



## Full wwPDB EM Validation Report ⓘ

Oct 19, 2024 – 07:52 PM EDT

PDB ID : 6DQJ  
EMDB ID : EMD-7978  
Title : Human type 3 1,4,5-inositol trisphosphate receptor in a ligand-free state  
Authors : Hite, R.K.; Paknejad, N.  
Deposited on : 2018-06-11  
Resolution : 3.49 Å (reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.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

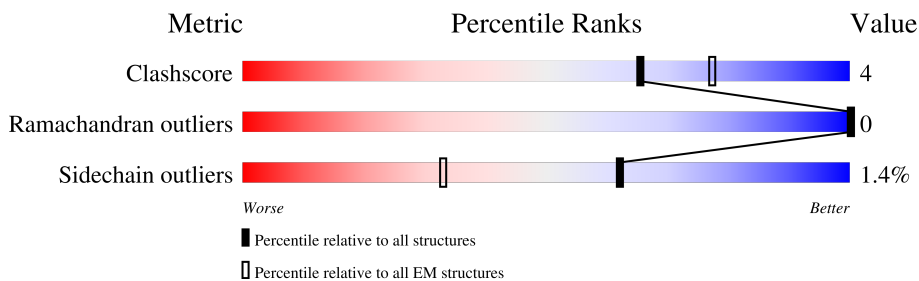
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.49 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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	2671	<p>68% 73% 9% 18%</p>
1	B	2671	<p>65% 72% 9% 18%</p>
1	C	2671	<p>65% 72% 9% 18%</p>
1	D	2671	<p>70% 73% 9% 18%</p>

## 2 Entry composition [i](#)

There are 2 unique types of molecules in this entry. The entry contains 138477 atoms, of which 69265 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	2181	34618	11031	17316	2979	3188	104	0	0
1	B	2181	34619	11031	17317	2979	3188	104	0	0
1	C	2181	34618	11031	17316	2979	3188	104	0	0
1	D	2181	34618	11031	17316	2979	3188	104	0	0

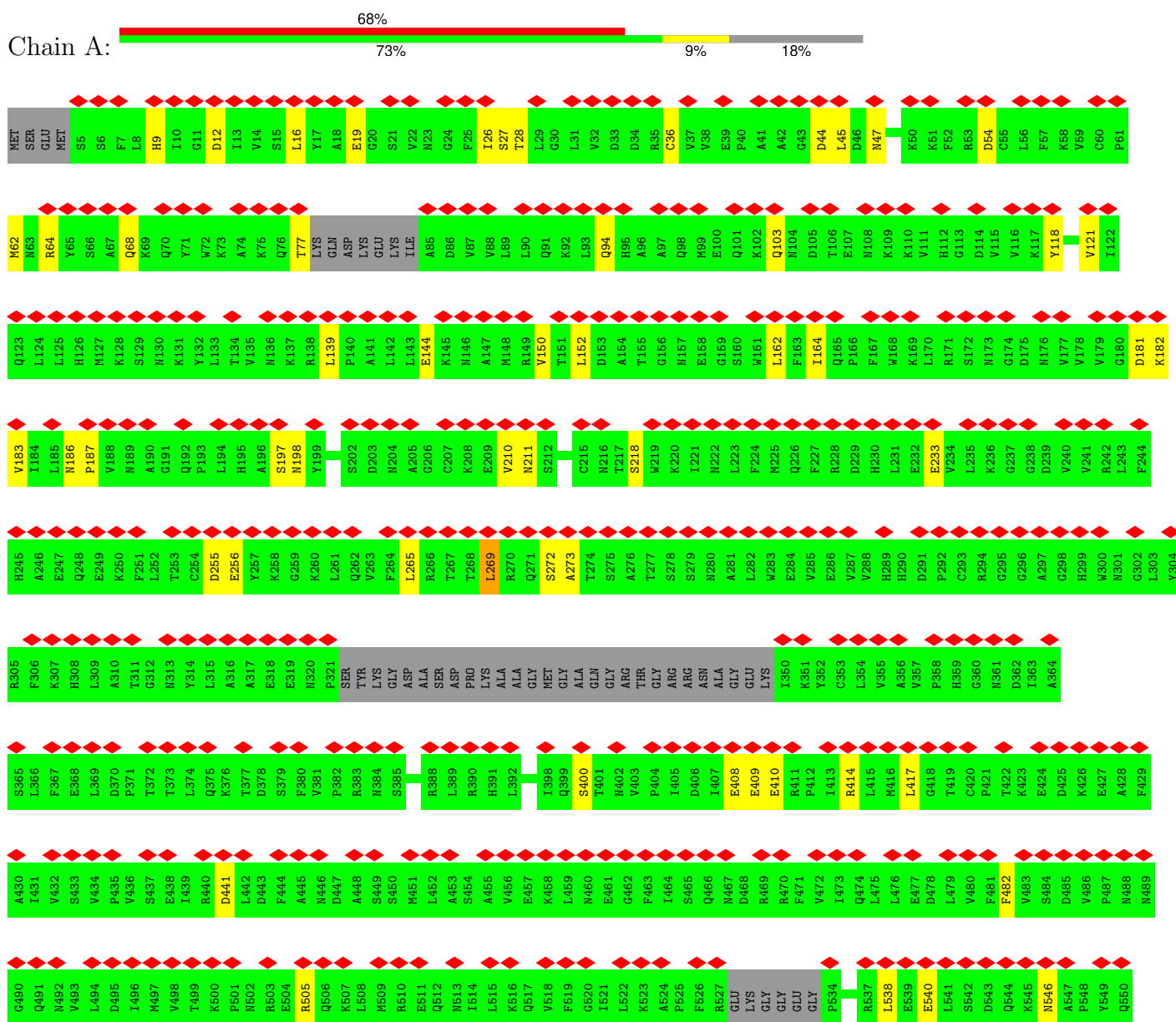
- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn).

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

### 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



H561	M552	F553	R554	L555	C556	Y557	R558	V559	L560	R561	H562	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	T594	L595	T596	A597	L598	L599	H600	M602	R603	K604	L605	L606	E607	K608	H609	I610	T611			
K612	V615	T617	F618	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	C655	V656	L657	D658	P659	L660	K661	S662	D663	I664	L665	I666	R667	E668	E669	L670	R671	P672				
V673	K674	GLU	MET	ALA	GLN	SER	HIS	GLU	TTR	LEU	SER	ILE	GLU	TTR	SER	GLU	E691	V692	W693	L694	T695	W696	T697	D698	A699	N700	N701	E702	H703	H704	E705	L706	S707	V708	R709	Q710	L711	A712	Q713	E714	R715	A717	G718	N719	H721	D722	P723	E723	N724	V725	L726	S727	L728	Y729	R730	Y731	Q732			
L733	K734	L735	F736	A737	R738	M739	C740	L741	E642	R743	Q744	Y745	L746	A747	I748	D749	E750	I751	S752	Q753	Q754	L755	G756	V757	D758	L759	H760	H761	L762	C763	M764	A765	D766	E767	M768	L769	P770	D771	L772	L773	A774	A775	S776	F777	H778	L779	L780	M781	L782	H783	S784	H785	V786	D787	R788	D789	P790	Q791	E792	
L793	V794	T795	P796	F797	K798	F799	A800	MET	R801	L802	W803	T804	E805	I806	P807	T808	I810	T811	I812	K813	D814	Y815	D816	S817	N818	L819	M820	A821	S822	R823	D824	D825	K826	K827	L828	N829	K829	F830	A831	N832	T833	M834	E835	F836	V837	E838	D839	Y840	L841	N842	N843	Y844	V845	S846	E847	A848	V849	P850	F851	A852
M853	E854	E855	K856	N857	K858	L859	T860	F861	E862	V863	V864	S865	L866	A867	H868	N869	L870	I871	Y872	F873	G874	F875	Y876	S877	F878	S879	E880	L881	L882	R883	L884	R885	R886	T887	L888	L889	G890	I891	I892	CYS	VAL	GLN	GLY	PRO	PRO	ALA	ALA	MET	LEU	GLN	ALA	TTR	GLU	ASP	PRD	GLY	GLY	LYS	ASN	
VAL	ARG	ARG	ILE	GLN	GLY	VAL	HIS	MET	MET	SER	THR	MET	VAL	VAL	PHE	SER	ALA	PRO	SER	LEU	LEU	ALA	ALA	GLY	GLY	ALA	SER	ALA	GLU	LEU	ASP	ARG	SER	LYS	PHE	GLU	GLU	ASN	D961	I962	V963	Y964	M965	E966	T967	K968	L969	A970	I971	L972										
E973	I974	L975	Q976	I978	N980	V981	R982	L983	D984	Y985	R986	I987	S988	Y989	L990	L991	S992	V993	F994	K995	K996	E997	F998	V999	E1000	V1001	F1002	PRO	MET	GLN	ASP	SER	SER	GLY	ALA	ALA	PHE	GLU	GLY	THR	ALA	ALA	PHE	ASP	SER	THR	THR	THR	ALA	ASN	MET	M1024	L1025	L1026	R1027	I1028	G1029	E1030	Q1031	A1032
E1033	A1034	M1035	F1036	G1037	VAL	GLY	LYS	THR	SER	S1043	M1044	L1045	E1046	V1047	D1048	D1049	E1050	G1051	G1052	R1053	M1054	F1055	L1056	L1057	V1058	L1059	I1060	H1061	L1062	T1063	M1064	H1065	D1066	Y1067	A1068	P1069	L1070	V1071	S1072	G1073	A1074	L1075	Q1076	L1077	L1078	F1079	K1080	H1081	F1082	S1083	Q1084	R1085	Q1086	E1087	A1088	M1089	H1090	T1091	F1092	
K1093	Q1094	V1095	Q1096	L1097	L1098	I1099	S1100	A1101	Q1102	D1103	V1104	E1105	N1106	Y1107	K1108	V1109	I1110	K1111	S1112	E1113	L1114	D1115	R1116	L1117	R1118	T1119	M1120	V1121	E1122	K1123	S1124	E1125	L1126	W1127	V1128	ASP	LYS	GLY	SER	GLY	LYS	GLY	LYS	GLY	GLU	VAL	GLU	GLY	ALA	ALA	LYS	ASP	LYS	LYS	GLU	ARG	PRO	THR		
ASP	GLU	GLU	PHE	LEU	HIS	PRO	GLU	GLY	LYS	SER	S1166	E1167	M1168	Y1169	Q1170	I1171	V1172	K1173	G1174	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	D1201	A1202	H1203	K1204	V1205	M1206	L1207	D1208	L1209	L1210	Q1211	I1212			
P1213	Y1214	D1215	K1216	G1217	D1218	A1219	K1220	M1221	M1222	E1223	I1224	L1225	R1226	Y1227	T1228	H1229	Q1230	F1231	L1232	Q1233	K1234	F1235	C1236	A1237	G1238	M1239	P1240	G1241	M1242	Q1243	A1244	L1245	L1246	H1247	K1248	H1249	L1250	H1251	L1252	F1253	L1254	T1255	P1256	G1257	L1258	L1259	E1260	A1261	E1262	T1263	M1264	Q1265	H1266	I1267	F1268	L1269	M1270	M1271	Y1272	
Q1273	L1274	C1275	S1276	E1277	I1278	S1279	E1280	F1281	V1282	L1283	K1284	H1285	F1286	V1287	H1288	L1289	L1290	A1291	T1292	H1293	G1294	R1295	H1296	V1297	Q1298	Y1299	L1300	D1301	F1302	L1303	H1304	T1305	V1306	I1307	K1308	A1309	E1310	G1311	K1312	Y1313	V1314	K1315	K1316	C1317	Q1318	D1319	M1320	I1321	M1322	T1323	E1324	L1325	T1326	M1327	A1328	G1329	D1330	D1331	V1332	



V2116	V2117	E2118	H2119	H2120	H2121	S2122	Q2123	Q2124	E2125	I2126	V2127	R2128	Q2129	D2130	R2131	S2132	H2133	E2134	Q2135	I2136	V2137	F2138	P2139	V2140	F2141	G2142	I2143	C2144	Q2145	F2146	L2147	T2148	E2149	E2150	T2151	H2152	H2153	R2154	L2155	F2156	T2157	T2158	T2159	E2160	Q2161	D2162	E2163	Q2164	G2165	S2166	K2167	GLY	ALA	SER	THR	GLY	VAL	F2172	D2173	Q2174	S2175
S2176	F2177	L2178	H2179	E2181	M2182	E2183	W2184	Q2185	R2186	K2187	L2188	S2189	S2190	M2191	P2192	L2193	I2194	Y2195	W2196	F2197	S2198	R2199	R2200	M2201	T2202	L2203	W2204	I2207	S2208	F2209	N2210	A2212	V2213	F2214	I2215	N2216	I2217	I2218	I2219	A2220	G2221	F2222	Y2223	P2224	Y2225	M2226	GLY	ALA	SER	THR	GLY	VAL	F2291	M2292	E2293	L2294	V2295	F2296			
PRO	L2231	I2232	S2233	L2234	L2235	F2236	W2237	I2238	L2239	I2240	C2241	F2242	S2243	I2244	A2245	A2246	L2247	F2248	T2249	K2250	R2251	Y2252	S2260	I2261	R2262	P2263	L2264	I2265	V2266	A2267	L2268	I2269	L2270	R2271	S2272	I2273	Y2274	Y2275	Y2276	G2277	L2278	G2279	P2280	T2281	L2282	M2283	L2284	L2285	G2286	A2287	L2288	N2289	L2290	T2291	M2292	K2293	L2294	F2296			
V2297	V2298	S2299	F2300	V2301	G2302	M2303	R2304	G2305	T2306	F2307	L2308	G2309	Q2310	Y2311	K2312	A2313	L2314	V2315	M2316	D2317	M2318	E2319	F2320	L2321	Y2322	H2323	V2324	G2325	Y2326	L2327	L2328	T2329	S2330	V2331	L2332	G2333	L2334	F2335	A2336	H2337	E2338	L2339	F2340	Y2341	S2342	I2343	L2344	L2345	F2346	D2347	L2348	I2349	Y2350	R2351	E2352	E2353	T2354	L2355	F2356		
M2357	V2358	I2359	K2360	S2361	V2362	T2363	R2364	N2365	G2366	R2367	S2368	I2369	L2370	L2371	T2372	A2373	M2374	L2375	A2376	L2377	L2378	L2379	V2380	Y2381	L2382	F2383	S2384	I2385	V2386	G2387	L2388	F2390	L2391	K2392	D2393	D2394	F2395	I2396	L2397	E2398	V2399	D2400	R2401	L2402	P2403	ASN	ASN	HIS	SER	THR	THR	ALA	SER	PRO	LEU	GLY	PRO	MET	HIS		
GLY	ALA	ALA	ALA	PHE	VAL	ASP	THR	CYS	SER	GLY	ASP	LYS	ASP	MET	ASP	CYS	VAL	SER	VAL	GLY	LEU	SER	PRO	VAL	VAL	LEU	GLU	GLU	ASP	ARG	GLU	D2449	S2450	T2451	E2452	R2453	A2454	C2455	D2456	T2457	L2458	L2459	M2460	C2461	I2462	V2463	T2464	V2465	M2466	M2467	H2468	G2469	L2470	R2471	N2472	Q2473	G2474	G2475	W2476		
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L2599	D2600	W2601	M2605	K2606	A2607	M2608	S2609	L2610	V2611	SER	ASN	GLN	GLY	GLY	GLU	GLU	GLN	GLN	ASN	ASN	ILE	ARG	ILE	ILE	LEU	GLN	ASP	ASP	LYS	LEU	ASN	ASN	THR	MET	MET	LYS	LEU	VAL	SER	HIS	LEU	THR	ALA	GLN	ASN	GLU	LEU	LYS	LEU	GLY	GLN	ARG	ARG	ARG	GLN	ARG	LEU				
GLY	PHE	VAL	ASP	VAL	GLN	ASN	CYS	ILE	SER	ARG																																																			

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



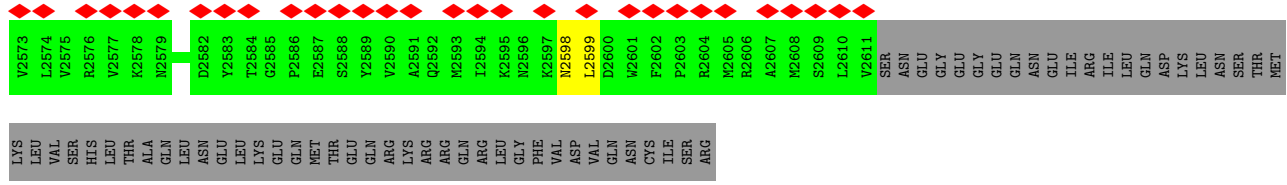
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765	866	867	068	869	070	711	712	772	773	774	775	776	777	GLN	GLN	ASP	GLY	GLU	LYS	ILE	A85	D86	H87	H88	L89	L90	Q91	K92	L93	Q94	H95	A96	A97	Q98	H99	E100	Q101	A102	Q103	M104	D105	T106	E107	M108	K109	K110	V111	H112	G113	D114	V115	L116	F117	Y118	G119	S120	P121	L122	Q123	L124

