:VAL:O	1:D:1169:TYR:OH	2.15	0.63
1:B:394:THR:HG1	1:B:396:THR:HG1	1.38	0.63
1:C:19:GLU:OE1	1:C:182:LYS:NZ	2.27	0.62
1:A:815:TYR:OH	1:A:984:ASP:OD2	2.18	0.61
1:D:164:ILE:HD11	1:D:183:VAL:HG21	1.83	0.61
1:C:164:ILE:HD11	1:C:183:VAL:HG21	1.83	0.61
1:D:19:GLU:OE1	1:D:182:LYS:NZ	2.27	0.61
1:D:815:TYR:OH	1:D:984:ASP:OD2	2.18	0.61
1:B:400:SER:OG	1:B:427:GLU:OE2	2.15	0.61
1:B:2365:ASN:O	1:B:2368:SER:OG	2.18	0.60
1:A:400:SER:OG	1:A:427:GLU:OE2	2.16	0.60
1:B:815:TYR:OH	1:B:984:ASP:OD2	2.18	0.60
1:A:2365:ASN:O	1:A:2368:SER:OG	2.18	0.60
1:B:164:ILE:HD11	1:B:183:VAL:HG21	1.83	0.60
1:A:164:ILE:HD11	1:A:183:VAL:HG21	1.83	0.60
1:C:815:TYR:OH	1:C:984:ASP:OD2	2.18	0.60
1:C:2365:ASN:O	1:C:2368:SER:OG	2.18	0.60
1:D:819:LEU:O	1:D:823:ARG:NE	2.34	0.60
1:C:819:LEU:O	1:C:823:ARG:NE	2.34	0.59
1:C:853:ASN:O	1:C:857:ASN:ND2	2.36	0.59
1:B:853:ASN:O	1:B:857:ASN:ND2	2.36	0.59
1:D:1769:GLN:NE2	1:D:1880:LEU:O	2.36	0.59
1:C:1769:GLN:NE2	1:C:1880:LEU:O	2.36	0.59
1:A:1769:GLN:NE2	1:A:1880:LEU:O	2.36	0.59
1:A:853:ASN:O	1:A:857:ASN:ND2	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1769:GLN:NE2	1:B:1880:LEU:O	2.36	0.58
1:C:12:ASP:OD1	1:C:227:PHE:N	2.36	0.58
1:D:853:ASN:O	1:D:857:ASN:ND2	2.36	0.58
1:A:19:GLU:OE1	1:A:182:LYS:NZ	2.27	0.58
1:A:819:LEU:O	1:A:823:ARG:NE	2.34	0.58
1:A:1053:ARG:NH2	1:A:1694:TYR:O	2.37	0.58
1:B:1053:ARG:NH2	1:B:1694:TYR:O	2.37	0.58
1:D:12:ASP:OD1	1:D:227:PHE:N	2.36	0.58
1:B:12:ASP:OD1	1:B:227:PHE:N	2.36	0.58
1:B:2024:GLU:OE1	1:B:2024:GLU:N	2.37	0.58
1:C:1053:ARG:NH2	1:C:1694:TYR:O	2.37	0.58
1:A:2024:GLU:N	1:A:2024:GLU:OE1	2.37	0.58
1:C:400:SER:OG	1:C:427:GLU:OE2	2.15	0.58
1:D:400:SER:OG	1:D:427:GLU:OE2	2.15	0.58
1:D:1053:ARG:NH2	1:D:1694:TYR:O	2.37	0.58
1:D:1882:GLU:OE1	1:D:1883:ASN:N	2.37	0.58
1:A:12:ASP:OD1	1:A:227:PHE:N	2.36	0.57
1:A:1882:GLU:OE1	1:A:1883:ASN:N	2.37	0.56
1:C:2024:GLU:N	1:C:2024:GLU:OE1	2.37	0.56
1:B:1659:GLU:OE1	1:B:1746:ASN:ND2	2.38	0.56
1:D:2365:ASN:O	1:D:2368:SER:OG	2.18	0.56
1:A:1081:HIS:O	1:A:1084:GLN:NE2	2.38	0.56
1:D:2024:GLU:OE1	1:D:2024:GLU:N	2.37	0.56
1:B:1081:HIS:O	1:B:1084:GLN:NE2	2.38	0.56
1:C:1659:GLU:OE1	1:C:1746:ASN:ND2	2.38	0.56
1:C:1882:GLU:OE1	1:C:1883:ASN:N	2.37	0.56
1:C:1081:HIS:O	1:C:1084:GLN:NE2	2.38	0.56
1:D:31:LEU:O	1:D:131:LYS:NZ	2.29	0.56
1:A:1659:GLU:OE1	1:A:1746:ASN:ND2	2.38	0.56
1:D:1659:GLU:OE1	1:D:1746:ASN:ND2	2.38	0.55
1:D:1081:HIS:O	1:D:1084:GLN:NE2	2.38	0.55
1:D:1593:GLU:OE1	1:D:1593:GLU:N	2.40	0.55
1:A:1593:GLU:OE1	1:A:1593:GLU:N	2.40	0.55
1:C:854:GLU:OE1	1:C:854:GLU:N	2.40	0.55
1:D:69:LYS:NZ	1:D:158:GLU:OE1	2.39	0.55
1:C:1593:GLU:N	1:C:1593:GLU:OE1	2.40	0.55
1:A:854:GLU:N	1:A:854:GLU:OE1	2.40	0.55
1:B:69:LYS:NZ	1:B:158:GLU:OE1	2.39	0.55
1:B:1882:GLU:OE1	1:B:1883:ASN:N	2.37	0.55
1:A:69:LYS:NZ	1:A:158:GLU:OE1	2.39	0.55
1:B:819:LEU:O	1:B:823:ARG:NE	2.34	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:550:GLN:OE1	1:B:554:ARG:NE	2.41	0.55
1:A:1994:ASP:O	1:A:1997:SER:OG	2.24	0.54
1:D:1994:ASP:O	1:D:1997:SER:OG	2.24	0.54
1:D:854:GLU:N	1:D:854:GLU:OE1	2.40	0.54
1:B:854:GLU:N	1:B:854:GLU:OE1	2.40	0.54
1:C:69:LYS:NZ	1:C:158:GLU:OE1	2.39	0.54
1:A:550:GLN:OE1	1:A:554:ARG:NE	2.41	0.54
1:B:533:GLY:N	1:B:536:VAL:O	2.41	0.54
1:B:1994:ASP:O	1:B:1997:SER:OG	2.24	0.54
1:D:533:GLY:N	1:D:536:VAL:O	2.41	0.54
1:C:1260:GLU:N	1:C:1260:GLU:OE1	2.41	0.54
1:C:550:GLN:OE1	1:C:554:ARG:NE	2.41	0.54
1:D:550:GLN:OE1	1:D:554:ARG:NE	2.41	0.54
1:A:533:GLY:N	1:A:536:VAL:O	2.41	0.53
1:C:533:GLY:N	1:C:536:VAL:O	2.41	0.53
1:B:1593:GLU:N	1:B:1593:GLU:OE1	2.40	0.53
1:B:1260:GLU:N	1:B:1260:GLU:OE1	2.41	0.53
1:C:1875:ARG:N	1:C:1939:GLN:OE1	2.42	0.53
1:B:1875:ARG:N	1:B:1939:GLN:OE1	2.42	0.53
1:D:1260:GLU:OE1	1:D:1260:GLU:N	2.41	0.53
1:D:1875:ARG:N	1:D:1939:GLN:OE1	2.42	0.53
1:A:1791:ASP:O	1:A:1795:ARG:N	2.42	0.53
1:A:1875:ARG:N	1:A:1939:GLN:OE1	2.42	0.52
1:A:99:MET:O	1:A:103:GLN:N	2.42	0.52
1:D:1280:GLU:OE2	1:D:1284:GLN:NE2	2.42	0.52
