



## Full wwPDB EM Validation Report ⓘ

Mar 4, 2024 – 03:02 AM EST

PDB ID : 8DUJ  
EMDB ID : EMD-27721  
Title : Global map in C1 of RyR1 particles in complex with ImperaCalcin  
Authors : Haji-Ghassemi, O.; Van Petegm, F.  
Deposited on : 2022-07-27  
Resolution : 3.70 Å (reported)  
Based on initial model : 6M2W

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev70  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36

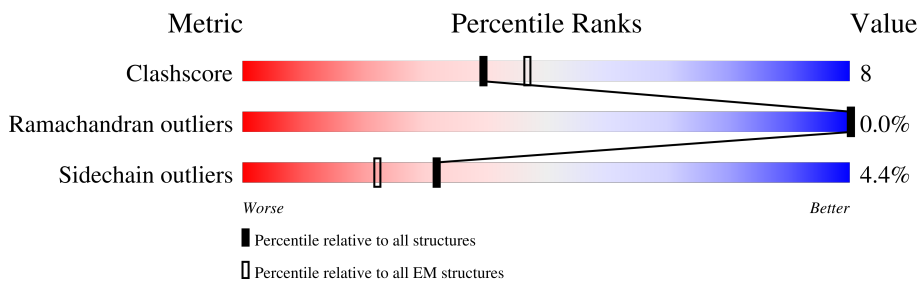
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.70 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.




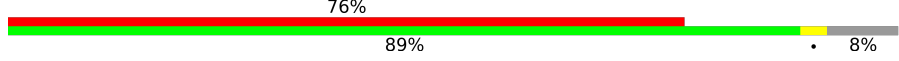
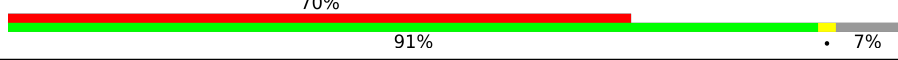
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	M	33	<div style="display: flex; justify-content: space-between;"> <span>24%</span> <span>67%</span> <span>33%</span> </div>
2	A	5037	<div style="display: flex; justify-content: space-between;"> <span>11%</span> <span>64%</span> <span>12%</span> <span>24%</span> </div>
2	D	5037	<div style="display: flex; justify-content: space-between;"> <span>15%</span> <span>68%</span> <span>8%</span> <span>23%</span> </div>
2	G	5037	<div style="display: flex; justify-content: space-between;"> <span>8%</span> <span>66%</span> <span>12%</span> <span>22%</span> </div>
2	J	5037	<div style="display: flex; justify-content: space-between;"> <span>7%</span> <span>67%</span> <span>10%</span> <span>23%</span> </div>
3	B	107	<div style="display: flex; justify-content: space-between;"> <span>86%</span> <span>13%</span> </div>
3	E	107	<div style="display: flex; justify-content: space-between;"> <span>12%</span> <span>86%</span> <span>13%</span> </div>
3	H	107	<div style="display: flex; justify-content: space-between;"> <span>72%</span> <span>28%</span> </div>

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Mol	Chain	Length	Quality of chain
3	K	107	
4	C	149	
4	F	149	
4	I	149	
4	L	149	

## 2 Entry composition [i](#)

There are 8 unique types of molecules in this entry. The entry contains 106156 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 Imperacalcin.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	M	33	514	296	116	90	12	33	0

- Molecule 2 is a protein called Ryanodine receptor 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	G	3933	26285	16856	4666	4625	138	0	0
2	A	3823	24845	15885	4439	4407	114	1	0
2	D	3865	23336	14719	4259	4281	77	1	0
2	J	3892	25245	16153	4530	4440	122	0	0

- Molecule 3 is a protein called Peptidyl-prolyl cis-trans isomerase FKBP1B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	H	107	759	483	134	138	4	0	0
3	B	107	735	465	130	136	4	0	0
3	E	106	657	415	115	125	2	0	0
3	K	106	758	483	135	136	4	0	0

- Molecule 4 is a protein called Calmodulin-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	I	138	711	431	139	139	2	0	0

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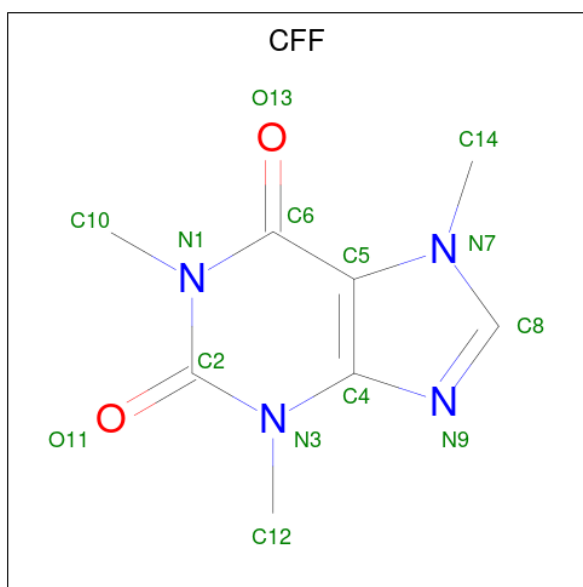
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Mol	Chain	Residues	Atoms					AltConf	Trace
4	C	137	Total	C	N	O	S	0	0
			707	430	137	139	1		
4	F	137	Total	C	N	O		0	0
			710	434	137	139			
4	L	139	Total	C	N	O	S	0	0
			706	427	139	139	1		

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
I	32	ALA	GLU	engineered mutation	UNP P0DP23
I	68	ALA	GLU	engineered mutation	UNP P0DP23
I	105	ALA	GLU	engineered mutation	UNP P0DP23
I	141	ALA	GLU	engineered mutation	UNP P0DP23
C	32	ALA	GLU	engineered mutation	UNP P0DP23
C	68	ALA	GLU	engineered mutation	UNP P0DP23
C	105	ALA	GLU	engineered mutation	UNP P0DP23
C	141	ALA	GLU	engineered mutation	UNP P0DP23
F	32	ALA	GLU	engineered mutation	UNP P0DP23
F	68	ALA	GLU	engineered mutation	UNP P0DP23
F	105	ALA	GLU	engineered mutation	UNP P0DP23
F	141	ALA	GLU	engineered mutation	UNP P0DP23
L	32	ALA	GLU	engineered mutation	UNP P0DP23
L	68	ALA	GLU	engineered mutation	UNP P0DP23
L	105	ALA	GLU	engineered mutation	UNP P0DP23
L	141	ALA	GLU	engineered mutation	UNP P0DP23

- Molecule 5 is CAFFEINE (three-letter code: CFF) (formula: C<sub>8</sub>H<sub>10</sub>N<sub>4</sub>O<sub>2</sub>).

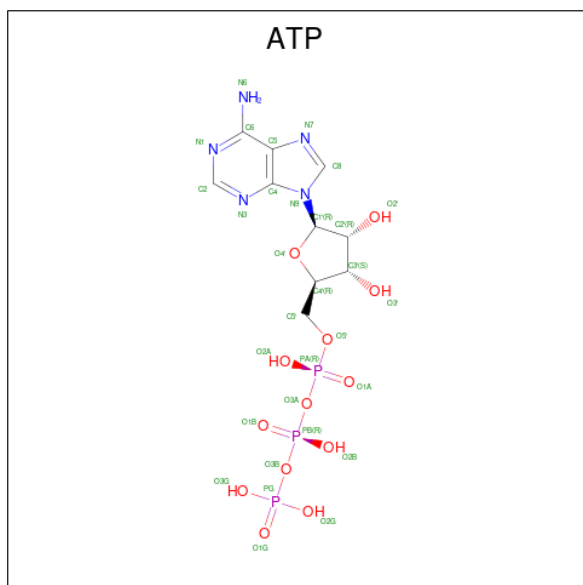


Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
5	G	1	14	8	4	2	0
5	A	1	14	8	4	2	0
5	D	1	14	8	4	2	0
5	J	1	14	8	4	2	0

- Molecule 6 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms		AltConf
			Total	Ca	
6	G	1	1	1	0
6	A	1	1	1	0
6	D	1	1	1	0
6	J	1	1	1	0

- Molecule 7 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: C<sub>10</sub>H<sub>16</sub>N<sub>5</sub>O<sub>13</sub>P<sub>3</sub>).



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

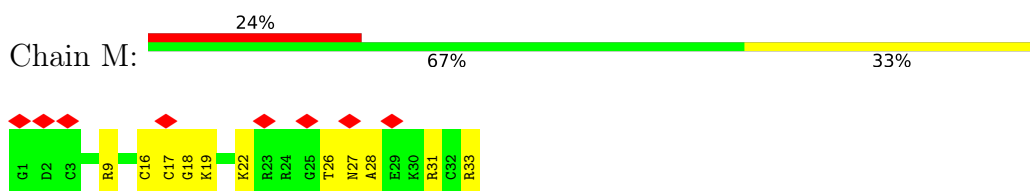
- Molecule 8 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
8	G	1	1	1	0
8	A	1	1	1	0
8	D	1	1	1	0
8	J	1	1	1	0

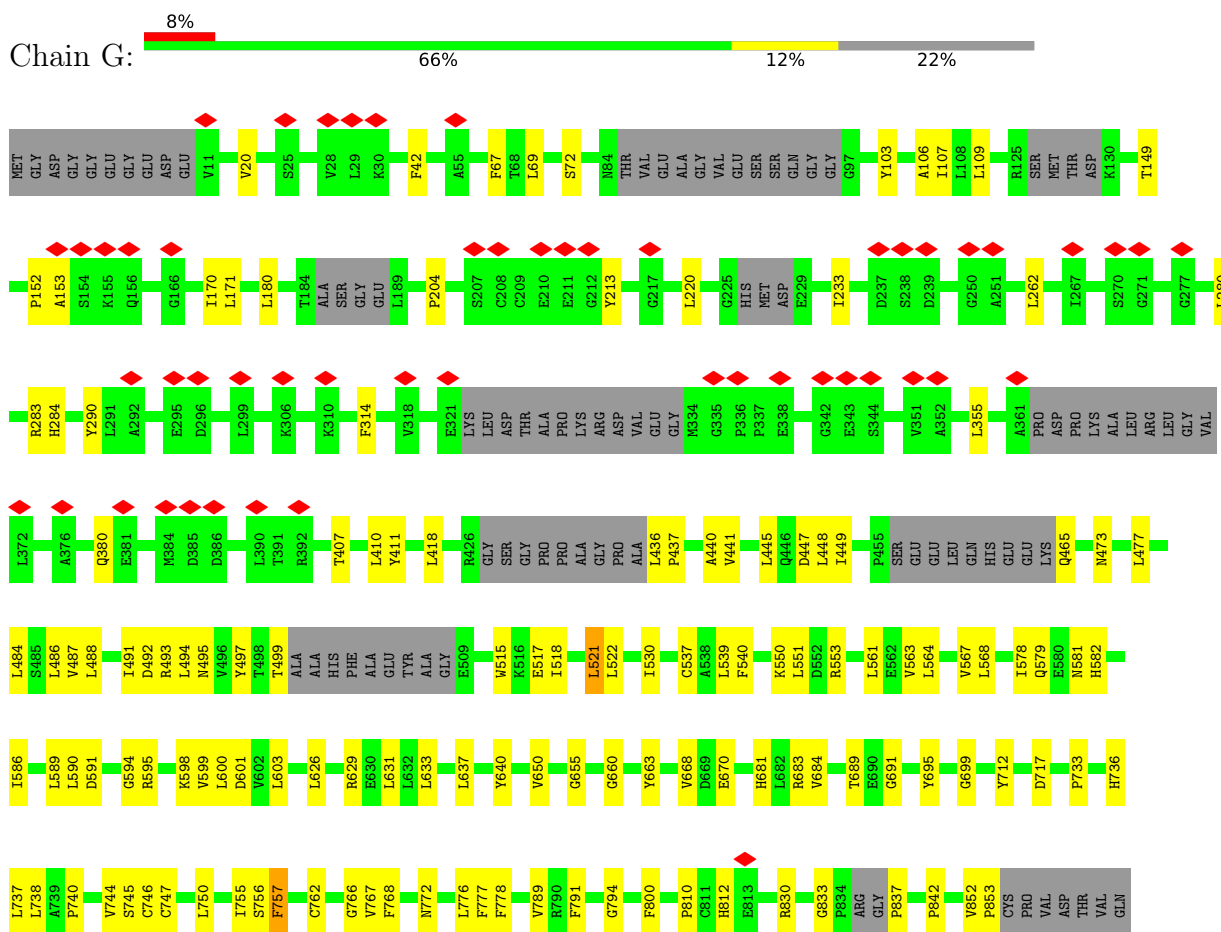
### 3 Residue-property plots

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

- Molecule 1: Impericalcin

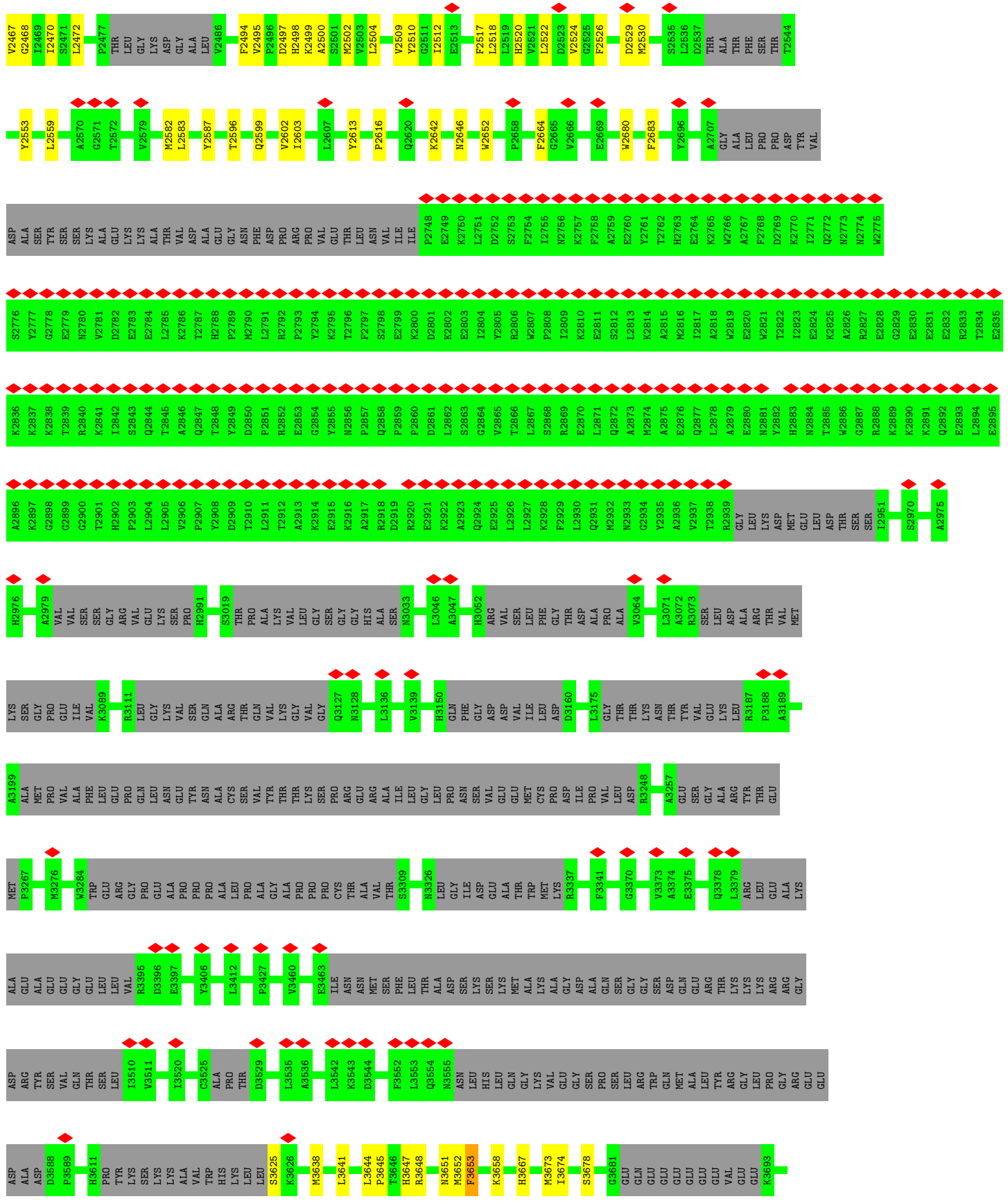


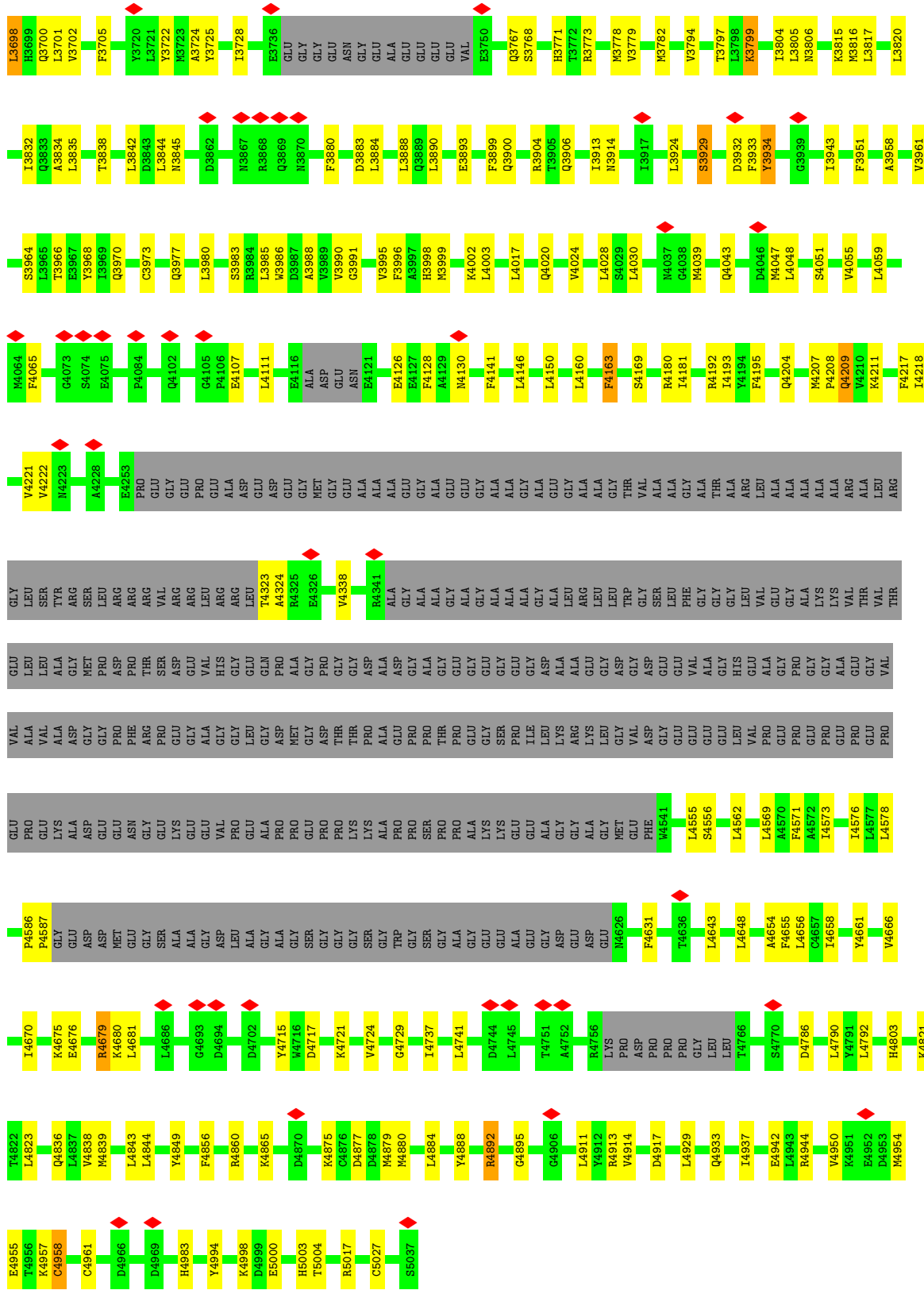
- Molecule 2: Ryanodine receptor 1







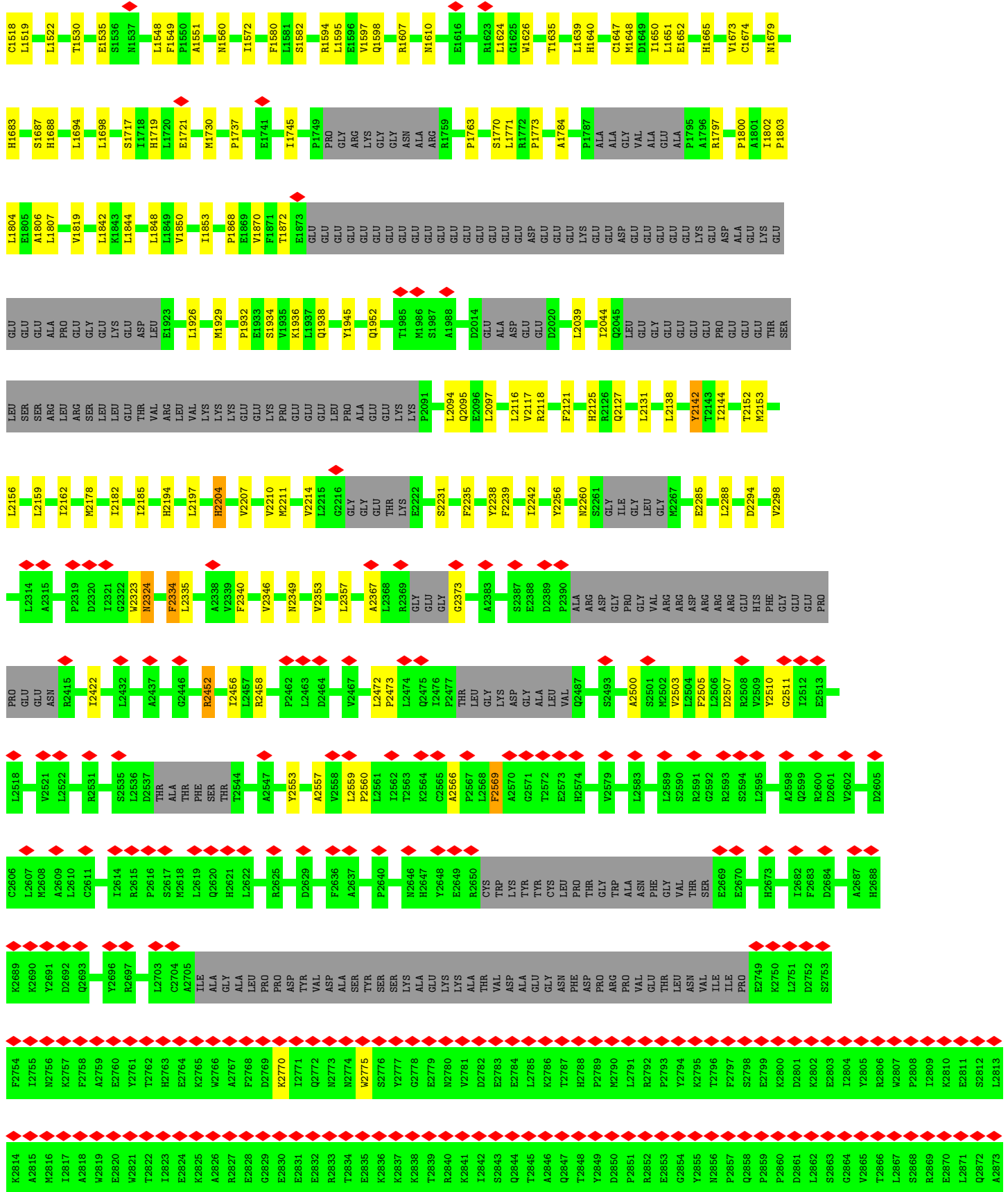




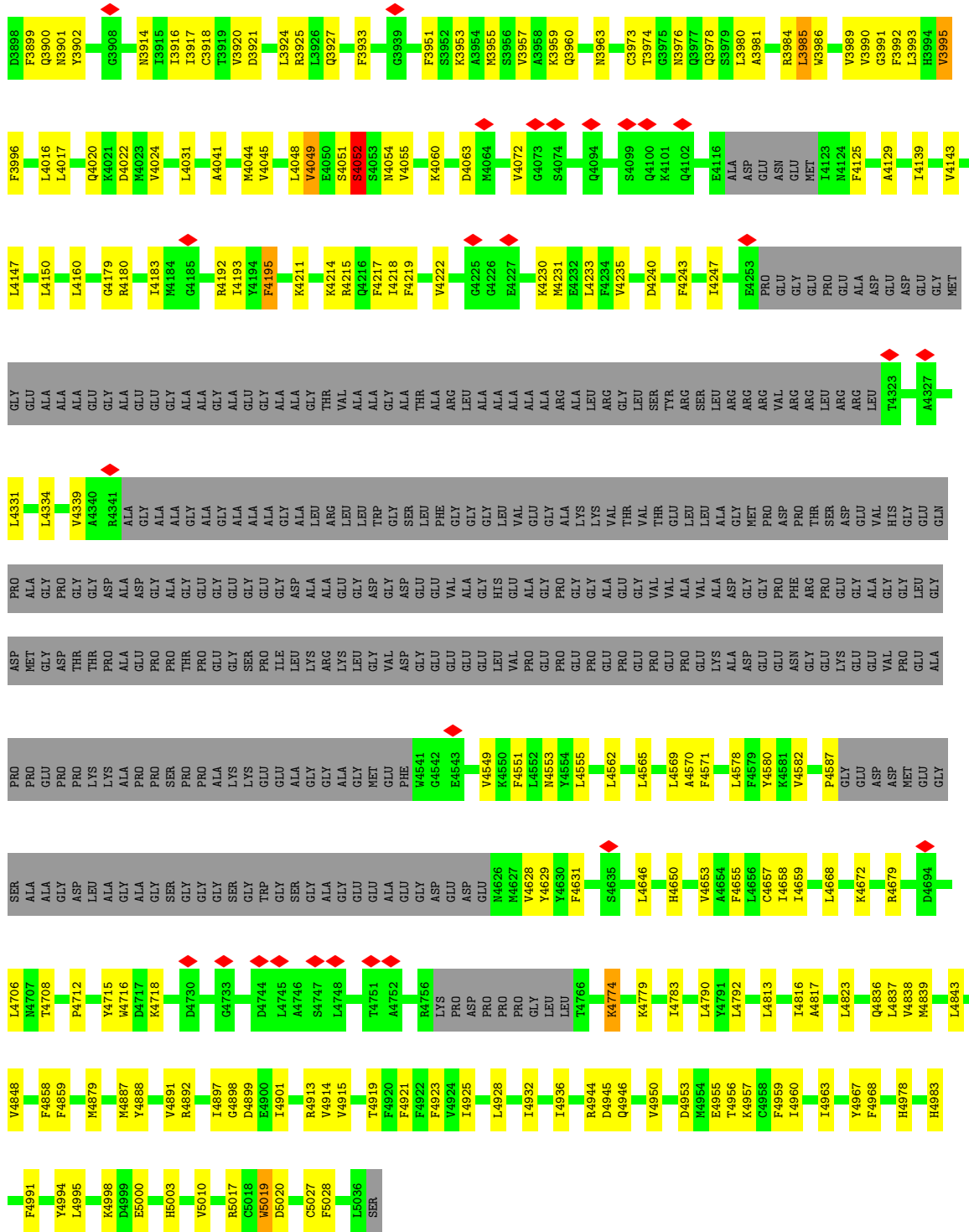
• Molecule 2: Ryanodine receptor 1



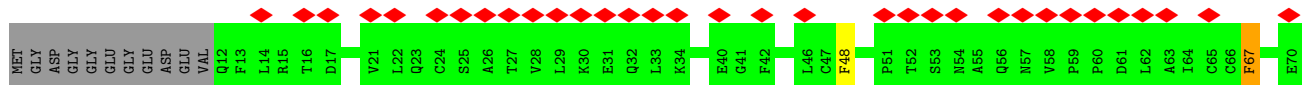


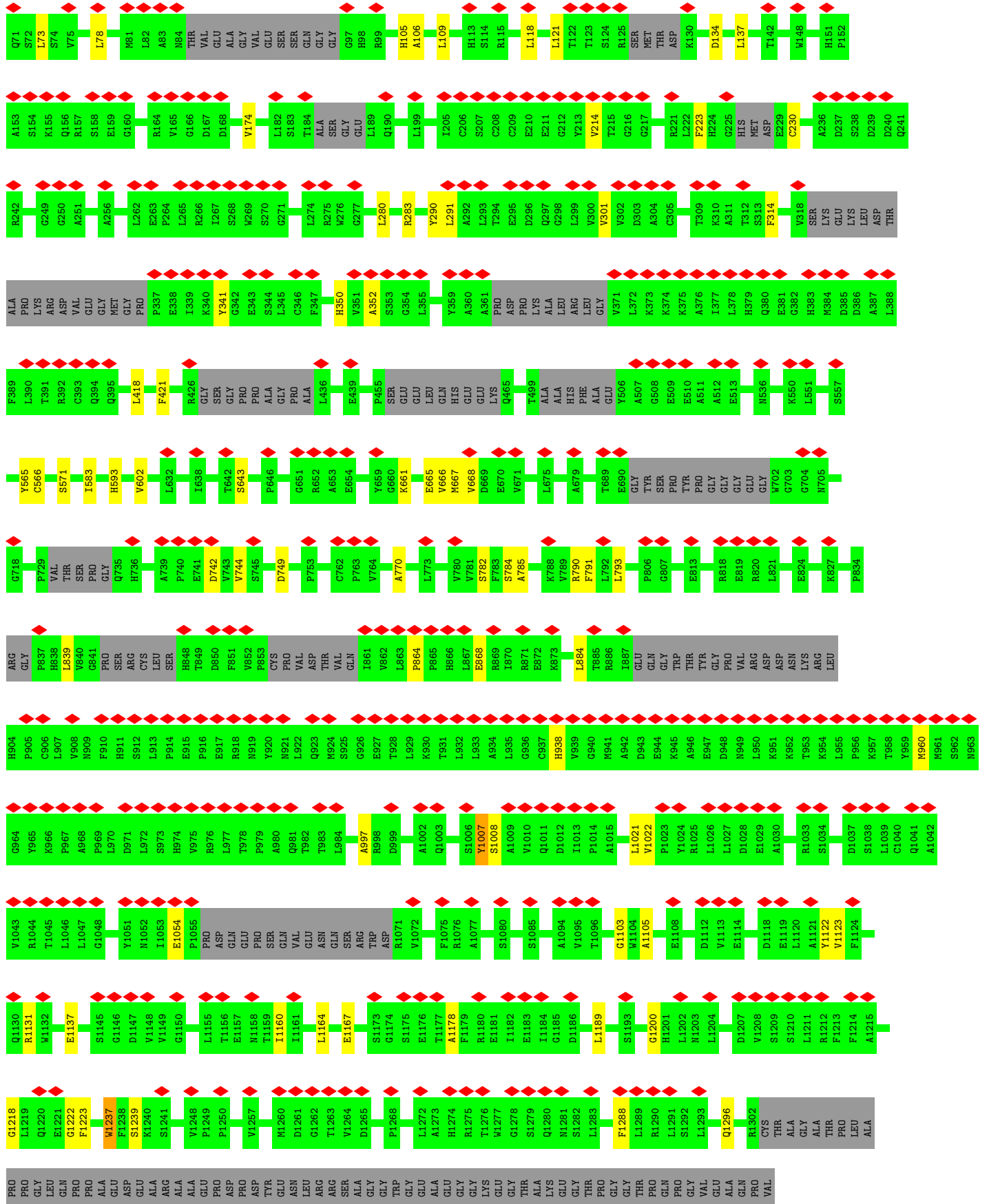


K2874	K2875	E2876	Q2877	L2878	A2879	E2880	H2881	H2882	H2883	H2884	T2885	H2886	Q2887	R2888	K2889	K2890	K2891	Q2892	E2893	L2894	E2895	A2896	K2897	G2898	Q2899	G2900	T2901	H2902	P2903	L2904	L2905	V2906	P2907	V2908	D2909	T2910	L2911	T2912	A2913	K2914	E2915	K2916	A2917	D2918	D2919	R2920	E2921	A2922	Q2923	Q2924	E2925	L2926	L2927	K2928	F2929	L2930	Q2931	H2932	H2933
G2934	Y2935	A2936	V2937	R2938	R2939	GLY	LEU	LYS	ASP	PRO	GLU	LEU	ASP	THR	SER	SER	ILE	GLY	LYS	ARG	F2955	V2966	M2967	D2968	I2969	E2972	F2973	I2974	ALA	HIS	LEU	GLU	ALA	VAL	VAL	SER	SER	GLY	ARG	D2909	VAL	GLU	LYS	SER	PRO	HIS	GLU	GLN	E2994	I2995	K2996	F2997	K3000	I3001	L3002	A3003	P3004		
L3005	I3006	H3013	CYS	TYR	PHE	LEU	SER	THR	ASP	ALA	LYS	VAL	LEU	GLY	VAL	GLN	ALA	SER	ASN	LYS	E3035	I3039	T3040	S3041	A3048	L3049	VAL	ARG	HIS	GLY	ARG	VAL	SER	PHE	GLY	THR	ASP	ALA	PRO	A3063	V3064	V3065	C3067	L3068	L3071	A3072	R3073	SER	K3000	I3001	L3002	A3003	P3004						
ARG	THR	VAL	MET	LYS	SER	GLY	PRO	E3086	E3104	E3108	ASN	LEU	ARG	LEU	GLY	TYR	VAL	GLN	ALA	ARG	THR	GLN	VAL	G3126	Q3127	N3128	L3129	T3130	Y3131	T3132	A3135	L3136	L3137	P3138	V3139	L3140	T3141	T3142	L3143	A3148	Q3149	HIS	GLN	PHE	GLY	ASP	ASP	VAL	ILE	LEU	ASP								
D3160	T3166	L3169	C3170	S3171	Y3173	S3174	L3175	G3176	T3177	THR	LYS	ASN	THR	TYR	VAL	GLY	LYS	LEU	ALA	ARG	P3188	A3189	L3190	G3191	E3192	R3196	LEU	ALA	ALA	ALA	THR	LEU	GLY	PRO	GLN	LEU	ASN	GLY	ASN	ALA	CYS	SER	VAL	TYR	THR	LYS	SER	PRO	ARG	GLU	ARG								
ALA	ILE	LEU	GLY	LEU	PRO	ASN	SER	PRO	VAL	VAL	ASP	ARG	MET	CYS	PRO	ASP	S3309	D3310	H3311	L3316	G3317	N3318	I3319	L3320	R3321	I3322	I3323	V3324	N3325	N3326	LEU	GLY	ILE	ARG	TYR	ASP	GLU	ALA	TRP	M3335	K3336	A3339	A3342	Q3343	P3344	ILE	VAL	SER	ARG	ALA	ARG	PRO	ALA	PRO	PRO				
R3364	L3365	R3366	K3367	V3373	A3374	E3375	E3376	E3377	Q3378	L3379	R3380	L3381	E3382	A3383	K3384	A3385	E3386	A3387	E3388	E3389	G3390	E3391	L3392	L3393	V3394	R3395	D3396	E3397	F3398	S3399	R3403	Y3406	P3410	I3413	R3414	Y3415	R3420	A3421	H3422	W3423	H3428	A3431	K3447	S3448	H3449	F3458	V3459	V3460	Q3461										
ASN	GLU	ILE	ASN	ASN	MET	SER	PHE	LEU	THR	ALA	ALA	ASP	SER	LYS	SER	S3594	L3595	A3596	K3597	R3598	R3599	Y3599	A3541	L3542	T3545	D3546	E3547	E3548	V3549	R3550	E3551	PHE	LEU	GLN	ASN	ASN	LEU	HIS	LEU	GLN	GLY	LYS	VAL	VAL	GLU	GLY	PRO	SER	LEU	LEU	LEU	VAL	G3551						
L3522	M3523	MET	CYS	ALA	PRO	THR	ASP	Q3530	D3531	L3532	I3533	M3534	L3535	A3536	K3537	R3538	R3539	Y3540	A3541	L3542	T3545	D3546	E3547	E3548	V3549	R3550	E3551	PHE	LEU	GLN	ASN	ASN	LEU	HIS	LEU	GLN	GLY	LYS	VAL	VAL	GLU	GLY	PRO	SER	LEU	LEU	LEU	VAL	G3551										
GLU	GLU	ASP	ALA	ASP	PRO	E3590	K3591	L3592	V3593	R3594	E3598	E3607	Q3608	T3609	E3610	H3611	PRO	TYR	LYS	SER	GLY	LYS	LYS	LYS	LYS	ALA	ASN	VAL	TRP	HIS	LYS	LEU	LEU	S3625	A3631	V3632	V3633	A3634	M3638	T3639	P3640	N3643	K3658	L3662	H3667	G3681	GLU	GLN	GLU	GLY	GLU	GLU	GLU						
GLU	VAL	GLU	GLU	K3693	H3704	F3705	S3706	R3707	L3710	S3714	E3718	Y3722	M3723	A3724	Y3725	A3726	L3735	GLU	GLU	GLY	GLY	GLU	GLU	ASN	GLY	GLU	ALA	ALA	GLU	GLU	GLU	GLU	S3750	Q3767	S3768	H3771	T3772	R3773	G3774	A3775	M3778	V3779	L3780	Q3781	M3782	G3788	E3789	T3790	M3793										
S3796	T3797	L3798	K3799	L3800	G3801	L3802	S3803	L3804	L3805	M3806	N3809	A3810	E3811	V3812	K3816	Y3819	L3820	F3828	F3829	L3832	L3835	L3836	M3836	C3839	S3840	V3841	L3842	A3853	Q3857	D3862	L3866	N3867	R3868	Q3869	I3870	L3882	R3886	F3887	L3888	Q3889	L3890	L3891	C3892	E3893	N3897														

