



# wwPDB EM Validation Summary Report ⓘ

Nov 5, 2024 – 10:41 AM EST

PDB ID : 9E1D  
EMDB ID : EMD-47390  
Title : Structure of RyR1 in the primed state in the presence of enprofylline  
Authors : Miotto, M.C.; Marks, A.R.  
Deposited on : 2024-10-21  
Resolution : 2.76 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](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  
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

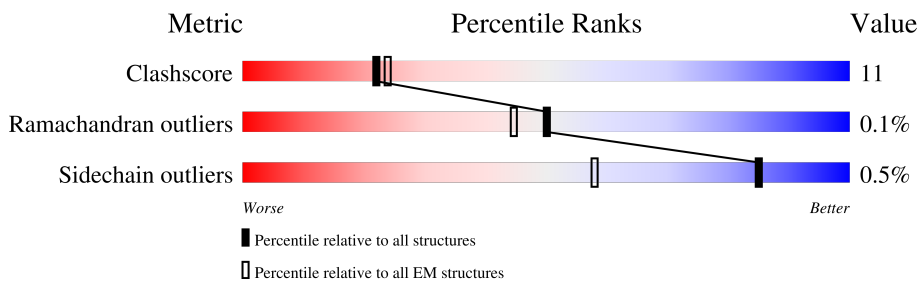
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 2.76 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	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 144112 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.

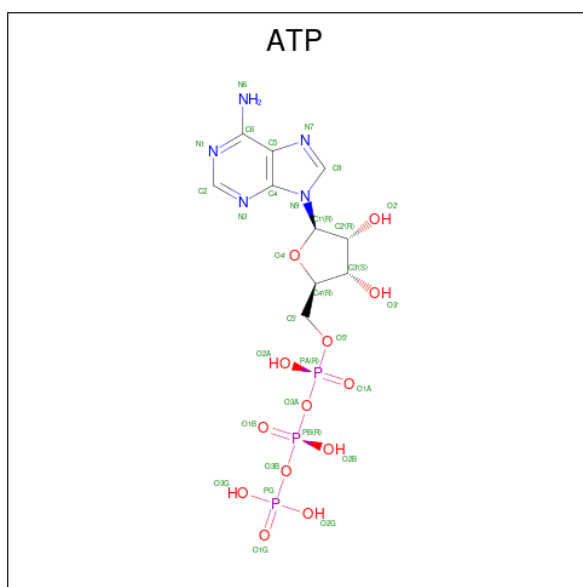
- Molecule 1 is a protein called Ryanodine receptor 1.

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

- 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	831	527	146	154	4	0	0
2	H	107	831	527	146	154	4	0	0
2	G	107	831	527	146	154	4	0	0
2	F	107	831	527	146	154	4	0	0

- 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
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
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).

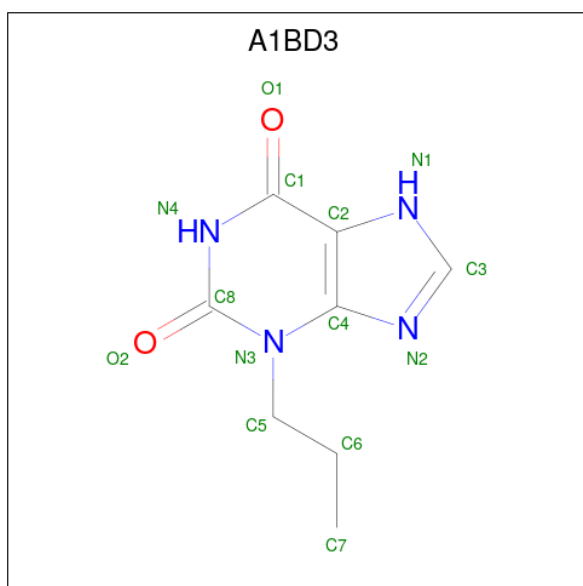
Mol	Chain	Residues	Atoms		AltConf
5	A	1	Total	Zn	0
			1	1	

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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 enprofylline (three-letter code: A1BD3) (formula: C<sub>8</sub>H<sub>10</sub>N<sub>4</sub>O<sub>2</sub>) (labeled as "Ligand of Interest" by depositor).

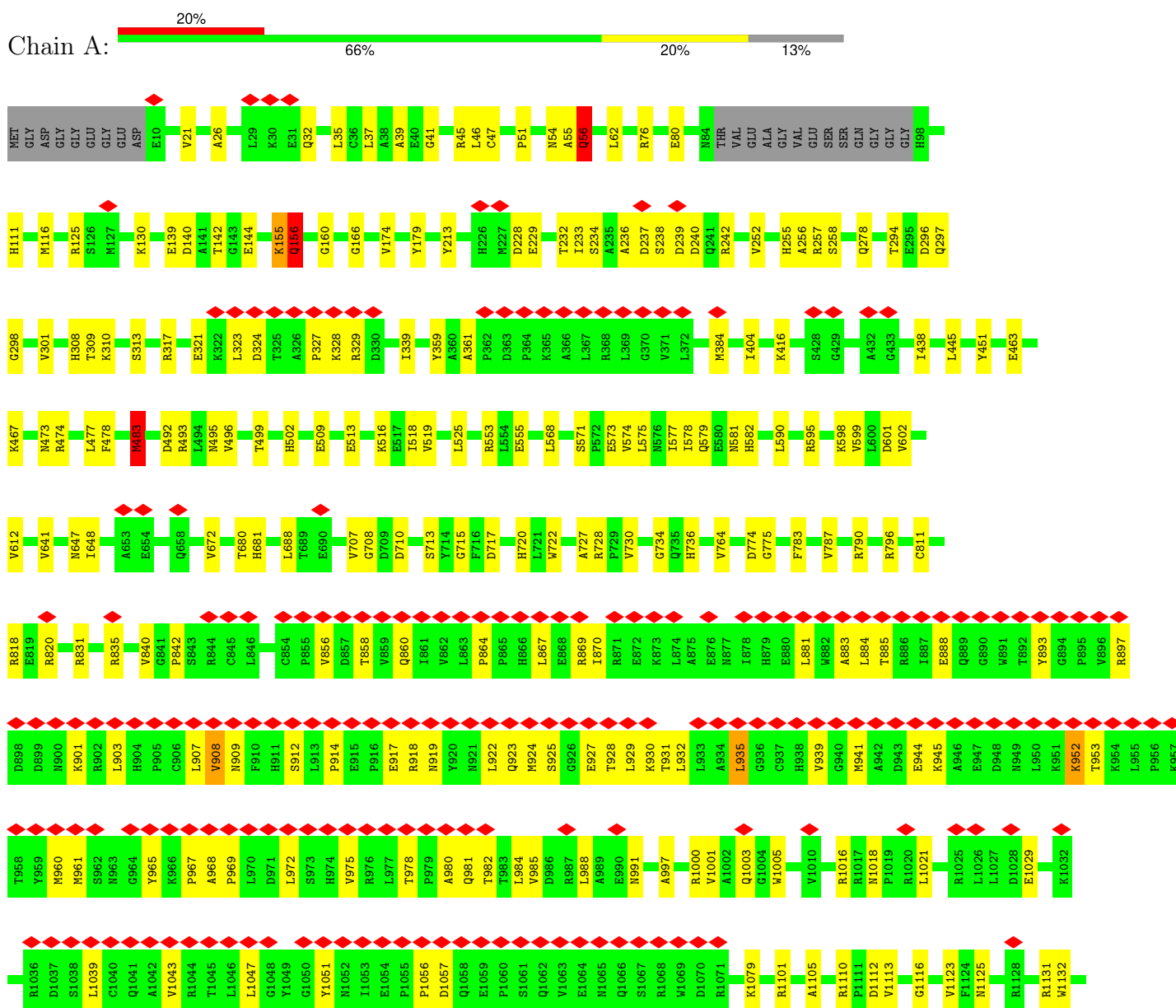


Mol	Chain	Residues	Atoms				AltConf
6	A	1	Total	C	N	O	0
			14	8	4	2	
6	B	1	Total	C	N	O	0
			14	8	4	2	
6	D	1	Total	C	N	O	0
			14	8	4	2	
6	C	1	Total	C	N	O	0
			14	8	4	2	

