



wwPDB EM Validation Summary Report ⓘ

Nov 12, 2024 – 06:48 AM EST

PDB ID : 9E1A
EMDB ID : EMD-47387
Title : Structure of RyR1 in the primed state in the presence of dyphylline
Authors : Miotto, M.C.; Marks, A.R.
Deposited on : 2024-10-21
Resolution : 3.35 Å (reported)
Based on initial model : 7TZC

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev113
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
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

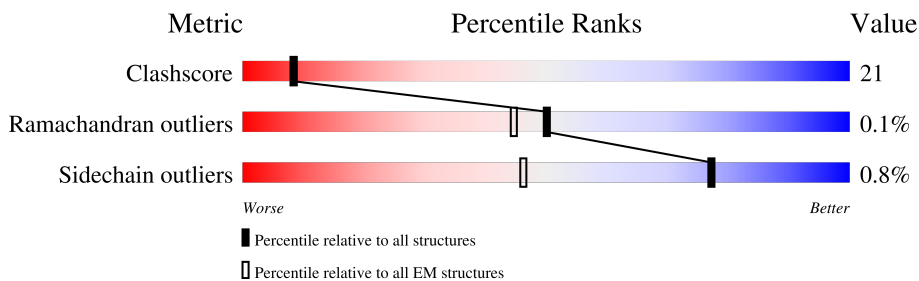
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.35 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	5037	
1	B	5037	
1	C	5037	
1	D	5037	
2	E	108	
2	F	108	
2	G	108	
2	H	108	

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 144128 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Ryanodine receptor 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	4404	Total	C	N	O	S	9	0
			35150	22365	6063	6485	237		
1	B	4404	Total	C	N	O	S	9	0
			35150	22365	6063	6485	237		
1	D	4404	Total	C	N	O	S	9	0
			35150	22365	6063	6485	237		
1	C	4404	Total	C	N	O	S	9	0
			35150	22365	6063	6485	237		

- Molecule 2 is a protein called Peptidyl-prolyl cis-trans isomerase FKBP1A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	E	107	Total	C	N	O	S	0	0
			831	527	146	154	4		
2	H	107	Total	C	N	O	S	0	0
			831	527	146	154	4		
2	G	107	Total	C	N	O	S	0	0
			831	527	146	154	4		
2	F	107	Total	C	N	O	S	0	0
			831	527	146	154	4		

- Molecule 3 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
3	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
3	B	1	Total	C	N	O	P	0
			31	10	5	13	3	
3	D	1	Total	C	N	O	P	0
			31	10	5	13	3	
3	C	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 4 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		AltConf
			Total	Ca	
4	A	1	Total	Ca	0
			1	1	
4	B	1	Total	Ca	0
			1	1	
4	D	1	Total	Ca	0
			1	1	
4	C	1	Total	Ca	0
			1	1	

- Molecule 5 is ZINC ION (three-letter code: ZN) (formula: Zn).

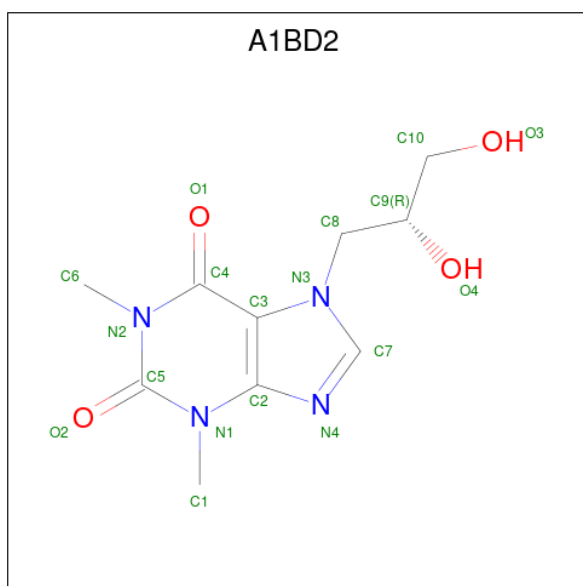
Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
5	A	1	Total	Zn	0
			1	1	

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

- Molecule 6 is dyphylline (three-letter code: A1BD2) (formula: $C_{10}H_{14}N_4O_4$) (labeled as "Ligand of Interest" by depositor).

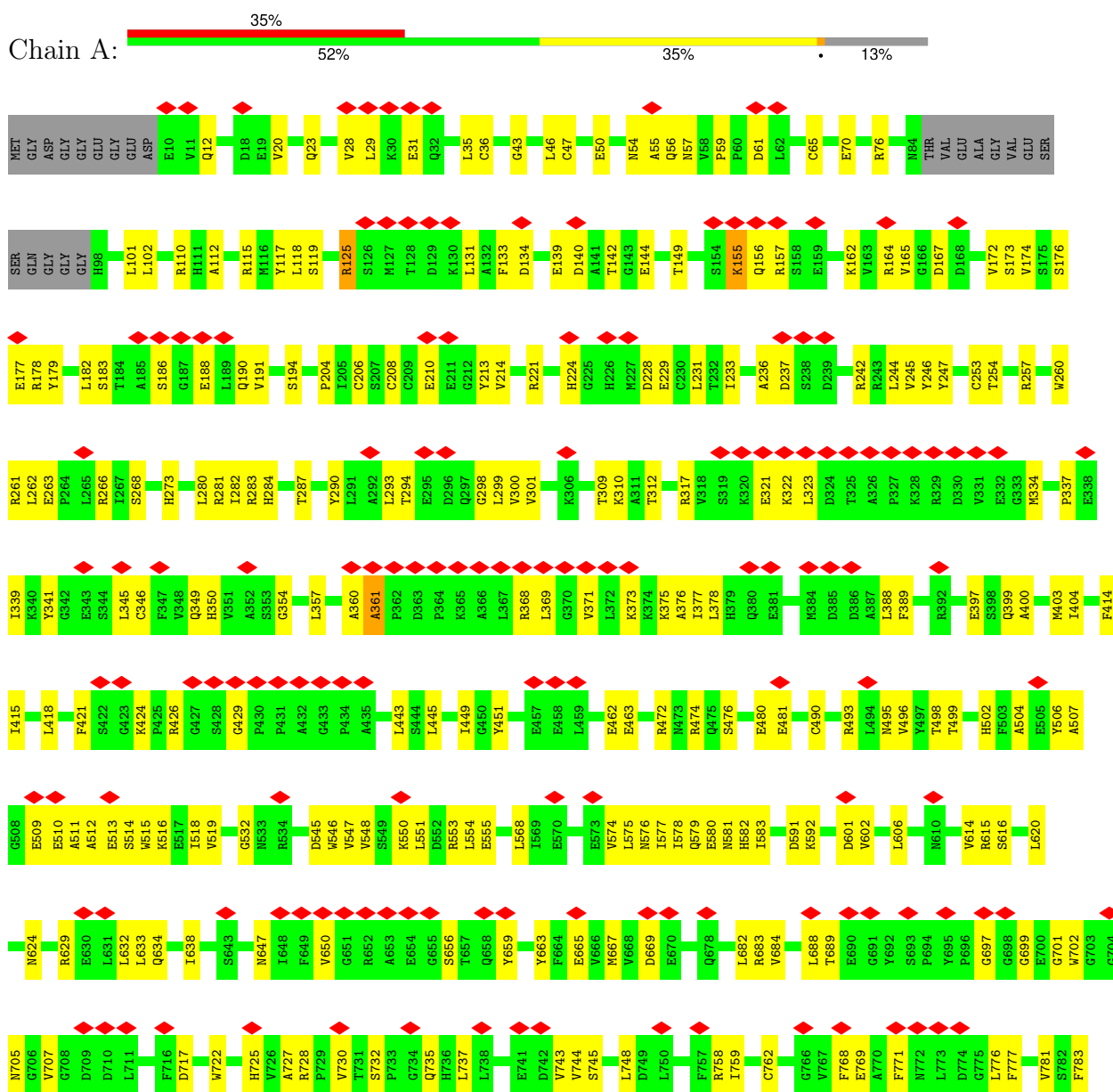


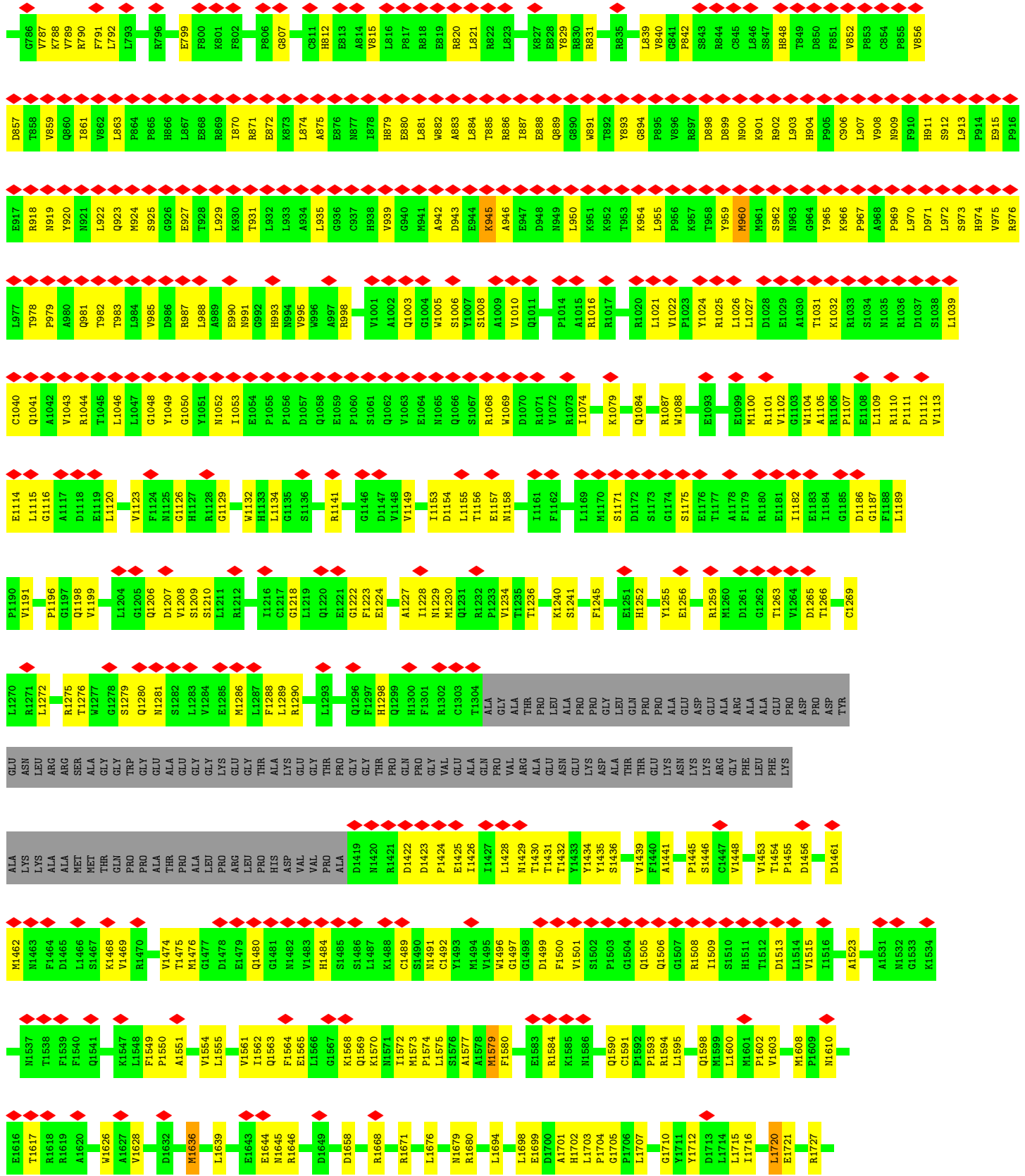
Mol	Chain	Residues	Atoms				AltConf
6	A	1	Total	C	N	O	0
			18	10	4	4	
6	B	1	Total	C	N	O	0
			18	10	4	4	
6	D	1	Total	C	N	O	0
			18	10	4	4	
6	C	1	Total	C	N	O	0
			18	10	4	4	

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.

