



## Full wwPDB EM Validation Report ⓘ

Feb 24, 2024 – 01:35 PM EST

PDB ID : 7KZM  
EMDB ID : EMD-23082  
Title : Outer dynein arm bound to doublet microtubules from *C. reinhardtii*  
Authors : Walton, T.; Wu, H.; Brown, A.B.  
Deposited on : 2020-12-10  
Resolution : 7.50 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

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

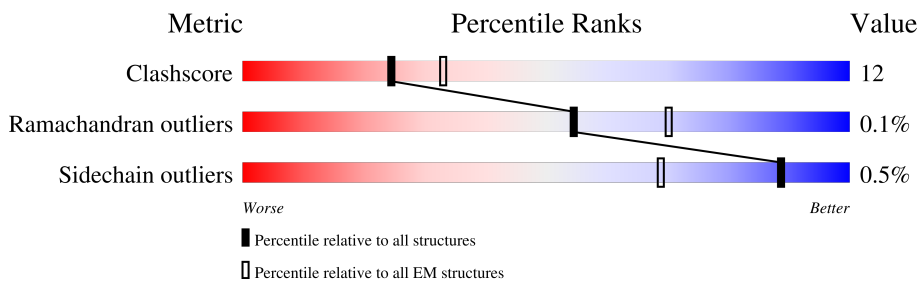
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 7.50 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A1	443	
1	A3	443	
1	A5	443	
1	A7	443	
1	B1	443	
1	B3	443	
1	B5	443	
1	B7	443	



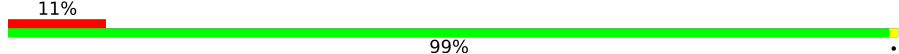
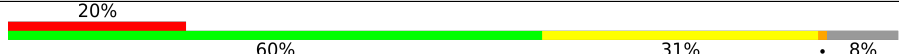
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Mol	Chain	Length	Quality of chain
2	A2	451	
2	A4	451	
2	A6	451	
2	B2	451	
2	B4	451	
2	B6	451	
3	A	4503	
4	B	4568	
5	C	4485	
6	D	683	
7	E	567	
8	F	136	
9	G	159	
10	H	120	
11	I	105	
12	J	100	
13	K	91	
13	L	91	
13	M	91	
13	N	91	
14	O	117	
15	P	103	
16	X	749	
16	X1	749	
17	X0	162	

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Mol	Chain	Length	Quality of chain
18	Y	552	 8% 5% 87%
18	Y1	552	 19% 7% 73%
19	Y0	168	 11% 99%
20	Z	184	 20% 60% 31% 8%

## 2 Entry composition [i](#)

There are 23 unique types of molecules in this entry. The entry contains 124943 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 Tubulin beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A1	426	3346	2103	574	639	30	0	0
1	A3	426	3346	2103	574	639	30	0	0
1	A5	426	3346	2103	574	639	30	0	0
1	A7	426	3346	2103	574	639	30	0	0
1	B1	419	3298	2077	563	628	30	0	0
1	B3	410	3227	2030	553	614	30	0	0
1	B5	426	3346	2103	574	639	30	0	0
1	B7	426	3346	2103	574	639	30	0	0

- Molecule 2 is a protein called Tubulin alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	A2	430	3339	2114	568	636	21	0	0
2	A4	427	3318	2103	565	629	21	0	0
2	A6	429	3335	2112	567	635	21	0	0
2	B2	411	3204	2035	544	605	20	0	0
2	B4	409	3193	2028	542	603	20	0	0
2	B6	427	3318	2103	565	629	21	0	0

- Molecule 3 is a protein called Heavy chain alpha.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
3	A	3275	16173	9623	3275	3275	0	0

- Molecule 4 is a protein called Flagellar outer dynein arm heavy chain beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	B	3540	19163	11601	3735	3803	24	0	0

- Molecule 5 is a protein called Dynein gamma chain, flagellar outer arm.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	C	3890	21756	13184	4221	4314	37	0	0

- Molecule 6 is a protein called Dynein, 78 kDa intermediate chain, flagellar outer arm.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	D	456	3609	2297	610	678	24	0	0

- Molecule 7 is a protein called Dynein, 70 kDa intermediate chain, flagellar outer arm.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	E	474	3697	2332	623	725	17	0	0

- Molecule 8 is a protein called Flagellar outer dynein arm light chain 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
8	F	100	495	295	100	100	0	0

- Molecule 9 is a protein called Dynein 18 kDa light chain, flagellar outer arm.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	G	138	1089	677	183	220	9	0	0

- Molecule 10 is a protein called Dynein 11 kDa light chain, flagellar outer arm.

Mol	Chain	Residues	Atoms				AltConf	Trace
10	H	91	Total	C	N	O	0	0
			451	269	91	91		

- Molecule 11 is a protein called Dynein light chain roadblock LC7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	I	103	Total	C	N	O	S	0	0
			827	525	148	153	1		

- Molecule 12 is a protein called Dynein light chain roadblock LC7b.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	J	94	Total	C	N	O	S	0	0
			741	466	133	140	2		

- Molecule 13 is a protein called Dynein 8 kDa light chain, flagellar outer arm.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	K	82	Total	C	N	O	S	0	0
			671	433	112	122	4		
13	L	82	Total	C	N	O	S	0	0
			671	433	112	122	4		
13	M	82	Total	C	N	O	S	0	0
			671	433	112	122	4		
13	N	82	Total	C	N	O		0	0
			407	243	82	82			

- Molecule 14 is a protein called Dynein light chain 9.

Mol	Chain	Residues	Atoms				AltConf	Trace
14	O	97	Total	C	N	O	0	0
			481	286	97	98		

- Molecule 15 is a protein called Dynein light chain 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	P	98	Total	C	N	O	S	0	0
			805	523	128	146	8		

- Molecule 16 is a protein called Outer dynein arm-docking complex subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	X	56	Total	C	N	O	S	0	0
			481	292	97	89	3		
16	X1	142	Total	C	N	O	S	0	0
			1178	715	223	235	5		

- Molecule 17 is a protein called DC1.

Mol	Chain	Residues	Atoms				AltConf	Trace
17	X0	162	Total	C	N	O	0	0
			810	486	162	162		

- Molecule 18 is a protein called Outer dynein arm protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	Y	73	Total	C	N	O	S	0	0
			595	360	112	120	3		
18	Y1	147	Total	C	N	O	S	0	0
			1185	729	223	224	9		

- Molecule 19 is a protein called DC2.

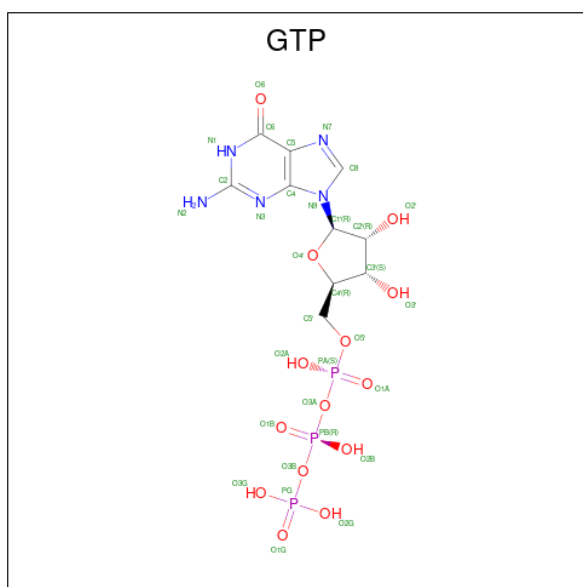
Mol	Chain	Residues	Atoms				AltConf	Trace
19	Y0	168	Total	C	N	O	0	0
			840	504	168	168		

- Molecule 20 is a protein called Outer dynein arm-docking complex protein DC3.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Z	170	Total	C	N	O	S	0	0
			1384	863	242	270	9		

- Molecule 21 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula:  $C_{10}H_{16}N_5O_{14}P_3$ ).





Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
21	A1	1	Total 32	C 10	N 5	O 14	P 3	0
21	A3	1	Total 32	C 10	N 5	O 14	P 3	0
21	A5	1	Total 32	C 10	N 5	O 14	P 3	0
21	A7	1	Total 32	C 10	N 5	O 14	P 3	0
21	B2	1	Total 32	C 10	N 5	O 14	P 3	0
21	B5	1	Total 32	C 10	N 5	O 14	P 3	0
21	B7	1	Total 32	C 10	N 5	O 14	P 3	0

- Molecule 22 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

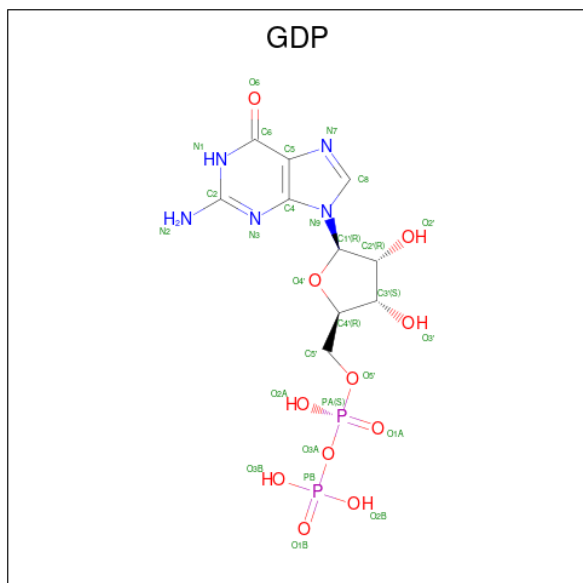
Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
22	A1	1	Total 1	Mg 1	0
22	A2	1	Total 1	Mg 1	0
22	A4	1	Total 1	Mg 1	0
22	A6	1	Total 1	Mg 1	0
22	B3	1	Total 1	Mg 1	0

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Mol	Chain	Residues	Atoms		AltConf
22	B4	1	Total	Mg	0
			1	1	
22	B6	1	Total	Mg	0
			1	1	

- Molecule 23 is GUANOSINE-5'-DIPHOSPHATE (three-letter code: GDP) (formula:  $C_{10}H_{15}N_5O_{11}P_2$ ).

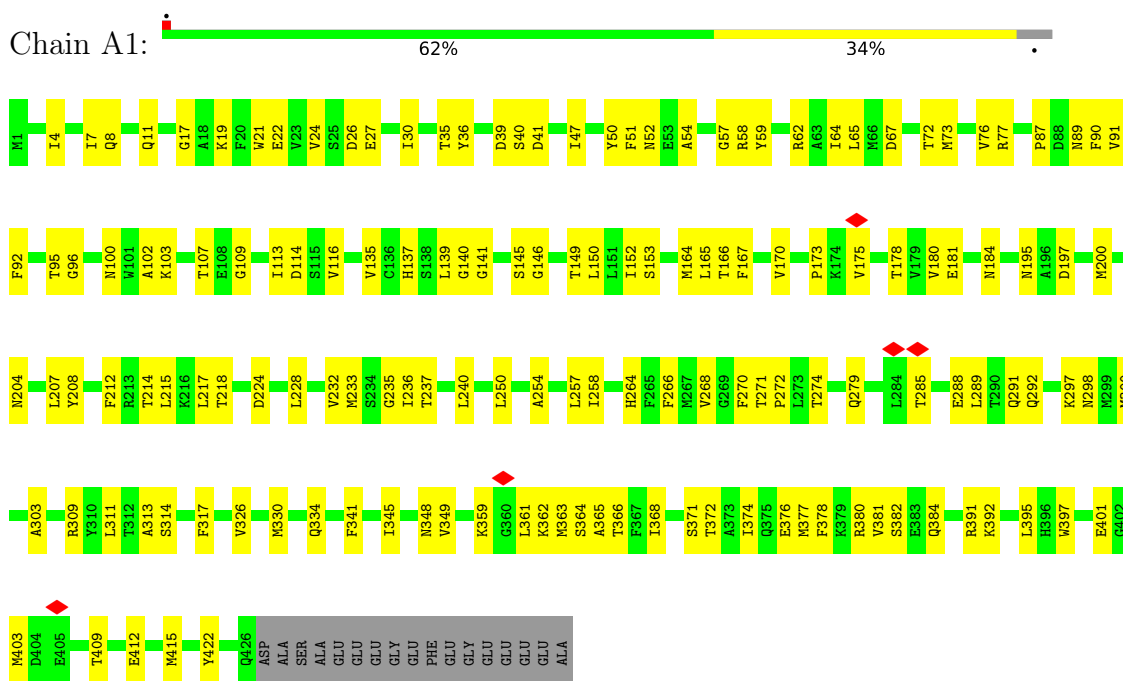


Mol	Chain	Residues	Atoms				AltConf	
23	A1	1	Total	C	N	O	P	0
			28	10	5	11	2	
23	A3	1	Total	C	N	O	P	0
			28	10	5	11	2	
23	A5	1	Total	C	N	O	P	0
			28	10	5	11	2	
23	A7	1	Total	C	N	O	P	0
			28	10	5	11	2	
23	B1	1	Total	C	N	O	P	0
			28	10	5	11	2	
23	B3	1	Total	C	N	O	P	0
			28	10	5	11	2	
23	B5	1	Total	C	N	O	P	0
			28	10	5	11	2	
23	B7	1	Total	C	N	O	P	0
			28	10	5	11	2	

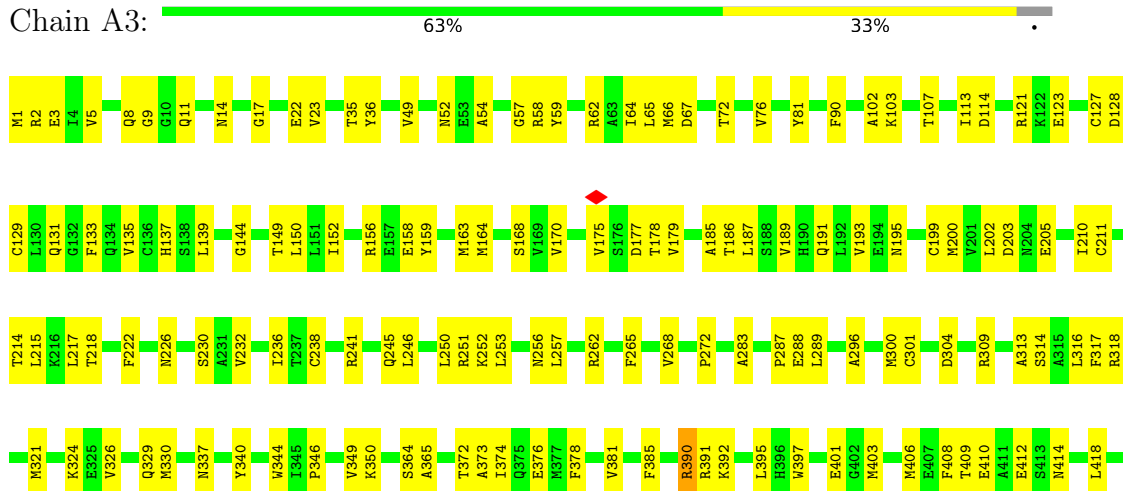
### 3 Residue-property plots

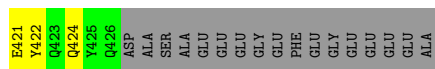
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