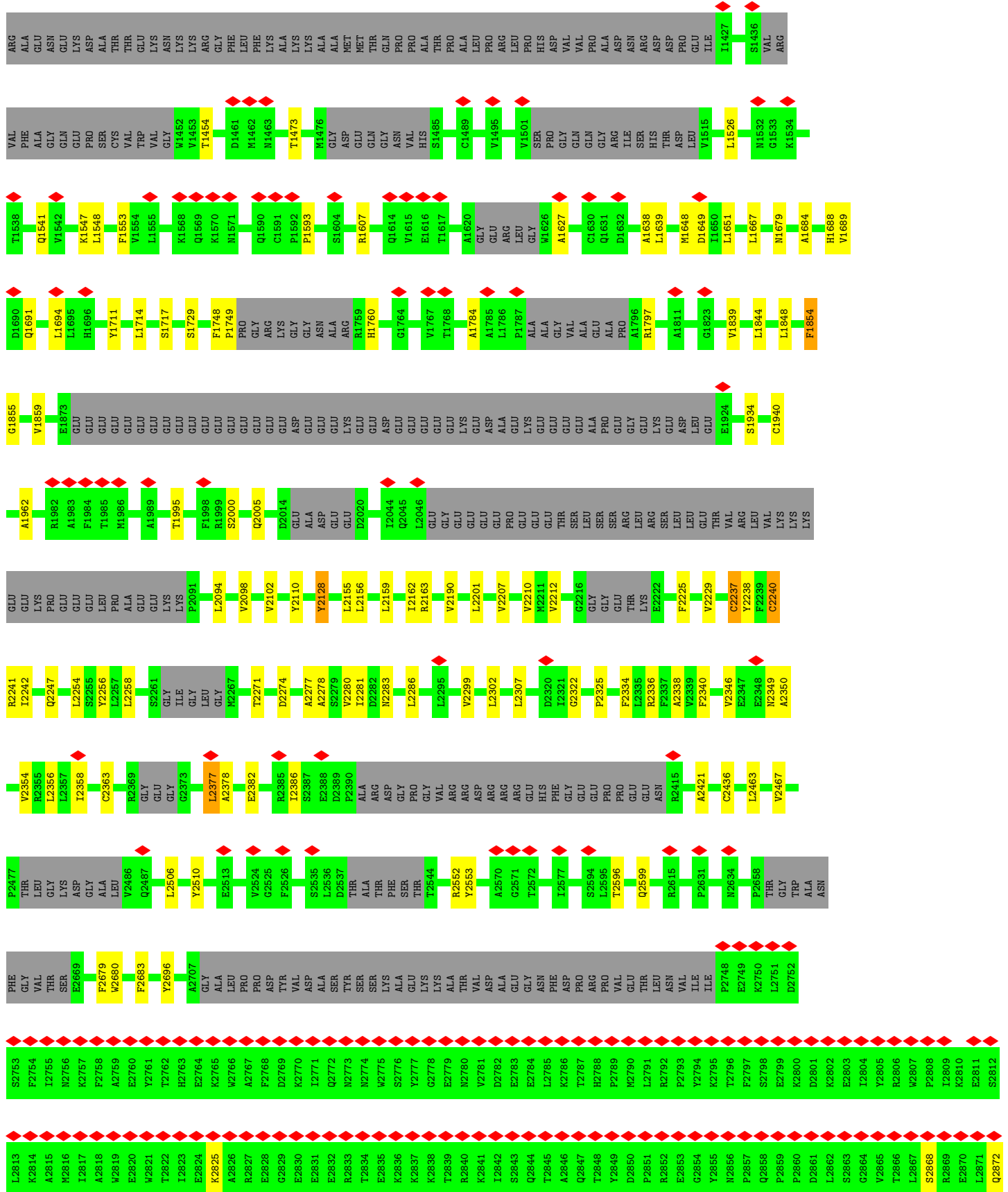


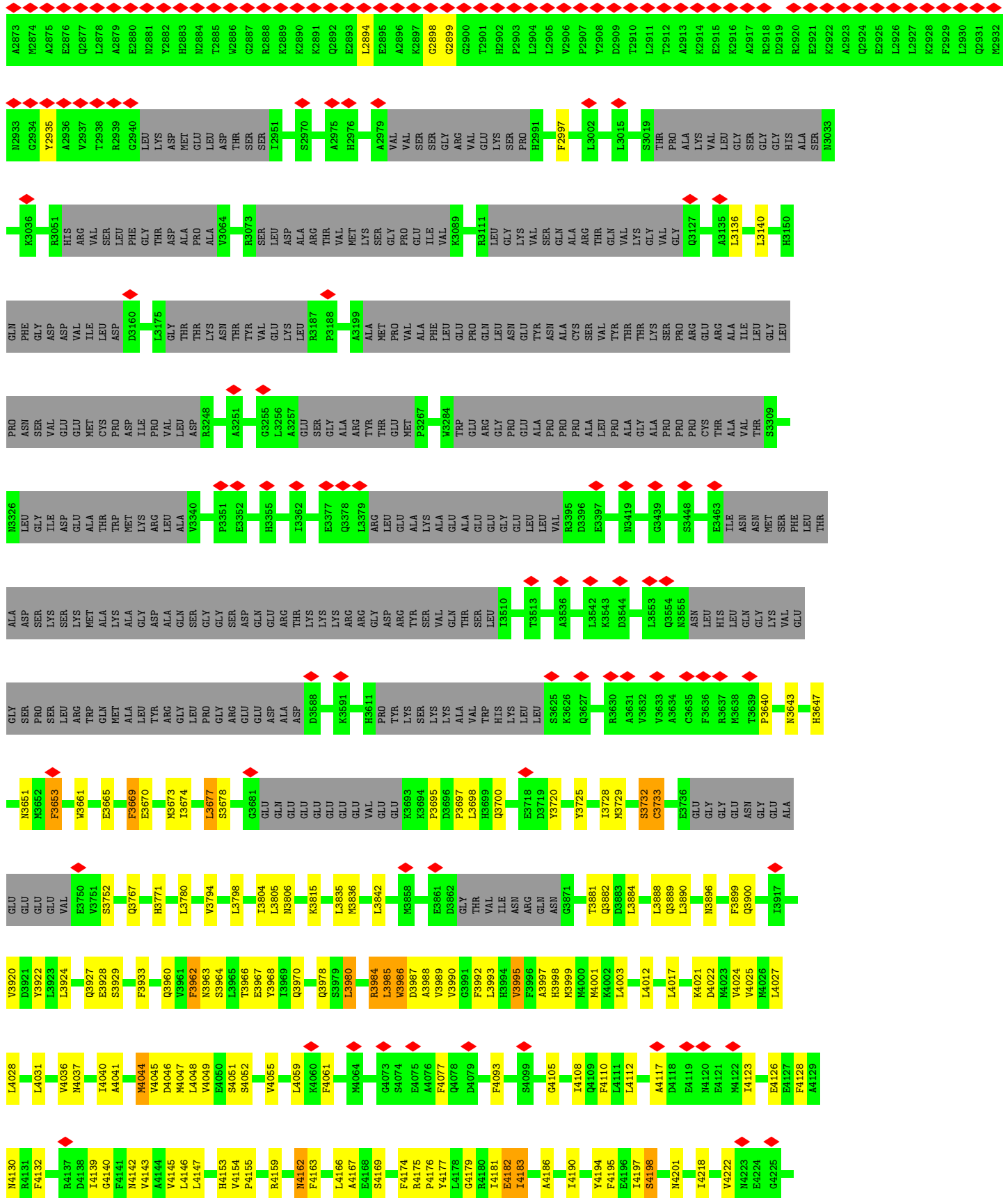
• Molecule 2: Ryanodine receptor 1

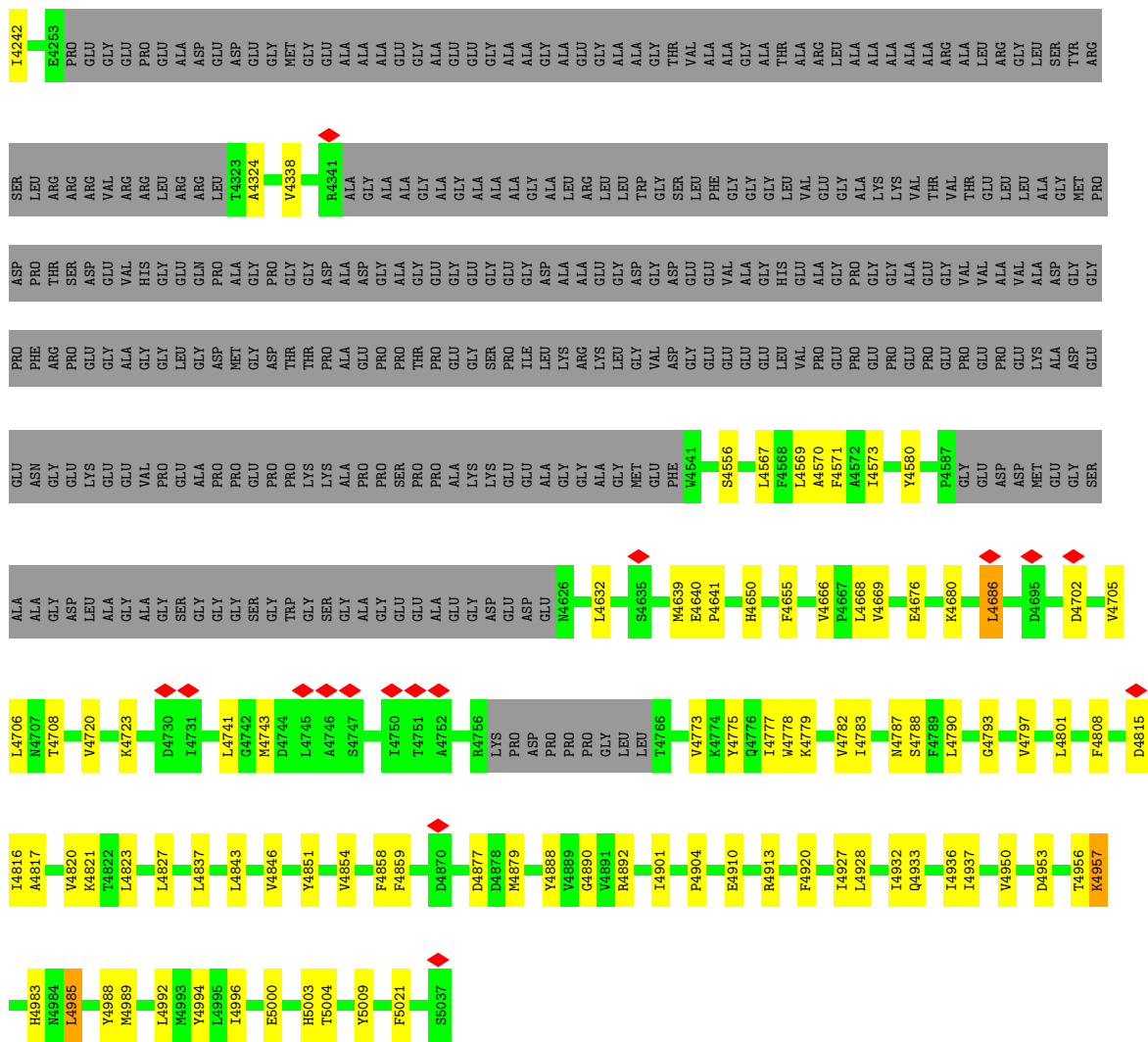




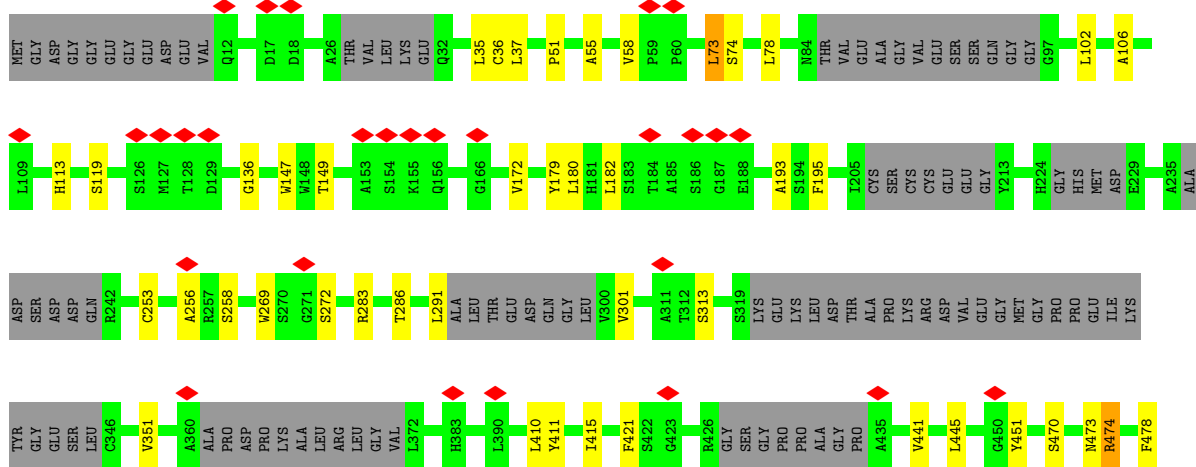


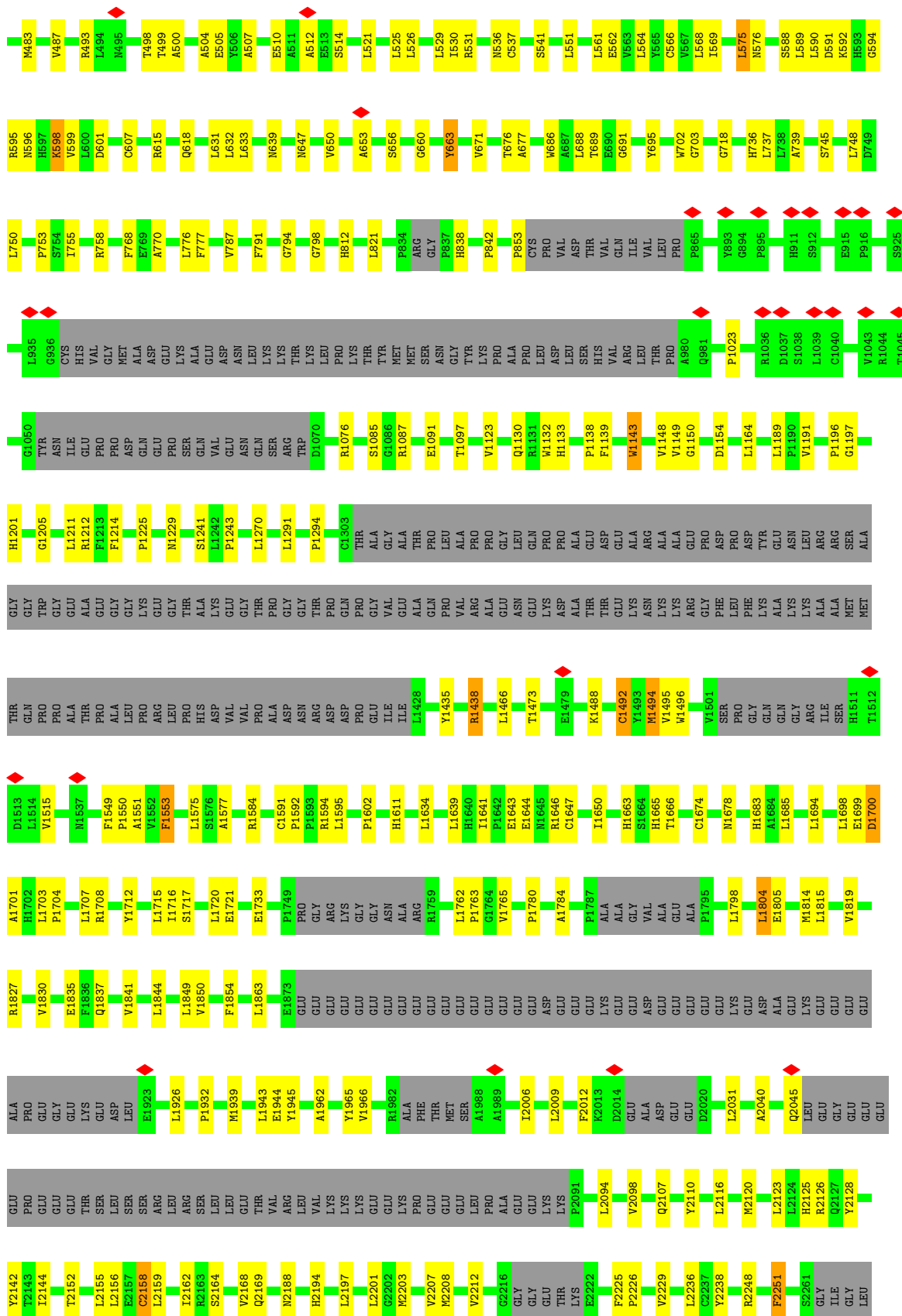






● Molecule 2: Ryanodine receptor 1





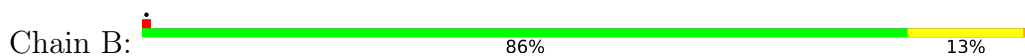
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ASP	ARG	ARG	GLU	HIS	PHE	GLY	ALA	ALA	THR	THR	THR	PRO	PRO	GLU	GLU	N2414	R2415	L2418	L2422	L2432	L2433	G2434	R2458	G2468	S2471	P2477	T2478	LEU	GLY	LYS	ASP	GLY	ALA	ALA	V2486	Q2487	P2488	K2489	S2493	H2498	K2499	A2500	V2503	L2504	F2505	R2508	V2509	Y2510	D2516																
G2525	A2534	S2535	L2536	THR	THR	ALA	ALA	THR	PHE	ASP	THR	T2544	E2545	M2546	Y2553	Q2571	T2572	L2589	R2593	S2594	I2614	S2617	P2628	M2634	P2658	A2662	T2667	S2668	E2669	W2680	F2683	R2697	L2703	L2710	P2711	PRO	TYR	ASP	VAL	ASP	ALA	SER																							
TYR	SER	SER	LYS	ALA	GLU	LYS	ALA	ALA	THR	THR	VAL	VAL	ALA	ALA	GLU	GLY	PHE	ASP	PRO	ARG	PRO	VAL	VAL	ILE	P2748	E2749	K2750	L2751	D2752	S2753	F2754	I2755	N2756	K2757	F2758	A2759	E2760	Y2761	T2762	H2763	E2764	K2765	M2766	A2767	D2768	K2770	I2771	Q2772	N2773	N2774	W2775	S2776	Y2777	G2778											
E2779	N2780	V2781	D2782	E2783	E2784	L2785	K2786	T2787	H2788	P2789	M2790	L2791	R2792	P2793	Y2794	K2795	T2796	F2797	S2798	E2799	K2800	D2801	K2802	E2803	L2804	Y2805	R2806	W2807	P2808	I2809	K2810	E2811	S2812	L2813	K2814	A2815	M2816	I2817	A2818	W2819	W2820	W2821	T2822	I2823	E2824	K2825	A2826	R2827	E2828	G2829	E2830	E2831	E2832	R2833	T2834	E2835	K2836	K2837	K2838						
T2839	R2840	K2841	T2842	S2843	Q2844	T2845	A2846	Q2847	T2848	Y2849	D2850	R2851	P2852	E2853	G2854	Y2855	N2856	F2857	Q2858	P2859	T2860	D2861	L2862	S2863	G2864	V2865	T2866	L2867	S2868	R2869	E2870	L2871	Q2872	A2873	M2874	E2875	A2876	Q2877	L2878	E2879	E2880	N2881	Y2882	H2883	N2884	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	L2927	K2928	F2929	L2930	Q2931	M2932	N2933	G2934	Y2935	A2936	V2937	T2938	R2939	GLY	LEU	LYS	ASP	MET	GLU	LEU	ASP	THR	SER	SER	I2951	S2970	A2979	VAL	VAL	SER	SER	GLY								
ARG	VAL	GLU	LYS	PRO	H2991	E2992	K3000	L3001	L3002	F3017	L3018	S3019	THR	PRO	ALA	LYS	VAL	LEU	GLY	SER	GLY	HIS	GLY	SER	M3033	L3046	H3052	ARG	VAL	SER	LEU	PHE	GLY	ASP	THR	ALA	ALA	PRO	ALA	Y3064	R3073	SER	LEU	LYS	ASP	ALA	ARG	THR	THR	VAL	VAL	LEU	LEU	ASP	R3248	L3249	M3250	A3251	A3257	GLU	SER	SER	GLY	ALA	ARG
GLU	ILE	K3089	E3108	R3111	L3111	GLY	LYS	VAL	T2910	GLN	ALA	ARG	THR	GLN	VAL	LYS	GLY	VAL	GLY	Q3127	Y3131	T3132	T3133	V3134	A3135	L3136	L3140	H3150	PHE	GLY	ASP	ASP	VAL	ILE	LEU	ASP	D3160	L3175	GLY	THR	THR	LYS	ASN	THR	TYR	THR	VAL	VAL	LEU	LEU	ASP	R3248	L3249	M3250	A3251	A3257	GLU	SER	SER	GLY	ALA	ARG			
A3199	ALA	MET	PRO	VAL	PHE	LEU	PRO	GLN	PRO	GLU	ASN	ALA	ALA	CYS	VAL	VAL	THR	THR	LYS	PRO	ARG	GLU	ARG	ALA	ILE	LEU	LEU	PRO	ASN	SER	VAL	GLU	GLU	MET	CYS	PRO	ASP	ILE	PRO	VAL	VAL	LEU	LEU	ASP	R3248	L3249	M3250	A3251	A3257	GLU	SER	SER	GLY	ALA	ARG										
TYR	THR	MET	L3281	W3284	TRP	GLU	ARG	GLY	PRO	GLU	ALA	ALA	PRO	PRO	ALA	ALA	ALA	ALA	ALA	GLY	ALA	PRO	PRO	PRO	CYS	THR	ALA	VAL	THR	S3309	R3326	LEU	GLY	ILE	ASP	GLU	ALA	ALA	THR	TRP	MET	LEU	LYS	R3337	A3342	F3351	A3369	Q3378	LEU	ARG	LEU	GLU	ALA												
LYS	ALA	ALA	GLU	GLU	GLY	GLU	LEU	VAL	R3395	D3396	E3397	V3400	L3408	F3435	G3439	E3463	ILE	ASN	ASN	MET	THR	SER	PHE	LEU	THR	ALA	ALA	ASP	ASP	SER	SER	LYS	SER	LYS	MET	ALA	ALA	ALA	THR	TRP	MET	LEU	LYS	R3337	A3342	F3351	A3369	Q3378	LEU	ARG	LEU	GLU	ALA	ARG											
GLY	ASP	ARG	TYR	SER	VAL	GLN	THR	SER	L3510	V3511	L3514	K3515	L3522	A3526	D3529	L3532	L3535	R3539	K3543	D3544	V3549	F3552	L3553	D3554	N3555	ASN	LEU	LEU	HIS	LEU	GLN	LYS	VAL	VAL	GLU	GLY	SER	PRO	SER	LEU	TRP	GLN	MET	LEU	ALA	LEU	TYR	ARG	GLY																



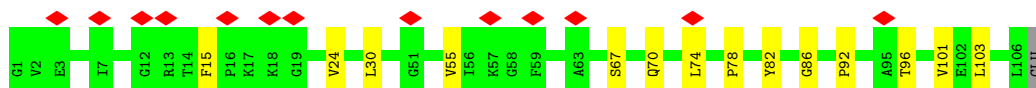
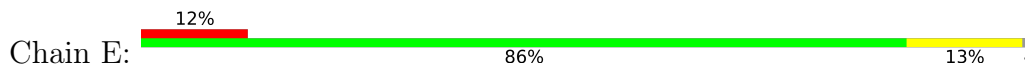
• Molecule 3: Peptidyl-prolyl cis-trans isomerase FKBP1B



• Molecule 3: Peptidyl-prolyl cis-trans isomerase FKBP1B



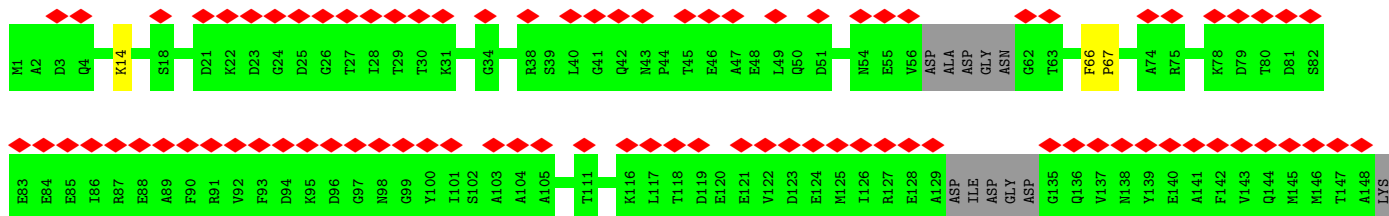
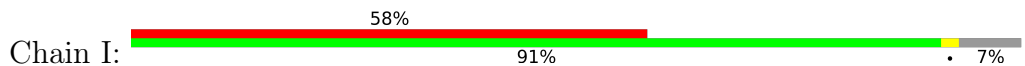
• Molecule 3: Peptidyl-prolyl cis-trans isomerase FKBP1B



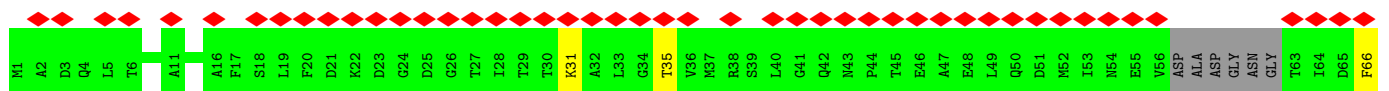
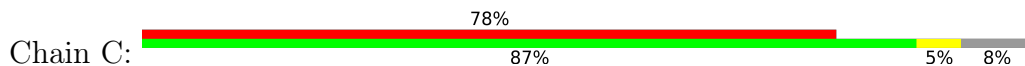
• Molecule 3: Peptidyl-prolyl cis-trans isomerase FKBP1B

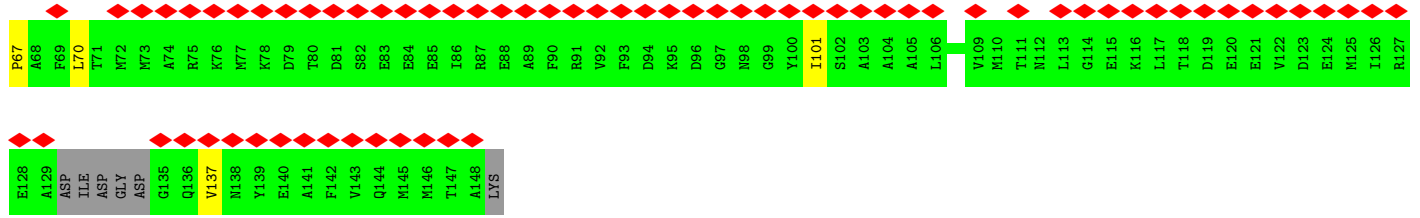


• Molecule 4: Calmodulin-1

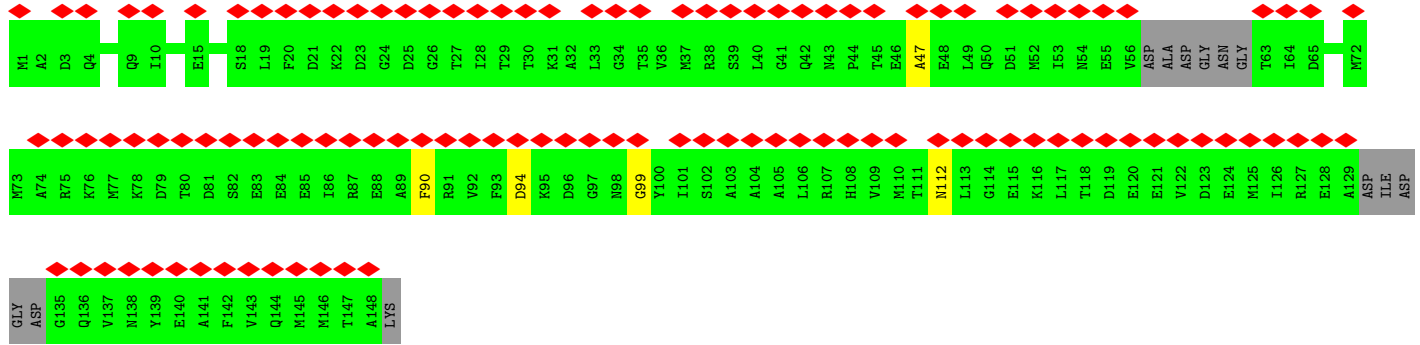
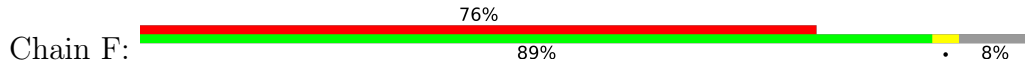


• Molecule 4: Calmodulin-1

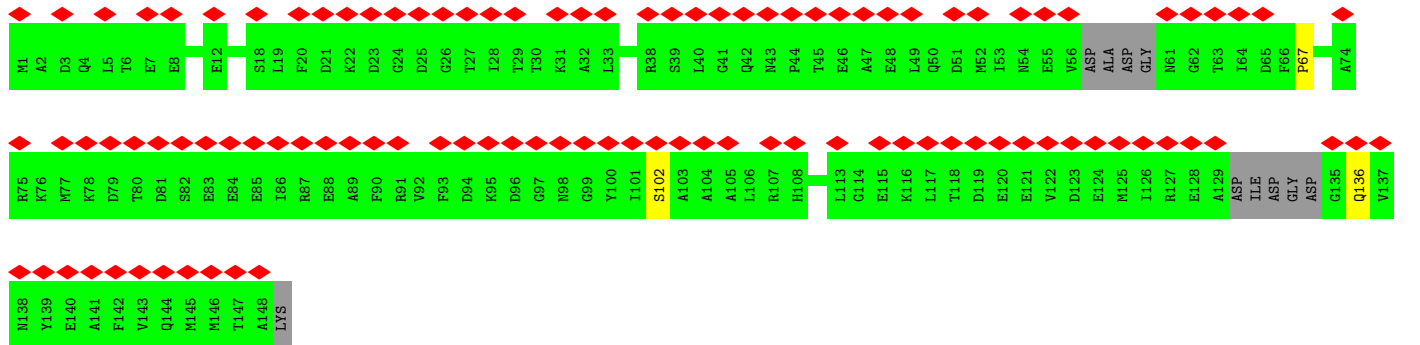
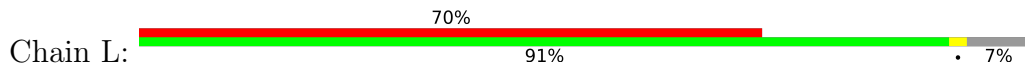




• Molecule 4: Calmodulin-1



• Molecule 4: Calmodulin-1





## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	144529	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON III (4k x 4k)	Depositor
Maximum map value	2.559	Depositor
Minimum map value	-1.060	Depositor
Average map value	0.011	Depositor
Map value standard deviation	0.066	Depositor
Recommended contour level	0.35	Depositor
Map size (Å)	479.36002, 479.36002, 479.36002	wwPDB
Map dimensions	448, 448, 448	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.07, 1.07, 1.07	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: CFF, CA, ATP, 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	M	0.25	0/516	0.62	0/672
2	A	0.27	0/25342	0.46	0/34836
2	D	0.27	0/23698	0.43	0/32668
2	G	0.25	0/26809	0.45	0/36763
2	J	0.26	0/25729	0.44	0/35328
3	B	0.26	0/751	0.55	0/1025
3	E	0.24	0/671	0.42	0/926
3	H	0.27	0/775	0.55	0/1054
3	K	0.32	0/774	0.55	0/1051
4	C	0.24	0/707	0.38	0/978
4	F	0.24	0/711	0.35	0/984
4	I	0.23	0/711	0.35	0/981
4	L	0.24	0/706	0.35	0/976
All	All	0.26	0/107900	0.45	0/148242

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

### 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	M	514	0	522	9	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	A	24845	0	19916	424	0
2	D	23336	0	16446	294	0
2	G	26285	0	21941	392	0
2	J	25245	0	20257	321	0
3	B	735	0	669	11	0
3	E	657	0	537	7	0
3	H	759	0	724	19	0
3	K	758	0	735	21	0
4	C	707	0	386	5	0
4	F	710	0	386	3	0
4	I	711	0	383	4	0
4	L	706	0	363	2	0
5	A	14	0	10	0	0
5	D	14	0	10	1	0
5	G	14	0	10	0	0
5	J	14	0	10	0	0
6	A	1	0	0	0	0
6	D	1	0	0	0	0
6	G	1	0	0	0	0
6	J	1	0	0	0	0
7	A	31	0	12	2	0
7	D	31	0	12	1	0
7	G	31	0	12	3	0
7	J	31	0	12	0	0
8	A	1	0	0	0	0
8	D	1	0	0	0	0
8	G	1	0	0	0	0
8	J	1	0	0	0	0
All	All	106156	0	83353	1461	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 8.