1:A:1956:GLN:NE2	1:A:2002:ALA:O	2.43	0.52
1:B:1767:GLU:N	1:B:1767:GLU:OE1	2.42	0.52
1:A:1280:GLU:OE2	1:A:1284:GLN:NE2	2.42	0.52
1:C:1767:GLU:N	1:C:1767:GLU:OE1	2.42	0.52
1:D:2598:ASN:OD1	1:D:2599:LEU:N	2.43	0.52
1:A:1260:GLU:OE1	1:A:1260:GLU:N	2.41	0.52
1:B:99:MET:O	1:B:103:GLN:N	2.42	0.52
1:D:1791:ASP:O	1:D:1795:ARG:N	2.42	0.52
1:A:1742:THR:HG21	1:A:1785:PHE:HA	1.92	0.52
1:B:1742:THR:HG21	1:B:1785:PHE:HA	1.92	0.52
1:B:1956:GLN:NE2	1:B:2002:ALA:O	2.43	0.52
1:C:1956:GLN:NE2	1:C:2002:ALA:O	2.43	0.52
1:C:1742:THR:HG21	1:C:1785:PHE:HA	1.92	0.51
1:D:838:GLU:O	1:D:842:ASN:ND2	2.43	0.51
1:A:838:GLU:O	1:A:842:ASN:ND2	2.43	0.51
1:A:1767:GLU:N	1:A:1767:GLU:OE1	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2598:ASN:OD1	1:B:2599:LEU:N	2.43	0.51
1:D:1956:GLN:NE2	1:D:2002:ALA:O	2.43	0.51
1:C:838:GLU:O	1:C:842:ASN:ND2	2.43	0.51
1:C:1791:ASP:O	1:C:1795:ARG:N	2.42	0.51
1:B:1280:GLU:OE2	1:B:1284:GLN:NE2	2.42	0.51
1:B:31:LEU:O	1:B:131:LYS:NZ	2.29	0.51
1:B:1791:ASP:O	1:B:1795:ARG:N	2.42	0.51
1:B:2497:ASP:OD2	1:C:2471:ARG:NH1	2.44	0.51
1:C:2497:ASP:OD2	1:D:2471:ARG:NH1	2.44	0.51
1:D:1742:THR:HG21	1:D:1785:PHE:HA	1.92	0.51
1:B:838:GLU:O	1:B:842:ASN:ND2	2.43	0.51
1:C:99:MET:O	1:C:103:GLN:N	2.43	0.51
1:A:2598:ASN:OD1	1:A:2599:LEU:N	2.43	0.51
1:D:1767:GLU:OE1	1:D:1767:GLU:N	2.42	0.51
1:C:1307:ILE:HD12	1:C:1317:CYS:SG	2.52	0.50
1:B:1307:ILE:HD12	1:B:1317:CYS:SG	2.52	0.50
1:C:1994:ASP:O	1:C:1997:SER:OG	2.24	0.50
1:C:2598:ASN:OD1	1:C:2599:LEU:N	2.43	0.50
1:C:1280:GLU:OE2	1:C:1284:GLN:NE2	2.42	0.50
1:D:2564:ASN:OD1	1:D:2566:TRP:N	2.45	0.50
1:A:1307:ILE:HD12	1:A:1317:CYS:SG	2.52	0.50
1:A:2564:ASN:OD1	1:A:2566:TRP:N	2.45	0.50
1:D:1307:ILE:HD12	1:D:1317:CYS:SG	2.52	0.50
1:C:2564:ASN:OD1	1:C:2566:TRP:N	2.45	0.49
1:B:2564:ASN:OD1	1:B:2566:TRP:N	2.45	0.49
1:B:284:GLU:OE1	1:B:307:LYS:NZ	2.36	0.49
1:A:1113:GLU:OE1	1:A:1116:ARG:NH2	2.46	0.49
1:D:99:MET:O	1:D:103:GLN:N	2.43	0.49
1:D:1113:GLU:OE1	1:D:1116:ARG:NH2	2.46	0.49
1:A:806:ILE:HD13	1:A:991:LEU:HD22	1.94	0.49
1:B:1113:GLU:OE1	1:B:1116:ARG:NH2	2.46	0.49
1:A:2471:ARG:NH1	1:D:2497:ASP:OD2	2.46	0.49
1:C:548:PRO:O	1:C:552:MET:N	2.45	0.48
1:B:806:ILE:HD13	1:B:991:LEU:HD22	1.94	0.48
1:B:1125:GLU:N	1:B:1125:GLU:OE1	2.47	0.48
1:B:548:PRO:O	1:B:552:MET:N	2.46	0.48
1:D:1125:GLU:N	1:D:1125:GLU:OE1	2.47	0.48
1:C:494:LEU:O	1:C:558:ARG:NE	2.47	0.48
1:B:494:LEU:O	1:B:558:ARG:NE	2.47	0.48
1:C:806:ILE:HD13	1:C:991:LEU:HD22	1.94	0.48
1:C:1741:ILE:HD11	1:C:1785:PHE:CE1	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:806:ILE:HD13	1:D:991:LEU:HD22	1.94	0.48
1:A:1125:GLU:N	1:A:1125:GLU:OE1	2.47	0.48
1:A:494:LEU:O	1:A:558:ARG:NE	2.47	0.48
1:C:1125:GLU:OE1	1:C:1125:GLU:N	2.47	0.48
1:B:741:LEU:O	1:B:783:HIS:ND1	2.46	0.48
1:D:741:LEU:O	1:D:783:HIS:ND1	2.46	0.48
1:B:1797:GLN:OE1	1:B:1909:GLN:NE2	2.47	0.48
1:C:1113:GLU:OE1	1:C:1116:ARG:NH2	2.46	0.48
1:C:592:GLU:OE1	1:C:592:GLU:N	2.47	0.47
1:D:592:GLU:N	1:D:592:GLU:OE1	2.47	0.47
1:D:1797:GLN:OE1	1:D:1909:GLN:NE2	2.47	0.47
1:A:592:GLU:N	1:A:592:GLU:OE1	2.47	0.47
1:A:741:LEU:O	1:A:783:HIS:ND1	2.46	0.47
1:D:1741:ILE:HD11	1:D:1785:PHE:CE1	2.49	0.47
1:B:592:GLU:N	1:B:592:GLU:OE1	2.47	0.47
1:B:1741:ILE:HD11	1:B:1785:PHE:CE1	2.49	0.47
1:D:63:ASN:OD1	1:D:123:GLN:NE2	2.47	0.47
1:A:548:PRO:O	1:A:552:MET:N	2.46	0.47
1:D:494:LEU:O	1:D:558:ARG:NE	2.47	0.47
1:A:972:LEU:O	1:A:976:GLN:N	2.48	0.47
1:C:1797:GLN:OE1	1:C:1909:GLN:NE2	2.47	0.47
1:A:300:TRP:CE2	1:A:381:VAL:HG22	2.50	0.47
1:A:1797:GLN:OE1	1:A:1909:GLN:NE2	2.47	0.47
1:B:2513:PHE:CZ	1:B:2517:ILE:HD11	2.50	0.47
1:C:886:ARG:NE	1:C:1049:ASP:OD1	2.47	0.47
1:D:2513:PHE:CZ	1:D:2517:ILE:HD11	2.50	0.47
1:A:886:ARG:NE	1:A:1049:ASP:OD1	2.47	0.47
1:A:1741:ILE:HD11	1:A:1785:PHE:CE1	2.49	0.47
1:A:1954:GLU:OE1	1:A:1954:GLU:N	2.47	0.47
1:A:2513:PHE:CZ	1:A:2517:ILE:HD11	2.50	0.47
1:D:886:ARG:NE	1:D:1049:ASP:OD1	2.48	0.47
1:D:1954:GLU:OE1	1:D:1954:GLU:N	2.47	0.47