#### • Molecule 1: Tubulin beta



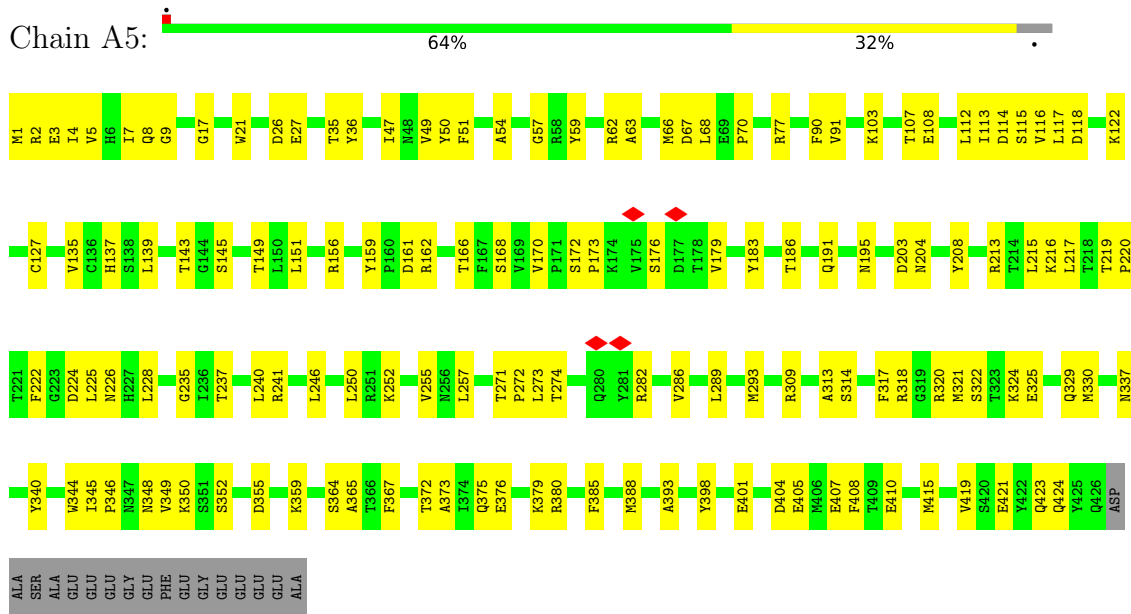
#### • Molecule 1: Tubulin beta





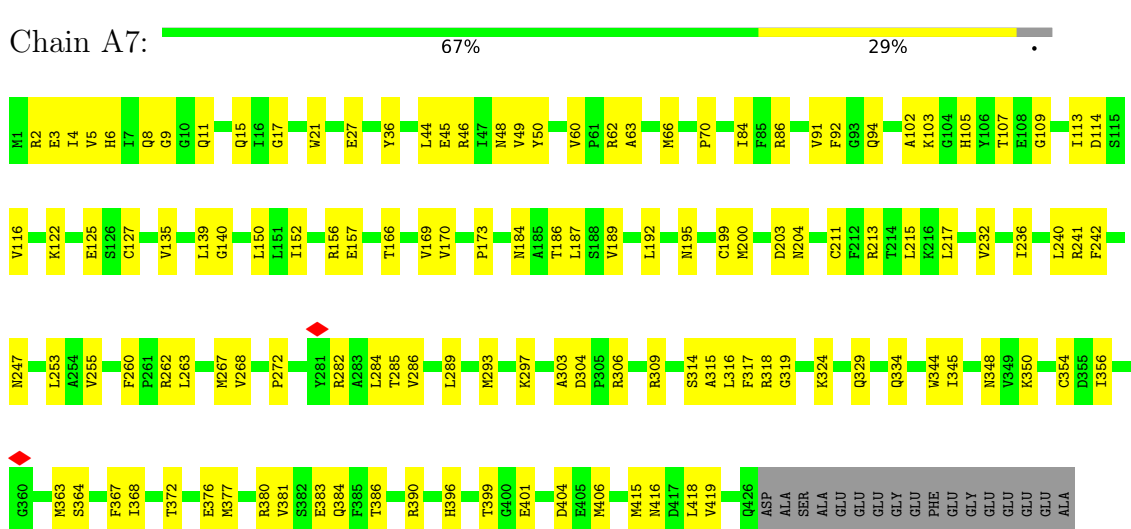
• Molecule 1: Tubulin beta

Chain A5:



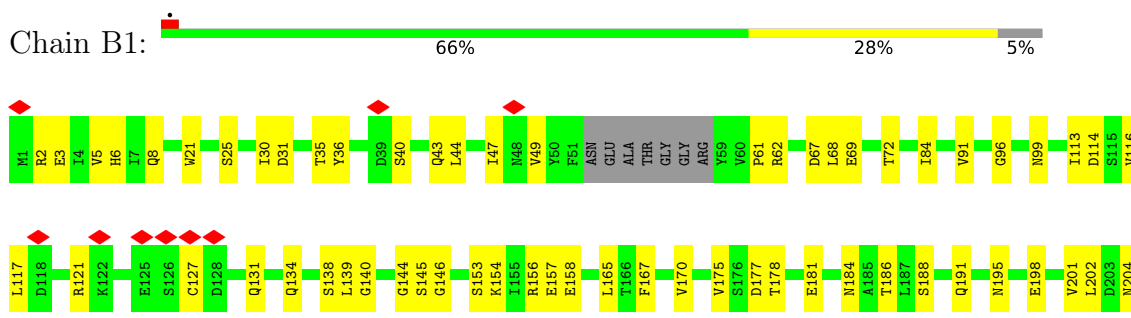
• Molecule 1: Tubulin beta

Chain A7:



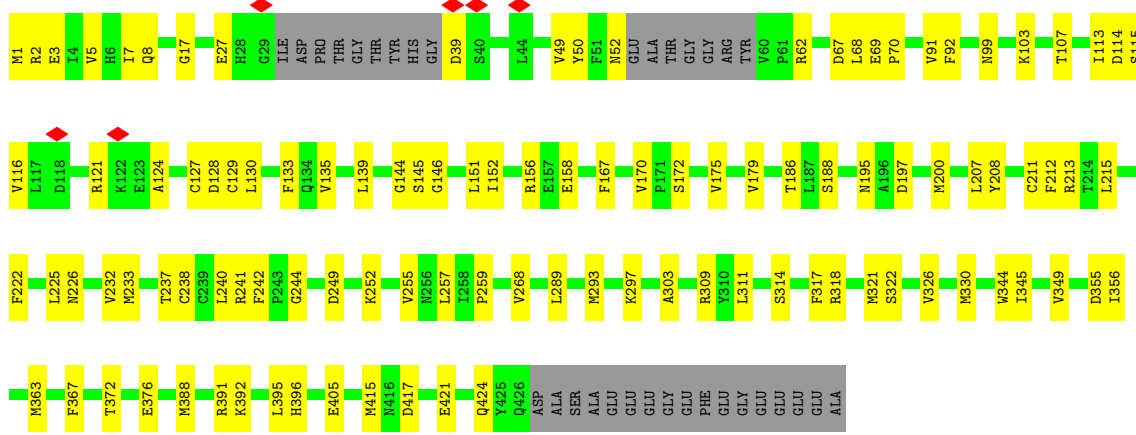
• Molecule 1: Tubulin beta

Chain B1:

