



Full wwPDB EM Validation Report ⓘ

Oct 5, 2024 – 10:52 AM EDT

PDB ID : 5TB0
EMDB ID : EMD-8391
Title : Structure of rabbit RyR1 (EGTA-only dataset, all particles)
Authors : Clarke, O.B.; des Georges, A.; Zalk, R.; Marks, A.R.; Hendrickson, W.A.;
Frank, J.
Deposited on : 2016-09-10
Resolution : 4.40 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev113
MolProbity : 4.02b-467
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

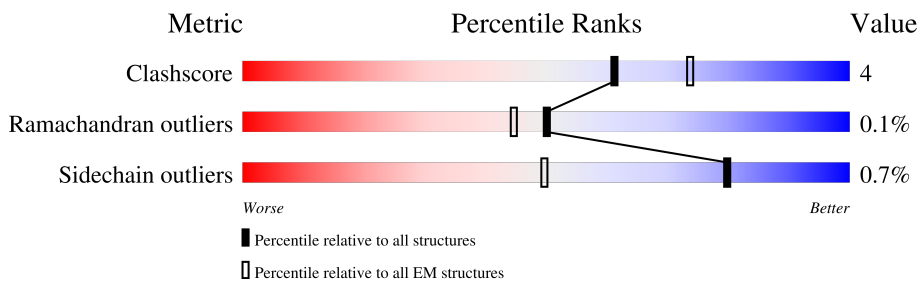
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.40 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	108	
1	F	108	
1	H	108	
1	J	108	
2	B	4416	
2	E	4416	
2	G	4416	
2	I	4416	

2 Entry composition [i](#)

There are 3 unique types of molecules in this entry. The entry contains 121272 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 Peptidyl-prolyl cis-trans isomerase FKBP1B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	F	107	818	516	144	154	4	0	0
1	A	107	818	516	144	154	4	0	0
1	H	107	818	516	144	154	4	0	0
1	J	107	818	516	144	154	4	0	0

- Molecule 2 is a protein called Ryanodine receptor 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	4194	29499	18686	5228	5428	157	0	0
2	G	4194	29499	18686	5228	5428	157	0	0
2	E	4194	29499	18686	5228	5428	157	0	0
2	I	4194	29499	18686	5228	5428	157	0	0

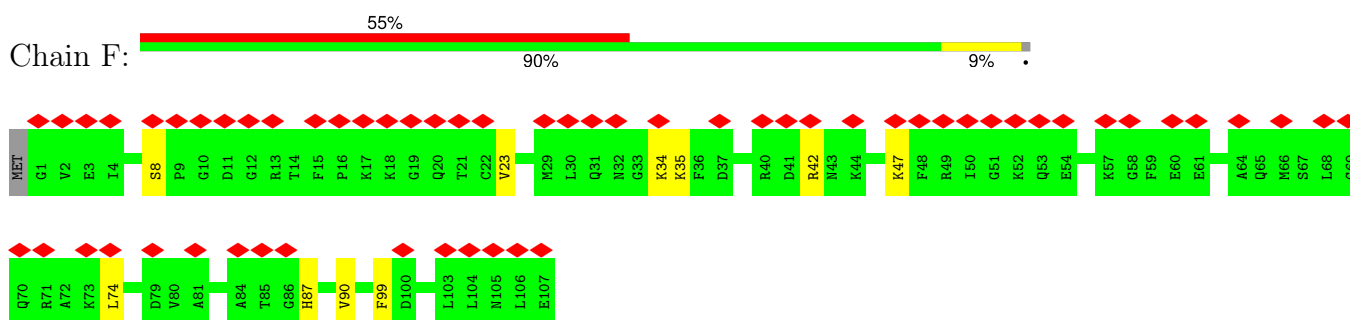
- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
3	B	1	Total	Zn	0
			1	1	
3	G	1	Total	Zn	0
			1	1	
3	E	1	Total	Zn	0
			1	1	
3	I	1	Total	Zn	0
			1	1	

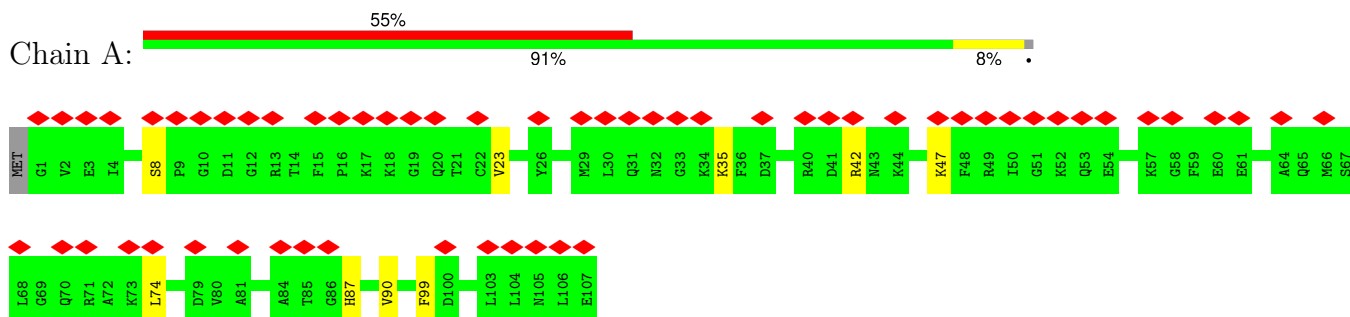
3 Residue-property plots [i](#)

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.

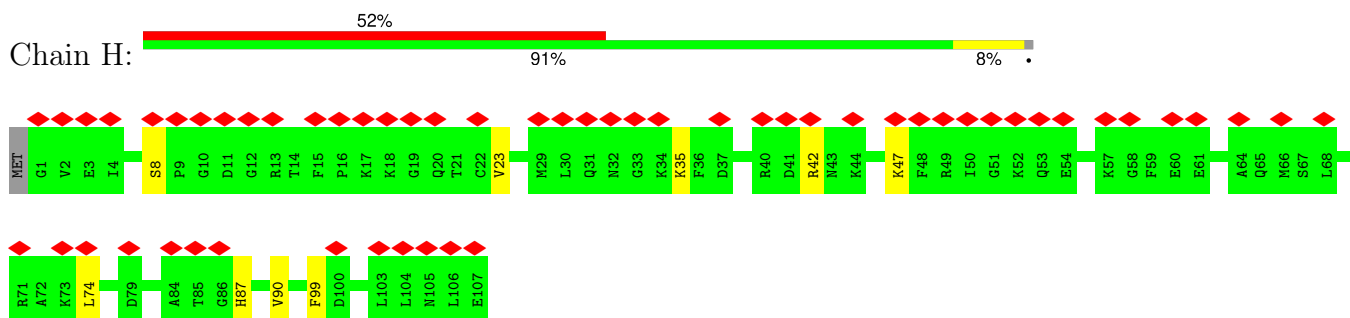
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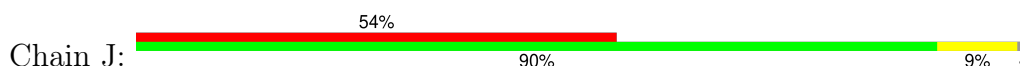
- Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

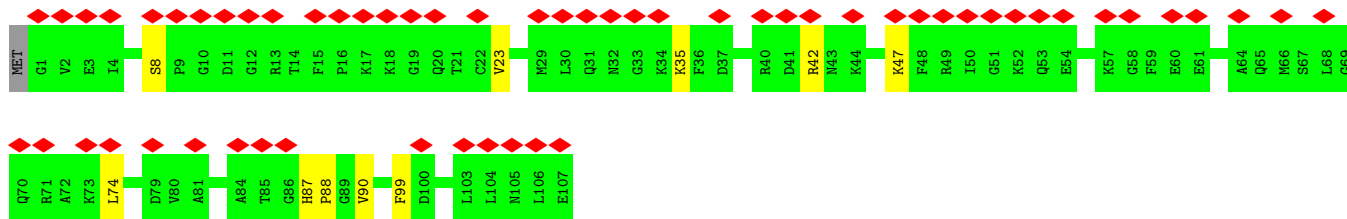


- Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

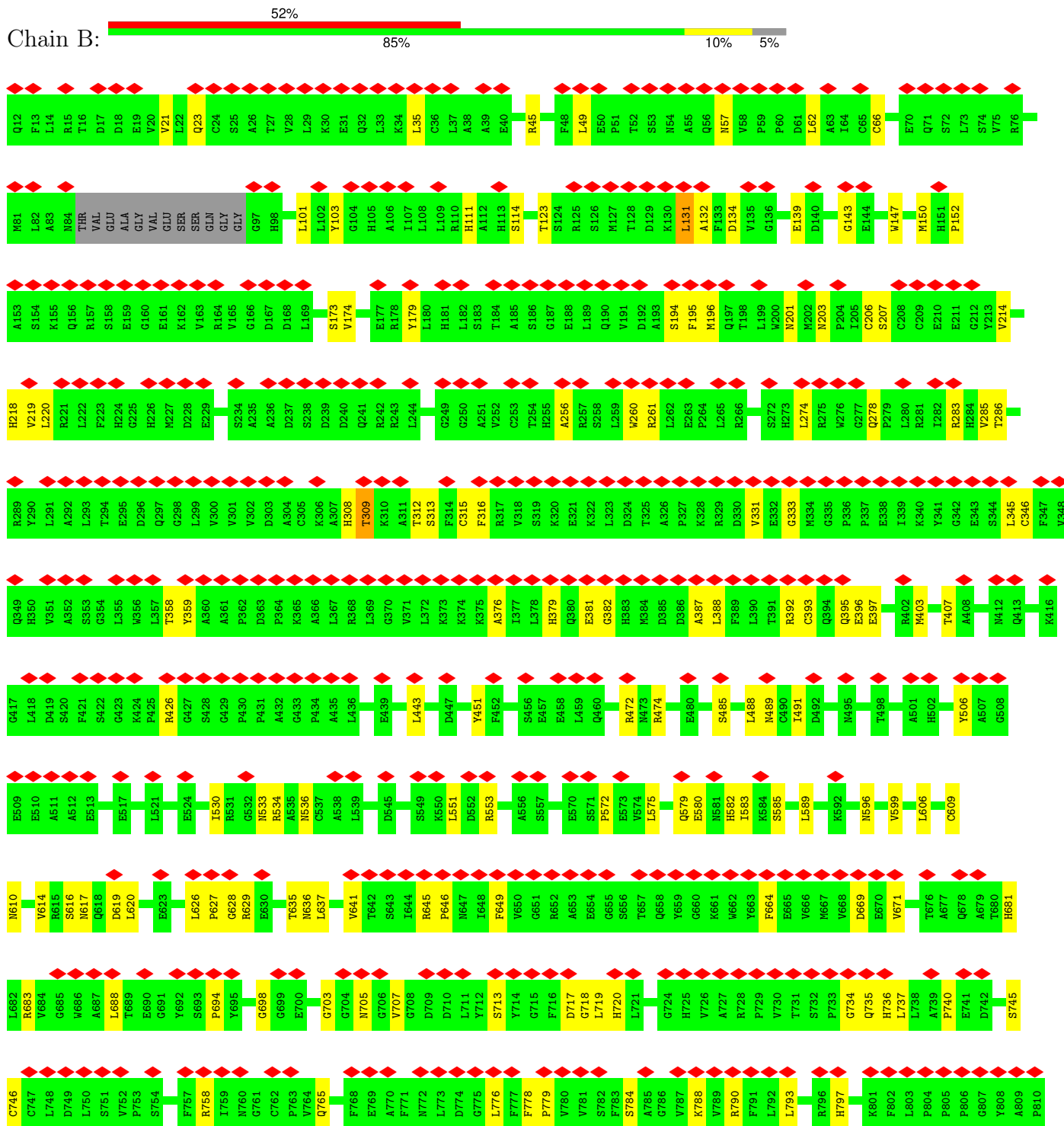


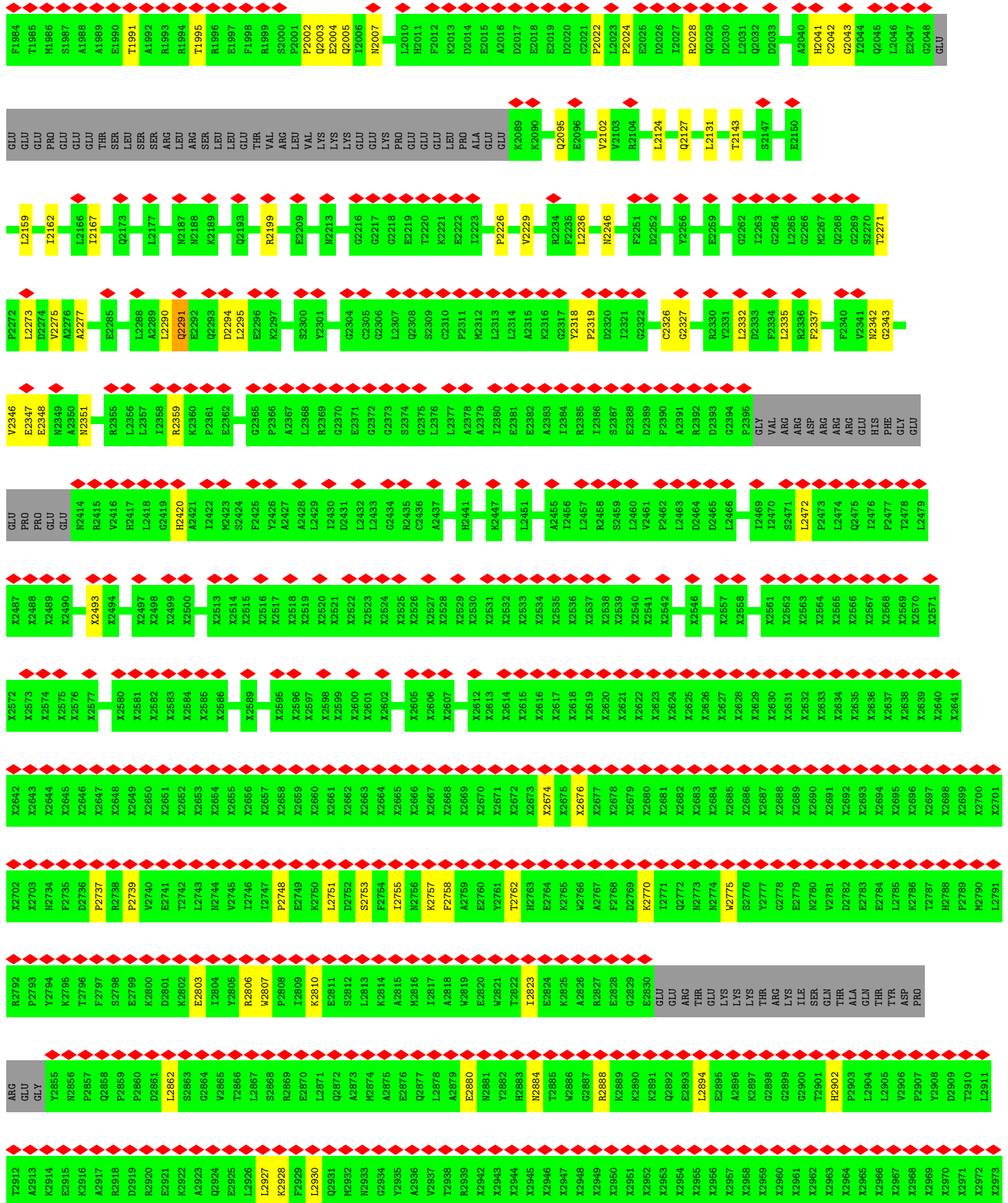
- Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B