LEU	D961	D962	V964	M965	E966	T967	K968	L969	K970	L971	L972	E973	L974	L975	D976	F977	L978	L979	N980	V981	L982	L983	D984	R986	L987	S988	L989	L990	L991	S992	V993	F994	K995	K996	E997	F998	V999	E1000																																																																																																																																																																																																																																																																																																																																																																		
SER	L889	G890	L891	L892	R883	L884	T885	R886	L887	G888	G889	L890	L891	L892	L893	L894	L895	L896	L897	L898	L899	L900	L901	L902	L903	L904	L905	L906	L907	L908	L909	L910	L911	L912	L913	L914	L915	L916	L917	L918	L919	L920	L921	L922	L923	L924	L925	L926	L927	L928	L929	L930	L931	L932	L933	L934	L935	L936	L937	L938	L939	L940	L941	L942	L943	L944	L945	L946	L947	L948	L949	L950	L951	L952	L953	L954	L955	L956	L957	L958	L959	L960	L961	L962	L963	L964	L965	L966	L967	L968	L969	L970	L971	L972	L973	L974	L975	L976	L977	L978	L979	L980	L981	L982	L983	L984	L985	L986	L987	L988	L989	L990	L991	L992	L993	L994	L995	L996	L997	L998	L999	E1000																																																																																																																																																																																																																																																																														
ASP	L819	M820	A821	S822	R823	C783	M764	A765	D766	E767	M768	L769	P770	F771	D772	L773	R774	A775	S776	F777	C778	H779	L780	M781	L782	H783	V784	H785	V786	D787	R788	D789	P790	F851	A852	M853	E854	E855	K856	M857	K858	L859	T860	F861	E862	V863	V864	A867	H868	M869	L870	L871	Y872	F873	F874	F875	Y876	D877	D878	D879	D880	D881	D882	D883	D884	D885	D886	D887	D888	D889	D890	D891	D892	D893	D894	D895	D896	D897	D898	D899	D900	D901	D902	D903	D904	D905	D906	D907	D908	D909	D910	D911	D912	D913	D914	D915	D916	D917	D918	D919	D920	D921	D922	D923	D924	D925	D926	D927	D928	D929	D930	D931	D932	D933	D934	D935	D936	D937	D938	D939	D940	D941	D942	D943	D944	D945	D946	D947	D948	D949	D950	D951	D952	D953	D954	D955	D956	D957	D958	D959	D960	D961	D962	D963	D964	D965	D966	D967	D968	D969	D970	D971	D972	D973	D974	D975	D976	D977	D978	D979	D980	D981	D982	D983	D984	D985	D986	D987	D988	D989	D990	D991	D992	D993	D994	D995	D996	D997	D998	D999	E1000																																																																																																																																																																																																																			
GLY	M809	R510	E511	Q512	M513	L514	L515	L522	K523	F526	R527	GLU	L535	L536	L537	L538	E539	L541	S542	D543	K544	K545	N546	A547	Q550	H551	M552	F553	R554	L555	C556	Y557	H558	R561	H562	S563	O564	E565	D566	Y567	R568	K569	M570	Q571	E572	H573	L574	A575	K576	F577	G578	G579	M580	H581	O582	S583	Q584	L585	G586	Y587	D588	L589	A591	E592	D593	T594	T596	A597	L598	L599	H600	M601	M602	R603	K604	L605	L606	E607	K608	H609	L610	T611	K612	E614	V615	E616	A617	G618	S619	H620	GLU	M621	L622	R623	R626	E627	F628	R629	F630	L631	D632	V633	L634	S635	D636	L637	A448	S449	S450	M451	L452	A453	S454	A455	V456	E457	M460	E461	F463	I464	S465	Q466	D468	R469	R470	F471	V472	I473	Q474	L475	L476	E477	D478	L479	V480	F481	F482	S484	D485	V486	P487	N488	N489	G490	Q491	M492	V493	L494	D495	I496	M497	V498	T499	K500	P501	N502	R503	E504	Y505	Q506	K507	L508	M384	S385	Y386	V387	R390	H391	L392	N395	T396	W397	L398	Q399	S400	T401	M402	D406	I407	E408	E409	E410	M411	P412	I413	R414	L415	L416	V417	G418	T419	C420	P421	K422	K423	E424	D425	K426	E427	A428	F429	A430	I431	V432	S433	V434	P435	V436	S437	E438	K439	R440	D441	L442	D443	F444	A445	M446	D447	D255	E256	Y257	K258	G259	K260	L261	Q262	L265	R266	T267	T268	L269	R270	Q271	S272	A273	T274	S275	A281	L282	V283	E284	V287	V288	H289	H290	N291	P292	C293	R294	A297	G298	H299	W300	N301	G302	L303	Y304	R305	H308	L309	G312	N313	Y314	L315	H245	A246	E247	A317	E318	E319	N320	P321	L252	G191	L194	H195	A196	S197	M198	Y199	E200	L201	S202	D203	N204	A205	G206	L139	F140	A141	L142	L143	E144	K145	M148	R149	V150	T151	L152	A154	T155	G156	M157	E158	G159	S160	M161	L162	F163	I164	Q165	M168	K169	L170	R171	S172	M173	D175	M176	V177	L178	H244	L315	A246	E247	A317	E318	E319	N320	P321	L252	L125	H126	M127	K128	H129	M130	K131	Y132	L133	T134	V135	M136	K137	L138	L139	F140	A141	L142	L143	E144	K145	M148	R149	V150	T151	L152	A154	T155	G156	M157	E158	G159	S160	M161	L162	F163	I164	Q165	M168	K169	L170	R171	S172	M173	D175	M176	V177	L178	H244	L315	A246	E247	A317	E318	E319	N320	P321	L252	L185	M186

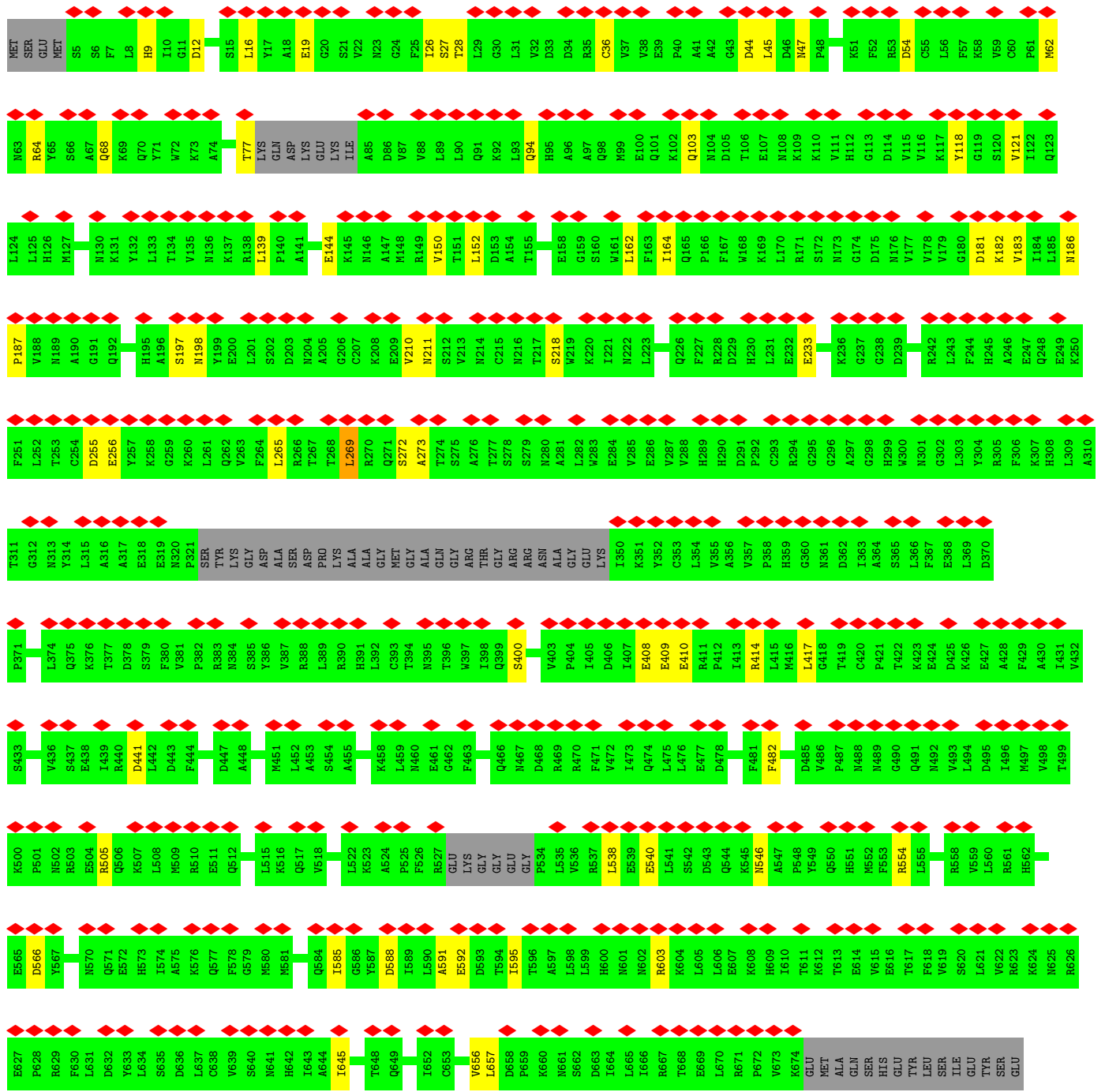


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V1121	E1122	K1123	S1124	E1125	L1126	W1127	ASP	LYS	LYS	GLY	SER	GLY	LYS	GLY	VAL	VAL	GLU	GLY	ALA	ALA	LYS	ASP	LYS	LYS	GLU	ARG	PRO	THR	ASP	GLU	GLY	PHE	HIS	PRO	PRO	GLY	LYS	THR	SER	S1166	E1167	M1168	Y1169	Q1170	I1171	V1172	K1173	G1174	I1175	L1176	E1177	R1178	K1111	S1112	E1113	D1114	D1115	R1116	L1117	T1119	M1120
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Y1421	V1422	D1423	THR	VAL	GLU	MET	LYS	GLU	ILE	TYR	THR	SER	ASN	HIS	ILE	TRP	THR	LEU	PHE	GLU	ASN	PHE	THR	THR	THR	THR	LYS	ARG	GLU	LYS	ARG	VAL	A1434	D1435	P1436	T1437	L1438	E1439	K1440	Y1441	V1442	L1443	S1444	V1445	V1446	L1447	D1448	T1449	I1450	M1451	A1452	F1453	F1454								
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A1722	A1723	T1724	Q1725	C1726	R1727	L1728	D1729	K1730	E1731	G1732	A1733	T1734	K1735	L1736	V1737	C1738	D1739	L1740	I1741	T1744	K1745	M1746	E1747	K1748	I1749	F1750	Q1751	E1752	S1753	G1754	G1755	L1756	A1757	I1758	H1759	L1760	L1761	D1762	G1763	G1764	M1765	T1766	E1767	I1768	Q1769	K1770	S1771	F1772	M1773	N1774	L1775	M1776	M1777	S1778	D1779	K1780	K1781	S1782			



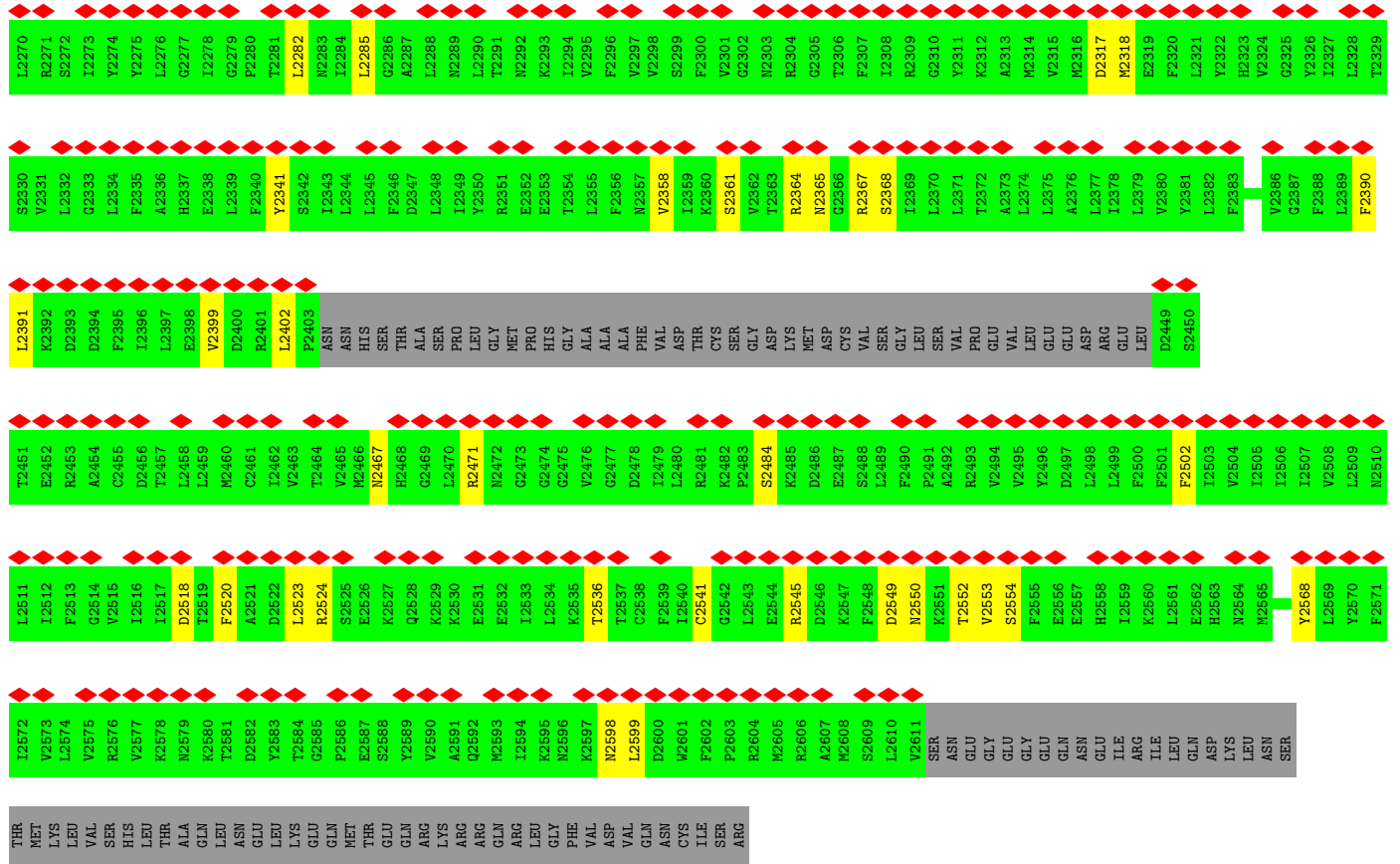


• Molecule 1: Inositol 1,4,5-trisphosphate receptor type 3

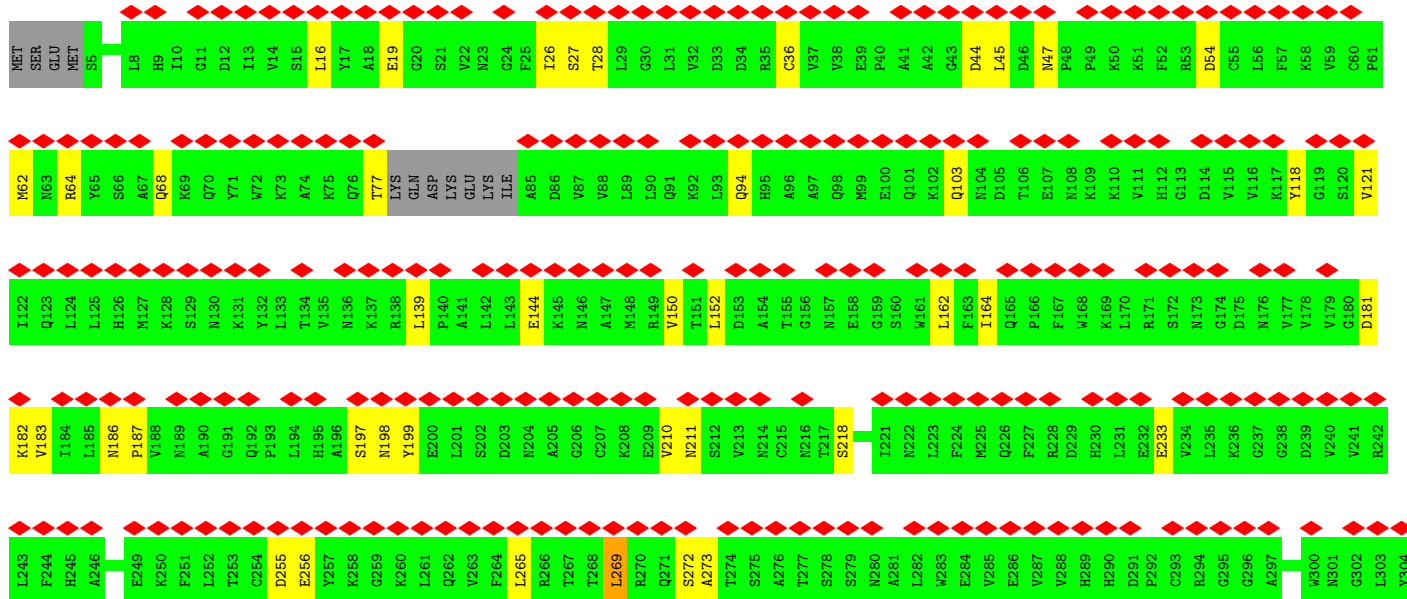
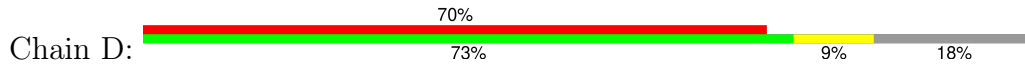