### 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

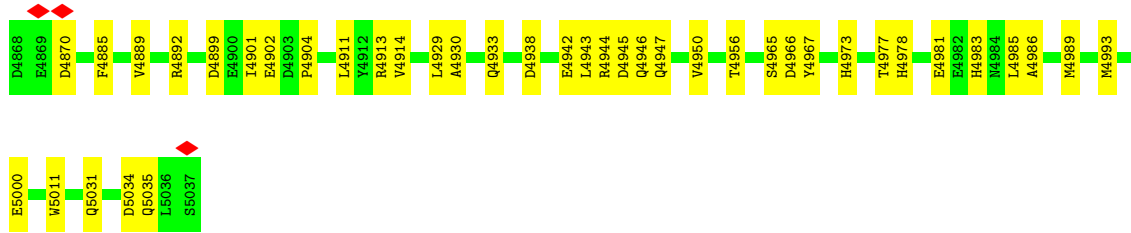




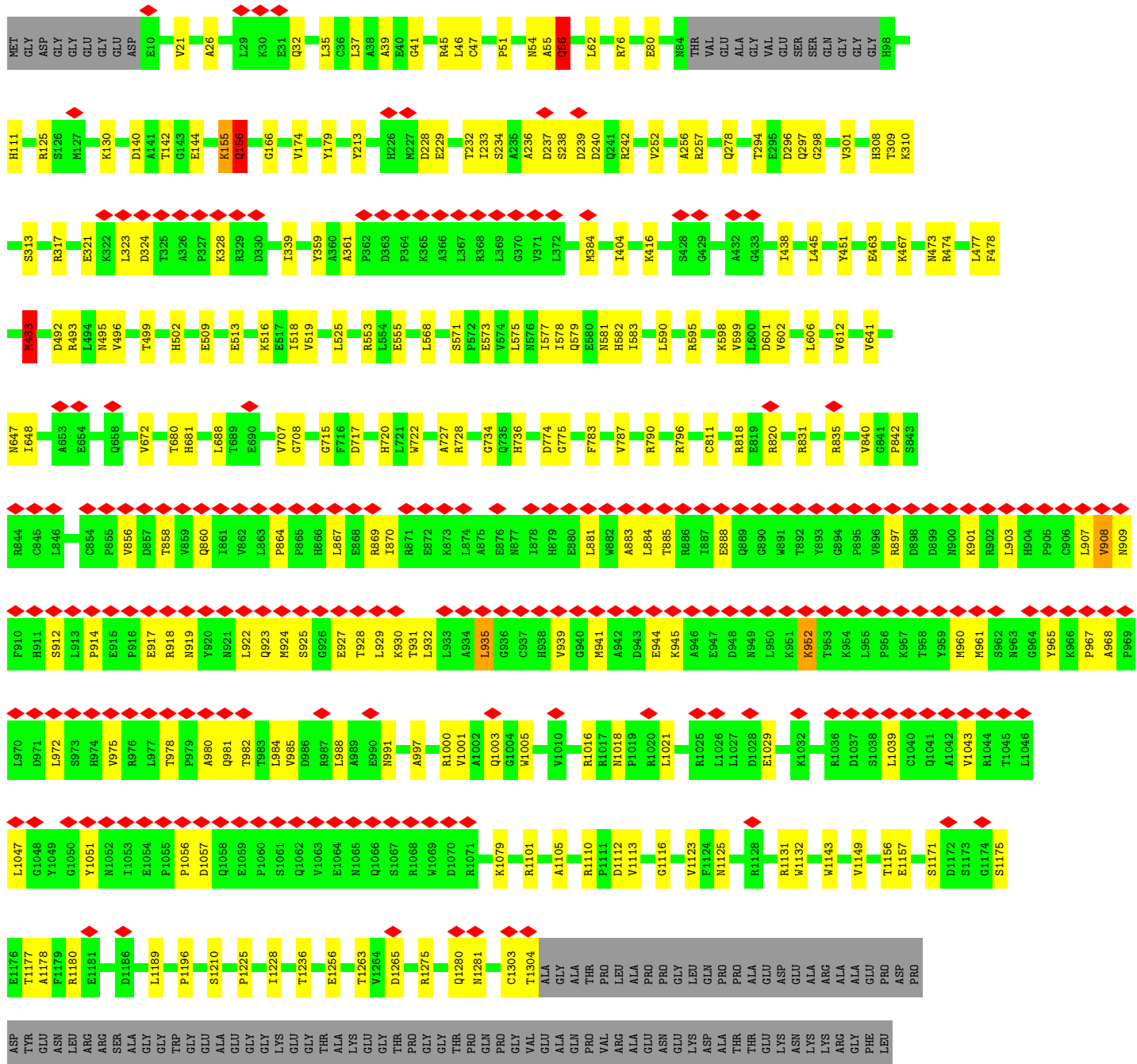
R3450	F3451	R3452	R3453	E3454	E3455	V3459	V3460	V3372	V3373	A3374	E3375	E3376	E3377	Q3378	L3379	R3380	L3381	E3382	A3383	K3384	A3385	E3386	E3387	E3388	E3389	G3390	E3391	L3392	L3393	V3394	R3395	L3401	R3402	R3403	D3404	L3405	Y3406	A3407	L3408	Y3409	P3410	L3411	L3412	L3413	R3414	R3420	L3434	F3435	F3442	W3445	S3446	K3447	S3448	H3449						
P3293	P3294	A3295	L3296	P3297	A3298	G3299	A3300	P3301	P3302	C3303	T3304	T3305	A3306	L3312	L3316	G3317	N3318	L3319	R3320	L3322	L3323	V3324	N3325	N3326	L3327	G3328	L3329	D3330	E3331	A3332	W3335	K3336	R3337	L3338	V3339	V3340	F3341	A3342	Q3343	P3344	L3345	V3346	S3347	R3350	L3354	H3355	S3356	H3357	F3358	P3359	P3360	T3361	L3362							
R3227	A3228	I3229	L3230	G3231	L3232	P3233	S3235	V3236	E3237	M3238	C3240	P3241	D3242	I3243	P3244	V3245	L3246	D3247	R3248	L3249	N3250	A3251	D3252	A3257	E3258	S3259	G3260	A3261	R3262	Y3263	T3264	E3265	M3266	M3267	H3268	P3269	I3270	E3271	I3272	T3273	L3274	P3275	M3276	L3281	R3282	R3283	W3284	E3286	R3287	C3288	P3289	E3290	A3291	P3292						
R3164	C3165	Y3166	R3167	L3168	L3169	C3170	S3171	I3172	L3175	G3176	T3177	T3178	K3179	N3180	P3181	Y3182	V3183	E3184	K3185	L3186	R3187	L3190	G3191	C3192	C3193	L3194	A3195	R3196	L3197	A3198	A3199	M3201	P3202	V3203	A3204	F3205	L3206	E3207	L3210	N3211	E3212	Y3213	N3214	C3215	A3216	S3217	V3218	T3219	T3220	T3221	K3222	S3223	P3224	R3225	E3226					
R3227	A3228	I3229	L3230	G3231	L3232	P3233	S3235	V3236	E3237	M3238	C3240	P3241	D3242	I3243	P3244	V3245	L3246	D3247	R3248	L3249	N3250	A3251	D3252	A3257	E3258	S3259	G3260	A3261	R3262	Y3263	T3264	E3265	M3266	M3267	H3268	P3269	I3270	E3271	I3272	T3273	L3274	P3275	M3276	L3281	R3282	R3283	W3284	E3286	R3287	C3288	P3289	E3290	A3291	P3292						
P3293	P3294	A3295	L3296	P3297	A3298	G3299	A3300	P3301	P3302	C3303	T3304	T3305	A3306	L3312	L3316	G3317	N3318	L3319	R3320	L3322	L3323	V3324	N3325	N3326	L3327	G3328	L3329	D3330	E3331	A3332	W3335	K3336	R3337	L3338	V3339	V3340	F3341	A3342	Q3343	P3344	L3345	V3346	S3347	R3350	L3354	H3355	S3356	H3357	F3358	P3359	P3360	T3361	L3362							
G3363	R3364	L3365	R3366	K3367	R3368	A3369	V3372	V3373	A3374	E3375	E3376	E3377	Q3378	L3379	R3380	L3381	E3382	A3383	K3384	A3385	E3386	E3387	E3388	E3389	G3390	E3391	L3392	L3393	V3394	R3395	L3401	R3402	R3403	D3404	L3405	Y3406	A3407	L3408	Y3409	P3410	L3411	L3412	L3413	R3414	R3420	L3434	F3435	F3442	W3445	S3446	K3447	S3448	H3449							
L2644	R2650	C2651	V2655	T2659	G2660	V2666	T2667	S2668	E2669	E2670	E2671	H2672	L2673	T2674	T2675	R2676	K2677	L2678	F2679	W2680	D2684	S2685	L2686	A2687	H2688	K2689	Y2691	D2692	V2696	R2697	M2698	A2699	R2700	P2701	C2702	L2706	A2707	G2708	A2709	L2710	P2711	F2712	D2713	Y2714	Y2715	D2716	A2717	L2718	S2719	S2720	S2721									
K2722	A2723	E2724	K2725	LYS	ALA	THR	THR	VAL	ASP	PRO	ALA	GLU	GLY	N2734	F2735	E2736	P2737	R2738	L2739	V2740	E2741	T2742	L2743	N2744	V2745	I2746	L2747	P2748	E2749	K2750	L2751	D2752	S2753	F2754	L2755	N2756	K2757	F2758	A2759	E2760	Y2761	T2762	H2763	E2764	K2765	W2766	A2767	F2768	D2769	E2770	Y2771	Q2772	N2773	N2774	W2775	S2776	Y2777	G2778	E2779	N2780
D2782	E2783	E2784	L2785	T2786	T2787	H2788	P2789	M2790	L2791	L2791	L2792	P2793	Y2794	P2795	Q2796	P2797	S2798	L2799	D2800	D2801	K2802	E2803	L2804	Y2805	L2806	W2807	P2808	L2809	K2810	E2811	S2812	L2813	K2814	A2815	M2816	L2817	A2818	W2819	E2820	W2821	T2822	L2823	E2824	K2825	A2826	D2827	E2828	K2829	Q2830	E2830	GLU	ARG	THR	GLU	LYS	LYS	THR	ARG	LYS	
ILE	SER	GLN	THR	ALA	GLN	THR	TYR	ASP	PRO	ARG	GLU	GLY	Y2855	W2856	P2857	Q2858	P2859	P2860	D2861	L2862	S2863	G2864	T2865	T2866	L2867	S2868	R2869	E2870	L2871	Q2872	A2873	W2874	A2875	E2876	Q2877	L2878	A2879	E2880	M2881	Y2882	H2883	W2884	T2885	W2886	G2887	R2888	K2889	K2890	L2891	Q2892	E2893	L2894	E2895	K2896	R2897	K2898	G2899	Q2900	T2901	
H2902	P2903	L2904	L2905	V2906	P2907	Y2908	D2909	L2910	L2911	T2912	A2913	K2914	E2915	K2916	A2917	R2918	D2919	R2920	E2921	A2922	A2923	Q2924	E2925	L2926	L2927	K2928	F2929	L2930	Q2931	M2932	N2933	G2934	Y2935	A2936	V2937	T2938	R2939	GLY	LEU	LYS	ASP	MET	GLU	L2946	T2947	T2948	S2949	S2950	I2951	E2952	K2953	R2954	F2955	A2956	F2957	G2958	F2959	L2960		
W2966	M2967	D2968	L2969	S2970	F2973	L2974	A2975	H2976	L2977	E2978	V2979	W2980	V2981	S2982	R2983	G2984	R2985	V2986	E2987	K2988	S2989	P2990	H2991	E2992	T2995	F2998	K3000	I3001	L3002	P3004	L3005	I3006	Y3009	F3010	L3015	Y3016	F3017	L3018	S3019	T3020	P3021	P3025	S2949	K3023	V3024	L3025	G3026	S3027	G3028	G3029	H3030	A3031	S3032							
N3033	K3034	E3035	K3036	I3039	L3042	F3043	L3046	A3047	A3048	L3049	V3050	R3051	H3052	R3053	V3054	S3055	V2986	E2987	K2988	S2989	P2990	H2991	E2992	T2995	F2998	K3000	I3001	L3002	P3004	L3005	I3006	Y3009	F3010	L3015	Y3016	F3017	L3018	S3019	T3020	P3021	P3025	S2949	K3023	V3024	L3025	G3026	S3027	G3028	G3029	H3030	A3031	S3032								
S3098	A3099	S3100	T3103	E3104	K3105	M3106	V3107	L3110	R3111	L3112	G3113	K3114	V3115	S3116	GLN	ALA	THR	GLN	VAL	K3123	G3124	V3125	G3126	Q3127	H3128	L3129	T3130	T3133	V3134	A3135	L3136	L3137	P3138	V3139	L3140	T3141	T3142	L3143	F3144	Q3149	H3150	Q3151	F3152	G3153	D3154	D3155	V3156	L3157	L3158	D3159	D3160	V3161	Q3162	V3163						
S3164	C3165	Y3166	R3167	L3168	L3169	C3170	S3171	I3172	L3175	G3176	T3177	T3178	K3179	N3180	P3181	Y3182	V3183	E3184	K3185	L3186	R3187	L3190	G3191	C3192	C3193	L3194	A3195	R3196	L3197	A3198	A3199	M3201	P3202	V3203	A3204	F3205	L3206	E3207	L3210	N3211	E3212	Y3213	N3214	C3215	A3216	S3217	V3218	T3219	T3220	T3221	K3222	S3223	P3224	R3225	E3226					
R3227	A3228	I3229	L3230	G3231	L3232	P3233	S3235	V3236	E3237	M3238	C3240	P3241	D3242	I3243	P3244	V3245	L3246	D3247	R3248	L3249	N3250	A3251	D3252	A3257	E3258	S3259	G3260	A3261	R3262	Y3263	T3264	E3265	M3266	M3267	H3268	P3269	I3270	E3271	I3272	T3273	L3274	P3275	M3276	L3281	R3282	R3283	W3284	E3286	R3287	C3288	P3289	E3290	A3291	P3292						
P3293	P3294	A3295	L3296	P3297	A3298	G3299	A3300	P3301	P3302	C3303	T3304	T3305	A3306	L3312	L3316	G3317	N3318	L3319	R3320	L3322	L3323	V3324	N3325	N3326	L3327	G3328	L3329	D3330	E3331	A3332	W3335	K3336	R3337	L3338	V3339	V3340	F3341	A3342	Q3343	P3344	L3345	V3346	S3347	R3350	L3354	H3355	S3356	H3357	F3358	P3359	P3360	T3361	L3362							
G3363	R3364	L3365	R3366	K3367	R3368	A3369	V3372	V3373	A3374	E3375	E3376	E3377	Q3378	L3379	R3380	L3381	E3382	A3383	K3384	A3385	E3386	E3387	E3388	E3389	G3390	E3391	L3392	L3393	V3394	R3395	L3401	R3402	R3403	D3404	L3405	Y3406	A3407	L3408	Y3409	P3410	L3411	L3412	L3413	R3414	R3420	L3434	F3435	F3442	W3445	S3446	K3447	S3448	H3449							







• Molecule 1: Ryanodine receptor 1





K2810	K2811	S2812	L2813	K2814	A2815	A2816	L2817	A2818	A2819	E2820	W2821	T2822	L2823	E2824	K2825	A2826	L2827	E2828	G2829	E2830	GLU	ARG	THR	GLU	LYS	LYS	THR	ARG	LYS	ILE	SER	GLN	THR	GLN	THR	TYR	ASP	PRO	ARG	GLU	GLY	V2855	N2856	P2857	Q2858	P2859	P2860	D2861	L2862	S2863	G2864	V2865	T2866	L2867	S2868	R2869													
L2870	L2871	Q2872	A2873	M2874	A2875	E2876	Q2877	L2878	A2879	E2880	N2881	Y2882	H2883	N2884	T2885	V2886	G2887	R2888	K2889	K2890	K2891	Q2892	E2893	L2894	E2895	A2896	K2897	G2898	G2899	G2900	T2901	H2902	P2903	L2904	L2905	V2906	P2907	Y2908	D2909	T2910	L2911	T2912	A2913	K2914	E2915	K2916	A2917	R2918	D2919	R2920	E2921	K2922	A2923	Q2924	E2925	L2926	K2928	F2929											
L2930	Q2931	M2932	N2933	G2934	V2935	A2936	V2937	T2938	R2939	GLY	LEU	LYS	ASP	MET	GLU	L2946	D2947	T2948	S2949	S2950	I2951	E2952	K2953	R2954	A2955	F2956	G2957	F2958	L2959	W2960	M2961	D2962	L2963	S2964	F2965	L2966	W2967	D2968	L2969	H2970	F2971	L2972	A2973	H2974	A2975	H2976	L2977	E2978	A2979	V2980	V2981	S2982	S2983	G2984	R2985	V2986	E2987	K2988	R2989	R2990	S2991	P2992	H2993	E2994	T2995	L2996	I2997	K2998	L2999
F2998	A2999	K3000	I3001	L3002	L3003	P3004	L3005	L3006	N3007	Q3008	Y3009	F3010	T3011	L3015	Y3016	L3018	S3019	T3020	P3021	A3022	K3023	V3024	L3025	G3026	S3027	G3028	G3029	H3030	A3031	S3032	E3033	K3036	I3039	L3042	F3043	L3046	A3047	A3048	L3049	V3050	R3051	H3052	R3053	V3054	S3055	L3056	F3057	K2988	S2989	P2990	H2991	D3080	A3061																
V3064	V3065	H3066	C3067	L3068	H3069	L3070	L3071	A3072	R3073	S3074	L3075	D3076	A3077	R3078	T3079	V3080	M3081	K3082	S3083	G3084	P3085	E3086	I3087	V3088	K3089	L3092	R3093	S3094	F3095	F3096	E3097	S3098	A3099	S3100	I3103	E3104	K3106	M3106	V3107	L3110	R3111	L3112	G3113	K3114	V3115	S3116	GLN	ALA	ARG	THR	GLN	VAL	K3123	G3124	V3125	G3126													
Q3127	N3128	L3129	T3130	T3133	V3134	A3135	L3136	L3137	F3138	V3139	L3140	T3141	T3142	L3143	F3144	Q3149	H3150	Q3151	G3153	D3154	I3155	V3156	L3157	L3158	D3159	D3160	Q3161	V3163	S3164	C3165	Y3166	R3167	T3168	L3169	C3170	S3171	V3172	L3175	G3176	T3177	T3178	K3179	N3180	T3181	D3242	V3183	E3184	K3185	L3186	R3187	L3190	G3191	E3192																
C3193	L3194	A3195	R3196	L3197	A3198	A3199	A3200	M3201	P3202	V3203	A3204	F3205	L3206	E3207	L3210	N3211	A3215	C3216	S3217	V3218	T3220	T3221	R3222	D3223	K3222	Q3224	R3225	E3226	R3227	A3228	L3229	L3230	G3231	L3232	S3233	N3234	S3235	V3236	E3237	E3238	M3239	C3240	P3241	D3242	I3243	P3244	V3245	L3246	D3247	R3248	L3249	M3250	A3251	D3252															
A3257	E3258	S3259	G3260	A3261	R3262	Y3263	T3264	E3265	H3266	P3267	H3268	V3269	L3270	E3271	L3272	T3273	L3274	P3275	M3276	L3281	P3282	R3283	W3284	V3285	E3286	R3287	G3288	P3289	E3290	A3291	P3292	P3293	P3294	A3295	L3296	P3297	A3298	G3299	A3300	P3301	P3302	P3303	C3304	T3305	A3306	L3312	L3316	T3319	L3320	R3321	L3322	T3323	V3324	N3325	N3326														
L3327	G3328	I3329	D3330	E3331	A3332	M3335	K3336	R3337	L3338	A3339	V3340	F3341	A3342	Q3343	P3344	I3345	V3346	S3347	R3350	L3354	H3355	S3356	H3357	F3358	L3359	P3360	T3361	I3362	G3363	R3364	L3365	R3366	K3367	R3368	A3369	V3372	V3373	A3374	E3375	E3376	E3377	Q3378	L3379	R3380	L3381	E3382	A3383	K3384	A3385	E3386	A3387	E3388	E3389	G3390	E3391														
L3392	L3393	W3394	R3395	L3401	R3402	C3403	D3404	L3405	Y3406	L3407	L3408	Y3409	P3410	L3411	L3412	R3414	R3420	L3434	F3435	G3439	F3442	W3445	S3446	K3447	S3448	H3449	K3452	R3453	E3454	E3455	V3459	Q3461	N3462	I3463	L3464	N3465	N3466	M3467	F3468	L3470	T3471	A3472	K3473	D3474	S3474	K3475	S3476	K3477	M3478																				
A3479	LYS	ALA	GLY	ASP	ALA	GLN	SER	GLY	GLY	SFR	ASP	GLN	GLU	ARG	THR	LYS	LYS	R3498	R3499	G3500	D3501	R3502	Y3503	S3504	V3505	Q3506	T3507	S3508	L3509	I3510	V3511	A3512	T3513	L3514	R3515	K3516	G3521	L3522	N3523	M3524	P3527	Q3530	L3531	L3532	L3533	M3534	L3535	A3536	K3537	T3538	A3541	L3542	K3543	D3544															
T3545	D3546	E3547	R3550	E3551	F3552	L3553	Q3554	N3555	M3556	L3557	H3558	L3559	Q3560	G3561	K3562	V3563	E3564	G3565	S3566	R3570	M3573	R3577	G3578	L3579	P3580	G3581	S3582	E3583	E3584	D3585	A3586	E3587	D3588	P3589	E3590	K3591	I3592	V3593	V3596	V3602	L3603	T3604	H3605	L3606	E3607	E3610	H3611	P3612	Y3613	K3614	S3615	L3616																	
K3617	A3618	V3619	W3620	H3621	K3622	L3623	L3624	S3625	K3626	Q3627	R3628	R3629	R3630	A3631	V3632	V3633	A3634	C3635	F3636	R3637	M3638	T3639	L3641	L3644	N3651	E3655	S3656	F3657	A3660	V3661	T3664	M3673	E3682	Q3683	E3684	E3685	E3686	E3687	E3688	E3689	V3690	E3691	E3692	K3693	D3696	H3699	L3703																						







