



Full wwPDB EM Validation Report ⓘ

Oct 1, 2024 – 03:51 pm BST

PDB ID : 8RRX
EMDB ID : EMD-19468
Title : Structure of RyR1 reconstituted into lipid nanodisc in primed state in complex with Ca²⁺, ATP, caffeine and Nb9657
Authors : Li, C.; Efremov, R.G.
Deposited on : 2024-01-23
Resolution : 3.10 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev113
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.39

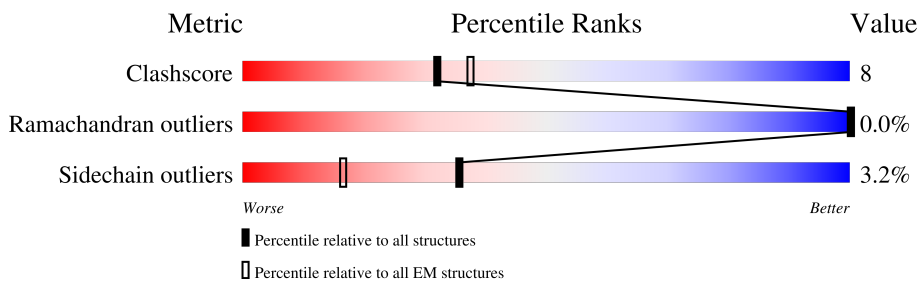
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.10 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



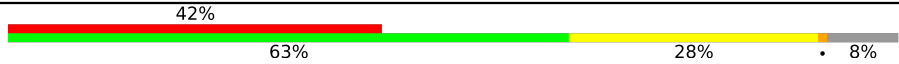

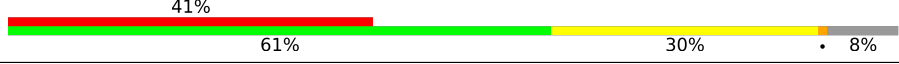
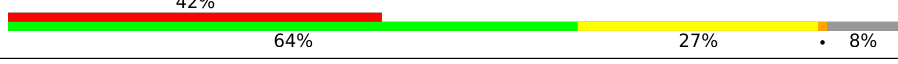
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	F	107	82% 16% .
1	H	107	82% 16% .
1	J	107	85% 14% .
1	L	107	83% 15% .
2	A	5027	5% 67% 18% . 14%
2	D	5027	5% 67% 18% . 14%
2	G	5027	5% 67% 18% . 14%
2	I	5027	5% 67% 18% . 14%

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Mol	Chain	Length	Quality of chain
3	C	137	
3	E	137	
3	K	137	
3	M	137	

2 Entry composition [i](#)

There are 8 unique types of molecules in this entry. The entry contains 144144 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Peptidyl-prolyl cis-trans isomerase FKBP1B.

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

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
H	100	ASP	GLY	conflict	UNP Q8HYX6
L	100	ASP	GLY	conflict	UNP Q8HYX6
J	100	ASP	GLY	conflict	UNP Q8HYX6
F	100	ASP	GLY	conflict	UNP Q8HYX6

- Molecule 2 is a protein called Ryanodine receptor 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	I	4319	34151	21750	5888	6285	228	1	0
2	A	4319	34153	21752	5888	6285	228	1	0
2	D	4319	34153	21752	5888	6285	228	1	0
2	G	4319	34151	21750	5888	6285	228	1	0

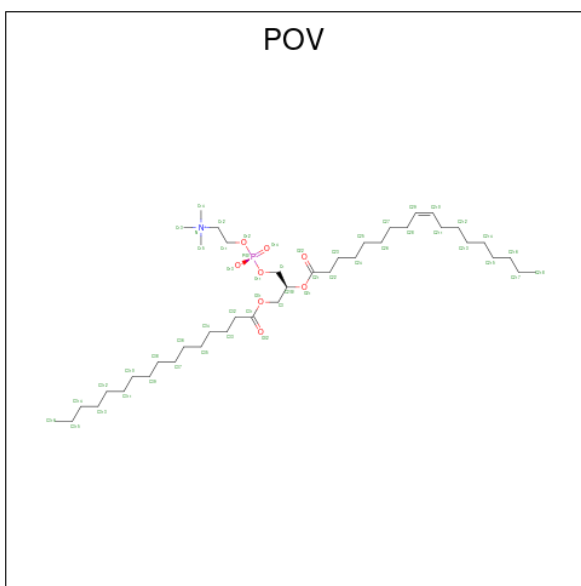
- Molecule 3 is a protein called Nanobody 9657.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	K	126	Total	C	N	O	S	0	0
			967	597	170	195	5		
3	C	126	Total	C	N	O	S	0	0
			967	597	170	195	5		
3	E	126	Total	C	N	O	S	0	0
			967	597	170	195	5		
3	M	126	Total	C	N	O	S	0	0
			967	597	170	195	5		

- Molecule 4 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
4	I	1	Total	Zn	0
			1	1	
4	A	1	Total	Zn	0
			1	1	
4	D	1	Total	Zn	0
			1	1	
4	G	1	Total	Zn	0
			1	1	

- Molecule 5 is (2S)-3-(hexadecanoyloxy)-2-[(9Z)-octadec-9-enoyloxy]propyl 2-(trimethylamm onio)ethyl phosphate (three-letter code: POV) (formula: C₄₂H₈₂NO₈P).



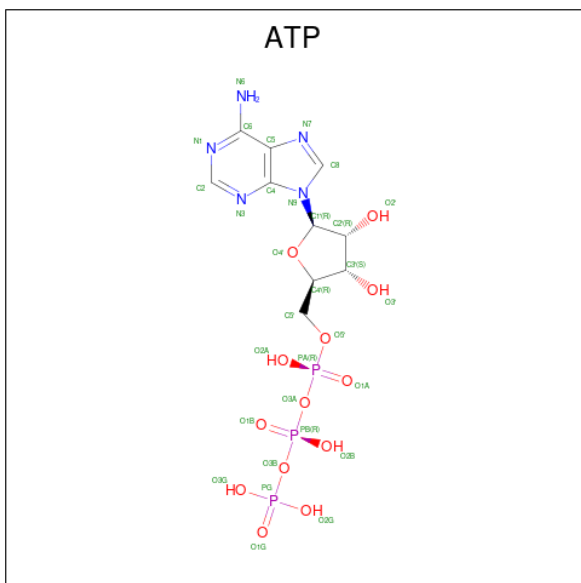
Mol	Chain	Residues	Atoms					AltConf
5	I	1	Total	C	N	O	P	0
			52	42	1	8	1	

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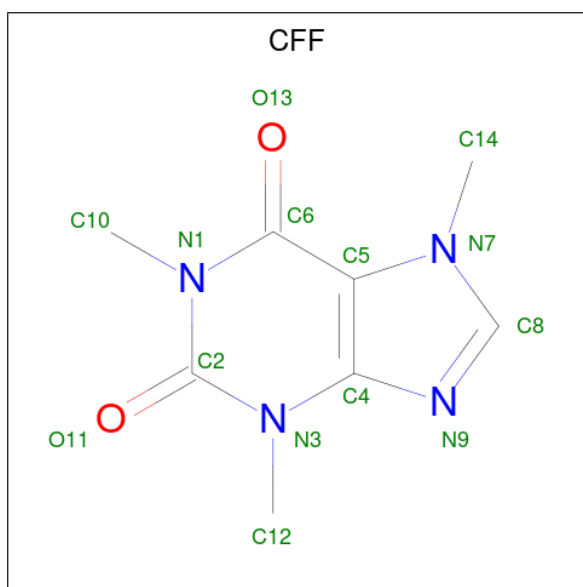
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
5	A	1	Total	C	N	O	P	0
			52	42	1	8	1	
5	D	1	Total	C	N	O	P	0
			52	42	1	8	1	
5	G	1	Total	C	N	O	P	0
			52	42	1	8	1	

- Molecule 6 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 7 is CAFFEINE (three-letter code: CFF) (formula: $C_8H_{10}N_4O_2$) (labeled as "Ligand of Interest" by depositor).



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

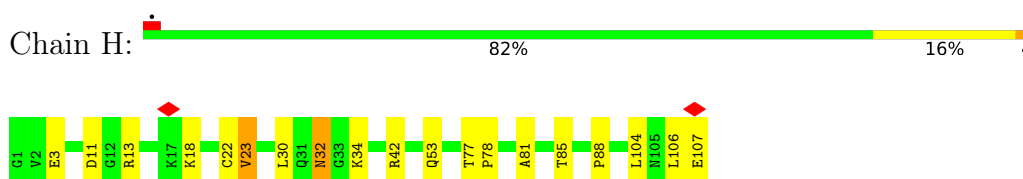
- Molecule 8 is CALCIUM ION (three-letter code: CA) (formula: Ca) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
			Total	Ca	
8	I	1	1	1	0
8	A	1	1	1	0
8	D	1	1	1	0
8	G	1	1	1	0

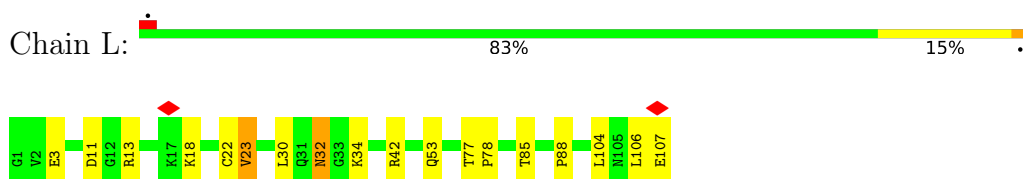
3 Residue-property plots

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.

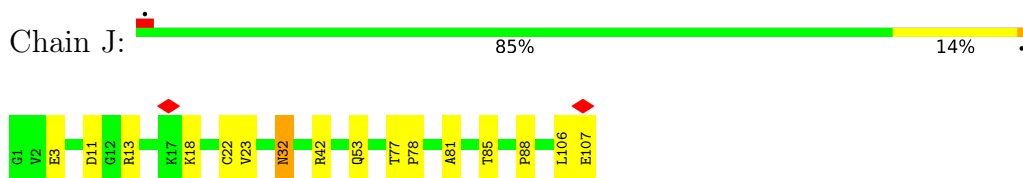
- Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B



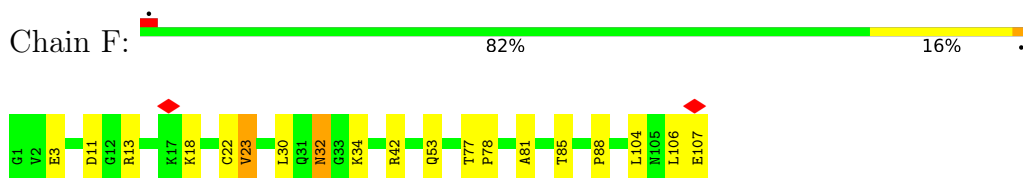
- Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B



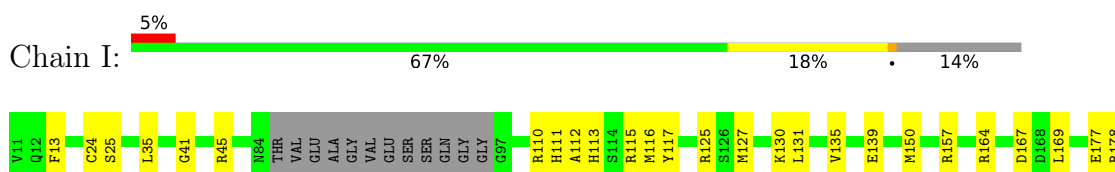
- Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B

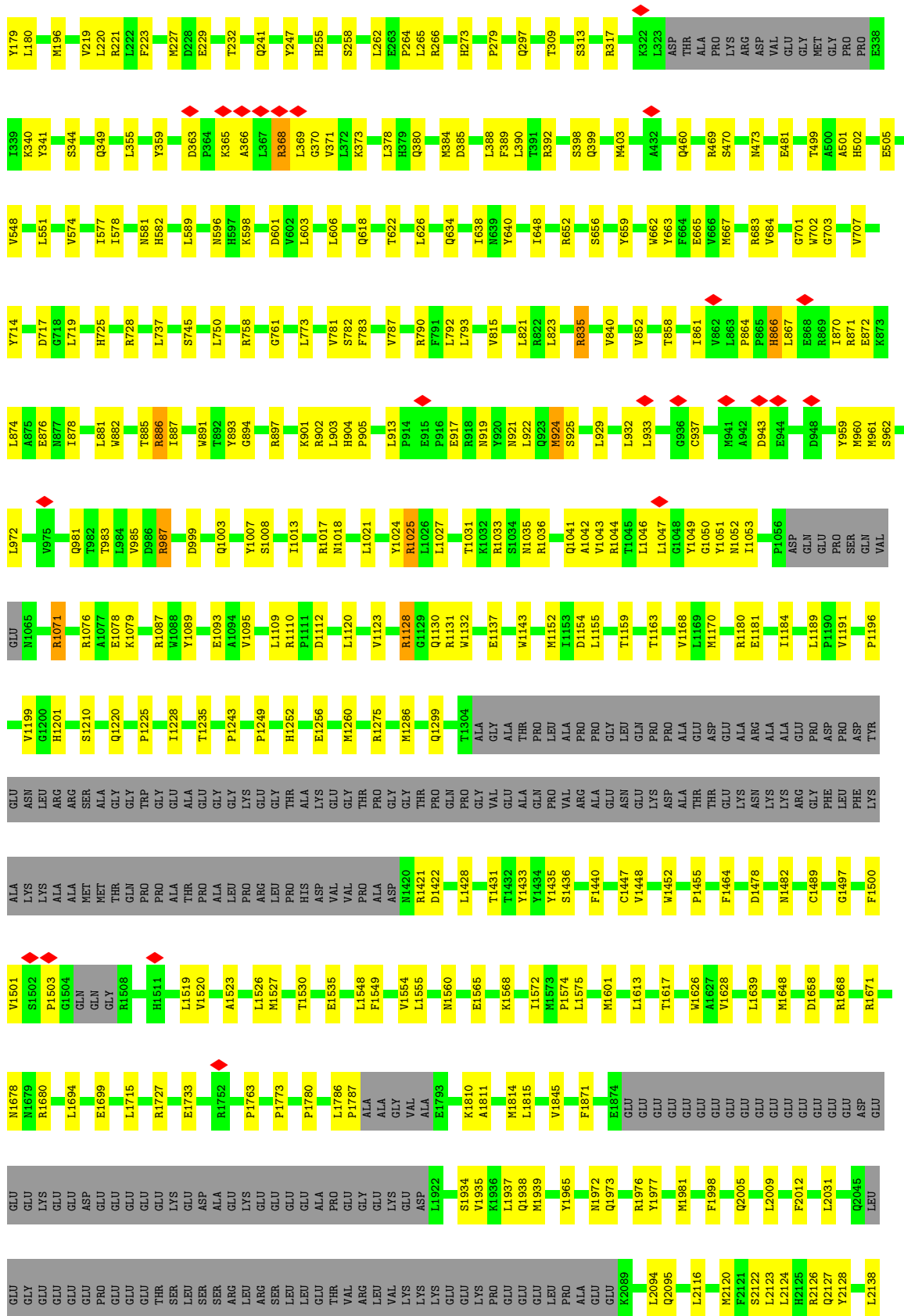


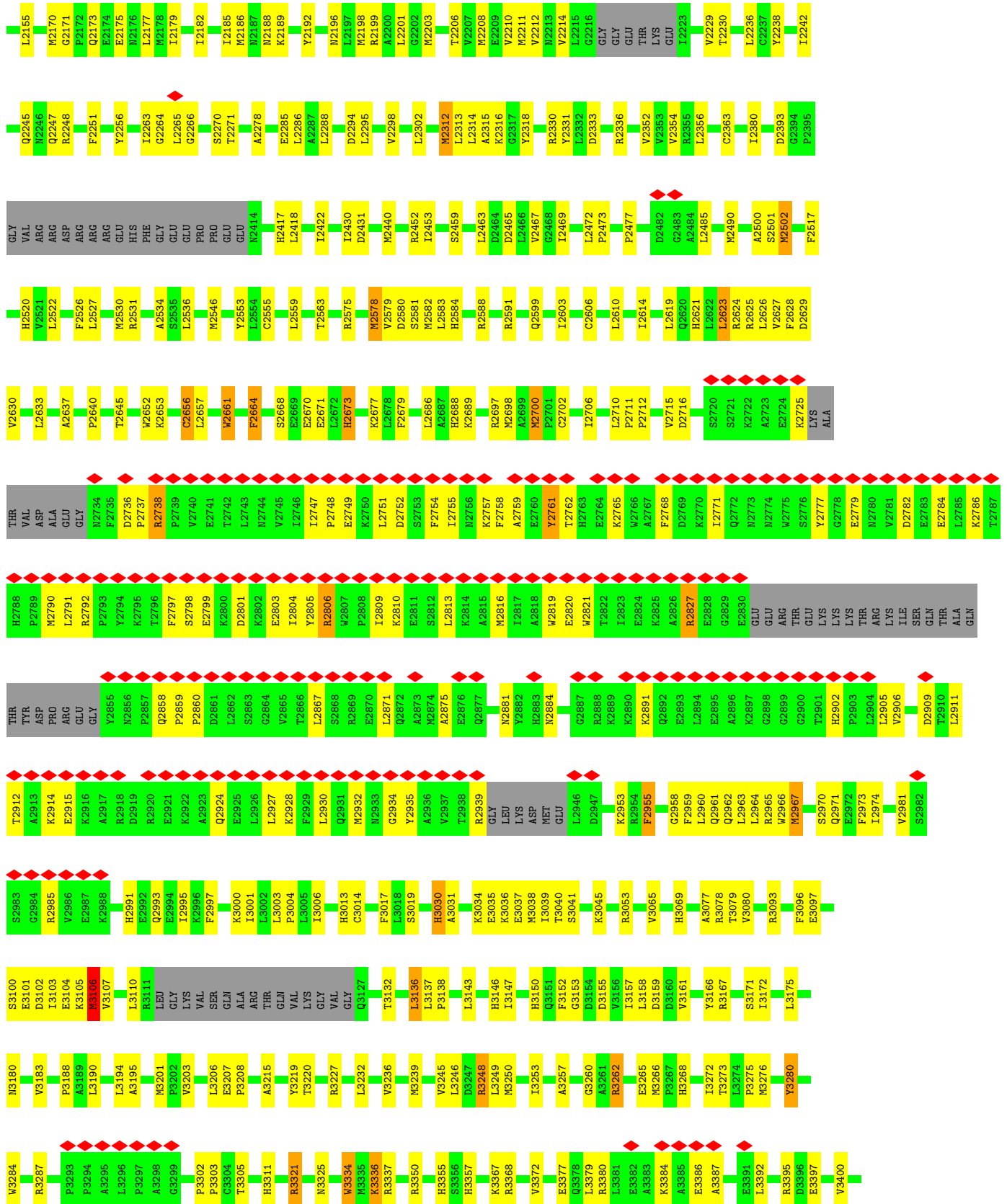
- Molecule 1: Peptidyl-prolyl cis-trans isomerase FKBP1B



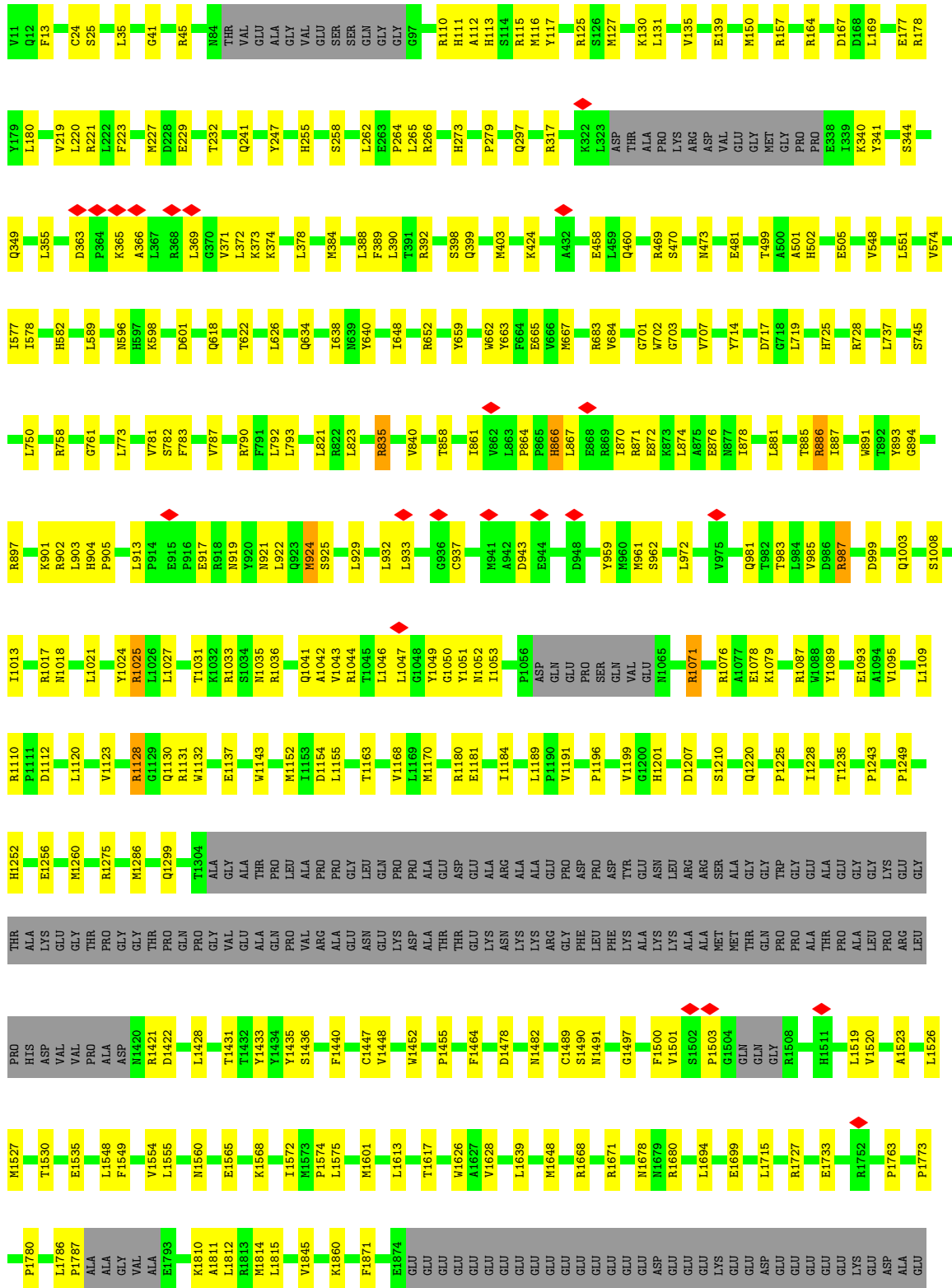
- Molecule 2: Ryanodine receptor 1







• Molecule 2: Ryanodine receptor 1



L2187	L2188	L2189	L2192	L2196	L2197	L2198	L2199	L2200	L2201	L2202	L2203	L2206	L2207	L2208	L2209	L2210	L2211	L2212	L2213	L2214	L2215	L2216	L2223	L2229	L2230	L2236	L2237	L2238	L2242	L2245	L2246	L2248	L2251	L2256	L2263	L2264	L2265	L2266	L2270	L2271	L2272	L2277	L2286														
LYS	GLU	GLU	GLU	ALA	PRO	GLU	GLY	LYS	LYS	GLU	ASP	LYS	PRO	GLU	GLU	GLU	GLU	ALA	ALA	GLU	GLU	GLU	GLY	GLY	GLU	THR	LYS	THR	VAL	ARG	ASP	ASP	ARG	ARG	GLU	PHE	GLY	GLU	GLU	PRO	PRO	GLU	GLU	ARG	LEU	ARG	LEU	ARG									
A2278	E2285	L2286	A2287	L2288	D2294	L2295	V2298	L2201	L3302	M2312	L2313	L2314	A2315	Y2318	R2330	Y2331	L2332	D2333	R2336	V2352	V2353	V2354	R2356	C2363	L2380	D2393	G2394	P2395	VAL	ARG	ARG	ASP	ARG	ARG	HIS	GLU	PHE	GLY	GLU	GLU	PRO	PRO	GLU	GLU	N2414												
H2417	L2418	L2422	L2430	D2431	M2440	M2452	L2453	S2459	L2463	D2464	D2465	L2466	V2467	L2468	L2469	L2472	P2473	P2477	Q2482	Q2483	M2490	A2500	F2628	D2629	V2630	F2517	H2520	V2521	L2522	F2526	L2527	M2530	R2531	A2534	S2535	L2536	M2546	Y2553	L2554	C2555																	
L2559	T2563	R2575	M2578	V2579	D2580	S2581	M2582	L2583	H2584	R2588	R2591	D2599	Q2599	I2603	L2610	L2614	L2619	Q2620	H2621	L2623	R2624	R2625	V2627	D2629	V2630	L2633	A2637	K2638	M2639	P2640	T2645	V2652	K2653	C2656	L2657	V2661	F2664	S2668	E2669																		
E2670	E2671	H2672	K2677	L2678	F2679	L2686	K2687	H2688	K2689	M2697	M2698	A2699	M2700	P2701	C2702	I2706	L2710	P2711	P2712	V2715	D2716	S2720	S2721	K2722	A2723	F2628	E2724	K2725	LYS	ALA	THR	VAL	ASP	ALA	ALA	GLU	GLY	M2734	D2736	F2735	P2737	R2738	M2790	L2791	R2792	P2793	Y2794	L2743	M2744	V2745	I2746	I2747	E2749				
K2750	L2751	D2752	S2753	F2754	N2756	K2757	F2758	A2759	E2760	Y2761	T2762	H2763	M2700	E2764	K2765	V2766	A2767	F2768	D2769	K2770	L2771	Q2772	N2773	N2774	V2775	S2776	Y2777	G2778	E2779	N2780	V2781	D2782	E2783	E2784	L2785	K2786	T2787	H2788	P2789	M2790	L2791	R2792	P2793	Y2794	L2743	M2744	V2745	I2746	I2747	E2749							
K2810	E2811	S2812	L2813	K2814	A2815	M2816	L2817	A2818	M2819	E2820	M2821	T2822	L2823	E2824	K2825	A2826	R2827	E2828	Q2829	E2830	GLU	GLU	THR	LYS	LYS	LYS	THR	ARG	LYS	ILE	SER	GLN	THR	ALA	GLN	THR	TYR	ASP	PRO	ARG	GLU	GLY	Y2855	N2856	P2857	Q2858	P2859	P2860	D2861	L2862	S2863	G2864	V2865	T2866	L2867	S2868	R2869
E2870	L2871	Q2872	M2874	A2875	E2876	Q2877	M2881	H2883	M2884	G2887	R2888	K2889	K2890	K2891	Q2892	E2893	L2894	E2895	A2896	G2898	G2899	T2900	L2901	H2902	P2903	L2904	V2906	D2909	T2910	L2911	T2912	A2913	K2914	E2915	K2916	E2917	R2918	D2919	R2920	E2921	K2922	A2923	Q2924	E2925	L2926	L2927	F2928	L2930	Q2931	M2932	M2933						
G2934	Y2935	A2936	V2937	T2938	R2939	GLY	LEU	LYS	ASP	MET	GLU	L2946	D2947	K2953	R2954	F2955	G2958	F2959	L2960	Q2961	Q2962	L2963	R2965	V2966	M2967	S2970	Q2971	E2972	F2973	L2974	A2975	V2981	S2982	S2983	G2984	R2985	V2986	E2987	K2988	H2991	E2992	Q2993	E2994	L2995	K2996	F2997	K3000	I3001	L3002	L3003	P3004	L3005					
I3006	H3013	C3014	F3017	L3018	S3019	H3030	A3031	K3034	E3035	K3036	E3037	K3038	L3039	T3040	S3041	K3045	Q3151	F3152	G3153	D3154	D3155	V3156	H3069	I3157	L3158	K3266	P3267	H2268	L3272	T3273	L3274	P3275	K3276	Y3280	V3284	R3287	P3292	P3293	P3294	A3295	L3296	P3297	A3298	G3299	F3302	P3303	C3304	T3305	H3311								
THR	GLN	VAL	LYS	VAL	GLY	Q3127	T3132	L3136	L3137	P3138	L3143	H3146	I3147	H3150	Q3151	F3152	G3153	D3154	D3155	V3156	I3157	L3158	K3266	P3267	H2268	L3272	T3273	L3274	P3275	K3276	L3175	N3180	D3102	I3103	E3104	K3105	K3106	V3107	L3110	R3111	GLY	VAL	VAL	SER	GLN	ALA	ARG										
A3215	Y3219	T3220	R3227	L3232	V3236	M3239	V3245	L3246	L3247	R3248	L3249	M3250	L3253	A3257	G3260	K3261	R3262	E3265	K3266	P3267	H2268	L3272	T3273	L3274	P3275	K3276	Y3280	V3284	R3287	P3292	P3293	P3294	A3295	L3296	P3297	A3298	G3299	F3302	P3303	C3304	T3305	H3311															

S65037

Molecule 2: Ryanodine receptor 1



V11	Q12	F13	C24	S25	L35	G41	R45	L73	N84	THR	VAL	GLU	ALA	GLY	VAL	GLU	SER	SER	GLN	GLY	C97	R110	H111	A112	R115	M116	Y117	R125	S125	M127	K130	L131	V135	E139	M150	R157	R164	D167	D168	L169	E177					
R178	T179	L180	V219	L220	R221	L222	F223	M227	A228	E229	T232	Q241	Y246	Y247	E248	H255	S258	L262	E263	P264	L265	R266	H273	P279	Q297	R317	K322	L323	ASP	THR	ALA	PRO	LYS	ARG	ASP	VAL	GLU	GLY	MET	GLY	PRO	D167	E338	I339	K340	Y341
S344	Q349	L355	D363	P364	K365	A366	L367	R368	G369	V371	L372	K373	K374	L378	H379	Q380	M384	L388	F389	L390	T391	R392	S398	Q399	M403	K424	A432	E458	L459	Q460	R469	S470	ASP	VAL	M473	E481	T499	A500	A501	H502	E505	V548				
L551	V574	I577	I578	N581	H582	L589	M596	H597	K598	D601	T622	T626	Q634	I638	M639	Y640	L648	R652	S656	Y659	V662	F663	F664	V666	M667	R683	V684	G701	W702	G703	V707	Y714	T499	D717	G718	L719	H725									
R728	L737	S745	L750	R758	G761	L773	V781	S782	F783	V787	R790	F791	L792	L793	L821	R822	L823	R835	V840	V852	T858	I861	V862	L863	P864	F866	L867	E868	R869	I870	R871	E872	K873	L874	A875	E876	R877	I878	L881	T885						
R886	I887	M891	T892	G894	R897	K901	R902	L903	H904	P905	L913	P914	E915	P916	E917	R918	N919	Y920	N921	L922	Q923	N924	S925	L929	L932	L933	G936	C937	N941	A942	D943	E944	D948	Y959	N960	N961	S962	L972	V975	Q981	T982	L984	V985	D986		
R987	D999	Q1003	S1008	I1013	R1017	M1018	L1021	Y1024	R1025	L1026	L1027	T1031	K1032	R1033	R1036	Q1041	A1042	V1043	T1044	L1045	L1046	L1047	G1048	Y1049	G1050	Y1051	M1052	I1053	P1056	ASP	GLN	GLU	PRO	SER	GLM	VAL	N1065	R1071	R1076	A1077	E1078	K1079	R1087	V1088		
Y1089	E1093	A1094	V1095	L1109	R1110	D1112	L1120	V1123	R1128	G1129	Q1130	R1131	W1132	E1137	W1143	M1152	T1153	D1154	L1155	T1163	V1168	L1169	M1170	R1180	E1181	I1184	L1189	P1190	V1191	P1196	V1199	G1200	H1201	S1210	Q1220	P1225	I1228	T1235								
P1243	P1249	H1252	E1256	M1260	R1275	M1286	Q1299	R1302	C1303	T1304	ALA	GLY	VAL	GLU	THR	PRO	LEU	ALA	PRO	ARG	GLU	GLY	ASN	GLU	ALA	ARG	ALA	GLU	PRO	ASP	ASP	TYR	GLU	ASN	LEU	ARG	ALA	ARG	SER	ALA	GLN	THR	GLN	PRO	ALA	
THR	PRO	ALA	LEU	PRO	ARG	LEU	PRO	THR	ALA	ASP	N1420	R1421	D1422	L1428	T1431	T1432	Y1433	Y1434	Y1435	S1436	F1440	C1447	V1448	W1452	P1455	F1464	D1478	N1482	C1489	S1490	M1491	G1497	F1500	V1501	S1502	P1503	G1504	GLN	THR	GLN	PRO	PRO	ALA			
L1519	V1520	A1523	L1526	M1527	T1530	E1535	L1548	F1549	V1554	L1555	N1560	E1565	K1568	I1572	M1573	P1574	L1575	M1601	L1613	T1617	V1626	A1627	V1628	L1639	M1648	R1668	R1671	R1680	E1689	R1727	E1733	R1752	P1763													

VAL	F3017	T2938	W2874	K2814	F2754	L2575	L2418	S2270	I2182	LEU	ALA	P1773
GLY	L3018	R2939	A2875	A2815	I2755	F2679	I2422	T2271	I2185	ARG	GLU	P1760
S3019	S3019	GLY	E2876	M2816	M2756	D2684	I2430	A2278	M2186	SER	LEU	L1786
H3030	L3132	LYS	Q2877	L2817	K2757	S2685	D2431	S2279	N2187	LEU	GLU	P1767
A3031	H3030	ASP	N2881	A2818	L2686	A2687	M2440	E2285	N2188	THR	ALA	ALA
K3034	Y2882	MET	H2883	W2819	A2759	K2688	R2452	L2286	K2189	VAL	ALA	GLY
E3035	E2820	GLU	N2884	E2820	E2760	K2689	R2453	L2288	Y2192	ARG	VAL	GLY
M3037	W2821	T2822	G2887	T2822	T2762	M2698	R2453	L2288	N2196	LEU	VAL	ALA
I3039	E2824	L2823	R2888	H2763	H2763	A2699	I2452	D2284	M2197	LYS	VAL	E1793
S3041	K2889	E2824	K2889	E2824	E2764	M2700	R2453	L2288	R2199	LYS	VAL	ALA
K3045	K2890	K2825	K2890	K2825	K2765	P2701	S2459	D2284	A2200	LYS	VAL	E1793
R3053	K2891	A2826	A2827	A2768	A2767	C2702	L2463	L2302	A2201	GLU	GLU	K1810
V3065	G2958	G2958	G2892	E2828	Q2772	I2706	D2464	M2312	L2201	GLU	GLU	A1811
H3069	F2959	F2959	E2893	E2828	D2769	L2710	D2465	M2312	G2202	LYS	PRO	M1814
I3070	L2960	L2960	L2894	E2829	K2770	P2711	L2466	L2313	M2203	PRO	PRO	L1815
A3077	Q2961	Q2961	E2895	E2830	I2771	P2712	V2467	L2314	V1935	GLU	GLU	G1816
R3078	L2964	L2964	A2896	E2830	Q2772	P2712	G2468	A2315	K1936	GLU	GLU	E1817
T3079	K2965	K2965	K2897	E2830	Q2772	P2712	I2469	L2356	L1937	GLU	GLU	V1845
V3080	R2966	R2966	G2898	E2830	Q2772	P2712	L2472	L2356	M2208	LEU	PRO	M1939
R3083	R2967	R2967	G2899	E2830	Q2772	P2712	P2473	L2356	V2207	GLU	GLU	Y1965
F3096	S2970	S2970	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
E3097	Q2971	Q2971	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
S3100	E2972	E2972	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
E3101	Q2983	Q2983	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
D3102	G2984	G2984	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
I3103	R2985	R2985	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
E3104	V2986	V2986	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
K3105	E2987	E2987	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
K3106	R2988	R2988	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
V3107	E2988	E2988	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
L3110	H2991	H2991	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
R3111	E2992	E2992	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
LEU	Q2993	Q2993	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
GLY	P2994	P2994	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
LYS	I2995	I2995	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
VAL	F2997	F2997	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
SER	L3001	L3001	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
GLN	L3002	L3002	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
THR	L3003	L3003	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
THR	P3004	P3004	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
GLN	E2925	E2925	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
VAL	L3006	L3006	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
LYS	N3007	N3007	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
GLY	H3013	H3013	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
GLY	C3014	C3014	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
LEU	M3201	M3201	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
GLY	P3202	P3202	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
LYS	V3203	V3203	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
SER	L3206	L3206	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
GLN	E3207	E3207	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
ALA	A3215	A3215	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
THR	V3219	V3219	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
THR	T3220	T3220	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965
LYS	R3227	R3227	G2899	E2830	Q2772	P2712	P2477	L2356	V2207	GLU	GLU	Y1965

K4721	SER	M4626	PRO	THR	GLY	GLY	GLY	THR	GLY	THR	M4142	R3949	E3757	CYS	V3549	L3345	I3345	L3292
V4724	ALA	M4627	PRO	PRO	THR	VAL	ALA	THR	VAL	THR	E4152	K3959	Q3761	PHE	R3550	R3350	M3239	L3272
L4741	GLY	V4628	ALA	GLY	ALA	GLY	ALA	ALA	ALA	ALA	R4156	K3959	S3768	ARG	E3551	F3552	M3239	L3274
D4744	GLY	Y4629	GLY	GLY	ALA	GLY	ALA	ALA	ALA	ALA	R4156	F3962	R3769	MET	L3553	D3473	V3245	L3276
S4747	GLY	Y4630	GLY	GLY	ALA	GLY	ALA	ALA	ALA	ALA	R4159	T3966	R3770	ARG	H3357	L3246	V3245	L3276
P4758	GLY	E4634	ASP	LEU	THR	THR	ALA	THR	ALA	THR	R4188	I3969	H3771	ASP	R3248	R3247	R3248	L3246
D4759	GLY	S4635	ALA	LEU	GLY	LEU	ALA	ALA	ALA	ALA	R4189	I3969	R3772	ALA	R3248	R3247	R3248	L3246
P4760	GLY	T4636	ALA	LEU	GLY	LEU	ALA	ALA	ALA	ALA	R4189	I3969	R3773	ALA	R3248	R3247	R3248	L3246
P4761	GLY	M4639	GLY	LEU	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
P4762	GLY	E4640	GLY	LEU	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
G4763	GLY	P4641	GLY	LEU	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
L4764	GLY	A4642	GLY	LEU	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
L4765	GLY	E4643	GLY	LEU	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
K4779	GLY	L4544	HIS	LEU	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
P4780	GLY	S4645	LEU	LEU	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
I4783	GLY	V4546	VAL	VAL	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
M4796	GLY	V4549	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
S4799	GLY	K4550	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
H4803	GLY	M4553	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
M4805	GLY	F4564	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
M4806	GLY	M4574	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
F4808	GLY	F4576	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
A4810	GLY	P4586	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
L4813	GLY	P4587	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
I4816	GLY	L4677	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
A4817	GLY	E4678	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
G4819	GLY	R4679	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
V4820	GLY	K4680	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
K4821	GLY	L4681	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
L4823	GLY	M4686	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
R4824	GLY	Y4687	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
T4825	GLY	I4688	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
I4826	GLY	T4689	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
K4835	GLY	D4694	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
Q4836	GLY	D4695	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
M4839	GLY	Y4697	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
T4852	GLY	K4698	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
V4853	GLY	Q4699	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
F4858	GLY	Y4715	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
	GLY	W4716	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
	GLY	D4717	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246
	GLY	F4858	PRO	PRO	GLY	LEU	ALA	ALA	ALA	ALA	R4192	T3974	L3780	ALA	R3248	R3247	R3248	L3246



• Molecule 2: Ryanodine receptor 1

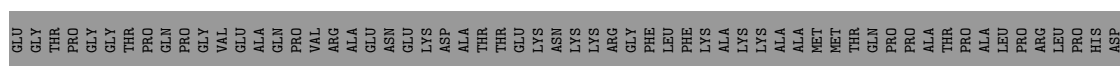
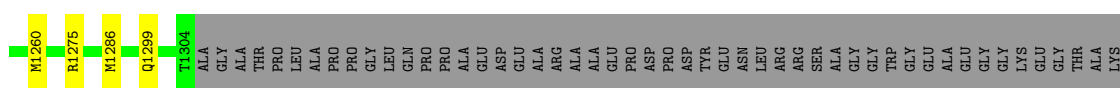
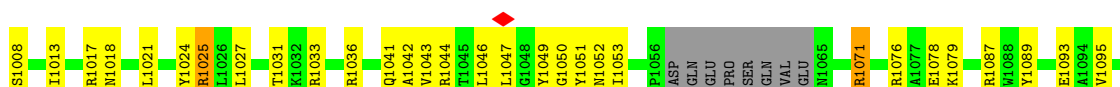
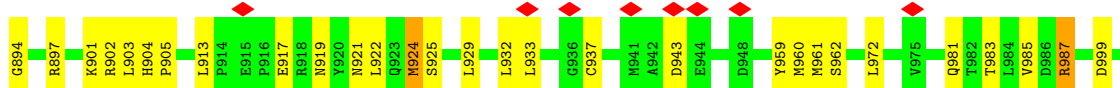
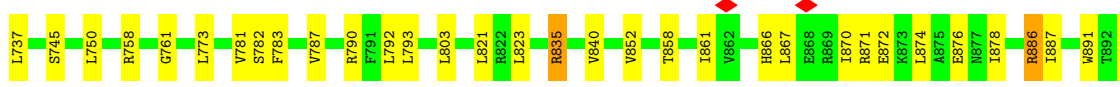
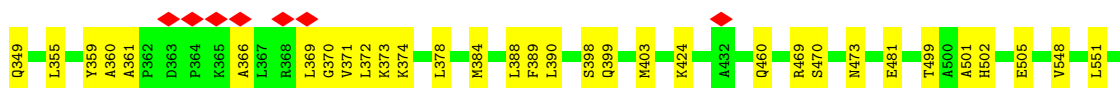
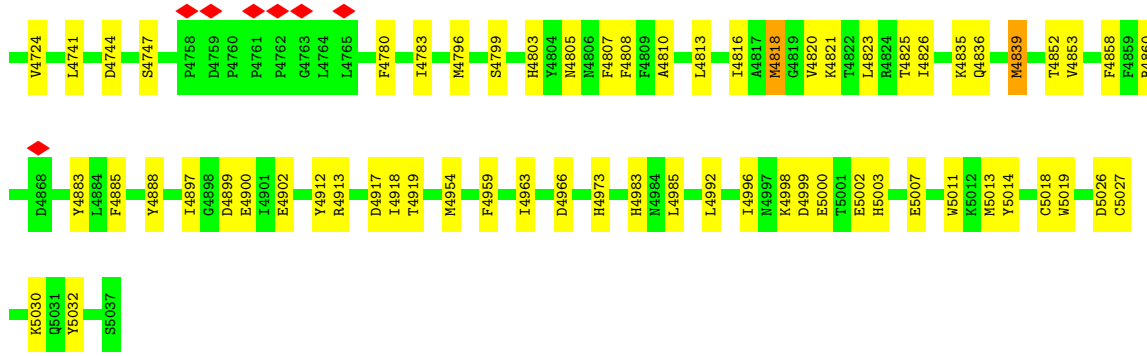
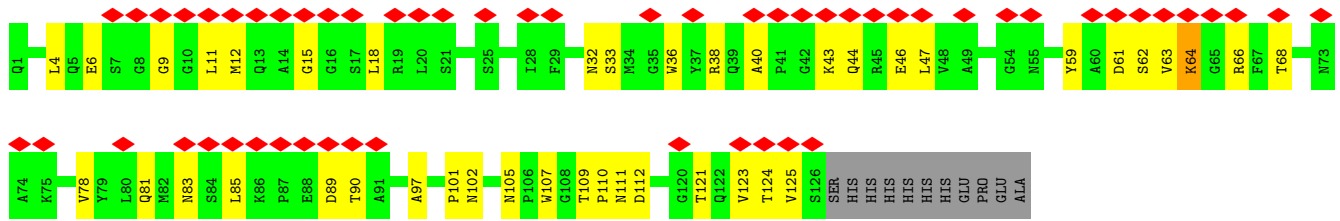
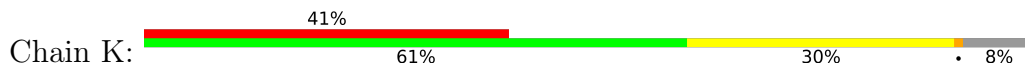


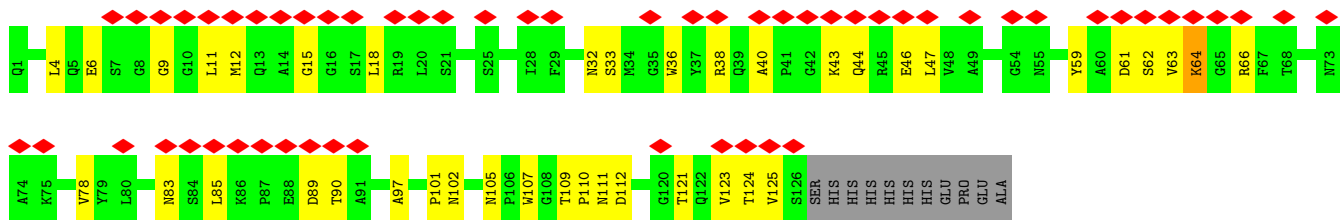
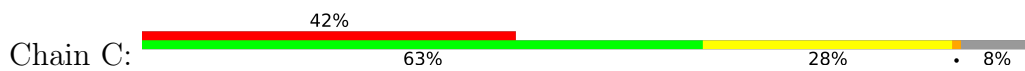
Table listing amino acid residues (Residue ID, Name, and Type) with color-coded bars indicating validation status. The table is organized into 12 columns and includes residues from H3030 to K3023. Some residues have red diamond markers above them.



