



Full wwPDB EM Validation Report ⓘ

Mar 19, 2024 – 11:35 PM JST

PDB ID : 6JRR
EMDB ID : EMD-9879
Title : Structure of RyR2 (*F/A/C/L-Ca²⁺ dataset)
Authors : Gong, D.S.; Chi, X.M.; Zhou, G.W.; Huang, G.X.Y.; Lei, J.L.; Yan, N.
Deposited on : 2019-04-05
Resolution : 3.90 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:

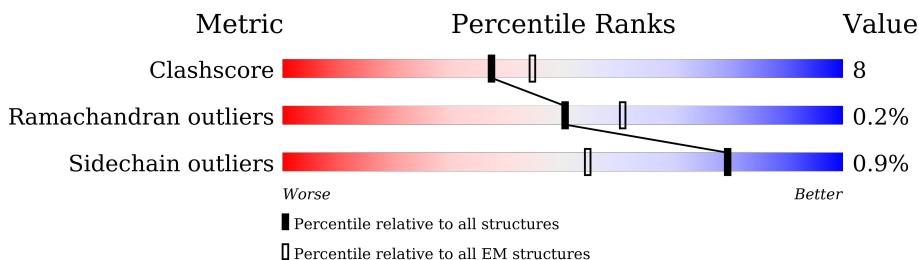
EMDB validation analysis : 0.0.1.dev70
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry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

1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.90 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	4968	
1	C	4968	
1	E	4968	
1	G	4968	
2	B	108	
2	D	108	
2	F	108	
2	H	108	

2 Entry composition [i](#)

There are 6 unique types of molecules in this entry. The entry contains 109132 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 RyR2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	3460	26417	16833	4528	4900	156	0	0
1	C	3460	26417	16833	4528	4900	156	0	0
1	E	3460	26417	16833	4528	4900	156	0	0
1	G	3460	26417	16833	4528	4900	156	0	0

- Molecule 2 is a protein called Peptidyl-prolyl cis-trans isomerase FKBP1B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	107	819	516	144	155	4	0	0
2	D	107	819	516	144	155	4	0	0
2	F	107	819	516	144	155	4	0	0
2	H	107	819	516	144	155	4	0	0

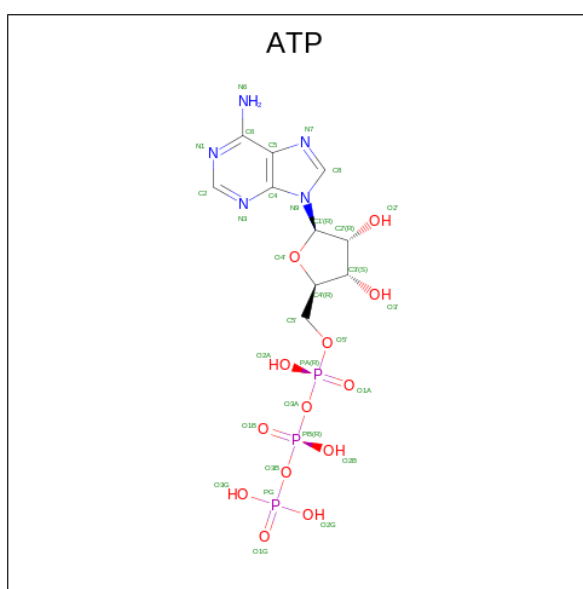
- Molecule 3 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
3	A	1	Total	Zn	0
			1	1	
3	C	1	Total	Zn	0
			1	1	
3	E	1	Total	Zn	0
			1	1	
3	G	1	Total	Zn	0
			1	1	

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

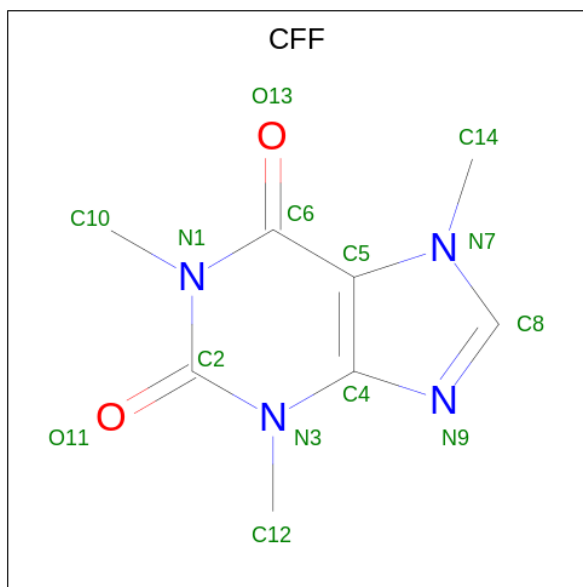
Mol	Chain	Residues	Atoms	AltConf
4	A	1	Total Ca 1 1	0
4	C	1	Total Ca 1 1	0
4	E	1	Total Ca 1 1	0
4	G	1	Total Ca 1 1	0

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

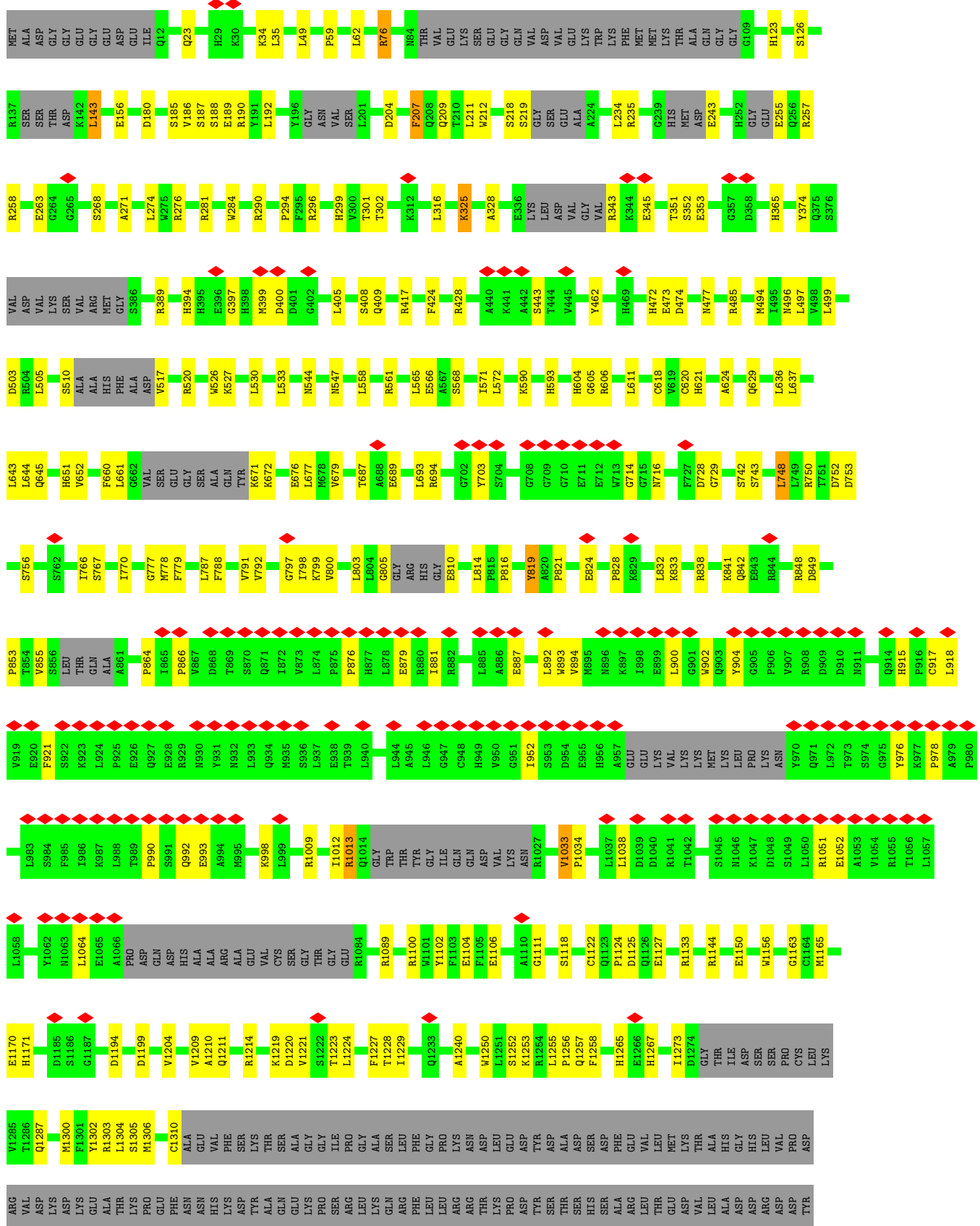


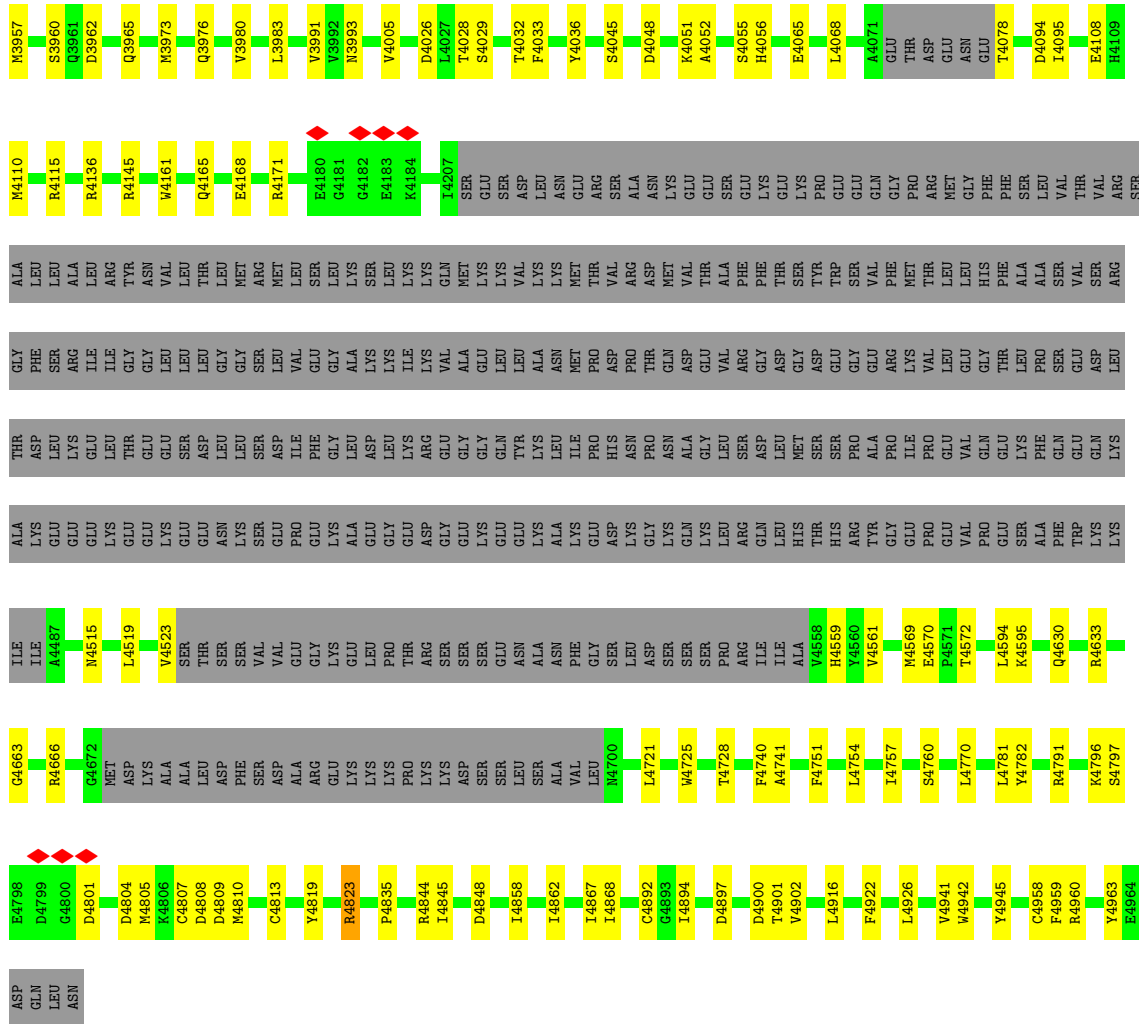
Mol	Chain	Residues	Atoms	AltConf
5	A	1	Total C N O P 31 10 5 13 3	0
5	C	1	Total C N O P 31 10 5 13 3	0
5	E	1	Total C N O P 31 10 5 13 3	0
5	G	1	Total C N O P 31 10 5 13 3	0

- Molecule 6 is CAFFEINE (three-letter code: CFF) (formula: $C_8H_{10}N_4O_2$).

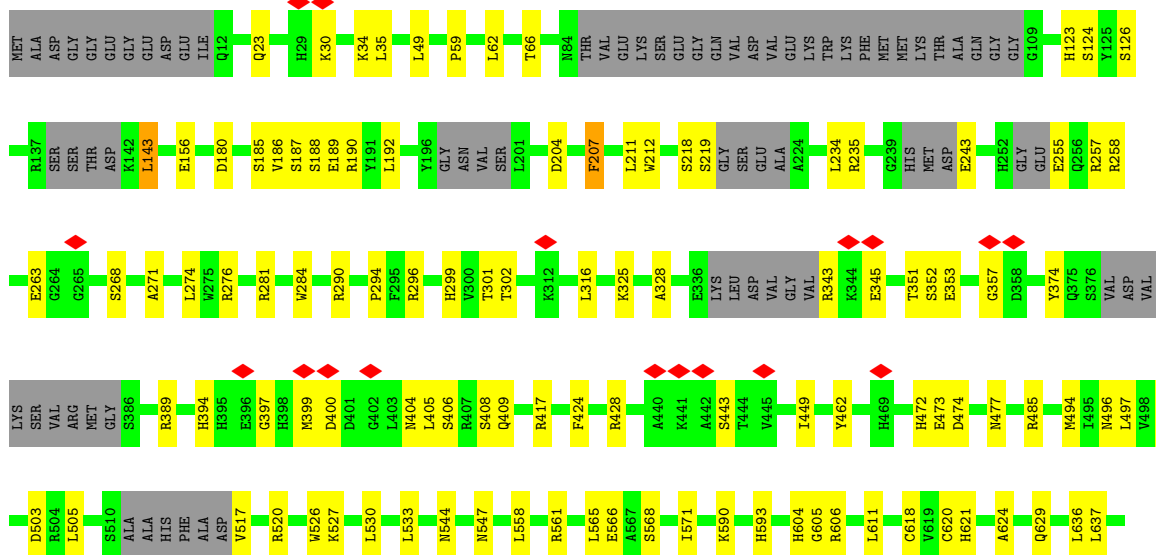


Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
6	A	1	Total	C	N	O	0
			14	8	4	2	
6	C	1	Total	C	N	O	0
			14	8	4	2	
6	E	1	Total	C	N	O	0
			14	8	4	2	
6	G	1	Total	C	N	O	0
			14	8	4	2	



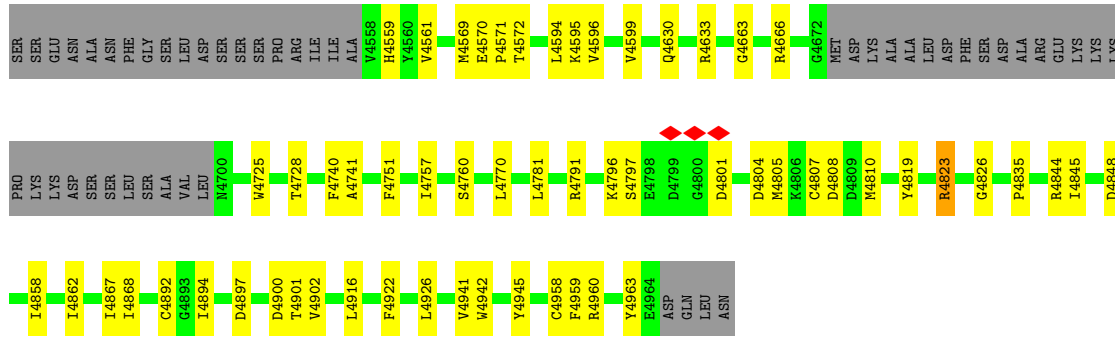


• Molecule 1: RyR2

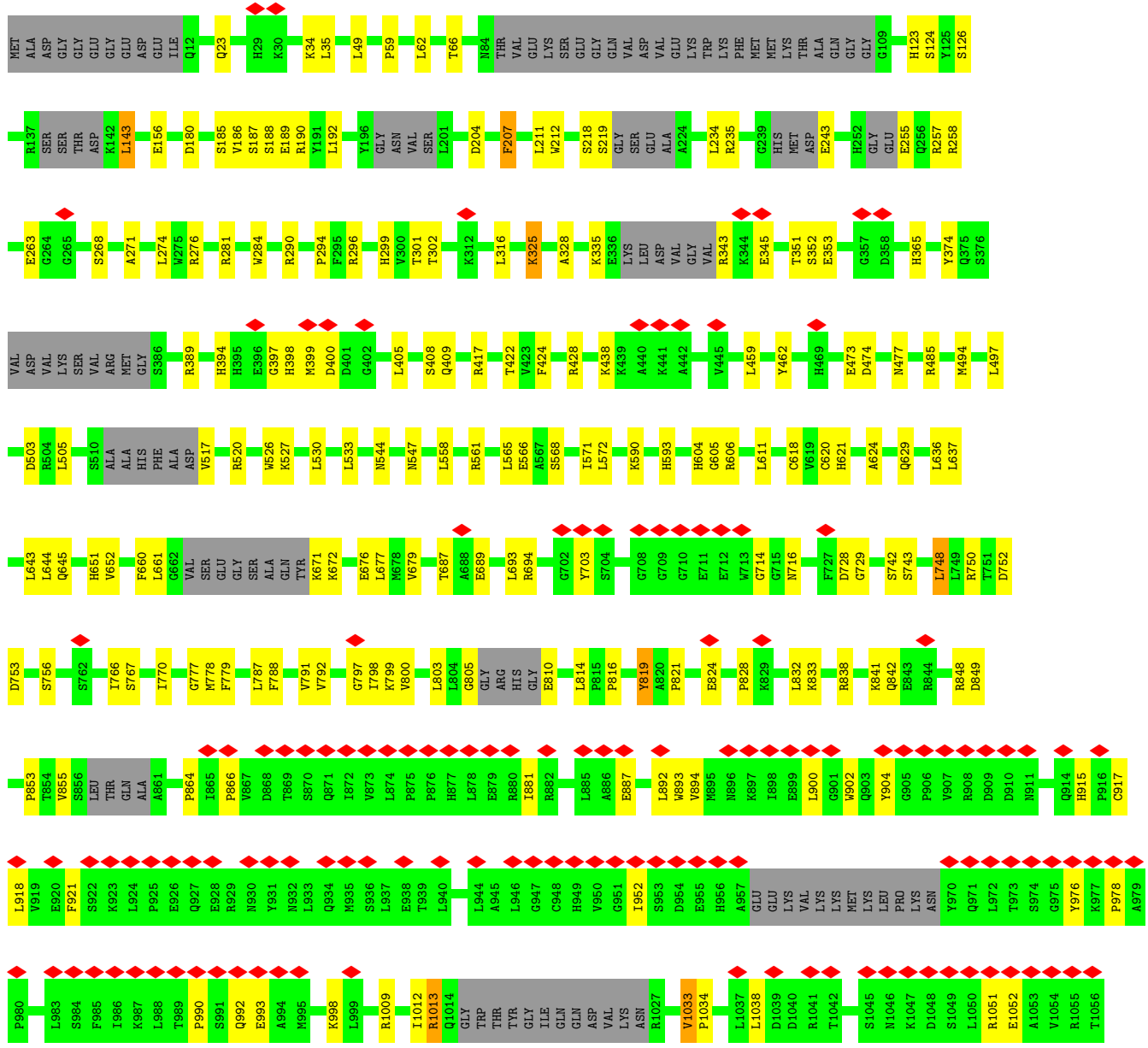


L643	L644	Q645	H651	V652	F660	L661	G662	VAL	SER	GLU	GLY	SER	ALA	GLN	TYR	K671	K672	E676	L677	M678	V679	T687	A688	E689	L693	R694	G702	Y703	S704	G708	G709	G710	E711	E712	W713	G714	G715	N716	F727	D728	G729	S742	S743	L748	L749	D909	D910	W750	T751	D752	D753					
S762	T766	S767	I770	G777	M778	F779	V867	L868	F788	SER	VAL	Y91	Y92	G797	I798	K799	V800	L803	L804	G805	GLY	ARG	HIS	GLY	E810	L814	P815	P816	Y819	A820	P821	G824	P828	K829	L832	K833	R838	K841	Q842	E843	R844	R848	D849	P853	T854											
V855	S856	LEU	THR	GLN	ALA	A861	P864	I865	P866	E868	T869	S870	Q871	I872	V873	L874	P875	P876	H877	L878	E879	R880	I881	G882	L885	A886	E887	L892	W893	V894	M895	N896	K897	I898	E899	L900	G901	W902	Q903	Y904	G905	P906	V907	R908	D909	D910	N911	Q914	H915	P916	C917	L918	V919	E920		
F921	S922	K923	L924	P925	E926	Q927	R928	E929	N930	Y931	N932	T933	Q934	M935	S936	E938	T939	P940	L944	A945	L946	G947	C948	H949	V950	G951	I952	S953	D954	E955	H956	A957	GLU	GLU	LYS	VAL	LYS	LYS	MET	LYS	LEU	PRO	LYS	ASN	Y970	Q971	L972	T973	S974	G975	Y976	K977	P978	A979	P980	L983
S984	F985	I986	K987	L988	T989	P990	S991	Q992	E993	A994	M995	L999	R1009	I1012	R1013	Q1014	GLY	TRP	THR	TYR	GLY	ILE	GLN	GLN	ASP	VAL	LYS	ASN	V1033	P1034	L1037	L1038	D1039	D1040	R1041	T1042	S1045	N1046	K1047	D1048	S1049	L1050	R1051	R1052	A1053	V1054	R1055	T1056	L1057	L1058	Y1062					
M1063	L1064	E1065	A1066	PRO	ASP	GLN	ASP	HIS	ALA	ALA	ARG	ALA	VAL	VAL	CYS	SER	GLY	THR	R1069	R1100	W1101	F1102	F1103	E1104	F1105	E1106	A1110	G1111	S1118	C1122	G1123	P1124	D1125	Q1126	E1127	R1133	R1144	E1150	W1156	G1163	C1164	M1165	E1170	H1171												
D1185	S1186	G1187	D1194	D1199	V1204	V1209	A1210	Q1211	R1214	K1219	D1220	V1221	S1222	T1223	L1224	F1227	T1228	I1229	Q1233	A1240	W1250	L1251	S1252	K1253	R1254	L1255	Q1257	F1258	H1265	E1266	H1267	I1273	D1274	GLY	THR	ILE	ASP	SER	SER	PRO	CYS	LEU	LYS	T1285	L1286	Q1287										
M1300	F1301	Y1302	R1303	L1304	S1305	M1306	C1310	ALA	GLU	ASN	ASN	ALA	VAL	PHE	ASP	LYS	THR	ALA	ALA	GLY	GLY	ILE	PRO	PRO	GLY	ALA	SER	ARG	PHE	ALA	ASP	ASP	ASP	ASP	ASP	VAL	ALA	HIS	GLY	HIS	ASP	ASP	ASP	ASP	ARG	VAL	ASP									
LYS	ASP	GLU	LYS	ALA	THR	LYS	PRO	GLU	GLU	PHE	ASN	HIS	LYS	ASP	TYR	VAL	GLN	GLY	LYS	PRO	SER	ARG	LEU	LEU	GLN	ARG	GLN	ARG	PHE	LEU	LEU	LEU	THR	TYR	SER	THR	VAL	LEU	ALA	ALA	ASP	ASP	ASP	ASP	ASP	TYR	ASP	TYR	LEU							
MET	GLN	THR	SER	Y1426	S1429	V1430	R1431	P1434	GLY	GLN	GLU	PRO	M1440	V1443	G1444	W1445	I1446	D1454	L1459	ASP	ARG	VAL	ARG	THR	V1465	V1466	T1468	K1473	G1474	K1475	V1476	H1477	E1478	S1479	R1482	S1483	M1484	CYS	Y1486	M1487	A1490	GLY	GLU	SER	MET	PRO	GLY									
GLN	GLY	ARG	ASN	N1502	L1506	E1506	I1507	V1510	V1511	ASP	ALA	ALA	SER	G1516	T1521	D1526	P1535	S1536	F1540	P1541	A1542	F1543	F1544	A1545	T1548	S1549	E1556	LEU	GLY	ARG	ILE	LYS	ASN	VAL	MET	PRO	LEU	SER	A1568	G1569	L1570	F1571	K1572	S1573	E1574	V1579	P1580	R1585								
Q1589	L1595	W1596	S1597	R1598	M1599	P1600	M1601	Q1602	F1603	R1610	I1611	S1612	E1613	R1614	M1617	L1618	V1619	Q1620	C1621	L1622	L1625	S1629	L1630	H1631	I1632	E1633	E1634	I1641	L1642	E1643	L1644	T1645	L1651	V1655	R1659	L1660	L1667	G1668	M1669	S1678	E1682	Y1687	P1688	S1849	M1691	S1712										
S1713	Y1714	R1718	T1733	I1736	T1737	L1738	G1741	GLU	ASN	LYS	LYS	HIS	GLY	LEU	F1749	F1750	T1755	S1756	L1757	R1758	F1763	V1769	E1781	F1782	D1785	I1792	D1808	P1809	G1810	V1811	F1816	K1823	L1828	K1840	H1841	L1842	Q1843	L1844	E1847	P1848	S1849	VAL	PHE													
LYS	GLU	ALA	PRO	GLU	GLU	GLU	THR	LEU	GLU	LYS	GLU	PRO	CYS	ALA	SER	GLY	ASP	ARG	LEU	GLU	GLY	PRO	ALA	GLU	GLU	SER	LYS	GLY	LYS	ARG	PRO	LYS	GLU	G1893	K1904	A1925	S1930	D1931	D1932	D1939	R1942	F1943	Q1950	A1951	L1952	ASN										

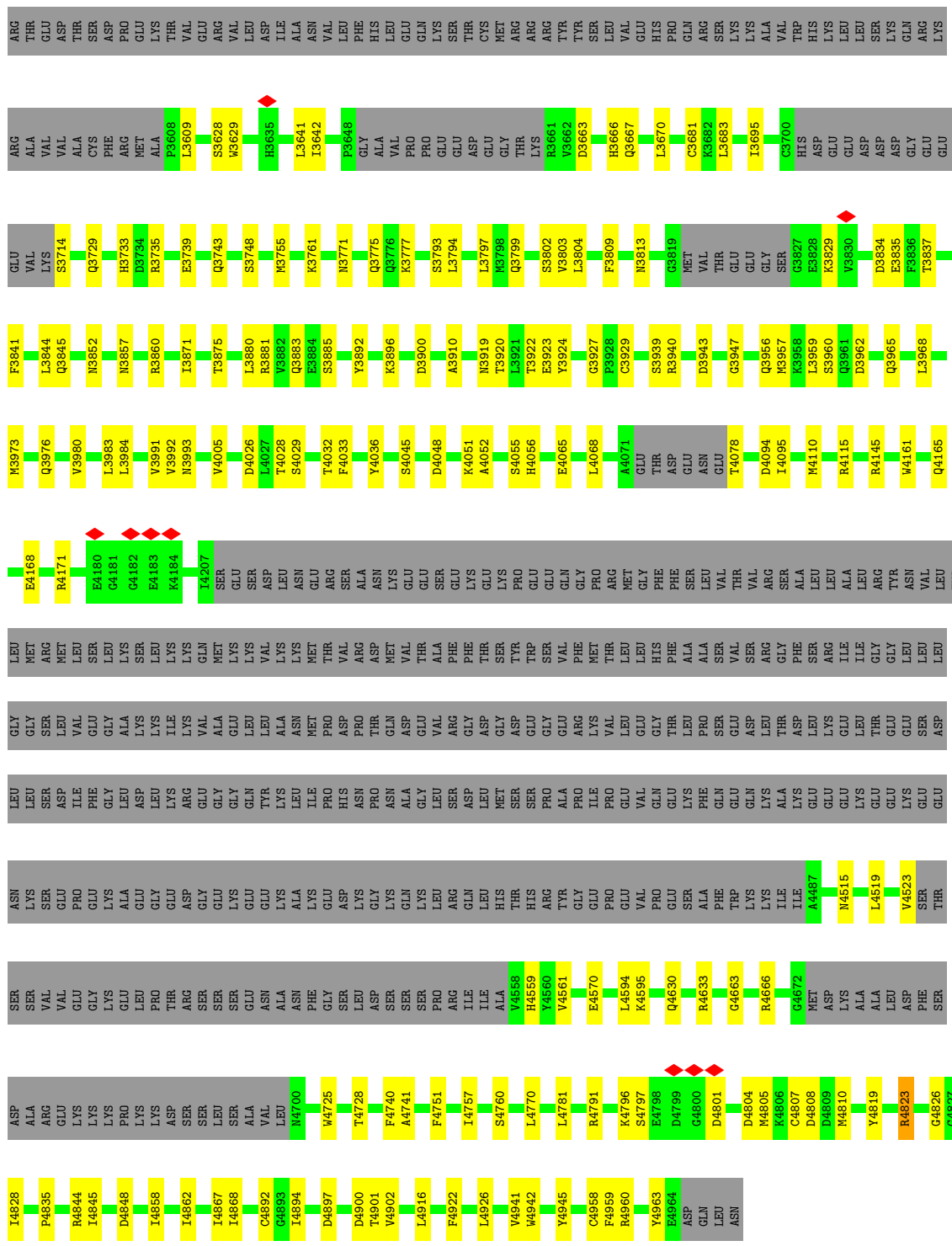
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K2889	A2890	Q2891	D2892	I2893	L2894	K2895	F2896	L2897	Q2898	I2899	N2900	G2901	Y2902	A2903	V2904	S2905	R2906	E2847	N2848	Y2849	H2850	M2851	L2852	M2853	K2855	K2856	K2857	K2858	L2859	E2860	L2861	E2862	S2863	K2864	G2865	G2866	G2867	M2868	H2869	P2870	L2871	L2872	V2873	P2874	Y2875	D2876	T2877	L2878	T2879	A2880	K2881	E2882	K2883	A2884	D2885	E2886	E2887		
M2829	S2830	M2831	V2832	T2833	L2834	S2835	R2836	D2837	L2838	H2839	A2840	M2841	A2842	E2843	M2844	M2845	A2846	E2847	N2848	Y2849	H2850	M2851	L2852	M2853	K2855	K2856	K2857	K2858	L2859	E2860	L2861	E2862	S2863	K2864	G2865	G2866	G2867	M2868	H2869	P2870	L2871	L2872	V2873	P2874	Y2875	D2876	T2877	L2878	T2879	A2880	K2881	E2882	K2883	A2884	D2885	E2886	E2887		
K2769	E2770	I2771	Y2772	R2773	W2774	P2775	I2776	K2777	E2778	S2779	L2780	K2781	T2782	M2783	L2784	A2785	W2786	G2787	W2788	R2789	I2790	E2791	L2792	T2793	R2794	E2795	G2796	D2797	SER	MET	ALA	LEU	TYR	ARG	THR	ILE	GLN	THR	SER	GLN	VAL	VAL	ASP	A2818	A2819	H2820	G2821	Y2822	S2823	P2824	R2825	A2826	I2827	D2828					
T2709	S2710	N2711	L2712	T2713	L2714	P2715	E2716	K2717	L2718	E2719	Y2720	F2721	L2722	N2723	K2724	Y2725	A2726	E2727	H2728	S2729	H2730	D2731	K2732	W2733	S2734	M2735	D2736	K2737	L2738	A2739	N2740	G2741	W2742	I2743	Y2744	G2745	E2746	I2747	Y2748	S2749	D2750	S2751	S2752	K2753	W2754	Q2755	P2756	L2757	M2758	K2759	P2760	Y2761	K2762	L2763	S2765	E2766	K2767	E2768	
K2609	G2627	TRP	GLY	ASN	PHE	GLY	ALA	A2634	D2651	A2652	L2653	SER	GLN	LYS	LYS	Y2658	F2663	L2667	P2668	C2669	A2672	F2678	PRO	ASP	TYR	MET	GLY	SER	ASN	TYR	VAL	LEU	SER	ASN	THR	GLN	ILE	THR	GLN	SER	GLN	VAL	VAL	ASP	A2818	A2819	H2820	G2821	Y2822	S2823	P2824	R2825	A2826	I2827	D2828				
ASP	THR	ALA	ALA	LEU	SER	ALA	T2511	M2518	R2519	Y2520	L2521	L2526	L2529	THR	ARG	CYS	ALA	PRO	L2536	E2540	A2543	V2553	TYR	ARG	LEU	SER	K2558	S2576	ILE	CYS	GLY	GLN	LEU	ASN	ARG	H2586	L2589	L2590	R2591	R2592	L2593	V2597	P2596	L2599	L2600	M2601	HIS	ALA	K2605										
GLU	GLY	GLU	GLU	ASP	THR	ILE	HIS	MET	G2386	I2420	R2425	S2426	L2427	L2430	L2433	Y2436	I2439	A2440	F2441	D2442	MET	PRO	THR	ILE	ALA	LYS	ASP	GLY	ASN	VAL	VAL	GLU	PRO	ASP	MET	SER	ALA	F2461	K2466	V2476	Y2477	GLY	ILE	GLU	V2481	A2501	S2502	L2503											
ASN	P2293	R2298	Y2299	L2300	D2301	V2307	V2314	E2315	E2316	M2317	V2322	R2323	L2324	L2325	L2326	R2327	P2328	P2329	E2330	CYS	PHE	GLY	PRO	LEU	ALA	LEU	ARG	GLY	ASN	ALA	GLU	ASP	PRO	ARG	ARG	ASP	GLY	ALA	F2461	K2466	V2476	Y2477	GLY	ILE	GLU	V2481	A2501	S2502	L2503										
GLU	SER	LYS	ILE	THR	PHE	F2191	S2208	R2209	S2227	V2228	GLY	LEU	ALA	SER	ALA	ALA	MET	ARG	GLY	SER	T2239	L2254	A2257	L2258	R2259	E2264	K2265	R2268	Y2269	L2270	A2271	L2275	GLN	SER	SER	GLN	CYS	GLN	LYS	TYR	PRO	ASP	ILE	GLY	TRP														
LYS	GLN	ALA	LYS	LEU	VAL	GLU	SER	ASP	SER	T2068	A2071	L2081	M2085	Y2093	L2099	L2103	N2110	S2113	D2116	L2120	R2128	L2131	S2132	V2133	ARG	MET	GLY	LYS	E2138	K2141	G2148	N2152	N2153	M2163	G2181	GLY	GLY	LYS	TYR	PRO	ASP	ILE	GLY	TRP															
MET	SER	ALA	ALA	THR	ALA	ARG	LYS	THR	LYS	GLU	PHE	ARG	SER	PRO	PRO	GLN	GLN	ILE	ASN	MET	LEU	ASN	PHE	LYS	ASP	ASP	GLY	PRO	CYS	PRO	CYS	PRO	PRO	PRO	E1991	D2013	GLU	ASP	GLY	SER	LEU	ASP	GLY	ASP	L2024	T2025	L2026	R2029	T2039	Y2039	LYS	LYS							