F3950	F3951	V3957	V3961	I3969	I3970	P3972	L3980	R3981	R3982	G3983	T3984	V3985	I3986	N3987	N3988	N3989	N4000	N4001	N4002	D4006	S4007	S4008	L4013	L4016	L4017	Q4020	N4039	N4040	A4041	V4045	V4049	M4057	K4060	D4063	M4064	K4069	E3944	E3945	Q3946	G3947	K3948	R3949												
L3835	T3838	F3847	K3852	A3853	M3858	V3859	N3860	E3861	D3862	G3863	T3864	V3865	I3866	N3867	R3868	Q3869	N3870	G3871	V3874	M3875	D3876	E3879	F3880	D3883	L3891	C3892	F3899	Q3900	N3901	N3902	L3903	R3904	I3916	V3920	F3933	V3937	K3940	I3943	E3944	E3945	Q3946	G3947	K3948	R3949										
H3699	L3703	E3718	D3719	M3723	A3724	V3725	S3732	C3733	H3734	L3735	E3736	GLU	GLY	GLY	GLU	ASN	GLY	ALA	GLU	GLU	V3749	E3750	E3755	E3759	R3762	V3765	Q3766	Q3767	S3768	R3769	L3770	H3771	T3772	R3773	C3786	K3799	D3822	K3823	R3824	E3825	S3831	A3834												
H3611	H3612	V3613	K3614	S3615	K3616	K3617	V3618	V3619	W3620	H3621	K3622	L3623	L3624	S3625	K3626	Q3627	R3628	R3629	R3630	A3631	V3632	V3633	A3634	C3635	F3636	M3637	N3638	T3639	P3640	L3644	N3651	E3655	S3656	V3657	A3660	W3661	M3673	E3682	Q3683	E3684	E3685	E3686	E3687	E3688	E3689	V3690	E3691	E3692	K3693	D3696				
E3386	A3387	E3388	E3389	G3390	E3391	L3392	L3393	R3394	R3395	L4401	C4402	R4403	D4404	L4405	Y4406	A4407	Y4409	P4410	L4411	L4412	I4413	R4414	R4420	L4434	F4435	G4439	F4442	W4445	S4446	K4447	S4448	H4449	N4450	F4451	K4452	R4453	E4454	E4455	Y4459	V4460	Q4461	N4462	E4463	L4464	N4465	N4466	M4467	F4469	L4470	T4471				
E3321	L3322	V3324	N3325	N3326	L3327	G3328	L3329	D3330	E3331	A3332	M3335	K3336	K3337	L3338	A3339	V3340	F3341	A3342	L3343	P3344	L3345	S3346	R3350	L3354	H3355	S3356	H3357	F3358	L3359	V3360	T3361	L3362	G3363	R3364	L3365	R3366	K3367	R3368	A3369	V3372	V3373	A3374	E3375	E3376	E3377	Q3378	L3379	R3380	E3382	L3381	E3382	F3469	L3470	T3471
D3252	I3253	A3257	S3258	G3260	A3261	R3262	Y3263	T3264	E3265	M3266	P3267	H3268	V3269	L3270	E3271	I3272	T3273	L3274	P3275	M3276	S3279	Y3280	L3281	P3282	R3283	W3284	W3285	E3286	R3287	G3288	P3289	E3290	A3291	P3292	P3293	P3294	A3295	L3296	A3298	G3299	A3300	P3301	P3302	P3303	C3304	T3305	A3306	L3312	L3316	G3317	N3318	L3319	L3320	
G3191	E3192	C3193	L3194	R3196	L3197	A3198	A3199	A3200	M3201	P3202	V3203	A3204	F3205	L3206	T3210	N3211	E3212	Y3213	N3214	A3215	C3216	S3217	V3218	Y3219	T3220	T3221	K3222	S3223	P3224	R3225	R3227	A3228	I3229	L3230	G3231	L3232	P3233	N3234	D3242	I3243	F3244	V3245	E3246	D3247	R3248	N3249	M3250	A3251						
V3125	G3126	Q3127	N3128	L3129	T3130	T3133	V3134	A3135	L3136	L3137	P3138	V3139	L3140	T3141	T3142	L3143	F3144	Q3149	H3150	Q3151	F3152	G3153	D3154	D3155	V3156	L3157	L3158	D3159	L3160	V3161	Q3162	S3164	Y3165	F3166	R3167	T3168	L3169	C3170	S3171	I3172	L3175	G3176	T3177	T3178	K3179	V3180	T3181	Y3182	V3183	E3184	K3185	L3186	R3187	L3190
H2991	E2992	I2995	F2998	A2999	K3000	I3001	L3002	F3004	L3005	I3006	Y3009	F3010	L3015	Y3016	F3017	L3018	S3019	T3020	P3021	A3022	K3023	V3024	L3025	Q3026	S3027	G3028	K3029	H3030	A3031	S3032	E3035	K3036	I3039	L3042	F3043	L3046	A3047	A3048	L3049	V3050	R3051	R3052	R3053	V3054	S3055	L3056	F3057	G3058	T3059	P3060				
A3061	V3065	N3066	C3067	L3068	H3069	I3070	L3071	A3072	R3073	S3074	D3075	L3076	A3077	R3078	T3079	V3080	M3081	K3082	S3083	G3084	P3085	E3086	S3087	V3088	K3089	L3092	R3093	S3094	F3095	F3096	E3097	S3098	A3099	S3100	I3103	E3104	K3105	M3106	V3107	L3110	R3111	L3112	G3113	K3114	V3115	S3116	GLN	ALA	ARG	THR	GLN	VAL	K3123	G3124

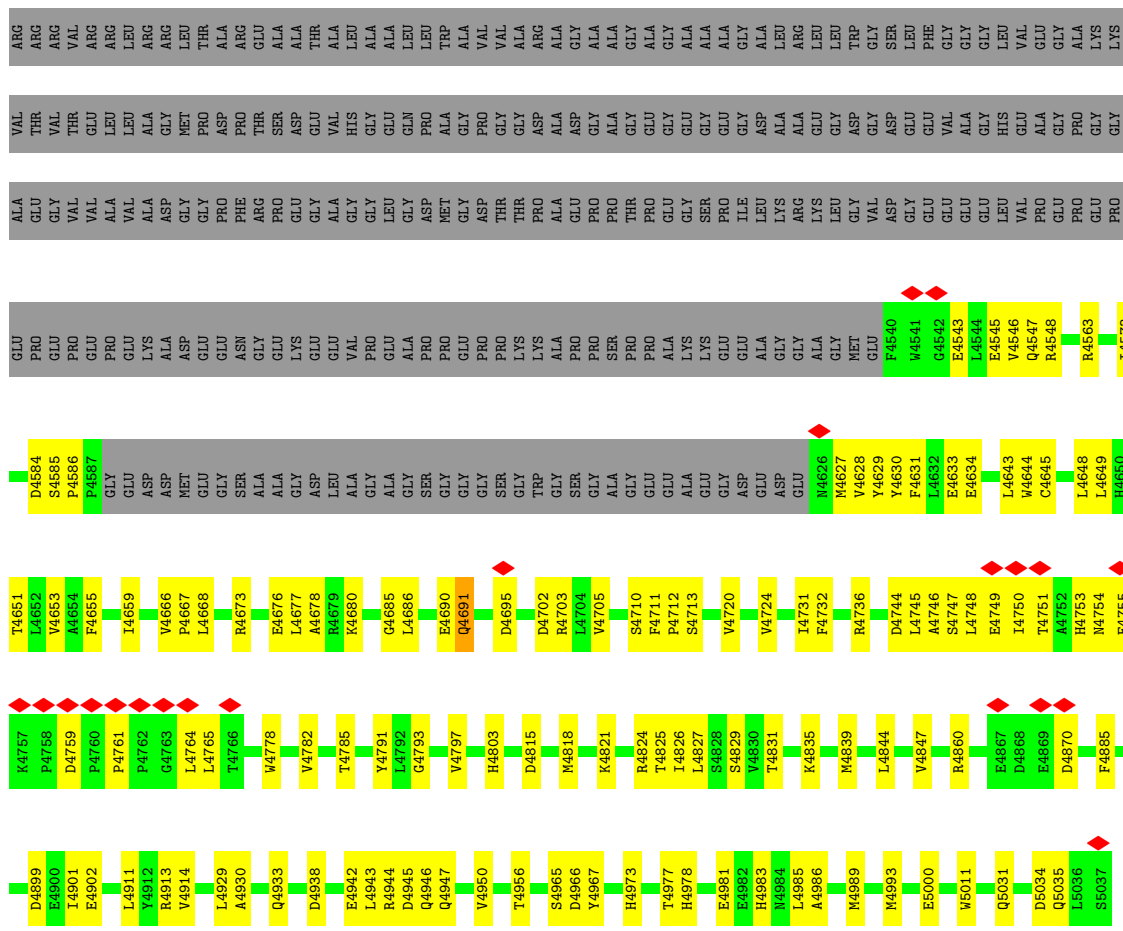




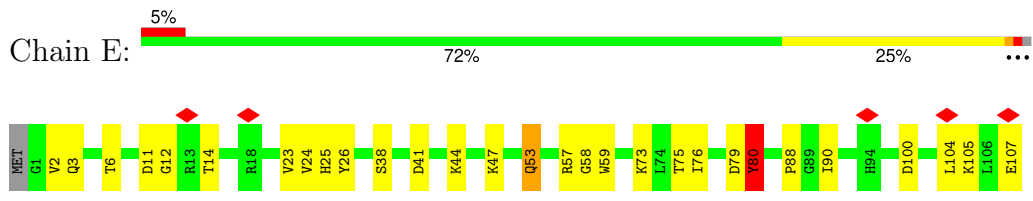




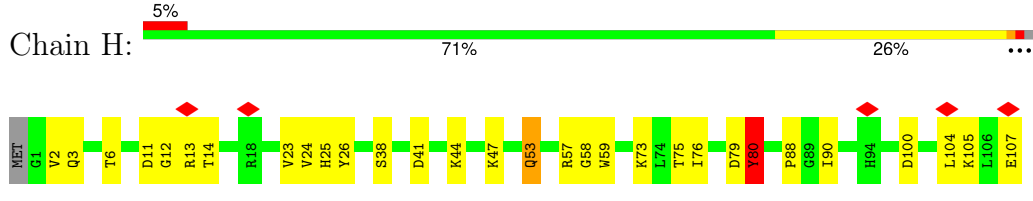




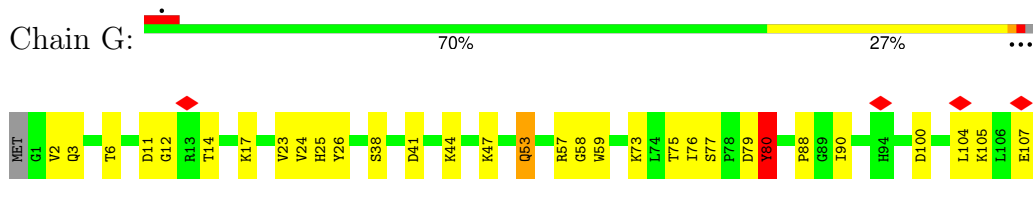
• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1A



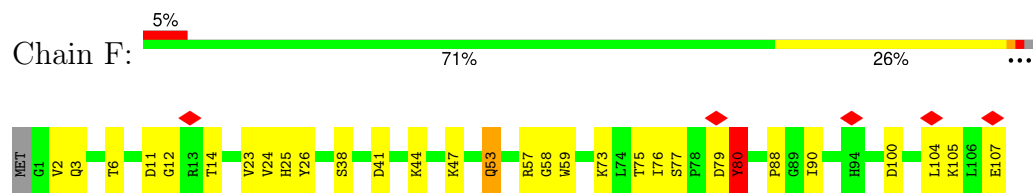
• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1A



• 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	94090	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	0.513	Depositor
Minimum map value	-0.205	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.021	Depositor
Recommended contour level	0.1	Depositor
Map size ( $\text{\AA}$ )	427.52, 427.52, 427.52	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	0.835, 0.835, 0.835	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, ZN, A1BD3, 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	0.43	23/35977 (0.1%)	0.72	47/48726 (0.1%)
1	B	0.43	24/35977 (0.1%)	0.72	46/48726 (0.1%)
1	C	0.43	23/35977 (0.1%)	0.72	47/48726 (0.1%)
1	D	0.43	24/35977 (0.1%)	0.72	46/48726 (0.1%)
2	E	1.65	9/850 (1.1%)	1.98	11/1146 (1.0%)
2	F	1.65	9/850 (1.1%)	1.98	11/1146 (1.0%)
2	G	1.65	9/850 (1.1%)	1.98	11/1146 (1.0%)
2	H	1.65	9/850 (1.1%)	1.98	11/1146 (1.0%)
All	All	0.49	130/147308 (0.1%)	0.77	230/199488 (0.1%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	1	11
1	B	1	11
1	C	1	11
1	D	1	11
2	E	0	1
2	F	0	1
2	G	0	1
2	H	0	1
All	All	4	48

The worst 5 of 130 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	G	80	TYR	CG-CD1	-23.10	1.09	1.39
2	E	80	TYR	CG-CD1	-23.07	1.09	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	H	80	TYR	CG-CD1	-23.06	1.09	1.39
2	F	80	TYR	CG-CD1	-23.01	1.09	1.39
1	D	3321	ARG	CG-CD	-22.80	0.94	1.51

The worst 5 of 230 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	D	3949	ARG	NE-CZ-NH1	-66.67	86.97	120.30
1	A	3949	ARG	NE-CZ-NH1	-66.63	86.99	120.30
1	C	3949	ARG	NE-CZ-NH1	-66.62	86.99	120.30
1	B	3949	ARG	NE-CZ-NH1	-66.59	87.00	120.30
2	F	80	TYR	CE1-CZ-CE2	-41.45	53.47	119.80

All (4) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
1	A	3321	ARG	CA
1	B	3321	ARG	CA
1	D	3321	ARG	CA
1	C	3321	ARG	CA

5 of 48 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1421	ARG	Sidechain
1	A	156	GLN	Sidechain
1	A	1758	ARG	Sidechain
1	A	2173	GLN	Sidechain
1	A	3320	LEU	Peptide

## 5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	35150	0	34794	801	0
1	B	35150	0	34794	786	0
1	C	35150	0	34794	789	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	35150	0	34794	799	0
2	E	831	0	829	24	0
2	F	831	0	829	25	0
2	G	831	0	829	28	0
2	H	831	0	829	25	0
3	A	31	0	12	1	0
3	B	31	0	12	1	0
3	C	31	0	12	1	0
3	D	31	0	12	1	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
5	C	1	0	0	0	0
5	D	1	0	0	0	0
6	A	14	0	0	0	0
6	B	14	0	0	0	0
6	C	14	0	0	0	0
6	D	14	0	0	0	0
All	All	144112	0	142540	3231	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 11.