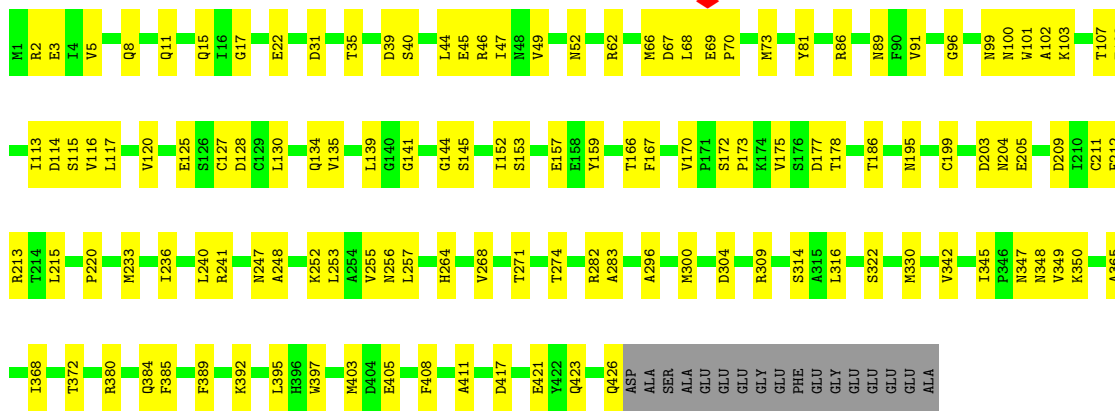




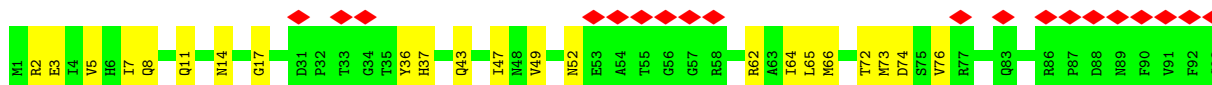
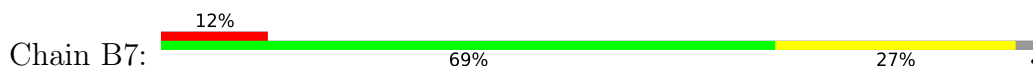
• Molecule 1: Tubulin beta