All (1461) 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:A:415:ILE:CD1	2:A:493:ARG:HD2	1.68	1.23
2:A:415:ILE:HD11	2:A:493:ARG:CD	1.68	1.21
2:D:4055:VAL:HG11	2:D:4163:PHE:CZ	1.91	1.05
2:A:4048:LEU:HD11	2:A:4055:VAL:HG21	1.36	1.03
2:A:357:LEU:HB2	2:A:378:LEU:HA	1.45	0.98

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:4055:VAL:HG11	2:D:4163:PHE:HZ	1.30	0.94
2:A:359:TYR:HA	2:A:376:ALA:HA	1.52	0.92
2:A:4048:LEU:HD11	2:A:4055:VAL:CG2	2.00	0.90
2:J:4024:VAL:HA	2:J:4027:LEU:HD12	1.51	0.89
2:D:4183:ILE:HG23	2:D:5021:PHE:HB2	1.52	0.89
2:D:4044:MET:SD	2:D:4047:MET:HE2	2.12	0.88
2:D:4037:ASN:HD21	2:D:4155:PRO:HD2	1.37	0.88
2:A:3980:LEU:HD12	2:A:3985:LEU:HD22	1.55	0.87
2:D:3677:LEU:HD21	2:D:3698:LEU:HD21	1.58	0.84
2:D:4059:LEU:HD21	2:D:4167:ALA:HA	1.60	0.82
2:D:3989:VAL:HG11	2:D:4027:LEU:HD21	1.62	0.82
2:D:4059:LEU:HD11	2:D:4167:ALA:HB2	1.58	0.82
2:A:273:HIS:H	2:A:335:GLY:HA3	1.43	0.81
2:A:489:ASN:HB3	2:A:493:ARG:HH12	1.45	0.80
2:A:3981:ALA:HA	2:A:3986:TRP:CH2	2.17	0.79
2:G:2559:LEU:HD23	2:G:2602:VAL:HG12	1.64	0.79
2:J:1943:LEU:HD13	2:J:2098:VAL:HG22	1.65	0.79
2:J:498:THR:HG22	2:J:499:THR:H	1.48	0.79
2:D:4055:VAL:CG1	2:D:4163:PHE:CZ	2.66	0.78
2:D:4055:VAL:CG1	2:D:4163:PHE:CE1	2.67	0.78
2:D:2159:LEU:O	2:D:2162:ILE:HG22	1.84	0.78
2:A:4048:LEU:HD11	2:A:4055:VAL:CB	2.14	0.77
2:G:2198:MET:HB3	2:G:2203:MET:HE1	1.66	0.77
2:A:1870:VAL:HG11	2:A:2097:LEU:HD22	1.65	0.77
2:D:3677:LEU:HD11	2:D:3698:LEU:HD23	1.64	0.77
2:D:4052:SER:HA	2:D:4055:VAL:CG1	2.15	0.77
3:H:78:PRO:HD3	3:H:96:THR:HG22	1.67	0.77
2:G:3980:LEU:HD12	2:G:3985:LEU:HD22	1.65	0.76
2:J:4222:VAL:HB	2:J:4950:VAL:HG22	1.67	0.76
2:J:35:LEU:HD22	2:J:51:PRO:HG3	1.66	0.76
2:D:4022:ASP:O	2:D:4025:VAL:HG22	1.87	0.75
2:A:4048:LEU:CD1	2:A:4055:VAL:HG11	2.16	0.74
2:J:3783:ILE:HD11	2:J:3832:ILE:HD13	1.69	0.74
2:A:357:LEU:CB	2:A:378:LEU:HA	2.17	0.74
2:D:4055:VAL:CG2	2:D:4163:PHE:CE1	2.70	0.74
2:A:224:HIS:HA	2:A:388:LEU:HD22	1.68	0.73
2:G:3835:LEU:HD21	2:G:3880:PHE:CZ	2.23	0.73
2:A:475:GLN:NE2	2:A:531:ARG:O	2.21	0.73
1:M:27[A]:ASN:OD1	1:M:28[A]:ALA:N	2.22	0.73
2:A:223:PHE:HD2	2:A:389:PHE:HE1	1.37	0.72
2:D:4936:ILE:HG21	2:J:4927:ILE:HD12	1.72	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:576:ASN:OD1	2:J:2169:GLN:NE2	2.22	0.72
2:G:2298:VAL:HG11	2:G:2335:LEU:HD21	1.71	0.72
3:B:25:HIS:HB3	3:B:40:ARG:HE	1.55	0.71
2:D:3842:LEU:HB2	2:D:3929:SER:HB2	1.72	0.71
2:G:2522:LEU:HA	2:G:2526:PHE:HB2	1.73	0.71
2:A:445:LEU:HD23	2:A:521:LEU:HB3	1.72	0.71
2:A:1257:VAL:HG21	2:A:1597:VAL:HG21	1.72	0.71
2:A:4991:PHE:HE2	2:A:5010:VAL:HG11	1.56	0.71
2:D:4044:MET:SD	2:D:4047:MET:CE	2.79	0.71
3:E:82:TYR:HB3	3:E:86:GLY:HA2	1.73	0.70
2:J:3701:LEU:HD21	2:J:3725:TYR:HD2	1.56	0.70
2:D:67:PHE:HB3	2:D:109:LEU:HD12	1.71	0.70
2:J:2248:ARG:HG2	2:J:2286:LEU:HD21	1.74	0.70
2:A:483:MET:SD	2:A:484:LEU:N	2.64	0.70
2:G:2193:GLN:O	2:G:2195:PRO:HD3	1.92	0.69
2:A:1291:LEU:HD12	2:A:1595:LEU:HD12	1.72	0.69
2:D:3927:GLN:HB2	2:D:3992:PHE:CE1	2.27	0.69
2:D:4052:SER:HA	2:D:4055:VAL:HG12	1.74	0.69
2:A:3767:GLN:NE2	2:A:3806:ASN:O	2.23	0.69
3:K:82:TYR:HB3	3:K:86:GLY:HA2	1.75	0.69
2:A:2452:ARG:NH2	2:D:174:VAL:O	2.26	0.69
2:D:2128:TYR:HD2	2:D:3669:PHE:HD2	1.41	0.69
2:D:565:TYR:HB2	2:D:602:VAL:HG22	1.75	0.68
2:D:4021:LYS:O	2:D:4025:VAL:HG13	1.94	0.68
2:G:445:LEU:HB3	2:G:521:LEU:HD22	1.76	0.68
2:A:1804:LEU:HD12	2:A:1853:ILE:HD13	1.75	0.68
2:G:1106:ARG:HH21	2:G:1185:GLY:HA3	1.59	0.67
2:D:2299:VAL:HG21	2:D:2356:LEU:HB3	1.77	0.67
2:D:3989:VAL:O	2:D:3993:LEU:HG	1.94	0.67
2:D:4037:ASN:ND2	2:D:4155:PRO:HD2	2.09	0.67
2:G:2298:VAL:HA	2:G:2331:TYR:OH	1.95	0.67
2:A:4150:LEU:HB3	2:A:4160:LEU:HD21	1.77	0.67
2:J:4139:ILE:O	2:J:4143:VAL:HG13	1.95	0.66
2:G:3768:SER:HA	2:G:3771:HIS:HB3	1.77	0.66
2:D:3640:PRO:HG2	2:D:3643:ASN:HB2	1.77	0.66
3:H:68:LEU:HD12	3:H:106:LEU:HD23	1.77	0.66
2:D:4787:ASN:OD1	2:D:4788:SER:N	2.28	0.66
2:A:3820:LEU:HD23	2:A:3902:TYR:HE2	1.59	0.66
2:A:575:LEU:HD13	2:A:609:CYS:HB2	1.78	0.66
2:G:1454:THR:HG22	2:G:1456:ASP:H	1.60	0.66
2:A:3951:PHE:O	2:A:3955:MET:HG3	1.95	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:4055:VAL:CG2	2:D:4163:PHE:HE1	2.09	0.66
2:A:488:LEU:HD11	2:A:540:PHE:HE1	1.60	0.65
2:A:1639:LEU:HB3	2:A:1648:MET:HB3	1.78	0.65
2:J:3768:SER:HA	2:J:3771:HIS:HB3	1.78	0.65
2:D:4055:VAL:HG11	2:D:4163:PHE:CE1	2.29	0.65
1:M:26[A]:THR:HG22	2:J:4937:ILE:HG23	1.79	0.65
2:D:4037:ASN:HA	2:D:4154:VAL:HG22	1.79	0.65
2:D:4059:LEU:HD21	2:D:4167:ALA:CA	2.27	0.65
2:D:4177:TYR:O	2:D:4197:ILE:HD12	1.97	0.65
2:A:3953:LYS:O	2:A:3957:VAL:HG23	1.96	0.65
2:G:1653:LEU:HB3	2:G:1660:GLN:HB2	1.77	0.65
2:J:1699:GLU:HG2	2:J:1814:MET:HE1	1.79	0.65
2:J:4687:TYR:HD2	2:J:4706:LEU:HD11	1.61	0.65
2:G:2354:VAL:O	2:G:2358:ILE:HG22	1.97	0.65
2:A:625:LEU:HD21	2:A:632:LEU:HD11	1.78	0.65
2:G:755:ILE:HB	2:G:768:PHE:HB2	1.79	0.64
2:A:3981:ALA:HA	2:A:3986:TRP:HH2	1.60	0.64
2:A:655:GLY:H	2:A:852:VAL:HG22	1.62	0.64
2:D:3990:VAL:HG13	2:D:4051:SER:HB3	1.79	0.64
2:D:4055:VAL:HG21	2:D:4163:PHE:CE1	2.32	0.64
2:J:4958:CYS:SG	2:J:4978:HIS:CD2	2.89	0.64
2:G:590:LEU:HD23	2:G:631:LEU:HD12	1.79	0.64
2:G:4020:GLN:O	2:G:4024:VAL:HG23	1.98	0.64
2:A:3788:GLY:HA2	2:A:3835:LEU:HG	1.78	0.64
2:G:1093:GLU:HB3	2:G:1201:HIS:HB3	1.79	0.64
3:H:8:SER:HB3	3:H:71:ARG:HB2	1.80	0.64
2:J:4027:LEU:HB2	2:J:4146:LEU:HD21	1.77	0.64
2:G:2301:TYR:CE2	2:G:2331:TYR:HD2	2.15	0.64
2:D:4153:HIS:O	2:D:4155:PRO:HD3	1.97	0.64
2:J:4140:GLY:O	2:J:4143:VAL:HG22	1.98	0.64
2:A:489:ASN:HB3	2:A:493:ARG:NH1	2.12	0.64
2:J:1704:PRO:HG2	2:J:1707:LEU:HB2	1.80	0.64
2:G:4821:LYS:HE2	2:G:4821:LYS:HA	1.80	0.64
2:A:633:LEU:HD23	2:A:1639:LEU:HD11	1.80	0.64
2:A:1679:ASN:ND2	2:A:1797:ARG:O	2.31	0.64
2:A:4020:GLN:O	2:A:4024:VAL:HG23	1.98	0.64
2:G:842:PRO:HD3	2:G:1073:ARG:HG3	1.80	0.63
2:G:2155:LEU:HD21	2:G:2198:MET:HE1	1.81	0.63
2:A:3918:CYS:HA	2:A:3921:ASP:OD2	1.99	0.63
2:A:4549:VAL:O	2:A:4553:ASN:ND2	2.31	0.63
2:J:1700:ASP:HB3	2:J:1703:LEU:HB2	1.79	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:56:ILE:HD12	3:K:81:ALA:HB2	1.80	0.63
2:G:2024:PRO:HG2	2:G:2027:ILE:HG12	1.81	0.63
2:G:2512:ILE:HG21	2:G:2518:LEU:HB2	1.81	0.63
2:A:3775:ALA:O	2:A:3778:MET:HG3	1.97	0.63
2:A:419:ASP:OD1	2:A:493:ARG:HD3	1.99	0.63
2:A:4240:ASP:HB3	2:A:4668:LEU:HD11	1.81	0.63
2:G:3767:GLN:NE2	2:G:3806:ASN:O	2.27	0.63
2:A:3832:ILE:O	2:A:3836:MET:HG2	1.99	0.62
2:D:938:HIS:H	2:D:1054:GLU:H	1.46	0.62
2:J:2288:LEU:O	2:J:3849:ARG:NH1	2.31	0.62
2:A:645:ARG:HD2	2:A:826:ILE:HG13	1.80	0.62
2:G:1851:MET:HB2	2:G:1853:ILE:HG13	1.82	0.62
2:G:3698:LEU:HB3	2:G:3773:ARG:HD3	1.81	0.62
2:J:3723:MET:CE	2:J:3793:MET:HA	2.29	0.62
2:D:4055:VAL:CG1	2:D:4163:PHE:HE1	2.12	0.62
3:E:24:VAL:HG12	3:E:103:LEU:HA	1.80	0.62
2:D:2302:LEU:HB3	2:D:2363:CYS:HB3	1.80	0.62
2:D:4046:ASP:O	2:D:4049:VAL:HG22	2.00	0.62
4:F:94:ASP:HA	4:F:99:GLY:HA2	1.81	0.62
2:G:488:LEU:HD21	2:G:540:PHE:HE1	1.65	0.62
2:D:2346:VAL:HG12	2:D:2349:ASN:H	1.64	0.62
2:D:3889:GLN:HG3	2:D:3967:GLU:HG3	1.82	0.62
2:J:3732:SER:O	2:J:3735:LEU:HB2	1.99	0.62
2:D:2163:ARG:NH2	2:D:2201:LEU:O	2.32	0.61
2:J:1733:GLU:HG2	2:J:2201:LEU:HD23	1.81	0.61
2:A:1848:LEU:HD12	2:A:1853:ILE:HD11	1.82	0.61
2:J:1784:ALA:HA	3:K:55:VAL:HA	1.82	0.61
2:G:4913:ARG:NH2	2:G:4917:ASP:OD2	2.34	0.61
3:H:37:ASP:OD1	3:H:38:SER:N	2.33	0.61
2:A:3829:PHE:HD1	2:A:3832:ILE:HD11	1.65	0.61
2:A:4837:LEU:HD11	2:A:4932:ILE:HG23	1.81	0.61
1:M:26[B]:THR:O	2:A:4944:ARG:NH2	2.33	0.61
2:G:67:PHE:HB3	2:G:109:LEU:HD12	1.82	0.61
2:G:683:ARG:NH1	2:G:717:ASP:OD2	2.34	0.61
2:G:3934:TYR:OH	2:G:3998:HIS:ND1	2.34	0.61
2:G:2116:LEU:O	2:G:2120:MET:HG3	2.01	0.61
2:G:2642:LYS:O	2:G:2646:ASN:ND2	2.34	0.61
2:D:4983:HIS:O	7:D:5103:ATP:N6	2.29	0.61
2:G:2495:VAL:HG12	2:G:2497:ASP:H	1.65	0.61
2:G:2005:GLN:O	2:G:2009:LEU:HD12	2.00	0.61
2:D:4218:ILE:O	2:D:4222:VAL:HG23	2.01	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:4181:ILE:HD11	2:J:4987:ASN:HB3	1.83	0.61
2:G:4884:LEU:HD11	2:A:4914:VAL:HG21	1.83	0.61
2:G:411:TYR:HB2	2:G:486:LEU:HD21	1.82	0.60
2:G:3906:GLN:NE2	2:G:3913:ILE:O	2.28	0.60
2:A:2500:ALA:N	2:A:2553:TYR:HE2	1.99	0.60
2:A:3981:ALA:HA	2:A:3986:TRP:CZ3	2.36	0.60
2:J:2158:CYS:O	2:J:2162:ILE:HD12	2.01	0.60
2:A:1454:THR:HG22	2:A:1456:ASP:H	1.66	0.60
2:D:4175:ARG:N	2:D:4176:PRO:HD2	2.16	0.60
2:G:1257:VAL:HG21	2:G:1597:VAL:HG21	1.82	0.60
2:G:3844:LEU:HD21	2:G:3932:ASP:HB3	1.83	0.60
2:J:4995:LEU:HD21	2:J:5007:GLU:HB3	1.84	0.60
2:D:4055:VAL:HG13	2:D:4163:PHE:CE1	2.36	0.60
2:J:106:ALA:HA	2:J:149:THR:HA	1.83	0.60
2:J:4023:MET:O	2:J:4027:LEU:HG	2.01	0.60
2:G:581:ASN:OD1	2:G:582:HIS:N	2.35	0.60
2:J:689:THR:HG22	2:J:776:LEU:H	1.67	0.60
2:G:1708:ARG:HH12	2:G:1814:MET:HE1	1.67	0.59
2:A:3959:LYS:NZ	2:A:4022:ASP:OD2	2.34	0.59
2:D:4680:LYS:HG3	2:D:4686:LEU:HD11	1.83	0.59
2:G:4126:GLU:O	2:G:4130:ASN:ND2	2.36	0.59
2:A:4956:THR:HG23	2:A:4957:LYS:HG3	1.84	0.59
2:D:4027:LEU:O	2:D:4031:LEU:HG	2.03	0.59
2:A:830:ARG:HA	2:A:839:LEU:HA	1.84	0.59
3:B:27:THR:HB	3:B:100:ASP:HB3	1.85	0.59
2:D:2894:LEU:O	2:D:2899:GLY:N	2.32	0.59
2:D:4183:ILE:HD12	2:D:5021:PHE:HD1	1.67	0.59
2:G:594:GLY:HA2	2:G:1594:ARG:HD2	1.83	0.59
2:G:1678:ASN:OD1	2:G:1681:VAL:HG23	2.02	0.59
2:A:347:PHE:CD1	2:A:387:ALA:HB2	2.37	0.59
2:A:4888:TYR:OH	2:D:4913:ARG:NH2	2.36	0.59
2:D:583:ILE:HD12	2:D:583:ILE:H	1.67	0.59
2:D:4055:VAL:HG22	2:D:4163:PHE:HE1	1.68	0.59
2:J:2471:SER:HA	2:J:2525:GLY:HA3	1.84	0.59
2:G:418:LEU:HD11	2:G:494:LEU:HD22	1.85	0.59
2:G:578:ILE:H	2:G:578:ILE:HD12	1.67	0.59
2:D:4024:VAL:HA	2:D:4027:LEU:HD12	1.83	0.59
2:J:526:LEU:O	2:J:530:ILE:HG12	2.03	0.59
2:J:1966:VAL:HG21	2:J:3650:CYS:HA	1.84	0.59
2:A:4813:LEU:HD13	2:D:4846:VAL:HG13	1.85	0.59
2:G:668:VAL:HG21	2:G:738:LEU:HD12	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3900:GLN:NE2	2:G:3968:TYR:O	2.35	0.59
2:A:1717:SER:HA	2:A:1721:GLU:HB2	1.85	0.59
2:D:4851:TYR:HD2	2:D:4920:PHE:HD1	1.51	0.59
2:J:2295:LEU:O	2:J:2299:VAL:HG12	2.02	0.59
2:J:2894:LEU:O	2:J:2899:GLY:N	2.31	0.59
2:D:3670:GLU:HA	2:D:3728:ILE:HD12	1.85	0.58
2:G:4059:LEU:HD12	2:G:4163:PHE:HE1	1.67	0.58
2:A:3812:VAL:O	2:A:3816:MET:HG2	2.03	0.58
2:A:4048:LEU:HD11	2:A:4055:VAL:HG11	1.84	0.58
2:D:1995:THR:HA	4:F:112:ASN:HA	1.85	0.58
2:J:4984:ASN:HB3	2:J:4987:ASN:HB2	1.85	0.58
2:J:595:ARG:NH2	2:J:631:LEU:O	2.36	0.58
2:A:3891:LEU:HD11	2:A:3899:PHE:CZ	2.39	0.58
2:A:3916:ILE:O	2:A:3920:VAL:HG23	2.04	0.58
2:G:2138:LEU:HB3	2:G:3658:LYS:HD3	1.86	0.58
2:G:4204:GLN:O	2:G:4207:MET:HG2	2.03	0.58
3:H:40:ARG:NH2	3:H:102:GLU:OE2	2.36	0.58
2:A:414:PHE:HD2	2:A:441:VAL:HG21	1.68	0.58
2:A:3805:LEU:HD21	2:A:3891:LEU:HA	1.84	0.58
2:D:3767:GLN:NE2	2:D:3806:ASN:O	2.36	0.58
2:G:1293:LEU:HG	2:G:1580:PHE:HE1	1.68	0.58
2:J:4036:VAL:HA	2:J:4153:HIS:O	2.03	0.58
2:G:699:GLY:H	2:G:1647:CYS:HB3	1.68	0.58
2:G:2305:CYS:O	2:G:2324:ASN:ND2	2.36	0.58
2:G:3844:LEU:HD12	2:G:3844:LEU:H	1.69	0.58
2:A:4551:PHE:O	2:A:4555:LEU:HD13	2.04	0.58
2:J:2499:LYS:O	2:J:2503:VAL:HG12	2.04	0.58
2:G:794:GLY:HA3	2:G:812:HIS:HB3	1.85	0.58
2:G:4823:LEU:HD12	2:A:4843:LEU:HD22	1.86	0.58
2:A:1819:VAL:HG23	2:A:1926:LEU:HD13	1.85	0.58
2:D:3647:HIS:O	2:D:3651:ASN:ND2	2.37	0.58
2:J:445:LEU:HD13	2:J:525:LEU:HD12	1.86	0.58
2:A:4231:MET:O	2:A:4235:VAL:HG23	2.04	0.58
2:D:2596:THR:HA	4:F:47:ALA:HB1	1.84	0.58
2:G:3890:LEU:HA	2:G:3893:GLU:HB2	1.86	0.58
2:G:4836:GLN:HE21	2:J:4944:ARG:HH12	1.52	0.58
2:A:478:PHE:HD1	2:A:483:MET:SD	2.27	0.58
2:D:4145:VAL:HG13	2:D:4194:TYR:HD2	1.67	0.58
2:J:2208:MET:O	2:J:2212:VAL:HG23	2.03	0.58
2:G:103:TYR:HB3	2:G:152:PRO:HD3	1.87	0.57
2:G:106:ALA:HA	2:G:149:THR:HA	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2142:TYR:CD1	2:A:2197:LEU:HD21	2.39	0.57
2:D:2271:THR:HG23	2:D:2274:ASP:H	1.69	0.57
2:D:2382:GLU:O	2:D:2386:ILE:HG12	2.03	0.57
2:A:663:TYR:HE1	2:A:745:SER:HB2	1.69	0.57
2:J:3723:MET:HE1	2:J:3793:MET:HA	1.85	0.57
3:K:105:ASN:OD1	3:K:106:LEU:N	2.37	0.57
2:G:2000:SER:O	2:G:2005:GLN:NE2	2.36	0.57
2:G:2298:VAL:HG22	2:G:2331:TYR:OH	2.04	0.57
2:A:483:MET:HE3	2:A:529:LEU:HD11	1.86	0.57
2:J:1291:LEU:HD12	2:J:1550:PRO:HG2	1.86	0.57
2:J:4569:LEU:HD11	2:J:4649:LEU:HD22	1.86	0.57
2:G:4675:LYS:HD2	2:G:4679:ARG:HH21	1.70	0.57
2:A:2894:LEU:O	2:A:2898:GLY:N	2.37	0.57
2:A:3768:SER:HA	2:A:3771:HIS:CE1	2.39	0.57
2:A:4587:PRO:HD3	2:A:4628:VAL:HG21	1.85	0.57
2:D:1103:GLY:HA3	2:D:1123:VAL:HA	1.86	0.57
2:D:4741:LEU:HD22	2:D:4743:MET:HG3	1.85	0.57
2:G:3647:HIS:O	2:G:3651:ASN:ND2	2.37	0.57
2:G:3991:GLY:O	2:G:3995:VAL:HG12	2.04	0.57
2:J:688:LEU:HD23	2:J:691:GLY:H	1.69	0.57
2:G:2349:ASN:O	2:G:2353:VAL:HG12	2.05	0.57
2:A:2238:TYR:HE2	4:C:67:PRO:HB2	1.70	0.57
2:G:2559:LEU:HD21	2:G:2603:ILE:HD13	1.87	0.57
2:A:1072:VAL:HG12	2:A:1195:GLY:HA2	1.87	0.57
2:G:2294:ASP:O	2:G:2298:VAL:HG23	2.04	0.57
2:D:3695:PRO:O	2:D:3700:GLN:NE2	2.38	0.57
2:J:590:LEU:HD23	2:J:631:LEU:HD13	1.87	0.57
2:J:2477:PRO:HD2	2:J:2536:LEU:HD11	1.86	0.57
2:A:22:LEU:HD23	2:A:22:LEU:H	1.70	0.57
2:A:1737:PRO:HD3	2:A:1771:LEU:HG	1.87	0.57
2:A:4139:ILE:O	2:A:4143:VAL:HG22	2.04	0.57
2:D:3836:MET:HB2	2:D:3884:LEU:HD21	1.87	0.57
2:D:3986:TRP:HA	2:D:3986:TRP:CE3	2.39	0.57
2:D:4779:LYS:O	2:D:4783:ILE:HG12	2.05	0.56
2:J:3647:HIS:O	2:J:3651:ASN:ND2	2.37	0.56
2:G:2522:LEU:HD11	2:G:2582:MET:HG3	1.88	0.56
2:A:2194:HIS:CB	2:A:2197:LEU:HD23	2.36	0.56
2:J:1780:PRO:HG2	3:K:42:ARG:HD3	1.86	0.56
2:G:3799:LYS:NZ	2:G:3883:ASP:OD2	2.38	0.56
2:G:4843:LEU:HD22	2:J:4823:LEU:HD12	1.87	0.56
2:A:478:PHE:CD1	2:A:483:MET:SD	2.98	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:3806:ASN:HA	2:A:3890:LEU:HD23	1.87	0.56
2:A:4195:PHE:HD2	2:A:4991:PHE:HD1	1.53	0.56
2:A:4562:LEU:HG	2:A:4657:CYS:SG	2.45	0.56
2:D:418:LEU:HA	2:D:421:PHE:CE1	2.41	0.56
2:J:1644:GLU:HB3	2:J:1646:ARG:HG3	1.88	0.56
2:J:3788:GLY:HA2	2:J:3835:LEU:HG	1.87	0.56
2:J:3980:LEU:HD22	2:J:3985:LEU:HD22	1.87	0.56
2:D:1679:ASN:ND2	2:D:1797:ARG:O	2.33	0.56
2:D:4037:ASN:HD22	2:D:4154:VAL:HG13	1.71	0.56
2:D:4159:ARG:HA	2:D:4162:ASN:ND2	2.20	0.56
2:J:411:TYR:O	2:J:415:ILE:HG12	2.06	0.56
2:G:883:ALA:HB1	2:G:907:LEU:HA	1.88	0.56
2:G:1653:LEU:HD12	2:G:1707:LEU:HD11	1.87	0.56
2:A:2144:ILE:HG12	2:A:2152:THR:HG21	1.87	0.56
3:B:37:ASP:OD1	3:B:38:SER:N	2.39	0.56
2:D:2254:LEU:HG	2:D:2258:LEU:HD23	1.86	0.56
2:D:4222:VAL:HB	2:D:4950:VAL:HG22	1.87	0.56
2:J:4021:LYS:O	2:J:4024:VAL:HG22	2.04	0.56
2:A:1773:PRO:HD3	2:A:2156:LEU:HB3	1.88	0.56
2:J:596:ASN:HB3	2:J:599:VAL:HG23	1.88	0.56
2:G:3834:ALA:O	2:G:3838:THR:HG23	2.06	0.56
2:D:1962:ALA:HA	2:D:3653:PHE:HE2	1.70	0.56
2:J:1663:HIS:HB3	2:J:1707:LEU:HD21	1.88	0.56
2:A:2894:LEU:O	2:A:2899:GLY:N	2.32	0.56
2:G:2512:ILE:HG23	2:G:2517:PHE:HD2	1.71	0.56
2:G:3943:ILE:HD11	2:G:4002:LYS:HZ1	1.71	0.56
2:D:4037:ASN:ND2	2:D:4154:VAL:HA	2.21	0.56
2:G:2308:GLN:O	2:G:2324:ASN:ND2	2.32	0.56
2:G:2520:HIS:O	2:G:2524:VAL:HG12	2.06	0.56
2:A:4072:VAL:HG22	2:A:4125:PHE:HD2	1.71	0.56
2:A:4915:VAL:O	2:A:4919:THR:HG22	2.06	0.56
2:D:3674:ILE:O	2:D:3678:SER:HB3	2.06	0.56
2:J:4981:GLU:O	2:J:4987:ASN:ND2	2.39	0.56
2:D:2680:TRP:HA	2:D:2683:PHE:CE2	2.40	0.55
2:D:4024:VAL:HG23	2:D:4146:LEU:HD22	1.89	0.55
2:D:4028:LEU:HA	2:D:4031:LEU:HD12	1.87	0.55
2:D:4055:VAL:HG22	2:D:4163:PHE:CE1	2.41	0.55
2:G:684:VAL:HG21	2:G:744:VAL:HG11	1.87	0.55
2:G:1833:SER:HB3	2:G:1836:PHE:HD2	1.71	0.55
2:A:647:ASN:ND2	2:A:820:ARG:O	2.39	0.55
2:D:4904:PRO:HG3	2:D:4913:ARG:HE	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:H:41:ASP:OD1	3:H:41:ASP:N	2.40	0.55
2:A:4048:LEU:HD11	2:A:4055:VAL:CG1	2.36	0.55
2:G:3943:ILE:HD11	2:G:4002:LYS:NZ	2.21	0.55
2:A:22:LEU:HA	2:A:202:MET:HA	1.88	0.55
2:A:4243:PHE:O	2:A:4247:ILE:HG12	2.07	0.55
2:D:1131:ARG:N	2:D:1137:GLU:O	2.39	0.55
2:J:2349:ASN:O	2:J:2353:VAL:HG12	2.06	0.55
2:J:2680:TRP:HA	2:J:2683:PHE:CE2	2.42	0.55
2:J:3722:TYR:OH	2:J:3782:MET:HG2	2.06	0.55
2:A:484:LEU:HG	2:A:485:SER:N	2.21	0.55
2:G:3924:LEU:HD12	2:G:3988:ALA:HB2	1.88	0.55
2:G:4555:LEU:HD11	2:G:4656:LEU:HB3	1.88	0.55
2:G:4578:LEU:HD12	2:A:4879:MET:HG3	1.88	0.55
2:A:495:ASN:HD22	2:A:550:LYS:HE2	1.71	0.55
2:A:853:PRO:HA	2:A:1023:PRO:HB3	1.88	0.55
2:D:3963:ASN:O	2:D:3966:THR:OG1	2.20	0.55
2:G:171:LEU:HD13	2:G:180:LEU:HD23	1.87	0.55
2:G:2332:LEU:HA	2:G:2335:LEU:HD12	1.89	0.55
2:A:2346:VAL:HG12	2:A:2349:ASN:H	1.72	0.55
2:D:3767:GLN:NE2	2:D:3804:ILE:O	2.39	0.55
2:D:4037:ASN:HD22	2:D:4154:VAL:HA	1.71	0.55
2:J:291:LEU:HA	2:J:301:VAL:HA	1.88	0.55
3:K:56:ILE:HD12	3:K:81:ALA:CB	2.37	0.55
2:A:3767:GLN:NE2	2:A:3804:ILE:O	2.40	0.55
1:M:27[A]:ASN:ND2	2:G:4942:GLU:OE2	2.40	0.55
2:G:153:ALA:HB2	2:G:170:ILE:HG12	1.89	0.55
2:J:1639:LEU:HD21	2:J:1650:ILE:HD13	1.89	0.55
3:H:56:ILE:HG21	3:H:81:ALA:HA	1.88	0.55
2:A:3640:PRO:HD2	2:A:3643:ASN:HB2	1.89	0.55
2:D:2237:CYS:O	2:D:2241:ARG:HG3	2.06	0.55
2:J:4658:ILE:HD13	2:J:4792:LEU:HB3	1.88	0.55
2:G:4562:LEU:HD21	2:G:4656:LEU:HB2	1.89	0.54
2:A:223:PHE:O	2:A:388:LEU:HB3	2.07	0.54