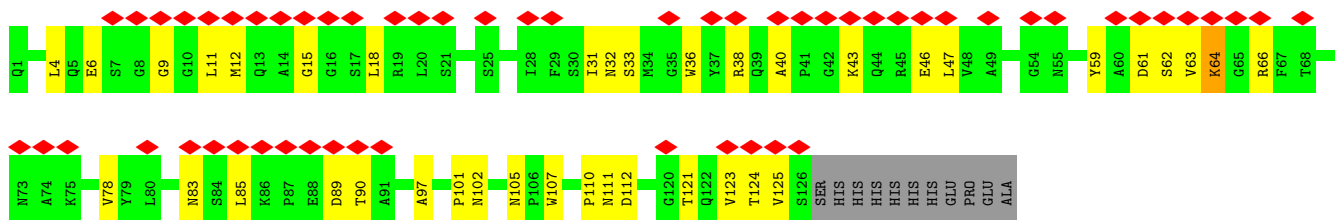
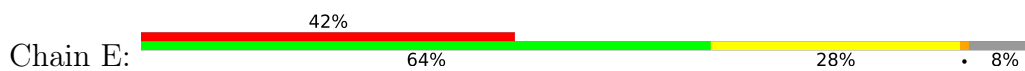
• Molecule 3: Nanobody 9657



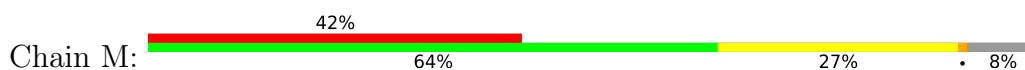
• Molecule 3: Nanobody 9657

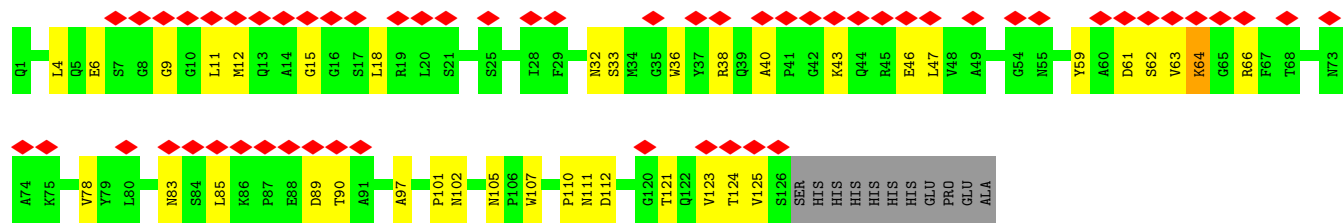


• Molecule 3: Nanobody 9657



• Molecule 3: Nanobody 9657





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	175535	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	JEOL CRYO ARM 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	1500	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.601	Depositor
Minimum map value	-0.040	Depositor
Average map value	0.034	Depositor
Map value standard deviation	0.067	Depositor
Recommended contour level	0.2	Depositor
Map size (Å)	511.65, 511.65, 511.65	wwPDB
Map dimensions	450, 450, 450	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.137, 1.137, 1.137	Depositor

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: ATP, CA, POV, CFF, 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	F	0.27	0/834	0.56	0/1123
1	H	0.27	0/834	0.56	0/1123
1	J	0.27	0/834	0.56	0/1123
1	L	0.27	0/834	0.56	0/1123
2	A	0.25	0/34923	0.49	4/47330 (0.0%)
2	D	0.25	0/34923	0.49	4/47330 (0.0%)
2	G	0.25	0/34920	0.49	4/47325 (0.0%)
2	I	0.25	0/34920	0.49	4/47325 (0.0%)
3	C	0.25	0/987	0.52	0/1340
3	E	0.25	0/987	0.52	0/1340
3	K	0.25	0/987	0.52	0/1340
3	M	0.25	0/987	0.52	0/1340
All	All	0.25	0/146970	0.49	16/199162 (0.0%)

There are no bond length outliers.

All (16) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	G	1503	PRO	N-CA-CB	5.72	110.16	103.30
2	I	1503	PRO	N-CA-CB	5.71	110.16	103.30
2	D	1503	PRO	N-CA-CB	5.71	110.16	103.30
2	A	1503	PRO	N-CA-CB	5.68	110.12	103.30
2	D	3136	LEU	CA-CB-CG	5.66	128.32	115.30
2	I	3136	LEU	CA-CB-CG	5.64	128.28	115.30
2	A	3136	LEU	CA-CB-CG	5.64	128.28	115.30
2	G	3136	LEU	CA-CB-CG	5.64	128.28	115.30
2	D	3106	MET	CA-CB-CG	5.49	122.64	113.30
2	I	3106	MET	CA-CB-CG	5.47	122.59	113.30
2	A	3106	MET	CA-CB-CG	5.46	122.57	113.30
2	G	3106	MET	CA-CB-CG	5.45	122.56	113.30

Continued on next page...

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	I	3534	MET	CA-CB-CG	5.09	121.95	113.30
2	A	3534	MET	CA-CB-CG	5.08	121.94	113.30
2	G	3534	MET	CA-CB-CG	5.08	121.94	113.30
2	D	3534	MET	CA-CB-CG	5.06	121.90	113.30