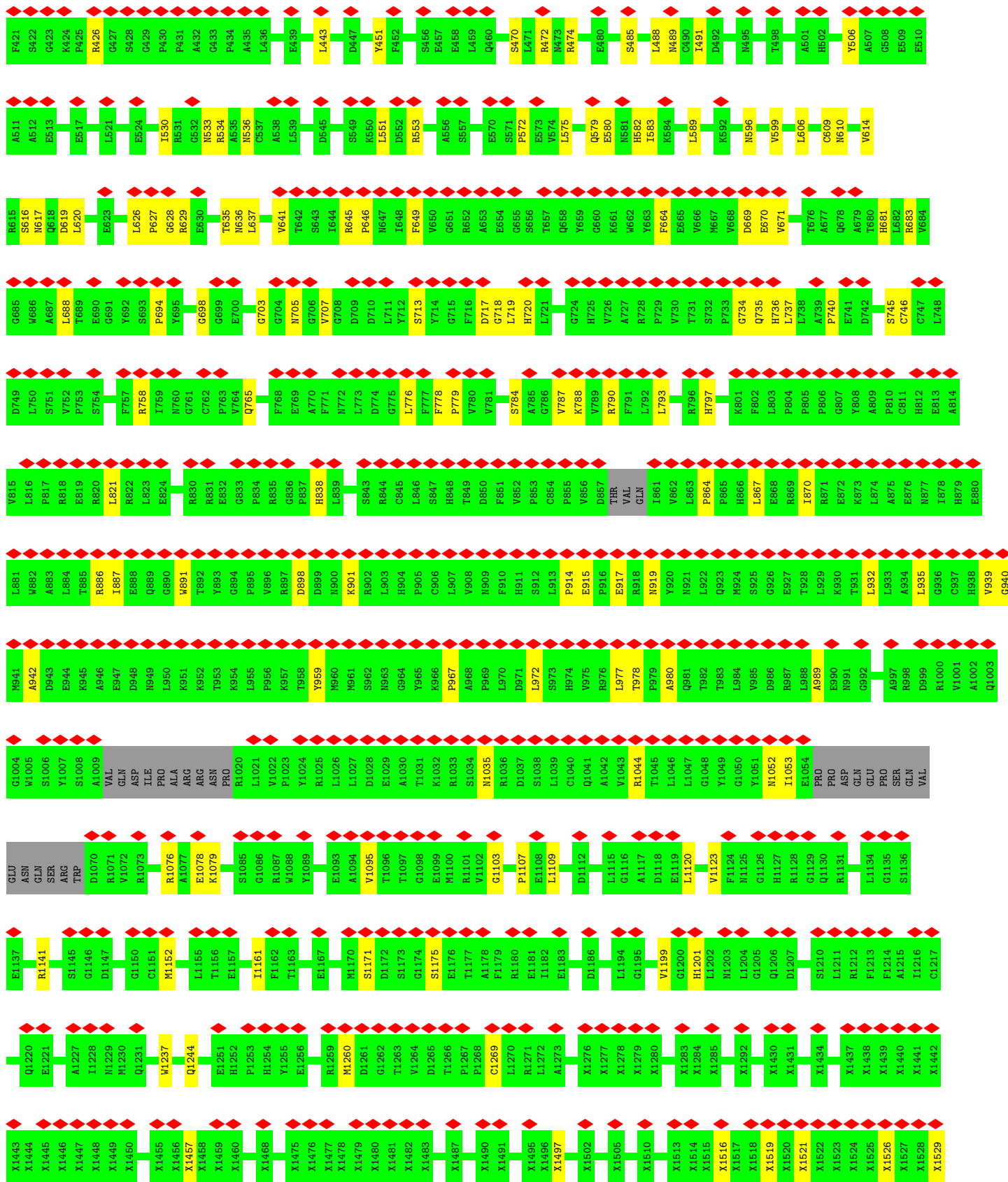


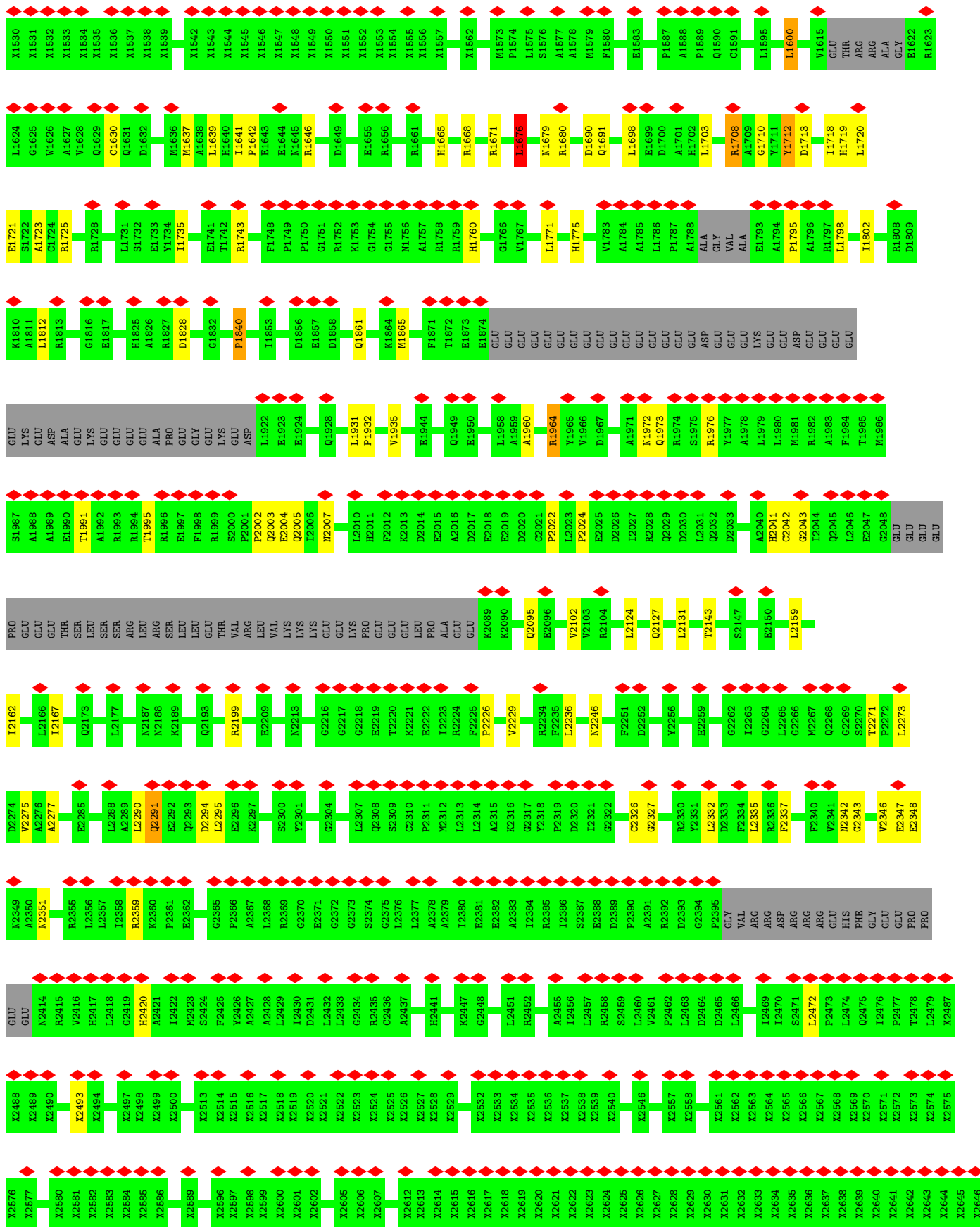
• Molecule 2: Ryanodine receptor 1



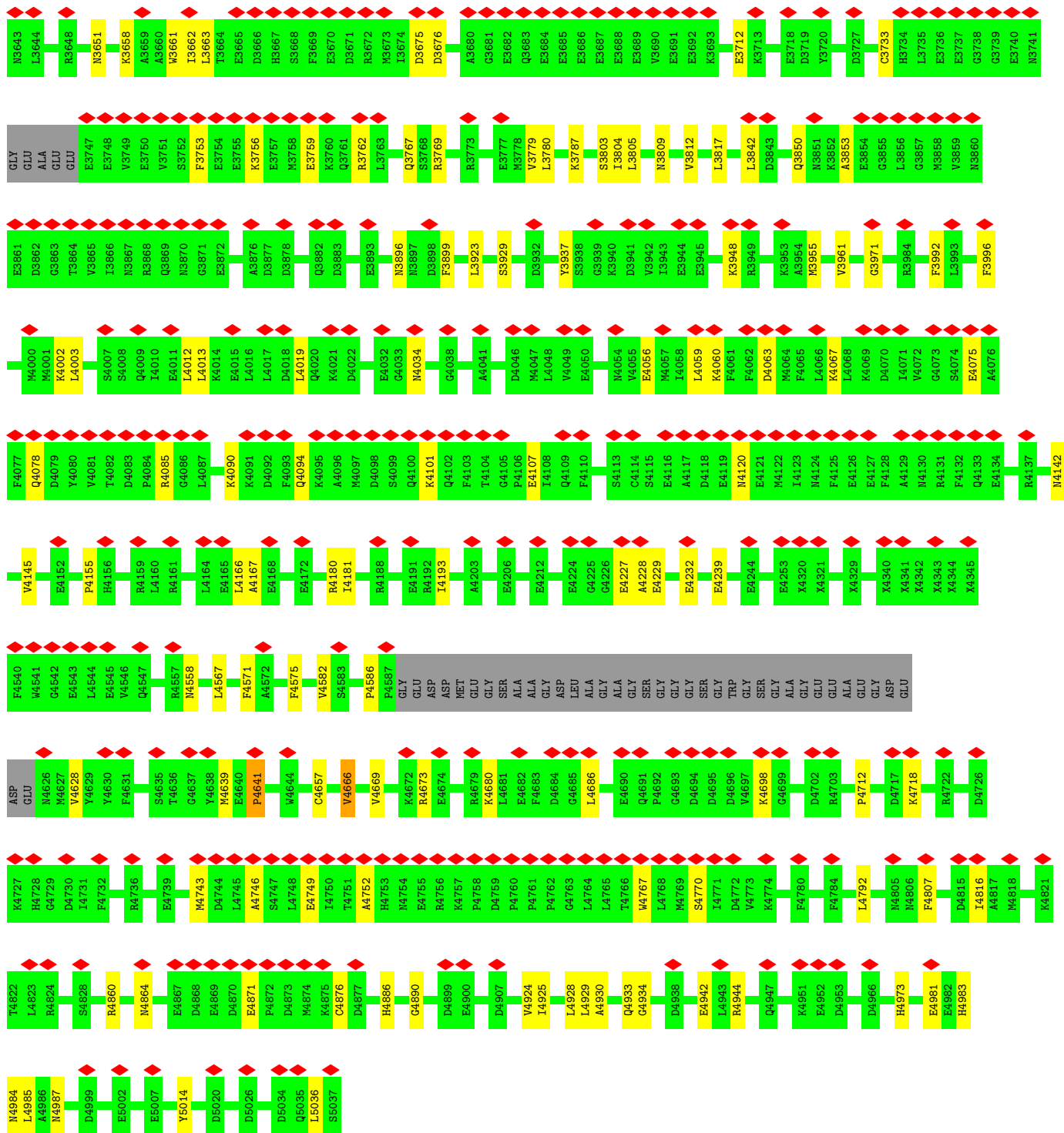


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S4074	R3984	L3856	E3736	X3549	X4443	X3381	X3320	X3254	X3190	X3064	X2976
A4075	L3993	G3857	E3737	X3550	X4446	X3382	X3321	X3261	X3191	X3065	X2995
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F4127	K4069	X3696	K3713	X3595	X4494	X3430	X3366	X3306	X3236	X3176	X3040
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		X3605	X3605	X3606	X4501	X3437	X3373	X3313	X3243	X3183	X3047
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		X3607	X3607	X3608	X4503	X3439	X3375	X3315	X3245	X3185	X3049
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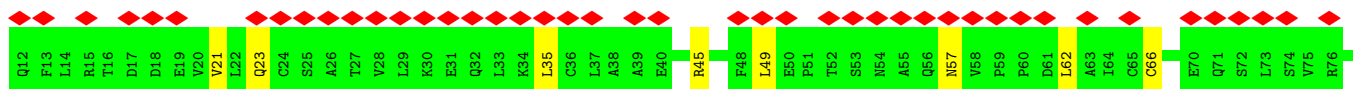
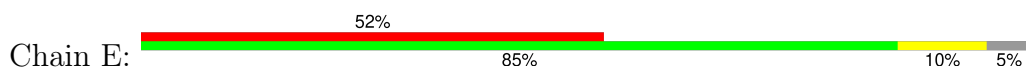


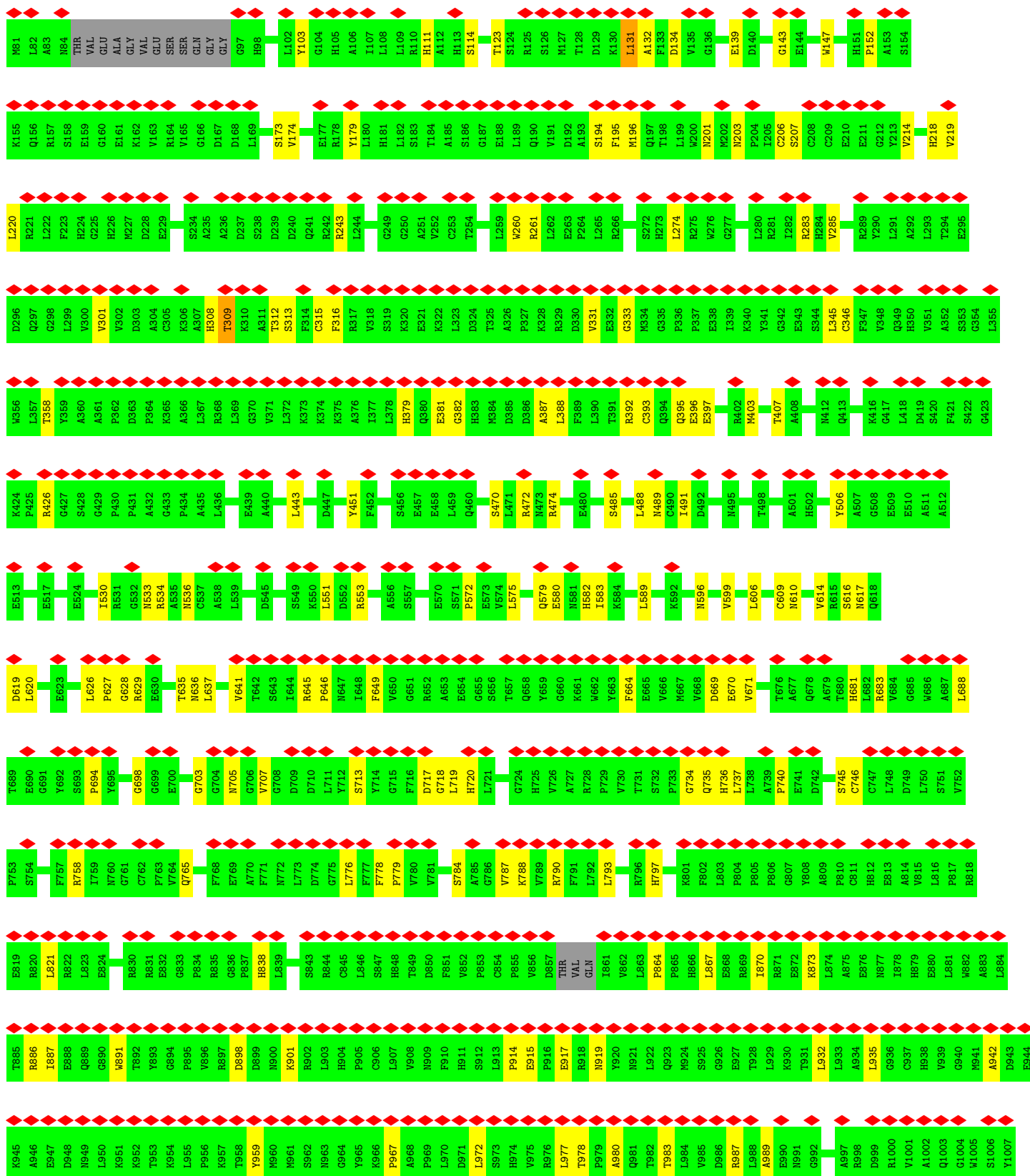


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P2737	R2738	P2739	V2740	E2741	T2742	L2743	N2744	V2745	L2746	L2747	P2748	E2749	K2750	L2751	D2752	S2753	F2754	I2755	N2756	K2757	F2758	A2759	E2760	Y2761	T2762	H2763	E2764	K2765	W2766	A2767	F2768	D2769	K2770	I2771	Q2772	N2773	N2774	W2775	S2776	Y2777	G2778	E2779	N2780	V2781	D2782	E2783	E2784	L2785	L2786	T2787	H2788	P2789	M2790	L2791	R2792	P2793	Y2794	K2795	L2796					



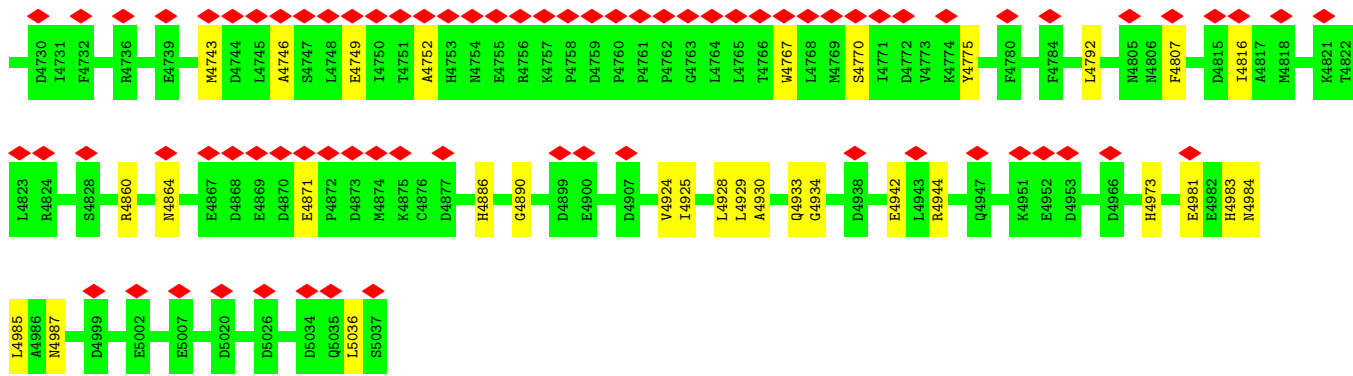
• Molecule 2: Ryanodine receptor 1



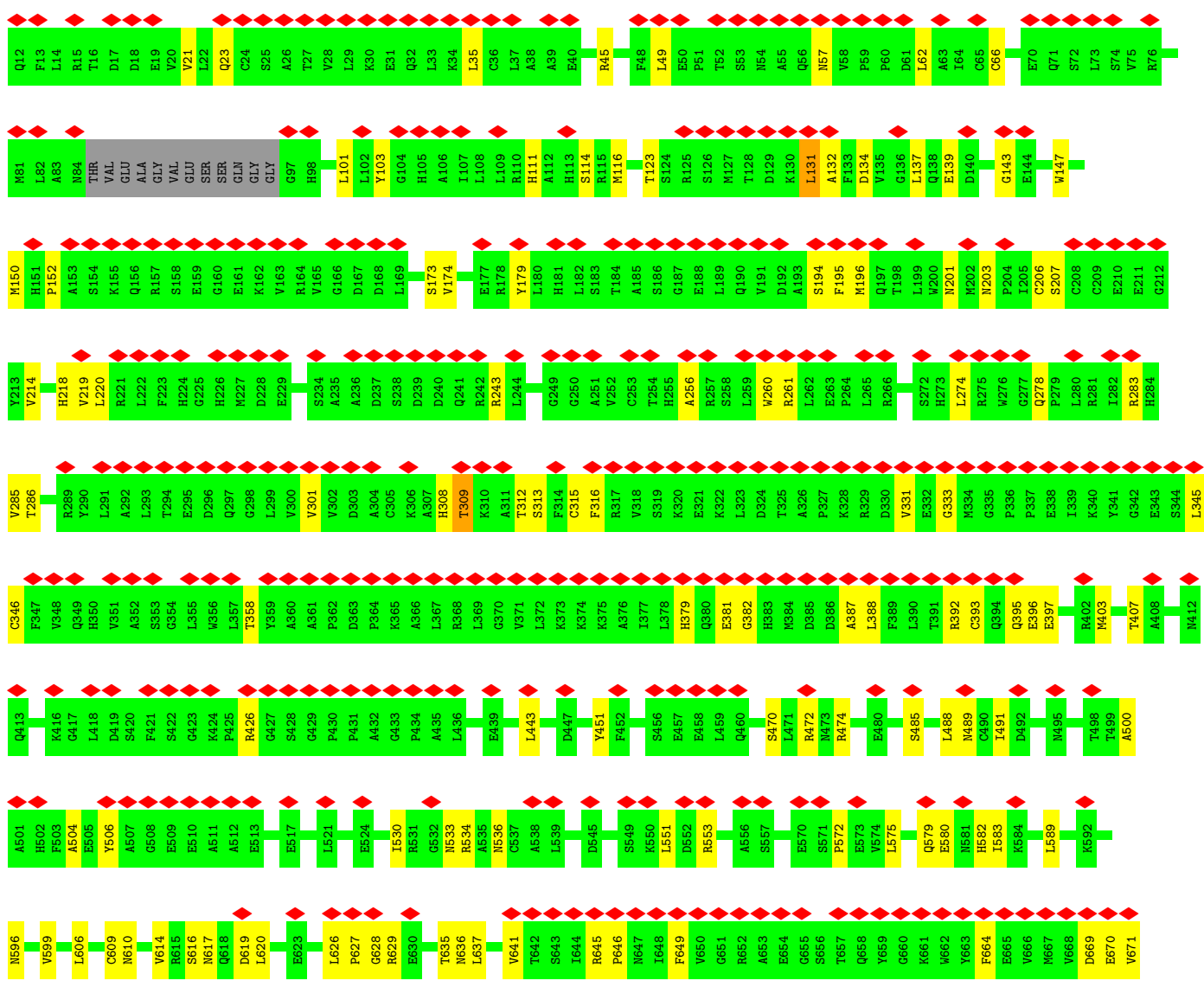
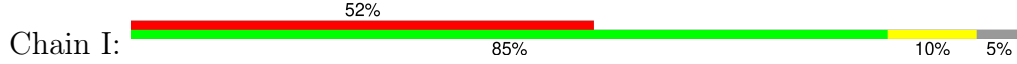


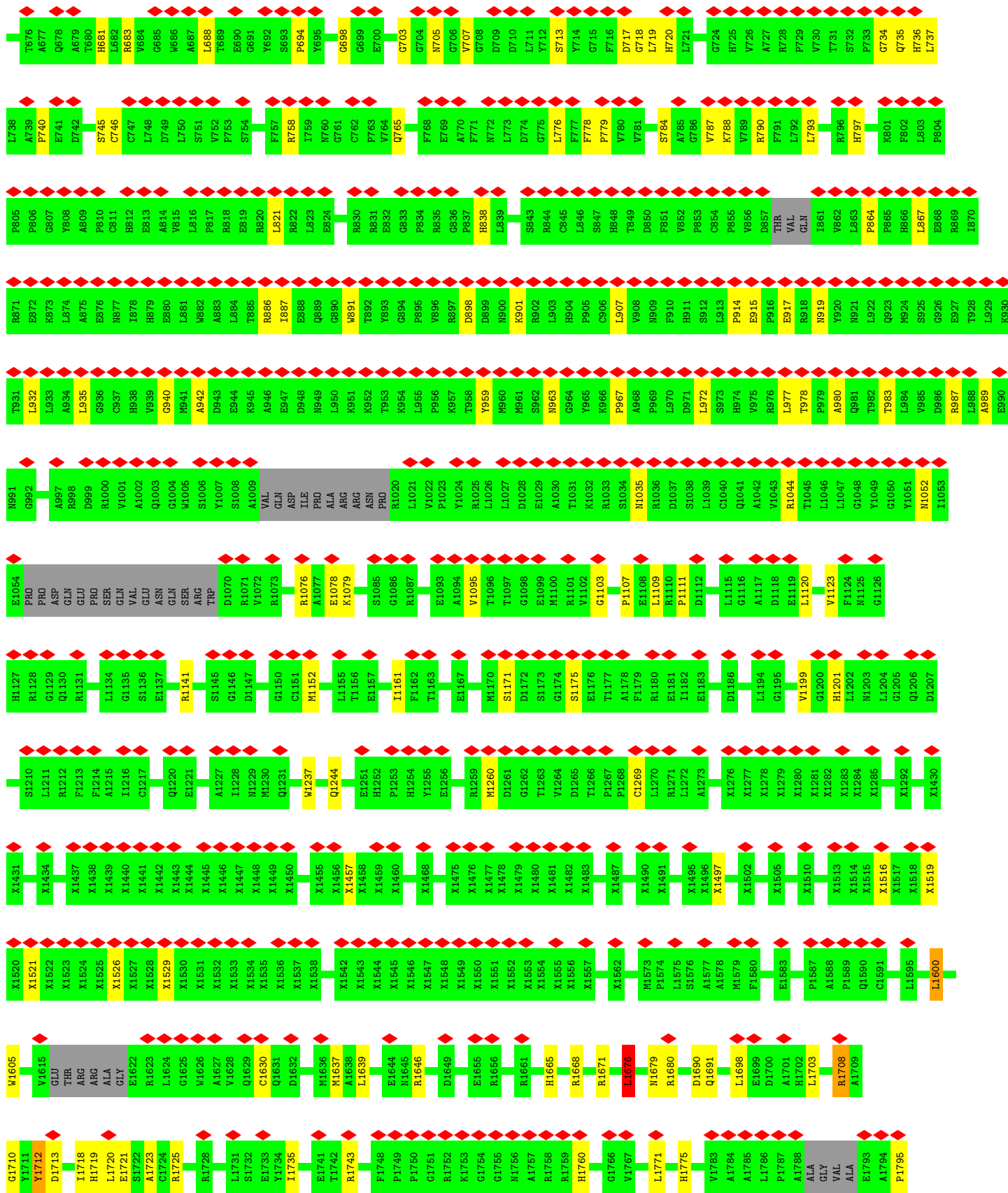
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X3202	X3204	X3205	X3206	X3207	X3208	X3209	X3210	X3211	X3212	X3213	X3214	X3215	X3216	X3217	X3218	X3219	X3220	X3221	X3222	X3223	X3224	X3225	X3226	X3227	X3228	X3229	X3230	X3231	X3232	X3233	X3234	X3235	X3236	X3241	X3242	X3243	X3244	X3245	X3246	X3248	X3249	X3250	X3251	X3252	X3253	X3254	X3255	X3256	X3257	X3258	X3259	X3260	X3261	X3262	X3263	X3264	X3265	X3266	X3267	X3268	X3270	X3271
X3007	X3008	X3009	X3010	X3011	X3012	X3013	X3014	X3015	X3016	X3017	X3018	X3019	X3020	X3021	X3022	X3023	X3024	X3025	X3026	X3027	X3028	X3029	X3030	X3031	X3032	X3033	X3034	X3035	X3036	X3037	X3038	X3039	X3040	X3041	X3042	X3043	X3044	X3045	X3046	X3047	X3048	X3049	X3050	X3051	X3052	X3053	X3054	X3055	X3056	X3057	X3058	X3059	X3060	X3061	X3062	X3063	X3134	X3135				
X2866	L2927	K2928	F2929	L2930	Q2931	M2932	N2933	G2934	Y2935	A2936	V2937	T2938	R2939	X2940	X2941	X2942	X2943	X2944	X2945	X2946	X2947	X2948	X2949	X2950	X2951	X2952	X2953	X2954	X2955	X2956	X2957	X2958	X2959	X2960	X2961	X2962	X2963	X2964	X2965	X2966	X2967	X2968	X2969	X2970	X2971	X2972	X2973	X2974	X2975	X2976	X2995	X2996	X2997	X2998	X2999	X3000	X3001	X3002	X3003	X3004	X3005	
L2876	P2877	Q2878	R2879	S2880	T2881	Y2882	H2883	M2884	T2885	G2886	W2887	R2888	K2889	K2890	K2891	Q2892	E2893	L2894	E2895	X2896	X2897	X2898	X2899	X2900	X2901	H2902	P2903	L2904	L2905	V2906	ASP	PRO	ARG	GLU	GLY	Y2855	M2856	P2857	Q2858	P2859	P2860	D2861	L2862	S2863	G2864	V2865																
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X2515	X2516	X2517	X2518	X2519	X2520	X2521	X2522	X2523	X2524	X2525	X2526	X2527	X2528	X2529	X2530	X2531	X2532	X2533	X2534	X2535	X2536	X2537	X2538	X2539	X2540	X2541	X2542	X2546	X2557	X2558	X2561	X2562	X2563	X2564	X2565	X2566	X2567	X2568	X2569	X2570	X2571	X2572	X2573	X2574	X2575	X2576	X2577	X2580	X2581	X2582	X2583	X2584	X2585	X2586								
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X2326	G2327	R2330	L2331	F2334	L2335	R2336	F2337	F2340	V2341	N2342	G2343	V2346	E2347	E2348	N2351	R2355	L2356	L2357	I2358	R2359	R2360	R2361	C2326	G2327	R2330	L2331	F2334	L2335	R2336	F2337	F2340	V2341	N2342	G2343	V2346	E2347	E2348	N2351	R2355	L2356	L2357	I2358	R2359	R2360	R2361																	

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X3332	X3333	X3334	X3335	X3336	X3337	X3338	X3339	X3340	X3341	X3342	X3343	X3344	X3345	X3346	X3347	X3348	X3349	X3350	X3351	X3352	X3353	X3354	X3355	X3356	X3357	X3358	X3359	X3360	X3361	X3362	X3363	X3364	X3365	X3366	X3367	X3368	X3369	X3370	X3373	X3374	X3375	X3376	X3377	X3378	X3379	X3380	X3381	X3382	X3383	X3384	X3385	X3386	X3387	X3388	X3389	X3390	X3391	X3392	
X3393	X3394	X3395	X3396	X3397	X3398	X3399	X3400	X3401	X3402	X3403	X3404	X3405	X3406	X3407	X3408	X3409	X3410	X3411	X3412	X3413	X3414	X3415	X3416	X3417	X3418	X3419	X3420	X3421	X3422	X3423	X3427	X3428	X3429	X3430	X3431	X3432	X3433	X3434	X3435	X3436	X3437	X3438	X3439	X3440	X3441	X3442	X3443	X3446	X3447	X3448	X3449	X3450	X3451	X3452	X3453	X3454	X3455		
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X3561	X3562	X3563	X3564	X3565	X3566	X3567	X3568	X3569	X3570	X3574	X3575	X3576	X3577	X3578	X3579	X3580	X3581	X3582	X3583	X3584	X3585	X3586	X3587	X3588	X3589	X3590	X3591	X3592	X3593	X3594	X3595	X3596	X3597	X3598	X3599	X3600	X3603	X3604	X3605	X3606	X3607	X3608	X3609	X3610	X3611	X3612	X3613	T3639	P3640	M3643	GLU	L3644	ALA	GLU	R3646	N3651			
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E4546	V4546	Q4547	M4558	L4567	F4571	A4572	F4575	V4582	P4586	P4587	GLY	ASP	ASP	MET	GLU	GLY	SER	ALA	ALA	GLY	LEU	ASP	ALA	ALA	ALA	GLY	TRP	GLY	SER	ALA	ALA	GLY	GLU	M4626	M4627	V4628	Y4630																						
F4631	L4632	E4633	E4634	S4635	T4636	G4637	V4638	M4639	E4640	P4641	W4644	L4652	C4657	V4666	V4669	K4672	R4673	E4674	R4679	K4680	L4681	E4682	F4683	D4684	G4685	L4686	E4690	Q4691	P4692	G4693	D4694	D4695	V4696	K4698	G4699	D4702	R4703	P4712	S4713	D4717	K4718	K4721	R4722	D4726	K4727														