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K814	D814	Y815	D816	S817	N818	L819	N820	A821	S822	R823	D824	D825	K826	K827	N828	K829	F830	A831	N832	T833	M834	E835	F836	V837	E838	D839	Y840	L841	N842	N843	V844	V845	S846	E847	A848	V849	F851	A852	N853	E854	E855	K856	N857	T860	F861	E862	V863	V864	S865	L866	A867	H868	I871	Y872	F873					
Y876	S877	F878	S879	E880	L881	L882	R883	L884	T885	R886	T887	L888	L889	G890	I891	I892	D893	CYS	VAL	GLN	GLY	PRO	ALA	LEU	GLN	ALA	ALA	GLU	ASP	PRO	GLY	LYS	ASN	VAL	VAL	ARG	ARG	ILE	GLY	VAL	GLY	HIS	MET	MET	SER	THR	MET	VAL	LEU	SER	ARG	GLN	SER	VAL						
PHE	SER	ALA	PRO	SER	LEU	SER	ALA	ALA	ALA	GLU	PRO	LEU	ASP	ARG	SER	LYS	PHE	GLU	GLU	ASN	D961	I962	V963	V964	H965	K968	L969	K970	I971	L972	L975	Q976	F977	I978	L979	N980	L983	D984	Y985	R986	I987	S988	Y989	L990	V993	F994	K995	K996	E997	F998	V999									
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V1121	E1122	K1123	S1124	L1125	L1126	W1127	W1128	ASP	LYS	GLY	GLY	SER	GLY	GLY	LYS	GLU	VAL	VAL	ALA	ALA	LYS	ASP	ASP	LYS	GLY	GLU	ARG	PRO	THR	ASP	GLU	GLU	PHE	HIS	PRO	PRO	PRO	GLY	LYS	S1166	E1167	N1168	Y1169	Q1170	I1171	V1172	K1173	G1174	I1175	L1176	E1177	R1178	L1179	L1180	M1180					
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S1367	L1368	V1369	D1370	L1371	L1372	A1373	A1374	C1375	A1376	E1377	G1378	K1379	M1380	V1381	Y1382	T1383	E1384	I1385	K1386	T1387	L1388	S1389	L1390	L1391	P1392	L1393	E1394	D1395	V1396	S1397	S1398	V1399	V1400	T1401	H1402	E1403	D1404	C1405	L1406	D1407	E1408	Y1409	K1410	M1411	A1412	F1413	Y1414	N1415	F1416	V1417	M1418	H1419	H1359	C1420	Y1421	V1422	D1423	THR	GLU	VAL
GLU	MET	LYS	GLU	ILE	TYR	THR	SER	ASN	HIS	TRP	THR	LEU	PHE	GLU	ASN	PHE	THR	LEU	ASP	MET	ARG	VAL	VAL	CYS	SER	LYS	ARG	GLU	LYS	ARG	VAL	A1434	D1435	P1436	T1437	L1438	E1439	K1440	Y1441	V1442	L1443	S1444	V1445	V1446	L1447	D1448	T1449	I1450	M1451	A1452	F1453	F1454	SER	SER	PRO	PHE	SER	GLU		





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



R305	F306	K307	H308	L309	A310	T311	G312	N313	Y314	E318	E319	N320	SER	TYR	LYS	GLY	ASP	ALA	SER	ASP	PRO	LYS	ALA	ALA	GLY	MET	GLY	ALA	GLN	GLY	ARG	ARG	ASN	ALA	GLY	GLU	LYS	I350	K351	L354	V355	A356	V357	P358	H359	G360	N361	D362	I363	A364	S365	L366	F367						
E368	L369	D370	P371	T372	T373	L374	Q375	K376	T377	D378	S379	F380	V381	P382	R383	N384	S385	A448	Y386	V387	R388	L389	R390	H391	L392	C393	T394	N395	T396	V397	I398	Q399	S400	T401	M402	V403	P404	I405	D406	I407	E408	E409	E410	R411	P412	I413	R414	L415	M416	L417	G418	T419	C420	K423	E424	D425	E427		
A428	F429	A430	P435	V436	S437	E438	I439	R440	D441	L442	D443	F444	A445	N446	D447	S448	S449	S450	M451	L452	A453	S454	A455	V456	E457	K458	L459	M460	E461	G462	F463	I464	S465	Q466	D468	R469	R470	F471	V472	I473	Q474	L475	L476	E477	D478	L479	V480	F481	F482	V483	S484	D485	V486	P487	M488	M489	G490		
Q491	M492	V493	L494	D495	M497	V498	T499	K500	P501	N502	R503	E504	Q505	Q506	K507	L508	M509	R510	E511	Q512	N513	I514	L515	K516	Q517	V518	F519	G520	I521	L522	K523	P525	F526	GLU	LYS	GLY	GLY	GLY	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	H561	H562	S563	Q564	F565	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	A591	E592	D593	T594	I595	T596	A597	L598	L599	H600	N601	N602	R603	K604	L605	L606	E607	K608	H609	I610
T611	K612	T613	E616	T617	F618	V619	S620	L621	V622	R623	K624	N625	R626	E627	P628	R629	F630	L631	D632	V633	L634	S635	D636	L637	C638	V639	S640	N641	H642	I643	A644	I645	P646	V647	T648	Q649	L651	I652	C653	K654	C655	V656	L657	D658	P659	K660	N661	S662	D663	I664	L665	I666	T667	E668	E669	L670	R671		
P672	V673	K674	GLU	MET	ALA	GLN	SER	HIS	A800	TVR	L802	H803	T804	E805	L806	P807	T808	I810	E811	L812	K813	F814	Y815	D816	S817	N818	L819	L820	A821	S822	R823	D824	D825	K826	K827	M828	G829	I831	H832	T833	H834	E835	F836	H837	E838	D839	Y840	L841	N842	N843	V844	H845	S846	E847	A848	V849	P850	F851	A852
L793	W794	T795	P796	W797	K798	F799	A800	T800	R801	L802	H803	T804	E805	L806	P807	T808	I810	E811	L812	K813	F814	Y815	D816	S817	N818	L819	L820	A821	S822	R823	D824	D825	K826	K827	M828	G829	I831	H832	T833	H834	E835	F836	H837	E838	D839	Y840	L841	N842	N843	V844	H845	S846	E847	A848	V849	P850	F851	A852	
Q732	L733	K734	L735	F736	A737	R738	M739	C740	L741	D742	R743	V745	L746	A747	I748	D749	E750	L751	S752	T753	Q754	L755	D758	L759	I760	F761	L762	C763	M764	A765	D766	E767	M768	L769	P770	F771	D772	L773	R774	A775	S776	F777	C778	H779	L780	M781	L782	H783	V784	H785	V786	D787	R788	D789	Q791	E792			
L793	W794	T795	P796	W797	K798	F799	A800	T800	R801	L802	H803	T804	E805	L806	P807	T808	I810	E811	L812	K813	F814	Y815	D816	S817	N818	L819	L820	A821	S822	R823	D824	D825	K826	K827	M828	G829	I831	H832	T833	H834	E835	F836	H837	E838	D839	Y840	L841	N842	N843	V844	H845	S846	E847	A848	V849	P850	F851	A852	
M853	E854	E855	K856	M857	K858	L859	T860	F861	E862	W863	V864	S865	L866	A867	L870	I871	Y872	F873	G874	F875	Y876	S877	F878	S879	E880	L881	L882	L884	T885	R886	T887	L888	L889	G890	I891	I892	D893	V963	V964	M965	E966	T967	K968	L969	I970	I971	L972	E973											
ARG	ARG	SER	ILE	GLN	GLY	VAL	GLY	HIS	MET	SER	THR	MET	VAL	LEU	SER	ARG	LYS	GLN	SER	PHE	SER	ALA	PRO	LEU	ALA	GLY	ASP	ASP	LYS	LYS	PHE	GLU	GLU	ASN	D961	I962	V963	V964	M965	E966	T967	K968	L969	I970	I971	L972	E973												
I974	L975	Q976	F977	I978	L979	N980	V981	L983	D984	R985	R986	I987	S988	Y989	L990	L991	S992	V993	F994	K995	K996	E997	F998	V999	E1000	V1001	F1002	PRO	MET	GLN	ASP	GLY	ALA	ASP	GLY	ALA	THR	THR	ALA	ALA	ASN	D961	I962	V963	V964	M965	E966	T967	K968	L969	I970	I971	L972	E973					
A1034	M1035	F1036	G1037	VAL	GLY	LYS	THR	SER	M1043	S1044	L1045	E1046	V1047	S988	D1049	E1050	R1053	M1054	F1055	L1056	R1057	V1058	L1059	I1060	H1061	L1062	T1063	M1064	H1065	D1066	Y1067	A1068	P1069	L1070	V1071	S1072	G1073	A1074	L1075	Q1076	L1077	L1078	F1079	K1080	H1081	F1082	S1083	Q1084	R1085	Q1086	E1087	M1088	H1089	T1091	F1092	K1093	Q1094		

PRO	HIS	GLU	ASP	ARG	GLY	PRO	VAL	L1761	G1765	L1696	Y1635	A1541	Q1463	ARG	D1395	F1335	C1275	D1215	V1095
HIS	GLU	ASP	ARG	GLY	PRO	VAL	L1761	G1765	L1696	ASN	Q1636	F1542	Q1464	GLU	D1396	Y1336	S1276	D1216	V1096
ASP	ARG	GLY	PRO	VAL	THR	THR	L1762	G1766	L1697	ARG	R1637	P1543	Q1465	LYS	V1397	M1337	E1277	G1217	L1097
GLY	PRO	THR	THR	THR	THR	THR	L1763	G1767	L1698	LYS	C1638	R1544	H1466	VAL	S1398	M1338	I1278	D1218	L1098
VAL	ASP	THR	THR	THR	THR	THR	L1764	G1768	L1699	THR	E1639	R1545	K1467	A1434	V1399	K1339	S1279	A1219	L1099
PRO	VAL	THR	THR	THR	THR	THR	L1765	G1769	L1700	THR	S1640	T1546	K1468	A1435	V1400	A1340	E1280	M1220	S1100
ASP	THR	THR	THR	THR	THR	THR	L1766	G1770	L1701	THR	P1547	T1548	V1470	P1436	L1401	S1341	P1281	M1221	A1101
VAL	ASP	THR	THR	THR	THR	THR	L1767	G1771	L1702	THR	T1548	T1470	H1402	L1437	H1402	L1342	V1282	M1222	Q1102
ALA	THR	THR	THR	THR	THR	THR	L1768	G1772	L1703	THR	T1549	T1471	E1471	L1438	H1403	L1343	V1283	E1223	D1103
GLY	THR	THR	THR	THR	THR	THR	L1769	G1773	L1704	THR	M1550	E1472	E1472	L1439	D1403	A1343	L1283	M1224	V1104
ARG	THR	THR	THR	THR	THR	THR	L1770	G1774	L1705	THR	Q1551	T1549	C1473	K1440	C1405	L1346	H1285	I1224	V1105
VAL	THR	THR	THR	THR	THR	THR	L1771	G1775	L1706	THR	V1552	I1474	I1441	Y1441	I1406	D1347	F1286	E1167	E1105
ALA	THR	THR	THR	THR	THR	THR	L1772	G1776	L1707	THR	D1587	T1476	V1442	L1443	I1407	M1348	H1288	R1226	M1106
GLY	THR	THR	THR	THR	THR	THR	L1773	G1777	L1708	THR	R1476	T1477	L1443	L1443	L1408	M1349	L1289	L1227	Y1107
THR	THR	THR	THR	THR	THR	THR	L1774	G1778	L1709	THR	L1477	L1477	L1444	S1444	E1408	M1350	H1229	T1228	V1109
ASP	THR	THR	THR	THR	THR	THR	L1775	G1779	L1710	THR	A1478	A1478	V1445	S1444	V1409	K1350	Q1230	F1231	I1110
PRO	THR	THR	THR	THR	THR	THR	L1776	G1780	L1711	THR	M1479	M1479	V1446	V1445	K1410	A1351	Q1231	F1231	K1111
GLY	THR	THR	THR	THR	THR	THR	L1777	G1781	L1712	THR	M1480	V1480	V1447	L1447	M1411	A1352	H1233	Q1233	G1174
GLY	THR	THR	THR	THR	THR	THR	L1778	G1782	L1713	THR	A1481	A1481	L1448	D1448	A1412	R1353	G1294	Q1234	E1113
THR	THR	THR	THR	THR	THR	THR	L1779	G1783	L1714	THR	K1482	K1482	T1449	L1449	Y1413	D1354	R1295	K1234	D1115
GLY	THR	THR	THR	THR	THR	THR	L1780	G1784	L1715	THR	R1483	R1483	I1450	T1450	M1415	G1355	F1235	F1235	R1116
GLY	THR	THR	THR	THR	THR	THR	L1781	G1785	L1716	THR	R1484	R1484	N1451	F1416	V1416	V1356	V1296	C1236	L1114
GLY	THR	THR	THR	THR	THR	THR	L1782	G1786	L1717	THR	A1490	A1490	A1452	V1417	V1417	E1357	V1297	A1237	L1117
GLY	THR	THR	THR	THR	THR	THR	L1783	G1787	L1718	THR	I1491	I1491	F1453	F1453	M1418	E1357	Q1298	L1179	N1180
GLY	THR	THR	THR	THR	THR	THR	L1784	G1788	L1719	THR	I1492	I1492	F1454	F1454	H1419	H1359	Y1299	G1238	R1118
GLY	THR	THR	THR	THR	THR	THR	L1785	G1789	L1720	THR	L1493	L1493	SER	SER	C1420	S1360	L1300	M1239	T1119
GLY	THR	THR	THR	THR	THR	THR	L1786	G1790	L1721	THR	P1494	P1494	PRO	PRO	C1421	S1361	F1302	P1240	M1120
GLY	THR	THR	THR	THR	THR	THR	L1787	G1791	L1722	THR	M1495	M1495	PHE	PHE	Y1421	F1302	V1121	G1241	V1121
GLY	THR	THR	THR	THR	THR	THR	L1788	G1792	L1723	THR	D1496	D1496	THR	THR	Y1422	L1303	H1184	G1242	H1184
GLY	THR	THR	THR	THR	THR	THR	L1789	G1793	L1724	THR	L1497	L1497	GLU	GLU	D1423	L1304	V1185	Q1243	K1123
GLY	THR	THR	THR	THR	THR	THR	L1790	G1794	L1725	THR	D1498	D1498	ASN	ASN	THR	H1305	G1186	A1244	S1124
GLY	THR	THR	THR	THR	THR	THR	L1791	G1795	L1726	THR	D1499	D1499	THR	THR	THR	V1306	V1187	L1245	E1125
GLY	THR	THR	THR	THR	THR	THR	L1792	G1796	L1727	THR	H1500	H1500	THR	THR	VAL	I1307	Q1188	L1246	L1126
GLY	THR	THR	THR	THR	THR	THR	L1793	G1797	L1728	THR	I1501	I1501	GLN	GLN	GLU	K1308	K1192	H1247	M1189
GLY	THR	THR	THR	THR	THR	THR	L1794	G1798	L1729	THR	S1502	S1502	THR	THR	THR	A1309	K1191	H1248	R1190
GLY	THR	THR	THR	THR	THR	THR	L1795	G1799	L1730	THR	S1503	S1503	THR	THR	THR	H1249	K1192	H1249	K1191
GLY	THR	THR	THR	THR	THR	THR	L1796	G1800	L1731	THR	S1504	S1504	THR	THR	THR	E1310	K1193	H1250	L1192
GLY	THR	THR	THR	THR	THR	THR	L1797	G1801	L1732	THR	M1505	M1505	THR	THR	THR	L1311	Q1193	H1251	GLY
GLY	THR	THR	THR	THR	THR	THR	L1798	G1802	L1733	THR	S1506	S1506	THR	THR	THR	L1312	Q1194	L1252	GLY
GLY	THR	THR	THR	THR	THR	THR	L1799	G1803	L1734	THR	S1507	S1507	THR	THR	THR	L1313	Q1195	F1253	GLY
GLY	THR	THR	THR	THR	THR	THR	L1800	G1804	L1735	THR	V1616	V1616	THR	THR	THR	L1314	R1195	L1254	GLY
GLY	THR	THR	THR	THR	THR	THR	L1801	G1805	L1736	THR	V1617	V1617	THR	THR	THR	L1315	R1196	L1255	GLY
GLY	THR	THR	THR	THR	THR	THR	L1802	G1806	L1737	THR	L1617	L1617	THR	THR	THR	L1316	R1197	L1256	GLY
GLY	THR	THR	THR	THR	THR	THR	L1803	G1807	L1738	THR	V1618	V1618	THR	THR	THR	L1317	R1198	P1256	GLY
GLY	THR	THR	THR	THR	THR	THR	L1804	G1808	L1739	THR	D1619	D1619	THR	THR	THR	Q1318	K1199	P1257	VAL
VAL	THR	THR	THR	THR	THR	THR	L1805	G1809	L1740	THR	V1620	V1620	THR	THR	THR	D1319	K1200	G1257	VAL
ASN	THR	THR	THR	THR	THR	THR	L1806	G1810	L1741	THR	V1621	V1621	THR	THR	THR	L1258	M1200	L1257	GLU
ASN	THR	THR	THR	THR	THR	THR	L1807	G1811	L1742	THR	L1621	L1621	THR	THR	THR	L1259	D1201	A1202	ALA
ASN	THR	THR	THR	THR	THR	THR	L1808	G1812	L1743	THR	H1622	H1622	THR	THR	THR	E1260	A1202	A1202	ALA
ASN	THR	THR	THR	THR	THR	THR	L1809	G1813	L1744	THR	A1518	A1518	THR	THR	THR	E1261	A1203	H1203	ALA
LEU	THR	THR	THR	THR	THR	THR	L1810	G1814	L1745	THR	A1519	A1519	THR	THR	THR	E1262	K1204	K1204	LYS
GLY	THR	THR	THR	THR	THR	THR	L1811	G1815	L1746	THR	A1520	A1520	THR	THR	THR	T1263	L1205	V1205	LYS
GLN	THR	THR	THR	THR	THR	THR	L1812	G1816	L1747	THR	A1521	A1521	THR	THR	THR	T1264	M1206	M1206	LYS
GLN	THR	THR	THR	THR	THR	THR	L1813	G1817	L1748	THR	Q1522	Q1522	THR	THR	THR	E1324	L1207	L1207	LYS
GLN	THR	THR	THR	THR	THR	THR	L1814	G1818	L1749	THR	R1523	R1523	THR	THR	THR	Y1326	D1208	D1208	GLU
GLN	THR	THR	THR	THR	THR	THR	L1815	G1819	L1750	THR	M1524	M1524	THR	THR	THR	T1327	L1209	L1209	THR
GLN	THR	THR	THR	THR	THR	THR	L1816	G1820	L1751	THR	A1525	A1525	THR	THR	THR	M1327	L1210	L1210	THR
GLN	THR	THR	THR	THR	THR	THR	L1817	G1821	L1752	THR	S1526	S1526	THR	THR	THR	A1328	L1210	L1210	THR
GLN	THR	THR	THR	THR	THR	THR	L1818	G1822	L1753	THR	S1527	S1527	THR	THR	THR	G1329	L1211	L1211	THR
GLN	THR	THR	THR	THR	THR	THR	L1819	G1823	L1754	THR	Y1528	Y1528	THR	THR	THR	D1330	L1212	L1212	THR
GLN	THR	THR	THR	THR	THR	THR	L1820	G1824	L1755	THR	K1529	K1529	THR	THR	THR	D1331	L1213	L1213	THR
GLN	THR	THR	THR	THR	THR	THR	L1821	G1825	L1756	THR	A1530	A1530	THR	THR	THR	V1332	L1214	L1214	THR
GLN	THR	THR	THR	THR	THR	THR	L1822	G1826	L1757	THR	T1531	T1531	THR	THR	THR	V1333	Y1214	Y1214	THR
GLN	THR	THR	THR	THR	THR	THR	L1823	G1827	L1758	THR	T1532	T1532	THR	THR	THR	L1274	L1274	L1274	THR