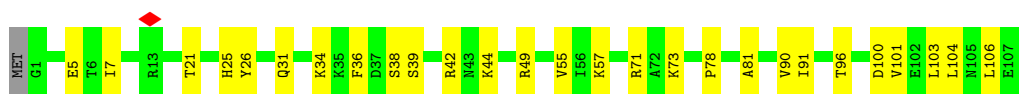
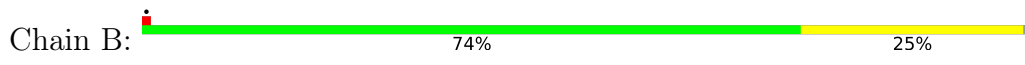
• Molecule 1: RyR2




L1057	L1058	L1062	H1063	L1064	E1065	A1066	PRO	ASP	GLN	ASP	HIS	ALA	ALA	ALA	ARG	ALA	GLU	VAL	CYS	THR	GLY	GLY	R1084	R1089	R1100	H1101	Y1102	F1103	E1104	F1105	E1106	A1110	G1111	S1118	C1122	Q1123	P1124	D1125	Q1126	E1127	R1133	R1144	E1150	W1156	G1163	M1165											
E1170	H1171	D1185	S1186	G1187	D1194	D1199	V1204	V1209	A1210	Q1211	R1214	K1219	D1220	S1222	T1223	L1224	F1227	T1228	I1229	Q1233	A1240	W1250	L1251	S1252	K1253	R1254	L1255	P1256	Q1257	F1258	H1265	E1266	H1267	I1273	D1274	GLY	THR	ILE	ASP	SER	W1156	SER	PRO	CYS	LEU												
L1285	T1286	Q1287	M1300	F1301	Y1302	R1303	L1304	S1305	A1306	F1307	I1308	E1309	C1310	ALA	GLU	VAL	PHE	ASP	THR	TYR	ALA	ALA	ALA	GLN	GLY	ALA	GLN	THR	PRO	ASP	ASP	ASP	ASP	TYR	ASP	ALA	ALA	ASP	GLU	VAL	LEU	MET	GLY	THR	LYS	VAL	THR	ALA	HIS	GLY	ASP	HIS	LEU				
VAL	PRO	ASP	ASP	VAL	ASP	LYS	GLU	ALA	THR	LYS	PRO	GLU	PHE	ASN	GLU	VAL	HIS	ASP	LYS	TYR	ALA	ALA	GLN	GLY	ALA	GLN	THR	PRO	ASP	ASP	ASP	ASP	TYR	ASP	THR	THR	THR	THR	GLU	GLU	ASP	GLY	THR	VAL	LEU	MET	GLY	THR	LYS	VAL	THR	ALA	HIS	GLY	ASP	HIS	LEU
ASP	ASP	TYR	TYR	LEU	MET	GLN	T1425	Y1426	S1429	V1430	R1431	F1434	GLY	GLN	GLU	ALA	GLN	PRO	PRO	ALA	ALA	N1440	V1443	G1444	W1445	I1446	D1454	L1459	ASP	ARG	VAL	ARG	ARG	THR	V1465	T1466	V1467	T1468	K1473	G1474	K1475	V1476	H1477	E1478	S1479	R1482	S1483	W1484	CYS	V1486	M1487	A1490	GLY				
GLU	SER	MET	PRO	GLY	GLN	GLY	N1502	L1505	E1506	I1507	V1510	V1511	ASP	ALA	ALA	ALA	GLU	ALA	GLN	PRO	PRO	ALA	G1516	T1521	D1526	P1535	S1536	F1540	F1541	A1542	F1543	F1544	A1545	T1548	S1549	E1556	GLY	LEU	ARG	ILE	LYS	ASN	VAL	MET	PRO	SER	A1568	G1569	L1570	F1571	K1572	S1573	E1574				
H1575	V1579	P1580	R1585	Q1589	L1595	W1596	S1597	R1598	M1599	P1600	I1601	Q1602	F1603	R1610	I1611	S1612	E1613	R1614	W1617	L1618	V1619	Q1620	C1621	L1622	L1625	S1629	A1632	F1633	H1631	I1632	P1633	E1634	I1641	L1642	E1643	L1644	T1645	L1651	Y1655	L1658	R1659	L1660	L1667	I1684	G1668	Q1844	M1669	S1678									
E1682	Y1687	M1691	S1712	S1713	Y1714	R1718	T1733	I1736	T1737	L1738	D1741	GLU	ASN	LYS	ASN	LYS	LYS	HIS	GLY	LEU	P1749	G1750	T1755	L1756	L1757	R1758	F1763	V1769	E1781	F1782	D1785	I1792	D1808	P1809	V1810	G1811	F1816	K1840	H1841	I1842	L1843	Q1844	E1847														
P1848	S1849	VAL	PHE	LYS	GLU	ALA	ALA	GLY	PRO	GLU	GLU	GLU	SER	ASP	THR	LEU	GLU	LYS	GLU	ARG	PRO	CYS	ALA	ALA	SER	GLU	ASP	GLU	GLU	LYS	LYS	ARG	PRO	PRO	LYS	GLU	G1893	K1904	L1911	A1925	S1930	D1931	D1932	D1939	R1942												
F1943	Q1950	A1951	L1952	MET	SER	ALA	ALA	ALA	PRO	GLU	THR	THR	ALA	ARG	LYS	LYS	PHE	PRO	SER	GLN	GLU	GLN	ILE	ASN	MET	LEU	LEU	ASN	PHE	LYS	ASP	GLU	CYS	PRO	PRO	E1991	V2013	GLU	ASP	GLY	SER	LEU	ASP	GLY	ASN	SER	ASP	L2024	T2025	L2026							
R2029	Y2039	LEU	LYS	LYS	GLN	ALA	GLU	LYS	VAL	S2296	S2297	V2228	GLY	LEU	ALA	SER	PRO	ALA	ALA	T2058	L2081	Y2093	M2110	S2113	D2116	L2120	R2128	L2131	S2132	V2133	ARG	GLY	LYS	E2138	K2141	G2148	M2152	M2153	M2163	G2181	GLY	L2024	T2025	L2026	R2298												
LYS	GLU	ILE	THR	PHE	P2191	S2208	R2209	K2213	S2296	S2297	V2228	GLY	LEU	ALA	SER	PRO	ALA	ALA	ARG	GLY	L2081	Y2093	M2110	S2113	D2116	L2120	R2128	L2131	S2132	V2133	ARG	GLY	LYS	E2138	K2141	G2148	M2152	M2153	M2163	G2181	GLY	L2024	T2025	L2026	R2298												
Y2299	L2300	D2301	V2307	V2314	E2315	E2316	M2317	V2321	V2322	R2323	L2324	L2325	L2326	R2327	R2328	P2329	E2330	CYS	PHE	GLY	PRO	ALA	ALA	L2254	A2257	L2258	R2259	K2265	R2268	Y2269	L2270	L2275	GLN	SER	CYS	GLN	MET	LEU	VAL	THR	SER	GLY	SER	LYS	ASP	MET	PRO	ASP	THR	ASP	GLY	ILE	GLU	V2481	A2501	S2502	
GLU	ASP	ASP	THR	HIS	ILE	MET	G2386	L2397	R2402	R2425	S2426	L2427	L2430	L2433	V2436	L2439	A2440	F2441	Q2442	MET	PRO	PRO	THR	ILE	ALA	LYS	ASP	GLY	ASN	ALA	VAL	PRO	PRO	ASP	ASP	MET	SER	GLY	PRO	PRO	THR	SER	GLY	SER	LYS	ASP	MET	PRO	ASP	THR	GLU	V2481	A2501	S2502			

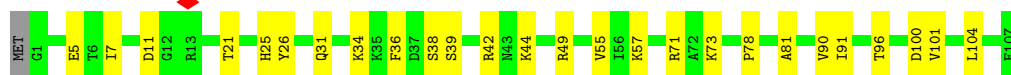


• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1B



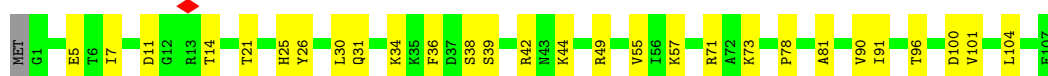
• Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain D:  75% 24%




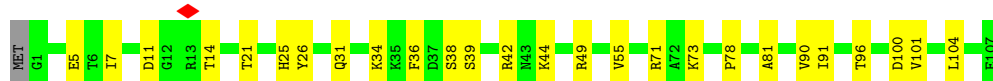
● Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain F:  73% 26%



● Molecule 2: Peptidyl-prolyl cis-trans isomerase FKBP1B

Chain H:  75% 24%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	149212	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.141	Depositor
Minimum map value	-0.073	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.022	Depositor
Map size (Å)	436.4, 436.4, 436.4	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.091, 1.091, 1.091	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: ZN, CA, CFF, ATP

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.47	0/26913	0.60	5/36395 (0.0%)
1	C	0.47	0/26913	0.60	5/36395 (0.0%)
1	E	0.47	0/26913	0.60	5/36395 (0.0%)
1	G	0.47	0/26913	0.60	5/36395 (0.0%)
2	B	0.41	0/835	0.58	0/1123
2	D	0.41	0/835	0.58	0/1123
2	F	0.41	0/835	0.58	0/1123
2	H	0.41	0/835	0.58	0/1123
All	All	0.47	0/110992	0.60	20/150072 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	15
1	C	0	15
1	E	0	15
1	G	0	15
All	All	0	60

There are no bond length outliers.

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	2430	LEU	CA-CB-CG	7.00	131.39	115.30
1	C	2430	LEU	CA-CB-CG	7.00	131.39	115.30
1	E	2430	LEU	CA-CB-CG	7.00	131.39	115.30
1	G	2430	LEU	CA-CB-CG	7.00	131.39	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	E	3681	CYS	CA-CB-SG	5.68	124.22	114.00
1	C	3681	CYS	CA-CB-SG	5.66	124.19	114.00
1	G	3681	CYS	CA-CB-SG	5.66	124.19	114.00
1	A	3681	CYS	CA-CB-SG	5.66	124.19	114.00
1	E	2757	LEU	CA-CB-CG	5.44	127.81	115.30
1	A	2757	LEU	CA-CB-CG	5.44	127.80	115.30
1	C	2757	LEU	CA-CB-CG	5.44	127.80	115.30
1	G	2757	LEU	CA-CB-CG	5.44	127.80	115.30
1	A	748	LEU	CA-CB-CG	5.10	127.03	115.30
1	C	748	LEU	CA-CB-CG	5.10	127.03	115.30
1	E	748	LEU	CA-CB-CG	5.10	127.03	115.30
1	G	748	LEU	CA-CB-CG	5.10	127.03	115.30
1	A	2300	LEU	CB-CG-CD2	-5.04	102.43	111.00
1	C	2300	LEU	CB-CG-CD2	-5.04	102.43	111.00
1	E	2300	LEU	CB-CG-CD2	-5.04	102.43	111.00
1	G	2300	LEU	CB-CG-CD2	-5.04	102.43	111.00

There are no chirality outliers.

All (60) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1127	GLU	Peptide
1	A	1545	ALA	Peptide
1	A	1570	LEU	Peptide
1	A	1579	VAL	Peptide
1	A	1750	GLY	Peptide
1	A	1808	ASP	Peptide
1	A	1809	PRO	Peptide
1	A	1847	GLU	Peptide
1	A	3802	SER	Peptide
1	A	729	GLY	Peptide
1	A	791	VAL	Peptide
1	A	814	LEU	Peptide
1	A	816	PRO	Peptide
1	A	819	TYR	Peptide
1	A	838	ARG	Peptide
1	C	1127	GLU	Peptide
1	C	1545	ALA	Peptide
1	C	1570	LEU	Peptide
1	C	1579	VAL	Peptide
1	C	1750	GLY	Peptide
1	C	1808	ASP	Peptide

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Mol	Chain	Res	Type	Group
1	C	1809	PRO	Peptide
1	C	1847	GLU	Peptide
1	C	3802	SER	Peptide
1	C	729	GLY	Peptide
1	C	791	VAL	Peptide
1	C	814	LEU	Peptide
1	C	816	PRO	Peptide
1	C	819	TYR	Peptide
1	C	838	ARG	Peptide
1	E	1127	GLU	Peptide
1	E	1545	ALA	Peptide
1	E	1570	LEU	Peptide
1	E	1579	VAL	Peptide
1	E	1750	GLY	Peptide
1	E	1808	ASP	Peptide
1	E	1809	PRO	Peptide
1	E	1847	GLU	Peptide
1	E	3802	SER	Peptide
1	E	729	GLY	Peptide
1	E	791	VAL	Peptide
1	E	814	LEU	Peptide
1	E	816	PRO	Peptide
1	E	819	TYR	Peptide
1	E	838	ARG	Peptide
1	G	1127	GLU	Peptide
1	G	1545	ALA	Peptide
1	G	1570	LEU	Peptide
1	G	1579	VAL	Peptide
1	G	1750	GLY	Peptide
1	G	1808	ASP	Peptide
1	G	1809	PRO	Peptide
1	G	1847	GLU	Peptide
1	G	3802	SER	Peptide
1	G	729	GLY	Peptide
1	G	791	VAL	Peptide
1	G	814	LEU	Peptide
1	G	816	PRO	Peptide
1	G	819	TYR	Peptide
1	G	838	ARG	Peptide

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	26417	0	24909	474	0
1	C	26417	0	24909	487	0
1	E	26417	0	24909	466	0
1	G	26417	0	24909	457	0
2	B	819	0	824	18	0
2	D	819	0	824	18	0
2	F	819	0	824	19	0
2	H	819	0	824	18	0
3	A	1	0	0	0	0
3	C	1	0	0	0	0
3	E	1	0	0	0	0
3	G	1	0	0	0	0
4	A	1	0	0	0	0
4	C	1	0	0	0	0
4	E	1	0	0	0	0
4	G	1	0	0	0	0
5	A	31	0	12	1	0
5	C	31	0	12	1	0
5	E	31	0	12	1	0
5	G	31	0	12	1	0
6	A	14	0	10	2	0
6	C	14	0	10	2	0
6	E	14	0	10	2	0
6	G	14	0	10	2	0
All	All	109132	0	103020	1741	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 (1741) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2427:LEU:HD13	1:G:143:LEU:CB	1.41	1.51
1:E:143:LEU:CB	1:G:2427:LEU:HD13	1.41	1.49
1:A:143:LEU:CB	1:C:2427:LEU:HD13	1.41	1.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:143:LEU:CB	1:E:2427:LEU:HD13	1.43	1.47
1:A:2427:LEU:CD1	1:G:143:LEU:HB3	1.48	1.42
1:A:143:LEU:HB3	1:C:2427:LEU:CD1	1.48	1.41
1:C:143:LEU:HB3	1:E:2427:LEU:CD1	1.50	1.39
1:E:143:LEU:HB3	1:G:2427:LEU:CD1	1.49	1.39
1:E:4845:ILE:HD12	1:G:4819:TYR:CD1	1.65	1.32
1:C:4845:ILE:HD12	1:E:4819:TYR:CD1	1.65	1.32
1:A:4819:TYR:CD1	1:G:4845:ILE:HD12	1.66	1.28
1:A:4845:ILE:HD12	1:C:4819:TYR:CD1	1.67	1.27
1:G:2327:ARG:O	1:G:2328:ARG:CG	1.83	1.27
1:C:4845:ILE:CD1	1:E:4819:TYR:CD1	2.20	1.25
1:A:2327:ARG:O	1:A:2328:ARG:CG	1.83	1.23
1:A:4819:TYR:O	1:A:4823:ARG:HD3	1.34	1.23
1:A:4819:TYR:CD1	1:G:4845:ILE:CD1	2.22	1.23
1:A:4845:ILE:CD1	1:C:4819:TYR:CD1	2.22	1.22
1:E:4845:ILE:CD1	1:G:4819:TYR:CD1	2.21	1.22
1:G:4819:TYR:O	1:G:4823:ARG:HD3	1.34	1.22
1:C:4819:TYR:O	1:C:4823:ARG:HD3	1.36	1.21
1:A:4862:ILE:HG22	1:C:4868:ILE:HD12	1.30	1.14
1:C:4862:ILE:HG22	1:E:4868:ILE:HD12	1.30	1.13
1:G:2327:ARG:O	1:G:2328:ARG:HG2	0.95	1.13
1:E:4862:ILE:HG22	1:G:4868:ILE:HD12	1.32	1.12
1:A:2327:ARG:O	1:A:2328:ARG:HG2	0.95	1.11
1:C:4845:ILE:HD13	1:E:4819:TYR:CE1	1.86	1.09
1:A:4819:TYR:CE1	1:G:4845:ILE:HD13	1.87	1.08
1:A:4868:ILE:HD12	1:G:4862:ILE:HG22	1.31	1.08
1:E:4845:ILE:HD13	1:G:4819:TYR:CE1	1.86	1.08
1:A:4845:ILE:HD13	1:C:4819:TYR:CE1	1.88	1.07
1:A:2427:LEU:HD13	1:G:143:LEU:CG	1.83	1.06
1:A:4858:ILE:HD12	1:C:4867:ILE:HG21	1.36	1.06
1:A:143:LEU:CG	1:C:2427:LEU:HD13	1.84	1.06
1:C:143:LEU:CG	1:E:2427:LEU:HD13	1.85	1.06
1:C:4858:ILE:HD12	1:E:4867:ILE:HG21	1.38	1.06
1:E:143:LEU:CG	1:G:2427:LEU:HD13	1.83	1.06
1:E:143:LEU:CD2	1:G:2427:LEU:HD13	1.87	1.05
1:A:4867:ILE:HG21	1:G:4858:ILE:HD12	1.36	1.04
1:A:2427:LEU:HD13	1:G:143:LEU:CD2	1.87	1.03
1:C:143:LEU:CD2	1:E:2427:LEU:HD13	1.88	1.03
1:A:143:LEU:CD2	1:C:2427:LEU:HD13	1.88	1.03
1:A:2427:LEU:CD1	1:G:143:LEU:HD22	1.89	1.03
1:E:4858:ILE:HD12	1:G:4867:ILE:HG21	1.36	1.02

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:143:LEU:HD22	1:E:2427:LEU:CD1	1.90	1.01
1:E:143:LEU:HD22	1:G:2427:LEU:CD1	1.89	1.00
1:A:143:LEU:HD22	1:C:2427:LEU:CD1	1.90	1.00
1:C:143:LEU:CB	1:E:2427:LEU:CD1	2.25	0.97
1:A:143:LEU:CB	1:C:2427:LEU:CD1	2.23	0.97
1:A:2427:LEU:CD1	1:G:143:LEU:CB	2.22	0.96
1:A:2427:LEU:HD13	1:G:143:LEU:HB3	0.99	0.96
1:A:143:LEU:HB3	1:C:2427:LEU:HD13	0.98	0.96
1:C:4862:ILE:CG2	1:E:4868:ILE:HD12	1.96	0.96
1:E:143:LEU:HB3	1:G:2427:LEU:HD13	1.00	0.95
1:C:143:LEU:HB3	1:E:2427:LEU:HD13	0.99	0.95
1:A:143:LEU:HD11	1:A:207:PHE:HD2	1.32	0.94
1:A:2427:LEU:CD1	1:G:143:LEU:CD2	2.45	0.94
1:A:143:LEU:CD2	1:C:2427:LEU:CD1	2.45	0.94
1:A:143:LEU:HD22	1:C:2427:LEU:CD2	1.98	0.94
1:A:4862:ILE:CG2	1:C:4868:ILE:HD12	1.96	0.94
1:C:76:ARG:HD3	1:E:3891:TRP:CD2	2.03	0.93
1:C:209:GLN:HE21	1:E:2327:ARG:HH11	1.13	0.93
1:E:143:LEU:CD2	1:G:2427:LEU:CD1	2.44	0.93
1:E:4862:ILE:CG2	1:G:4868:ILE:HD12	1.98	0.93
1:A:143:LEU:HB3	1:C:2427:LEU:HD12	1.51	0.92
1:C:76:ARG:HH21	1:C:76:ARG:HB3	1.33	0.92
1:C:143:LEU:CD2	1:E:2427:LEU:CD1	2.46	0.92
1:E:143:LEU:HD22	1:G:2427:LEU:CD2	1.99	0.92
1:A:76:ARG:HH21	1:A:76:ARG:HG3	1.34	0.92
1:C:143:LEU:HD22	1:E:2427:LEU:CD2	2.00	0.92
1:A:4868:ILE:HD12	1:G:4862:ILE:CG2	1.98	0.92
1:A:2427:LEU:CD2	1:G:143:LEU:HD22	1.99	0.91
1:G:4823:ARG:NH1	1:G:4823:ARG:HB2	1.86	0.90
1:A:2427:LEU:HD12	1:G:143:LEU:HB3	1.51	0.90
1:C:143:LEU:HB3	1:E:2427:LEU:HD12	1.53	0.90
1:C:4823:ARG:NH2	1:C:4823:ARG:HB2	1.87	0.90
1:E:143:LEU:HB3	1:G:2427:LEU:HD12	1.51	0.89
1:A:4819:TYR:CE1	1:G:4845:ILE:CD1	2.52	0.89
1:A:4823:ARG:NH2	1:A:4823:ARG:HB2	1.87	0.89
1:C:2323:ARG:HH21	1:C:2323:ARG:HG3	1.35	0.89
1:E:4845:ILE:CD1	1:G:4819:TYR:CE1	2.50	0.88
1:C:4862:ILE:CG2	1:E:4868:ILE:CD1	2.52	0.88
1:A:4845:ILE:CD1	1:C:4819:TYR:CE1	2.53	0.88
1:E:143:LEU:CB	1:G:2427:LEU:CD1	2.23	0.88
1:A:143:LEU:HD11	1:A:207:PHE:CD2	2.08	0.87