The worst 5 of 3231 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:B:2237:CYS:SG	1:B:2237:CYS:CB	2.11	1.39
1:A:2237:CYS:CB	1:A:2237:CYS:SG	2.11	1.38
1:D:2237:CYS:CB	1:D:2237:CYS:SG	2.11	1.37
1:C:2237:CYS:SG	1:C:2237:CYS:CB	2.11	1.37
1:B:2452:ARG:NH1	1:C:144:GLU:OE1	1.88	1.06

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%)	4256 (97%)	123 (3%)	6 (0%)	48	70
1	B	4385/5037 (87%)	4256 (97%)	123 (3%)	6 (0%)	48	70
1	C	4385/5037 (87%)	4256 (97%)	123 (3%)	6 (0%)	48	70
1	D	4385/5037 (87%)	4256 (97%)	123 (3%)	6 (0%)	48	70
2	E	105/108 (97%)	102 (97%)	3 (3%)	0	100	100
2	F	105/108 (97%)	102 (97%)	3 (3%)	0	100	100
2	G	105/108 (97%)	102 (97%)	3 (3%)	0	100	100
2	H	105/108 (97%)	102 (97%)	3 (3%)	0	100	100
All	All	17960/20580 (87%)	17432 (97%)	504 (3%)	24 (0%)	50	70

5 of 24 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	55	ALA
1	A	908	VAL
1	A	3300	ALA
1	A	3949	ARG
1	B	55	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%)	3817 (100%)	19 (0%)	86	92

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	3836/4276 (90%)	3817 (100%)	19 (0%)	86	92
1	C	3836/4276 (90%)	3817 (100%)	19 (0%)	86	92
1	D	3836/4276 (90%)	3817 (100%)	19 (0%)	86	92
2	E	89/90 (99%)	88 (99%)	1 (1%)	70	83
2	F	89/90 (99%)	88 (99%)	1 (1%)	70	83
2	G	89/90 (99%)	88 (99%)	1 (1%)	70	83
2	H	89/90 (99%)	88 (99%)	1 (1%)	70	83
All	All	15700/17464 (90%)	15620 (100%)	80 (0%)	85	92

5 of 80 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	3321	ARG
1	C	2268[A]	GLN
1	D	3734	HIS
1	C	960	MET
1	C	3225	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 32 such sidechains are listed below:

Mol	Chain	Res	Type
1	C	2883	HIS
1	C	2931	GLN
1	B	838	HIS
1	B	582	HIS
1	C	3734	HIS

### 5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

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
3	ATP	B	5301	-	28,33,33	0.65	0	34,52,52	0.95	1 (2%)
3	ATP	A	5301	-	28,33,33	0.65	0	34,52,52	0.95	1 (2%)
6	A1BD3	A	5304	-	11,15,15	5.56	6 (54%)	13,21,21	3.55	8 (61%)
3	ATP	C	5301	-	28,33,33	0.65	0	34,52,52	0.95	1 (2%)
3	ATP	D	5301	-	28,33,33	0.64	0	34,52,52	0.95	1 (2%)
6	A1BD3	B	5304	-	11,15,15	5.56	6 (54%)	13,21,21	3.54	8 (61%)
6	A1BD3	C	5304	-	11,15,15	5.56	6 (54%)	13,21,21	3.55	8 (61%)
6	A1BD3	D	5304	-	11,15,15	5.56	6 (54%)	13,21,21	3.55	8 (61%)

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
3	ATP	B	5301	-	-	10/18/38/38	0/3/3/3
3	ATP	A	5301	-	-	10/18/38/38	0/3/3/3
6	A1BD3	A	5304	-	-	1/3/3/3	0/2/2/2
3	ATP	C	5301	-	-	10/18/38/38	0/3/3/3
3	ATP	D	5301	-	-	10/18/38/38	0/3/3/3
6	A1BD3	B	5304	-	-	1/3/3/3	0/2/2/2
6	A1BD3	C	5304	-	-	1/3/3/3	0/2/2/2
6	A1BD3	D	5304	-	-	1/3/3/3	0/2/2/2

The worst 5 of 24 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	D	5304	A1BD3	C8-N3	10.26	1.49	1.37
6	A	5304	A1BD3	C8-N3	10.19	1.49	1.37
6	B	5304	A1BD3	C8-N3	10.17	1.49	1.37
6	C	5304	A1BD3	C8-N3	10.17	1.49	1.37
6	A	5304	A1BD3	O2-C8	9.75	1.40	1.23

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

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	C	5304	A1BD3	C1-N4-C8	-8.20	119.67	127.38
6	A	5304	A1BD3	C1-N4-C8	-8.17	119.69	127.38
6	B	5304	A1BD3	C1-N4-C8	-8.17	119.69	127.38
6	D	5304	A1BD3	C1-N4-C8	-8.15	119.72	127.38
6	C	5304	A1BD3	C3-N2-C4	6.83	114.09	101.92

There are no chirality outliers.

5 of 44 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	5301	ATP	C5'-O5'-PA-O1A
3	A	5301	ATP	C5'-O5'-PA-O3A
3	B	5301	ATP	C5'-O5'-PA-O1A
3	B	5301	ATP	C5'-O5'-PA-O3A
3	D	5301	ATP	C5'-O5'-PA-O1A

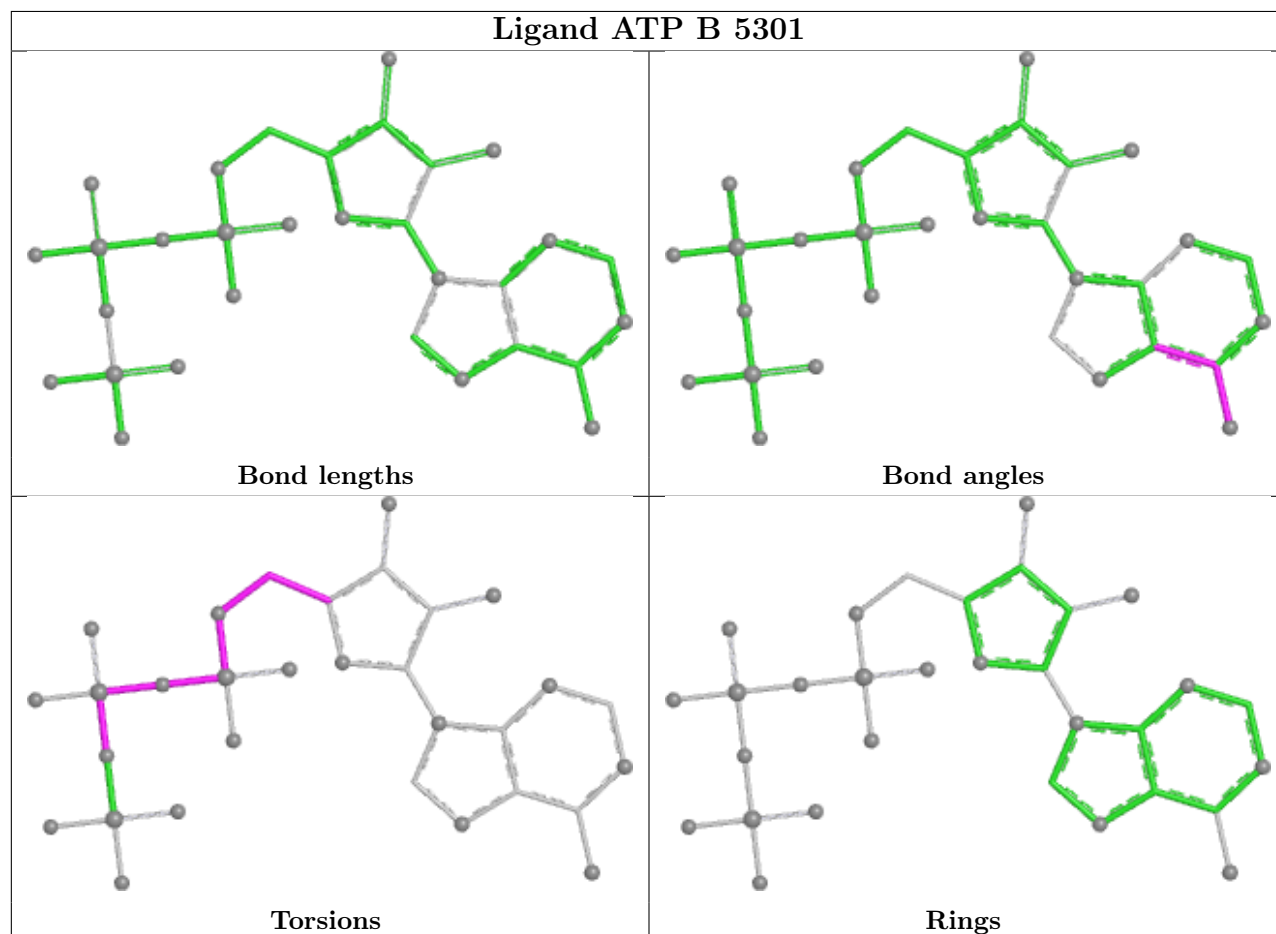
There are no ring outliers.

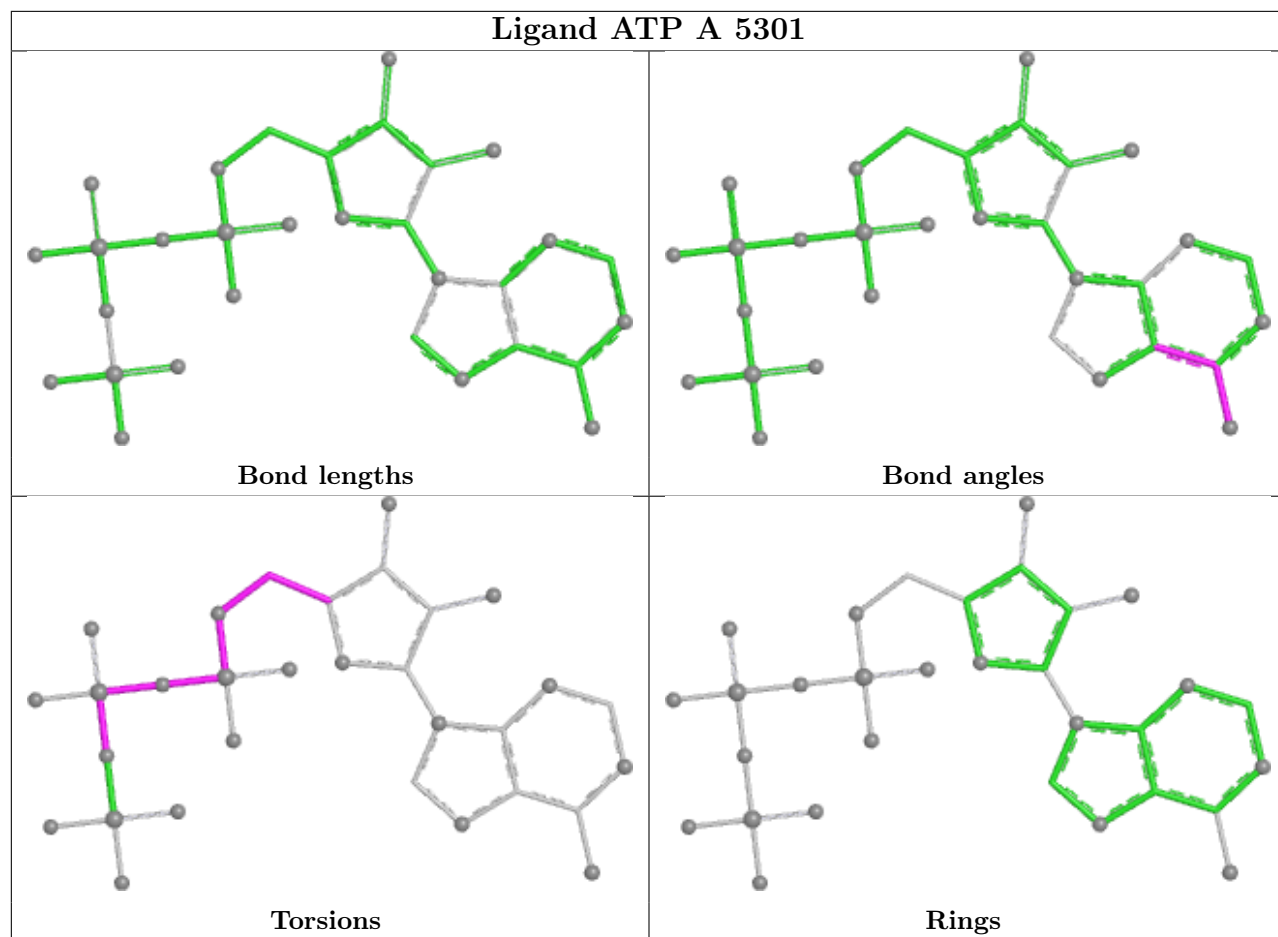
4 monomers are involved in 4 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	5301	ATP	1	0
3	A	5301	ATP	1	0
3	C	5301	ATP	1	0
3	D	5301	ATP	1	0

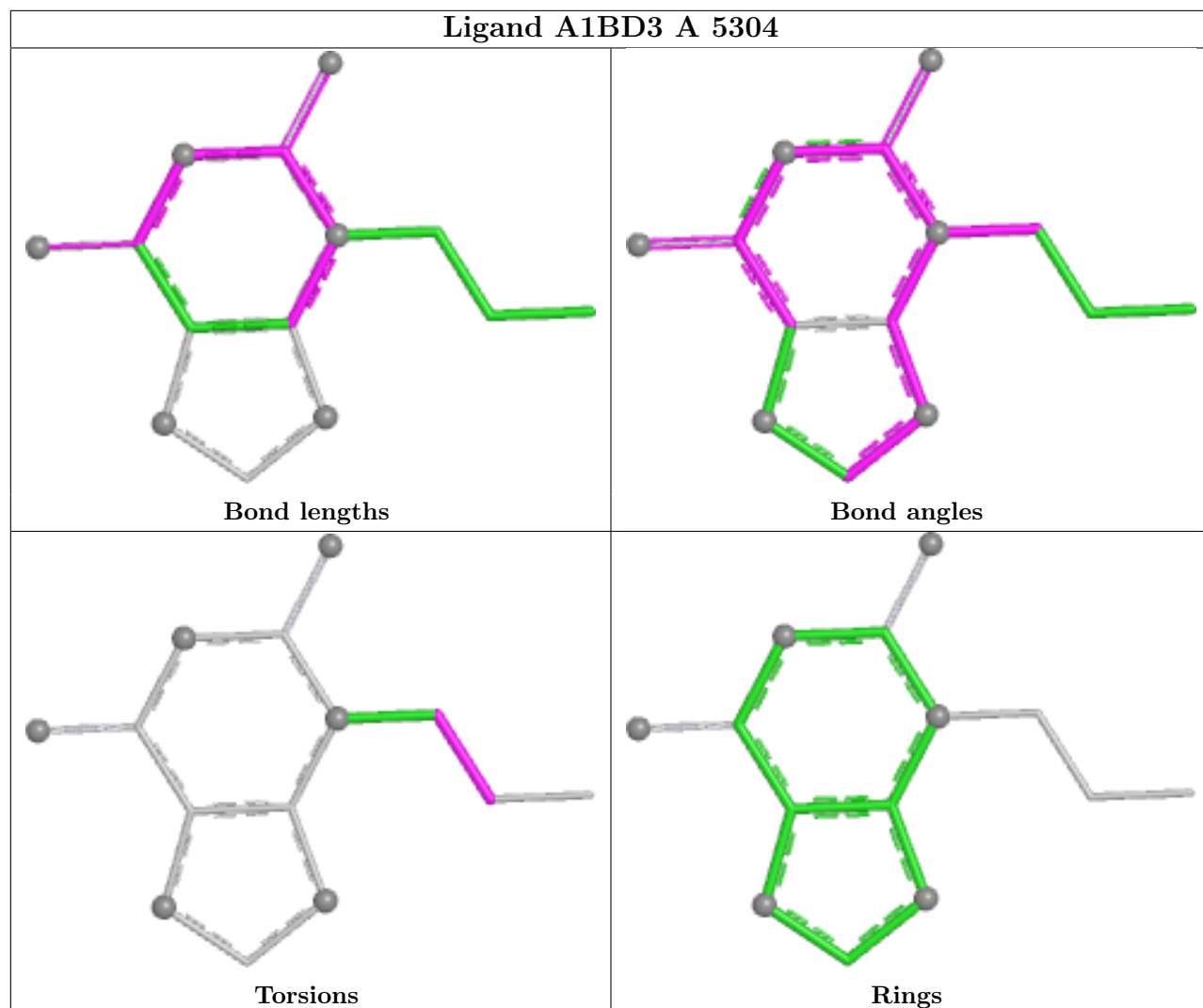
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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