1:B:153:ASP:OD2	1:B:156:GLY:N	2.48	0.46
1:B:886:ARG:NE	1:B:1049:ASP:OD1	2.47	0.46
1:C:153:ASP:OD2	1:C:156:GLY:N	2.48	0.46
1:B:300:TRP:CE2	1:B:381:VAL:HG22	2.50	0.46
1:C:1290:LEU:O	1:C:1294:GLY:N	2.49	0.46
1:C:1307:ILE:HD11	1:C:1318:GLN:HG2	1.98	0.46
1:D:1307:ILE:HD11	1:D:1318:GLN:HG2	1.98	0.46
1:A:44:ASP:OD1	1:A:45:LEU:N	2.49	0.46
1:C:2538:CYS:SG	1:C:2539:PHE:N	2.89	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:153:ASP:OD2	1:A:156:GLY:N	2.48	0.46
1:A:1290:LEU:O	1:A:1294:GLY:N	2.49	0.46
1:B:63:ASN:OD1	1:B:123:GLN:NE2	2.47	0.46
1:B:2538:CYS:SG	1:B:2539:PHE:N	2.89	0.46
1:C:730:ARG:NH2	1:C:772:ASP:OD2	2.49	0.46
1:A:542:SER:OG	1:A:588:ASP:OD2	2.33	0.46
1:A:1337:ASN:OD1	1:A:1338:ASP:N	2.48	0.46
1:D:300:TRP:CE2	1:D:381:VAL:HG22	2.50	0.46
1:D:1290:LEU:O	1:D:1294:GLY:N	2.49	0.46
1:D:1337:ASN:OD1	1:D:1338:ASP:N	2.48	0.46
1:A:63:ASN:OD1	1:A:123:GLN:NE2	2.47	0.46
1:D:153:ASP:OD2	1:D:156:GLY:N	2.48	0.46
1:B:1227:TYR:O	1:B:1231:PHE:N	2.48	0.46
1:B:1290:LEU:O	1:B:1294:GLY:N	2.49	0.46
1:C:542:SER:OG	1:C:588:ASP:OD2	2.33	0.46
1:B:542:SER:OG	1:B:588:ASP:OD2	2.33	0.46
1:B:972:LEU:O	1:B:976:GLN:N	2.48	0.46
1:C:13:ILE:HG21	1:C:56:LEU:HD22	1.98	0.46
1:C:1633:GLU:OE1	1:C:1633:GLU:N	2.49	0.46
1:D:2007:ARG:NE	1:D:2012:ASN:OD1	2.49	0.46
1:A:1741:ILE:HG13	1:A:1742:THR:HG23	1.98	0.46
1:B:1337:ASN:OD1	1:B:1338:ASP:N	2.48	0.46
1:C:44:ASP:OD1	1:C:45:LEU:N	2.49	0.46
1:C:1064:MET:SD	1:C:1637:ARG:NE	2.89	0.46
1:C:2513:PHE:CZ	1:C:2517:ILE:HD11	2.50	0.46
1:A:2538:CYS:SG	1:A:2539:PHE:N	2.89	0.45
1:B:44:ASP:OD1	1:B:45:LEU:N	2.49	0.45
1:B:730:ARG:NH2	1:B:772:ASP:OD2	2.49	0.45
1:B:1307:ILE:HD11	1:B:1318:GLN:HG2	1.98	0.45
1:D:542:SER:OG	1:D:588:ASP:OD2	2.33	0.45
1:D:2329:THR:O	1:D:2333:GLY:N	2.48	0.45
1:C:972:LEU:O	1:C:976:GLN:N	2.48	0.45
1:D:972:LEU:O	1:D:976:GLN:N	2.48	0.45
1:D:2538:CYS:SG	1:D:2539:PHE:N	2.89	0.45
1:B:1064:MET:SD	1:B:1637:ARG:NE	2.89	0.45
1:C:656:VAL:O	1:C:665:LEU:HD11	2.17	0.45
1:C:1227:TYR:O	1:C:1231:PHE:N	2.48	0.45
1:C:1337:ASN:OD1	1:C:1338:ASP:N	2.48	0.45
1:C:2549:ASP:OD1	1:C:2550:ASN:N	2.49	0.45
1:A:1307:ILE:HD11	1:A:1318:GLN:HG2	1.98	0.45
1:B:2007:ARG:NE	1:B:2012:ASN:OD1	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2329:THR:O	1:B:2333:GLY:N	2.48	0.45
1:D:730:ARG:NH2	1:D:772:ASP:OD2	2.49	0.45
1:A:578:PHE:CE1	1:A:595:ILE:HD13	2.52	0.45
1:A:656:VAL:O	1:A:665:LEU:HD11	2.17	0.45
1:C:31:LEU:O	1:C:131:LYS:NZ	2.29	0.45
1:C:300:TRP:CE2	1:C:381:VAL:HG22	2.50	0.45
1:D:44:ASP:OD1	1:D:45:LEU:N	2.49	0.45
1:A:730:ARG:NH2	1:A:772:ASP:OD2	2.49	0.45
1:B:13:ILE:HG21	1:B:56:LEU:HD22	1.98	0.45
1:B:578:PHE:CE1	1:B:595:ILE:HD13	2.52	0.45
1:D:13:ILE:HG21	1:D:56:LEU:HD22	1.98	0.45
1:B:1633:GLU:OE1	1:B:1633:GLU:N	2.49	0.45
1:B:1741:ILE:HG13	1:B:1742:THR:HG23	1.98	0.45
1:C:1741:ILE:HG13	1:C:1742:THR:HG23	1.98	0.45
1:D:1633:GLU:OE1	1:D:1633:GLU:N	2.49	0.45
1:B:299:HIS:N	1:B:304:TYR:OH	2.50	0.44
1:B:1954:GLU:OE1	1:B:1954:GLU:N	2.47	0.44
1:C:164:ILE:HG23	1:C:164:ILE:O	2.18	0.44
1:C:578:PHE:CE1	1:C:595:ILE:HD13	2.52	0.44
1:D:299:HIS:N	1:D:304:TYR:OH	2.50	0.44
1:B:2549:ASP:OD1	1:B:2550:ASN:N	2.49	0.44
1:C:741:LEU:O	1:C:783:HIS:ND1	2.46	0.44
1:C:2007:ARG:NE	1:C:2012:ASN:OD1	2.49	0.44
1:D:164:ILE:HG23	1:D:164:ILE:O	2.18	0.44
1:D:578:PHE:CE1	1:D:595:ILE:HD13	2.52	0.44
1:A:2549:ASP:OD1	1:A:2550:ASN:N	2.49	0.44
1:B:164:ILE:HG23	1:B:164:ILE:O	2.18	0.44
1:D:656:VAL:O	1:D:665:LEU:HD11	2.17	0.44
1:D:1227:TYR:O	1:D:1231:PHE:N	2.48	0.44
1:A:13:ILE:HG21	1:A:56:LEU:HD22	1.98	0.44
1:A:1064:MET:SD	1:A:1637:ARG:NE	2.89	0.44
1:B:1046:GLU:OE2	1:B:1052:GLY:N	2.51	0.44
1:C:299:HIS:N	1:C:304:TYR:OH	2.51	0.44
1:B:656:VAL:O	1:B:665:LEU:HD11	2.17	0.44
1:D:1741:ILE:HG13	1:D:1742:THR:HG23	1.98	0.44
1:C:1046:GLU:OE2	1:C:1052:GLY:N	2.51	0.44
1:A:299:HIS:N	1:A:304:TYR:OH	2.50	0.44
1:A:16:LEU:HD12	1:A:26:ILE:HD12	2.00	0.44
1:C:1954:GLU:OE1	1:C:1954:GLU:N	2.47	0.44
1:C:2329:THR:O	1:C:2333:GLY:N	2.48	0.44