2:A:4708:THR:HG22	2:A:4774:LYS:HB3	1.90	0.54
2:G:1847:THR:O	2:G:1851:MET:HG2	2.07	0.54
2:J:755:ILE:HB	2:J:768:PHE:HB2	1.88	0.54
2:J:1716:ILE:HD11	2:J:1844:LEU:HA	1.89	0.54
2:G:1735:ILE:HD11	2:G:2197:LEU:HD13	1.90	0.54
2:A:1694:LEU:O	2:A:1698:LEU:HG	2.07	0.54
2:A:4679:ARG:NH2	2:A:4715:TYR:OH	2.40	0.54
3:B:105:ASN:OD1	3:B:105:ASN:N	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3835:LEU:HD22	2:G:3884:LEU:HD22	1.88	0.54
2:G:4222:VAL:HG12	2:G:4950:VAL:HG22	1.89	0.54
2:J:2286:LEU:HD12	2:J:2286:LEU:H	1.71	0.54
2:J:4865:LYS:HE2	2:J:4900:GLU:HB3	1.90	0.54
2:G:1649:ASP:HB3	2:G:1652:GLU:HG3	1.88	0.54
2:G:2435:ARG:HG2	2:G:2504:LEU:HD21	1.89	0.54
2:A:4041:ALA:O	2:A:4045:VAL:HG23	2.07	0.54
2:D:2552:ARG:HA	2:D:2599:GLN:HE22	1.72	0.54
2:A:4230:LYS:HG2	2:A:4231:MET:HE2	1.90	0.54
2:A:411:TYR:CB	2:A:486:LEU:HD11	2.38	0.54
2:A:2182:ILE:O	2:A:2185:ILE:HG22	2.08	0.54
2:A:4048:LEU:CD1	2:A:4055:VAL:CG1	2.86	0.54
2:G:561:LEU:HD11	2:G:599:VAL:HB	1.89	0.54
2:G:1580:PHE:CE2	2:G:1592:PRO:HG2	2.43	0.54
2:G:1760:HIS:HE1	2:G:2095:GLN:HE22	1.54	0.54
2:G:2128:TYR:CD2	2:G:3673:MET:HG2	2.43	0.54
2:A:437:PRO:HB2	2:A:440:ALA:HB3	1.90	0.54
2:A:505:GLU:HA	2:A:512:ALA:HB2	1.90	0.54
2:D:3986:TRP:CE3	2:D:4047:MET:SD	3.01	0.54
1:M:16[A]:CYS:SG	1:M:17[A]:CYS:N	2.81	0.54
2:A:493:ARG:O	2:A:496:VAL:HB	2.08	0.54
2:D:3992:PHE:O	2:D:3995:VAL:HG13	2.08	0.54
2:J:607:CYS:HB3	2:J:618:GLN:HE21	1.73	0.54
2:G:42:PHE:HD1	2:G:447:ASP:HB3	1.71	0.54
2:G:3904:ARG:O	2:G:3914:ASN:ND2	2.40	0.54
2:D:661:LYS:HA	2:D:749:ASP:HA	1.89	0.54
2:D:4041:ALA:O	2:D:4045:VAL:HG23	2.08	0.54
2:D:4174:PHE:HA	2:D:4177:TYR:HD2	1.72	0.54
2:A:551:LEU:HD11	2:A:589:LEU:HD22	1.90	0.53
2:D:1844:LEU:O	2:D:1848:LEU:HG	2.08	0.53
2:D:3725:TYR:O	2:D:3729:MET:HG2	2.09	0.53
2:D:4055:VAL:HG13	2:D:4163:PHE:HE1	1.72	0.53
2:J:1819:VAL:HG22	2:J:1926:LEU:HD13	1.90	0.53
2:J:4238:CYS:O	2:J:4242:ILE:HG12	2.08	0.53
3:B:25:HIS:HB3	3:B:40:ARG:NE	2.20	0.53
2:J:4821:LYS:O	2:J:4825:THR:HG23	2.09	0.53
2:A:348:VAL:HG22	2:A:357:LEU:HD21	1.90	0.53
2:A:478:PHE:HE1	2:A:483:MET:CE	2.22	0.53
2:A:488:LEU:HD11	2:A:540:PHE:CE1	2.43	0.53
2:D:2128:TYR:HD2	2:D:3669:PHE:CD2	2.25	0.53
2:J:564:LEU:O	2:J:568:LEU:HG	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:1944:GLU:HB2	2:J:2123:LEU:HD21	1.90	0.53
2:G:4823:LEU:HD21	2:A:4839:MET:HB3	1.91	0.53
2:A:349:GLN:HB2	2:A:356:TRP:CE3	2.44	0.53
2:A:4051:SER:O	2:A:4052:SER:C	2.46	0.53
2:A:4968:PHE:HE2	2:A:4978:HIS:CG	2.27	0.53
2:J:2116:LEU:O	2:J:2120:MET:HG3	2.08	0.53
2:J:3698:LEU:O	2:J:3702:VAL:HG23	2.09	0.53
2:A:45:ARG:HG2	2:A:443:LEU:HD21	1.91	0.53
2:A:3722:TYR:CE1	2:A:3726:ALA:HB2	2.44	0.53
2:D:283:ARG:HA	2:D:290:TYR:HA	1.89	0.53
3:H:61:GLU:O	3:H:65:GLN:HG3	2.09	0.53
2:J:3723:MET:HE1	2:J:3796:SER:HB2	1.91	0.53
2:A:273:HIS:N	2:A:335:GLY:HA3	2.19	0.53
2:A:495:ASN:ND2	2:A:550:LYS:HE2	2.24	0.53
3:B:91:ILE:HD12	3:B:97:LEU:HD11	1.91	0.53
2:D:1684:ALA:O	2:D:1688:HIS:ND1	2.38	0.53
2:J:1123:VAL:HG23	2:J:1132:TRP:HB2	1.90	0.53
2:J:2203:MET:O	2:J:2207:VAL:HG23	2.09	0.53
2:G:4892:ARG:NH2	2:A:4899:ASP:OD1	2.42	0.53
2:A:2194:HIS:HB2	2:A:2197:LEU:HD23	1.90	0.53
2:D:1651:LEU:H	2:D:1651:LEU:HD12	1.72	0.53
2:G:4211:LYS:NZ	7:G:5103:ATP:O3G	2.40	0.53
2:A:1096:THR:HB	2:A:1199:VAL:H	1.73	0.53
2:A:4650:HIS:HA	2:A:4653:VAL:HG12	1.90	0.53
2:A:4978:HIS:HE1	2:A:4983:HIS:CE1	2.26	0.53
2:G:637:LEU:HD12	2:G:1635:THR:HB	1.90	0.53
2:A:4179:GLY:HA3	2:A:4195:PHE:CE1	2.43	0.53
2:D:2159:LEU:O	2:D:2162:ILE:CG2	2.55	0.53
2:D:2825:LYS:HA	2:D:2935:TYR:HA	1.89	0.53
2:D:4140:GLY:O	2:D:4143:VAL:HG12	2.09	0.53
2:J:575:LEU:HD12	2:J:575:LEU:H	1.74	0.53
2:J:3696:ASP:OD1	2:J:3696:ASP:N	2.37	0.53
2:G:1087:ARG:HG2	2:G:1154:ASP:HA	1.91	0.52
2:G:2377:LEU:HG	2:G:2465:ASP:HA	1.90	0.52
2:A:223:PHE:CD2	2:A:389:PHE:HE1	2.23	0.52
2:A:4217:PHE:HE1	2:A:4233:LEU:HB3	1.73	0.52
2:D:1288:PHE:HA	2:D:1553:PHE:HA	1.91	0.52
2:G:1104:TRP:CD1	2:G:1190:PRO:HA	2.45	0.52
2:G:1206:GLN:NE2	2:G:1230:MET:O	2.39	0.52
2:D:770:ALA:HB3	2:D:1473:THR:H	1.73	0.52
2:D:3927:GLN:HB2	2:D:3992:PHE:HE1	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:3997:ALA:O	2:D:4001:MET:HG2	2.09	0.52
2:D:4793:GLY:O	2:D:4797:VAL:HG23	2.09	0.52
2:G:484:LEU:HD13	2:G:539:LEU:HD11	1.91	0.52
2:G:2104:ARG:O	2:G:2108:GLU:HG2	2.10	0.52
2:G:4208:PRO:HD2	2:G:4209:GLN:OE1	2.09	0.52
2:A:2142:TYR:CE1	2:A:2197:LEU:HD21	2.45	0.52
2:A:3798:LEU:O	2:A:3802:ILE:HG23	2.10	0.52
2:A:4968:PHE:CE2	2:A:4978:HIS:CG	2.97	0.52
2:J:2434:GLY:O	2:J:2508:ARG:NE	2.43	0.52
2:G:4024:VAL:O	2:G:4028:LEU:HG	2.10	0.52
2:A:414:PHE:CD2	2:A:441:VAL:HG21	2.45	0.52
2:J:1701:ALA:O	2:J:1830:VAL:HG23	2.09	0.52
2:A:4051:SER:O	2:A:4054:ASN:N	2.39	0.52
2:A:4901:ILE:HD12	2:A:4913:ARG:HH21	1.73	0.52
2:J:1694:LEU:HD22	2:J:1715:LEU:HB2	1.92	0.52
2:J:4677:LEU:HD23	2:J:4711:PHE:HE1	1.74	0.52
2:G:3999:MET:O	2:G:4003:LEU:HG	2.10	0.52
2:G:4338:VAL:HG21	2:A:4838:VAL:HG11	1.91	0.52
2:J:653:ALA:HB3	2:J:656:SER:HB3	1.91	0.52
2:J:2144:ILE:HG12	2:J:2152:THR:HG21	1.90	0.52
2:J:2354:VAL:O	2:J:2358:ILE:HG12	2.10	0.52
2:J:4215:ARG:O	2:J:4218:ILE:HG13	2.09	0.52
2:G:4661:TYR:OH	2:G:4786:ASP:OD2	2.27	0.52
2:A:1434:TYR:HB3	2:A:1572:ILE:HG21	1.92	0.52
2:A:3705:PHE:HB3	2:A:3778:MET:CE	2.39	0.52
2:A:4936:ILE:HD13	2:D:4927:ILE:HG12	1.91	0.52
2:D:1105:ALA:HA	2:D:1122:TYR:H	1.73	0.52
2:J:253:CYS:HA	2:J:258:SER:HB3	1.92	0.52
2:J:2894:LEU:O	2:J:2898:GLY:N	2.43	0.52
2:J:3805:LEU:HB3	2:J:3890:LEU:HB3	1.92	0.52
2:J:4687:TYR:CD2	2:J:4706:LEU:HD11	2.42	0.52
2:G:441:VAL:HG23	2:G:518:ILE:HD11	1.91	0.52
2:A:565:TYR:HE2	2:A:601:ASP:HB3	1.74	0.52
2:A:2559:LEU:HG	2:A:2560:PRO:HD3	1.92	0.52
2:A:4219:PHE:HD1	2:A:4950:VAL:HG21	1.75	0.52
4:C:31:LYS:O	4:C:35:THR:HG23	2.10	0.52
2:D:3674:ILE:HD11	2:D:3698:LEU:HD11	1.91	0.52
2:D:3986:TRP:CH2	2:D:4044:MET:HG2	2.45	0.52
2:J:3701:LEU:HD21	2:J:3725:TYR:CD2	2.40	0.52
2:D:4242:ILE:HG22	5:D:5101:CFF:H143	1.91	0.52
2:G:4838:VAL:HG11	2:J:4338:VAL:HG21	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:1476:MET:O	2:A:1484:HIS:N	2.43	0.52
2:J:3889:GLN:HG3	2:J:3967:GLU:HG3	1.92	0.52
3:K:76:CYS:SG	3:K:80:VAL:HG11	2.50	0.52
2:G:1476:MET:O	2:G:1484:HIS:N	2.43	0.51
1:M:9[B]:ARG:HA	1:M:31[B]:ARG:HG2	1.91	0.51
3:H:22:CYS:N	3:H:48:PHE:O	2.39	0.51
2:D:3888:LEU:HD13	2:D:3968:TYR:OH	2.10	0.51
2:G:449:ILE:HD12	2:G:521:LEU:HD23	1.92	0.51
2:A:500:ALA:HB2	2:A:515:TRP:CE3	2.45	0.51
2:J:1551:ALA:HB1	2:J:1553:PHE:CE2	2.46	0.51
2:J:1708:ARG:HH12	2:J:1837:GLN:HA	1.75	0.51
2:J:3719:ASP:OD1	2:J:3719:ASP:N	2.44	0.51
2:A:499:THR:HB	2:A:502:HIS:CB	2.40	0.51
2:A:1844:LEU:HD12	2:A:1848:LEU:HD23	1.93	0.51
2:A:4195:PHE:CE2	2:A:4991:PHE:HB2	2.45	0.51
2:D:3962:PHE:O	2:D:3966:THR:HG23	2.11	0.51
2:J:3820:LEU:HD13	2:J:3902:TYR:HE2	1.75	0.51
2:G:591:ASP:O	2:G:1594:ARG:NH1	2.43	0.51
2:J:4927:ILE:O	2:J:4931:ILE:HG12	2.10	0.51
2:G:1580:PHE:HE2	2:G:1592:PRO:HG2	1.75	0.51
2:A:3828:PHE:O	2:A:3832:ILE:HG12	2.10	0.51
2:D:2350:ALA:HB1	2:D:2436:CYS:HB3	1.93	0.51
4:C:66:PHE:CZ	4:C:70:LEU:HD11	2.46	0.51
2:D:4181:ILE:HG22	2:D:4182:GLU:H	1.74	0.51
2:J:498:THR:HG22	2:J:499:THR:N	2.22	0.51
3:K:24:VAL:HB	3:K:101:VAL:HG23	1.91	0.51
2:G:4849:TYR:CE1	2:J:4578:LEU:HD13	2.46	0.51
2:A:1868:PRO:O	2:A:1872:THR:OG1	2.23	0.51
2:J:269:TRP:CE2	2:J:272:SER:HB3	2.45	0.51
2:G:4059:LEU:HD12	2:G:4163:PHE:CE1	2.45	0.51
2:A:591:ASP:OD1	2:A:1594:ARG:NH1	2.44	0.51
2:A:3900:GLN:HB3	2:A:3976:ASN:HD21	1.76	0.51
2:J:3723:MET:CE	2:J:3796:SER:HB2	2.41	0.51
3:K:58:GLY:HA3	3:K:80:VAL:CG1	2.41	0.51
2:G:683:ARG:HG2	2:G:717:ASP:HB3	1.92	0.51
2:G:1947:CYS:HB2	2:G:2126:ARG:NH2	2.26	0.51
2:G:3934:TYR:HB2	2:G:3999:MET:HE3	1.93	0.51
2:A:3927:GLN:HE21	2:A:3991:GLY:HA3	1.76	0.51
2:D:3798:LEU:HD12	2:D:3884:LEU:HA	1.93	0.51
2:D:4854:VAL:HG13	2:D:4858:PHE:CE1	2.46	0.51
2:J:470:SER:HA	2:J:473:ASN:HD21	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:487:VAL:HG13	2:G:522:LEU:HD11	1.93	0.50
2:G:1931:LEU:HD22	2:G:1935:VAL:HG11	1.92	0.50
2:G:2248:ARG:HD3	2:G:2286:LEU:HD22	1.91	0.50
2:G:3805:LEU:HD11	2:G:3816:MET:HE1	1.93	0.50
2:G:4961:CYS:SG	2:G:4983:HIS:HE1	2.30	0.50
2:A:561:LEU:HD11	2:A:599:VAL:HG22	1.93	0.50
2:A:633:LEU:HB3	2:A:1639:LEU:HD11	1.93	0.50
2:D:2094:LEU:O	2:D:2098:VAL:HG22	2.10	0.50
2:D:4890:GLY:O	2:D:4892:ARG:N	2.42	0.50
2:J:1577:ALA:O	2:J:1584:ARG:NE	2.40	0.50
2:J:4028:LEU:HG	2:J:4146:LEU:HD22	1.92	0.50
2:G:579:GLN:H	2:G:582:HIS:HD2	1.59	0.50
2:G:4888:TYR:CD1	2:A:4914:VAL:HG22	2.45	0.50
2:A:218:HIS:ND1	2:A:218:HIS:C	2.65	0.50
2:A:232:THR:OG1	2:A:257:ARG:O	2.27	0.50
2:A:790:ARG:NH1	2:A:1624:LEU:O	2.44	0.50
2:A:1802:ILE:HD13	2:A:1807:LEU:HD22	1.92	0.50
2:D:3986:TRP:HE3	2:D:4047:MET:SD	2.34	0.50
2:G:800:PHE:HE2	2:G:810:PRO:HB3	1.76	0.50
2:A:684:VAL:HG12	2:A:781:VAL:HG22	1.94	0.50
2:J:4825:THR:HG22	2:J:4947:GLN:HE22	1.75	0.50
2:G:1772:ARG:NH2	2:G:1952:GLN:OE1	2.40	0.50
2:G:2238:TYR:CE2	4:I:67:PRO:HB2	2.47	0.50
2:A:668:VAL:HA	2:A:789:VAL:HG23	1.92	0.50
2:A:1650:ILE:HG22	2:A:1651:LEU:HD12	1.92	0.50
2:A:3790:THR:HG22	2:A:3835:LEU:HD23	1.93	0.50
2:D:3729:MET:HA	2:D:3732:SER:HB3	1.92	0.50
2:J:2377:LEU:HD21	2:J:2468:GLY:HA3	1.93	0.50
2:G:746:CYS:HA	2:G:757:PHE:HA	1.93	0.50
2:G:629:ARG:NH2	3:H:90:VAL:O	2.44	0.50
2:G:3990:VAL:HG13	2:G:4051:SER:HB3	1.94	0.50
2:D:1839:VAL:HG21	2:D:1934:SER:HB2	1.94	0.50
2:D:3674:ILE:HG21	2:D:3732:SER:HB2	1.94	0.50
2:J:1473:THR:HA	2:J:1488:LYS:HA	1.94	0.50
2:A:596:ASN:HB3	2:A:599:VAL:HG23	1.94	0.50
2:A:4048:LEU:CD1	2:A:4055:VAL:CB	2.87	0.50
2:A:4921:PHE:HD1	2:A:4925:ILE:HD13	1.75	0.50
2:D:2463:LEU:O	2:D:2467:VAL:HG23	2.11	0.50
2:J:595:ARG:NH1	2:J:1643:GLU:OE2	2.44	0.50
2:J:1835:GLU:HB2	2:J:1932:PRO:HG3	1.94	0.50
2:J:4873:ASP:N	2:J:4873:ASP:OD1	2.43	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:495:ASN:HD21	2:G:553:ARG:NH1	2.10	0.50
2:A:2125:HIS:NE2	2:A:3724:ALA:HB1	2.27	0.50
2:D:1007:TYR:HE2	2:D:1022:VAL:HG22	1.77	0.50
2:D:2377:LEU:HD23	2:D:2378:ALA:H	1.77	0.50
2:D:4017:LEU:HD12	2:D:4139:ILE:HG21	1.93	0.50
2:D:4045:VAL:O	2:D:4049:VAL:HG13	2.12	0.50
2:G:1653:LEU:HD13	2:G:1660:GLN:HA	1.94	0.50
2:G:4914:VAL:HG21	2:J:4884:LEU:HD21	1.93	0.50
2:A:248:GLU:HA	2:A:372:LEU:O	2.12	0.50
2:A:4211:LYS:O	2:A:4215:ARG:HG2	2.11	0.50
2:A:4848:VAL:HG11	2:A:4887:MET:HG2	1.93	0.50
2:J:3900:GLN:NE2	2:J:3968:TYR:O	2.45	0.50
2:G:473:ASN:O	2:G:477:LEU:HG	2.12	0.49
2:G:2195:PRO:HB3	2:G:2242:ILE:CG2	2.41	0.49
2:A:639:ASN:HD22	2:A:676:THR:HG21	1.77	0.49
2:A:3768:SER:HA	2:A:3771:HIS:ND1	2.27	0.49
2:A:3991:GLY:O	2:A:3995:VAL:HG12	2.12	0.49
2:A:4331:LEU:HD12	2:A:4334:LEU:HD21	1.93	0.49
2:A:5017:ARG:NH1	2:A:5019:TRP:HZ2	2.10	0.49
2:D:1218:GLY:O	2:D:1223:PHE:N	2.34	0.49
2:D:3669:PHE:CZ	2:D:3728:ILE:HD11	2.47	0.49
2:J:3832:ILE:HD11	2:J:3884:LEU:HD11	1.94	0.49
2:G:689:THR:HA	2:G:778:PHE:HE2	1.76	0.49
2:G:1732:SER:OG	2:G:1733:GLU:OE2	2.27	0.49
2:G:4181:ILE:HG23	2:G:4193:ILE:HB	1.95	0.49
2:G:4823:LEU:HD12	2:A:4843:LEU:HD13	1.94	0.49
2:A:67:PHE:HB3	2:A:109:LEU:HD12	1.94	0.49
2:A:3890:LEU:HA	2:A:3893:GLU:HB2	1.95	0.49
2:J:1091:GLU:HA	2:J:1150:GLY:HA2	1.94	0.49
2:J:4581:LYS:HD2	2:J:4632:LEU:HD22	1.93	0.49
4:L:102:SER:HA	4:L:136:GLN:HA	1.94	0.49
3:H:77:THR:HG23	3:H:80:VAL:HG12	1.94	0.49
2:A:1434:TYR:HB2	2:A:1519:LEU:HB3	1.94	0.49
2:A:3897:ASN:O	2:A:3901:ASN:ND2	2.45	0.49
2:D:2212:VAL:HG22	2:D:2256:TYR:CZ	2.47	0.49
2:J:551:LEU:HD21	2:J:589:LEU:HD12	1.94	0.49
2:J:561:LEU:HD21	2:J:598:LYS:HB3	1.94	0.49
2:J:591:ASP:O	2:J:1594:ARG:NH1	2.44	0.49
2:G:1713:ASP:HA	2:G:1716:ILE:HG12	1.94	0.49
2:G:3977:GLN:HG2	2:G:4030:LEU:HD23	1.93	0.49
2:D:666:VAL:HA	2:D:791:PHE:HA	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:2238:TYR:O	2:D:2242:ILE:HG12	2.11	0.49
2:J:537:CYS:O	2:J:541:SER:OG	2.29	0.49
2:G:233:ILE:HD13	2:G:284:HIS:CE1	2.47	0.49
2:G:3641:LEU:HA	2:G:3644:LEU:HD23	1.95	0.49
2:A:1719:HIS:CD2	2:A:1800:PRO:HB2	2.48	0.49
2:A:4923:PHE:O	2:A:4928:LEU:HD23	2.11	0.49
2:D:1639:LEU:N	2:D:1648:MET:O	2.46	0.49
2:D:4837:LEU:HD11	2:D:4932:ILE:HG23	1.94	0.49
2:J:4920:PHE:CZ	2:J:4924:VAL:HG11	2.47	0.49
2:G:4024:VAL:HG13	2:G:4146:LEU:HD22	1.93	0.49
3:H:71:ARG:HG2	3:H:102:GLU:HB2	1.92	0.49
2:A:3992:PHE:HB3	2:A:3996:PHE:CE2	2.47	0.49
2:A:4817:ALA:HA	2:A:4823:LEU:HD12	1.94	0.49
2:D:2000:SER:O	2:D:2005:GLN:NE2	2.37	0.49
2:D:3677:LEU:HD12	2:D:3697:PRO:HB2	1.95	0.49
2:J:283:ARG:HA	2:J:291:LEU:H	1.77	0.49
2:J:4679:ARG:NH1	2:J:4715:TYR:OH	2.34	0.49
2:G:1859:VAL:O	2:G:1863:LEU:HD23	2.11	0.49
2:D:2868:SER:O	2:D:2872:GLN:N	2.42	0.49
2:D:3732:SER:OG	2:D:3733:CYS:N	2.45	0.49
2:A:173:SER:HB3	2:A:178:ARG:H	1.78	0.49
2:A:3705:PHE:HB3	2:A:3778:MET:HE2	1.94	0.49
4:C:101:ILE:O	4:C:137:VAL:N	2.46	0.49
2:D:2283:ASN:HB3	2:D:2286:LEU:HD12	1.93	0.49
2:D:4126:GLU:O	2:D:4130:ASN:ND2	2.46	0.49
2:J:4093:PHE:O	2:J:4097:MET:HG3	2.13	0.49
2:G:1097:THR:HA	2:G:1143:TRP:HZ3	1.77	0.49
2:A:1607:ARG:NH2	2:A:1610:ASN:OD1	2.46	0.49
2:A:4898:GLY:HA2	2:A:4913:ARG:HH22	1.77	0.49
2:A:4953:ASP:HA	2:A:4956:THR:HG22	1.93	0.49
2:D:280:LEU:N	2:D:314:PHE:O	2.45	0.49
2:J:2294:ASP:O	2:J:2298:VAL:HG23	2.13	0.49
2:G:262:LEU:H	2:G:262:LEU:HD23	1.77	0.49
2:G:499:THR:HA	2:G:515:TRP:CZ3	2.48	0.49
2:G:1104:TRP:CH2	2:G:1153:ILE:HB	2.48	0.49
2:G:1232:ARG:NH2	2:G:1828:ASP:O	2.45	0.49
2:G:1673:VAL:HG12	2:G:1681:VAL:HG11	1.95	0.49
2:G:4218:ILE:HD11	2:G:4954:MET:SD	2.53	0.49
2:A:483:MET:CE	2:A:529:LEU:HD11	2.43	0.49
2:A:1771:LEU:HB3	2:A:2153:MET:HE1	1.94	0.49
2:D:2894:LEU:O	2:D:2898:GLY:N	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:3985:LEU:O	2:D:3989:VAL:HG23	2.12	0.49
2:D:4773:VAL:O	2:D:4777:ILE:HG23	2.13	0.49
2:G:2247:GLN:HG2	2:G:2279:SER:HA	1.94	0.48
2:A:222:LEU:HD12	2:A:388:LEU:HB2	1.95	0.48
2:A:478:PHE:CE1	2:A:483:MET:HG2	2.47	0.48
2:A:637:LEU:HD13	2:A:1635:THR:HG21	1.94	0.48
2:A:1143:TRP:CD1	2:A:1164:LEU:HD21	2.48	0.48
2:A:2500:ALA:HB2	2:A:2553:TYR:CD2	2.48	0.48
2:G:1115:LEU:HG	2:G:1123:VAL:HG11	1.95	0.48
2:D:864:PRO:O	2:D:868:GLU:N	2.44	0.48
2:J:842:PRO:HG2	2:J:1196:PRO:HA	1.95	0.48
2:J:1270:LEU:HD21	2:J:1591:CYS:SG	2.53	0.48
2:G:2461:VAL:O	2:G:2510:TYR:OH	2.29	0.48
2:A:247:TYR:CE2	2:A:359:TYR:HB3	2.48	0.48
2:A:1235:THR:HG22	2:A:1610:ASN:HD21	1.76	0.48
2:A:4222:VAL:HG11	2:A:4950:VAL:HA	1.95	0.48
2:J:5027:CYS:SG	2:J:5028:PHE:N	2.86	0.48
2:G:3698:LEU:O	2:G:3702:VAL:HG23	2.11	0.48
2:A:4143:VAL:O	2:A:4147:LEU:HG	2.13	0.48
2:D:3998:HIS:O	2:D:4001:MET:N	2.45	0.48
2:G:530:ILE:HD11	2:G:537:CYS:HA	1.96	0.48
2:G:1297:PHE:HE2	2:G:1525:GLY:HA2	1.78	0.48
2:G:2254:LEU:O	2:G:2258:LEU:HG	2.14	0.48
2:G:2509:VAL:HG13	2:G:2510:TYR:HD1	1.79	0.48
3:E:74:LEU:HD12	3:E:101:VAL:HB	1.96	0.48
2:A:1932:PRO:O	2:A:1936:LYS:HG3	2.14	0.48
2:G:909:ASN:HA	2:G:967:PRO:HA	1.96	0.48
2:A:265:LEU:HD12	2:A:279:PRO:HB2	1.95	0.48
2:A:2503:VAL:HG11	2:A:2557:ALA:HB1	1.96	0.48
2:D:1784:ALA:HA	3:E:55:VAL:HA	1.95	0.48
2:J:1849:LEU:HB2	2:J:1854:PHE:HD2	1.78	0.48
3:H:62:GLY:HA3	3:H:74:LEU:HD11	1.94	0.48
2:A:5017:ARG:HH11	2:A:5019:TRP:HZ2	1.62	0.48
2:D:118:LEU:HA	2:D:137:LEU:HA	1.96	0.48
2:D:2247:GLN:NE2	2:D:2281:ILE:O	2.37	0.48
2:J:2281:ILE:HB	2:J:2337:PHE:HD2	1.77	0.48
2:J:3892:CYS:SG	2:J:3968:TYR:HA	2.54	0.48
2:G:355:LEU:HD22	2:G:380:GLN:HA	1.96	0.48
2:G:1104:TRP:HA	2:G:1191:VAL:HG12	1.95	0.48
2:G:2125:HIS:NE2	2:G:3724:ALA:HB1	2.28	0.48
2:G:3648:ARG:HA	2:G:3651:ASN:HD22	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:223:PHE:HD2	2:A:389:PHE:CE1	2.26	0.48
2:A:4217:PHE:CE1	2:A:4233:LEU:HB3	2.48	0.48
2:G:4839:MET:HB3	2:J:4823:LEU:HD21	1.96	0.47
3:H:10:GLY:HA3	3:H:70:GLN:HB2	1.95	0.47
2:A:500:ALA:O	2:A:504:ALA:HB3	2.14	0.47
2:A:590:LEU:HB2	2:A:599:VAL:HG11	1.95	0.47
2:A:752:VAL:HG22	2:A:754:SER:H	1.78	0.47
2:A:3782:MET:CE	2:A:3793:MET:HG3	2.44	0.47
2:A:4658:ILE:HD13	2:A:4792:LEU:HB3	1.95	0.47
2:D:4567:LEU:HD21	2:D:4816:ILE:HG13	1.95	0.47
2:D:4985:LEU:HD12	2:D:4985:LEU:H	1.78	0.47
2:G:1289:LEU:HD22	2:G:1552:VAL:HG13	1.96	0.47
2:A:618:GLN:NE2	2:A:1673:VAL:O	2.47	0.47
2:A:4219:PHE:CD1	2:A:4950:VAL:HG21	2.49	0.47
2:A:4991:PHE:CE2	2:A:5010:VAL:HG11	2.44	0.47
2:J:842:PRO:O	2:J:1197:GLY:N	2.43	0.47
2:J:2006:ILE:HD13	2:J:2009:LEU:HD21	1.96	0.47
2:G:3648:ARG:HG3	2:G:3652:MET:CE	2.45	0.47
3:H:28:GLY:HA2	3:H:99:PHE:HA	1.96	0.47
2:A:350:HIS:H	2:A:357:LEU:HD23	1.79	0.47
2:A:478:PHE:CE1	2:A:483:MET:HE3	2.49	0.47
2:A:2472:LEU:HD23	2:A:2473:PRO:HD2	1.96	0.47
2:D:3881:THR:HG21	2:D:3922:TYR:OH	2.14	0.47
2:D:4179:GLY:HA3	2:D:4197:ILE:HD11	1.95	0.47
2:J:445:LEU:CD1	2:J:525:LEU:HD12	2.42	0.47
2:J:2040:ALA:HA	2:J:2045:GLN:HA	1.96	0.47
2:J:2287:ALA:O	2:J:2349:ASN:ND2	2.44	0.47
2:J:2335:LEU:HB3	2:J:2432:LEU:HD13	1.96	0.47
2:J:2500:ALA:HB2	2:J:2553:TYR:HD1	1.79	0.47
2:G:1093:GLU:HG3	2:G:1148:VAL:HG12	1.95	0.47
2:G:1848:LEU:HD13	2:G:1853:ILE:HD12	1.95	0.47
2:A:1451:GLY:HA3	2:A:1494:MET:HA	1.95	0.47
2:A:2367:ALA:O	2:A:2373:GLY:N	2.48	0.47
2:A:3800:LEU:O	2:A:3804:ILE:HG22	2.14	0.47
2:A:4193:ILE:H	2:A:4193:ILE:HD12	1.79	0.47