R1875	F1876	L1877	Q1878	L1879	C1881	E1882	H1883	H1884	H1885	R1886	D1887	L1888	Q1889	H1890	F1891	L1892	R1893	C1894	Q1895	H1896	H1897	K1898	T1899	N1900	Y1901	N1902	L1903	V1904	C1905	E1906	T1907	L1908	Q1909	F1910	L1911	D1912	I1913	M1914	G1915	G1916	S1917	T1918	T1919	G1920	G1921	L1922	G1923	L1924	L1925	G1926	L1927	I1928	I1929	N1930	E1931	D1932	N1933	V1934														
G1935	L1936	Y1937	I1938	Q1939	L1941	E1942	T1943	L1944	T1945	E1946	Y1947	C1948	Q1949	G1950	P1951	C1952	H1953	E1954	N1955	Q1956	T1957	C1958	I1959	V1960	T1961	H1962	E1963	N1964	N1965	D2027	V2028	G1966	I1967	D1968	I2029	K2030	LYS	K2031	A2032	Y2033	L1973	Q2034	L2035	E2036	E2037	E2038	R2039	E2040	N2041	L1981	C1982	L1983	Y2044	S2045	R2046	R2047	E2048	V2049	G2050	H2051	N2052	L1992	Y2054	I2055								
M1995	K1996	L2000	L2001	A2002	L2003	M2004	E2005	S2006	R2007	H2008	D2009	H2009	S2010	E2011	N2012	A2013	E2014	R2015	I2016	L2017	I2018	S2019	L2020	R2021	P2022	Q2023	E2024	L2025	V2026	D2027	V2028	I2029	K2030	LYS	K2031	A2032	Y2033	L1973	Q2034	L2035	E2036	E2037	E2038	R2039	E2040	N2041	L1981	C1982	L1983	Y2044	S2045	R2046	R2047	E2048	V2049	G2050	H2051	N2052	L1992	Y2054	I2055											
L2056	A2057	L2058	L2060	S2061	H2062	M2064	K2065	Q2066	Q2067	Q2068	H2069	L2070	L2071	K2072	P2073	V2074	LYS	ARG	I2016	ILE	GLN	GLU	S2019	L2020	R2021	P2022	Q2023	E2024	L2025	V2026	D2027	V2028	I2029	K2030	LYS	K2031	A2032	Y2033	L1973	Q2034	L2035	E2036	E2037	E2038	R2039	E2040	N2041	L1981	C1982	L1983	Y2044	S2045	R2046	R2047	E2048	V2049	G2050	H2051	N2052	L1992	Y2054	I2055										
Y2117	E2118	N2119	H2120	T2121	S2122	Q2123	I2124	E2125	I2126	V2127	R2128	Q2129	D2130	R2131	S2132	M2133	E2134	Q2135	I2136	V2137	F2138	P2139	V2140	P2141	G2142	I2143	C2144	Q2145	F2146	L2147	T2148	E2149	E2150	T2151	K2152	H2153	R2154	L2155	F2156	T2157	T2158	T2159	E2160	Q2161	D2162	E2163	Q2164	G2165	K2166	S2167	V2168	S2169	D2170	F2171	D2172	D2173	Q2174	S2175	S2176													
F2177	L2178	H2179	N2180	E2181	N2182	E2183	N2184	Q2185	L2186	K2187	L2188	L2189	S2190	P2191	P2192	L2193	I2194	Y2195	N2196	F2197	S2198	R2199	R2200	M2201	T2202	L2203	M2204	G2205	S2206	I2207	S2208	F2209	N2210	L2211	A2212	I2215	N2216	I2217	I2218	I2219	A2220	F2221	F2222	V2223	F2224	V2225	M2226	GLU	GLY	ALA	SER	THR	VAL	LEU	ASP	PRO																
L2231	I2232	S2233	L2234	L2235	F2236	V2237	I2238	L2239	I2240	C2241	F2242	S2243	I2244	A2245	A2246	L2247	F2248	T2249	K2250	R2251	Y2252	S2253	L2254	I2255	R2256	P2257	L2258	I2259	R2260	L2261	R2262	P2263	L2264	I2265	V2266	A2267	L2268	I2269	L2270	R2271	S2272	I2273	Y2274	I2275	L2276	G2277	I2278	P2280	L2281	N2283	I2284	L2285	G2286	A2287	L2288	N2289	L2290	T2291	N2292	K2293	L2294	V2295	F2296	V2297								
V2298	S2299	F2300	V2301	G2302	N2303	R2304	G2305	T2306	F2307	I2308	R2309	G2310	Y2311	K2312	A2313	M2314	V2315	M2316	T2317	M2318	E2319	F2320	L2321	Y2322	H2323	V2324	G2325	Y2326	I2327	L2328	T2329	S2330	V2331	L2332	G2333	L2334	F2335	A2336	H2337	E2338	L2339	F2340	Y2341	S2342	L2343	L2344	L2345	F2346	D2347	L2348	A2349	Y2350	N2351	E2352	E2353	T2354	L2355	F2356	N2357													
V2358	I2359	K2360	S2361	V2362	T2363	R2364	G2365	G2366	R2367	S2368	I2369	L2370	L2371	T2372	A2373	L2374	L2375	A2376	L2377	I2378	L2379	V2380	Y2381	L2382	F2383	S2384	V2385	I2386	G2387	F2388	L2389	F2390	L2391	K2392	D2393	D2394	F2395	I2396	L2397	E2398	V2399	D2400	R2401	L2402	P2403	ASN	ASN	HIS	SER	THR	ALA	SER	PRO	PRO	LEU	GLY	MET	PRO	HIS	L2355	F2356	N2357										
ALA	ALA	ALA	PHE	VAL	ASP	THR	CYS	SER	GLY	ASP	LYS	MET	ASP	CYS	VAL	GLY	LEU	VAL	PRO	GLU	VAL	LEU	GLU	GLU	D2449	D2450	T2451	E2452	R2453	A2454	C2455	D2456	T2457	L2458	L2459	M2460	C2461	I2462	V2463	T2464	V2465	M2466	N2467	H2468	G2469	L2470	R2471	N2472	G2473	G2474	G2475	V2476	G2477	D2478	D2479	A2521	L2522	L2523	R2524	S2525	E2526	K2527	Q2528	K2529	K2530	E2531	E2532	L2533	L2534	K2535	T2536	T2537
D2478	I2479	L2480	R2481	K2482	P2483	S2484	K2485	D2486	E2487	S2488	L2489	F2490	P2491	A2492	R2493	V2494	V2495	Y2496	D2497	L2498	L2499	F2500	F2501	F2502	I2503	V2504	I2505	L2506	I2507	V2508	L2509	N2510	L2511	L2512	F2513	G2514	V2515	L2516	L2517	D2518	T2519	F2520	A2521	L2522	L2523	R2524	S2525	E2526	K2527	Q2528	K2529	K2530	E2531	E2532	L2533	L2534	K2535	T2536	T2537													
C2538	P2539	I2540	C2541	G2542	L2543	E2544	R2545	D2546	K2547	F2548	D2549	N2550	K2551	T2552	V2553	S2554	F2555	E2556	I2559	K2560	H2563	N2564	M2565	W2566	N2567	Y2568	L2569	Y2570	F2571	I2572	V2573	L2574	V2575	R2576	V2577	K2578	N2579	K2580	T2581	D2582	Y2583	T2584	E2587	S2588	Y2589	V2590	A2591	Q2592	M2593	I2594	K2595	N2596	K2597	N2598	L2599	D2600																
M2601	F2602	P2603	R2604	M2605	R2606	A2607	M2608	S2609	L2610	L2611	SER	ASN	GLY	GLU	GLU	GLY	GLU	ASN	ILE	ARG	ILE	LEU	GLN	ASP	LYS	LEU	ASN	LYS	LEU	VAL	SER	HIS	LEU	THR	THR	ALA	GLN	LEU	ASN	GLU	GLU	GLN	GLN	ARG	LYS	ARG	ARG	GLN	ARG	LEU																						

GLY  
PHE  
VAL  
ASP  
VAL  
GLN  
ASN  
CYS  
ILE  
SER  
ARG

## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	26325	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 ( $e^-/\text{\AA}^2$ )	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	Not provided	
Magnification	105000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	34.630	Depositor
Minimum map value	-19.505	Depositor
Average map value	0.017	Depositor
Map value standard deviation	1.473	Depositor
Recommended contour level	5.72	Depositor
Map size (Å)	417.79202, 417.79202, 417.79202	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	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

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	0.38	0/17606	0.51	4/23791 (0.0%)
1	B	0.38	0/17606	0.51	4/23791 (0.0%)
1	C	0.38	0/17606	0.51	4/23791 (0.0%)
1	D	0.38	0/17606	0.51	4/23791 (0.0%)
All	All	0.38	0/70424	0.51	16/95164 (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	B	1494	PRO	N-CA-CB	5.60	110.02	103.30
1	C	1494	PRO	N-CA-CB	5.60	110.02	103.30
1	A	1547	PRO	N-CA-CB	5.59	110.00	103.30
1	D	1494	PRO	N-CA-CB	5.57	109.99	103.30
1	B	1547	PRO	N-CA-CB	5.57	109.98	103.30
1	C	1547	PRO	N-CA-CB	5.57	109.98	103.30
1	D	1547	PRO	N-CA-CB	5.57	109.98	103.30
1	A	1494	PRO	N-CA-CB	5.55	109.96	103.30
1	B	1543	PRO	N-CA-CB	5.37	109.74	103.30
1	C	1543	PRO	N-CA-CB	5.37	109.74	103.30
1	D	1543	PRO	N-CA-CB	5.37	109.74	103.30
1	A	1543	PRO	N-CA-CB	5.36	109.73	103.30
1	A	1436	PRO	N-CA-CB	5.10	109.42	103.30
1	B	1436	PRO	N-CA-CB	5.10	109.42	103.30
1	C	1436	PRO	N-CA-CB	5.10	109.42	103.30
1	D	1436	PRO	N-CA-CB	5.10	109.42	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	17302	17316	17145	132	0
1	B	17302	17317	17145	136	0
1	C	17302	17316	17145	135	0
1	D	17302	17316	17145	131	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
All	All	69212	69265	68580	520	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 4.