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	F	818	0	824	14	0
1	H	818	0	824	13	0
1	J	818	0	824	11	0
1	L	818	0	824	12	0
2	A	34153	0	33544	573	0
2	D	34153	0	33544	576	0
2	G	34151	0	33538	575	0
2	I	34151	0	33538	580	0
3	C	967	0	916	25	0
3	E	967	0	916	25	0
3	K	967	0	916	28	0
3	M	967	0	916	23	0
4	A	1	0	0	0	0
4	D	1	0	0	0	0
4	G	1	0	0	0	0
4	I	1	0	0	0	0
5	A	52	0	82	1	0
5	D	52	0	82	3	0
5	G	52	0	82	3	0
5	I	52	0	82	1	0
6	A	31	0	12	3	0
6	D	31	0	12	3	0
6	G	31	0	12	3	0
6	I	31	0	12	2	0
7	A	14	0	10	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
7	D	14	0	10	2	0
7	G	14	0	10	2	0
7	I	14	0	10	1	0
8	A	1	0	0	0	0
8	D	1	0	0	0	0
8	G	1	0	0	0	0
8	I	1	0	0	0	0
All	All	144144	0	141540	2394	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 (2394) 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:3132:THR:HA	2:A:3136:LEU:HB3	1.61	0.83
2:G:3132:THR:HA	2:G:3136:LEU:HB3	1.61	0.82
2:I:3132:THR:HA	2:I:3136:LEU:HB3	1.61	0.82
2:I:4823:LEU:HD13	2:G:4839:MET:HE2	1.61	0.81
2:I:4839:MET:HE2	2:A:4823:LEU:HD13	1.62	0.81
2:D:3132:THR:HA	2:D:3136:LEU:HB3	1.61	0.80
2:D:1520:VAL:HG23	2:D:1527:MET:HG2	1.64	0.79
2:G:1520:VAL:HG23	2:G:1527:MET:HG2	1.64	0.78
2:I:1520:VAL:HG23	2:I:1527:MET:HG2	1.64	0.78
2:D:2710:LEU:HD12	2:D:2711:PRO:HD2	1.65	0.78
2:I:913:LEU:HB3	2:I:917:GLU:HB2	1.65	0.77
2:D:913:LEU:HB3	2:D:917:GLU:HB2	1.65	0.77
2:A:1520:VAL:HG23	2:A:1527:MET:HG2	1.65	0.77
2:I:2710:LEU:HD12	2:I:2711:PRO:HD2	1.65	0.77
2:A:1973:GLN:HE22	2:A:3641:LEU:H	1.33	0.76
2:A:2710:LEU:HD12	2:A:2711:PRO:HD2	1.65	0.76
2:G:913:LEU:HB3	2:G:917:GLU:HB2	1.65	0.76
2:A:913:LEU:HB3	2:A:917:GLU:HB2	1.65	0.76
2:G:2710:LEU:HD12	2:G:2711:PRO:HD2	1.65	0.76
2:D:1973:GLN:HE22	2:D:3641:LEU:H	1.33	0.76
2:A:2626:LEU:HD22	2:A:2640:PRO:HB3	1.68	0.75
2:I:2626:LEU:HD22	2:I:2640:PRO:HB3	1.68	0.75
2:D:4839:MET:HE2	2:G:4823:LEU:HD13	1.70	0.74
2:G:1973:GLN:HE22	2:G:3641:LEU:H	1.32	0.74
2:G:2626:LEU:HD22	2:G:2640:PRO:HB3	1.68	0.74
2:I:1973:GLN:HE22	2:I:3641:LEU:H	1.33	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:2626:LEU:HD22	2:D:2640:PRO:HB3	1.68	0.73
2:A:4839:MET:HE2	2:D:4823:LEU:HD13	1.71	0.73
2:D:897:ARG:HD3	2:D:905:PRO:HD3	1.70	0.73
2:A:665:GLU:HB3	2:A:792:LEU:HB2	1.71	0.73
2:D:1008:SER:HB2	2:D:1017:ARG:HE	1.54	0.72
2:I:665:GLU:HB3	2:I:792:LEU:HB2	1.71	0.72
2:I:3110:LEU:HD13	2:I:3183:VAL:HG12	1.71	0.72
2:A:897:ARG:HD3	2:A:905:PRO:HD3	1.70	0.72
2:I:972:LEU:HB2	2:I:1044:ARG:HE	1.55	0.72
2:A:1008:SER:HB2	2:A:1017:ARG:HE	1.55	0.72
2:D:665:GLU:HB3	2:D:792:LEU:HB2	1.71	0.72
2:G:665:GLU:HB3	2:G:792:LEU:HB2	1.71	0.72
2:I:220:LEU:HD12	2:I:390:LEU:HB3	1.70	0.72
2:I:2248:ARG:HE	2:I:3868:ARG:HD2	1.55	0.72
2:A:220:LEU:HD12	2:A:390:LEU:HB3	1.71	0.72
2:A:2248:ARG:HE	2:A:3868:ARG:HD2	1.55	0.72
2:G:1008:SER:HB2	2:G:1017:ARG:HE	1.55	0.72
2:D:972:LEU:HB2	2:D:1044:ARG:HE	1.55	0.71
2:D:220:LEU:HD12	2:D:390:LEU:HB3	1.71	0.71
2:I:1008:SER:HB2	2:I:1017:ARG:HE	1.55	0.71
2:A:972:LEU:HB2	2:A:1044:ARG:HE	1.55	0.71
2:G:972:LEU:HB2	2:G:1044:ARG:HE	1.55	0.71
2:G:897:ARG:HD3	2:G:905:PRO:HD3	1.70	0.71
2:G:3110:LEU:HD13	2:G:3183:VAL:HG12	1.71	0.71
2:I:2967:MET:HE2	2:I:3045:LYS:HB3	1.71	0.71
2:A:2967:MET:HE2	2:A:3045:LYS:HB3	1.71	0.71
3:M:66:ARG:HH11	3:M:83:ASN:HB3	1.56	0.71
2:I:897:ARG:HD3	2:I:905:PRO:HD3	1.71	0.71
3:E:66:ARG:HH11	3:E:83:ASN:HB3	1.56	0.70
2:A:3110:LEU:HD13	2:A:3183:VAL:HG12	1.71	0.70
2:G:220:LEU:HD12	2:G:390:LEU:HB3	1.71	0.70
2:D:130:LYS:NZ	2:G:2459:SER:O	2.24	0.70
2:D:2248:ARG:HE	2:D:3868:ARG:HD2	1.55	0.70
3:K:66:ARG:HH11	3:K:83:ASN:HB3	1.56	0.70
2:D:3110:LEU:HD13	2:D:3183:VAL:HG12	1.71	0.70
2:A:130:LYS:NZ	2:D:2459:SER:O	2.25	0.70
2:I:130:LYS:NZ	2:A:2459:SER:O	2.24	0.70
2:G:2248:ARG:HE	2:G:3868:ARG:HD2	1.55	0.70
3:C:66:ARG:HH11	3:C:83:ASN:HB3	1.56	0.70
2:A:2677:LYS:HE3	2:A:2909:ASP:HB2	1.74	0.69
2:I:2459:SER:O	2:G:130:LYS:NZ	2.24	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:2677:LYS:HE3	2:G:2909:ASP:HB2	1.74	0.69
2:D:2967:MET:HE2	2:D:3045:LYS:HB3	1.73	0.69
2:I:4918:ILE:HD11	2:A:4888:TYR:HA	1.75	0.69
2:I:2677:LYS:HE3	2:I:2909:ASP:HB2	1.74	0.68
2:D:2677:LYS:HE3	2:D:2909:ASP:HB2	1.73	0.68
2:G:3534:MET:HA	2:G:3537:LYS:HB2	1.75	0.68
2:I:3107:VAL:HG21	2:I:3171:SER:HB2	1.76	0.68
2:I:3534:MET:HA	2:I:3537:LYS:HB2	1.75	0.68
2:A:2779:GLU:HG3	2:A:2792:ARG:HG2	1.76	0.68
2:A:3107:VAL:HG21	2:A:3171:SER:HB2	1.76	0.68
2:D:3534:MET:HA	2:D:3537:LYS:HB2	1.75	0.68
2:D:2960:LEU:HD13	2:D:3038:MET:HG3	1.76	0.68
2:D:4918:ILE:HD11	2:G:4888:TYR:HA	1.76	0.68
2:G:891:TRP:HA	2:G:902:ARG:HB3	1.76	0.68
2:A:2116:LEU:O	2:A:2120:MET:HG2	1.95	0.67
2:A:2960:LEU:HD13	2:A:3038:MET:HG3	1.76	0.67
2:D:2971:GLN:HA	2:D:2974:ILE:HG12	1.76	0.67
2:G:2967:MET:HE2	2:G:3045:LYS:HB3	1.75	0.67
3:K:38:ARG:HG3	3:K:46:GLU:HG3	1.76	0.67
2:A:3534:MET:HA	2:A:3537:LYS:HB2	1.75	0.67
3:E:38:ARG:HG3	3:E:46:GLU:HG3	1.76	0.67
2:I:2960:LEU:HD13	2:I:3038:MET:HG3	1.76	0.67
2:I:4888:TYR:HA	2:G:4918:ILE:HD11	1.76	0.67
2:I:2971:GLN:HA	2:I:2974:ILE:HG12	1.76	0.67
2:I:891:TRP:HA	2:I:902:ARG:HB3	1.76	0.67
2:I:2116:LEU:O	2:I:2120:MET:HG2	1.95	0.67
2:G:2960:LEU:HD13	2:G:3038:MET:HG3	1.76	0.67
2:D:891:TRP:HA	2:D:902:ARG:HB3	1.76	0.67
2:D:2116:LEU:O	2:D:2120:MET:HG2	1.94	0.67
2:G:220:LEU:HD21	2:G:262:LEU:HD23	1.76	0.67
2:G:2116:LEU:O	2:G:2120:MET:HG2	1.94	0.67
2:I:1180:ARG:HG3	2:I:1181:GLU:HG3	1.78	0.66
2:A:1180:ARG:HG3	2:A:1181:GLU:HG3	1.78	0.66
2:A:2431:ASP:HB2	2:A:2501:SER:HB2	1.78	0.66
2:A:2971:GLN:HA	2:A:2974:ILE:HG12	1.76	0.66
2:D:2431:ASP:HB2	2:D:2501:SER:HB2	1.78	0.66
2:G:2779:GLU:HG3	2:G:2792:ARG:HG2	1.76	0.66
2:I:2431:ASP:HB2	2:I:2501:SER:HB2	1.78	0.66
2:G:2431:ASP:HB2	2:G:2501:SER:HB2	1.78	0.66
2:G:2971:GLN:HA	2:G:2974:ILE:HG12	1.76	0.66
2:D:1180:ARG:HG3	2:D:1181:GLU:HG3	1.78	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:1180:ARG:HG3	2:G:1181:GLU:HG3	1.78	0.66
2:I:220:LEU:HD21	2:I:262:LEU:HD23	1.76	0.66
2:A:399:GLN:O	2:A:403:MET:HG3	1.96	0.66
2:A:220:LEU:HD21	2:A:262:LEU:HD23	1.76	0.66
2:A:891:TRP:HA	2:A:902:ARG:HB3	1.76	0.66
2:A:4918:ILE:HD11	2:D:4888:TYR:HA	1.77	0.66
2:D:2779:GLU:HG3	2:D:2792:ARG:HG2	1.76	0.66
2:D:3107:VAL:HG21	2:D:3171:SER:HB2	1.76	0.66
2:G:2645:THR:HB	2:G:2702:CYS:HA	1.78	0.66
2:G:3107:VAL:HG21	2:G:3171:SER:HB2	1.76	0.66
2:I:2779:GLU:HG3	2:I:2792:ARG:HG2	1.76	0.66
2:A:1568:LYS:HE2	2:A:1574:PRO:HD3	1.78	0.66
3:C:38:ARG:HG3	3:C:46:GLU:HG3	1.76	0.66
2:D:220:LEU:HD21	2:D:262:LEU:HD23	1.76	0.66
2:D:758:ARG:HH11	2:D:761:GLY:HA2	1.61	0.65
2:I:399:GLN:O	2:I:403:MET:HG3	1.96	0.65
2:I:2645:THR:HB	2:I:2702:CYS:HA	1.78	0.65
2:D:1568:LYS:HE2	2:D:1574:PRO:HD3	1.78	0.65
2:D:3780:LEU:HD11	2:D:3816:MET:HB3	1.78	0.65
2:G:4818:MET:N	2:G:4818:MET:SD	2.70	0.65
2:A:4651:THR:HG22	2:A:4799:SER:HB3	1.78	0.65
2:D:4818:MET:N	2:D:4818:MET:SD	2.70	0.65
3:M:38:ARG:HG3	3:M:46:GLU:HG3	1.76	0.65
2:D:399:GLN:O	2:D:403:MET:HG3	1.96	0.65
2:A:758:ARG:HH11	2:A:761:GLY:HA2	1.61	0.65
2:D:4651:THR:HG22	2:D:4799:SER:HB3	1.78	0.65
2:G:3780:LEU:HD11	2:G:3816:MET:HB3	1.79	0.65
2:I:3780:LEU:HD11	2:I:3816:MET:HB3	1.78	0.65
2:G:399:GLN:O	2:G:403:MET:HG3	1.96	0.65
2:G:2624:ARG:NH2	2:G:2915:GLU:OE2	2.27	0.65
2:D:640:TYR:HB3	2:D:1613:LEU:HD11	1.79	0.65
2:G:4651:THR:HG22	2:G:4799:SER:HB3	1.78	0.65
2:I:4651:THR:HG22	2:I:4799:SER:HB3	1.78	0.65
2:D:2645:THR:HB	2:D:2702:CYS:HA	1.78	0.65
2:A:4818:MET:N	2:A:4818:MET:SD	2.70	0.64
2:I:2624:ARG:NH2	2:I:2915:GLU:OE2	2.27	0.64
2:A:3780:LEU:HD11	2:A:3816:MET:HB3	1.78	0.64
2:G:1568:LYS:HE2	2:G:1574:PRO:HD3	1.78	0.64
2:I:4818:MET:N	2:I:4818:MET:SD	2.70	0.64
2:D:363:ASP:HB3	2:D:366:ALA:HB3	1.79	0.64
2:G:640:TYR:HB3	2:G:1613:LEU:HD11	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:758:ARG:HH11	2:I:761:GLY:HA2	1.61	0.64
2:A:2645:THR:HB	2:A:2702:CYS:HA	1.78	0.64
2:G:601:ASP:OD1	2:G:1668:ARG:NH2	2.31	0.64
2:A:3132:THR:HG23	2:A:3136:LEU:HD12	1.80	0.64
2:I:3132:THR:HG23	2:I:3136:LEU:HD12	1.80	0.64
2:D:985:VAL:HG22	2:D:1043:VAL:HG21	1.80	0.64
2:D:4963:ILE:HG13	2:D:5030:LYS:HZ1	1.63	0.63
2:A:601:ASP:OD1	2:A:1668:ARG:NH2	2.31	0.63
2:D:601:ASP:OD1	2:D:1668:ARG:NH2	2.31	0.63
2:A:2624:ARG:NH2	2:A:2915:GLU:OE2	2.27	0.63
2:A:4963:ILE:HG13	2:A:5030:LYS:HZ1	1.63	0.63
2:G:3535:LEU:HB3	2:G:3539:ARG:HH21	1.64	0.63
2:I:1568:LYS:HE2	2:I:1574:PRO:HD3	1.78	0.63
2:G:758:ARG:HH11	2:G:761:GLY:HA2	1.61	0.63
2:G:985:VAL:HG22	2:G:1043:VAL:HG21	1.80	0.63
2:I:640:TYR:HB3	2:I:1613:LEU:HD11	1.79	0.63
2:I:1110:ARG:NH2	2:I:1112:ASP:OD2	2.32	0.63
2:A:3535:LEU:HB3	2:A:3539:ARG:HH21	1.64	0.63
2:D:1519:LEU:HD11	2:D:1572:ILE:HD13	1.80	0.63
2:G:663:TYR:HE1	2:G:745:SER:HB3	1.64	0.63
2:I:4963:ILE:HG13	2:I:5030:LYS:HZ1	1.64	0.63
2:D:3535:LEU:HB3	2:D:3539:ARG:HH21	1.64	0.63
2:I:601:ASP:OD1	2:I:1668:ARG:NH2	2.31	0.63
2:I:1519:LEU:HD11	2:I:1572:ILE:HD13	1.80	0.63
2:A:1110:ARG:NH2	2:A:1112:ASP:OD2	2.32	0.62
2:D:3157:ILE:HG23	2:D:3161:VAL:HG12	1.81	0.62
2:I:985:VAL:HG22	2:I:1043:VAL:HG21	1.80	0.62
2:A:929:LEU:HA	2:A:932:LEU:HD12	1.81	0.62
2:D:663:TYR:HE1	2:D:745:SER:HB3	1.64	0.62
2:G:3157:ILE:HG23	2:G:3161:VAL:HG12	1.81	0.62
2:G:4852:THR:HG21	2:G:4883:TYR:HA	1.81	0.62
2:A:663:TYR:HE1	2:A:745:SER:HB3	1.64	0.62
2:G:1519:LEU:HD11	2:G:1572:ILE:HD13	1.80	0.62
2:I:663:TYR:HE1	2:I:745:SER:HB3	1.64	0.62
2:I:3245:VAL:HG12	2:I:3248:ARG:HH12	1.65	0.62
2:I:3535:LEU:HB3	2:I:3539:ARG:HH21	1.64	0.62
2:A:640:TYR:HB3	2:A:1613:LEU:HD11	1.79	0.62
2:A:5027:CYS:SG	2:A:5030:LYS:NZ	2.66	0.62
2:G:1110:ARG:NH2	2:G:1112:ASP:OD2	2.32	0.62
2:G:2591:ARG:NH2	2:G:2629:ASP:OD2	2.32	0.62
2:I:929:LEU:HA	2:I:932:LEU:HD12	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:1220:GLN:HG3	2:G:3519:PRO:HB3	1.82	0.62
2:D:5027:CYS:SG	2:D:5030:LYS:NZ	2.66	0.62
2:G:3132:THR:HG23	2:G:3136:LEU:HD12	1.80	0.62
2:I:4852:THR:HG21	2:I:4883:TYR:HA	1.81	0.62
2:D:1110:ARG:NH2	2:D:1112:ASP:OD2	2.32	0.62
2:D:4852:THR:HG21	2:D:4883:TYR:HA	1.81	0.62
2:I:2591:ARG:NH2	2:I:2629:ASP:OD2	2.33	0.62
2:D:3132:THR:HG23	2:D:3136:LEU:HD12	1.80	0.62
2:A:985:VAL:HG22	2:A:1043:VAL:HG21	1.80	0.61
2:A:3245:VAL:HG12	2:A:3248:ARG:HH12	1.65	0.61
2:D:2591:ARG:NH2	2:D:2629:ASP:OD2	2.33	0.61
2:A:1220:GLN:HG3	2:D:3519:PRO:HB3	1.81	0.61
2:A:1519:LEU:HD11	2:A:1572:ILE:HD13	1.80	0.61
2:I:3157:ILE:HG23	2:I:3161:VAL:HG12	1.81	0.61
2:A:2591:ARG:NH2	2:A:2629:ASP:OD2	2.33	0.61
2:D:929:LEU:HA	2:D:932:LEU:HD12	1.81	0.61
2:G:783:PHE:HB2	2:G:787:VAL:HG21	1.83	0.61
2:A:4852:THR:HG21	2:A:4883:TYR:HA	1.81	0.61
2:D:3557:LEU:HD21	2:D:3589:PRO:HB3	1.82	0.61
2:G:3245:VAL:HG12	2:G:3248:ARG:HH12	1.65	0.61
2:G:4963:ILE:HG13	2:G:5030:LYS:HZ1	1.66	0.61
2:A:3557:LEU:HD21	2:A:3589:PRO:HB3	1.82	0.61
2:D:783:PHE:HB2	2:D:787:VAL:HG21	1.82	0.61
2:G:929:LEU:HA	2:G:932:LEU:HD12	1.81	0.61
2:A:3157:ILE:HG23	2:A:3161:VAL:HG12	1.81	0.61
2:A:3590:GLU:O	2:A:3594:ARG:HG2	2.01	0.61
2:I:3557:LEU:HD21	2:I:3589:PRO:HB3	1.82	0.61
2:D:3937:TYR:O	2:D:4002:LYS:NZ	2.34	0.61
2:G:3557:LEU:HD21	2:G:3589:PRO:HB3	1.82	0.60
2:I:4576:ILE:HG21	2:I:4643:LEU:HB2	1.83	0.60
2:A:365:LYS:O	2:A:369:LEU:HG	2.02	0.60
2:A:4576:ILE:HG21	2:A:4643:LEU:HB2	1.83	0.60
2:D:3245:VAL:HG12	2:D:3248:ARG:HH12	1.64	0.60
2:I:232:THR:HG22	2:I:258:SER:HB3	1.84	0.60
2:A:265:LEU:HD12	2:A:279:PRO:HB2	1.83	0.60
2:D:1095:VAL:HB	2:D:1199:VAL:HG23	1.84	0.60
2:D:2393:ASP:OD1	2:D:2417:HIS:ND1	2.34	0.60
2:G:232:THR:HG22	2:G:258:SER:HB3	1.84	0.60
2:I:3519:PRO:HB3	2:G:1220:GLN:HG3	1.82	0.60
2:G:2534:ALA:HB1	2:G:2588:ARG:HE	1.67	0.60
2:G:3590:GLU:O	2:G:3594:ARG:HG2	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:983:THR:O	2:I:987:ARG:HD2	2.02	0.60
2:D:2534:ALA:HB1	2:D:2588:ARG:HE	1.67	0.60
2:D:897:ARG:NH1	3:E:102:ASN:O	2.35	0.60
2:D:4576:ILE:HG21	2:D:4643:LEU:HB2	1.83	0.60
2:G:3102:ASP:HA	2:G:3105:LYS:HE2	1.84	0.60
2:G:3937:TYR:O	2:G:4002:LYS:NZ	2.34	0.60
2:I:4241:THR:O	2:I:4245:MET:HG2	2.01	0.60
2:A:232:THR:HG22	2:A:258:SER:HB3	1.84	0.60
2:A:983:THR:O	2:A:987:ARG:HD2	2.02	0.60
2:I:1220:GLN:HG3	2:A:3519:PRO:HB3	1.83	0.60
2:A:3821:LYS:O	2:A:3824:LYS:NZ	2.35	0.60
2:A:3937:TYR:O	2:A:4002:LYS:NZ	2.34	0.60
2:D:1448:VAL:HG12	2:D:1554:VAL:HG23	1.84	0.60
2:D:3102:ASP:HA	2:D:3105:LYS:HE2	1.84	0.60
2:I:340:LYS:O	2:I:344:SER:OG	2.20	0.60
2:I:365:LYS:HD2	2:I:368:ARG:HD2	1.83	0.60
2:I:783:PHE:HB2	2:I:787:VAL:HG21	1.83	0.60
2:I:5014:TYR:HE2	7:I:5104:CFF:H101	1.66	0.60
2:A:4152:GLU:OE1	2:A:4192:ARG:NH1	2.35	0.60
2:G:983:THR:O	2:G:987:ARG:HD2	2.02	0.60
2:G:1095:VAL:HB	2:G:1199:VAL:HG23	1.83	0.60
2:I:265:LEU:HD12	2:I:279:PRO:HB2	1.83	0.60
2:A:783:PHE:HB2	2:A:787:VAL:HG21	1.82	0.60
2:D:232:THR:HG22	2:D:258:SER:HB3	1.84	0.60
2:I:3590:GLU:O	2:I:3594:ARG:HG2	2.01	0.59
2:I:3937:TYR:O	2:I:4002:LYS:NZ	2.34	0.59
2:I:4090:LYS:HG2	2:I:4123:ILE:HD11	1.84	0.59
2:A:1095:VAL:HB	2:A:1199:VAL:HG23	1.84	0.59
2:G:4576:ILE:HG21	2:G:4643:LEU:HB2	1.83	0.59
2:I:551:LEU:HB3	2:I:589:LEU:HD21	1.85	0.59
2:I:897:ARG:NH1	3:K:102:ASN:O	2.34	0.59
2:I:1095:VAL:HB	2:I:1199:VAL:HG23	1.84	0.59
2:A:2534:ALA:HB1	2:A:2588:ARG:HE	1.67	0.59
1:F:3:GLU:N	1:F:3:GLU:OE2	2.35	0.59
2:I:871:ARG:HG2	2:I:925:SER:HB2	1.84	0.59
2:I:5013:MET:HE1	2:I:5021:PHE:HB3	1.84	0.59
1:J:3:GLU:N	1:J:3:GLU:OE2	2.35	0.59
2:G:1448:VAL:HG12	2:G:1554:VAL:HG23	1.84	0.59
2:G:4090:LYS:HG2	2:G:4123:ILE:HD11	1.84	0.59
1:H:3:GLU:N	1:H:3:GLU:OE2	2.35	0.59
2:I:359:TYR:CE1	2:I:385:ASP:HB2	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:371:VAL:HG12	2:I:373:LYS:H	1.67	0.59
2:I:2534:ALA:HB1	2:I:2588:ARG:HE	1.67	0.59
2:A:4090:LYS:HG2	2:A:4123:ILE:HD11	1.84	0.59
2:D:3590:GLU:O	2:D:3594:ARG:HG2	2.01	0.59
2:I:2656:CYS:SG	2:I:2657:LEU:N	2.76	0.59
2:D:2777:TYR:HB3	2:D:2791:LEU:HD23	1.85	0.59
2:G:871:ARG:HG2	2:G:925:SER:HB2	1.84	0.59
2:G:4152:GLU:OE1	2:G:4192:ARG:NH1	2.35	0.59
2:I:2393:ASP:OD1	2:I:2417:HIS:ND1	2.34	0.59
2:I:2777:TYR:HB3	2:I:2791:LEU:HD23	1.85	0.59
2:I:3102:ASP:HA	2:I:3105:LYS:HE2	1.84	0.59
2:I:4152:GLU:OE1	2:I:4192:ARG:NH1	2.35	0.59
2:A:2777:TYR:HB3	2:A:2791:LEU:HD23	1.85	0.59
2:I:4836:GLN:O	2:I:4839:MET:HB3	2.03	0.59
3:K:105:ASN:ND2	3:K:112:ASP:OD1	2.36	0.59
2:A:551:LEU:HB3	2:A:589:LEU:HD21	1.85	0.59
2:A:2656:CYS:SG	2:A:2657:LEU:N	2.76	0.59
2:D:2624:ARG:NH2	2:D:2915:GLU:OE2	2.27	0.59
2:A:2472:LEU:HD23	2:A:2473:PRO:HD2	1.85	0.59
2:D:983:THR:O	2:D:987:ARG:HD2	2.01	0.59
2:D:4090:LYS:HG2	2:D:4123:ILE:HD11	1.84	0.59
2:I:3504:SER:O	2:I:3507:THR:OG1	2.21	0.59
1:L:3:GLU:N	1:L:3:GLU:OE2	2.35	0.59
2:A:1448:VAL:HG12	2:A:1554:VAL:HG23	1.84	0.59
2:A:2393:ASP:OD1	2:A:2417:HIS:ND1	2.34	0.59
2:D:4152:GLU:OE1	2:D:4192:ARG:NH1	2.35	0.59
2:G:265:LEU:HD12	2:G:279:PRO:HB2	1.83	0.59
2:G:897:ARG:NH1	3:M:102:ASN:O	2.36	0.59
2:G:2777:TYR:HB3	2:G:2791:LEU:HD23	1.84	0.59
2:I:3219:TYR:HE1	2:I:3232:LEU:HB3	1.68	0.59
2:D:265:LEU:HD12	2:D:279:PRO:HB2	1.83	0.59
3:M:105:ASN:ND2	3:M:112:ASP:OD1	2.36	0.59
2:A:3219:TYR:HE1	2:A:3232:LEU:HB3	1.68	0.58
2:D:551:LEU:HB3	2:D:589:LEU:HD21	1.85	0.58
2:D:3579:LEU:HD23	2:D:3582:ARG:HB2	1.85	0.58
2:G:41:GLY:O	2:G:45:ARG:NH1	2.37	0.58
2:G:551:LEU:HB3	2:G:589:LEU:HD21	1.85	0.58
2:G:2472:LEU:HD23	2:G:2473:PRO:HD2	1.85	0.58
2:I:1448:VAL:HG12	2:I:1554:VAL:HG23	1.84	0.58
2:G:2656:CYS:SG	2:G:2657:LEU:N	2.76	0.58
2:I:2875:ALA:HB2	2:I:2927:LEU:HD22	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:3579:LEU:HD23	2:I:3582:ARG:HB2	1.85	0.58
2:A:41:GLY:O	2:A:45:ARG:NH1	2.37	0.58
2:A:3102:ASP:HA	2:A:3105:LYS:HE2	1.84	0.58
2:D:2875:ALA:HB2	2:D:2927:LEU:HD22	1.84	0.58
2:G:221:ARG:NH2	2:G:255:HIS:O	2.36	0.58
2:A:4836:GLN:O	2:A:4839:MET:HB3	2.03	0.58
2:D:219:VAL:HG21	2:D:398:SER:HB2	1.86	0.58
2:G:366:ALA:HB1	2:G:371:VAL:HG12	1.85	0.58
2:G:596:ASN:OD1	2:G:598:LYS:NZ	2.37	0.58
2:G:3821:LYS:O	2:G:3824:LYS:NZ	2.35	0.58
2:A:3504:SER:O	2:A:3507:THR:OG1	2.21	0.58
3:C:105:ASN:ND2	3:C:112:ASP:OD1	2.36	0.58
2:D:340:LYS:O	2:D:344:SER:OG	2.20	0.58
3:E:105:ASN:ND2	3:E:112:ASP:OD1	2.35	0.58
2:I:596:ASN:OD1	2:I:598:LYS:NZ	2.37	0.58
2:G:219:VAL:HG21	2:G:398:SER:HB2	1.86	0.58
2:I:2123:LEU:O	2:I:2127:GLN:HG2	2.03	0.58
2:A:871:ARG:HG2	2:A:925:SER:HB2	1.84	0.58
2:A:2624:ARG:HH12	2:A:2912:THR:HG22	1.69	0.58
2:D:2123:LEU:O	2:D:2127:GLN:HG2	2.03	0.58
2:D:2656:CYS:SG	2:D:2657:LEU:N	2.76	0.58
2:G:2123:LEU:O	2:G:2127:GLN:HG2	2.03	0.58
2:G:3504:SER:O	2:G:3507:THR:OG1	2.21	0.58
2:G:4836:GLN:O	2:G:4839:MET:HB3	2.03	0.58
2:I:3821:LYS:O	2:I:3824:LYS:NZ	2.35	0.57
2:A:340:LYS:O	2:A:344:SER:OG	2.20	0.57
2:A:2875:ALA:HB2	2:A:2927:LEU:HD22	1.84	0.57
2:A:3031:ALA:O	2:A:3036:LYS:NZ	2.29	0.57
3:C:32:ASN:OD1	3:C:33:SER:N	2.37	0.57
2:D:2472:LEU:HD23	2:D:2473:PRO:HD2	1.85	0.57
2:D:3219:TYR:HE1	2:D:3232:LEU:HB3	1.68	0.57
3:E:32:ASN:OD1	3:E:33:SER:N	2.37	0.57
2:I:41:GLY:O	2:I:45:ARG:NH1	2.37	0.57
3:K:32:ASN:OD1	3:K:33:SER:N	2.37	0.57
2:A:219:VAL:HG21	2:A:398:SER:HB2	1.86	0.57
2:G:340:LYS:O	2:G:344:SER:OG	2.20	0.57
2:G:2875:ALA:HB2	2:G:2927:LEU:HD22	1.84	0.57
2:G:3219:TYR:HE1	2:G:3232:LEU:HB3	1.68	0.57
2:I:2624:ARG:HH12	2:I:2912:THR:HG22	1.69	0.57
2:D:596:ASN:OD1	2:D:598:LYS:NZ	2.37	0.57
2:D:3100:SER:HB3	2:D:3167:ARG:HE	1.70	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:2958:GLY:O	2:G:2962:GLN:HG2	2.04	0.57
2:A:469:ARG:O	2:A:473:ASN:ND2	2.37	0.57
2:D:41:GLY:O	2:D:45:ARG:NH1	2.37	0.57
2:D:871:ARG:HG2	2:D:925:SER:HB2	1.84	0.57
2:G:5014:TYR:HE2	7:G:5104:CFF:H101	1.69	0.57
2:I:219:VAL:HG21	2:I:398:SER:HB2	1.86	0.57
2:I:5027:CYS:SG	2:I:5030:LYS:NZ	2.66	0.57
2:A:2123:LEU:O	2:A:2127:GLN:HG2	2.04	0.57
2:D:2624:ARG:HH12	2:D:2912:THR:HG22	1.69	0.57
2:D:4836:GLN:O	2:D:4839:MET:HB3	2.03	0.57
2:G:2393:ASP:OD1	2:G:2417:HIS:ND1	2.34	0.57
2:G:3579:LEU:HD23	2:G:3582:ARG:HB2	1.85	0.57
2:I:2472:LEU:HD23	2:I:2473:PRO:HD2	1.85	0.57
2:A:3579:LEU:HD23	2:A:3582:ARG:HB2	1.85	0.57
2:D:5014:TYR:HE2	7:D:5104:CFF:H101	1.69	0.57
2:G:2624:ARG:HH12	2:G:2912:THR:HG22	1.69	0.57
3:M:32:ASN:OD1	3:M:33:SER:N	2.37	0.57
2:I:469:ARG:O	2:I:473:ASN:ND2	2.38	0.57
2:A:1089:TYR:HD1	2:A:1152:MET:HG3	1.70	0.57
2:I:999:ASP:O	2:I:1003:GLN:HG3	2.05	0.57
2:A:3100:SER:HB3	2:A:3167:ARG:HE	1.70	0.57
2:D:469:ARG:O	2:D:473:ASN:ND2	2.37	0.57
2:D:2958:GLY:O	2:D:2962:GLN:HG2	2.04	0.57
2:I:2958:GLY:O	2:I:2962:GLN:HG2	2.05	0.57
2:I:835:ARG:NH1	2:I:1210:SER:OG	2.38	0.56
3:K:6:GLU:HG3	3:K:121:THR:HG22	1.87	0.56
2:A:835:ARG:NH1	2:A:1210:SER:OG	2.38	0.56
2:A:897:ARG:NH1	3:C:102:ASN:O	2.38	0.56
2:A:2527:LEU:HG	2:A:2531:ARG:HH21	1.70	0.56
2:I:1286:MET:HE2	2:I:1464:PHE:HB3	1.87	0.56
2:A:596:ASN:OD1	2:A:598:LYS:NZ	2.37	0.56
2:A:999:ASP:O	2:A:1003:GLN:HG3	2.05	0.56
2:D:2229:VAL:HG11	2:D:2265:LEU:HD11	1.87	0.56
3:E:6:GLU:HG3	3:E:121:THR:HG22	1.87	0.56
2:G:999:ASP:O	2:G:1003:GLN:HG3	2.05	0.56
2:I:4242:ILE:O	2:I:4246:GLN:HG3	2.04	0.56
3:C:6:GLU:HG3	3:C:121:THR:HG22	1.87	0.56
2:D:24:CYS:SG	2:D:25:SER:N	2.78	0.56
2:D:221:ARG:NH2	2:D:255:HIS:O	2.36	0.56
2:D:835:ARG:NH1	2:D:1210:SER:OG	2.38	0.56
2:D:999:ASP:O	2:D:1003:GLN:HG3	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:4983:HIS:O	6:D:5103:ATP:N6	2.38	0.56
2:G:371:VAL:HG22	2:G:373:LYS:H	1.69	0.56
2:G:469:ARG:O	2:G:473:ASN:ND2	2.37	0.56
2:G:835:ARG:NH1	2:G:1210:SER:OG	2.38	0.56
2:G:1286:MET:HE2	2:G:1464:PHE:HB3	1.87	0.56
2:G:2229:VAL:HG11	2:G:2265:LEU:HD11	1.87	0.56
2:G:5026:ASP:HA	2:G:5030:LYS:HE2	1.88	0.56
3:M:6:GLU:HG3	3:M:121:THR:HG22	1.87	0.56
2:I:2527:LEU:HG	2:I:2531:ARG:HH21	1.70	0.56
2:A:135:VAL:HG11	2:A:180:LEU:HD21	1.87	0.56
2:A:5026:ASP:HA	2:A:5030:LYS:HE2	1.88	0.56
2:D:3031:ALA:O	2:D:3036:LYS:NZ	2.29	0.56
2:G:3100:SER:HB3	2:G:3167:ARG:HE	1.69	0.56
2:I:2827:ARG:NH2	2:I:2935:TYR:OH	2.39	0.56
2:A:2958:GLY:O	2:A:2962:GLN:HG2	2.04	0.56
3:C:85:LEU:HD13	3:C:125:VAL:HG13	1.88	0.56
2:D:2527:LEU:HG	2:D:2531:ARG:HH21	1.70	0.56
2:I:177:GLU:OE2	2:A:2452:ARG:NH2	2.37	0.56
2:D:1815:LEU:HD22	2:D:1845:VAL:HG21	1.87	0.56
2:D:2881:ASN:HA	2:D:2884:ASN:ND2	2.21	0.56
2:A:1299:GLN:NE2	1:J:32:ASN:OD1	2.39	0.56
2:A:3410:PRO:HA	2:A:3413:ILE:HD12	1.88	0.56
2:D:110:ARG:NH2	2:D:117:TYR:OH	2.39	0.56
3:E:40:ALA:HB3	3:E:43:LYS:HB3	1.88	0.56
2:I:1089:TYR:HD1	2:I:1152:MET:HG3	1.70	0.56
2:I:5026:ASP:HA	2:I:5030:LYS:HE2	1.88	0.56
2:D:2827:ARG:NH2	2:D:2935:TYR:OH	2.39	0.56
2:D:3147:ILE:HD11	2:D:3153:GLY:HA2	1.87	0.56
2:D:3504:SER:O	2:D:3507:THR:OG1	2.21	0.56
2:I:135:VAL:HG11	2:I:180:LEU:HD21	1.87	0.56
2:I:894:GLY:HA3	2:I:903:LEU:HD13	1.88	0.56
2:I:2314:LEU:HD23	2:I:2314:LEU:H	1.71	0.56
2:A:2827:ARG:NH2	2:A:2935:TYR:OH	2.39	0.56
2:D:5026:ASP:HA	2:D:5030:LYS:HE2	1.88	0.56
2:G:110:ARG:NH2	2:G:117:TYR:OH	2.39	0.56
3:M:40:ALA:HB3	3:M:43:LYS:HB3	1.88	0.56
2:I:221:ARG:NH2	2:I:255:HIS:O	2.36	0.56
2:I:3100:SER:HB3	2:I:3167:ARG:HE	1.69	0.56
3:C:11:LEU:HG	3:C:124:THR:HB	1.88	0.56
2:D:3402:CYS:HG	2:D:3451:PHE:HE1	1.54	0.56
2:D:3410:PRO:HA	2:D:3413:ILE:HD12	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:11:LEU:HG	3:E:124:THR:HB	1.88	0.56
2:G:24:CYS:SG	2:G:25:SER:N	2.78	0.56
2:G:1089:TYR:HD1	2:G:1152:MET:HG3	1.70	0.56
2:G:5027:CYS:SG	2:G:5030:LYS:NZ	2.66	0.56
2:I:110:ARG:NH2	2:I:117:TYR:OH	2.39	0.55
2:I:2624:ARG:HH21	2:I:2906:VAL:HG21	1.71	0.55
2:A:24:CYS:SG	2:A:25:SER:N	2.78	0.55
2:G:135:VAL:HG11	2:G:180:LEU:HD21	1.87	0.55
2:G:157:ARG:NH1	2:G:167:ASP:OD2	2.39	0.55
2:G:894:GLY:HA3	2:G:903:LEU:HD13	1.88	0.55
2:G:2827:ARG:NH2	2:G:2935:TYR:OH	2.39	0.55
2:G:3034:LYS:O	2:G:3037:GLU:HG3	2.06	0.55
2:I:3036:LYS:HD2	2:I:3079:THR:HG21	1.88	0.55
2:A:3034:LYS:O	2:A:3037:GLU:HG3	2.07	0.55
2:D:1089:TYR:HD1	2:D:1152:MET:HG3	1.70	0.55
2:G:4983:HIS:O	6:G:5103:ATP:N6	2.38	0.55
2:I:24:CYS:SG	2:I:25:SER:N	2.78	0.55
2:I:157:ARG:NH1	2:I:167:ASP:OD2	2.39	0.55
2:A:1815:LEU:HD22	2:A:1845:VAL:HG21	1.88	0.55
2:D:2314:LEU:HD23	2:D:2314:LEU:H	1.72	0.55
2:G:2314:LEU:HD23	2:G:2314:LEU:H	1.72	0.55
2:G:3036:LYS:HD2	2:G:3079:THR:HG21	1.88	0.55
2:I:2229:VAL:HG11	2:I:2265:LEU:HD11	1.87	0.55
2:D:3530:GLN:O	2:D:3533:ILE:HB	2.07	0.55
2:I:247:TYR:HE2	2:I:359:TYR:HA	1.71	0.55
2:I:3034:LYS:O	2:I:3037:GLU:HG3	2.07	0.55
2:A:961:MET:HG3	2:A:962:SER:H	1.72	0.55
2:A:2314:LEU:HD23	2:A:2314:LEU:H	1.71	0.55
2:A:2624:ARG:HH21	2:A:2906:VAL:HG21	1.71	0.55
2:G:131:LEU:O	2:G:178:ARG:NH1	2.40	0.55
2:G:1815:LEU:HD22	2:G:1845:VAL:HG21	1.88	0.55
3:M:11:LEU:HG	3:M:124:THR:HB	1.88	0.55
2:I:870:ILE:HD11	2:I:1049:TYR:HB3	1.89	0.55
2:I:3147:ILE:HD11	2:I:3153:GLY:HA2	1.87	0.55
3:K:11:LEU:HG	3:K:124:THR:HB	1.88	0.55
2:A:3147:ILE:HD11	2:A:3153:GLY:HA2	1.88	0.55
2:D:3821:LYS:O	2:D:3824:LYS:NZ	2.35	0.55
2:G:3530:GLN:O	2:G:3533:ILE:HB	2.07	0.55
2:I:2881:ASN:HA	2:I:2884:ASN:ND2	2.21	0.55
2:A:110:ARG:NH2	2:A:117:TYR:OH	2.39	0.55
2:G:2527:LEU:HG	2:G:2531:ARG:HH21	1.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3147:ILE:HD11	2:G:3153:GLY:HA2	1.87	0.55
2:G:3410:PRO:HA	2:G:3413:ILE:HD12	1.88	0.55
2:I:359:TYR:HE1	2:I:385:ASP:HB2	1.72	0.55
2:I:3031:ALA:O	2:I:3036:LYS:NZ	2.29	0.55
2:A:221:ARG:NH2	2:A:255:HIS:O	2.36	0.55
2:A:2229:VAL:HG11	2:A:2265:LEU:HD11	1.87	0.55
3:C:40:ALA:HB3	3:C:43:LYS:HB3	1.88	0.55
2:G:2624:ARG:HH21	2:G:2906:VAL:HG21	1.71	0.55
3:M:85:LEU:HD13	3:M:125:VAL:HG13	1.88	0.55
2:I:131:LEU:O	2:I:178:ARG:NH1	2.40	0.55
2:I:3410:PRO:HA	2:I:3413:ILE:HD12	1.88	0.55
2:D:135:VAL:HG11	2:D:180:LEU:HD21	1.87	0.55
2:D:1286:MET:HE2	2:D:1464:PHE:HB3	1.89	0.55
2:D:1299:GLN:NE2	1:F:32:ASN:OD1	2.39	0.55
2:G:870:ILE:HD11	2:G:1049:TYR:HB3	1.89	0.55
2:G:2380:ILE:HG21	2:G:2469:ILE:HD11	1.89	0.55
2:I:622:THR:HG23	2:I:626:LEU:HD22	1.89	0.55
2:I:2867:LEU:HB2	2:I:2928:LYS:HZ3	1.72	0.55
3:K:40:ALA:HB3	3:K:43:LYS:HB3	1.88	0.55
2:A:177:GLU:OE2	2:D:2452:ARG:NH2	2.38	0.55
2:A:2881:ASN:HA	2:A:2884:ASN:ND2	2.21	0.55
3:E:85:LEU:HD13	3:E:125:VAL:HG13	1.88	0.55
2:G:3402:CYS:HG	2:G:3451:PHE:HE1	1.55	0.55
2:I:1815:LEU:HD22	2:I:1845:VAL:HG21	1.88	0.54
2:I:2623:LEU:O	2:I:2627:VAL:HG23	2.07	0.54
2:I:3768:SER:HA	2:I:3771:HIS:CD2	2.42	0.54
2:A:894:GLY:HA3	2:A:903:LEU:HD13	1.88	0.54
2:D:177:GLU:OE2	2:G:2452:ARG:NH2	2.38	0.54
2:D:3768:SER:HA	2:D:3771:HIS:CD2	2.42	0.54
2:A:131:LEU:O	2:A:178:ARG:NH1	2.40	0.54
2:A:317:ARG:NH1	2:A:349:GLN:OE1	2.40	0.54
2:D:317:ARG:NH1	2:D:349:GLN:OE1	2.41	0.54
2:G:2881:ASN:HA	2:G:2884:ASN:ND2	2.21	0.54
2:G:4242:ILE:O	2:G:4246:GLN:HG3	2.06	0.54
2:A:2380:ILE:HG21	2:A:2469:ILE:HD11	1.90	0.54
2:A:4242:ILE:O	2:A:4246:GLN:HG3	2.07	0.54
2:D:894:GLY:HA3	2:D:903:LEU:HD13	1.88	0.54
2:D:961:MET:HG3	2:D:962:SER:H	1.72	0.54
2:D:1033:ARG:HA	2:D:1033:ARG:NE	2.22	0.54
2:D:2624:ARG:HH21	2:D:2906:VAL:HG21	1.71	0.54
2:G:3768:SER:HA	2:G:3771:HIS:CD2	2.42	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:793:LEU:HD12	2:I:821:LEU:HD21	1.89	0.54
2:I:858:THR:HA	2:I:861:ILE:HD13	1.89	0.54
2:A:3036:LYS:HD2	2:A:3079:THR:HG21	1.89	0.54
2:A:3768:SER:HA	2:A:3771:HIS:CD2	2.42	0.54
2:D:870:ILE:HD11	2:D:1049:TYR:HB3	1.89	0.54
2:D:2623:LEU:O	2:D:2627:VAL:HG23	2.06	0.54
2:D:4242:ILE:O	2:D:4246:GLN:HG3	2.07	0.54
2:G:3194:LEU:HD21	2:G:3276:MET:SD	2.48	0.54
2:I:3194:LEU:HD21	2:I:3276:MET:SD	2.48	0.54
2:D:2380:ILE:HG21	2:D:2469:ILE:HD11	1.90	0.54
2:G:2623:LEU:O	2:G:2627:VAL:HG23	2.06	0.54
3:K:85:LEU:HD13	3:K:125:VAL:HG13	1.88	0.54
2:A:622:THR:HG23	2:A:626:LEU:HD22	1.89	0.54
2:A:2623:LEU:O	2:A:2627:VAL:HG23	2.06	0.54
2:D:131:LEU:O	2:D:178:ARG:NH1	2.40	0.54
2:D:3017:PHE:HD2	2:D:3039:ILE:HD12	1.73	0.54
2:D:3034:LYS:O	2:D:3037:GLU:HG3	2.06	0.54
2:D:3245:VAL:HG12	2:D:3248:ARG:NH1	2.23	0.54
2:G:793:LEU:HD12	2:G:821:LEU:HD21	1.89	0.54
2:I:2380:ILE:HG21	2:I:2469:ILE:HD11	1.89	0.54
2:I:2452:ARG:NH2	2:G:177:GLU:OE2	2.38	0.54
2:I:4826:ILE:HD12	2:G:4839:MET:SD	2.48	0.54
2:I:5009:TYR:HA	2:I:5012:LYS:HE3	1.89	0.54
2:A:365:LYS:HE2	2:A:369:LEU:HD21	1.90	0.54
2:A:858:THR:HA	2:A:861:ILE:HD13	1.89	0.54
2:A:1033:ARG:NE	2:A:1033:ARG:HA	2.22	0.54
2:A:2247:GLN:NE2	2:A:2278:ALA:O	2.41	0.54
2:A:4853:VAL:HG13	2:D:4807:PHE:HD2	1.72	0.54
2:G:2469:ILE:HD12	2:G:2472:LEU:HD12	1.89	0.54
2:G:2902:HIS:HB3	2:G:2905:LEU:HG	1.90	0.54
2:I:1299:GLN:NE2	1:L:32:ASN:OD1	2.39	0.54
2:A:683:ARG:HG2	2:A:717:ASP:HB3	1.89	0.54
2:G:317:ARG:NH1	2:G:349:GLN:OE1	2.40	0.54
2:A:3530:GLN:O	2:A:3533:ILE:HB	2.07	0.54
2:D:157:ARG:NH1	2:D:167:ASP:OD2	2.39	0.54
2:D:3036:LYS:HD2	2:D:3079:THR:HG21	1.89	0.54
2:G:683:ARG:HG2	2:G:717:ASP:HB3	1.89	0.54
2:G:2867:LEU:HB2	2:G:2928:LYS:HZ3	1.72	0.54
2:I:3530:GLN:O	2:I:3533:ILE:HB	2.07	0.54
2:D:858:THR:HA	2:D:861:ILE:HD13	1.89	0.54
2:D:4839:MET:SD	2:G:4826:ILE:HD12	2.48	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:M:107:TRP:HE1	3:M:110:PRO:HB2	1.73	0.54
2:I:683:ARG:HG2	2:I:717:ASP:HB3	1.89	0.53
2:I:2902:HIS:HB3	2:I:2905:LEU:HG	1.90	0.53
3:K:107:TRP:HE1	3:K:110:PRO:HB2	1.73	0.53
2:A:3194:LEU:HD21	2:A:3276:MET:SD	2.48	0.53
2:D:3143:LEU:O	2:D:3147:ILE:HG22	2.09	0.53
2:G:858:THR:HA	2:G:861:ILE:HD13	1.89	0.53
2:G:2247:GLN:NE2	2:G:2278:ALA:O	2.41	0.53
2:G:4681:LEU:HD12	2:G:4724:VAL:HG21	1.90	0.53
2:I:1033:ARG:NE	2:I:1033:ARG:HA	2.22	0.53
2:I:4807:PHE:HD2	2:G:4853:VAL:HG13	1.73	0.53
2:A:870:ILE:HD11	2:A:1049:TYR:HB3	1.89	0.53
2:D:622:THR:HG23	2:D:626:LEU:HD22	1.89	0.53
2:D:2599:GLN:O	2:D:2603:ILE:HG12	2.09	0.53
2:I:2599:GLN:O	2:I:2603:ILE:HG12	2.09	0.53
2:I:3017:PHE:HD2	2:I:3039:ILE:HD12	1.73	0.53
2:A:2902:HIS:HB3	2:A:2905:LEU:HG	1.90	0.53
2:A:3245:VAL:HG12	2:A:3248:ARG:NH1	2.23	0.53
2:D:4654:ALA:O	2:D:4658:ILE:HG12	2.09	0.53
2:G:652:ARG:HE	2:G:773:LEU:HD13	1.73	0.53
2:G:3017:PHE:HD2	2:G:3039:ILE:HD12	1.73	0.53
2:I:1699:GLU:HG3	2:I:1810:LYS:HE3	1.91	0.53
2:A:157:ARG:NH1	2:A:167:ASP:OD2	2.39	0.53
2:D:3194:LEU:HD21	2:D:3276:MET:SD	2.48	0.53
2:G:622:THR:HG23	2:G:626:LEU:HD22	1.89	0.53
2:G:1033:ARG:HA	2:G:1033:ARG:NE	2.22	0.53
2:G:2599:GLN:O	2:G:2603:ILE:HG12	2.09	0.53
2:G:3245:VAL:HG12	2:G:3248:ARG:NH1	2.23	0.53
2:I:365:LYS:HE2	2:I:368:ARG:NH1	2.24	0.53
2:I:2247:GLN:NE2	2:I:2278:ALA:O	2.41	0.53
2:I:2469:ILE:HD12	2:I:2472:LEU:HD12	1.89	0.53
2:D:3246:LEU:HA	2:D:3249:LEU:HD13	1.91	0.53
2:D:4681:LEU:HD12	2:D:4724:VAL:HG21	1.90	0.53
2:G:1478:ASP:OD1	2:G:1482:ASN:N	2.42	0.53
2:I:317:ARG:NH1	2:I:349:GLN:OE1	2.40	0.53
2:I:961:MET:HG3	2:I:962:SER:H	1.72	0.53
2:I:2230:THR:HG23	2:I:2270:SER:H	1.74	0.53
2:I:2418:LEU:HD23	2:I:2418:LEU:H	1.74	0.53
2:A:1041:GLN:OE1	2:A:1044:ARG:NH1	2.42	0.53
2:A:2469:ILE:HD12	2:A:2472:LEU:HD12	1.89	0.53
2:A:2599:GLN:O	2:A:2603:ILE:HG12	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:683:ARG:HG2	2:D:717:ASP:HB3	1.89	0.53
2:D:1041:GLN:OE1	2:D:1044:ARG:NH1	2.42	0.53
2:D:2469:ILE:HD12	2:D:2472:LEU:HD12	1.89	0.53
2:D:2867:LEU:HB2	2:D:2928:LYS:HZ3	1.73	0.53
2:D:2902:HIS:HB3	2:D:2905:LEU:HG	1.90	0.53
2:I:652:ARG:HE	2:I:773:LEU:HD13	1.73	0.53
2:I:3078:ARG:HH21	2:I:3152:PHE:HA	1.74	0.53
2:A:2418:LEU:HD23	2:A:2418:LEU:H	1.74	0.53
2:A:3078:ARG:HH21	2:A:3152:PHE:HA	1.74	0.53
2:A:4983:HIS:O	6:A:5103:ATP:N6	2.38	0.53
2:G:2621:HIS:O	2:G:2624:ARG:HG2	2.09	0.53
2:G:3093:ARG:O	2:G:3097:GLU:HG2	2.09	0.53
2:G:3246:LEU:HA	2:G:3249:LEU:HD13	1.90	0.53
2:I:1780:PRO:O	1:L:42:ARG:NH1	2.42	0.53
2:I:4839:MET:SD	2:A:4826:ILE:HD12	2.48	0.53
2:G:4654:ALA:O	2:G:4658:ILE:HG12	2.09	0.53
2:I:3284:TRP:HB3	2:I:3305:THR:HG21	1.91	0.53
2:A:470:SER:HA	2:A:473:ASN:HD21	1.74	0.53
2:A:3017:PHE:HD2	2:A:3039:ILE:HD12	1.73	0.53
2:G:3143:LEU:O	2:G:3147:ILE:HG22	2.09	0.53
2:G:3284:TRP:HB3	2:G:3305:THR:HG21	1.91	0.53
2:I:652:ARG:HD3	2:I:750:LEU:HB3	1.91	0.53
2:I:893:TYR:HA	2:I:904:HIS:H	1.74	0.53
2:I:2288:LEU:O	2:I:3849:ARG:NH1	2.41	0.53
2:I:3368:ARG:O	2:I:3372:VAL:HG23	2.09	0.53
2:A:652:ARG:HE	2:A:773:LEU:HD13	1.73	0.53
2:A:893:TYR:HA	2:A:904:HIS:H	1.74	0.53
2:D:652:ARG:HD3	2:D:750:LEU:HB3	1.91	0.53
2:D:2247:GLN:NE2	2:D:2278:ALA:O	2.41	0.53
2:G:1041:GLN:OE1	2:G:1044:ARG:NH1	2.42	0.53
2:G:1699:GLU:HG3	2:G:1810:LYS:HE3	1.91	0.53
2:G:3078:ARG:HH21	2:G:3152:PHE:HA	1.74	0.53
2:G:4090:LYS:HG3	2:G:4121:GLU:HB3	1.91	0.53
2:I:1478:ASP:OD1	2:I:1482:ASN:N	2.42	0.52
2:I:3093:ARG:O	2:I:3097:GLU:HG2	2.09	0.52
2:I:4853:VAL:HG13	2:A:4807:PHE:HD2	1.74	0.52
2:A:3143:LEU:O	2:A:3147:ILE:HG22	2.09	0.52
2:A:3284:TRP:HB3	2:A:3305:THR:HG21	1.91	0.52
2:A:4654:ALA:O	2:A:4658:ILE:HG12	2.09	0.52
2:G:2230:THR:HG23	2:G:2270:SER:H	1.74	0.52
2:G:3812:VAL:O	2:G:3816:MET:HG3	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:4090:LYS:HG3	2:I:4121:GLU:HB3	1.91	0.52
2:A:4240:ASP:OD1	2:A:4675:LYS:NZ	2.36	0.52
2:D:652:ARG:HE	2:D:773:LEU:HD13	1.73	0.52
2:D:793:LEU:HD12	2:D:821:LEU:HD21	1.89	0.52
2:D:2736:ASP:OD1	2:D:2736:ASP:N	2.41	0.52
2:D:2997:PHE:CE2	2:D:3001:ILE:HD11	2.44	0.52
3:E:107:TRP:HE1	3:E:110:PRO:HB2	1.73	0.52
2:G:470:SER:HA	2:G:473:ASN:HD21	1.74	0.52
2:G:2418:LEU:HD23	2:G:2418:LEU:H	1.74	0.52
2:I:2302:LEU:HD23	2:I:2331:TYR:HB2	1.91	0.52
2:I:3143:LEU:O	2:I:3147:ILE:HG22	2.09	0.52
2:I:3245:VAL:HG12	2:I:3248:ARG:NH1	2.23	0.52
2:A:793:LEU:HD12	2:A:821:LEU:HD21	1.90	0.52
2:A:1478:ASP:OD1	2:A:1482:ASN:N	2.42	0.52
2:A:1699:GLU:HG3	2:A:1810:LYS:HE3	1.91	0.52
2:A:2621:HIS:O	2:A:2624:ARG:HG2	2.09	0.52
3:C:107:TRP:HE1	3:C:110:PRO:HB2	1.73	0.52
2:D:470:SER:HA	2:D:473:ASN:HD21	1.74	0.52
2:D:2716:ASP:OD1	2:D:2716:ASP:N	2.42	0.52
2:I:2621:HIS:O	2:I:2624:ARG:HG2	2.09	0.52
2:A:1780:PRO:O	1:J:42:ARG:NH1	2.43	0.52
2:A:2302:LEU:HD23	2:A:2331:TYR:HB2	1.91	0.52
2:D:2621:HIS:O	2:D:2624:ARG:HG2	2.09	0.52
2:D:3078:ARG:HH21	2:D:3152:PHE:HA	1.73	0.52
2:D:3093:ARG:O	2:D:3097:GLU:HG2	2.09	0.52
2:D:4627:MET:SD	2:D:4627:MET:N	2.81	0.52
2:G:652:ARG:HD3	2:G:750:LEU:HB3	1.91	0.52
2:G:893:TYR:HA	2:G:904:HIS:H	1.74	0.52
2:G:2736:ASP:OD1	2:G:2736:ASP:N	2.41	0.52
2:G:2997:PHE:CE2	2:G:3001:ILE:HD11	2.44	0.52
2:I:2012:PHE:CZ	2:I:2031:LEU:HD23	2.45	0.52
2:I:4681:LEU:HD12	2:I:4724:VAL:HG21	1.90	0.52
2:A:574:VAL:HA	2:A:577:ILE:HG12	1.92	0.52
2:A:2867:LEU:HB2	2:A:2928:LYS:HZ3	1.73	0.52
2:A:3093:ARG:O	2:A:3097:GLU:HG2	2.09	0.52
2:A:3368:ARG:O	2:A:3372:VAL:HG23	2.09	0.52
2:A:4681:LEU:HD12	2:A:4724:VAL:HG21	1.90	0.52
2:D:1780:PRO:O	1:F:42:ARG:NH1	2.42	0.52
2:D:2962:GLN:OE1	2:D:2965:ARG:NH1	2.42	0.52
2:D:3284:TRP:HB3	2:D:3305:THR:HG21	1.91	0.52
2:D:3368:ARG:O	2:D:3372:VAL:HG23	2.09	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:18:LYS:NZ	1:H:18:LYS:HB3	2.25	0.52
2:I:2997:PHE:CE2	2:I:3001:ILE:HD11	2.44	0.52
2:I:4634:GLU:HG2	2:I:4636:THR:H	1.75	0.52
2:A:2012:PHE:CZ	2:A:2031:LEU:HD23	2.45	0.52
2:A:2230:THR:HG23	2:A:2270:SER:H	1.74	0.52
2:D:1478:ASP:OD1	2:D:1482:ASN:N	2.42	0.52
2:D:1699:GLU:HG3	2:D:1810:LYS:HE3	1.91	0.52
2:G:2962:GLN:OE1	2:G:2965:ARG:NH1	2.42	0.52
1:H:32:ASN:OD1	2:G:1299:GLN:NE2	2.42	0.52
1:H:88:PRO:HB2	2:G:1680:ARG:HH12	1.74	0.52
2:I:1041:GLN:OE1	2:I:1044:ARG:NH1	2.42	0.52
2:I:2716:ASP:OD1	2:I:2716:ASP:N	2.42	0.52
2:A:3812:VAL:O	2:A:3816:MET:HG3	2.10	0.52
2:A:4627:MET:SD	2:A:4627:MET:N	2.81	0.52
2:A:4912:TYR:HD1	5:A:5101:POV:H28	1.75	0.52
2:D:2012:PHE:CZ	2:D:2031:LEU:HD23	2.45	0.52
2:D:2230:THR:HG23	2:D:2270:SER:H	1.74	0.52
2:D:2418:LEU:HD23	2:D:2418:LEU:H	1.74	0.52
2:G:264:PRO:HB2	2:G:266:ARG:HG2	1.92	0.52
2:G:1018:ASN:HB3	2:G:1021:LEU:HD23	1.92	0.52
2:I:264:PRO:HB2	2:I:266:ARG:HG2	1.92	0.52
2:I:3350:ARG:HG2	2:I:3350:ARG:HH11	1.75	0.52
2:D:574:VAL:HA	2:D:577:ILE:HG12	1.92	0.52
2:G:2970:SER:HA	2:G:2973:PHE:CE2	2.45	0.52
2:I:1680:ARG:HH12	1:L:88:PRO:HB2	1.75	0.52
2:I:4992:LEU:O	2:I:4996:ILE:HG13	2.10	0.52
2:A:2962:GLN:OE1	2:A:2965:ARG:NH1	2.42	0.52
2:A:2970:SER:HA	2:A:2973:PHE:CE2	2.45	0.52
2:D:246:TYR:CG	2:D:373:LYS:HE3	2.45	0.52
2:D:1680:ARG:HH12	1:F:88:PRO:HB2	1.75	0.52
2:D:2970:SER:HA	2:D:2973:PHE:CE2	2.45	0.52
2:D:3812:VAL:O	2:D:3816:MET:HG3	2.09	0.52
1:F:18:LYS:NZ	1:F:18:LYS:HB3	2.25	0.52
2:G:961:MET:HG3	2:G:962:SER:H	1.72	0.52
2:G:4680:LYS:HB3	2:G:4686:LEU:HD22	1.92	0.52
2:I:2670:GLU:O	2:I:2673:HIS:ND1	2.43	0.52
2:I:4654:ALA:O	2:I:4658:ILE:HG12	2.09	0.52
2:A:652:ARG:HD3	2:A:750:LEU:HB3	1.91	0.52
2:A:4634:GLU:HG2	2:A:4636:THR:H	1.75	0.52
2:A:4839:MET:CE	2:D:4823:LEU:HA	2.40	0.52
2:D:4240:ASP:OD1	2:D:4675:LYS:NZ	2.36	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:2012:PHE:CZ	2:G:2031:LEU:HD23	2.45	0.52
2:G:4546:VAL:HG22	2:G:4550:LYS:HE3	1.92	0.52
2:I:5013:MET:HE3	2:I:5021:PHE:HD2	1.75	0.51
2:A:3246:LEU:HA	2:A:3249:LEU:HD13	1.90	0.51
2:A:4839:MET:SD	2:D:4826:ILE:HD12	2.50	0.51
2:D:4546:VAL:HG22	2:D:4550:LYS:HE3	1.92	0.51
2:D:4853:VAL:HG13	2:G:4807:PHE:HD2	1.74	0.51
2:D:4912:TYR:HD1	5:D:5102:POV:H28	1.75	0.51
2:G:246:TYR:CB	2:G:373:LYS:HD2	2.39	0.51
2:G:2670:GLU:O	2:G:2673:HIS:ND1	2.43	0.51
2:G:4634:GLU:HG2	2:G:4636:THR:H	1.75	0.51
2:I:548:VAL:HG11	2:I:582:HIS:HD2	1.75	0.51
2:I:3246:LEU:HA	2:I:3249:LEU:HD13	1.90	0.51
1:L:18:LYS:HB3	1:L:18:LYS:NZ	2.25	0.51
2:A:372:LEU:HB3	2:A:374:LYS:NZ	2.25	0.51
2:A:1025:ARG:NE	2:A:1025:ARG:HA	2.25	0.51
2:D:2670:GLU:O	2:D:2673:HIS:ND1	2.43	0.51
2:D:4090:LYS:HG3	2:D:4121:GLU:HB3	1.91	0.51
2:D:4839:MET:CE	2:G:4823:LEU:HA	2.41	0.51
2:I:470:SER:HA	2:I:473:ASN:HD21	1.74	0.51
2:I:2962:GLN:OE1	2:I:2965:ARG:NH1	2.42	0.51
2:I:3812:VAL:O	2:I:3816:MET:HG3	2.09	0.51
2:A:4680:LYS:HB3	2:A:4686:LEU:HD22	1.92	0.51
2:D:264:PRO:HB2	2:D:266:ARG:HG2	1.92	0.51
2:D:893:TYR:HA	2:D:904:HIS:H	1.74	0.51
2:D:4680:LYS:HB3	2:D:4686:LEU:HD22	1.92	0.51
2:G:574:VAL:HA	2:G:577:ILE:HG12	1.92	0.51
2:G:3368:ARG:O	2:G:3372:VAL:HG23	2.09	0.51
2:A:1786:LEU:HD12	2:A:1787:PRO:HD2	1.92	0.51
2:D:2930:LEU:O	2:D:2934:GLY:N	2.41	0.51
2:G:3350:ARG:HH11	2:G:3350:ARG:HG2	1.75	0.51
2:I:2095:GLN:HG3	2:I:2127:GLN:HB3	1.93	0.51
2:A:2670:GLU:O	2:A:2673:HIS:ND1	2.43	0.51
2:A:3194:LEU:HD13	2:A:3272:ILE:HG23	1.92	0.51
2:A:3350:ARG:HG2	2:A:3350:ARG:HH11	1.75	0.51
1:J:18:LYS:NZ	1:J:18:LYS:HB3	2.25	0.51
2:D:1786:LEU:HD12	2:D:1787:PRO:HD2	1.92	0.51
2:D:3194:LEU:HD13	2:D:3272:ILE:HG23	1.92	0.51
2:A:2122:SER:O	2:A:2126:ARG:HG3	2.11	0.51
2:A:2997:PHE:CE2	2:A:3001:ILE:HD11	2.44	0.51
2:A:3262:ARG:HB2	2:A:3265:GLU:HG2	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:2122:SER:O	2:D:2126:ARG:HG3	2.11	0.51
2:D:2288:LEU:O	2:D:3849:ARG:NH1	2.41	0.51
2:D:4634:GLU:HG2	2:D:4636:THR:H	1.75	0.51
2:A:4090:LYS:HG3	2:A:4121:GLU:HB3	1.91	0.51
2:A:4546:VAL:HG22	2:A:4550:LYS:HE3	1.92	0.51
2:D:2095:GLN:HG3	2:D:2127:GLN:HB3	1.93	0.51
2:I:1018:ASN:HB3	2:I:1021:LEU:HD23	1.92	0.51
2:I:1025:ARG:NE	2:I:1025:ARG:HA	2.25	0.51
2:I:2170:MET:SD	2:I:2171:GLY:N	2.84	0.51
2:I:4680:LYS:HB3	2:I:4686:LEU:HD22	1.92	0.51
2:A:2881:ASN:HA	2:A:2884:ASN:HD21	1.76	0.51
2:D:116:MET:HG2	2:D:139:GLU:HA	1.93	0.51
2:D:247:TYR:HD2	2:D:374:LYS:HB2	1.76	0.51
2:G:548:VAL:HG11	2:G:582:HIS:HD2	1.75	0.51
2:I:4912:TYR:HD1	5:I:5102:POV:H28	1.75	0.51
2:A:1286:MET:HE2	2:A:1464:PHE:HB3	1.93	0.51
2:G:2170:MET:SD	2:G:2171:GLY:N	2.84	0.51
1:H:42:ARG:NH1	2:G:1780:PRO:O	2.44	0.51
2:I:3321:ARG:HH11	2:I:3325:ASN:HD21	1.59	0.51
2:I:4823:LEU:HA	2:G:4839:MET:CE	2.40	0.51
2:A:3321:ARG:HH11	2:A:3325:ASN:HD21	1.59	0.51
2:D:1025:ARG:NE	2:D:1025:ARG:HA	2.25	0.51
2:D:3350:ARG:HG2	2:D:3350:ARG:HH11	1.75	0.51
2:G:2302:LEU:HD23	2:G:2331:TYR:HB2	1.91	0.51
2:I:574:VAL:HA	2:I:577:ILE:HG12	1.92	0.50
2:A:1018:ASN:HB3	2:A:1021:LEU:HD23	1.92	0.50
2:G:116:MET:HG2	2:G:139:GLU:HA	1.93	0.50
2:G:1025:ARG:NE	2:G:1025:ARG:HA	2.25	0.50