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4868:ILE:CD1	1:G:4862:ILE:CG2	2.53	0.86
1:A:4862:ILE:CG2	1:C:4868:ILE:CD1	2.52	0.86
1:A:4862:ILE:HD11	1:C:4757:ILE:HD12	1.58	0.86
1:G:4819:TYR:O	1:G:4823:ARG:CD	2.23	0.86
1:E:4862:ILE:HD11	1:G:4757:ILE:HD12	1.58	0.85
1:E:4862:ILE:CD1	1:G:4757:ILE:HD12	2.07	0.84
1:A:4757:ILE:HD12	1:G:4862:ILE:CD1	2.07	0.84
1:A:4862:ILE:CD1	1:C:4757:ILE:HD12	2.08	0.84
1:E:4862:ILE:CG2	1:G:4868:ILE:CD1	2.54	0.84
1:A:4819:TYR:O	1:A:4823:ARG:CD	2.24	0.84
1:A:4757:ILE:HD12	1:G:4862:ILE:HD11	1.58	0.84
1:C:209:GLN:HE21	1:E:2327:ARG:NH1	1.74	0.83
1:C:4862:ILE:HD11	1:E:4757:ILE:HD12	1.60	0.83
1:C:4845:ILE:CD1	1:E:4819:TYR:CE1	2.51	0.82
1:C:4862:ILE:CD1	1:E:4757:ILE:HD12	2.10	0.82
1:C:797:GLY:HA2	1:C:1621:CYS:O	1.82	0.79
1:A:797:GLY:HA2	1:A:1621:CYS:O	1.82	0.79
1:C:76:ARG:HH21	1:C:76:ARG:CB	1.94	0.79
1:E:797:GLY:HA2	1:E:1621:CYS:O	1.82	0.79
1:A:189:GLU:OE2	1:C:2323:ARG:CD	2.32	0.78
1:G:797:GLY:HA2	1:G:1621:CYS:O	1.82	0.78
1:C:2328:ARG:CB	1:C:2328:ARG:HH11	1.97	0.78
1:A:2427:LEU:HD13	1:G:143:LEU:HD22	1.59	0.76
1:A:143:LEU:HD22	1:C:2427:LEU:HD13	1.60	0.76
1:A:1219:LYS:H	1:A:1240:ALA:HB2	1.51	0.76
1:E:2328:ARG:HH11	1:E:2328:ARG:CB	1.99	0.76
1:C:4819:TYR:O	1:C:4823:ARG:CD	2.27	0.75
1:C:143:LEU:HD11	1:C:207:PHE:HD2	1.51	0.75
1:G:143:LEU:HD11	1:G:207:PHE:HD2	1.50	0.75
1:C:1219:LYS:H	1:C:1240:ALA:HB2	1.51	0.75
1:E:1219:LYS:H	1:E:1240:ALA:HB2	1.51	0.75
1:G:2327:ARG:C	1:G:2328:ARG:HG2	2.03	0.74
1:E:143:LEU:HD22	1:G:2427:LEU:HD22	1.70	0.74
1:G:1219:LYS:H	1:G:1240:ALA:HB2	1.51	0.74
1:C:4845:ILE:HD12	1:E:4819:TYR:CG	2.22	0.74
1:G:143:LEU:HD11	1:G:207:PHE:CD2	2.23	0.73
1:C:143:LEU:HD22	1:E:2427:LEU:HD22	1.69	0.73
1:C:143:LEU:HD11	1:C:207:PHE:CD2	2.23	0.73
1:A:143:LEU:HD22	1:C:2427:LEU:HD22	1.69	0.73
1:E:2328:ARG:HH11	1:E:2328:ARG:CA	2.02	0.73
1:A:189:GLU:OE2	1:C:2323:ARG:HD3	1.88	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2328:ARG:HH11	1:C:2328:ARG:CA	2.02	0.72
1:A:76:ARG:HG3	1:A:76:ARG:NH2	1.99	0.72
1:C:842:GLN:HE21	1:C:849:ASP:H	1.36	0.72
1:G:842:GLN:HE21	1:G:849:ASP:H	1.36	0.72
1:A:2427:LEU:HD22	1:G:143:LEU:HD22	1.70	0.72
1:C:76:ARG:CD	1:E:3891:TRP:CG	2.72	0.71
1:E:842:GLN:HE21	1:E:849:ASP:H	1.36	0.71
1:A:842:GLN:HE21	1:A:849:ASP:H	1.36	0.71
1:G:4823:ARG:HB2	1:G:4823:ARG:CZ	2.20	0.71
1:E:4845:ILE:HD12	1:G:4819:TYR:CG	2.24	0.71
1:C:2314:VAL:HG23	1:C:2317:ASN:HB2	1.73	0.71
1:A:728:ASP:HA	1:A:748:LEU:HA	1.72	0.70
1:E:4862:ILE:CD1	1:G:4757:ILE:CD1	2.70	0.70
1:C:728:ASP:HA	1:C:748:LEU:HA	1.72	0.70
1:G:728:ASP:HA	1:G:748:LEU:HA	1.72	0.70
1:C:4845:ILE:CD1	1:E:4819:TYR:CG	2.73	0.70
1:E:2314:VAL:HG23	1:E:2317:ASN:HB2	1.74	0.70
1:A:2327:ARG:C	1:A:2328:ARG:HG2	2.03	0.70
1:A:4757:ILE:CD1	1:G:4862:ILE:CD1	2.70	0.70
1:E:728:ASP:HA	1:E:748:LEU:HA	1.72	0.70
1:E:4845:ILE:CD1	1:G:4819:TYR:CG	2.75	0.69
1:C:4823:ARG:HB2	1:C:4823:ARG:CZ	2.21	0.69
1:A:4823:ARG:HB2	1:A:4823:ARG:CZ	2.20	0.69
1:A:4845:ILE:HD12	1:C:4819:TYR:CG	2.25	0.69
1:A:4862:ILE:CD1	1:C:4757:ILE:CD1	2.70	0.69
1:G:590:LYS:H	1:G:593:HIS:HD2	1.41	0.68
1:A:590:LYS:H	1:A:593:HIS:HD2	1.41	0.68
1:A:4845:ILE:CD1	1:C:4819:TYR:CG	2.76	0.68
1:C:2323:ARG:HG3	1:C:2323:ARG:NH2	2.05	0.68
1:A:4757:ILE:CD1	1:G:4862:ILE:HD12	2.24	0.68
1:A:4862:ILE:HD12	1:C:4757:ILE:CD1	2.24	0.68
1:E:4862:ILE:HD12	1:G:4757:ILE:CD1	2.24	0.68
1:E:1089:ARG:HH22	1:E:1600:PRO:HG3	1.59	0.68
1:A:2427:LEU:HD13	1:G:143:LEU:HB2	1.68	0.68
1:C:1089:ARG:HH22	1:C:1600:PRO:HG3	1.59	0.68
1:C:590:LYS:H	1:C:593:HIS:HD2	1.41	0.68
1:A:4819:TYR:CG	1:G:4845:ILE:HD12	2.24	0.67
1:E:660:PHE:HB3	1:E:787:LEU:HD22	1.77	0.67
1:A:1089:ARG:HH22	1:A:1600:PRO:HG3	1.59	0.67
1:C:4862:ILE:CD1	1:E:4757:ILE:CD1	2.72	0.67
1:G:1089:ARG:HH22	1:G:1600:PRO:HG3	1.59	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4819:TYR:CG	1:G:4845:ILE:CD1	2.76	0.67
1:G:660:PHE:HB3	1:G:787:LEU:HD22	1.77	0.67
1:E:590:LYS:H	1:E:593:HIS:HD2	1.41	0.66
1:C:143:LEU:HD22	1:E:2427:LEU:HD13	1.59	0.66
1:C:660:PHE:HB3	1:C:787:LEU:HD22	1.77	0.66
1:C:4862:ILE:HD12	1:E:4757:ILE:CD1	2.26	0.65
1:G:4796:LYS:NZ	1:G:4807:CYS:SG	2.68	0.65
1:C:1125:ASP:HA	1:C:1598:ARG:HB2	1.79	0.65
1:A:660:PHE:HB3	1:A:787:LEU:HD22	1.77	0.65
1:G:1125:ASP:HA	1:G:1598:ARG:HB2	1.79	0.65
1:C:4835:PRO:HG3	1:C:4844:ARG:HE	1.62	0.65
1:E:1125:ASP:HA	1:E:1598:ARG:HB2	1.78	0.65
1:A:189:GLU:OE2	1:C:2323:ARG:HD2	1.96	0.65
1:E:4823:ARG:NH2	1:E:4823:ARG:HB3	2.12	0.65
1:G:2314:VAL:HG23	1:G:2317:ASN:HB2	1.79	0.65
1:E:4835:PRO:HG3	1:E:4844:ARG:HE	1.62	0.65
1:A:1125:ASP:HA	1:A:1598:ARG:HB2	1.79	0.65
1:A:2314:VAL:HG23	1:A:2317:ASN:HB2	1.79	0.65
1:A:4796:LYS:NZ	1:A:4807:CYS:SG	2.68	0.64
1:C:207:PHE:CZ	1:E:2326:ILE:CB	2.80	0.64
1:E:4826:GLY:O	1:G:4823:ARG:NH2	2.31	0.64
1:G:4835:PRO:HG3	1:G:4844:ARG:HE	1.62	0.64
1:A:503:ASP:HA	1:A:561:ARG:HH22	1.63	0.64
1:C:4796:LYS:NZ	1:C:4807:CYS:SG	2.68	0.64
1:G:243:GLU:HA	1:G:263:GLU:O	1.98	0.64
1:A:2706:PRO:HB3	1:A:2855:LYS:HG3	1.80	0.64
1:C:503:ASP:HA	1:C:561:ARG:HH22	1.63	0.64
1:E:503:ASP:HA	1:E:561:ARG:HH22	1.63	0.64
1:A:2327:ARG:O	1:A:2328:ARG:CB	2.43	0.64
1:A:4823:ARG:NH1	1:G:4826:GLY:O	2.31	0.64
1:G:503:ASP:HA	1:G:561:ARG:HH22	1.63	0.64
1:E:243:GLU:HA	1:E:263:GLU:O	1.98	0.64
1:A:4835:PRO:HG3	1:A:4844:ARG:HE	1.62	0.63
1:C:1465:VAL:N	1:C:1483:SER:O	2.31	0.63
1:G:123:HIS:HD2	1:G:126:SER:H	1.47	0.63
1:G:1465:VAL:N	1:G:1483:SER:O	2.31	0.63
1:A:123:HIS:HD2	1:A:126:SER:H	1.47	0.63
1:C:1446:ILE:O	1:C:1540:PHE:HB2	1.98	0.63
1:E:2315:GLU:HA	1:E:2315:GLU:OE2	1.97	0.63
1:G:2706:PRO:HB3	1:G:2855:LYS:HG3	1.80	0.63
1:C:76:ARG:HD2	1:E:3891:TRP:CD1	2.34	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1446:ILE:O	1:E:1540:PHE:HB2	1.98	0.63
1:C:123:HIS:HD2	1:C:126:SER:H	1.47	0.63
1:C:374:TYR:HB2	1:C:389:ARG:HB3	1.81	0.63
1:E:123:HIS:HD2	1:E:126:SER:H	1.47	0.63
1:E:143:LEU:HB2	1:G:2427:LEU:HD13	1.68	0.63
1:E:374:TYR:HB2	1:E:389:ARG:HB3	1.81	0.63
1:A:4958:CYS:SG	1:A:4959:PHE:N	2.72	0.62
1:C:243:GLU:HA	1:C:263:GLU:O	1.98	0.62
1:G:374:TYR:HB2	1:G:389:ARG:HB3	1.81	0.62
1:G:4958:CYS:SG	1:G:4959:PHE:N	2.72	0.62
1:A:1465:VAL:N	1:A:1483:SER:O	2.31	0.62
1:E:1465:VAL:N	1:E:1483:SER:O	2.31	0.62
1:E:2706:PRO:HB3	1:E:2855:LYS:HG3	1.80	0.62
1:G:189:GLU:HG2	1:G:189:GLU:O	2.00	0.62
1:G:2327:ARG:O	1:G:2328:ARG:CB	2.43	0.62
1:A:243:GLU:HA	1:A:263:GLU:O	1.98	0.62
1:A:374:TYR:HB2	1:A:389:ARG:HB3	1.81	0.62
1:C:1265:HIS:HD2	1:C:1267:HIS:H	1.48	0.62
1:C:2706:PRO:HB3	1:C:2855:LYS:HG3	1.80	0.62
1:C:4958:CYS:SG	1:C:4959:PHE:N	2.72	0.62
1:G:1446:ILE:O	1:G:1540:PHE:HB2	1.98	0.62
1:A:143:LEU:HD22	1:C:2427:LEU:HD11	1.81	0.62
1:C:4791:ARG:HD2	1:C:4808:ASP:HB3	1.82	0.62
1:E:4958:CYS:SG	1:E:4959:PHE:N	2.72	0.62
1:C:462:TYR:O	1:C:485:ARG:NH1	2.33	0.62
1:E:4791:ARG:HD2	1:E:4808:ASP:HB3	1.82	0.62
1:A:4845:ILE:HD12	1:C:4819:TYR:HD1	1.57	0.62
1:E:189:GLU:O	1:E:189:GLU:HG2	2.00	0.62
1:G:1265:HIS:HD2	1:G:1267:HIS:H	1.48	0.62
1:C:189:GLU:O	1:C:189:GLU:HG2	2.00	0.62
1:E:143:LEU:HD22	1:G:2427:LEU:HD11	1.81	0.62
1:G:4791:ARG:HD2	1:G:4808:ASP:HB3	1.82	0.62
1:A:462:TYR:O	1:A:485:ARG:NH1	2.33	0.62
1:E:1265:HIS:HD2	1:E:1267:HIS:H	1.48	0.62
1:A:207:PHE:CZ	1:C:2326:ILE:CB	2.82	0.62
1:A:2427:LEU:HD11	1:G:143:LEU:CD2	2.30	0.62
1:A:1265:HIS:HD2	1:A:1267:HIS:H	1.48	0.61
1:A:1446:ILE:O	1:A:1540:PHE:HB2	1.98	0.61
1:A:2427:LEU:HD11	1:G:143:LEU:HD22	1.81	0.61
1:G:462:TYR:O	1:G:485:ARG:NH1	2.33	0.61
1:G:4145:ARG:NH2	1:G:4963:TYR:OH	2.33	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4791:ARG:HD2	1:A:4808:ASP:HB3	1.82	0.61
1:G:143:LEU:HD12	1:G:143:LEU:O	2.01	0.61
1:C:143:LEU:HB2	1:E:2427:LEU:HD13	1.69	0.61
1:C:4145:ARG:NH2	1:C:4963:TYR:OH	2.33	0.61
1:E:143:LEU:HD12	1:E:143:LEU:O	2.01	0.61
1:E:4145:ARG:NH2	1:E:4963:TYR:OH	2.33	0.61
1:A:2315:GLU:OE2	1:A:2315:GLU:HA	2.00	0.61
1:E:207:PHE:CZ	1:G:2326:ILE:CB	2.84	0.61
1:E:4005:VAL:HG21	1:E:4115:ARG:HD2	1.83	0.61
1:G:3939:SER:OG	1:G:3940:ARG:N	2.34	0.61
1:A:4145:ARG:NH2	1:A:4963:TYR:OH	2.33	0.61
1:C:143:LEU:HD12	1:C:143:LEU:O	2.01	0.61
1:C:4005:VAL:HG21	1:C:4115:ARG:HD2	1.83	0.61
1:E:462:TYR:O	1:E:485:ARG:NH1	2.33	0.61
1:A:189:GLU:O	1:A:189:GLU:HG2	2.00	0.61
1:A:3939:SER:OG	1:A:3940:ARG:N	2.34	0.61
1:A:4826:GLY:O	1:C:4823:ARG:NH1	2.34	0.61
1:A:4868:ILE:CD1	1:G:4862:ILE:HG22	2.15	0.60
1:G:1443:VAL:HG12	1:G:1543:VAL:HG22	1.83	0.60
1:G:2315:GLU:HA	1:G:2315:GLU:OE2	2.00	0.60
1:A:143:LEU:O	1:A:143:LEU:HD12	2.01	0.60
1:A:4005:VAL:HG21	1:A:4115:ARG:HD2	1.83	0.60
1:A:4848:ASP:OD1	1:C:4823:ARG:NE	2.33	0.60
1:E:4165:GLN:HG2	1:E:4594:LEU:HD11	1.84	0.60
1:G:832:LEU:O	1:G:1614:ARG:NH1	2.35	0.60
1:E:1932:ASP:OD1	1:E:1932:ASP:N	2.35	0.60
1:G:1932:ASP:OD1	1:G:1932:ASP:N	2.35	0.60
1:A:4165:GLN:HG2	1:A:4594:LEU:HD11	1.84	0.60
1:C:4165:GLN:HG2	1:C:4594:LEU:HD11	1.84	0.60
1:E:2328:ARG:HH11	1:E:2328:ARG:HA	1.66	0.60
1:E:3939:SER:OG	1:E:3940:ARG:N	2.34	0.60
1:C:4791:ARG:HD2	1:C:4808:ASP:CB	2.32	0.60
1:E:4796:LYS:NZ	1:E:4807:CYS:SG	2.68	0.60
1:A:832:LEU:O	1:A:1614:ARG:NH1	2.35	0.60
1:G:2893:ILE:HG13	1:G:2894:LEU:HD12	1.84	0.60
1:C:832:LEU:O	1:C:1614:ARG:NH1	2.35	0.60
1:C:2893:ILE:HG13	1:C:2894:LEU:HD12	1.84	0.60
1:G:4165:GLN:HG2	1:G:4594:LEU:HD11	1.84	0.60
1:A:2893:ILE:HG13	1:A:2894:LEU:HD12	1.84	0.60
1:C:76:ARG:HD3	1:E:3891:TRP:CG	2.36	0.59
1:E:2893:ILE:HG13	1:E:2894:LEU:HD12	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:2138:GLU:O	1:G:2141:LYS:NZ	2.34	0.59
1:A:143:LEU:HB2	1:C:2427:LEU:HD13	1.68	0.59
1:E:1224:LEU:HD22	1:E:1227:PHE:HB2	1.84	0.59
1:E:4791:ARG:HD2	1:E:4808:ASP:CB	2.32	0.59
1:G:4005:VAL:HG21	1:G:4115:ARG:HD2	1.83	0.59
1:E:832:LEU:O	1:E:1614:ARG:NH1	2.35	0.59
1:G:3845:GLN:HG3	1:G:3923:GLU:HG3	1.85	0.59
1:A:1443:VAL:HG12	1:A:1543:VAL:HG22	1.83	0.59
1:C:235:ARG:NH1	1:C:268:SER:O	2.36	0.59
1:C:4515:ASN:ND2	1:C:4740:PHE:O	2.33	0.59
1:G:620:CYS:SG	1:G:621:HIS:N	2.74	0.59
1:G:235:ARG:NH1	1:G:268:SER:O	2.36	0.59
1:A:143:LEU:CD2	1:C:2427:LEU:HD11	2.30	0.59
1:C:620:CYS:SG	1:C:621:HIS:N	2.74	0.59
1:C:4897:ASP:OD1	1:C:4897:ASP:N	2.35	0.59
1:G:4791:ARG:HD2	1:G:4808:ASP:CB	2.32	0.59
1:A:620:CYS:SG	1:A:621:HIS:N	2.74	0.59
1:C:62:LEU:HB3	1:C:276:ARG:HH21	1.68	0.59
1:E:235:ARG:NH1	1:E:268:SER:O	2.36	0.59
1:E:258:ARG:NH1	1:E:316:LEU:O	2.36	0.59
1:C:1224:LEU:HD22	1:C:1227:PHE:HB2	1.84	0.59
1:G:258:ARG:NH1	1:G:316:LEU:O	2.36	0.59
1:A:235:ARG:NH1	1:A:268:SER:O	2.36	0.59
1:C:143:LEU:CD2	1:E:2427:LEU:HD11	2.33	0.59
1:E:1443:VAL:HG12	1:E:1543:VAL:HG22	1.83	0.59
1:A:3845:GLN:HG3	1:A:3923:GLU:HG3	1.85	0.58
1:E:143:LEU:CD2	1:G:2427:LEU:HD11	2.30	0.58
1:G:4515:ASN:ND2	1:G:4740:PHE:O	2.33	0.58
1:A:188:SER:OG	1:A:190:ARG:NH2	2.35	0.58
1:A:2540:GLU:O	1:A:2543:ALA:HB3	2.03	0.58
1:A:2427:LEU:CG	1:G:143:LEU:HD22	2.34	0.58
1:A:4791:ARG:HD2	1:A:4808:ASP:CB	2.32	0.58
1:C:2540:GLU:O	1:C:2543:ALA:HB3	2.03	0.58
1:E:62:LEU:HB3	1:E:276:ARG:HH21	1.68	0.58
1:E:2540:GLU:O	1:E:2543:ALA:HB3	2.03	0.58
1:A:805:GLY:HA2	1:A:810:GLU:HB2	1.85	0.58
1:C:2328:ARG:HH11	1:C:2328:ARG:CG	2.14	0.58
1:E:620:CYS:SG	1:E:621:HIS:N	2.74	0.58
1:G:1224:LEU:HD22	1:G:1227:PHE:HB2	1.84	0.58
1:C:1443:VAL:HG12	1:C:1543:VAL:HG22	1.83	0.58
1:C:1644:LEU:HD23	1:C:1651:LEU:HA	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:2328:ARG:HH11	1:E:2328:ARG:CG	2.14	0.58
1:A:143:LEU:HD22	1:C:2427:LEU:CG	2.34	0.58
1:A:1224:LEU:HD22	1:A:1227:PHE:HB2	1.84	0.58
1:C:258:ARG:NH1	1:C:316:LEU:O	2.36	0.58
1:A:1304:LEU:HB2	1:A:1541:PRO:HG2	1.86	0.58
1:C:1102:TYR:HB2	1:C:1165:MET:HG2	1.86	0.58
1:G:1102:TYR:HB2	1:G:1165:MET:HG2	1.86	0.58
1:G:1304:LEU:HB2	1:G:1541:PRO:HG2	1.86	0.58
1:A:258:ARG:NH1	1:A:316:LEU:O	2.36	0.58
1:E:3845:GLN:HG3	1:E:3923:GLU:HG3	1.85	0.58
1:A:62:LEU:HB3	1:A:276:ARG:HH21	1.68	0.58
1:C:4862:ILE:HG23	1:E:4868:ILE:CD1	2.34	0.58
2:F:7:ILE:HB	2:F:71:ARG:HG3	1.86	0.58
1:G:62:LEU:HB3	1:G:276:ARG:HH21	1.68	0.58
1:G:2540:GLU:O	1:G:2543:ALA:HB3	2.03	0.58
1:A:778:MET:SD	1:A:1468:THR:OG1	2.62	0.58
1:A:1682:GLU:HG3	1:A:1782:PHE:HB2	1.85	0.58
2:B:7:ILE:HB	2:B:71:ARG:HG3	1.86	0.58
1:C:3939:SER:OG	1:C:3940:ARG:N	2.34	0.58
1:E:143:LEU:HD22	1:G:2427:LEU:CG	2.33	0.58
1:E:2897:LEU:HB3	1:E:2902:TYR:HB2	1.86	0.58
1:A:185:SER:HG	1:A:190:ARG:H	1.50	0.57
1:C:778:MET:SD	1:C:1468:THR:OG1	2.62	0.57
1:A:218:SER:OG	1:A:219:SER:N	2.37	0.57
1:E:1682:GLU:HG3	1:E:1782:PHE:HB2	1.85	0.57
1:G:2669:CYS:O	1:G:2672:ALA:HB3	2.04	0.57
2:H:90:VAL:HG23	2:H:91:ILE:HG12	1.86	0.57
1:A:2138:GLU:O	1:A:2141:LYS:NZ	2.34	0.57
1:A:2897:LEU:HB3	1:A:2902:TYR:HB2	1.86	0.57
1:C:1682:GLU:HG3	1:C:1782:PHE:HB2	1.85	0.57
1:E:778:MET:SD	1:E:1468:THR:OG1	2.62	0.57
1:E:1644:LEU:HD23	1:E:1651:LEU:HA	1.86	0.57
1:E:2138:GLU:O	1:E:2141:LYS:NZ	2.34	0.57
1:E:2669:CYS:O	1:E:2672:ALA:HB3	2.04	0.57
1:A:3775:GLN:OE1	1:A:3852:ASN:ND2	2.38	0.57
1:C:3845:GLN:HG3	1:C:3923:GLU:HG3	1.85	0.57
1:E:1102:TYR:HB2	1:E:1165:MET:HG2	1.86	0.57
1:G:218:SER:OG	1:G:219:SER:N	2.37	0.57
1:G:676:GLU:HB2	1:G:803:LEU:HB2	1.87	0.57
1:G:805:GLY:HA2	1:G:810:GLU:HB2	1.85	0.57
1:G:3775:GLN:OE1	1:G:3852:ASN:ND2	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1102:TYR:HB2	1:A:1165:MET:HG2	1.86	0.57
1:E:143:LEU:HD22	1:G:2427:LEU:HD13	1.58	0.57
1:E:143:LEU:HD11	1:E:207:PHE:CD2	2.40	0.57
1:E:805:GLY:HA2	1:E:810:GLU:HB2	1.85	0.57
1:C:766:ILE:HB	1:C:779:PHE:HB2	1.87	0.57
1:C:1104:GLU:HA	1:C:1163:GLY:HA2	1.87	0.57
1:C:2669:CYS:O	1:C:2672:ALA:HB3	2.04	0.57
2:D:90:VAL:HG23	2:D:91:ILE:HG12	1.86	0.57
1:G:778:MET:SD	1:G:1468:THR:OG1	2.62	0.57
1:A:1644:LEU:HD23	1:A:1651:LEU:HA	1.86	0.57
1:A:2669:CYS:O	1:A:2672:ALA:HB3	2.04	0.57
2:D:7:ILE:HB	2:D:71:ARG:HG3	1.86	0.57
1:E:3775:GLN:OE1	1:E:3852:ASN:ND2	2.38	0.57
1:G:1714:TYR:OH	1:G:1718:ARG:NH2	2.38	0.57
1:E:1104:GLU:HA	1:E:1163:GLY:HA2	1.87	0.57
1:G:1104:GLU:HA	1:G:1163:GLY:HA2	1.87	0.57
1:G:1736:ILE:HG22	1:G:1738:LEU:H	1.70	0.57
1:G:3667:GLN:HA	1:G:3670:LEU:HB2	1.87	0.57
1:A:766:ILE:HB	1:A:779:PHE:HB2	1.87	0.57
1:A:866:PRO:HG3	1:A:1009:ARG:HD2	1.86	0.57
1:A:1736:ILE:HG22	1:A:1738:LEU:H	1.70	0.57
1:E:4848:ASP:OD1	1:G:4823:ARG:NE	2.35	0.57
1:A:3667:GLN:HA	1:A:3670:LEU:HB2	1.87	0.57
1:A:4862:ILE:HG23	1:C:4868:ILE:CD1	2.34	0.57
1:C:676:GLU:HB2	1:C:803:LEU:HB2	1.87	0.57
1:C:1304:LEU:HB2	1:C:1541:PRO:HG2	1.86	0.57
1:C:2328:ARG:HH11	1:C:2328:ARG:HA	1.68	0.57
1:C:2897:LEU:HB3	1:C:2902:TYR:HB2	1.86	0.57
1:C:3775:GLN:OE1	1:C:3852:ASN:ND2	2.38	0.57
1:E:866:PRO:HG3	1:E:1009:ARG:HD2	1.86	0.57
1:E:1304:LEU:HB2	1:E:1541:PRO:HG2	1.86	0.57
2:H:7:ILE:HB	2:H:71:ARG:HG3	1.86	0.57
1:A:4897:ASP:OD1	1:A:4897:ASP:N	2.35	0.56
1:A:629:GLN:OE1	1:A:1669:ASN:ND2	2.38	0.56
1:C:866:PRO:HG3	1:C:1009:ARG:HD2	1.86	0.56
1:G:629:GLN:OE1	1:G:1669:ASN:ND2	2.38	0.56
1:G:1682:GLU:HG3	1:G:1782:PHE:HB2	1.85	0.56
1:A:1104:GLU:HA	1:A:1163:GLY:HA2	1.87	0.56
1:C:143:LEU:HD22	1:E:2427:LEU:HD11	1.83	0.56
1:E:748:LEU:HD23	1:E:750:ARG:HG3	1.86	0.56
1:E:766:ILE:HB	1:E:779:PHE:HB2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:1009:ARG:O	1:E:1013:ARG:NH2	2.39	0.56
1:G:1644:LEU:HD23	1:G:1651:LEU:HA	1.86	0.56
1:A:1009:ARG:O	1:A:1013:ARG:NH2	2.39	0.56
1:C:1111:GLY:H	1:C:1156:TRP:HZ2	1.54	0.56
1:E:3667:GLN:HA	1:E:3670:LEU:HB2	1.87	0.56
1:E:3729:GLN:O	1:E:3733:HIS:ND1	2.36	0.56
1:G:748:LEU:HD23	1:G:750:ARG:HG3	1.86	0.56
1:G:2897:LEU:HB3	1:G:2902:TYR:HB2	1.86	0.56
1:A:748:LEU:HD23	1:A:750:ARG:HG3	1.86	0.56
1:C:2138:GLU:O	1:C:2141:LYS:NZ	2.34	0.56
1:E:676:GLU:HB2	1:E:803:LEU:HB2	1.87	0.56
1:E:1678:SER:OG	2:F:36:PHE:O	2.24	0.56
1:G:766:ILE:HB	1:G:779:PHE:HB2	1.87	0.56
1:E:1736:ILE:HG22	1:E:1738:LEU:H	1.70	0.56
1:G:1111:GLY:H	1:G:1156:TRP:HZ2	1.54	0.56
1:G:1425:THR:N	1:G:1510:VAL:O	2.39	0.56
1:A:1678:SER:OG	2:B:36:PHE:O	2.24	0.56
1:A:4823:ARG:NE	1:G:4848:ASP:OD1	2.35	0.56
1:C:76:ARG:NE	1:E:3891:TRP:HB3	2.21	0.56
1:C:805:GLY:HA2	1:C:810:GLU:HB2	1.85	0.56
1:E:4862:ILE:HG23	1:G:4868:ILE:CD1	2.36	0.56
1:G:606:ARG:HH22	1:G:1632:ILE:HG23	1.70	0.56
1:G:866:PRO:HG3	1:G:1009:ARG:HD2	1.86	0.56
1:C:218:SER:OG	1:C:219:SER:N	2.37	0.56
1:C:1714:TYR:OH	1:C:1718:ARG:NH2	2.38	0.56
2:F:90:VAL:HG23	2:F:91:ILE:HG12	1.86	0.56
1:G:3729:GLN:O	1:G:3733:HIS:ND1	2.36	0.56
1:A:1111:GLY:H	1:A:1156:TRP:HZ2	1.54	0.56
2:B:90:VAL:HG23	2:B:91:ILE:HG12	1.86	0.56
1:E:218:SER:OG	1:E:219:SER:N	2.37	0.56
1:C:606:ARG:HH22	1:C:1632:ILE:HG23	1.70	0.56
1:C:3667:GLN:HA	1:C:3670:LEU:HB2	1.87	0.56
1:E:1429:SER:HA	1:E:1507:ILE:HG12	1.88	0.56
1:E:2436:VAL:O	1:E:2466:LYS:NZ	2.39	0.56
1:C:143:LEU:HD22	1:E:2427:LEU:CG	2.35	0.55
1:C:1009:ARG:O	1:C:1013:ARG:NH2	2.39	0.55
1:C:1429:SER:HA	1:C:1507:ILE:HG12	1.88	0.55
1:C:1736:ILE:HG22	1:C:1738:LEU:H	1.70	0.55
1:A:993:GLU:OE1	1:A:1051:ARG:NH1	2.39	0.55
1:E:188:SER:OG	1:E:190:ARG:NH2	2.35	0.55
1:E:629:GLN:OE1	1:E:1669:ASN:ND2	2.38	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1009:ARG:O	1:G:1013:ARG:NH2	2.39	0.55
1:G:4897:ASP:N	1:G:4897:ASP:OD1	2.35	0.55
1:A:2712:ILE:O	1:A:2781:LYS:NZ	2.40	0.55
1:A:1144:ARG:NH2	1:A:1150:GLU:OE1	2.40	0.55
2:B:78:PRO:HD3	2:B:96:THR:HG22	1.88	0.55
1:E:624:ALA:HB2	1:E:1667:LEU:HD12	1.88	0.55
1:A:676:GLU:HB2	1:A:803:LEU:HB2	1.87	0.55
1:A:3804:LEU:HD13	1:A:3910:ALA:HB2	1.89	0.55
1:C:624:ALA:HB2	1:C:1667:LEU:HD12	1.88	0.55
2:D:78:PRO:HD3	2:D:96:THR:HG22	1.88	0.55
1:E:606:ARG:HH22	1:E:1632:ILE:HG23	1.70	0.55
1:G:679:VAL:HA	1:G:800:VAL:HG12	1.89	0.55
1:A:624:ALA:HB2	1:A:1667:LEU:HD12	1.88	0.55
1:C:748:LEU:HD23	1:C:750:ARG:HG3	1.86	0.55
1:E:1425:THR:N	1:E:1510:VAL:O	2.39	0.55
1:G:4033:PHE:HA	1:G:4036:TYR:HB2	1.88	0.55
1:C:1220:ASP:O	1:C:1224:LEU:N	2.40	0.55
1:C:1425:THR:N	1:C:1510:VAL:O	2.39	0.55
1:A:679:VAL:HA	1:A:800:VAL:HG12	1.89	0.55
1:A:1220:ASP:O	1:A:1224:LEU:N	2.40	0.55
1:C:629:GLN:OE1	1:C:1669:ASN:ND2	2.38	0.55
1:E:993:GLU:OE1	1:E:1051:ARG:NH1	2.39	0.55
1:E:4900:ASP:O	1:E:4902:VAL:N	2.39	0.55
1:G:2712:ILE:O	1:G:2781:LYS:NZ	2.40	0.55
1:G:3804:LEU:HD13	1:G:3910:ALA:HB2	1.89	0.55
1:G:4900:ASP:O	1:G:4902:VAL:N	2.39	0.55
1:A:606:ARG:HH22	1:A:1632:ILE:HG23	1.70	0.55
1:A:1425:THR:N	1:A:1510:VAL:O	2.39	0.55
1:A:4033:PHE:HA	1:A:4036:TYR:HB2	1.88	0.55
1:C:1144:ARG:NH2	1:C:1150:GLU:OE1	2.40	0.55
1:A:1714:TYR:OH	1:A:1718:ARG:NH2	2.38	0.55
1:C:2436:VAL:O	1:C:2466:LYS:NZ	2.39	0.55
1:A:1429:SER:HA	1:A:1507:ILE:HG12	1.88	0.54
1:C:76:ARG:CD	1:E:3891:TRP:CD2	2.83	0.54
1:C:849:ASP:OD2	1:C:1214:ARG:NH2	2.40	0.54
1:C:4033:PHE:HA	1:C:4036:TYR:HB2	1.88	0.54
1:C:4823:ARG:CZ	1:C:4823:ARG:CB	2.85	0.54
1:E:1220:ASP:O	1:E:1224:LEU:N	2.40	0.54
1:E:2712:ILE:O	1:E:2781:LYS:NZ	2.40	0.54
1:G:624:ALA:HB2	1:G:1667:LEU:HD12	1.88	0.54
2:H:78:PRO:HD3	2:H:96:THR:HG22	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:849:ASP:OD2	1:A:1214:ARG:NH2	2.40	0.54
1:E:1111:GLY:H	1:E:1156:TRP:HZ2	1.54	0.54
1:E:2553:VAL:O	1:E:2605:LYS:N	2.41	0.54
1:C:4900:ASP:O	1:C:4902:VAL:N	2.39	0.54
1:C:4630:GLN:OE1	1:C:4633:ARG:NH2	2.41	0.54
1:E:1714:TYR:OH	1:E:1718:ARG:NH2	2.38	0.54
1:E:2328:ARG:HA	1:E:2328:ARG:NH1	2.22	0.54
1:E:4630:GLN:OE1	1:E:4633:ARG:NH2	2.41	0.54
1:A:848:ARG:HD2	1:A:1603:PHE:HE2	1.73	0.54
1:E:4033:PHE:HA	1:E:4036:TYR:HB2	1.88	0.54
1:G:1144:ARG:NH2	1:G:1150:GLU:OE1	2.40	0.54
1:G:1429:SER:HA	1:G:1507:ILE:HG12	1.88	0.54
1:G:3803:VAL:HG13	1:G:3885:SER:HB2	1.90	0.54
1:A:3919:ASN:O	1:A:3922:THR:OG1	2.24	0.54
1:E:1144:ARG:NH2	1:E:1150:GLU:OE1	2.40	0.54
1:E:3803:VAL:HG13	1:E:3885:SER:HB2	1.90	0.54
1:E:4515:ASN:ND2	1:E:4740:PHE:O	2.33	0.54
1:A:4515:ASN:ND2	1:A:4740:PHE:O	2.33	0.54
1:C:993:GLU:OE1	1:C:1051:ARG:NH1	2.39	0.54
1:C:2553:VAL:O	1:C:2605:LYS:N	2.41	0.54
1:G:993:GLU:OE1	1:G:1051:ARG:NH1	2.39	0.54
1:C:1678:SER:OG	2:D:36:PHE:O	2.24	0.54
2:F:78:PRO:HD3	2:F:96:THR:HG22	1.88	0.54
1:G:2307:VAL:HG11	1:G:2321:VAL:HG21	1.90	0.54
1:A:1256:PRO:HB3	1:A:1597:SER:HA	1.90	0.54
1:A:4823:ARG:CZ	1:A:4823:ARG:CB	2.85	0.54
1:C:679:VAL:HA	1:C:800:VAL:HG12	1.89	0.54
1:C:1305:SER:OG	1:C:1306:MET:N	2.41	0.54
1:C:2324:LEU:N	1:C:2324:LEU:HD23	2.22	0.54
1:C:2593:LEU:O	1:C:2597:VAL:N	2.41	0.54
1:E:679:VAL:HA	1:E:800:VAL:HG12	1.89	0.54
1:E:4897:ASP:N	1:E:4897:ASP:OD1	2.35	0.54
1:G:4823:ARG:CZ	1:G:4823:ARG:CB	2.85	0.54
1:A:2425:ARG:NH2	1:A:2476:VAL:O	2.42	0.53
1:C:1939:ASP:OD1	1:C:1939:ASP:N	2.40	0.53
1:G:1256:PRO:HB3	1:G:1597:SER:HA	1.90	0.53
1:A:2553:VAL:O	1:A:2605:LYS:N	2.41	0.53
1:C:2712:ILE:O	1:C:2781:LYS:NZ	2.40	0.53
1:C:3733:HIS:O	1:C:3777:LYS:NZ	2.41	0.53
1:E:4032:THR:OG1	1:E:4056:HIS:NE2	2.39	0.53
1:G:2425:ARG:NH2	1:G:2476:VAL:O	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:2593:LEU:O	1:G:2597:VAL:N	2.41	0.53
1:A:4797:SER:OG	1:A:4805:MET:N	2.40	0.53
1:C:753:ASP:HB2	1:C:770:ILE:HD11	1.90	0.53
1:G:2553:VAL:O	1:G:2605:LYS:N	2.41	0.53
1:G:4630:GLN:OE1	1:G:4633:ARG:NH2	2.41	0.53
1:A:2307:VAL:HG11	1:A:2321:VAL:HG21	1.90	0.53
1:A:2782:THR:OG1	1:A:2848:ASN:ND2	2.42	0.53
1:A:4804:ASP:N	1:A:4804:ASP:OD1	2.41	0.53
1:A:4900:ASP:O	1:A:4902:VAL:N	2.39	0.53
1:E:3804:LEU:HD13	1:E:3910:ALA:HB2	1.89	0.53
1:G:1220:ASP:O	1:G:1224:LEU:N	2.40	0.53
1:G:1305:SER:OG	1:G:1306:MET:N	2.41	0.53
1:E:849:ASP:OD2	1:E:1214:ARG:NH2	2.40	0.53
1:E:2425:ARG:NH2	1:E:2476:VAL:O	2.42	0.53
1:E:3733:HIS:O	1:E:3777:LYS:NZ	2.41	0.53
1:G:527:LYS:NZ	1:G:566:GLU:O	2.41	0.53
1:A:3803:VAL:HG13	1:A:3885:SER:HB2	1.90	0.53
1:C:1256:PRO:HB3	1:C:1597:SER:HA	1.90	0.53
1:C:2275:LEU:HB2	1:C:2293:PRO:HG3	1.91	0.53
1:C:3804:LEU:HD13	1:C:3910:ALA:HB2	1.89	0.53
1:C:4725:TRP:HA	1:C:4728:THR:HG22	1.91	0.53
1:G:2275:LEU:HB2	1:G:2293:PRO:HG3	1.91	0.53
1:G:3733:HIS:O	1:G:3777:LYS:NZ	2.41	0.53
1:A:4868:ILE:CD1	1:G:4862:ILE:HG23	2.35	0.53
1:A:4926:LEU:HD13	1:A:4942:TRP:HB2	1.91	0.53
1:C:742:SER:OG	1:C:743:SER:N	2.42	0.53
1:G:849:ASP:OD2	1:G:1214:ARG:NH2	2.40	0.53
1:A:752:ASP:OD1	1:A:752:ASP:N	2.41	0.53
1:A:4630:GLN:OE1	1:A:4633:ARG:NH2	2.41	0.53
2:B:26:TYR:N	2:B:39:SER:OG	2.41	0.53
1:C:2323:ARG:HH21	1:C:2323:ARG:CG	2.14	0.53
2:D:31:GLN:NE2	2:D:96:THR:OG1	2.42	0.53
1:E:848:ARG:HD2	1:E:1603:PHE:HE2	1.72	0.53
1:E:4725:TRP:HA	1:E:4728:THR:HG22	1.91	0.53
1:E:4797:SER:OG	1:E:4805:MET:N	2.40	0.53
1:A:2593:LEU:O	1:A:2597:VAL:N	2.41	0.53
2:B:31:GLN:NE2	2:B:96:THR:OG1	2.42	0.53
1:C:2425:ARG:NH2	1:C:2476:VAL:O	2.42	0.53
1:C:3803:VAL:HG13	1:C:3885:SER:HB2	1.90	0.53
1:E:1256:PRO:HB3	1:E:1597:SER:HA	1.90	0.53
1:E:1738:LEU:HG	1:E:1925:ALA:HB1	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:3940:ARG:HG2	1:E:3943:ASP:HB2	1.91	0.53
1:E:4926:LEU:HD13	1:E:4942:TRP:HB2	1.91	0.53
1:G:753:ASP:HB2	1:G:770:ILE:HD11	1.90	0.53
1:G:2782:THR:OG1	1:G:2848:ASN:ND2	2.42	0.53
1:A:672:LYS:N	1:A:819:TYR:O	2.42	0.53
1:A:703:TYR:HA	1:A:1255:LEU:HD21	1.91	0.53
1:C:1738:LEU:HG	1:C:1925:ALA:HB1	1.90	0.53
1:C:1932:ASP:OD1	1:C:1932:ASP:N	2.35	0.53
1:C:2328:ARG:HA	1:C:2328:ARG:NH1	2.24	0.53
1:E:703:TYR:HA	1:E:1255:LEU:HD21	1.91	0.53
1:E:1305:SER:OG	1:E:1306:MET:N	2.41	0.53
1:E:2593:LEU:O	1:E:2597:VAL:N	2.41	0.53
1:E:4845:ILE:HD12	1:G:4819:TYR:HD1	1.55	0.53
1:G:1738:LEU:HG	1:G:1925:ALA:HB1	1.90	0.53
2:H:31:GLN:NE2	2:H:96:THR:OG1	2.42	0.53
1:A:742:SER:OG	1:A:743:SER:N	2.42	0.52
1:A:753:ASP:HB2	1:A:770:ILE:HD11	1.90	0.52
1:A:1738:LEU:HG	1:A:1925:ALA:HB1	1.90	0.52
1:A:2275:LEU:HB2	1:A:2293:PRO:HG3	1.91	0.52
1:A:3729:GLN:O	1:A:3733:HIS:ND1	2.36	0.52
1:A:3733:HIS:O	1:A:3777:LYS:NZ	2.41	0.52
1:C:848:ARG:HD2	1:C:1603:PHE:HE2	1.73	0.52
1:E:2275:LEU:HB2	1:E:2293:PRO:HG3	1.91	0.52
1:E:4065:GLU:HA	1:E:4068:LEU:HB2	1.92	0.52
1:A:1305:SER:OG	1:A:1306:MET:N	2.41	0.52
1:C:703:TYR:HA	1:C:1255:LEU:HD21	1.91	0.52
1:C:2782:THR:OG1	1:C:2848:ASN:ND2	2.42	0.52
1:C:4804:ASP:N	1:C:4804:ASP:OD1	2.41	0.52
1:E:527:LYS:NZ	1:E:566:GLU:O	2.41	0.52
1:E:672:LYS:N	1:E:819:TYR:O	2.42	0.52
1:E:1310:CYS:HB2	1:E:1536:SER:HA	1.91	0.52
1:E:2782:THR:OG1	1:E:2848:ASN:ND2	2.42	0.52
1:G:703:TYR:HA	1:G:1255:LEU:HD21	1.91	0.52
1:G:848:ARG:HD2	1:G:1603:PHE:HE2	1.73	0.52
1:G:4032:THR:OG1	1:G:4056:HIS:NE2	2.39	0.52
1:G:4926:LEU:HD13	1:G:4942:TRP:HB2	1.91	0.52
1:A:1310:CYS:HB2	1:A:1536:SER:HA	1.91	0.52
1:C:76:ARG:HD3	1:E:3891:TRP:CE2	2.44	0.52
1:C:204:ASP:OD1	1:C:204:ASP:N	2.43	0.52
1:C:1199:ASP:OD2	1:C:1199:ASP:N	2.37	0.52
1:E:143:LEU:HD11	1:E:207:PHE:HD2	1.73	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1426:TYR:HD2	1:A:1574:GLU:HB2	1.75	0.52
1:A:4065:GLU:HA	1:A:4068:LEU:HB2	1.92	0.52
1:C:3729:GLN:O	1:C:3733:HIS:ND1	2.36	0.52
1:E:752:ASP:N	1:E:752:ASP:OD1	2.41	0.52
1:E:2257:ALA:O	1:E:2259:ARG:NH1	2.43	0.52
2:F:31:GLN:NE2	2:F:96:THR:OG1	2.42	0.52
1:G:3940:ARG:HG2	1:G:3943:ASP:HB2	1.91	0.52
1:A:2436:VAL:O	1:A:2466:LYS:NZ	2.39	0.52
1:E:4804:ASP:OD1	1:E:4804:ASP:N	2.41	0.52
1:G:188:SER:OG	1:G:190:ARG:NH2	2.35	0.52
1:G:565:LEU:HD13	1:G:604:HIS:HE1	1.75	0.52
1:A:3683:LEU:HD22	1:A:3748:SER:HB3	1.92	0.52
1:A:3871:ILE:O	1:A:3875:THR:N	2.42	0.52
1:A:4032:THR:OG1	1:A:4056:HIS:NE2	2.39	0.52
1:C:2328:ARG:CG	1:C:2328:ARG:NH1	2.73	0.52
1:C:3940:ARG:HG2	1:C:3943:ASP:HB2	1.91	0.52
1:C:4823:ARG:HB2	1:C:4823:ARG:HH21	1.71	0.52
1:E:797:GLY:HA2	1:E:1622:LEU:HA	1.92	0.52
1:E:2328:ARG:CG	1:E:2328:ARG:NH1	2.73	0.52
1:G:2436:VAL:O	1:G:2466:LYS:NZ	2.39	0.52
1:C:565:LEU:HD13	1:C:604:HIS:HE1	1.75	0.52
1:C:752:ASP:OD1	1:C:752:ASP:N	2.41	0.52
1:C:3683:LEU:HD22	1:C:3748:SER:HB3	1.92	0.52