1:D:1064:MET:SD	1:D:1637:ARG:NE	2.89	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1619:ASP:O	1:D:1623:TRP:N	2.51	0.44
1:A:1046:GLU:OE2	1:A:1052:GLY:N	2.51	0.43
1:A:1227:TYR:O	1:A:1231:PHE:N	2.48	0.43
1:B:16:LEU:HD12	1:B:26:ILE:HD12	2.00	0.43
1:A:164:ILE:O	1:A:164:ILE:HG23	2.18	0.43
1:A:2329:THR:O	1:A:2333:GLY:N	2.48	0.43
1:D:548:PRO:O	1:D:552:MET:N	2.46	0.43
1:A:31:LEU:O	1:A:131:LYS:NZ	2.29	0.43
1:A:1619:ASP:O	1:A:1623:TRP:N	2.51	0.43
1:C:1174:GLY:O	1:C:1178:ARG:NH1	2.52	0.43
1:D:255:ASP:OD1	1:D:256:GLU:N	2.52	0.43
1:A:1633:GLU:OE1	1:A:1633:GLU:N	2.49	0.43
1:A:2007:ARG:NE	1:A:2012:ASN:OD1	2.49	0.43
1:C:255:ASP:OD1	1:C:256:GLU:N	2.52	0.43
1:D:2549:ASP:OD1	1:D:2550:ASN:N	2.49	0.43
1:B:1490:ARG:O	1:B:1494:LEU:N	2.48	0.43
1:B:1619:ASP:O	1:B:1623:TRP:N	2.51	0.43
1:C:16:LEU:HD12	1:C:26:ILE:HD12	2.00	0.43
1:D:16:LEU:HD12	1:D:26:ILE:HD12	2.00	0.43
1:B:888:LEU:HD21	1:B:971:ILE:HG23	2.01	0.43
1:D:1046:GLU:OE2	1:D:1052:GLY:N	2.51	0.43
1:A:888:LEU:HD21	1:A:971:ILE:HG23	2.01	0.43
1:B:1895:GLN:N	1:B:1895:GLN:OE1	2.52	0.42
1:C:1895:GLN:N	1:C:1895:GLN:OE1	2.52	0.42
1:B:1174:GLY:O	1:B:1178:ARG:NH1	2.52	0.42
1:C:1307:ILE:HD11	1:C:1318:GLN:CG	2.50	0.42
1:D:1307:ILE:HD11	1:D:1318:GLN:CG	2.50	0.42
1:A:1307:ILE:HD11	1:A:1318:GLN:CG	2.50	0.42
1:B:652:ILE:O	1:B:656:VAL:HG12	2.20	0.42
1:C:63:ASN:OD1	1:C:123:GLN:NE2	2.47	0.42
1:D:652:ILE:O	1:D:656:VAL:HG12	2.20	0.42
1:D:888:LEU:HD21	1:D:971:ILE:HG23	2.01	0.42
1:D:1174:GLY:O	1:D:1178:ARG:NH1	2.52	0.42
1:A:1174:GLY:O	1:A:1178:ARG:NH1	2.52	0.42
1:B:1307:ILE:HD11	1:B:1318:GLN:CG	2.50	0.42
1:C:888:LEU:HD21	1:C:971:ILE:HG23	2.01	0.42
1:D:1254:LEU:O	1:D:1285:HIS:NE2	2.53	0.42
1:D:1264:MET:HA	1:D:1267:ILE:HD12	2.02	0.42
1:D:1523:GLN:O	1:D:1527:SER:N	2.53	0.42
1:D:1932:ASP:OD1	1:D:1933:ASN:N	2.53	0.42
1:A:652:ILE:O	1:A:656:VAL:HG12	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1619:ASP:O	1:C:1623:TRP:N	2.51	0.42
1:A:1264:MET:HA	1:A:1267:ILE:HD12	2.01	0.41
1:A:1932:ASP:OD1	1:A:1933:ASN:N	2.53	0.41
1:C:1490:ARG:O	1:C:1494:LEU:N	2.48	0.41
1:C:1523:GLN:O	1:C:1527:SER:N	2.53	0.41
1:D:698:ASP:OD2	1:D:704:HIS:NE2	2.52	0.41
1:A:255:ASP:OD1	1:A:256:GLU:N	2.52	0.41
1:A:1523:GLN:O	1:A:1527:SER:N	2.53	0.41
1:B:255:ASP:OD1	1:B:256:GLU:N	2.52	0.41
1:C:1254:LEU:O	1:C:1285:HIS:NE2	2.53	0.41
1:D:1895:GLN:OE1	1:D:1895:GLN:N	2.52	0.41
1:D:1937:VAL:O	1:D:1940:THR:OG1	2.36	0.41
1:A:1937:VAL:O	1:A:1940:THR:OG1	2.36	0.41
1:B:1523:GLN:O	1:B:1527:SER:N	2.53	0.41
1:A:1254:LEU:O	1:A:1285:HIS:NE2	2.53	0.41
1:B:1254:LEU:O	1:B:1285:HIS:NE2	2.53	0.41
1:C:1691:LEU:O	1:C:1695:LEU:N	2.50	0.41
1:C:1932:ASP:OD1	1:C:1933:ASN:N	2.53	0.41
1:A:1194:GLN:NE2	1:A:1234:LYS:O	2.51	0.41
1:B:1932:ASP:OD1	1:B:1933:ASN:N	2.53	0.41
1:C:652:ILE:O	1:C:656:VAL:HG12	2.20	0.41
1:D:2513:PHE:CE2	1:D:2517:ILE:HD11	2.56	0.41
1:C:698:ASP:OD2	1:C:704:HIS:NE2	2.52	0.41
1:B:698:ASP:OD2	1:B:704:HIS:NE2	2.52	0.41
1:B:1764:GLY:O	1:B:1883:ASN:ND2	2.54	0.41
1:B:2513:PHE:CE2	1:B:2517:ILE:HD11	2.56	0.41
1:C:2513:PHE:CE2	1:C:2517:ILE:HD11	2.56	0.41
1:A:1895:GLN:OE1	1:A:1895:GLN:N	2.52	0.40
1:C:536:VAL:HG21	1:C:546:ASN:CG	2.42	0.40
1:D:1394:GLU:OE1	1:D:1394:GLU:N	2.52	0.40
1:B:1264:MET:HA	1:B:1267:ILE:HD12	2.01	0.40
1:C:233:GLU:OE1	1:C:383:ARG:NH2	2.52	0.40
1:C:1264:MET:HA	1:C:1267:ILE:HD12	2.01	0.40
1:D:233:GLU:OE1	1:D:383:ARG:NH2	2.52	0.40
1:A:698:ASP:OD2	1:A:704:HIS:NE2	2.52	0.40
1:C:1340:ALA:O	1:C:1344:HIS:ND1	2.54	0.40
1:A:1968:ASP:OD1	1:A:2019:SER:OG	2.35	0.40
1:A:2513:PHE:CE2	1:A:2517:ILE:HD11	2.56	0.40
1:C:1764:GLY:O	1:C:1883:ASN:ND2	2.54	0.40
1:D:582:GLN:O	1:D:585:ILE:HG22	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	2147/2671 (80%)	2079 (97%)	66 (3%)	2 (0%)	48	81
1	B	2147/2671 (80%)	2078 (97%)	67 (3%)	2 (0%)	48	81
1	C	2147/2671 (80%)	2080 (97%)	65 (3%)	2 (0%)	48	81
1	D	2147/2671 (80%)	2080 (97%)	65 (3%)	2 (0%)	48	81
All	All	8588/10684 (80%)	8317 (97%)	263 (3%)	8 (0%)	50	81