• Molecule 2: Ryanodine receptor 1





E3854	G3855	L3735	X3610	X3547	X3441	X3379	X3318	X3252	X3188	X3052	X2974	ARG
G3856	L3856	E3736	X3611	X3548	X3442	X3380	X3319	X3253	X3189	X3053	A2913	GLU
G3857	X3612	E3737	X3613	X3549	X3443	X3381	X3320	X3254	X3190	X3054	K2914	GLY
G3858	T3639	G3738	X3613	X3550	X3446	X3382	X3321	X3261	X3191	X3055	E2915	V2855
G3859	P3640	G3739	X3639	X3551	X3447	X3383	X3322	X3262	X3192	X3056	K2916	P2857
V3860	M3643	E3740	X3640	X3552	X3448	X3384	X3323	X3263	X3193	X3057	A2917	Q2858
E3861	L3644	GLU	X3644	X3553	X3449	X3385	X3324	X3264	X3194	X3058	R2918	P2859
D3862	R3648	ALA	X3645	X3554	X3450	X3386	X3325	X3265	X3195	X3059	D2919	P2860
G3863	L3654	GLU	X3645	X3555	X3451	X3387	X3326	X3266	X3196	X3060	R2920	L2861
V3865	K3658	GLU	X3658	X3556	X3452	X3388	X3327	X3267	X3197	X3061	E2921	L2862
L3866	A3659	E3741	X3659	X3557	X3453	X3389	X3328	X3268	X3198	X3062	K2922	S2863
L3867	A3660	V3749	X3660	X3558	X3454	X3390	X3329	X3269	X3199	X3063	A2923	G2864
R3868	X3661	E3750	X3661	X3559	X3455	X3391	X3330	X3270	X3200	X3064	Q2924	V2865
Q3869	X3662	V3751	X3662	X3560	X3456	X3392	X3331	X3271	X3201	X3065	E2925	T2866
N3870	X3663	S3752	X3663	X3561	X3457	X3393	X3332	X3272	X3202	X3066	L2926	L2867
G3871	T3664	F3753	X3664	X3562	X3457	X3394	X3333	X3273	X3203	X3067	L2927	S2868
E3872	E3665	E3754	X3665	X3563	X3460	X3395	X3334	X3274	X3204	X3068	K2928	R2869
A3876	E3666	E3755	X3666	X3564	X3463	X3396	X3335	X3275	X3205	X3069	F2929	E2870
D3877	X3666	E3756	X3666	X3565	X3464	X3397	X3336	X3276	X3206	X3070	L2930	L2871
D3878	X3667	K3756	X3667	X3566	X3465	X3398	X3337	X3277	X3207	X3071	Q2872	Q2872
Q3882	H3667	E3757	X3667	X3567	X3466	X3399	X3338	X3278	X3208	X3072	M2932	A2873
D3883	S3668	E3758	X3668	X3568	X3467	X3400	X3339	X3279	X3209	X3073	N2933	A2874
E3883	F3669	M3756	X3669	X3569	X3467	X3401	X3340	X3280	X3210	X3074	G2934	A2875
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D3877	D3671	K3760	X3671	X3571	X3468	X3403	X3342	X3282	X3212	X3076	A2936	Q2877
R3762	R3672	R3761	X3672	X3572	X3469	X3404	X3343	X3283	X3213	X3077	V2937	L2878
L3763	M3673	R3762	X3673	X3573	X3470	X3405	X3344	X3284	X3214	X3078	T2938	A2879
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S3768	D3676	S3768	X3676	X3575	X3472	X3407	X3346	X3286	X3216	X3080	X2942	I2881
R3769	A3680	R3769	X3680	X3576	X3473	X3408	X3347	X3287	X3217	X3081	X2943	V2882
R3773	G3681	R3773	X3681	X3577	X3474	X3409	X3348	X3288	X3218	X3082	X2944	H2883
E3777	G3682	E3777	X3682	X3578	X3475	X3410	X3349	X3289	X3219	X3022	X2945	I2884
M3778	Q3683	M3778	X3683	X3579	X3476	X3411	X3350	X3290	X3220	X3023	X2946	T2885
V3779	E3684	V3779	X3684	X3580	X3477	X3412	X3351	X3291	X3221	X3024	X2947	A2886
L3780	E3685	L3780	X3685	X3581	X3478	X3413	X3352	X3292	X3222	X3025	X2948	A2887
E3686	E3686	E3787	X3686	X3582	X3479	X3414	X3353	X3293	X3223	X3026	X2949	G2888
E3687	E3687	K3787	X3687	X3583	X3480	X3415	X3354	X3294	X3224	X3027	X2950	R2889
E3688	E3688	S3803	X3688	X3584	X3481	X3416	X3355	X3295	X3225	X3028	I2951	K2890
E3689	E3689	I3804	X3689	X3585	X3482	X3417	X3356	X3296	X3226	X3029	X2952	R2891
V3690	V3690	L3805	X3690	X3586	X3483	X3418	X3357	X3297	X3227	X3030	X2953	Q2892
E3691	E3691	N3809	X3691	X3587	X3484	X3419	X3358	X3298	X3228	X3031	X2954	E2893
E3692	E3692	V3812	X3692	X3588	X3485	X3420	X3359	X3299	X3229	X3032	X2955	L2894
K3693	K3693	V3812	X3693	X3589	X3486	X3421	X3360	X3300	X3230	X3033	X2956	E2895
E3712	E3712	L3817	X3712	X3590	X3487	X3422	X3361	X3301	X3231	X3034	X2957	E2896
K3713	K3713	L3817	X3713	X3591	X3488	X3423	X3362	X3302	X3232	X3035	X2958	A2897
E3718	E3718	L3842	X3718	X3592	X3489	X3427	X3363	X3303	X3233	X3036	X2959	R2897
D3719	D3719	D3843	X3719	X3593	X3490	X3428	X3364	X3304	X3234	X3037	X2960	G2898
Y3720	Y3720	Q3850	X3720	X3594	X3491	X3429	X3365	X3305	X3235	X3038	X2961	G2900
D3727	D3727	N3851	X3727	X3595	X3492	X3430	X3366	X3306	X3236	X3039	X2962	T2901
C3733	C3733	R3852	X3733	X3596	X3493	X3431	X3367	X3307	X3237	X3040	X2963	H2902
H3734	H3734	A3853	X3734	X3597	X3494	X3432	X3368	X3308	X3238	X3041	X2964	P2903
				X3598	X3495	X3433	X3369	X3309	X3239	X3042	X2965	L2904
				X3599	X3496	X3434	X3370	X3310	X3240	X3043	X2966	L2905
				X3600	X3497	X3435	X3371	X3311	X3241	X3044	X2967	L2906
				X3603	X3498	X3436	X3372	X3312	X3242	X3045	X2968	V2907
				X3604	X3499	X3437	X3373	X3313	X3243	X3046	X2969	Q2908
				X3605	X3500	X3438	X3374	X3314	X3244	X3047	X2970	D2909
				X3606	X3501	X3439	X3375	X3315	X3245	X3048	X2971	T2910
				X3607	X3502	X3440	X3376	X3316	X3246	X3049	X2972	L2911
				X3608	X3503	X3441	X3377	X3317	X3247	X3050	X2973	
				X3609	X3504	X3442	X3378	X3318	X3248	X3051		

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	55564	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI POLARA 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.081	Depositor
Minimum map value	-0.049	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.025	Depositor
Map size (Å)	502.0, 502.0, 502.0	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.255, 1.255, 1.255	Depositor

5 Model quality

5.1 Standard geometry

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

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.31	0/834	0.53	0/1123
1	F	0.31	0/834	0.53	0/1123
1	H	0.31	0/834	0.53	0/1123
1	J	0.31	0/834	0.53	0/1123
2	B	0.32	0/25428	0.56	9/34534 (0.0%)
2	E	0.32	0/25428	0.56	9/34534 (0.0%)
2	G	0.32	0/25428	0.56	9/34534 (0.0%)
2	I	0.32	0/25428	0.56	9/34534 (0.0%)
All	All	0.32	0/105048	0.56	36/142628 (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	1
1	F	0	1
1	H	0	1
1	J	0	1
2	B	0	18
2	E	0	18
2	G	0	18
2	I	0	18
All	All	0	76

There are no bond length outliers.

All (36) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	G	131	LEU	CA-CB-CG	8.74	135.39	115.30
2	B	131	LEU	CA-CB-CG	8.73	135.38	115.30
2	I	131	LEU	CA-CB-CG	8.72	135.36	115.30
2	E	131	LEU	CA-CB-CG	8.72	135.36	115.30
2	I	1676	LEU	CA-CB-CG	6.26	129.70	115.30
2	G	1676	LEU	CA-CB-CG	6.25	129.69	115.30
2	B	1676	LEU	CA-CB-CG	6.25	129.69	115.30
2	E	1676	LEU	CA-CB-CG	6.25	129.67	115.30
2	G	1600	LEU	CA-CB-CG	6.14	129.42	115.30
2	B	1600	LEU	CA-CB-CG	6.13	129.40	115.30
2	E	1600	LEU	CA-CB-CG	6.13	129.40	115.30
2	I	1600	LEU	CA-CB-CG	6.12	129.37	115.30
2	B	688	LEU	CA-CB-CG	5.92	128.92	115.30
2	I	688	LEU	CA-CB-CG	5.92	128.92	115.30
2	E	688	LEU	CA-CB-CG	5.92	128.91	115.30
2	G	688	LEU	CA-CB-CG	5.91	128.90	115.30
2	E	977	LEU	CA-CB-CG	5.91	128.90	115.30
2	I	977	LEU	CA-CB-CG	5.91	128.90	115.30
2	B	977	LEU	CA-CB-CG	5.91	128.89	115.30
2	G	977	LEU	CA-CB-CG	5.91	128.88	115.30
2	G	2290	LEU	CA-CB-CG	5.62	128.22	115.30
2	E	2290	LEU	CA-CB-CG	5.61	128.21	115.30
2	B	2290	LEU	CA-CB-CG	5.60	128.18	115.30
2	I	2290	LEU	CA-CB-CG	5.59	128.16	115.30
2	I	4985	LEU	CA-CB-CG	5.46	127.85	115.30
2	B	4985	LEU	CA-CB-CG	5.44	127.81	115.30
2	G	4985	LEU	CA-CB-CG	5.44	127.81	115.30
2	E	4985	LEU	CA-CB-CG	5.42	127.77	115.30
2	G	3663	LEU	CA-CB-CG	5.29	127.47	115.30
2	I	3663	LEU	CA-CB-CG	5.28	127.44	115.30
2	B	3663	LEU	CA-CB-CG	5.27	127.43	115.30
2	E	3663	LEU	CA-CB-CG	5.26	127.40	115.30
2	G	4639	MET	C-N-CA	5.07	134.38	121.70
2	I	4639	MET	C-N-CA	5.07	134.37	121.70
2	B	4639	MET	C-N-CA	5.06	134.34	121.70
2	E	4639	MET	C-N-CA	5.06	134.34	121.70

There are no chirality outliers.

All (76) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	8	SER	Peptide
2	B	139	GLU	Peptide

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Mol	Chain	Res	Type	Group
2	B	1676	LEU	Peptide
2	B	1690	ASP	Peptide
2	B	1712	TYR	Peptide
2	B	1720	LEU	Peptide
2	B	1795	PRO	Peptide
2	B	1828	ASP	Peptide
2	B	1840	PRO	Peptide
2	B	2291	GLN	Peptide
2	B	2343	GLY	Peptide
2	B	2472	LEU	Peptide
2	B	2807	TRP	Peptide
2	B	312	THR	Peptide
2	B	3971	GLY	Peptide
2	B	4641	PRO	Peptide
2	B	4666	VAL	Peptide
2	B	4807	PHE	Peptide
2	B	694	PRO	Peptide
2	E	139	GLU	Peptide
2	E	1676	LEU	Peptide
2	E	1690	ASP	Peptide
2	E	1712	TYR	Peptide
2	E	1720	LEU	Peptide
2	E	1795	PRO	Peptide
2	E	1828	ASP	Peptide
2	E	1840	PRO	Peptide
2	E	2291	GLN	Peptide
2	E	2343	GLY	Peptide
2	E	2472	LEU	Peptide
2	E	2807	TRP	Peptide
2	E	312	THR	Peptide
2	E	3971	GLY	Peptide
2	E	4641	PRO	Peptide
2	E	4666	VAL	Peptide
2	E	4807	PHE	Peptide
2	E	694	PRO	Peptide
1	F	8	SER	Peptide
2	G	139	GLU	Peptide
2	G	1676	LEU	Peptide
2	G	1690	ASP	Peptide
2	G	1712	TYR	Peptide
2	G	1720	LEU	Peptide
2	G	1795	PRO	Peptide

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Mol	Chain	Res	Type	Group
2	G	1828	ASP	Peptide
2	G	1840	PRO	Peptide
2	G	2291	GLN	Peptide
2	G	2343	GLY	Peptide
2	G	2472	LEU	Peptide
2	G	2807	TRP	Peptide
2	G	312	THR	Peptide
2	G	3971	GLY	Peptide
2	G	4641	PRO	Peptide
2	G	4666	VAL	Peptide
2	G	4807	PHE	Peptide
2	G	694	PRO	Peptide
1	H	8	SER	Peptide
2	I	139	GLU	Peptide
2	I	1676	LEU	Peptide
2	I	1690	ASP	Peptide
2	I	1712	TYR	Peptide
2	I	1720	LEU	Peptide
2	I	1795	PRO	Peptide
2	I	1828	ASP	Peptide
2	I	1840	PRO	Peptide
2	I	2291	GLN	Peptide
2	I	2343	GLY	Peptide
2	I	2472	LEU	Peptide
2	I	2807	TRP	Peptide
2	I	312	THR	Peptide
2	I	3971	GLY	Peptide
2	I	4641	PRO	Peptide
2	I	4666	VAL	Peptide
2	I	4807	PHE	Peptide
2	I	694	PRO	Peptide
1	J	8	SER	Peptide

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	818	0	824	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	F	818	0	824	6	0
1	H	818	0	824	5	0
1	J	818	0	824	6	0
2	B	29499	0	24749	236	0
2	E	29499	0	24750	227	0
2	G	29499	0	24749	236	0
2	I	29499	0	24749	237	0
3	B	1	0	0	0	0
3	E	1	0	0	0	0
3	G	1	0	0	0	0
3	I	1	0	0	0	0
All	All	121272	0	102293	929	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 4.