All (520) 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:764:MET:O	1:A:774:ARG:NH1	2.20	0.74
1:C:764:MET:O	1:C:774:ARG:NH1	2.20	0.74
1:C:1619:ASP:OD2	1:C:1687:ARG:NH2	2.20	0.74
1:B:764:MET:O	1:B:774:ARG:NH1	2.20	0.74
1:D:764:MET:O	1:D:774:ARG:NH1	2.20	0.74
1:A:1619:ASP:OD2	1:A:1687:ARG:NH2	2.20	0.73
1:C:144:GLU:OE2	1:C:211:ASN:ND2	2.22	0.73
1:D:1619:ASP:OD2	1:D:1687:ARG:NH2	2.20	0.73
1:B:1619:ASP:OD2	1:B:1687:ARG:NH2	2.20	0.73
1:A:144:GLU:OE2	1:A:211:ASN:ND2	2.22	0.73
1:D:144:GLU:OE2	1:D:211:ASN:ND2	2.22	0.73
1:C:27:SER:OG	1:C:54:ASP:OD2	2.06	0.73
1:B:27:SER:OG	1:B:54:ASP:OD2	2.06	0.72
1:C:743:ARG:NH2	1:C:788:ARG:O	2.23	0.72
1:B:144:GLU:OE2	1:B:211:ASN:ND2	2.22	0.72
1:A:1735:LYS:NZ	1:A:1779:ASP:OD2	2.23	0.71
1:D:743:ARG:NH2	1:D:788:ARG:O	2.23	0.71
1:B:743:ARG:NH2	1:B:788:ARG:O	2.23	0.71
1:D:1735:LYS:NZ	1:D:1779:ASP:OD2	2.23	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1735:LYS:NZ	1:B:1779:ASP:OD2	2.23	0.71
1:C:1735:LYS:NZ	1:C:1779:ASP:OD2	2.23	0.71
1:A:27:SER:OG	1:A:54:ASP:OD2	2.06	0.71
1:A:743:ARG:NH2	1:A:788:ARG:O	2.23	0.70
1:D:798:LYS:O	1:D:801:ARG:NH1	2.24	0.70
1:D:27:SER:OG	1:D:54:ASP:OD2	2.06	0.70
1:D:540:GLU:O	1:D:546:ASN:ND2	2.25	0.70
1:B:798:LYS:O	1:B:801:ARG:NH1	2.24	0.70
1:A:540:GLU:O	1:A:546:ASN:ND2	2.25	0.70
1:C:540:GLU:O	1:C:546:ASN:ND2	2.25	0.70
1:C:798:LYS:O	1:C:801:ARG:NH1	2.24	0.70
1:B:1783:GLU:OE1	1:B:1899:THR:OG1	2.10	0.70
1:D:1783:GLU:OE1	1:D:1899:THR:OG1	2.10	0.69
1:C:1783:GLU:OE1	1:C:1899:THR:OG1	2.10	0.69
1:A:798:LYS:O	1:A:801:ARG:NH1	2.24	0.69
1:D:2467:ASN:OD1	1:D:2471:ARG:NH1	2.26	0.69
1:A:1783:GLU:OE1	1:A:1899:THR:OG1	2.10	0.69
1:B:2467:ASN:OD1	1:B:2471:ARG:NH1	2.26	0.69
1:A:886:ARG:NE	1:A:1049:ASP:OD1	2.26	0.69
1:B:540:GLU:O	1:B:546:ASN:ND2	2.25	0.68
1:C:886:ARG:NE	1:C:1049:ASP:OD1	2.26	0.68
1:C:2467:ASN:OD1	1:C:2471:ARG:NH1	2.26	0.68
1:A:2467:ASN:OD1	1:A:2471:ARG:NH1	2.26	0.68
1:B:886:ARG:NE	1:B:1049:ASP:OD1	2.26	0.67
1:D:886:ARG:NE	1:D:1049:ASP:OD1	2.26	0.67
1:B:1895:GLN:O	1:B:1900:ASN:ND2	2.27	0.67
1:C:410:GLU:OE1	1:C:410:GLU:N	2.27	0.67
1:C:1895:GLN:O	1:C:1900:ASN:ND2	2.27	0.67
1:D:1895:GLN:O	1:D:1900:ASN:ND2	2.27	0.67
1:A:410:GLU:N	1:A:410:GLU:OE1	2.27	0.67
1:D:410:GLU:N	1:D:410:GLU:OE1	2.27	0.67
1:B:19:GLU:OE1	1:B:182:LYS:NZ	2.20	0.67
1:C:19:GLU:OE1	1:C:182:LYS:NZ	2.20	0.67
1:C:1180:ASN:O	1:C:1234:LYS:NZ	2.28	0.67
1:A:1895:GLN:O	1:A:1900:ASN:ND2	2.27	0.67
1:B:410:GLU:N	1:B:410:GLU:OE1	2.27	0.66
1:B:233:GLU:OE1	1:B:233:GLU:N	2.29	0.66
1:A:1180:ASN:O	1:A:1234:LYS:NZ	2.28	0.66
1:D:19:GLU:OE1	1:D:182:LYS:NZ	2.20	0.66
1:B:1180:ASN:O	1:B:1234:LYS:NZ	2.28	0.66
1:A:233:GLU:N	1:A:233:GLU:OE1	2.29	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1180:ASN:O	1:D:1234:LYS:NZ	2.28	0.66
1:D:233:GLU:OE1	1:D:233:GLU:N	2.29	0.65
1:C:233:GLU:N	1:C:233:GLU:OE1	2.29	0.65
1:A:2163:GLU:O	1:B:2545:ARG:NH1	2.31	0.64
1:C:2484:SER:HB2	1:D:2399:VAL:HG21	1.82	0.62
1:C:2358:VAL:O	1:C:2361:SER:OG	2.08	0.62
1:A:2545:ARG:NH1	1:D:2163:GLU:O	2.33	0.61
1:C:2163:GLU:O	1:D:2545:ARG:NH1	2.33	0.61
1:D:2024:GLU:OE1	1:D:2024:GLU:N	2.34	0.61
1:C:2024:GLU:N	1:C:2024:GLU:OE1	2.34	0.61
1:B:2163:GLU:O	1:C:2545:ARG:NH1	2.33	0.61
1:B:2484:SER:HB2	1:C:2399:VAL:HG21	1.82	0.61
1:C:1307:ILE:HD11	1:C:1318:GLN:HB3	1.83	0.61
1:A:2024:GLU:N	1:A:2024:GLU:OE1	2.34	0.60
1:A:2484:SER:HB2	1:B:2399:VAL:HG21	1.83	0.60
1:B:1203:HIS:CE1	1:B:1245:LEU:HD21	2.36	0.60
1:D:1307:ILE:HD11	1:D:1318:GLN:HB3	1.83	0.60
1:C:255:ASP:OD1	1:C:256:GLU:N	2.35	0.60
1:A:1307:ILE:HD11	1:A:1318:GLN:HB3	1.83	0.60
1:B:2024:GLU:OE1	1:B:2024:GLU:N	2.34	0.60
1:D:255:ASP:OD1	1:D:256:GLU:N	2.35	0.60
1:A:1203:HIS:CE1	1:A:1245:LEU:HD21	2.36	0.60
1:C:1203:HIS:CE1	1:C:1245:LEU:HD21	2.36	0.60
1:C:19:GLU:O	1:C:218:SER:OG	2.20	0.60
1:B:16:LEU:HD12	1:B:26:ILE:HD12	1.84	0.59
1:B:1307:ILE:HD11	1:B:1318:GLN:HB3	1.83	0.59
1:C:68:GLN:N	1:C:68:GLN:OE1	2.35	0.59
1:C:482:PHE:O	1:C:505:ARG:NH1	2.35	0.59
1:D:1203:HIS:CE1	1:D:1245:LEU:HD21	2.36	0.59
1:D:19:GLU:O	1:D:218:SER:OG	2.20	0.59
1:B:68:GLN:OE1	1:B:68:GLN:N	2.35	0.59
1:B:19:GLU:O	1:B:218:SER:OG	2.20	0.59
1:C:16:LEU:HD12	1:C:26:ILE:HD12	1.85	0.59
1:A:68:GLN:N	1:A:68:GLN:OE1	2.35	0.59
1:B:482:PHE:O	1:B:505:ARG:NH1	2.35	0.59
1:D:482:PHE:O	1:D:505:ARG:NH1	2.35	0.59
1:A:255:ASP:OD1	1:A:256:GLU:N	2.35	0.58
1:D:16:LEU:HD12	1:D:26:ILE:HD12	1.85	0.58
1:A:482:PHE:O	1:A:505:ARG:NH1	2.35	0.58
1:A:1767:GLU:N	1:A:1767:GLU:OE1	2.36	0.58
1:B:854:GLU:N	1:B:854:GLU:OE1	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1767:GLU:N	1:C:1767:GLU:OE1	2.36	0.58
1:D:1767:GLU:OE1	1:D:1767:GLU:N	2.36	0.58
1:A:854:GLU:N	1:A:854:GLU:OE1	2.37	0.58
1:B:255:ASP:OD1	1:B:256:GLU:N	2.35	0.58
1:D:68:GLN:OE1	1:D:68:GLN:N	2.35	0.58
1:A:16:LEU:HD12	1:A:26:ILE:HD12	1.84	0.58
1:A:19:GLU:OE1	1:A:182:LYS:NZ	2.20	0.58
1:A:19:GLU:O	1:A:218:SER:OG	2.20	0.58
1:C:854:GLU:OE1	1:C:854:GLU:N	2.37	0.57
1:A:2399:VAL:HG21	1:D:2484:SER:HB2	1.86	0.57
1:B:1767:GLU:N	1:B:1767:GLU:OE1	2.36	0.57
1:D:854:GLU:N	1:D:854:GLU:OE1	2.37	0.57
1:A:2518:ASP:OD1	1:B:2524:ARG:NE	2.34	0.57
1:B:408:GLU:N	1:B:408:GLU:OE1	2.38	0.57
1:C:408:GLU:OE1	1:C:408:GLU:N	2.38	0.57
1:D:408:GLU:N	1:D:408:GLU:OE1	2.38	0.57
1:C:2037:GLU:N	1:C:2037:GLU:OE1	2.38	0.56
1:D:2037:GLU:OE1	1:D:2037:GLU:N	2.38	0.56
1:A:2037:GLU:N	1:A:2037:GLU:OE1	2.38	0.56
1:A:400:SER:HA	1:A:417:LEU:HD12	1.88	0.56
1:D:400:SER:HA	1:D:417:LEU:HD12	1.88	0.56
1:B:2037:GLU:N	1:B:2037:GLU:OE1	2.38	0.56
1:A:2269:ILE:CD1	1:A:2285:LEU:HD11	2.36	0.56
1:C:2269:ILE:CD1	1:C:2285:LEU:HD11	2.36	0.56
1:C:400:SER:HA	1:C:417:LEU:HD12	1.88	0.56
1:C:2518:ASP:OD1	1:D:2524:ARG:NE	2.37	0.56
1:A:408:GLU:OE1	1:A:408:GLU:N	2.38	0.55
1:B:2269:ILE:CD1	1:B:2285:LEU:HD11	2.36	0.55
1:C:691:GLU:N	1:C:691:GLU:OE1	2.40	0.55
1:A:691:GLU:N	1:A:691:GLU:OE1	2.40	0.55
1:A:1911:LEU:HD23	1:A:1937:VAL:HG23	1.89	0.55
1:C:1911:LEU:HD23	1:C:1937:VAL:HG23	1.89	0.55
1:D:1336:TYR:HB2	1:D:1345:LEU:HD22	1.89	0.55
1:B:28:THR:OG1	1:B:54:ASP:OD1	2.22	0.55
1:D:2317:ASP:OD1	1:D:2318:MET:N	2.40	0.55
1:A:1336:TYR:HB2	1:A:1345:LEU:HD22	1.89	0.55
1:B:1298:GLN:OE1	1:B:1298:GLN:N	2.40	0.55
1:C:2064:ASN:OD1	1:C:2067:LEU:N	2.40	0.55
1:D:1911:LEU:HD23	1:D:1937:VAL:HG23	1.89	0.55
1:D:2269:ILE:CD1	1:D:2285:LEU:HD11	2.36	0.55
1:B:400:SER:HA	1:B:417:LEU:HD12	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1911:LEU:HD23	1:B:1937:VAL:HG23	1.89	0.55
1:D:2358:VAL:O	1:D:2361:SER:OG	2.08	0.55
1:A:2317:ASP:OD1	1:A:2318:MET:N	2.40	0.54
1:B:1336:TYR:HB2	1:B:1345:LEU:HD22	1.89	0.54
1:B:2064:ASN:OD1	1:B:2067:LEU:N	2.40	0.54
1:B:2518:ASP:OD1	1:C:2524:ARG:NE	2.37	0.54
1:B:691:GLU:OE1	1:B:691:GLU:N	2.40	0.54
1:C:1336:TYR:HB2	1:C:1345:LEU:HD22	1.89	0.54
1:C:591:ALA:O	1:C:595:ILE:HG22	2.08	0.54
1:D:691:GLU:N	1:D:691:GLU:OE1	2.40	0.54
1:D:1298:GLN:OE1	1:D:1298:GLN:N	2.40	0.54
1:A:2358:VAL:O	1:A:2361:SER:OG	2.08	0.54
1:D:591:ALA:O	1:D:595:ILE:HG22	2.08	0.54
1:A:1298:GLN:N	1:A:1298:GLN:OE1	2.40	0.54
1:A:591:ALA:O	1:A:595:ILE:HG22	2.08	0.54
1:D:28:THR:OG1	1:D:54:ASP:OD1	2.22	0.54
1:B:591:ALA:O	1:B:595:ILE:HG22	2.08	0.53
1:A:2064:ASN:OD1	1:A:2067:LEU:N	2.40	0.53
1:C:1298:GLN:N	1:C:1298:GLN:OE1	2.40	0.53
1:D:1755:GLY:O	1:D:1759:HIS:ND1	2.41	0.53
1:C:2317:ASP:OD1	1:C:2318:MET:N	2.40	0.53
1:B:1954:GLU:OE1	1:B:1954:GLU:N	2.42	0.53
1:D:118:TYR:OH	1:D:181:ASP:OD2	2.26	0.53
1:D:2064:ASN:OD1	1:D:2067:LEU:N	2.40	0.53
1:A:118:TYR:OH	1:A:181:ASP:OD2	2.26	0.52
1:C:1755:GLY:O	1:C:1759:HIS:ND1	2.41	0.52
1:A:47:ASN:O	1:A:47:ASN:ND2	2.43	0.52
1:B:47:ASN:ND2	1:B:47:ASN:O	2.43	0.52
1:B:2317:ASP:OD1	1:B:2318:MET:N	2.40	0.52
1:D:47:ASN:ND2	1:D:47:ASN:O	2.43	0.52
1:B:1932:ASP:OD1	1:B:1933:ASN:N	2.43	0.52
1:D:1932:ASP:OD1	1:D:1933:ASN:N	2.43	0.52
1:A:28:THR:OG1	1:A:54:ASP:OD1	2.22	0.52
1:B:2006:SER:OG	1:B:2134:GLU:OE1	2.20	0.52
1:A:1954:GLU:OE1	1:A:1954:GLU:N	2.42	0.52
1:C:1954:GLU:OE1	1:C:1954:GLU:N	2.42	0.52
1:A:1932:ASP:OD1	1:A:1933:ASN:N	2.43	0.52
1:A:2524:ARG:NE	1:D:2518:ASP:OD1	2.39	0.51
1:B:1755:GLY:O	1:B:1759:HIS:ND1	2.41	0.51
1:C:28:THR:OG1	1:C:54:ASP:OD1	2.22	0.51
1:C:1932:ASP:OD1	1:C:1933:ASN:N	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:750:GLU:N	1:A:750:GLU:OE1	2.43	0.51
1:A:2147:LEU:HD23	1:A:2152:LYS:CE	2.41	0.51
1:B:118:TYR:OH	1:B:181:ASP:OD2	2.26	0.51
1:C:47:ASN:O	1:C:47:ASN:ND2	2.43	0.51
1:A:1633:GLU:OE1	1:A:1633:GLU:N	2.43	0.51
1:B:2020:LEU:HD22	1:B:2025:LEU:HD21	1.93	0.51
1:C:2020:LEU:HD22	1:C:2025:LEU:HD21	1.93	0.51
1:A:1755:GLY:O	1:A:1759:HIS:ND1	2.41	0.51
1:B:1633:GLU:OE1	1:B:1633:GLU:N	2.43	0.51
1:D:2147:LEU:HD23	1:D:2152:LYS:CE	2.41	0.51
1:C:118:TYR:OH	1:C:181:ASP:OD2	2.26	0.51
1:D:750:GLU:OE1	1:D:750:GLU:N	2.43	0.51
1:A:2124:ILE:HD11	1:A:2568:TYR:CD1	2.46	0.51
1:D:1633:GLU:OE1	1:D:1633:GLU:N	2.43	0.51
1:B:750:GLU:OE1	1:B:750:GLU:N	2.43	0.51
1:B:1254:LEU:O	1:B:1285:HIS:NE2	2.44	0.51
1:B:2124:ILE:HD11	1:B:2568:TYR:CD1	2.46	0.51
1:B:2147:LEU:HD23	1:B:2152:LYS:CE	2.41	0.51
1:D:1954:GLU:N	1:D:1954:GLU:OE1	2.42	0.51
1:C:2124:ILE:HD11	1:C:2568:TYR:CD1	2.46	0.50
1:C:750:GLU:N	1:C:750:GLU:OE1	2.43	0.50
1:C:1254:LEU:O	1:C:1285:HIS:NE2	2.44	0.50
1:D:2549:ASP:OD1	1:D:2550:ASN:N	2.45	0.50
1:A:1218:ASP:OD1	1:A:1219:ALA:N	2.44	0.50
1:A:1254:LEU:O	1:A:1285:HIS:NE2	2.44	0.50
1:C:409:GLU:OE2	1:C:414:ARG:NH1	2.45	0.50
1:D:2020:LEU:HD22	1:D:2025:LEU:HD21	1.93	0.50
1:D:2054:TYR:CE2	1:D:2058:LEU:HD11	2.47	0.50
1:D:2124:ILE:HD11	1:D:2568:TYR:CD1	2.46	0.50
1:B:782:LEU:HD23	1:B:782:LEU:O	2.12	0.50
1:B:1218:ASP:OD1	1:B:1219:ALA:N	2.44	0.50
1:C:2054:TYR:CE2	1:C:2058:LEU:HD11	2.47	0.50
1:D:1218:ASP:OD1	1:D:1219:ALA:N	2.44	0.50
1:B:733:LEU:CD1	1:B:780:LEU:HD22	2.42	0.50
1:C:782:LEU:HD23	1:C:782:LEU:O	2.12	0.50
1:D:782:LEU:O	1:D:782:LEU:HD23	2.12	0.50
1:A:409:GLU:OE2	1:A:414:ARG:NH1	2.45	0.50
1:A:733:LEU:CD1	1:A:780:LEU:HD22	2.42	0.50
1:A:2054:TYR:CE2	1:A:2058:LEU:HD11	2.47	0.50
1:C:2147:LEU:HD23	1:C:2152:LYS:CE	2.41	0.50
1:B:409:GLU:OE2	1:B:414:ARG:NH1	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:801:ARG:NH2	1:C:984:ASP:OD1	2.44	0.49
1:D:1254:LEU:O	1:D:1285:HIS:NE2	2.44	0.49
1:A:197:SER:OG	1:A:198:ASN:N	2.46	0.49
1:A:801:ARG:NH2	1:A:984:ASP:OD1	2.44	0.49
1:A:2020:LEU:HD22	1:A:2025:LEU:HD21	1.93	0.49
1:C:197:SER:OG	1:C:198:ASN:N	2.46	0.49
1:B:197:SER:OG	1:B:198:ASN:N	2.46	0.49
1:C:733:LEU:CD1	1:C:780:LEU:HD22	2.42	0.49
1:C:1633:GLU:N	1:C:1633:GLU:OE1	2.43	0.49
1:D:409:GLU:OE2	1:D:414:ARG:NH1	2.45	0.49
1:B:2549:ASP:OD1	1:B:2550:ASN:N	2.45	0.49
1:B:2054:TYR:CE2	1:B:2058:LEU:HD11	2.47	0.49
1:B:2358:VAL:O	1:B:2361:SER:OG	2.08	0.48
1:C:1218:ASP:OD1	1:C:1219:ALA:N	2.44	0.48
1:C:2549:ASP:OD1	1:C:2550:ASN:N	2.45	0.48
1:D:733:LEU:CD1	1:D:780:LEU:HD22	2.42	0.48
1:B:2390:PHE:O	1:B:2391:LEU:HD23	2.14	0.48
1:C:272:SER:OG	1:C:273:ALA:N	2.46	0.48
1:A:2549:ASP:OD1	1:A:2550:ASN:N	2.45	0.48
1:B:801:ARG:NH2	1:B:984:ASP:OD1	2.44	0.48
1:C:2390:PHE:O	1:C:2391:LEU:HD23	2.14	0.48
1:A:2364:ARG:CD	1:A:2523:LEU:HD21	2.44	0.48
1:A:782:LEU:O	1:A:782:LEU:HD23	2.12	0.48
1:D:2364:ARG:CD	1:D:2523:LEU:HD21	2.44	0.48
1:A:976:GLN:OE1	1:A:980:ASN:ND2	2.46	0.48
1:B:272:SER:OG	1:B:273:ALA:N	2.46	0.48
1:D:272:SER:OG	1:D:273:ALA:N	2.46	0.48
1:C:976:GLN:OE1	1:C:980:ASN:ND2	2.46	0.48
1:C:1229:HIS:NE2	1:C:1260:GLU:OE2	2.47	0.48
1:C:2364:ARG:CD	1:C:2523:LEU:HD21	2.44	0.48
1:D:769:LEU:HD12	1:D:770:PRO:O	2.14	0.48
1:D:2390:PHE:O	1:D:2391:LEU:HD23	2.14	0.48
1:B:769:LEU:HD12	1:B:770:PRO:O	2.14	0.48
1:B:1117:LEU:HD21	1:B:1175:ILE:HG21	1.96	0.48
1:D:976:GLN:OE1	1:D:980:ASN:ND2	2.46	0.48
1:A:1117:LEU:HD21	1:A:1175:ILE:HG21	1.96	0.47
1:C:769:LEU:HD12	1:C:770:PRO:O	2.14	0.47
1:A:2390:PHE:O	1:A:2391:LEU:HD23	2.14	0.47
1:C:1097:LEU:HD12	1:C:1595:LEU:HD22	1.96	0.47
1:D:197:SER:OG	1:D:198:ASN:N	2.46	0.47
1:B:2364:ARG:CD	1:B:2523:LEU:HD21	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1337:ASN:ND2	1:B:1395:ASP:OD2	2.47	0.47