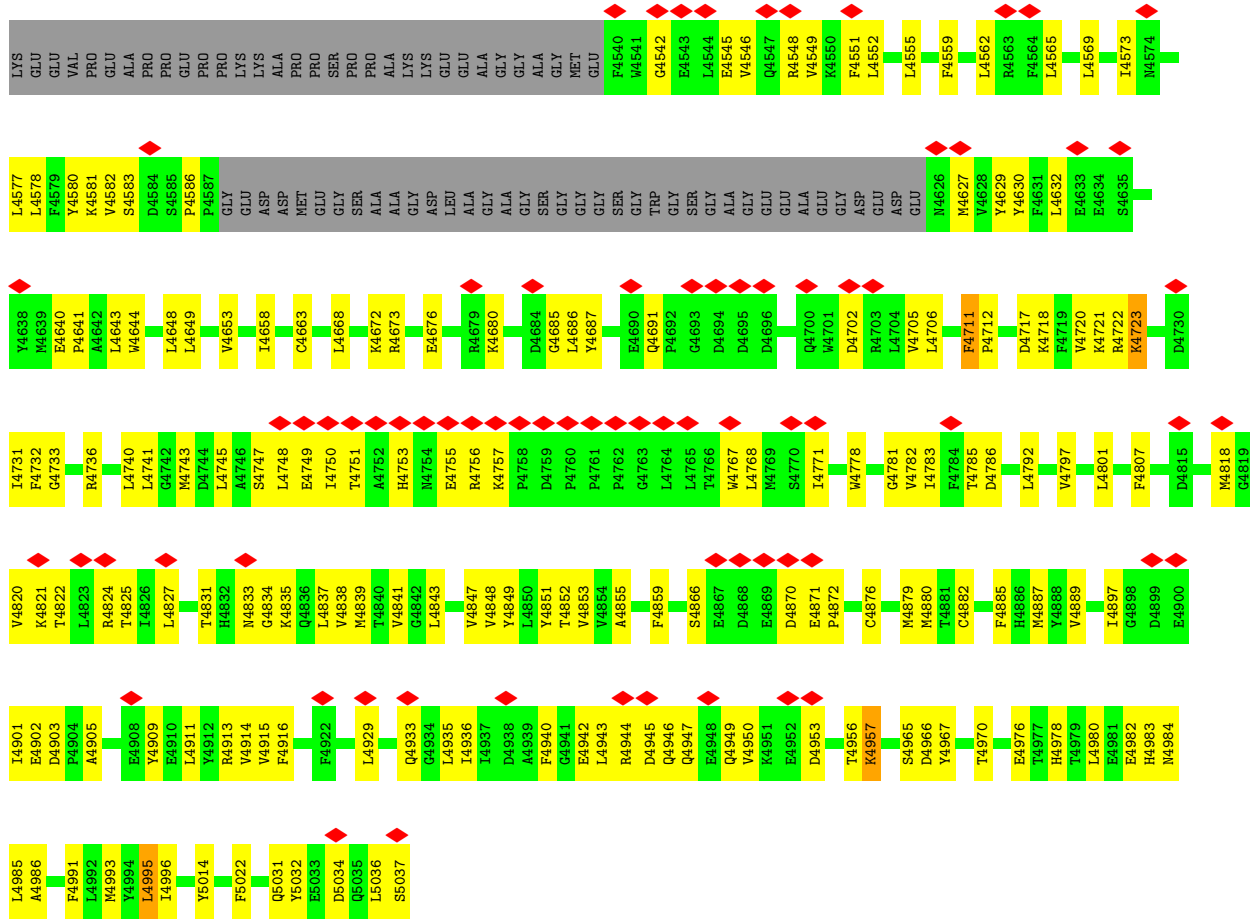
• Molecule 1: Ryanodine receptor 1



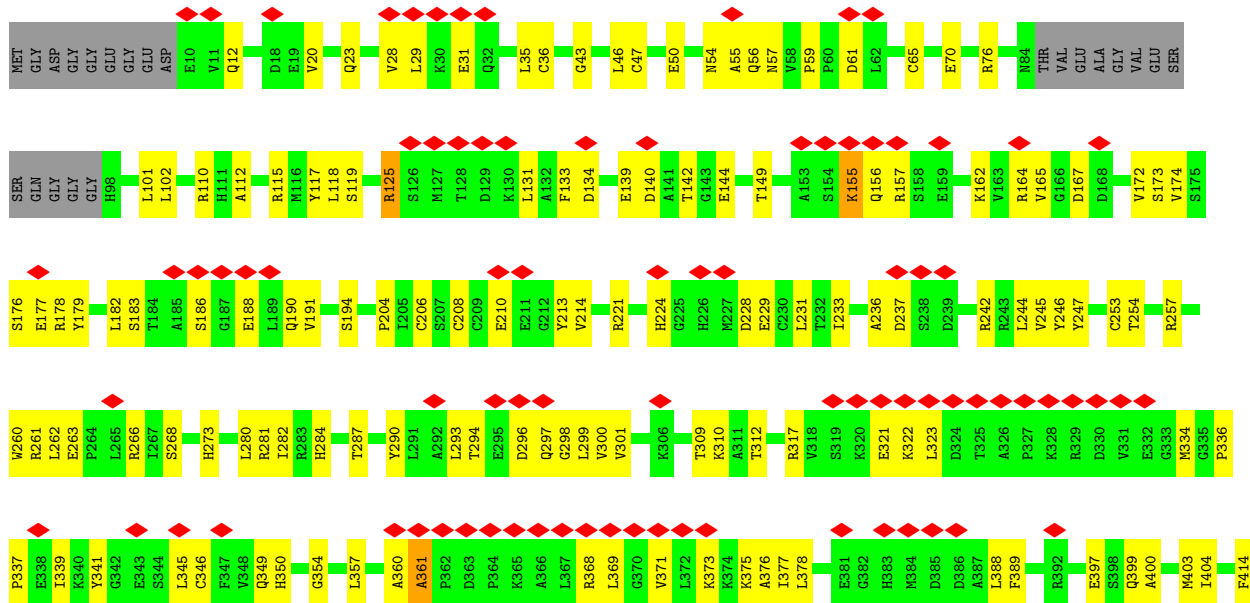


E1733	E1741	E1742	I1745	P1749	P1750	G1751	R1752	K1753	G1754	G1755	N1756	R1758	R1759	L1762	L1771	R1772	P1773	S1778	F1782	V1783	A1784	A1785	L1786	P1787	A1788	A1789	G1790	V1791	A1792	E1793	A1794	P1795	A1796	R1797	L1798	L1804	E1805	A1806	R1813	M1814	L1815	G1816	E1817	A1818	V1819	R1820	D1821	G1822	G1823																																								
Q1824	R1827	V1830	E1835	F1836	V1839	L1842	T1847	L1848	L1849	M1851	G1855	D1856	E1857	V1858	K1860	K1861	L1862	L1863	M1865	E1869	E1873	E1874	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	GLU	ASP	GLU	GLU	GLU	L1893	L1922	E1923	E1924	G1925	L1926	L1927	M1929	K1930	L1931	V1935	K1936	L1937	Q1938	M1939	Y1945	E1950	E1956	A1960	F1961	A1962	R1964	Y1965	V1966	L1969	M1972	Q1973	R1976	Y1977																			
A1978	L1979	L1980	M1981	R1982	A1983	F1984	T1985	M1986	S1987	A1988	A1989	E1990	A1992	R1993	R1994	T1995	R1996	E1997	F1998	R1999	S2000	E2004	M2008	L2009	L2010	H2011	F2012	K2013	D2014	E2015	A2016	D2017	E2018	E2019	D2020	C2021	F2022	L2023	P2024	E2025	D2026	L2027	R2028	Q2029	L2031	Q2032	F2033	D2034	H2035	Q2036	D2037	L2038	H2041																																				
Q2045	L2046	GLU	GLY	GLU	GLU	GLU	GLU	GLU	PRO	GLU	GLU	GLU	THR	THR	SER	LEU	LEU	LEU	SER	ARG	LEU	ARG	LEU	VAL	VAL	VAL	LYS	LYS	GLU	GLU	PRO	GLU	GLU	GLU	K2089	K2090	P2091	S2093	E2096	L2097	V2102	W2105	D2109	Y2110	V2111																																												
Q2112	L2116	M2120	F2121	S2122	L2123	Q2127	Y2128	D2129	E2133	L2134	L2135	L2138	F2139	R2140	A2141	Y2142	P2146	V2149	E2150	D2151	T2152	S2154	L2155	Q2161	L2165	L2166	V2168	Q2169	M2170	Q2173	E2174	E2175	R2176	L2177	M2178	T2182	G2183	M2184	T2185	M2186	P2195	M2196	L2197	M2198	R2199																																												
A2200	L2201	H2204	E2205	T2206	V2207	M2208	E2209	M2210	M2211	V2212	N2213	V2214	L2215	G2216	G2217	G2218	E2219	T2220	K2221	E2222	I2223	R2224	F2225	M2228	V2229	T2230	S2231	Q2232	C2233	Y2238	F2239	R2241	I2242	S2243	R2244	Q2245	N2246	Q2247	R2248	S2249	D2252	L2253	L2254	S2255	Y2256	L2257	L2258	E2259	N2260	S2261	G2262	I2263	G2264	L2265																																			
G2266	M2267	Q2268	G2269	S2270	T2271	D2274	V2275	S2279	D2282	F2285	L2286	A2287	L2288	A2289	L2290	Q2291	E2292	Q2293	D2294	L2295	E2296	K2297	V2298	C2305	G2306	L2307	Q2308	S2309	G2310	L2313	L2314	A2315	K2316	G2317	Y2318	P2319	D2320	L2321	N2324	P2325	G2326	G2327	G2328	E2329	R2330	Y2331	L2332	D2333	F2334	L2335	R2336																																						
F2340	V2341	E2347	E2348	R2349	A2350	N2351	V2352	V2353	V2354	R2355	L2358	R2359	F2364	L2368	R2369	G2370	E2371	G2372	L2376	L2377	L2380	E2381	E2382	A2383	L2384	R2385	T2386	S2387	E2388	D2389	P2390	A2391	R2392	D2393	G2394	P2395	G2396	V2397	ARG	ARG	ASP	ASP	ARG	ARG	GLU	GLU	HIS	PHE	D2440	G2441	G2442	L2443	Q2444	K2447	G2448	E2449	A2450	L2451	R2452	L2453	R2454	R2458	S2459	L2460	V2461	P2462	L2463	D2464	D2465	L2466	V2467	G2468	L2469	L2472	F2473	L2474	Q2475	Q2476	L2477	F2477	T2478	L2479	G2480	K2481	D2482	G2483	A2484	P2410	E2412
E2413	M2414	R2415	V2416	H2417	L2418	H2419	H2420	F2425	I2430	D2431	G2434	R2435	G2436	A2437	R2440	H2441	L2442	T2443	Q2444	K2447	G2448	E2449	A2450	L2451	R2452	L2453	R2454	R2458	S2459	L2460	V2461	P2462	L2463	D2464	D2465	L2466	V2467	G2468	L2469	L2472	F2473	L2474	Q2475	Q2476	L2477	F2477	T2478	L2479	G2480	K2481	D2482	G2483	A2484																																				
L2485	V2486	Q2487	P2488	K2489	M2490	S2491	A2492	S2493	F2494	V2495	P2496	D2497	H2498	K2499	M2502	F2505	R2508	V2509	Y2510	G2511	L2512	E2513	N2514	Q2515	D2516	F2517	L2518	L2519	H2520	D2523	V2524	G2525	F2526	L2527	P2528	D2529	M2530	R2531	A2532	A2533	A2534	S2535	L2536	D2537	T2538	A2539	T2540	F2541	S2542	L2543	T2544	E2545	M2546	A2549																																			
R2552	Y2553	L2554	C2555	L2556	L2562	T2563	K2564	C2565	A2566	P2567	L2568	F2569	A2570	G2571	T2572	E2573	H2574	R2575	A2576	L2577	M2578	V2579	D2580	S2581	M2582	L2583	H2584	T2585	V2586	Y2587	R2588	L2589	S2590	R2591	C2592	R2593	S2594	L2595	A2598	Q2599	R2600	D2601	V2602	L2603	E2604	L2607	M2608	A2609	L2610	C2611	R2612	Y2613	I2614	R2615	P2616																																		
S2617	M2618	L2622	L2623	R2624	R2625	L2626	V2627	F2628	P2631	L2632	L2633	M2634	E2635	F2636	A2637	L2641	R2642	L2643	L2644	H2647	V2648	E2649	R2650	C2651	V2655	R2656	L2657	P2658	T2659	C2660	N2663	F2664	V2666	T2667	S2668	E2669	E2670	E2671	L2672	H2673	T2674	L2675	R2676	K2677	L2678	F2679	M2680	G2681	L2682	D2684	S2685																																						

L2686	L2687	A2688	H2688	K2689	K2690	Y2691	D2692	Q2693	E2694	L2695	Y2696	R2697	H2698	K2699	K2700	P2701	C2702	L2703	C2704	A2705	L2706	A2707	G2708	A2709	L2710	P2711	P2712	D2713	Y2714	V2715	D2716	A2717	S2718	Y2719	S2720	S2721	K2722	A2723	E2724	K2725	LYS	ALA	THR	VAL	ASP	ALA	GLU	GLY	N2734	P2735	D2736	P2737	H2738	P2739	V2740	E2741	T2742	L2743	N2744	K2745								
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• Molecule 1: Ryanodine receptor 1

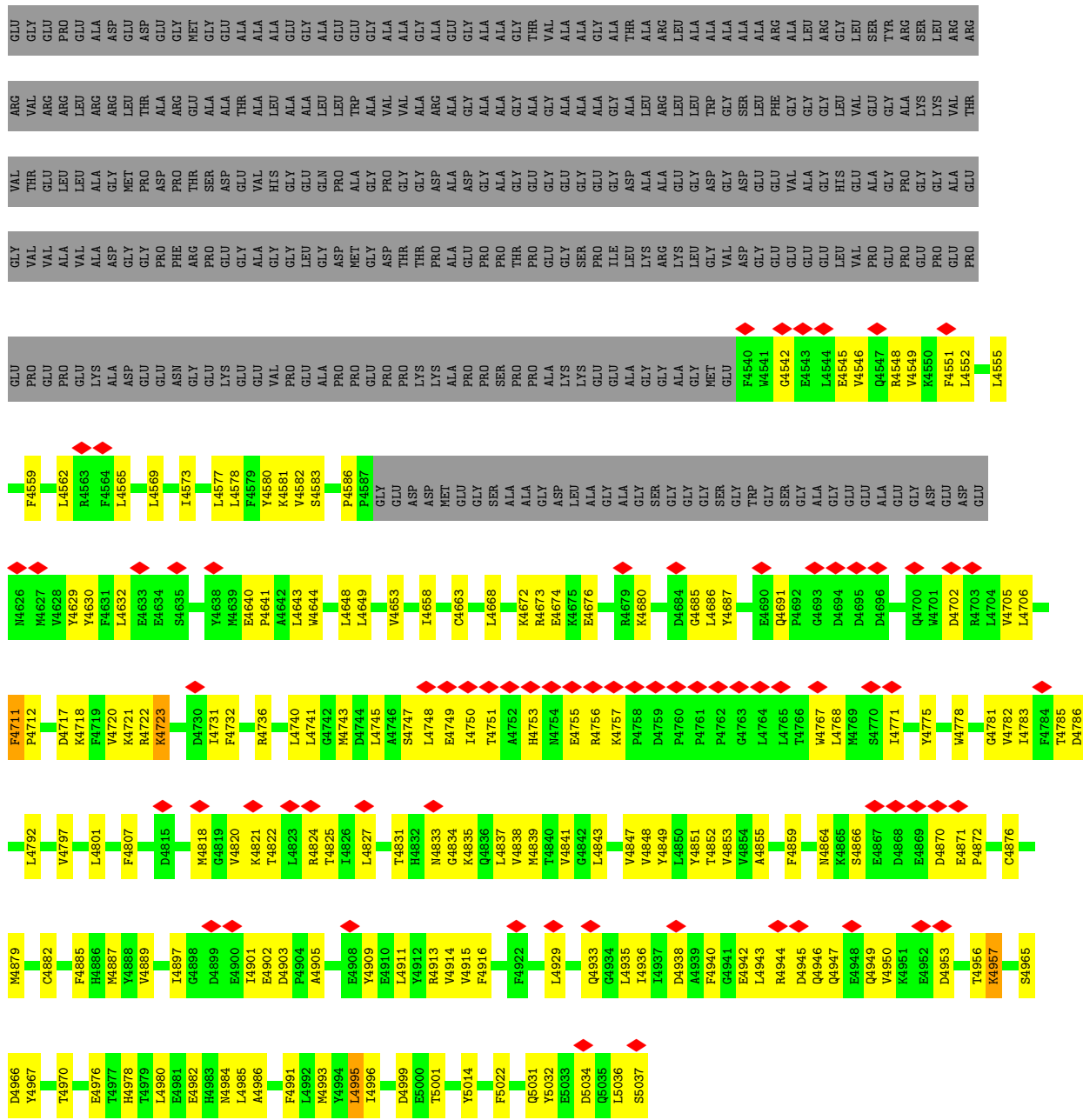


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ARG	T1430	GLY	G1262	E1181	E1107	S1034	D971	H911	F851	S782	G704	E510	F421
GLY	P1431	PRO	G1263	E1182	E1108	N1035	L972	S912	V652	F783	G706	A511	S422
PHE	P1432	ASP	V1264	I1183	L1109	R1036	S973	S913	P853	G786	G708	E513	G423
PHE	P1433	ASP	D1265	I1184	R1110	D1037	H974	L914	C854	V787	D709	S514	G424
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LYS	P1436	ALA	F1188	F1188	L1114	L1040	R977	E917	D857	V791	L711	K517	G427
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GLN	P1442	TRP	G1197	G1197	T1045	T1045	T982	L923	L663	I648	I649	D545	A433
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ALA	P1445	GLU	Q1280	Q1280	G1048	G1048	S925	S925	P865	V850	I649	V548	A435
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GLY	P1448	LYS	V1283	V1283	G1050	G1050	E927	E927	P868	A653	I649	V549	L445
GLY	P1449	GLY	H1127	H1127	Y1051	Y1051	T928	T928	E868	H654	I649	V549	L446
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THR	P1451	THR	M1286	M1286	I1053	I1053	A889	A889	E870	T857	I649	V549	L448
ALA	P1452	ALA	L1287	L1287	E1054	E1054	E990	E990	E871	Q858	I649	V549	L449
HIS	P1453	ALA	F1288	F1288	P1055	P1055	N991	N991	E872	H659	I649	V549	L450
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PRO	P1462	PRO	E1224	E1224	V1063	V1063	G940	G940	E880	Y671	I649	V549	L459
GLY	P1463	GLY	H1298	H1298	E1064	E1064	N941	N941	L881	Y672	I649	V549	L460
GLY	P1464	VAL	F1301	F1301	M1065	M1065	A942	A942	H882	Y673	I649	V549	L461
GLY	P1465	ALA	H1302	H1302	E1066	E1066	V1005	V1005	H883	Y674	I649	V549	L462
GLY	P1466	GLY	C1303	C1303	Q1066	Q1066	S1006	S1006	A883	Y675	I649	V549	L463
GLN	P1467	GLN	T1304	T1304	S1067	S1067	E944	E944	L884	Y676	I649	V549	L464
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ALA	P1470	ALA	THR	THR	W1010	W1010	V1010	V1010	L887	Y679	I649	V549	L467
ALA	P1471	ALA	ALA	ALA	D1070	D1070	Q1011	Q1011	E947	Y680	I649	V549	L468
GLY	P1472	GLY	PRO	PRO	R1071	R1071	V1012	V1012	D948	Y681	I649	V549	L469
ASN	P1473	ASN	LEU	LEU	V1072	V1072	P1014	P1014	E888	Y682	I649	V549	L470
GLY	P1474	GLY	ALA	ALA	R1073	R1073	A1015	A1015	Q889	Y683	I649	V549	L471
LEU	P1475	LEU	I1074	I1074	I1074	I1074	A1016	A1016	G890	Y684	I649	V549	L472
THR	P1476	THR	F1075	F1075	R1017	R1017	R1016	R1016	W891	Y685	I649	V549	L473
THR	P1477	THR	M1169	M1169	K1017	K1017	T892	T892	R891	Y686	I649	V549	L474
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GLN	P1479	GLN	S1171	S1171	Q1084	Q1084	K954	K954	G894	Y688	I649	V549	L476
PRO	P1480	PRO	D1172	D1172	L1021	L1021	L955	L955	P895	Y689	I649	V549	L477
ALA	P1481	ALA	S1173	S1173	V1022	V1022	P956	P956	V896	Y690	I649	V549	L478
ALA	P1482	ALA	G1174	G1174	P1023	P1023	K957	K957	R897	Y691	I649	V549	L479
ASP	P1483	ASP	S1175	S1175	Y1024	Y1024	T958	T958	R898	Y692	I649	V549	L480
GLY	P1484	GLY	E1176	E1176	L1025	L1025	D899	D899	D899	Y693	I649	V549	L481
ALA	P1485	ALA	ALA	ALA	L1026	L1026	R901	R901	N900	Y694	I649	V549	L482
ALA	P1486	ALA	L1177	L1177	L1027	L1027	K961	K961	N901	Y695	I649	V549	L483
ALA	P1487	ALA	A1178	A1178	D1028	D1028	S962	S962	K902	Y696	I649	V549	L484
ALA	P1488	ALA	M1100	M1100	E1029	E1029	N963	N963	L903	Y697	I649	V549	L485
ALA	P1489	ALA	R1101	R1101	V1102	V1102	G964	G964	H904	Y698	I649	V549	L486
ALA	P1490	ALA	G1103	G1103	W1104	W1104	Y965	Y965	P905	Y699	I649	V549	L487
ARG	P1491	ARG	W1104	W1104			P967	P967	L907	Y700	I649	V549	L488
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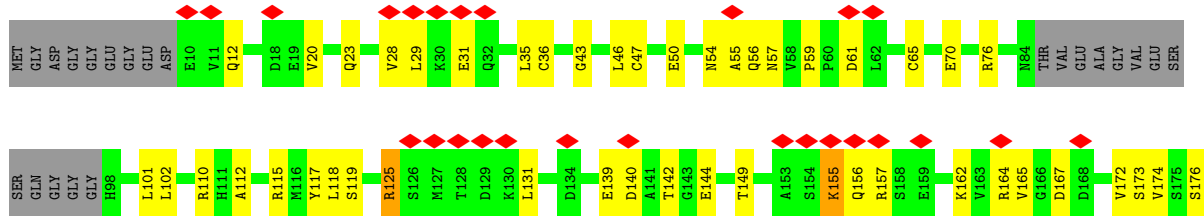