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	1544	PRO
1	B	1544	PRO
1	C	1544	PRO
1	D	1544	PRO
1	A	1494	LEU
1	B	1494	LEU
1	C	1494	LEU
1	D	1494	LEU

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	1883/2385 (79%)	1870 (99%)	13 (1%)	81	86
1	B	1883/2385 (79%)	1870 (99%)	13 (1%)	81	86

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	1883/2385 (79%)	1870 (99%)	13 (1%)	81	86
1	D	1883/2385 (79%)	1870 (99%)	13 (1%)	81	86
All	All	7532/9540 (79%)	7480 (99%)	52 (1%)	80	86

All (52) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	280	ASN
1	A	390	ARG
1	A	550	GLN
1	A	556	CYS
1	A	1086	GLN
1	A	1380	ASN
1	A	1418	ASN
1	A	1727	ARG
1	A	1797	GLN
1	A	1882	GLU
1	A	2051	HIS
1	A	2222	PHE
1	A	2532	GLU
1	B	280	ASN
1	B	390	ARG
1	B	550	GLN
1	B	556	CYS
1	B	1086	GLN
1	B	1380	ASN
1	B	1418	ASN
1	B	1727	ARG
1	B	1797	GLN
1	B	1882	GLU
1	B	2051	HIS
1	B	2222	PHE
1	B	2532	GLU
1	C	280	ASN
1	C	390	ARG
1	C	550	GLN
1	C	556	CYS
1	C	1086	GLN
1	C	1380	ASN
1	C	1418	ASN
1	C	1727	ARG

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Mol	Chain	Res	Type
1	C	1797	GLN
1	C	1882	GLU
1	C	2051	HIS
1	C	2222	PHE
1	C	2532	GLU
1	D	280	ASN
1	D	390	ARG
1	D	550	GLN
1	D	556	CYS
1	D	1086	GLN
1	D	1380	ASN
1	D	1418	ASN
1	D	1727	ARG
1	D	1797	GLN
1	D	1882	GLU
1	D	2051	HIS
1	D	2222	PHE
1	D	2532	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	94	GLN
1	B	94	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 oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 12 ligands modelled in this entry, 12 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	5
1	B	5
1	C	5
1	D	5

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	1552:GLN	C	1586:TRP	N	55.42
1	B	1552:GLN	C	1586:TRP	N	55.42
1	C	1552:GLN	C	1586:TRP	N	55.42
1	D	1552:GLN	C	1586:TRP	N	55.42
1	A	1533:THR	C	1541:ARG	N	16.01
1	B	1533:THR	C	1541:ARG	N	16.01
1	C	1533:THR	C	1541:ARG	N	16.01
1	D	1533:THR	C	1541:ARG	N	16.01
1	A	1508:SER	C	1515:GLY	N	12.00
1	B	1508:SER	C	1515:GLY	N	12.00
1	C	1508:SER	C	1515:GLY	N	12.00
1	D	1508:SER	C	1515:GLY	N	12.00
1	A	1484:GLY	C	1490:ARG	N	11.59

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	1484:GLY	C	1490:ARG	N	11.59
1	C	1484:GLY	C	1490:ARG	N	11.59
1	D	1484:GLY	C	1490:ARG	N	11.59
1	A	2252:TYR	C	2260:SER	N	7.49
1	B	2252:TYR	C	2260:SER	N	7.49
1	C	2252:TYR	C	2260:SER	N	7.49
1	D	2252:TYR	C	2260:SER	N	7.49

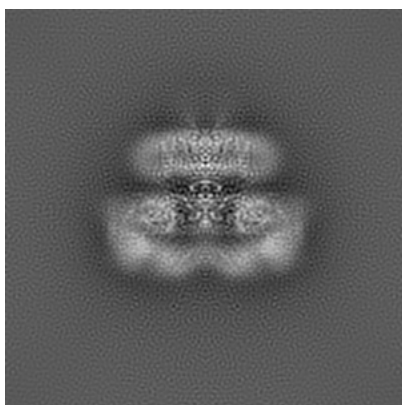
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-7991. These allow visual inspection of the internal detail of the map and identification of artifacts.

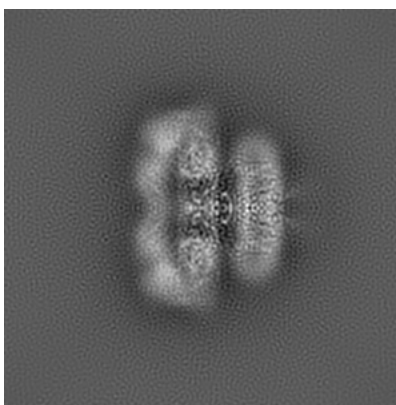
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

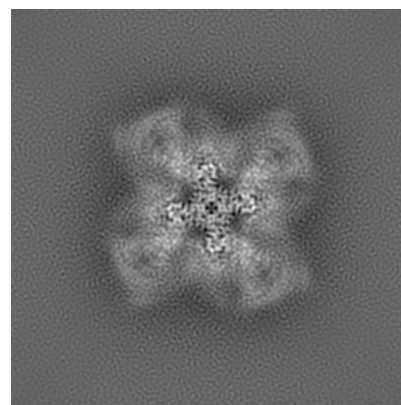
6.1.1 Primary map



X



Y

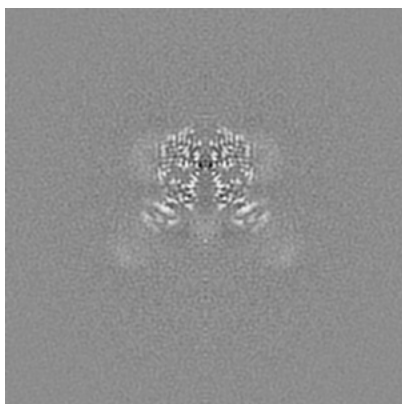


Z

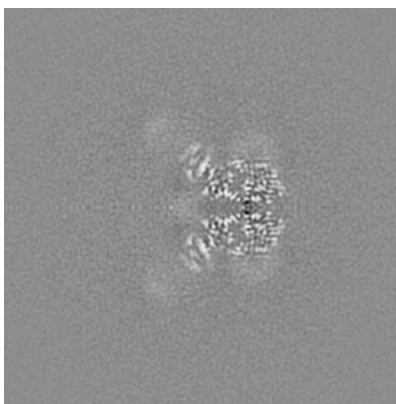
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

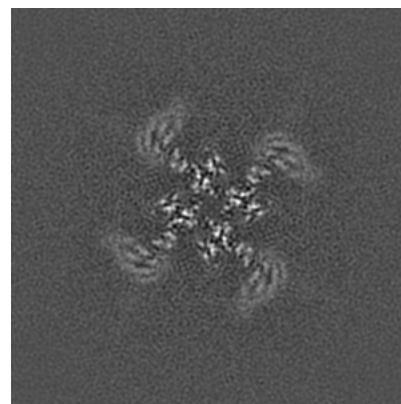
6.2.1 Primary map



X Index: 192



Y Index: 192

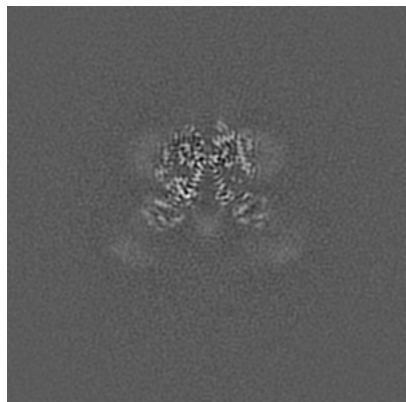


Z Index: 192

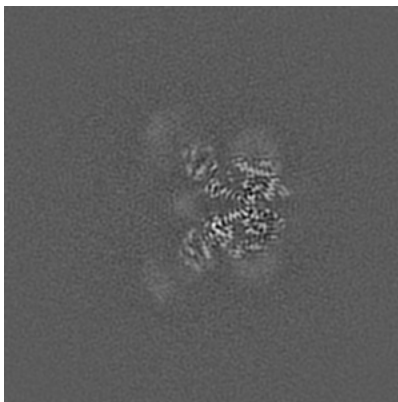
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