1:C:4926:LEU:HD13	1:C:4942:TRP:HB2	1.91	0.52
1:E:4052:ALA:O	1:E:4056:HIS:ND1	2.38	0.52
1:A:4725:TRP:HA	1:A:4728:THR:HG22	1.91	0.52
1:C:2257:ALA:O	1:C:2259:ARG:NH1	2.43	0.52
1:C:4844:ARG:NH2	1:E:4819:TYR:OH	2.43	0.52
1:E:1426:TYR:HD2	1:E:1574:GLU:HB2	1.75	0.52
1:G:3973:MET:HB3	1:G:4095:ILE:HG12	1.92	0.52
1:A:204:ASP:OD1	1:A:204:ASP:N	2.43	0.52
1:A:2257:ALA:O	1:A:2259:ARG:NH1	2.43	0.52
1:C:1310:CYS:HB2	1:C:1536:SER:HA	1.91	0.52
1:E:753:ASP:HB2	1:E:770:ILE:HD11	1.90	0.52
1:E:3683:LEU:HD22	1:E:3748:SER:HB3	1.92	0.52
1:G:742:SER:OG	1:G:743:SER:N	2.42	0.52
1:G:1426:TYR:HD2	1:G:1574:GLU:HB2	1.75	0.52
1:G:4725:TRP:HA	1:G:4728:THR:HG22	1.91	0.52
1:A:3973:MET:HB3	1:A:4095:ILE:HG12	1.92	0.52
1:E:833:LYS:HA	1:E:1614:ARG:HH12	1.75	0.52
1:E:3956:GLN:NE2	1:E:3973:MET:SD	2.83	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:4823:ARG:HB3	1:E:4823:ARG:HH21	1.74	0.52
2:F:26:TYR:N	2:F:39:SER:OG	2.41	0.52
1:G:4804:ASP:OD1	1:G:4804:ASP:N	2.41	0.52
1:A:3956:GLN:NE2	1:A:3973:MET:SD	2.83	0.51
1:C:185:SER:HG	1:C:190:ARG:H	1.56	0.51
1:C:188:SER:OG	1:C:190:ARG:NH2	2.35	0.51
1:C:797:GLY:HA2	1:C:1622:LEU:HA	1.92	0.51
1:C:1265:HIS:CD2	1:C:1267:HIS:H	2.28	0.51
1:C:1426:TYR:HD2	1:C:1574:GLU:HB2	1.75	0.51
1:E:742:SER:OG	1:E:743:SER:N	2.42	0.51
1:E:4823:ARG:NH2	1:E:4823:ARG:CB	2.73	0.51
1:E:4823:ARG:HB2	1:E:4823:ARG:CZ	2.40	0.51
1:G:204:ASP:N	1:G:204:ASP:OD1	2.43	0.51
1:G:1642:LEU:O	1:G:1645:THR:OG1	2.26	0.51
1:C:527:LYS:NZ	1:C:566:GLU:O	2.41	0.51
1:C:694:ARG:NH1	1:C:716:ASN:O	2.41	0.51
1:C:1904:LYS:HD2	1:C:2081:LEU:HD21	1.93	0.51
1:C:3956:GLN:NE2	1:C:3973:MET:SD	2.83	0.51
1:E:271:ALA:O	1:E:301:THR:OG1	2.25	0.51
1:E:565:LEU:HD13	1:E:604:HIS:HE1	1.75	0.51
1:E:4823:ARG:CB	1:E:4823:ARG:CZ	2.88	0.51
1:G:3956:GLN:NE2	1:G:3973:MET:SD	2.83	0.51
1:C:767:SER:HA	1:C:777:GLY:HA3	1.92	0.51
1:C:1431:ARG:HE	1:C:1505:LEU:HD21	1.76	0.51
1:C:1756:SER:OG	1:C:1757:LEU:N	2.44	0.51
1:C:1847:GLU:OE1	1:C:1849:SER:OG	2.29	0.51
2:D:26:TYR:N	2:D:39:SER:OG	2.41	0.51
1:G:833:LYS:HA	1:G:1614:ARG:HH12	1.75	0.51
1:G:2257:ALA:O	1:G:2259:ARG:NH1	2.43	0.51
1:A:343:ARG:NH2	1:A:345:GLU:O	2.44	0.51
1:A:661:LEU:O	1:A:788:PHE:N	2.43	0.51
1:A:3940:ARG:HG2	1:A:3943:ASP:HB2	1.91	0.51
1:C:661:LEU:O	1:C:788:PHE:N	2.43	0.51
1:E:1756:SER:OG	1:E:1757:LEU:N	2.44	0.51
1:E:1847:GLU:OE1	1:E:1849:SER:OG	2.28	0.51
1:G:1589:GLN:NE2	1:G:1634:GLU:OE1	2.43	0.51
1:C:904:TYR:HD1	1:C:918:LEU:HB2	1.76	0.51
1:C:3973:MET:HB3	1:C:4095:ILE:HG12	1.92	0.51
1:C:4065:GLU:HA	1:C:4068:LEU:HB2	1.92	0.51
1:E:694:ARG:NH1	1:E:716:ASN:O	2.41	0.51
1:E:1589:GLN:NE2	1:E:1634:GLU:OE1	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:185:SER:HG	1:G:190:ARG:H	1.57	0.51
1:A:693:LEU:HD22	1:A:798:ILE:HD13	1.93	0.51
1:A:904:TYR:HD1	1:A:918:LEU:HB2	1.76	0.51
1:C:209:GLN:NE2	1:E:2327:ARG:NH1	2.54	0.51
1:C:271:ALA:O	1:C:301:THR:OG1	2.25	0.51
1:C:693:LEU:HD22	1:C:798:ILE:HD13	1.93	0.51
1:C:833:LYS:HA	1:C:1614:ARG:HH12	1.75	0.51
1:C:887:GLU:HA	1:C:921:PHE:HB3	1.93	0.51
1:C:1589:GLN:NE2	1:C:1634:GLU:OE1	2.43	0.51
1:E:185:SER:HG	1:E:190:ARG:H	1.55	0.51
1:G:672:LYS:N	1:G:819:TYR:O	2.42	0.51
1:A:767:SER:HA	1:A:777:GLY:HA3	1.92	0.51
1:C:343:ARG:NH2	1:C:345:GLU:O	2.44	0.51
1:E:887:GLU:HA	1:E:921:PHE:HB3	1.93	0.51
1:E:3973:MET:HB3	1:E:4095:ILE:HG12	1.92	0.51
1:G:752:ASP:N	1:G:752:ASP:OD1	2.41	0.51
1:G:1310:CYS:HB2	1:G:1536:SER:HA	1.91	0.51
1:G:3683:LEU:HD22	1:G:3748:SER:HB3	1.92	0.51
1:A:143:LEU:HD22	1:C:2427:LEU:HD21	1.91	0.51
1:C:1718:ARG:HH12	1:C:1758:ARG:HD3	1.76	0.51
1:C:4094:ASP:N	1:C:4094:ASP:OD1	2.44	0.51
1:E:343:ARG:NH2	1:E:345:GLU:O	2.44	0.51
1:E:1431:ARG:HE	1:E:1505:LEU:HD21	1.76	0.51
1:G:887:GLU:HA	1:G:921:PHE:HB3	1.93	0.51
1:A:797:GLY:HA2	1:A:1622:LEU:HA	1.92	0.51
1:A:1589:GLN:NE2	1:A:1634:GLU:OE1	2.43	0.51
1:A:1756:SER:OG	1:A:1757:LEU:N	2.44	0.51
1:E:3683:LEU:HD23	1:E:3755:MET:HG2	1.93	0.51
1:A:1718:ARG:HH12	1:A:1758:ARG:HD3	1.76	0.51
1:E:767:SER:HA	1:E:777:GLY:HA3	1.92	0.51
1:E:2328:ARG:CA	1:E:2328:ARG:NH1	2.73	0.51
1:G:645:GLN:HE22	2:H:34:LYS:HB3	1.76	0.51
1:G:904:TYR:HD1	1:G:918:LEU:HB2	1.76	0.51
1:A:565:LEU:HD13	1:A:604:HIS:HE1	1.75	0.50
1:A:887:GLU:HA	1:A:921:PHE:HB3	1.93	0.50
1:A:1904:LYS:HD2	1:A:2081:LEU:HD21	1.93	0.50
1:C:645:GLN:HE22	2:D:34:LYS:HB3	1.76	0.50
1:C:2314:VAL:HG23	1:C:2314:VAL:O	2.11	0.50
1:E:645:GLN:HE22	2:F:34:LYS:HB3	1.76	0.50
1:E:1712:SER:OG	1:E:1712:SER:O	2.29	0.50
1:G:1718:ARG:HH12	1:G:1758:ARG:HD3	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1769:VAL:HG12	2:H:55:VAL:HG23	1.94	0.50
1:G:4065:GLU:HA	1:G:4068:LEU:HB2	1.92	0.50
1:A:645:GLN:HE22	2:B:34:LYS:HB3	1.76	0.50
1:A:694:ARG:NH1	1:A:716:ASN:O	2.41	0.50
1:A:4844:ARG:NH2	1:C:4819:TYR:OH	2.44	0.50
1:G:1763:PHE:HB3	1:G:1781:GLU:HB2	1.93	0.50
1:A:1769:VAL:HG12	2:B:55:VAL:HG23	1.94	0.50
1:A:4094:ASP:N	1:A:4094:ASP:OD1	2.44	0.50
1:E:473:GLU:O	1:E:477:ASN:ND2	2.45	0.50
1:E:1763:PHE:HB3	1:E:1781:GLU:HB2	1.94	0.50
1:E:4094:ASP:OD1	1:E:4094:ASP:N	2.44	0.50
1:G:1678:SER:OG	2:H:36:PHE:O	2.24	0.50
1:A:1431:ARG:HE	1:A:1505:LEU:HD21	1.76	0.50
1:A:4819:TYR:OH	1:G:4844:ARG:NH2	2.45	0.50
1:C:2433:LEU:HA	1:C:2436:VAL:HG12	1.93	0.50
1:E:4663:GLY:H	1:E:4666:ARG:HD3	1.77	0.50
1:G:473:GLU:O	1:G:477:ASN:ND2	2.45	0.50
1:G:797:GLY:HA2	1:G:1622:LEU:HA	1.92	0.50
1:G:1756:SER:OG	1:G:1757:LEU:N	2.44	0.50
1:A:833:LYS:HA	1:A:1614:ARG:HH12	1.75	0.50
1:A:1847:GLU:OE1	1:A:1849:SER:OG	2.29	0.50
1:A:2464:ASP:OD1	1:A:2464:ASP:N	2.44	0.50
1:E:1769:VAL:HG12	2:F:55:VAL:HG23	1.94	0.50
1:E:3729:GLN:OE1	1:E:3771:ASN:ND2	2.45	0.50
2:H:71:ARG:NH2	2:H:100:ASP:OD2	2.43	0.50
1:A:76:ARG:HG2	1:C:3891:TRP:CD2	2.47	0.50
1:A:527:LYS:NZ	1:A:566:GLU:O	2.41	0.50
1:C:473:GLU:O	1:C:477:ASN:ND2	2.45	0.50
1:C:3683:LEU:HD23	1:C:3755:MET:HG2	1.93	0.50
1:C:4032:THR:OG1	1:C:4056:HIS:NE2	2.39	0.50
1:E:693:LEU:HD22	1:E:798:ILE:HD13	1.93	0.50
1:E:904:TYR:HD1	1:E:918:LEU:HB2	1.76	0.50
1:E:1265:HIS:CD2	1:E:1267:HIS:H	2.28	0.50
1:E:2026:ILE:HA	1:E:2029:ARG:HH11	1.76	0.50
1:G:1847:GLU:OE1	1:G:1849:SER:OG	2.29	0.50
1:A:1939:ASP:O	1:A:1943:PHE:N	2.45	0.50
1:A:4858:ILE:HD12	1:C:4867:ILE:CG2	2.26	0.50
1:C:4845:ILE:HD12	1:E:4819:TYR:HD1	1.55	0.50
1:E:2433:LEU:HA	1:E:2436:VAL:HG12	1.93	0.50
1:G:343:ARG:NH2	1:G:345:GLU:O	2.44	0.50
1:G:767:SER:HA	1:G:777:GLY:HA3	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:4663:GLY:H	1:G:4666:ARG:HD3	1.77	0.50
1:A:473:GLU:O	1:A:477:ASN:ND2	2.45	0.50
1:C:1642:LEU:O	1:C:1645:THR:OG1	2.26	0.50
1:C:2849:TYR:HA	1:C:2852:ILE:HG22	1.94	0.50
1:C:4663:GLY:H	1:C:4666:ARG:HD3	1.77	0.50
1:E:1718:ARG:HH12	1:E:1758:ARG:HD3	1.76	0.50
1:E:2316:GLU:HG2	1:E:3811:ARG:NH2	2.27	0.50
1:E:4844:ARG:NH2	1:G:4819:TYR:OH	2.45	0.50
1:G:271:ALA:O	1:G:301:THR:OG1	2.25	0.50
1:G:1431:ARG:HE	1:G:1505:LEU:HD21	1.76	0.50
1:G:3919:ASN:O	1:G:3922:THR:OG1	2.24	0.50
1:A:1548:THR:OG1	1:A:1549:SER:N	2.45	0.50
1:A:2026:ILE:HA	1:A:2029:ARG:HH11	1.76	0.50
1:A:4770:LEU:O	1:C:4754:LEU:HD21	2.12	0.50
1:E:1939:ASP:O	1:E:1943:PHE:N	2.45	0.50
1:G:694:ARG:NH1	1:G:716:ASN:O	2.41	0.50
1:G:2026:ILE:HA	1:G:2029:ARG:HH11	1.76	0.50
1:G:3683:LEU:HD23	1:G:3755:MET:HG2	1.93	0.50
1:A:4028:THR:HA	1:A:4033:PHE:HD2	1.77	0.49
1:A:4823:ARG:HB2	1:A:4823:ARG:HH21	1.72	0.49
1:C:1769:VAL:HG12	2:D:55:VAL:HG23	1.94	0.49
1:C:2725:TYR:OH	1:C:2892:ASP:OD1	2.30	0.49
1:G:335:LYS:NZ	1:G:398:HIS:O	2.37	0.49
1:G:4028:THR:HA	1:G:4033:PHE:HD2	1.77	0.49
1:A:3800:SER:OG	1:A:3801:CYS:N	2.45	0.49
1:C:2328:ARG:CA	1:C:2328:ARG:NH1	2.73	0.49
1:C:3919:ASN:O	1:C:3922:THR:OG1	2.24	0.49
1:E:204:ASP:OD1	1:E:204:ASP:N	2.43	0.49
1:G:693:LEU:HD22	1:G:798:ILE:HD13	1.93	0.49
1:G:1904:LYS:HD2	1:G:2081:LEU:HD21	1.93	0.49
1:E:1904:LYS:HD2	1:E:2081:LEU:HD21	1.93	0.49
1:E:2725:TYR:OH	1:E:2892:ASP:OD1	2.30	0.49
1:G:2725:TYR:OH	1:G:2892:ASP:OD1	2.30	0.49
2:H:26:TYR:N	2:H:39:SER:OG	2.41	0.49
1:A:2433:LEU:HA	1:A:2436:VAL:HG12	1.94	0.49
1:C:992:GLN:HB3	1:C:1064:LEU:HD12	1.95	0.49
1:A:1763:PHE:HB3	1:A:1781:GLU:HB2	1.93	0.49
1:A:2849:TYR:HA	1:A:2852:ILE:HG22	1.94	0.49
1:C:2315:GLU:OE2	1:C:2315:GLU:HA	2.11	0.49
1:C:4028:THR:HA	1:C:4033:PHE:HD2	1.77	0.49
1:G:3871:ILE:O	1:G:3875:THR:N	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:4094:ASP:OD1	1:G:4094:ASP:N	2.44	0.49
1:A:156:GLU:HB3	1:A:186:VAL:HG12	1.95	0.49
1:A:671:LYS:N	1:A:819:TYR:O	2.46	0.49
1:A:1106:GLU:OE2	1:A:1214:ARG:NH1	2.46	0.49
1:A:2725:TYR:OH	1:A:2892:ASP:OD1	2.30	0.49
1:A:4663:GLY:H	1:A:4666:ARG:HD3	1.77	0.49
1:C:530:LEU:HA	1:C:533:LEU:HD12	1.95	0.49
1:C:2026:ILE:HA	1:C:2029:ARG:HH11	1.76	0.49
1:E:651:HIS:HD2	1:E:1625:LEU:HB3	1.78	0.49
2:F:71:ARG:NH2	2:F:100:ASP:OD2	2.43	0.49
1:A:530:LEU:HA	1:A:533:LEU:HD12	1.95	0.49
1:C:35:LEU:HB3	1:C:49:LEU:HD22	1.95	0.49
1:C:651:HIS:HD2	1:C:1625:LEU:HB3	1.78	0.49
1:C:1106:GLU:OE2	1:C:1214:ARG:NH1	2.46	0.49
1:C:1763:PHE:HB3	1:C:1781:GLU:HB2	1.93	0.49
1:C:1939:ASP:O	1:C:1943:PHE:N	2.45	0.49
1:C:4026:ASP:HA	1:C:4029:SER:HB3	1.94	0.49
1:E:992:GLN:HB3	1:E:1064:LEU:HD12	1.95	0.49
1:E:1106:GLU:OE2	1:E:1214:ARG:NH1	2.46	0.49
1:E:1548:THR:OG1	1:E:1549:SER:N	2.45	0.49
1:G:156:GLU:HB3	1:G:186:VAL:HG12	1.95	0.49
1:G:1548:THR:OG1	1:G:1549:SER:N	2.45	0.49
1:A:1642:LEU:O	1:A:1645:THR:OG1	2.26	0.49
1:A:3729:GLN:OE1	1:A:3771:ASN:ND2	2.45	0.49
1:C:3729:GLN:OE1	1:C:3771:ASN:ND2	2.45	0.49
1:E:3919:ASN:O	1:E:3922:THR:OG1	2.24	0.49
1:G:651:HIS:HD2	1:G:1625:LEU:HB3	1.78	0.49
1:C:3871:ILE:O	1:C:3875:THR:N	2.42	0.49
1:C:4797:SER:OG	1:C:4805:MET:N	2.40	0.49
1:C:4858:ILE:HD12	1:E:4867:ILE:CG2	2.27	0.49
1:E:530:LEU:HA	1:E:533:LEU:HD12	1.95	0.49
1:E:1209:VAL:N	1:E:1211:GLN:OE1	2.46	0.49
1:E:4028:THR:HA	1:E:4033:PHE:HD2	1.77	0.49
1:G:2433:LEU:HA	1:G:2436:VAL:HG12	1.94	0.49
1:G:4797:SER:OG	1:G:4805:MET:N	2.40	0.49
1:A:1253:LYS:NZ	1:A:1257:GLN:OE1	2.46	0.49
1:A:3683:LEU:HD23	1:A:3755:MET:HG2	1.93	0.49
1:A:4754:LEU:HD21	1:G:4770:LEU:O	2.13	0.49
1:C:4848:ASP:OD1	1:E:4823:ARG:CZ	2.61	0.49
1:E:671:LYS:N	1:E:819:TYR:O	2.46	0.49
1:E:2849:TYR:HA	1:E:2852:ILE:HG22	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:4026:ASP:HA	1:E:4029:SER:HB3	1.94	0.49
1:A:1209:VAL:N	1:A:1211:GLN:OE1	2.46	0.48
1:E:2314:VAL:HG23	1:E:2314:VAL:O	2.12	0.48
1:G:1265:HIS:CD2	1:G:1267:HIS:H	2.28	0.48
1:G:4026:ASP:HA	1:G:4029:SER:HB3	1.94	0.48
1:A:35:LEU:HB3	1:A:49:LEU:HD22	1.95	0.48
1:A:651:HIS:HD2	1:A:1625:LEU:HB3	1.78	0.48
1:E:1199:ASP:OD2	1:E:1199:ASP:N	2.37	0.48
1:G:1106:GLU:OE2	1:G:1214:ARG:NH1	2.46	0.48
1:G:1712:SER:O	1:G:1712:SER:OG	2.29	0.48
1:A:1199:ASP:OD2	1:A:1199:ASP:N	2.37	0.48
1:A:4026:ASP:HA	1:A:4029:SER:HB3	1.94	0.48
1:C:671:LYS:N	1:C:819:TYR:O	2.46	0.48
1:C:2328:ARG:CB	1:C:2329:PRO:CD	2.91	0.48
1:C:1209:VAL:N	1:C:1211:GLN:OE1	2.46	0.48
1:C:3800:SER:OG	1:C:3801:CYS:N	2.45	0.48
1:A:892:LEU:HD13	1:A:1052:GLU:HG3	1.95	0.48
1:C:517:VAL:HG23	1:C:520:ARG:HE	1.79	0.48
1:C:1712:SER:O	1:C:1712:SER:OG	2.29	0.48
1:E:35:LEU:HB3	1:E:49:LEU:HD22	1.95	0.48
1:G:1209:VAL:N	1:G:1211:GLN:OE1	2.46	0.48
1:G:3729:GLN:OE1	1:G:3771:ASN:ND2	2.45	0.48
1:A:4052:ALA:O	1:A:4056:HIS:ND1	2.38	0.48
1:C:156:GLU:HB3	1:C:186:VAL:HG12	1.95	0.48
1:E:3871:ILE:O	1:E:3875:THR:N	2.42	0.48
1:G:517:VAL:HG23	1:G:520:ARG:HE	1.79	0.48
1:G:671:LYS:N	1:G:819:TYR:O	2.46	0.48
1:G:3761:LYS:NZ	1:G:3835:GLU:OE2	2.42	0.48
1:A:517:VAL:HG23	1:A:520:ARG:HE	1.79	0.48
1:A:881:ILE:HD11	1:A:952:ILE:HD13	1.95	0.48
1:A:1932:ASP:OD1	1:A:1932:ASP:N	2.35	0.48
1:C:797:GLY:CA	1:C:1621:CYS:O	2.59	0.48
1:C:4051:LYS:O	1:C:4055:SER:N	2.46	0.48
1:C:4757:ILE:O	1:C:4760:SER:OG	2.32	0.48
1:G:1253:LYS:NZ	1:G:1257:GLN:OE1	2.46	0.48
1:G:2213:LYS:HA	1:G:2254:LEU:HD21	1.95	0.48
1:G:3892:TYR:O	1:G:3896:LYS:NZ	2.40	0.48
1:A:1265:HIS:CD2	1:A:1267:HIS:H	2.28	0.48
1:C:892:LEU:HD13	1:C:1052:GLU:HG3	1.94	0.48
1:C:2213:LYS:HA	1:C:2254:LEU:HD21	1.95	0.48
1:E:821:PRO:HG2	1:E:824:GLU:HG2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:915:HIS:CE1	1:E:917:CYS:HB2	2.49	0.48
1:E:1426:TYR:HB3	1:E:1571:PHE:HA	1.96	0.48
1:G:35:LEU:HB3	1:G:49:LEU:HD22	1.95	0.48
1:G:2849:TYR:HA	1:G:2852:ILE:HG22	1.94	0.48
1:C:672:LYS:N	1:C:819:TYR:O	2.42	0.48
1:C:1426:TYR:HB3	1:C:1571:PHE:HA	1.96	0.48
1:E:1253:LYS:NZ	1:E:1257:GLN:OE1	2.46	0.48
1:E:3663:ASP:OD2	1:E:3735:ARG:NH2	2.47	0.48
1:G:881:ILE:HD11	1:G:952:ILE:HD13	1.95	0.48
1:A:271:ALA:O	1:A:301:THR:OG1	2.25	0.48
1:A:394:HIS:CD2	1:A:397:GLY:H	2.32	0.48
1:A:821:PRO:HG2	1:A:824:GLU:HG2	1.96	0.48
1:A:992:GLN:HB3	1:A:1064:LEU:HD12	1.95	0.48
1:A:1426:TYR:HB3	1:A:1571:PHE:HA	1.96	0.48
1:A:3663:ASP:OD2	1:A:3735:ARG:NH2	2.47	0.48
1:C:1253:LYS:NZ	1:C:1257:GLN:OE1	2.46	0.48
1:G:1521:THR:HA	1:G:1526:ASP:HA	1.96	0.48
1:G:3663:ASP:OD2	1:G:3735:ARG:NH2	2.47	0.48
1:E:156:GLU:HB3	1:E:186:VAL:HG12	1.95	0.47
1:E:1303:ARG:HH21	1:E:1595:LEU:HB2	1.79	0.47
1:E:1642:LEU:O	1:E:1645:THR:OG1	2.26	0.47
1:G:992:GLN:HB3	1:G:1064:LEU:HD12	1.95	0.47
1:G:1303:ARG:HH21	1:G:1595:LEU:HB2	1.79	0.47
1:G:1426:TYR:HB3	1:G:1571:PHE:HA	1.96	0.47
1:A:1521:THR:HA	1:A:1526:ASP:HA	1.96	0.47
2:B:71:ARG:NH2	2:B:100:ASP:OD2	2.43	0.47
1:E:517:VAL:HG23	1:E:520:ARG:HE	1.79	0.47
1:E:2213:LYS:HA	1:E:2254:LEU:HD21	1.95	0.47
1:E:4781:LEU:CD1	1:G:4741:ALA:O	2.62	0.47
1:G:530:LEU:HA	1:G:533:LEU:HD12	1.95	0.47
1:A:1930:SER:O	1:A:1930:SER:OG	2.31	0.47
1:A:1942:ARG:NH1	1:A:3609:LEU:H	2.13	0.47
1:A:3799:GLN:O	1:A:3881:ARG:NH2	2.48	0.47
1:A:4741:ALA:O	1:G:4781:LEU:CD1	2.62	0.47
1:A:4770:LEU:HB3	1:C:4754:LEU:CD1	2.44	0.47
1:C:1303:ARG:HH21	1:C:1595:LEU:HB2	1.79	0.47
1:C:3663:ASP:OD2	1:C:3735:ARG:NH2	2.47	0.47
1:C:3799:GLN:O	1:C:3881:ARG:NH2	2.48	0.47
1:G:23:GLN:HE21	1:G:34:LYS:HB3	1.80	0.47
1:C:3900:ASP:OD1	1:C:3900:ASP:N	2.47	0.47
1:G:394:HIS:CD2	1:G:397:GLY:H	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:4045:SER:HA	1:G:4078:THR:HG22	1.96	0.47
1:A:1303:ARG:HH21	1:A:1595:LEU:HB2	1.79	0.47
1:C:915:HIS:CE1	1:C:917:CYS:HB2	2.49	0.47
1:C:1942:ARG:NH1	1:C:3609:LEU:H	2.13	0.47
1:E:1118:SER:HB2	1:E:1204:VAL:HG11	1.96	0.47
1:E:1655:TYR:OH	1:E:1659:ARG:NH2	2.48	0.47
1:E:3642:ILE:HD11	1:E:3695:ILE:HG22	1.96	0.47
1:G:1118:SER:HB2	1:G:1204:VAL:HG11	1.96	0.47
1:G:1930:SER:O	1:G:1930:SER:OG	2.31	0.47
1:C:1611:ILE:HG13	1:C:1620:GLN:HB3	1.97	0.47
1:E:1521:THR:HA	1:E:1526:ASP:HA	1.96	0.47
1:E:1611:ILE:HG13	1:E:1620:GLN:HB3	1.97	0.47
1:G:1655:TYR:OH	1:G:1659:ARG:NH2	2.48	0.47
1:G:1942:ARG:NH1	1:G:3609:LEU:H	2.13	0.47
1:A:1171:HIS:O	1:A:1194:ASP:N	2.45	0.47
1:A:2213:LYS:HA	1:A:2254:LEU:HD21	1.95	0.47
1:A:3642:ILE:HD11	1:A:3695:ILE:HG22	1.96	0.47
1:A:4051:LYS:O	1:A:4055:SER:N	2.46	0.47
1:C:881:ILE:HD11	1:C:952:ILE:HD13	1.95	0.47
2:D:71:ARG:NH2	2:D:100:ASP:OD2	2.43	0.47
1:E:568:SER:HA	1:E:571:ILE:HD12	1.97	0.47
1:E:892:LEU:HD13	1:E:1052:GLU:HG3	1.94	0.47
1:G:892:LEU:HD13	1:G:1052:GLU:HG3	1.95	0.47
1:G:1629:SER:OG	1:G:1630:LEU:N	2.48	0.47
1:G:2116:ASP:OD1	1:G:2116:ASP:N	2.46	0.47
1:A:1655:TYR:OH	1:A:1659:ARG:NH2	2.48	0.47
1:A:4922:PHE:HE2	1:A:4941:VAL:HG11	1.80	0.47
1:C:1430:VAL:HG11	1:C:1443:VAL:HG11	1.97	0.47
1:C:1548:THR:OG1	1:C:1549:SER:N	2.45	0.47
1:C:1629:SER:OG	1:C:1630:LEU:N	2.48	0.47
1:E:1733:THR:HA	1:E:1755:THR:HG21	1.97	0.47
1:G:687:THR:OG1	1:G:689:GLU:O	2.33	0.47
1:G:3799:GLN:O	1:G:3881:ARG:NH2	2.48	0.47
1:A:1118:SER:HB2	1:A:1204:VAL:HG11	1.96	0.47
1:A:3900:ASP:OD1	1:A:3900:ASP:N	2.47	0.47
1:A:4171:ARG:NE	5:A:6002:ATP:O2G	2.41	0.47
2:B:25:HIS:HD2	2:B:104:LEU:HD11	1.80	0.47
1:C:23:GLN:HE21	1:C:34:LYS:HB3	1.80	0.47
1:C:299:HIS:HD2	1:C:302:THR:H	1.63	0.47
1:C:394:HIS:CD2	1:C:397:GLY:H	2.32	0.47
1:C:821:PRO:HG2	1:C:824:GLU:HG2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:4922:PHE:HE2	1:C:4941:VAL:HG11	1.80	0.47
1:E:1942:ARG:NH1	1:E:3609:LEU:H	2.13	0.47
1:E:4791:ARG:HH22	1:G:4559:HIS:HE1	1.63	0.47
1:G:661:LEU:O	1:G:788:PHE:N	2.43	0.47
1:G:915:HIS:CE1	1:G:917:CYS:HB2	2.49	0.47
1:G:2996:HIS:O	1:G:3000:LYS:CB	2.63	0.47
1:G:4051:LYS:O	1:G:4055:SER:N	2.46	0.47
1:A:23:GLN:HE21	1:A:34:LYS:HB3	1.80	0.47
1:A:915:HIS:CE1	1:A:917:CYS:HB2	2.49	0.47
1:A:1611:ILE:HG13	1:A:1620:GLN:HB3	1.97	0.47
1:A:2427:LEU:HD21	1:G:143:LEU:HD22	1.91	0.47
1:A:3875:THR:HG21	1:A:3924:TYR:HE2	1.80	0.47
1:C:1221:VAL:HA	1:C:1224:LEU:HB2	1.97	0.47
1:C:2323:ARG:NH2	1:C:2323:ARG:CG	2.73	0.47
1:E:3799:GLN:O	1:E:3881:ARG:NH2	2.48	0.47
1:E:3875:THR:HG21	1:E:3924:TYR:HE2	1.80	0.47
1:E:4810:MET:HB3	1:G:4519:LEU:O	2.15	0.47
1:G:568:SER:HA	1:G:571:ILE:HD12	1.97	0.47
2:H:25:HIS:HD2	2:H:104:LEU:HD11	1.80	0.47
1:A:2324:LEU:N	1:A:2324:LEU:HD23	2.30	0.46
1:A:4045:SER:HA	1:A:4078:THR:HG22	1.96	0.46
1:A:4781:LEU:CD1	1:C:4741:ALA:O	2.63	0.46
1:C:894:VAL:HG13	1:C:918:LEU:HD22	1.97	0.46
1:C:1521:THR:HA	1:C:1526:ASP:HA	1.96	0.46
1:C:2307:VAL:HG12	1:C:2317:ASN:HB3	1.98	0.46
1:C:3980:VAL:HA	1:C:3983:LEU:HG	1.97	0.46
1:E:881:ILE:HD11	1:E:952:ILE:HD13	1.95	0.46
1:E:2996:HIS:O	1:E:3000:LYS:CB	2.63	0.46
2:F:25:HIS:HD2	2:F:104:LEU:HD11	1.80	0.46
1:G:1733:THR:HA	1:G:1755:THR:HG21	1.97	0.46
1:G:1939:ASP:O	1:G:1943:PHE:N	2.45	0.46
1:C:1655:TYR:OH	1:C:1659:ARG:NH2	2.48	0.46
1:C:3875:THR:HG21	1:C:3924:TYR:HE2	1.80	0.46
1:C:4045:SER:HA	1:C:4078:THR:HG22	1.96	0.46
1:E:894:VAL:HG13	1:E:918:LEU:HD22	1.97	0.46
1:E:3980:VAL:HA	1:E:3983:LEU:HG	1.97	0.46
1:E:4045:SER:HA	1:E:4078:THR:HG22	1.96	0.46
1:G:1199:ASP:OD2	1:G:1199:ASP:N	2.37	0.46
1:G:1221:VAL:HA	1:G:1224:LEU:HB2	1.97	0.46
1:G:1611:ILE:HG13	1:G:1620:GLN:HB3	1.97	0.46
1:A:1221:VAL:HA	1:A:1224:LEU:HB2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2226:SER:O	1:A:2226:SER:OG	2.33	0.46
1:C:2996:HIS:O	1:C:3000:LYS:CB	2.63	0.46
1:E:394:HIS:CD2	1:E:397:GLY:H	2.32	0.46
1:E:687:THR:OG1	1:E:689:GLU:O	2.33	0.46
1:G:4757:ILE:O	1:G:4760:SER:OG	2.32	0.46
1:A:3927:GLY:O	1:A:3929:CYS:N	2.48	0.46
1:C:3642:ILE:HD11	1:C:3695:ILE:HG22	1.96	0.46
1:E:797:GLY:CA	1:E:1621:CYS:O	2.59	0.46
1:G:821:PRO:HG2	1:G:824:GLU:HG2	1.96	0.46
1:G:1440:ASN:N	1:G:1440:ASN:OD1	2.49	0.46
1:G:2324:LEU:HD23	1:G:2324:LEU:N	2.30	0.46
1:A:299:HIS:HD2	1:A:302:THR:H	1.63	0.46
1:A:687:THR:OG1	1:A:689:GLU:O	2.33	0.46
1:A:2996:HIS:O	1:A:3000:LYS:CB	2.63	0.46
1:C:394:HIS:HD2	1:C:397:GLY:H	1.64	0.46
1:C:1118:SER:HB2	1:C:1204:VAL:HG11	1.96	0.46
1:E:605:GLY:HA2	1:E:1589:GLN:HE21	1.81	0.46
1:E:1430:VAL:HG11	1:E:1443:VAL:HG11	1.97	0.46
1:E:4757:ILE:O	1:E:4760:SER:OG	2.32	0.46
1:G:894:VAL:HG13	1:G:918:LEU:HD22	1.97	0.46
1:G:4922:PHE:HE2	1:G:4941:VAL:HG11	1.80	0.46
1:A:4559:HIS:HE1	1:G:4791:ARG:HH22	1.63	0.46
1:E:23:GLN:HE21	1:E:34:LYS:HB3	1.80	0.46
1:E:299:HIS:HD2	1:E:302:THR:H	1.63	0.46
1:E:2110:ASN:OD1	1:E:2113:SER:OG	2.34	0.46
1:E:4922:PHE:HE2	1:E:4941:VAL:HG11	1.80	0.46
1:G:3927:GLY:O	1:G:3929:CYS:N	2.48	0.46
1:A:2116:ASP:N	1:A:2116:ASP:OD1	2.46	0.46
1:C:255:GLU:HB2	1:C:257:ARG:H	1.81	0.46
1:E:394:HIS:HD2	1:E:397:GLY:H	1.64	0.46
1:E:3900:ASP:N	1:E:3900:ASP:OD1	2.47	0.46
1:G:255:GLU:HB2	1:G:257:ARG:H	1.81	0.46
1:G:394:HIS:HD2	1:G:397:GLY:H	1.64	0.46
1:G:3875:THR:HG21	1:G:3924:TYR:HE2	1.80	0.46
1:A:1629:SER:OG	1:A:1630:LEU:N	2.48	0.46
1:A:4757:ILE:O	1:A:4760:SER:OG	2.32	0.46
1:A:4770:LEU:HB3	1:C:4754:LEU:HD13	1.97	0.46
1:C:4168:GLU:OE1	1:C:4595:LYS:NZ	2.46	0.46
1:G:299:HIS:HD2	1:G:302:THR:H	1.63	0.46
1:A:1430:VAL:HG11	1:A:1443:VAL:HG11	1.97	0.46
1:C:568:SER:HA	1:C:571:ILE:HD12	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2110:ASN:OD1	1:C:2110:ASN:N	2.49	0.46
2:D:25:HIS:HD2	2:D:104:LEU:HD11	1.80	0.46
1:E:1221:VAL:HA	1:E:1224:LEU:HB2	1.97	0.46
1:E:1629:SER:OG	1:E:1630:LEU:N	2.48	0.46
1:E:2116:ASP:N	1:E:2116:ASP:OD1	2.46	0.46
1:G:605:GLY:HA2	1:G:1589:GLN:HE21	1.81	0.46
1:G:3642:ILE:HD11	1:G:3695:ILE:HG22	1.96	0.46
1:A:394:HIS:HD2	1:A:397:GLY:H	1.64	0.46
1:A:894:VAL:HG13	1:A:918:LEU:HD22	1.97	0.46
1:A:3892:TYR:O	1:A:3896:LYS:NZ	2.40	0.46
1:A:4801:ASP:OD1	1:A:4801:ASP:N	2.49	0.46
1:C:3794:LEU:HD23	1:C:3794:LEU:HA	1.82	0.46
1:E:1033:VAL:HG23	1:E:1038:LEU:HD12	1.98	0.46
1:G:636:LEU:HD21	1:G:643:LEU:HD11	1.98	0.46
1:G:1430:VAL:HG11	1:G:1443:VAL:HG11	1.97	0.46
1:A:568:SER:HA	1:A:571:ILE:HD12	1.97	0.45
1:A:605:GLY:HA2	1:A:1589:GLN:HE21	1.81	0.45
1:A:1733:THR:HA	1:A:1755:THR:HG21	1.97	0.45
1:C:1440:ASN:OD1	1:C:1440:ASN:N	2.49	0.45
1:E:1440:ASN:N	1:E:1440:ASN:OD1	2.49	0.45
1:G:2464:ASP:N	1:G:2464:ASP:OD1	2.44	0.45
1:A:255:GLU:HB2	1:A:257:ARG:H	1.81	0.45
1:A:3793:SER:O	1:A:3797:LEU:N	2.45	0.45
1:C:687:THR:OG1	1:C:689:GLU:O	2.33	0.45
1:C:1220:ASP:HB3	1:C:1223:THR:HB	1.97	0.45
1:C:1221:VAL:HA	1:C:1224:LEU:HD12	1.99	0.45
1:C:1733:THR:HA	1:C:1755:THR:HG21	1.97	0.45
1:E:1221:VAL:HA	1:E:1224:LEU:HD12	1.99	0.45
1:E:2324:LEU:N	1:E:2324:LEU:HD23	2.31	0.45
1:E:4858:ILE:HD12	1:G:4867:ILE:CG2	2.26	0.45
1:G:797:GLY:CA	1:G:1621:CYS:O	2.59	0.45
1:G:1033:VAL:HG23	1:G:1038:LEU:HD12	1.98	0.45
1:A:1100:ARG:HH12	1:A:1170:GLU:H	1.65	0.45
1:A:3794:LEU:HD23	1:A:3794:LEU:HA	1.82	0.45
1:C:1764:SER:OG	1:C:1779:SER:O	2.33	0.45
1:C:4171:ARG:NE	5:C:6002:ATP:O2G	2.41	0.45
1:E:294:PRO:HB2	1:E:328:ALA:HB1	1.99	0.45
1:E:636:LEU:HD21	1:E:643:LEU:HD11	1.99	0.45
1:G:1124:PRO:HB2	1:G:1252:SER:HB2	1.98	0.45
1:G:4823:ARG:HB2	1:G:4823:ARG:HH11	1.71	0.45
1:A:294:PRO:HB2	1:A:328:ALA:HB1	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2265:LYS:HA	1:A:2268:ARG:HB2	1.98	0.45
1:A:2326:ILE:CB	1:G:207:PHE:CZ	2.99	0.45
1:A:4819:TYR:HD1	1:G:4845:ILE:HD12	1.56	0.45
1:C:2464:ASP:N	1:C:2464:ASP:OD1	2.44	0.45
1:E:1220:ASP:HB3	1:E:1223:THR:HB	1.98	0.45
1:E:4801:ASP:OD1	1:E:4801:ASP:N	2.49	0.45
1:G:2776:ILE:O	1:G:2779:SER:HB3	2.16	0.45
1:G:3980:VAL:HA	1:G:3983:LEU:HG	1.97	0.45
1:A:1614:ARG:HH11	1:A:1617:TRP:HE1	1.64	0.45
1:A:4519:LEU:O	1:G:4810:MET:HB3	2.17	0.45
1:C:572:LEU:HD12	1:C:572:LEU:HA	1.84	0.45
1:C:1033:VAL:HG23	1:C:1038:LEU:HD12	1.98	0.45
1:C:1124:PRO:HB2	1:C:1252:SER:HB2	1.98	0.45
1:C:4052:ALA:O	1:C:4056:HIS:ND1	2.38	0.45
1:G:1220:ASP:HB3	1:G:1223:THR:HB	1.97	0.45
1:G:2110:ASN:OD1	1:G:2110:ASN:N	2.49	0.45
1:G:2771:ILE:H	1:G:2771:ILE:HG13	1.63	0.45
1:A:1124:PRO:HB2	1:A:1252:SER:HB2	1.98	0.45
1:A:2314:VAL:HG23	1:A:2314:VAL:O	2.17	0.45
1:C:294:PRO:HB2	1:C:328:ALA:HB1	1.99	0.45
1:C:605:GLY:HA2	1:C:1589:GLN:HE21	1.81	0.45
1:C:4801:ASP:OD1	1:C:4801:ASP:N	2.49	0.45
1:A:1033:VAL:HG23	1:A:1038:LEU:HD12	1.98	0.45
1:A:1220:ASP:HB3	1:A:1223:THR:HB	1.97	0.45
1:A:1221:VAL:HA	1:A:1224:LEU:HD12	1.99	0.45
1:A:2776:ILE:O	1:A:2779:SER:HB3	2.16	0.45
1:C:35:LEU:HD12	1:C:49:LEU:HB3	1.99	0.45
1:C:4862:ILE:HG23	1:E:4868:ILE:HD11	1.99	0.45
1:E:2776:ILE:O	1:E:2779:SER:HB3	2.16	0.45
1:E:4051:LYS:O	1:E:4055:SER:N	2.46	0.45
1:G:294:PRO:HB2	1:G:328:ALA:HB1	1.99	0.45
1:G:1100:ARG:HH12	1:G:1170:GLU:H	1.65	0.45
1:G:1171:HIS:O	1:G:1194:ASP:N	2.45	0.45
1:G:2141:LYS:HE2	1:G:2141:LYS:HB2	1.80	0.45
1:G:2208:SER:OG	1:G:2209:ARG:N	2.50	0.45
1:A:3980:VAL:HA	1:A:3983:LEU:HG	1.97	0.45
1:C:443:SER:O	1:C:443:SER:OG	2.35	0.45
1:C:1171:HIS:O	1:C:1194:ASP:N	2.45	0.45
1:C:2093:TYR:HD2	1:C:3641:LEU:HD22	1.82	0.45
1:C:3927:GLY:O	1:C:3929:CYS:N	2.48	0.45
2:D:26:TYR:HB2	2:D:101:VAL:HG12	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:1210:ALA:N	1:G:1211:GLN:OE1	2.50	0.45
1:G:3957:MET:O	1:G:3960:SER:OG	2.33	0.45
1:A:4770:LEU:HD13	1:C:4751:PHE:HD1	1.82	0.45
1:A:4791:ARG:HH22	1:C:4559:HIS:HE1	1.64	0.45
1:A:4867:ILE:CG2	1:G:4858:ILE:HD12	2.26	0.45
1:C:894:VAL:HG22	1:C:918:LEU:HA	1.99	0.45
1:C:1614:ARG:NH1	1:C:1617:TRP:HE1	2.15	0.45
1:E:661:LEU:O	1:E:788:PHE:N	2.43	0.45
1:E:767:SER:OG	1:E:777:GLY:O	2.35	0.45
1:E:1614:ARG:NH1	1:E:1617:TRP:HE1	2.15	0.45
1:E:2208:SER:OG	1:E:2209:ARG:N	2.50	0.45
1:E:3809:PHE:O	1:E:3813:ASN:N	2.50	0.45
1:G:2265:LYS:HA	1:G:2268:ARG:HB2	1.98	0.45
1:G:4801:ASP:OD1	1:G:4801:ASP:N	2.49	0.45
1:A:767:SER:OG	1:A:777:GLY:O	2.35	0.45
1:A:1210:ALA:N	1:A:1211:GLN:OE1	2.50	0.45
1:E:2265:LYS:HA	1:E:2268:ARG:HB2	1.98	0.45
1:E:4569:MET:O	1:E:4572:THR:OG1	2.31	0.45
1:G:998:LYS:HB3	1:G:998:LYS:HE3	1.82	0.45
1:A:494:MET:HA	1:A:497:LEU:HB2	2.00	0.44
1:A:1718:ARG:NH1	1:A:1758:ARG:HD3	2.33	0.44
1:A:2110:ASN:OD1	1:A:2110:ASN:N	2.49	0.44
1:A:2208:SER:OG	1:A:2209:ARG:N	2.50	0.44
1:C:2776:ILE:O	1:C:2779:SER:HB3	2.16	0.44
1:E:1718:ARG:NH1	1:E:1758:ARG:HD3	2.33	0.44
1:E:2110:ASN:OD1	1:E:2110:ASN:N	2.49	0.44
1:G:2314:VAL:HG23	1:G:2314:VAL:O	2.17	0.44
1:A:35:LEU:HD12	1:A:49:LEU:HB3	1.99	0.44
1:A:306:LEU:O	1:A:327:THR:OG1	2.27	0.44
1:C:1602:GLN:HB2	1:C:1643:GLU:HG2	1.99	0.44
1:C:2208:SER:OG	1:C:2209:ARG:N	2.50	0.44
1:C:4781:LEU:CD1	1:E:4741:ALA:O	2.65	0.44
1:E:1124:PRO:HB2	1:E:1252:SER:HB2	1.98	0.44
1:E:1210:ALA:N	1:E:1211:GLN:OE1	2.50	0.44
1:E:2093:TYR:HD2	1:E:3641:LEU:HD22	1.82	0.44
1:E:3957:MET:O	1:E:3960:SER:OG	2.33	0.44
1:G:1221:VAL:HA	1:G:1224:LEU:HD12	1.99	0.44
1:G:1718:ARG:NH1	1:G:1758:ARG:HD3	2.33	0.44
1:G:1849:SER:OG	1:G:1849:SER:O	2.35	0.44
1:A:636:LEU:HD21	1:A:643:LEU:HD11	1.99	0.44
2:B:78:PRO:HA	2:B:81:ALA:HB3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:290:ARG:HA	1:C:353:GLU:HG2	1.99	0.44
1:C:544:ASN:HB2	1:C:547:ASN:HD22	1.83	0.44
1:C:1718:ARG:NH1	1:C:1758:ARG:HD3	2.33	0.44
1:C:1930:SER:O	1:C:1930:SER:OG	2.31	0.44
1:C:2141:LYS:HE2	1:C:2141:LYS:HB2	1.80	0.44
2:D:78:PRO:HA	2:D:81:ALA:HB3	2.00	0.44