2:J:1698:LEU:HD12	2:J:1712:TYR:CZ	2.49	0.47
2:J:3967:GLU:OE1	2:J:3967:GLU:HA	2.15	0.47
2:G:2006:ILE:HG21	2:G:3653:PHE:HA	1.95	0.47
2:G:4998:LYS:HG2	2:G:5003:HIS:CE1	2.49	0.47
2:A:3809:ASN:ND2	2:A:3812:VAL:HG23	2.29	0.47
2:A:4968:PHE:HE2	2:A:4978:HIS:ND1	2.12	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:3677:LEU:HD11	2:D:3698:LEU:CD2	2.40	0.47
2:D:3966:THR:O	2:D:3970:GLN:N	2.48	0.47
2:J:753:PRO:HB2	2:J:770:ALA:H	1.79	0.47
2:J:1926:LEU:HG	2:J:1939:MET:CE	2.44	0.47
2:J:2868:SER:O	2:J:2872:GLN:N	2.46	0.47
2:J:4021:LYS:HG3	2:J:4142:ASN:ND2	2.29	0.47
2:G:681:HIS:CE1	2:G:683:ARG:HE	2.32	0.47
2:G:3771:HIS:NE2	2:G:3815:LYS:HE2	2.29	0.47
2:A:546:TRP:O	2:A:550:LYS:HG2	2.13	0.47
2:A:626:LEU:HD12	2:A:1688:HIS:CE1	2.50	0.47
2:A:2182:ILE:HD11	2:A:2231:SER:OG	2.13	0.47
2:A:2566:ALA:HA	2:A:2569:PHE:HD2	1.79	0.47
2:D:1962:ALA:HA	2:D:3653:PHE:CE2	2.49	0.47
2:D:4108:ILE:O	2:D:4112:LEU:HD23	2.14	0.47
2:J:632:LEU:HD13	2:J:1666:THR:HG23	1.96	0.47
2:J:1962:ALA:HA	2:J:3653:PHE:CE2	2.50	0.47
2:A:4045:VAL:O	2:A:4049:VAL:HG13	2.15	0.47
2:A:4215:ARG:NH1	7:A:5103:ATP:O1A	2.47	0.47
2:D:1638:ALA:HA	2:D:1649:ASP:HA	1.97	0.47
2:D:3674:ILE:HA	2:D:3677:LEU:HD23	1.96	0.47
2:J:35:LEU:HD12	2:J:182:LEU:HD21	1.97	0.47
2:J:483:MET:O	2:J:487:VAL:HG12	2.14	0.47
2:J:618:GLN:OE1	2:J:1678:ASN:ND2	2.43	0.47
2:J:736:HIS:HB2	2:J:739:ALA:HB2	1.96	0.47
2:J:794:GLY:O	2:J:798:GLY:N	2.47	0.47
2:J:2107:GLN:O	2:J:3694:LYS:NZ	2.47	0.47
2:J:5036:LEU:H	2:J:5036:LEU:HD12	1.80	0.47
3:K:25:HIS:HB3	3:K:40:ARG:HH21	1.78	0.47
2:G:4569:LEU:O	2:G:4573:ILE:HG22	2.14	0.47
2:J:180:LEU:HA	2:J:193:ALA:HA	1.96	0.47
2:J:650:VAL:O	2:J:777:PHE:N	2.44	0.47
2:J:4207:MET:HB2	2:J:4210:VAL:HG22	1.97	0.47
2:G:689:THR:HG22	2:G:776:LEU:H	1.79	0.47
2:A:3891:LEU:HD12	2:A:3891:LEU:O	2.14	0.47
2:D:4031:LEU:HD21	2:D:4044:MET:HG3	1.96	0.47
2:J:4218:ILE:O	2:J:4222:VAL:HG23	2.14	0.47
3:K:58:GLY:HA3	3:K:80:VAL:HG13	1.97	0.47
2:G:791:PHE:N	2:G:1626:TRP:O	2.39	0.47
2:G:3996:PHE:HD2	2:G:4020:GLN:HG2	1.80	0.47
2:A:672:VAL:HB	2:A:675:LEU:HB2	1.97	0.47
2:A:2138:LEU:HD13	2:A:3658:LYS:CB	2.45	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:3985:LEU:HG	2:A:3986:TRP:N	2.30	0.47
2:D:667:MET:N	2:D:790:ARG:O	2.47	0.47
2:D:3989:VAL:CG1	2:D:4027:LEU:HD21	2.39	0.47
2:D:4059:LEU:HD21	2:D:4166:LEU:C	2.35	0.47
2:J:35:LEU:CD1	2:J:182:LEU:HD21	2.45	0.47
2:G:4933:GLN:O	2:G:4937:ILE:HG12	2.15	0.46
2:G:5000:GLU:HA	2:G:5003:HIS:CD2	2.50	0.46
3:H:4:ILE:HD13	3:H:65:GLN:OE1	2.15	0.46
2:A:281:ARG:HB3	2:A:290:TYR:HD2	1.80	0.46
2:A:2298:VAL:HG21	2:A:2334:PHE:HE2	1.80	0.46
2:A:3836:MET:HA	2:A:3839:CYS:SG	2.55	0.46
2:A:4214:LYS:O	2:A:4218:ILE:HG22	2.15	0.46
2:D:78:LEU:HD21	2:D:174:VAL:HG11	1.97	0.46
2:D:2098:VAL:O	2:D:2102:VAL:HG12	2.14	0.46
2:D:4186:ALA:HB2	2:D:5009:TYR:CE2	2.50	0.46
2:D:4705:VAL:HB	2:D:4778:TRP:CD1	2.50	0.46
2:J:647:ASN:HD21	2:J:821:LEU:HA	1.78	0.46
2:G:695:TYR:HH	2:G:1241:SER:HG	1.60	0.46
2:G:853:PRO:HA	2:G:1023:PRO:HB3	1.97	0.46
2:G:3986:TRP:O	2:G:3990:VAL:HG23	2.14	0.46
2:A:516:LYS:O	2:A:519:VAL:HG12	2.15	0.46
2:D:1237:TRP:CD1	2:D:1607:ARG:HA	2.50	0.46
2:D:2506:LEU:HD23	2:D:2510:TYR:HB2	1.98	0.46
2:J:421:PHE:CZ	2:J:507:ALA:HA	2.51	0.46
2:J:745:SER:O	2:J:758:ARG:N	2.48	0.46
2:G:600:LEU:HD23	2:G:600:LEU:HA	1.78	0.46
2:A:2458:ARG:HH21	2:A:2510:TYR:HA	1.81	0.46
2:A:3809:ASN:OD1	2:A:3811:GLU:N	2.48	0.46
2:A:3996:PHE:HB3	2:A:4020:GLN:NE2	2.30	0.46
2:D:1694:LEU:HA	2:D:1711:TYR:HD2	1.80	0.46
2:J:1076:ARG:HB3	2:J:1191:VAL:HG23	1.97	0.46
2:J:4178:LEU:HD11	2:J:4194:TYR:HB3	1.96	0.46
2:A:2323:TRP:CH2	2:A:2422:ILE:HG12	2.49	0.46
2:A:2324:ASN:ND2	2:A:2324:ASN:O	2.48	0.46
2:A:4991:PHE:O	2:A:4995:LEU:HD13	2.14	0.46
4:C:67:PRO:HA	4:C:70:LEU:HD12	1.98	0.46
2:D:666:VAL:HB	2:D:744:VAL:HB	1.98	0.46
2:D:1855:GLY:O	2:D:1859:VAL:HG13	2.15	0.46
2:D:2128:TYR:HB2	2:D:3673:MET:CE	2.46	0.46
2:D:2280:VAL:HG11	2:D:2338:ALA:HA	1.97	0.46
2:D:4702:ASP:O	2:D:4706:LEU:HG	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:500:ALA:HA	2:J:504:ALA:HB3	1.97	0.46
2:J:1575:LEU:HD23	2:J:1575:LEU:H	1.81	0.46
2:G:4150:LEU:HB3	2:G:4160:LEU:HD21	1.96	0.46
2:G:4729:GLY:HA2	2:G:4737:ILE:HG13	1.97	0.46
2:A:225:GLY:HA2	2:A:389:PHE:CZ	2.51	0.46
2:A:5027:CYS:SG	2:A:5028:PHE:N	2.88	0.46
2:D:1164:LEU:N	2:D:1167:GLU:O	2.48	0.46
2:D:4031:LEU:HD11	2:D:4146:LEU:CD1	2.46	0.46
2:J:256:ALA:HB1	2:J:286:THR:HG21	1.96	0.46
2:J:591:ASP:HA	2:J:631:LEU:HD21	1.97	0.46
2:J:1717:SER:HA	2:J:1721:GLU:HB2	1.96	0.46
2:G:842:PRO:HG2	2:G:1196:PRO:HA	1.97	0.46
2:A:1116:GLY:H	2:A:1121:ALA:HB3	1.80	0.46
2:A:1842:LEU:HD23	2:A:1938:GLN:HB2	1.97	0.46
2:D:668:VAL:N	2:D:742:ASP:O	2.49	0.46
2:J:3815:LYS:HE3	2:J:3815:LYS:HB2	1.67	0.46
2:J:4150:LEU:HD13	2:J:4150:LEU:HA	1.72	0.46
3:K:62:GLY:O	3:K:66:MET:HG2	2.15	0.46
2:G:487:VAL:O	2:G:491:ILE:HG22	2.15	0.46
2:G:668:VAL:HG22	2:G:789:VAL:HG23	1.96	0.46
2:G:1667:LEU:O	2:G:1671:ARG:HG3	2.16	0.46
2:D:1689:VAL:HG13	2:D:1691:GLN:H	1.79	0.46
2:J:1291:LEU:HD13	2:J:1595:LEU:HD11	1.98	0.46
2:J:3677:LEU:HD11	2:J:3698:LEU:HD13	1.97	0.46
2:G:733:PRO:HG2	2:G:762:CYS:HB3	1.98	0.46
2:G:1717:SER:HA	2:G:1721:GLU:HB2	1.97	0.46
2:A:49:LEU:HD23	2:A:49:LEU:H	1.80	0.46
2:D:2155:LEU:HD22	2:D:2190:VAL:HB	1.98	0.46
2:D:3771:HIS:CE1	2:D:3815:LYS:HD3	2.51	0.46
2:J:566:CYS:HA	2:J:569:ILE:HG22	1.98	0.46
2:J:1494:MET:HE3	2:J:1495:VAL:H	1.81	0.46
2:G:2295:LEU:O	2:G:2299:VAL:HG23	2.15	0.46
2:G:4039:MET:O	2:G:4043:GLN:HG3	2.15	0.46
2:A:401:ALA:HA	2:A:404:ILE:HD12	1.97	0.46
2:A:2178:MET:O	2:A:2182:ILE:HG23	2.16	0.46
2:D:1526:LEU:HA	2:D:1541:GLN:HA	1.97	0.46
2:D:4055:VAL:CG1	2:D:4163:PHE:HZ	2.11	0.46
3:E:30:LEU:HD11	3:E:92:PRO:HD2	1.98	0.46
2:J:703:GLY:N	2:J:1647:CYS:SG	2.89	0.46
2:J:3645:PRO:HG2	2:J:3648:ARG:HD3	1.96	0.46
3:K:61:GLU:O	3:K:65:GLN:HG3	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:K:74:LEU:HB2	3:K:99:PHE:HB2	1.98	0.46
2:G:1802:ILE:HG13	2:G:1803:PRO:HD2	1.98	0.46
2:G:4849:TYR:HE1	2:J:4578:LEU:HD13	1.80	0.46
2:A:461:HIS:ND1	2:A:3707:ARG:HG2	2.31	0.46
2:D:2307:LEU:N	2:D:2322:GLY:O	2.46	0.46
2:D:2696:TYR:HE2	2:D:2997:PHE:HA	1.80	0.46
2:D:3805:LEU:HD23	2:D:3890:LEU:HB3	1.97	0.46
2:J:2126:ARG:HE	2:J:2126:ARG:HB3	1.62	0.46
2:J:2159:LEU:HA	2:J:2162:ILE:HD12	1.98	0.46
2:J:3986:TRP:O	2:J:3990:VAL:HG12	2.16	0.46
2:G:3817:LEU:HD22	2:G:3899:PHE:HD1	1.81	0.45
2:G:4141:PHE:HZ	2:G:4195:PHE:O	1.99	0.45
2:A:483:MET:HE2	2:A:483:MET:HB2	1.75	0.45
2:A:842:PRO:HD3	2:A:1073:ARG:HD2	1.98	0.45
2:A:3841:VAL:HG21	2:A:3925:ARG:HD2	1.98	0.45
2:A:4031:LEU:HD12	2:A:4031:LEU:O	2.16	0.45
2:D:2207:VAL:HA	2:D:2210:VAL:HG12	1.99	0.45
2:D:4181:ILE:HG22	2:D:4182:GLU:N	2.31	0.45
2:J:149:THR:N	2:J:172:VAL:O	2.48	0.45
2:J:2458:ARG:NE	2:J:2510:TYR:HA	2.31	0.45
2:J:3762:ARG:HH12	2:J:4756:ARG:H	1.63	0.45
2:J:4231:MET:O	2:J:4235:VAL:HG13	2.16	0.45
2:G:551:LEU:HD12	2:G:551:LEU:O	2.16	0.45
2:G:551:LEU:HD11	2:G:589:LEU:HD13	1.98	0.45
2:A:2285:GLU:HA	2:A:2288:LEU:HD12	1.97	0.45
2:D:784:SER:OG	2:D:785:ALA:N	2.49	0.45
2:D:1848:LEU:HB2	2:D:1854:PHE:CZ	2.52	0.45
2:D:4181:ILE:HG23	2:D:4988:TYR:CE1	2.51	0.45
3:E:67:SER:H	3:E:70:GLN:HE21	1.63	0.45
2:J:4024:VAL:HG21	2:J:4142:ASN:HB2	1.97	0.45
2:G:563:VAL:O	2:G:567:VAL:HG12	2.15	0.45
2:A:414:PHE:O	2:A:414:PHE:HD1	1.98	0.45
2:A:2121:PHE:HB3	2:A:3725:TYR:HE2	1.82	0.45
2:A:3990:VAL:HG13	2:A:4051:SER:HB2	1.98	0.45
2:D:418:LEU:HA	2:D:421:PHE:HE1	1.81	0.45
2:D:3794:VAL:HG11	2:D:3835:LEU:HD11	1.97	0.45
2:J:445:LEU:HB3	2:J:521:LEU:HD12	1.97	0.45
2:J:1683:HIS:NE2	2:J:1798:LEU:O	2.50	0.45
2:G:2463:LEU:O	2:G:2467:VAL:HG23	2.15	0.45
2:G:4654:ALA:O	2:G:4658:ILE:HG22	2.17	0.45
2:A:4994:TYR:CZ	2:A:4998:LYS:HD3	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:2358:ILE:HD11	2:J:195:PHE:CE2	2.51	0.45
2:D:4338:VAL:HG21	2:J:4838:VAL:HG11	1.97	0.45
2:G:2680:TRP:HA	2:G:2683:PHE:CE2	2.51	0.45
2:G:4944:ARG:HD2	2:A:4836:GLN:HE22	1.81	0.45
2:A:1194:LEU:HD12	2:A:1194:LEU:HA	1.85	0.45
2:A:2095:GLN:O	2:A:2127:GLN:NE2	2.50	0.45
2:J:74:SER:O	2:J:78:LEU:N	2.42	0.45
2:J:2159:LEU:HD12	2:J:2201:LEU:HD13	1.99	0.45
2:G:1870:VAL:HG11	2:G:2097:LEU:HD22	1.97	0.45
2:G:2301:TYR:CE2	2:G:2331:TYR:CD2	3.02	0.45
2:G:3722:TYR:CZ	2:G:3782:MET:HE1	2.50	0.45
2:G:3966:THR:O	2:G:3970:GLN:HG2	2.16	0.45
2:G:4666:VAL:O	2:G:4670:ILE:HG12	2.16	0.45
2:A:651:GLY:HA3	2:A:776:LEU:HG	1.98	0.45
3:B:66:MET:HE3	3:B:67:SER:H	1.81	0.45
2:D:73:LEU:O	2:D:106:ALA:N	2.39	0.45
2:G:518:ILE:HD13	2:G:518:ILE:HA	1.80	0.45
2:A:597:HIS:HB2	2:A:1665:HIS:ND1	2.32	0.45
2:A:1290:ARG:NH2	2:A:1598:GLN:OE1	2.33	0.45
2:A:1770:SER:HB2	2:A:1952:GLN:NE2	2.31	0.45
2:A:4582:VAL:HG11	2:A:4629:TYR:HD1	1.81	0.45
2:A:4823:LEU:HD13	2:D:4843:LEU:HD22	1.98	0.45
2:D:997:ALA:HB1	2:D:1021:LEU:HA	1.99	0.45
2:D:2128:TYR:HB3	2:D:3673:MET:HE2	1.97	0.45
2:D:2354:VAL:O	2:D:2358:ILE:HG22	2.17	0.45
2:D:3661:TRP:O	2:D:3665:GLU:N	2.50	0.45
2:D:3986:TRP:HA	2:D:3986:TRP:HE3	1.79	0.45
2:J:37:LEU:HD12	2:J:37:LEU:HA	1.80	0.45
2:G:691:GLY:HA3	2:G:712:TYR:CD1	2.52	0.45
2:G:1593:PRO:O	2:G:1596:GLU:HG2	2.16	0.45
2:G:2500:ALA:HB2	2:G:2553:TYR:HD2	1.82	0.45
2:A:2294:ASP:O	2:A:2298:VAL:HG23	2.17	0.45
2:D:593:HIS:HA	2:D:1593:PRO:HD2	1.99	0.45
2:D:4904:PRO:HB3	2:D:4910:GLU:HA	1.99	0.45
2:J:531:ARG:NH2	2:J:562:GLU:OE1	2.50	0.45
2:J:633:LEU:HD23	2:J:1639:LEU:HD12	1.99	0.45
2:J:2156:LEU:HD23	2:J:2156:LEU:HA	1.79	0.45
2:J:2312:MET:SD	2:J:2313:LEU:N	2.90	0.45
2:J:3136:LEU:O	2:J:3140:LEU:N	2.41	0.45
2:J:3698:LEU:HB3	2:J:3773:ARG:HG2	1.97	0.45
2:J:4924:VAL:HG13	2:J:4925:ILE:HG13	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:564:LEU:O	2:G:568:LEU:HG	2.17	0.45
2:G:1996:ARG:NH2	2:G:1997:GLU:OE2	2.50	0.45
2:G:2198:MET:HB3	2:G:2203:MET:CE	2.41	0.45
2:A:638:ILE:HG12	2:A:703:GLY:HA2	1.99	0.45
2:D:223:PHE:HA	2:D:230:CYS:HA	1.99	0.45
2:D:1007:TYR:CE2	2:D:1022:VAL:HG22	2.52	0.45
2:J:1634:LEU:HD23	2:J:1634:LEU:HA	1.86	0.45
2:J:4820:VAL:CG1	2:J:4823:LEU:HD23	2.47	0.45
2:G:3674:ILE:O	2:G:3678:SER:OG	2.23	0.45
2:G:3842:LEU:O	2:G:3929:SER:OG	2.34	0.45
2:D:2128:TYR:CE2	2:D:3669:PHE:HB2	2.51	0.45
2:D:4851:TYR:HE2	2:D:4920:PHE:HA	1.82	0.45
2:J:3889:GLN:HB2	2:J:3964:SER:HA	1.97	0.45
2:G:69:LEU:HD21	2:G:107:ILE:HD11	1.98	0.44
2:G:283:ARG:HB3	2:G:290:TYR:CD1	2.53	0.44
2:G:2384:ILE:HD11	2:G:2494:PHE:HD1	1.82	0.44
2:G:4721:LYS:HB3	2:G:4741:LEU:HD23	1.99	0.44
2:D:214:VAL:N	2:D:341:TYR:H	2.15	0.44
2:J:1720:LEU:HD23	2:J:1720:LEU:H	1.83	0.44
2:J:1763:PRO:HG3	2:J:2094:LEU:HD22	2.00	0.44
3:K:73:LYS:HB3	3:K:73:LYS:HE2	1.72	0.44
2:G:1731:LEU:HD12	2:G:1772:ARG:HH21	1.82	0.44
2:G:4180:ARG:HB3	2:G:4192:ARG:HH21	1.82	0.44
2:A:1437:VAL:HG11	2:A:1450:VAL:HG11	1.99	0.44
2:A:2507:ASP:HA	2:A:2511:GLY:HA2	1.99	0.44
2:D:3889:GLN:HB2	2:D:3964:SER:HA	2.00	0.44
2:J:55:ALA:HA	2:J:58:VAL:O	2.17	0.44
2:G:2500:ALA:N	2:G:2553:TYR:HE2	2.16	0.44
2:A:172:VAL:HG22	2:A:179:TYR:CD1	2.52	0.44
2:A:355:LEU:CB	2:A:380:GLN:HA	2.47	0.44
2:A:4959:PHE:HD2	2:A:4960:ILE:HD13	1.81	0.44
2:D:2156:LEU:HD22	2:D:2201:LEU:HD21	1.99	0.44
2:J:718:GLY:HA3	2:J:737:LEU:HA	1.99	0.44
2:J:4820:VAL:HG13	2:J:4823:LEU:HD23	1.99	0.44
2:G:2159:LEU:HA	2:G:2162:ILE:HG22	1.99	0.44
2:G:4218:ILE:HA	2:G:4221:VAL:HG12	1.99	0.44
2:G:4888:TYR:O	2:G:4892:ARG:NH1	2.39	0.44
2:A:478:PHE:HE1	2:A:483:MET:HE3	1.80	0.44
2:A:488:LEU:HD13	2:A:488:LEU:HA	1.81	0.44
2:A:2039:LEU:HD13	2:A:2044:ILE:HG13	1.99	0.44
2:A:3722:TYR:HE2	2:A:3782:MET:SD	2.41	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:3914:ASN:OD1	2:A:3917:ILE:HG12	2.17	0.44
2:A:4183:ILE:HG13	2:A:4193:ILE:HD13	1.99	0.44
2:A:4817:ALA:HA	2:A:4823:LEU:HB3	1.99	0.44
2:D:121:LEU:N	2:D:134:ASP:O	2.51	0.44
2:J:3702:VAL:HG21	2:J:3773:ARG:HB3	1.99	0.44
2:J:4897:ILE:HG23	2:J:4901:ILE:HD12	2.00	0.44
2:G:1827:ARG:HE	2:G:1827:ARG:HB2	1.64	0.44
2:G:2012:PHE:HZ	2:G:2031:LEU:HD13	1.82	0.44
2:G:4648:LEU:HD22	2:G:4803:HIS:HE1	1.81	0.44
2:A:723:THR:O	2:A:723:THR:OG1	2.33	0.44
2:A:2879:ALA:HB2	2:A:2923:ALA:HB2	1.98	0.44
2:D:4820:VAL:HB	2:D:4823:LEU:HG	1.98	0.44
2:D:4888:TYR:OH	2:J:4917:ASP:OD2	2.24	0.44
2:J:2251:PHE:CD2	2:J:2286:LEU:HB3	2.52	0.44
2:J:4922:PHE:O	2:J:4927:ILE:HG12	2.17	0.44
2:G:1006:SER:O	2:G:1018:ASN:N	2.50	0.44
2:G:3698:LEU:HD23	2:G:3701:LEU:HD12	2.00	0.44
2:G:4957:LYS:HB3	2:G:4957:LYS:HE3	1.85	0.44
2:A:78:LEU:HD11	2:A:147:TRP:CE3	2.53	0.44
2:A:906:CYS:HA	2:A:913:LEU:HA	1.98	0.44
2:A:3780:LEU:HD11	2:A:3819:TYR:CD1	2.53	0.44
2:A:3974:THR:O	2:A:3978:GLN:HG2	2.17	0.44
2:A:4955:GLU:N	2:A:4955:GLU:OE1	2.51	0.44
2:J:35:LEU:HA	2:J:51:PRO:HA	1.99	0.44
2:J:1641:ILE:HB	2:J:1644:GLU:HB2	2.00	0.44
2:G:1735:ILE:HG22	2:G:1771:LEU:HB3	1.99	0.44
2:G:3705:PHE:HB3	2:G:3778:MET:HG3	2.00	0.44
2:A:273:HIS:N	2:A:334:MET:O	2.51	0.44
2:A:411:TYR:HB3	2:A:486:LEU:HD11	1.99	0.44
2:A:3992:PHE:O	2:A:3995:VAL:HG13	2.18	0.44
2:D:3998:HIS:O	2:D:3999:MET:C	2.52	0.44
2:D:4778:TRP:O	2:D:4782:VAL:HG23	2.18	0.44
2:J:73:LEU:HD23	2:J:73:LEU:H	1.82	0.44
2:J:1211:LEU:HD13	2:J:1214:PHE:HB2	2.00	0.44
2:G:1637:MET:HE1	2:G:1693:GLN:HE22	1.83	0.44
2:A:273:HIS:HB2	2:A:335:GLY:C	2.38	0.44
2:A:358:THR:HG21	2:A:383:HIS:O	2.18	0.44
2:A:1763:PRO:HG3	2:A:2094:LEU:HD13	2.00	0.44
2:A:2204:HIS:HA	2:A:2207:VAL:HG12	2.00	0.44
2:D:4105:GLY:O	2:D:4108:ILE:HG22	2.17	0.44
2:G:2299:VAL:HG21	2:G:2356:LEU:HB3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:2616:PRO:HG2	2:G:2664:PHE:CG	2.53	0.44
2:G:3888:LEU:HD12	2:G:3968:TYR:OH	2.18	0.44
2:G:4715:TYR:CE2	2:G:4717:ASP:HB3	2.53	0.44
2:A:106:ALA:HA	2:A:149:THR:HA	2.00	0.44
2:A:1452:TRP:HB3	2:A:1548:LEU:HD13	2.00	0.44
2:G:2110:TYR:HA	2:G:3700:GLN:HE21	1.83	0.43
2:G:4323:THR:OG1	2:G:4324:ALA:N	2.49	0.43
2:A:178:ARG:HG3	2:A:195:PHE:CE2	2.53	0.43
2:A:206:CYS:O	2:A:334:MET:HA	2.17	0.43
2:A:1092:PHE:HB3	2:A:1149:VAL:HG12	1.99	0.43
2:A:4712:PRO:HB3	2:A:4718:LYS:HA	1.99	0.43
2:D:4640:GLU:HB3	2:D:4641:PRO:HD3	1.99	0.43
2:D:4933:GLN:O	2:D:4937:ILE:HG12	2.18	0.43
2:G:2202:GLY:HA2	2:G:2204:HIS:CE1	2.53	0.43
2:G:3673:MET:HE2	2:G:3728:ILE:HG21	1.99	0.43
2:G:3701:LEU:HD11	2:G:3725:TYR:CD2	2.54	0.43
2:G:4895:GLY:O	2:J:4892:ARG:NH1	2.51	0.43
2:A:2875:ALA:HB1	2:A:2923:ALA:HB1	2.00	0.43
2:A:4193:ILE:HD12	2:A:4193:ILE:N	2.33	0.43
2:D:4198:SER:HB3	2:D:4201:ASN:OD1	2.19	0.43
2:J:2283:ASN:CB	2:J:2286:LEU:HD13	2.49	0.43
2:J:3730:ALA:HB1	2:J:3803:SER:OG	2.19	0.43
2:G:626:LEU:HD23	2:G:626:LEU:HA	1.83	0.43
2:G:1153:ILE:HD11	2:G:1160:ILE:HG23	2.00	0.43
2:G:1862:ILE:O	2:G:1866:ILE:HG22	2.18	0.43
2:A:20:VAL:HG12	2:A:204:PRO:HA	1.99	0.43
2:A:2159:LEU:HA	2:A:2162:ILE:HG22	2.00	0.43
2:A:3886:ARG:NH1	2:A:3890:LEU:HD11	2.33	0.43
2:A:4790:LEU:HD23	2:A:4790:LEU:HA	1.87	0.43
2:D:4901:ILE:HD13	2:D:4913:ARG:NH1	2.33	0.43
2:J:451:TYR:CE2	2:J:474:ARG:HD2	2.53	0.43
2:J:525:LEU:HD23	2:J:529:LEU:HD23	1.99	0.43
2:J:677:ALA:HA	3:K:40:ARG:HG2	1.99	0.43
2:G:655:GLY:HA3	2:G:852:VAL:HG13	2.00	0.43
2:G:670:GLU:HA	2:G:740:PRO:HB3	1.99	0.43
2:G:4676:GLU:HG3	2:G:4680:LYS:HE2	1.99	0.43
2:J:3962:PHE:O	2:J:3966:THR:HG23	2.18	0.43
2:J:4639:MET:O	2:J:4643:LEU:N	2.43	0.43
2:G:747:CYS:N	2:G:756:SER:O	2.42	0.43
2:G:1637:MET:HB3	2:G:1637:MET:HE2	1.63	0.43
2:G:2166:LEU:HD12	2:G:2210:VAL:HG23	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3779:VAL:HG13	2:G:3797:THR:HG22	2.00	0.43
2:A:1687:SER:OG	3:B:90:VAL:HG13	2.18	0.43
2:D:1296:GLN:HA	2:D:1547:LYS:HA	1.99	0.43
2:D:2240:CYS:SG	2:D:2241:ARG:N	2.90	0.43
2:D:4801:LEU:HB3	2:D:4808:PHE:CG	2.54	0.43
2:J:505:GLU:HA	2:J:512:ALA:HB2	2.00	0.43
2:J:1291:LEU:HD23	2:J:1291:LEU:HA	1.88	0.43
2:J:1815:LEU:HD13	2:J:1841:VAL:HG12	2.00	0.43
2:G:170:ILE:HD13	2:G:170:ILE:HA	1.89	0.43
2:G:553:ARG:CZ	2:G:553:ARG:HB2	2.48	0.43
2:G:830:ARG:HE	2:G:830:ARG:HB3	1.72	0.43
2:G:1076:ARG:HD3	2:G:1109:LEU:HD23	2.00	0.43
2:G:1160:ILE:HD12	2:G:1179:PHE:HB2	1.99	0.43
2:G:3832:ILE:HD13	2:G:3832:ILE:HA	1.90	0.43
2:G:4955:GLU:OE2	7:G:5103:ATP:O3'	2.35	0.43
2:A:279:PRO:HA	2:A:315:CYS:HA	2.00	0.43
2:A:468:LEU:HD12	2:A:468:LEU:HA	1.85	0.43
2:A:2907:PRO:O	2:A:2911:LEU:N	2.47	0.43
2:A:4339:VAL:HG11	2:A:4816:ILE:HD11	2.01	0.43
2:A:4897:ILE:HD12	2:A:4897:ILE:HA	1.88	0.43
2:D:3924:LEU:O	2:D:3928:GLU:HG2	2.18	0.43
2:D:4003:LEU:HD21	2:D:4012:LEU:HB3	2.01	0.43
2:D:4569:LEU:O	2:D:4573:ILE:HG22	2.18	0.43
2:J:2534:ALA:HB2	2:J:2589:LEU:HG	1.99	0.43
2:J:4235:VAL:HG21	2:J:5019:TRP:CH2	2.54	0.43
2:G:833:GLY:H	2:G:837:PRO:HD2	1.83	0.43
2:G:947:GLU:HA	2:G:1049:TYR:HA	2.01	0.43
2:G:2295:LEU:O	2:G:2298:VAL:HB	2.19	0.43
2:G:4047:MET:SD	2:G:4048:LEU:HD22	2.58	0.43
2:G:4681:LEU:HD21	2:G:4724:VAL:HG11	2.00	0.43
2:A:359:TYR:HA	2:A:376:ALA:CA	2.35	0.43
2:A:500:ALA:O	2:A:505:GLU:N	2.50	0.43
2:A:1745:ILE:O	2:A:1745:ILE:HG13	2.19	0.43
2:D:2128:TYR:CB	2:D:3673:MET:CE	2.96	0.43
2:D:4992:LEU:O	2:D:4996:ILE:HG12	2.19	0.43
2:J:1087:ARG:HG2	2:J:1154:ASP:HA	2.00	0.43
2:J:1130:GLN:HA	2:J:1138:PRO:HA	1.99	0.43
2:G:2239:PHE:HD2	2:G:2250:MET:HE1	1.83	0.43