2:I:1786:LEU:HD12	2:I:1787:PRO:HD2	1.92	0.50
2:A:548:VAL:HG11	2:A:582:HIS:HD2	1.75	0.50
2:D:548:VAL:HG11	2:D:582:HIS:HD2	1.75	0.50
2:G:3262:ARG:HB2	2:G:3265:GLU:HG2	1.93	0.50
2:G:4912:TYR:HD1	5:G:5102:POV:H28	1.75	0.50
2:I:2736:ASP:OD1	2:I:2736:ASP:N	2.41	0.50
2:A:1680:ARG:HH12	1:J:88:PRO:HB2	1.76	0.50
2:A:3651:ASN:O	2:A:3655:GLU:HG2	2.11	0.50
2:D:2881:ASN:HA	2:D:2884:ASN:HD21	1.76	0.50
2:G:1786:LEU:HD12	2:G:1787:PRO:HD2	1.92	0.50
2:I:1811:ALA:HA	2:I:1814:MET:HE2	1.94	0.50
2:I:3717:ASP:OD1	2:I:3717:ASP:N	2.43	0.50
2:A:264:PRO:HB2	2:A:266:ARG:HG2	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:2313:LEU:HG	2:D:2318:TYR:HB2	1.94	0.50
2:I:701:GLY:HA3	2:I:725:HIS:CE1	2.47	0.50
2:I:4546:VAL:HG22	2:I:4550:LYS:HE3	1.92	0.50
2:A:2173:GLN:O	2:A:2177:LEU:HD23	2.12	0.50
2:D:1018:ASN:HB3	2:D:1021:LEU:HD23	1.92	0.50
2:D:2302:LEU:HD23	2:D:2331:TYR:HB2	1.91	0.50
2:D:3065:VAL:O	2:D:3069:HIS:ND1	2.45	0.50
2:D:3262:ARG:HB2	2:D:3265:GLU:HG2	1.93	0.50
2:G:701:GLY:HA3	2:G:725:HIS:CE1	2.47	0.50
2:G:3194:LEU:HD13	2:G:3272:ILE:HG23	1.92	0.50
2:I:2970:SER:HA	2:I:2973:PHE:CE2	2.45	0.50
2:A:728:ARG:NH2	2:A:1489:CYS:SG	2.85	0.50
2:A:2170:MET:SD	2:A:2171:GLY:N	2.84	0.50
2:D:840:VAL:HG12	2:D:1199:VAL:HG12	1.94	0.50
2:D:2170:MET:SD	2:D:2171:GLY:N	2.84	0.50
2:D:3536:ALA:HB2	2:D:3553:LEU:HD11	1.94	0.50
2:D:3548:GLU:HG3	2:D:3552:PHE:CZ	2.47	0.50
2:G:1811:ALA:HA	2:G:1814:MET:HE2	1.94	0.50
2:G:2313:LEU:HG	2:G:2318:TYR:HB2	1.94	0.50
2:G:3536:ALA:HB2	2:G:3553:LEU:HD11	1.94	0.50
2:I:3550:ARG:HD3	2:I:3594:ARG:NH2	2.27	0.50
2:D:701:GLY:HA3	2:D:725:HIS:CE1	2.47	0.50
2:D:2173:GLN:O	2:D:2177:LEU:HD23	2.12	0.50
2:G:3065:VAL:O	2:G:3069:HIS:ND1	2.45	0.50
2:I:2122:SER:O	2:I:2126:ARG:HG3	2.11	0.50
2:I:3065:VAL:O	2:I:3069:HIS:ND1	2.45	0.50
2:I:3262:ARG:HB2	2:I:3265:GLU:HG2	1.93	0.50
2:I:4627:MET:SD	2:I:4627:MET:N	2.81	0.50
2:A:116:MET:HG2	2:A:139:GLU:HA	1.93	0.50
2:A:840:VAL:HG12	2:A:1199:VAL:HG12	1.94	0.50
2:A:3065:VAL:O	2:A:3069:HIS:ND1	2.45	0.50
2:D:3321:ARG:HH11	2:D:3325:ASN:HD21	1.59	0.50
1:F:53:GLN:N	1:F:53:GLN:OE1	2.45	0.50
2:G:2173:GLN:O	2:G:2177:LEU:HD23	2.12	0.50
2:I:840:VAL:HG12	2:I:1199:VAL:HG12	1.94	0.50
2:I:2175:GLU:O	2:I:2179:ILE:HG12	2.12	0.50
2:D:2924:GLN:O	2:D:2928:LYS:HG2	2.12	0.50
2:G:840:VAL:HG12	2:G:1199:VAL:HG12	1.94	0.50
2:G:2095:GLN:HG3	2:G:2127:GLN:HB3	1.93	0.50
2:G:3548:GLU:HG3	2:G:3552:PHE:CZ	2.47	0.50
2:G:3651:ASN:O	2:G:3655:GLU:HG2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:4574:ASN:HD21	2:G:4810:ALA:HA	1.77	0.50
2:A:684:VAL:HG22	2:A:781:VAL:HG12	1.94	0.49
2:D:867:LEU:O	2:D:871:ARG:HB3	2.12	0.49
2:D:3651:ASN:O	2:D:3655:GLU:HG2	2.11	0.49
2:G:2175:GLU:O	2:G:2179:ILE:HG12	2.12	0.49
1:H:53:GLN:OE1	1:H:53:GLN:N	2.45	0.49
2:I:1977:TYR:HB2	2:I:1998:PHE:CE2	2.47	0.49
2:I:3835:LEU:HD22	2:I:3880:PHE:HZ	1.77	0.49
2:I:4574:ASN:HD21	2:I:4810:ALA:HA	1.77	0.49
2:A:2175:GLU:O	2:A:2179:ILE:HG12	2.12	0.49
2:A:2313:LEU:HG	2:A:2318:TYR:HB2	1.94	0.49
2:A:3550:ARG:HD3	2:A:3594:ARG:NH2	2.27	0.49
2:D:2175:GLU:O	2:D:2179:ILE:HG12	2.12	0.49
2:I:1668:ARG:HG3	2:I:1671:ARG:HH12	1.78	0.49
2:I:2313:LEU:HG	2:I:2318:TYR:HB2	1.94	0.49
2:I:4813:LEU:O	2:I:4816:ILE:HG12	2.13	0.49
1:L:53:GLN:OE1	1:L:53:GLN:N	2.45	0.49
2:A:1977:TYR:HB2	2:A:1998:PHE:CE2	2.47	0.49
2:A:3809:ASN:HB3	2:A:3812:VAL:HG22	1.94	0.49
2:D:728:ARG:NH2	2:D:1489:CYS:SG	2.85	0.49
2:G:2924:GLN:O	2:G:2928:LYS:HG2	2.12	0.49
3:M:15:GLY:H	3:M:85:LEU:HB2	1.78	0.49
2:I:2418:LEU:O	2:I:2422:ILE:HG12	2.13	0.49
2:I:3536:ALA:HB2	2:I:3553:LEU:HD11	1.94	0.49
2:I:3548:GLU:HG3	2:I:3552:PHE:CZ	2.47	0.49
2:I:3651:ASN:O	2:I:3655:GLU:HG2	2.11	0.49
2:A:1811:ALA:HA	2:A:1814:MET:HE2	1.94	0.49
2:A:3546:ASP:O	2:A:3550:ARG:HG3	2.12	0.49
2:A:3548:GLU:HG3	2:A:3552:PHE:CZ	2.47	0.49
2:D:684:VAL:HG22	2:D:781:VAL:HG12	1.94	0.49
2:D:3336:LYS:HD2	2:D:3464:ILE:HD11	1.95	0.49
2:D:3604:TYR:O	2:D:3607:GLU:HG3	2.12	0.49
3:E:15:GLY:H	3:E:85:LEU:HB2	1.77	0.49
2:G:638:ILE:HD12	2:G:703:GLY:HA2	1.95	0.49
2:G:1078:GLU:OE1	2:G:1235:THR:OG1	2.31	0.49
2:G:2288:LEU:O	2:G:3849:ARG:NH1	2.41	0.49
2:G:2930:LEU:O	2:G:2934:GLY:N	2.41	0.49
2:I:2173:GLN:O	2:I:2177:LEU:HD23	2.12	0.49
2:I:3194:LEU:HD13	2:I:3272:ILE:HG23	1.92	0.49
2:I:3695:PRO:HB2	2:I:3700:GLN:HG2	1.94	0.49
2:I:4839:MET:CE	2:A:4823:LEU:HA	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:1052:ASN:OD1	2:A:1052:ASN:N	2.45	0.49
2:A:2095:GLN:HG3	2:A:2127:GLN:HB3	1.93	0.49
2:A:2418:LEU:O	2:A:2422:ILE:HG12	2.13	0.49
2:A:4813:LEU:O	2:A:4816:ILE:HG12	2.13	0.49
2:D:1078:GLU:OE1	2:D:1235:THR:OG1	2.31	0.49
2:D:3377:GLU:HA	2:D:3380:ARG:HG2	1.95	0.49
2:D:3550:ARG:HD3	2:D:3594:ARG:NH2	2.27	0.49
2:G:2628:PHE:HZ	2:G:2906:VAL:HA	1.78	0.49
2:G:2981:VAL:HA	2:G:2985:ARG:HD3	1.95	0.49
2:G:3604:TYR:O	2:G:3607:GLU:HG3	2.13	0.49
2:I:684:VAL:HG22	2:I:781:VAL:HG12	1.94	0.49
2:I:728:ARG:NH2	2:I:1489:CYS:SG	2.85	0.49
2:I:2500:ALA:HB2	2:I:2553:TYR:HD1	1.77	0.49
2:I:2871:LEU:HG	2:I:2927:LEU:HD21	1.95	0.49
2:A:1087:ARG:HG2	2:A:1154:ASP:HB3	1.95	0.49
2:A:3536:ALA:HB2	2:A:3553:LEU:HD11	1.94	0.49
2:D:1668:ARG:HG3	2:D:1671:ARG:HH12	1.78	0.49
2:D:2653:LYS:HB2	2:D:2661:TRP:CD1	2.48	0.49
2:D:2871:LEU:HG	2:D:2927:LEU:HD21	1.95	0.49
2:G:1668:ARG:HG3	2:G:1671:ARG:HH12	1.78	0.49
2:G:3321:ARG:HH11	2:G:3325:ASN:HD21	1.59	0.49
2:I:867:LEU:O	2:I:871:ARG:HB3	2.12	0.49
2:I:2930:LEU:O	2:I:2934:GLY:N	2.41	0.49
2:I:2981:VAL:HA	2:I:2985:ARG:HD3	1.95	0.49
2:I:3392:LEU:HA	2:I:3395:ARG:HD2	1.94	0.49
2:A:2500:ALA:HB2	2:A:2553:TYR:HD1	1.77	0.49
2:A:2981:VAL:HA	2:A:2985:ARG:HD3	1.95	0.49
2:A:3336:LYS:HD2	2:A:3464:ILE:HD11	1.95	0.49
2:A:5014:TYR:HE2	7:A:5104:CFF:H101	1.77	0.49
2:D:499:THR:HG23	2:D:502:HIS:H	1.78	0.49
2:D:2263:ILE:HA	2:D:2330:ARG:HH12	1.78	0.49
2:D:2500:ALA:HB2	2:D:2553:TYR:HD1	1.78	0.49
2:D:2981:VAL:HA	2:D:2985:ARG:HD3	1.95	0.49
2:D:3172:ILE:HD13	2:D:3194:LEU:HB2	1.95	0.49
2:G:2871:LEU:HG	2:G:2927:LEU:HD21	1.95	0.49
2:G:2881:ASN:HA	2:G:2884:ASN:HD21	1.76	0.49
2:G:4104:THR:O	2:G:4108:ILE:HG12	2.13	0.49
2:I:116:MET:HG2	2:I:139:GLU:HA	1.93	0.49
2:I:2238:TYR:O	2:I:2242:ILE:HG12	2.13	0.49
2:I:2881:ASN:HA	2:I:2884:ASN:HD21	1.76	0.49
2:I:2924:GLN:O	2:I:2928:LYS:HG2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:1087:ARG:HG2	2:D:1154:ASP:HB3	1.95	0.49
2:G:684:VAL:HG22	2:G:781:VAL:HG12	1.94	0.49
2:G:728:ARG:NH2	2:G:1489:CYS:SG	2.85	0.49
2:G:1013:ILE:H	2:G:1013:ILE:HD12	1.78	0.49
2:G:1087:ARG:HG2	2:G:1154:ASP:HB3	1.95	0.49
2:G:1977:TYR:HB2	2:G:1998:PHE:CE2	2.47	0.49
2:G:2500:ALA:HB2	2:G:2553:TYR:HD1	1.77	0.49
2:G:2653:LYS:HB2	2:G:2661:TRP:CD1	2.48	0.49
2:G:3172:ILE:HD13	2:G:3194:LEU:HB2	1.95	0.49
2:G:3546:ASP:O	2:G:3550:ARG:HG3	2.12	0.49
2:G:3550:ARG:HD3	2:G:3594:ARG:NH2	2.27	0.49
2:I:887:ILE:HD13	2:I:959:TYR:HB3	1.95	0.49
2:I:1078:GLU:OE1	2:I:1235:THR:OG1	2.31	0.49
2:I:3172:ILE:HD13	2:I:3194:LEU:HB2	1.95	0.49
3:K:15:GLY:H	3:K:85:LEU:HB2	1.77	0.49
2:A:701:GLY:HA3	2:A:725:HIS:CE1	2.47	0.49
2:A:3604:TYR:O	2:A:3607:GLU:HG3	2.12	0.49
2:D:638:ILE:HD12	2:D:703:GLY:HA2	1.95	0.49
2:D:1052:ASN:OD1	2:D:1052:ASN:N	2.45	0.49
2:D:1811:ALA:HA	2:D:1814:MET:HE2	1.94	0.49
2:D:2628:PHE:HZ	2:D:2906:VAL:HA	1.78	0.49
2:D:3188:PRO:HB3	2:D:3334:TRP:CZ2	2.48	0.49
2:G:3695:PRO:HB2	2:G:3700:GLN:HG2	1.94	0.49
2:G:3809:ASN:HB3	2:G:3812:VAL:HG22	1.94	0.49
2:G:4813:LEU:O	2:G:4816:ILE:HG12	2.13	0.49
1:H:77:THR:OG1	1:H:78:PRO:HD2	2.13	0.49
2:I:1497:GLY:HA2	2:I:1500:PHE:HD2	1.78	0.49
2:I:3546:ASP:O	2:I:3550:ARG:HG3	2.12	0.49
2:A:499:THR:HG23	2:A:502:HIS:H	1.78	0.49
2:A:3215:ALA:HA	2:A:3220:THR:HG21	1.95	0.49
2:A:3717:ASP:OD1	2:A:3717:ASP:N	2.43	0.49
1:J:53:GLN:OE1	1:J:53:GLN:N	2.45	0.49
2:D:246:TYR:CD2	2:D:373:LYS:HB3	2.48	0.49
2:D:1497:GLY:HA2	2:D:1500:PHE:HD2	1.78	0.49
2:D:3268:HIS:CE1	2:D:3272:ILE:HD12	2.48	0.49
2:D:4104:THR:O	2:D:4108:ILE:HG12	2.13	0.49
2:G:372:LEU:O	2:G:374:LYS:HG3	2.12	0.49
2:G:2122:SER:O	2:G:2126:ARG:HG3	2.11	0.49
2:G:3188:PRO:HB3	2:G:3334:TRP:CZ2	2.48	0.49
2:G:4242:ILE:HG22	2:G:4246:GLN:HE21	1.77	0.49
2:I:2768:PHE:O	2:I:2771:ILE:HG22	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:867:LEU:O	2:A:871:ARG:HB3	2.12	0.48
2:A:1076:ARG:HB3	2:A:1191:VAL:HG23	1.95	0.48
2:A:1078:GLU:OE1	2:A:1235:THR:OG1	2.31	0.48
2:A:2238:TYR:O	2:A:2242:ILE:HG12	2.13	0.48
2:A:2559:LEU:O	2:A:2563:THR:HG23	2.13	0.48
2:A:2653:LYS:HB2	2:A:2661:TRP:CD1	2.48	0.48
2:A:2792:ARG:NH2	2:A:2798:SER:OG	2.46	0.48
2:A:2924:GLN:O	2:A:2928:LYS:HG2	2.12	0.48
2:A:3172:ILE:HD13	2:A:3194:LEU:HB2	1.95	0.48
2:A:3188:PRO:HB3	2:A:3334:TRP:CZ2	2.48	0.48
2:A:3695:PRO:HB2	2:A:3700:GLN:HG2	1.94	0.48
2:D:1128:ARG:CZ	2:D:1130:GLN:HG3	2.44	0.48
2:D:2138:LEU:HB3	2:D:3658:LYS:HE2	1.95	0.48
2:D:2418:LEU:O	2:D:2422:ILE:HG12	2.13	0.48
2:D:3695:PRO:HB2	2:D:3700:GLN:HG2	1.94	0.48
2:G:1076:ARG:HB3	2:G:1191:VAL:HG23	1.95	0.48
2:G:2768:PHE:O	2:G:2771:ILE:HG22	2.13	0.48
2:I:2012:PHE:HZ	2:I:2031:LEU:HD23	1.78	0.48
2:I:3268:HIS:CE1	2:I:3272:ILE:HD12	2.48	0.48
2:A:887:ILE:HD13	2:A:959:TYR:HB3	1.95	0.48
2:A:2628:PHE:HZ	2:A:2906:VAL:HA	1.78	0.48
2:A:3103:ILE:O	2:A:3107:VAL:HG13	2.14	0.48
2:A:3835:LEU:HD22	2:A:3880:PHE:HZ	1.77	0.48
2:D:1076:ARG:HB3	2:D:1191:VAL:HG23	1.95	0.48
2:D:1977:TYR:HB2	2:D:1998:PHE:CE2	2.47	0.48
2:D:2559:LEU:O	2:D:2563:THR:HG23	2.13	0.48
2:D:3392:LEU:HA	2:D:3395:ARG:HD2	1.94	0.48
2:D:3546:ASP:O	2:D:3550:ARG:HG3	2.12	0.48
2:D:4813:LEU:O	2:D:4816:ILE:HG12	2.12	0.48
2:I:2759:ALA:HA	2:I:2809:ILE:HG12	1.95	0.48
2:I:3536:ALA:O	2:I:3540:TYR:N	2.46	0.48
2:A:638:ILE:HD12	2:A:703:GLY:HA2	1.95	0.48
2:A:2716:ASP:OD1	2:A:2716:ASP:N	2.42	0.48
2:A:2871:LEU:HG	2:A:2927:LEU:HD21	1.95	0.48
2:A:3195:ALA:HB2	2:A:3275:PRO:HB3	1.96	0.48
2:A:3268:HIS:CE1	2:A:3272:ILE:HD12	2.48	0.48
2:D:1422:ASP:OD1	2:D:1422:ASP:N	2.45	0.48
1:F:77:THR:OG1	1:F:78:PRO:HD2	2.13	0.48
2:G:499:THR:HG23	2:G:502:HIS:H	1.78	0.48
2:G:3268:HIS:CE1	2:G:3272:ILE:HD12	2.48	0.48
2:I:1087:ARG:HG2	2:I:1154:ASP:HB3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2792:ARG:NH2	2:I:2798:SER:OG	2.46	0.48
2:I:3147:ILE:HG13	2:I:3152:PHE:HB2	1.95	0.48
2:I:3377:GLU:HA	2:I:3380:ARG:HG2	1.95	0.48
2:I:3604:TYR:O	2:I:3607:GLU:HG3	2.13	0.48
2:A:1668:ARG:HG3	2:A:1671:ARG:HH12	1.78	0.48
2:A:2288:LEU:O	2:A:3849:ARG:NH1	2.41	0.48
2:A:3392:LEU:HA	2:A:3395:ARG:HD2	1.94	0.48
2:A:4104:THR:O	2:A:4108:ILE:HG12	2.13	0.48
2:D:1013:ILE:H	2:D:1013:ILE:HD12	1.78	0.48
2:D:3103:ILE:O	2:D:3107:VAL:HG13	2.14	0.48
2:G:2196:ASN:OD1	2:G:2199:ARG:NH2	2.46	0.48
2:G:3377:GLU:HA	2:G:3380:ARG:HG2	1.95	0.48
2:G:4954:MET:O	6:G:5103:ATP:O2'	2.27	0.48
2:I:1530:THR:HG22	2:I:1535:GLU:HA	1.95	0.48
2:I:2581:SER:O	2:I:2584:HIS:HB2	2.14	0.48
2:I:2653:LYS:HB2	2:I:2661:TRP:CD1	2.48	0.48
2:I:3215:ALA:HA	2:I:3220:THR:HG21	1.95	0.48
2:I:4104:THR:O	2:I:4108:ILE:HG12	2.13	0.48
1:J:77:THR:OG1	1:J:78:PRO:HD2	2.13	0.48
2:D:1530:THR:HG22	2:D:1535:GLU:HA	1.96	0.48
2:D:2238:TYR:O	2:D:2242:ILE:HG12	2.13	0.48
2:D:3809:ASN:HB3	2:D:3812:VAL:HG22	1.94	0.48
2:G:2138:LEU:HB3	2:G:3658:LYS:HE2	1.95	0.48
2:G:2238:TYR:O	2:G:2242:ILE:HG12	2.13	0.48
2:G:2418:LEU:O	2:G:2422:ILE:HG12	2.13	0.48
2:G:2581:SER:O	2:G:2584:HIS:HB2	2.14	0.48
2:G:3103:ILE:O	2:G:3107:VAL:HG13	2.14	0.48
2:G:3835:LEU:HD22	2:G:3880:PHE:HZ	1.77	0.48
2:I:3103:ILE:O	2:I:3107:VAL:HG13	2.14	0.48
2:A:904:HIS:ND1	2:A:905:PRO:HD2	2.29	0.48
2:A:1013:ILE:H	2:A:1013:ILE:HD12	1.78	0.48
2:A:1497:GLY:HA2	2:A:1500:PHE:HD2	1.78	0.48
2:D:3215:ALA:HA	2:D:3220:THR:HG21	1.95	0.48
2:D:4574:ASN:HD21	2:D:4810:ALA:HA	1.77	0.48
2:G:3536:ALA:O	2:G:3540:TYR:N	2.46	0.48
2:G:4992:LEU:O	2:G:4996:ILE:HG13	2.13	0.48
2:I:499:THR:HG23	2:I:502:HIS:H	1.78	0.48
2:I:861:ILE:HG23	2:I:933:LEU:HD22	1.96	0.48
2:I:2559:LEU:O	2:I:2563:THR:HG23	2.13	0.48
2:A:1530:THR:HG22	2:A:1535:GLU:HA	1.95	0.48
2:A:2768:PHE:O	2:A:2771:ILE:HG22	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:904:HIS:ND1	2:D:905:PRO:HD2	2.29	0.48
2:D:5003:HIS:HD2	2:D:5007:GLU:HB3	1.79	0.48
2:G:2963:LEU:HD13	2:G:3006:ILE:HD13	1.96	0.48
2:I:904:HIS:ND1	2:I:905:PRO:HD2	2.29	0.48
2:I:1076:ARG:HB3	2:I:1191:VAL:HG23	1.95	0.48
2:I:3188:PRO:HB3	2:I:3334:TRP:CZ2	2.48	0.48
2:I:3336:LYS:HD2	2:I:3464:ILE:HD11	1.95	0.48
2:I:3809:ASN:HB3	2:I:3812:VAL:HG22	1.94	0.48
2:A:5003:HIS:HD2	2:A:5007:GLU:HB3	1.79	0.48
2:D:2792:ARG:NH2	2:D:2798:SER:OG	2.46	0.48
2:D:3257:ALA:HB1	2:D:3321:ARG:HB3	1.96	0.48
2:G:904:HIS:ND1	2:G:905:PRO:HD2	2.29	0.48
2:G:2012:PHE:HZ	2:G:2031:LEU:HD23	1.79	0.48
2:G:2559:LEU:O	2:G:2563:THR:HG23	2.13	0.48
2:I:1013:ILE:H	2:I:1013:ILE:HD12	1.78	0.48
2:I:2628:PHE:HZ	2:I:2906:VAL:HA	1.78	0.48
2:A:861:ILE:HG23	2:A:933:LEU:HD22	1.96	0.48
2:A:2263:ILE:HA	2:A:2330:ARG:HH12	1.78	0.48
2:A:2759:ALA:HA	2:A:2809:ILE:HG12	1.95	0.48
2:D:364:PRO:HG2	2:D:365:LYS:HZ2	1.79	0.48
2:D:501:ALA:O	2:D:505:GLU:HG2	2.14	0.48
2:D:861:ILE:HG23	2:D:933:LEU:HD22	1.96	0.48
2:D:2768:PHE:O	2:D:2771:ILE:HG22	2.13	0.48
2:D:4721:LYS:HD2	2:D:4741:LEU:HB3	1.96	0.48
2:G:1256:GLU:HB2	2:G:1275:ARG:HE	1.79	0.48
2:G:2263:ILE:HA	2:G:2330:ARG:HH12	1.78	0.48
2:G:2792:ARG:NH2	2:G:2798:SER:OG	2.46	0.48
2:G:3717:ASP:OD1	2:G:3717:ASP:N	2.43	0.48
2:I:371:VAL:HG12	2:I:373:LYS:HG2	1.96	0.48
2:I:3257:ALA:HB1	2:I:3321:ARG:HB3	1.96	0.48
2:A:3257:ALA:HB1	2:A:3321:ARG:HB3	1.96	0.48
2:A:3377:GLU:HA	2:A:3380:ARG:HG2	1.95	0.48
2:A:3470:LEU:O	2:A:3474:SER:OG	2.28	0.48
2:G:861:ILE:HG23	2:G:933:LEU:HD22	1.96	0.48
2:G:4240:ASP:OD1	2:G:4675:LYS:NZ	2.36	0.48
2:I:2263:ILE:HA	2:I:2330:ARG:HH12	1.78	0.47
2:I:3195:ALA:HB2	2:I:3275:PRO:HB3	1.96	0.47
2:I:4243:PHE:CE2	2:I:4247:ILE:HD11	2.49	0.47
2:A:501:ALA:O	2:A:505:GLU:HG2	2.14	0.47
2:A:2138:LEU:HB3	2:A:3658:LYS:HE2	1.95	0.47
2:A:3147:ILE:HG13	2:A:3152:PHE:HB2	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:887:ILE:HD13	2:D:959:TYR:HB3	1.95	0.47
2:G:867:LEU:O	2:G:871:ARG:HB3	2.12	0.47
2:G:1128:ARG:CZ	2:G:1130:GLN:HG3	2.44	0.47
2:G:1497:GLY:HA2	2:G:1500:PHE:HD2	1.78	0.47
2:I:3416:VAL:HG23	2:I:3423:TRP:HZ3	1.79	0.47
2:A:2196:ASN:OD1	2:A:2199:ARG:NH2	2.46	0.47
2:A:2747:ILE:HD12	2:A:2748:PRO:HD2	1.95	0.47
2:D:1256:GLU:HB2	2:D:1275:ARG:HE	1.79	0.47
2:G:2430:ILE:HG21	2:G:2502:MET:HB2	1.96	0.47
2:G:3416:VAL:HG23	2:G:3423:TRP:HZ3	1.79	0.47
2:I:1128:ARG:CZ	2:I:1130:GLN:HG3	2.44	0.47
2:A:363:ASP:HB3	2:A:366:ALA:HB3	1.96	0.47
2:A:1128:ARG:CZ	2:A:1130:GLN:HG3	2.44	0.47
2:A:2012:PHE:HZ	2:A:2031:LEU:HD23	1.79	0.47
2:A:4574:ASN:HD21	2:A:4810:ALA:HA	1.77	0.47
1:J:106:LEU:HD22	1:J:107:GLU:H	1.79	0.47
2:D:2581:SER:O	2:D:2584:HIS:HB2	2.14	0.47
2:D:3835:LEU:HD22	2:D:3880:PHE:HZ	1.77	0.47
2:G:2212:VAL:HG22	2:G:2256:TYR:CZ	2.50	0.47
2:I:368:ARG:HD3	2:I:369:LEU:N	2.29	0.47
2:I:638:ILE:HD12	2:I:703:GLY:HA2	1.95	0.47
2:I:2138:LEU:HB3	2:I:3658:LYS:HE2	1.95	0.47
2:I:2430:ILE:HG21	2:I:2502:MET:HB2	1.96	0.47
2:I:2477:PRO:HG2	2:I:2536:LEU:HD11	1.96	0.47
2:I:4687:TYR:OH	2:I:4699:GLY:O	2.30	0.47
2:A:4721:LYS:HD2	2:A:4741:LEU:HB3	1.96	0.47
2:A:4835:LYS:O	2:A:4839:MET:HB2	2.15	0.47
2:D:3195:ALA:HB2	2:D:3275:PRO:HB3	1.96	0.47
2:G:887:ILE:HD13	2:G:959:TYR:HB3	1.95	0.47
2:G:1046:LEU:HD22	2:G:1051:TYR:CZ	2.50	0.47
2:G:1422:ASP:OD1	2:G:1422:ASP:N	2.45	0.47
2:G:2477:PRO:HG2	2:G:2536:LEU:HD11	1.96	0.47
2:G:3257:ALA:HB1	2:G:3321:ARG:HB3	1.96	0.47
2:G:3336:LYS:HD2	2:G:3464:ILE:HD11	1.95	0.47
2:G:3392:LEU:HA	2:G:3395:ARG:HD2	1.94	0.47
2:I:815:VAL:O	2:I:1007:TYR:OH	2.28	0.47
2:I:1046:LEU:HD22	2:I:1051:TYR:CZ	2.50	0.47
2:I:2212:VAL:HG22	2:I:2256:TYR:CZ	2.50	0.47
2:I:4094:GLN:HG3	2:I:4108:ILE:HG21	1.96	0.47
2:I:5003:HIS:HD2	2:I:5007:GLU:HB3	1.79	0.47
2:A:2755:ILE:HD12	2:A:2813:LEU:HG	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:2212:VAL:HG22	2:D:2256:TYR:CZ	2.50	0.47
2:D:2755:ILE:HD12	2:D:2813:LEU:HG	1.97	0.47
2:D:3147:ILE:HG13	2:D:3152:PHE:HB2	1.95	0.47
2:G:1733:GLU:HG2	2:G:2201:LEU:HD23	1.97	0.47
2:G:2285:GLU:OE2	2:G:3860:ASN:ND2	2.40	0.47
2:I:1763:PRO:HG3	2:I:2094:LEU:HD22	1.97	0.47
2:I:2747:ILE:HD12	2:I:2748:PRO:HD2	1.95	0.47
2:I:2963:LEU:HD13	2:I:3006:ILE:HD13	1.96	0.47
2:I:3103:ILE:HA	2:I:3106:MET:SD	2.55	0.47
1:L:77:THR:OG1	1:L:78:PRO:HD2	2.13	0.47
2:A:1727:ARG:NH2	2:A:1773:PRO:O	2.48	0.47
2:A:2212:VAL:HG22	2:A:2256:TYR:CZ	2.50	0.47
2:A:4242:ILE:HG22	2:A:4246:GLN:HE21	1.79	0.47
3:C:15:GLY:H	3:C:85:LEU:HB2	1.78	0.47
2:D:2579:VAL:O	2:D:2582:MET:HG3	2.15	0.47
3:E:90:THR:HG23	3:E:124:THR:HA	1.97	0.47
2:G:4721:LYS:HD2	2:G:4741:LEU:HB3	1.96	0.47
2:G:5003:HIS:HD2	2:G:5007:GLU:HB3	1.79	0.47
2:I:501:ALA:O	2:I:505:GLU:HG2	2.14	0.47
2:I:2196:ASN:OD1	2:I:2199:ARG:NH2	2.46	0.47
2:I:2799:GLU:O	2:I:2803:GLU:HG2	2.15	0.47
2:I:4835:LYS:O	2:I:4839:MET:HB2	2.14	0.47
2:I:4999:ASP:HB2	2:I:5002:GLU:HG2	1.97	0.47
1:L:106:LEU:HD22	1:L:107:GLU:H	1.79	0.47
2:A:355:LEU:HB3	2:A:378:LEU:HB3	1.97	0.47
2:A:2963:LEU:HD13	2:A:3006:ILE:HD13	1.96	0.47
2:A:3536:ALA:O	2:A:3540:TYR:N	2.47	0.47
2:A:4999:ASP:HB2	2:A:5002:GLU:HG2	1.97	0.47
2:D:943:ASP:HB3	2:D:1050:GLY:HA3	1.96	0.47
2:D:1763:PRO:HG3	2:D:2094:LEU:HD22	1.97	0.47
2:D:2430:ILE:HG21	2:D:2502:MET:HB2	1.96	0.47
2:D:3416:VAL:HG23	2:D:3423:TRP:HZ3	1.79	0.47
2:D:4992:LEU:O	2:D:4996:ILE:HG13	2.13	0.47
1:F:106:LEU:HD22	1:F:107:GLU:H	1.79	0.47
2:G:1052:ASN:OD1	2:G:1052:ASN:N	2.45	0.47
2:G:1530:THR:HG22	2:G:1535:GLU:HA	1.96	0.47
2:G:2747:ILE:HD12	2:G:2748:PRO:HD2	1.95	0.47
2:G:2799:GLU:O	2:G:2803:GLU:HG2	2.15	0.47
2:G:3215:ALA:HA	2:G:3220:THR:HG21	1.95	0.47
3:M:90:THR:HG23	3:M:124:THR:HA	1.97	0.47
2:A:1046:LEU:HD22	2:A:1051:TYR:CZ	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2581:SER:O	2:A:2584:HIS:HB2	2.14	0.47
2:A:3730:ALA:O	2:A:3734:HIS:HB2	2.15	0.47
2:D:2747:ILE:HD12	2:D:2748:PRO:HD2	1.95	0.47
2:D:2799:GLU:O	2:D:2803:GLU:HG2	2.15	0.47
2:D:4835:LYS:O	2:D:4839:MET:HB2	2.14	0.47
2:G:2579:VAL:O	2:G:2582:MET:HG3	2.15	0.47
2:G:3260:GLY:O	2:G:3262:ARG:NH1	2.48	0.47
2:G:4835:LYS:O	2:G:4839:MET:HB2	2.14	0.47
2:I:366:ALA:O	2:I:370:GLY:N	2.47	0.47
2:A:1256:GLU:HB2	2:A:1275:ARG:HE	1.79	0.47
2:A:3103:ILE:HA	2:A:3106:MET:SD	2.55	0.47
2:D:247:TYR:CD2	2:D:374:LYS:HB2	2.50	0.47
2:D:3536:ALA:O	2:D:3540:TYR:N	2.47	0.47
2:G:501:ALA:O	2:G:505:GLU:HG2	2.14	0.47
2:G:1763:PRO:HG3	2:G:2094:LEU:HD22	1.97	0.47
2:G:3103:ILE:HA	2:G:3106:MET:SD	2.55	0.47
2:I:2755:ILE:HD12	2:I:2813:LEU:HG	1.97	0.47
2:A:3031:ALA:HB1	2:A:3035:GLU:HB2	1.97	0.47
2:A:3416:VAL:HG23	2:A:3423:TRP:HZ3	1.79	0.47
2:A:3852:LYS:HE2	2:A:3852:LYS:HB2	1.78	0.47
2:D:872:GLU:O	2:D:876:GLU:HG2	2.15	0.47
2:D:4094:GLN:HG3	2:D:4108:ILE:HG21	1.96	0.47
2:G:355:LEU:HD23	2:G:378:LEU:HB3	1.97	0.47
2:G:1727:ARG:NH2	2:G:1773:PRO:O	2.48	0.47
2:G:3031:ALA:O	2:G:3036:LYS:NZ	2.29	0.47
2:G:3147:ILE:HG13	2:G:3152:PHE:HB2	1.95	0.47
2:G:4999:ASP:HB2	2:G:5002:GLU:HG2	1.97	0.47
2:I:3730:ALA:O	2:I:3734:HIS:HB2	2.15	0.46
2:A:872:GLU:O	2:A:876:GLU:HG2	2.15	0.46
2:A:2155:LEU:HB2	2:A:2188:ASN:HD22	1.80	0.46
2:D:4999:ASP:HB2	2:D:5002:GLU:HG2	1.97	0.46
2:G:355:LEU:HB3	2:G:378:LEU:HB3	1.97	0.46
2:G:1452:TRP:HB3	2:G:1548:LEU:HB3	1.98	0.46
2:G:1617:THR:HG22	2:G:1628:VAL:HG22	1.97	0.46
2:G:3195:ALA:HB2	2:G:3275:PRO:HB3	1.96	0.46
2:I:355:LEU:HD23	2:I:378:LEU:HB3	1.97	0.46
2:I:1256:GLU:HB2	2:I:1275:ARG:HE	1.79	0.46
2:I:1617:THR:HG22	2:I:1628:VAL:HG22	1.97	0.46
2:I:1727:ARG:NH2	2:I:1773:PRO:O	2.48	0.46
2:A:943:ASP:HB3	2:A:1050:GLY:HA3	1.96	0.46
2:A:1452:TRP:HB3	2:A:1548:LEU:HB3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:1455:PRO:HG3	2:A:1549:PHE:HE1	1.81	0.46
2:A:1763:PRO:HG3	2:A:2094:LEU:HD22	1.97	0.46
2:A:2579:VAL:O	2:A:2582:MET:HG3	2.15	0.46
2:D:355:LEU:HD23	2:D:378:LEU:HB3	1.97	0.46
2:D:2155:LEU:HB2	2:D:2188:ASN:HD22	1.80	0.46
2:D:3260:GLY:O	2:D:3262:ARG:NH1	2.48	0.46
2:D:3336:LYS:HG2	2:D:3337:ARG:N	2.31	0.46
2:D:4242:ILE:HG22	2:D:4246:GLN:HE21	1.79	0.46
2:G:229:GLU:HG3	2:G:247:TYR:HB3	1.97	0.46
2:I:1155:LEU:HD13	2:I:1184:ILE:HG23	1.97	0.46
2:I:2575:ARG:HB3	2:I:2578:MET:HG2	1.97	0.46
2:I:3754:GLU:HG3	2:I:4719:PHE:CZ	2.49	0.46
2:I:4721:LYS:HD2	2:I:4741:LEU:HB3	1.96	0.46
2:A:870:ILE:O	2:A:874:LEU:HG	2.16	0.46
2:A:1733:GLU:HG2	2:A:2201:LEU:HD23	1.97	0.46
2:A:2430:ILE:HG21	2:A:2502:MET:HB2	1.96	0.46
2:A:2575:ARG:HB3	2:A:2578:MET:HG2	1.97	0.46
2:A:4992:LEU:O	2:A:4996:ILE:HG13	2.16	0.46
2:D:1455:PRO:HG3	2:D:1549:PHE:HE1	1.81	0.46
2:D:2477:PRO:HG2	2:D:2536:LEU:HD11	1.96	0.46
2:D:2759:ALA:HA	2:D:2809:ILE:HG12	1.96	0.46
2:G:3031:ALA:HB1	2:G:3035:GLU:HB2	1.97	0.46
2:G:3730:ALA:O	2:G:3734:HIS:HB2	2.15	0.46
3:M:89:ASP:HB2	3:M:125:VAL:HG21	1.97	0.46
2:I:229:GLU:HG3	2:I:247:TYR:HB3	1.97	0.46
2:I:355:LEU:HB3	2:I:378:LEU:HB3	1.97	0.46
2:I:1042:ALA:O	2:I:1046:LEU:HG	2.16	0.46
2:I:1452:TRP:HB3	2:I:1548:LEU:HB3	1.98	0.46
2:I:1733:GLU:HG2	2:I:2201:LEU:HD23	1.97	0.46
2:A:229:GLU:HG3	2:A:247:TYR:HB3	1.97	0.46
2:A:2736:ASP:OD1	2:A:2736:ASP:N	2.41	0.46
2:A:4546:VAL:HA	2:A:4549:VAL:HG22	1.98	0.46
2:D:1727:ARG:NH2	2:D:1773:PRO:O	2.48	0.46
2:D:2012:PHE:HZ	2:D:2031:LEU:HD23	1.79	0.46
2:D:2155:LEU:HB2	2:D:2188:ASN:ND2	2.30	0.46
2:D:2963:LEU:HD13	2:D:3006:ILE:HD13	1.96	0.46
2:D:3730:ALA:O	2:D:3734:HIS:HB2	2.15	0.46
2:G:247:TYR:HD2	2:G:374:LYS:HB2	1.80	0.46
2:G:981:GLN:HE21	2:G:1043:VAL:HG13	1.81	0.46
2:G:2700:MET:HB2	2:G:3001:ILE:HG22	1.98	0.46
2:I:870:ILE:O	2:I:874:LEU:HG	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:1455:PRO:HG3	2:I:1549:PHE:HE1	1.81	0.46
2:A:1042:ALA:O	2:A:1046:LEU:HG	2.16	0.46
2:A:3962:PHE:O	2:A:3966:THR:HG23	2.16	0.46
2:A:4024:VAL:HG11	2:A:4142:ASN:HB3	1.97	0.46
3:C:90:THR:HG23	3:C:124:THR:HA	1.97	0.46
2:D:1046:LEU:HD22	2:D:1051:TYR:CZ	2.50	0.46
2:D:2575:ARG:HB3	2:D:2578:MET:HG2	1.97	0.46
2:D:2668:SER:HB3	2:D:2671:GLU:HG3	1.98	0.46
3:E:89:ASP:HB2	3:E:125:VAL:HG21	1.97	0.46
1:F:11:ASP:OD2	1:F:13:ARG:HG2	2.16	0.46
2:G:369:LEU:O	2:G:370:GLY:C	2.54	0.46
2:G:943:ASP:HB3	2:G:1050:GLY:HA3	1.96	0.46
2:G:2155:LEU:HB2	2:G:2188:ASN:ND2	2.30	0.46
2:G:2155:LEU:HB2	2:G:2188:ASN:HD22	1.81	0.46
2:G:2575:ARG:HB3	2:G:2578:MET:HG2	1.97	0.46
2:G:4094:GLN:HG3	2:G:4108:ILE:HG21	1.96	0.46
2:I:872:GLU:O	2:I:876:GLU:HG2	2.15	0.46
2:I:943:ASP:HB3	2:I:1050:GLY:HA3	1.96	0.46
2:I:2700:MET:HB2	2:I:3001:ILE:HG22	1.98	0.46
3:K:89:ASP:HB2	3:K:125:VAL:HG21	1.97	0.46
2:A:3260:GLY:O	2:A:3262:ARG:NH1	2.48	0.46
2:A:4094:GLN:HG3	2:A:4108:ILE:HG21	1.96	0.46
3:C:4:LEU:HD21	3:C:97:ALA:HB2	1.98	0.46
2:D:4024:VAL:HG11	2:D:4142:ASN:HB3	1.97	0.46
2:G:707:VAL:HG23	2:G:782:SER:OG	2.16	0.46
2:G:2755:ILE:HD12	2:G:2813:LEU:HG	1.97	0.46
2:G:2759:ALA:HA	2:G:2809:ILE:HG12	1.96	0.46
2:G:3379:LEU:HD12	2:G:3387:ALA:HA	1.98	0.46
1:H:11:ASP:OD2	1:H:13:ARG:HG2	2.16	0.46
2:I:2579:VAL:O	2:I:2582:MET:HG3	2.15	0.46
2:I:4024:VAL:HG11	2:I:4142:ASN:HB3	1.97	0.46
2:A:2155:LEU:HB2	2:A:2188:ASN:ND2	2.30	0.46
2:A:2867:LEU:HD21	2:A:2871:LEU:HB3	1.98	0.46
2:A:3280:TYR:CE2	2:A:3284:TRP:CD1	3.04	0.46
2:A:3379:LEU:HD12	2:A:3387:ALA:HA	1.98	0.46
2:D:150:MET:HB3	2:D:169:LEU:HD22	1.98	0.46
2:D:1452:TRP:HB3	2:D:1548:LEU:HB3	1.98	0.46
2:D:3103:ILE:HA	2:D:3106:MET:SD	2.55	0.46
2:D:4820:VAL:HB	2:D:4823:LEU:HD23	1.98	0.46
2:G:150:MET:HB3	2:G:169:LEU:HD22	1.98	0.46
2:G:872:GLU:O	2:G:876:GLU:HG2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:2206:THR:O	2:G:2210:VAL:HG23	2.16	0.46
2:G:4675:LYS:O	2:G:4679:ARG:HG2	2.16	0.46
2:I:981:GLN:HE21	2:I:1043:VAL:HG13	1.81	0.46
2:I:2155:LEU:HB2	2:I:2188:ASN:ND2	2.30	0.46
2:I:3260:GLY:O	2:I:3262:ARG:NH1	2.48	0.46
2:I:3924:LEU:HD21	2:I:3984:ARG:HH21	1.81	0.46
2:A:1155:LEU:HD13	2:A:1184:ILE:HG23	1.97	0.46
2:A:2199:ARG:NH2	2:A:2245:GLN:OE1	2.49	0.46
2:A:2477:PRO:HG2	2:A:2536:LEU:HD11	1.96	0.46
2:A:2799:GLU:O	2:A:2803:GLU:HG2	2.15	0.46
2:A:3384:LYS:HG2	2:A:3386:GLU:H	1.81	0.46
2:D:355:LEU:HB3	2:D:378:LEU:HB3	1.97	0.46
2:D:823:LEU:HD11	2:D:1626:TRP:HB3	1.98	0.46
2:D:981:GLN:HE21	2:D:1043:VAL:HG13	1.81	0.46
2:D:1042:ALA:O	2:D:1046:LEU:HG	2.16	0.46
2:D:2196:ASN:OD1	2:D:2199:ARG:NH2	2.46	0.46
2:D:2199:ARG:NH2	2:D:2245:GLN:OE1	2.49	0.46
2:D:2206:THR:O	2:D:2210:VAL:HG23	2.16	0.46
2:D:3201:MET:HG3	2:D:3203:VAL:O	2.16	0.46
2:D:4675:LYS:O	2:D:4679:ARG:HG2	2.16	0.46
3:E:4:LEU:HD21	3:E:97:ALA:HB2	1.98	0.46
2:G:246:TYR:CG	2:G:373:LYS:HD2	2.51	0.46
2:G:2463:LEU:O	2:G:2467:VAL:HG22	2.16	0.46
2:G:3384:LYS:HG2	2:G:3386:GLU:H	1.81	0.46
2:I:2206:THR:O	2:I:2210:VAL:HG23	2.16	0.46
1:L:11:ASP:OD2	1:L:13:ARG:HG2	2.16	0.46
2:A:1027:LEU:HD13	2:A:1031:THR:HB	1.98	0.46
2:A:2782:ASP:N	2:A:2782:ASP:OD1	2.49	0.46
2:A:4675:LYS:O	2:A:4679:ARG:HG2	2.16	0.46
2:A:4820:VAL:HB	2:A:4823:LEU:HD23	1.98	0.46
2:A:4839:MET:CE	2:D:4823:LEU:HD13	2.44	0.46
2:D:707:VAL:HG23	2:D:782:SER:OG	2.16	0.46
2:G:2199:ARG:NH2	2:G:2245:GLN:OE1	2.49	0.46
2:G:2668:SER:HB3	2:G:2671:GLU:HG3	1.98	0.46
2:I:2463:LEU:O	2:I:2467:VAL:HG22	2.16	0.46
2:I:2867:LEU:HD21	2:I:2871:LEU:HB3	1.98	0.46
2:I:3379:LEU:HD12	2:I:3387:ALA:HA	1.98	0.46
2:I:3550:ARG:HE	2:I:3597:GLN:NE2	2.14	0.46
2:I:4066:LEU:HD23	2:I:4066:LEU:HA	1.85	0.46
2:A:707:VAL:HG23	2:A:782:SER:OG	2.16	0.46
2:A:1617:THR:HG22	2:A:1628:VAL:HG22	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2522:LEU:HA	2:A:2526:PHE:HB2	1.98	0.46
2:A:2930:LEU:O	2:A:2934:GLY:N	2.41	0.46
3:C:89:ASP:HB2	3:C:125:VAL:HG21	1.97	0.46
2:D:874:LEU:O	2:D:878:ILE:HG12	2.16	0.46
2:D:3511:VAL:HG23	2:D:3515:LYS:HD3	1.98	0.46
2:D:3550:ARG:HE	2:D:3597:GLN:NE2	2.14	0.46
2:G:870:ILE:O	2:G:874:LEU:HG	2.16	0.46
2:G:1027:LEU:HD23	2:G:1027:LEU:HA	1.83	0.46
2:G:1455:PRO:HG3	2:G:1549:PHE:HE1	1.81	0.46
2:G:2715:VAL:HG12	2:G:2953:LYS:HB3	1.98	0.46
2:G:2806:ARG:O	2:G:2810:LYS:HG2	2.16	0.46
2:G:3336:LYS:HG2	2:G:3337:ARG:N	2.31	0.46
2:G:3539:ARG:HH11	2:G:3552:PHE:HB2	1.81	0.46
2:I:2199:ARG:NH2	2:I:2245:GLN:OE1	2.49	0.45
2:I:3962:PHE:O	2:I:3966:THR:HG23	2.16	0.45
3:K:90:THR:HG23	3:K:124:THR:HA	1.97	0.45
2:A:2765:LYS:HA	2:A:2765:LYS:HD3	1.82	0.45
2:A:3336:LYS:HG2	2:A:3337:ARG:N	2.31	0.45
2:A:3924:LEU:HD21	2:A:3984:ARG:HH21	1.81	0.45
2:D:1155:LEU:HD13	2:D:1184:ILE:HG23	1.97	0.45
2:D:3379:LEU:HD12	2:D:3387:ALA:HA	1.98	0.45
2:D:4546:VAL:HA	2:D:4549:VAL:HG22	1.98	0.45
2:G:246:TYR:CD2	2:G:373:LYS:HB3	2.51	0.45
2:G:3550:ARG:HE	2:G:3597:GLN:NE2	2.14	0.45
2:G:4627:MET:SD	2:G:4627:MET:N	2.81	0.45
1:H:106:LEU:HD22	1:H:107:GLU:H	1.79	0.45
2:I:1027:LEU:HD13	2:I:1031:THR:HB	1.98	0.45
2:I:1052:ASN:OD1	2:I:1052:ASN:N	2.45	0.45
2:I:1934:SER:O	2:I:1938:GLN:HG2	2.17	0.45
2:I:2522:LEU:HA	2:I:2526:PHE:HB2	1.98	0.45
2:I:3101:GLU:O	2:I:3105:LYS:HG3	2.16	0.45
2:I:3511:VAL:HG23	2:I:3515:LYS:HD3	1.98	0.45
2:A:1497:GLY:O	2:A:1501:VAL:HG12	2.17	0.45
2:A:4694:ASP:OD1	2:A:4694:ASP:N	2.50	0.45
2:D:229:GLU:HG3	2:D:247:TYR:HB3	1.98	0.45
2:D:2700:MET:HB2	2:D:3001:ILE:HG22	1.98	0.45
2:D:2806:ARG:O	2:D:2810:LYS:HG2	2.16	0.45
2:D:3962:PHE:O	2:D:3966:THR:HG23	2.16	0.45
2:G:246:TYR:HB2	2:G:373:LYS:HD2	1.97	0.45
2:G:823:LEU:HD11	2:G:1626:TRP:HB3	1.98	0.45
2:G:1128:ARG:NH1	2:G:1130:GLN:HG3	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:1934:SER:O	2:G:1938:GLN:HG2	2.17	0.45
2:G:1965:TYR:CZ	2:G:2031:LEU:HB2	2.52	0.45
2:I:1128:ARG:NH1	2:I:1130:GLN:HG3	2.32	0.45
2:I:3031:ALA:HB1	2:I:3035:GLU:HB2	1.97	0.45
2:I:3384:LYS:HG2	2:I:3386:GLU:H	1.81	0.45
2:A:355:LEU:HD23	2:A:378:LEU:HB3	1.97	0.45
2:A:2206:THR:O	2:A:2210:VAL:HG23	2.16	0.45
2:A:2668:SER:HB3	2:A:2671:GLU:HG3	1.98	0.45
2:A:2749:GLU:HG3	2:A:2752:ASP:HB2	1.99	0.45
2:A:3969:ILE:HD13	2:A:3980:LEU:HD12	1.99	0.45
2:D:870:ILE:O	2:D:874:LEU:HG	2.16	0.45
2:D:2463:LEU:O	2:D:2467:VAL:HG22	2.16	0.45
2:D:3031:ALA:HB1	2:D:3035:GLU:HB2	1.97	0.45
2:G:618:GLN:OE1	2:G:1678:ASN:ND2	2.46	0.45
2:G:3201:MET:HG3	2:G:3203:VAL:O	2.16	0.45
2:G:3470:LEU:O	2:G:3474:SER:OG	2.28	0.45
2:I:823:LEU:HD11	2:I:1626:TRP:HB3	1.98	0.45
2:I:2155:LEU:HB2	2:I:2188:ASN:HD22	1.80	0.45
2:I:2749:GLU:HG3	2:I:2752:ASP:HB2	1.99	0.45
2:I:2765:LYS:HZ2	2:I:2860:PRO:HA	1.81	0.45
2:I:3206:LEU:HD13	2:I:3246:LEU:HB3	1.98	0.45
2:I:4546:VAL:HA	2:I:4549:VAL:HG22	1.98	0.45
2:A:2661:TRP:HB3	2:A:2664:PHE:CD1	2.52	0.45
2:A:3511:VAL:HG23	2:A:3515:LYS:HD3	1.98	0.45
1:J:85:THR:O	1:J:85:THR:OG1	2.34	0.45
2:D:424:LYS:HE2	2:D:424:LYS:HB2	1.82	0.45
2:D:917:GLU:OE1	3:E:101:PRO:HB2	2.17	0.45
2:D:1617:THR:HG22	2:D:1628:VAL:HG22	1.97	0.45
2:D:1733:GLU:HG2	2:D:2201:LEU:HD23	1.97	0.45
2:D:3539:ARG:HH11	2:D:3552:PHE:HB2	1.81	0.45
2:I:150:MET:HB3	2:I:169:LEU:HD22	1.98	0.45
2:I:707:VAL:HG23	2:I:782:SER:OG	2.16	0.45
2:I:2627:VAL:HA	2:I:2630:VAL:HG12	1.99	0.45
2:I:4688:ILE:HG22	2:I:4689:THR:HG23	1.99	0.45
2:A:823:LEU:HD11	2:A:1626:TRP:HB3	1.98	0.45
2:A:886:ARG:HG2	2:A:891:TRP:CD1	2.51	0.45
2:A:1128:ARG:NH1	2:A:1130:GLN:HG3	2.31	0.45
2:A:3539:ARG:HH11	2:A:3552:PHE:HB2	1.81	0.45
2:D:886:ARG:HG2	2:D:891:TRP:CD1	2.51	0.45
2:D:2867:LEU:HD21	2:D:2871:LEU:HB3	1.98	0.45
2:D:3924:LEU:HD21	2:D:3984:ARG:HH21	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:2627:VAL:HA	2:G:2630:VAL:HG12	1.99	0.45
2:G:3974:THR:O	2:G:3978:GLN:HG2	2.17	0.45
2:G:4546:VAL:HA	2:G:4549:VAL:HG22	1.98	0.45
3:M:59:TYR:HB3	3:M:63:VAL:HG21	1.99	0.45
2:I:2211:MET:HA	2:I:2214:VAL:HG12	1.99	0.45
2:I:2710:LEU:HD23	2:I:2955:PHE:CD1	2.52	0.45
2:I:2962:GLN:HA	2:I:2965:ARG:HH11	1.82	0.45
2:I:3207:GLU:H	2:I:3245:VAL:HG23	1.82	0.45
2:A:150:MET:HB3	2:A:169:LEU:HD22	1.98	0.45
2:A:1436:SER:OG	2:A:1565:GLU:HB2	2.17	0.45
2:A:2286:LEU:HD23	2:A:3868:ARG:HH22	1.81	0.45
2:A:2463:LEU:O	2:A:2467:VAL:HG22	2.16	0.45
2:A:3101:GLU:O	2:A:3105:LYS:HG3	2.16	0.45
2:D:1934:SER:O	2:D:1938:GLN:HG2	2.17	0.45
2:D:2302:LEU:HD12	2:D:2363:CYS:HB3	1.98	0.45
2:D:2661:TRP:HB3	2:D:2664:PHE:CD1	2.52	0.45
2:D:2715:VAL:HG12	2:D:2953:LYS:HB3	1.98	0.45
2:D:3280:TYR:CE2	2:D:3284:TRP:CD1	3.04	0.45
2:D:3384:LYS:HG2	2:D:3386:GLU:H	1.81	0.45
2:G:2286:LEU:HD23	2:G:3868:ARG:HH22	1.81	0.45
2:G:2710:LEU:HD23	2:G:2955:PHE:CD1	2.52	0.45
2:I:1422:ASP:N	2:I:1422:ASP:OD1	2.45	0.45
2:I:2302:LEU:HD12	2:I:2363:CYS:HB3	1.98	0.45
2:I:2668:SER:HB3	2:I:2671:GLU:HG3	1.98	0.45
2:I:3280:TYR:CE2	2:I:3284:TRP:CD1	3.04	0.45
2:I:4820:VAL:HB	2:I:4823:LEU:HD23	1.98	0.45
2:A:1965:TYR:CZ	2:A:2031:LEU:HB2	2.51	0.45
2:A:2211:MET:HA	2:A:2214:VAL:HG12	1.99	0.45
2:A:3206:LEU:HD13	2:A:3246:LEU:HB3	1.98	0.45
2:A:3207:GLU:H	2:A:3245:VAL:HG23	1.82	0.45
2:D:901:LYS:HB3	2:D:903:LEU:HG	1.99	0.45
2:D:1436:SER:OG	2:D:1565:GLU:HB2	2.17	0.45
2:D:1497:GLY:O	2:D:1501:VAL:HG12	2.17	0.45
2:G:874:LEU:O	2:G:878:ILE:HG12	2.16	0.45
2:G:1042:ALA:O	2:G:1046:LEU:HG	2.16	0.45
2:G:4687:TYR:OH	2:G:4699:GLY:O	2.30	0.45
2:I:1436:SER:OG	2:I:1565:GLU:HB2	2.17	0.45
2:I:1447:CYS:HB3	2:I:1555:LEU:HB3	1.99	0.45
2:I:1658:ASP:OD1	2:I:1658:ASP:N	2.43	0.45
2:I:1965:TYR:CZ	2:I:2031:LEU:HB2	2.51	0.45
2:I:2263:ILE:HG13	2:I:2264:GLY:N	2.32	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2715:VAL:HG12	2:I:2953:LYS:HB3	1.98	0.45
2:I:3969:ILE:HD13	2:I:3980:LEU:HD12	1.99	0.45
2:A:2477:PRO:HD3	2:A:2546:MET:HG2	1.99	0.45
2:A:2627:VAL:HA	2:A:2630:VAL:HG12	1.99	0.45
2:A:3041:SER:O	2:A:3045:LYS:HG3	2.17	0.45
2:A:3201:MET:HG3	2:A:3203:VAL:O	2.16	0.45
2:A:3974:THR:O	2:A:3978:GLN:HG2	2.17	0.45
2:D:3104:GLU:HA	2:D:3107:VAL:HG22	1.99	0.45
2:D:3717:ASP:OD1	2:D:3717:ASP:N	2.43	0.45
2:D:3969:ILE:HD13	2:D:3980:LEU:HD12	1.99	0.45
2:G:1155:LEU:HD13	2:G:1184:ILE:HG23	1.97	0.45
2:G:2211:MET:HA	2:G:2214:VAL:HG12	1.99	0.45
2:G:2522:LEU:HA	2:G:2526:PHE:HB2	1.98	0.45
2:G:3206:LEU:HD13	2:G:3246:LEU:HB3	1.98	0.45
2:G:3962:PHE:O	2:G:3966:THR:HG23	2.16	0.45
2:I:921:ASN:HA	2:I:924:MET:HB2	1.99	0.45
3:K:59:TYR:HB3	3:K:63:VAL:HG21	1.99	0.45
2:A:901:LYS:HB3	2:A:903:LEU:HG	1.99	0.45
2:A:2806:ARG:O	2:A:2810:LYS:HG2	2.16	0.45
2:A:4687:TYR:OH	2:A:4699:GLY:O	2.30	0.45
2:D:1027:LEU:HD13	2:D:1031:THR:HB	1.98	0.45
2:D:2286:LEU:HD23	2:D:3868:ARG:HH22	1.81	0.45
2:D:2477:PRO:HD3	2:D:2546:MET:HG2	1.99	0.45
2:G:886:ARG:HG2	2:G:891:TRP:CD1	2.51	0.45
2:G:2263:ILE:HG13	2:G:2264:GLY:N	2.32	0.45
2:G:3511:VAL:HG23	2:G:3515:LYS:HD3	1.98	0.45
2:G:4024:VAL:HG11	2:G:4142:ASN:HB3	1.97	0.45
2:G:4688:ILE:HG22	2:G:4689:THR:HG23	1.99	0.45
3:M:4:LEU:HD21	3:M:97:ALA:HB2	1.98	0.45
2:I:886:ARG:HG2	2:I:891:TRP:CD1	2.52	0.45
2:I:1225:PRO:HG2	2:I:1228:ILE:HB	1.99	0.45
2:I:2286:LEU:HD23	2:I:3868:ARG:HH22	1.81	0.45
2:I:2751:LEU:O	2:I:2755:ILE:HG12	2.16	0.45
2:I:2906:VAL:HG23	2:I:2911:LEU:HD23	1.99	0.45
2:I:3449:HIS:ND1	2:I:3449:HIS:O	2.50	0.45
2:I:3974:THR:O	2:I:3978:GLN:HG2	2.17	0.45
3:K:4:LEU:HD21	3:K:97:ALA:HB2	1.98	0.45
2:A:1422:ASP:N	2:A:1422:ASP:OD1	2.45	0.45
2:A:1934:SER:O	2:A:1938:GLN:HG2	2.17	0.45
2:A:2263:ILE:HG13	2:A:2264:GLY:N	2.32	0.45
2:A:2302:LEU:HD12	2:A:2363:CYS:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:2715:VAL:HG12	2:A:2953:LYS:HB3	1.98	0.45
2:A:2751:LEU:O	2:A:2755:ILE:HG12	2.17	0.45
2:A:3040:THR:HG21	2:A:3080:VAL:HG11	1.99	0.45
2:A:3104:GLU:HA	2:A:3107:VAL:HG22	1.99	0.45
2:D:369:LEU:O	2:D:371:VAL:HG23	2.17	0.45
2:D:1965:TYR:CZ	2:D:2031:LEU:HB2	2.51	0.45
2:D:2970:SER:O	2:D:2974:ILE:HG23	2.17	0.45
2:G:2749:GLU:HG3	2:G:2752:ASP:HB2	1.99	0.45
2:G:2867:LEU:HD21	2:G:2871:LEU:HB3	1.98	0.45
2:G:3280:TYR:CE2	2:G:3284:TRP:CD1	3.04	0.45
2:G:3540:TYR:HB3	2:G:3604:TYR:CD1	2.52	0.45
2:I:874:LEU:O	2:I:878:ILE:HG12	2.16	0.44
2:I:1123:VAL:HG12	2:I:1132:TRP:HB2	1.99	0.44
2:I:1497:GLY:O	2:I:1501:VAL:HG12	2.17	0.44
2:I:3041:SER:O	2:I:3045:LYS:HG3	2.17	0.44
2:I:3754:GLU:HG3	2:I:4719:PHE:HZ	1.81	0.44
2:I:4675:LYS:O	2:I:4679:ARG:HG2	2.16	0.44
2:A:981:GLN:HE21	2:A:1043:VAL:HG13	1.81	0.44
2:A:1937:LEU:HD13	2:A:2116:LEU:HA	1.99	0.44
2:A:2962:GLN:HA	2:A:2965:ARG:HH11	1.82	0.44
2:A:2970:SER:O	2:A:2974:ILE:HG23	2.17	0.44
2:A:3550:ARG:HE	2:A:3597:GLN:NE2	2.14	0.44
1:J:11:ASP:OD2	1:J:13:ARG:HG2	2.16	0.44
2:D:365:LYS:O	2:D:368:ARG:HG3	2.17	0.44
2:D:2266:GLY:HA2	2:D:2271:THR:HG21	1.99	0.44
2:D:3201:MET:SD	2:D:3203:VAL:HG12	2.58	0.44
2:D:3245:VAL:CG1	2:D:3248:ARG:HH12	2.30	0.44
2:D:4232:GLU:OE1	2:D:5019:TRP:NE1	2.31	0.44
2:G:1225:PRO:HG2	2:G:1228:ILE:HB	1.99	0.44
2:G:1243:PRO:HA	2:G:1601:MET:O	2.17	0.44
2:G:2302:LEU:HD12	2:G:2363:CYS:HB3	1.98	0.44
2:G:2661:TRP:HB3	2:G:2664:PHE:CD1	2.52	0.44
2:G:2716:ASP:OD1	2:G:2716:ASP:N	2.42	0.44
2:G:3101:GLU:O	2:G:3105:LYS:HG3	2.16	0.44
2:I:2625:ARG:NE	2:I:2625:ARG:HA	2.33	0.44
2:I:2970:SER:O	2:I:2974:ILE:HG23	2.17	0.44
2:I:3040:THR:HG21	2:I:3080:VAL:HG11	1.99	0.44
2:A:180:LEU:HD23	2:A:180:LEU:HA	1.88	0.44
2:A:921:ASN:HA	2:A:924:MET:HB2	1.99	0.44
2:A:1243:PRO:HA	2:A:1601:MET:O	2.17	0.44
2:A:1447:CYS:HB3	2:A:1555:LEU:HB3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:3172:ILE:HD11	2:A:3190:LEU:HB3	1.99	0.44
2:A:4063:ASP:OD1	2:A:4064:MET:N	2.51	0.44
2:D:1128:ARG:NH1	2:D:1130:GLN:HG3	2.32	0.44
2:D:2522:LEU:HA	2:D:2526:PHE:HB2	1.99	0.44
2:D:2751:LEU:O	2:D:2755:ILE:HG12	2.16	0.44
2:D:2782:ASP:N	2:D:2782:ASP:OD1	2.50	0.44
2:D:3206:LEU:HD13	2:D:3246:LEU:HB3	1.98	0.44
2:D:4688:ILE:HG22	2:D:4689:THR:HG23	1.99	0.44
2:D:5013:MET:HG2	2:D:5018:CYS:HB3	2.00	0.44
5:D:5102:POV:H35A	5:D:5102:POV:H32	1.86	0.44
3:E:59:TYR:HB3	3:E:63:VAL:HG21	1.99	0.44
2:G:1497:GLY:O	2:G:1501:VAL:HG12	2.17	0.44
2:G:2765:LYS:HZ2	2:G:2860:PRO:HA	1.81	0.44
2:G:2782:ASP:HB2	2:G:2784:GLU:HG3	1.99	0.44
2:G:3023:LYS:HE2	2:G:3023:LYS:HB3	1.78	0.44
2:G:4063:ASP:OD1	2:G:4064:MET:N	2.51	0.44
2:G:4066:LEU:HD23	2:G:4066:LEU:HA	1.86	0.44
2:I:363:ASP:HB3	2:I:366:ALA:HB3	1.98	0.44
2:I:901:LYS:HB3	2:I:903:LEU:HG	1.99	0.44
2:I:2661:TRP:HB3	2:I:2664:PHE:CD1	2.52	0.44
2:I:3336:LYS:HG2	2:I:3337:ARG:N	2.31	0.44
2:A:874:LEU:O	2:A:878:ILE:HG12	2.16	0.44
2:A:1225:PRO:HG2	2:A:1228:ILE:HB	1.99	0.44
2:A:2266:GLY:HA2	2:A:2271:THR:HG21	2.00	0.44
2:A:2782:ASP:HB2	2:A:2784:GLU:HG3	1.99	0.44
2:A:3201:MET:SD	2:A:3203:VAL:HG12	2.58	0.44
2:A:3249:LEU:HD12	2:A:3249:LEU:H	1.83	0.44
2:A:3438:VAL:HG23	2:A:3514:LEU:HD13	2.00	0.44
2:A:3449:HIS:ND1	2:A:3449:HIS:O	2.50	0.44
2:A:4688:ILE:HG22	2:A:4689:THR:HG23	1.99	0.44
2:D:551:LEU:HD13	2:D:589:LEU:HD11	2.00	0.44
2:D:1123:VAL:HG12	2:D:1132:TRP:HB2	1.99	0.44
2:D:1225:PRO:HG2	2:D:1228:ILE:HB	1.99	0.44
2:D:1447:CYS:HB3	2:D:1555:LEU:HB3	1.99	0.44
2:D:3172:ILE:HD11	2:D:3190:LEU:HB3	1.99	0.44
2:G:901:LYS:HB3	2:G:903:LEU:HG	1.99	0.44
2:G:1027:LEU:HD13	2:G:1031:THR:HB	1.98	0.44
2:G:1109:LEU:HA	2:G:1120:LEU:HD13	2.00	0.44
2:G:2906:VAL:HG23	2:G:2911:LEU:HD23	1.99	0.44
2:G:3040:THR:HG21	2:G:3080:VAL:HG11	1.99	0.44
2:G:3146:HIS:CE1	2:G:3150:HIS:HD2	2.36	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3924:LEU:HD21	2:G:3984:ARG:HH21	1.81	0.44
2:I:2806:ARG:O	2:I:2810:LYS:HG2	2.16	0.44
2:I:2960:LEU:HA	2:I:2963:LEU:HD12	1.99	0.44
2:I:3201:MET:HG3	2:I:3203:VAL:O	2.16	0.44
2:I:4063:ASP:OD1	2:I:4064:MET:N	2.51	0.44
2:A:2700:MET:HB2	2:A:3001:ILE:HG22	1.97	0.44
2:D:574:VAL:O	2:D:578:ILE:HG12	2.18	0.44
2:D:2211:MET:HA	2:D:2214:VAL:HG12	1.99	0.44
2:D:2710:LEU:HD23	2:D:2955:PHE:CD1	2.52	0.44
2:D:3101:GLU:O	2:D:3105:LYS:HG3	2.16	0.44
2:G:4820:VAL:HB	2:G:4823:LEU:HD23	1.98	0.44
2:I:574:VAL:O	2:I:578:ILE:HG12	2.18	0.44
2:I:634:GLN:O	2:I:1639:LEU:HD12	2.18	0.44
2:I:1109:LEU:HA	2:I:1120:LEU:HD13	2.00	0.44
2:I:3539:ARG:HH11	2:I:3552:PHE:CB	2.31	0.44