1:E:1614:ARG:HH11	1:E:1617:TRP:HE1	1.64	0.44
1:E:2264:GLU:HG2	1:E:2324:LEU:CD1	2.47	0.44
1:E:3927:GLY:O	1:E:3929:CYS:N	2.48	0.44
2:F:57:LYS:HD2	2:F:57:LYS:HA	1.69	0.44
1:G:290:ARG:HA	1:G:353:GLU:HG2	1.99	0.44
2:H:78:PRO:HA	2:H:81:ALA:HB3	2.00	0.44
1:A:1614:ARG:HA	1:A:1614:ARG:HD3	1.86	0.44
1:A:4168:GLU:OE1	1:A:4595:LYS:NZ	2.46	0.44
1:C:408:SER:OG	1:C:409:GLN:N	2.50	0.44
1:C:1210:ALA:N	1:C:1211:GLN:OE1	2.50	0.44
1:C:2110:ASN:OD1	1:C:2113:SER:OG	2.34	0.44
1:C:2265:LYS:HA	1:C:2268:ARG:HB2	1.98	0.44
1:C:2771:ILE:H	1:C:2771:ILE:HG13	1.63	0.44
2:F:26:TYR:HB2	2:F:101:VAL:HG12	1.99	0.44
2:F:78:PRO:HA	2:F:81:ALA:HB3	2.00	0.44
1:A:2110:ASN:OD1	1:A:2113:SER:OG	2.34	0.44
2:B:21:THR:HG22	2:B:49:ARG:HE	1.83	0.44
1:C:3761:LYS:NZ	1:C:3835:GLU:OE2	2.42	0.44
2:D:21:THR:HG22	2:D:49:ARG:HE	1.83	0.44
1:E:1939:ASP:OD1	1:E:1939:ASP:N	2.40	0.44
1:E:2307:VAL:HG12	1:E:2317:ASN:HB3	1.99	0.44
1:E:4168:GLU:OE1	1:E:4595:LYS:NZ	2.46	0.44
1:G:676:GLU:OE1	1:G:756:SER:OG	2.33	0.44
1:A:243:GLU:OE2	1:A:389:ARG:NH2	2.51	0.44
1:A:1440:ASN:OD1	1:A:1440:ASN:N	2.49	0.44
1:A:1811:GLY:HA3	1:A:1816:PHE:HB2	2.00	0.44
1:A:2093:TYR:HD2	1:A:3641:LEU:HD22	1.82	0.44
1:C:494:MET:HA	1:C:497:LEU:HB2	2.00	0.44
1:C:3809:PHE:O	1:C:3813:ASN:N	2.50	0.44
1:E:35:LEU:HD12	1:E:49:LEU:HB3	1.99	0.44
1:E:243:GLU:OE2	1:E:389:ARG:NH2	2.51	0.44
1:E:255:GLU:HB2	1:E:257:ARG:H	1.81	0.44
1:E:544:ASN:HB2	1:E:547:ASN:HD22	1.83	0.44
1:E:1930:SER:O	1:E:1930:SER:OG	2.31	0.44
1:G:408:SER:OG	1:G:409:GLN:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:494:MET:HA	1:G:497:LEU:HB2	1.99	0.44
1:G:894:VAL:HG22	1:G:918:LEU:HA	1.99	0.44
1:G:1614:ARG:NH1	1:G:1617:TRP:HE1	2.15	0.44
1:G:1614:ARG:HH11	1:G:1617:TRP:HE1	1.64	0.44
1:G:2857:LYS:HZ3	1:G:2869:HIS:HB3	1.83	0.44
1:G:4052:ALA:O	1:G:4056:HIS:ND1	2.38	0.44
1:A:4751:PHE:HD1	1:G:4770:LEU:HD13	1.82	0.44
1:C:636:LEU:HD21	1:C:643:LEU:HD11	1.99	0.44
1:E:1811:GLY:HA3	1:E:1816:PHE:HB2	2.00	0.44
1:E:3962:ASP:HB2	1:E:3965:GLN:HE22	1.83	0.44
1:G:544:ASN:HB2	1:G:547:ASN:HD22	1.83	0.44
1:G:1602:GLN:HB2	1:G:1643:GLU:HG2	1.99	0.44
1:G:2110:ASN:OD1	1:G:2113:SER:OG	2.34	0.44
1:G:2148:GLY:O	1:G:2152:ASN:ND2	2.51	0.44
1:C:76:ARG:HD2	1:E:3891:TRP:CG	2.45	0.44
1:C:243:GLU:OE2	1:C:389:ARG:NH2	2.51	0.44
1:C:1614:ARG:HH11	1:C:1617:TRP:HE1	1.64	0.44
1:E:2141:LYS:HE2	1:E:2141:LYS:HB2	1.80	0.44
1:E:4045:SER:OG	1:E:4048:ASP:N	2.48	0.44
1:G:234:LEU:HD13	1:G:405:LEU:HD22	2.00	0.44
1:G:611:LEU:HD22	1:G:1660:LEU:HD22	1.99	0.44
1:G:3900:ASP:N	1:G:3900:ASP:OD1	2.47	0.44
2:H:21:THR:HG22	2:H:49:ARG:HE	1.83	0.44
1:A:290:ARG:HA	1:A:353:GLU:HG2	1.99	0.44
1:A:408:SER:OG	1:A:409:GLN:N	2.50	0.44
1:A:1009:ARG:HA	1:A:1012:ILE:HG12	2.00	0.44
1:A:4569:MET:O	1:A:4572:THR:OG1	2.31	0.44
2:B:57:LYS:HD2	2:B:57:LYS:HA	1.69	0.44
1:C:1687:TYR:OH	1:C:1691:ASN:ND2	2.51	0.44
1:C:2148:GLY:O	1:C:2152:ASN:ND2	2.51	0.44
1:C:4045:SER:OG	1:C:4048:ASP:N	2.48	0.44
1:C:4945:TYR:OH	6:C:6003:CFF:H81	2.18	0.44
2:F:21:THR:HG22	2:F:49:ARG:HE	1.83	0.44
1:G:767:SER:OG	1:G:777:GLY:O	2.35	0.44
1:A:652:VAL:HG21	1:A:714:GLY:HA3	2.00	0.43
1:A:4810:MET:HB3	1:C:4519:LEU:O	2.18	0.43
1:C:652:VAL:HG21	1:C:714:GLY:HA3	2.00	0.43
1:C:1572:LYS:HD2	1:C:1585:ARG:H	1.83	0.43
1:C:3892:TYR:O	1:C:3896:LYS:NZ	2.40	0.43
1:E:1687:TYR:OH	1:E:1691:ASN:ND2	2.51	0.43
1:E:2148:GLY:O	1:E:2152:ASN:ND2	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:35:LEU:HD12	1:G:49:LEU:HB3	1.99	0.43
1:A:1572:LYS:HD2	1:A:1585:ARG:H	1.83	0.43
1:A:1614:ARG:NH1	1:A:1617:TRP:HE1	2.15	0.43
1:A:2120:LEU:HD13	1:A:2153:ASN:HD22	1.83	0.43
2:B:26:TYR:HB2	2:B:101:VAL:HG12	1.99	0.43
1:C:1009:ARG:HA	1:C:1012:ILE:HG12	2.00	0.43
1:C:1100:ARG:HH12	1:C:1170:GLU:H	1.65	0.43
1:C:1811:GLY:HA3	1:C:1816:PHE:HB2	2.00	0.43
1:E:234:LEU:HD13	1:E:405:LEU:HD22	2.00	0.43
1:E:443:SER:O	1:E:443:SER:OG	2.35	0.43
1:E:652:VAL:HG21	1:E:714:GLY:HA3	2.00	0.43
1:E:2103:LEU:HD23	1:E:2103:LEU:HA	1.81	0.43
1:G:652:VAL:HG21	1:G:714:GLY:HA3	2.00	0.43
1:G:1687:TYR:OH	1:G:1691:ASN:ND2	2.51	0.43
1:G:1811:GLY:HA3	1:G:1816:PHE:HB2	2.00	0.43
1:G:2093:TYR:HD2	1:G:3641:LEU:HD22	1.82	0.43
1:G:2226:SER:O	1:G:2226:SER:OG	2.33	0.43
1:G:3809:PHE:O	1:G:3813:ASN:N	2.50	0.43
1:A:544:ASN:HB2	1:A:547:ASN:HD22	1.83	0.43
1:A:611:LEU:HD22	1:A:1660:LEU:HD22	1.99	0.43
1:A:2771:ILE:H	1:A:2771:ILE:HG13	1.63	0.43
1:E:494:MET:HA	1:E:497:LEU:HB2	2.00	0.43
1:E:894:VAL:HG22	1:E:918:LEU:HA	1.99	0.43
1:E:1100:ARG:HH12	1:E:1170:GLU:H	1.65	0.43
1:E:1602:GLN:HB2	1:E:1643:GLU:HG2	1.99	0.43
1:E:4945:TYR:OH	6:E:6003:CFF:H81	2.18	0.43
1:G:3962:ASP:HB2	1:G:3965:GLN:HE22	1.83	0.43
1:A:406:SER:O	1:A:406:SER:OG	2.35	0.43
1:A:797:GLY:CA	1:A:1621:CYS:O	2.59	0.43
1:A:894:VAL:HG22	1:A:918:LEU:HA	1.99	0.43
1:A:1823:LYS:HB2	1:A:1823:LYS:HE3	1.88	0.43
1:A:2088:LEU:HD12	1:A:2088:LEU:HA	1.84	0.43
1:C:2298:ARG:O	1:C:2301:ASP:HB3	2.19	0.43
1:E:1009:ARG:HA	1:E:1012:ILE:HG12	2.00	0.43
1:G:243:GLU:OE2	1:G:389:ARG:NH2	2.51	0.43
1:G:1009:ARG:HA	1:G:1012:ILE:HG12	2.00	0.43
1:G:3794:LEU:HD23	1:G:3794:LEU:HA	1.82	0.43
1:A:4862:ILE:HG23	1:C:4868:ILE:HD11	1.99	0.43
1:C:399:MET:SD	1:C:399:MET:N	2.92	0.43
1:C:2876:ASP:OD1	1:C:2876:ASP:N	2.47	0.43
1:C:4810:MET:HB3	1:E:4519:LEU:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:57:LYS:HD2	2:D:57:LYS:HA	1.69	0.43
1:E:30:LYS:HD3	1:E:30:LYS:HA	1.69	0.43
1:E:408:SER:OG	1:E:409:GLN:N	2.50	0.43
1:G:976:TYR:CZ	1:G:978:PRO:HB3	2.53	0.43
1:G:2120:LEU:HD13	1:G:2153:ASN:HD22	1.83	0.43
2:H:26:TYR:HB2	2:H:101:VAL:HG12	1.99	0.43
1:A:1228:THR:OG1	1:A:1229:ILE:N	2.52	0.43
1:A:4523:VAL:CG1	1:G:4808:ASP:HB2	2.49	0.43
1:C:611:LEU:HD22	1:C:1660:LEU:HD22	1.99	0.43
1:C:976:TYR:CZ	1:C:978:PRO:HB3	2.53	0.43
1:E:2270:LEU:HA	1:E:2270:LEU:HD23	1.81	0.43
1:G:1228:THR:OG1	1:G:1229:ILE:N	2.52	0.43
1:G:1572:LYS:HD2	1:G:1585:ARG:H	1.83	0.43
1:G:1610:ARG:HE	1:G:1610:ARG:HB3	1.64	0.43
1:G:2298:ARG:O	1:G:2301:ASP:HB3	2.19	0.43
1:G:3984:LEU:HD23	1:G:3984:LEU:HA	1.87	0.43
1:G:4945:TYR:OH	6:G:6003:CFF:H81	2.18	0.43
1:A:399:MET:SD	1:A:399:MET:N	2.92	0.43
1:A:1687:TYR:OH	1:A:1691:ASN:ND2	2.51	0.43
1:A:2298:ARG:O	1:A:2301:ASP:HB3	2.19	0.43
1:A:2323:ARG:HD2	1:G:189:GLU:OE2	2.18	0.43
1:C:180:ASP:HB3	1:C:211:LEU:HD12	2.01	0.43
1:C:374:TYR:HE1	1:C:400:ASP:HB2	1.84	0.43
1:C:3962:ASP:HB2	1:C:3965:GLN:HE22	1.83	0.43
1:E:66:THR:OG1	1:E:124:SER:OG	2.25	0.43
1:E:611:LEU:HD22	1:E:1660:LEU:HD22	1.99	0.43
1:E:1228:THR:OG1	1:E:1229:ILE:N	2.52	0.43
1:E:1572:LYS:HD2	1:E:1585:ARG:H	1.83	0.43
1:E:4892:CYS:HB3	1:E:4894:ILE:HG12	2.01	0.43
1:G:1211:GLN:OE1	1:G:1211:GLN:N	2.52	0.43
1:G:1630:LEU:HD22	1:G:1641:ILE:HG13	2.01	0.43
1:A:897:LYS:HE3	1:A:897:LYS:HB3	1.92	0.43
1:A:976:TYR:CZ	1:A:978:PRO:HB3	2.53	0.43
1:A:1211:GLN:OE1	1:A:1211:GLN:N	2.52	0.43
1:A:4754:LEU:HD21	1:G:4770:LEU:C	2.39	0.43
1:C:1211:GLN:OE1	1:C:1211:GLN:N	2.52	0.43
1:C:1840:LYS:O	1:C:1844:GLN:NE2	2.52	0.43
1:C:4892:CYS:HB3	1:C:4894:ILE:HG12	2.01	0.43
1:E:374:TYR:HE1	1:E:400:ASP:HB2	1.84	0.43
1:E:3892:TYR:O	1:E:3896:LYS:NZ	2.40	0.43
1:G:374:TYR:HE1	1:G:400:ASP:HB2	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:572:LEU:HD12	1:G:572:LEU:HA	1.84	0.43
1:G:2397:ILE:HD13	1:G:2397:ILE:HA	1.90	0.43
1:G:4171:ARG:NE	5:G:6002:ATP:O2G	2.41	0.43
1:A:1602:GLN:HB2	1:A:1643:GLU:HG2	1.99	0.43
1:A:4868:ILE:HD11	1:G:4862:ILE:HG23	2.00	0.43
2:B:42:ARG:HG3	2:B:44:LYS:HB2	2.01	0.43
1:C:156:GLU:HB2	1:C:187:SER:HB3	2.01	0.43
1:C:644:LEU:HB3	1:C:1630:LEU:HD12	2.01	0.43
1:C:4791:ARG:HH22	1:E:4559:HIS:HE1	1.66	0.43
1:E:3829:LYS:HB3	1:E:3829:LYS:HE3	1.86	0.43
2:F:38:SER:OG	2:F:39:SER:N	2.52	0.43
1:A:374:TYR:HE1	1:A:400:ASP:HB2	1.84	0.43
1:A:4744:LEU:HD23	1:A:4744:LEU:HA	1.78	0.43
1:C:900:LEU:HD23	1:C:902:TRP:HE1	1.84	0.43
1:C:2267:VAL:HG21	1:C:2324:LEU:HB3	2.00	0.43
1:E:290:ARG:HA	1:E:353:GLU:HG2	1.99	0.43
1:E:4770:LEU:HD13	1:G:4751:PHE:HD1	1.83	0.43
1:A:59:PRO:HB3	1:A:296:ARG:CZ	2.49	0.42
1:A:180:ASP:HB3	1:A:211:LEU:HD12	2.01	0.42
1:A:1526:ASP:OD1	1:A:1526:ASP:N	2.52	0.42
1:A:2148:GLY:O	1:A:2152:ASN:ND2	2.51	0.42
1:A:3962:ASP:HB2	1:A:3965:GLN:HE22	1.83	0.42
1:A:4945:TYR:OH	6:A:6003:CFF:H81	2.18	0.42
1:C:2120:LEU:HD13	1:C:2153:ASN:HD22	1.83	0.42
1:E:399:MET:SD	1:E:399:MET:N	2.92	0.42
1:E:2298:ARG:O	1:E:2301:ASP:HB3	2.19	0.42
1:E:4858:ILE:CD1	1:G:4867:ILE:HG21	2.27	0.42
1:A:572:LEU:HD12	1:A:572:LEU:HA	1.84	0.42
1:A:864:PRO:HG3	1:A:1034:PRO:HB3	2.01	0.42
1:A:1445:TRP:H	1:A:1487:MET:HG2	1.84	0.42
1:A:2270:LEU:HD23	1:A:2270:LEU:HA	1.81	0.42
1:C:767:SER:OG	1:C:777:GLY:O	2.35	0.42
1:C:2271:ALA:HB2	1:C:2328:ARG:HD3	2.01	0.42
2:D:11:ASP:OD1	2:D:11:ASP:N	2.52	0.42
1:E:474:ASP:HA	1:E:477:ASN:HD22	1.84	0.42
1:E:976:TYR:CZ	1:E:978:PRO:HB3	2.53	0.42
1:E:1211:GLN:OE1	1:E:1211:GLN:N	2.52	0.42
1:E:2271:ALA:HB2	1:E:2328:ARG:HD3	2.01	0.42
1:E:3857:ASN:OD1	1:E:3860:ARG:NH1	2.52	0.42
1:E:4808:ASP:HB2	1:G:4523:VAL:CG1	2.50	0.42
1:G:3880:LEU:HD21	1:G:3940:ARG:HD2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:42:ARG:HG3	2:H:44:LYS:HB2	2.01	0.42
1:A:1840:LYS:O	1:A:1844:GLN:NE2	2.52	0.42
1:A:4770:LEU:C	1:C:4754:LEU:HD11	2.39	0.42
1:C:234:LEU:HD13	1:C:405:LEU:HD22	2.00	0.42
1:C:998:LYS:HB3	1:C:998:LYS:HE3	1.82	0.42
1:C:4823:ARG:H	1:C:4823:ARG:HG3	1.55	0.42
1:E:900:LEU:HD23	1:E:902:TRP:HE1	1.84	0.42
1:E:1250:TRP:HE1	1:E:1602:GLN:HG3	1.84	0.42
1:E:2226:SER:O	1:E:2226:SER:OG	2.33	0.42
1:E:4894:ILE:HD13	1:E:4894:ILE:HA	1.94	0.42
1:G:3857:ASN:OD1	1:G:3860:ARG:NH1	2.52	0.42
2:H:38:SER:OG	2:H:39:SER:N	2.52	0.42
1:A:156:GLU:HB2	1:A:187:SER:HB3	2.01	0.42
1:A:1630:LEU:HD22	1:A:1641:ILE:HG13	2.01	0.42
1:A:4589:ILE:HD13	1:A:4589:ILE:HA	1.92	0.42
1:C:1228:THR:OG1	1:C:1229:ILE:N	2.52	0.42
1:C:3880:LEU:HD21	1:C:3940:ARG:HD2	2.01	0.42
1:E:1823:LYS:HB2	1:E:1823:LYS:HE3	1.88	0.42
1:E:1828:LEU:HD12	1:E:1828:LEU:HA	1.87	0.42
1:E:1840:LYS:O	1:E:1844:GLN:NE2	2.52	0.42
2:F:30:LEU:HD23	2:F:30:LEU:HA	1.90	0.42
1:G:192:LEU:O	1:G:212:TRP:NE1	2.47	0.42
1:G:399:MET:SD	1:G:399:MET:N	2.92	0.42
1:G:4045:SER:OG	1:G:4048:ASP:N	2.48	0.42
1:A:3880:LEU:HD21	1:A:3940:ARG:HD2	2.01	0.42
1:A:4892:CYS:HB3	1:A:4894:ILE:HG12	2.01	0.42
1:C:1526:ASP:N	1:C:1526:ASP:OD1	2.52	0.42
1:C:3957:MET:O	1:C:3960:SER:OG	2.33	0.42
1:E:143:LEU:HD22	1:G:2427:LEU:HD21	1.92	0.42
1:E:189:GLU:OE2	1:G:2323:ARG:HD2	2.19	0.42
1:E:406:SER:O	1:E:406:SER:OG	2.35	0.42
1:E:449:ILE:HD13	1:E:449:ILE:HA	1.88	0.42
1:E:1556:GLU:O	1:E:1572:LYS:NZ	2.44	0.42
1:G:1250:TRP:NE1	1:G:1643:GLU:OE2	2.53	0.42
1:G:3844:LEU:HA	1:G:3844:LEU:HD23	1.84	0.42
2:H:5:GLU:HB3	2:H:73:LYS:HB3	2.02	0.42
1:A:234:LEU:HD13	1:A:405:LEU:HD22	2.00	0.42
1:A:677:LEU:HD11	1:A:792:VAL:HG21	2.02	0.42
1:A:3609:LEU:HD12	1:A:3609:LEU:HA	1.86	0.42
1:C:59:PRO:HB3	1:C:296:ARG:CZ	2.49	0.42
1:C:864:PRO:HG3	1:C:1034:PRO:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1250:TRP:HE1	1:C:1602:GLN:HG3	1.84	0.42
1:C:2030:LEU:HD23	1:C:2030:LEU:HA	1.90	0.42
1:E:59:PRO:HB3	1:E:296:ARG:CZ	2.50	0.42
1:E:351:THR:OG1	1:E:352:SER:N	2.53	0.42
1:E:1445:TRP:H	1:E:1487:MET:HG2	1.84	0.42
1:E:1526:ASP:N	1:E:1526:ASP:OD1	2.52	0.42
1:E:1610:ARG:HE	1:E:1610:ARG:HB3	1.64	0.42
1:E:3609:LEU:HD12	1:E:3609:LEU:HA	1.86	0.42
1:G:1556:GLU:O	1:G:1572:LYS:NZ	2.44	0.42
1:A:900:LEU:HD23	1:A:902:TRP:HE1	1.84	0.42
1:A:2518:ASN:HA	1:A:2521:LEU:HD12	2.02	0.42
1:A:4808:ASP:HB2	1:C:4523:VAL:HG11	2.02	0.42
1:C:351:THR:OG1	1:C:352:SER:N	2.53	0.42
1:C:1785:ASP:OD1	1:C:1785:ASP:N	2.53	0.42
1:C:1792:ILE:HG12	1:C:1842:ILE:HD11	2.01	0.42
1:C:3793:SER:O	1:C:3797:LEU:N	2.45	0.42
1:C:4770:LEU:HD13	1:E:4751:PHE:HD1	1.85	0.42
1:E:156:GLU:HB2	1:E:187:SER:HB3	2.01	0.42
1:E:357:GLY:O	1:E:404:ASN:ND2	2.46	0.42
1:E:505:LEU:HD23	1:E:505:LEU:HA	1.83	0.42
1:E:677:LEU:HD11	1:E:792:VAL:HG21	2.02	0.42
1:E:4862:ILE:HG23	1:G:4868:ILE:HD11	2.01	0.42
1:G:59:PRO:HB3	1:G:296:ARG:CZ	2.49	0.42
1:G:1658:LEU:HD23	1:G:1658:LEU:HA	1.80	0.42
1:G:1840:LYS:O	1:G:1844:GLN:NE2	2.52	0.42
1:G:2163:MET:SD	1:G:2163:MET:N	2.93	0.42
1:G:3834:ASP:O	1:G:3837:THR:OG1	2.33	0.42
1:A:1250:TRP:NE1	1:A:1643:GLU:OE2	2.53	0.42
1:A:1258:PHE:HA	1:A:1595:LEU:HA	2.02	0.42
1:A:2163:MET:SD	1:A:2163:MET:N	2.93	0.42
2:B:38:SER:OG	2:B:39:SER:N	2.52	0.42
1:C:1445:TRP:H	1:C:1487:MET:HG2	1.84	0.42
2:D:42:ARG:HG3	2:D:44:LYS:HB2	2.01	0.42
1:E:1258:PHE:HA	1:E:1595:LEU:HA	2.02	0.42
1:G:156:GLU:HB2	1:G:187:SER:HB3	2.01	0.42
1:G:180:ASP:HB3	1:G:211:LEU:HD12	2.01	0.42
1:G:1445:TRP:H	1:G:1487:MET:HG2	1.84	0.42
1:G:1785:ASP:OD1	1:G:1785:ASP:N	2.53	0.42
1:G:2518:ASN:HA	1:G:2521:LEU:HD12	2.02	0.42
1:G:3991:VAL:HG12	1:G:4145:ARG:NH2	2.35	0.42
1:A:325:LYS:O	1:A:365:HIS:NE2	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:357:GLY:O	1:A:404:ASN:ND2	2.46	0.42
1:A:472:HIS:O	1:A:472:HIS:ND1	2.53	0.42
1:A:644:LEU:HB3	1:A:1630:LEU:HD12	2.01	0.42
1:A:1273:ILE:HD11	1:A:1287:GLN:HB2	2.02	0.42
1:C:274:LEU:HD23	1:C:274:LEU:HA	1.90	0.42
1:C:1258:PHE:HA	1:C:1595:LEU:HA	2.02	0.42
2:D:38:SER:OG	2:D:39:SER:N	2.52	0.42
1:E:274:LEU:HD23	1:E:274:LEU:HA	1.90	0.42
1:E:1273:ILE:HD11	1:E:1287:GLN:HB2	2.02	0.42
1:E:2071:ALA:HB2	1:E:2085:MET:HE1	2.02	0.42
1:E:2120:LEU:HD13	1:E:2153:ASN:HD22	1.83	0.42
1:E:2771:ILE:H	1:E:2771:ILE:HG13	1.63	0.42
1:G:474:ASP:HA	1:G:477:ASN:HD22	1.84	0.42
1:G:1250:TRP:HE1	1:G:1602:GLN:HG3	1.84	0.42
1:G:1792:ILE:HG12	1:G:1842:ILE:HD11	2.01	0.42
1:A:1764:SER:OG	1:A:1779:SER:O	2.33	0.42
1:C:2316:GLU:HG2	1:C:3811:ARG:NH2	2.35	0.42
1:C:3630:ILE:HD13	1:C:3630:ILE:HA	1.93	0.42
1:E:1630:LEU:HD22	1:E:1641:ILE:HG13	2.01	0.42
1:G:1258:PHE:HA	1:G:1595:LEU:HA	2.02	0.42
1:G:1273:ILE:HD11	1:G:1287:GLN:HB2	2.02	0.42
1:G:1308:ILE:HG12	1:G:1575:HIS:HD1	1.85	0.42
1:G:1911:LEU:HD23	1:G:1911:LEU:HA	1.92	0.42
1:A:3991:VAL:HG12	1:A:4145:ARG:NH2	2.35	0.41
1:A:4867:ILE:HG21	1:G:4858:ILE:CD1	2.27	0.41
2:B:5:GLU:HB3	2:B:73:LYS:HB3	2.02	0.41
1:C:1273:ILE:HD11	1:C:1287:GLN:HB2	2.02	0.41
1:C:2103:LEU:HD23	1:C:2103:LEU:HA	1.81	0.41
1:C:3920:THR:O	1:C:3920:THR:OG1	2.38	0.41
1:E:180:ASP:HB3	1:E:211:LEU:HD12	2.01	0.41
1:E:799:LYS:HA	1:E:1619:VAL:O	2.20	0.41
1:E:1171:HIS:O	1:E:1194:ASP:N	2.45	0.41
1:E:1250:TRP:NE1	1:E:1643:GLU:OE2	2.53	0.41
1:E:4849:ILE:HD12	1:E:4849:ILE:HA	1.92	0.41
1:G:66:THR:OG1	1:G:124:SER:OG	2.25	0.41
1:G:438:LYS:HA	1:G:438:LYS:HD3	1.88	0.41
1:G:677:LEU:HD11	1:G:792:VAL:HG21	2.02	0.41
1:G:900:LEU:HD23	1:G:902:TRP:HE1	1.84	0.41
1:G:1526:ASP:N	1:G:1526:ASP:OD1	2.52	0.41
1:G:2402:ARG:HA	1:G:2402:ARG:HD3	1.86	0.41
1:G:4892:CYS:HB3	1:G:4894:ILE:HG12	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1250:TRP:HE1	1:A:1602:GLN:HG3	1.84	0.41
1:A:1300:MET:HB3	1:A:1302:TYR:CZ	2.55	0.41
1:A:1792:ILE:HG12	1:A:1842:ILE:HD11	2.01	0.41
1:A:1828:LEU:HD12	1:A:1828:LEU:HA	1.87	0.41
1:C:76:ARG:CB	1:C:76:ARG:NH2	2.73	0.41
1:C:676:GLU:OE1	1:C:756:SER:OG	2.33	0.41
1:C:1300:MET:HB3	1:C:1302:TYR:CZ	2.54	0.41
1:C:1849:SER:OG	1:C:1849:SER:O	2.35	0.41
1:E:2328:ARG:CB	1:E:2329:PRO:CD	2.97	0.41
1:G:325:LYS:O	1:G:365:HIS:NE2	2.53	0.41
1:G:351:THR:OG1	1:G:352:SER:N	2.53	0.41
1:G:864:PRO:HG3	1:G:1034:PRO:HB3	2.01	0.41
1:G:2270:LEU:HA	1:G:2270:LEU:HD23	1.81	0.41
1:A:438:LYS:HD3	1:A:438:LYS:HA	1.87	0.41
1:A:1689:ILE:HD11	1:A:1706:LEU:HD22	2.02	0.41
1:A:3841:PHE:HB3	1:A:3920:THR:HG21	2.02	0.41
1:C:1570:LEU:HD23	1:C:1570:LEU:HA	1.95	0.41
1:C:1689:ILE:HD11	1:C:1706:LEU:HD22	2.02	0.41
1:C:2116:ASP:OD1	1:C:2116:ASP:N	2.46	0.41
1:E:1300:MET:HB3	1:E:1302:TYR:CZ	2.55	0.41
1:E:2099:LEU:HD12	1:E:2099:LEU:HA	1.92	0.41
1:E:3880:LEU:HD21	1:E:3940:ARG:HD2	2.01	0.41
1:E:3991:VAL:HG12	1:E:4145:ARG:NH2	2.35	0.41
1:E:4819:TYR:O	1:E:4823:ARG:NE	2.53	0.41
1:G:1300:MET:HB3	1:G:1302:TYR:CZ	2.55	0.41
1:A:2073:GLU:H	1:A:2073:GLU:HG2	1.66	0.41
1:A:4523:VAL:HG11	1:G:4808:ASP:HB2	2.02	0.41
1:C:677:LEU:HD11	1:C:792:VAL:HG21	2.02	0.41
1:C:2128:ARG:O	1:C:2131:LEU:HB2	2.20	0.41
1:C:2270:LEU:HA	1:C:2270:LEU:HD23	1.81	0.41
1:E:281:ARG:NH2	1:E:284:TRP:O	2.54	0.41
1:E:1785:ASP:N	1:E:1785:ASP:OD1	2.53	0.41
1:E:1792:ILE:HG12	1:E:1842:ILE:HD11	2.01	0.41
2:F:42:ARG:HG3	2:F:44:LYS:HB2	2.01	0.41
1:G:281:ARG:NH2	1:G:284:TRP:O	2.54	0.41
1:G:1842:ILE:HD13	1:G:1842:ILE:HA	1.91	0.41
1:G:3920:THR:O	1:G:3920:THR:OG1	2.38	0.41
1:A:505:LEU:HD22	1:A:526:TRP:CD1	2.56	0.41
1:A:1942:ARG:HH12	1:A:3609:LEU:H	1.69	0.41
1:A:4808:ASP:HB2	1:C:4523:VAL:CG1	2.50	0.41
1:C:474:ASP:HA	1:C:477:ASN:HD22	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:2141:LYS:H	1:C:2141:LYS:HG3	1.74	0.41
1:E:505:LEU:HD22	1:E:526:TRP:CD1	2.56	0.41
1:E:3628:SER:OG	1:E:3629:TRP:N	2.54	0.41
1:G:644:LEU:HB3	1:G:1630:LEU:HD12	2.01	0.41
1:G:3663:ASP:HB2	1:G:3666:HIS:HB2	2.02	0.41
1:G:3841:PHE:HB3	1:G:3920:THR:HG21	2.02	0.41
1:G:4168:GLU:OE1	1:G:4595:LYS:NZ	2.46	0.41
2:H:11:ASP:OD2	2:H:14:THR:OG1	2.35	0.41
1:A:1685:LEU:HD23	1:A:1685:LEU:HA	1.93	0.41
1:A:1712:SER:O	1:A:1712:SER:OG	2.29	0.41
1:A:2834:LEU:HD13	1:A:2839:HIS:HB3	2.03	0.41
1:C:505:LEU:HD22	1:C:526:TRP:CD1	2.56	0.41
1:C:1250:TRP:NE1	1:C:1643:GLU:OE2	2.53	0.41
1:C:1731:GLU:O	1:C:1735:SER:OG	2.37	0.41
1:C:1906:GLN:HE21	1:C:1906:GLN:HB3	1.67	0.41
1:C:2071:ALA:HB2	1:C:2085:MET:HE1	2.02	0.41
1:C:2518:ASN:HA	1:C:2521:LEU:HD12	2.02	0.41
1:E:192:LEU:O	1:E:212:TRP:NE1	2.47	0.41
1:E:2779:SER:HB2	1:E:2889:LYS:HZ3	1.85	0.41
1:E:2834:LEU:HD13	1:E:2839:HIS:HB3	2.03	0.41
1:E:3663:ASP:HB2	1:E:3666:HIS:HB2	2.02	0.41
1:G:618:CYS:HB2	1:G:629:GLN:HG2	2.02	0.41
1:G:1614:ARG:HA	1:G:1614:ARG:HD3	1.86	0.41
2:H:11:ASP:OD1	2:H:11:ASP:N	2.52	0.41
1:A:274:LEU:HD23	1:A:274:LEU:HA	1.90	0.41
1:A:558:LEU:HD23	1:A:558:LEU:HA	1.87	0.41
1:A:1757:LEU:HA	1:A:1757:LEU:HD12	1.89	0.41
1:A:2071:ALA:HB2	1:A:2085:MET:HE1	2.03	0.41
1:A:3663:ASP:HB2	1:A:3666:HIS:HB2	2.02	0.41
1:A:4809:ASP:O	1:A:4813:CYS:N	2.49	0.41
1:C:1122:CYS:HA	1:C:1133:ARG:HD3	2.03	0.41
1:C:1630:LEU:HD22	1:C:1641:ILE:HG13	2.01	0.41
1:C:3993:ASN:HD22	1:C:4110:MET:HG3	1.86	0.41
1:C:4561:VAL:HG11	1:C:4570:GLU:HB3	2.03	0.41
1:E:644:LEU:HB3	1:E:1630:LEU:HD12	2.01	0.41
1:E:1122:CYS:HA	1:E:1133:ARG:HD3	2.03	0.41
1:E:2853:TRP:HA	1:E:2856:LYS:HB2	2.03	0.41
1:E:3844:LEU:HD23	1:E:3844:LEU:HA	1.84	0.41
1:E:3993:ASN:HD22	1:E:4110:MET:HG3	1.86	0.41
1:G:799:LYS:HA	1:G:1619:VAL:O	2.20	0.41
1:G:4945:TYR:HE2	6:G:6003:CFF:H141	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:35:LEU:HD13	1:A:35:LEU:HA	1.96	0.41
1:A:618:CYS:HB2	1:A:629:GLN:HG2	2.02	0.41
1:A:2128:ARG:O	1:A:2131:LEU:HB2	2.20	0.41
1:A:4945:TYR:HE2	6:A:6003:CFF:H141	1.86	0.41
1:C:2163:MET:SD	1:C:2163:MET:N	2.93	0.41
1:E:2518:ASN:HA	1:E:2521:LEU:HD12	2.02	0.41
2:F:5:GLU:HB3	2:F:73:LYS:HB3	2.02	0.41
1:G:505:LEU:HD22	1:G:526:TRP:CD1	2.56	0.41
1:G:1942:ARG:HH12	1:G:3609:LEU:H	1.69	0.41
1:G:3739:GLU:O	1:G:3743:GLN:N	2.53	0.41
1:A:55:SER:O	1:A:296:ARG:NH2	2.45	0.41
1:A:351:THR:OG1	1:A:352:SER:N	2.53	0.41
1:A:424:PHE:HB3	1:A:428:ARG:HH21	1.86	0.41
1:A:1939:ASP:OD1	1:A:1939:ASP:N	2.40	0.41
1:A:3739:GLU:O	1:A:3743:GLN:N	2.53	0.41
1:A:3883:GLN:HE21	1:A:3947:GLY:HA3	1.86	0.41
1:A:4103:LEU:HD23	1:A:4103:LEU:HA	1.94	0.41
1:C:424:PHE:HB3	1:C:428:ARG:HH21	1.86	0.41
1:C:424:PHE:HB3	1:C:428:ARG:NH2	2.36	0.41
1:C:618:CYS:HB2	1:C:629:GLN:HG2	2.02	0.41
1:C:1610:ARG:HE	1:C:1610:ARG:HB3	1.64	0.41
1:C:1614:ARG:HD3	1:C:1614:ARG:HA	1.86	0.41
1:C:1658:LEU:HD23	1:C:1658:LEU:HA	1.80	0.41
1:C:2099:LEU:HD12	1:C:2099:LEU:HA	1.92	0.41
1:C:2264:GLU:HG2	1:C:2324:LEU:CD1	2.51	0.41
1:C:3844:LEU:HD23	1:C:3844:LEU:HA	1.84	0.41
1:C:3991:VAL:HG12	1:C:4145:ARG:NH2	2.35	0.41
1:C:4108:GLU:OE1	1:C:4136:ARG:NH2	2.54	0.41
1:E:424:PHE:HB3	1:E:428:ARG:NH2	2.36	0.41
1:E:472:HIS:O	1:E:472:HIS:ND1	2.53	0.41
1:E:558:LEU:HD22	1:E:571:ILE:HG23	2.03	0.41
1:E:864:PRO:HG3	1:E:1034:PRO:HB3	2.01	0.41
1:E:2163:MET:SD	1:E:2163:MET:N	2.93	0.41
1:E:3739:GLU:O	1:E:3743:GLN:N	2.53	0.41
1:G:422:THR:HG21	1:G:459:LEU:HD11	2.03	0.41
1:G:2128:ARG:O	1:G:2131:LEU:HB2	2.20	0.41
1:G:2328:ARG:HA	1:G:2328:ARG:HD3	1.91	0.41
1:G:2834:LEU:HD13	1:G:2839:HIS:HB3	2.03	0.41
1:G:3829:LYS:HE3	1:G:3829:LYS:HB3	1.86	0.41
1:G:3883:GLN:HE21	1:G:3947:GLY:HA3	1.86	0.41
1:G:4561:VAL:HG11	1:G:4570:GLU:HB3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:4791:ARG:HD2	1:G:4808:ASP:HB2	2.03	0.41
1:A:510:SER:HA	1:A:520:ARG:NH2	2.36	0.41
1:A:773:GLN:HA	1:A:774:PRO:HD3	1.94	0.41
1:A:799:LYS:HA	1:A:1619:VAL:O	2.20	0.41
1:A:2210:GLN:H	1:A:2210:GLN:HG2	1.74	0.41
1:A:4770:LEU:HD13	1:C:4751:PHE:CD1	2.56	0.41
1:C:3841:PHE:HB3	1:C:3920:THR:HG21	2.02	0.41
2:D:5:GLU:HB3	2:D:73:LYS:HB3	2.02	0.41
1:E:618:CYS:HB2	1:E:629:GLN:HG2	2.02	0.41
1:E:3841:PHE:HB3	1:E:3920:THR:HG21	2.02	0.41
1:E:4171:ARG:NE	5:E:6002:ATP:O2G	2.41	0.41
1:E:4561:VAL:HG11	1:E:4570:GLU:HB3	2.03	0.41
1:G:3991:VAL:HG23	1:G:3992:VAL:H	1.87	0.41
1:A:235:ARG:HE	1:A:274:LEU:HD21	1.86	0.40
1:A:424:PHE:HB3	1:A:428:ARG:NH2	2.36	0.40
1:A:474:ASP:HA	1:A:477:ASN:HD22	1.85	0.40
1:A:1122:CYS:HA	1:A:1133:ARG:HD3	2.03	0.40
1:A:2103:LEU:HD23	1:A:2103:LEU:HA	1.81	0.40
1:A:3809:PHE:O	1:A:3813:ASN:N	2.50	0.40
1:C:143:LEU:HD22	1:E:2427:LEU:HD21	1.93	0.40
1:C:799:LYS:HA	1:C:1619:VAL:O	2.20	0.40
1:C:1719:LEU:HA	1:C:1719:LEU:HD23	1.87	0.40
1:C:4569:MET:O	1:C:4572:THR:OG1	2.31	0.40
1:C:4845:ILE:HD13	1:C:4845:ILE:HA	1.90	0.40
1:E:1942:ARG:HH12	1:E:3609:LEU:H	1.69	0.40
1:E:2327:ARG:HA	1:E:2327:ARG:HD2	1.60	0.40
1:E:3991:VAL:HG23	1:E:3992:VAL:H	1.87	0.40
1:E:4570:GLU:HG3	1:E:4571:PRO:HD3	2.03	0.40
1:E:4945:TYR:HE2	6:E:6003:CFF:H141	1.86	0.40
1:G:235:ARG:HE	1:G:274:LEU:HD21	1.86	0.40
1:G:2853:TRP:HA	1:G:2856:LYS:HB2	2.03	0.40
1:G:3628:SER:OG	1:G:3629:TRP:N	2.54	0.40
1:G:3793:SER:O	1:G:3797:LEU:N	2.45	0.40
1:A:30:LYS:HA	1:A:30:LYS:HD3	1.69	0.40
1:C:325:LYS:O	1:C:365:HIS:NE2	2.53	0.40
1:C:496:ASN:HA	1:C:499:LEU:HD12	2.04	0.40
1:C:3628:SER:OG	1:C:3629:TRP:N	2.54	0.40
1:C:4721:LEU:HD23	1:C:4721:LEU:HA	1.87	0.40
1:C:4782:TYR:HD1	1:C:4782:TYR:HA	1.78	0.40
1:E:496:ASN:HA	1:E:499:LEU:HD12	2.04	0.40
1:E:544:ASN:HB3	1:E:547:ASN:H	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:3883:GLN:HE21	1:E:3947:GLY:HA3	1.86	0.40
1:E:4791:ARG:HH22	1:G:4559:HIS:CE1	2.39	0.40
1:A:558:LEU:HD22	1:A:571:ILE:HG23	2.03	0.40
1:A:4823:ARG:H	1:A:4823:ARG:HG3	1.55	0.40
1:C:281:ARG:NH2	1:C:284:TRP:O	2.54	0.40
1:C:558:LEU:HD22	1:C:571:ILE:HG23	2.03	0.40
1:C:876:PRO:HA	1:C:879:GLU:HB3	2.04	0.40
1:C:1482:ARG:HD2	1:C:1531:TYR:HA	2.03	0.40
1:C:2402:ARG:HA	1:C:2402:ARG:HD3	1.86	0.40
1:C:3921:LEU:HA	1:C:3921:LEU:HD23	1.88	0.40
1:C:4809:ASP:O	1:C:4813:CYS:N	2.49	0.40
1:C:4945:TYR:HE2	6:C:6003:CFF:H141	1.86	0.40
1:E:876:PRO:HA	1:E:879:GLU:HB3	2.04	0.40
1:E:1102:TYR:HA	1:E:1164:CYS:O	2.22	0.40
1:E:2128:ARG:O	1:E:2131:LEU:HB2	2.20	0.40
1:E:2141:LYS:H	1:E:2141:LYS:HG3	1.74	0.40
1:G:544:ASN:HB3	1:G:547:ASN:H	1.86	0.40
1:G:1122:CYS:HA	1:G:1133:ARG:HD3	2.03	0.40
1:G:4845:ILE:HD13	1:G:4845:ILE:HA	1.90	0.40
1:A:281:ARG:NH2	1:A:284:TRP:O	2.54	0.40
1:A:422:THR:HG21	1:A:459:LEU:HD11	2.03	0.40
1:A:495:ILE:H	1:A:495:ILE:HG13	1.55	0.40
1:A:1102:TYR:HA	1:A:1164:CYS:O	2.22	0.40
1:A:1308:ILE:HG12	1:A:1575:HIS:HD1	1.85	0.40
1:A:3628:SER:OG	1:A:3629:TRP:N	2.54	0.40
2:B:103:LEU:HD11	2:B:106:LEU:HD21	2.03	0.40
1:C:510:SER:HA	1:C:520:ARG:NH2	2.36	0.40
1:C:2088:LEU:HA	1:C:2088:LEU:HD12	1.84	0.40
1:C:3714:SER:O	1:C:3714:SER:OG	2.34	0.40
1:C:3857:ASN:OD1	1:C:3860:ARG:NH1	2.52	0.40
1:E:424:PHE:HB3	1:E:428:ARG:HH21	1.86	0.40
1:E:1849:SER:OG	1:E:1849:SER:O	2.35	0.40
1:E:2322:VAL:HG11	1:E:2420:ILE:HG22	2.02	0.40
1:E:4596:VAL:HA	1:E:4599:VAL:HG12	2.04	0.40
1:E:4791:ARG:HD2	1:E:4808:ASP:HB2	2.03	0.40
1:G:424:PHE:HB3	1:G:428:ARG:NH2	2.36	0.40
1:G:558:LEU:HD22	1:G:571:ILE:HG23	2.03	0.40
1:G:3959:LEU:HD13	1:G:3968:LEU:HD22	2.04	0.40
1:G:4828:ILE:HD12	1:G:4828:ILE:HA	1.86	0.40
1:A:192:LEU:O	1:A:212:TRP:NE1	2.47	0.40
1:A:1591:LEU:HD23	1:A:1591:LEU:HA	1.92	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1658:LEU:HD23	1:A:1658:LEU:HA	1.80	0.40
1:A:1785:ASP:N	1:A:1785:ASP:OD1	2.53	0.40
1:A:2853:TRP:HA	1:A:2856:LYS:HB2	2.03	0.40
1:A:3957:MET:O	1:A:3960:SER:OG	2.33	0.40
1:A:3993:ASN:HD22	1:A:4110:MET:HG3	1.86	0.40
1:A:4561:VAL:HG11	1:A:4570:GLU:HB3	2.03	0.40
1:A:4888:LYS:HB3	1:A:4888:LYS:HE2	1.93	0.40
1:A:4911:LEU:HA	1:A:4915:ASN:HD22	1.87	0.40
1:C:192:LEU:O	1:C:212:TRP:NE1	2.47	0.40
1:C:472:HIS:ND1	1:C:472:HIS:O	2.53	0.40
1:C:1842:ILE:HD13	1:C:1842:ILE:HA	1.91	0.40
1:C:2834:LEU:HD13	1:C:2839:HIS:HB3	2.03	0.40
2:F:11:ASP:OD2	2:F:14:THR:OG1	2.35	0.40
1:G:424:PHE:HB3	1:G:428:ARG:HH21	1.86	0.40
1:G:3714:SER:O	1:G:3714:SER:OG	2.35	0.40
1:G:3993:ASN:HD22	1:G:4110:MET:HG3	1.86	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	3336/4968 (67%)	2981 (89%)	347 (10%)	8 (0%)	47	79
1	C	3336/4968 (67%)	2982 (89%)	345 (10%)	9 (0%)	41	75
1	E	3336/4968 (67%)	2980 (89%)	347 (10%)	9 (0%)	41	75
1	G	3336/4968 (67%)	2980 (89%)	348 (10%)	8 (0%)	47	79
2	B	105/108 (97%)	100 (95%)	5 (5%)	0	100	100
2	D	105/108 (97%)	100 (95%)	5 (5%)	0	100	100
2	F	105/108 (97%)	100 (95%)	5 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	H	105/108 (97%)	100 (95%)	5 (5%)	0	100	100
All	All	13764/20304 (68%)	12323 (90%)	1407 (10%)	34 (0%)	50	79