All (929) 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)
2:I:2291:GLN:HB3	2:I:2294:ASP:H	1.55	0.72
2:B:2291:GLN:HB3	2:B:2294:ASP:H	1.55	0.71
2:G:2291:GLN:HB3	2:G:2294:ASP:H	1.55	0.71
2:E:2291:GLN:HB3	2:E:2294:ASP:H	1.55	0.71
2:B:1260:MET:HB2	2:B:1269:CYS:H	1.62	0.65
2:B:331:VAL:HG12	2:B:333:GLY:H	1.61	0.65
2:G:1260:MET:HB2	2:G:1269:CYS:H	1.62	0.65
2:E:1260:MET:HB2	2:E:1269:CYS:H	1.62	0.65
2:I:331:VAL:HG12	2:I:333:GLY:H	1.61	0.64
2:G:1721:GLU:OE2	2:G:1725:ARG:NH2	2.31	0.64
2:E:331:VAL:HG12	2:E:333:GLY:H	1.61	0.64
2:E:942:ALA:HB2	2:E:1052:ASN:HB2	1.80	0.64
2:I:1260:MET:HB2	2:I:1269:CYS:H	1.62	0.64
2:I:1721:GLU:OE2	2:I:1725:ARG:NH2	2.31	0.64
2:G:942:ALA:HB2	2:G:1052:ASN:HB2	1.80	0.64
2:E:1721:GLU:OE2	2:E:1725:ARG:NH2	2.31	0.63
2:I:942:ALA:HB2	2:I:1052:ASN:HB2	1.80	0.63
2:I:379:HIS:HD2	2:I:382:GLY:H	1.47	0.63
2:B:942:ALA:HB2	2:B:1052:ASN:HB2	1.80	0.63
2:G:331:VAL:HG12	2:G:333:GLY:H	1.61	0.63
2:G:788:LYS:HG2	2:G:1630:CYS:H	1.64	0.63
2:B:1721:GLU:OE2	2:B:1725:ARG:NH2	2.31	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:788:LYS:HG2	2:I:1630:CYS:H	1.64	0.62
2:B:379:HIS:HD2	2:B:382:GLY:H	1.47	0.62
2:E:2347:GLU:O	2:E:2351:ASN:N	2.32	0.62
2:E:788:LYS:HG2	2:E:1630:CYS:H	1.64	0.61
2:B:788:LYS:HG2	2:B:1630:CYS:H	1.64	0.61
2:G:646:PRO:HD2	2:G:779:PRO:HB2	1.83	0.61
2:E:646:PRO:HD2	2:E:779:PRO:HB2	1.83	0.61
2:B:4973:HIS:NE2	2:I:4227:GLU:OE2	2.29	0.61
2:E:379:HIS:HD2	2:E:382:GLY:H	1.47	0.61
2:G:379:HIS:HD2	2:G:382:GLY:H	1.47	0.61
2:B:646:PRO:HD2	2:B:779:PRO:HB2	1.83	0.60
2:B:1519:UNK:HA	2:B:1526:UNK:HA	1.83	0.60
2:I:646:PRO:HD2	2:I:779:PRO:HB2	1.83	0.60
2:E:1519:UNK:HA	2:E:1526:UNK:HA	1.83	0.60
2:B:2347:GLU:O	2:B:2351:ASN:N	2.32	0.60
2:B:3937:TYR:O	2:B:4002:LYS:NZ	2.35	0.60
2:B:2748:PRO:HD2	2:B:2751:LEU:HD12	1.83	0.60
2:G:2748:PRO:HD2	2:G:2751:LEU:HD12	1.83	0.60
2:I:3937:TYR:O	2:I:4002:LYS:NZ	2.35	0.60
2:B:4984:ASN:OD1	2:B:4987:ASN:N	2.34	0.59
2:G:2347:GLU:O	2:G:2351:ASN:N	2.32	0.59
2:I:1519:UNK:HA	2:I:1526:UNK:HA	1.83	0.59
2:I:4180:ARG:NH1	2:I:4981:GLU:OE1	2.36	0.59
2:B:3675:ASP:OD1	2:B:3769:ARG:NH2	2.36	0.59
2:G:1519:UNK:HA	2:G:1526:UNK:HA	1.83	0.59
2:G:3937:TYR:O	2:G:4002:LYS:NZ	2.35	0.59
2:B:4227:GLU:OE2	2:E:4973:HIS:NE2	2.29	0.59
2:G:179:TYR:OH	2:I:2359:ARG:NH2	2.36	0.59
2:E:3937:TYR:O	2:E:4002:LYS:NZ	2.35	0.59
2:E:4180:ARG:NH1	2:E:4981:GLU:OE1	2.36	0.59
2:G:2359:ARG:NH2	2:E:179:TYR:OH	2.36	0.59
2:E:2748:PRO:HD2	2:E:2751:LEU:HD12	1.83	0.59
2:I:2748:PRO:HD2	2:I:2751:LEU:HD12	1.83	0.59
2:B:1079:LYS:NZ	2:B:1107:PRO:O	2.36	0.59
2:I:4984:ASN:OD1	2:I:4987:ASN:N	2.34	0.59
2:B:4180:ARG:NH1	2:B:4981:GLU:OE1	2.36	0.59
2:G:3675:ASP:OD1	2:G:3769:ARG:NH2	2.36	0.59
2:G:4180:ARG:NH1	2:G:4981:GLU:OE1	2.36	0.59
2:I:2347:GLU:O	2:I:2351:ASN:N	2.32	0.59
1:J:74:LEU:HB2	1:J:99:PHE:HB2	1.85	0.58
2:B:2291:GLN:HB2	2:B:2295:LEU:HG	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:580:GLU:HG2	2:G:583:ILE:HD11	1.85	0.58
2:G:1079:LYS:NZ	2:G:1107:PRO:O	2.36	0.58
2:G:4227:GLU:OE2	2:I:4973:HIS:NE2	2.26	0.58
2:E:580:GLU:HG2	2:E:583:ILE:HD11	1.85	0.58
2:I:2291:GLN:HB2	2:I:2295:LEU:HG	1.85	0.58
1:H:74:LEU:HB2	1:H:99:PHE:HB2	1.85	0.58
2:E:1079:LYS:NZ	2:E:1107:PRO:O	2.36	0.58
2:E:3675:ASP:OD1	2:E:3769:ARG:NH2	2.36	0.58
2:I:1079:LYS:NZ	2:I:1107:PRO:O	2.36	0.58
2:G:2291:GLN:HB2	2:G:2295:LEU:HG	1.85	0.58
1:A:74:LEU:HB2	1:A:99:PHE:HB2	1.85	0.58
2:G:1743:ARG:O	2:G:1964:ARG:NH2	2.37	0.58
2:E:2291:GLN:HB2	2:E:2295:LEU:HG	1.85	0.58
2:G:4984:ASN:OD1	2:G:4987:ASN:N	2.34	0.58
1:F:74:LEU:HB2	1:F:99:PHE:HB2	1.85	0.57
2:B:35:LEU:HD13	2:B:49:LEU:HD13	1.86	0.57
2:G:4582:VAL:HG11	2:E:4860:ARG:HD2	1.86	0.57
2:I:3675:ASP:OD1	2:I:3769:ARG:NH2	2.36	0.57
1:F:42:ARG:HG2	2:E:1691:GLN:HG2	1.87	0.57
2:I:4567:LEU:HA	2:I:4816:ILE:HD12	1.87	0.57
2:B:4567:LEU:HA	2:B:4816:ILE:HD12	1.87	0.57
2:B:4860:ARG:HD2	2:E:4582:VAL:HG11	1.87	0.57
2:G:393:CYS:SG	2:G:395:GLN:NE2	2.77	0.57
2:B:664:PHE:HB2	2:B:746:CYS:HB2	1.87	0.57
2:I:664:PHE:HB2	2:I:746:CYS:HB2	1.87	0.57
2:I:1743:ARG:O	2:I:1964:ARG:NH2	2.37	0.57
2:G:4567:LEU:HA	2:G:4816:ILE:HD12	1.87	0.57
2:B:580:GLU:HG2	2:B:583:ILE:HD11	1.85	0.57
2:B:2359:ARG:NH2	2:I:179:TYR:OH	2.37	0.57
2:B:4582:VAL:HG11	2:I:4860:ARG:HD2	1.86	0.57
2:G:35:LEU:HD13	2:G:49:LEU:HD13	1.86	0.57
2:G:4942:GLU:HA	2:I:4944:ARG:HH22	1.70	0.57
2:I:580:GLU:HG2	2:I:583:ILE:HD11	1.85	0.57
2:I:2755:ILE:HD13	2:I:2810:LYS:HG2	1.87	0.57
2:I:393:CYS:SG	2:I:395:GLN:NE2	2.77	0.57
2:B:393:CYS:SG	2:B:395:GLN:NE2	2.77	0.57
2:B:745:SER:HB2	2:B:758:ARG:HB3	1.87	0.57
2:B:1743:ARG:O	2:B:1964:ARG:NH2	2.37	0.56
2:G:4933:GLN:NE2	2:I:4933:GLN:OE1	2.38	0.56
2:E:393:CYS:SG	2:E:395:GLN:NE2	2.77	0.56
2:E:664:PHE:HB2	2:E:746:CYS:HB2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:1152:MET:HB2	2:E:1161:ILE:HB	1.87	0.56
2:I:745:SER:HB2	2:I:758:ARG:HB3	1.87	0.56
2:E:719:LEU:HD22	2:E:735:GLN:HG2	1.87	0.56
2:E:4984:ASN:OD1	2:E:4987:ASN:N	2.34	0.56
2:I:35:LEU:HD13	2:I:49:LEU:HD13	1.86	0.56
2:B:719:LEU:HD22	2:B:735:GLN:HG2	1.87	0.56
2:B:2755:ILE:HD13	2:B:2810:LYS:HG2	1.87	0.56
2:E:35:LEU:HD13	2:E:49:LEU:HD13	1.86	0.56
2:E:745:SER:HB2	2:E:758:ARG:HB3	1.87	0.56
2:E:1743:ARG:O	2:E:1964:ARG:NH2	2.37	0.56
2:E:2755:ILE:HD13	2:E:2810:LYS:HG2	1.87	0.56
2:G:641:VAL:HG21	2:G:705:ASN:HA	1.87	0.56
2:G:2042:CYS:SG	2:G:2043:GLY:N	2.78	0.56
2:E:4567:LEU:HA	2:E:4816:ILE:HD12	1.87	0.56
2:G:664:PHE:HB2	2:G:746:CYS:HB2	1.87	0.56
2:G:745:SER:HB2	2:G:758:ARG:HB3	1.87	0.56
2:I:23:GLN:OE1	2:I:203:ASN:ND2	2.34	0.56
2:B:1152:MET:HB2	2:B:1161:ILE:HB	1.87	0.56
2:G:1152:MET:HB2	2:G:1161:ILE:HB	1.87	0.56
2:E:641:VAL:HG21	2:E:705:ASN:HA	1.87	0.56
2:E:2042:CYS:SG	2:E:2043:GLY:N	2.78	0.56
2:B:23:GLN:OE1	2:B:203:ASN:ND2	2.34	0.56
2:G:2755:ILE:HD13	2:G:2810:LYS:HG2	1.87	0.56
2:G:2342:ASN:OD1	2:G:2342:ASN:N	2.39	0.56
2:E:4864:ASN:ND2	2:E:4871:GLU:OE1	2.39	0.56
2:I:719:LEU:HD22	2:I:735:GLN:HG2	1.87	0.56
2:B:179:TYR:OH	2:E:2359:ARG:NH2	2.38	0.56
2:G:4973:HIS:NE2	2:E:4227:GLU:OE2	2.32	0.56
2:E:2803:GLU:OE2	2:E:2806:ARG:NH1	2.39	0.56
2:B:2770:LYS:HB3	2:B:2775:TRP:HB2	1.88	0.55
2:G:719:LEU:HD22	2:G:735:GLN:HG2	1.87	0.55
2:I:1152:MET:HB2	2:I:1161:ILE:HB	1.87	0.55
2:I:2042:CYS:SG	2:I:2043:GLY:N	2.78	0.55
2:G:4864:ASN:ND2	2:G:4871:GLU:OE1	2.39	0.55
2:G:626:LEU:HG	2:G:628:GLY:H	1.72	0.55
2:G:2770:LYS:HB3	2:G:2775:TRP:HB2	1.88	0.55
2:E:485:SER:O	2:E:489:ASN:N	2.38	0.55
2:I:2770:LYS:HB3	2:I:2775:TRP:HB2	1.88	0.55
2:I:4864:ASN:ND2	2:I:4871:GLU:OE1	2.39	0.55
2:B:614:VAL:HG22	2:B:616:SER:H	1.72	0.55
2:E:614:VAL:HG22	2:E:616:SER:H	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2737:PRO:O	2:I:2888:ARG:NH2	2.40	0.55
2:B:2342:ASN:OD1	2:B:2342:ASN:N	2.39	0.55
2:I:626:LEU:HG	2:I:628:GLY:H	1.72	0.55
2:B:4864:ASN:ND2	2:B:4871:GLU:OE1	2.39	0.55
2:G:2803:GLU:OE2	2:G:2806:ARG:NH1	2.39	0.55
2:E:2737:PRO:O	2:E:2888:ARG:NH2	2.40	0.55
2:E:2770:LYS:HB3	2:E:2775:TRP:HB2	1.89	0.55
2:I:315:CYS:SG	2:I:316:PHE:N	2.80	0.55
2:G:614:VAL:HG22	2:G:616:SER:H	1.72	0.55
2:I:619:ASP:OD1	2:I:1680:ARG:NH1	2.38	0.55
2:E:23:GLN:OE1	2:E:203:ASN:ND2	2.34	0.55
2:I:614:VAL:HG22	2:I:616:SER:H	1.72	0.55
2:B:2803:GLU:OE2	2:B:2806:ARG:NH1	2.39	0.55
2:G:315:CYS:SG	2:G:316:PHE:N	2.80	0.55
2:G:2737:PRO:O	2:G:2888:ARG:NH2	2.40	0.55
2:E:626:LEU:HG	2:E:628:GLY:H	1.72	0.55
2:B:2737:PRO:O	2:B:2888:ARG:NH2	2.40	0.54
2:I:2803:GLU:OE2	2:I:2806:ARG:NH1	2.39	0.54
2:B:641:VAL:HG21	2:B:705:ASN:HA	1.87	0.54
2:G:671:VAL:HG22	2:G:740:PRO:HG3	1.89	0.54
2:G:2739:PRO:HB3	2:G:2884:ASN:HB3	1.89	0.54
2:G:3809:ASN:HB3	2:G:3812:VAL:HG22	1.89	0.54
2:E:3809:ASN:HB3	2:E:3812:VAL:HG22	1.89	0.54
2:B:626:LEU:HG	2:B:628:GLY:H	1.72	0.54
2:E:2739:PRO:HB3	2:E:2884:ASN:HB3	1.89	0.54
2:G:2346:VAL:HG22	2:G:2348:GLU:H	1.73	0.54
2:E:315:CYS:SG	2:E:316:PHE:N	2.80	0.54
2:I:641:VAL:HG21	2:I:705:ASN:HA	1.87	0.54
2:I:2739:PRO:HB3	2:I:2884:ASN:HB3	1.89	0.54
2:I:3809:ASN:HB3	2:I:3812:VAL:HG22	1.89	0.54
2:B:315:CYS:SG	2:B:316:PHE:N	2.80	0.54
2:B:2346:VAL:HG22	2:B:2348:GLU:H	1.73	0.54
2:E:3817:LEU:HD13	2:E:3899:PHE:HD1	1.73	0.54
2:I:2342:ASN:OD1	2:I:2342:ASN:N	2.39	0.54
2:B:3809:ASN:HB3	2:B:3812:VAL:HG22	1.89	0.54
2:E:1679:ASN:ND2	2:E:1798:LEU:O	2.41	0.54
2:B:671:VAL:HG22	2:B:740:PRO:HG3	1.89	0.54
2:E:2342:ASN:N	2:E:2342:ASN:OD1	2.39	0.54
2:I:3817:LEU:HD13	2:I:3899:PHE:HD1	1.73	0.54
2:B:1679:ASN:ND2	2:B:1798:LEU:O	2.41	0.54
2:B:3817:LEU:HD13	2:B:3899:PHE:HD1	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:358:THR:HG21	2:B:382:GLY:HA2	1.90	0.53
2:E:2003:GLN:O	2:E:2007:ASN:ND2	2.42	0.53
2:B:4930:ALA:O	2:B:4934:GLY:N	2.42	0.53
2:G:4930:ALA:O	2:G:4934:GLY:N	2.42	0.53
2:I:2346:VAL:HG22	2:I:2348:GLU:H	1.73	0.53
2:G:2003:GLN:O	2:G:2007:ASN:ND2	2.42	0.53
2:I:2003:GLN:O	2:I:2007:ASN:ND2	2.42	0.53
2:E:4090:LYS:O	2:E:4094:GLN:N	2.40	0.53
2:E:4075:GLU:HA	2:E:4078:GLN:HB2	1.91	0.53
2:I:671:VAL:HG22	2:I:740:PRO:HG3	1.89	0.53
2:E:671:VAL:HG22	2:E:740:PRO:HG3	1.89	0.53
2:I:1679:ASN:ND2	2:I:1798:LEU:O	2.41	0.53
2:I:1691:GLN:HE22	2:I:1802:ILE:HG12	1.74	0.53
2:I:4930:ALA:O	2:I:4934:GLY:N	2.42	0.53
2:B:1691:GLN:HE22	2:B:1802:ILE:HG12	1.74	0.53
2:B:2739:PRO:HB3	2:B:2884:ASN:HB3	1.89	0.53
2:G:1679:ASN:ND2	2:G:1798:LEU:O	2.41	0.53
2:G:3817:LEU:HD13	2:G:3899:PHE:HD1	1.73	0.53
2:E:2346:VAL:HG22	2:E:2348:GLU:H	1.73	0.53
2:E:4571:PHE:O	2:E:4575:PHE:N	2.42	0.53
2:E:4930:ALA:O	2:E:4934:GLY:N	2.41	0.53
2:B:2003:GLN:O	2:B:2007:ASN:ND2	2.42	0.53
2:B:4075:GLU:HA	2:B:4078:GLN:HB2	1.91	0.53
2:G:358:THR:HG21	2:G:382:GLY:HA2	1.90	0.53
2:E:358:THR:HG21	2:E:382:GLY:HA2	1.90	0.52
2:I:4571:PHE:O	2:I:4575:PHE:N	2.42	0.52
2:B:572:PRO:HA	2:B:575:LEU:HD13	1.92	0.52
2:B:4571:PHE:O	2:B:4575:PHE:N	2.42	0.52
2:G:4571:PHE:O	2:G:4575:PHE:N	2.42	0.52
2:G:619:ASP:OD1	2:G:1680:ARG:NH1	2.38	0.52
2:G:2199:ARG:NH2	2:G:2246:ASN:OD1	2.43	0.52
2:E:619:ASP:OD1	2:E:1680:ARG:NH1	2.39	0.52
2:I:358:THR:HG21	2:I:382:GLY:HA2	1.90	0.52
2:I:2199:ARG:NH2	2:I:2246:ASN:OD1	2.43	0.52
2:B:485:SER:O	2:B:489:ASN:N	2.38	0.52
2:E:1691:GLN:HE22	2:E:1802:ILE:HG12	1.74	0.52
2:I:635:THR:HB	2:I:1639:LEU:HD23	1.92	0.52
2:I:4181:ILE:HG23	2:I:4193:ILE:HB	1.92	0.52
2:B:2199:ARG:NH2	2:B:2246:ASN:OD1	2.43	0.52
2:I:533:ASN:ND2	2:I:536:ASN:OD1	2.38	0.52
2:I:4075:GLU:HA	2:I:4078:GLN:HB2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:669:ASP:OD2	2:G:790:ARG:NH2	2.43	0.52
2:G:1691:GLN:HE22	2:G:1802:ILE:HG12	1.74	0.52
2:I:173:SER:OG	2:I:174:VAL:N	2.43	0.52
2:I:572:PRO:HA	2:I:575:LEU:HD13	1.92	0.52
2:G:4181:ILE:HG23	2:G:4193:ILE:HB	1.92	0.52
2:G:635:THR:HB	2:G:1639:LEU:HD23	1.92	0.52
2:E:4181:ILE:HG23	2:E:4193:ILE:HB	1.92	0.52
2:B:173:SER:OG	2:B:174:VAL:N	2.43	0.51
2:G:4075:GLU:HA	2:G:4078:GLN:HB2	1.91	0.51
2:E:572:PRO:HA	2:E:575:LEU:HD13	1.92	0.51
1:A:42:ARG:HG2	2:B:1691:GLN:HG2	1.92	0.51
2:B:635:THR:HB	2:B:1639:LEU:HD23	1.92	0.51
2:I:1516:UNK:N	2:I:1529:UNK:O	2.44	0.51
2:I:4059:LEU:HD13	2:I:4167:ALA:HB2	1.92	0.51
2:I:4063:ASP:O	2:I:4067:LYS:NZ	2.36	0.51
2:B:619:ASP:OD1	2:B:1680:ARG:NH1	2.38	0.51
2:B:4181:ILE:HG23	2:B:4193:ILE:HB	1.92	0.51
2:I:4673:ARG:HH22	2:I:4698:LYS:HB2	1.75	0.51
2:B:4933:GLN:NE2	2:E:4933:GLN:OE1	2.43	0.51
2:G:572:PRO:HA	2:G:575:LEU:HD13	1.92	0.51
2:G:4673:ARG:HH22	2:G:4698:LYS:HB2	1.75	0.51
2:E:2199:ARG:NH2	2:E:2246:ASN:OD1	2.43	0.51
2:I:4003:LEU:HB2	2:I:4013:LEU:HD13	1.93	0.51
2:B:533:ASN:ND2	2:B:536:ASN:OD1	2.38	0.51
2:B:596:ASN:HB3	2:B:599:VAL:HG22	1.93	0.51
2:B:2042:CYS:SG	2:B:2043:GLY:N	2.78	0.51
2:B:4063:ASP:O	2:B:4067:LYS:NZ	2.36	0.51
2:G:173:SER:OG	2:G:174:VAL:N	2.43	0.51
2:G:4003:LEU:HB2	2:G:4013:LEU:HD13	1.93	0.51
2:G:4860:ARG:HD2	2:I:4582:VAL:HG11	1.92	0.51
2:I:4090:LYS:O	2:I:4094:GLN:N	2.40	0.51
2:B:717:ASP:OD1	2:B:720:HIS:ND1	2.44	0.51
2:B:4003:LEU:HB2	2:B:4013:LEU:HD13	1.93	0.51
2:G:717:ASP:OD1	2:G:720:HIS:ND1	2.44	0.51
2:E:1516:UNK:N	2:E:1529:UNK:O	2.44	0.51
2:I:717:ASP:OD1	2:I:720:HIS:ND1	2.44	0.51
2:B:4942:GLU:HA	2:E:4944:ARG:HH22	1.76	0.51
2:E:4673:ARG:HH22	2:E:4698:LYS:HB2	1.75	0.51
2:I:596:ASN:HB3	2:I:599:VAL:HG22	1.93	0.51
2:B:4680:LYS:HD3	2:B:4686:LEU:HD22	1.93	0.51
2:B:4944:ARG:HH22	2:I:4942:GLU:HA	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:596:ASN:HB3	2:G:599:VAL:HG22	1.93	0.50
2:G:1718:ILE:HG13	2:G:1719:HIS:CD2	2.46	0.50
2:E:4003:LEU:HB2	2:E:4013:LEU:HD13	1.93	0.50
2:I:1103:GLY:HA3	2:I:1123:VAL:HA	1.94	0.50
2:I:4743:MET:HB3	2:I:4746:ALA:HB3	1.93	0.50
2:B:4059:LEU:HD13	2:B:4167:ALA:HB2	1.92	0.50
2:E:4059:LEU:HD13	2:E:4167:ALA:HB2	1.92	0.50
2:I:1718:ILE:HG13	2:I:1719:HIS:CD2	2.46	0.50
2:B:609:CYS:SG	2:B:610:ASN:N	2.85	0.50
2:G:609:CYS:SG	2:G:610:ASN:N	2.85	0.50
2:G:1516:UNK:N	2:G:1529:UNK:O	2.44	0.50
2:G:4059:LEU:HD13	2:G:4167:ALA:HB2	1.92	0.50
2:G:4090:LYS:O	2:G:4094:GLN:N	2.40	0.50
2:B:1516:UNK:N	2:B:1529:UNK:O	2.44	0.50
2:B:1718:ILE:HG13	2:B:1719:HIS:CD2	2.46	0.50
2:B:4933:GLN:OE1	2:I:4933:GLN:NE2	2.44	0.50
2:E:669:ASP:OD2	2:E:790:ARG:NH2	2.42	0.50
2:G:23:GLN:OE1	2:G:203:ASN:ND2	2.34	0.50
2:G:396:GLU:OE2	2:G:451:TYR:OH	2.28	0.50
2:E:426:ARG:HB2	2:E:506:TYR:HA	1.94	0.50
2:E:717:ASP:OD1	2:E:720:HIS:ND1	2.44	0.50
2:B:1103:GLY:HA3	2:B:1123:VAL:HA	1.94	0.50
2:B:4673:ARG:HH22	2:B:4698:LYS:HB2	1.75	0.50
2:G:4944:ARG:HH22	2:E:4942:GLU:HA	1.76	0.50
2:E:1718:ILE:HG13	2:E:1719:HIS:CD2	2.46	0.50
2:I:396:GLU:OE2	2:I:451:TYR:OH	2.28	0.50
2:I:609:CYS:SG	2:I:610:ASN:N	2.85	0.50
2:I:4680:LYS:HD3	2:I:4686:LEU:HD22	1.93	0.50
1:F:87:HIS:HD2	1:F:90:VAL:HB	1.77	0.50
2:B:683:ARG:NH1	2:B:707:VAL:O	2.43	0.50
2:G:627:PRO:O	2:G:629:ARG:NH1	2.45	0.50
2:E:173:SER:OG	2:E:174:VAL:N	2.43	0.50
2:B:111:HIS:CD2	2:B:114:SER:H	2.30	0.50
2:B:669:ASP:OD2	2:B:790:ARG:NH2	2.43	0.50
2:B:2002:PRO:HA	2:B:2005:GLN:HB3	1.94	0.50
2:I:627:PRO:O	2:I:629:ARG:NH1	2.45	0.50
2:I:864:PRO:HD2	2:I:867:LEU:HD12	1.94	0.50
1:J:42:ARG:HG2	2:I:1691:GLN:HG2	1.94	0.50
2:G:1103:GLY:HA3	2:G:1123:VAL:HA	1.93	0.50
2:G:1698:LEU:N	2:G:1712:TYR:OH	2.45	0.50
2:E:111:HIS:CD2	2:E:114:SER:H	2.30	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:635:THR:HB	2:E:1639:LEU:HD23	1.92	0.50
2:E:4680:LYS:HD3	2:E:4686:LEU:HD22	1.93	0.50
2:B:627:PRO:O	2:B:629:ARG:NH1	2.45	0.49