2:I:4189:ARG:NH1	2:I:5032:TYR:OH	2.51	0.44
2:A:3003:LEU:HB2	2:A:3004:PRO:HD3	1.99	0.44
2:D:2263:ILE:HG13	2:D:2264:GLY:N	2.32	0.44
2:D:2725:LYS:HE2	2:D:2738:ARG:HH22	1.83	0.44
2:G:551:LEU:HD13	2:G:589:LEU:HD11	2.00	0.44
2:G:574:VAL:O	2:G:578:ILE:HG12	2.18	0.44
2:G:1123:VAL:HG12	2:G:1132:TRP:HB2	1.99	0.44
2:G:2970:SER:O	2:G:2974:ILE:HG23	2.17	0.44
2:G:3539:ARG:HH11	2:G:3552:PHE:CB	2.31	0.44
2:G:3969:ILE:HD13	2:G:3980:LEU:HD12	1.99	0.44
2:I:3172:ILE:HD11	2:I:3190:LEU:HB3	1.99	0.44
2:I:3249:LEU:HD12	2:I:3249:LEU:H	1.83	0.44
2:I:3719:ASP:O	2:I:3723:MET:HG3	2.18	0.44
2:A:574:VAL:O	2:A:578:ILE:HG12	2.17	0.44
2:A:2710:LEU:HD23	2:A:2955:PHE:CD1	2.52	0.44
2:A:2906:VAL:HG23	2:A:2911:LEU:HD23	1.99	0.44
2:D:355:LEU:HB3	2:D:378:LEU:HD22	2.00	0.44
2:D:2749:GLU:HG3	2:D:2752:ASP:HB2	1.98	0.44
2:D:3040:THR:HG21	2:D:3080:VAL:HG11	1.99	0.44
2:D:3438:VAL:HG23	2:D:3514:LEU:HD13	2.00	0.44
2:D:3449:HIS:ND1	2:D:3449:HIS:O	2.50	0.44
2:D:3539:ARG:HH11	2:D:3552:PHE:CB	2.31	0.44
2:D:3974:THR:O	2:D:3978:GLN:HG2	2.17	0.44
2:D:4211:LYS:O	2:D:4215:ARG:HG3	2.18	0.44
2:G:3104:GLU:HA	2:G:3107:VAL:HG22	1.99	0.44
2:G:3172:ILE:HD11	2:G:3190:LEU:HB3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3249:LEU:H	2:G:3249:LEU:HD12	1.83	0.44
2:G:3719:ASP:O	2:G:3723:MET:HG3	2.18	0.44
2:I:2263:ILE:HG13	2:I:2264:GLY:H	1.83	0.44
2:I:2477:PRO:HD3	2:I:2546:MET:HG2	1.99	0.44
2:A:458:GLU:H	2:A:458:GLU:HG3	1.67	0.44
2:A:3719:ASP:O	2:A:3723:MET:HG3	2.18	0.44
2:A:4651:THR:HG21	2:A:4803:HIS:CE1	2.53	0.44
3:C:59:TYR:HB3	3:C:63:VAL:HG21	1.99	0.44
2:D:2765:LYS:HZ3	2:D:2857:PRO:HB2	1.82	0.44
2:D:3146:HIS:CE1	2:D:3150:HIS:HD2	2.36	0.44
2:D:4081:VAL:HG12	2:D:4088:ILE:HD13	1.99	0.44
2:G:634:GLN:O	2:G:1639:LEU:HD12	2.18	0.44
2:G:2960:LEU:HA	2:G:2963:LEU:HD12	2.00	0.44
2:G:3449:HIS:ND1	2:G:3449:HIS:O	2.50	0.44
2:G:3834:ALA:O	2:G:3838:THR:HG23	2.18	0.44
2:I:130:LYS:O	2:I:130:LYS:HD3	2.18	0.44
2:I:1243:PRO:HA	2:I:1601:MET:O	2.17	0.44
2:I:1937:LEU:HD13	2:I:2116:LEU:HA	2.00	0.44
2:I:2689:LYS:O	2:I:2993:GLN:NE2	2.51	0.44
2:I:4211:LYS:O	2:I:4215:ARG:HG3	2.18	0.44
2:A:551:LEU:HD13	2:A:589:LEU:HD11	2.00	0.44
2:A:5013:MET:HG2	2:A:5018:CYS:HB3	2.00	0.44
2:D:1937:LEU:HD13	2:D:2116:LEU:HA	2.00	0.44
2:D:2759:ALA:HB2	2:D:2810:LYS:HZ1	1.83	0.44
2:D:3003:LEU:HB2	2:D:3004:PRO:HD3	1.99	0.44
2:D:3207:GLU:H	2:D:3245:VAL:HG23	1.82	0.44
2:D:3249:LEU:HD12	2:D:3249:LEU:H	1.83	0.44
2:D:4189:ARG:NH1	2:D:5032:TYR:OH	2.51	0.44
2:G:1041:GLN:HA	2:G:1044:ARG:HH11	1.83	0.44
2:G:2751:LEU:O	2:G:2755:ILE:HG12	2.16	0.44
2:G:3003:LEU:HB2	2:G:3004:PRO:HD3	1.99	0.44
2:G:3201:MET:SD	2:G:3203:VAL:HG12	2.58	0.44
2:G:3207:GLU:H	2:G:3245:VAL:HG23	1.82	0.44
2:G:3568:SER:O	2:G:3571:TRP:NE1	2.51	0.44
2:I:2266:GLY:HA2	2:I:2271:THR:HG21	2.00	0.44
2:I:3540:TYR:HB3	2:I:3604:TYR:CD1	2.52	0.44
2:I:3834:ALA:O	2:I:3838:THR:HG23	2.18	0.44
2:I:4215:ARG:HH21	6:I:5103:ATP:PG	2.41	0.44
2:A:2960:LEU:HA	2:A:2963:LEU:HD12	1.99	0.44
2:A:3245:VAL:CG1	2:A:3248:ARG:HH12	2.31	0.44
2:A:4081:VAL:HG12	2:A:4088:ILE:HD13	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:1109:LEU:HA	2:D:1120:LEU:HD13	2.00	0.44
2:D:1860:LYS:HE3	2:D:1860:LYS:HB2	1.84	0.44
2:D:4063:ASP:OD1	2:D:4064:MET:N	2.51	0.44
2:G:2962:GLN:HA	2:G:2965:ARG:HH11	1.82	0.44
2:I:2725:LYS:HE2	2:I:2738:ARG:HH22	1.83	0.43
2:I:2960:LEU:HD22	2:I:3038:MET:HB2	2.00	0.43
2:I:3104:GLU:HA	2:I:3107:VAL:HG22	1.99	0.43
2:I:3273:THR:O	2:I:3276:MET:HB2	2.18	0.43
2:I:4885:PHE:CE2	2:I:4897:ILE:HD11	2.53	0.43
2:A:3586:ALA:HA	2:A:3591:LYS:HD2	2.01	0.43
2:D:921:ASN:HA	2:D:924:MET:HB2	1.99	0.43
2:D:1041:GLN:HA	2:D:1044:ARG:HH11	1.83	0.43
2:D:2627:VAL:HA	2:D:2630:VAL:HG12	1.99	0.43
2:G:1436:SER:OG	2:G:1565:GLU:HB2	2.17	0.43
2:G:2580:ASP:HA	2:G:2583:LEU:HD12	2.00	0.43
2:G:2960:LEU:HD22	2:G:3038:MET:HB2	2.00	0.43
2:G:3041:SER:O	2:G:3045:LYS:HG3	2.17	0.43
2:G:4211:LYS:O	2:G:4215:ARG:HG3	2.18	0.43
2:I:3003:LEU:HB2	2:I:3004:PRO:HD3	1.99	0.43
2:I:3438:VAL:HG23	2:I:3514:LEU:HD13	2.00	0.43
2:I:3539:ARG:HH11	2:I:3552:PHE:HB2	1.82	0.43
2:I:3568:SER:O	2:I:3571:TRP:NE1	2.51	0.43
2:A:1027:LEU:HA	2:A:1027:LEU:HD23	1.82	0.43
2:A:1860:LYS:HE3	2:A:1860:LYS:HB2	1.84	0.43
2:A:1935:VAL:O	2:A:1939:MET:HE2	2.18	0.43
2:A:2638:LYS:HE2	2:A:2638:LYS:HB3	1.87	0.43
2:A:3333:THR:O	2:A:3336:LYS:NZ	2.39	0.43
2:A:3540:TYR:HB3	2:A:3604:TYR:CD1	2.52	0.43
2:A:4189:ARG:NH1	2:A:5032:TYR:OH	2.51	0.43
2:D:2959:PHE:O	2:D:2963:LEU:HG	2.19	0.43
3:E:9:GLY:HA3	3:E:123:VAL:HG22	2.00	0.43
2:G:355:LEU:HB3	2:G:378:LEU:HD22	2.00	0.43
2:G:648:ILE:HD11	2:G:793:LEU:HD13	2.00	0.43
2:G:2440:MET:HE2	2:G:2440:MET:HA	1.98	0.43
2:G:4885:PHE:CE2	2:G:4897:ILE:HD11	2.53	0.43
2:G:5013:MET:HG2	2:G:5018:CYS:HB3	2.00	0.43
2:I:2754:PHE:HB2	2:I:2935:TYR:OH	2.18	0.43
2:A:3568:SER:O	2:A:3571:TRP:NE1	2.51	0.43
2:A:3694:LYS:HB2	2:A:3694:LYS:HE3	1.76	0.43
2:D:130:LYS:O	2:D:130:LYS:HD3	2.18	0.43
2:D:363:ASP:OD1	2:D:365:LYS:HG2	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:3041:SER:O	2:D:3045:LYS:HG3	2.17	0.43
2:D:3698:LEU:O	2:D:3702:VAL:HG12	2.18	0.43
2:D:3946:GLN:OE1	2:D:3949:ARG:NH2	2.51	0.43
2:D:4885:PHE:CE2	2:D:4897:ILE:HD11	2.53	0.43
2:G:1447:CYS:HB3	2:G:1555:LEU:HB3	1.99	0.43
2:G:2477:PRO:HD3	2:G:2546:MET:HG2	1.99	0.43
2:G:2765:LYS:HA	2:G:2765:LYS:HD3	1.82	0.43
2:G:3946:GLN:OE1	2:G:3949:ARG:NH2	2.51	0.43
2:I:2759:ALA:HB2	2:I:2810:LYS:HZ1	1.83	0.43
2:I:3201:MET:SD	2:I:3203:VAL:HG12	2.58	0.43
2:I:3946:GLN:OE1	2:I:3949:ARG:NH2	2.51	0.43
2:A:1123:VAL:HG12	2:A:1132:TRP:HB2	1.99	0.43
2:A:2580:ASP:HA	2:A:2583:LEU:HD12	2.00	0.43
2:A:4779:LYS:HE3	2:A:4779:LYS:HB2	1.82	0.43
2:D:246:TYR:HB3	2:D:373:LYS:HA	2.00	0.43
2:D:634:GLN:O	2:D:1639:LEU:HD12	2.18	0.43
2:D:2679:PHE:HB2	2:D:2706:ILE:HG21	2.00	0.43
2:D:2689:LYS:O	2:D:2993:GLN:NE2	2.51	0.43
2:D:2782:ASP:HB2	2:D:2784:GLU:HG3	1.99	0.43
2:D:2906:VAL:HG23	2:D:2911:LEU:HD23	1.99	0.43
2:D:3540:TYR:HB3	2:D:3604:TYR:CD1	2.52	0.43
2:G:921:ASN:HA	2:G:924:MET:HB2	1.99	0.43
2:G:2266:GLY:HA2	2:G:2271:THR:HG21	1.99	0.43
2:G:3273:THR:O	2:G:3276:MET:HB2	2.18	0.43
2:G:3395:ARG:HG2	2:G:3453:ARG:NH1	2.33	0.43
2:I:648:ILE:HD11	2:I:793:LEU:HD13	2.00	0.43
2:I:1249:PRO:HG2	2:I:1252:HIS:HB2	2.01	0.43
2:I:2185:ILE:HD12	2:I:2203:MET:HE1	2.01	0.43
2:I:2782:ASP:HB2	2:I:2784:GLU:HG3	1.99	0.43
2:I:3000:LYS:HA	2:I:3000:LYS:HD3	1.86	0.43
2:I:3245:VAL:CG1	2:I:3248:ARG:HH12	2.31	0.43
2:I:3694:LYS:HB2	2:I:3694:LYS:HE3	1.77	0.43
2:I:4651:THR:HG21	2:I:4803:HIS:CE1	2.53	0.43
2:A:981:GLN:HG2	2:A:1047:LEU:HD11	2.01	0.43
2:A:2189:LYS:HA	2:A:2192:TYR:CE2	2.53	0.43
2:A:2679:PHE:HB2	2:A:2706:ILE:HG21	2.00	0.43
2:A:2725:LYS:HE2	2:A:2738:ARG:HH22	1.83	0.43
2:A:2754:PHE:HB2	2:A:2935:TYR:OH	2.18	0.43
2:A:2801:ASP:HA	2:A:2804:ILE:HG12	2.00	0.43
2:A:3539:ARG:HH11	2:A:3552:PHE:CB	2.31	0.43
2:A:3698:LEU:O	2:A:3702:VAL:HG12	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:4211:LYS:O	2:A:4215:ARG:HG3	2.18	0.43
2:D:2580:ASP:HA	2:D:2583:LEU:HD12	2.00	0.43
2:D:2754:PHE:HB2	2:D:2935:TYR:OH	2.18	0.43
2:D:3568:SER:O	2:D:3571:TRP:NE1	2.51	0.43
2:D:3586:ALA:HA	2:D:3591:LYS:HD2	2.01	0.43
2:D:4694:ASP:OD1	2:D:4694:ASP:N	2.50	0.43
2:G:917:GLU:OE1	3:M:101:PRO:HB2	2.19	0.43
2:I:981:GLN:HG2	2:I:1047:LEU:HD11	2.01	0.43
2:I:2189:LYS:HA	2:I:2192:TYR:CE2	2.53	0.43
2:I:4694:ASP:OD1	2:I:4694:ASP:N	2.50	0.43
2:I:5013:MET:CE	2:I:5021:PHE:HB3	2.47	0.43
2:A:634:GLN:O	2:A:1639:LEU:HD12	2.18	0.43
2:A:2182:ILE:O	2:A:2186:MET:HG2	2.19	0.43
2:A:3639:THR:N	2:A:3640:PRO:HD2	2.34	0.43
2:A:4885:PHE:CE2	2:A:4897:ILE:HD11	2.53	0.43
2:D:1243:PRO:HA	2:D:1601:MET:O	2.17	0.43
2:G:1249:PRO:HG2	2:G:1252:HIS:HB2	2.01	0.43
2:G:2782:ASP:N	2:G:2782:ASP:OD1	2.49	0.43
2:I:551:LEU:HD13	2:I:589:LEU:HD11	2.00	0.43
2:I:919:ASN:HA	2:I:922:LEU:HB2	2.01	0.43
2:I:2124:LEU:HD11	2:I:2128:TYR:HE2	1.84	0.43
2:I:3107:VAL:HA	2:I:3175:LEU:HD21	2.01	0.43
2:I:3146:HIS:CE1	2:I:3150:HIS:HD2	2.36	0.43
2:A:223:PHE:O	2:A:388:LEU:HB2	2.19	0.43
2:A:648:ILE:HD11	2:A:793:LEU:HD13	2.00	0.43
2:A:1041:GLN:HA	2:A:1044:ARG:HH11	1.83	0.43
2:A:1109:LEU:HA	2:A:1120:LEU:HD13	2.00	0.43
2:A:2625:ARG:NE	2:A:2625:ARG:HA	2.33	0.43
2:D:648:ILE:HD11	2:D:793:LEU:HD13	2.00	0.43
2:I:659:TYR:O	2:I:662:TRP:NE1	2.51	0.43
2:I:3586:ALA:HA	2:I:3591:LYS:HD2	2.01	0.43
2:A:3946:GLN:OE1	2:A:3949:ARG:NH2	2.51	0.43
2:D:180:LEU:HD23	2:D:180:LEU:HA	1.88	0.43
2:D:2182:ILE:O	2:D:2186:MET:HG2	2.19	0.43
2:D:2625:ARG:NE	2:D:2625:ARG:HA	2.33	0.43
2:D:2960:LEU:HA	2:D:2963:LEU:HD12	2.00	0.43
2:D:3639:THR:N	2:D:3640:PRO:HD2	2.34	0.43
2:D:4651:THR:HG21	2:D:4803:HIS:CE1	2.53	0.43
2:G:223:PHE:O	2:G:388:LEU:HB2	2.19	0.43
2:G:919:ASN:HA	2:G:922:LEU:HB2	2.01	0.43
2:G:1871:PHE:HZ	2:G:2094:LEU:HD13	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:1937:LEU:HD13	2:G:2116:LEU:HA	2.00	0.43
2:G:2182:ILE:O	2:G:2186:MET:HG2	2.19	0.43
2:G:2263:ILE:HG13	2:G:2264:GLY:H	1.83	0.43
2:G:2625:ARG:NE	2:G:2625:ARG:HA	2.32	0.43
2:G:3438:VAL:HG23	2:G:3514:LEU:HD13	2.00	0.43
2:G:4694:ASP:OD1	2:G:4694:ASP:N	2.50	0.43
2:G:5011:TRP:CH2	7:G:5104:CFF:H102	2.54	0.43
2:I:1041:GLN:HA	2:I:1044:ARG:HH11	1.83	0.43
2:I:3698:LEU:O	2:I:3702:VAL:HG12	2.18	0.43
2:I:4958:CYS:HA	6:I:5103:ATP:N7	2.34	0.43
2:A:130:LYS:O	2:A:130:LYS:HD3	2.18	0.43
2:A:355:LEU:HB3	2:A:378:LEU:HD22	2.00	0.43
2:A:1207:ASP:OD1	2:A:1207:ASP:N	2.50	0.43
2:A:2124:LEU:HD11	2:A:2128:TYR:HE2	1.84	0.43
2:A:3155:ASP:HA	2:A:3158:LEU:HD23	2.01	0.43
2:A:3273:THR:O	2:A:3276:MET:HB2	2.18	0.43
2:A:4780:PHE:HA	2:A:4783:ILE:HG22	2.01	0.43
2:A:4954:MET:O	6:A:5103:ATP:O2'	2.27	0.43
2:D:919:ASN:HA	2:D:922:LEU:HB2	2.01	0.43
2:D:2124:LEU:HD11	2:D:2128:TYR:HE2	1.84	0.43
2:D:2465:ASP:O	2:D:2469:ILE:HG22	2.19	0.43
2:D:2610:LEU:O	2:D:2614:ILE:HG12	2.19	0.43
2:D:3155:ASP:HA	2:D:3158:LEU:HD23	2.01	0.43
2:D:4071:ILE:HD12	2:D:4103:PHE:HE2	1.84	0.43
3:E:105:ASN:HD21	3:E:111:ASN:CB	2.32	0.43
2:G:981:GLN:HG2	2:G:1047:LEU:HD11	2.01	0.43
2:G:2754:PHE:HB2	2:G:2935:TYR:OH	2.18	0.43
2:G:2801:ASP:HA	2:G:2804:ILE:HG12	2.00	0.43
2:G:2996:LYS:HD3	2:G:2996:LYS:HA	1.87	0.43
2:G:3694:LYS:HB2	2:G:3694:LYS:HE3	1.76	0.43
2:G:3698:LEU:O	2:G:3702:VAL:HG12	2.18	0.43
2:G:4189:ARG:NH1	2:G:5032:TYR:OH	2.51	0.43
3:M:9:GLY:HA3	3:M:123:VAL:HG22	2.00	0.43
3:M:105:ASN:HD21	3:M:111:ASN:CB	2.32	0.43
2:I:737:LEU:HD12	2:I:737:LEU:HA	1.93	0.43
2:I:864:PRO:O	2:I:866:HIS:N	2.52	0.43
2:I:1871:PHE:HZ	2:I:2094:LEU:HD13	1.84	0.43
2:I:2580:ASP:HA	2:I:2583:LEU:HD12	2.00	0.43
2:I:2712:PRO:HD3	2:I:3013:HIS:CE1	2.54	0.43
2:I:2858:GLN:HB2	2:I:2859:PRO:HD3	2.01	0.43
2:I:3227:ARG:HB3	2:I:3232:LEU:HB2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:3395:ARG:HG2	2:I:3453:ARG:NH1	2.33	0.43
3:K:68:THR:HG1	3:K:81:GLN:HB3	1.84	0.43
2:A:864:PRO:O	2:A:866:HIS:N	2.52	0.43
2:A:2821:TRP:HD1	2:A:2939:ARG:HA	1.84	0.43
2:A:3137:LEU:HB3	2:A:3138:PRO:HD3	2.01	0.43
3:C:9:GLY:HA3	3:C:123:VAL:HG22	2.00	0.43
2:D:223:PHE:O	2:D:388:LEU:HB2	2.19	0.43
2:D:365:LYS:HE3	2:D:365:LYS:HB3	1.90	0.43
2:D:2821:TRP:HD1	2:D:2939:ARG:HA	1.84	0.43
2:D:3395:ARG:HG2	2:D:3453:ARG:NH1	2.33	0.43
2:D:3834:ALA:O	2:D:3838:THR:HG23	2.18	0.43
2:G:2619:LEU:O	2:G:2623:LEU:HD23	2.19	0.43
2:I:3866:ILE:HG23	2:I:3868:ARG:H	1.84	0.42
2:I:4081:VAL:HG12	2:I:4088:ILE:HD13	1.99	0.42
3:K:47:LEU:O	3:K:62:SER:OG	2.37	0.42
2:A:2465:ASP:O	2:A:2469:ILE:HG22	2.19	0.42
2:A:2638:LYS:H	2:A:2638:LYS:HG2	1.71	0.42
2:A:2689:LYS:O	2:A:2993:GLN:NE2	2.51	0.42
2:A:2959:PHE:O	2:A:2963:LEU:HG	2.19	0.42
2:A:2960:LEU:HD22	2:A:3038:MET:HB2	2.00	0.42
2:A:2973:PHE:CD1	2:A:2995:ILE:HG12	2.54	0.42
2:A:3395:ARG:HG2	2:A:3453:ARG:NH1	2.33	0.42
2:D:2801:ASP:HA	2:D:2804:ILE:HG12	2.00	0.42
2:D:3273:THR:O	2:D:3276:MET:HB2	2.18	0.42
2:D:3694:LYS:HE3	2:D:3694:LYS:HB2	1.76	0.42
2:D:3719:ASP:O	2:D:3723:MET:HG3	2.18	0.42
2:D:4066:LEU:HD23	2:D:4066:LEU:HA	1.86	0.42
2:G:1935:VAL:O	2:G:1939:MET:HE2	2.19	0.42
2:G:2625:ARG:HA	2:G:2625:ARG:HE	1.84	0.42
2:G:2679:PHE:HB2	2:G:2706:ILE:HG21	2.00	0.42
2:G:2959:PHE:O	2:G:2963:LEU:HG	2.19	0.42
2:G:4998:LYS:HB2	2:G:4998:LYS:HE3	1.73	0.42
2:I:223:PHE:O	2:I:388:LEU:HB2	2.18	0.42
2:I:2465:ASP:O	2:I:2469:ILE:HG22	2.19	0.42
2:I:2610:LEU:O	2:I:2614:ILE:HG12	2.19	0.42
2:I:2625:ARG:HA	2:I:2625:ARG:HE	1.84	0.42
2:A:1079:LYS:HA	2:A:1189:LEU:HD11	2.00	0.42
2:A:2625:ARG:HA	2:A:2625:ARG:HE	1.84	0.42
2:A:4071:ILE:HD12	2:A:4103:PHE:HE2	1.84	0.42
2:A:4805:ASN:HB3	2:A:4808:PHE:CD2	2.55	0.42
2:D:248:GLU:HB2	2:D:373:LYS:NZ	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:1871:PHE:HZ	2:D:2094:LEU:HD13	1.84	0.42
2:D:2189:LYS:HA	2:D:2192:TYR:CE2	2.53	0.42
2:D:2619:LEU:O	2:D:2623:LEU:HD23	2.19	0.42
2:D:2962:GLN:HA	2:D:2965:ARG:HH11	1.82	0.42
2:D:5011:TRP:CH2	7:D:5104:CFF:H102	2.54	0.42
2:G:2689:LYS:O	2:G:2993:GLN:NE2	2.51	0.42
2:G:3586:ALA:HA	2:G:3591:LYS:HD2	2.01	0.42
2:G:4081:VAL:HG12	2:G:4088:ILE:HD13	2.00	0.42
3:M:47:LEU:O	3:M:62:SER:OG	2.37	0.42
2:I:1079:LYS:HA	2:I:1189:LEU:HD11	2.01	0.42
2:I:2679:PHE:HB2	2:I:2706:ILE:HG21	2.00	0.42
2:I:2765:LYS:HA	2:I:2765:LYS:HD3	1.82	0.42
2:I:2801:ASP:HA	2:I:2804:ILE:HG12	2.00	0.42
2:I:2991:HIS:O	2:I:2995:ILE:HG13	2.20	0.42
2:I:3155:ASP:HA	2:I:3158:LEU:HD23	2.01	0.42
2:I:4780:PHE:HA	2:I:4783:ILE:HG22	2.01	0.42
2:I:5013:MET:HE3	2:I:5021:PHE:CD2	2.54	0.42
2:A:659:TYR:O	2:A:662:TRP:NE1	2.51	0.42
2:A:919:ASN:HA	2:A:922:LEU:HB2	2.01	0.42
2:A:3107:VAL:HA	2:A:3175:LEU:HD21	2.01	0.42
2:A:3146:HIS:CE1	2:A:3150:HIS:HD2	2.36	0.42
2:A:3227:ARG:HB3	2:A:3232:LEU:HB2	2.01	0.42
3:C:105:ASN:HD21	3:C:111:ASN:CB	2.32	0.42
2:D:112:ALA:O	2:D:115:ARG:NH1	2.53	0.42
2:D:2625:ARG:HA	2:D:2625:ARG:HE	1.84	0.42
2:D:2765:LYS:HD3	2:D:2765:LYS:HA	1.81	0.42
2:D:2858:GLN:HB2	2:D:2859:PRO:HD3	2.01	0.42
2:G:2189:LYS:HA	2:G:2192:TYR:CE2	2.53	0.42
2:G:2759:ALA:HB2	2:G:2810:LYS:HZ1	1.84	0.42
2:G:2991:HIS:O	2:G:2995:ILE:HG13	2.20	0.42
2:G:3137:LEU:HB3	2:G:3138:PRO:HD3	2.01	0.42
2:G:4651:THR:HG21	2:G:4803:HIS:CE1	2.53	0.42
2:I:355:LEU:HB3	2:I:378:LEU:HD22	2.00	0.42
2:I:1035:ASN:OD1	3:K:109:THR:OG1	2.37	0.42
2:I:2619:LEU:O	2:I:2623:LEU:HD23	2.19	0.42
2:I:2821:TRP:HD1	2:I:2939:ARG:HA	1.84	0.42
2:I:2959:PHE:O	2:I:2963:LEU:HG	2.19	0.42
2:I:3284:TRP:CE3	2:I:3287:ARG:HD3	2.55	0.42
2:I:4959:PHE:CD1	2:I:4985:LEU:HD11	2.55	0.42
2:A:2185:ILE:HD12	2:A:2203:MET:HE1	2.02	0.42
2:A:2759:ALA:HB2	2:A:2810:LYS:HZ1	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:3158:LEU:HD12	2:A:3159:ASP:HB2	2.01	0.42
2:D:659:TYR:O	2:D:662:TRP:NE1	2.51	0.42
2:D:2263:ILE:HG13	2:D:2264:GLY:H	1.83	0.42
2:D:3284:TRP:CE3	2:D:3287:ARG:HD3	2.55	0.42
2:D:4959:PHE:CD1	2:D:4985:LEU:HD11	2.55	0.42
2:D:4998:LYS:HB2	2:D:4998:LYS:HE3	1.73	0.42
2:G:3158:LEU:HD12	2:G:3159:ASP:HB2	2.01	0.42
2:G:3752:SER:O	2:G:3756:LYS:HG3	2.20	0.42
2:G:4071:ILE:HD12	2:G:4103:PHE:HE2	1.84	0.42
2:I:1154:ASP:OD1	2:I:1159:THR:OG1	2.25	0.42
2:I:2312:MET:HA	2:I:2315:ALA:HB3	2.01	0.42
2:I:2973:PHE:CD1	2:I:2995:ILE:HG12	2.54	0.42
2:I:3639:THR:N	2:I:3640:PRO:HD2	2.34	0.42
2:A:2263:ILE:HG13	2:A:2264:GLY:H	1.84	0.42
2:A:2610:LEU:O	2:A:2614:ILE:HG12	2.19	0.42
2:A:2712:PRO:HD3	2:A:3013:HIS:CE1	2.54	0.42
2:A:2858:GLN:HB2	2:A:2859:PRO:HD3	2.02	0.42
2:D:981:GLN:HG2	2:D:1047:LEU:HD11	2.01	0.42
2:D:1163:THR:HG22	2:D:1168:VAL:HA	2.02	0.42
2:D:3107:VAL:HA	2:D:3175:LEU:HD21	2.01	0.42
2:D:3752:SER:O	2:D:3756:LYS:HG3	2.20	0.42
2:G:2465:ASP:O	2:G:2469:ILE:HG22	2.19	0.42
2:G:2712:PRO:HD3	2:G:3013:HIS:CE1	2.54	0.42
2:G:2725:LYS:HE2	2:G:2738:ARG:HH22	1.83	0.42
2:G:3250:MET:O	2:G:3253:ILE:HG22	2.20	0.42
2:G:4188:ARG:HG2	2:G:4188:ARG:HH11	1.85	0.42
2:A:2312:MET:HA	2:A:2315:ALA:HB3	2.01	0.42
2:A:4118:ASP:OD1	2:A:4119:GLU:N	2.53	0.42
2:A:4715:TYR:CE2	2:A:4717:ASP:HB3	2.55	0.42
2:D:2973:PHE:CD1	2:D:2995:ILE:HG12	2.54	0.42
2:D:4188:ARG:HG2	2:D:4188:ARG:HH11	1.85	0.42
2:D:4687:TYR:OH	2:D:4699:GLY:O	2.30	0.42
2:D:4698:LYS:HE3	2:D:4698:LYS:HB2	1.91	0.42
2:G:130:LYS:O	2:G:130:LYS:HD3	2.18	0.42
2:G:2638:LYS:HE2	2:G:2638:LYS:HB3	1.87	0.42
2:G:2686:LEU:HD23	2:G:3001:ILE:HD13	2.02	0.42
2:G:2821:TRP:HD1	2:G:2939:ARG:HA	1.84	0.42
2:G:3227:ARG:HB3	2:G:3232:LEU:HB2	2.01	0.42
2:G:3769:ARG:O	2:G:3773:ARG:NH1	2.53	0.42
3:M:85:LEU:HD23	3:M:85:LEU:HA	1.94	0.42
2:I:618:GLN:OE1	2:I:1678:ASN:ND2	2.46	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2182:ILE:O	2:I:2186:MET:HG2	2.19	0.42
2:I:3397:GLU:O	2:I:3400:VAL:HG12	2.20	0.42
2:I:4071:ILE:HD12	2:I:4103:PHE:HE2	1.84	0.42
2:I:4698:LYS:HE3	2:I:4698:LYS:HB2	1.91	0.42
3:K:9:GLY:HA3	3:K:123:VAL:HG22	2.00	0.42
1:L:85:THR:O	1:L:85:THR:OG1	2.34	0.42
2:A:112:ALA:O	2:A:115:ARG:NH1	2.53	0.42
2:A:3757:GLU:O	2:A:3761:GLN:HG2	2.20	0.42
2:D:2960:LEU:HD22	2:D:3038:MET:HB2	2.00	0.42
2:D:4779:LYS:HE3	2:D:4779:LYS:HB2	1.82	0.42
2:D:4780:PHE:HA	2:D:4783:ILE:HG22	2.01	0.42
2:D:4954:MET:O	6:D:5103:ATP:O2'	2.28	0.42
2:G:1079:LYS:HA	2:G:1189:LEU:HD11	2.00	0.42
2:G:2359:ARG:HD3	2:G:2359:ARG:HA	1.92	0.42
2:G:2858:GLN:HB2	2:G:2859:PRO:HD3	2.01	0.42
2:G:2973:PHE:CD1	2:G:2995:ILE:HG12	2.54	0.42
2:G:3107:VAL:HA	2:G:3175:LEU:HD21	2.01	0.42
2:G:3284:TRP:CE3	2:G:3287:ARG:HD3	2.55	0.42
2:G:3959:LYS:HG3	2:G:4022:ASP:OD2	2.20	0.42
2:G:4780:PHE:HA	2:G:4783:ILE:HG22	2.01	0.42
2:I:180:LEU:HD23	2:I:180:LEU:HA	1.88	0.42
2:I:937:CYS:HB3	2:I:1053:ILE:HB	2.01	0.42
2:I:2686:LEU:HD23	2:I:3001:ILE:HD13	2.02	0.42
2:I:2960:LEU:O	2:I:2964:LEU:HG	2.19	0.42
3:K:105:ASN:HD21	3:K:111:ASN:CB	2.32	0.42
2:A:2958:GLY:O	2:A:2961:GLN:HG2	2.20	0.42
2:A:2991:HIS:O	2:A:2995:ILE:HG13	2.20	0.42
2:A:3019:SER:HB3	2:A:3030:HIS:HB3	2.02	0.42
2:A:3250:MET:O	2:A:3253:ILE:HG22	2.20	0.42
2:A:3834:ALA:O	2:A:3838:THR:HG23	2.18	0.42
2:A:3866:ILE:HG23	2:A:3868:ARG:H	1.84	0.42
2:D:2958:GLY:O	2:D:2961:GLN:HG2	2.20	0.42
2:D:2991:HIS:O	2:D:2995:ILE:HG13	2.20	0.42
2:D:3137:LEU:HB3	2:D:3138:PRO:HD3	2.01	0.42
2:D:3227:ARG:HB3	2:D:3232:LEU:HB2	2.01	0.42
2:D:3250:MET:O	2:D:3253:ILE:HG22	2.20	0.42
2:D:3757:GLU:O	2:D:3761:GLN:HG2	2.20	0.42
2:G:667:MET:HG2	2:G:790:ARG:HB3	2.02	0.42
2:G:1440:PHE:CD2	2:G:1560:ASN:HB3	2.55	0.42
2:G:3397:GLU:O	2:G:3400:VAL:HG12	2.20	0.42
2:G:3852:LYS:O	2:G:3856:LEU:HG	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3866:ILE:HG23	2:G:3868:ARG:H	1.84	0.42
2:I:1071:ARG:HG3	2:I:1196:PRO:HG3	2.02	0.42
2:I:1935:VAL:O	2:I:1939:MET:HE2	2.20	0.42
2:I:2958:GLY:O	2:I:2961:GLN:HG2	2.20	0.42
2:I:3757:GLU:O	2:I:3761:GLN:HG2	2.20	0.42
2:A:1249:PRO:HG2	2:A:1252:HIS:HB2	2.01	0.42
2:A:3000:LYS:HA	2:A:3000:LYS:HD3	1.86	0.42
2:A:3100:SER:HB3	2:A:3167:ARG:NE	2.35	0.42
2:D:1302:ARG:H	2:D:1302:ARG:HG2	1.66	0.42
1:F:85:THR:O	1:F:85:THR:OG1	2.34	0.42
2:G:2974:ILE:HG13	2:G:2975:ALA:N	2.35	0.42
2:G:4959:PHE:CD1	2:G:4985:LEU:HD11	2.55	0.42
5:G:5102:POV:H35A	5:G:5102:POV:H32	1.86	0.42
3:M:18:LEU:HD11	3:M:85:LEU:HD11	2.01	0.42
2:I:3752:SER:O	2:I:3756:LYS:HG3	2.20	0.42
2:I:3852:LYS:O	2:I:3856:LEU:HG	2.20	0.42
2:I:3959:LYS:HG3	2:I:4022:ASP:OD2	2.20	0.42
3:K:18:LEU:HD11	3:K:85:LEU:HD11	2.01	0.42
2:A:372:LEU:HD22	2:A:372:LEU:N	2.35	0.42
2:A:937:CYS:HB3	2:A:1053:ILE:HB	2.01	0.42
2:A:1433:TYR:HB3	2:A:1575:LEU:HD23	2.02	0.42
2:D:380:GLN:OE1	2:D:380:GLN:N	2.53	0.42
2:D:1249:PRO:HG2	2:D:1252:HIS:HB2	2.01	0.42
2:D:3158:LEU:HD12	2:D:3159:ASP:HB2	2.01	0.42
2:G:2124:LEU:HD11	2:G:2128:TYR:HE2	1.84	0.42
2:G:3406:TYR:CZ	2:G:3508:SER:HB2	2.55	0.42
2:G:3757:GLU:O	2:G:3761:GLN:HG2	2.20	0.42
2:G:4188:ARG:HA	2:G:4188:ARG:NE	2.35	0.42
2:I:2463:LEU:HD11	2:I:2517:PHE:HE1	1.85	0.41
2:I:4188:ARG:NE	2:I:4188:ARG:HA	2.35	0.41
2:I:4805:ASN:HB3	2:I:4808:PHE:CD2	2.55	0.41
2:A:1035:ASN:OD1	3:C:109:THR:OG1	2.38	0.41
2:A:2765:LYS:HZ2	2:A:2860:PRO:HA	1.84	0.41
2:A:3284:TRP:CE3	2:A:3287:ARG:HD3	2.55	0.41
2:A:3406:TYR:CZ	2:A:3508:SER:HB2	2.55	0.41
2:A:3769:ARG:O	2:A:3773:ARG:NH1	2.53	0.41
2:D:1071:ARG:HG3	2:D:1196:PRO:HG3	2.02	0.41
2:D:1079:LYS:HA	2:D:1189:LEU:HD11	2.01	0.41
2:D:2285:GLU:OE2	2:D:3860:ASN:ND2	2.40	0.41
2:D:3866:ILE:HG23	2:D:3868:ARG:H	1.84	0.41
2:D:4744:ASP:HB3	2:D:4747:SER:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:656:SER:HA	2:G:852:VAL:HG12	2.02	0.41
2:G:4715:TYR:CE2	2:G:4717:ASP:HB3	2.55	0.41
2:I:112:ALA:O	2:I:115:ARG:NH1	2.53	0.41
2:I:2633:LEU:HB2	2:I:2689:LYS:HE2	2.01	0.41
2:I:2782:ASP:OD1	2:I:2782:ASP:N	2.49	0.41
2:I:3158:LEU:HD12	2:I:3159:ASP:HB2	2.01	0.41
2:A:1871:PHE:HZ	2:A:2094:LEU:HD13	1.84	0.41
2:A:2463:LEU:HD11	2:A:2517:PHE:HE1	1.85	0.41
2:A:2633:LEU:HB2	2:A:2689:LYS:HE2	2.01	0.41
2:A:4188:ARG:HG2	2:A:4188:ARG:HH11	1.85	0.41
2:A:4839:MET:HE2	2:D:4823:LEU:HD22	2.01	0.41
2:A:4959:PHE:CD1	2:A:4985:LEU:HD11	2.55	0.41
2:D:2960:LEU:O	2:D:2964:LEU:HG	2.20	0.41
2:D:3852:LYS:O	2:D:3856:LEU:HG	2.20	0.41
2:D:4715:TYR:CE2	2:D:4717:ASP:HB3	2.55	0.41
3:E:31:ILE:HD13	3:E:31:ILE:HA	1.87	0.41
2:G:2312:MET:HA	2:G:2315:ALA:HB3	2.01	0.41
2:G:2610:LEU:O	2:G:2614:ILE:HG12	2.19	0.41
2:G:2960:LEU:O	2:G:2964:LEU:HG	2.20	0.41
2:G:3155:ASP:HA	2:G:3158:LEU:HD23	2.01	0.41
2:G:3639:THR:N	2:G:3640:PRO:HD2	2.34	0.41
2:I:2485:LEU:HD23	2:I:2485:LEU:HA	1.89	0.41
2:I:3367:LYS:HE3	2:I:3367:LYS:HB3	1.87	0.41
2:I:3769:ARG:O	2:I:3773:ARG:NH1	2.53	0.41
2:I:5009:TYR:O	2:I:5012:LYS:HG2	2.20	0.41
2:I:5012:LYS:HG3	2:I:5013:MET:N	2.35	0.41
2:A:1008:SER:HB2	2:A:1017:ARG:NE	2.29	0.41
2:A:2285:GLU:OE2	2:A:3860:ASN:ND2	2.40	0.41
2:A:4744:ASP:HB3	2:A:4747:SER:HB3	2.02	0.41
2:D:937:CYS:HB3	2:D:1053:ILE:HB	2.01	0.41
2:D:1433:TYR:HB3	2:D:1575:LEU:HD23	2.02	0.41
2:D:2165:LEU:HD23	2:D:2165:LEU:HA	1.91	0.41
2:D:2208:MET:HG2	2:D:2236:LEU:HD11	2.03	0.41
2:D:2633:LEU:HB2	2:D:2689:LYS:HE2	2.01	0.41
2:D:2712:PRO:HD3	2:D:3013:HIS:CE1	2.54	0.41
2:D:3769:ARG:O	2:D:3773:ARG:NH1	2.53	0.41
2:D:4677:LEU:HG	2:D:4681:LEU:HD23	2.03	0.41
3:E:18:LEU:HD11	3:E:85:LEU:HD11	2.01	0.41
3:E:47:LEU:O	3:E:62:SER:OG	2.37	0.41
2:G:112:ALA:O	2:G:115:ARG:NH1	2.52	0.41
2:G:937:CYS:HB3	2:G:1053:ILE:HB	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:2463:LEU:HD11	2:G:2517:PHE:HE1	1.85	0.41
2:G:3528:THR:OG1	2:G:3561:GLY:O	2.39	0.41
2:I:1027:LEU:HD23	2:I:1027:LEU:HA	1.82	0.41
2:I:1440:PHE:CD2	2:I:1560:ASN:HB3	2.55	0.41
2:I:4188:ARG:HG2	2:I:4188:ARG:HH11	1.84	0.41
2:A:1163:THR:HG22	2:A:1168:VAL:HA	2.02	0.41
2:A:2960:LEU:O	2:A:2964:LEU:HG	2.20	0.41
2:A:3077:ALA:HA	2:A:3080:VAL:HB	2.03	0.41
2:A:3752:SER:O	2:A:3756:LYS:HG3	2.20	0.41
3:C:36:TRP:HE1	3:C:78:VAL:HG11	1.86	0.41
3:C:61:ASP:O	3:C:64:LYS:HD2	2.21	0.41
2:D:2185:ILE:HD12	2:D:2203:MET:HE1	2.02	0.41
2:D:3077:ALA:HA	2:D:3080:VAL:HB	2.03	0.41
2:D:3406:TYR:CZ	2:D:3508:SER:HB2	2.55	0.41
2:D:3817:LEU:HB2	2:D:3899:PHE:CE1	2.56	0.41
2:D:4188:ARG:NE	2:D:4188:ARG:HA	2.35	0.41
2:G:737:LEU:HD12	2:G:737:LEU:HA	1.93	0.41
2:G:1163:THR:HG22	2:G:1168:VAL:HA	2.02	0.41
2:G:2223:ILE:HD12	2:G:2223:ILE:HA	1.95	0.41
2:G:3019:SER:HB3	2:G:3030:HIS:HB3	2.02	0.41
2:G:4805:ASN:HB3	2:G:4808:PHE:CD2	2.55	0.41
2:G:4899:ASP:OD1	2:G:4900:GLU:N	2.54	0.41
2:I:3137:LEU:HB3	2:I:3138:PRO:HD3	2.01	0.41
2:I:3576:TYR:CE1	2:I:3582:ARG:HG2	2.56	0.41
2:I:4238:CYS:O	2:I:4242:ILE:HG13	2.21	0.41
2:I:4917:ASP:HB2	2:A:4888:TYR:HE1	1.86	0.41
2:A:2208:MET:HG2	2:A:2236:LEU:HD11	2.03	0.41
2:A:2757:LYS:O	2:A:2761:TYR:HB2	2.21	0.41
2:A:3576:TYR:CE1	2:A:3582:ARG:HG2	2.56	0.41
2:A:3959:LYS:HG3	2:A:4022:ASP:OD2	2.20	0.41
2:A:4232:GLU:OE1	2:A:5019:TRP:NE1	2.31	0.41
3:C:47:LEU:O	3:C:62:SER:OG	2.37	0.41
2:D:367:LEU:O	2:D:368:ARG:C	2.59	0.41
2:D:719:LEU:HD12	2:D:737:LEU:HD13	2.03	0.41
2:D:2463:LEU:HD11	2:D:2517:PHE:HE1	1.85	0.41
2:D:3019:SER:HB3	2:D:3030:HIS:HB3	2.02	0.41
2:D:4118:ASP:OD1	2:D:4119:GLU:N	2.53	0.41
2:D:4805:ASN:HB3	2:D:4808:PHE:CD2	2.55	0.41
2:G:1093:GLU:HB3	2:G:1201:HIS:HB3	2.03	0.41
2:G:4902:GLU:O	2:G:4913:ARG:NH2	2.54	0.41
1:H:23:VAL:HG22	1:H:104:LEU:O	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:78:PRO:HA	1:H:81:ALA:HB3	2.02	0.41
2:I:667:MET:HG2	2:I:790:ARG:HB3	2.02	0.41
2:I:1093:GLU:HB3	2:I:1201:HIS:HB3	2.03	0.41
2:I:3406:TYR:CZ	2:I:3508:SER:HB2	2.55	0.41
2:A:1071:ARG:HG3	2:A:1196:PRO:HG3	2.02	0.41
2:A:1812:LEU:HD12	2:A:1812:LEU:HA	1.95	0.41
2:A:2251:PHE:CG	2:A:2286:LEU:HD22	2.56	0.41
2:A:2619:LEU:O	2:A:2623:LEU:HD23	2.19	0.41
2:A:3817:LEU:HB2	2:A:3899:PHE:CE1	2.56	0.41
2:A:4188:ARG:HA	2:A:4188:ARG:NE	2.35	0.41
3:C:18:LEU:HD11	3:C:85:LEU:HD11	2.01	0.41
1:J:78:PRO:HA	1:J:81:ALA:HB3	2.02	0.41
2:D:2005:GLN:O	2:D:2009:LEU:HG	2.21	0.41
2:D:3536:ALA:HA	2:D:3539:ARG:HB2	2.02	0.41
1:F:23:VAL:HG22	1:F:104:LEU:O	2.21	0.41
2:G:424:LYS:HE2	2:G:424:LYS:HB2	1.82	0.41
2:G:3180:ASN:ND2	2:G:3183:VAL:HG13	2.36	0.41
2:I:309:THR:O	2:I:313:SER:OG	2.32	0.41
2:I:369:LEU:HB3	2:I:371:VAL:HG23	2.01	0.41
2:I:1024:TYR:OH	2:I:1036:ARG:NH2	2.54	0.41
2:I:1431:THR:HG21	2:I:1523:ALA:HB2	2.03	0.41
2:I:2251:PHE:CG	2:I:2286:LEU:HD22	2.56	0.41
2:I:2757:LYS:O	2:I:2761:TYR:HB2	2.21	0.41
2:I:3253:ILE:HD12	2:I:3253:ILE:HA	1.86	0.41
2:I:3284:TRP:CE3	2:I:3287:ARG:HB2	2.56	0.41
3:K:85:LEU:HD23	3:K:85:LEU:HA	1.94	0.41
2:A:424:LYS:HB2	2:A:424:LYS:HE2	1.82	0.41
2:A:719:LEU:HD12	2:A:737:LEU:HD13	2.03	0.41
2:A:2686:LEU:HD23	2:A:3001:ILE:HD13	2.02	0.41
2:A:3180:ASN:ND2	2:A:3183:VAL:HG13	2.36	0.41
2:D:2757:LYS:O	2:D:2761:TYR:HB2	2.21	0.41
2:D:3180:ASN:ND2	2:D:3183:VAL:HG13	2.36	0.41
2:D:3959:LYS:HG3	2:D:4022:ASP:OD2	2.20	0.41
2:D:4919:THR:HG21	5:D:5102:POV:H31H	2.03	0.41
2:G:1024:TYR:OH	2:G:1036:ARG:NH2	2.54	0.41
2:G:1071:ARG:HG3	2:G:1196:PRO:HG3	2.02	0.41
2:G:2633:LEU:HB2	2:G:2689:LYS:HE2	2.01	0.41
2:G:2757:LYS:O	2:G:2761:TYR:HB2	2.21	0.41
2:G:2951:ILE:HG21	2:G:3034:LYS:HZ2	1.86	0.41
2:G:3100:SER:HB3	2:G:3167:ARG:NE	2.35	0.41
2:G:3576:TYR:CE1	2:G:3582:ARG:HG2	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:4118:ASP:OD1	2:G:4119:GLU:N	2.53	0.41
3:M:61:ASP:O	3:M:64:LYS:HD2	2.21	0.41
2:I:380:GLN:OE1	2:I:380:GLN:N	2.53	0.41
2:I:882:TRP:O	2:I:885:THR:OG1	2.33	0.41
2:I:1433:TYR:HB3	2:I:1575:LEU:HD23	2.02	0.41
2:I:2312:MET:SD	2:I:2313:LEU:N	2.94	0.41
2:I:2333:ASP:HA	2:I:2336:ARG:NE	2.36	0.41
2:I:2758:PHE:O	2:I:2762:THR:HG23	2.21	0.41
2:I:3077:ALA:HA	2:I:3080:VAL:HB	2.03	0.41
2:I:3180:ASN:ND2	2:I:3183:VAL:HG13	2.36	0.41
2:I:4060:LYS:HA	2:I:4060:LYS:HD3	1.87	0.41
2:I:4118:ASP:OD1	2:I:4119:GLU:N	2.53	0.41
2:A:13:PHE:HA	2:A:164:ARG:HA	2.03	0.41
2:A:1093:GLU:HB3	2:A:1201:HIS:HB3	2.03	0.41
2:A:1128:ARG:HH12	2:A:1132:TRP:HE1	1.68	0.41
2:A:1431:THR:HG21	2:A:1523:ALA:HB2	2.03	0.41
2:A:2312:MET:SD	2:A:2313:LEU:N	2.94	0.41
2:A:3397:GLU:O	2:A:3400:VAL:HG12	2.20	0.41
2:A:3536:ALA:HA	2:A:3539:ARG:HB2	2.03	0.41
2:A:3852:LYS:O	2:A:3856:LEU:HG	2.20	0.41
3:C:44:GLN:HE22	3:C:46:GLU:HG2	1.86	0.41
2:D:1431:THR:HG21	2:D:1523:ALA:HB2	2.03	0.41
2:D:1440:PHE:CD2	2:D:1560:ASN:HB3	2.55	0.41
2:D:2121:PHE:CZ	2:D:3701:LEU:HB2	2.56	0.41
2:D:2312:MET:HA	2:D:2315:ALA:HB3	2.01	0.41
2:D:3284:TRP:CE3	2:D:3287:ARG:HB2	2.56	0.41
2:D:4586:PRO:HA	2:D:4587:PRO:HD3	1.93	0.41
2:D:4715:TYR:HE2	2:D:4717:ASP:HB3	1.85	0.41
3:E:36:TRP:HE1	3:E:78:VAL:HG11	1.86	0.41
3:E:85:LEU:HD23	3:E:85:LEU:HA	1.95	0.41
1:F:18:LYS:HB3	1:F:18:LYS:HZ2	1.84	0.41
1:F:78:PRO:HA	1:F:81:ALA:HB3	2.02	0.41
2:G:803:LEU:HD23	2:G:803:LEU:HA	1.88	0.41
2:G:2121:PHE:CZ	2:G:3701:LEU:HB2	2.56	0.41
2:G:2251:PHE:CG	2:G:2286:LEU:HD22	2.56	0.41
2:G:3817:LEU:HB2	2:G:3899:PHE:CE1	2.56	0.41
2:G:3852:LYS:HE2	2:G:3852:LYS:HB2	1.79	0.41
2:G:4677:LEU:HG	2:G:4681:LEU:HD23	2.02	0.41
2:G:4715:TYR:HE2	2:G:4717:ASP:HB3	1.85	0.41
1:H:85:THR:O	1:H:85:THR:OG1	2.34	0.41
2:I:656:SER:HA	2:I:852:VAL:HG12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:719:LEU:HD12	2:I:737:LEU:HD13	2.03	0.41
2:I:1163:THR:HG22	2:I:1168:VAL:HA	2.02	0.41
2:I:1694:LEU:HB3	2:I:1715:LEU:HD12	2.03	0.41
2:I:2005:GLN:O	2:I:2009:LEU:HG	2.21	0.41
2:I:2285:GLU:OE2	2:I:3860:ASN:ND2	2.40	0.41
2:I:3250:MET:O	2:I:3253:ILE:HG22	2.20	0.41
2:I:3302:PRO:HA	2:I:3303:PRO:HD3	1.98	0.41
3:K:32:ASN:HD21	3:K:101:PRO:HB3	1.86	0.41
2:A:341:TYR:CE1	2:A:392:ARG:HB2	2.56	0.41
2:A:618:GLN:OE1	2:A:1678:ASN:ND2	2.46	0.41
2:A:667:MET:HG2	2:A:790:ARG:HB3	2.02	0.41
2:A:1131:ARG:NH2	2:A:1137:GLU:OE2	2.54	0.41
2:A:2005:GLN:O	2:A:2009:LEU:HG	2.21	0.41
2:A:2138:LEU:HD23	2:A:2138:LEU:HA	1.85	0.41
2:A:2295:LEU:HA	2:A:2298:VAL:HG12	2.03	0.41
2:A:2333:ASP:HA	2:A:2336:ARG:NE	2.36	0.41
2:A:2637:ALA:C	2:A:2640:PRO:HD2	2.41	0.41
2:A:2737:PRO:HD2	2:A:2891:LYS:HD3	2.03	0.41
2:A:2801:ASP:HB2	2:A:2805:TYR:CE2	2.56	0.41
2:A:3208:PRO:HB2	2:A:3236:VAL:HG13	2.02	0.41
2:A:3284:TRP:CE3	2:A:3287:ARG:HB2	2.56	0.41
2:A:3292:PRO:HA	2:A:3293:PRO:HD3	2.00	0.41
2:A:4011:GLU:H	2:A:4011:GLU:HG2	1.72	0.41
2:A:4640:GLU:HB3	2:A:4641:PRO:HD3	2.03	0.41
2:A:4836:GLN:HB3	2:D:4826:ILE:HD11	2.03	0.41
2:A:4839:MET:HE2	2:D:4823:LEU:HA	2.02	0.41
2:A:4902:GLU:O	2:A:4913:ARG:NH2	2.54	0.41
2:D:13:PHE:HA	2:D:164:ARG:HA	2.03	0.41
2:D:341:TYR:CE1	2:D:392:ARG:HB2	2.56	0.41
2:D:656:SER:HA	2:D:852:VAL:HG12	2.02	0.41
2:D:864:PRO:O	2:D:866:HIS:N	2.52	0.41
2:D:2686:LEU:HD23	2:D:3001:ILE:HD13	2.02	0.41
2:D:2758:PHE:O	2:D:2762:THR:HG23	2.21	0.41
2:D:3100:SER:HB3	2:D:3167:ARG:NE	2.35	0.41
2:D:3397:GLU:O	2:D:3400:VAL:HG12	2.20	0.41
2:D:3514:LEU:HD12	2:D:3514:LEU:HA	1.95	0.41
2:D:3704:HIS:O	2:D:3708:THR:HG23	2.21	0.41
2:D:4215:ARG:NH2	6:D:5103:ATP:O2G	2.54	0.41
2:D:4640:GLU:HB3	2:D:4641:PRO:HD3	2.03	0.41
2:D:4899:ASP:OD1	2:D:4900:GLU:N	2.54	0.41
2:D:4902:GLU:O	2:D:4913:ARG:NH2	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:360:ALA:O	2:G:361:ALA:C	2.59	0.41
2:G:2208:MET:HG2	2:G:2236:LEU:HD11	2.03	0.41
2:G:2352:VAL:O	2:G:2356:LEU:HG	2.21	0.41
2:G:2563:THR:HG22	2:G:2606:CYS:HA	2.03	0.41
2:G:2737:PRO:HD2	2:G:2891:LYS:HD3	2.03	0.41
2:G:2819:TRP:O	2:G:2820:GLU:HG3	2.21	0.41
2:G:2958:GLY:O	2:G:2961:GLN:HG2	2.20	0.41
2:G:3253:ILE:HG23	2:G:3318:ASN:HD22	1.86	0.41
2:G:3284:TRP:CE3	2:G:3287:ARG:HB2	2.56	0.41
2:G:3367:LYS:HE3	2:G:3367:LYS:HB3	1.87	0.41
2:G:3594:ARG:HA	2:G:3594:ARG:HE	1.86	0.41
3:M:36:TRP:HE1	3:M:78:VAL:HG11	1.85	0.41
2:I:2208:MET:HG2	2:I:2236:LEU:HD11	2.03	0.41
2:I:2295:LEU:HA	2:I:2298:VAL:HG12	2.03	0.41
2:I:3704:HIS:O	2:I:3708:THR:HG23	2.21	0.41
2:I:4630:TYR:OH	2:G:4860:ARG:NH2	2.54	0.41
2:I:4823:LEU:HA	2:G:4839:MET:HE3	2.02	0.41
3:K:44:GLN:HE22	3:K:46:GLU:HG2	1.86	0.41
3:K:61:ASP:O	3:K:64:LYS:HD2	2.21	0.41
2:A:371:VAL:CG1	2:A:373:LYS:HG2	2.51	0.41
2:A:1024:TYR:OH	2:A:1036:ARG:NH2	2.54	0.41
2:A:1440:PHE:CD2	2:A:1560:ASN:HB3	2.55	0.41
2:A:1490:SER:OG	2:A:1491:ASN:N	2.55	0.41
2:A:2121:PHE:CZ	2:A:3701:LEU:HB2	2.56	0.41
2:A:2354:VAL:HG11	2:A:2453:ILE:HD12	2.03	0.41
2:A:3274:LEU:HD23	2:A:3274:LEU:HA	1.90	0.41
2:A:4860:ARG:NH2	2:D:4630:TYR:OH	2.54	0.41
2:D:73:LEU:HD12	2:D:73:LEU:HA	1.96	0.41
2:D:1128:ARG:HH12	2:D:1132:TRP:HE1	1.69	0.41
2:D:2974:ILE:HG13	2:D:2975:ALA:N	2.35	0.41
2:D:3253:ILE:HG23	2:D:3318:ASN:HD22	1.86	0.41
2:D:4821:LYS:O	2:D:4825:THR:HG23	2.21	0.41
2:D:4839:MET:HE2	2:G:4823:LEU:HA	2.03	0.41
2:G:13:PHE:HA	2:G:164:ARG:HA	2.03	0.41
2:G:581:ASN:N	2:G:581:ASN:OD1	2.54	0.41
2:G:659:TYR:O	2:G:662:TRP:NE1	2.51	0.41
2:G:2354:VAL:HG11	2:G:2453:ILE:HD12	2.03	0.41
2:G:2637:ALA:C	2:G:2640:PRO:HD2	2.41	0.41
2:G:3077:ALA:HA	2:G:3080:VAL:HB	2.03	0.41
2:I:1131:ARG:NH2	2:I:1137:GLU:OE2	2.54	0.40
2:I:1972:ASN:O	2:I:1976:ARG:HG3	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:2352:VAL:O	2:I:2356:LEU:HG	2.21	0.40
2:I:2354:VAL:HG11	2:I:2453:ILE:HD12	2.03	0.40
2:I:2526:PHE:O	2:I:2530:MET:HG3	2.21	0.40
2:I:3038:MET:H	2:I:3038:MET:HG2	1.77	0.40
2:I:3208:PRO:HB2	2:I:3236:VAL:HG13	2.02	0.40
2:I:4888:TYR:HE1	2:G:4917:ASP:HB2	1.86	0.40
2:I:4902:GLU:O	2:I:4913:ARG:NH2	2.54	0.40
1:L:30:LEU:HB2	1:L:34:LYS:HB2	2.03	0.40
2:A:3594:ARG:HA	2:A:3594:ARG:HE	1.86	0.40
2:D:581:ASN:N	2:D:581:ASN:OD1	2.54	0.40
2:D:667:MET:HG2	2:D:790:ARG:HB3	2.02	0.40
2:D:1131:ARG:NH2	2:D:1137:GLU:OE2	2.54	0.40
2:D:1935:VAL:O	2:D:1939:MET:HE2	2.22	0.40
2:D:2251:PHE:CG	2:D:2286:LEU:HD22	2.56	0.40
2:D:2737:PRO:HD2	2:D:2891:LYS:HD3	2.03	0.40
2:D:3001:ILE:HG13	2:D:3002:LEU:N	2.37	0.40
2:D:4541:TRP:CE3	2:D:4544:LEU:HD21	2.56	0.40
3:E:61:ASP:O	3:E:64:LYS:HD2	2.21	0.40
2:G:111:HIS:CE1	2:G:113:HIS:HB3	2.56	0.40
2:G:719:LEU:HD12	2:G:737:LEU:HD13	2.03	0.40
2:G:2333:ASP:HA	2:G:2336:ARG:NE	2.36	0.40
2:G:2638:LYS:H	2:G:2638:LYS:HG2	1.71	0.40
2:G:3713:LYS:NZ	2:G:3715:LYS:O	2.54	0.40
2:G:4232:GLU:OE1	2:G:5019:TRP:NE1	2.31	0.40
2:G:4919:THR:HG21	5:G:5102:POV:H31H	2.03	0.40
2:I:111:HIS:CE1	2:I:113:HIS:HB3	2.56	0.40
2:I:341:TYR:CE1	2:I:392:ARG:HB2	2.56	0.40
2:I:2737:PRO:HD2	2:I:2891:LYS:HD3	2.03	0.40
2:I:2801:ASP:HB2	2:I:2805:TYR:CE2	2.56	0.40
2:I:3524:MET:O	2:I:3576:TYR:OH	2.37	0.40
2:I:3536:ALA:HA	2:I:3539:ARG:HB2	2.03	0.40
2:A:3001:ILE:HG13	2:A:3002:LEU:N	2.36	0.40
2:A:3014:CYS:SG	2:A:3074:SER:HB3	2.62	0.40
2:A:4541:TRP:CE3	2:A:4544:LEU:HD21	2.57	0.40
2:A:4677:LEU:HG	2:A:4681:LEU:HD23	2.02	0.40
2:D:1093:GLU:HB3	2:D:1201:HIS:HB3	2.03	0.40
2:D:2352:VAL:O	2:D:2356:LEU:HG	2.21	0.40
2:D:2801:ASP:HB2	2:D:2805:TYR:CE2	2.56	0.40
2:D:3257:ALA:O	2:D:3325:ASN:ND2	2.54	0.40
1:F:30:LEU:HB2	1:F:34:LYS:HB2	2.03	0.40
2:G:1490:SER:OG	2:G:1491:ASN:N	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:3034:LYS:O	2:G:3038:MET:HG2	2.21	0.40
2:I:581:ASN:OD1	2:I:581:ASN:N	2.54	0.40
2:I:2563:THR:HG22	2:I:2606:CYS:HA	2.03	0.40
2:I:3409:TYR:N	2:I:3410:PRO:HD2	2.37	0.40
2:I:4779:LYS:HB2	2:I:4779:LYS:HE3	1.82	0.40
3:K:109:THR:OG1	3:K:110:PRO:HD3	2.22	0.40
2:A:4215:ARG:NH2	6:A:5103:ATP:O2G	2.54	0.40
2:A:4715:TYR:HE2	2:A:4717:ASP:HB3	1.86	0.40
2:D:1043:VAL:O	2:D:1047:LEU:HG	2.22	0.40
2:D:2354:VAL:HG11	2:D:2453:ILE:HD12	2.03	0.40
2:D:2819:TRP:O	2:D:2820:GLU:HG3	2.21	0.40
3:E:32:ASN:HD21	3:E:101:PRO:HB3	1.86	0.40
2:G:180:LEU:HD23	2:G:180:LEU:HA	1.88	0.40
2:G:1128:ARG:HH12	2:G:1132:TRP:HE1	1.69	0.40
2:G:1433:TYR:HB3	2:G:1575:LEU:HD23	2.02	0.40
2:G:2138:LEU:HD23	2:G:2138:LEU:HA	1.85	0.40
2:G:2758:PHE:O	2:G:2762:THR:HG23	2.21	0.40
2:G:3704:HIS:O	2:G:3708:THR:HG23	2.21	0.40
2:G:4157:ASP:O	2:G:4161:ARG:HD3	2.22	0.40
2:G:4541:TRP:CE3	2:G:4544:LEU:HD21	2.57	0.40
2:G:4744:ASP:HB3	2:G:4747:SER:HB3	2.02	0.40
2:G:5000:GLU:HA	2:G:5003:HIS:ND1	2.37	0.40
1:H:30:LEU:HB2	1:H:34:LYS:HB2	2.04	0.40
2:I:13:PHE:HA	2:I:164:ARG:HA	2.03	0.40
2:I:179:TYR:HB2	2:I:196:MET:O	2.21	0.40
2:I:371:VAL:CG1	2:I:373:LYS:HG2	2.52	0.40
2:I:881:LEU:O	2:I:885:THR:HG23	2.21	0.40
2:I:2819:TRP:O	2:I:2820:GLU:HG3	2.21	0.40
2:I:3594:ARG:HE	2:I:3594:ARG:HA	1.86	0.40
3:K:36:TRP:HE1	3:K:78:VAL:HG11	1.86	0.40
1:L:23:VAL:HG22	1:L:104:LEU:O	2.21	0.40
2:A:1694:LEU:HB3	2:A:1715:LEU:HD12	2.03	0.40
2:A:2352:VAL:O	2:A:2356:LEU:HG	2.21	0.40
2:A:2526:PHE:O	2:A:2530:MET:HG3	2.22	0.40
2:A:3302:PRO:HA	2:A:3303:PRO:HD3	1.98	0.40
2:A:4813:LEU:HD23	2:A:4813:LEU:HA	1.92	0.40
3:C:32:ASN:HD21	3:C:101:PRO:HB3	1.86	0.40
2:D:458:GLU:H	2:D:458:GLU:HG3	1.67	0.40
2:D:1814:MET:O	2:D:1817:GLU:HG2	2.22	0.40
2:D:2247:GLN:HG3	2:D:2279:SER:HA	2.04	0.40
2:D:2684:ASP:OD1	2:D:2685:SER:N	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:3345:ILE:HD12	2:D:3345:ILE:HA	1.95	0.40
2:D:3576:TYR:CE1	2:D:3582:ARG:HG2	2.56	0.40
2:G:1534:LYS:HE3	2:G:1534:LYS:HB2	1.93	0.40
2:G:1694:LEU:HB3	2:G:1715:LEU:HD12	2.03	0.40
2:G:2005:GLN:O	2:G:2009:LEU:HG	2.21	0.40
2:G:3644:LEU:HD23	2:G:3644:LEU:HA	1.92	0.40
2:G:4215:ARG:NH2	6:G:5103:ATP:O2G	2.54	0.40
2:G:4821:LYS:O	2:G:4825:THR:HG23	2.21	0.40
2:I:603:LEU:HD23	2:I:606:LEU:HD12	2.04	0.40
2:I:917:GLU:OE1	3:K:101:PRO:HB2	2.21	0.40
2:I:2138:LEU:HD23	2:I:2138:LEU:HA	1.85	0.40
2:I:2312:MET:O	2:I:2316:LYS:HG2	2.22	0.40
2:I:2637:ALA:C	2:I:2640:PRO:HD2	2.41	0.40
2:I:3019:SER:HB3	2:I:3030:HIS:HB3	2.02	0.40
2:I:3550:ARG:HH21	2:I:3597:GLN:HE22	1.70	0.40
2:I:4640:GLU:HB3	2:I:4641:PRO:HD3	2.03	0.40
2:A:111:HIS:CE1	2:A:113:HIS:HB3	2.56	0.40
2:A:363:ASP:HB3	2:A:366:ALA:CB	2.51	0.40
2:A:881:LEU:O	2:A:885:THR:HG23	2.22	0.40
2:A:2974:ILE:HG13	2:A:2975:ALA:N	2.35	0.40
2:A:3034:LYS:O	2:A:3038:MET:HG2	2.21	0.40
2:A:3704:HIS:O	2:A:3708:THR:HG23	2.21	0.40
2:A:4821:LYS:O	2:A:4825:THR:HG23	2.21	0.40
3:C:109:THR:OG1	3:C:110:PRO:HD3	2.22	0.40
2:D:881:LEU:O	2:D:885:THR:HG23	2.21	0.40
2:D:1024:TYR:OH	2:D:1036:ARG:NH2	2.54	0.40
2:D:1490:SER:OG	2:D:1491:ASN:N	2.55	0.40
2:D:3007:ASN:OD1	2:D:3070:ILE:HG13	2.22	0.40
2:G:2697:ARG:C	2:G:2697:ARG:HH11	2.25	0.40
2:G:3001:ILE:HG13	2:G:3002:LEU:N	2.36	0.40
2:G:3245:VAL:CG1	2:G:3248:ARG:HH12	2.31	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	F	105/107 (98%)	101 (96%)	4 (4%)	0	100	100
1	H	105/107 (98%)	101 (96%)	4 (4%)	0	100	100
1	J	105/107 (98%)	101 (96%)	4 (4%)	0	100	100
1	L	105/107 (98%)	101 (96%)	4 (4%)	0	100	100
2	A	4280/5027 (85%)	4203 (98%)	77 (2%)	0	100	100
2	D	4280/5027 (85%)	4201 (98%)	78 (2%)	1 (0%)	100	100
2	G	4280/5027 (85%)	4201 (98%)	79 (2%)	0	100	100
2	I	4280/5027 (85%)	4203 (98%)	77 (2%)	0	100	100
3	C	124/137 (90%)	118 (95%)	6 (5%)	0	100	100
3	E	124/137 (90%)	118 (95%)	6 (5%)	0	100	100
3	K	124/137 (90%)	118 (95%)	6 (5%)	0	100	100
3	M	124/137 (90%)	118 (95%)	6 (5%)	0	100	100
All	All	18036/21084 (86%)	17684 (98%)	351 (2%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	D	374	LYS