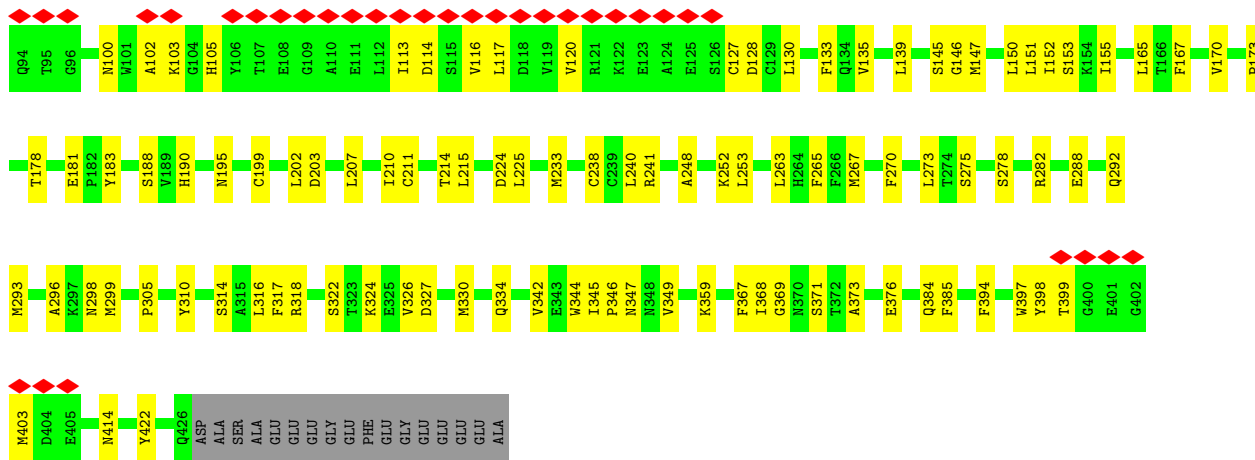


• Molecule 1: Tubulin beta

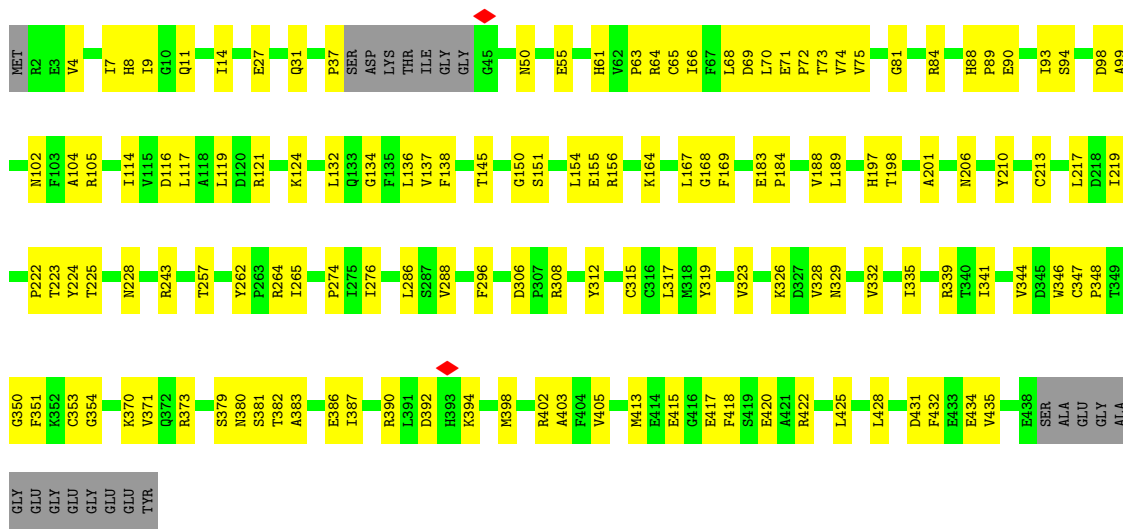


• Molecule 1: Tubulin beta

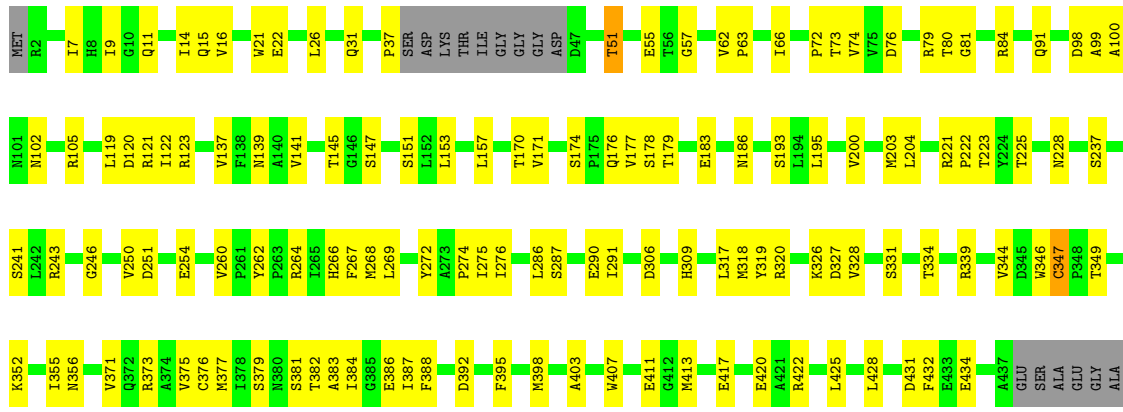




• Molecule 2: Tubulin alpha



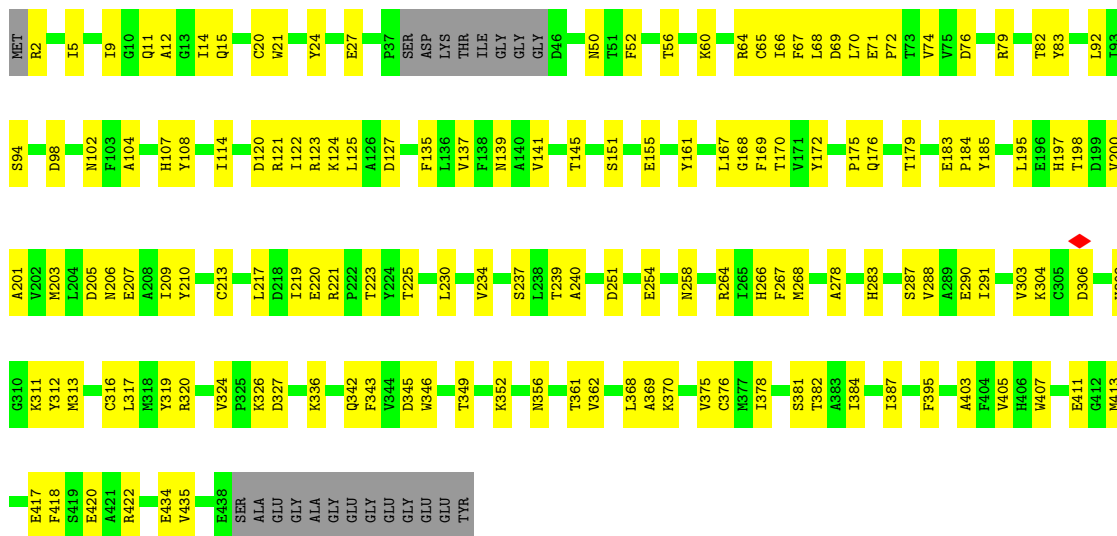
• Molecule 2: Tubulin alpha



GLY  
GLU  
GLY  
GLY  
GLY  
GLY  
GLY  
TYR

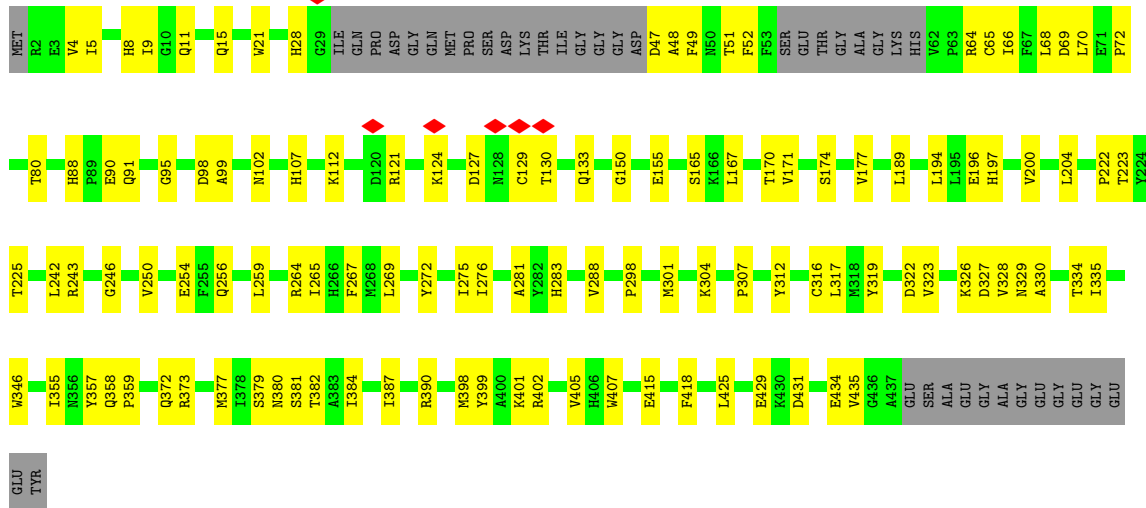
• Molecule 2: Tubulin alpha

Chain A6: 63% 32% 5%



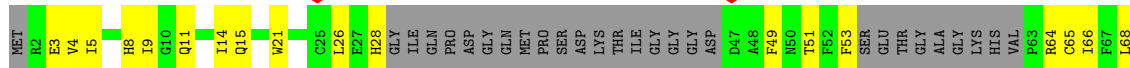
• Molecule 2: Tubulin alpha

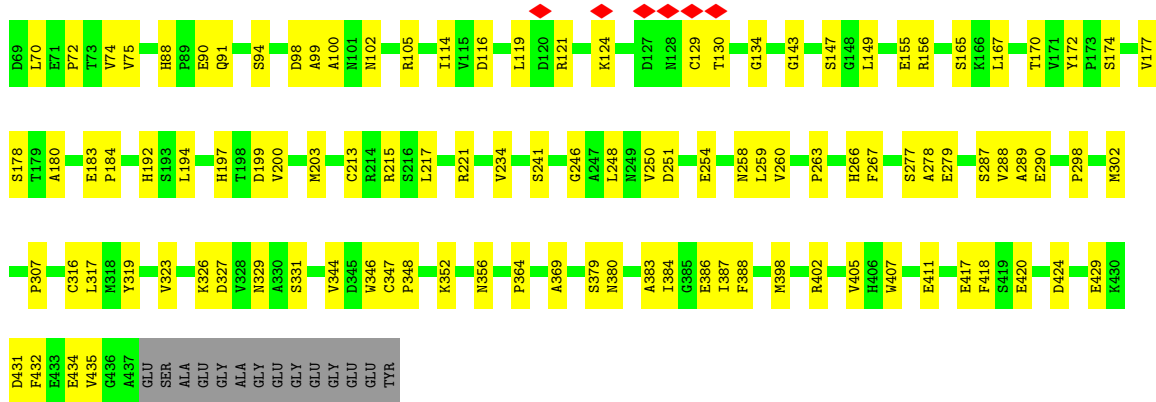
Chain B2: 66% 25% 9%



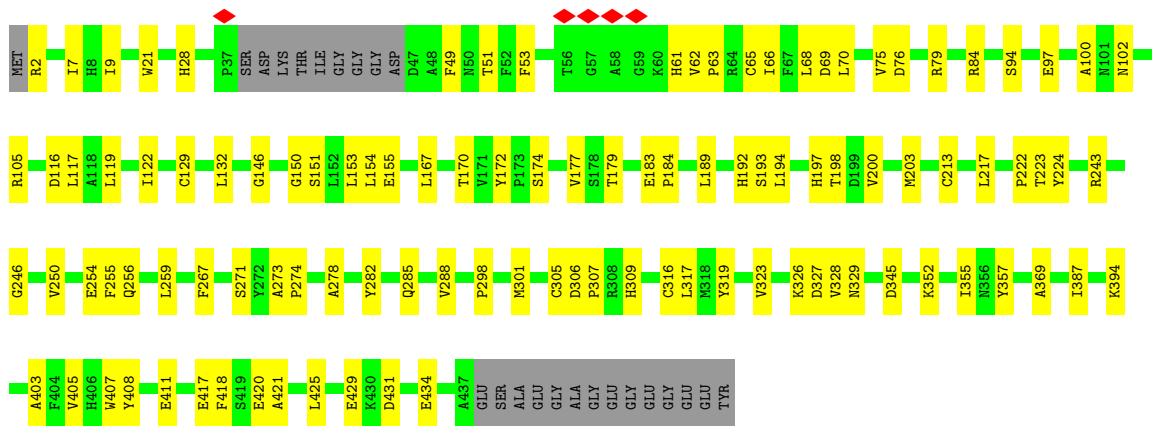
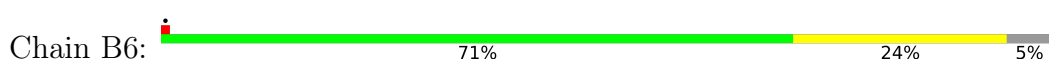
• Molecule 2: Tubulin alpha