2:G:2596:THR:HB	2:G:2599:GLN:HB2	2.01	0.43
2:G:3794:VAL:HG11	2:G:3835:LEU:HD11	2.01	0.43
2:G:4860:ARG:NH2	2:J:4629:TYR:OH	2.52	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:342:GLY:N	2:A:390:LEU:O	2.51	0.43
2:A:5000:GLU:HA	2:A:5003:HIS:CD2	2.54	0.43
3:B:66:MET:CE	3:B:67:SER:H	2.31	0.43
2:D:2277:ALA:HB2	2:D:2334:PHE:HD1	1.84	0.43
2:J:3760:LYS:HE3	2:J:3760:LYS:HB2	1.80	0.43
2:J:4144:ALA:O	2:J:4147:LEU:HG	2.18	0.43
2:G:418:LEU:HD13	2:G:493:ARG:HB3	2.01	0.43
2:G:1270:LEU:O	2:G:1564:PHE:N	2.37	0.43
2:G:1595:LEU:HD23	2:G:1595:LEU:HA	1.88	0.43
2:G:2495:VAL:O	2:G:2498:HIS:ND1	2.52	0.43
2:G:4879:MET:HB3	2:J:4578:LEU:O	2.19	0.43
2:D:4790:LEU:HD23	2:D:4790:LEU:HA	1.84	0.43
2:J:695:TYR:HE2	2:J:1241:SER:H	1.66	0.43
2:J:2125:HIS:HB2	2:J:3725:TYR:HE1	1.83	0.43
2:G:1125:ASN:HD22	2:G:1132:TRP:HE1	1.66	0.43
2:G:1130:GLN:HA	2:G:1138:PRO:HA	2.01	0.43
2:G:2495:VAL:HB	2:G:2498:HIS:CE1	2.53	0.43
2:G:4017:LEU:HA	2:G:4020:GLN:HB2	2.00	0.43
2:A:2353:VAL:O	2:A:2357:LEU:HG	2.19	0.43
2:D:3990:VAL:HG22	2:D:4047:MET:HG3	2.00	0.43
2:D:4702:ASP:HA	2:D:4705:VAL:HG12	2.01	0.43
2:J:470:SER:HA	2:J:473:ASN:ND2	2.34	0.43
2:J:688:LEU:CD2	2:J:691:GLY:H	2.31	0.43
2:G:1692:ALA:HB3	3:H:41:ASP:HB2	2.00	0.42
2:G:2430:ILE:HD12	2:G:2502:MET:HE1	2.01	0.42
2:G:3698:LEU:HD23	2:G:3698:LEU:HA	1.89	0.42
2:G:4048:LEU:HD12	2:G:4163:PHE:CE2	2.54	0.42
2:G:4658:ILE:HB	2:G:4792:LEU:HD12	2.01	0.42
2:A:411:TYR:HB2	2:A:486:LEU:HD11	2.00	0.42
2:A:478:PHE:CE1	2:A:483:MET:CE	3.01	0.42
2:A:600:LEU:HB3	2:A:1665:HIS:HB3	2.01	0.42
2:A:3886:ARG:CZ	2:A:3890:LEU:HD11	2.49	0.42
2:A:4565:LEU:CD2	2:A:4653:VAL:HG21	2.49	0.42
2:A:4963:ILE:HG21	2:A:4968:PHE:HE1	1.83	0.42
2:D:2128:TYR:HB2	2:D:3673:MET:HE1	2.00	0.42
2:D:4179:GLY:HA3	2:D:4195:PHE:CZ	2.53	0.42
2:D:4720:VAL:HA	2:D:4723:LYS:HE2	2.01	0.42
2:J:794:GLY:HA3	2:J:812:HIS:HB3	2.01	0.42
2:J:2194:HIS:HB2	2:J:2197:LEU:HB3	1.99	0.42
2:J:3817:LEU:HD12	2:J:3817:LEU:HA	1.83	0.42
2:G:491:ILE:HG13	2:G:550:LYS:HZ3	1.82	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:579:GLN:H	2:G:582:HIS:CD2	2.35	0.42
2:G:629:ARG:HE	2:G:1688:HIS:CD2	2.37	0.42
2:G:1927:LEU:HD13	2:G:2101:MET:HG3	2.01	0.42
2:G:3820:LEU:HD12	2:G:3820:LEU:HA	1.91	0.42
2:G:3845:ASN:OD1	2:G:3845:ASN:N	2.52	0.42
2:D:2128:TYR:CD2	2:D:3669:PHE:HB2	2.53	0.42
2:J:410:LEU:HG	2:J:441:VAL:HG12	2.00	0.42
2:J:1243:PRO:HB3	2:J:1602:PRO:HA	2.02	0.42
2:J:4197:ILE:HD12	2:J:4990:PHE:HB3	2.02	0.42
2:J:4218:ILE:HB	2:J:4954:MET:CE	2.49	0.42
2:G:660:GLY:O	2:G:750:LEU:N	2.39	0.42
2:G:1229:ASN:HB2	2:G:1827:ARG:HG2	2.02	0.42
2:G:1733:GLU:OE2	2:G:1733:GLU:N	2.52	0.42
4:I:14:LYS:HA	4:I:66:PHE:HZ	1.85	0.42
2:A:4983:HIS:O	7:A:5103:ATP:N6	2.45	0.42
2:D:1454:THR:HA	2:D:1548:LEU:HA	2.00	0.42
2:J:1149:VAL:HG13	2:J:1164:LEU:HG	1.99	0.42
2:J:1733:GLU:N	2:J:1733:GLU:OE2	2.52	0.42
2:J:1863:LEU:HD23	2:J:1863:LEU:HA	1.81	0.42
1:M:18[B]:GLY:O	1:M:19[B]:LYS:HG2	2.19	0.42
2:A:707:VAL:HG12	2:A:782:SER:OG	2.19	0.42
2:A:721:LEU:N	2:A:728:ARG:O	2.53	0.42
2:A:804:PRO:HA	2:A:805:PRO:HD3	1.94	0.42
2:A:3658:LYS:HA	2:A:3662:ILE:HD11	2.01	0.42
2:A:4017:LEU:HD12	2:A:4139:ILE:HG21	2.01	0.42
2:A:4659:ILE:HD12	2:A:4659:ILE:HA	1.86	0.42
2:D:3978:GLN:OE1	2:D:4040:ILE:HD11	2.19	0.42
2:D:4956:THR:HG22	2:D:4957:LYS:HG2	2.01	0.42
2:J:4813:LEU:HD23	2:J:4813:LEU:HA	1.86	0.42
3:K:86:GLY:O	3:K:87:HIS:C	2.57	0.42
2:G:582:HIS:O	2:G:586:ILE:HG12	2.20	0.42
2:G:736:HIS:ND1	2:G:737:LEU:O	2.53	0.42
2:G:1943:LEU:HD13	2:G:2098:VAL:HG22	2.01	0.42
2:G:2427:ALA:HB1	2:G:2498:HIS:HA	2.02	0.42
2:G:4929:LEU:HD12	2:G:4929:LEU:HA	1.84	0.42
2:A:638:ILE:HD12	2:A:638:ILE:HA	1.86	0.42
2:A:1730:MET:HE1	2:A:2159:LEU:HD23	2.01	0.42
2:A:2239:PHE:O	2:A:2242:ILE:HG22	2.19	0.42
2:A:3888:LEU:HD23	2:A:3888:LEU:HA	1.85	0.42
2:A:3924:LEU:HD21	2:A:3984:ARG:HE	1.83	0.42
2:D:1729:SER:O	2:D:2163:ARG:NH1	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:4708:THR:HG21	2:D:4775:TYR:HB2	2.00	0.42
2:D:4821:LYS:HE2	2:D:4821:LYS:HB2	1.80	0.42
2:J:663:TYR:HE1	2:J:745:SER:HB3	1.84	0.42
2:G:280:LEU:N	2:G:314:PHE:O	2.51	0.42
2:G:1671:ARG:HG2	2:G:1714:LEU:HA	2.00	0.42
2:G:2201:LEU:HD23	2:G:2201:LEU:HA	1.83	0.42
2:G:2210:VAL:O	2:G:2214:VAL:HG12	2.19	0.42
2:G:2472:LEU:HD23	2:G:2472:LEU:HA	1.86	0.42
2:G:3958:ALA:HA	2:G:3961:VAL:HG12	2.02	0.42
2:A:221:ARG:HG2	2:A:393:CYS:SG	2.60	0.42
2:A:637:LEU:HD23	2:A:637:LEU:HA	1.83	0.42
2:A:1850:VAL:HG12	2:A:1945:TYR:CD1	2.54	0.42
2:A:3798:LEU:HD23	2:A:3798:LEU:HA	1.80	0.42
2:D:790:ARG:HA	2:D:1627:ALA:HA	2.02	0.42
2:D:3970:GLN:HE22	2:D:5004:THR:HA	1.84	0.42
2:D:4052:SER:CA	2:D:4055:VAL:HG12	2.45	0.42
2:D:4928:LEU:HA	2:D:4928:LEU:HD12	1.83	0.42
2:D:5000:GLU:HA	2:D:5003:HIS:CD2	2.54	0.42
2:J:1804:LEU:HD23	2:J:1805:GLU:H	1.84	0.42
2:J:1962:ALA:HA	2:J:3653:PHE:HE2	1.85	0.42
2:J:3793:MET:HA	2:J:3793:MET:HE2	2.02	0.42
2:G:595:ARG:HH12	2:G:633:LEU:HD21	1.85	0.42
2:G:663:TYR:CE2	2:G:745:SER:HB2	2.55	0.42
2:G:766:GLY:HA2	2:G:1476:MET:HA	2.02	0.42
2:G:1143:TRP:HB3	2:G:1164:LEU:HD21	2.00	0.42
2:G:4911:LEU:HD11	2:D:4324:ALA:H	1.83	0.42
2:A:1803:PRO:HB2	2:A:1806:ALA:HB3	2.02	0.42
2:D:1218:GLY:O	2:D:1222:GLY:N	2.53	0.42
2:D:3729:MET:O	2:D:3732:SER:N	2.53	0.42
2:D:4666:VAL:HA	2:D:4669:VAL:HG12	2.01	0.42
2:J:3923:LEU:HD12	2:J:3923:LEU:HA	1.84	0.42
2:J:4573:ILE:HD12	2:J:4573:ILE:HA	1.92	0.42
3:K:4:ILE:HG23	3:K:72:ALA:HB1	2.02	0.42
2:G:517:GLU:O	2:G:521:LEU:HD12	2.20	0.42
2:G:626:LEU:HD22	2:G:1688:HIS:CE1	2.55	0.42
2:G:1153:ILE:CD1	2:G:1160:ILE:HA	2.49	0.42
3:H:56:ILE:H	3:H:56:ILE:HG13	1.59	0.42
3:H:63:ALA:HA	3:H:66:MET:HB2	2.00	0.42
2:A:442:ILE:HD13	2:A:442:ILE:HA	1.94	0.42
2:A:4180:ARG:HB3	2:A:4192:ARG:NE	2.35	0.42
2:A:4569:LEU:HG	2:A:4646:LEU:HD13	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:4779:LYS:O	2:A:4783:ILE:HG23	2.20	0.42
2:D:3780:LEU:HD23	2:D:3780:LEU:HA	1.83	0.42
2:J:686:TRP:CD1	2:J:748:LEU:HD13	2.54	0.42
2:J:1205:GLY:HA3	2:J:1225:PRO:HB3	2.01	0.42
3:K:7:ILE:H	3:K:7:ILE:HG13	1.66	0.42
1:M:22[A]:LYS:HG3	1:M:33[A]:ARG:HD3	2.02	0.42
2:A:111:HIS:CE1	2:A:113:HIS:HB3	2.55	0.42
2:A:247:TYR:N	2:A:374:LYS:O	2.48	0.42
2:A:582:HIS:O	2:A:586:ILE:HG12	2.20	0.42
2:A:655:GLY:HA3	2:A:852:VAL:HA	2.01	0.42
2:A:766:GLY:HA2	2:A:1476:MET:HA	2.02	0.42
2:A:4570:ALA:HB2	2:A:4650:HIS:HE1	1.85	0.42
2:A:4578:LEU:O	2:D:4879:MET:HB3	2.20	0.42
2:J:686:TRP:CE3	2:J:777:PHE:HB3	2.54	0.42
2:J:2012:PHE:HZ	2:J:2031:LEU:HD13	1.85	0.42
2:J:4051:SER:O	2:J:4055:VAL:HG12	2.19	0.42
2:G:2384:ILE:HD13	2:G:2384:ILE:HA	1.88	0.42
2:G:4107:GLU:O	2:G:4111:LEU:HG	2.20	0.42
4:I:14:LYS:HA	4:I:66:PHE:CZ	2.55	0.42
2:A:592:LYS:HA	2:A:1580:PHE:CE2	2.55	0.42
2:A:1936:LYS:HD3	2:A:2116:LEU:HD21	2.02	0.42
2:D:291:LEU:HA	2:D:301:VAL:HA	2.02	0.42
2:D:839:LEU:O	2:D:1200:GLY:N	2.41	0.42
2:D:3920:VAL:O	2:D:3924:LEU:HD13	2.19	0.42
2:J:1097:THR:HG23	2:J:1143:TRP:HE1	1.85	0.42
2:J:2142:TYR:HB3	2:J:2197:LEU:HD13	2.02	0.42
2:J:3723:MET:HE2	2:J:3723:MET:HA	2.02	0.42
2:J:4681:LEU:HD11	2:J:4706:LEU:HD22	2.02	0.42
2:G:20:VAL:HA	2:G:204:PRO:HA	2.01	0.41
2:G:591:ASP:HA	2:G:631:LEU:HD11	2.02	0.41
2:G:2377:LEU:HD21	2:G:2468:GLY:HA3	2.02	0.41
2:G:4051:SER:O	2:G:4051:SER:OG	2.33	0.41
2:A:560:ILE:HA	2:A:563:VAL:HG12	2.02	0.41
2:A:1079:LYS:NZ	2:A:1107:PRO:O	2.53	0.41
2:A:3989:VAL:O	2:A:3993:LEU:HG	2.20	0.41
2:A:4060:LYS:O	2:A:4063:ASP:N	2.52	0.41
2:A:4180:ARG:HB3	2:A:4192:ARG:HE	1.85	0.41
2:D:884:LEU:HA	2:D:960:MET:O	2.20	0.41
2:D:2225:PHE:O	2:D:2229:VAL:HG23	2.20	0.41
2:D:4570:ALA:HB2	2:D:4650:HIS:CE1	2.55	0.41
2:J:269:TRP:CZ2	2:J:272:SER:HB3	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:592:LYS:O	2:J:1592:PRO:HB2	2.19	0.41
2:J:4587:PRO:HG3	2:J:4630:TYR:HB3	2.01	0.41
2:G:1636:MET:HG2	2:G:1637:MET:N	2.35	0.41
2:G:2466:LEU:O	2:G:2470:ILE:HG22	2.20	0.41
2:A:529:LEU:HD23	2:A:529:LEU:HA	1.92	0.41
2:A:548:VAL:HG11	2:A:582:HIS:CD2	2.55	0.41
2:A:575:LEU:HD21	2:A:606:LEU:HA	2.02	0.41
2:A:1771:LEU:HD23	2:A:1771:LEU:HA	1.89	0.41
2:A:2770:LYS:O	2:A:2775:TRP:N	2.52	0.41
2:D:643:SER:HA	2:D:782:SER:HA	2.02	0.41
2:J:615:ARG:CZ	2:J:2168:VAL:HG21	2.50	0.41
2:J:853:PRO:HB3	2:J:1023:PRO:HA	2.01	0.41
2:J:2226:PRO:HA	2:J:2229:VAL:HG12	2.02	0.41
2:J:3969:ILE:HD13	2:J:3980:LEU:HD12	2.02	0.41
2:J:4833:ASN:ND2	2:J:4836:GLN:OE1	2.46	0.41
2:G:1293:LEU:HD21	2:G:1594:ARG:HG2	2.02	0.41
2:G:1694:LEU:HD23	2:G:1694:LEU:HA	1.94	0.41
2:G:2131:LEU:HD22	2:G:2131:LEU:HA	1.94	0.41
2:G:2197:LEU:O	2:G:2201:LEU:N	2.36	0.41
2:G:3648:ARG:HG3	2:G:3652:MET:HE1	2.02	0.41
2:G:4715:TYR:HE2	2:G:4717:ASP:HB3	1.84	0.41
2:D:4027:LEU:HD23	2:D:4047:MET:HE1	2.03	0.41
2:D:4668:LEU:HD12	2:D:4668:LEU:HA	1.88	0.41
2:J:2236:LEU:HD23	2:J:2236:LEU:HA	1.83	0.41
2:J:2505:PHE:O	2:J:2509:VAL:HG12	2.20	0.41
2:J:3777:GLU:O	2:J:3781:GLN:HG2	2.21	0.41
2:J:4802:GLY:HA2	2:J:4805:ASN:O	2.20	0.41
2:G:492:ASP:HA	2:G:550:LYS:HZ1	1.85	0.41
2:G:1760:HIS:CE1	2:G:2095:GLN:HE22	2.35	0.41
2:G:2299:VAL:HG11	2:G:2356:LEU:O	2.20	0.41
2:G:3782:MET:HB3	2:G:3782:MET:HE3	1.64	0.41
2:A:2156:LEU:HD23	2:A:2156:LEU:HA	1.81	0.41
2:A:2456:ILE:HD13	2:A:2456:ILE:HA	1.93	0.41
2:D:3924:LEU:HD12	2:D:3988:ALA:HB2	2.03	0.41
2:D:3984:ARG:O	2:D:3987:ASP:N	2.54	0.41
2:J:594:GLY:HA2	2:J:1594:ARG:HD2	2.03	0.41
2:J:1148:VAL:HG21	2:J:1212:ARG:HD2	2.00	0.41
2:J:1674:CYS:HB2	2:J:1685:LEU:HD22	2.02	0.41
2:J:2155:LEU:HB2	2:J:2188:ASN:HD22	1.84	0.41
2:J:4147:LEU:HD11	2:J:4171:LEU:HD13	2.02	0.41
2:G:410:LEU:HD21	2:G:441:VAL:HG12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:1731:LEU:HA	2:G:1772:ARG:HH21	1.86	0.41
2:G:2238:TYR:CD2	4:I:67:PRO:HB2	2.56	0.41
2:G:3644:LEU:HD12	2:G:3645:PRO:O	2.21	0.41
2:G:3722:TYR:CE2	2:G:3782:MET:HE1	2.55	0.41
2:A:288:GLY:HA3	2:A:405:HIS:CE1	2.56	0.41
2:A:1148:VAL:HG21	2:A:1213:PHE:CD2	2.56	0.41
2:A:4706:LEU:HD23	2:A:4706:LEU:HA	1.93	0.41
2:D:1160:ILE:O	2:D:1178:ALA:N	2.53	0.41
2:J:510:GLU:O	2:J:514:SER:OG	2.33	0.41
2:J:2418:LEU:O	2:J:2422:ILE:HG13	2.20	0.41
2:J:4137:ARG:NH1	2:J:4196:GLU:OE1	2.51	0.41
2:G:407:THR:HG21	2:G:448:LEU:HD11	2.02	0.41
2:G:1771:LEU:HD11	2:G:2153:MET:SD	2.61	0.41
2:G:3970:GLN:HE22	2:G:5004:THR:HG22	1.85	0.41
2:G:4222:VAL:CG1	2:G:4950:VAL:HG22	2.50	0.41
2:G:4576:ILE:HG21	2:G:4643:LEU:HB2	2.03	0.41
2:G:4843:LEU:HD13	2:J:4823:LEU:HD12	2.01	0.41
2:G:4880:MET:CE	2:J:4328:ALA:HB2	2.51	0.41
2:A:358:THR:HA	2:A:386:ASP:OD2	2.20	0.41
2:A:1297:PHE:HA	2:A:1522:LEU:HD12	2.02	0.41
2:A:4960:ILE:H	2:A:4960:ILE:HG12	1.71	0.41
3:B:28:GLY:HA2	3:B:99:PHE:HA	2.02	0.41
2:G:1838:PHE:O	2:G:1842:LEU:HB2	2.21	0.41
2:G:1934:SER:O	2:G:1938:GLN:HG2	2.20	0.41
2:G:2442:LEU:HA	2:G:2442:LEU:HD23	1.81	0.41
2:G:4865:LYS:HA	2:G:4865:LYS:HD2	1.90	0.41
2:A:359:TYR:CA	2:A:376:ALA:HA	2.38	0.41
2:A:2207:VAL:HG21	2:A:2235:PHE:CD2	2.55	0.41
2:A:2210:VAL:O	2:A:2214:VAL:HG12	2.21	0.41
2:A:3722:TYR:CE2	2:A:3782:MET:SD	3.14	0.41
2:A:4044:MET:HE3	2:A:4044:MET:HB3	1.98	0.41
2:D:3896:ASN:O	2:D:3900:GLN:HG3	2.21	0.41
2:D:4028:LEU:HD21	2:D:4146:LEU:HA	2.02	0.41
2:J:1438:ARG:HB3	2:J:1515:VAL:HG13	2.01	0.41
2:J:2142:TYR:OH	2:J:2194:HIS:ND1	2.53	0.41
2:J:3716:LEU:HD23	2:J:3716:LEU:H	1.85	0.41
2:G:436:LEU:HD23	2:G:436:LEU:HA	1.91	0.41
2:G:1160:ILE:HG21	2:G:1179:PHE:HD2	1.85	0.41
2:G:1492:CYS:HB2	2:G:1494:MET:CE	2.51	0.41
2:G:1747:LEU:HB3	2:G:2041:HIS:HD2	1.86	0.41
2:A:102:LEU:HA	2:A:162:LYS:HA	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2194:HIS:HB3	2:A:2197:LEU:HD23	2.03	0.41
2:D:2325:PRO:HB2	2:D:2421:ALA:HB1	2.01	0.41
3:E:78:PRO:HD3	3:E:96:THR:HA	2.02	0.41
2:J:119:SER:N	2:J:136:GLY:O	2.43	0.41
2:J:1762:LEU:O	2:J:1765:VAL:HG22	2.21	0.41
2:J:2281:ILE:HD12	2:J:2282:ASP:H	1.84	0.41
2:G:107:ILE:HD12	2:G:107:ILE:HA	1.99	0.41
2:G:1863:LEU:HD21	2:G:1946:PHE:CE1	2.56	0.41
2:G:2499:LYS:C	2:G:2553:TYR:HE2	2.23	0.41
2:G:4055:VAL:HG13	2:G:4163:PHE:HZ	1.86	0.41
2:G:4880:MET:HE1	2:J:4328:ALA:HB2	2.03	0.41
2:A:419:ASP:OD1	2:A:493:ARG:CD	2.67	0.41
2:A:527:ALA:O	2:A:530:ILE:HG22	2.21	0.41
2:A:1076:ARG:HG3	2:A:1077:ALA:O	2.20	0.41
2:A:1530:THR:HA	2:A:1535:GLU:HA	2.03	0.41
2:A:3842:LEU:HD21	2:A:3933:PHE:CD1	2.56	0.41
2:A:4016:LEU:O	2:A:4020:GLN:HG2	2.20	0.41
2:A:4048:LEU:CD1	2:A:4055:VAL:HB	2.51	0.41
2:D:665:GLU:H	2:D:793:LEU:HA	1.86	0.41
2:D:1667:LEU:O	2:D:1714:LEU:HD11	2.21	0.41
2:D:3136:LEU:O	2:D:3140:LEU:N	2.41	0.41
2:D:4904:PRO:HD3	2:D:4913:ARG:HH21	1.86	0.41
2:J:1294:PRO:HB3	2:J:1549:PHE:CZ	2.56	0.41
2:J:1492:CYS:SG	2:J:1494:MET:HB2	2.61	0.41
2:J:2355:ARG:O	2:J:2359:ARG:HG2	2.21	0.41
2:J:4998:LYS:HD2	2:J:5003:HIS:CD2	2.56	0.41
3:K:31:GLN:HB2	3:K:96:THR:OG1	2.21	0.41
1:M:18[A]:GLY:O	1:M:19[A]:LYS:HG2	2.20	0.41
2:G:1460:HIS:HD2	2:G:1602:PRO:HB3	1.85	0.41
2:A:414:PHE:CD1	2:A:414:PHE:C	2.94	0.41
2:A:3718:GLU:HA	2:A:3793:MET:HE1	2.03	0.41
2:D:1105:ALA:N	2:D:1189:LEU:O	2.54	0.41
2:D:4183:ILE:HD13	2:D:4183:ILE:N	2.35	0.41
2:D:4817:ALA:HB1	2:D:4827:LEU:HD11	2.01	0.41
2:J:313:SER:O	2:J:351:VAL:HG12	2.21	0.41
2:J:639:ASN:ND2	2:J:676:THR:OG1	2.54	0.41
2:J:1229:ASN:HB2	2:J:1827:ARG:H	1.86	0.41
2:J:1466:LEU:HD12	2:J:1496:TRP:HB2	2.02	0.41
2:J:4217:PHE:CD2	2:J:4237:PHE:HB2	2.56	0.41
2:J:4777:ILE:HD13	2:J:4777:ILE:HA	1.91	0.41
2:G:437:PRO:HB2	2:G:440:ALA:HB3	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:767:VAL:O	2:G:1475:THR:OG1	2.37	0.40
2:G:1721:GLU:OE2	2:G:1725:ARG:NH1	2.54	0.40
2:G:1777:PHE:HB3	2:G:1801:ALA:HA	2.03	0.40
2:G:1839:VAL:HG23	2:G:1935:VAL:HG22	2.03	0.40
2:A:1237:TRP:CH2	2:A:1652:GLU:HG3	2.56	0.40
2:A:1934:SER:O	2:A:1938:GLN:HG2	2.21	0.40
2:A:2256:TYR:O	2:A:2260:ASN:ND2	2.55	0.40
2:D:1748:PHE:HA	2:D:1749:PRO:HD3	1.97	0.40
2:D:3980:LEU:HD13	2:D:3980:LEU:HA	1.71	0.40
2:J:671:VAL:HG12	2:J:787:VAL:HA	2.02	0.40
2:J:838:HIS:ND1	2:J:1201:HIS:HB2	2.35	0.40
2:J:2238:TYR:CE1	4:L:67:PRO:HB2	2.55	0.40
2:G:1719:HIS:CD2	2:G:1802:ILE:HD12	2.55	0.40
2:G:2460:LEU:HA	2:G:2460:LEU:HD23	1.89	0.40
2:A:118:LEU:HA	2:A:137:LEU:HA	2.03	0.40
2:A:621:ILE:HG21	2:A:1673:VAL:HG11	2.04	0.40
2:A:2117:VAL:HG23	2:A:3704:HIS:CD2	2.56	0.40
2:A:4843:LEU:HD12	2:A:4843:LEU:HA	1.86	0.40
2:A:4891:VAL:HG13	2:A:4892:ARG:HG3	2.02	0.40
2:D:3882:GLN:OE1	2:D:3960:GLN:NE2	2.46	0.40
2:D:4077:PHE:HE1	2:D:4093:PHE:HD1	1.68	0.40
2:D:4676:GLU:O	2:D:4680:LYS:HG2	2.21	0.40
2:G:1699:GLU:HG2	2:G:1810:LYS:HD3	2.02	0.40
2:G:4586:PRO:HA	2:G:4587:PRO:HD3	1.91	0.40
2:G:4958:CYS:HA	7:G:5103:ATP:N7	2.36	0.40
2:A:2335:LEU:HD23	2:A:2335:LEU:HA	1.88	0.40
2:A:3882:GLN:HA	2:A:3960:GLN:HG2	2.02	0.40
2:A:4072:VAL:HG21	2:A:4129:ALA:HB2	2.03	0.40
2:D:2159:LEU:HA	2:D:2162:ILE:HG22	2.02	0.40
2:J:660:GLY:O	2:J:750:LEU:N	2.48	0.40
2:J:3966:THR:HG22	2:J:4026:MET:HA	2.02	0.40
3:K:23:VAL:HG12	3:K:47:LYS:HG2	2.02	0.40
2:G:603:LEU:HB3	2:G:1669:LEU:HD13	2.03	0.40
2:G:650:VAL:O	2:G:777:PHE:N	2.53	0.40
2:G:3767:GLN:NE2	2:G:3804:ILE:O	2.55	0.40
2:G:4790:LEU:HD13	2:G:4790:LEU:HA	1.95	0.40
2:A:70:GLU:HG3	2:A:117:TYR:HE2	1.85	0.40
2:A:758:ARG:HA	2:A:763:PRO:HA	2.04	0.40
2:A:1719:HIS:ND1	2:A:1802:ILE:HD12	2.37	0.40
2:A:3986:TRP:O	2:A:3990:VAL:HG23	2.22	0.40
2:A:4233:LEU:HD13	2:A:4233:LEU:HA	1.97	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:4946:GLN:O	2:A:4950:VAL:HG23	2.21	0.40
2:D:350:HIS:CE1	2:D:352:ALA:HB3	2.57	0.40
2:D:4117:ALA:HB2	2:D:4123:ILE:HG22	2.03	0.40
2:J:3793:MET:HE2	2:J:3793:MET:CA	2.51	0.40
2:G:1161:ILE:HG23	2:G:1176:GLU:O	2.21	0.40
2:G:1202:LEU:HD12	2:G:1203:ASN:N	2.36	0.40
2:G:1763:PRO:HG3	2:G:2094:LEU:HD22	2.03	0.40
2:G:4051:SER:O	2:G:4055:VAL:HG12	2.22	0.40
2:G:4856:PHE:HZ	2:J:4582:VAL:HB	1.85	0.40
2:A:526:LEU:CD2	2:A:563:VAL:HG21	2.50	0.40
2:A:1290:ARG:HG3	2:A:1551:ALA:HB2	2.03	0.40
2:A:1784:ALA:HA	3:B:55:VAL:HA	2.03	0.40
2:A:2118:ARG:HB2	2:A:3704:HIS:NE2	2.36	0.40
2:A:2131:LEU:HD12	2:A:2131:LEU:HA	1.90	0.40
2:A:3889:GLN:NE2	2:A:3963:ASN:HB3	2.37	0.40
2:A:4650:HIS:O	2:A:4653:VAL:HG12	2.22	0.40
2:D:2278:ALA:HA	2:D:2281:ILE:HG12	2.03	0.40
2:J:1850:VAL:HA	2:J:1945:TYR:CE1	2.57	0.40
2:J:4555:LEU:HD21	2:J:4656:LEU:HD22	2.03	0.40
2:J:4678:ALA:HB1	2:J:4720:VAL:HG21	2.04	0.40
2:J:4851:TYR:CD2	2:J:4920:PHE:HD1	2.39	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	M	62/33 (188%)	56 (90%)	6 (10%)	0	100	100
2	A	3718/5037 (74%)	3668 (99%)	48 (1%)	2 (0%)	51	83
2	D	3750/5037 (74%)	3701 (99%)	49 (1%)	0	100	100
2	G	3827/5037 (76%)	3774 (99%)	53 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	J	3786/5037 (75%)	3726 (98%)	60 (2%)	0	100	100
3	B	105/107 (98%)	101 (96%)	4 (4%)	0	100	100
3	E	104/107 (97%)	100 (96%)	4 (4%)	0	100	100
3	H	105/107 (98%)	99 (94%)	6 (6%)	0	100	100
3	K	104/107 (97%)	100 (96%)	4 (4%)	0	100	100
4	C	131/149 (88%)	131 (100%)	0	0	100	100
4	F	131/149 (88%)	130 (99%)	1 (1%)	0	100	100
4	I	132/149 (89%)	132 (100%)	0	0	100	100
4	L	133/149 (89%)	131 (98%)	2 (2%)	0	100	100
All	All	16088/21205 (76%)	15849 (98%)	237 (2%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	A	4052	SER
2	A	614	VAL