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	F	88/88 (100%)	85 (97%)	3 (3%)	32	62
1	H	88/88 (100%)	85 (97%)	3 (3%)	32	62
1	J	88/88 (100%)	85 (97%)	3 (3%)	32	62
1	L	88/88 (100%)	85 (97%)	3 (3%)	32	62
2	A	3674/4270 (86%)	3555 (97%)	119 (3%)	34	63

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	D	3674/4270 (86%)	3553 (97%)	121 (3%)	33	62
2	G	3673/4270 (86%)	3552 (97%)	121 (3%)	33	62
2	I	3673/4270 (86%)	3552 (97%)	121 (3%)	33	62
3	C	104/114 (91%)	102 (98%)	2 (2%)	52	75
3	E	104/114 (91%)	102 (98%)	2 (2%)	52	75
3	K	104/114 (91%)	102 (98%)	2 (2%)	52	75
3	M	104/114 (91%)	102 (98%)	2 (2%)	52	75
All	All	15462/17888 (86%)	14960 (97%)	502 (3%)	36	63

All (502) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	H	22	CYS
1	H	23	VAL
1	H	32	ASN
2	I	35	LEU
2	I	125	ARG
2	I	127	MET
2	I	227	MET
2	I	241	GLN
2	I	273	HIS
2	I	297	GLN
2	I	368	ARG
2	I	384	MET
2	I	389	PHE
2	I	460	GLN
2	I	481	GLU
2	I	702	TRP
2	I	714	TYR
2	I	835	ARG
2	I	866	HIS
2	I	886	ARG
2	I	924	MET
2	I	960	MET
2	I	987	ARG
2	I	1025	ARG
2	I	1071	ARG
2	I	1128	ARG
2	I	1143	TRP
2	I	1170	MET

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Mol	Chain	Res	Type
2	I	1260	MET
2	I	1421	ARG
2	I	1428	LEU
2	I	1435	TYR
2	I	1526	LEU
2	I	1648	MET
2	I	1981	MET
2	I	2198	MET
2	I	2294	ASP
2	I	2312	MET
2	I	2440	MET
2	I	2490	MET
2	I	2502	MET
2	I	2520	HIS
2	I	2555	CYS
2	I	2578	MET
2	I	2623	LEU
2	I	2652	TRP
2	I	2656	CYS
2	I	2661	TRP
2	I	2664	PHE
2	I	2673	HIS
2	I	2688	HIS
2	I	2697	ARG
2	I	2698	MET
2	I	2700	MET
2	I	2738	ARG
2	I	2761	TYR
2	I	2786	LYS
2	I	2790	MET
2	I	2797	PHE
2	I	2806	ARG
2	I	2816	MET
2	I	2827	ARG
2	I	2914	LYS
2	I	2932	MET
2	I	2955	PHE
2	I	2966	TRP
2	I	2967	MET
2	I	3014	CYS
2	I	3030	HIS
2	I	3053	ARG

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Mol	Chain	Res	Type
2	I	3096	PHE
2	I	3106	MET
2	I	3166	TYR
2	I	3239	MET
2	I	3248	ARG
2	I	3262	ARG
2	I	3266	MET
2	I	3280	TYR
2	I	3311	HIS
2	I	3321	ARG
2	I	3334	TRP
2	I	3336	LYS
2	I	3355	HIS
2	I	3357	HIS
2	I	3409	TYR
2	I	3449	HIS
2	I	3451	PHE
2	I	3458	PHE
2	I	3534	MET
2	I	3552	PHE
2	I	3573	MET
2	I	3576	TYR
2	I	3577	ARG
2	I	3594	ARG
2	I	3673	MET
2	I	3715	LYS
2	I	3734	HIS
2	I	3836	MET
2	I	3933	PHE
2	I	3945	GLU
2	I	4001	MET
2	I	4023	MET
2	I	4039	MET
2	I	4042	ARG
2	I	4057	MET
2	I	4080	TYR
2	I	4120	ASN
2	I	4156	HIS
2	I	4159	ARG
2	I	4207	MET
2	I	4553	ASN
2	I	4564	PHE

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Mol	Chain	Res	Type
2	I	4627	MET
2	I	4629	TYR
2	I	4639	MET
2	I	4644	TRP
2	I	4676	GLU
2	I	4696	ASP
2	I	4796	MET
2	I	4818	MET
2	I	4839	MET
2	I	4858	PHE
2	I	4966	ASP
2	I	4973	HIS
3	K	12	MET
3	K	64	LYS
1	L	22	CYS
1	L	23	VAL
1	L	32	ASN
2	A	35	LEU
2	A	125	ARG
2	A	127	MET
2	A	227	MET
2	A	241	GLN
2	A	273	HIS
2	A	297	GLN
2	A	384	MET
2	A	389	PHE
2	A	460	GLN
2	A	481	GLU
2	A	702	TRP
2	A	714	TYR
2	A	835	ARG
2	A	866	HIS
2	A	886	ARG
2	A	924	MET
2	A	987	ARG
2	A	1025	ARG
2	A	1071	ARG
2	A	1128	ARG
2	A	1143	TRP
2	A	1170	MET
2	A	1260	MET
2	A	1421	ARG

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Mol	Chain	Res	Type
2	A	1428	LEU
2	A	1435	TYR
2	A	1526	LEU
2	A	1648	MET
2	A	1981	MET
2	A	2198	MET
2	A	2294	ASP
2	A	2312	MET
2	A	2440	MET
2	A	2490	MET
2	A	2502	MET
2	A	2520	HIS
2	A	2555	CYS
2	A	2578	MET
2	A	2623	LEU
2	A	2652	TRP
2	A	2656	CYS
2	A	2661	TRP
2	A	2664	PHE
2	A	2673	HIS
2	A	2688	HIS
2	A	2697	ARG
2	A	2698	MET
2	A	2700	MET
2	A	2738	ARG
2	A	2761	TYR
2	A	2786	LYS
2	A	2790	MET
2	A	2797	PHE
2	A	2806	ARG
2	A	2816	MET
2	A	2827	ARG
2	A	2914	LYS
2	A	2932	MET
2	A	2955	PHE
2	A	2966	TRP
2	A	2967	MET
2	A	3014	CYS
2	A	3030	HIS
2	A	3053	ARG
2	A	3096	PHE
2	A	3106	MET

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Mol	Chain	Res	Type
2	A	3166	TYR
2	A	3239	MET
2	A	3248	ARG
2	A	3262	ARG
2	A	3266	MET
2	A	3280	TYR
2	A	3311	HIS
2	A	3321	ARG
2	A	3334	TRP
2	A	3336	LYS
2	A	3355	HIS
2	A	3357	HIS
2	A	3409	TYR
2	A	3449	HIS
2	A	3451	PHE
2	A	3458	PHE
2	A	3534	MET
2	A	3552	PHE
2	A	3573	MET
2	A	3576	TYR
2	A	3577	ARG
2	A	3594	ARG
2	A	3673	MET
2	A	3715	LYS
2	A	3734	HIS
2	A	3836	MET
2	A	3933	PHE
2	A	3945	GLU
2	A	4001	MET
2	A	4023	MET
2	A	4039	MET
2	A	4042	ARG
2	A	4057	MET
2	A	4080	TYR
2	A	4120	ASN
2	A	4156	HIS
2	A	4159	ARG
2	A	4207	MET
2	A	4553	ASN
2	A	4564	PHE
2	A	4627	MET
2	A	4629	TYR