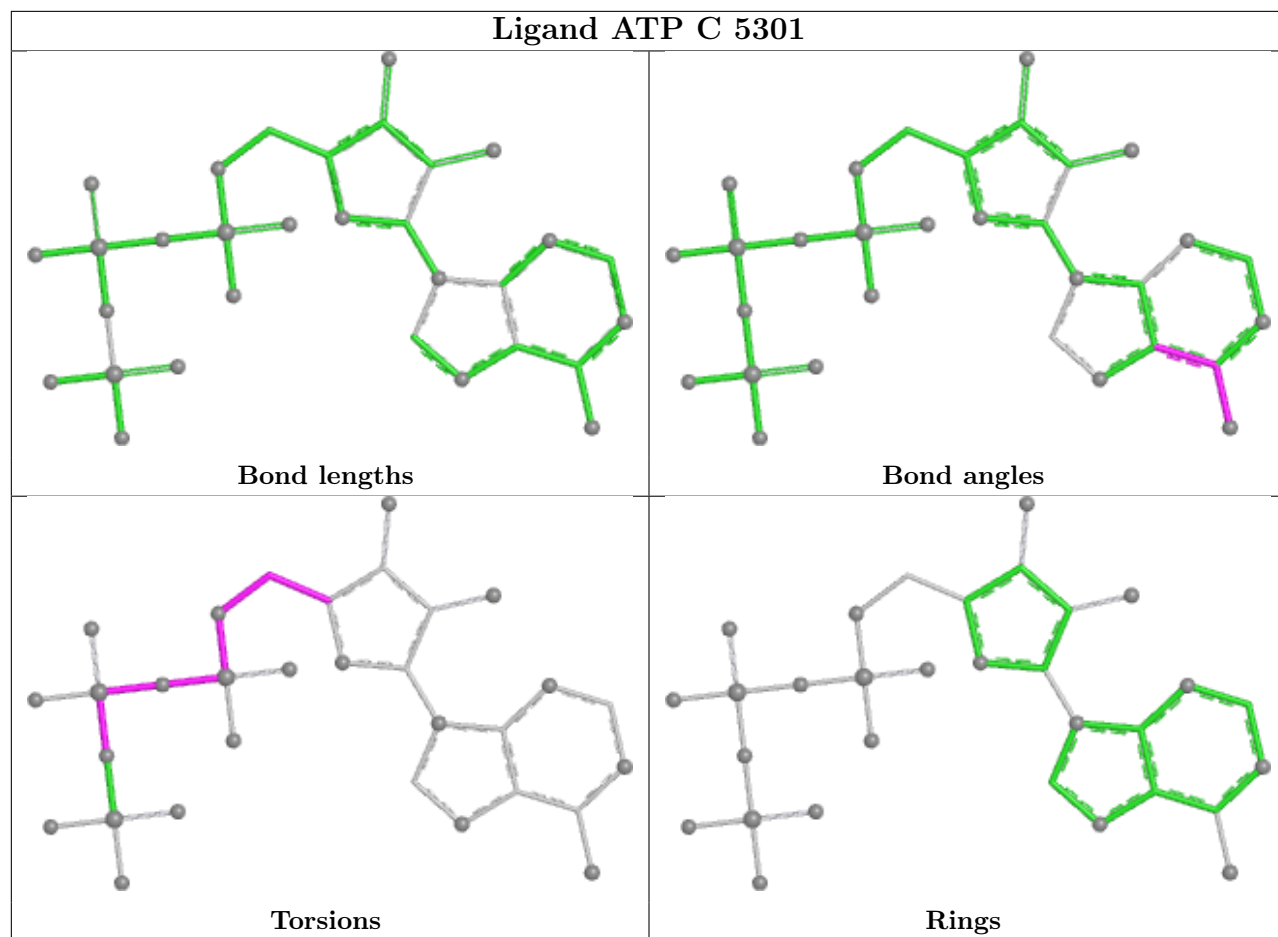
in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