Chain B4: 63% 27% 9%

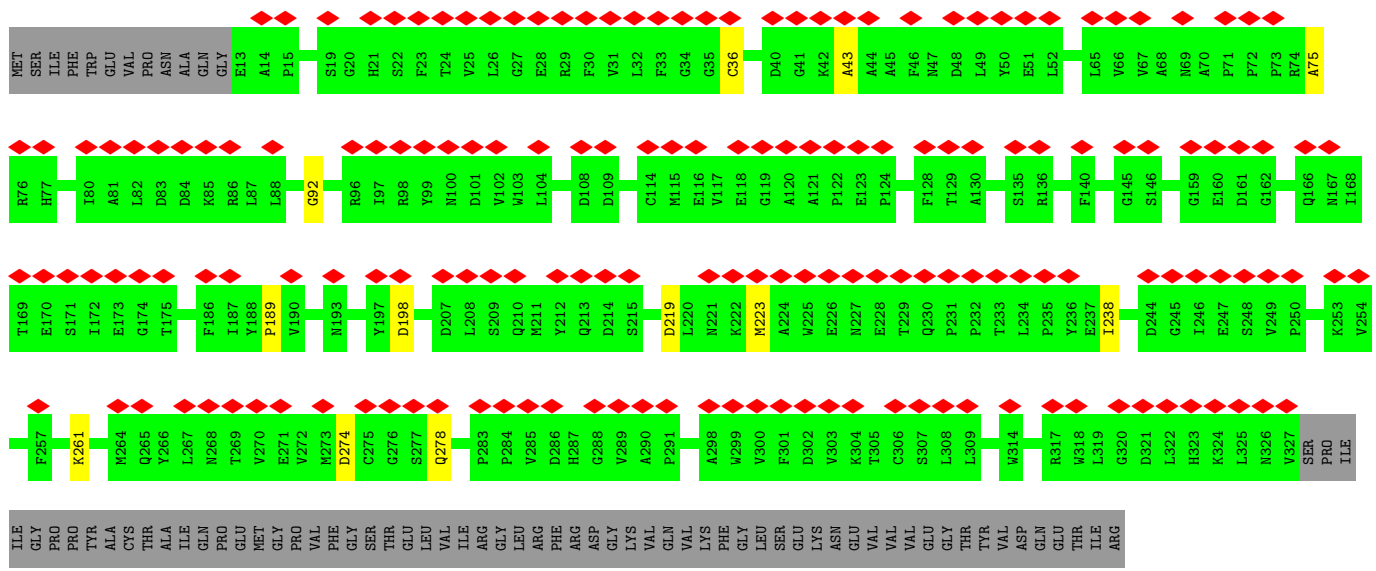




• Molecule 2: Tubulin alpha

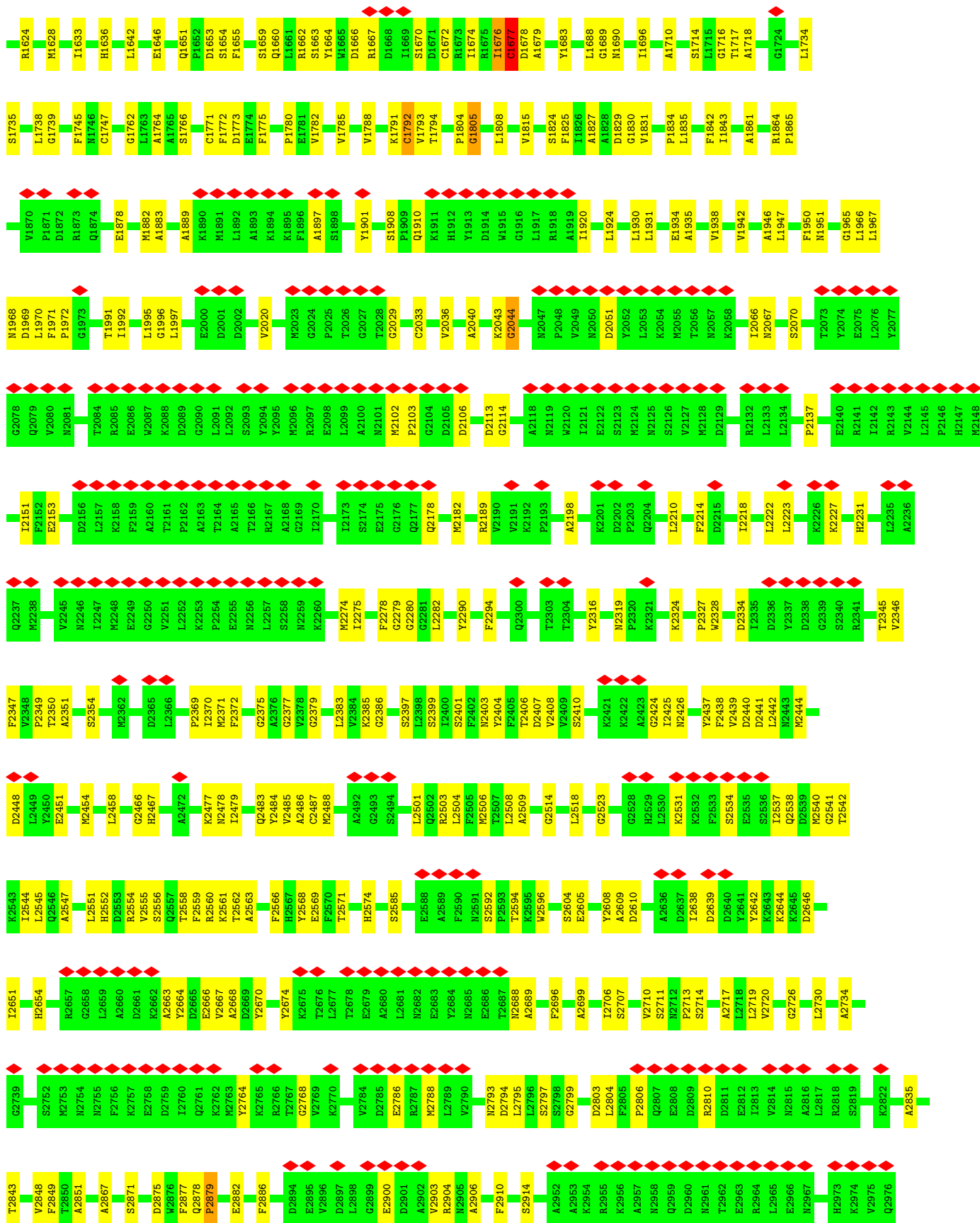


• Molecule 3: Heavy chain alpha

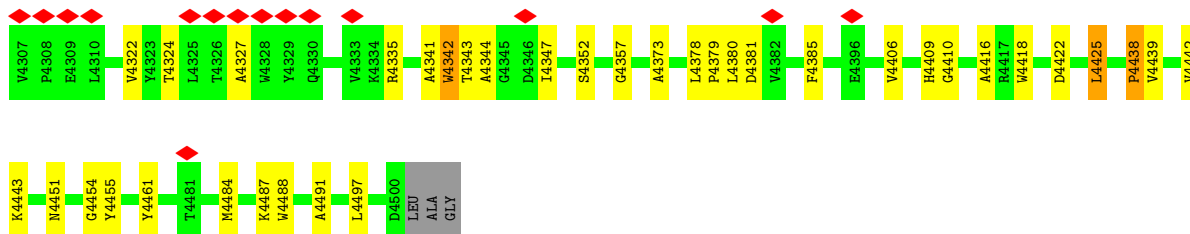




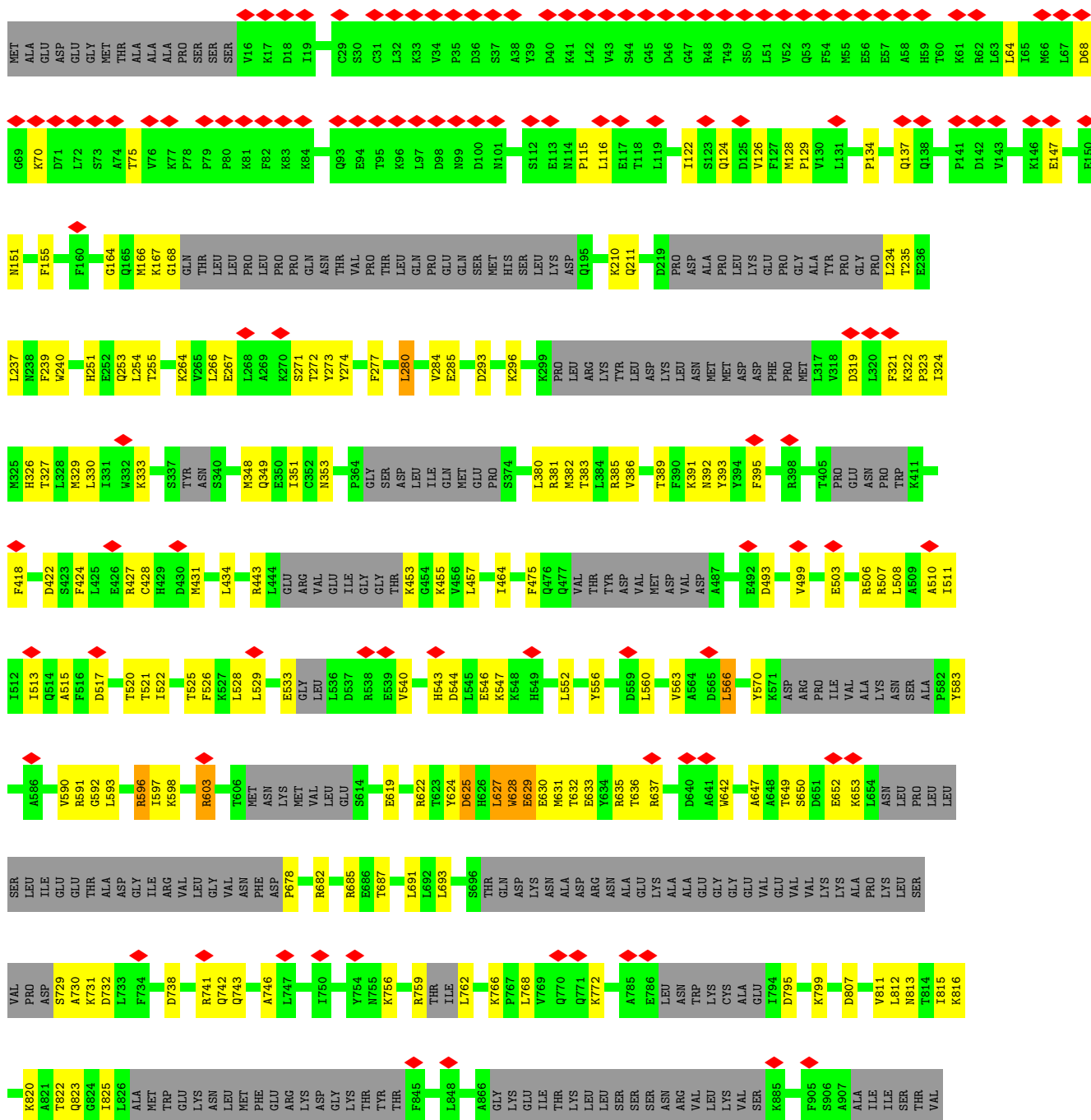




L4230	E3961	E3612	P3697	G3624	S3526	E3395	P3289	LEU	V2977
E4231	S3962	A3613	E3698	L3625	T3527	R3396	F3290	GLU	D2978
T4232	A3963	A3699	A3699	T3628	A3528	I3397	T3291	GLN	V2979
R4233	H3964	T3627	R3703	T3628	E3529	A3398	GLN	ALA	D2980
R4234	P3965	Q3631	C3711	S3640	R3529	F3399	GLY	TRP	D2981
L4237	D3966	Q3637	C3711	LEU	D3530	A3400	LYS	ALA	L2982
P4238	R3967	A3637	R3720	MET	R3531	G3401	GLU	ALA	L2982
E4239	C3968	E3652	R3721	GLU	I3532	V3404	ALA	GLN	V2983
P4240	R3969	E3652	G3722	LYS	T3533	N3408	VAL	LEU	E2984
F4241	F3970	G3656	L3723	ALA	E3534	L3417	ASP	ALA	E2985
E4242	A3973	ARG	F3724	ARG	V3536	M3311	LYS	MET	A2986
N4243	I3976	SER	D3727	SER	A3537	T3314	ALA	ALA	A2987
N4244	A3982	SER	K3728	GLY	E3540	I3420	VAL	VAL	V2988
E4245	R3987	GLY	L3729	ASP	S3541	R3422	ARG	TYR	A2989
V4246	M3870	VAL	I3730	ASP	L3542	S3424	GLU	TYR	A2990
L4248	D3872	ARG	V3731	ARG	E3543	F3426	GLU	ASP	A2991
V4257	E3873	PRO	T3736	PRO	K3546	L3436	GLU	VAL	V2991
V4258	S3876	SER	I3739	ALA	R3547	I3443	GLN	ARG	GLU
V4259	G3879	GLN	L3740	ALA	R3547	Y3443	GLU	ARG	VAL
A4260	I3880	GLY	L3741	GLY	V3548	F3446	VAL	GLU	ALA
L4261	M4004	LEU	R3742	LEU	S3549	F3447	VAL	GLY	ALA
A4264	T4016	PRO	V3746	PRO	T3550	L3451	GLN	THR	ALA
T4265	P4017	PRO	E3752	PRO	E3551	L3451	ALA	ASP	ALA