2:E:596:ASN:HB3	2:E:599:VAL:HG22	1.93	0.49
2:E:683:ARG:NH1	2:E:707:VAL:O	2.43	0.49
2:I:214:VAL:HG12	2:I:274:LEU:HD12	1.94	0.49
2:I:637:LEU:HD23	2:I:1637:MET:HB3	1.94	0.49
2:I:989:ALA:O	2:I:1035:ASN:ND2	2.44	0.49
1:J:35:LYS:HD3	2:I:636:ASN:HD21	1.77	0.49
2:G:1244:GLN:OE1	2:G:1646:ARG:NH1	2.45	0.49
2:I:488:LEU:HD23	2:I:491:ILE:HD12	1.94	0.49
2:I:2002:PRO:HA	2:I:2005:GLN:HB3	1.94	0.49
1:H:87:HIS:HD2	1:H:90:VAL:HB	1.77	0.49
2:B:488:LEU:HD23	2:B:491:ILE:HD12	1.94	0.49
2:B:989:ALA:O	2:B:1035:ASN:ND2	2.44	0.49
2:B:3753:PHE:HA	2:B:3756:LYS:HB3	1.93	0.49
2:G:214:VAL:HG12	2:G:274:LEU:HD12	1.94	0.49
2:G:533:ASN:ND2	2:G:536:ASN:OD1	2.38	0.49
2:E:609:CYS:SG	2:E:610:ASN:N	2.85	0.49
2:E:683:ARG:HG2	2:E:717:ASP:HB3	1.95	0.49
2:I:707:VAL:HG23	2:I:713:SER:HB2	1.94	0.49
2:B:864:PRO:HD2	2:B:867:LEU:HD12	1.94	0.49
2:B:4090:LYS:O	2:B:4094:GLN:N	2.40	0.49
2:G:707:VAL:HG23	2:G:713:SER:HB2	1.94	0.49
2:G:4743:MET:HB3	2:G:4746:ALA:HB3	1.93	0.49
2:E:206:CYS:SG	2:E:207:SER:N	2.85	0.49
2:I:206:CYS:SG	2:I:207:SER:N	2.85	0.49
2:I:1244:GLN:OE1	2:I:1646:ARG:NH1	2.45	0.49
2:I:3753:PHE:HA	2:I:3756:LYS:HB3	1.93	0.49
2:I:2332:LEU:HD13	2:I:2335:LEU:HD12	1.95	0.49
2:B:214:VAL:HG12	2:B:274:LEU:HD12	1.94	0.49
2:B:1698:LEU:N	2:B:1712:TYR:OH	2.45	0.49
2:G:637:LEU:HD23	2:G:1637:MET:HB3	1.94	0.49
2:G:2894:LEU:HD11	2:G:2902:HIS:HB2	1.94	0.49
2:G:4680:LYS:HD3	2:G:4686:LEU:HD22	1.93	0.49
2:E:4924:VAL:HA	2:E:4928:LEU:HB2	1.94	0.49
2:I:426:ARG:HB2	2:I:506:TYR:HA	1.93	0.49
2:I:3842:LEU:O	2:I:3929:SER:OG	2.31	0.49
2:B:1244:GLN:OE1	2:B:1646:ARG:NH1	2.45	0.49
2:B:1703:LEU:HD12	2:B:1708:ARG:HB2	1.95	0.49
2:G:111:HIS:CD2	2:G:114:SER:H	2.30	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:488:LEU:HD23	2:G:491:ILE:HD12	1.94	0.49
2:E:214:VAL:HG12	2:E:274:LEU:HD12	1.94	0.49
2:E:627:PRO:O	2:E:629:ARG:NH1	2.45	0.49
2:E:1244:GLN:OE1	2:E:1646:ARG:NH1	2.45	0.49
2:E:3753:PHE:HA	2:E:3756:LYS:HB3	1.93	0.49
2:B:426:ARG:HB2	2:B:506:TYR:HA	1.93	0.49
2:B:2332:LEU:HD13	2:B:2335:LEU:HD12	1.95	0.49
2:G:206:CYS:SG	2:G:207:SER:N	2.85	0.49
2:G:3842:LEU:O	2:G:3929:SER:OG	2.31	0.49
2:E:4743:MET:HB3	2:E:4746:ALA:HB3	1.93	0.49
2:I:111:HIS:CD2	2:I:114:SER:H	2.30	0.49
2:I:1703:LEU:HD12	2:I:1708:ARG:HB2	1.95	0.49
1:A:87:HIS:HD2	1:A:90:VAL:HB	1.77	0.49
2:B:683:ARG:HG2	2:B:717:ASP:HB3	1.95	0.49
2:G:426:ARG:HB2	2:G:506:TYR:HA	1.94	0.49
2:G:864:PRO:HD2	2:G:867:LEU:HD12	1.94	0.49
2:G:2002:PRO:HA	2:G:2005:GLN:HB3	1.94	0.49
2:G:4933:GLN:OE1	2:E:4933:GLN:NE2	2.46	0.49
2:E:637:LEU:HD23	2:E:1637:MET:HB3	1.94	0.49
2:I:1698:LEU:N	2:I:1712:TYR:OH	2.45	0.49
2:B:2894:LEU:HD11	2:B:2902:HIS:HB2	1.94	0.49
2:G:3753:PHE:HA	2:G:3756:LYS:HB3	1.93	0.49
2:E:1103:GLY:HA3	2:E:1123:VAL:HA	1.94	0.49
2:E:2002:PRO:HA	2:E:2005:GLN:HB3	1.94	0.49
2:B:2131:LEU:HD23	2:B:3662:ILE:HB	1.95	0.48
2:G:4063:ASP:O	2:G:4067:LYS:NZ	2.36	0.48
2:E:838:HIS:HA	2:E:1201:HIS:HB3	1.95	0.48
2:E:989:ALA:O	2:E:1035:ASN:ND2	2.44	0.48
2:E:1698:LEU:N	2:E:1712:TYR:OH	2.45	0.48
2:B:707:VAL:HG23	2:B:713:SER:HB2	1.94	0.48
2:E:2420:HIS:ND1	2:E:2493:UNK:O	2.47	0.48
2:I:485:SER:O	2:I:489:ASN:N	2.38	0.48
2:I:669:ASP:OD2	2:I:790:ARG:NH2	2.43	0.48
2:I:683:ARG:NH1	2:I:707:VAL:O	2.43	0.48
2:I:2131:LEU:HD23	2:I:3662:ILE:HB	1.96	0.48
2:I:3948:LYS:HG2	2:I:4012:LEU:HD22	1.95	0.48
2:B:838:HIS:HA	2:B:1201:HIS:HB3	1.95	0.48
2:B:4743:MET:HB3	2:B:4746:ALA:HB3	1.93	0.48
2:G:683:ARG:HG2	2:G:717:ASP:HB3	1.95	0.48
2:E:2894:LEU:HD11	2:E:2902:HIS:HB2	1.94	0.48
2:I:4924:VAL:HA	2:I:4928:LEU:HB2	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:206:CYS:SG	2:B:207:SER:N	2.85	0.48
2:B:395:GLN:NE2	2:B:397:GLU:OE1	2.47	0.48
2:B:1960:ALA:O	2:B:1964:ARG:NE	2.46	0.48
2:B:3842:LEU:O	2:B:3929:SER:OG	2.31	0.48
2:G:2758:PHE:O	2:G:2762:THR:N	2.47	0.48
2:E:488:LEU:HD23	2:E:491:ILE:HD12	1.94	0.48
2:I:2894:LEU:HD11	2:I:2902:HIS:HB2	1.94	0.48
2:B:637:LEU:HD23	2:B:1637:MET:HB3	1.94	0.48
2:B:3767:GLN:NE2	2:B:3804:ILE:O	2.47	0.48
2:G:1991:THR:O	2:G:1995:THR:OG1	2.32	0.48
2:G:4060:LYS:NZ	2:G:4107:GLU:OE2	2.47	0.48
2:G:4924:VAL:HA	2:G:4928:LEU:HB2	1.94	0.48
2:E:864:PRO:HD2	2:E:867:LEU:HD12	1.94	0.48
2:E:1991:THR:O	2:E:1995:THR:OG1	2.32	0.48
2:I:683:ARG:HG2	2:I:717:ASP:HB3	1.95	0.48
2:B:1991:THR:O	2:B:1995:THR:OG1	2.32	0.48
2:G:485:SER:O	2:G:489:ASN:N	2.38	0.48
2:G:3948:LYS:HG2	2:G:4012:LEU:HD22	1.96	0.48
2:E:395:GLN:NE2	2:E:397:GLU:OE1	2.47	0.48
2:E:1960:ALA:O	2:E:1964:ARG:NE	2.46	0.48
1:H:35:LYS:HD3	2:G:636:ASN:HD21	1.79	0.48
2:B:4924:VAL:HA	2:B:4928:LEU:HB2	1.94	0.48
2:G:2131:LEU:HD23	2:G:3662:ILE:HB	1.96	0.48
2:E:707:VAL:HG23	2:E:713:SER:HB2	1.94	0.48
2:E:2131:LEU:HD23	2:E:3662:ILE:HB	1.96	0.48
2:E:4060:LYS:NZ	2:E:4107:GLU:OE2	2.47	0.48
2:I:681:HIS:HB3	2:I:784:SER:HB3	1.96	0.48
2:I:1991:THR:O	2:I:1995:THR:OG1	2.32	0.48
2:I:4666:VAL:HG23	2:I:4669:VAL:HB	1.96	0.48
2:G:838:HIS:HA	2:G:1201:HIS:HB3	1.95	0.48
2:G:887:ILE:HG21	2:G:959:TYR:HA	1.96	0.48
2:G:2332:LEU:HD13	2:G:2335:LEU:HD12	1.95	0.48
2:E:3767:GLN:NE2	2:E:3804:ILE:O	2.47	0.48
2:G:1703:LEU:HD12	2:G:1708:ARG:HB2	1.95	0.47
2:G:3767:GLN:NE2	2:G:3804:ILE:O	2.47	0.47
2:E:1703:LEU:HD12	2:E:1708:ARG:HB2	1.95	0.47
2:E:2332:LEU:HD13	2:E:2335:LEU:HD12	1.95	0.47
2:E:4666:VAL:HG23	2:E:4669:VAL:HB	1.96	0.47
1:A:35:LYS:HD3	2:B:636:ASN:HD21	1.79	0.47
1:J:87:HIS:HD2	1:J:90:VAL:HB	1.77	0.47
2:G:1671:ARG:NH2	2:G:1710:GLY:O	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:2420:HIS:ND1	2:G:2493:UNK:O	2.47	0.47
2:I:3658:LYS:HA	2:I:3661:TRP:CD2	2.49	0.47
2:B:1671:ARG:NH2	2:B:1710:GLY:O	2.47	0.47
2:G:681:HIS:HB3	2:G:784:SER:HB3	1.96	0.47
2:E:4063:ASP:O	2:E:4067:LYS:NZ	2.36	0.47
2:I:395:GLN:NE2	2:I:397:GLU:OE1	2.47	0.47
2:I:2758:PHE:O	2:I:2762:THR:N	2.47	0.47
2:B:2758:PHE:O	2:B:2762:THR:N	2.47	0.47
2:B:3658:LYS:HA	2:B:3661:TRP:CD2	2.49	0.47
2:G:219:VAL:HG13	2:G:285:VAL:HG21	1.97	0.47
2:G:683:ARG:NH1	2:G:707:VAL:O	2.43	0.47
2:G:3658:LYS:HA	2:G:3661:TRP:CD2	2.49	0.47
2:E:887:ILE:HG21	2:E:959:TYR:HA	1.96	0.47
2:I:3767:GLN:NE2	2:I:3804:ILE:O	2.47	0.47
1:H:42:ARG:HG2	2:G:1691:GLN:HG2	1.97	0.47
2:E:533:ASN:ND2	2:E:536:ASN:OD1	2.38	0.47
2:E:1671:ARG:NH2	2:E:1710:GLY:O	2.47	0.47
2:B:4155:PRO:HD2	2:B:5036:LEU:HD23	1.97	0.47
2:G:395:GLN:NE2	2:G:397:GLU:OE1	2.47	0.47
2:G:2159:LEU:HA	2:G:2162:ILE:HD12	1.97	0.47
2:I:395:GLN:HG3	2:I:397:GLU:H	1.80	0.47
2:I:838:HIS:HA	2:I:1201:HIS:HB3	1.95	0.47
2:I:1671:ARG:NH2	2:I:1710:GLY:O	2.47	0.47
2:I:4060:LYS:NZ	2:I:4107:GLU:OE2	2.47	0.47
2:B:395:GLN:HG3	2:B:397:GLU:H	1.80	0.47
2:B:396:GLU:OE2	2:B:451:TYR:OH	2.28	0.47
2:B:681:HIS:HB3	2:B:784:SER:HB3	1.96	0.47
2:B:972:LEU:O	2:B:1044:ARG:NH2	2.48	0.47
2:B:1812:LEU:HD21	2:B:1861:GLN:HG2	1.97	0.47
2:B:2420:HIS:ND1	2:B:2493:UNK:O	2.47	0.47
2:B:3948:LYS:HG2	2:B:4012:LEU:HD22	1.96	0.47
2:B:4060:LYS:NZ	2:B:4107:GLU:OE2	2.47	0.47
2:G:395:GLN:HG3	2:G:397:GLU:H	1.80	0.47
2:E:1171:SER:OG	2:E:1175:SER:N	2.42	0.47
2:E:3842:LEU:O	2:E:3929:SER:OG	2.31	0.47
2:E:3948:LYS:HG2	2:E:4012:LEU:HD22	1.96	0.47
2:E:4155:PRO:HD2	2:E:5036:LEU:HD23	1.97	0.47
2:I:887:ILE:HG21	2:I:959:TYR:HA	1.96	0.47
2:I:1960:ALA:O	2:I:1964:ARG:NE	2.46	0.47
2:B:2751:LEU:HD11	2:B:2823:ILE:HG21	1.97	0.47
2:G:4666:VAL:HG23	2:G:4669:VAL:HB	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:134:ASP:N	2:E:134:ASP:OD1	2.48	0.47
2:E:681:HIS:HB3	2:E:784:SER:HB3	1.96	0.47
2:E:2927:LEU:HD23	2:E:2930:LEU:HD12	1.96	0.47
2:E:3779:VAL:HG23	2:E:3780:LEU:HD12	1.97	0.47
2:I:4155:PRO:HD2	2:I:5036:LEU:HD23	1.97	0.47
2:B:4239:GLU:OE2	2:B:5014:TYR:OH	2.27	0.47
2:G:989:ALA:O	2:G:1035:ASN:ND2	2.44	0.47
2:G:4155:PRO:HD2	2:G:5036:LEU:HD23	1.97	0.47
2:E:395:GLN:HG3	2:E:397:GLU:H	1.80	0.47
2:E:2159:LEU:HA	2:E:2162:ILE:HD12	1.97	0.47
2:I:219:VAL:HG13	2:I:285:VAL:HG21	1.97	0.47
2:I:2420:HIS:ND1	2:I:2493:UNK:O	2.47	0.47
2:I:4767:TRP:HE3	2:I:4770:SER:HB2	1.80	0.47
2:B:3779:VAL:HG23	2:B:3780:LEU:HD12	1.97	0.47
2:B:887:ILE:HG21	2:B:959:TYR:HA	1.96	0.46
2:E:1812:LEU:HD21	2:E:1861:GLN:HG2	1.97	0.46
2:I:2751:LEU:HD11	2:I:2823:ILE:HG21	1.97	0.46
1:A:23:VAL:HG22	1:A:47:LYS:HG2	1.97	0.46
2:B:2159:LEU:HA	2:B:2162:ILE:HD12	1.96	0.46
2:B:2277:ALA:HB1	2:B:2337:PHE:HD2	1.81	0.46
2:B:2927:LEU:HD23	2:B:2930:LEU:HD12	1.96	0.46
2:B:4666:VAL:HG23	2:B:4669:VAL:HB	1.96	0.46
2:B:4767:TRP:HE3	2:B:4770:SER:HB2	1.80	0.46
2:G:132:ALA:HA	2:G:194:SER:HB2	1.98	0.46
2:E:972:LEU:O	2:E:1044:ARG:NH2	2.48	0.46
2:E:2236:LEU:HD23	2:E:2275:VAL:HG21	1.98	0.46
2:E:2758:PHE:O	2:E:2762:THR:N	2.47	0.46
2:I:2159:LEU:HA	2:I:2162:ILE:HD12	1.97	0.46
1:H:23:VAL:HG22	1:H:47:LYS:HG2	1.97	0.46
2:B:219:VAL:HG13	2:B:285:VAL:HG21	1.97	0.46
2:B:1095:VAL:HB	2:B:1199:VAL:HG23	1.97	0.46
2:G:972:LEU:O	2:G:1044:ARG:NH2	2.48	0.46
2:G:2236:LEU:HD23	2:G:2275:VAL:HG21	1.98	0.46
2:G:3779:VAL:HG23	2:G:3780:LEU:HD12	1.97	0.46
2:E:2277:ALA:HB1	2:E:2337:PHE:HD2	1.81	0.46
2:I:972:LEU:O	2:I:1044:ARG:NH2	2.48	0.46
2:G:1812:LEU:HD21	2:G:1861:GLN:HG2	1.97	0.46
2:E:396:GLU:OE2	2:E:451:TYR:OH	2.28	0.46
2:E:3658:LYS:HA	2:E:3661:TRP:CD2	2.49	0.46
2:E:3923:LEU:HD13	2:E:3961:VAL:HG11	1.98	0.46
2:I:2927:LEU:HD23	2:I:2930:LEU:HD12	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:3779:VAL:HG23	2:I:3780:LEU:HD12	1.97	0.46
2:B:1078:GLU:HG3	2:B:1237:TRP:HE1	1.81	0.46
2:B:2143:THR:O	2:B:3651:ASN:ND2	2.44	0.46
2:G:2751:LEU:HD11	2:G:2823:ILE:HG21	1.97	0.46
2:G:4749:GLU:HA	2:G:4752:ALA:HB3	1.97	0.46
2:B:134:ASP:OD1	2:B:134:ASP:N	2.48	0.46
2:G:765:GLN:NE2	2:G:1521:UNK:O	2.49	0.46
2:G:3923:LEU:HD13	2:G:3961:VAL:HG11	1.98	0.46
2:I:645:ARG:HH11	2:I:778:PHE:HE1	1.64	0.46
2:I:2326:CYS:SG	2:I:2327:GLY:N	2.89	0.46
2:B:2236:LEU:HD23	2:B:2275:VAL:HG21	1.98	0.46
2:E:219:VAL:HG13	2:E:285:VAL:HG21	1.97	0.46
2:I:132:ALA:HA	2:I:194:SER:HB2	1.98	0.46
2:G:698:GLY:HA2	2:G:703:GLY:HA2	1.98	0.46
2:G:1960:ALA:O	2:G:1964:ARG:NE	2.46	0.46
2:G:2326:CYS:SG	2:G:2327:GLY:N	2.89	0.46
2:G:2927:LEU:HD23	2:G:2930:LEU:HD12	1.96	0.46
2:I:4749:GLU:HA	2:I:4752:ALA:HB3	1.97	0.46
2:G:1171:SER:OG	2:G:1175:SER:N	2.42	0.46
2:G:2277:ALA:HB1	2:G:2337:PHE:HD2	1.81	0.46
2:G:3365:UNK:O	2:G:3369:UNK:N	2.49	0.46
2:E:765:GLN:NE2	2:E:1521:UNK:O	2.49	0.46
2:I:134:ASP:OD1	2:I:134:ASP:N	2.48	0.46
2:I:698:GLY:HA2	2:I:703:GLY:HA2	1.98	0.46
2:I:3923:LEU:HD13	2:I:3961:VAL:HG11	1.98	0.46
2:G:134:ASP:OD1	2:G:134:ASP:N	2.48	0.45
2:G:1095:VAL:HB	2:G:1199:VAL:HG23	1.97	0.45
2:E:2326:CYS:SG	2:E:2327:GLY:N	2.89	0.45
2:I:2236:LEU:HD23	2:I:2275:VAL:HG21	1.98	0.45
2:B:4749:GLU:HA	2:B:4752:ALA:HB3	1.97	0.45
2:E:1078:GLU:HG3	2:E:1237:TRP:HE1	1.81	0.45
2:I:765:GLN:NE2	2:I:1521:UNK:O	2.49	0.45
2:I:2277:ALA:HB1	2:I:2337:PHE:HD2	1.81	0.45
2:E:4749:GLU:HA	2:E:4752:ALA:HB3	1.97	0.45
2:E:4767:TRP:HE3	2:E:4770:SER:HB2	1.80	0.45
1:J:23:VAL:HG22	1:J:47:LYS:HG2	1.97	0.45
2:B:2326:CYS:SG	2:B:2327:GLY:N	2.89	0.45
2:B:3923:LEU:HD13	2:B:3961:VAL:HG11	1.98	0.45
2:I:2004:GLU:HA	2:I:2007:ASN:HD22	1.82	0.45
2:B:403:MET:O	2:B:407:THR:N	2.50	0.45
2:B:765:GLN:NE2	2:B:1521:UNK:O	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:4767:TRP:HE3	2:G:4770:SER:HB2	1.80	0.45
2:E:551:LEU:HD21	2:E:589:LEU:HD13	1.98	0.45
2:E:1095:VAL:HB	2:E:1199:VAL:HG23	1.97	0.45
2:E:4713:SER:HG	2:E:4775:TYR:HH	1.64	0.45
2:I:4657:CYS:HB3	2:I:4792:LEU:HD11	1.99	0.45
2:B:551:LEU:HD21	2:B:589:LEU:HD13	1.98	0.45
2:B:645:ARG:HH11	2:B:778:PHE:HE1	1.64	0.45
2:B:2004:GLU:HA	2:B:2007:ASN:HD22	1.82	0.45
2:G:645:ARG:HH11	2:G:778:PHE:HE1	1.64	0.45
2:G:2004:GLU:HA	2:G:2007:ASN:HD22	1.82	0.45
2:E:2751:LEU:HD11	2:E:2823:ILE:HG21	1.97	0.45
2:E:2753:SER:O	2:E:2757:LYS:N	2.48	0.45
2:E:3365:UNK:O	2:E:3369:UNK:N	2.49	0.45
2:I:1078:GLU:HG3	2:I:1237:TRP:HE1	1.81	0.45
1:F:23:VAL:HG22	1:F:47:LYS:HG2	1.97	0.45
2:B:132:ALA:HA	2:B:194:SER:HB2	1.98	0.45
2:B:698:GLY:HA2	2:B:703:GLY:HA2	1.98	0.45
2:G:551:LEU:HD21	2:G:589:LEU:HD13	1.98	0.45
2:G:1078:GLU:HG3	2:G:1237:TRP:HE1	1.81	0.45
2:G:1457:UNK:N	2:G:1497:UNK:O	2.50	0.45
2:I:1095:VAL:HB	2:I:1199:VAL:HG23	1.98	0.45
2:B:4657:CYS:HB3	2:B:4792:LEU:HD11	1.99	0.45
2:E:132:ALA:HA	2:E:194:SER:HB2	1.98	0.45
2:I:1812:LEU:HD21	2:I:1861:GLN:HG2	1.97	0.45
2:I:4925:ILE:HA	2:I:4929:LEU:HD23	1.99	0.45
2:B:3365:UNK:O	2:B:3369:UNK:N	2.49	0.45
2:G:3756:LYS:HA	2:G:3759:GLU:HG2	1.99	0.45
2:G:3992:PHE:O	2:G:3996:PHE:N	2.41	0.45
2:E:4558:ASN:OD1	2:E:4558:ASN:N	2.50	0.45
2:I:3365:UNK:O	2:I:3369:UNK:N	2.49	0.45
1:F:35:LYS:HD3	2:E:636:ASN:HD21	1.82	0.45
2:B:379:HIS:CD2	2:B:381:GLU:H	2.35	0.45
2:E:4142:ASN:HA	2:E:4145:VAL:HG12	1.99	0.45
2:B:886:ARG:HB3	2:B:891:TRP:HB2	2.00	0.44
2:B:2753:SER:O	2:B:2757:LYS:N	2.48	0.44
2:E:2004:GLU:HA	2:E:2007:ASN:HD22	1.82	0.44
2:E:4925:ILE:HA	2:E:4929:LEU:HD23	1.99	0.44
2:I:45:ARG:HG2	2:I:443:LEU:HD21	1.99	0.44
2:I:1171:SER:OG	2:I:1175:SER:N	2.42	0.44
2:I:4142:ASN:HA	2:I:4145:VAL:HG12	1.99	0.44
2:B:4142:ASN:HA	2:B:4145:VAL:HG12	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:978:THR:HB	2:G:980:ALA:H	1.82	0.44
2:G:4142:ASN:HA	2:G:4145:VAL:HG12	1.99	0.44
2:E:346:CYS:N	2:E:388:LEU:O	2.50	0.44
2:E:4229:GLU:HA	2:E:4232:GLU:HB3	2.00	0.44
2:I:143:GLY:HA3	2:I:147:TRP:HE1	1.82	0.44
2:B:346:CYS:N	2:B:388:LEU:O	2.50	0.44
2:G:2880:GLU:O	2:G:2884:ASN:N	2.46	0.44
2:E:379:HIS:CD2	2:E:381:GLU:H	2.35	0.44
2:E:698:GLY:HA2	2:E:703:GLY:HA2	1.98	0.44
2:E:886:ARG:HB3	2:E:891:TRP:HB2	2.00	0.44
2:E:1457:UNK:N	2:E:1497:UNK:O	2.50	0.44
2:I:1457:UNK:N	2:I:1497:UNK:O	2.50	0.44
2:I:3676:ASP:OD1	2:I:3676:ASP:N	2.50	0.44
2:B:1973:GLN:HA	2:B:1976:ARG:HB3	2.00	0.44
2:B:4227:GLU:HG3	2:B:4228:ALA:H	1.82	0.44
2:G:4657:CYS:HB3	2:G:4792:LEU:HD11	1.99	0.44
2:E:978:THR:HB	2:E:980:ALA:H	1.82	0.44
2:I:403:MET:O	2:I:407:THR:N	2.50	0.44
2:I:579:GLN:H	2:I:582:HIS:HD2	1.66	0.44
2:B:1457:UNK:N	2:B:1497:UNK:O	2.50	0.44
2:B:3676:ASP:OD1	2:B:3676:ASP:N	2.50	0.44
2:B:4229:GLU:HA	2:B:4232:GLU:HB3	2.00	0.44
2:E:220:LEU:O	2:E:260:TRP:N	2.50	0.44
2:E:645:ARG:HH11	2:E:778:PHE:HE1	1.64	0.44
2:I:218:HIS:HB3	2:I:392:ARG:HD3	2.00	0.44
2:I:379:HIS:CD2	2:I:381:GLU:H	2.35	0.44
2:I:470:SER:O	2:I:474:ARG:NE	2.43	0.44
2:I:2226:PRO:HA	2:I:2229:VAL:HG12	2.00	0.44
2:I:4227:GLU:HG3	2:I:4228:ALA:H	1.82	0.44