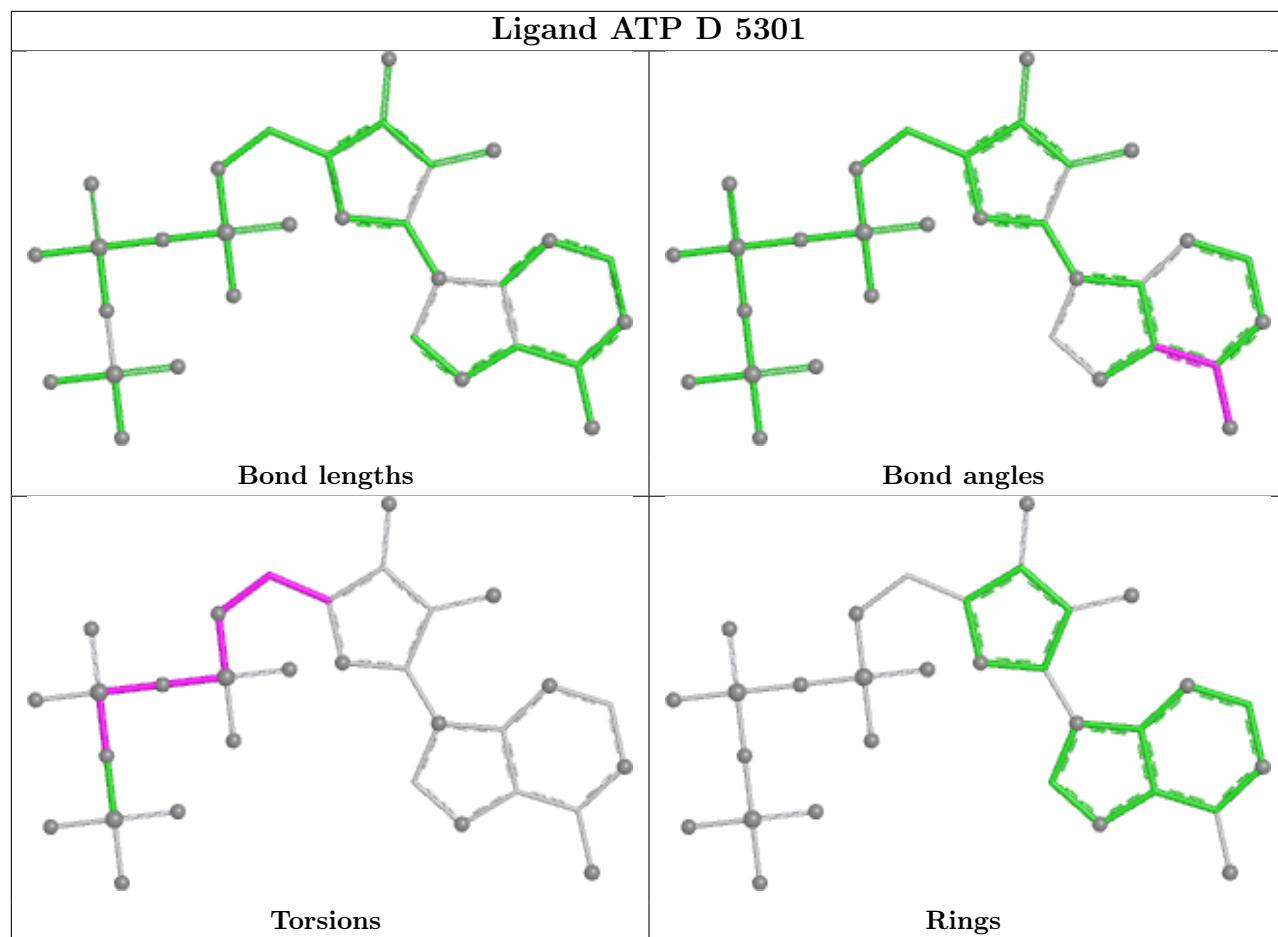


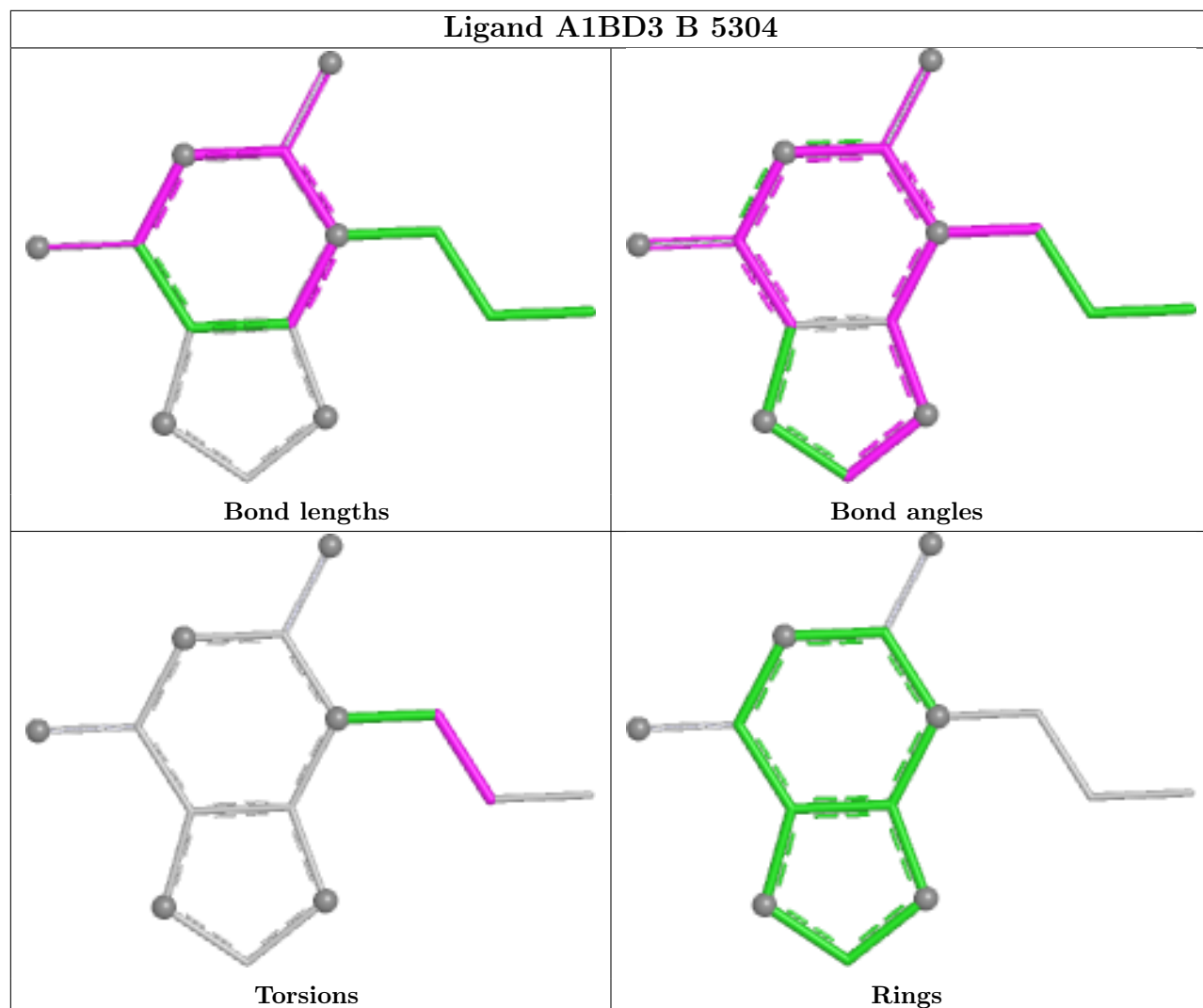


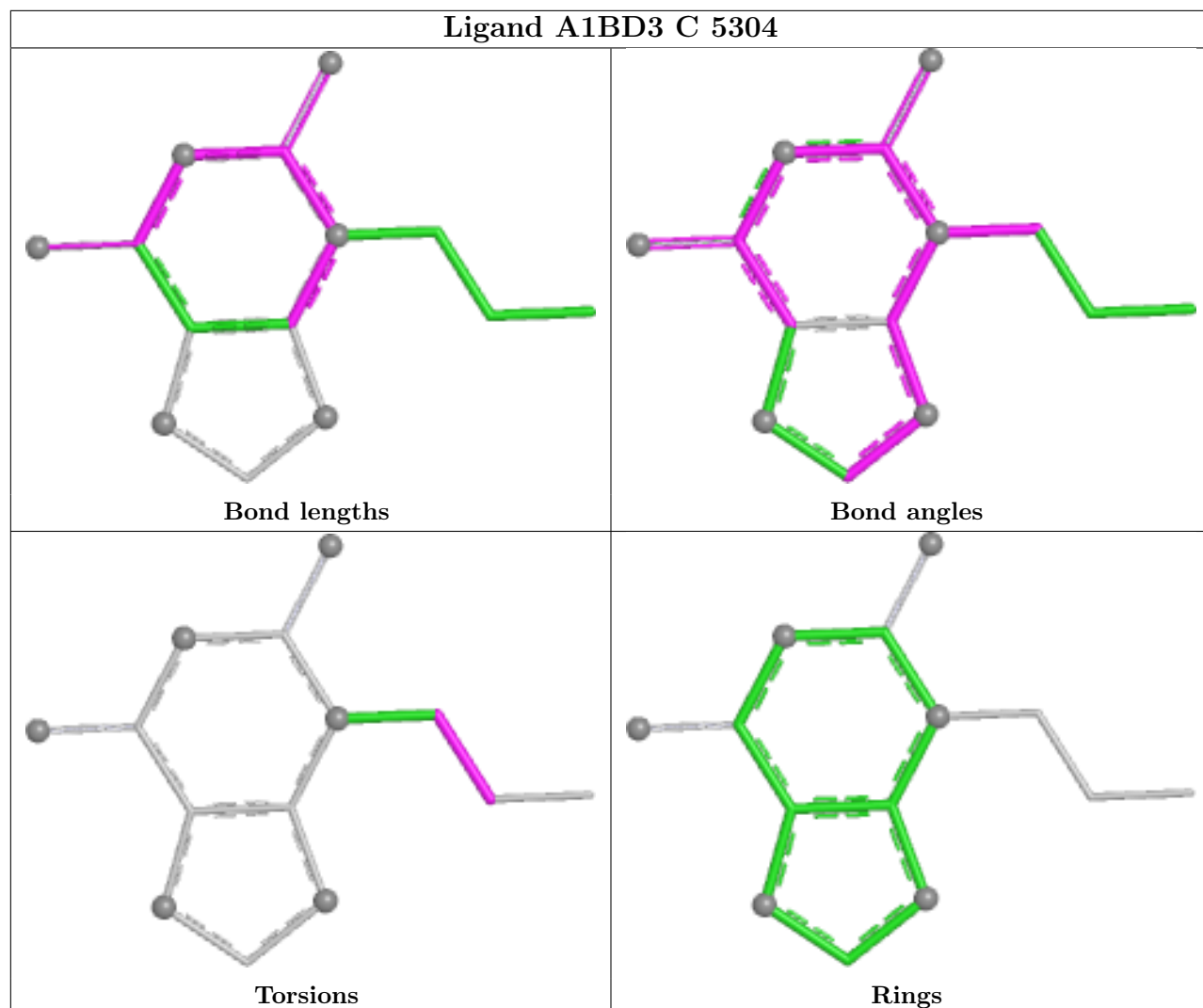


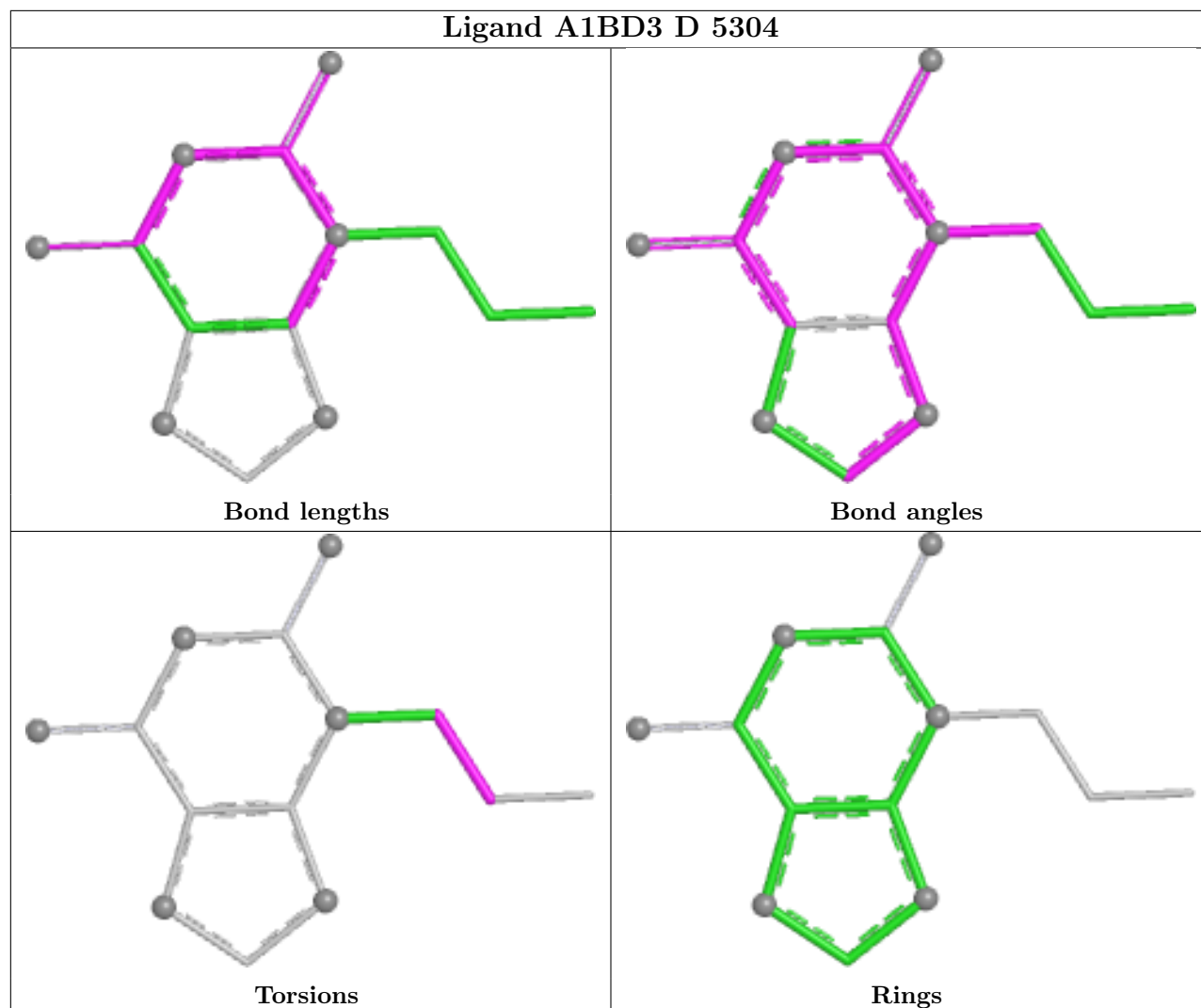












## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

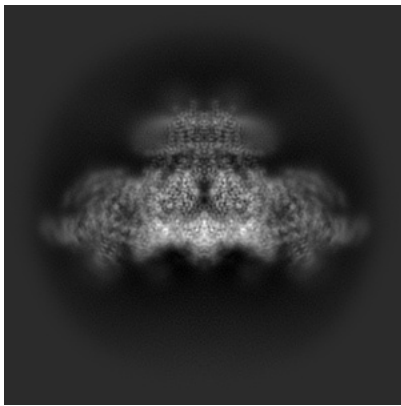
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-47390. These allow visual inspection of the internal detail of the map and identification of artifacts.

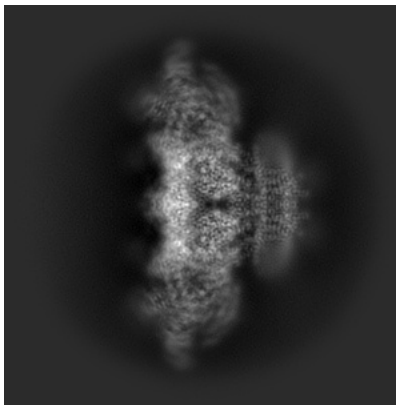
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

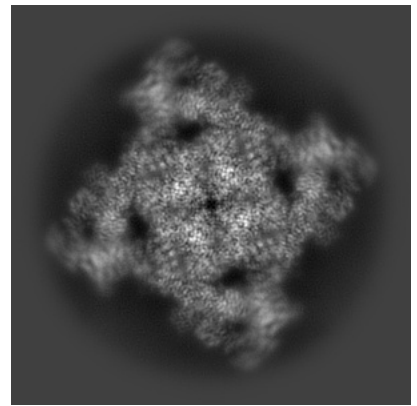
#### 6.1.1 Primary map



X

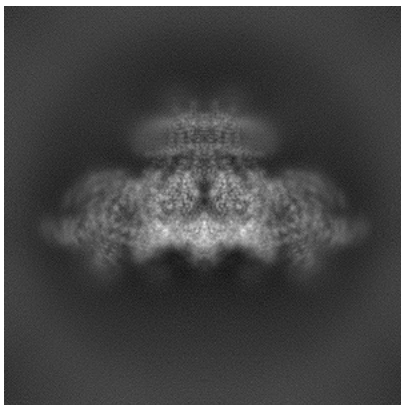


Y

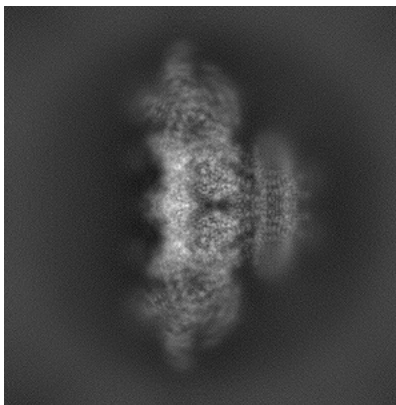


Z

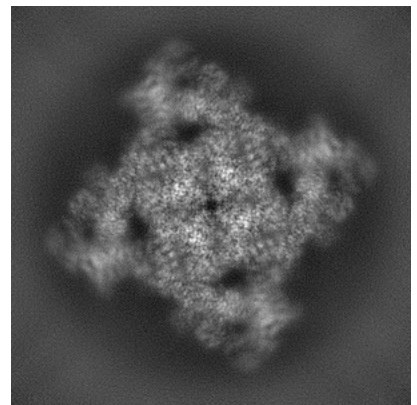
#### 6.1.2 Raw map



X



Y

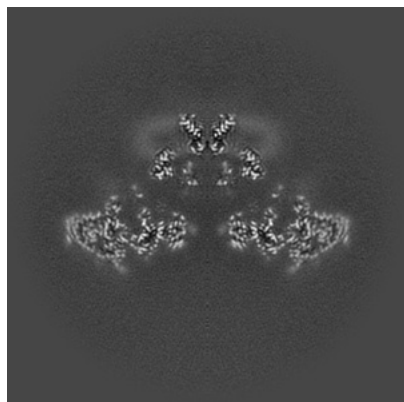


Z

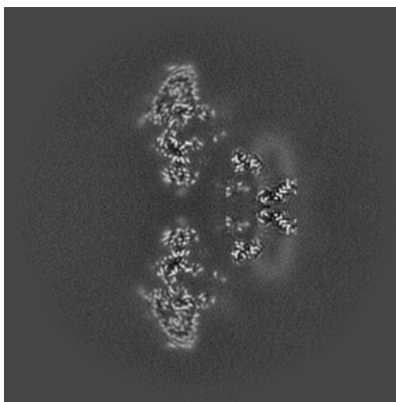
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

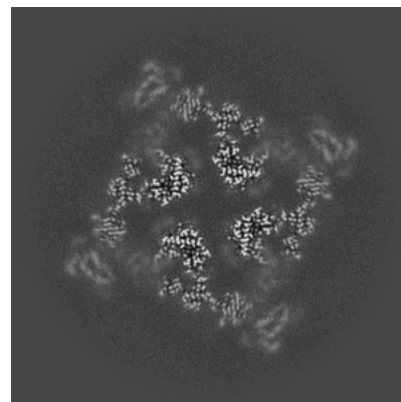
### 6.2.1 Primary map



X Index: 256

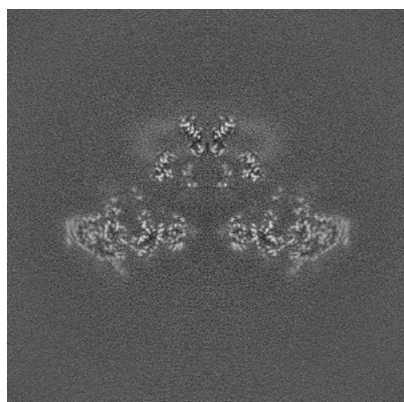


Y Index: 256

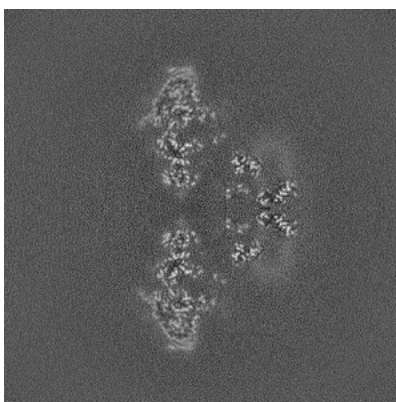


Z Index: 256

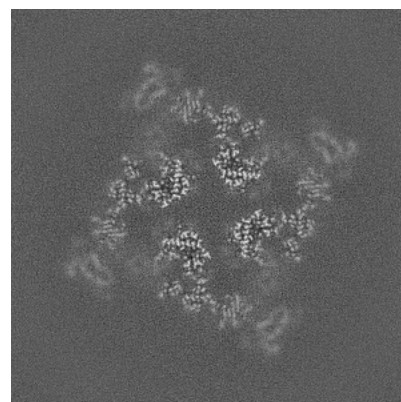
### 6.2.2 Raw map



X Index: 256



Y Index: 256



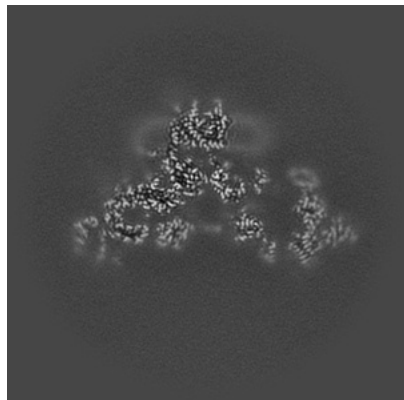
Z Index: 256

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

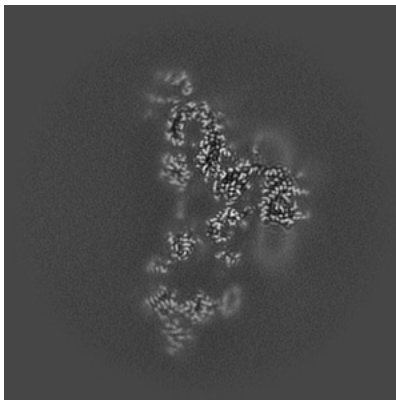


## 6.3 Largest variance slices [i](#)

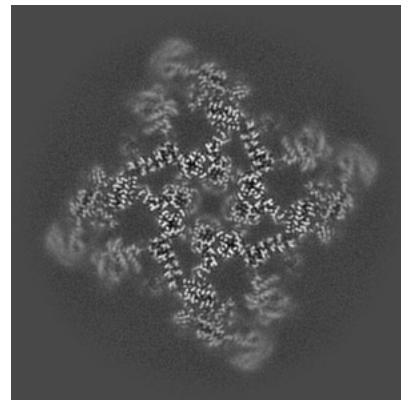
### 6.3.1 Primary map



X Index: 239

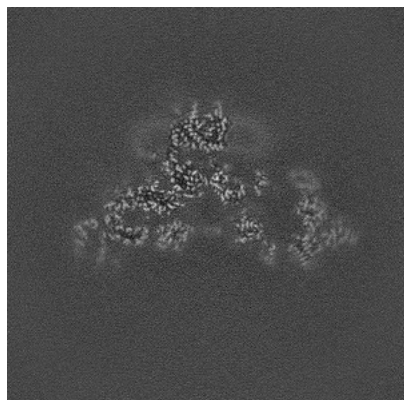


Y Index: 239

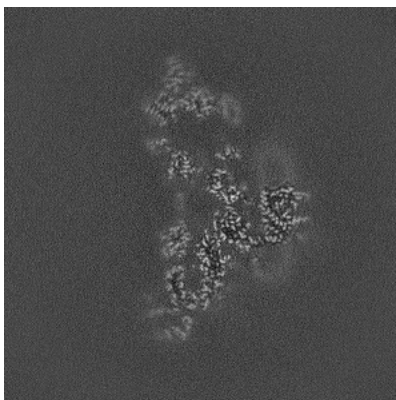


Z Index: 229

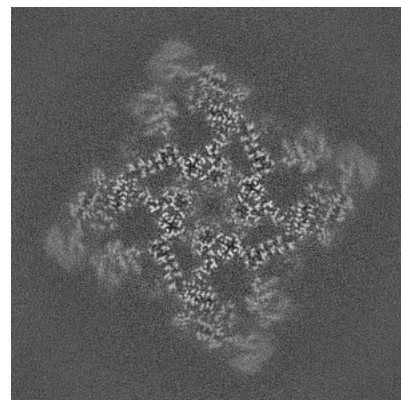
### 6.3.2 Raw map



X Index: 239



Y Index: 273

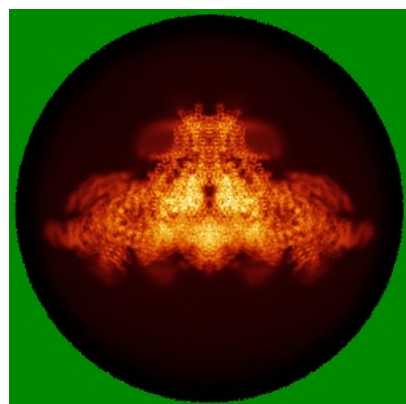


Z Index: 229

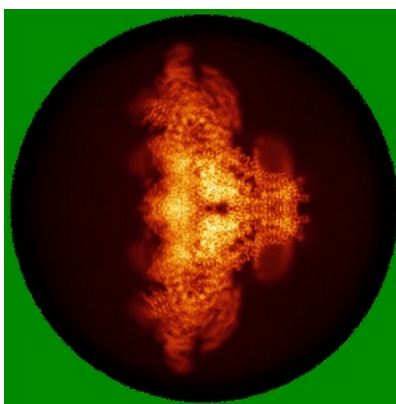
The images above show the largest variance slices of the map in three orthogonal directions.