R4266	A3898	ALA	E3752	E3665	I3552	L3244	ALA	ALA	ALA
N4267	N3899	SER	R3756	ALA	S3553	A3245	GLN	GLY	GLU
A4269	D4021	SER	P3761	GLN	E3554	N3246	ASN	VAL	ALA
L4270	G3808	ALA	T3762	GLN	R3555	R3247	ASN	VAL	ALA
L4271	M3915	ALA	P3763	ALA	K3556	I3248	LYS	ARG	ALA
S4272	G3916	SER	P3764	LEU	V3556	I3249	LEU	LYS	GLY
Q4282	E3920	ALA	P3764	LEU	R3574	N3250	GLU	THR	VAL
L4283	P3922	ALA	D3768	ALA	A3577	A3251	GLU	ASP	LYS
G4284	P3922	ALA	D3769	ALA	A3577	L3252	ASN	ALA	LYS
D4286	A3925	ALA	L3770	ALA	S3589	A3253	VAL	PRO	VAL
A4288	V3926	ALA	R3678	ALA	S3589	S3254	VAL	PRO	VAL
L4289	K3929	ALA	G3679	ALA	I3593	E3255	VAL	PRO	VAL
N4290	Y3930	ALA	R3680	ALA	H3594	E3256	VAL	PRO	VAL
N4291	G3934	ALA	Q3681	ALA	A3595	G3256	VAL	PRO	VAL
S4292	G3935	ALA	V3682	ALA	Q3598	E3257	VAL	PRO	VAL
D4293	W3936	ALA	G3682	ALA	L3601	R3374	VAL	PRO	VAL
N4294	A3792	ALA	D3684	ALA	F3508	E3375	VAL	PRO	VAL
N4295	R4097	ALA	A3685	ALA	T3508	S3376	VAL	PRO	VAL
E4296	D4098	ALA	E3686	ALA	F3510	K3377	VAL	PRO	VAL
N4297	L4099	ALA	D3687	ALA	T3511	N3378	VAL	PRO	VAL
N4298	Q4100	ALA	E3688	ALA	I3512	Q3381	VAL	PRO	VAL
L4299	Y4101	ALA	D3689	ALA	K3513	Q3381	VAL	PRO	VAL
A4299	G4104	ALA	N3801	ALA	L3514	M3385	VAL	PRO	VAL
R4300	E4105	ALA	D3802	ALA	K3515	M3390	VAL	PRO	VAL
G4301	V4226	ALA	S3803	ALA	E3516	L3391	VAL	PRO	VAL
L4302	A4229	ALA	D3803	ALA	R3267	Q3392	VAL	PRO	VAL
A4303	A4229	ALA	S3692	ALA	K3268	V3393	VAL	PRO	VAL
S4304	V4226	ALA	M3695	ALA	K3269	M3394	VAL	PRO	VAL
N4305	A4229	ALA	A3696	ALA	K3622	K3623	VAL	PRO	VAL
T4306	A4229	ALA	K3623	ALA	K3623	K3623	VAL	PRO	VAL