### 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	M	56/28 (200%)	56 (100%)	0	100	100
2	A	1728/4276 (40%)	1650 (96%)	78 (4%)	27	57
2	D	1204/4276 (28%)	1137 (94%)	67 (6%)	21	53
2	G	1976/4276 (46%)	1902 (96%)	74 (4%)	34	61
2	J	1721/4276 (40%)	1640 (95%)	81 (5%)	26	56
3	B	67/88 (76%)	66 (98%)	1 (2%)	65	81
3	E	49/88 (56%)	48 (98%)	1 (2%)	55	74
3	H	73/88 (83%)	72 (99%)	1 (1%)	67	82
3	K	74/88 (84%)	72 (97%)	2 (3%)	44	68

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
4	C	9/123 (7%)	9 (100%)	0	100	100
4	F	9/123 (7%)	8 (89%)	1 (11%)	6	28
4	I	8/123 (6%)	8 (100%)	0	100	100
4	L	5/123 (4%)	5 (100%)	0	100	100
All	All	6979/17976 (39%)	6673 (96%)	306 (4%)	32	58

All (306) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	G	72	SER
2	G	213	TYR
2	G	220	LEU
2	G	465	GLN
2	G	497	TYR
2	G	521	LEU
2	G	598	LYS
2	G	601	ASP
2	G	640	TYR
2	G	757	PHE
2	G	772	ASN
2	G	1081	TYR
2	G	1124	PHE
2	G	1239	SER
2	G	1269	CYS
2	G	1464	PHE
2	G	1494	MET
2	G	1500	PHE
2	G	1553	PHE
2	G	1604	SER
2	G	1610	ASN
2	G	1630	CYS
2	G	1640	HIS
2	G	1931	LEU
2	G	1969	LEU
2	G	2009	LEU
2	G	2113	SER
2	G	2128	TYR
2	G	2131	LEU
2	G	2197	LEU
2	G	2232	CYS
2	G	2301	TYR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	G	2305	CYS
2	G	2340	PHE
2	G	2423	MET
2	G	2460	LEU
2	G	2529	ASP
2	G	2530	MET
2	G	2583	LEU
2	G	2587	TYR
2	G	2613	TYR
2	G	2652	TRP
2	G	3625	SER
2	G	3638	MET
2	G	3653	PHE
2	G	3667	HIS
2	G	3698	LEU
2	G	3799	LYS
2	G	3929	SER
2	G	3933	PHE
2	G	3934	TYR
2	G	3951	PHE
2	G	3964	SER
2	G	3973	CYS
2	G	3983	SER
2	G	4065	PHE
2	G	4128	PHE
2	G	4163	PHE
2	G	4169	SER
2	G	4209	GLN
2	G	4217	PHE
2	G	4556	SER
2	G	4571	PHE
2	G	4631	PHE
2	G	4655	PHE
2	G	4679	ARG
2	G	4844	LEU
2	G	4875	LYS
2	G	4877	ASP
2	G	4892	ARG
2	G	4958	CYS
2	G	4994	TYR
2	G	5017	ARG
2	G	5027	CYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	H	87	HIS
2	A	24	CYS
2	A	74	SER
2	A	78	LEU
2	A	178	ARG
2	A	200	TRP
2	A	218	HIS
2	A	221	ARG
2	A	230	CYS
2	A	389	PHE
2	A	394	GLN
2	A	414	PHE
2	A	483	MET
2	A	484	LEU
2	A	486	LEU
2	A	488	LEU
2	A	491	ILE
2	A	494	LEU
2	A	498	THR
2	A	558	SER
2	A	593	HIS
2	A	605	SER
2	A	619	ASP
2	A	645	ARG
2	A	663	TYR
2	A	791	PHE
2	A	851	PHE
2	A	1092	PHE
2	A	1238	PHE
2	A	1254	HIS
2	A	1255	TYR
2	A	1269	CYS
2	A	1434	TYR
2	A	1492	CYS
2	A	1518	CYS
2	A	1549	PHE
2	A	1560	ASN
2	A	1582	SER
2	A	1626	TRP
2	A	1640	HIS
2	A	1647	CYS
2	A	1674	CYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	A	1683	HIS
2	A	1929	MET
2	A	2142	TYR
2	A	2204	HIS
2	A	2211	MET
2	A	2324	ASN
2	A	2334	PHE
2	A	2340	PHE
2	A	2452	ARG
2	A	2505	PHE
2	A	2569	PHE
2	A	3667	HIS
2	A	3710	LEU
2	A	3714	SER
2	A	3722	TYR
2	A	3773	ARG
2	A	3781	GLN
2	A	3796	SER
2	A	3973	CYS
2	A	3985	LEU
2	A	3995	VAL
2	A	4049	VAL
2	A	4052	SER
2	A	4195	PHE
2	A	4571	PHE
2	A	4580	TYR
2	A	4631	PHE
2	A	4655	PHE
2	A	4672	LYS
2	A	4716	TRP
2	A	4774	LYS
2	A	4858	PHE
2	A	4859	PHE
2	A	4945	ASP
2	A	4967	TYR
2	A	5019	TRP
2	A	5020	ASP
3	B	40	ARG
2	D	48	PHE
2	D	67	PHE
2	D	105	HIS
2	D	566	CYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	D	571	SER
2	D	1007	TYR
2	D	1008	SER
2	D	1237	TRP
2	D	1239	SER
2	D	1717	SER
2	D	1760	HIS
2	D	1854	PHE
2	D	1940	CYS
2	D	2110	TYR
2	D	2128	TYR
2	D	2237	CYS
2	D	2240	CYS
2	D	2336	ARG
2	D	2340	PHE
2	D	2377	LEU
2	D	2553	TYR
2	D	2679	PHE
2	D	3653	PHE
2	D	3669	PHE
2	D	3677	LEU
2	D	3720	TYR
2	D	3732	SER
2	D	3733	CYS
2	D	3752	SER
2	D	3899	PHE
2	D	3933	PHE
2	D	3962	PHE
2	D	3980	LEU
2	D	3984	ARG
2	D	3985	LEU
2	D	3986	TRP
2	D	3995	VAL
2	D	4036	VAL
2	D	4044	MET
2	D	4048	LEU
2	D	4061	PHE
2	D	4110	PHE
2	D	4128	PHE
2	D	4132	PHE
2	D	4142	ASN
2	D	4147	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	D	4162	ASN
2	D	4169	SER
2	D	4182	GLU
2	D	4183	ILE
2	D	4190	ILE
2	D	4198	SER
2	D	4556	SER
2	D	4571	PHE
2	D	4580	TYR
2	D	4632	LEU
2	D	4639	MET
2	D	4655	PHE
2	D	4686	LEU
2	D	4815	ASP
2	D	4859	PHE
2	D	4877	ASP
2	D	4953	ASP
2	D	4957	LYS
2	D	4985	LEU
2	D	4989	MET
2	D	4994	TYR
3	E	15	PHE
4	F	90	PHE
2	J	36	CYS
2	J	73	LEU
2	J	102	LEU
2	J	113	HIS
2	J	147	TRP
2	J	179	TYR
2	J	474	ARG
2	J	478	PHE
2	J	493	ARG
2	J	536	ASN
2	J	575	LEU
2	J	588	SER
2	J	598	LYS
2	J	601	ASP
2	J	663	TYR
2	J	702	TRP
2	J	791	PHE
2	J	1085	SER
2	J	1133	HIS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	J	1139	PHE
2	J	1143	TRP
2	J	1189	LEU
2	J	1435	TYR
2	J	1438	ARG
2	J	1492	CYS
2	J	1494	MET
2	J	1553	PHE
2	J	1611	HIS
2	J	1665	HIS
2	J	1700	ASP
2	J	1804	LEU
2	J	1965	TYR
2	J	2110	TYR
2	J	2128	TYR
2	J	2158	CYS
2	J	2164	SER
2	J	2225	PHE
2	J	2251	PHE
2	J	2272	PRO
2	J	2305	CYS
2	J	2312	MET
2	J	2498	HIS
2	J	2546	MET
2	J	2553	TYR
2	J	3017	PHE
2	J	3653	PHE
2	J	3673	MET
2	J	3696	ASP
2	J	3706	SER
2	J	3727	ASP
2	J	3728	ILE
2	J	3735	LEU
2	J	3897	ASN
2	J	3899	PHE
2	J	3934	TYR
2	J	3937	TYR
2	J	3951	PHE
2	J	3968	TYR
2	J	3970	GLN
2	J	3979	SER
2	J	3992	PHE

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Mol	Chain	Res	Type
2	J	4023	MET
2	J	4029	SER
2	J	4065	PHE
2	J	4077	PHE
2	J	4103	PHE
2	J	4146	LEU
2	J	4150	LEU
2	J	4571	PHE
2	J	4631	PHE
2	J	4728	HIS
2	J	4796	MET
2	J	4856	PHE
2	J	4876	CYS
2	J	4880	MET
2	J	4887	MET
2	J	4998	LYS
2	J	5012	LYS
2	J	5027	CYS
2	J	5032	TYR
2	J	5036	LEU
3	K	73	LYS
3	K	77	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (17) such sidechains are listed below:

Mol	Chain	Res	Type
2	G	2095	GLN
2	G	2253	HIS
2	G	2646	ASN
2	G	4130	ASN
2	G	5003	HIS
2	A	495	ASN
2	A	1678	ASN
2	A	2127	GLN
2	A	3900	GLN
2	A	4043	GLN
2	A	4857	ASN
2	D	4020	GLN
2	D	4037	ASN
2	J	576	ASN
2	J	639	ASN
2	J	2169	GLN

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Mol	Chain	Res	Type
2	J	4142	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 monosaccharides 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$
7	ATP	G	5103	-	26,33,33	0.59	0	31,52,52	0.74	2 (6%)
5	CFF	D	5101	-	8,15,15	1.24	1 (12%)	8,23,23	2.69	3 (37%)
7	ATP	A	5103	-	26,33,33	0.60	0	31,52,52	0.75	2 (6%)
7	ATP	J	5103	-	26,33,33	0.59	0	31,52,52	0.75	2 (6%)
5	CFF	G	5101	-	8,15,15	1.23	1 (12%)	8,23,23	2.70	3 (37%)
5	CFF	J	5101	-	8,15,15	1.23	1 (12%)	8,23,23	2.68	3 (37%)
5	CFF	A	5101	-	8,15,15	1.23	1 (12%)	8,23,23	2.67	3 (37%)
7	ATP	D	5103	-	26,33,33	0.59	0	31,52,52	0.73	2 (6%)

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
7	ATP	G	5103	-	-	6/18/38/38	0/3/3/3
5	CFF	D	5101	-	-	-	0/2/2/2
7	ATP	A	5103	-	-	7/18/38/38	0/3/3/3
7	ATP	J	5103	-	-	8/18/38/38	0/3/3/3
5	CFF	G	5101	-	-	-	0/2/2/2
5	CFF	J	5101	-	-	-	0/2/2/2
5	CFF	A	5101	-	-	-	0/2/2/2
7	ATP	D	5103	-	-	12/18/38/38	0/3/3/3

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	D	5101	CFF	C6-N1	3.03	1.42	1.38
5	J	5101	CFF	C6-N1	3.02	1.42	1.38
5	G	5101	CFF	C6-N1	3.02	1.42	1.38
5	A	5101	CFF	C6-N1	3.02	1.42	1.38

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	D	5101	CFF	C5-C6-N1	-5.31	112.54	118.20
5	G	5101	CFF	C5-C6-N1	-5.29	112.56	118.20
5	A	5101	CFF	C5-C6-N1	-5.27	112.58	118.20
5	J	5101	CFF	C5-C6-N1	-5.27	112.58	118.20
5	G	5101	CFF	C4-C5-C6	4.60	122.92	119.96
5	A	5101	CFF	C4-C5-C6	4.60	122.91	119.96
5	D	5101	CFF	C4-C5-C6	4.53	122.87	119.96
5	J	5101	CFF	C4-C5-C6	4.52	122.86	119.96
5	J	5101	CFF	C12-N3-C4	2.46	121.74	118.25
5	D	5101	CFF	C12-N3-C4	2.43	121.69	118.25
5	G	5101	CFF	C12-N3-C4	2.42	121.67	118.25
7	A	5103	ATP	C5-C6-N6	2.29	123.83	120.35
7	G	5103	ATP	C5-C6-N6	2.27	123.81	120.35
7	J	5103	ATP	C5-C6-N6	2.27	123.80	120.35
7	D	5103	ATP	C5-C6-N6	2.25	123.77	120.35
5	A	5101	CFF	C12-N3-C4	2.23	121.40	118.25
7	D	5103	ATP	PB-O3B-PG	2.06	139.90	132.83
7	G	5103	ATP	PB-O3B-PG	2.06	139.88	132.83
7	A	5103	ATP	PB-O3B-PG	2.06	139.88	132.83
7	J	5103	ATP	PB-O3B-PG	2.04	139.81	132.83

There are no chirality outliers.

All (33) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	G	5103	ATP	PB-O3B-PG-O2G
7	G	5103	ATP	C5'-O5'-PA-O3A
7	G	5103	ATP	C4'-C5'-O5'-PA
7	A	5103	ATP	PB-O3A-PA-O5'
7	A	5103	ATP	C5'-O5'-PA-O2A
7	A	5103	ATP	C5'-O5'-PA-O3A
7	A	5103	ATP	C4'-C5'-O5'-PA
7	D	5103	ATP	C5'-O5'-PA-O3A
7	D	5103	ATP	C4'-C5'-O5'-PA
7	D	5103	ATP	C3'-C4'-C5'-O5'
7	J	5103	ATP	C5'-O5'-PA-O1A
7	J	5103	ATP	C5'-O5'-PA-O2A
7	J	5103	ATP	C3'-C4'-C5'-O5'
7	J	5103	ATP	C4'-C5'-O5'-PA
7	D	5103	ATP	O4'-C4'-C5'-O5'
7	J	5103	ATP	O4'-C4'-C5'-O5'
7	D	5103	ATP	PB-O3B-PG-O1G
7	J	5103	ATP	PB-O3B-PG-O1G
7	D	5103	ATP	PG-O3B-PB-O2B
7	D	5103	ATP	PA-O3A-PB-O2B
7	G	5103	ATP	C5'-O5'-PA-O1A
7	G	5103	ATP	C5'-O5'-PA-O2A
7	D	5103	ATP	C5'-O5'-PA-O1A
7	A	5103	ATP	PG-O3B-PB-O2B
7	J	5103	ATP	PG-O3B-PB-O2B
7	G	5103	ATP	PB-O3B-PG-O1G
7	D	5103	ATP	PB-O3B-PG-O2G
7	D	5103	ATP	PB-O3B-PG-O3G
7	J	5103	ATP	C5'-O5'-PA-O3A
7	A	5103	ATP	PB-O3A-PA-O2A
7	D	5103	ATP	PG-O3B-PB-O1B
7	D	5103	ATP	PA-O3A-PB-O1B
7	A	5103	ATP	O4'-C4'-C5'-O5'

There are no ring outliers.

4 monomers are involved in 7 short contacts:

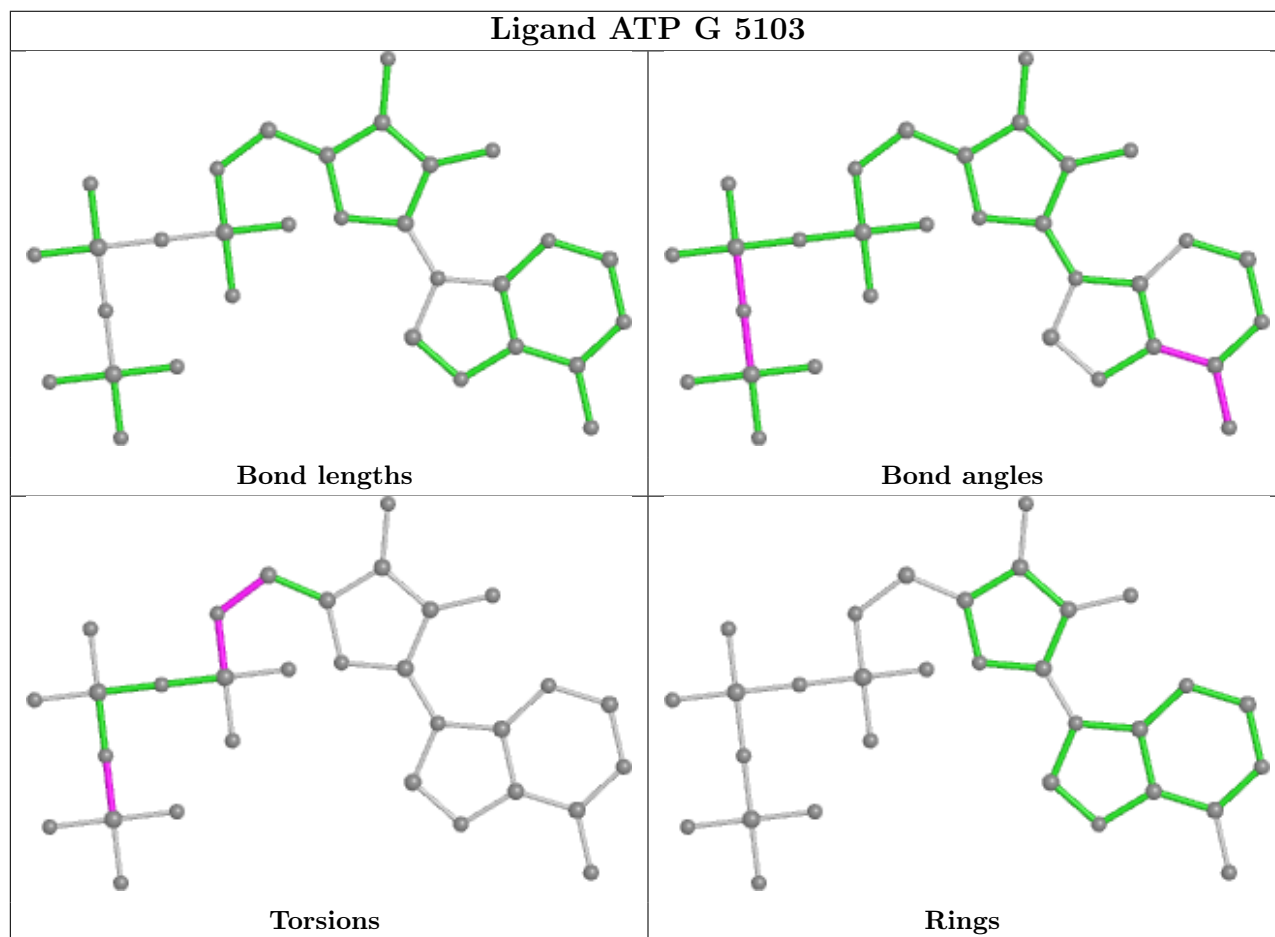
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	G	5103	ATP	3	0
5	D	5101	CFE	1	0

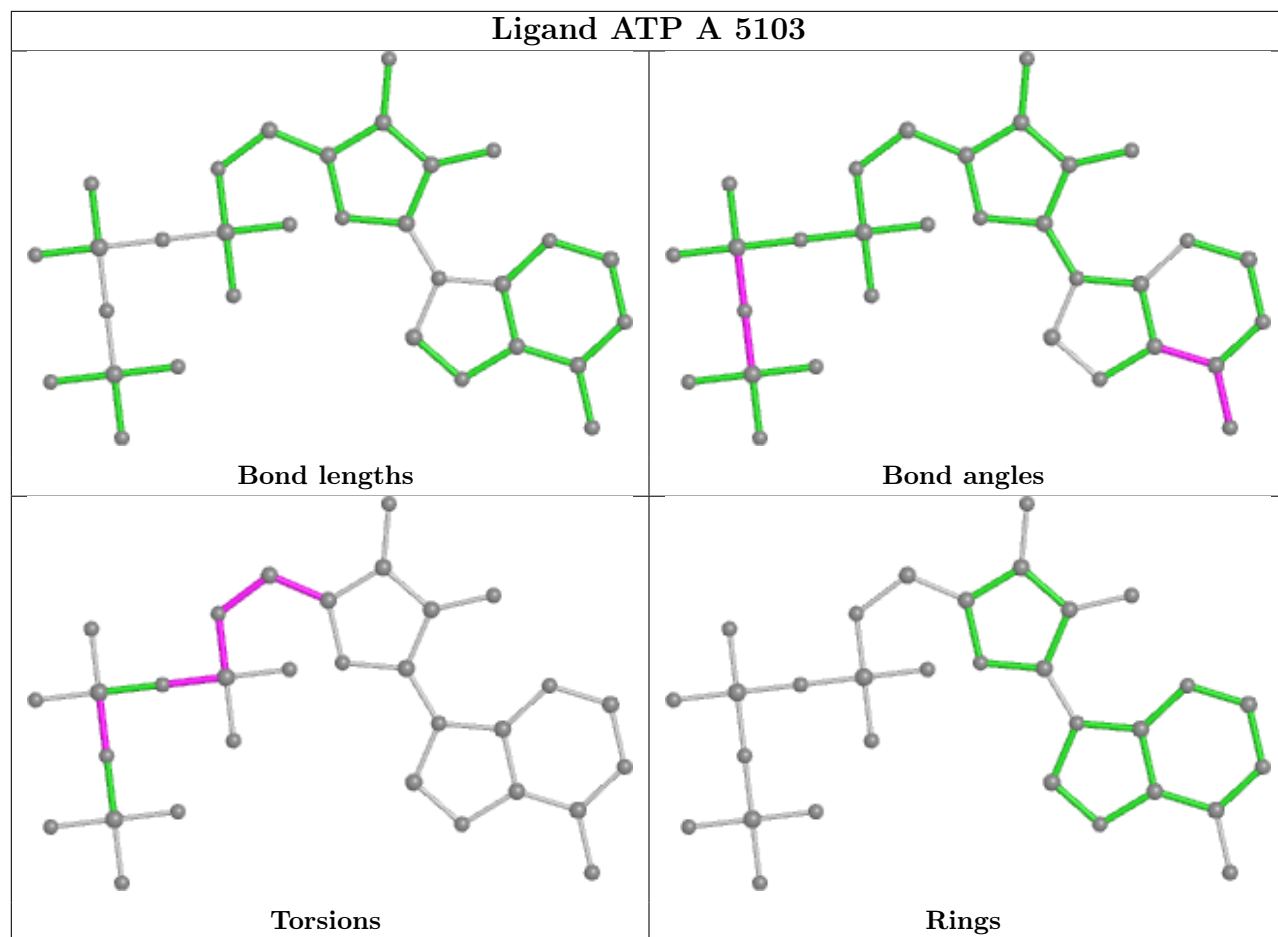
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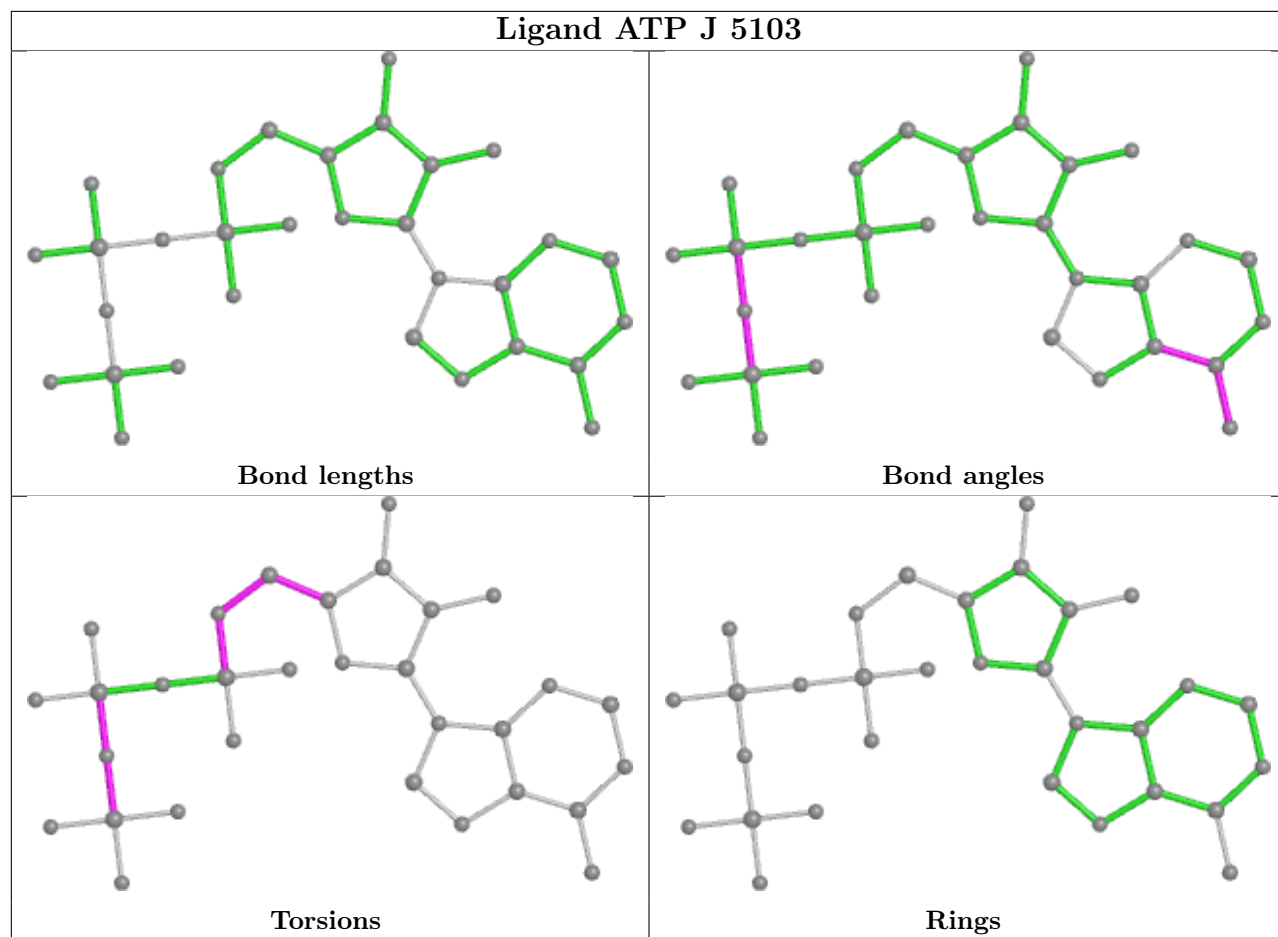
Continued from previous page...

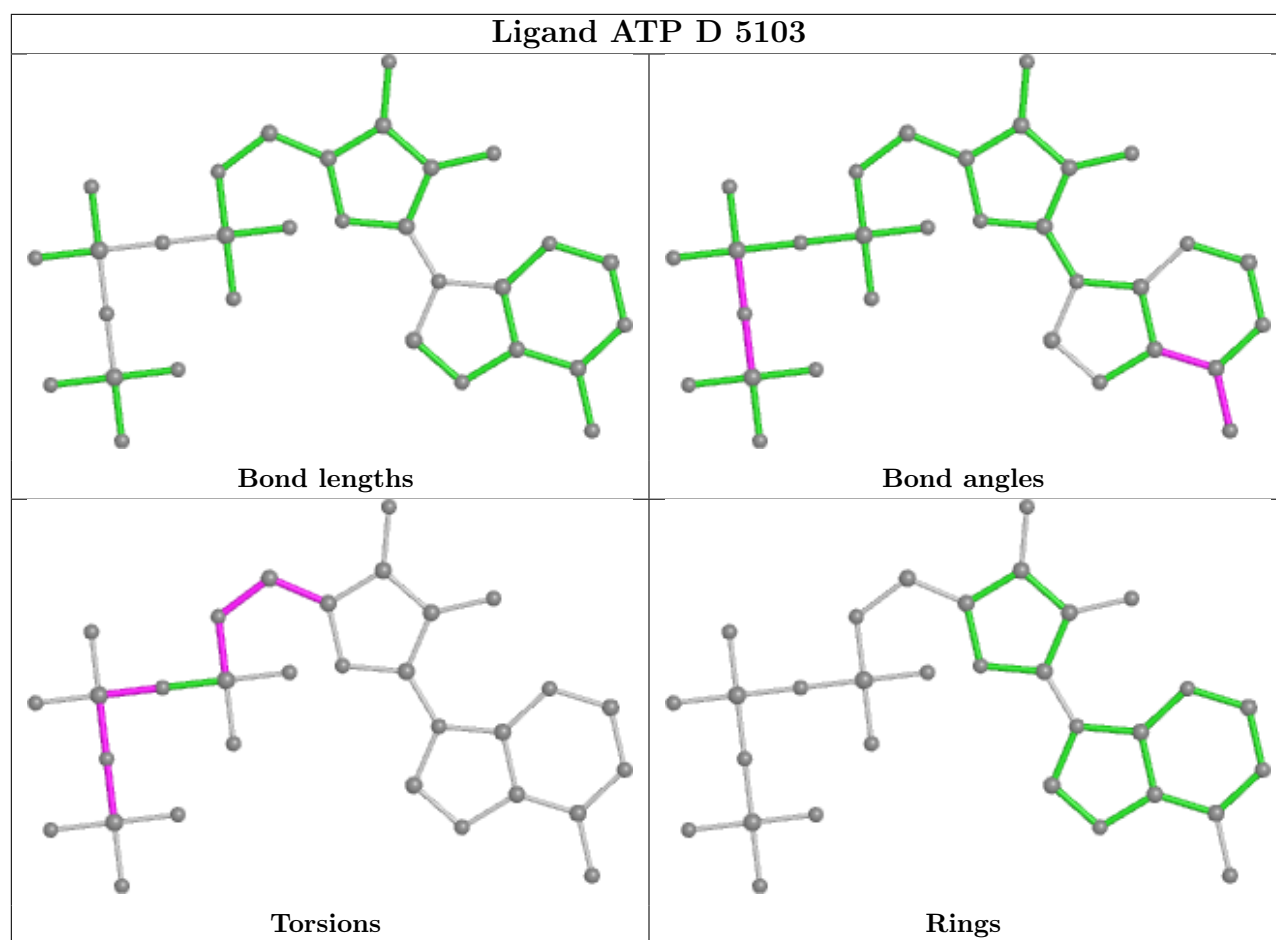
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	A	5103	ATP	2	0
7	D	5103	ATP	1	0

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.

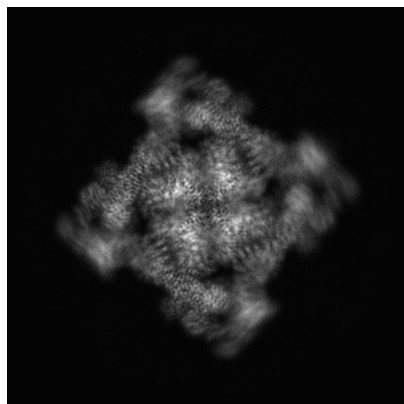
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-27721. These allow visual inspection of the internal detail of the map and identification of artifacts.

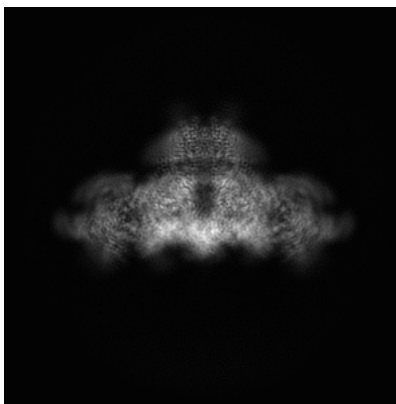
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

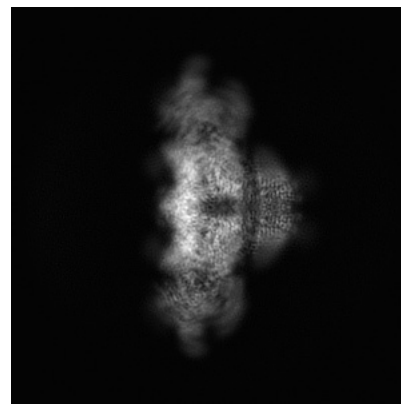
#### 6.1.1 Primary map



X

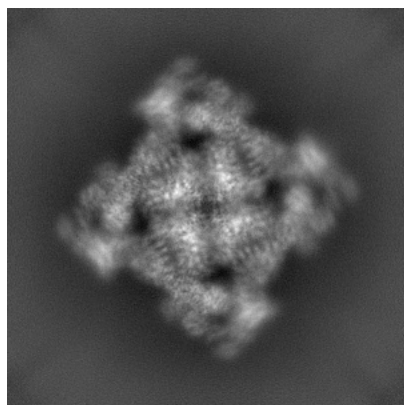


Y

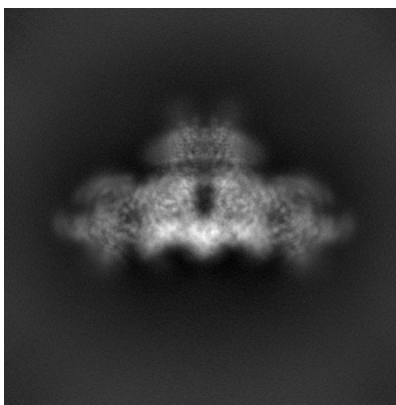


Z

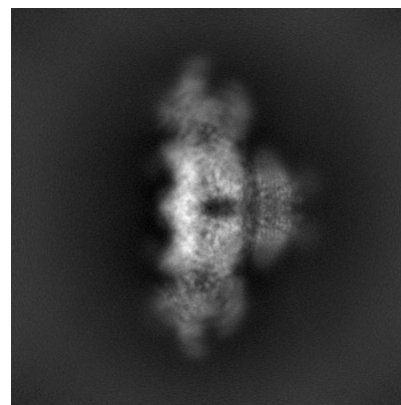
#### 6.1.2 Raw map



X



Y



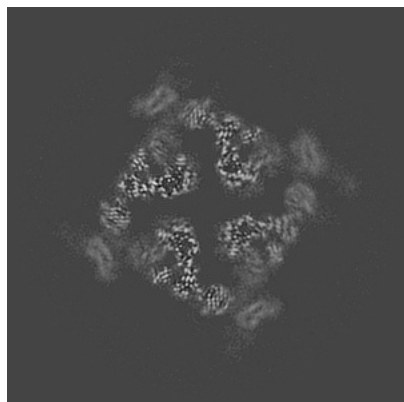
Z

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

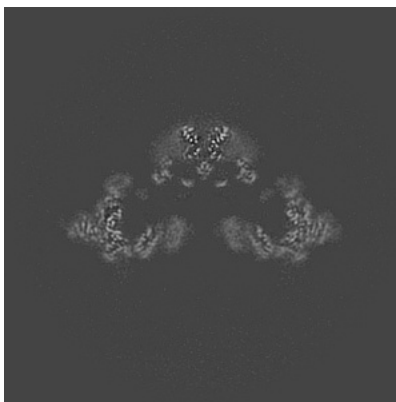


## 6.2 Central slices [i](#)

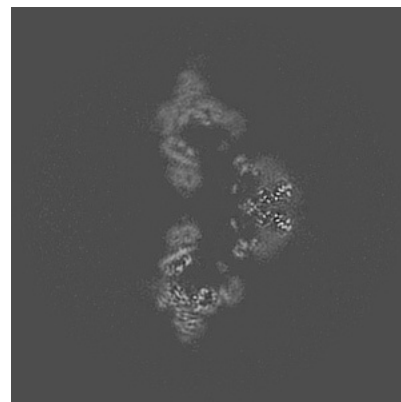
### 6.2.1 Primary map



X Index: 224

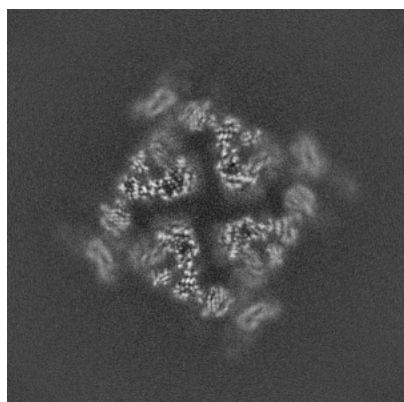


Y Index: 224

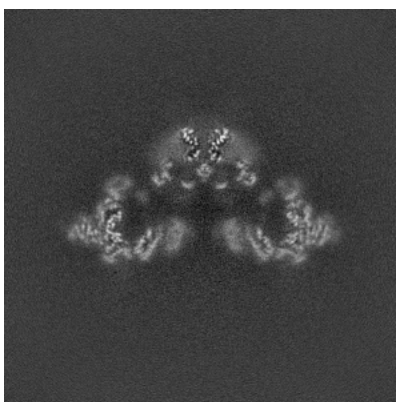


Z Index: 224

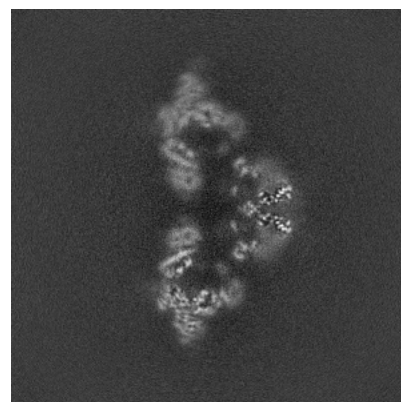
### 6.2.2 Raw map



X Index: 224



Y Index: 224

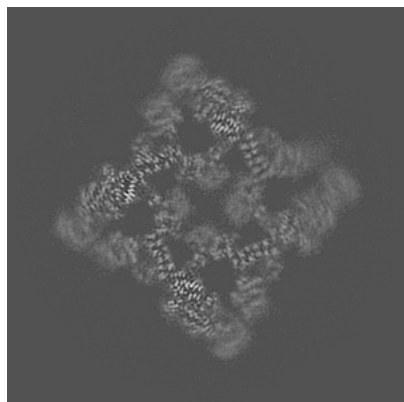


Z Index: 224

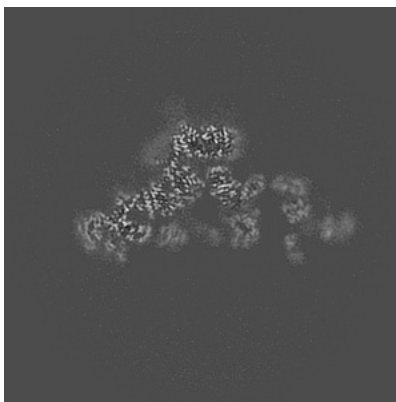
The images above show central slices of the map in three orthogonal directions.