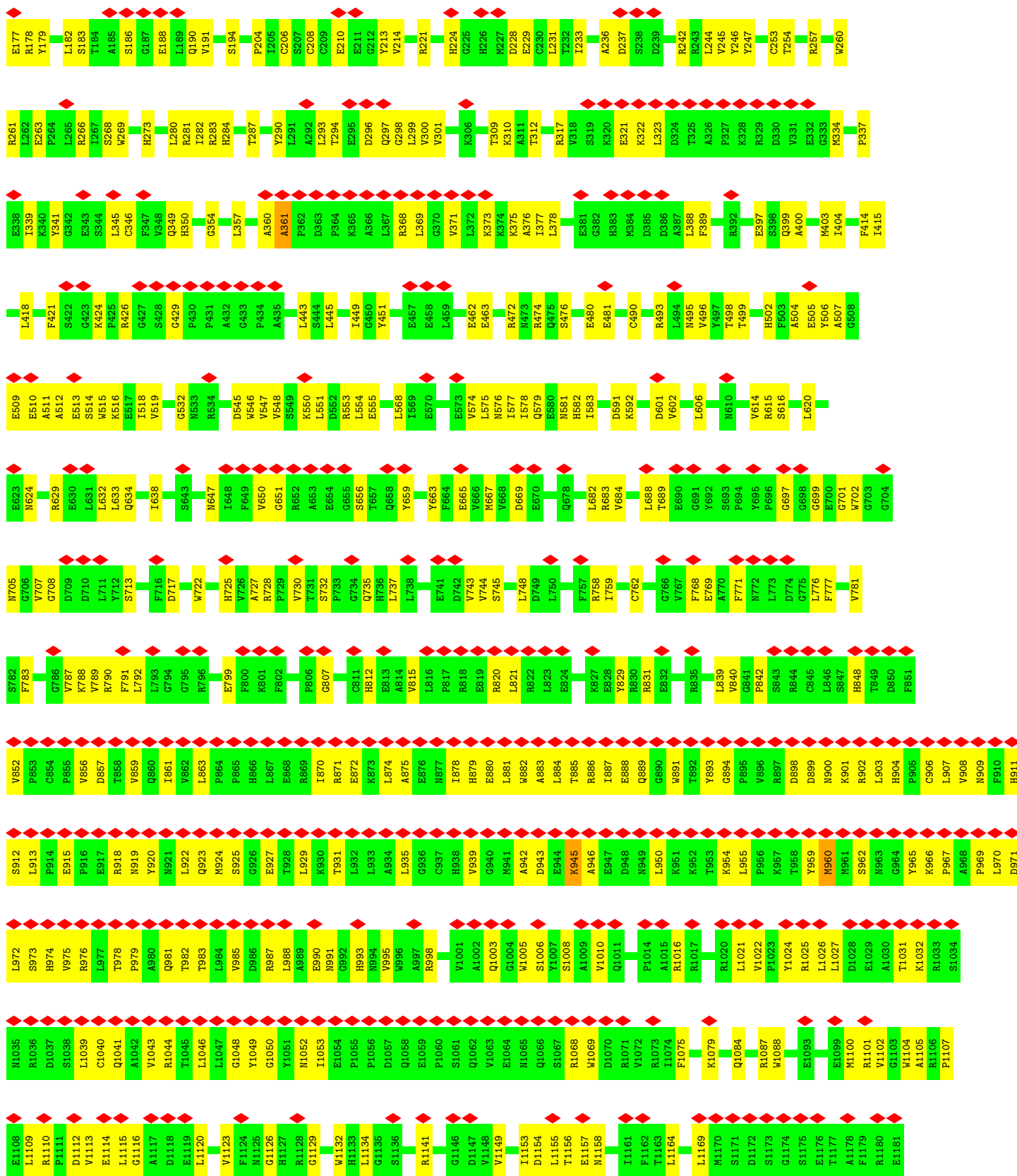
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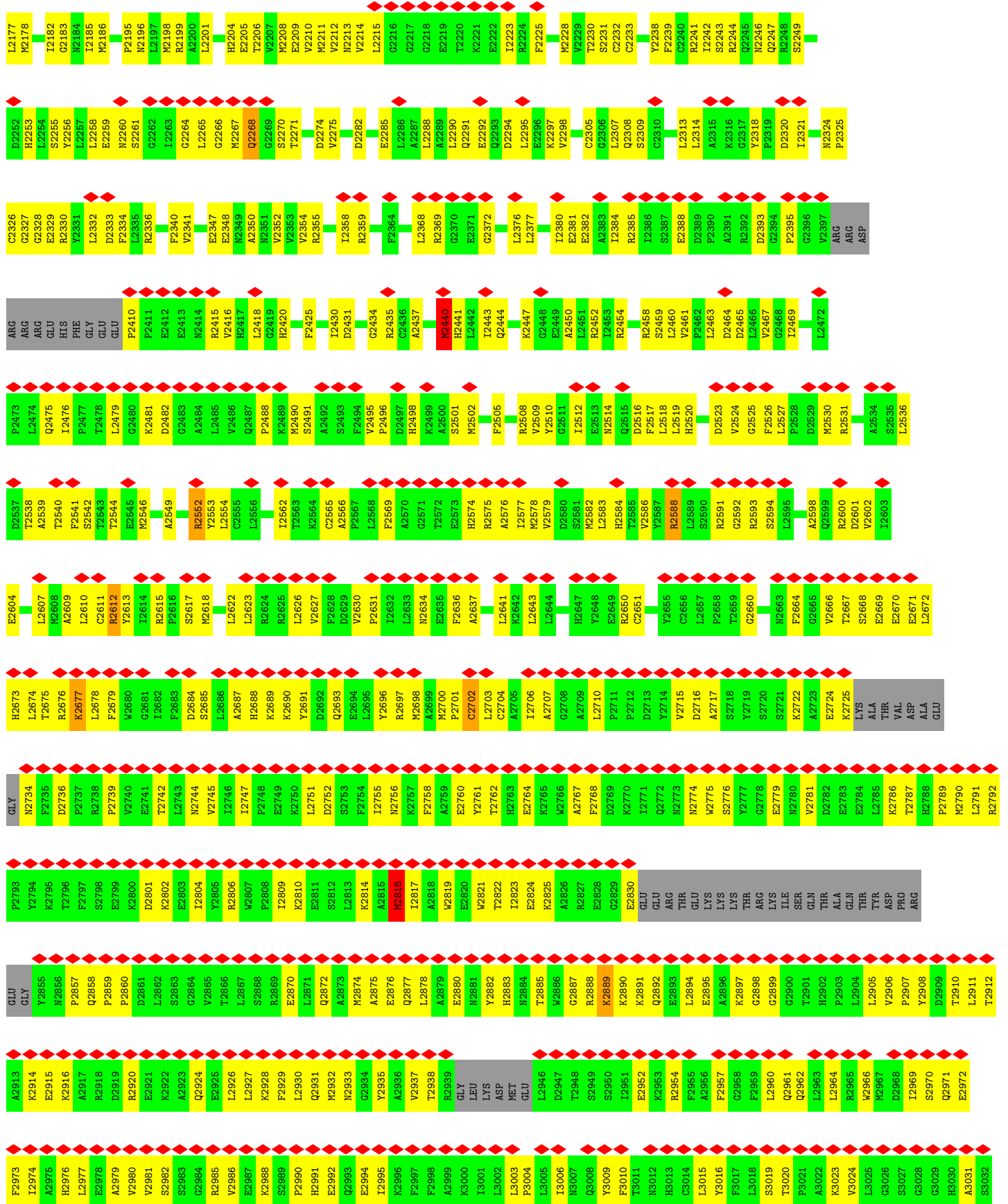
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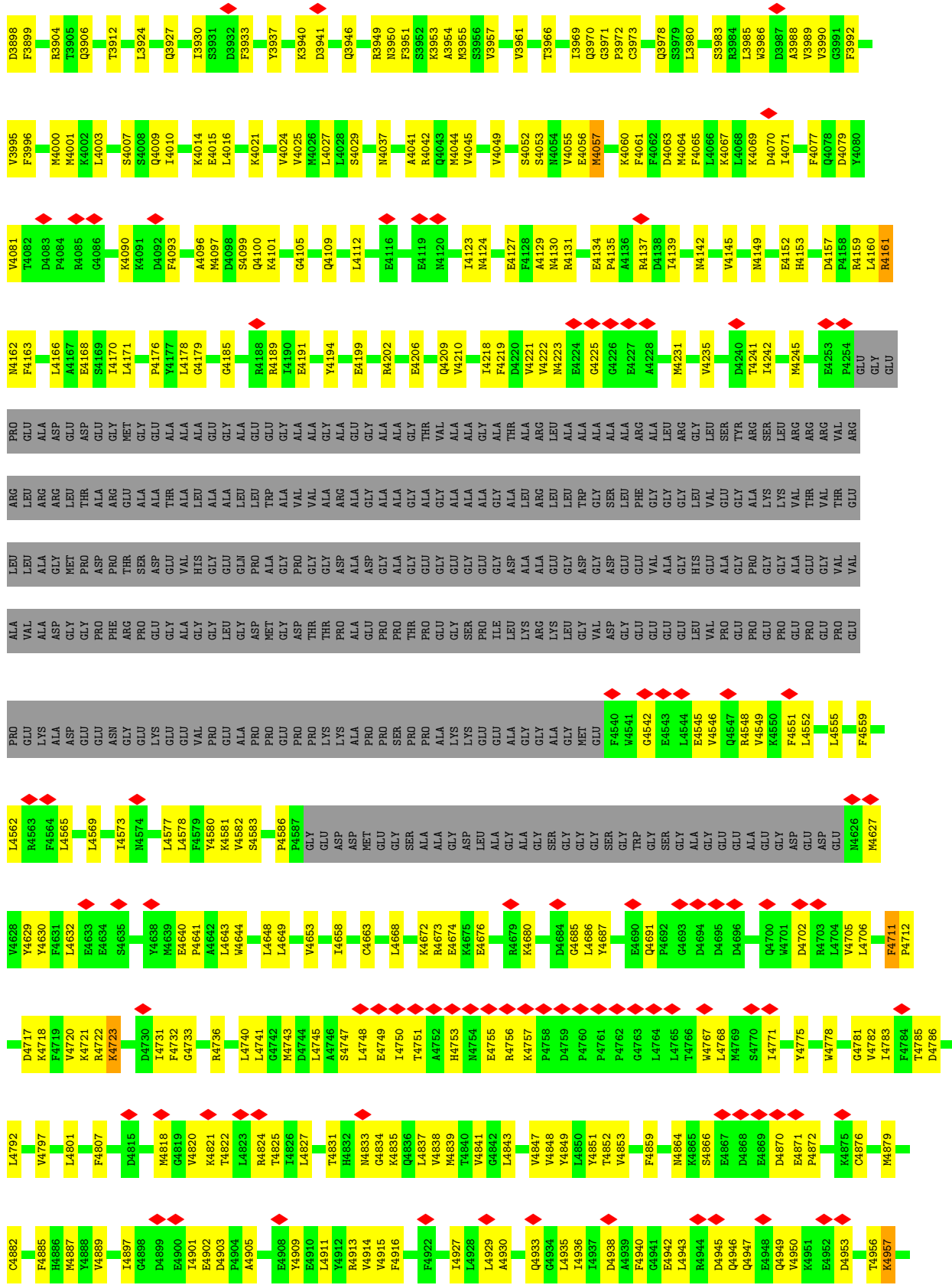
• Molecule 1: Ryanodine receptor 1

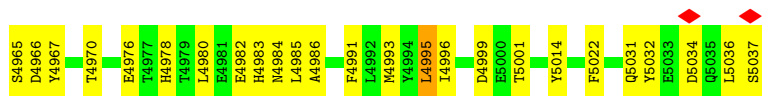




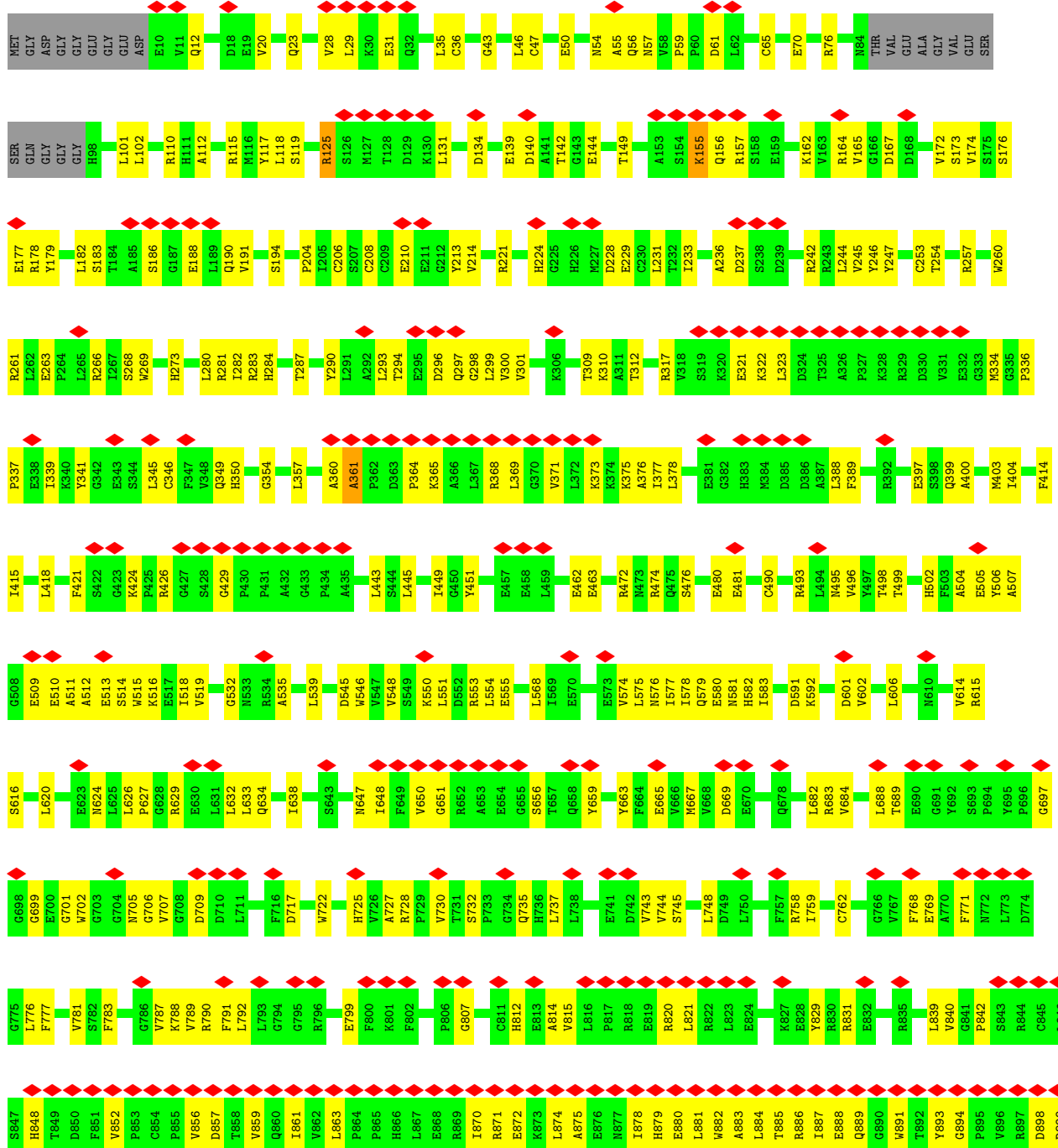


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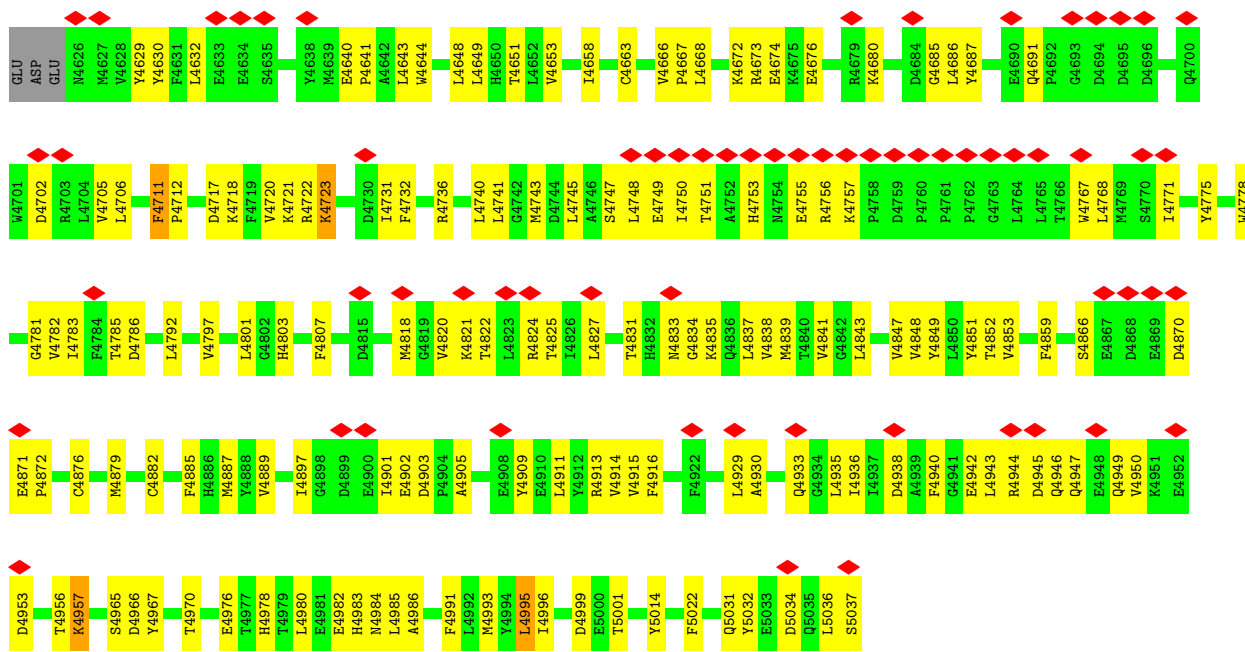
• Molecule 1: Ryanodine receptor 1