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

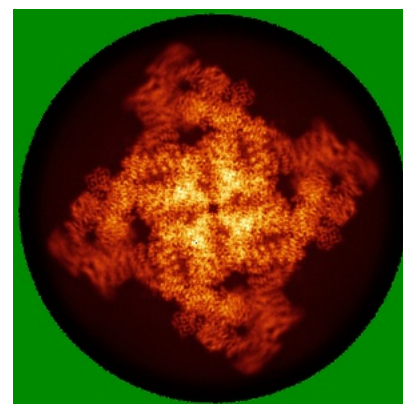
### 6.4.1 Primary map



X

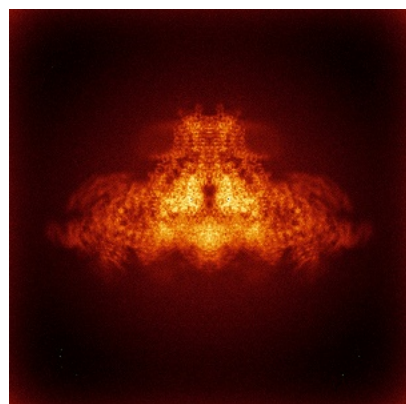


Y

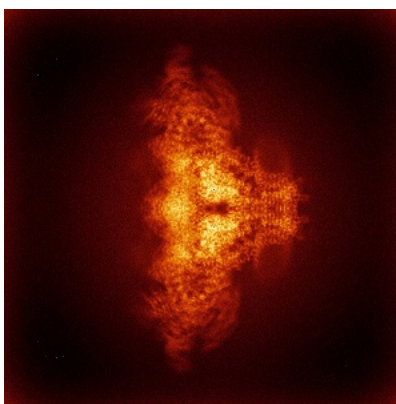


Z

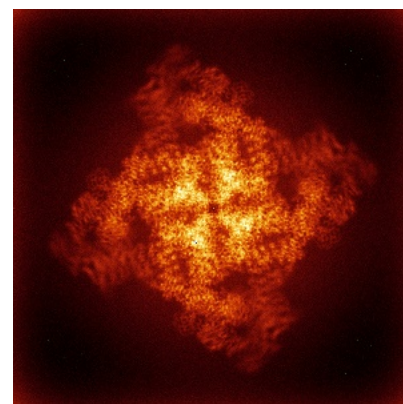
### 6.4.2 Raw map



X



Y

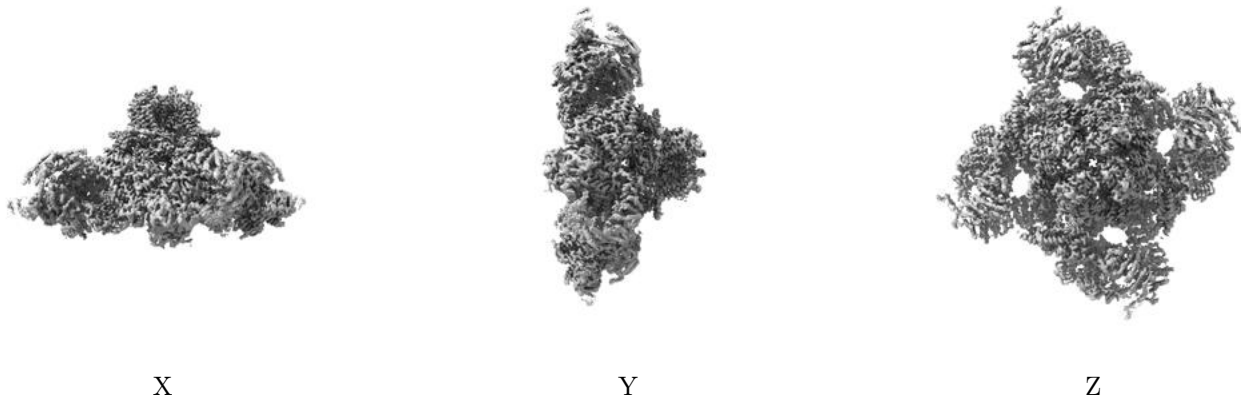


Z

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.

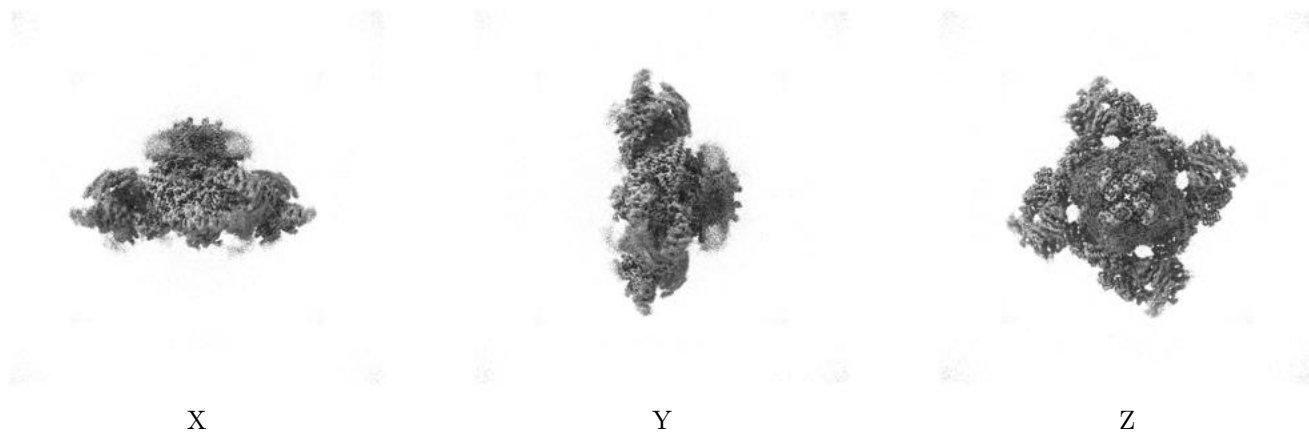
## 6.5 Orthogonal surface views [i](#)

### 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.

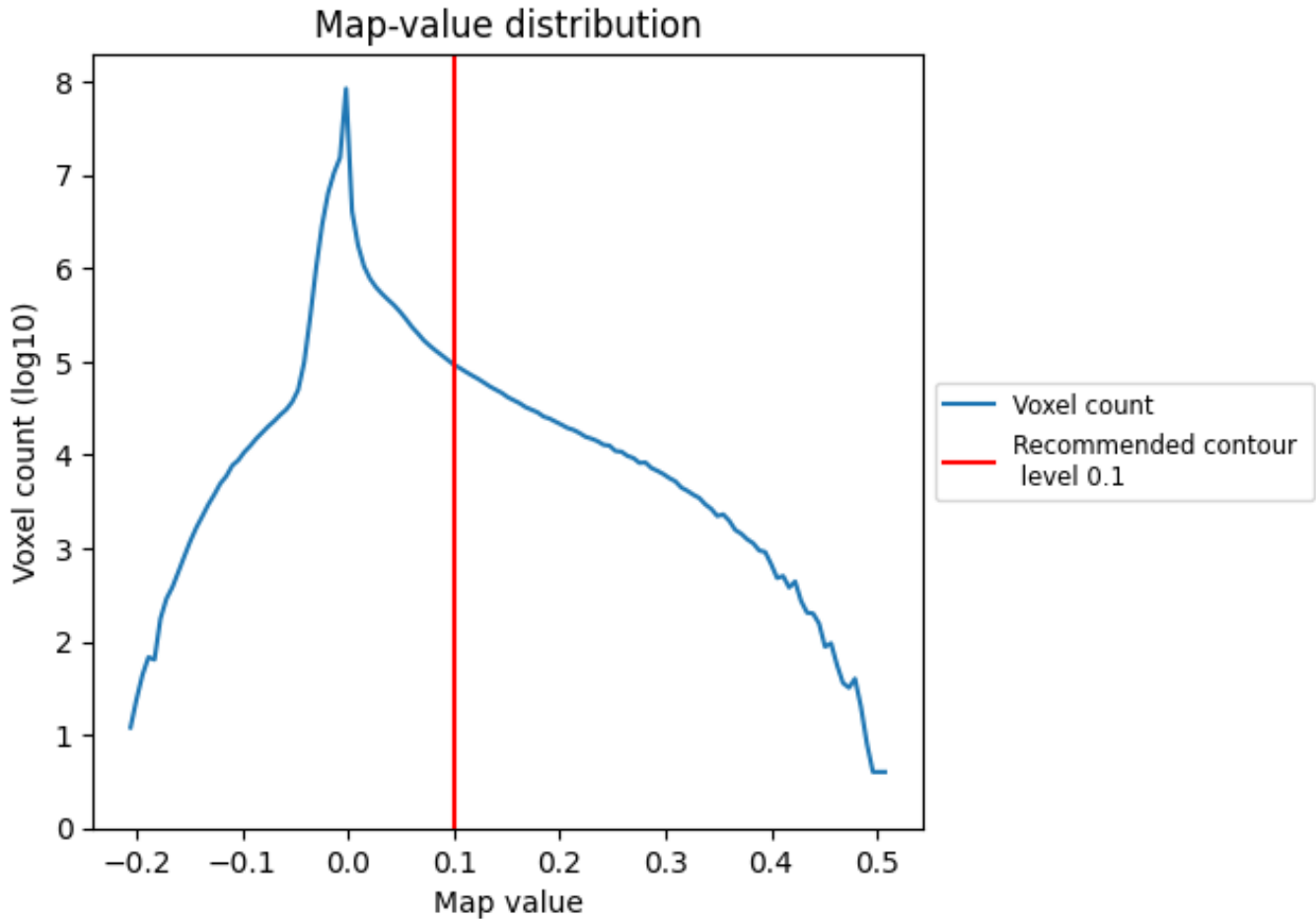
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

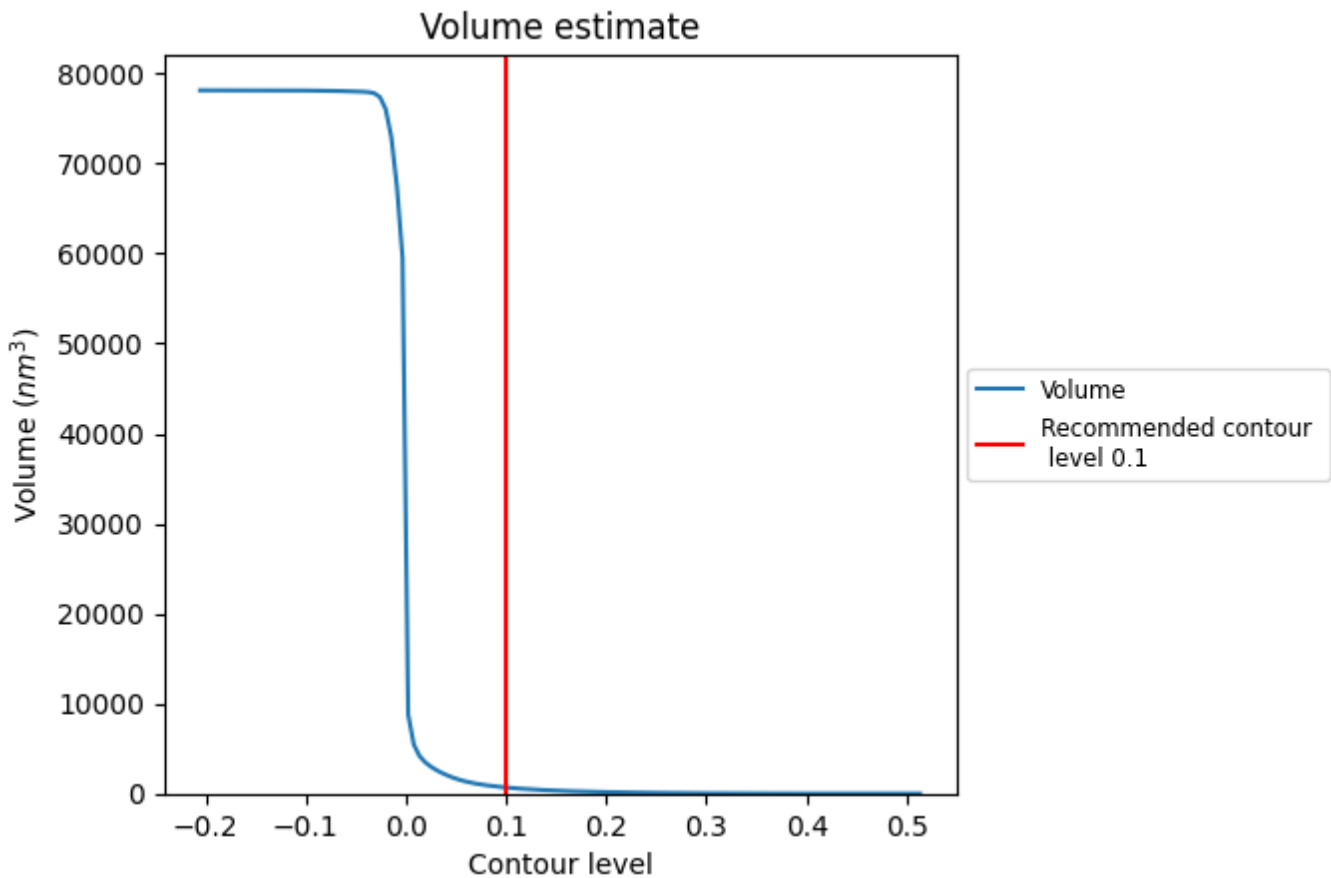
This section contains the results of statistical analysis of the map.