1:D:1229:HIS:NE2	1:D:1260:GLU:OE2	2.47	0.47
1:D:1256:PRO:HA	1:D:1289:LEU:HD21	1.96	0.47
1:D:1337:ASN:ND2	1:D:1395:ASP:OD2	2.47	0.47
1:A:1229:HIS:NE2	1:A:1260:GLU:OE2	2.47	0.47
1:B:1097:LEU:HD12	1:B:1595:LEU:HD22	1.96	0.47
1:B:2364:ARG:HD3	1:B:2523:LEU:HD21	1.97	0.47
1:C:2364:ARG:HD3	1:C:2523:LEU:HD21	1.97	0.47
1:D:1617:LEU:HD23	1:D:1621:LEU:HD23	1.97	0.47
1:D:1647:LEU:O	1:D:1651:THR:OG1	2.32	0.47
1:A:1256:PRO:HA	1:A:1289:LEU:HD21	1.96	0.47
1:B:1229:HIS:NE2	1:B:1260:GLU:OE2	2.47	0.47
1:A:769:LEU:HD12	1:A:770:PRO:O	2.14	0.47
1:D:1097:LEU:HD12	1:D:1595:LEU:HD22	1.96	0.47
1:D:1280:GLU:OE2	1:D:1284:GLN:NE2	2.48	0.47
1:D:2364:ARG:HD3	1:D:2523:LEU:HD21	1.97	0.47
1:A:1280:GLU:OE2	1:A:1284:GLN:NE2	2.48	0.47
1:A:1337:ASN:ND2	1:A:1395:ASP:OD2	2.48	0.46
1:B:1647:LEU:O	1:B:1651:THR:OG1	2.32	0.46
1:C:1256:PRO:HA	1:C:1289:LEU:HD21	1.96	0.46
1:D:1616:VAL:HG21	1:D:1690:LEU:HD23	1.97	0.46
1:B:164:ILE:HD11	1:B:183:VAL:HG21	1.97	0.46
1:B:1280:GLU:OE2	1:B:1284:GLN:NE2	2.48	0.46
1:C:1616:VAL:HG21	1:C:1690:LEU:HD23	1.97	0.46
1:D:164:ILE:HD11	1:D:183:VAL:HG21	1.97	0.46
1:C:64:ARG:NH2	1:C:103:GLN:OE1	2.47	0.46
1:C:1337:ASN:ND2	1:C:1395:ASP:OD2	2.47	0.46
1:C:1394:GLU:N	1:C:1394:GLU:OE1	2.49	0.46
1:A:272:SER:OG	1:A:273:ALA:N	2.46	0.46
1:A:2364:ARG:HD3	1:A:2523:LEU:HD21	1.97	0.46
1:C:1617:LEU:HD23	1:C:1621:LEU:HD23	1.97	0.46
1:D:1117:LEU:HD21	1:D:1175:ILE:HG21	1.96	0.46
1:C:1280:GLU:OE2	1:C:1284:GLN:NE2	2.48	0.46
1:B:1256:PRO:HA	1:B:1289:LEU:HD21	1.96	0.46
1:B:1394:GLU:N	1:B:1394:GLU:OE1	2.49	0.46
1:C:1117:LEU:HD21	1:C:1175:ILE:HG21	1.96	0.46
1:A:1325:LEU:HD13	1:A:1325:LEU:O	2.16	0.46
1:B:1325:LEU:HD13	1:B:1325:LEU:O	2.16	0.46
1:B:1410:LYS:O	1:B:1414:VAL:HG23	2.16	0.46
1:D:1325:LEU:HD13	1:D:1325:LEU:O	2.16	0.46
1:A:1394:GLU:OE1	1:A:1394:GLU:N	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1617:LEU:HD23	1:B:1621:LEU:HD23	1.97	0.46
1:C:164:ILE:HD11	1:C:183:VAL:HG21	1.97	0.46
1:C:1647:LEU:O	1:C:1651:THR:OG1	2.32	0.46
1:D:1394:GLU:OE1	1:D:1394:GLU:N	2.49	0.46
1:A:1617:LEU:HD23	1:A:1621:LEU:HD23	1.97	0.46
1:A:2552:THR:HG23	1:A:2553:VAL:HG13	1.98	0.46
1:B:64:ARG:NH2	1:B:103:GLN:OE1	2.47	0.46
1:C:1325:LEU:HD13	1:C:1325:LEU:O	2.16	0.46
1:A:1097:LEU:HD12	1:A:1595:LEU:HD22	1.96	0.45
1:A:1616:VAL:HG21	1:A:1690:LEU:HD23	1.97	0.45
1:B:603:ARG:NH1	1:B:645:ILE:HD13	2.31	0.45
1:C:1410:LYS:O	1:C:1414:VAL:HG23	2.16	0.45
1:D:1866:SER:HA	1:D:1869:ILE:HG22	1.98	0.45
1:C:2147:LEU:HD23	1:C:2152:LYS:HE2	1.98	0.45
1:B:1616:VAL:HG21	1:B:1690:LEU:HD23	1.97	0.45
1:D:1116:ARG:O	1:D:1119:THR:OG1	2.30	0.45
1:A:164:ILE:HD11	1:A:183:VAL:HG21	1.97	0.45
1:A:2147:LEU:HD23	1:A:2152:LYS:HE2	1.98	0.45
1:B:1866:SER:HA	1:B:1869:ILE:HG22	1.98	0.45
1:C:1866:SER:HA	1:C:1869:ILE:HG22	1.98	0.45
1:D:1410:LYS:O	1:D:1414:VAL:HG23	2.16	0.45
1:C:603:ARG:NH1	1:C:645:ILE:HD13	2.31	0.45
1:D:603:ARG:NH1	1:D:645:ILE:HD13	2.31	0.45
1:D:2147:LEU:HD23	1:D:2152:LYS:HE2	1.98	0.45
1:D:2552:THR:HG23	1:D:2553:VAL:HG13	1.98	0.45
1:A:44:ASP:OD1	1:A:45:LEU:N	2.50	0.45
1:B:2215:ILE:HD12	1:B:2341:TYR:CD2	2.52	0.45
1:A:265:LEU:HD11	1:A:417:LEU:HD13	1.99	0.45
1:A:603:ARG:NH1	1:A:645:ILE:HD13	2.31	0.45
1:B:2552:THR:HG23	1:B:2553:VAL:HG13	1.98	0.45
1:D:64:ARG:NH2	1:D:103:GLN:OE1	2.47	0.45
1:A:9:HIS:N	1:A:12:ASP:OD2	2.49	0.44
1:A:1410:LYS:O	1:A:1414:VAL:HG23	2.16	0.44
1:B:1725:GLN:HB2	1:B:1760:LEU:HD13	1.98	0.44
1:C:1725:GLN:HB2	1:C:1760:LEU:HD13	1.98	0.44
1:C:2215:ILE:HD12	1:C:2341:TYR:CD2	2.52	0.44
1:D:36:CYS:SG	1:D:152:LEU:HD21	2.58	0.44
1:A:1725:GLN:HB2	1:A:1760:LEU:HD13	1.98	0.44
1:A:1866:SER:HA	1:A:1869:ILE:HG22	1.98	0.44
1:B:44:ASP:OD1	1:B:45:LEU:N	2.50	0.44
1:B:976:GLN:OE1	1:B:980:ASN:ND2	2.46	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2147:LEU:HD23	1:B:2152:LYS:HE2	1.98	0.44
1:C:968:LYS:O	1:C:972:LEU:HD23	2.17	0.44
1:C:44:ASP:OD1	1:C:45:LEU:N	2.50	0.44
1:C:2552:THR:HG23	1:C:2553:VAL:HG13	1.98	0.44
1:D:2215:ILE:HD12	1:D:2341:TYR:CD2	2.52	0.44
1:A:64:ARG:NH2	1:A:103:GLN:OE1	2.47	0.44
1:A:2215:ILE:HD12	1:A:2341:TYR:CD2	2.52	0.44
1:D:44:ASP:OD1	1:D:45:LEU:N	2.50	0.44
1:D:961:ASP:OD1	1:D:962:ILE:N	2.50	0.44
1:D:968:LYS:O	1:D:972:LEU:HD23	2.17	0.44
1:D:1725:GLN:HB2	1:D:1760:LEU:HD13	1.98	0.44
1:A:1307:ILE:HD11	1:A:1318:GLN:CB	2.47	0.44
1:A:1056:LEU:HD22	1:A:1694:TYR:HD1	1.83	0.44
1:A:1235:PHE:O	1:A:1242:ASN:ND2	2.48	0.44
1:C:1258:LEU:HD23	1:C:1298:GLN:NE2	2.33	0.44
1:C:2006:SER:OG	1:C:2134:GLU:OE1	2.20	0.44
1:A:1116:ARG:O	1:A:1119:THR:OG1	2.30	0.44
1:B:265:LEU:HD11	1:B:417:LEU:HD13	1.99	0.44
1:B:968:LYS:O	1:B:972:LEU:HD23	2.17	0.44
1:C:150:VAL:HG21	1:C:210:VAL:HG12	2.00	0.44
1:D:1056:LEU:HD22	1:D:1694:TYR:HD1	1.83	0.44
1:A:1258:LEU:HD23	1:A:1298:GLN:NE2	2.33	0.44
1:B:1056:LEU:HD22	1:B:1694:TYR:HD1	1.83	0.44
1:B:1258:LEU:HD23	1:B:1298:GLN:NE2	2.33	0.44
1:C:36:CYS:SG	1:C:152:LEU:HD21	2.58	0.44
1:C:961:ASP:OD1	1:C:962:ILE:N	2.50	0.44
1:D:265:LEU:HD11	1:D:417:LEU:HD13	1.99	0.44
1:A:2367:ARG:NH2	1:B:2352:GLU:OE2	2.47	0.44
1:C:721:HIS:O	1:C:725:VAL:HG23	2.18	0.44
1:B:9:HIS:N	1:B:12:ASP:OD2	2.49	0.43
1:A:36:CYS:SG	1:A:152:LEU:HD21	2.57	0.43
1:A:961:ASP:OD1	1:A:962:ILE:N	2.50	0.43
1:A:2124:ILE:HD11	1:A:2568:TYR:CE1	2.53	0.43
1:B:36:CYS:SG	1:B:152:LEU:HD21	2.58	0.43
1:C:265:LEU:HD11	1:C:417:LEU:HD13	1.99	0.43
1:C:1056:LEU:HD22	1:C:1694:TYR:HD1	1.83	0.43
1:C:2261:ILE:HG22	1:C:2265:ILE:HD12	2.01	0.43
1:C:2598:ASN:OD1	1:C:2599:LEU:N	2.51	0.43
1:D:1258:LEU:HD23	1:D:1298:GLN:NE2	2.33	0.43
1:B:2261:ILE:HG22	1:B:2265:ILE:HD12	2.00	0.43
1:D:810:ILE:HD11	1:D:989:TYR:HA	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:150:VAL:HG21	1:B:210:VAL:HG12	2.00	0.43
1:D:2261:ILE:HG22	1:D:2265:ILE:HD12	2.01	0.43
1:D:2598:ASN:OD1	1:D:2599:LEU:N	2.51	0.43
1:B:554:ARG:NH2	1:B:588:ASP:OD2	2.52	0.43
1:A:2598:ASN:OD1	1:A:2599:LEU:N	2.51	0.43
1:B:2124:ILE:HD11	1:B:2568:TYR:CE1	2.53	0.43
1:C:810:ILE:HD11	1:C:989:TYR:HA	2.00	0.43
1:D:150:VAL:HG21	1:D:210:VAL:HG12	2.00	0.43
1:D:721:HIS:O	1:D:725:VAL:HG23	2.18	0.43
1:A:2261:ILE:HG22	1:A:2265:ILE:HD12	2.01	0.43
1:A:769:LEU:HD13	1:A:773:LEU:HD23	2.01	0.43
1:B:810:ILE:HD11	1:B:989:TYR:HA	2.00	0.43
1:A:721:HIS:O	1:A:725:VAL:HG23	2.18	0.43
1:A:810:ILE:HD11	1:A:989:TYR:HA	2.00	0.43
1:D:1076:GLN:NE2	1:D:1658:GLU:OE1	2.52	0.43
1:D:1880:LEU:CD1	1:D:1888:LEU:HD13	2.49	0.43
1:A:968:LYS:O	1:A:972:LEU:HD23	2.17	0.43
1:B:1076:GLN:NE2	1:B:1658:GLU:OE1	2.52	0.43
1:B:2598:ASN:OD1	1:B:2599:LEU:N	2.51	0.43
1:C:1880:LEU:CD1	1:C:1888:LEU:HD13	2.49	0.43
1:D:554:ARG:NH2	1:D:588:ASP:OD2	2.52	0.43
1:A:554:ARG:NH2	1:A:588:ASP:OD2	2.51	0.42
1:A:1880:LEU:CD1	1:A:1888:LEU:HD13	2.49	0.42
1:B:721:HIS:O	1:B:725:VAL:HG23	2.18	0.42
1:C:1076:GLN:NE2	1:C:1658:GLU:OE1	2.52	0.42
1:D:729:TYR:O	1:D:733:LEU:HD23	2.19	0.42
1:D:769:LEU:HD13	1:D:773:LEU:HD23	2.01	0.42
1:D:801:ARG:NH2	1:D:984:ASP:OD1	2.44	0.42
1:D:1645:SER:N	1:D:1731:GLU:OE1	2.52	0.42
1:C:2365:ASN:OD1	1:C:2368:SER:OG	2.34	0.42
1:A:150:VAL:HG21	1:A:210:VAL:HG12	2.00	0.42
1:B:729:TYR:O	1:B:733:LEU:HD23	2.19	0.42
1:B:1235:PHE:O	1:B:1242:ASN:ND2	2.48	0.42
1:C:9:HIS:N	1:C:12:ASP:OD2	2.49	0.42
1:C:554:ARG:NH2	1:C:588:ASP:OD2	2.52	0.42
1:C:1054:MET:O	1:C:1058:VAL:HG23	2.20	0.42
1:D:1092:PHE:O	1:D:1095:VAL:HG12	2.19	0.42
1:D:2124:ILE:HD11	1:D:2568:TYR:CE1	2.53	0.42
1:C:729:TYR:O	1:C:733:LEU:HD23	2.19	0.42
1:B:961:ASP:OD1	1:B:962:ILE:N	2.50	0.42
1:B:1880:LEU:CD1	1:B:1888:LEU:HD13	2.49	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2009:ASP:OD1	1:B:2010:SER:N	2.53	0.42
1:B:2147:LEU:HD23	1:B:2152:LYS:HE3	2.00	0.42
1:D:2147:LEU:HD23	1:D:2152:LYS:HE3	2.00	0.42
1:A:1076:GLN:NE2	1:A:1658:GLU:OE1	2.52	0.42
1:A:1092:PHE:O	1:A:1095:VAL:HG12	2.19	0.42
1:B:769:LEU:HD13	1:B:773:LEU:HD23	2.01	0.42
1:B:1092:PHE:O	1:B:1095:VAL:HG12	2.19	0.42
1:B:1307:ILE:HD11	1:B:1318:GLN:CB	2.47	0.42
1:C:2147:LEU:HD23	1:C:2152:LYS:HE3	2.00	0.42
1:D:1054:MET:O	1:D:1058:VAL:HG23	2.20	0.42
1:B:441:ASP:OD2	1:B:505:ARG:NE	2.53	0.42
1:B:1645:SER:N	1:B:1731:GLU:OE1	2.52	0.42
1:B:1746:ASN:HB2	1:B:1749:ILE:HD12	2.02	0.42
1:C:1092:PHE:O	1:C:1095:VAL:HG12	2.19	0.42
1:C:1645:SER:N	1:C:1731:GLU:OE1	2.52	0.42
1:A:729:TYR:O	1:A:733:LEU:HD23	2.19	0.42
1:B:1867:VAL:O	1:B:1936:LEU:HD11	2.20	0.42
1:C:769:LEU:HD13	1:C:773:LEU:HD23	2.01	0.42
1:C:2124:ILE:HD11	1:C:2568:TYR:CE1	2.53	0.42
1:D:441:ASP:OD2	1:D:505:ARG:NE	2.53	0.42
1:A:1054:MET:O	1:A:1058:VAL:HG23	2.20	0.42
1:A:2536:THR:O	1:A:2536:THR:HG22	2.20	0.42
1:C:1746:ASN:HB2	1:C:1749:ILE:HD12	2.02	0.42
1:A:269:LEU:HD13	1:A:269:LEU:O	2.20	0.42
1:B:62:MET:SD	1:B:121:VAL:HG11	2.60	0.42
1:B:2536:THR:HG22	1:B:2536:THR:O	2.20	0.42
1:C:1307:ILE:HD11	1:C:1318:GLN:CB	2.47	0.42
1:A:441:ASP:OD2	1:A:505:ARG:NE	2.53	0.41
1:A:1867:VAL:O	1:A:1936:LEU:HD11	2.20	0.41
1:B:1116:ARG:O	1:B:1119:THR:OG1	2.30	0.41
1:B:2365:ASN:OD1	1:B:2368:SER:OG	2.34	0.41
1:C:62:MET:SD	1:C:121:VAL:HG11	2.60	0.41
1:A:1645:SER:N	1:A:1731:GLU:OE1	2.52	0.41
1:A:2009:ASP:OD1	1:A:2010:SER:N	2.53	0.41
1:C:441:ASP:OD2	1:C:505:ARG:NE	2.53	0.41
1:C:2536:THR:O	1:C:2536:THR:HG22	2.20	0.41
1:D:269:LEU:HD13	1:D:269:LEU:O	2.20	0.41
1:A:1293:HIS:ND1	1:A:1293:HIS:O	2.54	0.41
1:D:2536:THR:HG22	1:D:2536:THR:O	2.20	0.41
1:B:269:LEU:HD13	1:B:269:LEU:O	2.20	0.41
1:B:1224:ILE:O	1:B:1228:THR:HG23	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:269:LEU:HD13	1:C:269:LEU:O	2.20	0.41
1:C:840:TYR:O	1:C:844:VAL:HG23	2.20	0.41
1:D:62:MET:SD	1:D:121:VAL:HG11	2.60	0.41
1:D:1293:HIS:O	1:D:1293:HIS:ND1	2.54	0.41
1:A:62:MET:SD	1:A:121:VAL:HG11	2.60	0.41
1:A:1746:ASN:HB2	1:A:1749:ILE:HD12	2.02	0.41
1:A:2365:ASN:O	1:A:2368:SER:OG	2.39	0.41
1:C:1235:PHE:O	1:C:1242:ASN:ND2	2.48	0.41
1:D:2183:GLU:OE1	1:D:2186:ARG:NH2	2.48	0.41
1:B:1054:MET:O	1:B:1058:VAL:HG23	2.20	0.41
1:C:2365:ASN:O	1:C:2368:SER:OG	2.39	0.41
1:D:1746:ASN:HB2	1:D:1749:ILE:HD12	2.02	0.41
1:D:1867:VAL:O	1:D:1936:LEU:HD11	2.20	0.41
1:A:2147:LEU:HD23	1:A:2152:LYS:HE3	2.00	0.41
1:C:1867:VAL:O	1:C:1936:LEU:HD11	2.20	0.41
1:B:585:ILE:HG23	1:B:592:GLU:HG3	2.02	0.41
1:C:585:ILE:HG23	1:C:592:GLU:HG3	2.02	0.41
1:C:766:ASP:O	1:C:774:ARG:NH1	2.54	0.41
1:C:1224:ILE:O	1:C:1228:THR:HG23	2.21	0.41
1:D:162:LEU:HD23	1:D:187:PRO:HA	2.03	0.41
1:D:840:TYR:O	1:D:844:VAL:HG23	2.20	0.41
1:A:585:ILE:HG23	1:A:592:GLU:HG3	2.02	0.41
1:A:656:VAL:HG13	1:A:657:LEU:HD22	2.03	0.41
1:B:656:VAL:HG13	1:B:657:LEU:HD22	2.03	0.41
1:B:766:ASP:O	1:B:774:ARG:NH1	2.54	0.41
1:B:1293:HIS:ND1	1:B:1293:HIS:O	2.54	0.41
1:C:162:LEU:HD23	1:C:187:PRO:HA	2.03	0.41
1:A:162:LEU:HD23	1:A:187:PRO:HA	2.03	0.41
1:B:2365:ASN:O	1:B:2368:SER:OG	2.39	0.41
1:C:656:VAL:HG13	1:C:657:LEU:HD22	2.03	0.41
1:D:656:VAL:HG13	1:D:657:LEU:HD22	2.03	0.41
1:B:655:CYS:O	1:B:661:ASN:ND2	2.53	0.40
1:C:1203:HIS:NE2	1:C:1245:LEU:HD21	2.36	0.40
1:D:1203:HIS:NE2	1:D:1245:LEU:HD21	2.36	0.40
1:A:1203:HIS:NE2	1:A:1245:LEU:HD21	2.36	0.40
1:B:1911:LEU:O	1:B:1911:LEU:HD22	2.22	0.40
1:C:1911:LEU:O	1:C:1911:LEU:HD22	2.22	0.40
1:C:2009:ASP:OD1	1:C:2010:SER:N	2.53	0.40
1:D:197:SER:HG	1:D:199:TYR:HD2	1.67	0.40
1:D:2365:ASN:O	1:D:2368:SER:OG	2.39	0.40
1:C:1293:HIS:O	1:C:1293:HIS:ND1	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:840:TYR:O	1:A:844:VAL:HG23	2.20	0.40
1:B:840:TYR:O	1:B:844:VAL:HG23	2.20	0.40
1:B:1043:SER:OG	1:B:1044:MET:N	2.54	0.40
1:C:2367:ARG:NH2	1:D:2352:GLU:OE2	2.50	0.40
1:D:1224:ILE:O	1:D:1228:THR:HG23	2.21	0.40
1:A:766:ASP:O	1:A:774:ARG:NH1	2.54	0.40
1:A:1097:LEU:C	1:A:1098:LEU:HD12	2.42	0.40
1:D:766:ASP:O	1:D:774:ARG:NH1	2.54	0.40
1:D:1056:LEU:HD22	1:D:1694:TYR:CD1	2.57	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	2139/2671 (80%)	2043 (96%)	96 (4%)	0	100	100
1	B	2139/2671 (80%)	2042 (96%)	97 (4%)	0	100	100
1	C	2139/2671 (80%)	2042 (96%)	97 (4%)	0	100	100
1	D	2139/2671 (80%)	2042 (96%)	97 (4%)	0	100	100
All	All	8556/10684 (80%)	8169 (96%)	387 (4%)	0	100	100