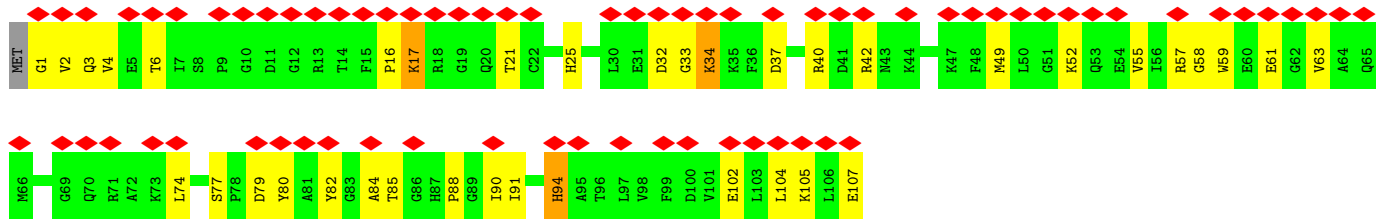
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K954	R1020	L1021	S1171	F1245	PRO	PRO	Y1435	D1499	F1580	G1790	GLU
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	D1948	GLU	Q2161	Q2233	C2310	S2387	S2459	L2519	V2587	C2651	D2712	Q2772
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	E1950	GLU	L2165	Q2233	C2310	S2387	V2461	H2520	R2588	Y2655	Y2714	N2773
		GLU	L2166	G2240	L2314	D2389	P2462	D2523	R2588	C2656	V2715	N2774
		PRO	I2167	I2241	A2315	P2390	L2463	V2524	L2589	L2657	D2716	N2774
		ALA	Q2169	S2243	G2317	A2391	D2464	G2525	S2590	P2658	A2717	N2775
		GLU	M2170	R2244	Y2318	R2393	L2466	F2526	R2591	T2659	S2718	S2776
		GLU		Q2245	D2320	G2394	V2467	P2528	G2592	G2660	Y2719	V2777
		GLU			D2320	G2394	Q2468	P2528	R2593	Y2663	S2720	G2778
		GLU			D2320	G2394	Q2468	P2528	S2594	Y2663	S2721	E2779
		GLU			D2320	G2394	Q2468	P2528	L2595	Y2663	K2722	N2780
		GLU			D2320	G2394	Q2468	P2528	A2598	Y2663	Y2781	N2780
		GLU			D2320	G2394	Q2468	P2528	Q2599	Y2663	D2782	N2781
		GLU			D2320	G2394	Q2468	P2528	Q2599	Y2663	E2783	N2781
		GLU			D2320	G2394	Q2468	P2528	Q2599	Y2663	E2784	N2781
		GLU			D2320	G2394	Q2468	P2528	Q2599	Y2663	L2785	N2781
		GLU			D2320	G2394	Q2468	P2528	Q2599	Y2663	K2786	N2781
		GLU			D2320	G2394	Q2468	P2528	Q2599	Y2663	T2787	N2781
		GLU			D2320	G2394	Q2468	P2528	Q2599	Y2663	ALA	N2781
		GLU			D2320	G2394	Q2468	P2528	Q2599	Y2663	THR	N2781

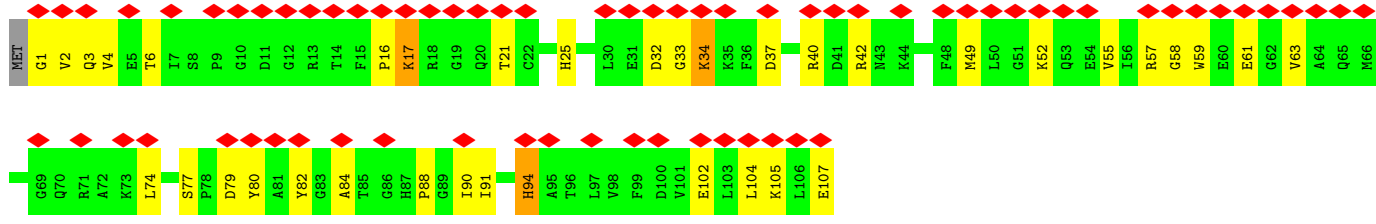
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A3512	F3451	E3391	E3331	E3271	N3211	H3150	A3090	H3030	S2970	T2910	ASP	M2790
T3513	K3452	L3392	A3332	I3272	E3212	Q3151	G3091	A3031	Q2971	L2911	PRU	L2790
L3514	R3453	L3393	T3333	T3273	Y3213	F3152	L3092	S3032	E2972	T2912	ARG	R2792
K3515	Q3456	V3394	W3334	L3274	N3214	G3153	R3093	K3033	F2973	A2913	GLY	P2793
R3516	N3457	R3395	K3335	P3275	A3215	D3154	S3094	K3034	K2914	K2914	Y2855	V2794
K3517	F3458	D3396	K3336	M3276	C3216	D3155	F3095	E3035	A2975	E2915	N2856	K2795
L3520	V3460	E3397	R3337	L3277	S3217	V3156	E3097	K3036	H2976	K2916	P2857	T2796
G3521	F3461	F3398	A3338	C3278	Y3218	L3157	S3098	E3037	I2977	I2917	Q2858	T2797
L3522	N3462	S3399	L3339	S3279	Y3219	L3158	A3099	M3038	P2859	R2918	P2859	S2798
N3523	N3463	V3400	V3340	Y3280	T3220	D3159	I3039	I3039	P2860	D2919	P2860	E2799
C3525	G3402	L3401	F3341	L3281	T3221	D3160	S3100	T3040	D2861	R2920	K2800	K2800
A3526	R3403	R3403	Q3942	P3282	K3222	V3161	E3101	S3041	L2862	E2921	D2802	D2802
P3527	D3404	Q3404	Q3943	R3283	S3223	Q3162	D3102	S3042	S2863	K2922	K2801	K2801
T3528	L3405	P3944	P3944	W2284	P3224	V3163	E3104	F3043	G2864	A2923	E2803	E2803
D3529	V3406	I3945	I3945	W3285	R3225	K3105	K3105	C3044	G2984	Q2924	I2804	I2804
I3530	A3407	V3946	V3946	E2286	E3226	K3106	K3106	K3045	R2985	E2925	Y2805	Y2805
D3531	L3470	L3408	S3947	G3288	R3227	V3107	V3107	L3046	V2986	L2926	R2806	R2806
L3532	Y3409	Y3409	A3949	P3289	R3227	E3108	E3108	A3047	E2987	L2927	K2807	K2807
I3533	P3410	P3410	A3949	P3289	A3228	R3167	R3167	A3048	K2988	K2928	P2808	P2808
N3534	A3472	I3229	I3229	E3290	L3230	L3168	N3109	A3048	S2989	L2927	E2870	E2870
K3535	D3473	L3411	R3350	E3290	L3230	L3169	L3110	L3049	P2989	F2929	L2871	L2871
S3474	S3474	L3412	P3351	A3291	G3231	R3111	R3111	V3050	S2989	L2930	L2871	L2871
K3475	K3475	L3413	E3352	P3292	L3232	R3112	L3112	R3051	H2991	Q2931	Q2872	E2811
S3476	R3414	L3414	L3353	P3293	L3232	G3113	G3113	H3052	E2992	M2932	A2873	S2812
K3477	L3415	R3414	L3354	P3294	P3233	S3174	S3174	R3053	E2992	M2933	M2874	S2812
M3478	Y3416	V3416	H3355	A3295	R3234	L3175	K3114	R3054	Q2994	G2934	A2875	K2813
A3479	D3417	D3417	S3356	L3296	S3235	G3176	V3115	S3055	I2995	Y2935	E2876	K2814
A3541	N3419	N3419	F3358	P3297	E3237	T3177	GLN	L3056	K2996	A2936	Q2877	W2816
L3542	R3420	R3420	I3359	A3298	E3238	T3178	ALA	F3057	F2997	L2937	L2878	L2817
K3543	R3421	R3421	P3360	G3299	M3239	K3179	ARG	G3058	F2998	T2938	A2879	A2818
I3544	A3422	H3422	T3361	A3300	C3240	N3180	THR	T3059	A2999	R2939	E2880	W2819
L3545	W3423	W3423	I3362	P3301	P3241	T3181	VAL	D3060	K3000	K2939	GLY	E2820
L3546	L3424	L3424	K3363	P3302	D3242	Y3182	K3123	A3061	I3001	LEU	N2882	W2821
E3547	T3425	T3425	R3364	P3303	I3243	V3183	G3124	P3062	L3002	LYS	W2821	W2821
E3548	E3426	E3426	L3365	C3304	P3244	E3184	V3125	A3063	L3003	ASP	H2883	T2822
V3549	P3427	P3427	R3366	T3305	V3245	K3185	K3126	V3064	L3004	NET	N2884	I2823
R3550	N3428	N3428	K3367	A3306	L3246	L3186	Q3127	V3065	L3005	GLU	T2885	E2824
E3551	A3429	A3429	R3368	V3307	D3247	R3187	N3128	N3066	I3006	D2947	W2886	K2825
L3553	N3430	N3430	A3369	T3308	R3248	P3188	L3129	C3067	N3007	T2948	G2887	A2826
L3554	A3431	A3431	G3370	S3309	R3248	A3189	L3130	L3068	Q3008	S2949	R2888	R2827
E3555	E3432	E3432	K3371	D3310	L3249	L3190	T3130	L3069	Y3009	K2889	K2889	E2828
N3556	A3433	A3433	V3372	H3311	M3250	G3191	V3131	H3069	F3010	S2950	K2890	E2828
L3557	F3435	F3435	V3373	L3312	A3251	I3192	T3132	I3070	F3010	I2951	K2891	G2829
H3558	R3436	R3436	A3374	N3313	D3252	C3193	T3133	L3071	N3012	E2952	Q2892	E2830
L3559	N3437	N3437	E3375	S3314	I3253	L3194	V3134	A3072	N3012	K2953	E2893	GLU
Q3560	W3438	W3438	E3376	L3315	G3254	A3195	A3135	R3073	H3013	R2954	L2894	GLU
L3561	G3439	G3439	E3377	L3316	G3255	R3196	L3136	S3074	G3014	F2955	E2895	GLU
L3562	R3440	R3440	L3378	K3317	L3256	L3197	L3137	L3075	L3015	F2957	A2896	LYS
L3563	L3441	L3441	L3379	N3318	A3257	R3197	F3138	D3076	F3017	K2897	K2897	LYS
E3564	T3442	T3442	L3380	I3319	S3259	A3199	V3139	A3077	L3018	G2968	G2968	LYS
L3565	F3443	F3443	L3381	L3320	S3259	A3199	L3140	R3077	L3018	F2959	G2999	THR
L3566	W3444	W3444	L3382	R3321	G3260	M3201	T3141	T3079	S3019	L2960	G2999	ARG
S3566	Y3446	Y3446	E3383	A3261	A3261	M3201	T3141	V3080	T3020	Q2961	G2900	LYS
P3567	K3447	K3447	K3384	I3322	R3262	F3202	L3143	M3081	F3021	Q2962	H2902	ILE
S3568	S3448	S3448	E3385	V3263	V3203	V3203	F3144	K3082	A3022	L2963	H2902	GLN
L3569	R3449	R3449	A3386	T3264	A3204	A3204	Q3145	S3083	K3023	L2964	P2903	THR
R3570	H3449	H3449	A3387	E3265	F3205	F3205	H3146	S3084	V3024	R2965	P2903	ALA
			E3388	M3266	L3206	L3206	I3147	G3084	L3025	W2966	L2905	GLN
			E3389	P3267	E3207	E3207	A3148	P3085	G3026	M2967	V2906	GLN
				H3268	Q3208	Q3208		I3087	S3027	D2968	P2907	THR
				V3269				V3088	S3028		Y2908	



• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1A

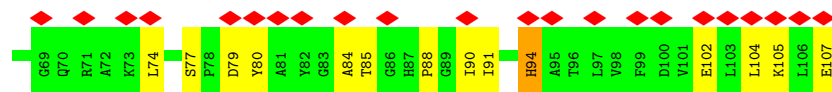


• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1A

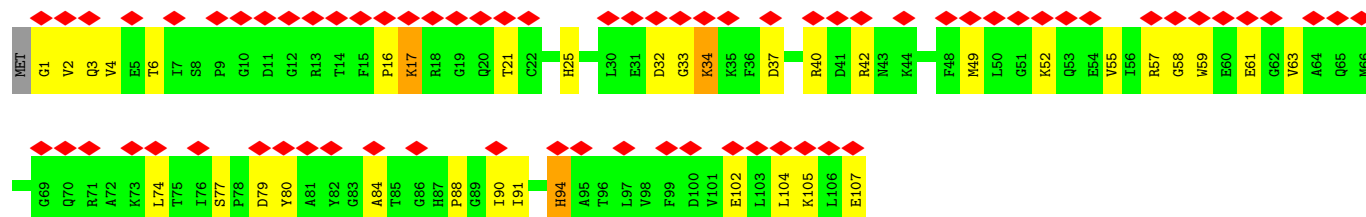


• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1A





- Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1A



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	113183	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	58	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.268	Depositor
Minimum map value	-0.112	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.016	Depositor
Recommended contour level	0.1	Depositor
Map size (Å)	427.008, 427.008, 427.008	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.834, 0.834, 0.834	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: ATP, A1BD2, 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	0.30	1/35977 (0.0%)	0.56	17/48726 (0.0%)
1	B	0.30	1/35977 (0.0%)	0.56	17/48726 (0.0%)
1	C	0.30	1/35977 (0.0%)	0.56	17/48726 (0.0%)
1	D	0.30	1/35977 (0.0%)	0.56	17/48726 (0.0%)
2	E	0.40	0/850	0.91	5/1146 (0.4%)
2	F	0.40	0/850	0.91	5/1146 (0.4%)
2	G	0.40	0/850	0.91	5/1146 (0.4%)
2	H	0.40	0/850	0.91	5/1146 (0.4%)
All	All	0.30	4/147308 (0.0%)	0.57	88/199488 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	6
1	B	0	6
1	C	0	6
1	D	0	6
All	All	0	24

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	3622	LYS	CB-CG	-5.33	1.38	1.52
1	D	3622	LYS	CB-CG	-5.33	1.38	1.52
1	B	3622	LYS	CB-CG	-5.30	1.38	1.52
1	C	3622	LYS	CB-CG	-5.30	1.38	1.52

The worst 5 of 88 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	105	LYS	CD-CE-NZ	-13.61	80.40	111.70
2	F	105	LYS	CD-CE-NZ	-13.60	80.42	111.70
2	G	105	LYS	CD-CE-NZ	-13.59	80.44	111.70
2	H	105	LYS	CD-CE-NZ	-13.58	80.47	111.70
2	F	34	LYS	CD-CE-NZ	13.16	141.97	111.70

There are no chirality outliers.

5 of 24 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1025	ARG	Sidechain
1	A	2702	CYS	Peptide
1	A	3196	ARG	Sidechain
1	A	3366	ARG	Sidechain
1	A	3436	ARG	Sidechain

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	35150	0	34795	1497	0
1	B	35150	0	34795	1483	0
1	C	35150	0	34795	1510	0
1	D	35150	0	34795	1512	0
2	E	831	0	831	42	0
2	F	831	0	831	41	0
2	G	831	0	831	41	0
2	H	831	0	831	42	0
3	A	31	0	12	0	0
3	B	31	0	12	0	0
3	C	31	0	12	0	0
3	D	31	0	12	0	0
4	A	1	0	0	0	0
4	B	1	0	0	0	0
4	C	1	0	0	0	0
4	D	1	0	0	0	0
5	A	1	0	0	0	0
5	B	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	C	1	0	0	0	0
5	D	1	0	0	0	0
6	A	18	0	0	3	0
6	B	18	0	0	3	0
6	C	18	0	0	3	0
6	D	18	0	0	3	0
All	All	144128	0	142552	6089	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 21.