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Mol	Chain	Res	Type
2	A	4639	MET
2	A	4644	TRP
2	A	4676	GLU
2	A	4696	ASP
2	A	4796	MET
2	A	4818	MET
2	A	4839	MET
2	A	4858	PHE
2	A	4966	ASP
2	A	4973	HIS
3	C	12	MET
3	C	64	LYS
1	J	22	CYS
1	J	23	VAL
1	J	32	ASN
2	D	35	LEU
2	D	125	ARG
2	D	127	MET
2	D	227	MET
2	D	241	GLN
2	D	273	HIS
2	D	297	GLN
2	D	369	LEU
2	D	384	MET
2	D	389	PHE
2	D	460	GLN
2	D	481	GLU
2	D	702	TRP
2	D	714	TYR
2	D	835	ARG
2	D	866	HIS
2	D	886	ARG
2	D	924	MET
2	D	960	MET
2	D	987	ARG
2	D	1025	ARG
2	D	1071	ARG
2	D	1128	ARG
2	D	1143	TRP
2	D	1170	MET
2	D	1260	MET
2	D	1421	ARG

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Mol	Chain	Res	Type
2	D	1428	LEU
2	D	1435	TYR
2	D	1526	LEU
2	D	1648	MET
2	D	1981	MET
2	D	2198	MET
2	D	2294	ASP
2	D	2312	MET
2	D	2440	MET
2	D	2490	MET
2	D	2502	MET
2	D	2520	HIS
2	D	2555	CYS
2	D	2578	MET
2	D	2623	LEU
2	D	2652	TRP
2	D	2656	CYS
2	D	2661	TRP
2	D	2664	PHE
2	D	2673	HIS
2	D	2688	HIS
2	D	2697	ARG
2	D	2698	MET
2	D	2700	MET
2	D	2738	ARG
2	D	2761	TYR
2	D	2786	LYS
2	D	2790	MET
2	D	2797	PHE
2	D	2806	ARG
2	D	2816	MET
2	D	2827	ARG
2	D	2914	LYS
2	D	2932	MET
2	D	2955	PHE
2	D	2966	TRP
2	D	2967	MET
2	D	3014	CYS
2	D	3030	HIS
2	D	3053	ARG
2	D	3096	PHE
2	D	3106	MET

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Mol	Chain	Res	Type
2	D	3166	TYR
2	D	3239	MET
2	D	3248	ARG
2	D	3262	ARG
2	D	3266	MET
2	D	3280	TYR
2	D	3311	HIS
2	D	3321	ARG
2	D	3334	TRP
2	D	3336	LYS
2	D	3355	HIS
2	D	3357	HIS
2	D	3409	TYR
2	D	3449	HIS
2	D	3451	PHE
2	D	3458	PHE
2	D	3534	MET
2	D	3552	PHE
2	D	3573	MET
2	D	3576	TYR
2	D	3577	ARG
2	D	3594	ARG
2	D	3673	MET
2	D	3715	LYS
2	D	3734	HIS
2	D	3836	MET
2	D	3933	PHE
2	D	3945	GLU
2	D	4001	MET
2	D	4023	MET
2	D	4039	MET
2	D	4042	ARG
2	D	4057	MET
2	D	4080	TYR
2	D	4120	ASN
2	D	4156	HIS
2	D	4159	ARG
2	D	4207	MET
2	D	4553	ASN
2	D	4564	PHE
2	D	4627	MET
2	D	4629	TYR

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Mol	Chain	Res	Type
2	D	4639	MET
2	D	4644	TRP
2	D	4676	GLU
2	D	4696	ASP
2	D	4796	MET
2	D	4818	MET
2	D	4839	MET
2	D	4858	PHE
2	D	4966	ASP
2	D	4973	HIS
3	E	12	MET
3	E	64	LYS
1	F	22	CYS
1	F	23	VAL
1	F	32	ASN
2	G	35	LEU
2	G	125	ARG
2	G	127	MET
2	G	227	MET
2	G	241	GLN
2	G	273	HIS
2	G	297	GLN
2	G	359	TYR
2	G	384	MET
2	G	389	PHE
2	G	460	GLN
2	G	481	GLU
2	G	702	TRP
2	G	714	TYR
2	G	835	ARG
2	G	866	HIS
2	G	886	ARG
2	G	924	MET
2	G	960	MET
2	G	987	ARG
2	G	1025	ARG
2	G	1071	ARG
2	G	1128	ARG
2	G	1143	TRP
2	G	1170	MET
2	G	1260	MET
2	G	1421	ARG

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Mol	Chain	Res	Type
2	G	1428	LEU
2	G	1435	TYR
2	G	1526	LEU
2	G	1648	MET
2	G	1981	MET
2	G	2198	MET
2	G	2294	ASP
2	G	2312	MET
2	G	2440	MET
2	G	2490	MET
2	G	2502	MET
2	G	2520	HIS
2	G	2555	CYS
2	G	2578	MET
2	G	2623	LEU
2	G	2652	TRP
2	G	2656	CYS
2	G	2661	TRP
2	G	2664	PHE
2	G	2673	HIS
2	G	2688	HIS
2	G	2697	ARG
2	G	2698	MET
2	G	2700	MET
2	G	2738	ARG
2	G	2761	TYR
2	G	2786	LYS
2	G	2790	MET
2	G	2797	PHE
2	G	2806	ARG
2	G	2816	MET
2	G	2827	ARG
2	G	2914	LYS
2	G	2932	MET
2	G	2955	PHE
2	G	2966	TRP
2	G	2967	MET
2	G	3014	CYS
2	G	3030	HIS
2	G	3053	ARG
2	G	3096	PHE
2	G	3106	MET

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Mol	Chain	Res	Type
2	G	3166	TYR
2	G	3239	MET
2	G	3248	ARG
2	G	3262	ARG
2	G	3266	MET
2	G	3280	TYR
2	G	3311	HIS
2	G	3321	ARG
2	G	3334	TRP
2	G	3336	LYS
2	G	3355	HIS
2	G	3357	HIS
2	G	3409	TYR
2	G	3449	HIS
2	G	3451	PHE
2	G	3458	PHE
2	G	3534	MET
2	G	3552	PHE
2	G	3573	MET
2	G	3576	TYR
2	G	3577	ARG
2	G	3594	ARG
2	G	3673	MET
2	G	3715	LYS
2	G	3734	HIS
2	G	3836	MET
2	G	3933	PHE
2	G	3945	GLU
2	G	4001	MET
2	G	4023	MET
2	G	4039	MET
2	G	4042	ARG
2	G	4057	MET
2	G	4080	TYR
2	G	4120	ASN
2	G	4156	HIS
2	G	4159	ARG
2	G	4207	MET
2	G	4553	ASN
2	G	4564	PHE
2	G	4627	MET
2	G	4629	TYR

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Mol	Chain	Res	Type
2	G	4639	MET
2	G	4644	TRP
2	G	4676	GLU
2	G	4696	ASP
2	G	4796	MET
2	G	4818	MET
2	G	4839	MET
2	G	4858	PHE
2	G	4966	ASP
2	G	4973	HIS
3	M	12	MET
3	M	64	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (35) such sidechains are listed below:

Mol	Chain	Res	Type
1	H	32	ASN
2	I	473	ASN
2	I	981	GLN
2	I	1299	GLN
2	I	3146	HIS
2	I	3597	GLN
2	I	3806	ASN
2	I	4574	ASN
3	K	44	GLN
1	L	32	ASN
2	A	473	ASN
2	A	981	GLN
2	A	3146	HIS
2	A	3597	GLN
2	A	3806	ASN
2	A	4246	GLN
2	A	4574	ASN
3	C	44	GLN
2	D	473	ASN
2	D	981	GLN
2	D	1299	GLN
2	D	3146	HIS
2	D	3597	GLN
2	D	4246	GLN
2	D	4574	ASN
3	E	44	GLN

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Mol	Chain	Res	Type
1	F	32	ASN
2	G	473	ASN
2	G	981	GLN
2	G	1299	GLN
2	G	3146	HIS
2	G	3597	GLN
2	G	4246	GLN
2	G	4574	ASN
3	M	44	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 20 ligands modelled in this entry, 8 are monoatomic - leaving 12 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	CFF	I	5104	-	8,15,15	2.40	3 (37%)	8,23,23	1.20	1 (12%)
6	ATP	G	5103	-	26,33,33	0.58	0	31,52,52	0.84	3 (9%)
7	CFF	D	5104	-	8,15,15	2.41	3 (37%)	8,23,23	1.19	1 (12%)
5	POV	A	5101	-	51,51,51	0.49	0	57,59,59	0.45	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
6	ATP	I	5103	-	26,33,33	0.91	1 (3%)	31,52,52	1.59	5 (16%)
6	ATP	D	5103	-	26,33,33	0.59	0	31,52,52	0.85	3 (9%)
7	CFE	G	5104	-	8,15,15	2.38	3 (37%)	8,23,23	1.18	1 (12%)
5	POV	D	5102	-	51,51,51	0.49	0	57,59,59	0.45	0
7	CFE	A	5104	-	8,15,15	2.40	3 (37%)	8,23,23	1.20	1 (12%)
5	POV	I	5102	-	51,51,51	0.49	0	57,59,59	0.45	0
5	POV	G	5102	-	51,51,51	0.49	0	57,59,59	0.45	0
6	ATP	A	5103	-	26,33,33	0.59	0	31,52,52	0.85	3 (9%)

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	CFE	I	5104	-	-	-	0/2/2/2
6	ATP	G	5103	-	-	5/18/38/38	0/3/3/3
7	CFE	D	5104	-	-	-	0/2/2/2
5	POV	A	5101	-	-	17/55/55/55	-
6	ATP	I	5103	-	-	3/18/38/38	0/3/3/3
6	ATP	D	5103	-	-	5/18/38/38	0/3/3/3
7	CFE	G	5104	-	-	-	0/2/2/2
5	POV	D	5102	-	-	17/55/55/55	-
7	CFE	A	5104	-	-	-	0/2/2/2
5	POV	I	5102	-	-	17/55/55/55	-
5	POV	G	5102	-	-	17/55/55/55	-
6	ATP	A	5103	-	-	5/18/38/38	0/3/3/3

All (13) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	5104	CFE	C5-C4	4.54	1.45	1.39
7	I	5104	CFE	C5-C4	4.53	1.45	1.39
7	D	5104	CFE	C5-C4	4.53	1.45	1.39
7	G	5104	CFE	C5-C4	4.52	1.45	1.39
7	D	5104	CFE	C5-C6	4.35	1.48	1.41
7	I	5104	CFE	C5-C6	4.34	1.48	1.41
7	A	5104	CFE	C5-C6	4.34	1.48	1.41
7	G	5104	CFE	C5-C6	4.28	1.48	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	I	5103	ATP	C5-C4	2.33	1.47	1.40
7	D	5104	CFF	C6-N1	2.23	1.41	1.38
7	A	5104	CFF	C6-N1	2.18	1.41	1.38
7	I	5104	CFF	C6-N1	2.17	1.41	1.38
7	G	5104	CFF	C6-N1	2.17	1.41	1.38

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	I	5103	ATP	PA-O3A-PB	-3.89	119.48	132.83
6	I	5103	ATP	PB-O3B-PG	-3.87	119.54	132.83
6	I	5103	ATP	N3-C2-N1	-3.20	123.67	128.68
6	I	5103	ATP	C3'-C2'-C1'	3.07	105.60	100.98
6	I	5103	ATP	C4-C5-N7	-2.42	106.87	109.40
7	A	5104	CFF	C5-C6-N1	-2.34	115.70	118.20
7	D	5104	CFF	C5-C6-N1	-2.34	115.71	118.20
7	I	5104	CFF	C5-C6-N1	-2.33	115.72	118.20
7	G	5104	CFF	C5-C6-N1	-2.33	115.72	118.20
6	D	5103	ATP	C5-C6-N6	2.29	123.83	120.35
6	A	5103	ATP	C5-C6-N6	2.26	123.79	120.35
6	G	5103	ATP	C5-C6-N6	2.26	123.78	120.35
6	A	5103	ATP	C3'-C2'-C1'	2.06	104.08	100.98
6	G	5103	ATP	C3'-C2'-C1'	2.05	104.07	100.98
6	D	5103	ATP	C3'-C2'-C1'	2.05	104.06	100.98
6	A	5103	ATP	PB-O3B-PG	2.01	139.72	132.83
6	D	5103	ATP	PB-O3B-PG	2.01	139.72	132.83
6	G	5103	ATP	PB-O3B-PG	2.01	139.71	132.83

There are no chirality outliers.

All (86) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	I	5102	POV	C1-O11-P-O14
5	A	5101	POV	C1-O11-P-O14
5	D	5102	POV	C1-O11-P-O14
5	G	5102	POV	C1-O11-P-O14
6	I	5103	ATP	C5'-O5'-PA-O1A
6	I	5103	ATP	C5'-O5'-PA-O2A
6	A	5103	ATP	PB-O3B-PG-O2G
6	A	5103	ATP	C5'-O5'-PA-O2A
6	A	5103	ATP	C5'-O5'-PA-O3A
6	D	5103	ATP	PB-O3B-PG-O2G

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Mol	Chain	Res	Type	Atoms
6	D	5103	ATP	C5'-O5'-PA-O2A
6	D	5103	ATP	C5'-O5'-PA-O3A
6	G	5103	ATP	PB-O3B-PG-O2G
6	G	5103	ATP	C5'-O5'-PA-O2A
6	G	5103	ATP	C5'-O5'-PA-O3A
5	I	5102	POV	C22-C21-O21-C2
5	A	5101	POV	C22-C21-O21-C2
5	D	5102	POV	C22-C21-O21-C2
5	G	5102	POV	C22-C21-O21-C2
5	I	5102	POV	C21-C22-C23-C24
5	A	5101	POV	C21-C22-C23-C24
5	D	5102	POV	C21-C22-C23-C24
5	G	5102	POV	C21-C22-C23-C24
5	I	5102	POV	C31-C32-C33-C34
5	A	5101	POV	C31-C32-C33-C34
5	D	5102	POV	C31-C32-C33-C34
5	G	5102	POV	C31-C32-C33-C34
5	I	5102	POV	O22-C21-O21-C2
5	A	5101	POV	O22-C21-O21-C2
5	D	5102	POV	O22-C21-O21-C2
5	G	5102	POV	O22-C21-O21-C2
5	G	5102	POV	C39-C310-C311-C312
5	I	5102	POV	C39-C310-C311-C312
5	A	5101	POV	C39-C310-C311-C312
5	D	5102	POV	C39-C310-C311-C312
5	D	5102	POV	C312-C313-C314-C315
5	I	5102	POV	C312-C313-C314-C315
5	A	5101	POV	C312-C313-C314-C315
5	G	5102	POV	C312-C313-C314-C315
5	I	5102	POV	C211-C212-C213-C214
5	A	5101	POV	C211-C212-C213-C214
5	D	5102	POV	C211-C212-C213-C214
5	G	5102	POV	C211-C212-C213-C214
5	I	5102	POV	O11-C1-C2-O21
5	A	5101	POV	O11-C1-C2-O21
5	D	5102	POV	O11-C1-C2-O21
5	G	5102	POV	O11-C1-C2-O21
5	I	5102	POV	C11-C12-N-C14
5	A	5101	POV	C11-C12-N-C14
5	D	5102	POV	C11-C12-N-C14
5	G	5102	POV	C11-C12-N-C14
6	I	5103	ATP	C5'-O5'-PA-O3A

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Mol	Chain	Res	Type	Atoms
5	I	5102	POV	C11-C12-N-C15
5	A	5101	POV	C11-C12-N-C15
5	D	5102	POV	C11-C12-N-C15
5	G	5102	POV	C11-C12-N-C15
5	I	5102	POV	O11-C1-C2-C3
5	A	5101	POV	O11-C1-C2-C3
5	D	5102	POV	O11-C1-C2-C3
5	G	5102	POV	O11-C1-C2-C3
5	I	5102	POV	C11-C12-N-C13
5	A	5101	POV	C11-C12-N-C13
5	D	5102	POV	C11-C12-N-C13
5	G	5102	POV	C11-C12-N-C13
5	I	5102	POV	C29-C210-C211-C212
5	A	5101	POV	C29-C210-C211-C212
5	D	5102	POV	C29-C210-C211-C212
5	G	5102	POV	C29-C210-C211-C212
5	I	5102	POV	C1-O11-P-O12
5	A	5101	POV	C1-O11-P-O12
5	D	5102	POV	C1-O11-P-O12
5	G	5102	POV	C1-O11-P-O12
5	A	5101	POV	C36-C37-C38-C39
5	I	5102	POV	C36-C37-C38-C39
5	D	5102	POV	C36-C37-C38-C39
5	G	5102	POV	C36-C37-C38-C39
6	A	5103	ATP	PB-O3B-PG-O1G
6	D	5103	ATP	PB-O3B-PG-O1G
6	G	5103	ATP	PB-O3B-PG-O1G
6	A	5103	ATP	PB-O3B-PG-O3G
6	D	5103	ATP	PB-O3B-PG-O3G
6	G	5103	ATP	PB-O3B-PG-O3G
5	I	5102	POV	O31-C31-C32-C33
5	A	5101	POV	O31-C31-C32-C33
5	D	5102	POV	O31-C31-C32-C33
5	G	5102	POV	O31-C31-C32-C33

There are no ring outliers.

12 monomers are involved in 25 short contacts:

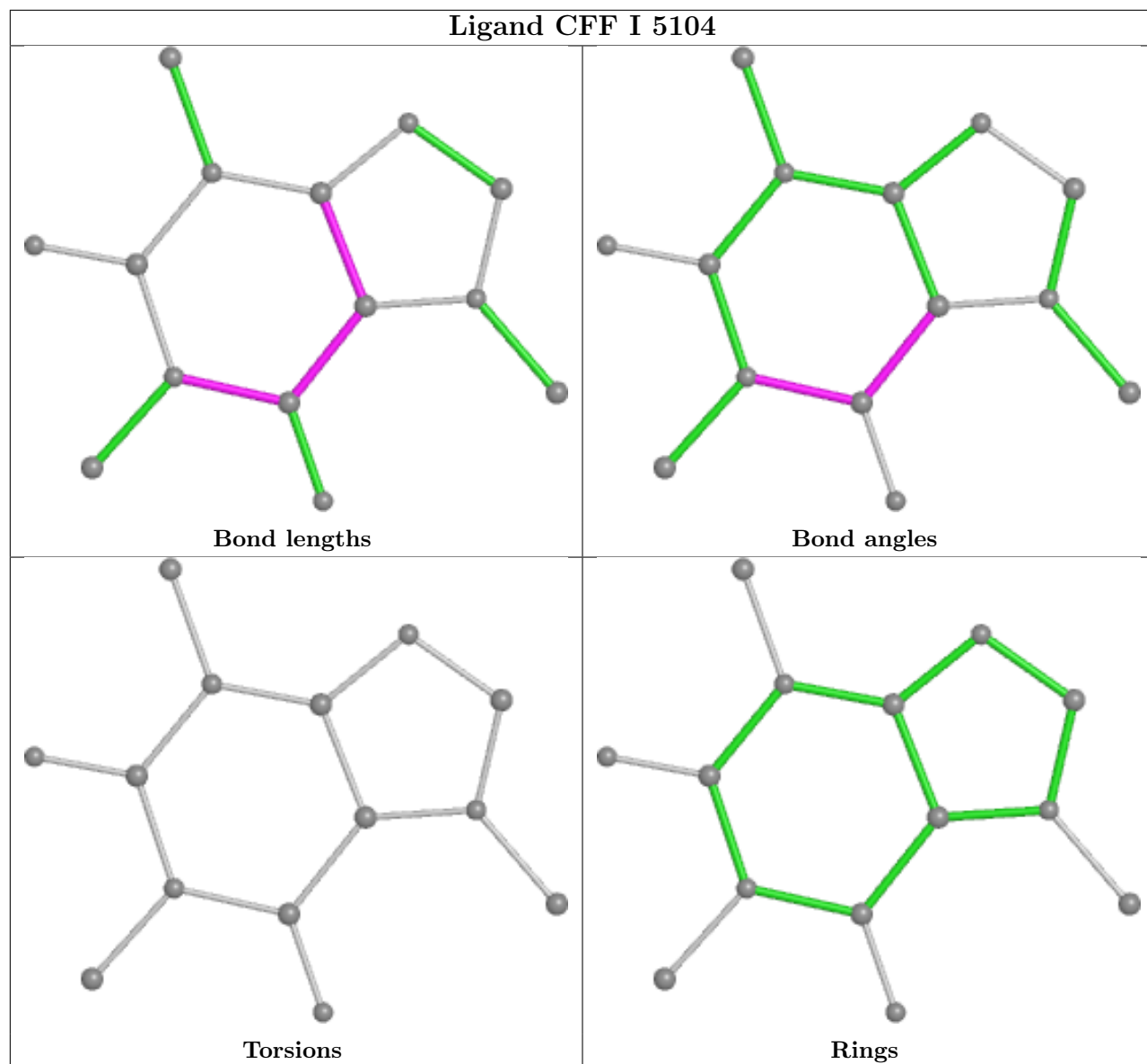
Mol	Chain	Res	Type	Clashes	Symm-Clashes
7	I	5104	CFE	1	0
6	G	5103	ATP	3	0
7	D	5104	CFE	2	0

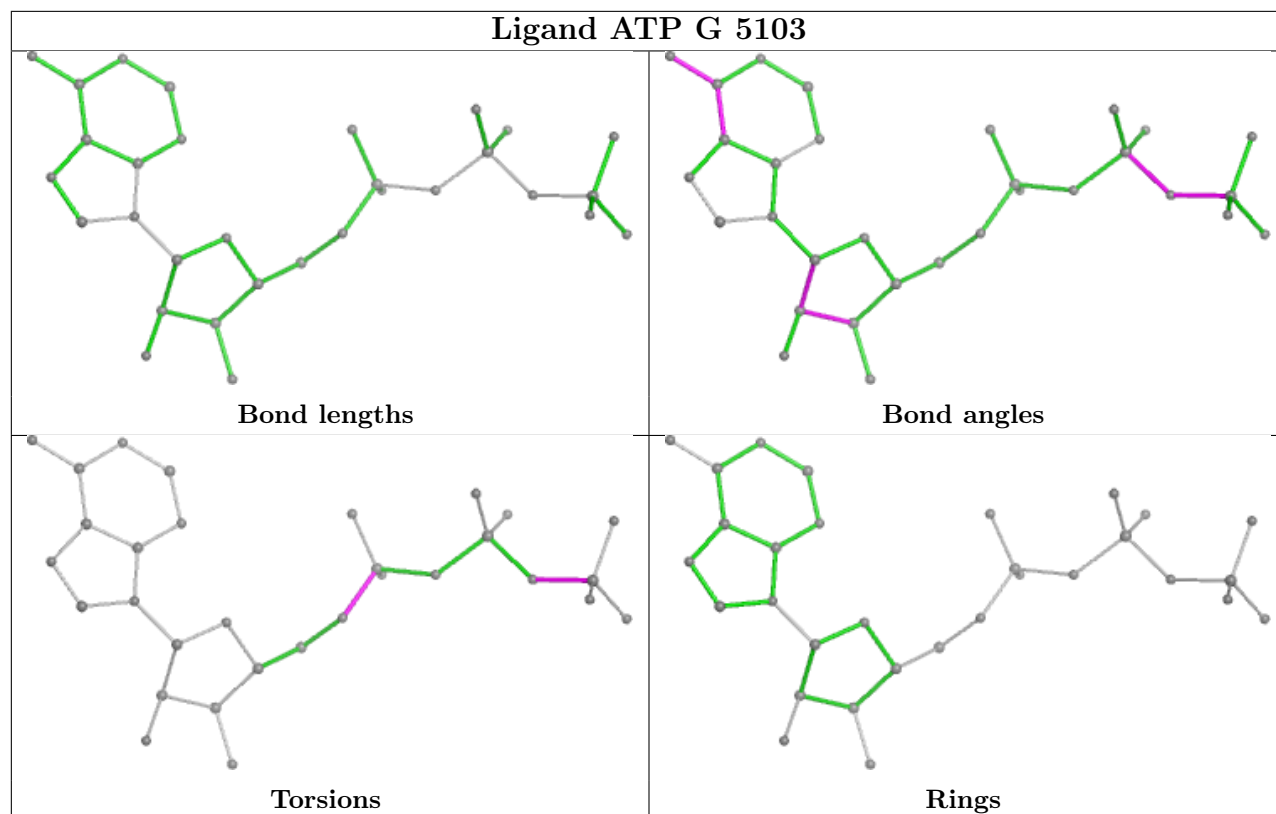
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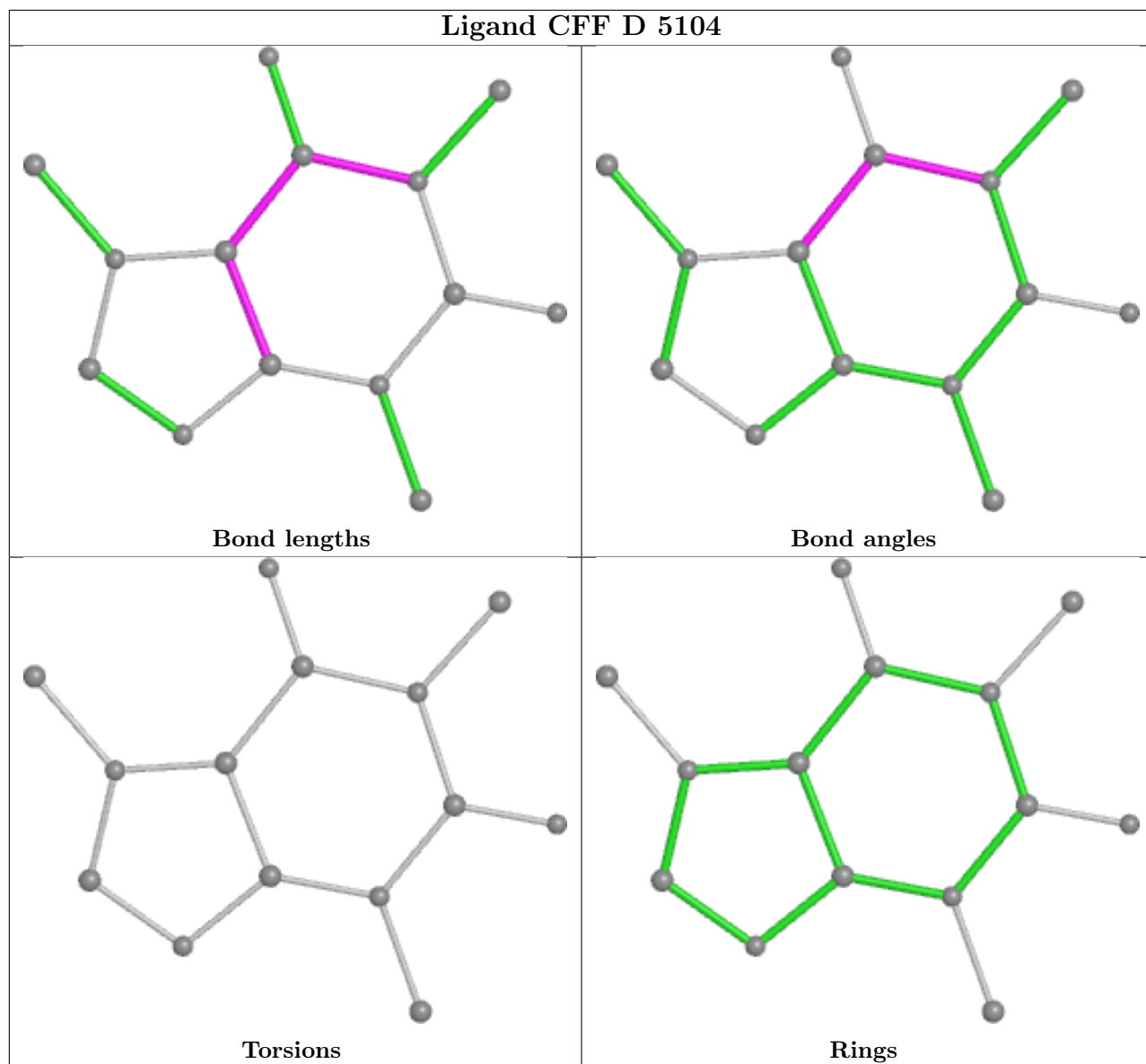
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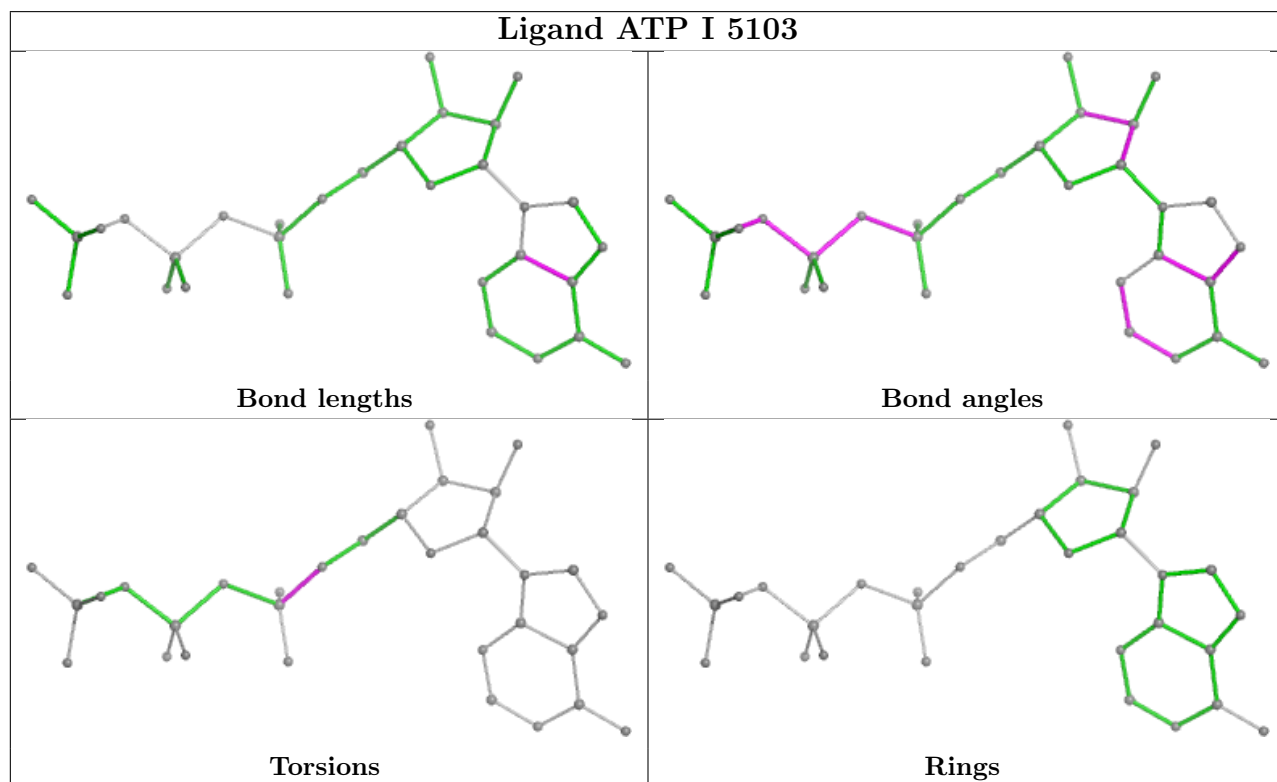
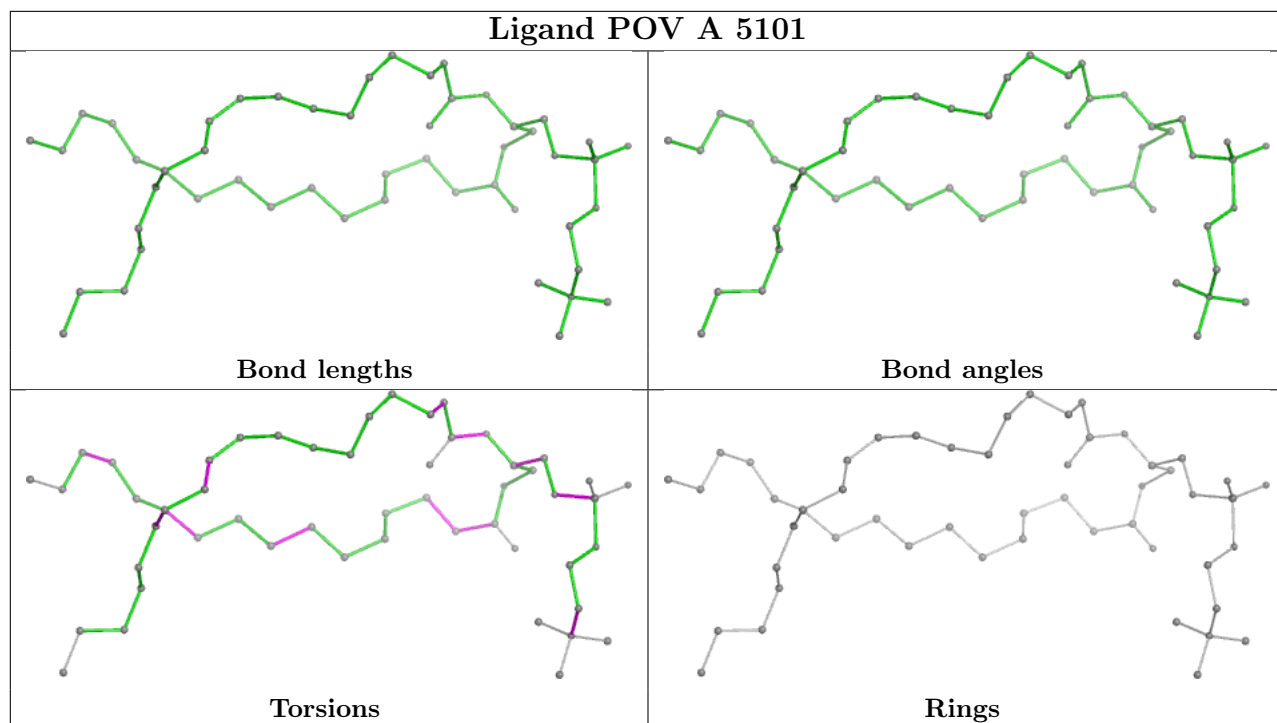
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	5101	POV	1	0
6	I	5103	ATP	2	0
6	D	5103	ATP	3	0
7	G	5104	CFF	2	0
5	D	5102	POV	3	0
7	A	5104	CFF	1	0
5	I	5102	POV	1	0
5	G	5102	POV	3	0
6	A	5103	ATP	3	0

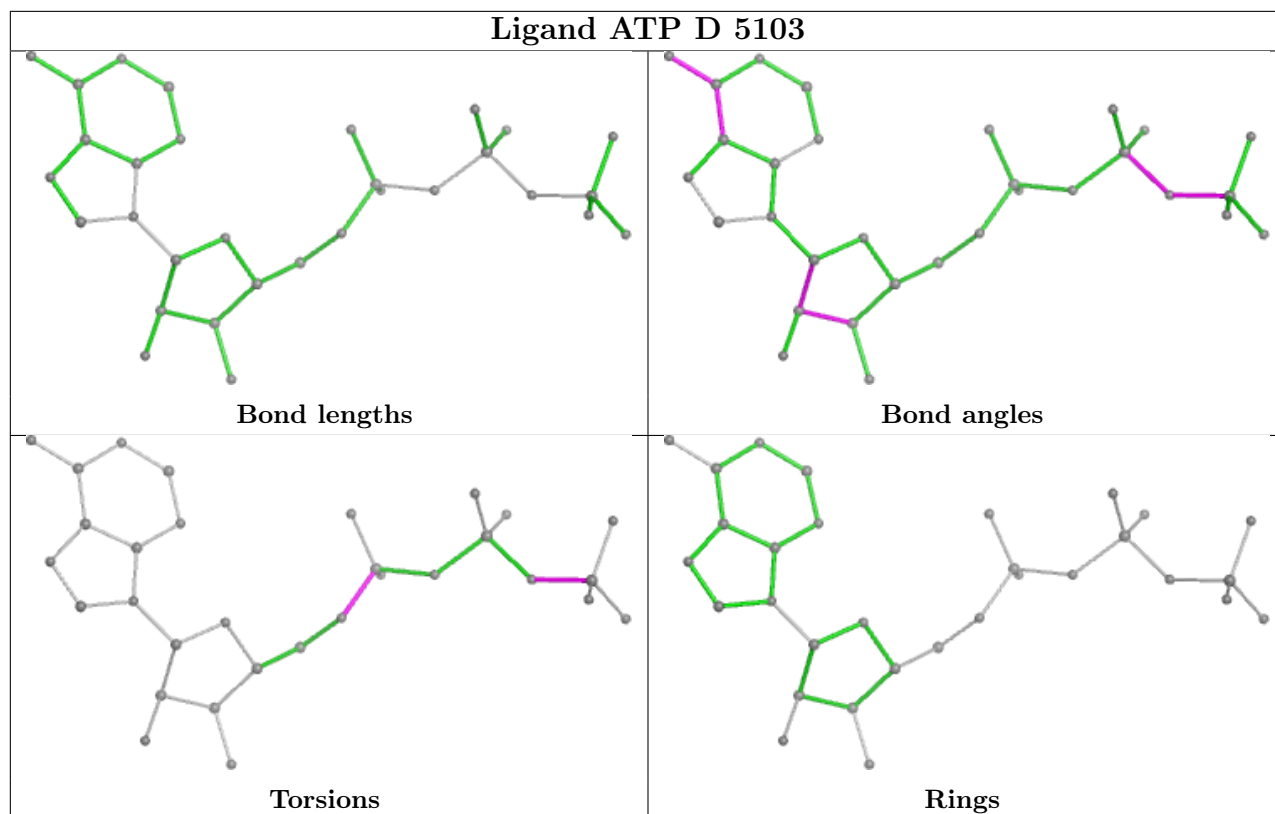
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