All (34) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	2328	ARG
1	A	4901	THR
1	C	2328	ARG
1	C	4901	THR
1	E	2328	ARG
1	E	4901	THR
1	G	2328	ARG
1	G	4901	THR
1	C	2329	PRO
1	E	2329	PRO
1	A	1580	PRO
1	C	1580	PRO
1	E	1580	PRO
1	G	1580	PRO
1	A	853	PRO
1	A	4916	LEU
1	C	853	PRO
1	C	4916	LEU
1	E	853	PRO
1	E	4916	LEU
1	G	853	PRO
1	G	4916	LEU
1	A	1848	PRO
1	C	1848	PRO
1	E	1848	PRO
1	G	1848	PRO
1	A	1535	PRO
1	C	1535	PRO
1	E	1535	PRO
1	G	1535	PRO
1	A	828	PRO
1	C	828	PRO
1	E	828	PRO
1	G	828	PRO

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	2650/4355 (61%)	2627 (99%)	23 (1%)	78	87
1	C	2650/4355 (61%)	2625 (99%)	25 (1%)	78	87
1	E	2648/4355 (61%)	2623 (99%)	25 (1%)	78	87
1	G	2650/4355 (61%)	2628 (99%)	22 (1%)	81	89
2	B	88/89 (99%)	88 (100%)	0	100	100
2	D	88/89 (99%)	88 (100%)	0	100	100
2	F	88/89 (99%)	88 (100%)	0	100	100
2	H	88/89 (99%)	88 (100%)	0	100	100
All	All	10950/17776 (62%)	10855 (99%)	95 (1%)	79	87