The worst 5 of 6089 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:D:3365:LEU:HD11	1:D:3405:LEU:HD23	1.43	1.00
1:B:899:ASP:OD1	1:B:902:ARG:NH2	1.95	0.99
1:B:3308:THR:OG1	1:B:3310:ASP:OD1	1.80	0.99
1:A:899:ASP:OD1	1:A:902:ARG:NH2	1.95	0.99
1:C:899:ASP:OD1	1:C:902:ARG:NH2	1.95	0.99

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	4385/5037 (87%)	4253 (97%)	128 (3%)	4 (0%)	48	77
1	B	4385/5037 (87%)	4254 (97%)	127 (3%)	4 (0%)	48	77
1	C	4385/5037 (87%)	4253 (97%)	128 (3%)	4 (0%)	48	77
1	D	4385/5037 (87%)	4254 (97%)	127 (3%)	4 (0%)	48	77
2	E	105/108 (97%)	103 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	F	105/108 (97%)	103 (98%)	2 (2%)	0	100	100
2	G	105/108 (97%)	103 (98%)	2 (2%)	0	100	100
2	H	105/108 (97%)	103 (98%)	2 (2%)	0	100	100
All	All	17960/20580 (87%)	17426 (97%)	518 (3%)	16 (0%)	50	77

5 of 16 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	3300	ALA
1	A	4711	PHE
1	B	3300	ALA
1	B	4711	PHE
1	D	3300	ALA

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	3836/4276 (90%)	3801 (99%)	35 (1%)	75	87
1	B	3836/4276 (90%)	3801 (99%)	35 (1%)	75	87
1	C	3836/4276 (90%)	3801 (99%)	35 (1%)	75	87
1	D	3836/4276 (90%)	3801 (99%)	35 (1%)	75	87
2	E	89/90 (99%)	87 (98%)	2 (2%)	47	68
2	F	89/90 (99%)	87 (98%)	2 (2%)	47	68
2	G	89/90 (99%)	87 (98%)	2 (2%)	47	68
2	H	89/90 (99%)	87 (98%)	2 (2%)	47	68
All	All	15700/17464 (90%)	15552 (99%)	148 (1%)	77	87

5 of 148 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	424	LYS

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Mol	Chain	Res	Type
1	C	3626	LYS
1	C	1720	LEU
1	C	2612[A]	ARG
1	B	1068	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 90 such sidechains are listed below:

Mol	Chain	Res	Type
1	D	2036	GLN
1	C	921	ASN
1	D	2213	ASN
1	D	4037	ASN
1	C	1484	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 16 ligands modelled in this entry, 8 are monoatomic - leaving 8 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	A1BD2	A	5304	-	16,19,19	0.82	1 (6%)	15,28,28	1.20	1 (6%)
3	ATP	B	5301	-	28,33,33	0.87	2 (7%)	34,52,52	0.81	0
6	A1BD2	C	5304	-	16,19,19	0.82	1 (6%)	15,28,28	1.20	1 (6%)
3	ATP	C	5301	-	28,33,33	0.87	2 (7%)	34,52,52	0.81	0
3	ATP	A	5301	-	28,33,33	0.88	2 (7%)	34,52,52	0.81	0
6	A1BD2	B	5304	-	16,19,19	0.82	1 (6%)	15,28,28	1.20	1 (6%)
6	A1BD2	D	5304	-	16,19,19	0.82	0	15,28,28	1.20	1 (6%)
3	ATP	D	5301	-	28,33,33	0.88	2 (7%)	34,52,52	0.82	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	A1BD2	A	5304	-	-	2/4/6/6	0/2/2/2
3	ATP	B	5301	-	-	8/18/38/38	0/3/3/3
6	A1BD2	C	5304	-	-	2/4/6/6	0/2/2/2
3	ATP	C	5301	-	-	8/18/38/38	0/3/3/3
3	ATP	A	5301	-	-	8/18/38/38	0/3/3/3
6	A1BD2	B	5304	-	-	2/4/6/6	0/2/2/2
6	A1BD2	D	5304	-	-	2/4/6/6	0/2/2/2
3	ATP	D	5301	-	-	8/18/38/38	0/3/3/3

The worst 5 of 11 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	5301	ATP	C1'-N9	-2.39	1.44	1.49
3	B	5301	ATP	C1'-N9	-2.39	1.44	1.49
3	D	5301	ATP	C1'-N9	-2.39	1.44	1.49
3	C	5301	ATP	C1'-N9	-2.39	1.44	1.49
3	A	5301	ATP	C8-N7	-2.23	1.30	1.34

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	B	5304	A1BD2	C2-N1-C5	-2.66	119.76	122.22
6	D	5304	A1BD2	C2-N1-C5	-2.66	119.76	122.22

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	C	5304	A1BD2	C2-N1-C5	-2.66	119.76	122.22
6	A	5304	A1BD2	C2-N1-C5	-2.63	119.79	122.22

There are no chirality outliers.

5 of 40 torsion outliers are listed below:

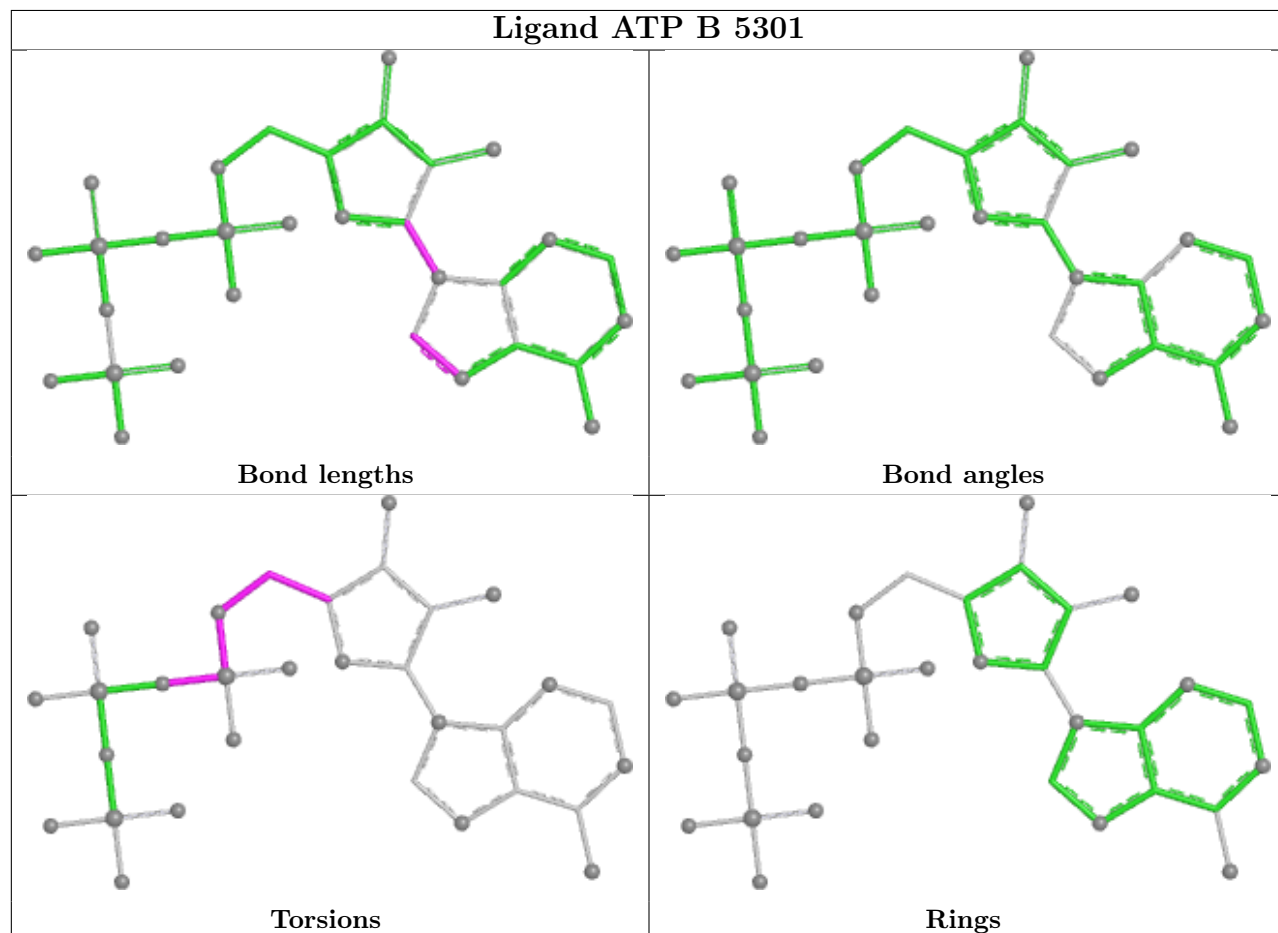
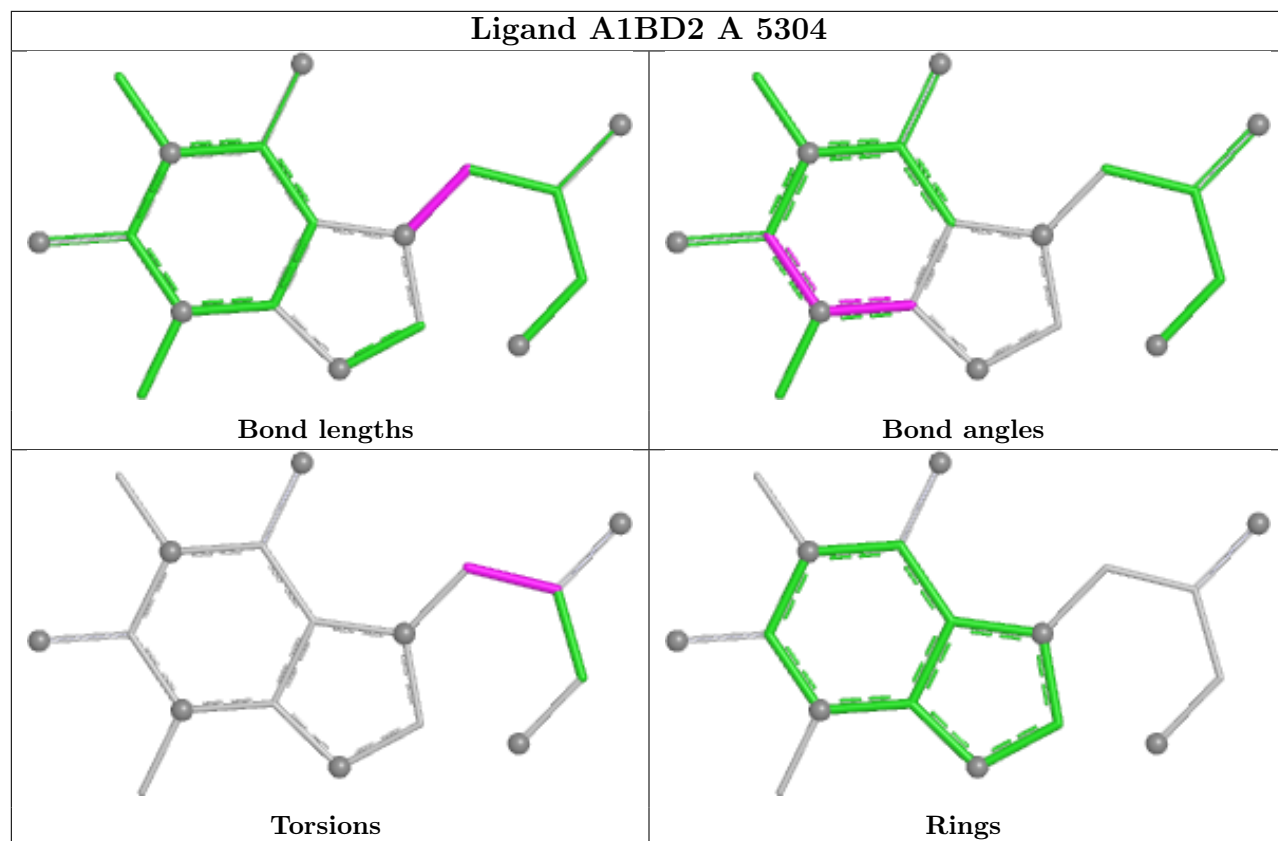
Mol	Chain	Res	Type	Atoms
3	A	5301	ATP	C5'-O5'-PA-O2A
3	A	5301	ATP	C5'-O5'-PA-O3A
3	A	5301	ATP	C3'-C4'-C5'-O5'
3	B	5301	ATP	C5'-O5'-PA-O2A
3	B	5301	ATP	C5'-O5'-PA-O3A

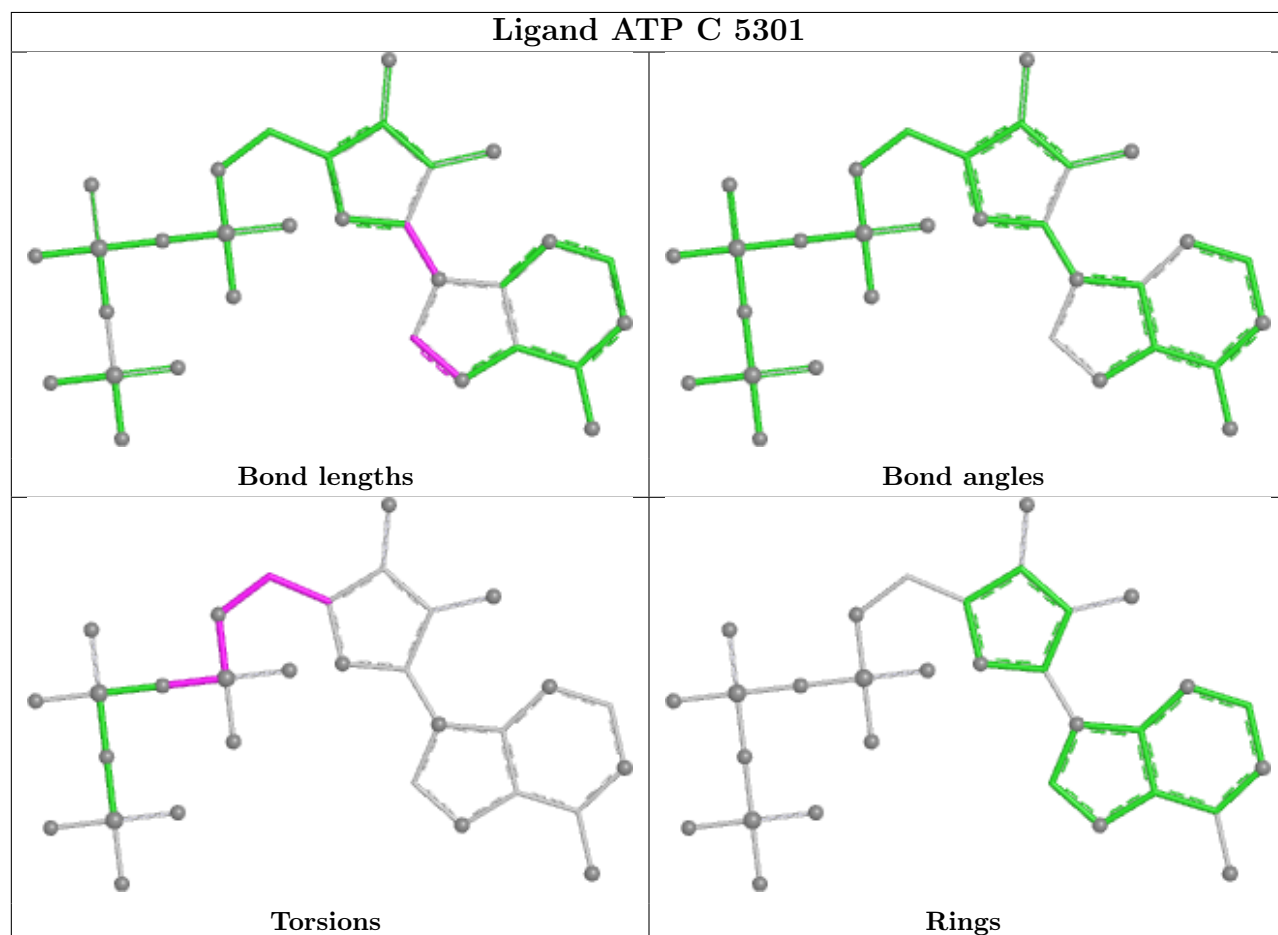
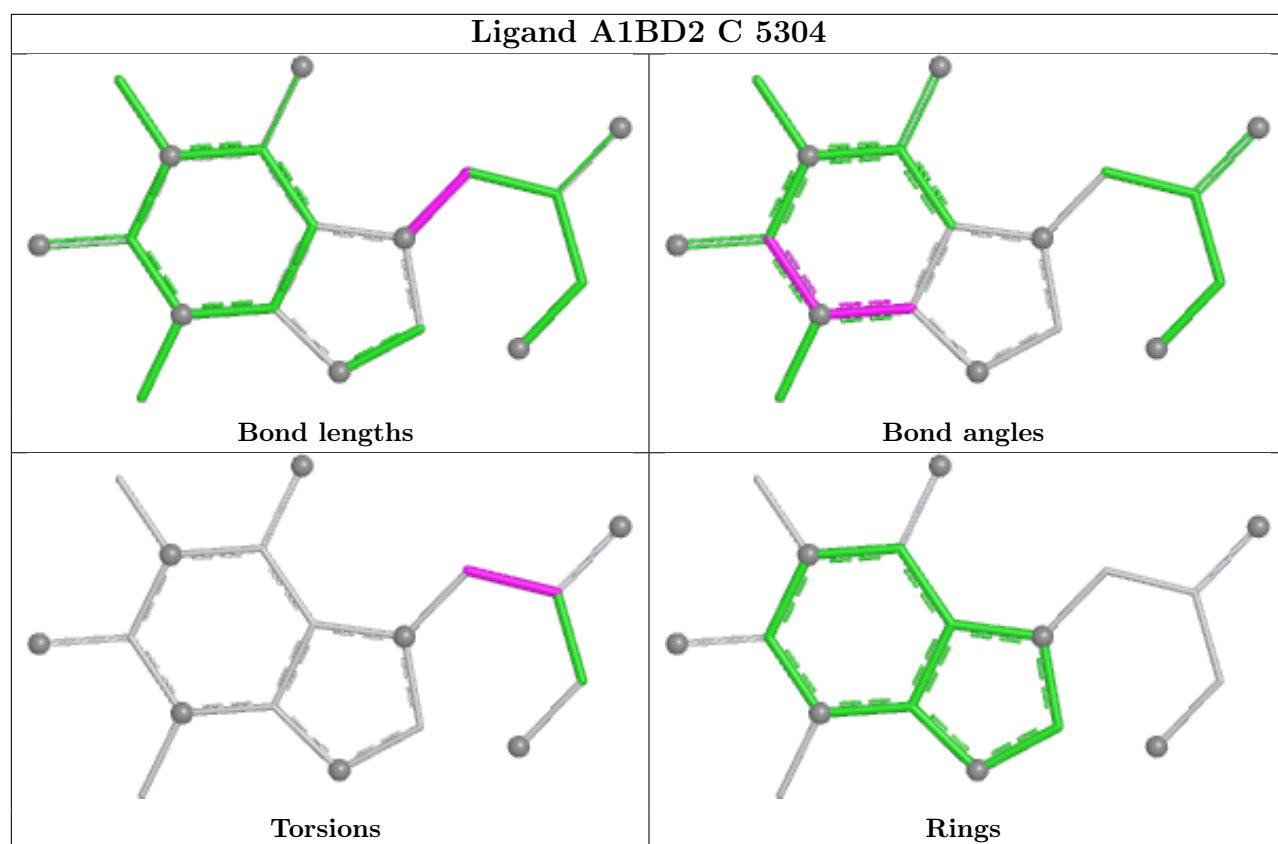
There are no ring outliers.