2:B:1972:ASN:O	2:B:1976:ARG:N	2.49	0.44
2:B:4925:ILE:HA	2:B:4929:LEU:HD23	1.99	0.44
2:I:551:LEU:HD21	2:I:589:LEU:HD13	1.98	0.44
2:I:2880:GLU:O	2:I:2884:ASN:N	2.47	0.44
2:I:4886:HIS:O	2:I:4890:GLY:N	2.46	0.44
2:B:978:THR:HB	2:B:980:ALA:H	1.82	0.44
2:G:143:GLY:HA3	2:G:147:TRP:HE1	1.82	0.44
2:G:2226:PRO:HA	2:G:2229:VAL:HG12	2.00	0.44
2:G:3676:ASP:OD1	2:G:3676:ASP:N	2.50	0.44
2:G:4925:ILE:HA	2:G:4929:LEU:HD23	1.99	0.44
2:I:606:LEU:HG	2:I:617:ASN:HD22	1.82	0.44
2:I:1760:HIS:CE1	2:I:2041:HIS:HA	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:3756:LYS:HA	2:I:3759:GLU:HG2	1.99	0.44
2:B:143:GLY:HA3	2:B:147:TRP:HE1	1.82	0.44
2:G:379:HIS:CD2	2:G:381:GLU:H	2.35	0.44
2:G:886:ARG:HB3	2:G:891:TRP:HB2	2.00	0.44
2:B:3850:GLN:HA	2:B:3853:ALA:HB3	2.00	0.44
2:B:4558:ASN:OD1	2:B:4558:ASN:N	2.50	0.44
2:B:4886:HIS:O	2:B:4890:GLY:N	2.46	0.44
2:G:346:CYS:N	2:G:388:LEU:O	2.50	0.44
2:G:606:LEU:HG	2:G:617:ASN:HD22	1.82	0.44
2:G:4227:GLU:HG3	2:G:4228:ALA:H	1.82	0.44
2:E:143:GLY:HA3	2:E:147:TRP:HE1	1.82	0.44
2:I:1973:GLN:HA	2:I:1976:ARG:HB3	2.00	0.44
2:I:4229:GLU:HA	2:I:4232:GLU:HB3	2.00	0.44
2:G:218:HIS:HB3	2:G:392:ARG:HD3	2.00	0.43
2:G:220:LEU:O	2:G:260:TRP:N	2.50	0.43
2:E:243:ARG:NH1	2:E:301:VAL:O	2.46	0.43
2:E:403:MET:O	2:E:407:THR:N	2.50	0.43
2:E:3756:LYS:HA	2:E:3759:GLU:HG2	1.99	0.43
2:I:886:ARG:HB3	2:I:891:TRP:HB2	2.00	0.43
2:B:278:GLN:N	2:B:315:CYS:SG	2.91	0.43
2:B:1760:HIS:CE1	2:B:2041:HIS:HA	2.53	0.43
2:G:451:TYR:O	2:G:474:ARG:NH1	2.45	0.43
2:G:579:GLN:H	2:G:582:HIS:HD2	1.66	0.43
2:G:718:GLY:HA3	2:G:737:LEU:HA	2.01	0.43
2:E:606:LEU:HG	2:E:617:ASN:HD22	1.82	0.43
2:E:4227:GLU:HG3	2:E:4228:ALA:H	1.82	0.43
2:E:4657:CYS:HB3	2:E:4792:LEU:HD11	1.99	0.43
2:I:101:LEU:HB3	2:I:150:MET:HE1	1.99	0.43
2:I:346:CYS:N	2:I:388:LEU:O	2.50	0.43
2:B:218:HIS:HB3	2:B:392:ARG:HD3	2.00	0.43
2:B:718:GLY:HA3	2:B:737:LEU:HA	2.01	0.43
2:B:3756:LYS:HA	2:B:3759:GLU:HG2	1.99	0.43
2:G:243:ARG:NH1	2:G:301:VAL:O	2.46	0.43
2:G:915:GLU:O	2:G:919:ASN:ND2	2.51	0.43
2:G:3362:UNK:O	2:G:3366:UNK:N	2.52	0.43
2:G:4229:GLU:HA	2:G:4232:GLU:HB3	2.00	0.43
2:E:530:ILE:HD13	2:E:536:ASN:HB3	2.01	0.43
2:E:3362:UNK:O	2:E:3366:UNK:N	2.52	0.43
2:B:4586:PRO:HB3	2:B:4628:VAL:HG21	2.01	0.43
2:G:1972:ASN:O	2:G:1976:ARG:N	2.49	0.43
2:E:959:TYR:HB3	2:E:967:PRO:HD2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:907:LEU:O	2:I:963:ASN:ND2	2.39	0.43
2:G:530:ILE:HD13	2:G:536:ASN:HB3	2.01	0.43
2:E:3850:GLN:HA	2:E:3853:ALA:HB3	2.00	0.43
2:I:2095:GLN:NE2	2:I:2127:GLN:O	2.50	0.43
2:I:4586:PRO:HB3	2:I:4628:VAL:HG21	2.01	0.43
2:B:579:GLN:H	2:B:582:HIS:HD2	1.66	0.43
2:G:101:LEU:HB3	2:G:150:MET:HE1	2.00	0.43
2:G:1973:GLN:HA	2:G:1976:ARG:HB3	2.00	0.43
2:G:4586:PRO:HB3	2:G:4628:VAL:HG21	2.01	0.43
2:E:345:LEU:HD22	2:E:387:ALA:HB1	2.01	0.43
2:E:915:GLU:O	2:E:919:ASN:ND2	2.51	0.43
2:E:3955:MET:HG3	2:E:4019:LEU:HD22	2.01	0.43
2:E:4886:HIS:O	2:E:4890:GLY:N	2.46	0.43
2:I:978:THR:HB	2:I:980:ALA:H	1.82	0.43
2:B:309:THR:O	2:B:313:SER:OG	2.37	0.43
2:B:2226:PRO:HA	2:B:2229:VAL:HG12	2.00	0.43
2:B:4712:PRO:HG2	2:B:4718:LYS:HG2	2.01	0.43
2:G:3850:GLN:HA	2:G:3853:ALA:HB3	2.00	0.43
2:E:718:GLY:HA3	2:E:737:LEU:HA	2.01	0.43
2:E:1760:HIS:CE1	2:E:2041:HIS:HA	2.53	0.43
2:I:580:GLU:HG3	2:I:620:LEU:HD22	2.01	0.43
2:I:2271:THR:HG22	2:I:2273:LEU:H	1.83	0.43
2:I:3362:UNK:O	2:I:3366:UNK:N	2.52	0.43
2:B:45:ARG:HG2	2:B:443:LEU:HD21	1.99	0.43
2:B:915:GLU:O	2:B:919:ASN:ND2	2.51	0.43
2:G:45:ARG:HG2	2:G:443:LEU:HD21	1.99	0.43
2:E:45:ARG:HG2	2:E:443:LEU:HD21	2.00	0.43
2:E:62:LEU:O	2:E:261:ARG:NH2	2.52	0.43
2:E:218:HIS:HB3	2:E:392:ARG:HD3	2.00	0.43
2:E:470:SER:O	2:E:474:ARG:NE	2.43	0.43
2:E:2271:THR:HG22	2:E:2273:LEU:H	1.83	0.43
2:I:111:HIS:HD2	2:I:114:SER:H	1.66	0.43
2:I:195:PHE:HB3	2:I:196:MET:HG2	2.01	0.43
2:I:530:ILE:HD13	2:I:536:ASN:HB3	2.01	0.43
2:I:718:GLY:HA3	2:I:737:LEU:HA	2.01	0.43
2:I:1109:LEU:HA	2:I:1120:LEU:HD21	2.01	0.43
2:B:21:VAL:HG12	2:B:66:CYS:HA	2.00	0.43
2:B:345:LEU:HD22	2:B:387:ALA:HB1	2.01	0.43
2:B:530:ILE:HD13	2:B:536:ASN:HB3	2.01	0.43
2:B:898:ASP:HB3	2:B:901:LYS:HB2	2.01	0.43
2:B:2102:VAL:HB	2:B:2124:LEU:HD12	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:2271:THR:HG22	2:B:2273:LEU:H	1.83	0.43
2:B:2880:GLU:O	2:B:2884:ASN:N	2.46	0.43
2:G:309:THR:O	2:G:313:SER:OG	2.37	0.43
2:G:403:MET:O	2:G:407:THR:N	2.50	0.43
2:G:1760:HIS:CE1	2:G:2041:HIS:HA	2.53	0.43
2:G:2095:GLN:NE2	2:G:2127:GLN:O	2.50	0.43
2:E:195:PHE:HB3	2:E:196:MET:HG2	2.01	0.43
2:E:2226:PRO:HA	2:E:2229:VAL:HG12	2.00	0.43
2:I:1972:ASN:O	2:I:1976:ARG:N	2.49	0.43
2:G:345:LEU:HD22	2:G:387:ALA:HB1	2.01	0.43
2:I:932:LEU:HA	2:I:935:LEU:HD12	2.01	0.43
2:I:4712:PRO:HG2	2:I:4718:LYS:HG2	2.01	0.43
2:B:101:LEU:HB3	2:B:150:MET:HE1	2.01	0.42
2:B:111:HIS:HD2	2:B:114:SER:H	1.66	0.42
2:B:734:GLY:O	2:B:736:HIS:ND1	2.52	0.42
2:B:3955:MET:HG3	2:B:4019:LEU:HD22	2.01	0.42
2:B:4763:GLY:O	2:B:4766:THR:OG1	2.34	0.42
2:G:4712:PRO:HG2	2:G:4718:LYS:HG2	2.01	0.42
2:E:309:THR:O	2:E:313:SER:OG	2.37	0.42
2:E:579:GLN:H	2:E:582:HIS:HD2	1.66	0.42
2:I:793:LEU:HD22	2:I:821:LEU:HD13	2.01	0.42
2:I:915:GLU:O	2:I:919:ASN:ND2	2.51	0.42
2:G:195:PHE:HB3	2:G:196:MET:HG2	2.01	0.42
2:G:959:TYR:HB3	2:G:967:PRO:HD2	2.01	0.42
2:G:1109:LEU:HA	2:G:1120:LEU:HD21	2.01	0.42
2:E:103:TYR:HB3	2:E:152:PRO:HD3	2.01	0.42
2:E:111:HIS:HD2	2:E:114:SER:H	1.66	0.42
2:E:1931:LEU:HB3	2:E:1935:VAL:HB	2.02	0.42
2:E:2143:THR:O	2:E:3651:ASN:ND2	2.44	0.42
2:E:4586:PRO:HB3	2:E:4628:VAL:HG21	2.01	0.42
2:I:3850:GLN:HA	2:I:3853:ALA:HB3	2.00	0.42
2:B:1109:LEU:HA	2:B:1120:LEU:HD21	2.01	0.42
2:G:940:GLY:O	2:G:1052:ASN:N	2.50	0.42
2:G:1931:LEU:HB3	2:G:1935:VAL:HB	2.02	0.42
2:E:580:GLU:HG3	2:E:620:LEU:HD22	2.01	0.42
2:I:309:THR:O	2:I:313:SER:OG	2.37	0.42
2:I:898:ASP:HB3	2:I:901:LYS:HB2	2.01	0.42
2:B:959:TYR:HB3	2:B:967:PRO:HD2	2.01	0.42
2:G:62:LEU:O	2:G:261:ARG:NH2	2.52	0.42
2:G:2102:VAL:HB	2:G:2124:LEU:HD12	2.00	0.42
2:E:793:LEU:HD12	2:E:797:HIS:HB2	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:62:LEU:O	2:B:261:ARG:NH2	2.52	0.42
2:B:220:LEU:O	2:B:260:TRP:N	2.50	0.42
2:B:580:GLU:HG3	2:B:620:LEU:HD22	2.01	0.42
2:B:606:LEU:HG	2:B:617:ASN:HD22	1.82	0.42
2:B:1171:SER:OG	2:B:1175:SER:N	2.42	0.42
2:E:21:VAL:HG12	2:E:66:CYS:HA	2.00	0.42
2:E:932:LEU:HA	2:E:935:LEU:HD12	2.01	0.42
2:E:4712:PRO:HG2	2:E:4718:LYS:HG2	2.01	0.42
2:I:21:VAL:HG12	2:I:66:CYS:HA	2.00	0.42
2:I:123:THR:OG1	2:I:134:ASP:OD1	2.38	0.42
2:I:3992:PHE:O	2:I:3996:PHE:N	2.41	0.42
2:G:3955:MET:HG3	2:G:4019:LEU:HD22	2.01	0.42
2:G:4558:ASN:OD1	2:G:4558:ASN:N	2.50	0.42
2:E:451:TYR:O	2:E:474:ARG:NH1	2.45	0.42
2:I:3955:MET:HG3	2:I:4019:LEU:HD22	2.01	0.42
1:F:34:LYS:HD3	2:E:629:ARG:HD2	2.01	0.42
2:B:195:PHE:HB3	2:B:196:MET:HG2	2.01	0.42
2:B:793:LEU:HD22	2:B:821:LEU:HD13	2.01	0.42
2:B:3362:UNK:O	2:B:3366:UNK:N	2.52	0.42
2:G:103:TYR:HB3	2:G:152:PRO:HD3	2.01	0.42
2:E:1973:GLN:HA	2:E:1976:ARG:HB3	2.00	0.42
2:I:261:ARG:HB3	2:I:283:ARG:HB3	2.02	0.42
2:I:2102:VAL:HB	2:I:2124:LEU:HD12	2.00	0.42
2:B:932:LEU:HA	2:B:935:LEU:HD12	2.01	0.42
2:G:2753:SER:O	2:G:2757:LYS:N	2.48	0.42
2:G:4101:LYS:HD3	2:G:4101:LYS:HA	1.86	0.42
2:E:898:ASP:HB3	2:E:901:LYS:HB2	2.01	0.42
2:E:3676:ASP:N	2:E:3676:ASP:OD1	2.50	0.42
2:I:2753:SER:O	2:I:2757:LYS:N	2.48	0.42
2:B:649:PHE:HB3	2:B:776:LEU:HB3	2.02	0.42
2:B:1665:HIS:HA	2:B:1668:ARG:HG2	2.02	0.42
2:G:580:GLU:HG3	2:G:620:LEU:HD22	2.01	0.42
2:G:870:ILE:HD12	2:G:870:ILE:HA	1.95	0.42
2:E:123:THR:OG1	2:E:134:ASP:OD1	2.38	0.42
2:E:793:LEU:HD22	2:E:821:LEU:HD13	2.01	0.42
2:I:62:LEU:O	2:I:261:ARG:NH2	2.52	0.42
2:I:220:LEU:O	2:I:260:TRP:N	2.50	0.42
2:I:940:GLY:O	2:I:1052:ASN:N	2.50	0.42
2:B:23:GLN:HB3	2:B:201:ASN:HB2	2.02	0.42
2:B:1723:ALA:HB1	2:B:1775:HIS:HD2	1.85	0.42
2:G:21:VAL:HG12	2:G:66:CYS:HA	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:472:ARG:NH2	2:G:3712:GLU:OE2	2.53	0.42
2:G:2271:THR:HG22	2:G:2273:LEU:H	1.83	0.42
2:E:23:GLN:HB3	2:E:201:ASN:HB2	2.02	0.42
2:I:345:LEU:HD22	2:I:387:ALA:HB1	2.01	0.42
2:I:1665:HIS:HA	2:I:1668:ARG:HG2	2.02	0.42
2:I:4056:GLU:HG2	2:I:4166:LEU:HD23	2.02	0.42
2:I:4558:ASN:OD1	2:I:4558:ASN:N	2.50	0.42
2:B:583:ILE:H	2:B:583:ILE:HG13	1.70	0.41
2:B:880:GLU:OE1	2:B:968:ALA:N	2.43	0.41
2:B:4056:GLU:HG2	2:B:4166:LEU:HD23	2.02	0.41
2:G:470:SER:O	2:G:474:ARG:NE	2.43	0.41
2:E:2102:VAL:HB	2:E:2124:LEU:HD12	2.00	0.41
2:I:670:GLU:HG3	2:I:787:VAL:HG13	2.03	0.41
2:B:793:LEU:HD12	2:B:797:HIS:HB2	2.01	0.41
2:B:914:PRO:HD2	2:B:917:GLU:HB2	2.02	0.41
2:B:940:GLY:O	2:B:1052:ASN:N	2.50	0.41
2:G:23:GLN:HB3	2:G:201:ASN:HB2	2.02	0.41
2:G:123:THR:OG1	2:G:134:ASP:OD1	2.38	0.41
2:E:472:ARG:NH2	2:E:3712:GLU:OE2	2.53	0.41
2:E:914:PRO:HD2	2:E:917:GLU:HB2	2.02	0.41
2:E:1109:LEU:HA	2:E:1120:LEU:HD21	2.01	0.41
2:E:1723:ALA:HB1	2:E:1775:HIS:HD2	1.85	0.41
2:I:243:ARG:NH1	2:I:301:VAL:O	2.46	0.41
2:I:959:TYR:HB3	2:I:967:PRO:HD2	2.01	0.41
2:G:793:LEU:HD12	2:G:797:HIS:HB2	2.01	0.41
2:G:898:ASP:HB3	2:G:901:LYS:HB2	2.01	0.41
2:G:4239:GLU:OE2	2:G:5014:TYR:OH	2.27	0.41
2:E:649:PHE:HB3	2:E:776:LEU:HB3	2.02	0.41
2:E:983:THR:O	2:E:987:ARG:N	2.52	0.41
2:I:793:LEU:HD12	2:I:797:HIS:HB2	2.01	0.41
2:I:1931:LEU:HB3	2:I:1935:VAL:HB	2.02	0.41
2:B:103:TYR:HB3	2:B:152:PRO:HD3	2.01	0.41
2:B:1931:LEU:HB3	2:B:1935:VAL:HB	2.02	0.41
2:G:793:LEU:HD22	2:G:821:LEU:HD13	2.01	0.41
2:E:2868:SER:O	2:E:2872:GLN:N	2.39	0.41
2:I:1676:LEU:HD23	2:I:2167:ILE:HG23	2.03	0.41
2:I:1735:ILE:HG23	2:I:1771:LEU:HB2	2.02	0.41
2:B:261:ARG:HB3	2:B:283:ARG:HB3	2.02	0.41
2:B:1676:LEU:HD23	2:B:2167:ILE:HG23	2.03	0.41
2:G:1665:HIS:HA	2:G:1668:ARG:HG2	2.02	0.41
2:G:1723:ALA:HB1	2:G:1775:HIS:HD2	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:2874:MET:O	2:G:2878:LEU:N	2.43	0.41
2:G:4056:GLU:HG2	2:G:4166:LEU:HD23	2.02	0.41
2:E:1665:HIS:HA	2:E:1668:ARG:HG2	2.02	0.41
2:E:1972:ASN:O	2:E:1976:ARG:N	2.49	0.41
2:E:4056:GLU:HG2	2:E:4166:LEU:HD23	2.02	0.41
1:J:87:HIS:HA	1:J:88:PRO:HD3	1.90	0.41
2:G:111:HIS:HD2	2:G:114:SER:H	1.66	0.41
2:I:472:ARG:NH2	2:I:3712:GLU:OE2	2.53	0.41
2:I:1723:ALA:HB1	2:I:1775:HIS:HD2	1.85	0.41
2:I:4763:GLY:O	2:I:4766:THR:OG1	2.34	0.41
2:B:2862:LEU:HB3	2:B:2928:LYS:HB3	2.03	0.41
2:G:261:ARG:HB3	2:G:283:ARG:HB3	2.02	0.41
2:G:670:GLU:HG3	2:G:787:VAL:HG13	2.03	0.41
2:E:734:GLY:O	2:E:736:HIS:ND1	2.52	0.41
2:G:932:LEU:HA	2:G:935:LEU:HD12	2.01	0.41
2:G:1735:ILE:HG23	2:G:1771:LEU:HB2	2.02	0.41
2:G:1865:MET:N	2:G:1865:MET:SD	2.94	0.41
2:G:2022:PRO:HB2	2:G:2024:PRO:HD2	2.03	0.41
2:G:4860:ARG:HG3	2:G:4876:CYS:HB3	2.03	0.41
2:E:1676:LEU:HD23	2:E:2167:ILE:HG23	2.03	0.41
2:E:1735:ILE:HG23	2:E:1771:LEU:HB2	2.02	0.41
2:I:103:TYR:HB3	2:I:152:PRO:HD3	2.01	0.41
2:I:451:TYR:O	2:I:474:ARG:NH1	2.45	0.41
2:I:914:PRO:HD2	2:I:917:GLU:HB2	2.02	0.41
2:B:472:ARG:NH2	2:B:3712:GLU:OE2	2.53	0.41
2:B:582:HIS:O	2:B:585:SER:OG	2.30	0.41
2:B:2095:GLN:NE2	2:B:2127:GLN:O	2.50	0.41
2:G:939:VAL:HG22	2:G:1053:ILE:HG12	2.03	0.41
2:G:2674:UNK:O	2:G:2676:UNK:N	2.54	0.41
2:E:2862:LEU:HB3	2:E:2928:LYS:HB3	2.03	0.41
2:E:3889:GLN:HG3	2:E:3967:GLU:HG3	2.03	0.41
2:E:4005:GLN:HE21	2:E:4110:PHE:HE1	1.69	0.41
2:I:734:GLY:O	2:I:736:HIS:ND1	2.52	0.41
2:I:2674:UNK:O	2:I:2676:UNK:N	2.54	0.41
2:I:2868:SER:O	2:I:2872:GLN:N	2.39	0.41
2:B:123:THR:OG1	2:B:134:ASP:OD1	2.38	0.41
2:G:256:ALA:HB1	2:G:286:THR:HG21	2.03	0.41
2:G:2868:SER:O	2:G:2872:GLN:N	2.39	0.41
2:G:3733:CYS:HB2	2:G:3803:SER:HB3	2.03	0.41
2:E:2022:PRO:HB2	2:E:2024:PRO:HD2	2.03	0.41
2:I:278:GLN:N	2:I:315:CYS:SG	2.91	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:1865:MET:SD	2:I:1865:MET:N	2.94	0.41
2:I:2022:PRO:HB2	2:I:2024:PRO:HD2	2.03	0.41
2:I:4848:VAL:O	2:I:4852:THR:OG1	2.32	0.41
2:I:4860:ARG:HG3	2:I:4876:CYS:HB3	2.03	0.41
2:B:2022:PRO:HB2	2:B:2024:PRO:HD2	2.03	0.40
2:B:4860:ARG:HG3	2:B:4876:CYS:HB3	2.03	0.40
2:G:649:PHE:HB3	2:G:776:LEU:HB3	2.02	0.40
2:G:914:PRO:HD2	2:G:917:GLU:HB2	2.02	0.40
2:G:2143:THR:O	2:G:3651:ASN:ND2	2.44	0.40
2:I:23:GLN:HB3	2:I:201:ASN:HB2	2.02	0.40
2:I:500:ALA:HB1	2:I:504:ALA:HB2	2.03	0.40
2:B:57:ASN:HD22	2:B:308:HIS:HB2	1.87	0.40
2:B:359:TYR:HA	2:B:376:ALA:HA	2.03	0.40
2:B:1865:MET:SD	2:B:1865:MET:N	2.94	0.40
2:B:2674:UNK:O	2:B:2676:UNK:N	2.54	0.40
2:B:3889:GLN:HG3	2:B:3967:GLU:HG3	2.03	0.40
2:G:1671:ARG:NH2	2:G:1713:ASP:HB3	2.36	0.40
2:G:1676:LEU:HD23	2:G:2167:ILE:HG23	2.03	0.40
2:G:4886:HIS:O	2:G:4890:GLY:N	2.46	0.40
2:E:57:ASN:HD22	2:E:308:HIS:HB2	1.87	0.40
2:E:670:GLU:HG3	2:E:787:VAL:HG13	2.03	0.40
2:E:1671:ARG:NH2	2:E:1713:ASP:HB3	2.36	0.40
2:E:2880:GLU:O	2:E:2884:ASN:N	2.47	0.40
2:I:1671:ARG:NH2	2:I:1713:ASP:HB3	2.36	0.40
2:I:2022:PRO:O	2:I:2028:ARG:NH2	2.54	0.40
2:B:1111:PRO:HD3	2:B:1605:TRP:HE1	1.86	0.40
2:B:1671:ARG:NH2	2:B:1713:ASP:HB3	2.36	0.40
2:B:4848:VAL:O	2:B:4852:THR:OG1	2.32	0.40
2:G:57:ASN:HD22	2:G:308:HIS:HB2	1.87	0.40
2:I:256:ALA:HB1	2:I:286:THR:HG21	2.03	0.40
2:I:983:THR:O	2:I:987:ARG:N	2.52	0.40
2:I:1111:PRO:HD3	2:I:1605:TRP:HE1	1.86	0.40
2:B:256:ALA:HB1	2:B:286:THR:HG21	2.03	0.40
2:G:1641:ILE:HA	2:G:1642:PRO:HD3	1.90	0.40
2:G:4929:LEU:HD13	2:G:4929:LEU:HA	1.95	0.40
2:E:870:ILE:HD12	2:E:873:LYS:HB2	2.04	0.40
2:B:451:TYR:O	2:B:474:ARG:NH1	2.45	0.40
2:B:939:VAL:HG22	2:B:1053:ILE:HG12	2.03	0.40
2:B:2022:PRO:O	2:B:2028:ARG:NH2	2.54	0.40
2:B:2318:TYR:HA	2:B:2319:PRO:HD3	1.94	0.40
2:G:734:GLY:O	2:G:736:HIS:ND1	2.52	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:261:ARG:HB3	2:E:283:ARG:HB3	2.02	0.40
2:I:57:ASN:HD22	2:I:308:HIS:HB2	1.87	0.40
2:I:116:MET:HB2	2:I:137:LEU:HD12	2.04	0.40
2:I:649:PHE:HB3	2:I:776:LEU:HB3	2.02	0.40
2:I:3733:CYS:HB2	2:I:3803:SER:HB3	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	105/108 (97%)	95 (90%)	10 (10%)	0	100	100
1	F	105/108 (97%)	95 (90%)	10 (10%)	0	100	100
1	H	105/108 (97%)	95 (90%)	10 (10%)	0	100	100
1	J	105/108 (97%)	95 (90%)	10 (10%)	0	100	100
2	B	3235/4416 (73%)	2874 (89%)	357 (11%)	4 (0%)	48	83
2	E	3235/4416 (73%)	2873 (89%)	358 (11%)	4 (0%)	48	83
2	G	3235/4416 (73%)	2875 (89%)	356 (11%)	4 (0%)	48	83
2	I	3235/4416 (73%)	2873 (89%)	358 (11%)	4 (0%)	48	83
All	All	13360/18096 (74%)	11875 (89%)	1469 (11%)	16 (0%)	50	83