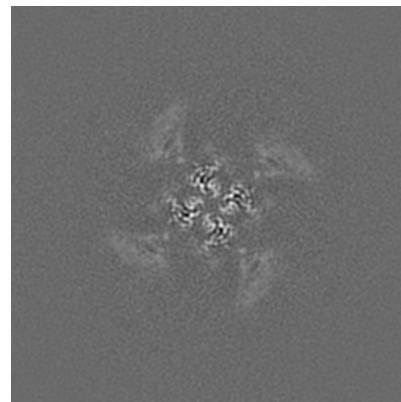
6.3.1 Primary map



X Index: 194



Y Index: 190

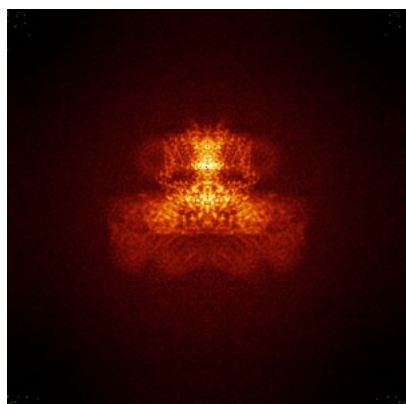


Z Index: 200

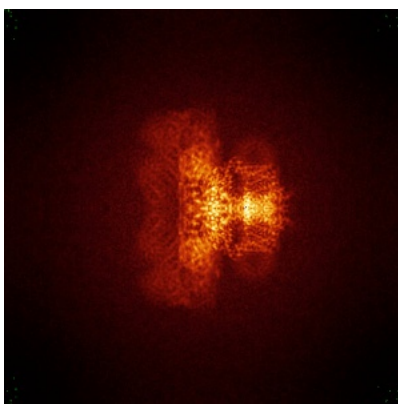
The images above show the largest variance slices of the map in three orthogonal directions.

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

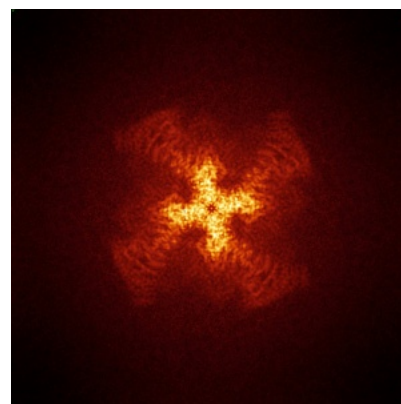
6.4.1 Primary map



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



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 2.8. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

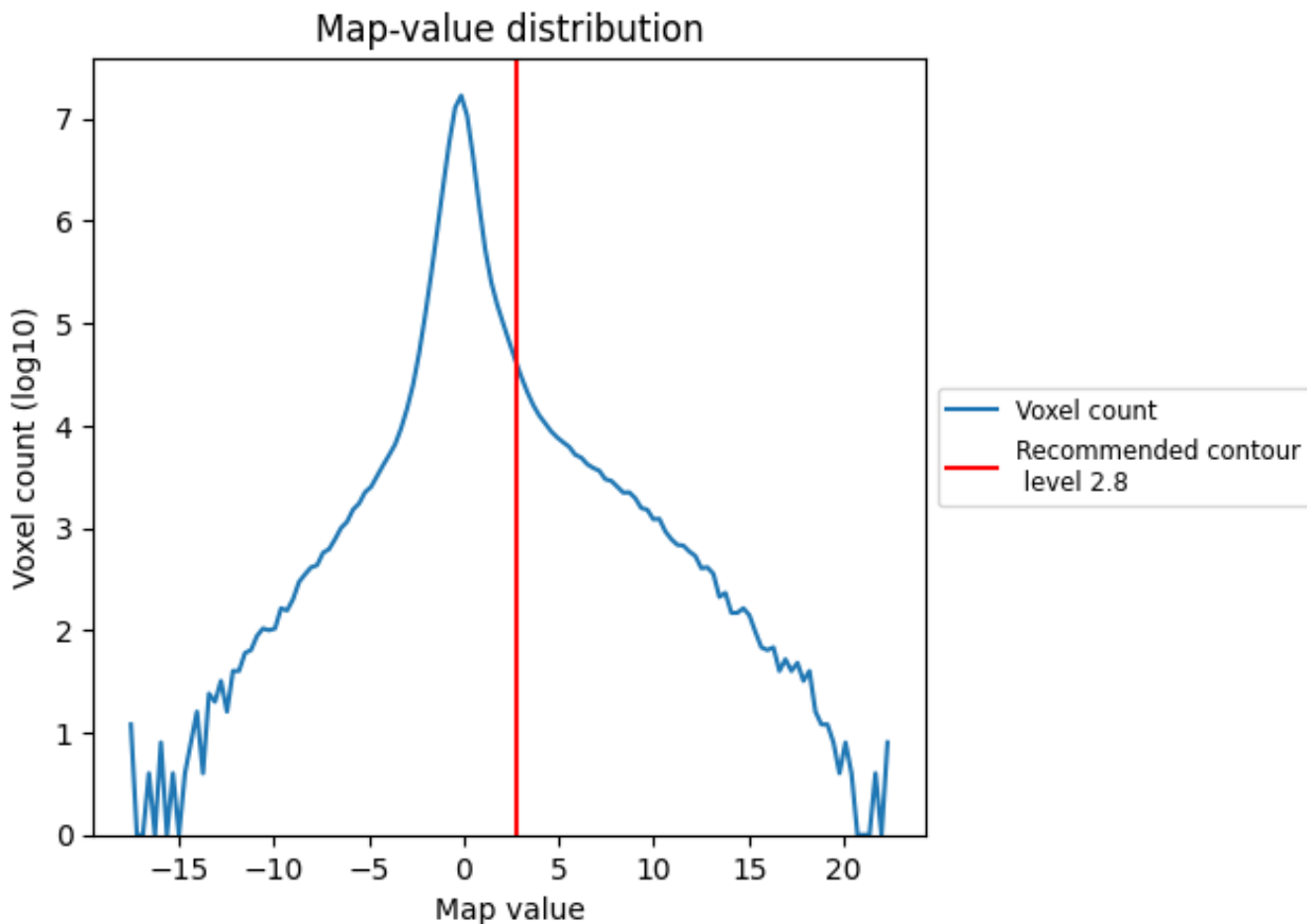
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