All (95) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	76	ARG
1	A	143	LEU
1	A	207	PHE
1	A	325	LYS
1	A	417	ARG
1	A	637	LEU
1	A	841	LYS
1	A	855	VAL
1	A	893	TRP
1	A	990	PRO
1	A	1013	ARG
1	A	1033	VAL
1	A	1466	THR
1	A	1610	ARG
1	A	1782	PHE
1	A	2315	GLU
1	A	2324	LEU
1	A	2836	ARG
1	A	2857	LYS

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Mol	Chain	Res	Type
1	A	3976	GLN
1	A	4161	TRP
1	A	4823	ARG
1	A	4960	ARG
1	C	76	ARG
1	C	143	LEU
1	C	207	PHE
1	C	325	LYS
1	C	417	ARG
1	C	637	LEU
1	C	841	LYS
1	C	855	VAL
1	C	893	TRP
1	C	990	PRO
1	C	1013	ARG
1	C	1033	VAL
1	C	1466	THR
1	C	1610	ARG
1	C	1782	PHE
1	C	2323	ARG
1	C	2324	LEU
1	C	2327	ARG
1	C	2328	ARG
1	C	2836	ARG
1	C	2857	LYS
1	C	3976	GLN
1	C	4161	TRP
1	C	4823	ARG
1	C	4960	ARG
1	E	143	LEU
1	E	207	PHE
1	E	325	LYS
1	E	417	ARG
1	E	637	LEU
1	E	841	LYS
1	E	855	VAL
1	E	893	TRP
1	E	990	PRO
1	E	1013	ARG
1	E	1033	VAL
1	E	1466	THR
1	E	1610	ARG

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Mol	Chain	Res	Type
1	E	1782	PHE
1	E	2315	GLU
1	E	2323	ARG
1	E	2324	LEU
1	E	2327	ARG
1	E	2328	ARG
1	E	2836	ARG
1	E	2857	LYS
1	E	3976	GLN
1	E	4161	TRP
1	E	4823	ARG
1	E	4960	ARG
1	G	143	LEU
1	G	207	PHE
1	G	325	LYS
1	G	417	ARG
1	G	637	LEU
1	G	841	LYS
1	G	855	VAL
1	G	893	TRP
1	G	990	PRO
1	G	1013	ARG
1	G	1033	VAL
1	G	1466	THR
1	G	1610	ARG
1	G	1782	PHE
1	G	2315	GLU
1	G	2324	LEU
1	G	2836	ARG
1	G	2857	LYS
1	G	3976	GLN
1	G	4161	TRP
1	G	4823	ARG
1	G	4960	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (149) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	23	GLN
1	A	123	HIS
1	A	394	HIS
1	A	477	ASN

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Mol	Chain	Res	Type
1	A	490	GLN
1	A	550	GLN
1	A	593	HIS
1	A	604	HIS
1	A	651	HIS
1	A	890	HIS
1	A	914	GLN
1	A	915	HIS
1	A	1005	ASN
1	A	1149	ASN
1	A	1265	HIS
1	A	1440	ASN
1	A	1589	GLN
1	A	1691	ASN
1	A	1836	ASN
1	A	1906	GLN
1	A	1918	GLN
1	A	2152	ASN
1	A	2317	ASN
1	A	2820	HIS
1	A	2848	ASN
1	A	3611	ASN
1	A	3635	HIS
1	A	3852	ASN
1	A	3993	ASN
1	A	4494	ASN
1	A	4559	HIS
1	A	4880	GLN
1	A	4904	HIS
1	A	4915	ASN
1	A	4934	HIS
2	B	25	HIS
2	B	31	GLN
1	C	23	GLN
1	C	123	HIS
1	C	209	GLN
1	C	394	HIS
1	C	477	ASN
1	C	490	GLN
1	C	550	GLN
1	C	593	HIS
1	C	604	HIS

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Mol	Chain	Res	Type
1	C	651	HIS
1	C	890	HIS
1	C	914	GLN
1	C	915	HIS
1	C	1005	ASN
1	C	1149	ASN
1	C	1265	HIS
1	C	1440	ASN
1	C	1589	GLN
1	C	1691	ASN
1	C	1836	ASN
1	C	1906	GLN
1	C	1918	GLN
1	C	2152	ASN
1	C	2317	ASN
1	C	2820	HIS
1	C	2848	ASN
1	C	3611	ASN
1	C	3635	HIS
1	C	3852	ASN
1	C	3993	ASN
1	C	4494	ASN
1	C	4559	HIS
1	C	4880	GLN
1	C	4904	HIS
1	C	4915	ASN
1	C	4934	HIS
2	D	25	HIS
2	D	31	GLN
1	E	23	GLN
1	E	123	HIS
1	E	394	HIS
1	E	477	ASN
1	E	490	GLN
1	E	544	ASN
1	E	550	GLN
1	E	593	HIS
1	E	604	HIS
1	E	651	HIS
1	E	890	HIS
1	E	914	GLN
1	E	915	HIS

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Mol	Chain	Res	Type
1	E	1005	ASN
1	E	1149	ASN
1	E	1265	HIS
1	E	1589	GLN
1	E	1691	ASN
1	E	1836	ASN
1	E	1906	GLN
1	E	1918	GLN
1	E	2152	ASN
1	E	2317	ASN
1	E	2319	ASN
1	E	2820	HIS
1	E	2848	ASN
1	E	3611	ASN
1	E	3635	HIS
1	E	3852	ASN
1	E	3993	ASN
1	E	4494	ASN
1	E	4559	HIS
1	E	4880	GLN
1	E	4904	HIS
1	E	4915	ASN
1	E	4934	HIS
2	F	25	HIS
2	F	31	GLN
1	G	23	GLN
1	G	123	HIS
1	G	394	HIS
1	G	477	ASN
1	G	490	GLN
1	G	544	ASN
1	G	550	GLN
1	G	593	HIS
1	G	604	HIS
1	G	651	HIS
1	G	890	HIS
1	G	914	GLN
1	G	915	HIS
1	G	1005	ASN
1	G	1149	ASN
1	G	1265	HIS
1	G	1691	ASN

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Mol	Chain	Res	Type
1	G	1836	ASN
1	G	1906	GLN
1	G	1918	GLN
1	G	2152	ASN
1	G	2317	ASN
1	G	2820	HIS
1	G	2848	ASN
1	G	3611	ASN
1	G	3852	ASN
1	G	3993	ASN
1	G	4490	GLN
1	G	4494	ASN
1	G	4559	HIS
1	G	4880	GLN
1	G	4904	HIS
1	G	4915	ASN
1	G	4934	HIS
2	H	25	HIS
2	H	31	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 monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 16 ligands modelled in this entry, 8 are monoatomic - leaving 8 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the

expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
6	CFF	E	6003	-	8,15,15	2.91	4 (50%)	8,23,23	1.32	1 (12%)
5	ATP	E	6002	-	26,33,33	0.91	1 (3%)	31,52,52	1.66	6 (19%)
5	ATP	G	6002	-	26,33,33	0.91	1 (3%)	31,52,52	1.66	6 (19%)
6	CFF	C	6003	-	8,15,15	2.93	4 (50%)	8,23,23	1.30	1 (12%)
6	CFF	G	6003	-	8,15,15	2.93	4 (50%)	8,23,23	1.30	1 (12%)
5	ATP	A	6002	-	26,33,33	0.91	1 (3%)	31,52,52	1.66	6 (19%)
6	CFF	A	6003	-	8,15,15	2.93	4 (50%)	8,23,23	1.30	1 (12%)
5	ATP	C	6002	-	26,33,33	0.91	1 (3%)	31,52,52	1.66	6 (19%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	CFF	E	6003	-	-	-	0/2/2/2
5	ATP	E	6002	-	-	4/18/38/38	0/3/3/3
5	ATP	G	6002	-	-	4/18/38/38	0/3/3/3
6	CFF	C	6003	-	-	-	0/2/2/2
6	CFF	G	6003	-	-	-	0/2/2/2
5	ATP	A	6002	-	-	4/18/38/38	0/3/3/3
6	CFF	A	6003	-	-	-	0/2/2/2
5	ATP	C	6002	-	-	4/18/38/38	0/3/3/3

All (20) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	6003	CFF	C5-C4	-5.46	1.32	1.39
6	C	6003	CFF	C5-C4	-5.46	1.32	1.39
6	G	6003	CFF	C5-C4	-5.46	1.32	1.39
6	E	6003	CFF	C5-C4	-5.39	1.32	1.39
6	A	6003	CFF	C6-N1	-4.45	1.31	1.38
6	C	6003	CFF	C6-N1	-4.45	1.31	1.38
6	G	6003	CFF	C6-N1	-4.45	1.31	1.38
6	E	6003	CFF	C6-N1	-4.44	1.31	1.38
6	A	6003	CFF	C5-C6	-2.78	1.36	1.41
6	C	6003	CFF	C5-C6	-2.78	1.36	1.41

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	E	6003	CFF	C5-C6	-2.78	1.36	1.41
6	G	6003	CFF	C5-C6	-2.78	1.36	1.41
6	A	6003	CFF	O13-C6	-2.57	1.18	1.24
6	C	6003	CFF	O13-C6	-2.57	1.18	1.24
6	E	6003	CFF	O13-C6	-2.57	1.18	1.24
6	G	6003	CFF	O13-C6	-2.57	1.18	1.24
5	A	6002	ATP	C5-N7	-2.16	1.31	1.39
5	C	6002	ATP	C5-N7	-2.16	1.31	1.39
5	E	6002	ATP	C5-N7	-2.16	1.31	1.39
5	G	6002	ATP	C5-N7	-2.16	1.31	1.39

All (28) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	E	6002	ATP	PA-O3A-PB	-4.88	116.07	132.83
5	A	6002	ATP	PA-O3A-PB	-4.87	116.11	132.83
5	C	6002	ATP	PA-O3A-PB	-4.87	116.11	132.83
5	G	6002	ATP	PA-O3A-PB	-4.86	116.15	132.83
5	A	6002	ATP	N3-C2-N1	-3.63	123.01	128.68
5	G	6002	ATP	N3-C2-N1	-3.63	123.01	128.68
5	C	6002	ATP	N3-C2-N1	-3.62	123.02	128.68
5	E	6002	ATP	N3-C2-N1	-3.61	123.04	128.68
6	A	6003	CFF	C14-N7-C8	-2.86	111.67	125.43
6	G	6003	CFF	C14-N7-C8	-2.86	111.67	125.43
6	C	6003	CFF	C14-N7-C8	-2.85	111.70	125.43
5	E	6002	ATP	N6-C6-N1	2.85	124.49	118.57
6	E	6003	CFF	C14-N7-C8	-2.85	111.73	125.43
5	A	6002	ATP	N6-C6-N1	2.83	124.45	118.57
5	C	6002	ATP	N6-C6-N1	2.83	124.45	118.57
5	G	6002	ATP	N6-C6-N1	2.83	124.45	118.57
5	G	6002	ATP	PB-O3B-PG	-2.76	123.35	132.83
5	A	6002	ATP	PB-O3B-PG	-2.75	123.38	132.83
5	C	6002	ATP	PB-O3B-PG	-2.75	123.38	132.83
5	E	6002	ATP	PB-O3B-PG	-2.75	123.38	132.83
5	C	6002	ATP	C3'-C2'-C1'	2.65	104.97	100.98
5	A	6002	ATP	C3'-C2'-C1'	2.64	104.95	100.98
5	E	6002	ATP	C3'-C2'-C1'	2.64	104.95	100.98
5	G	6002	ATP	C3'-C2'-C1'	2.64	104.95	100.98
5	E	6002	ATP	C5-C6-N6	-2.01	117.29	120.35
5	A	6002	ATP	C5-C6-N6	-2.01	117.30	120.35
5	C	6002	ATP	C5-C6-N6	-2.01	117.30	120.35
5	G	6002	ATP	C5-C6-N6	-2.01	117.30	120.35

There are no chirality outliers.

All (16) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	6002	ATP	C3'-C4'-C5'-O5'
5	C	6002	ATP	C3'-C4'-C5'-O5'
5	E	6002	ATP	C3'-C4'-C5'-O5'
5	G	6002	ATP	C3'-C4'-C5'-O5'
5	A	6002	ATP	O4'-C4'-C5'-O5'
5	C	6002	ATP	O4'-C4'-C5'-O5'
5	E	6002	ATP	O4'-C4'-C5'-O5'
5	G	6002	ATP	O4'-C4'-C5'-O5'
5	A	6002	ATP	PA-O3A-PB-O1B
5	C	6002	ATP	PA-O3A-PB-O1B
5	E	6002	ATP	PA-O3A-PB-O1B
5	G	6002	ATP	PA-O3A-PB-O1B
5	A	6002	ATP	C4'-C5'-O5'-PA
5	C	6002	ATP	C4'-C5'-O5'-PA
5	E	6002	ATP	C4'-C5'-O5'-PA
5	G	6002	ATP	C4'-C5'-O5'-PA

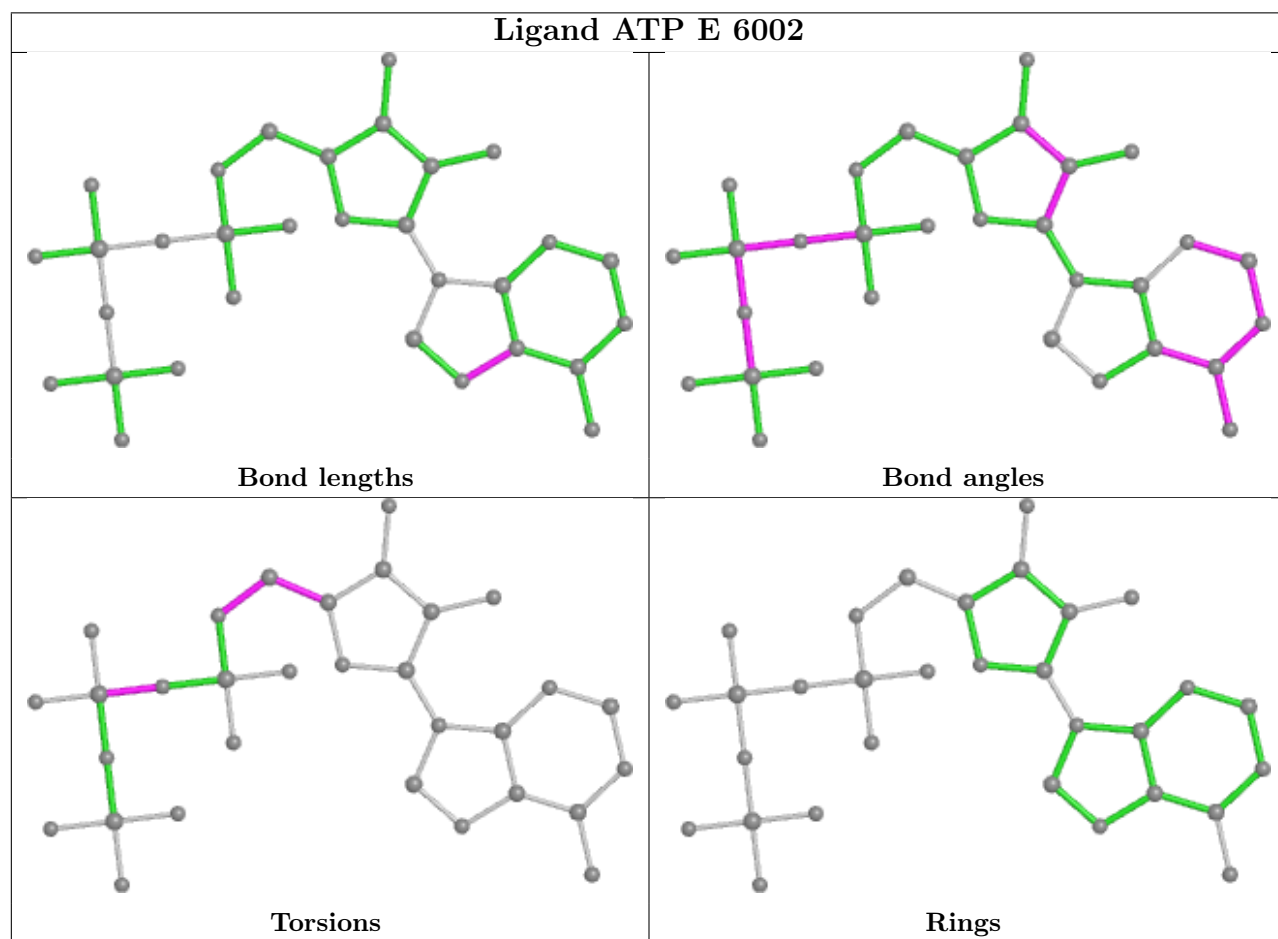
There are no ring outliers.

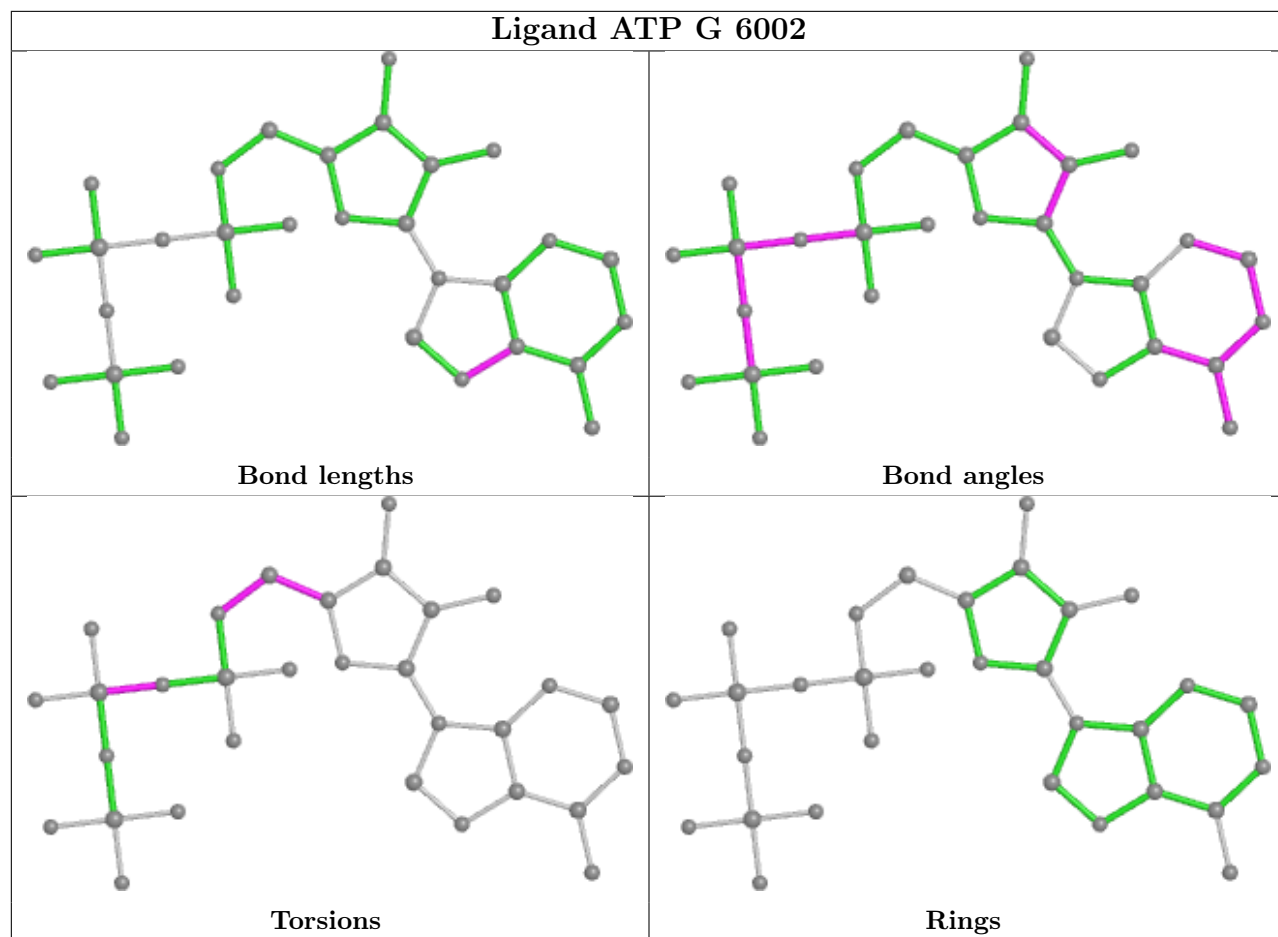
8 monomers are involved in 12 short contacts:

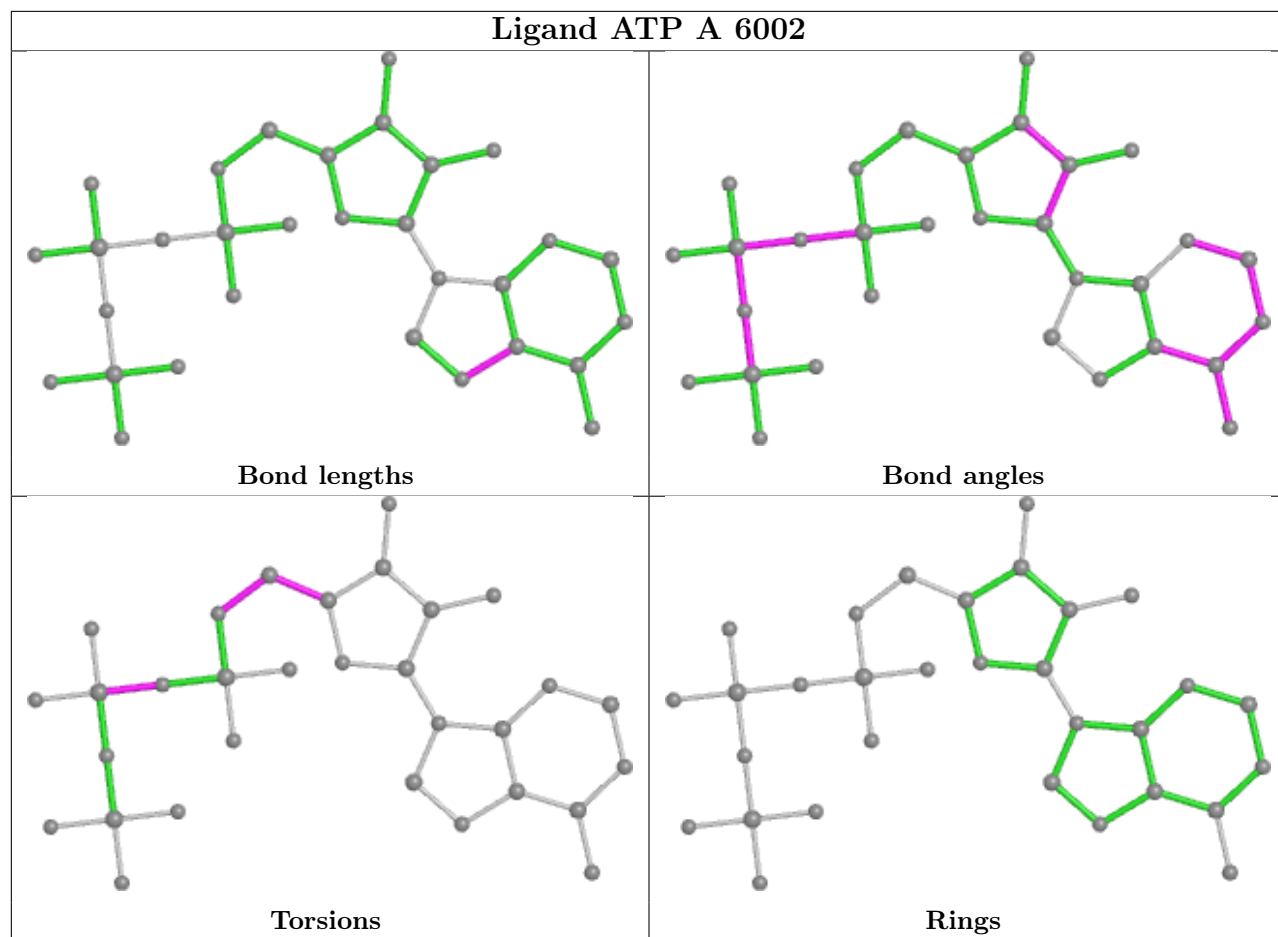
Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	E	6003	CFE	2	0
5	E	6002	ATP	1	0
5	G	6002	ATP	1	0
6	C	6003	CFE	2	0
6	G	6003	CFE	2	0
5	A	6002	ATP	1	0
6	A	6003	CFE	2	0
5	C	6002	ATP	1	0

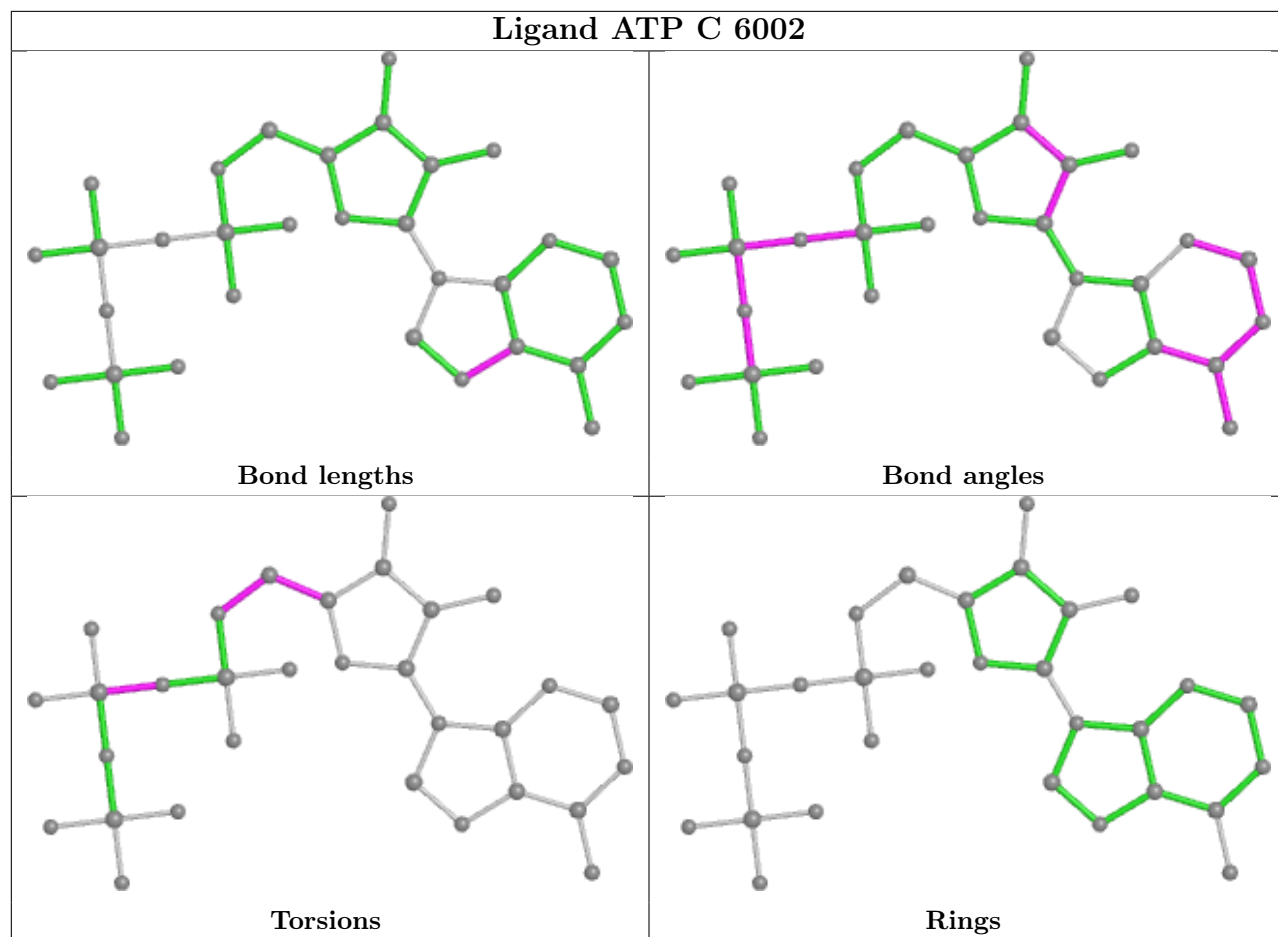
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier.

The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.









5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

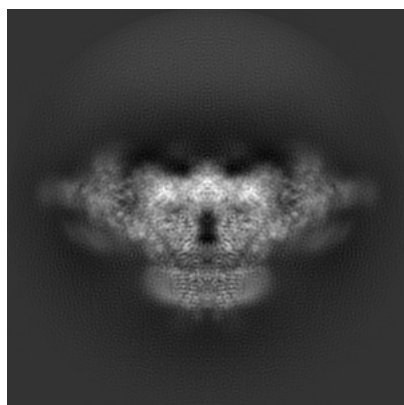
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-9879. These allow visual inspection of the internal detail of the map and identification of artifacts.