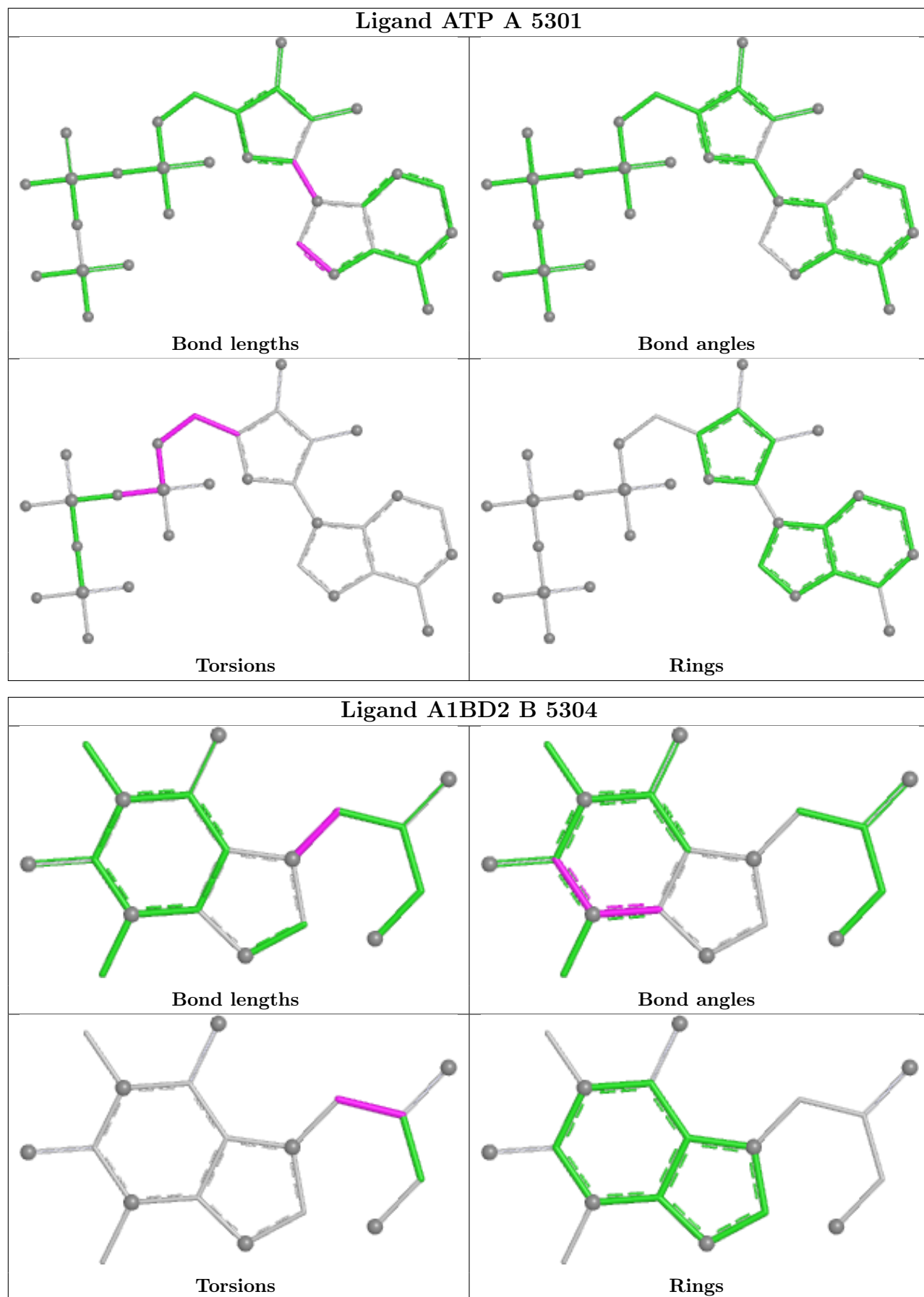
4 monomers are involved in 12 short contacts:

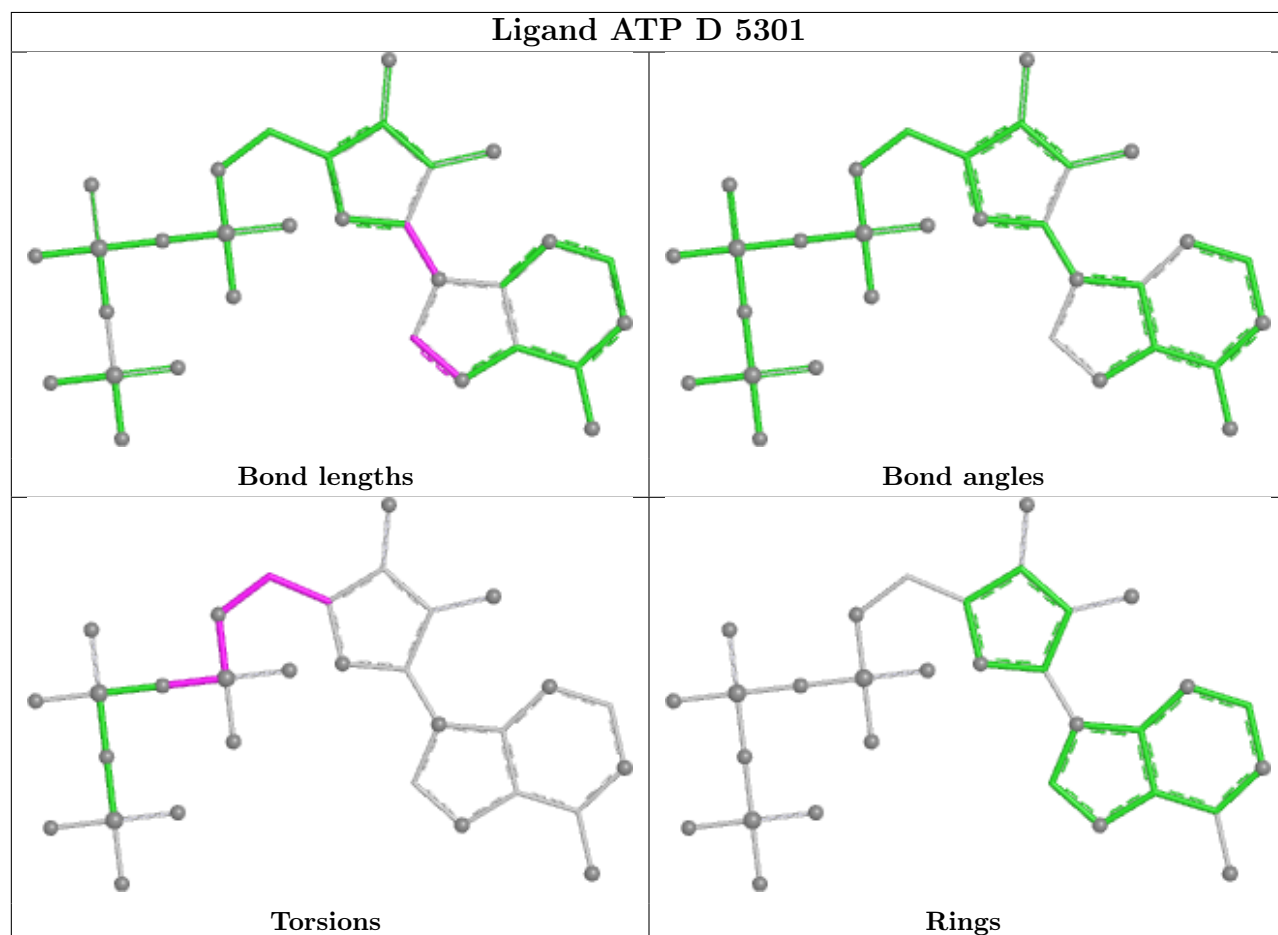
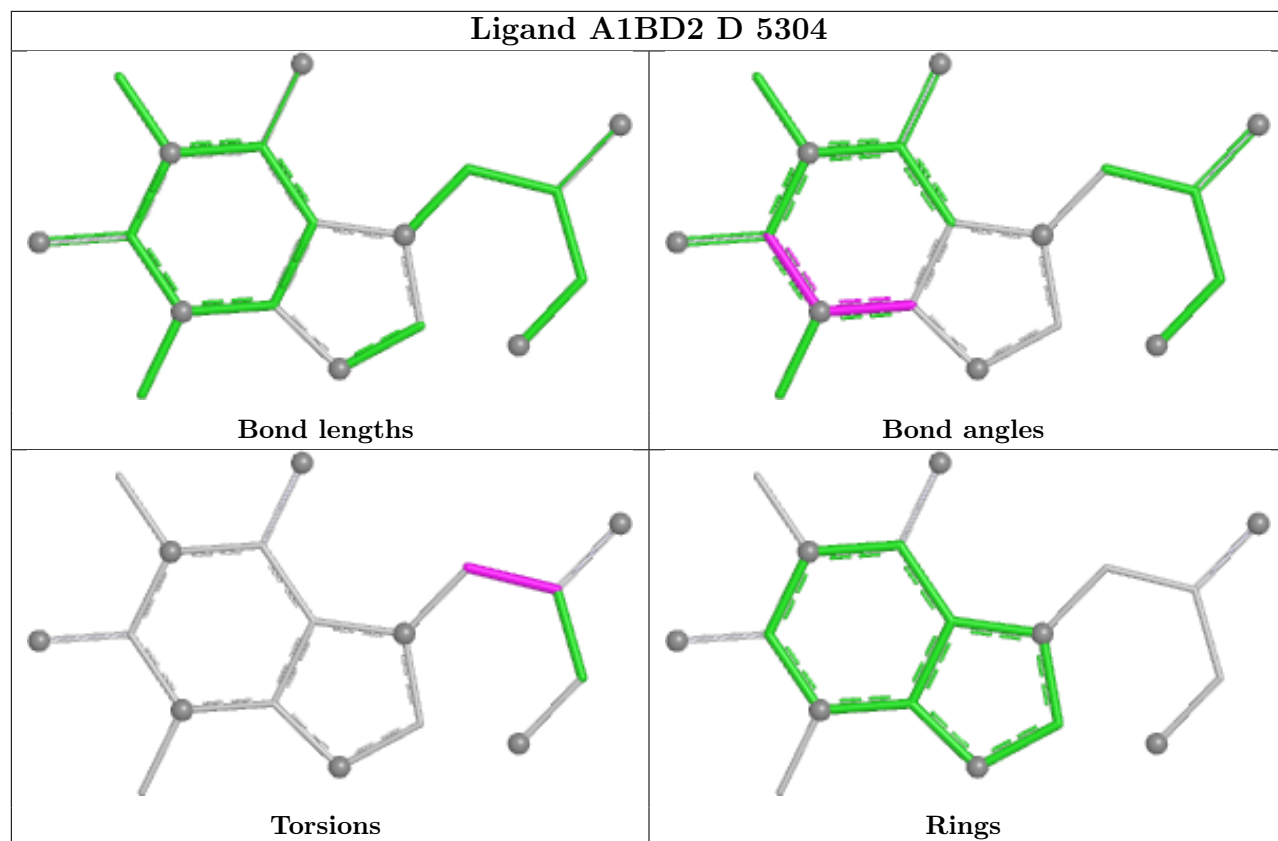
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	5304	A1BD2	3	0
6	C	5304	A1BD2	3	0
6	B	5304	A1BD2	3	0
6	D	5304	A1BD2	3	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.









5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

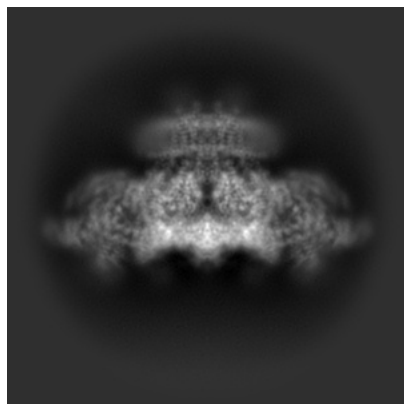
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-47387. These allow visual inspection of the internal detail of the map and identification of artifacts.

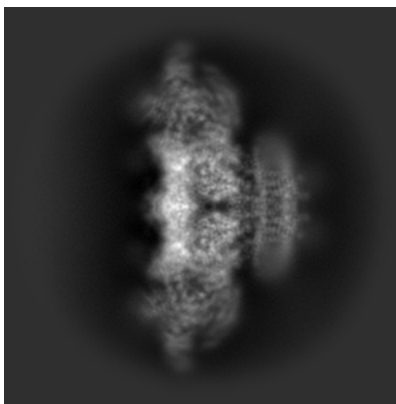
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

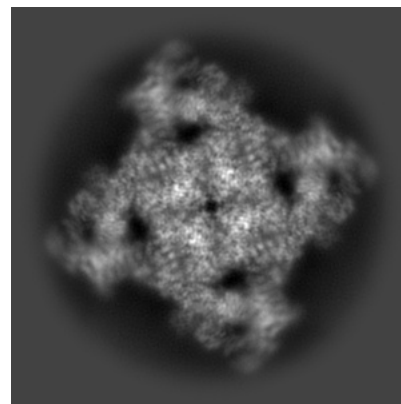
6.1.1 Primary map



X

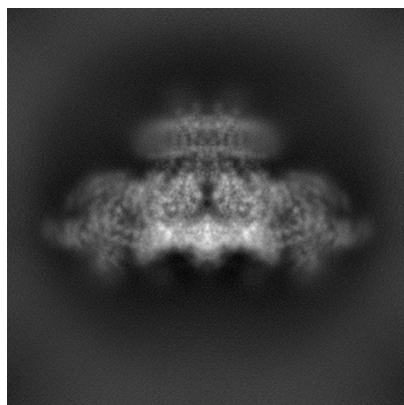


Y

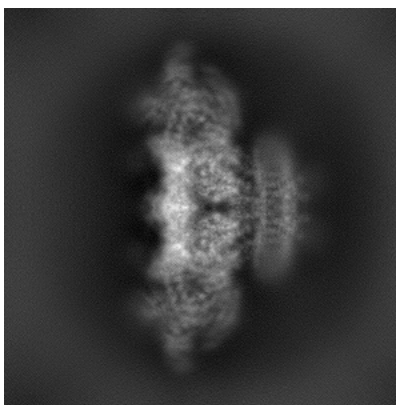


Z

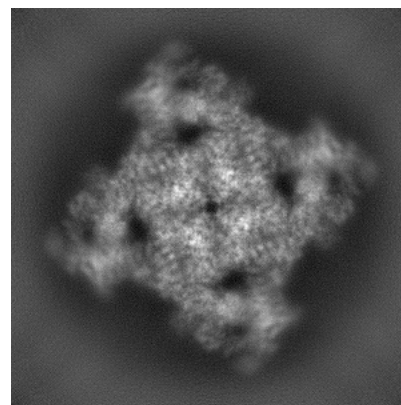
6.1.2 Raw map



X



Y

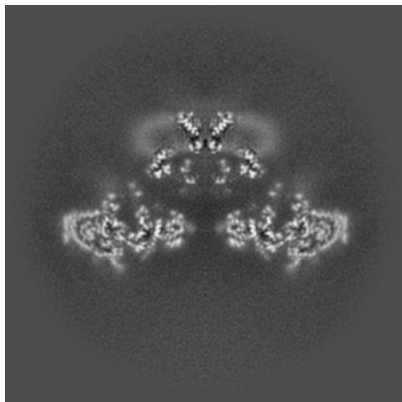


Z

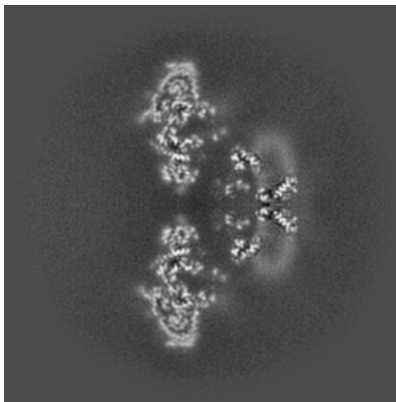
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

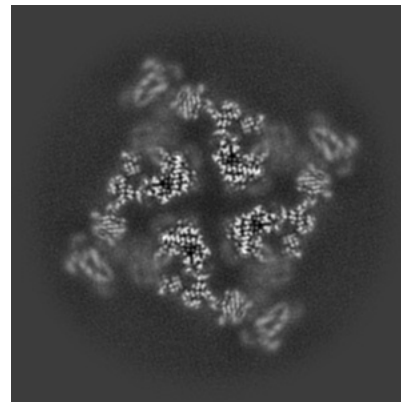
6.2.1 Primary map



X Index: 256

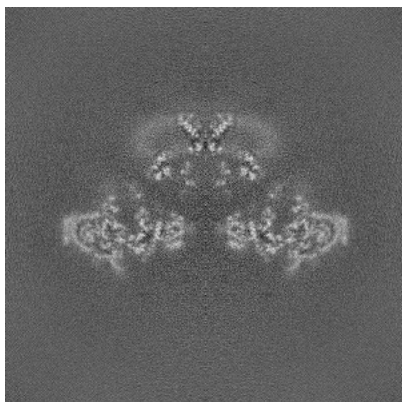


Y Index: 256

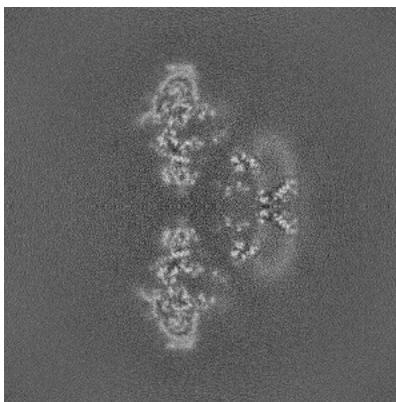


Z Index: 256

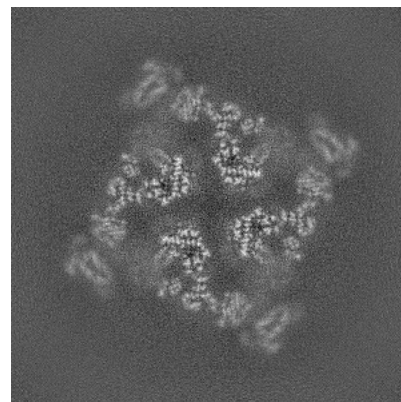
6.2.2 Raw map



X Index: 256



Y Index: 256

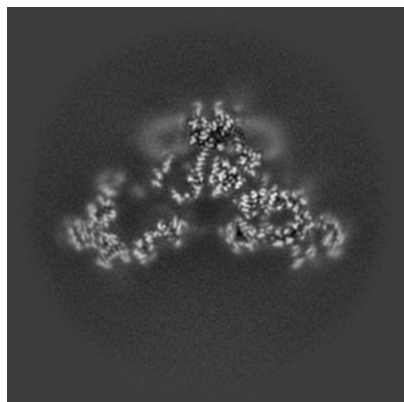


Z Index: 256

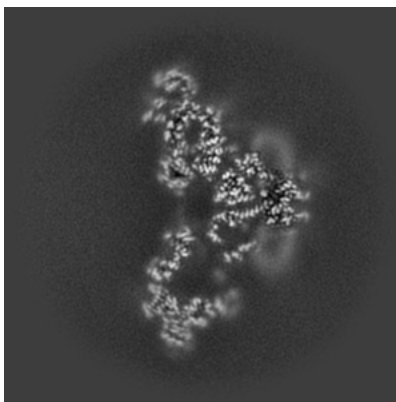
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