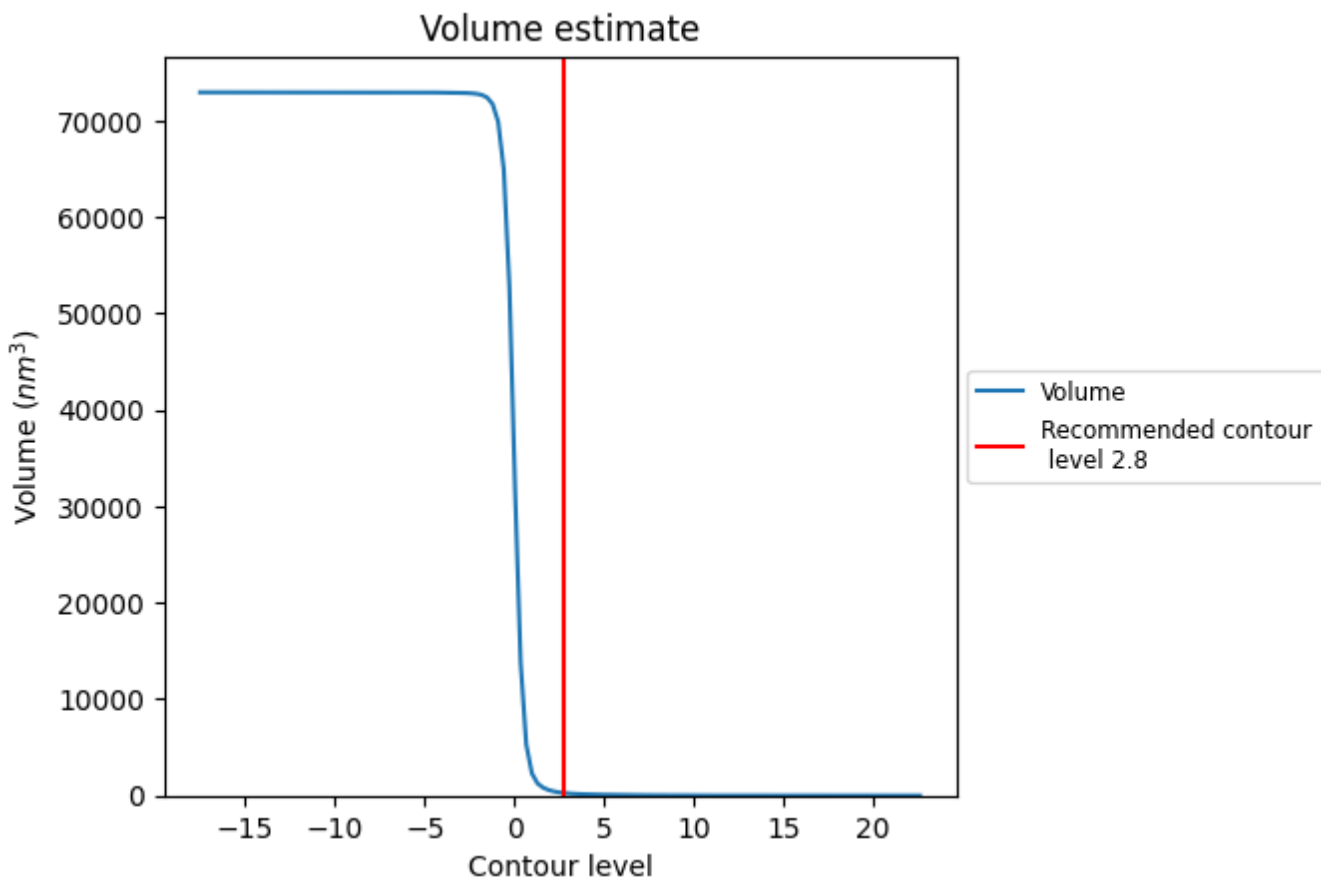
This section contains the results of statistical analysis of the map.

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.

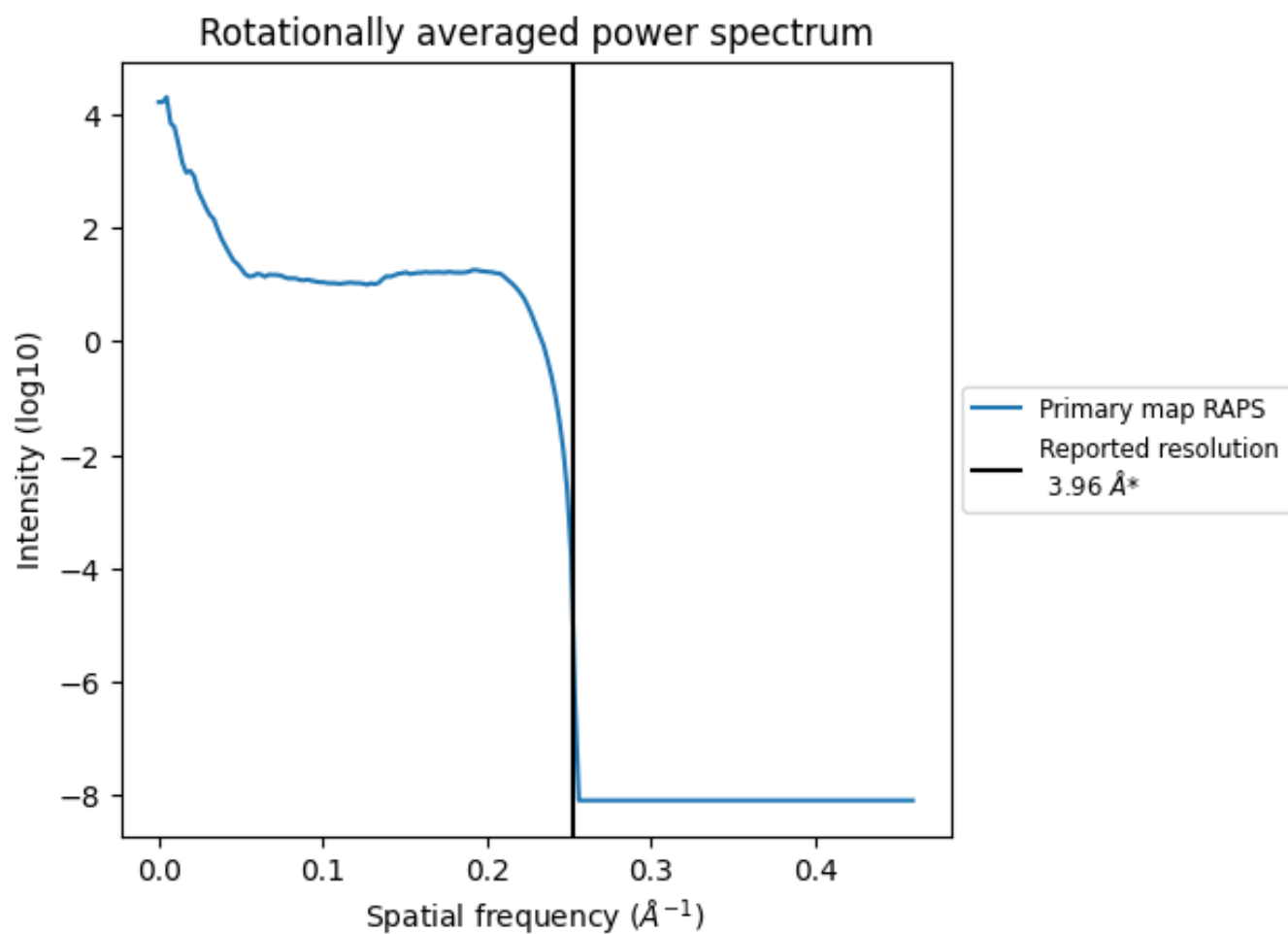
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 258 nm^3 ; this corresponds to an approximate mass of 233 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 0.253 Å⁻¹

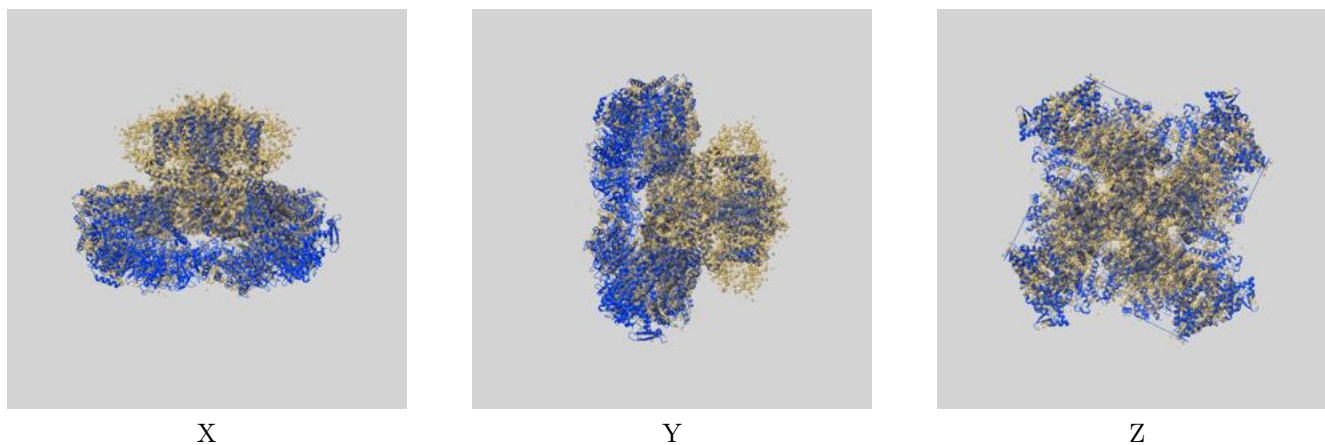
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