There are no Ramachandran outliers to report.

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

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	1874/2385 (79%)	1848 (99%)	26 (1%)	62	79
1	B	1874/2385 (79%)	1848 (99%)	26 (1%)	62	79
1	C	1874/2385 (79%)	1848 (99%)	26 (1%)	62	79
1	D	1874/2385 (79%)	1848 (99%)	26 (1%)	62	79
All	All	7496/9540 (79%)	7392 (99%)	104 (1%)	62	79

All (104) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	77	THR
1	A	94	GLN
1	A	139	LEU
1	A	186	ASN
1	A	269	LEU
1	A	538	LEU
1	A	566	ASP
1	A	787	ASP
1	A	862	GLU
1	A	1024	ASN
1	A	1055	PHE
1	A	1300	LEU
1	A	1622	HIS
1	A	1691	LEU
1	A	1760	LEU
1	A	1911	LEU
1	A	2008	HIS
1	A	2051	HIS
1	A	2121	THR
1	A	2222	PHE
1	A	2282	LEU
1	A	2402	LEU
1	A	2502	PHE
1	A	2520	PHE
1	A	2541	CYS
1	A	2554	SER
1	B	77	THR
1	B	94	GLN
1	B	139	LEU
1	B	186	ASN
1	B	269	LEU
1	B	538	LEU
1	B	566	ASP

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	787	ASP
1	B	862	GLU
1	B	1024	ASN
1	B	1055	PHE
1	B	1300	LEU
1	B	1622	HIS
1	B	1691	LEU
1	B	1760	LEU
1	B	1911	LEU
1	B	2008	HIS
1	B	2051	HIS
1	B	2121	THR
1	B	2222	PHE
1	B	2282	LEU
1	B	2402	LEU
1	B	2502	PHE
1	B	2520	PHE
1	B	2541	CYS
1	B	2554	SER
1	C	77	THR
1	C	94	GLN
1	C	139	LEU
1	C	186	ASN
1	C	269	LEU
1	C	538	LEU
1	C	566	ASP
1	C	787	ASP
1	C	862	GLU
1	C	1024	ASN
1	C	1055	PHE
1	C	1300	LEU
1	C	1622	HIS
1	C	1691	LEU
1	C	1760	LEU
1	C	1911	LEU
1	C	2008	HIS
1	C	2051	HIS
1	C	2121	THR
1	C	2222	PHE
1	C	2282	LEU
1	C	2402	LEU
1	C	2502	PHE

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Mol	Chain	Res	Type
1	C	2520	PHE
1	C	2541	CYS
1	C	2554	SER
1	D	77	THR
1	D	94	GLN
1	D	139	LEU
1	D	186	ASN
1	D	269	LEU
1	D	538	LEU
1	D	566	ASP
1	D	787	ASP
1	D	862	GLU
1	D	1024	ASN
1	D	1055	PHE
1	D	1300	LEU
1	D	1622	HIS
1	D	1691	LEU
1	D	1760	LEU
1	D	1911	LEU
1	D	2008	HIS
1	D	2051	HIS
1	D	2121	THR
1	D	2222	PHE
1	D	2282	LEU
1	D	2402	LEU
1	D	2502	PHE
1	D	2520	PHE
1	D	2541	CYS
1	D	2554	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (19) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	869	ASN
1	A	1199	ASN
1	A	1288	HIS
1	A	1337	ASN
1	B	869	ASN
1	B	1199	ASN
1	B	1288	HIS
1	B	1337	ASN
1	C	402	ASN

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Mol	Chain	Res	Type
1	C	869	ASN
1	C	1076	GLN
1	C	1199	ASN
1	C	1288	HIS
1	C	1337	ASN
1	C	1773	HIS
1	D	402	ASN
1	D	869	ASN
1	D	1199	ASN
1	D	1288	HIS

### 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 4 ligands modelled in this entry, 4 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

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:TRP	C	1587:ASP	N	49.53
1	B	1552:TRP	C	1587:ASP	N	49.53
1	C	1552:TRP	C	1587:ASP	N	49.53
1	D	1552:TRP	C	1587:ASP	N	49.53
1	A	1484:ARG	C	1490:ALA	N	15.78
1	B	1484:ARG	C	1490:ALA	N	15.78
1	C	1484:ARG	C	1490:ALA	N	15.78
1	D	1484:ARG	C	1490:ALA	N	15.78
1	A	1533:ARG	C	1541:ALA	N	15.69
1	B	1533:ARG	C	1541:ALA	N	15.69
1	C	1533:ARG	C	1541:ALA	N	15.69
1	D	1533:ARG	C	1541:ALA	N	15.69
1	A	2252:TYR	C	2260:SER	N	7.83
1	B	2252:TYR	C	2260:SER	N	7.83
1	C	2252:TYR	C	2260:SER	N	7.83
1	D	2252:TYR	C	2260:SER	N	7.83
1	A	1508:GLY	C	1515:ALA	N	7.09
1	B	1508:GLY	C	1515:ALA	N	7.09
1	C	1508:GLY	C	1515:ALA	N	7.09
1	D	1508:GLY	C	1515:ALA	N	7.09

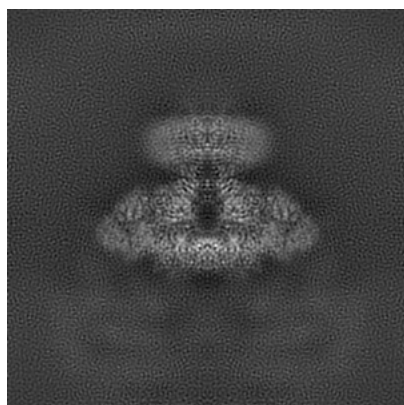
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-7978. These allow visual inspection of the internal detail of the map and identification of artifacts.

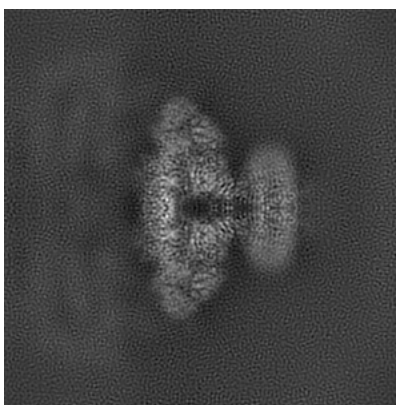
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

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

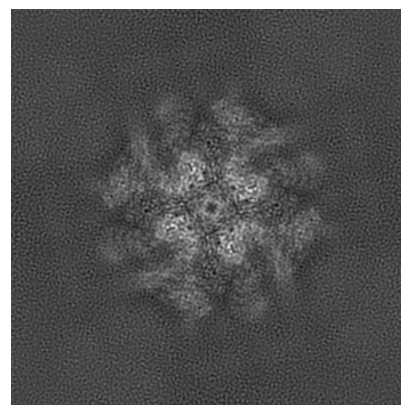
#### 6.1.1 Primary map



X



Y

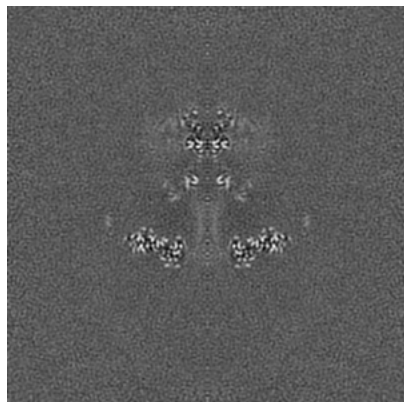


Z

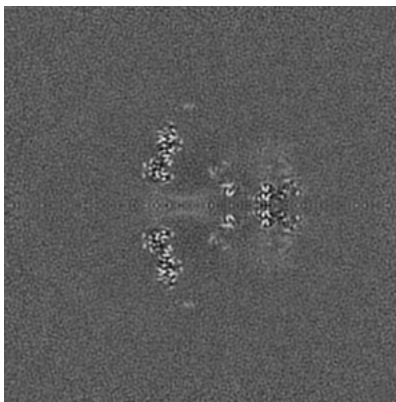
The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

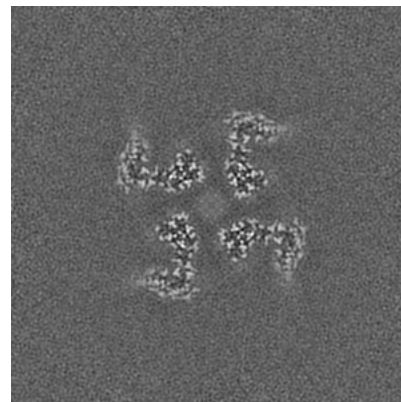
#### 6.2.1 Primary map



X Index: 192



Y Index: 192



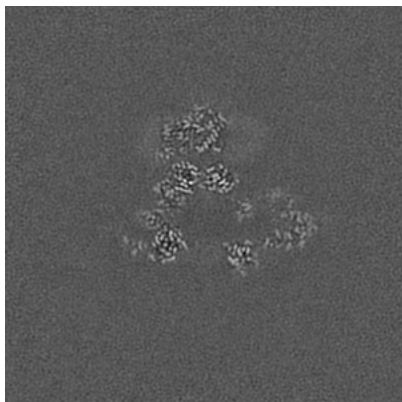
Z Index: 192



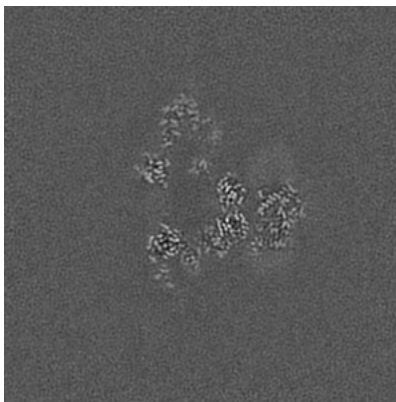
The images above show central slices of the map in three orthogonal directions.

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

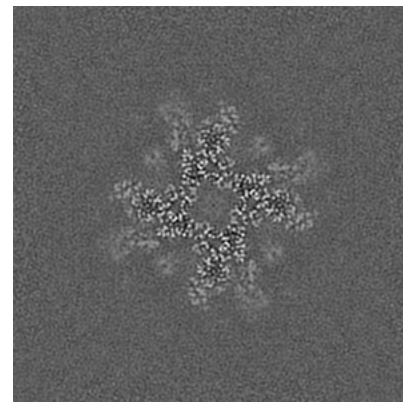
### 6.3.1 Primary map



X Index: 207



Y Index: 177

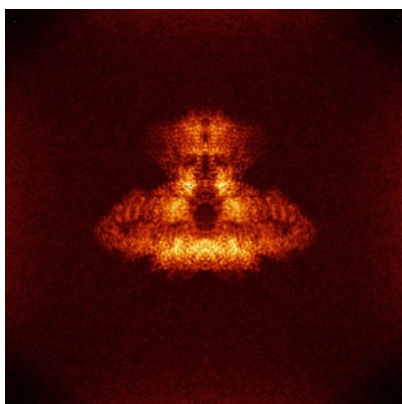


Z Index: 155

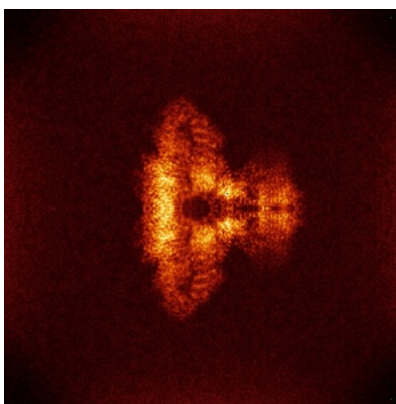
The images above show the largest variance slices of the map in three orthogonal directions.

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

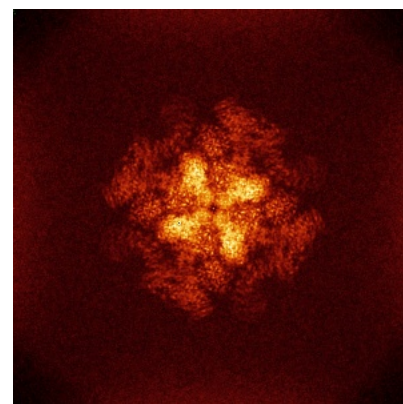
### 6.4.1 Primary map



X



Y



Z

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](#)

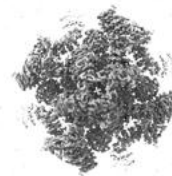
### 6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 5.72. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

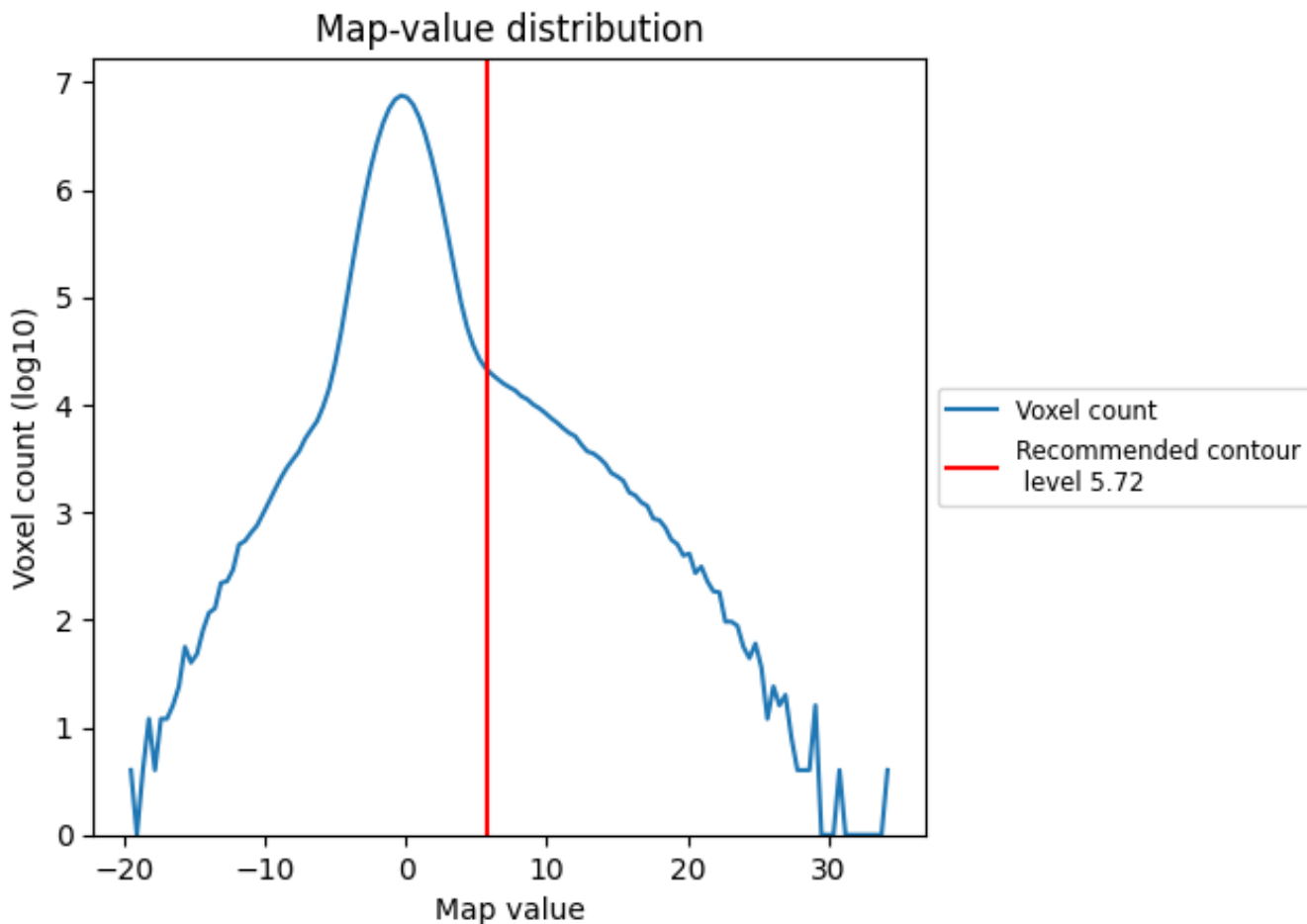
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