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

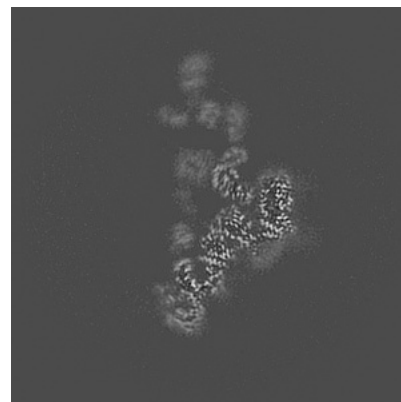
### 6.3.1 Primary map



X Index: 203

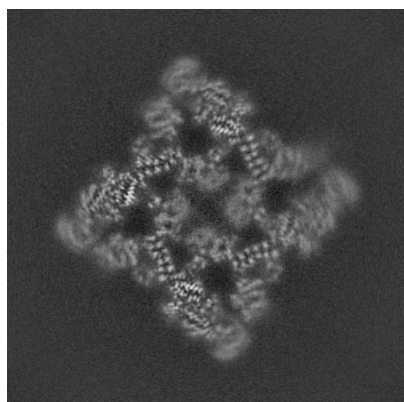


Y Index: 205

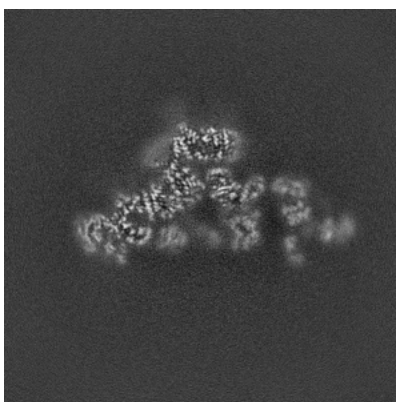


Z Index: 242

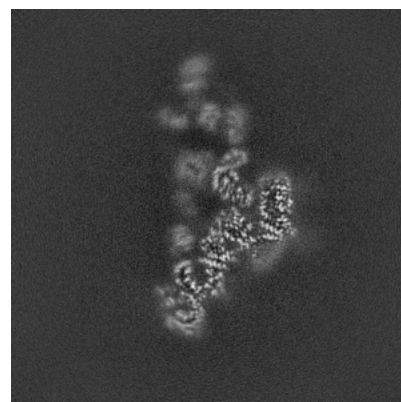
### 6.3.2 Raw map



X Index: 203



Y Index: 205

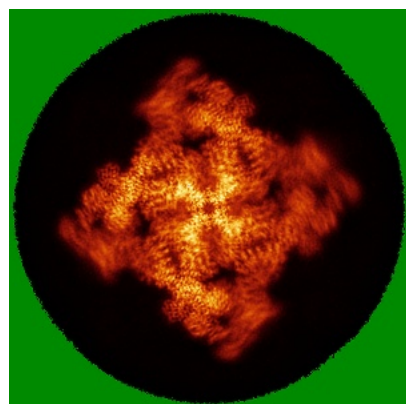


Z Index: 242

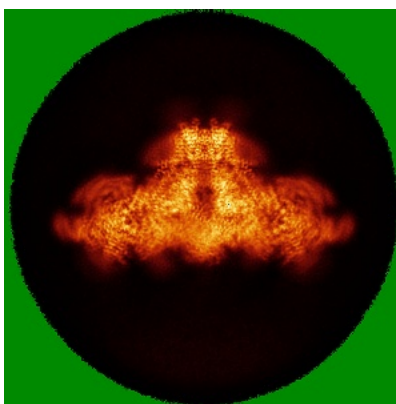
The images above show the largest variance slices of the map in three orthogonal directions.

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

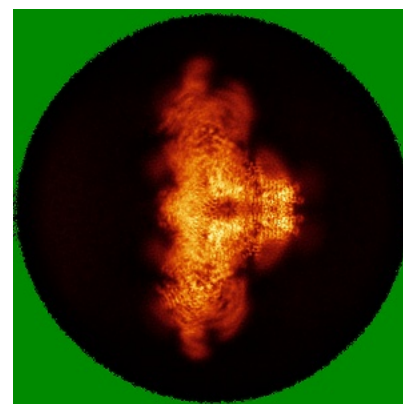
### 6.4.1 Primary map



X

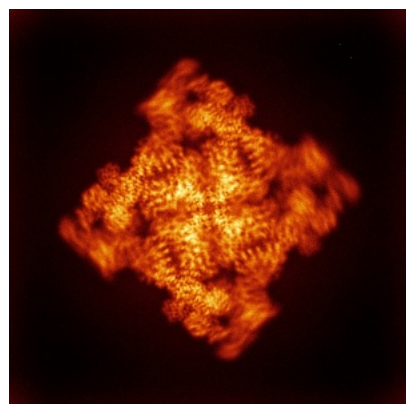


Y

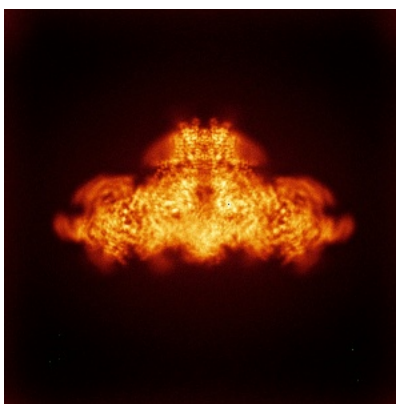


Z

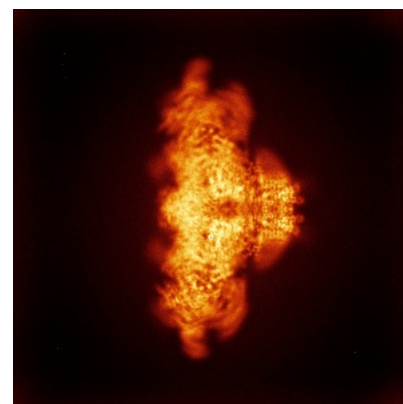
### 6.4.2 Raw map



X



Y

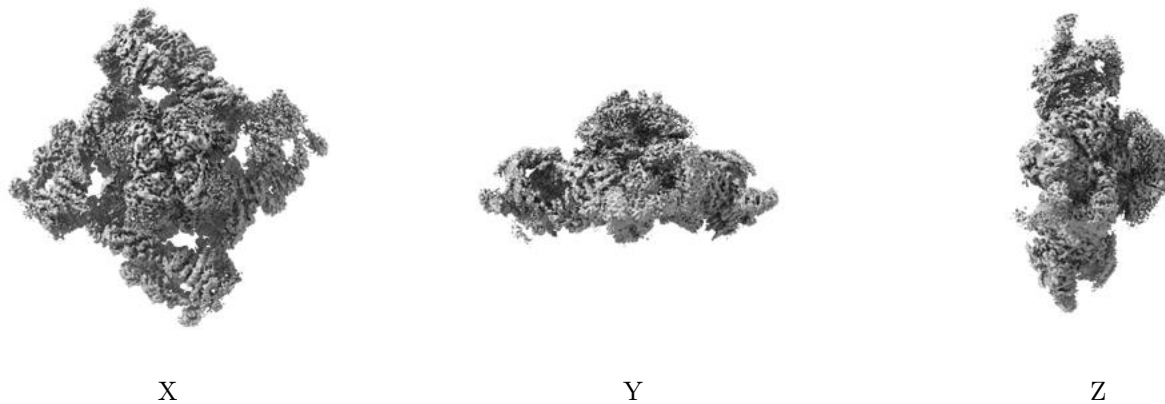


Z

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.

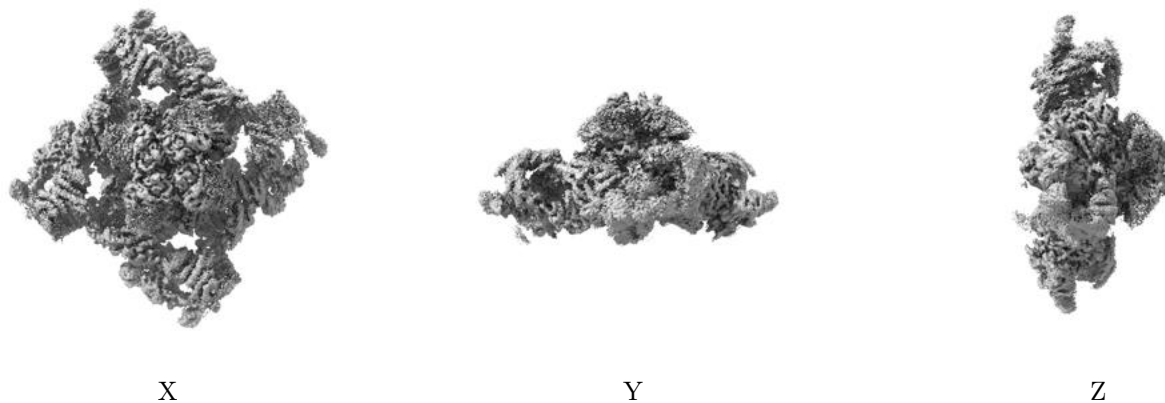
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.35. 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.

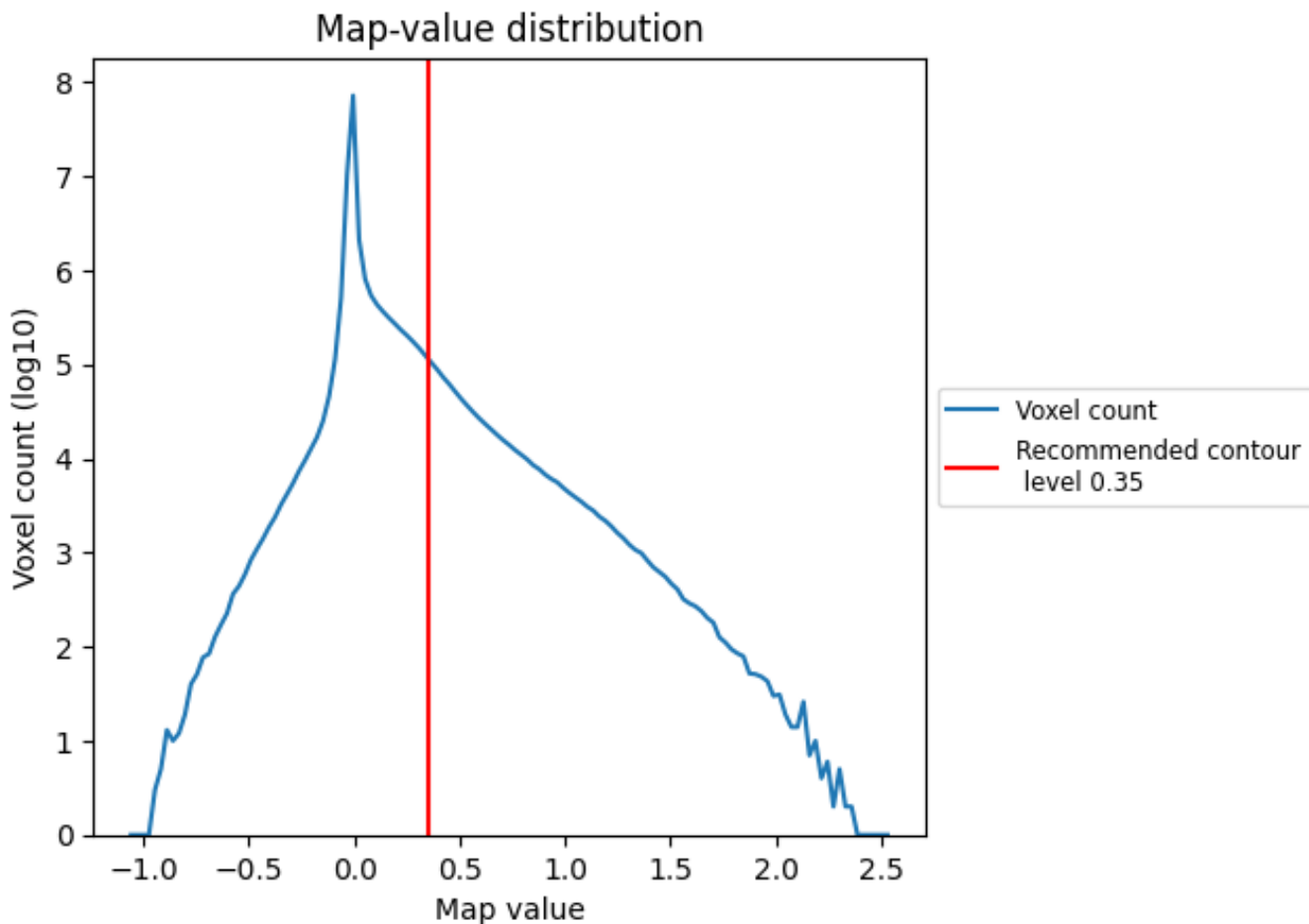
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

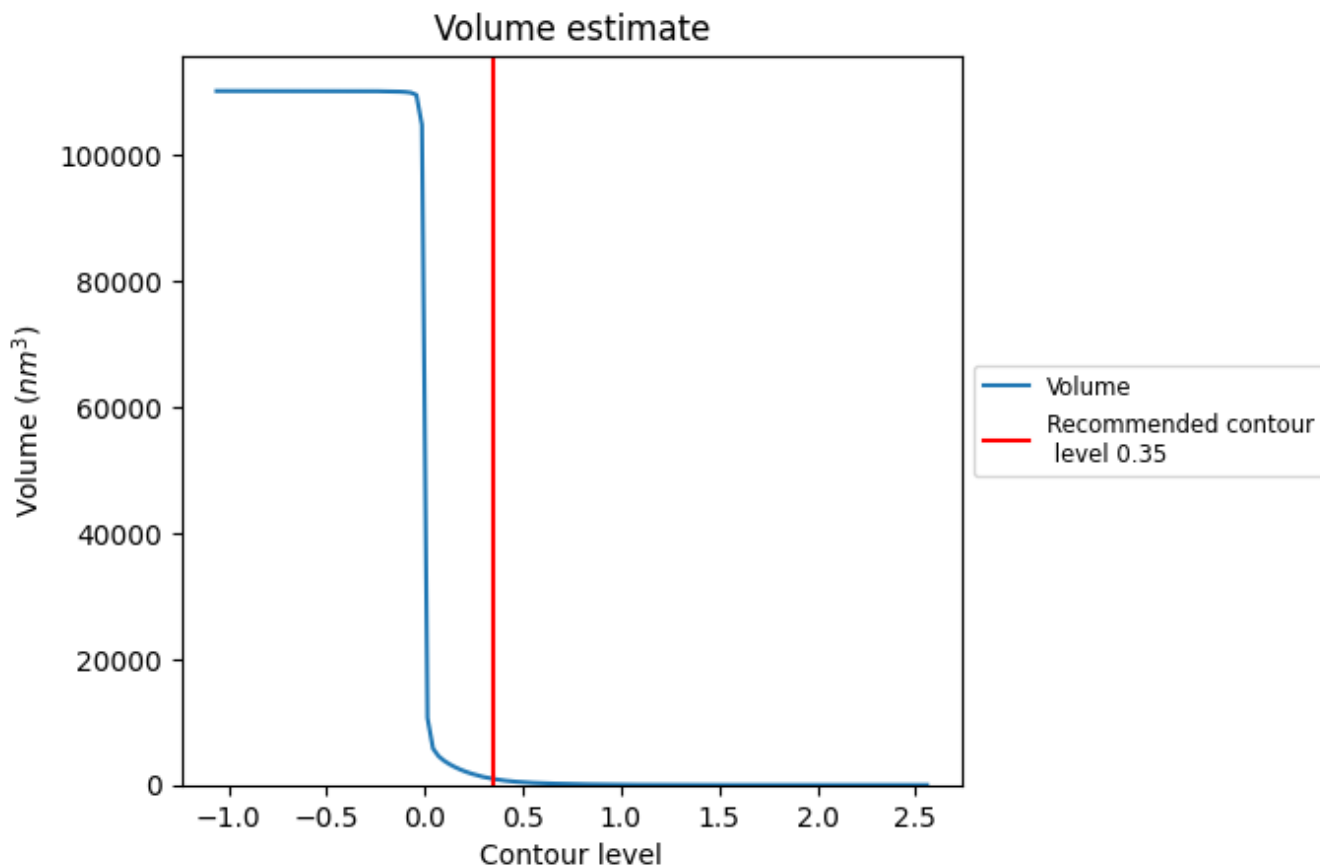
This section contains the results of statistical analysis of the map.

### 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.

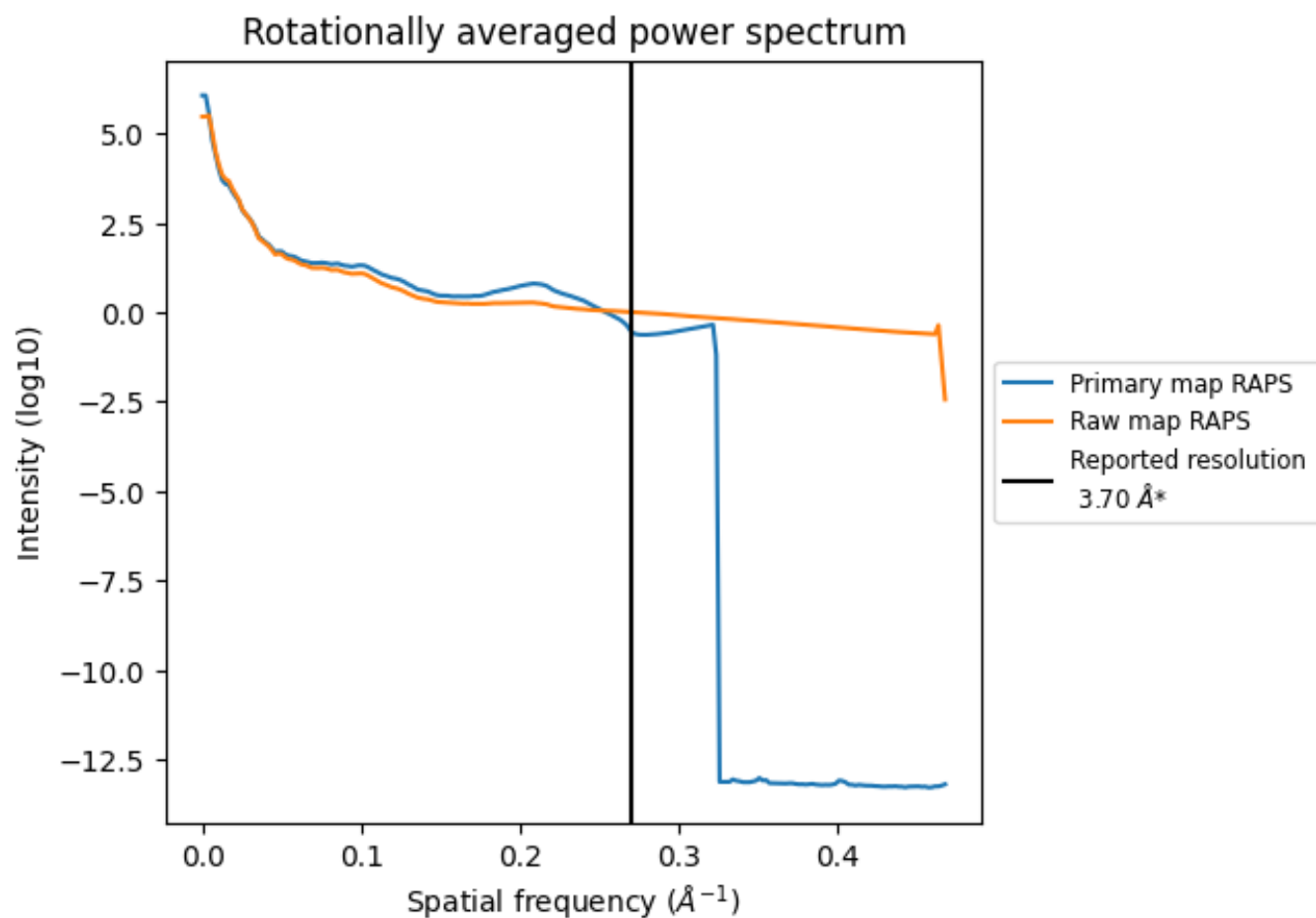
## 7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 957  $\text{nm}^3$ ; this corresponds to an approximate mass of 865 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



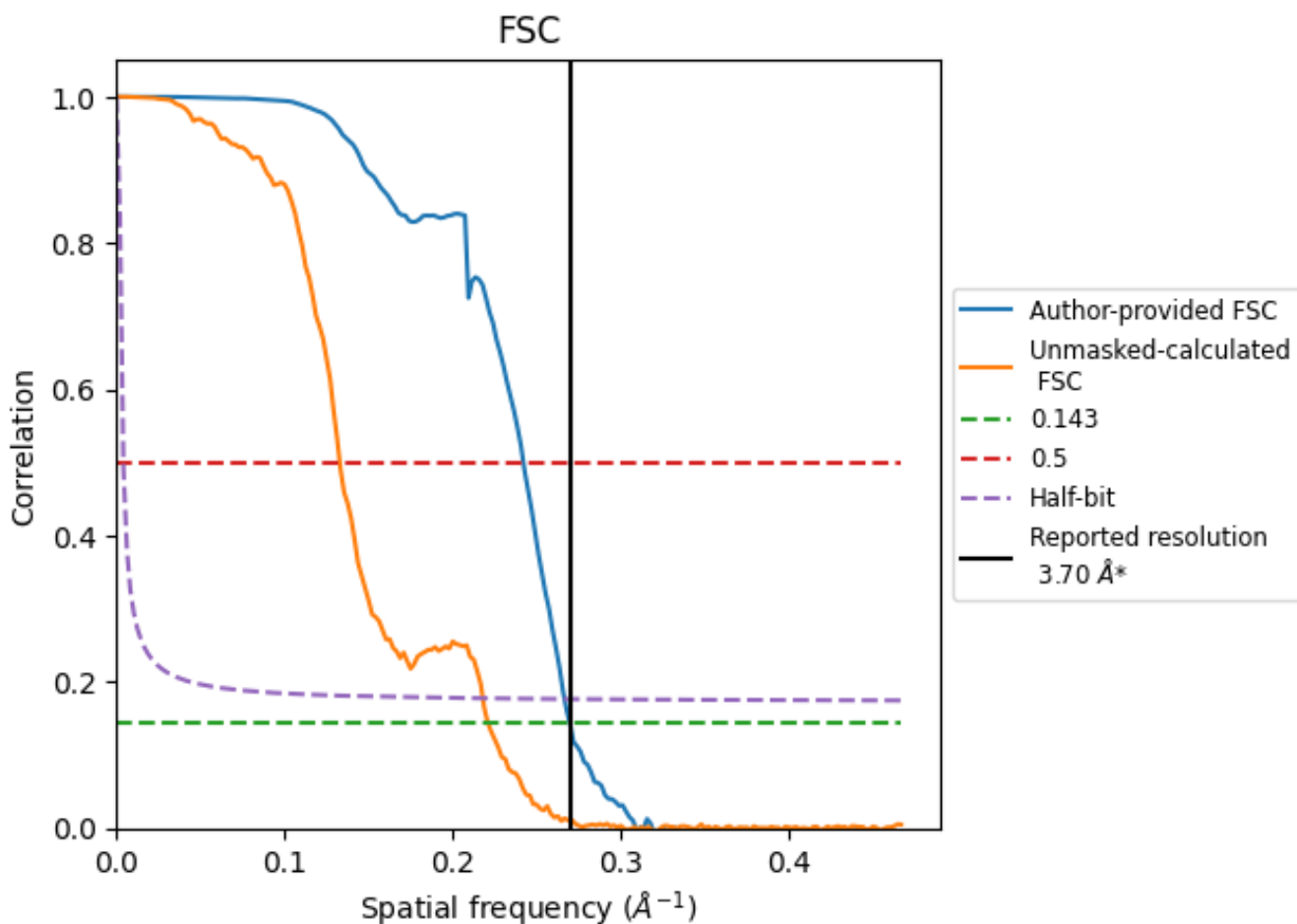
\*Reported resolution corresponds to spatial frequency of 0.270 Å<sup>-1</sup>



## 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 0.270 Å<sup>-1</sup>



## 8.2 Resolution estimates [i](#)

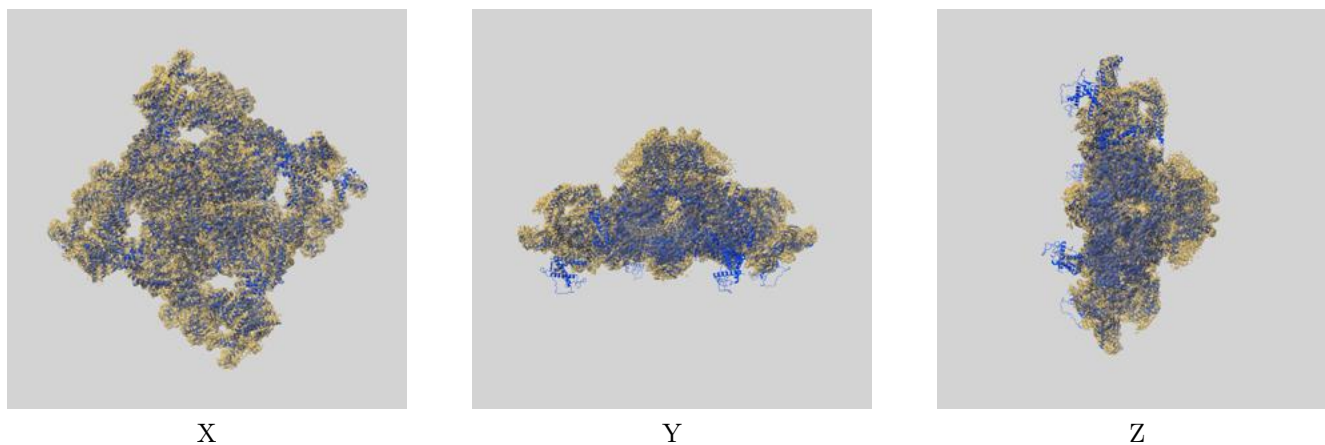
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	3.71	4.13	3.75
Unmasked-calculated*	4.52	7.52	4.58

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.52 differs from the reported value 3.7 by more than 10 %

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

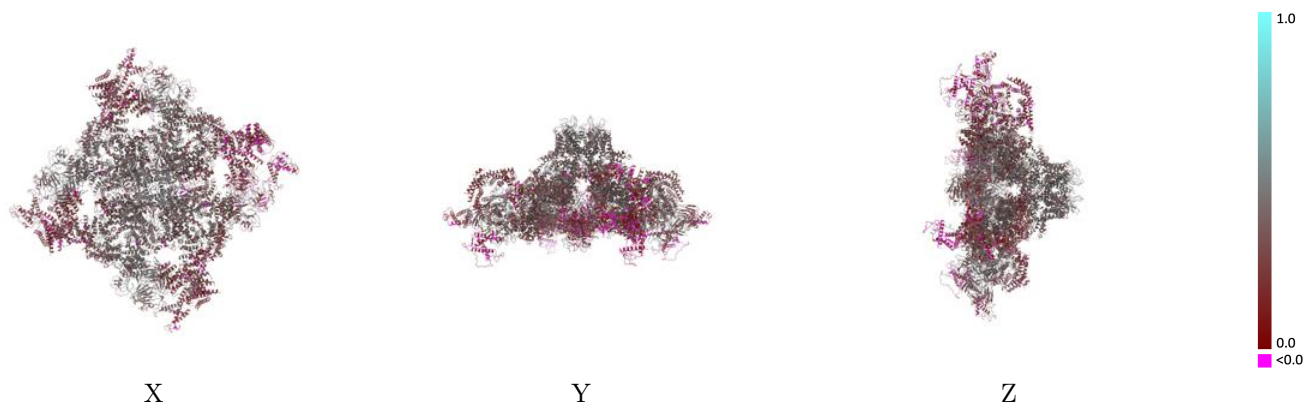
This section contains information regarding the fit between EMDB map EMD-27721 and PDB model 8DUJ. Per-residue inclusion information can be found in section 3 on page 8.

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



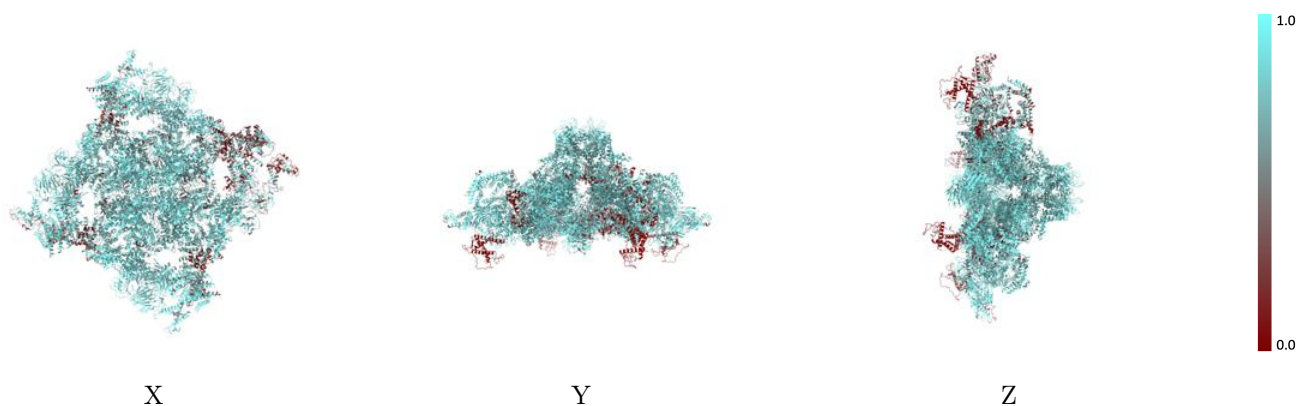
The images above show the 3D surface view of the map at the recommended contour level 0.35 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



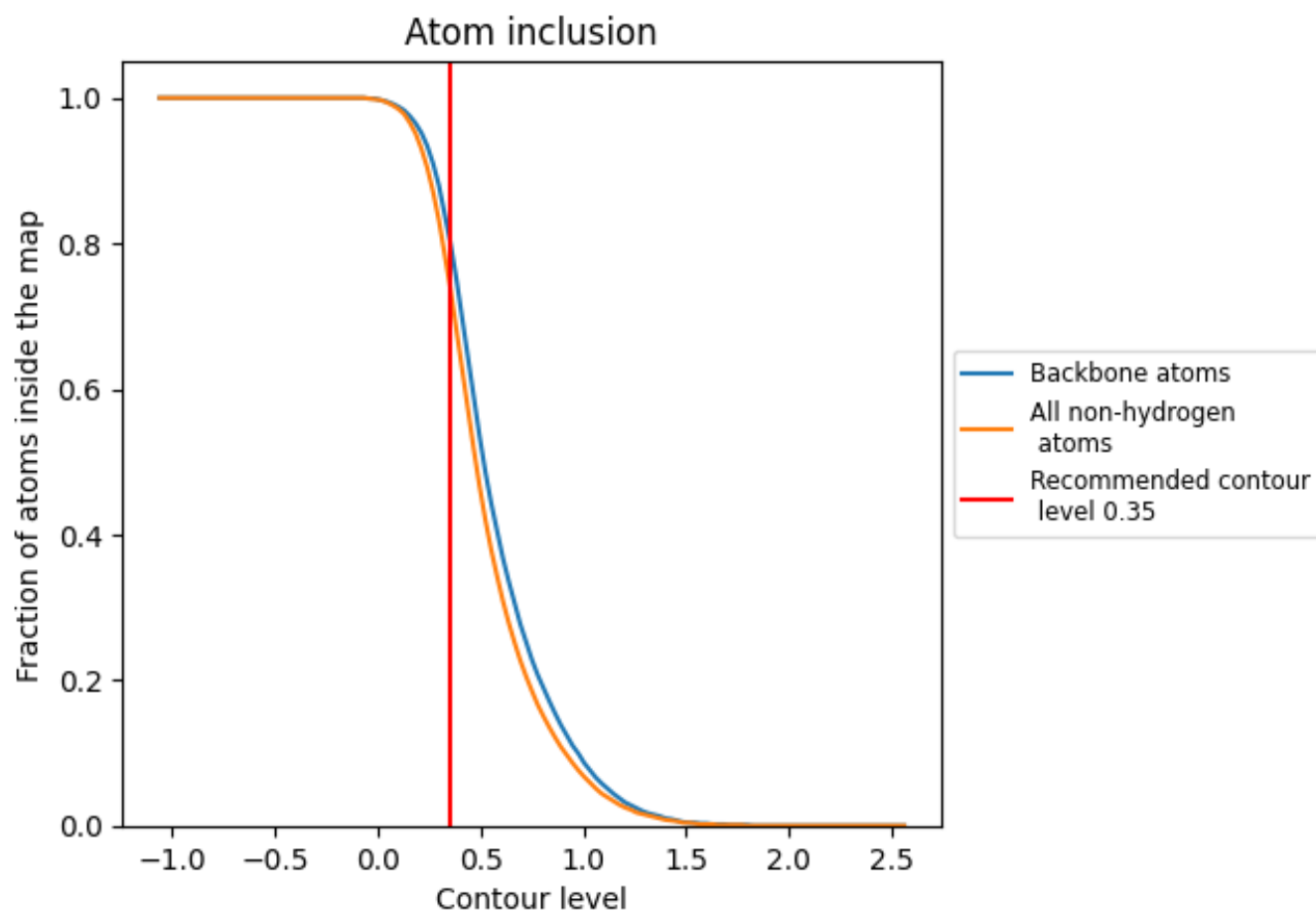
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.35).





























## 9.4 Atom inclusion [i](#)



At the recommended contour level, 81% of all backbone atoms, 74% 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 (0.35) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7430	 0.3450
A	 0.7390	 0.3470
B	 0.8290	 0.3980
C	 0.1920	 0.2430
D	 0.7080	 0.3050
E	 0.7030	 0.2960
F	 0.1970	 0.2240
G	 0.7760	 0.3660
H	 0.8610	 0.4330
I	 0.3760	 0.2800
J	 0.7910	 0.3640
K	 0.8640	 0.4400
L	 0.2950	 0.2410
M	 0.6070	 0.3960