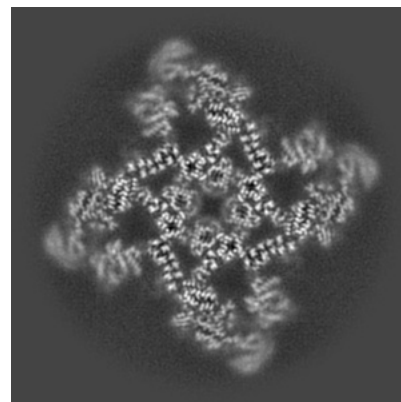
6.3.1 Primary map



X Index: 268

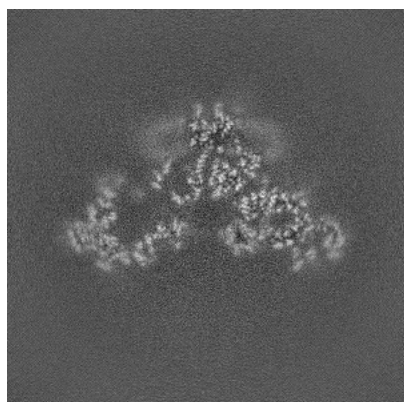


Y Index: 244

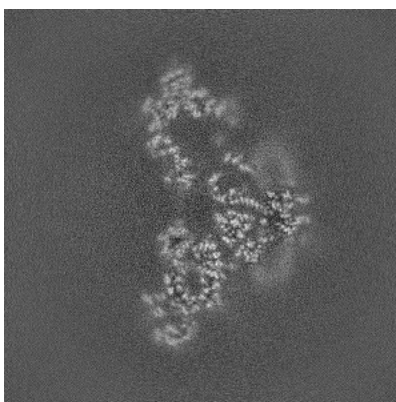


Z Index: 229

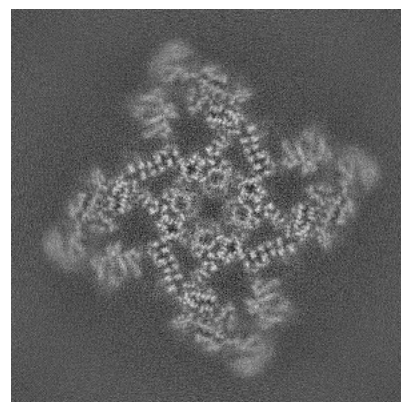
6.3.2 Raw map



X Index: 268



Y Index: 268

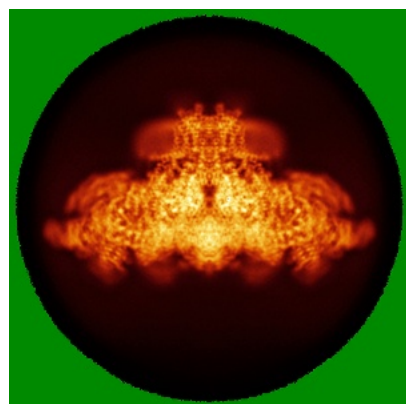


Z Index: 229

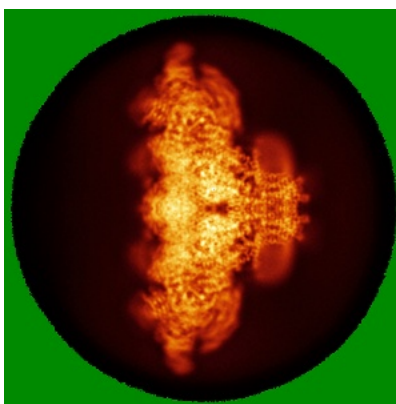
The images above show the largest variance slices of the map in three orthogonal directions.

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

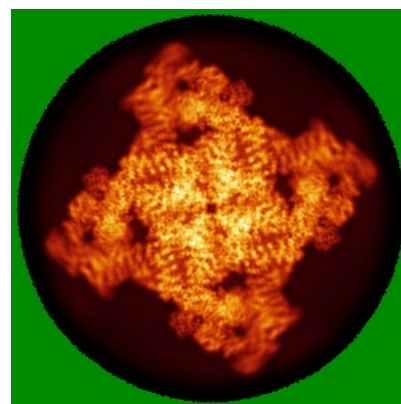
6.4.1 Primary map



X

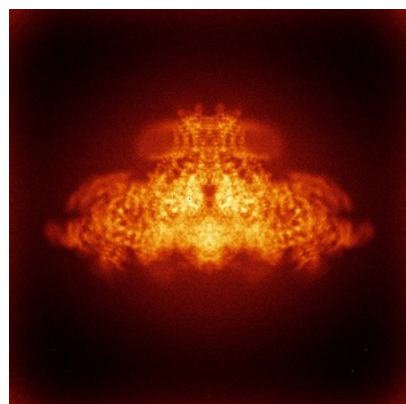


Y

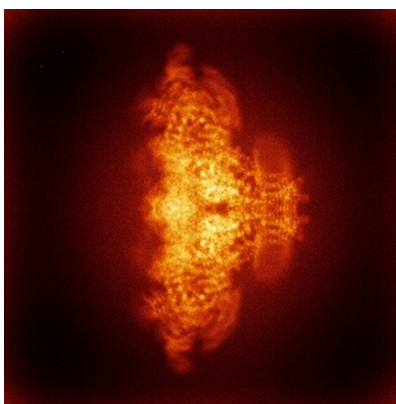


Z

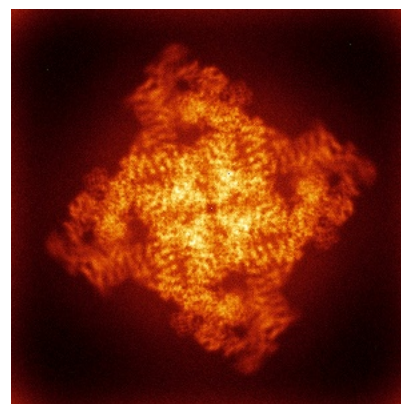
6.4.2 Raw map



X



Y

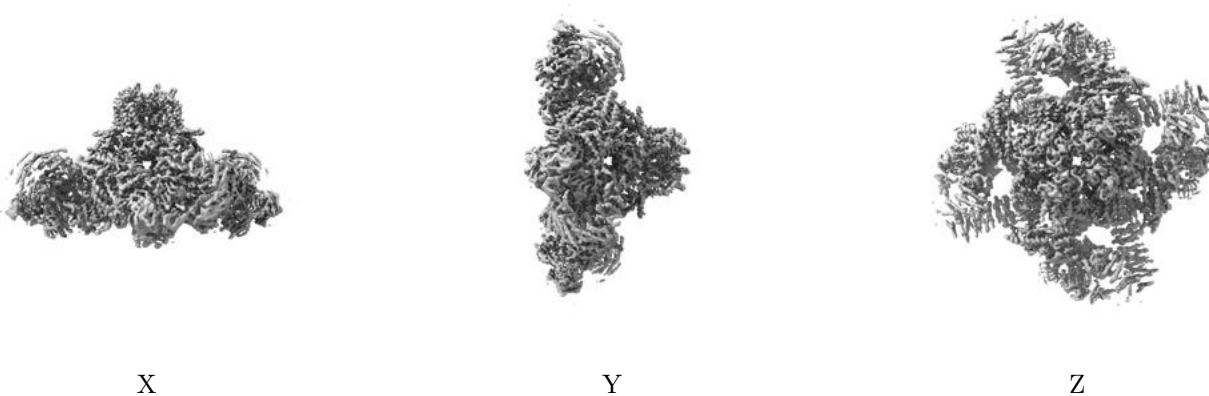


Z

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

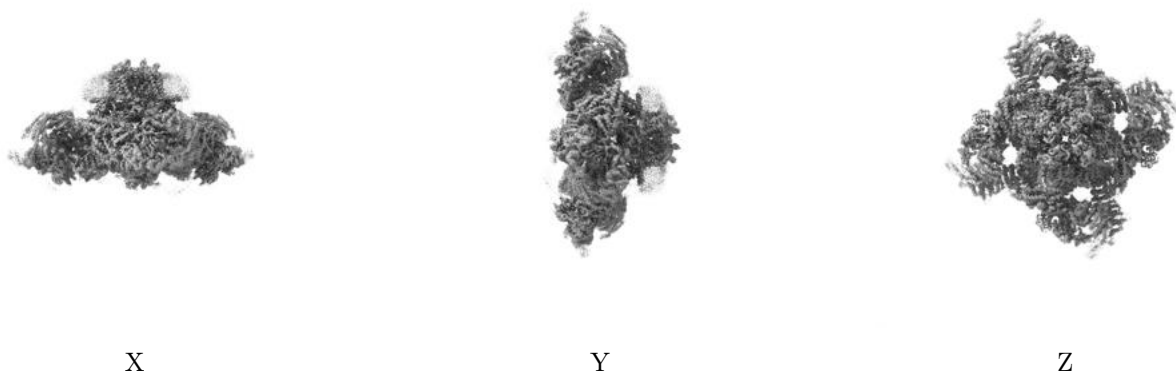
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.1. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

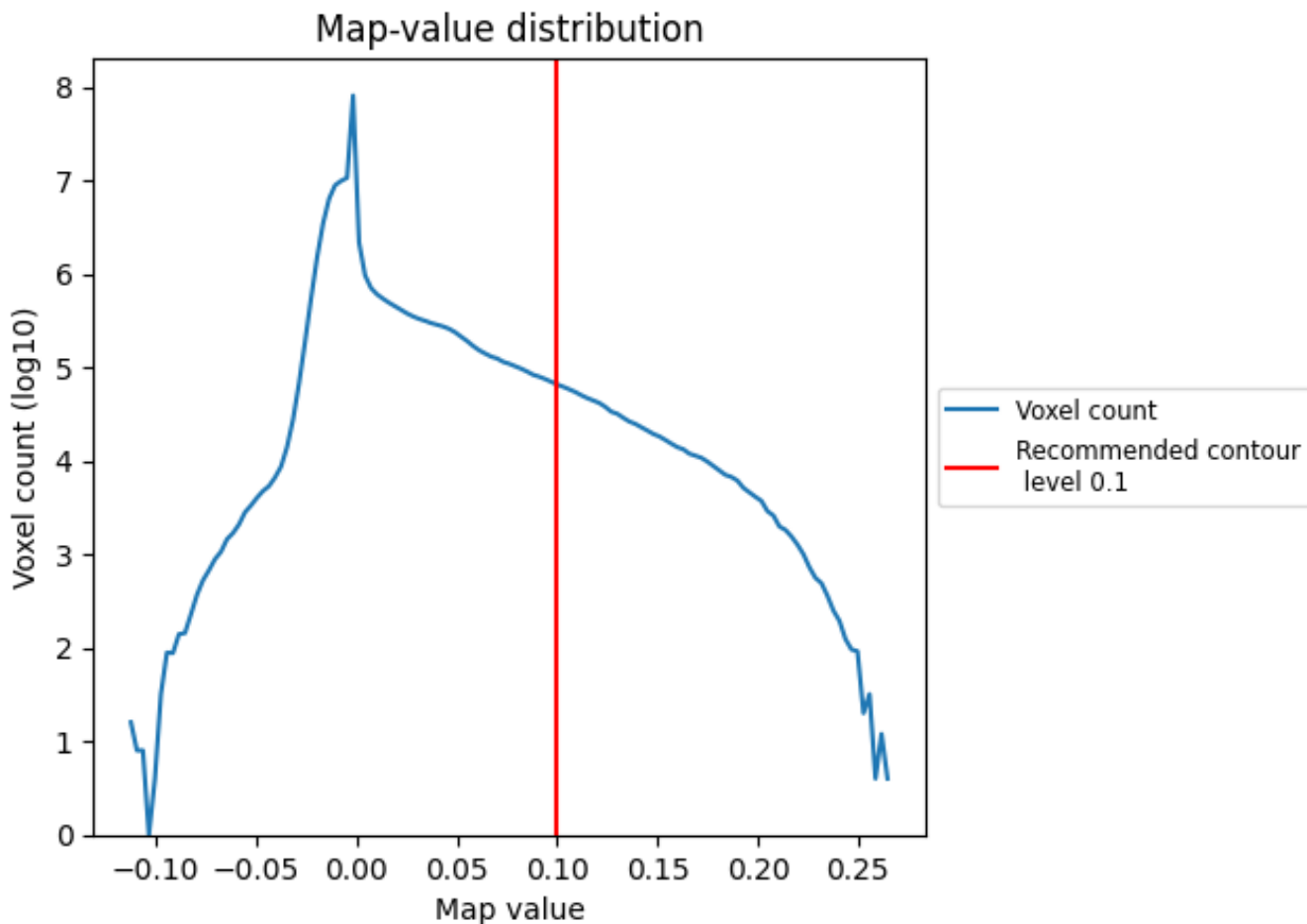
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

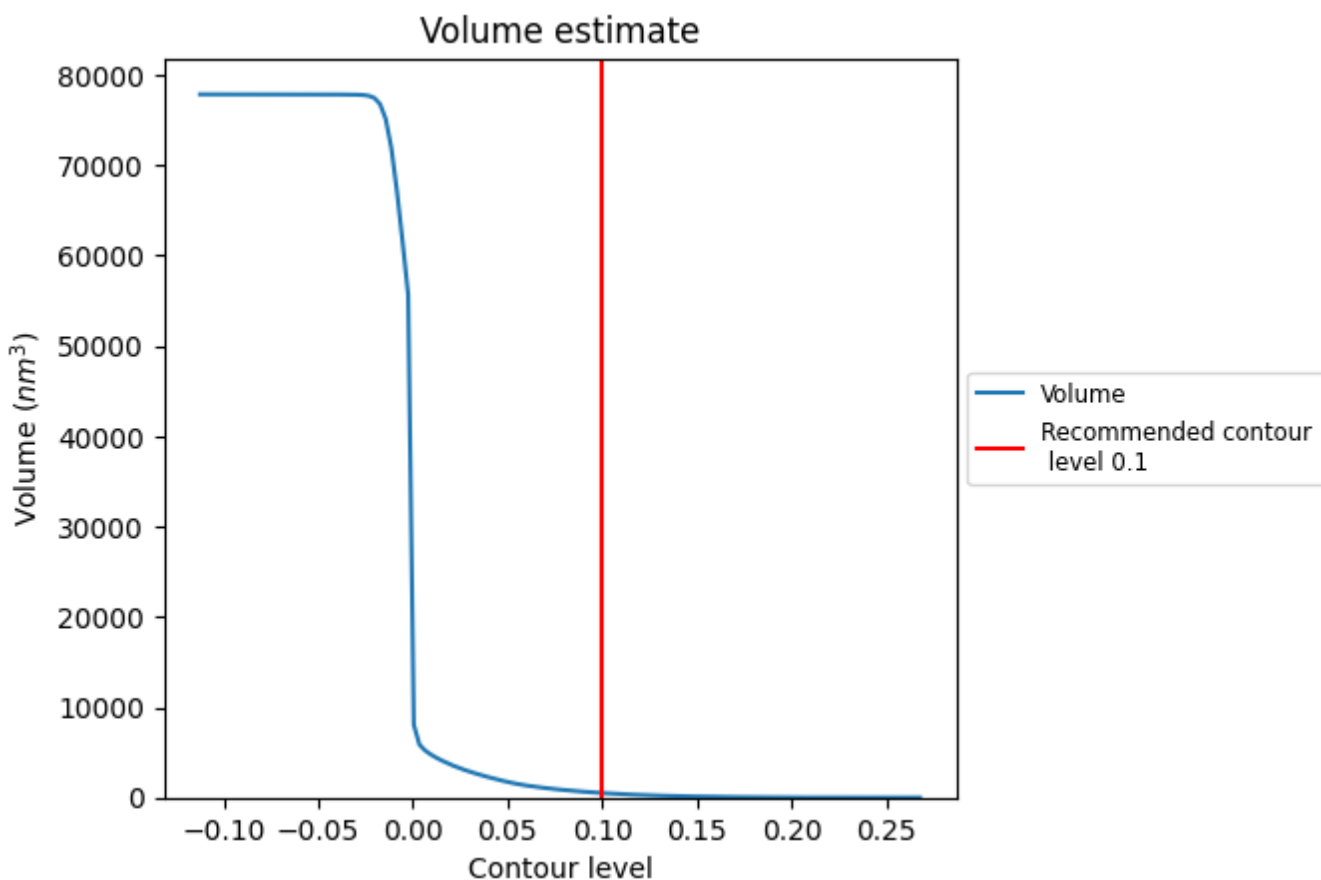
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