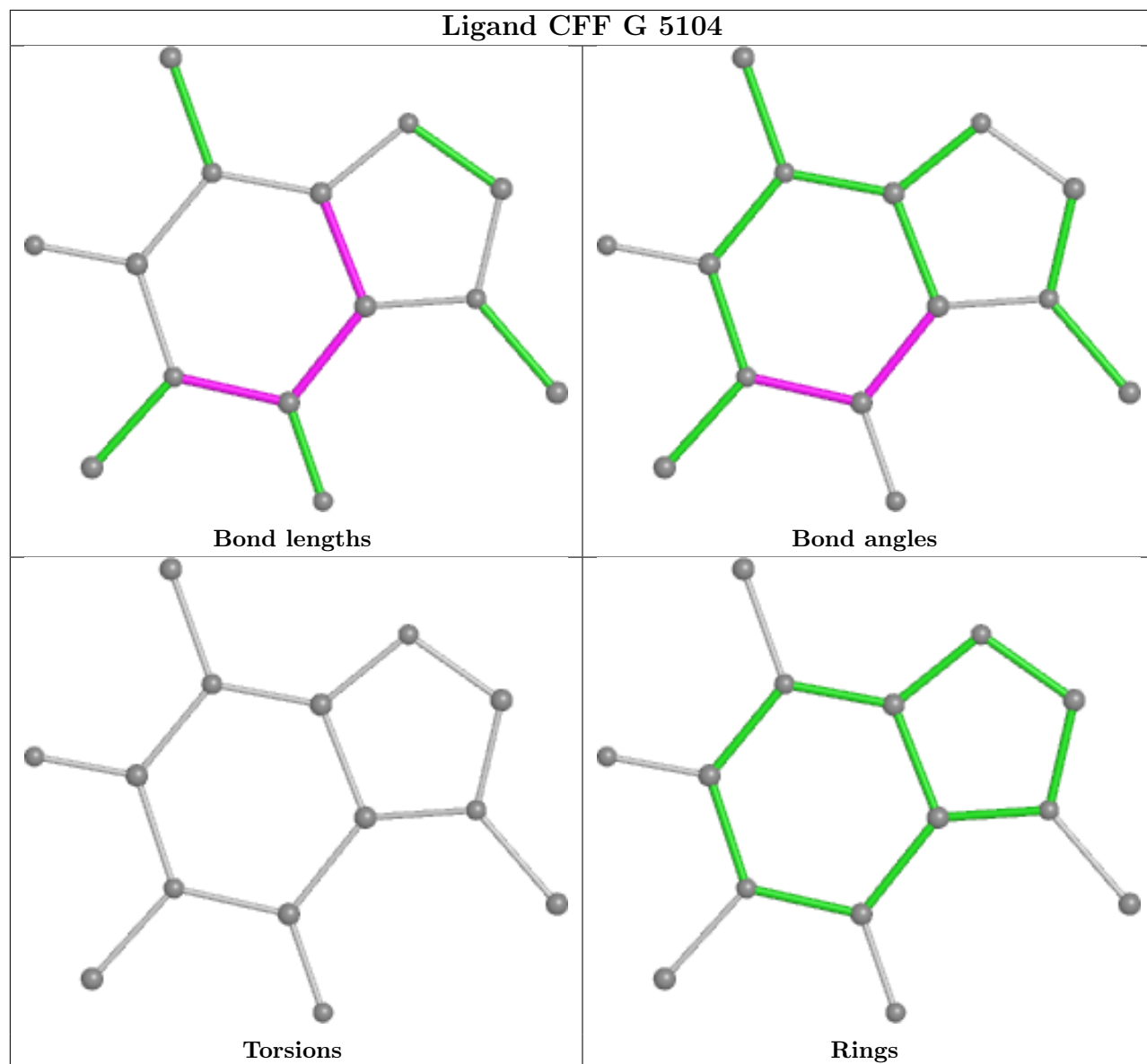


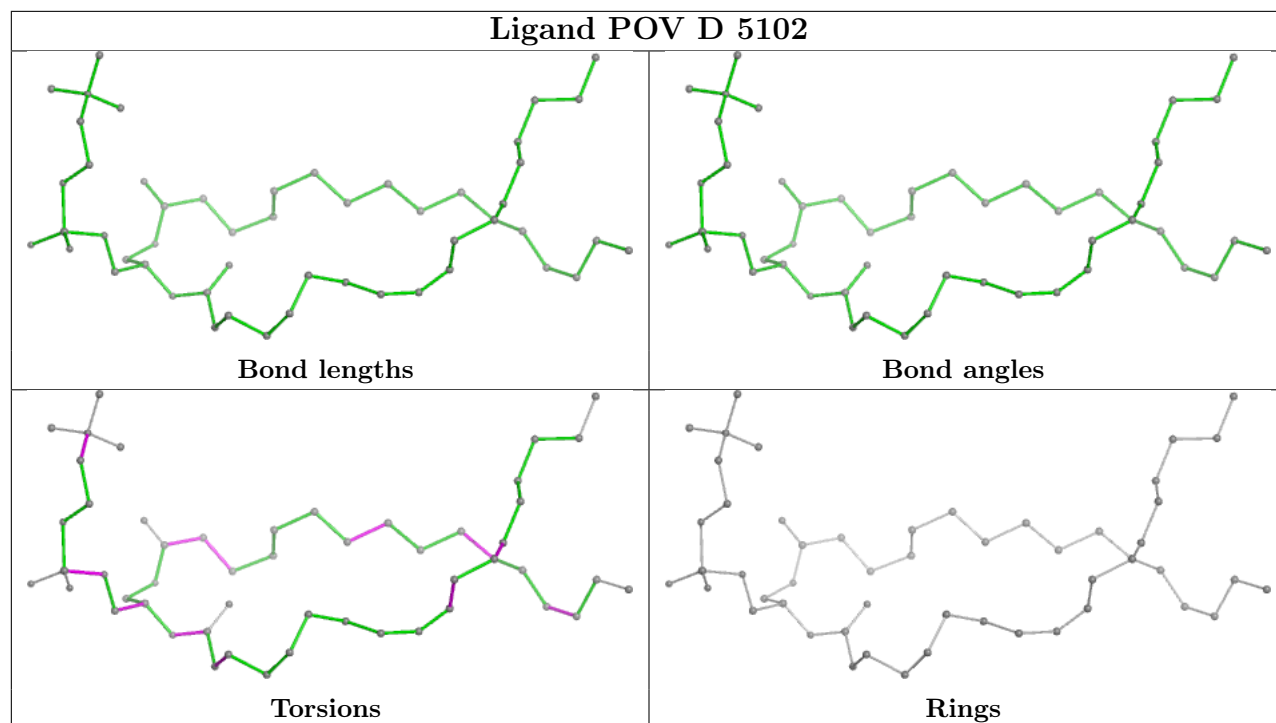


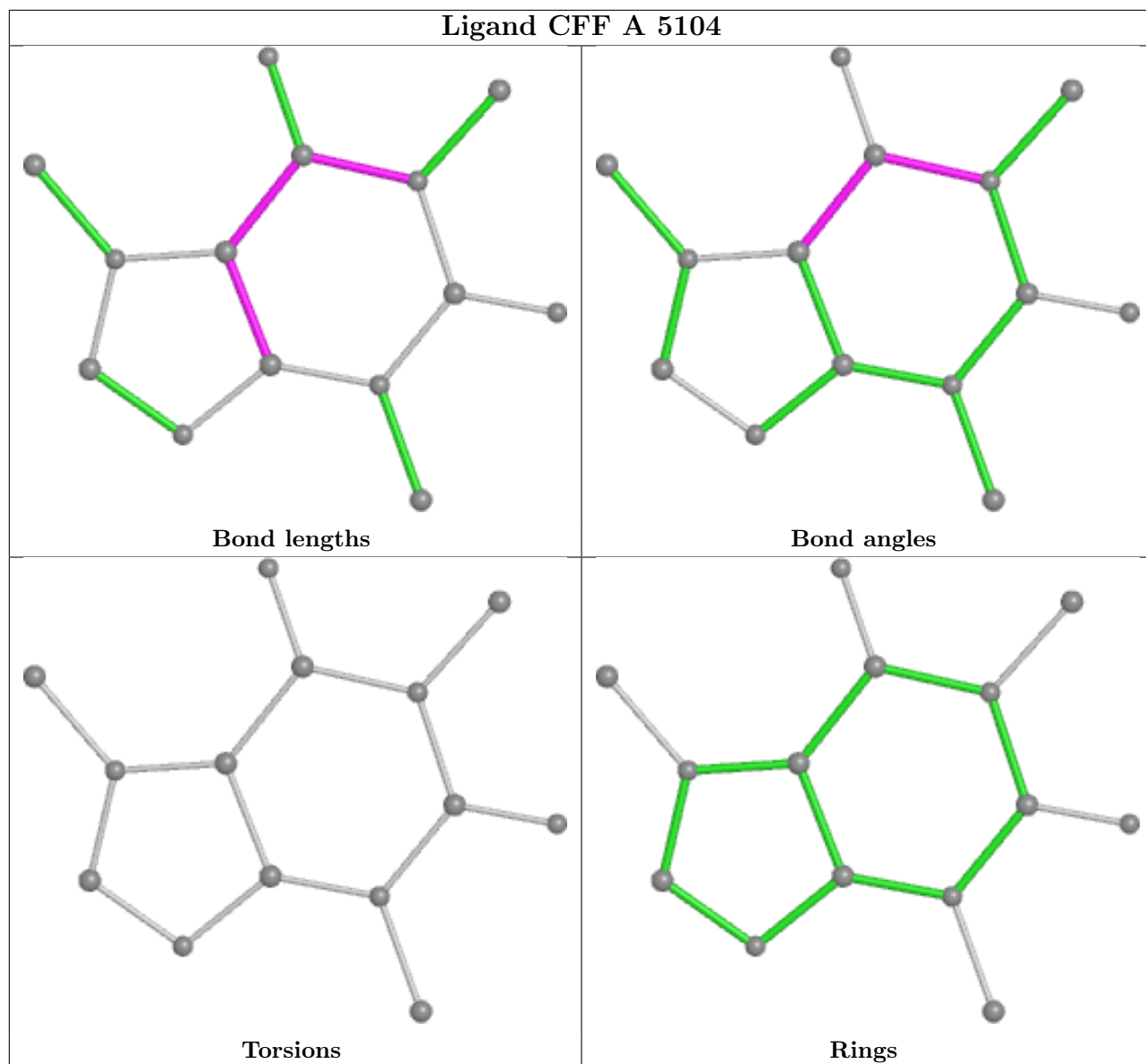


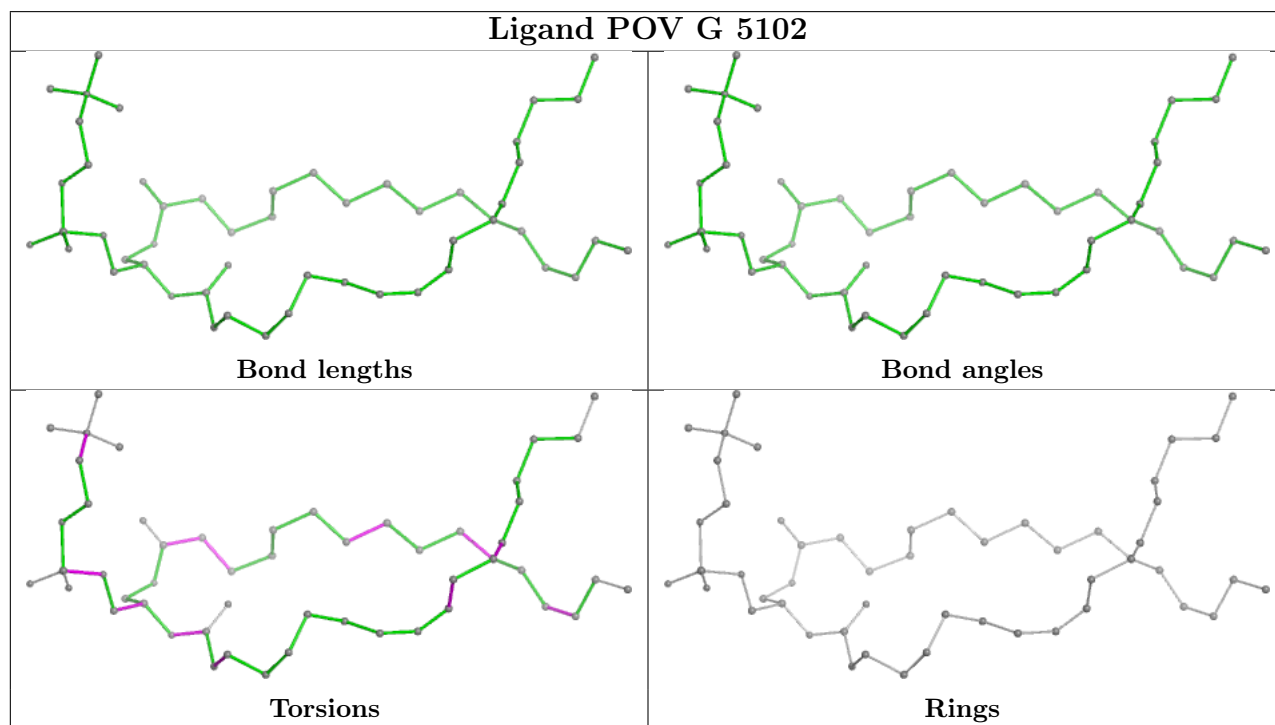
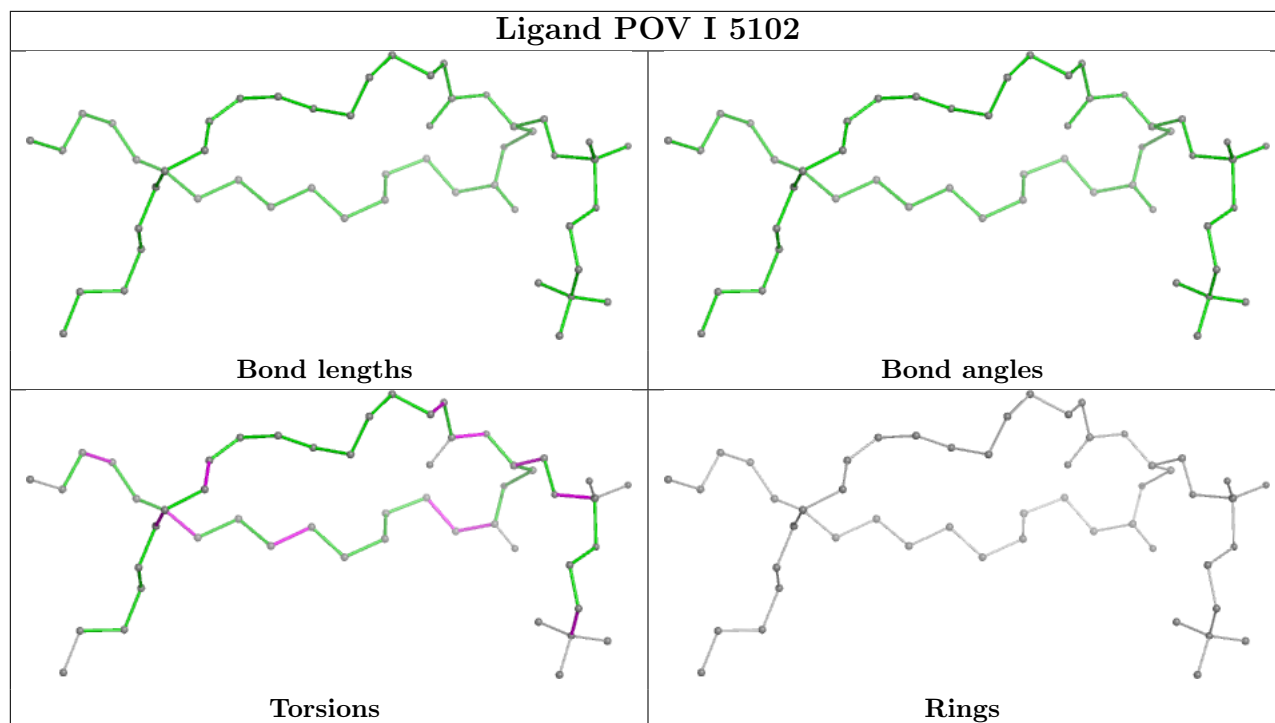


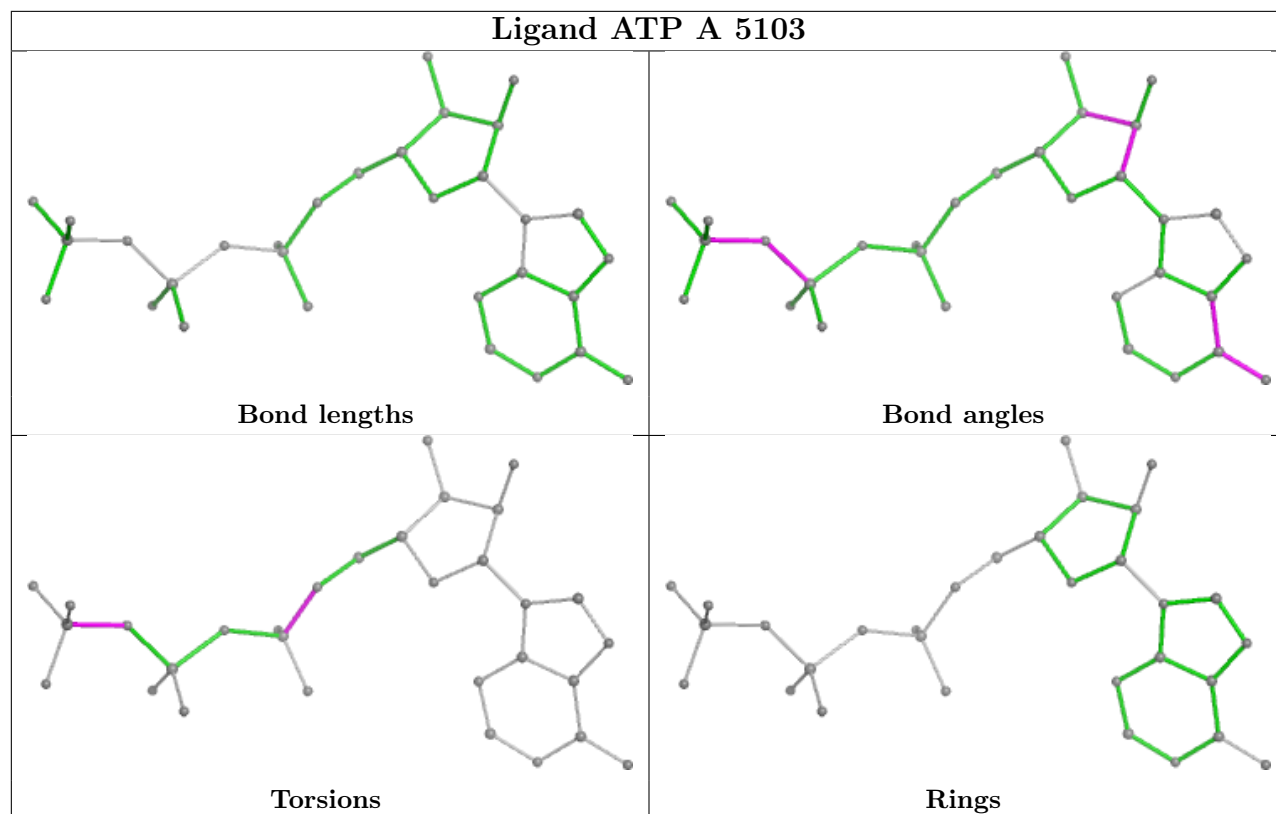












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

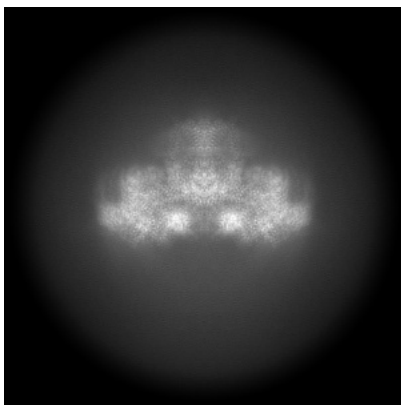
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-19468. These allow visual inspection of the internal detail of the map and identification of artifacts.

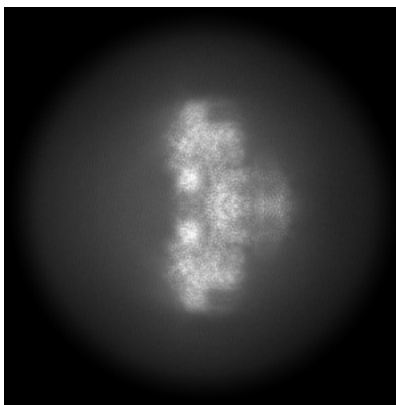
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

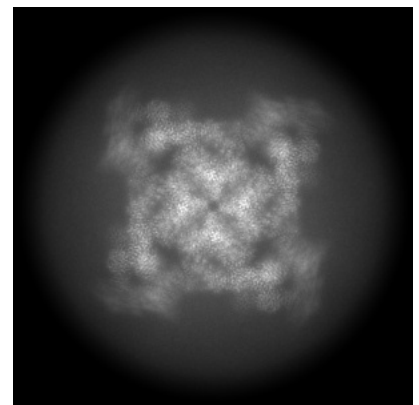
6.1.1 Primary map



X



Y

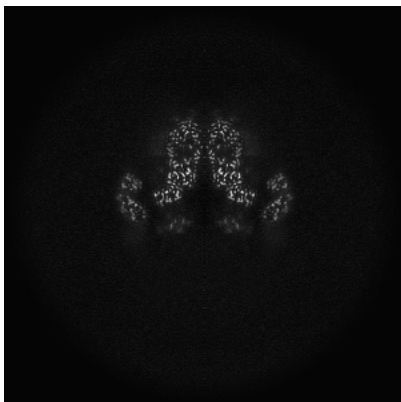


Z

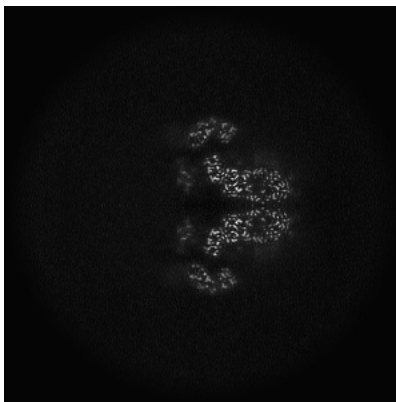
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

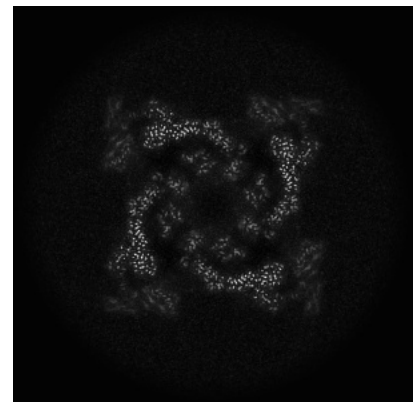
6.2.1 Primary map



X Index: 225



Y Index: 225

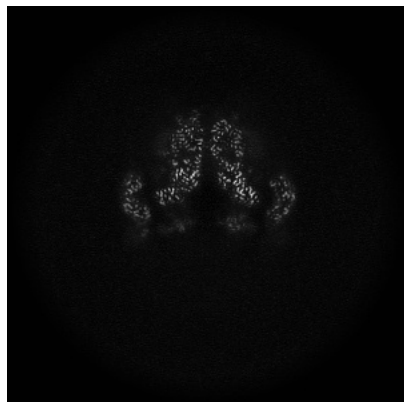


Z Index: 225

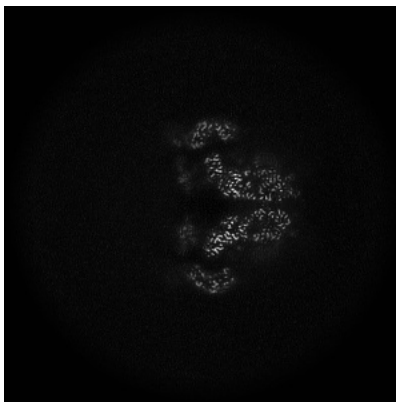
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

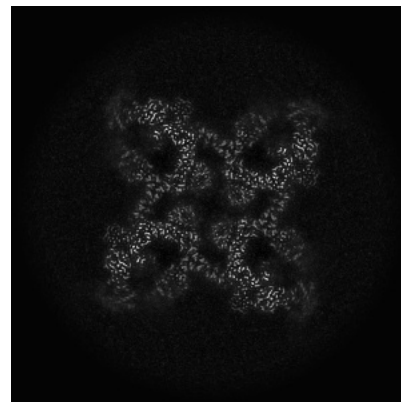
6.3.1 Primary map



X Index: 223



Y Index: 223

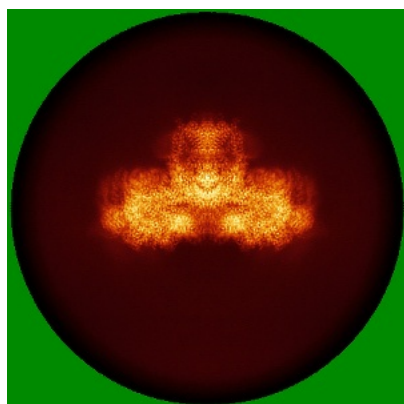


Z Index: 210

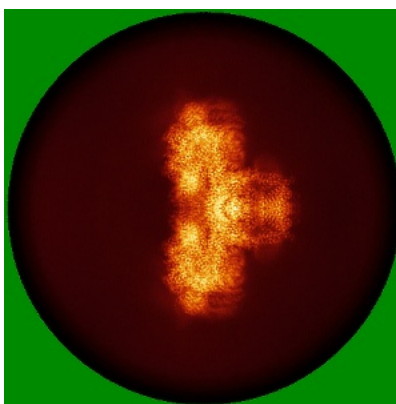
The images above show the largest variance slices of the map in three orthogonal directions.

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

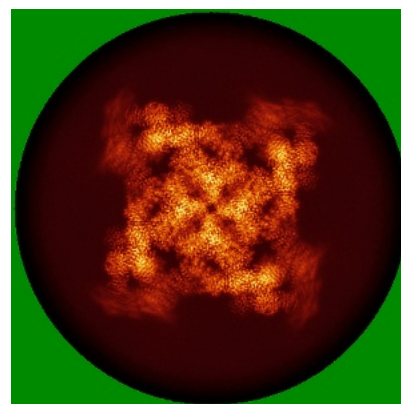
6.4.1 Primary map



X



Y

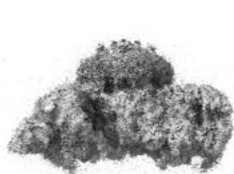


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.2. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

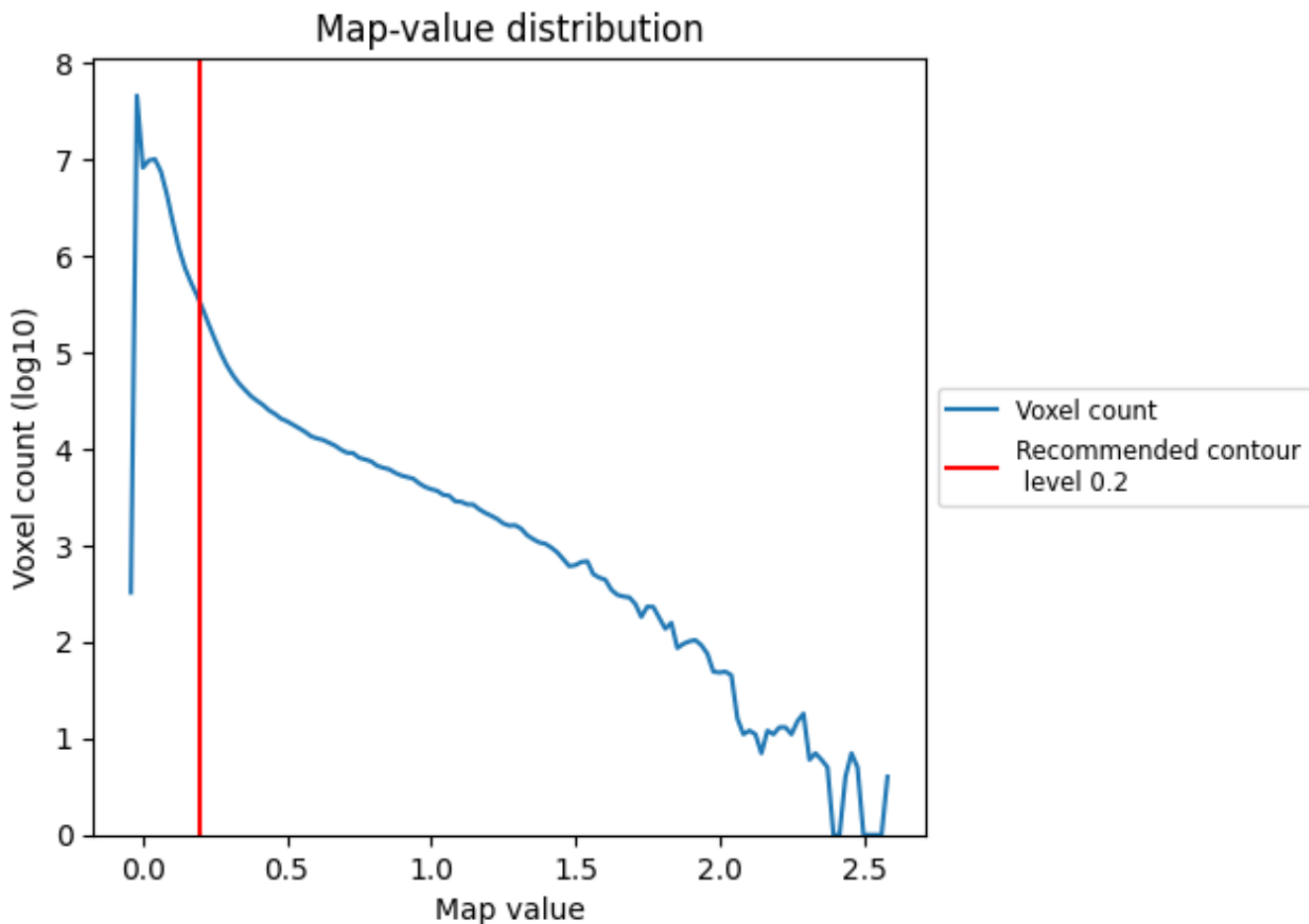
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

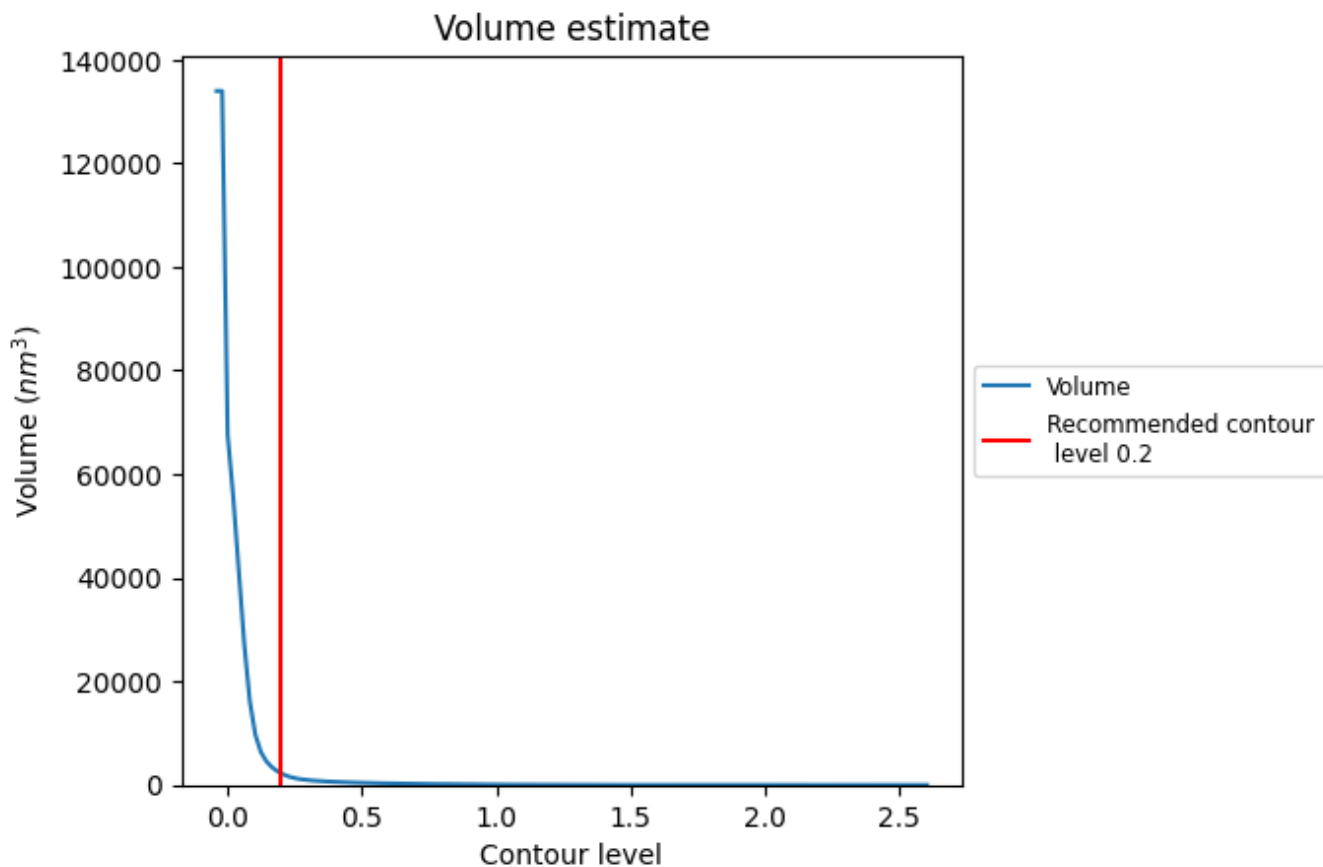
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

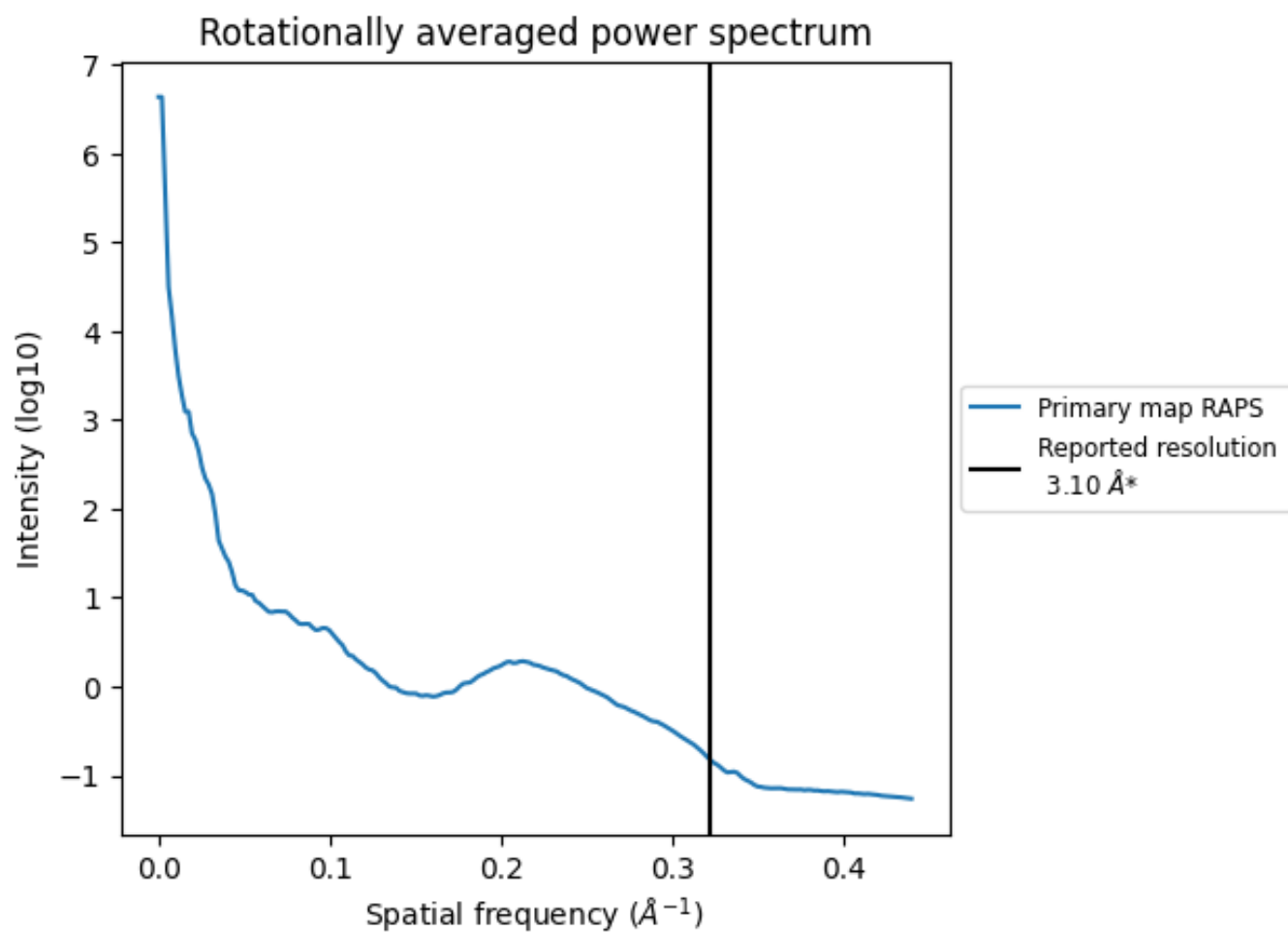
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2259 nm^3 ; this corresponds to an approximate mass of 2041 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](#)

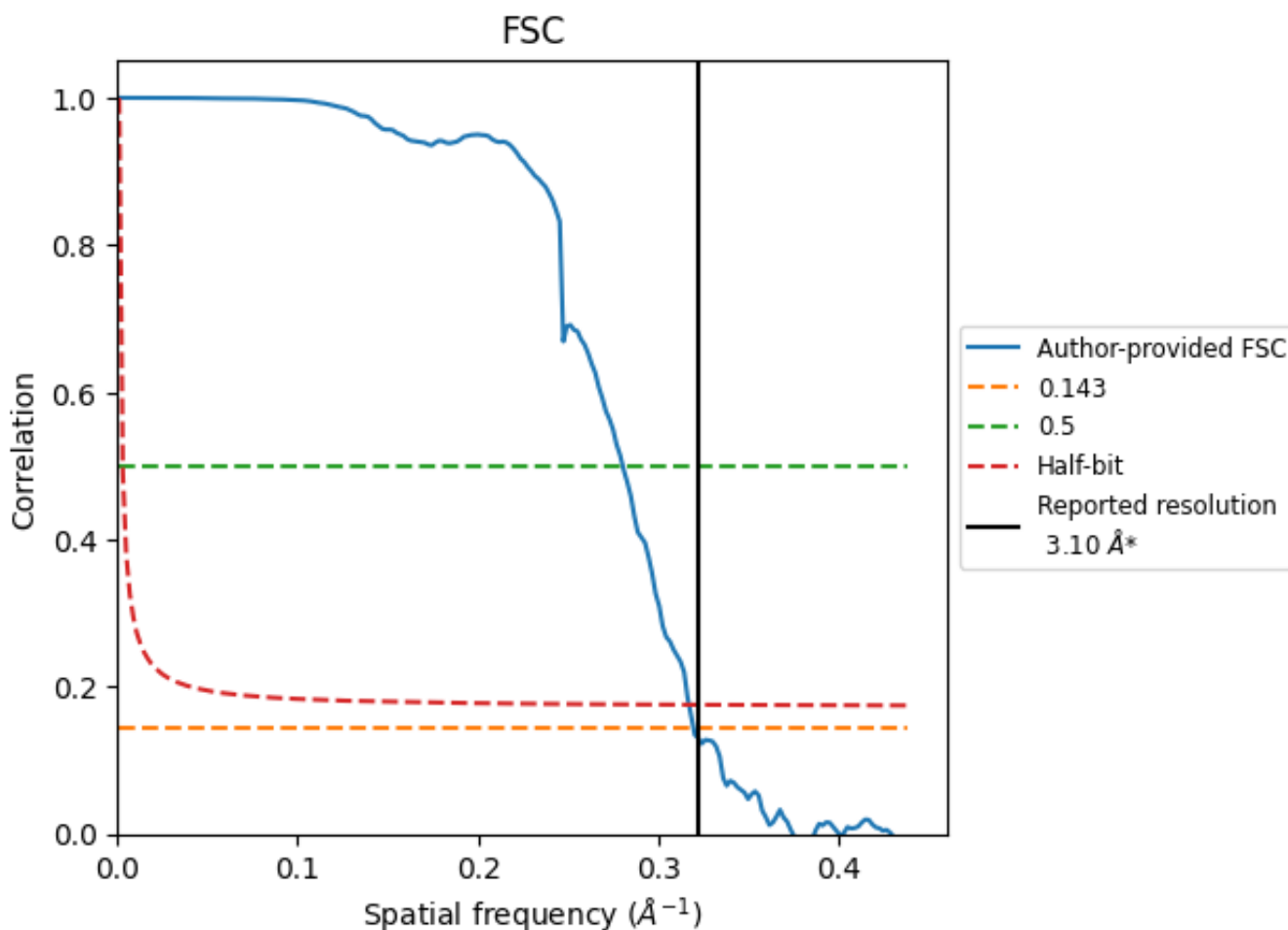


*Reported resolution corresponds to spatial frequency of 0.323 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.323 Å⁻¹

8.2 Resolution estimates [i](#)

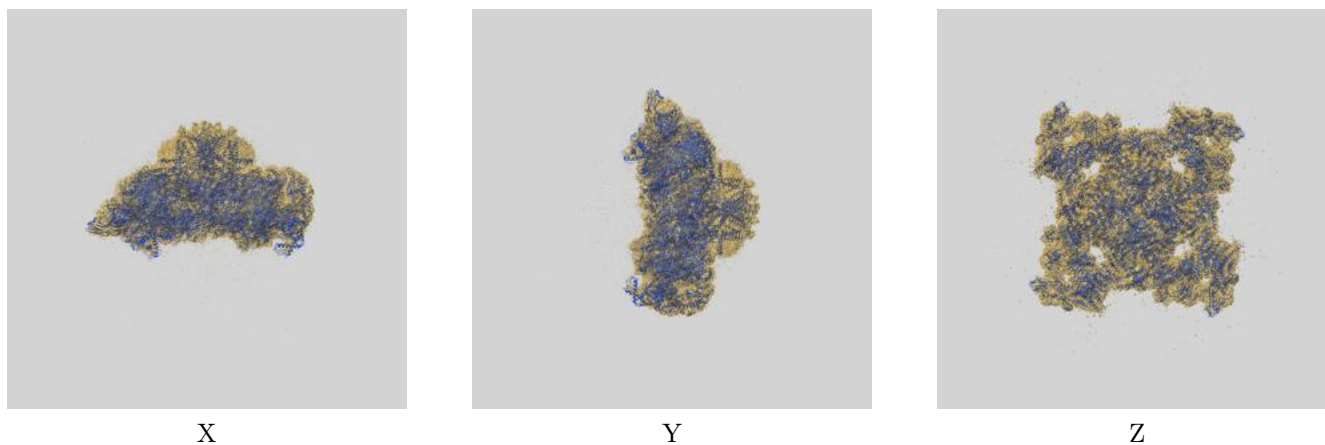
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	3.13	3.57	3.15
Unmasked-calculated*	-	-	-

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

9 Map-model fit [i](#)

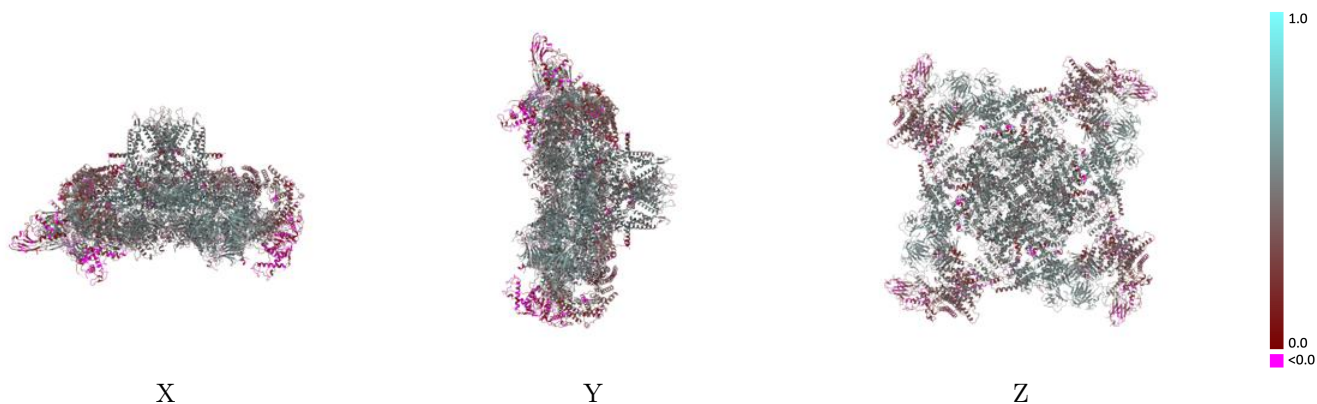
This section contains information regarding the fit between EMDB map EMD-19468 and PDB model 8RRX. Per-residue inclusion information can be found in section 3 on page 8.

9.1 Map-model overlay [i](#)



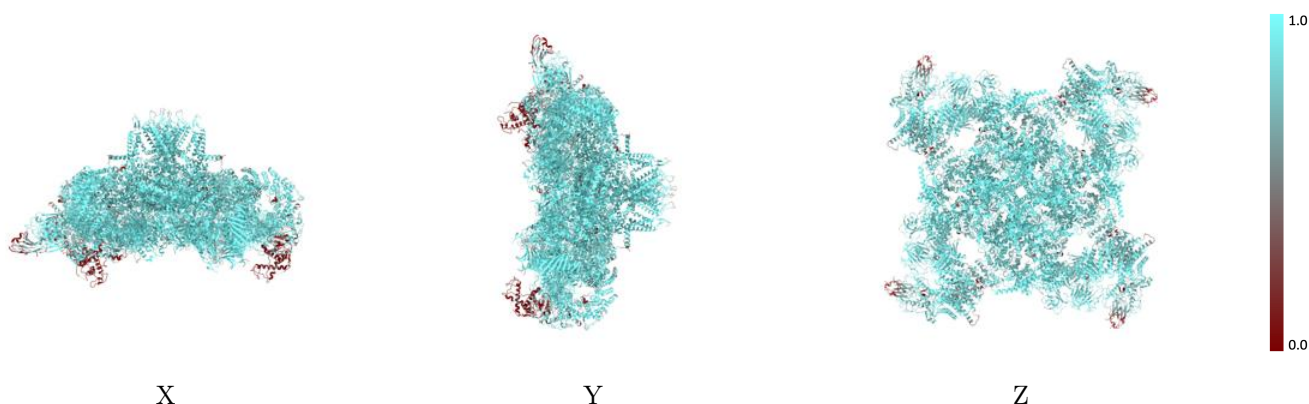
The images above show the 3D surface view of the map at the recommended contour level 0.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



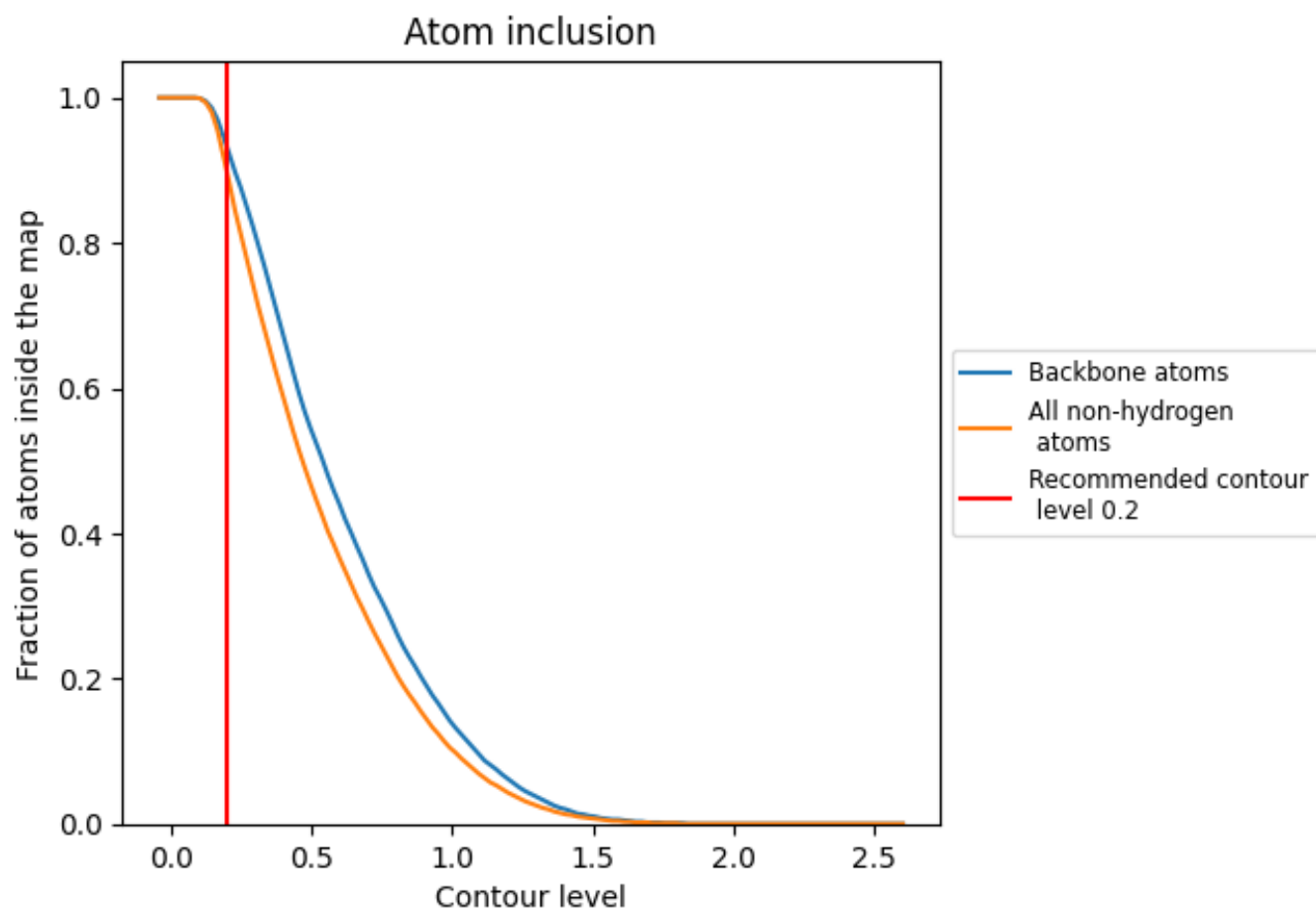
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.2).



























9.4 Atom inclusion [i](#)



At the recommended contour level, 93% of all backbone atoms, 90% 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 (0.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8980	 0.4240
A	 0.9090	 0.4300
C	 0.4850	 0.1360
D	 0.9090	 0.4300
E	 0.4900	 0.1350
F	 0.9070	 0.5000
G	 0.9090	 0.4300
H	 0.9020	 0.5020
I	 0.9090	 0.4300
J	 0.9070	 0.5040
K	 0.4870	 0.1370
L	 0.9030	 0.5030
M	 0.4910	 0.1370