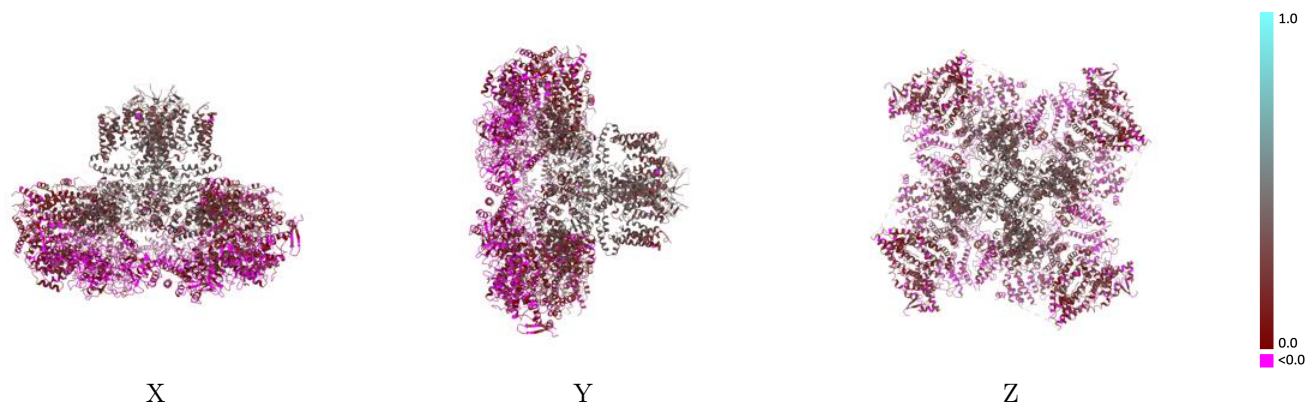
This section contains information regarding the fit between EMDB map EMD-7991 and PDB model 6DRA. Per-residue inclusion information can be found in section [3](#) on page [4](#).

9.1 Map-model overlay [i](#)



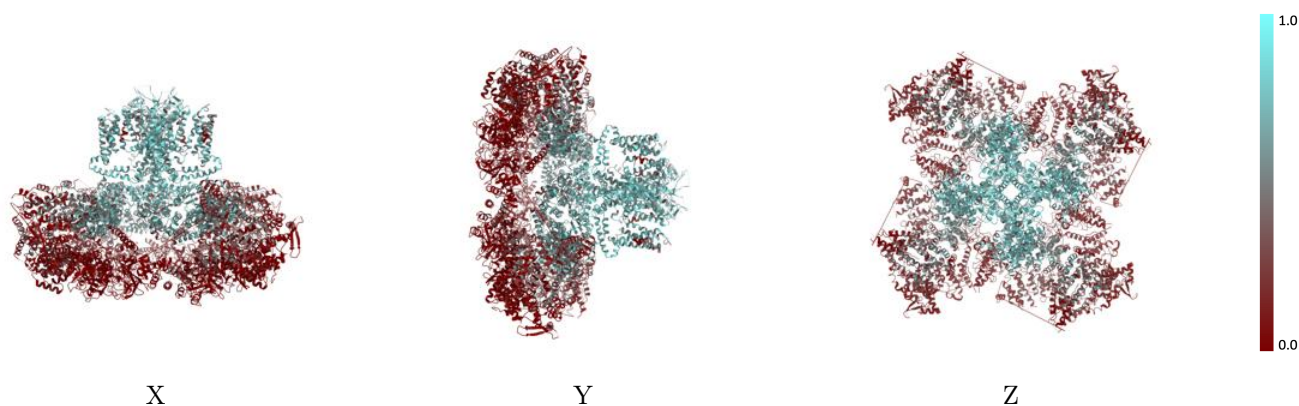
The images above show the 3D surface view of the map at the recommended contour level 2.8 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



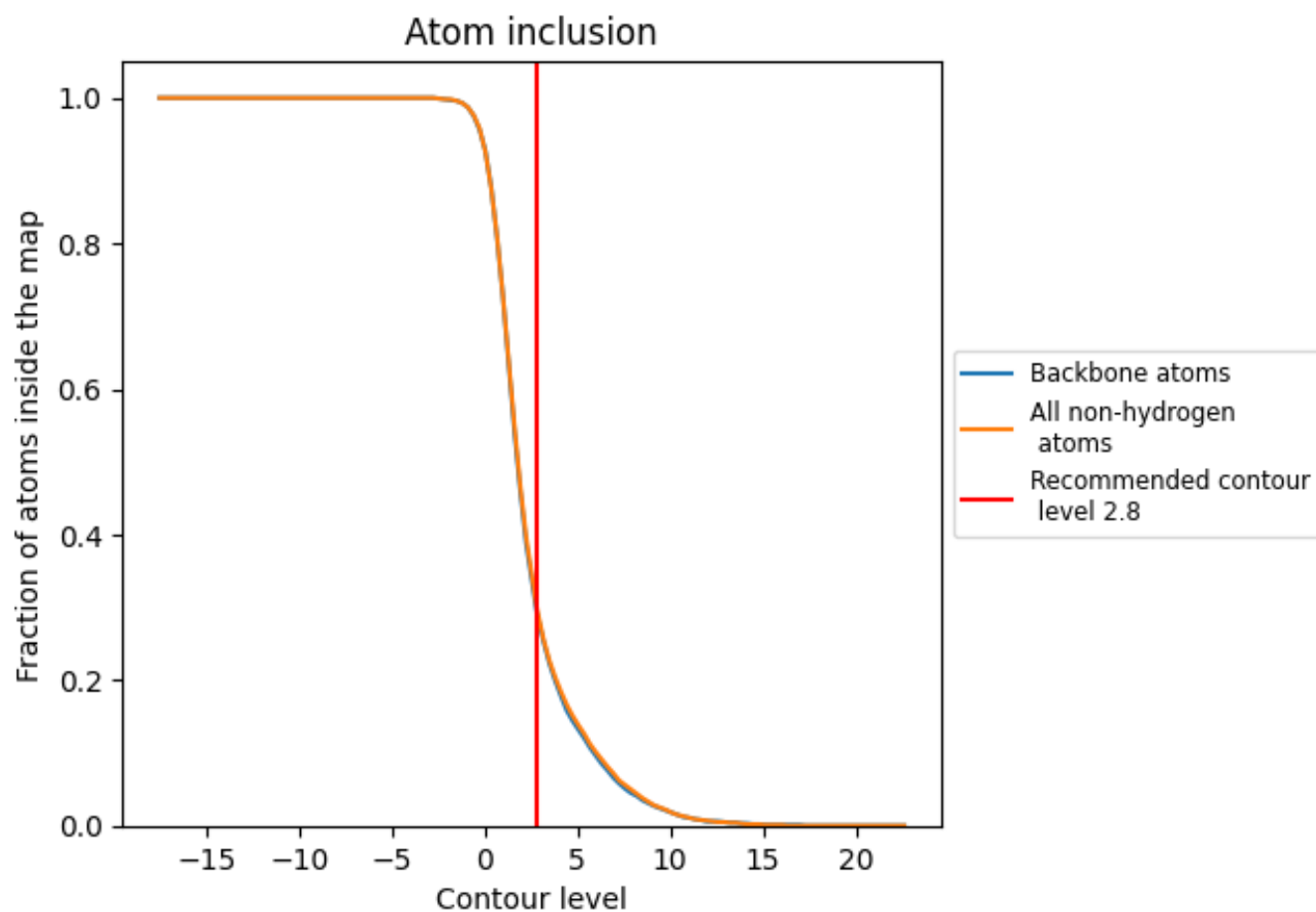
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (2.8).











9.4 Atom inclusion [i](#)



At the recommended contour level, 30% of all backbone atoms, 30% 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 (2.8) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.3010	 0.1690
A	 0.3100	 0.1680
B	 0.3100	 0.1690
C	 0.3100	 0.1690
D	 0.3100	 0.1680