### 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.

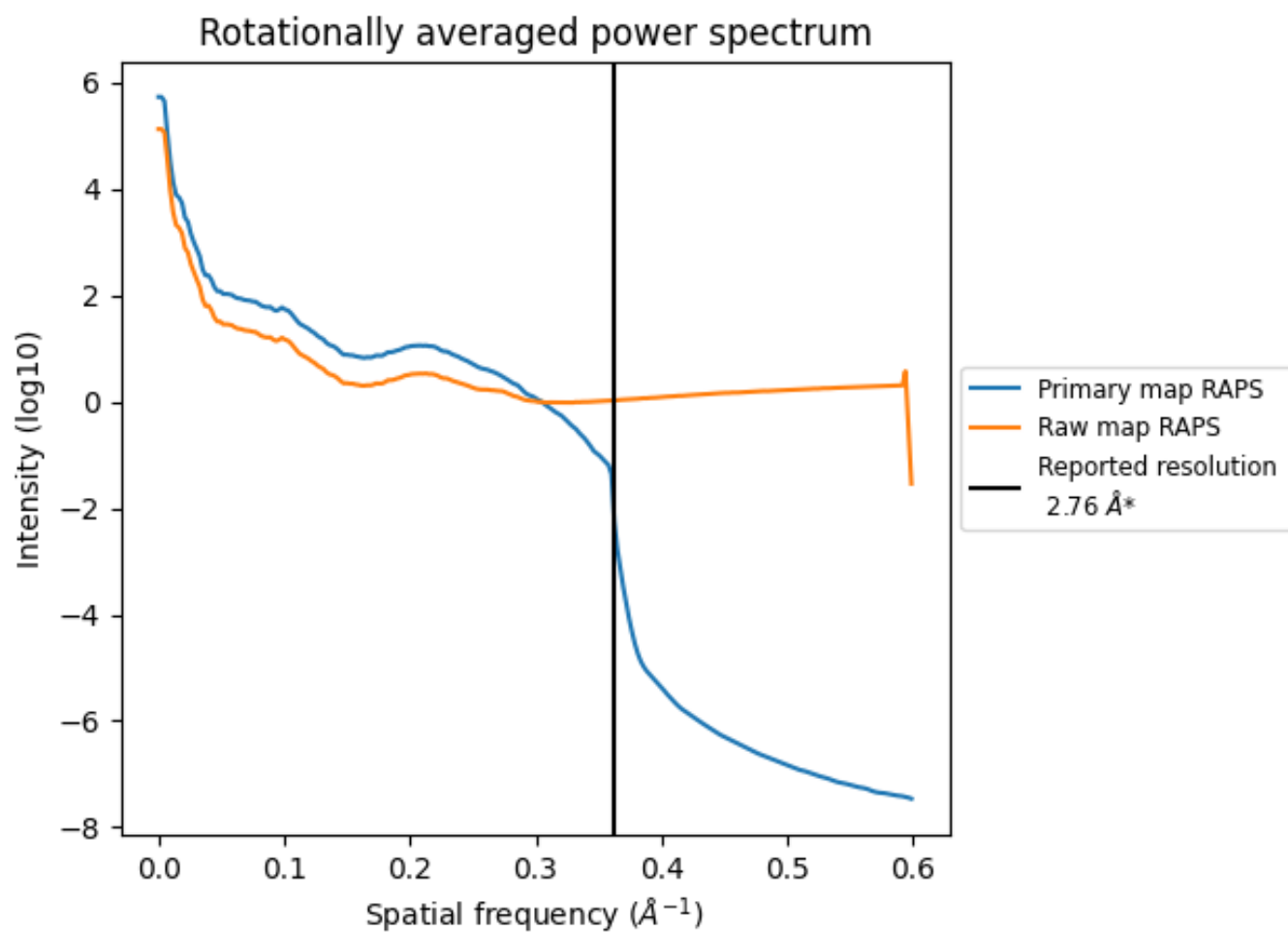
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 676 nm<sup>3</sup>; this corresponds to an approximate mass of 611 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

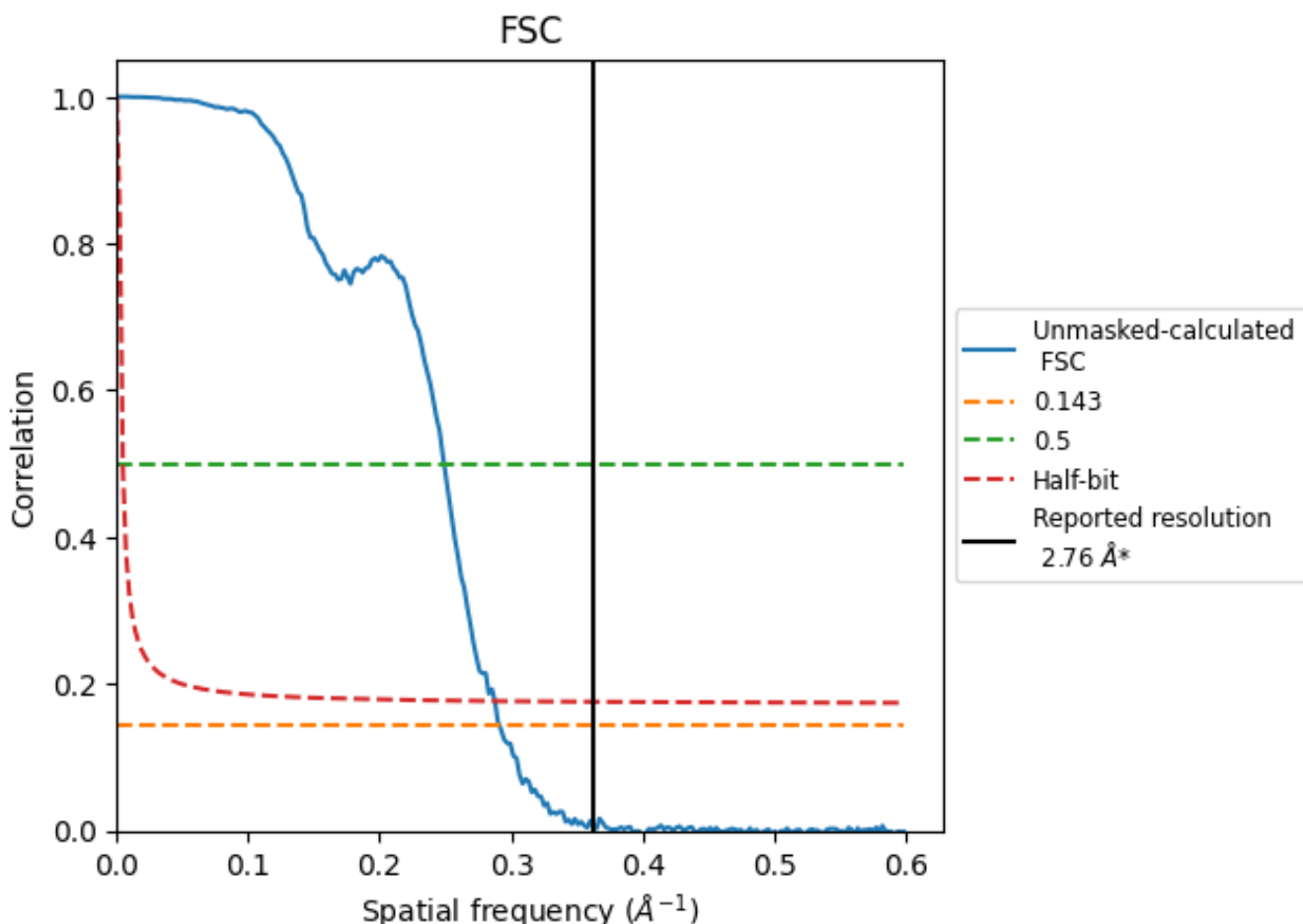


\*Reported resolution corresponds to spatial frequency of 0.362 Å<sup>-1</sup>

## 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 0.362  $\text{\AA}^{-1}$

## 8.2 Resolution estimates [i](#)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.76	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.44	4.02	3.48

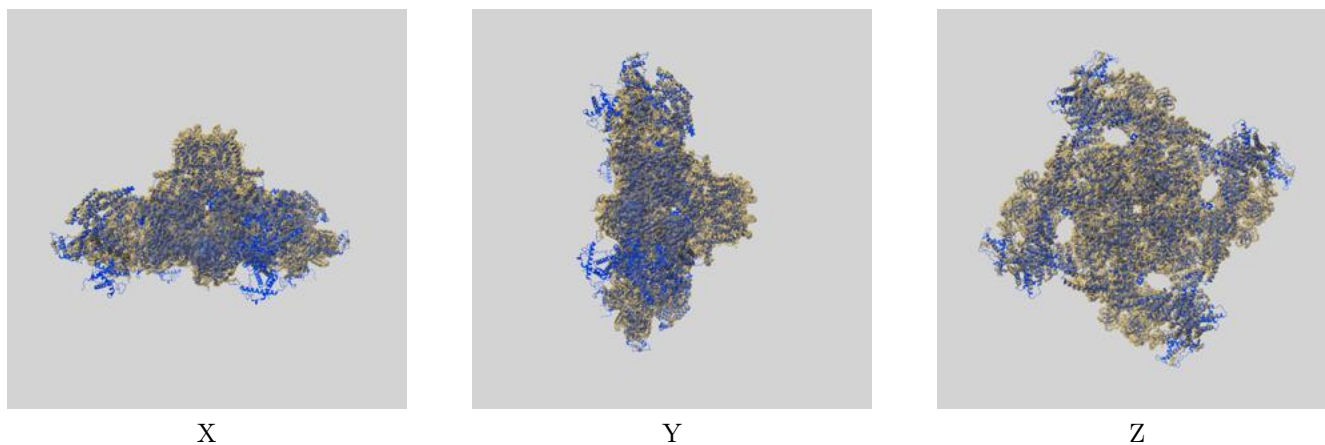
\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.44 differs from the reported value 2.76 by more than 10 %



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

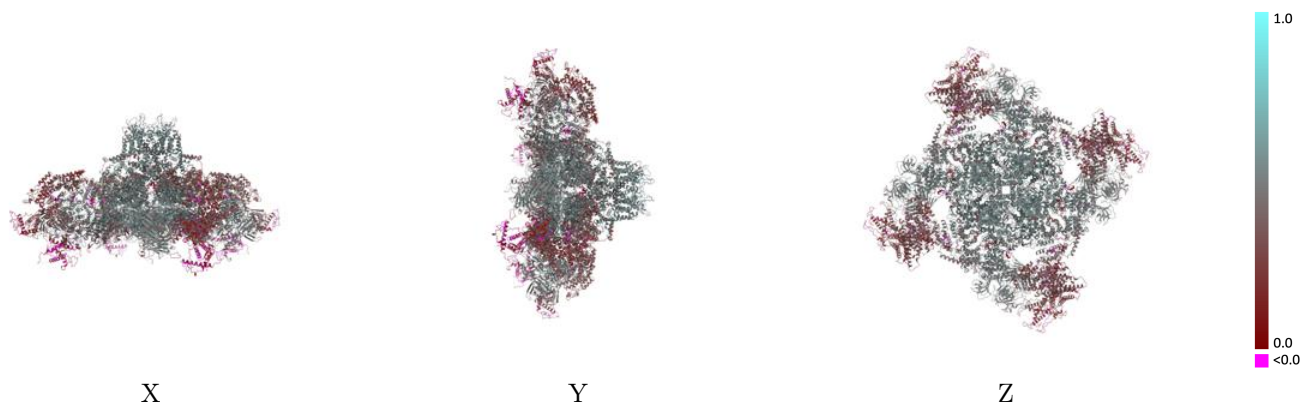
This section contains information regarding the fit between EMDB map EMD-47390 and PDB model 9E1D. Per-residue inclusion information can be found in section 3 on page 6.

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



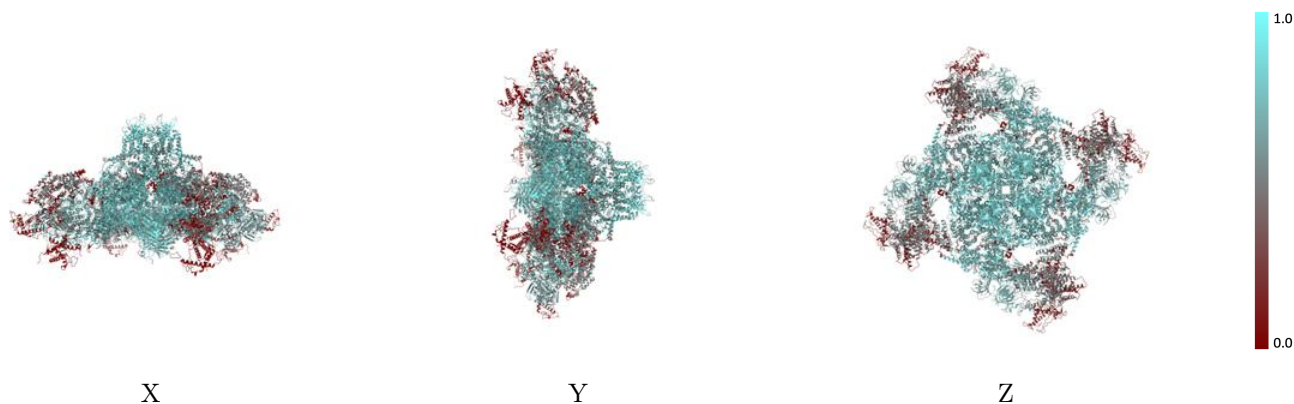
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



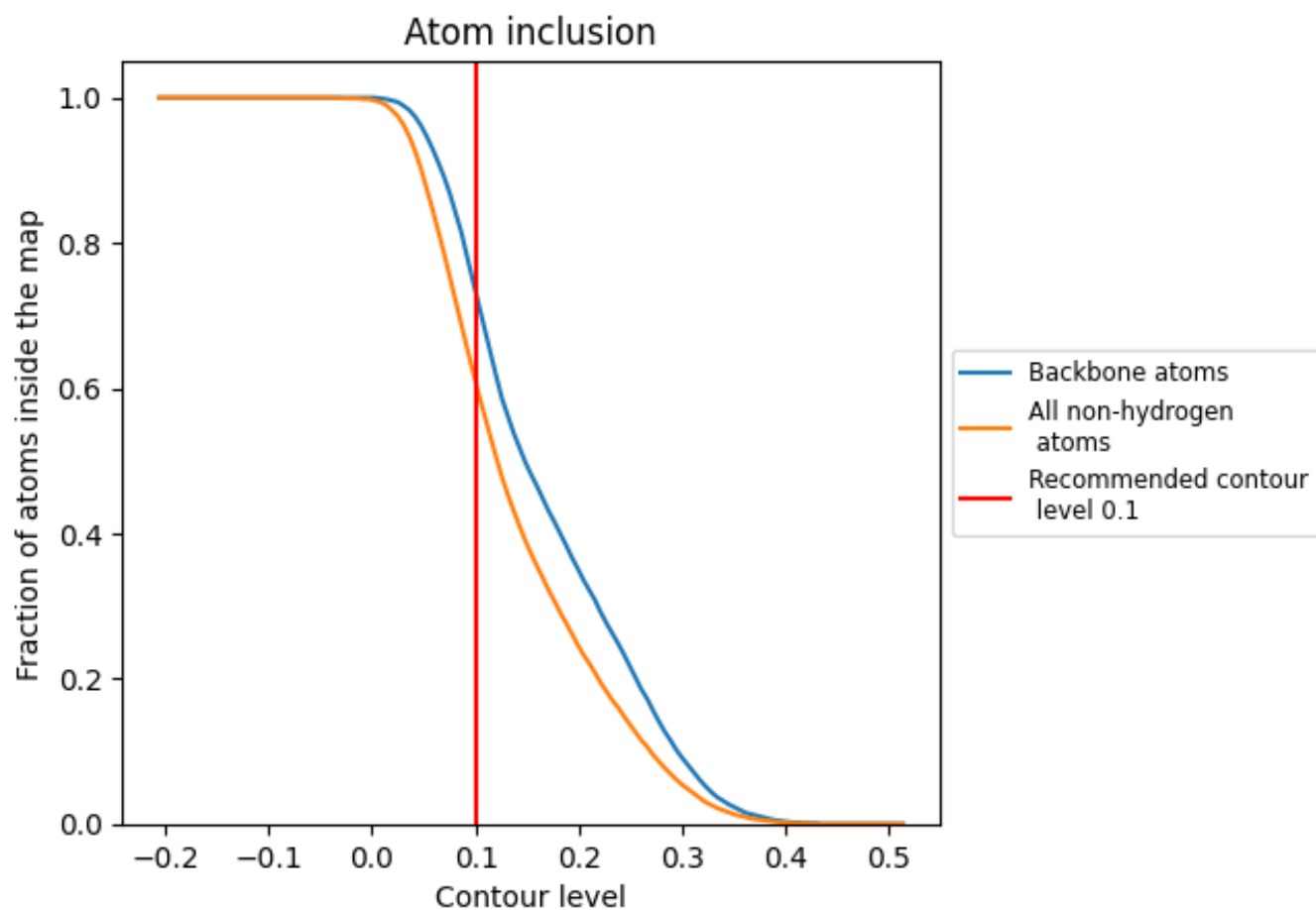
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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, 73% of all backbone atoms, 61% 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	 0.6090	 0.4220
A	 0.6100	 0.4200
B	 0.6090	 0.4200
C	 0.6090	 0.4200
D	 0.6090	 0.4200
E	 0.6110	 0.4940
F	 0.6140	 0.4920
G	 0.6100	 0.4900
H	 0.6090	 0.4920