All (16) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	1708	ARG
2	G	1708	ARG
2	E	1708	ARG
2	I	1708	ARG
2	B	1932	PRO

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Mol	Chain	Res	Type
2	G	1932	PRO
2	E	1932	PRO
2	I	1932	PRO
2	B	1840	PRO
2	B	4641	PRO
2	G	1840	PRO
2	G	4641	PRO
2	E	1840	PRO
2	E	4641	PRO
2	I	1840	PRO
2	I	4641	PRO

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	88/89 (99%)	88 (100%)	0	100	100
1	F	88/89 (99%)	88 (100%)	0	100	100
1	H	88/89 (99%)	88 (100%)	0	100	100
1	J	88/89 (99%)	88 (100%)	0	100	100
2	B	2493/3022 (82%)	2476 (99%)	17 (1%)	81	87
2	E	2493/3022 (82%)	2476 (99%)	17 (1%)	81	87
2	G	2493/3022 (82%)	2476 (99%)	17 (1%)	81	87
2	I	2493/3022 (82%)	2476 (99%)	17 (1%)	81	87
All	All	10324/12444 (83%)	10256 (99%)	68 (1%)	80	87

All (68) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	B	131	LEU
2	B	309	THR
2	B	534	ARG
2	B	553	ARG

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Mol	Chain	Res	Type
2	B	1076	ARG
2	B	1141	ARG
2	B	1600	LEU
2	B	1676	LEU
2	B	1964	ARG
2	B	3762	ARG
2	B	3787	LYS
2	B	3805	LEU
2	B	3896	ASN
2	B	4034	ASN
2	B	4085	ARG
2	B	4120	ASN
2	B	4983	HIS
2	G	131	LEU
2	G	309	THR
2	G	534	ARG
2	G	553	ARG
2	G	1076	ARG
2	G	1141	ARG
2	G	1600	LEU
2	G	1676	LEU
2	G	1964	ARG
2	G	3762	ARG
2	G	3787	LYS
2	G	3805	LEU
2	G	3896	ASN
2	G	4034	ASN
2	G	4085	ARG
2	G	4120	ASN
2	G	4983	HIS
2	E	131	LEU
2	E	309	THR
2	E	534	ARG
2	E	553	ARG
2	E	1076	ARG
2	E	1141	ARG
2	E	1600	LEU
2	E	1676	LEU
2	E	1964	ARG
2	E	3762	ARG
2	E	3787	LYS
2	E	3805	LEU

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Mol	Chain	Res	Type
2	E	3896	ASN
2	E	4034	ASN
2	E	4085	ARG
2	E	4120	ASN
2	E	4983	HIS
2	I	131	LEU
2	I	309	THR
2	I	534	ARG
2	I	553	ARG
2	I	1076	ARG
2	I	1141	ARG
2	I	1600	LEU
2	I	1676	LEU
2	I	1964	ARG
2	I	3762	ARG
2	I	3787	LYS
2	I	3805	LEU
2	I	3896	ASN
2	I	4034	ASN
2	I	4085	ARG
2	I	4120	ASN
2	I	4983	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (97) such sidechains are listed below:

Mol	Chain	Res	Type
1	F	87	HIS
1	A	87	HIS
1	H	87	HIS
1	J	87	HIS
2	B	57	ASN
2	B	111	HIS
2	B	113	HIS
2	B	273	HIS
2	B	379	HIS
2	B	479	GLN
2	B	582	HIS
2	B	1158	ASN
2	B	1598	GLN
2	B	1679	ASN
2	B	1688	HIS
2	B	1691	GLN

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Mol	Chain	Res	Type
2	B	1719	HIS
2	B	1775	HIS
2	B	2005	GLN
2	B	3767	GLN
2	B	3809	ASN
2	B	3896	ASN
2	B	3960	GLN
2	B	3976	ASN
2	B	4034	ASN
2	B	4120	ASN
2	B	4553	ASN
2	B	4806	ASN
2	G	57	ASN
2	G	111	HIS
2	G	113	HIS
2	G	273	HIS
2	G	379	HIS
2	G	479	GLN
2	G	582	HIS
2	G	1158	ASN
2	G	1598	GLN
2	G	1679	ASN
2	G	1688	HIS
2	G	1691	GLN
2	G	1719	HIS
2	G	1775	HIS
2	G	2005	GLN
2	G	3767	GLN
2	G	3809	ASN
2	G	3896	ASN
2	G	3960	GLN
2	G	4034	ASN
2	G	4120	ASN
2	G	4553	ASN
2	G	4806	ASN
2	E	57	ASN
2	E	111	HIS
2	E	113	HIS
2	E	273	HIS
2	E	379	HIS
2	E	479	GLN
2	E	582	HIS

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Mol	Chain	Res	Type
2	E	1158	ASN
2	E	1598	GLN
2	E	1679	ASN
2	E	1688	HIS
2	E	1691	GLN
2	E	1719	HIS
2	E	1775	HIS
2	E	2005	GLN
2	E	3767	GLN
2	E	3809	ASN
2	E	3896	ASN
2	E	3960	GLN
2	E	4034	ASN
2	E	4120	ASN
2	E	4553	ASN
2	E	4806	ASN
2	I	57	ASN
2	I	111	HIS
2	I	113	HIS
2	I	273	HIS
2	I	379	HIS
2	I	479	GLN
2	I	582	HIS
2	I	1158	ASN
2	I	1598	GLN
2	I	1679	ASN
2	I	1688	HIS
2	I	1691	GLN
2	I	1719	HIS
2	I	1775	HIS
2	I	2005	GLN
2	I	3767	GLN
2	I	3809	ASN
2	I	3896	ASN
2	I	3960	GLN
2	I	4034	ASN
2	I	4120	ASN
2	I	4553	ASN
2	I	4806	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 4 ligands modelled in this entry, 4 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
2	B	14
2	G	14
2	E	14
2	I	14

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	4345:UNK	C	4540:PHE	N	73.03
1	G	4345:UNK	C	4540:PHE	N	73.03
1	E	4345:UNK	C	4540:PHE	N	73.03
1	I	4345:UNK	C	4540:PHE	N	73.03
1	B	3613:UNK	C	3639:THR	N	46.34
1	G	3613:UNK	C	3639:THR	N	46.34
1	E	3613:UNK	C	3639:THR	N	46.34
1	I	3613:UNK	C	3639:THR	N	46.34
1	B	4253:GLU	C	4320:UNK	N	27.01
1	G	4253:GLU	C	4320:UNK	N	27.01
1	E	4253:GLU	C	4320:UNK	N	27.01
1	I	4253:GLU	C	4320:UNK	N	27.01
1	B	3163:UNK	C	3170:UNK	N	16.37
1	G	3163:UNK	C	3170:UNK	N	16.37
1	E	3163:UNK	C	3170:UNK	N	16.37
1	I	3163:UNK	C	3170:UNK	N	16.37
1	B	3063:UNK	C	3134:UNK	N	15.02
1	E	3063:UNK	C	3134:UNK	N	15.02
1	G	3063:UNK	C	3134:UNK	N	15.01
1	I	3063:UNK	C	3134:UNK	N	15.01
1	B	3468:UNK	C	3511:UNK	N	14.70
1	G	3468:UNK	C	3511:UNK	N	14.70
1	E	3468:UNK	C	3511:UNK	N	14.70
1	I	3468:UNK	C	3511:UNK	N	14.70
1	B	2703:UNK	C	2734:ASN	N	14.05
1	G	2703:UNK	C	2734:ASN	N	14.05
1	E	2703:UNK	C	2734:ASN	N	14.05
1	I	2703:UNK	C	2734:ASN	N	14.05
1	B	3236:UNK	C	3241:UNK	N	13.51
1	G	3236:UNK	C	3241:UNK	N	13.51
1	E	3236:UNK	C	3241:UNK	N	13.51
1	I	3236:UNK	C	3241:UNK	N	13.50
1	B	2976:UNK	C	2995:UNK	N	12.41
1	G	2976:UNK	C	2995:UNK	N	12.41
1	E	2976:UNK	C	2995:UNK	N	12.41
1	I	2976:UNK	C	2995:UNK	N	12.41
1	B	1564:UNK	C	1573:MET	N	12.19
1	G	1564:UNK	C	1573:MET	N	12.19
1	E	1564:UNK	C	1573:MET	N	12.19
1	I	1564:UNK	C	1573:MET	N	12.19
1	B	3254:UNK	C	3261:UNK	N	8.04
1	G	3254:UNK	C	3261:UNK	N	8.04
1	E	3254:UNK	C	3261:UNK	N	8.04

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	I	3254:UNK	C	3261:UNK	N	8.04
1	B	1297:UNK	C	1430:UNK	N	5.71
1	G	1297:UNK	C	1430:UNK	N	5.71
1	E	1297:UNK	C	1430:UNK	N	5.71
1	I	1297:UNK	C	1430:UNK	N	5.71
1	B	2479:LEU	C	2487:UNK	N	3.30
1	G	2479:LEU	C	2487:UNK	N	3.30
1	E	2479:LEU	C	2487:UNK	N	3.30
1	I	2479:LEU	C	2487:UNK	N	3.30
1	B	2939:ARG	C	2942:UNK	N	3.28
1	G	2939:ARG	C	2942:UNK	N	3.28
1	E	2939:ARG	C	2942:UNK	N	3.28
1	I	2939:ARG	C	2942:UNK	N	3.28

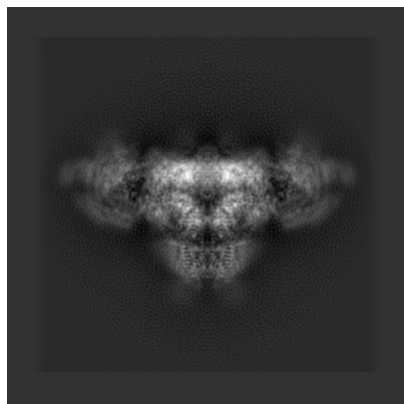
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-8391. These allow visual inspection of the internal detail of the map and identification of artifacts.

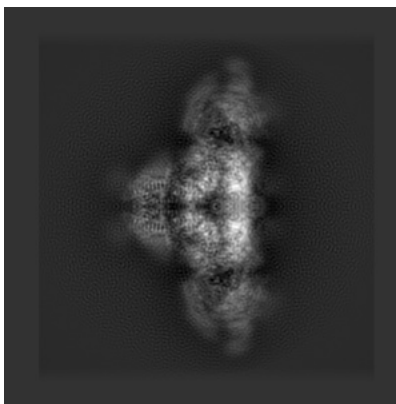
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

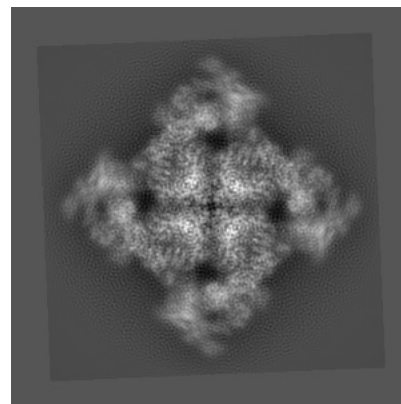
6.1.1 Primary map



X

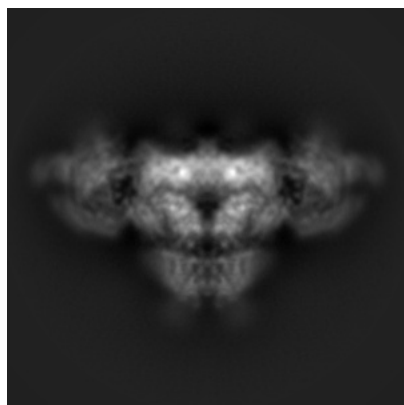


Y

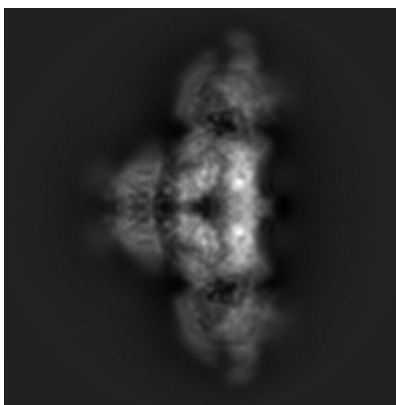


Z

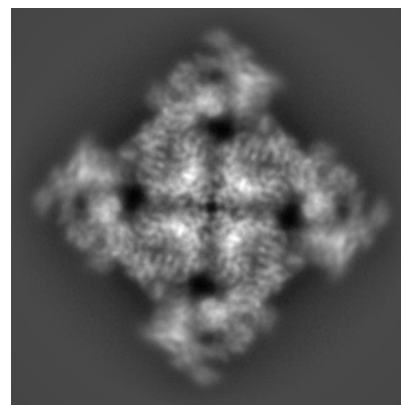
6.1.2 Raw map



X



Y



Z

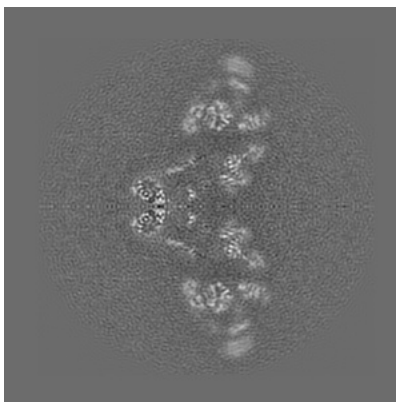
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

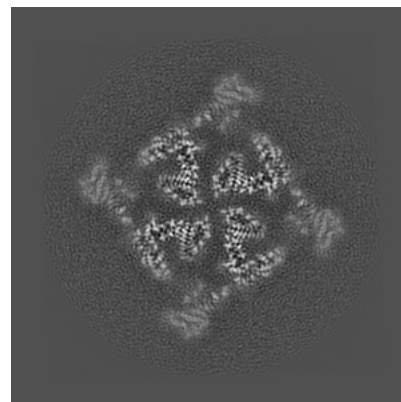
6.2.1 Primary map



X Index: 200

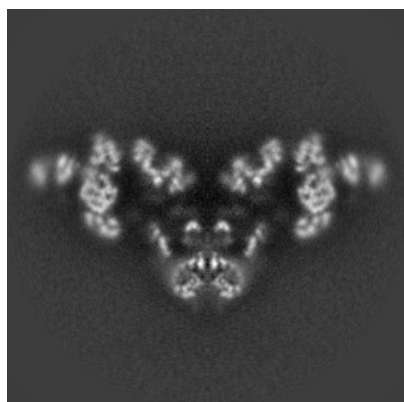


Y Index: 200

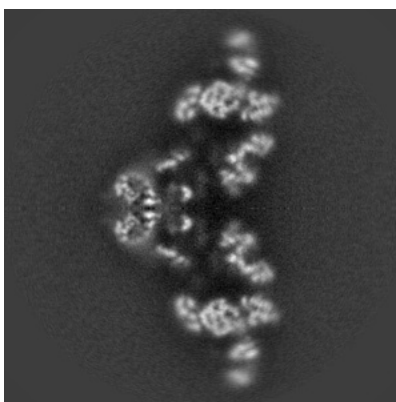


Z Index: 200

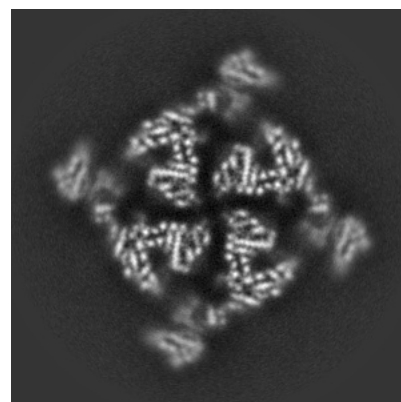
6.2.2 Raw map



X Index: 168



Y Index: 168

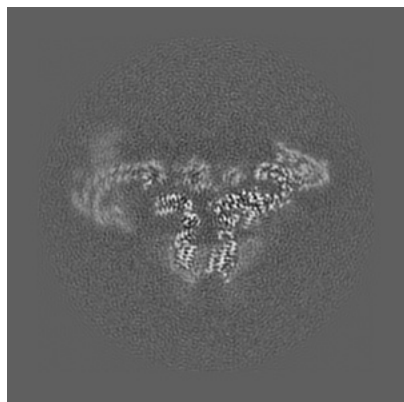


Z Index: 168

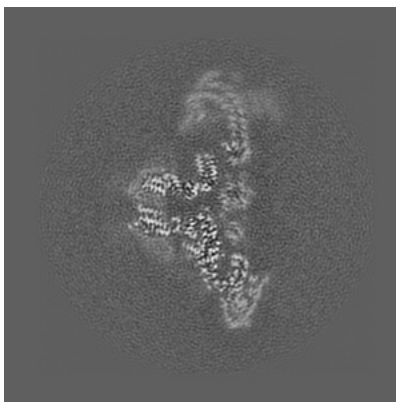
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

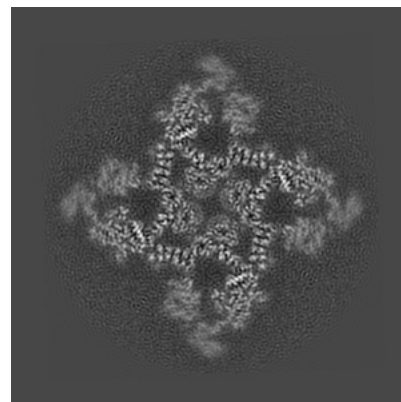
6.3.1 Primary map



X Index: 176

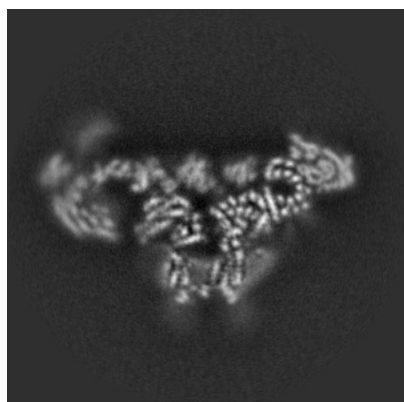


Y Index: 176

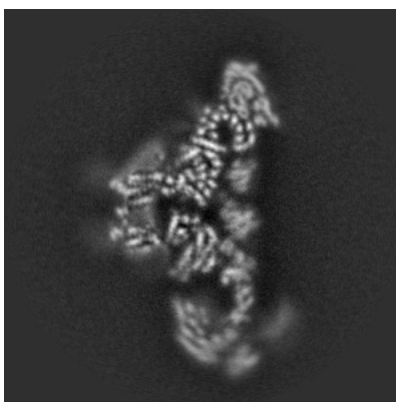


Z Index: 228

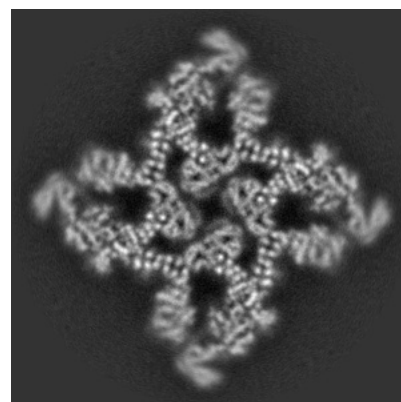
6.3.2 Raw map



X Index: 147



Y Index: 189

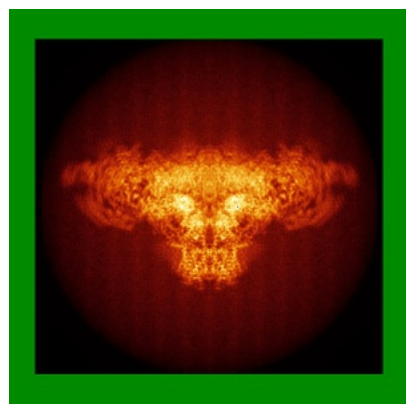


Z Index: 196

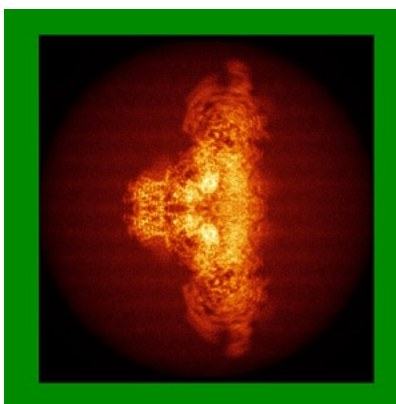
The images above show the largest variance slices of the map in three orthogonal directions.

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

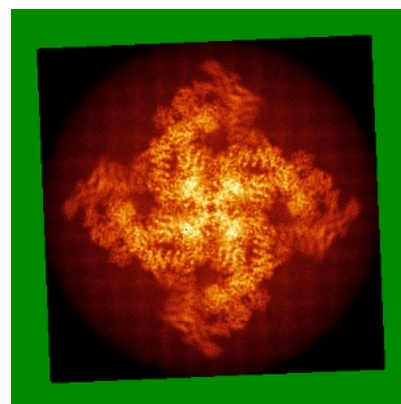
6.4.1 Primary map



X

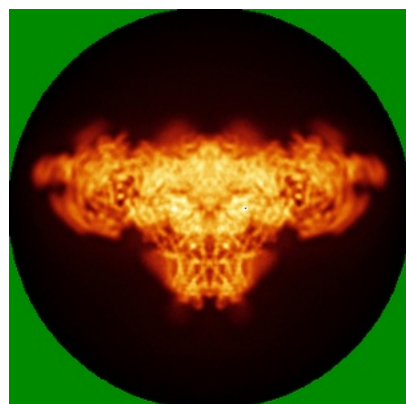


Y

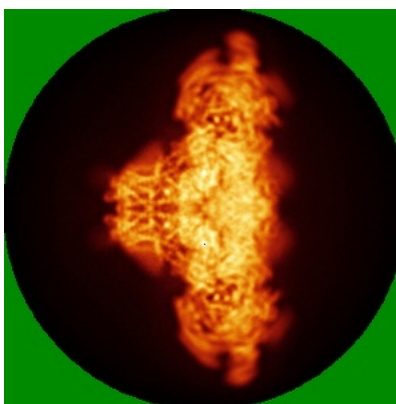


Z

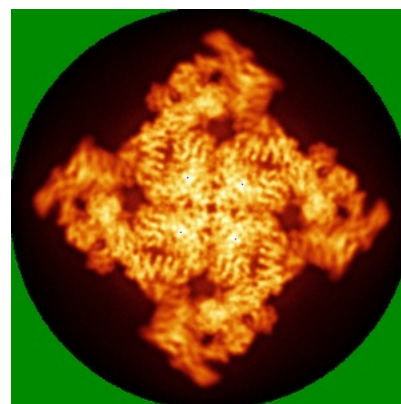
6.4.2 Raw map



X



Y

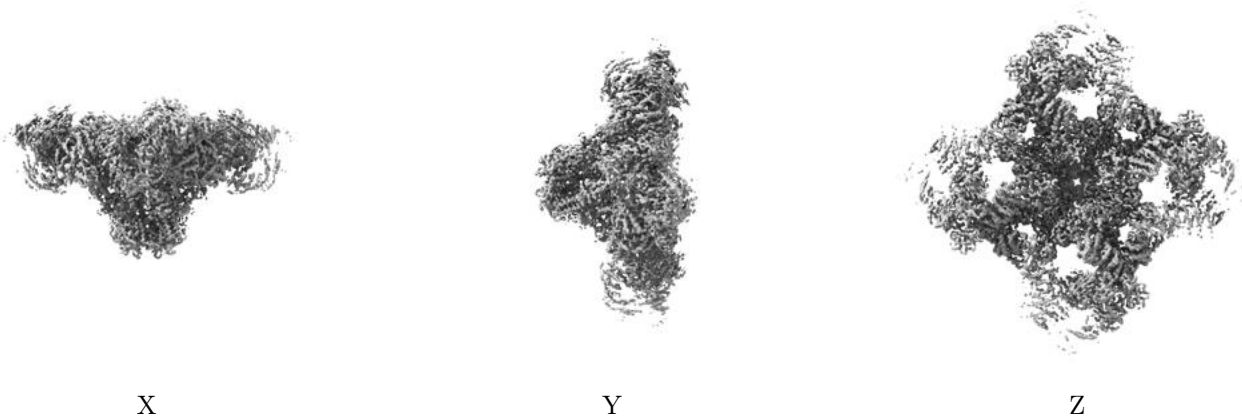


Z

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 0.025. 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.