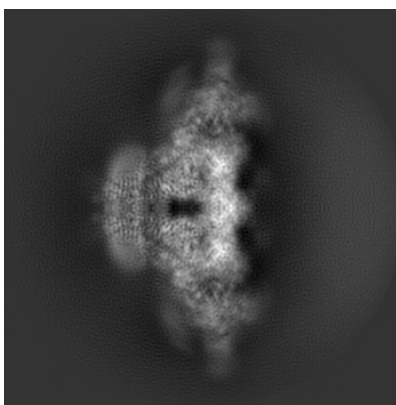
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

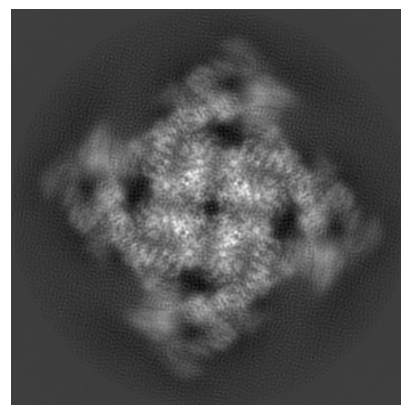
6.1.1 Primary map



X



Y

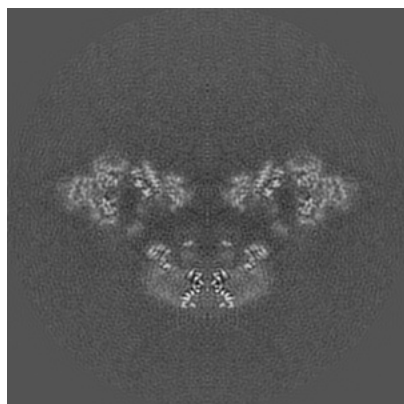


Z

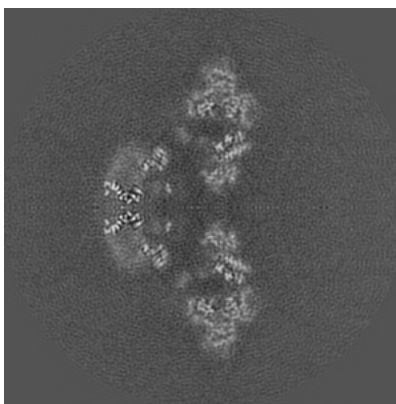
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

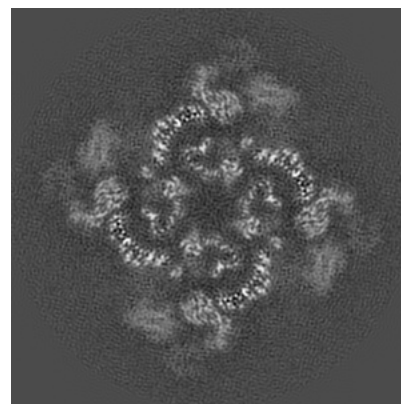
6.2.1 Primary map



X Index: 200



Y Index: 200

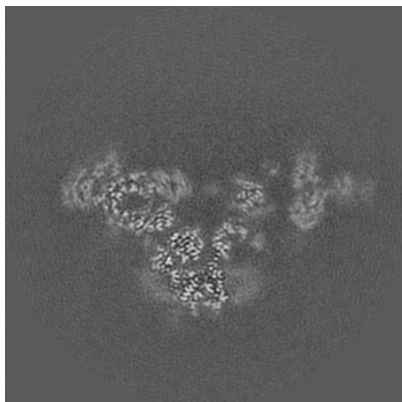


Z Index: 200

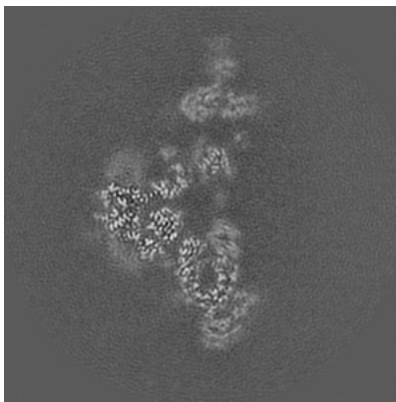
The images above show central slices of the map in three orthogonal directions.

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

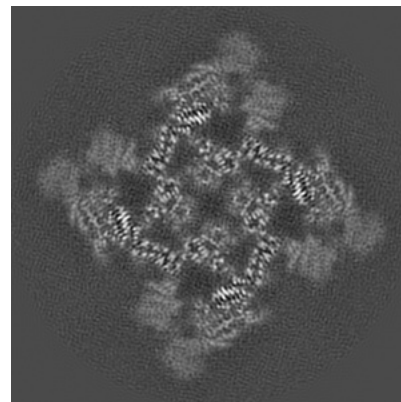
6.3.1 Primary map



X Index: 213



Y Index: 187

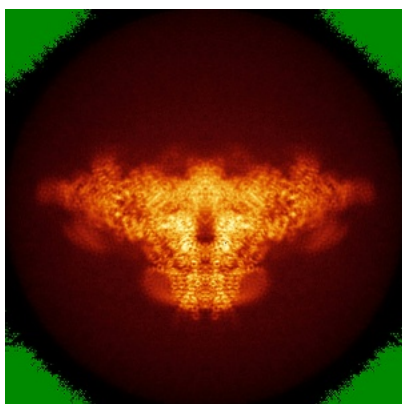


Z Index: 211

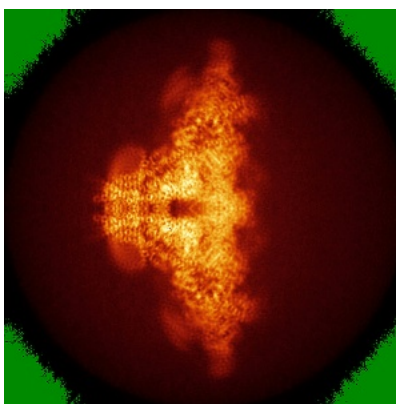
The images above show the largest variance slices of the map in three orthogonal directions.

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

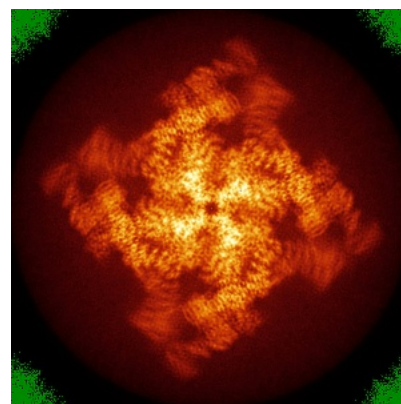
6.4.1 Primary map



X



Y

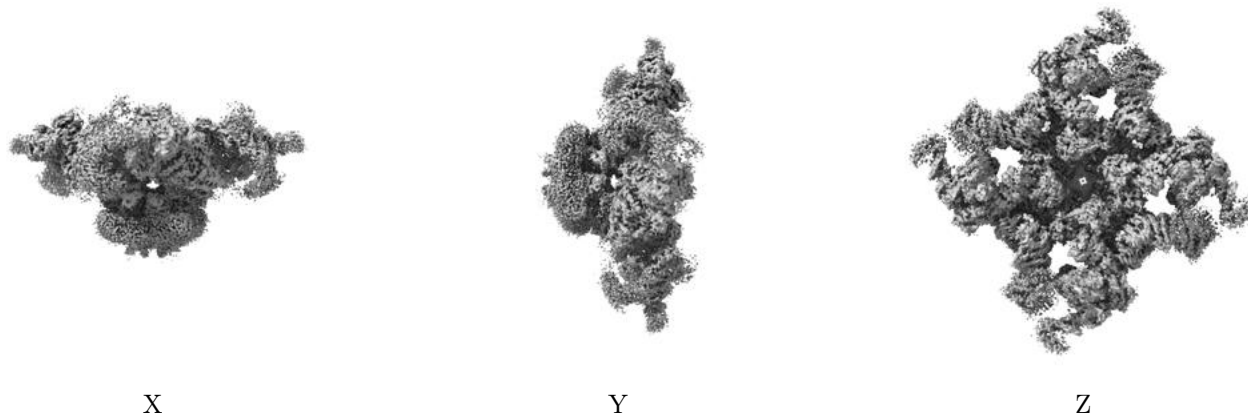


Z

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



The images above show the 3D surface view of the map at the recommended contour level 0.022. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

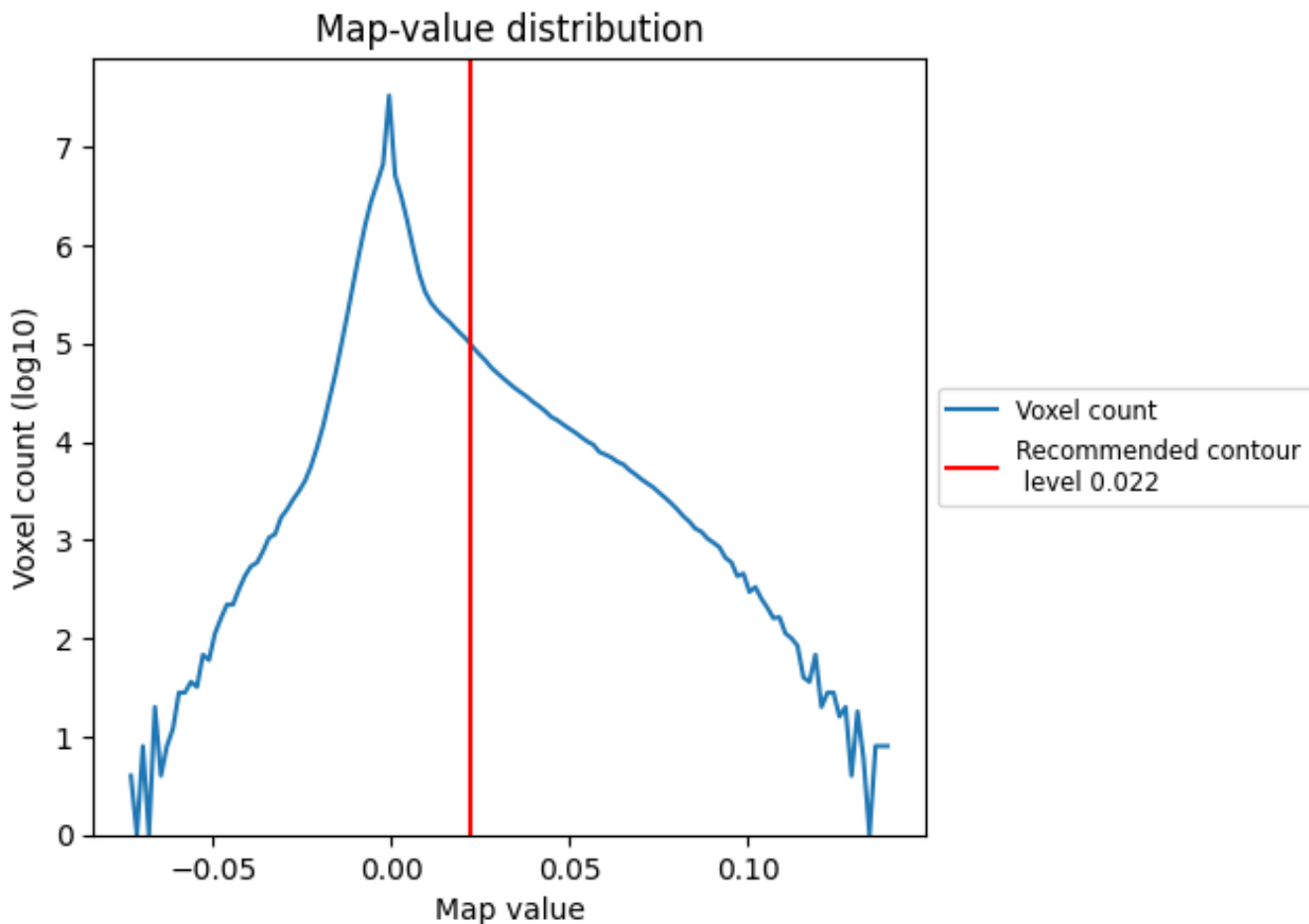
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

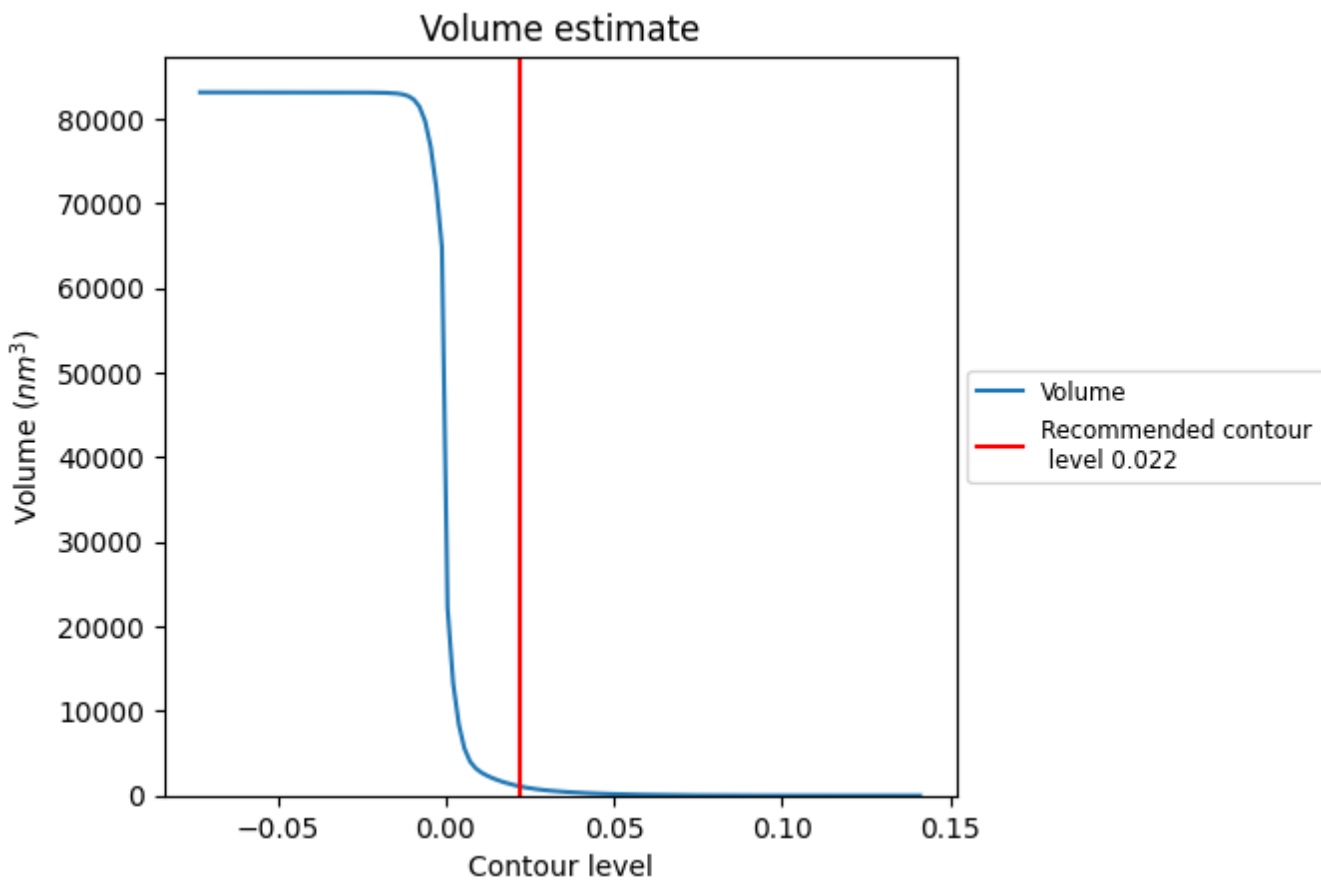
This section contains the results of statistical analysis of the map.

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.

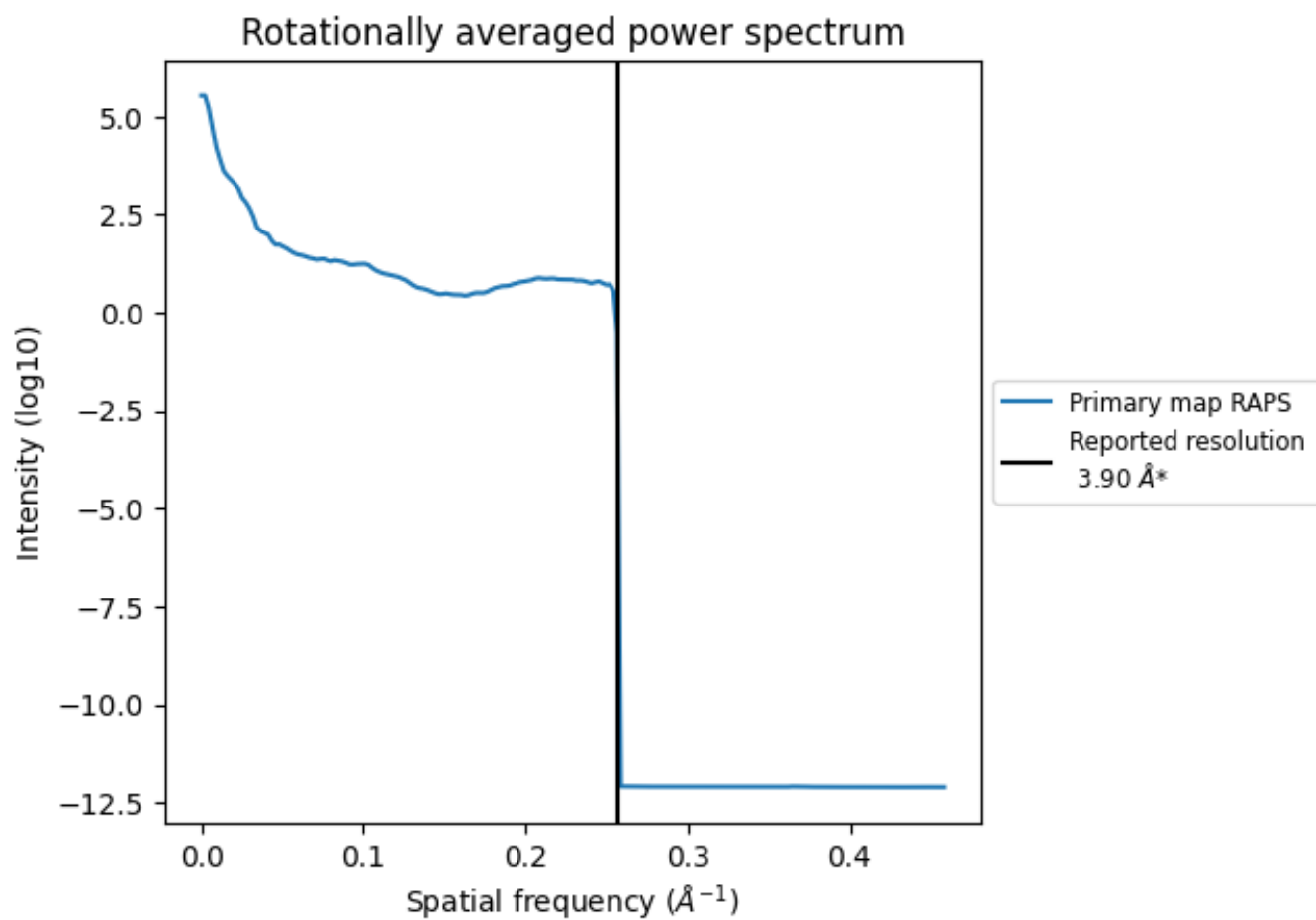
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1096 nm³; this corresponds to an approximate mass of 990 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](#)

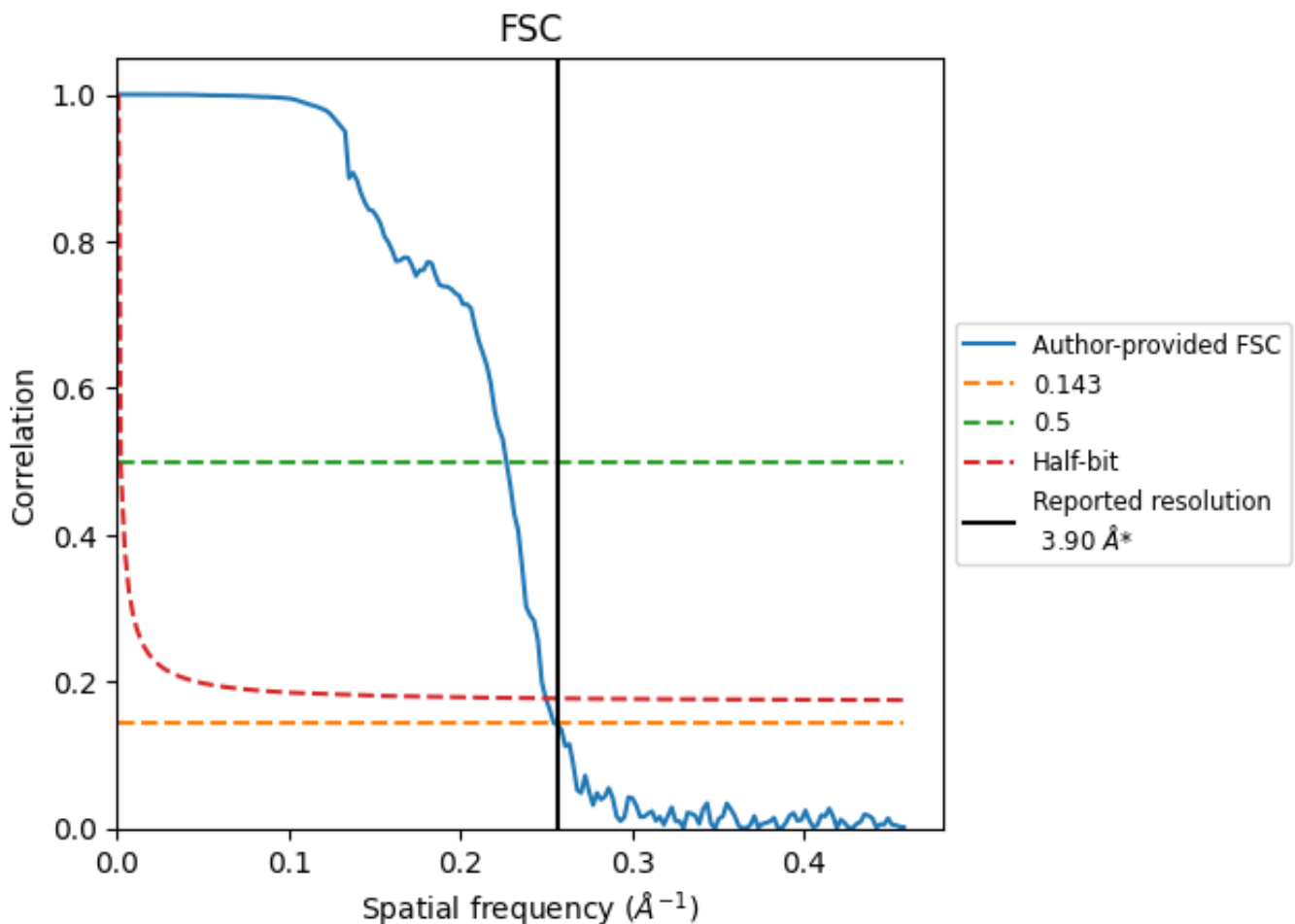


*Reported resolution corresponds to spatial frequency of 0.256 \AA^{-1}

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 0.256 Å⁻¹

8.2 Resolution estimates [i](#)

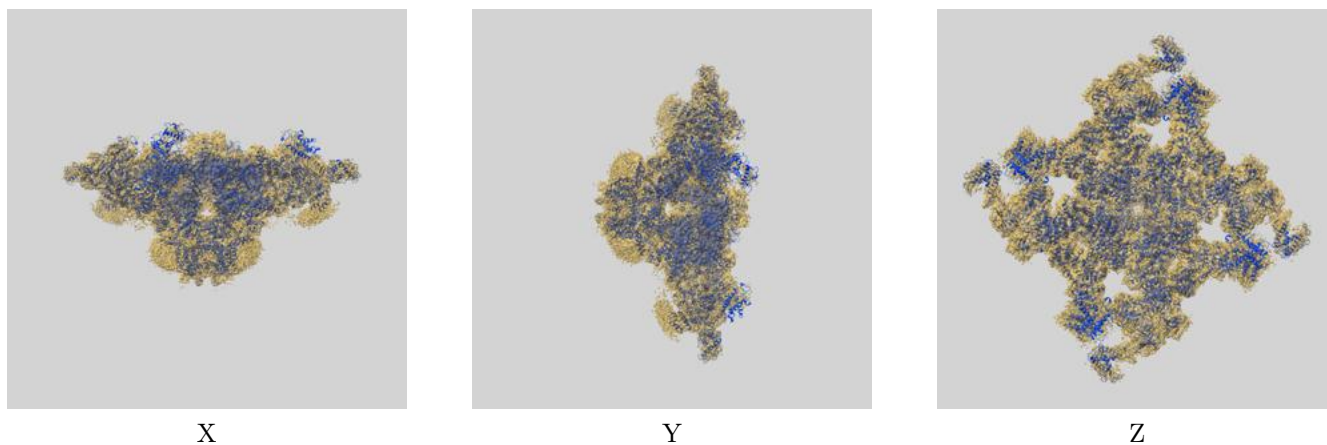
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.90	-	-
Author-provided FSC curve	3.93	4.41	4.00
Unmasked-calculated*	-	-	-

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

9 Map-model fit [i](#)

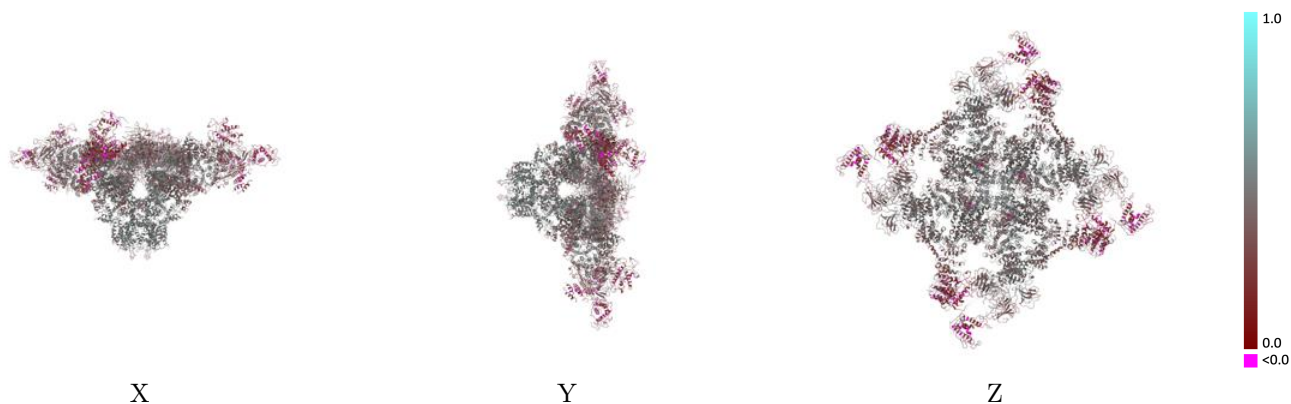
This section contains information regarding the fit between EMDB map EMD-9879 and PDB model 6JRR. Per-residue inclusion information can be found in section 3 on page 6.

9.1 Map-model overlay [i](#)



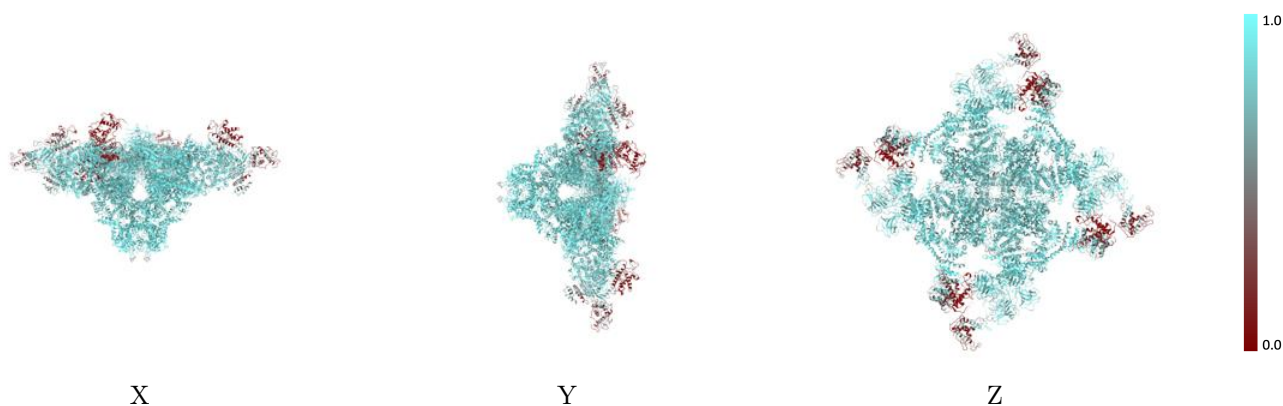
The images above show the 3D surface view of the map at the recommended contour level 0.022 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



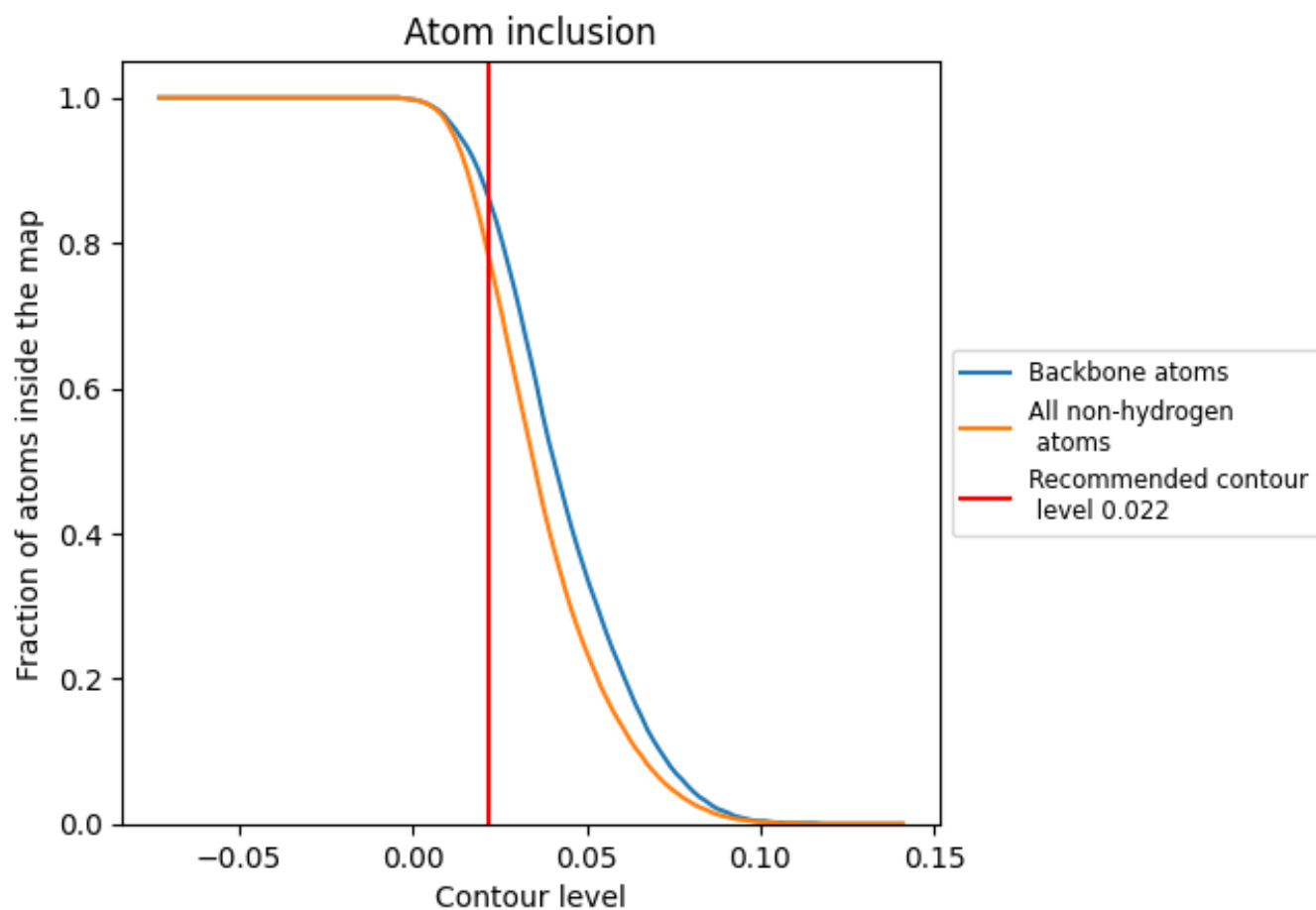
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.022).



















9.4 Atom inclusion [i](#)



At the recommended contour level, 86% of all backbone atoms, 78% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.022) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7780	 0.3900
A	 0.7770	 0.3900
B	 0.8140	 0.4170
C	 0.7770	 0.3890
D	 0.8150	 0.4160
E	 0.7770	 0.3890
F	 0.8180	 0.4170
G	 0.7770	 0.3890
H	 0.8150	 0.4160