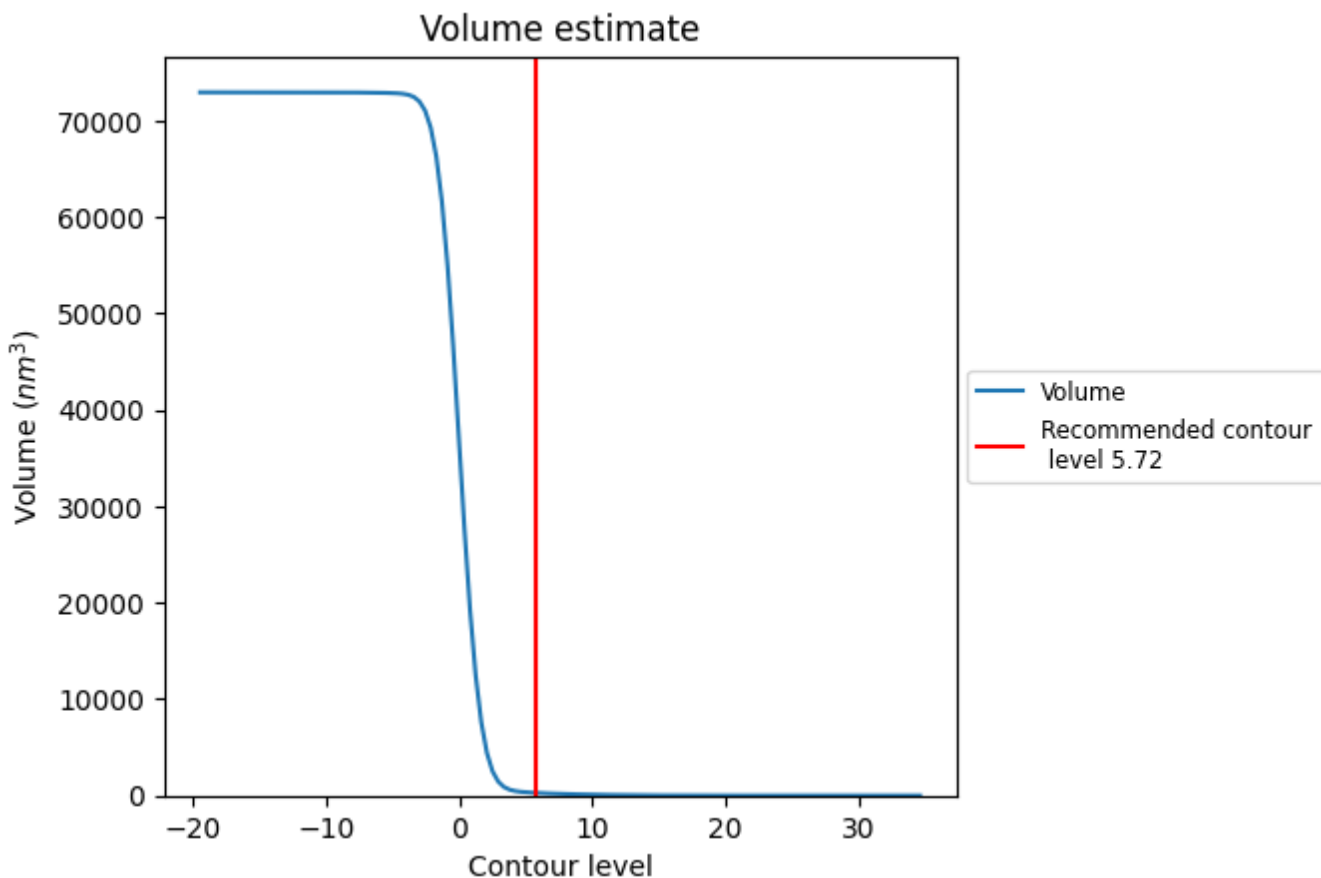
This section contains the results of statistical analysis of the map.

### 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.

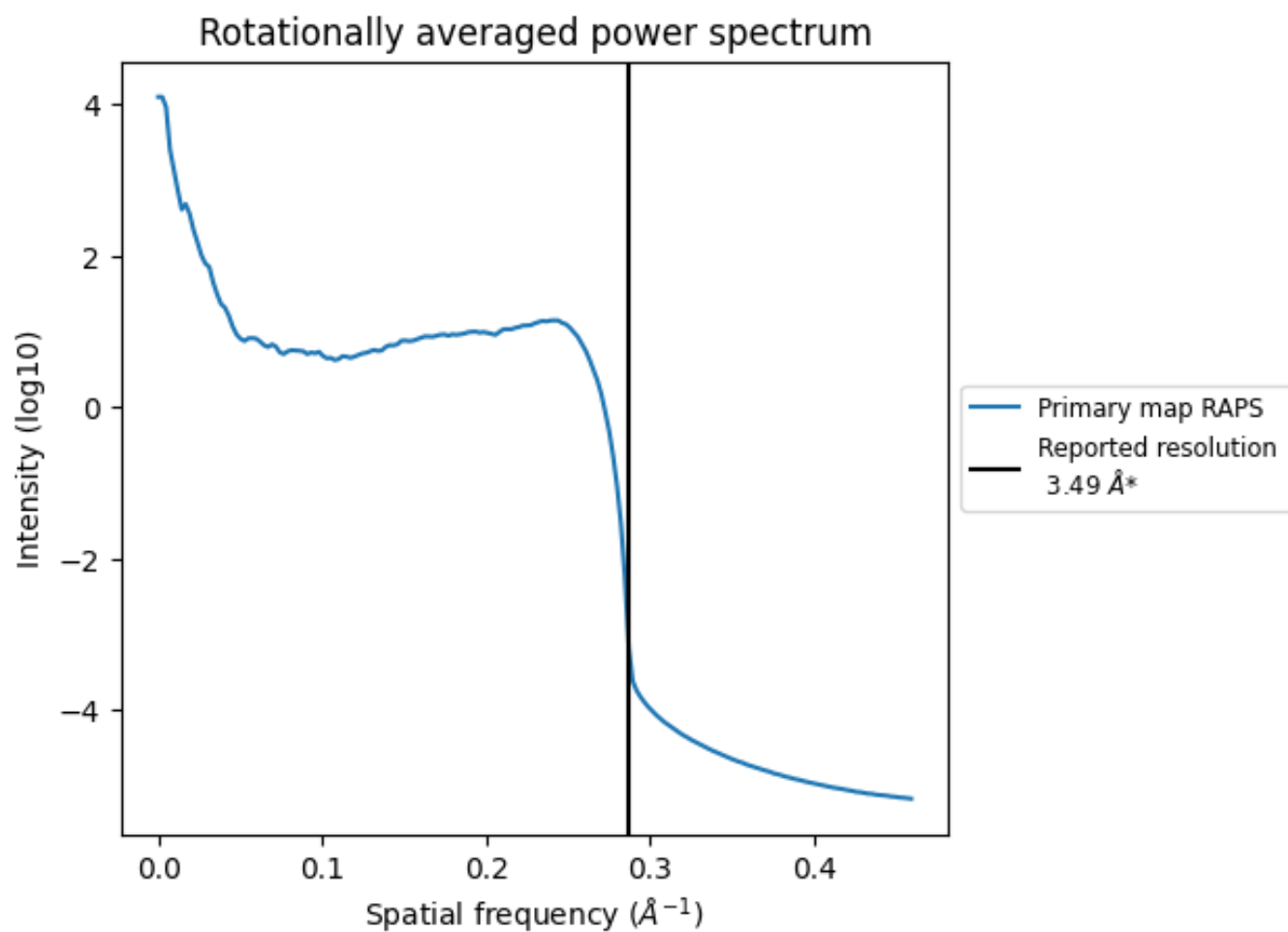
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 279 nm<sup>3</sup>; this corresponds to an approximate mass of 252 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  $0.287 \text{\AA}^{-1}$

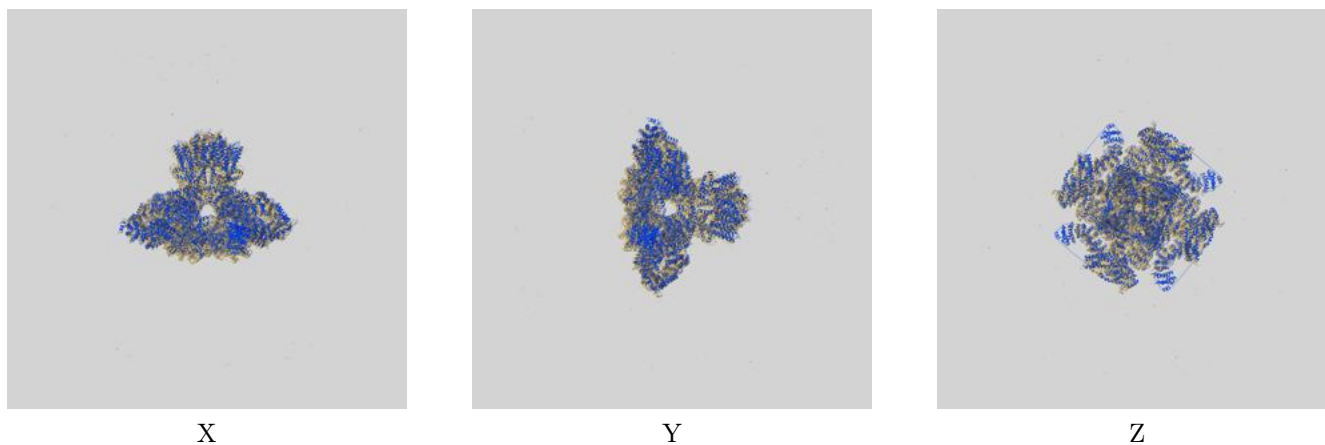
## 8 Fourier-Shell correlation

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

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

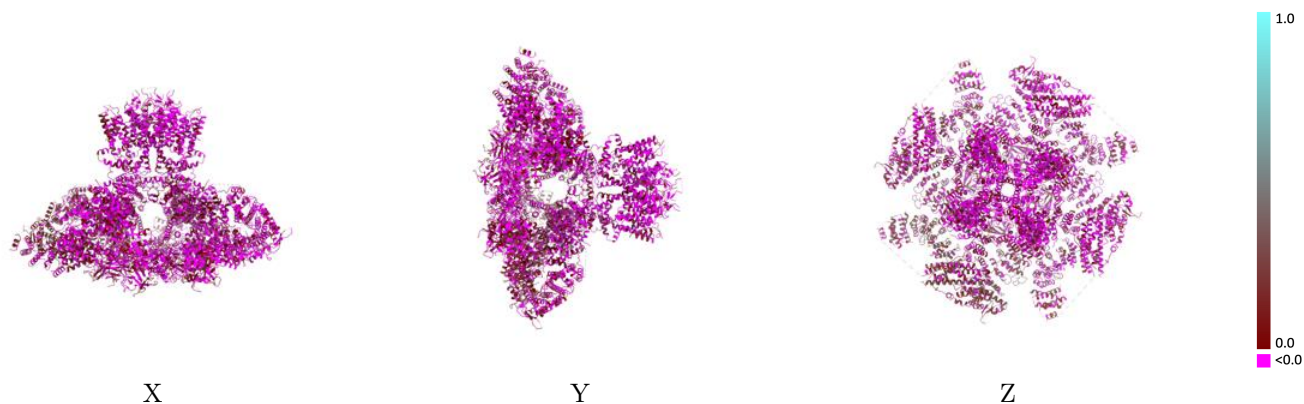
This section contains information regarding the fit between EMDB map EMD-7978 and PDB model 6DQJ. Per-residue inclusion information can be found in section 3 on page 4.

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



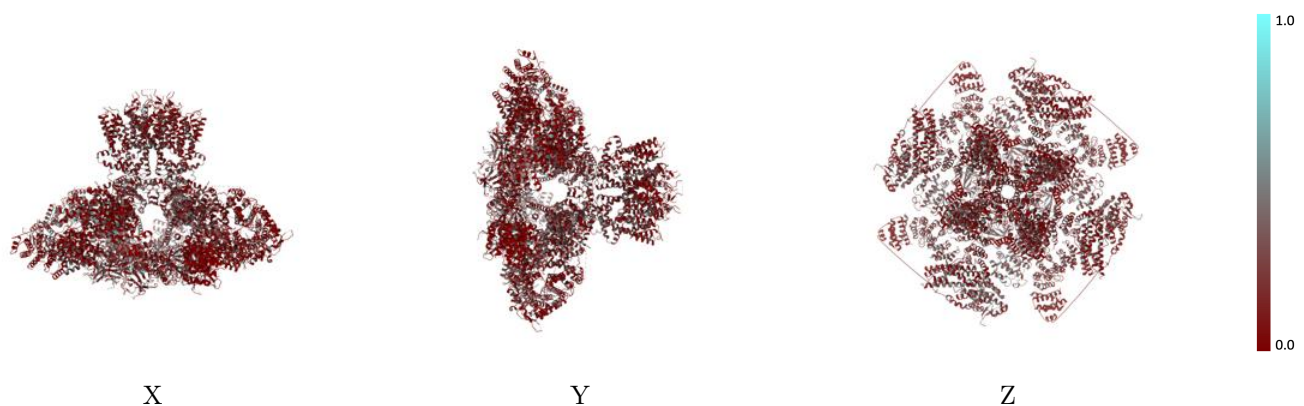
The images above show the 3D surface view of the map at the recommended contour level 5.72 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 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.

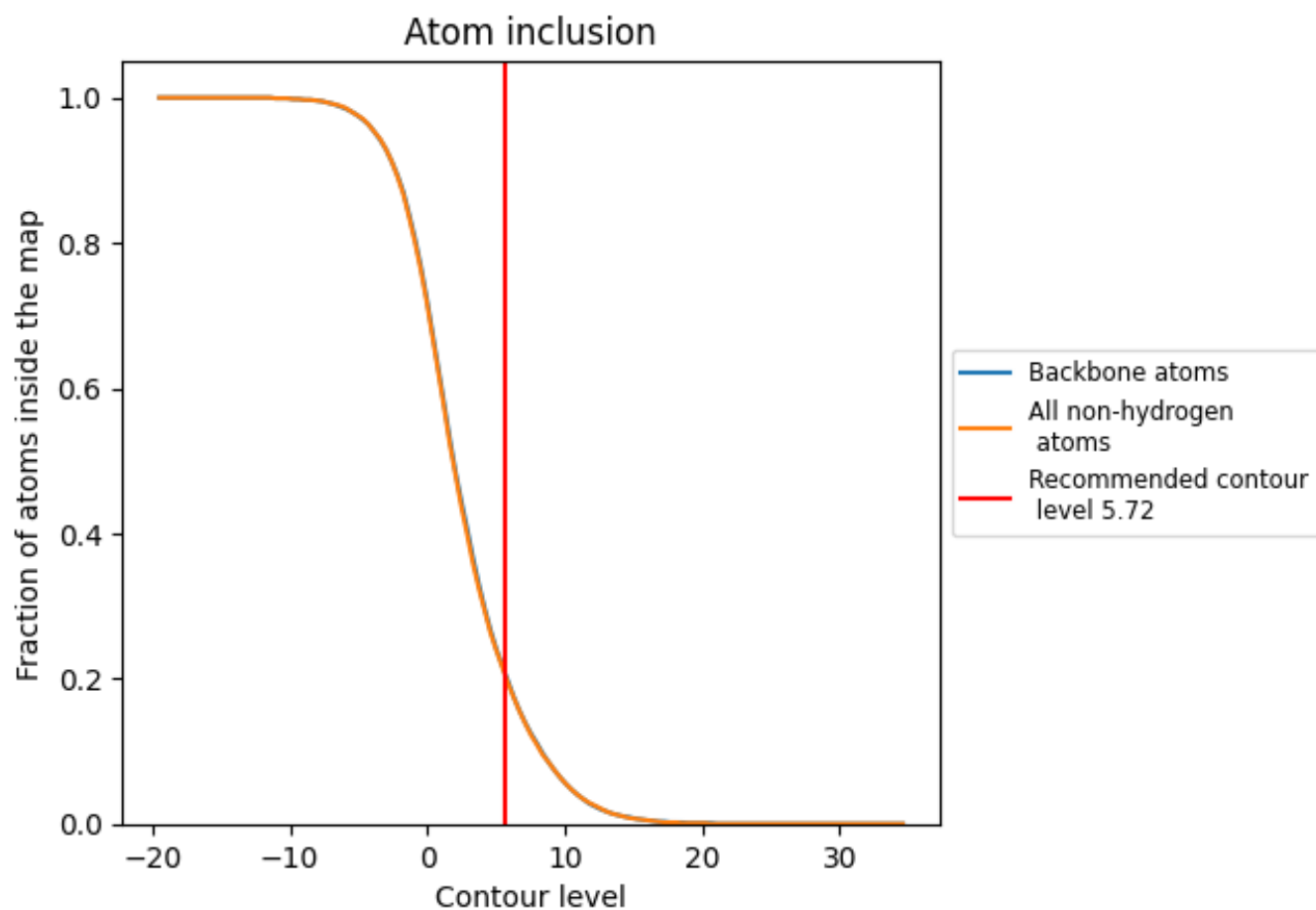
## 9.3 Atom inclusion mapped to coordinate model [i](#)



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 (5.72).













## 9.4 Atom inclusion [i](#)



At the recommended contour level, 20% of all backbone atoms, 20% 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 (5.72) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.2020	 0.0040
A	 0.1850	 -0.0320
B	 0.2120	 0.0190
C	 0.2350	 0.0570
D	 0.1840	 -0.0260