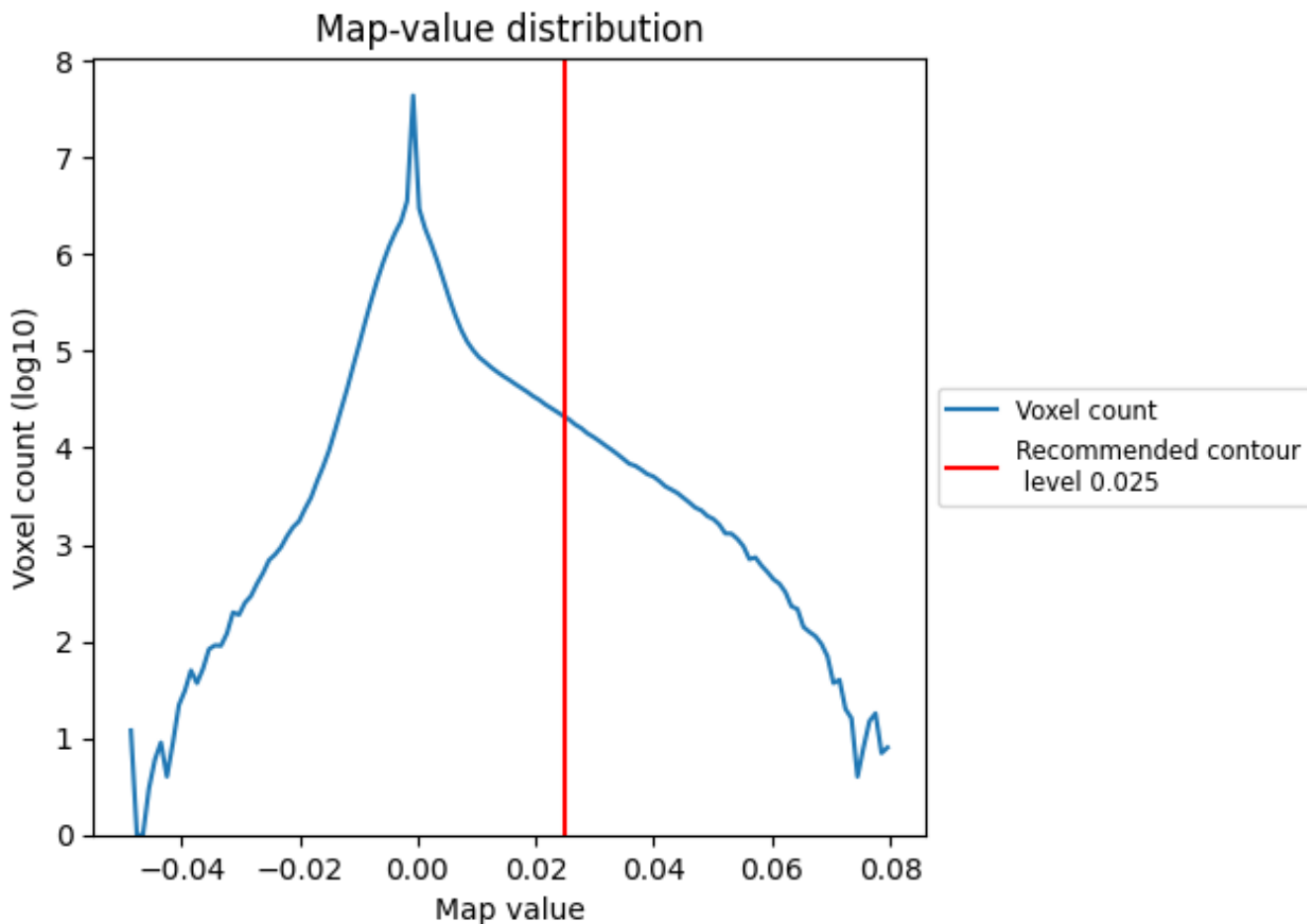
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

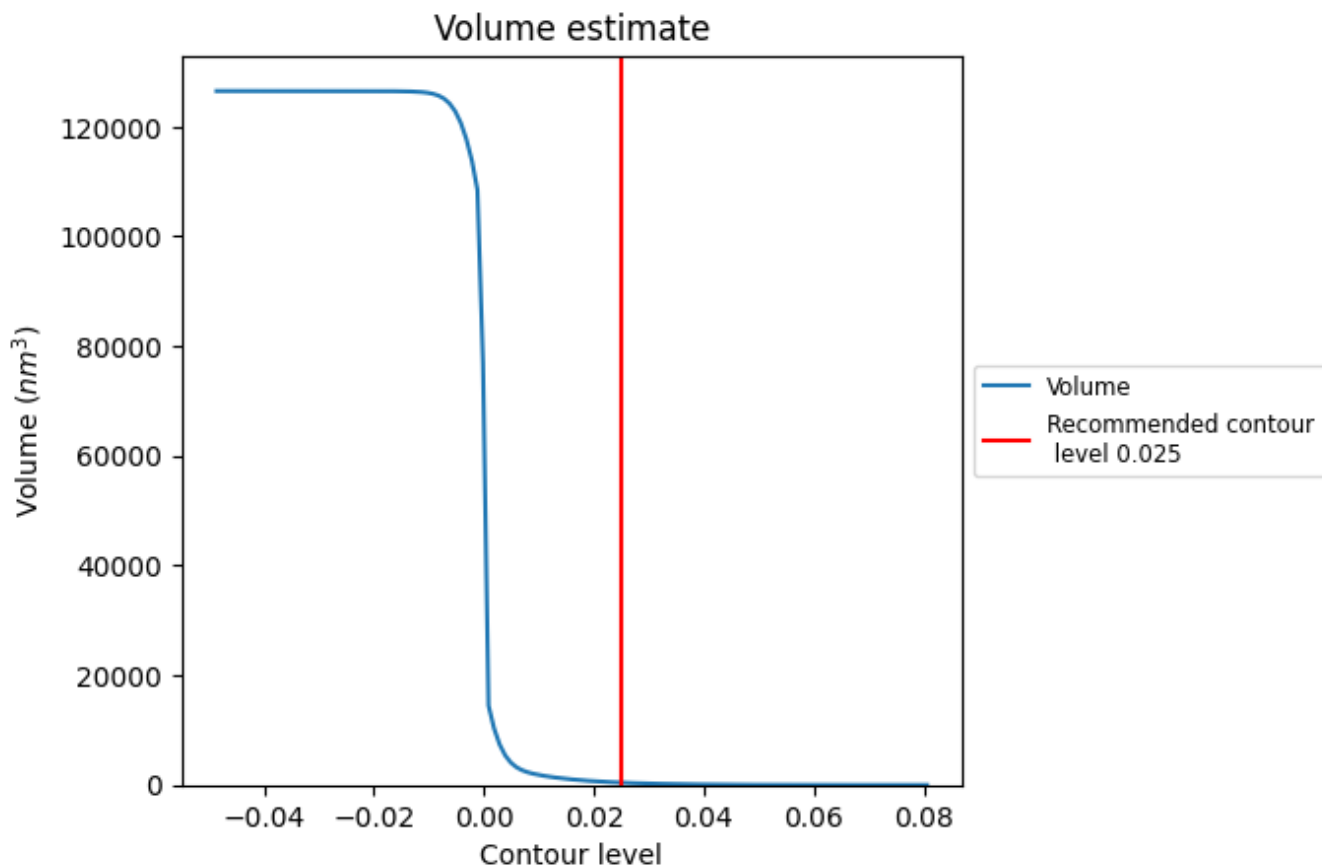
This section contains the results of statistical analysis of the map.

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.

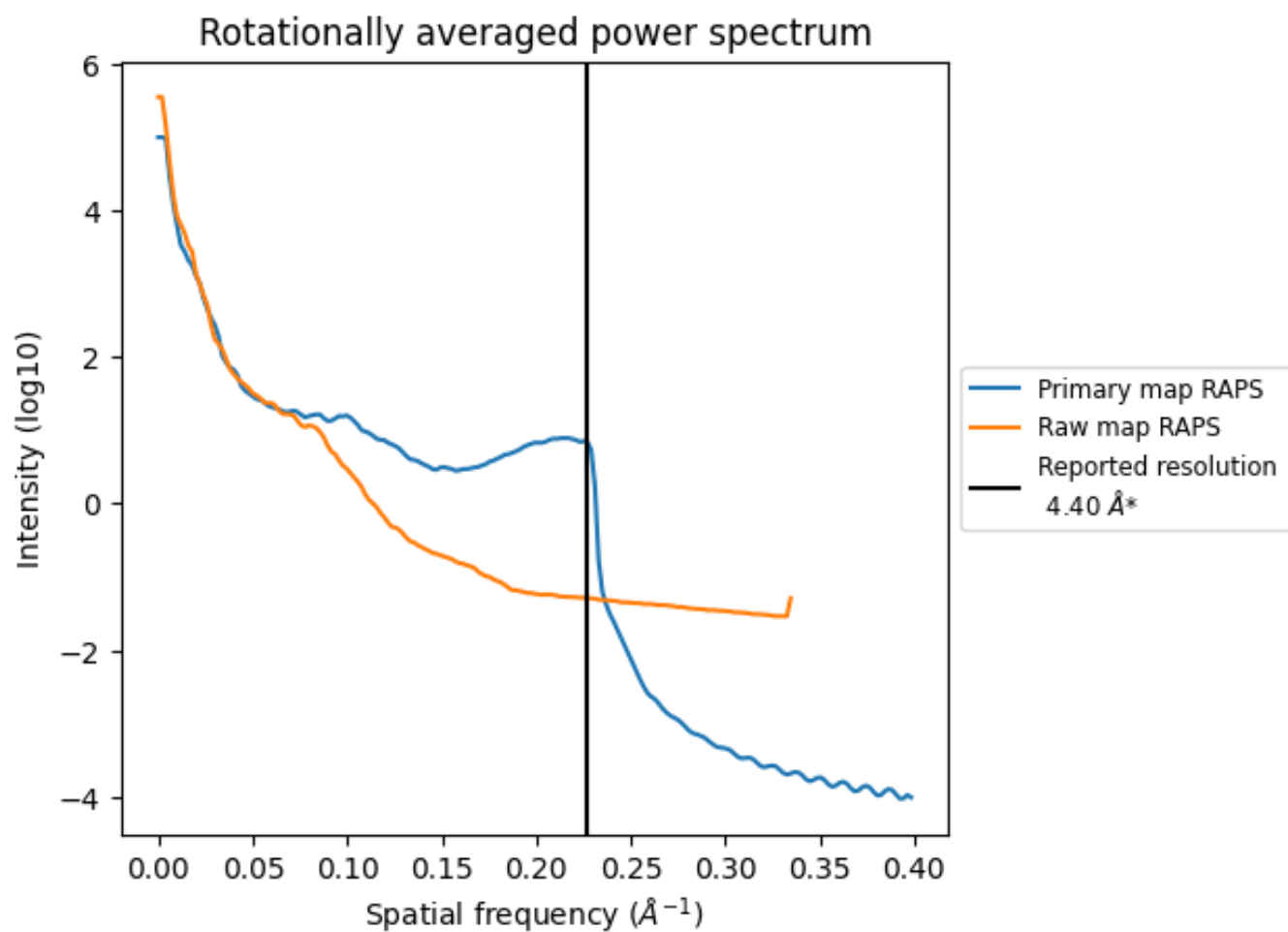
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 422 nm³; this corresponds to an approximate mass of 381 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

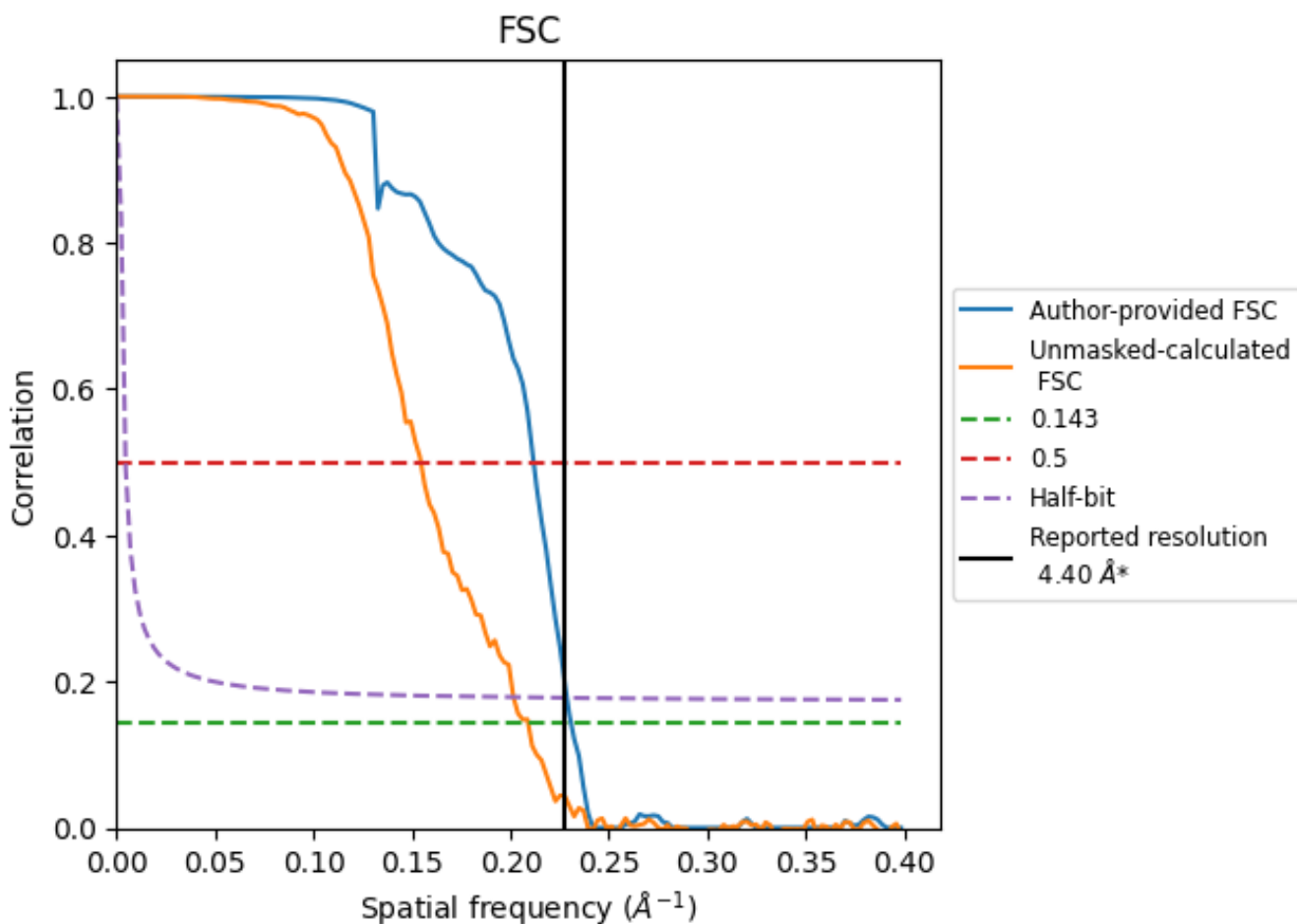


*Reported resolution corresponds to spatial frequency of 0.227 Å⁻¹

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 0.227 Å⁻¹

8.2 Resolution estimates [i](#)

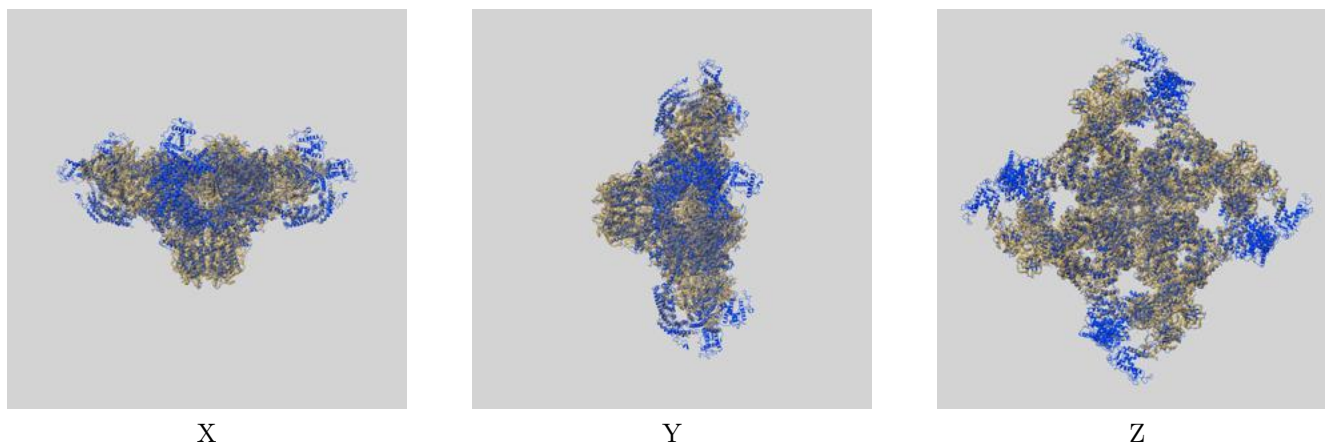
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.40	-	-
Author-provided FSC curve	4.33	4.72	4.37
Unmasked-calculated*	4.78	6.47	4.96

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

9 Map-model fit [i](#)

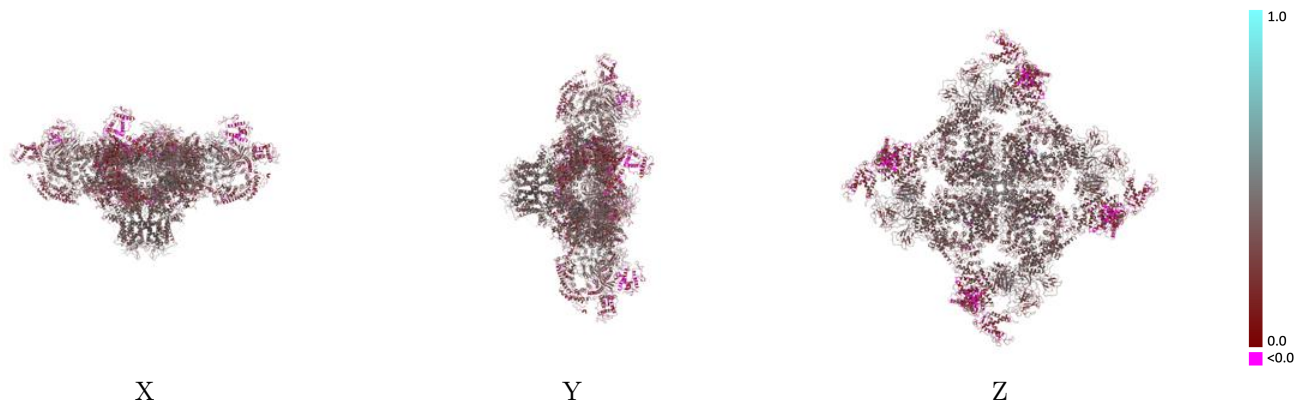
This section contains information regarding the fit between EMDB map EMD-8391 and PDB model 5TB0. Per-residue inclusion information can be found in section 3 on page 4.

9.1 Map-model overlay [i](#)



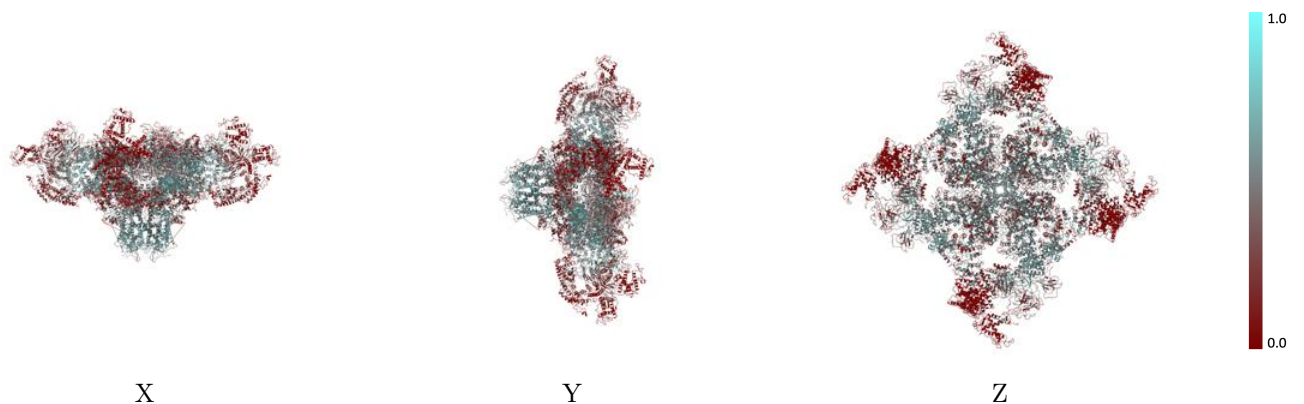
The images above show the 3D surface view of the map at the recommended contour level 0.025 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



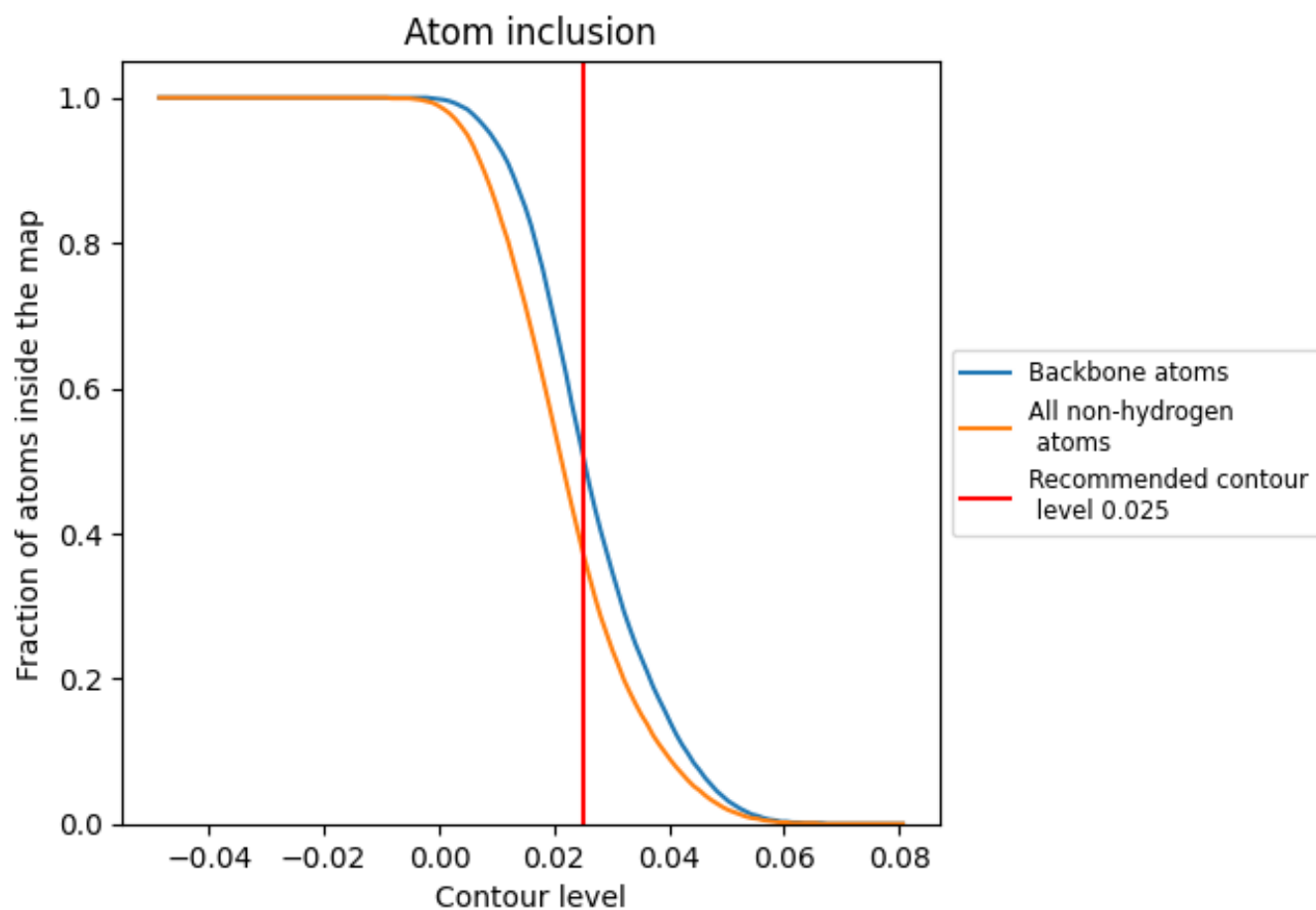
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.025).

9.4 Atom inclusion [i](#)



At the recommended contour level, 51% of all backbone atoms, 37% 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 (0.025) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.3740	0.3120
A	0.3810	0.3450
B	0.3750	0.3110
E	0.3730	0.3110
F	0.3780	0.3490
G	0.3740	0.3110
H	0.3810	0.3480
I	0.3740	0.3110
J	0.3800	0.3450