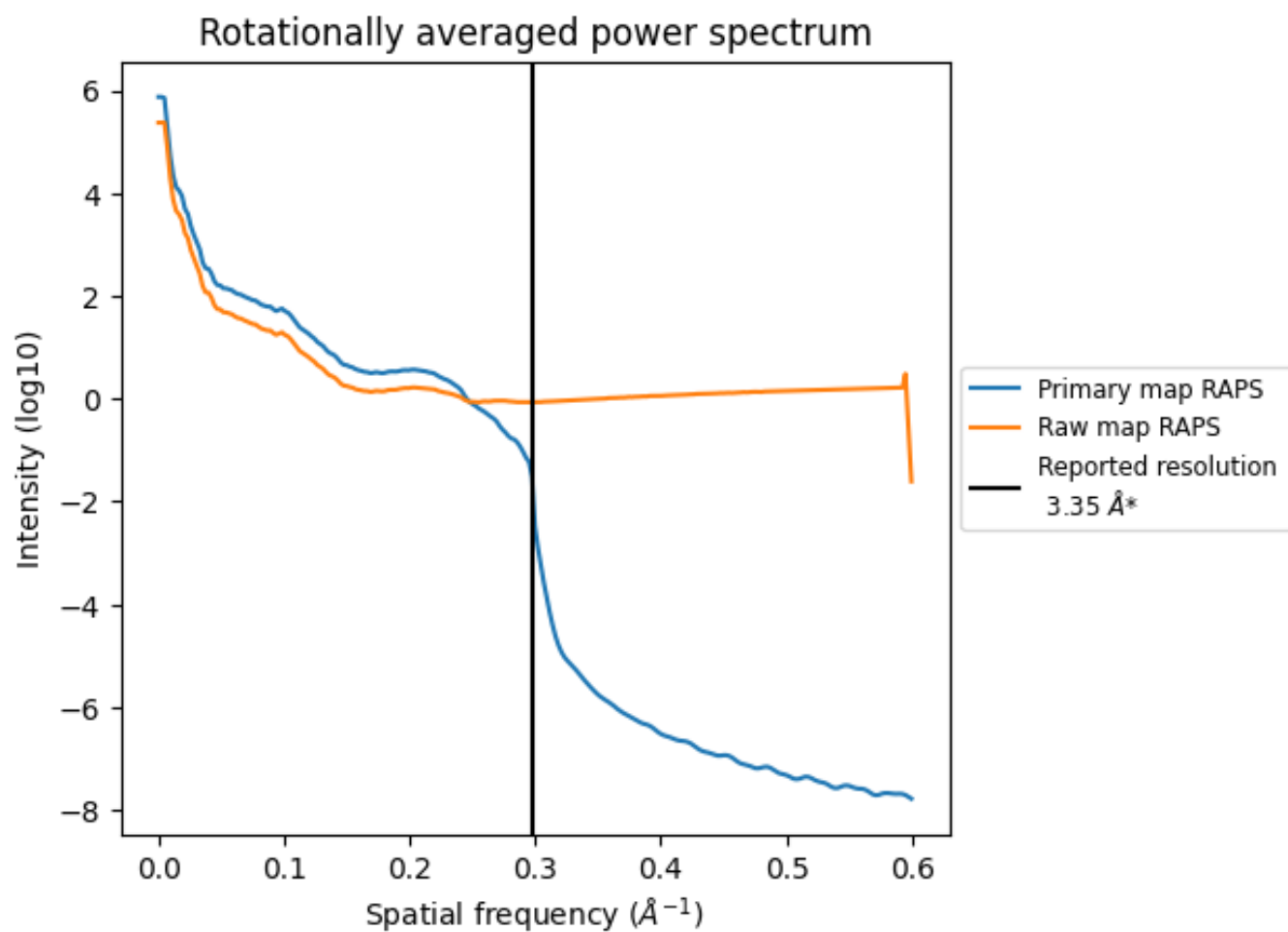
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 502 nm³; this corresponds to an approximate mass of 453 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](#)

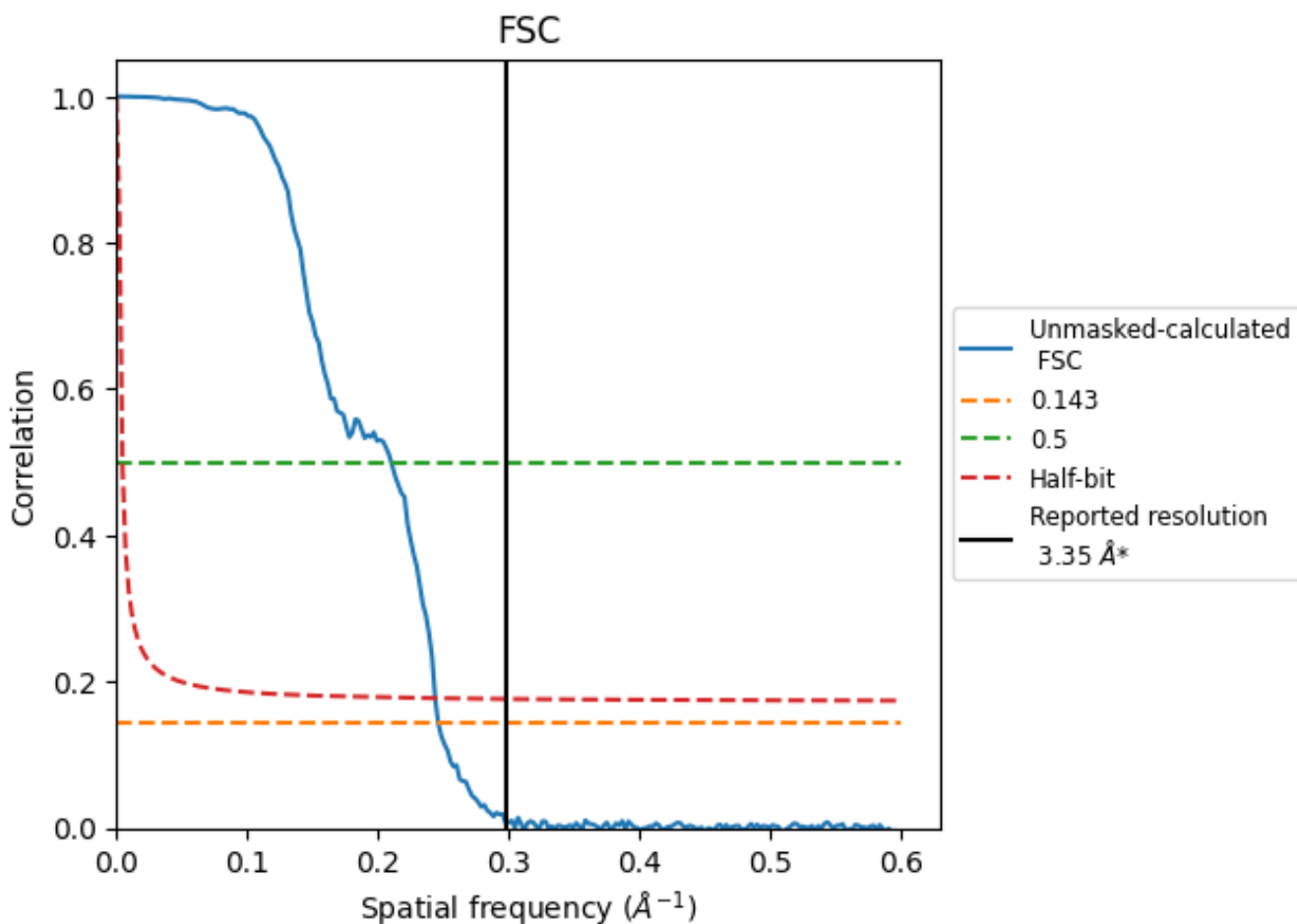


*Reported resolution corresponds to spatial frequency of 0.299 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.299 Å⁻¹

8.2 Resolution estimates [i](#)

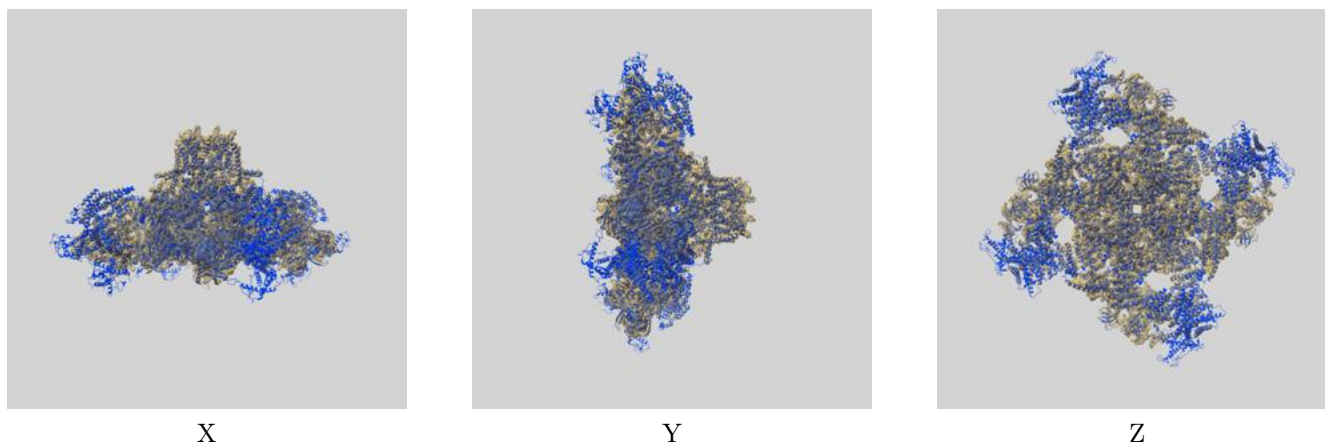
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.35	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.07	4.76	4.11

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.07 differs from the reported value 3.35 by more than 10 %

9 Map-model fit [i](#)

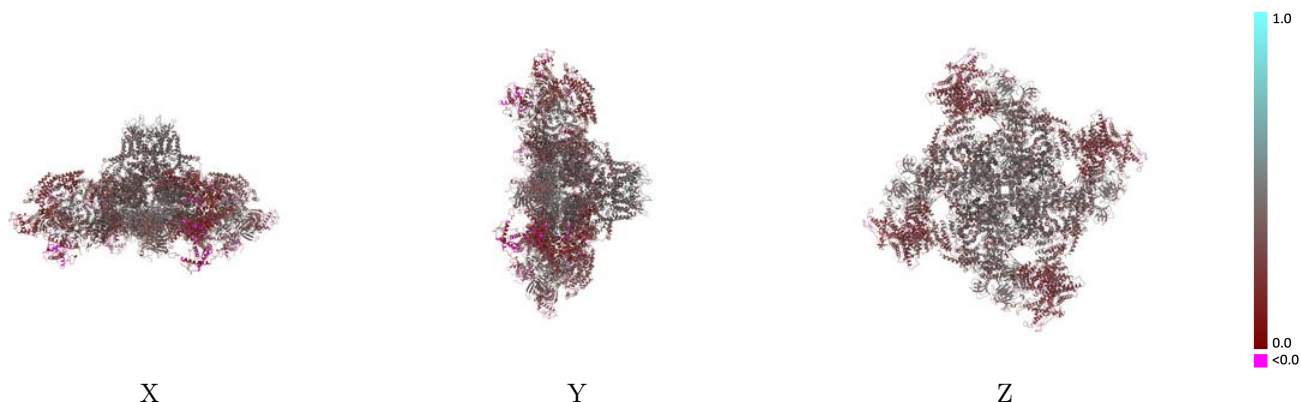
This section contains information regarding the fit between EMDB map EMD-47387 and PDB model 9E1A. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay [i](#)



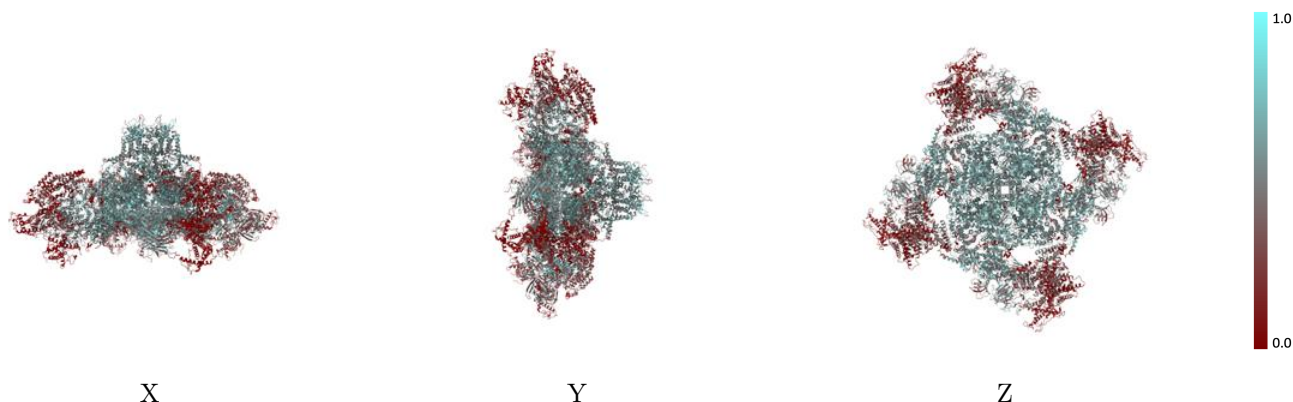
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



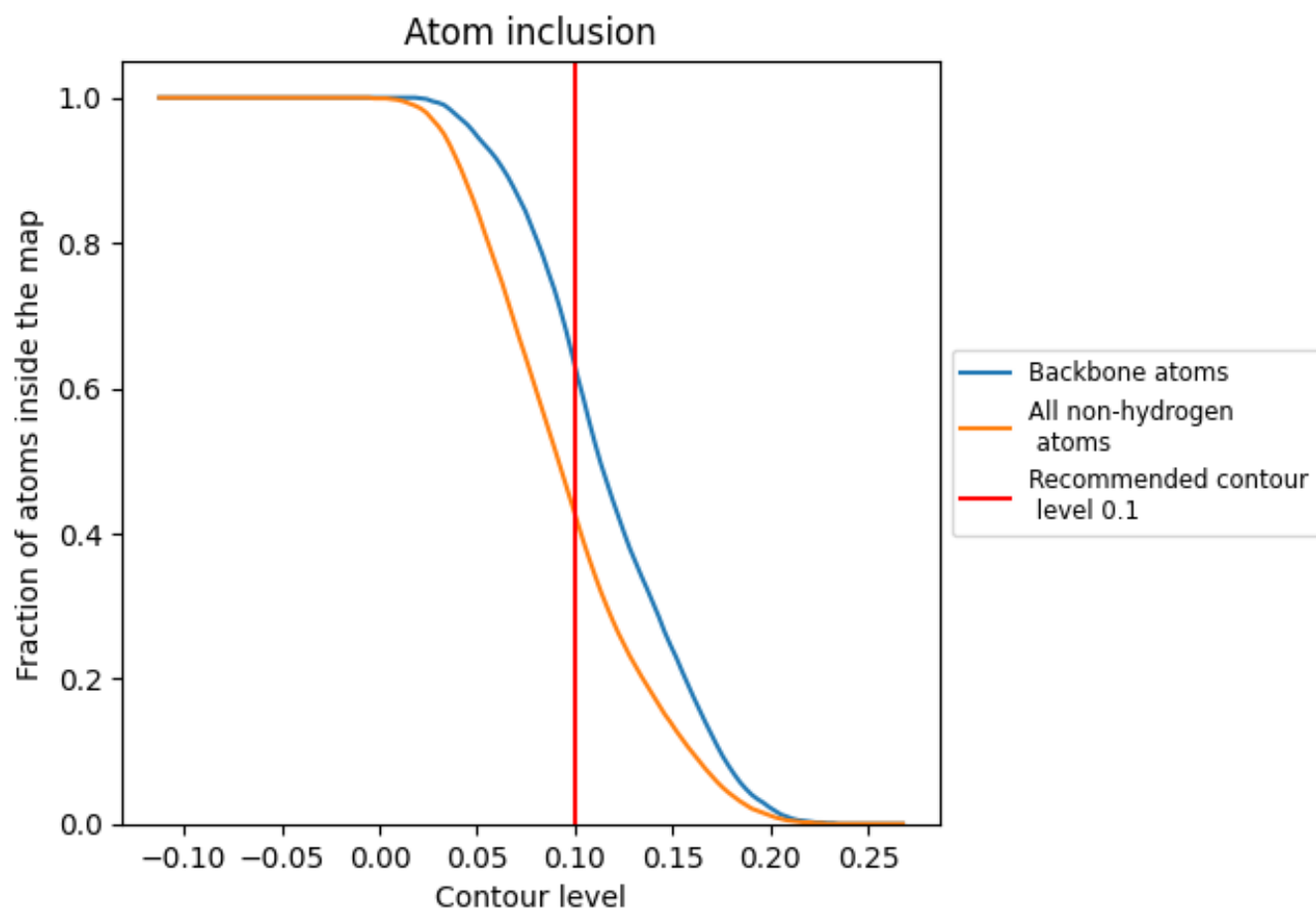
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.1).

9.4 Atom inclusion [i](#)



At the recommended contour level, 63% of all backbone atoms, 43% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4260	0.3280
A	0.4280	0.3280
B	0.4280	0.3270
C	0.4280	0.3270
D	0.4280	0.3270
E	0.3290	0.3760
F	0.3310	0.3770
G	0.3340	0.3760
H	0.3300	0.3750