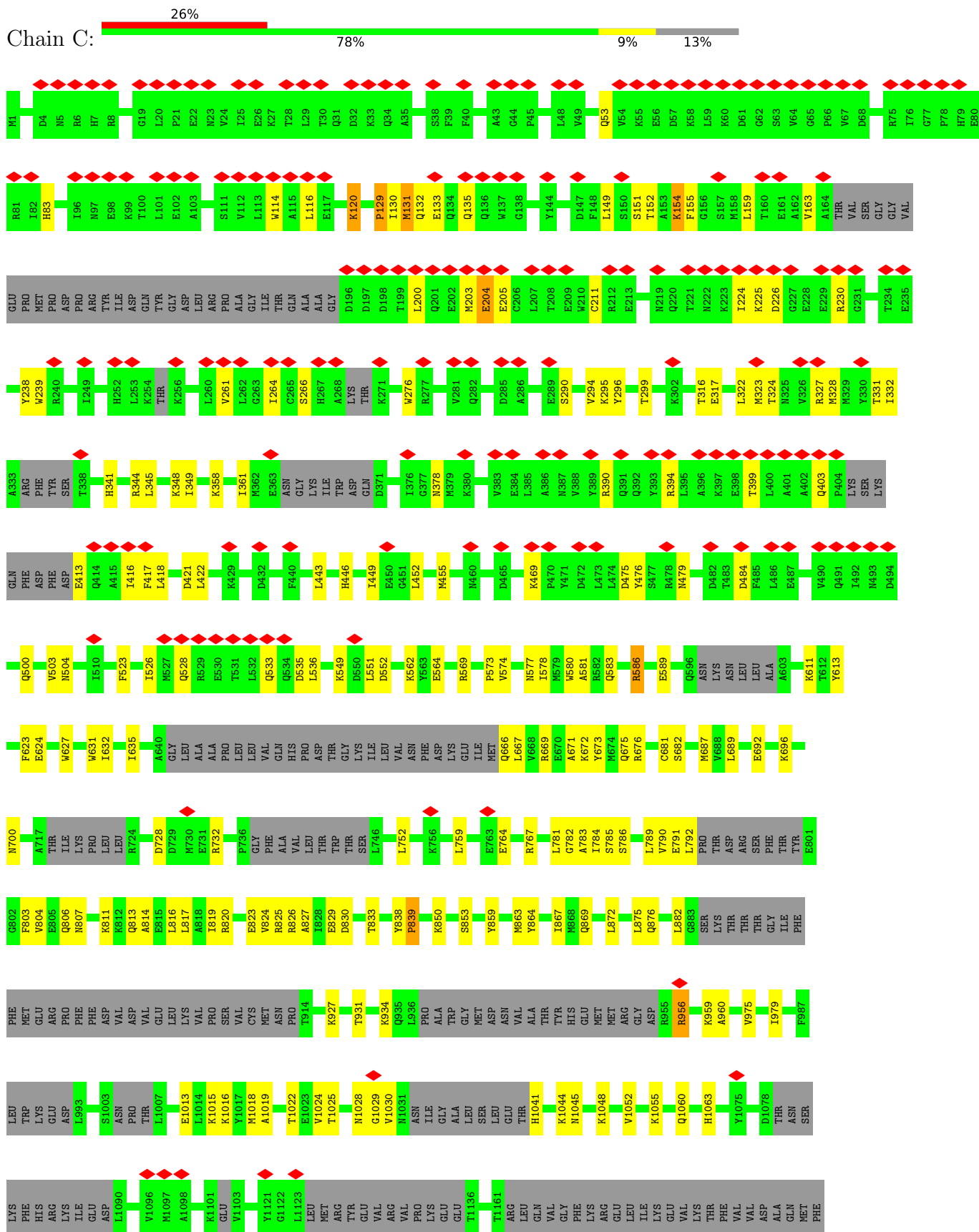
● Molecule 4: Flagellar outer dynein arm heavy chain beta





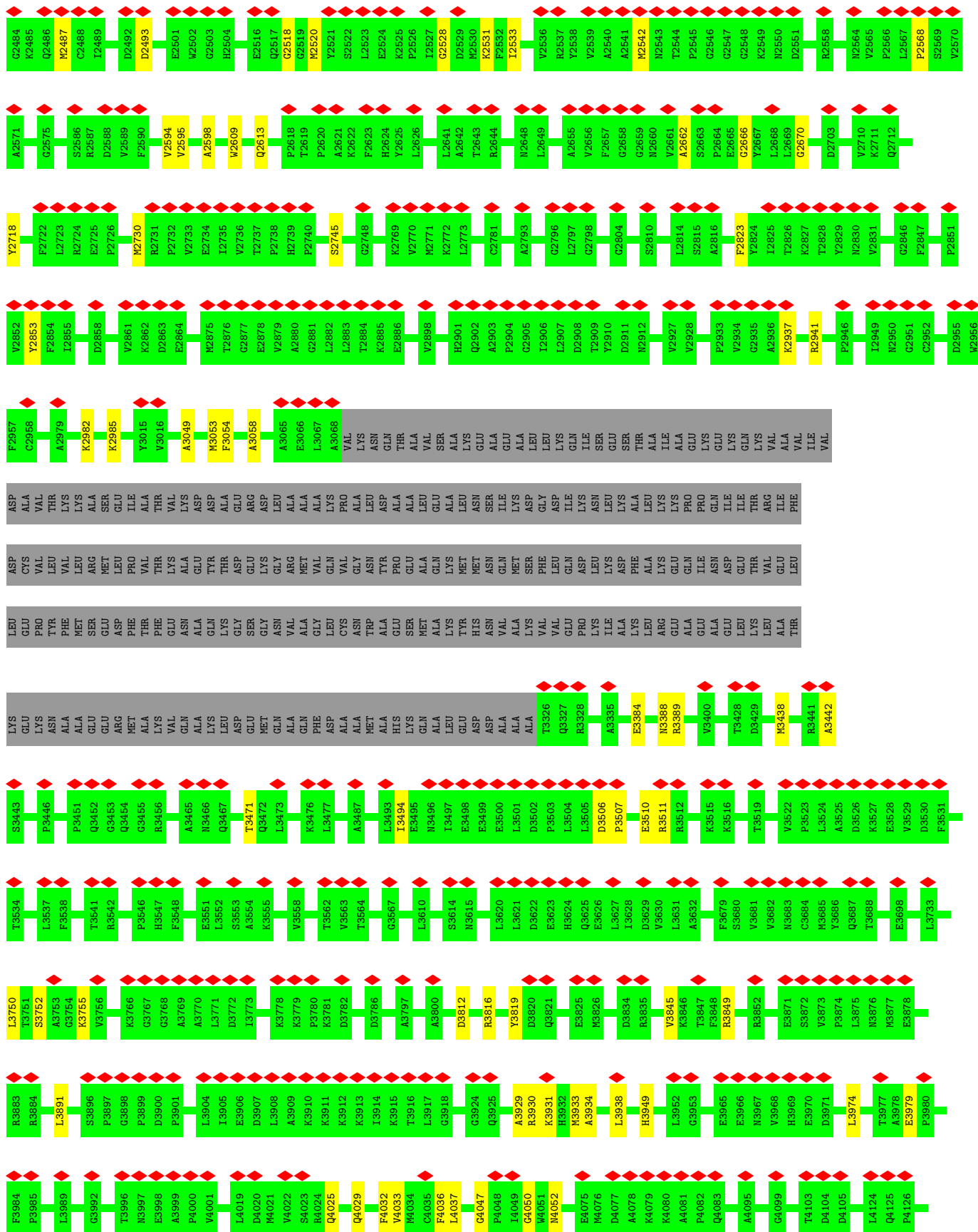
ARG	F3035	T2937	S2827	R2766	M2669	G2585	D2476	V2888	S2288	P2177	K2107	V2020
GLU	H3036	D2938	Y2828	D2767	P2670	P2586	E2477	P2389	M2289	D2178	R2108	K2020
ASP	M3057	M2939	D2829	R2768	N2671	P2587	Q2478	L2390	M2290	D2179	A2109	M2022
GLU	M3060	M2940	V2830	M2769	A2672	G2588	M2479	P2391	M2291	Q2180	A2110	P2023
ALA	F3083	I2941	L2831	I2770	E2673	S2589	N2483	A2392	T2292	F2181	P2111	G2024
THR	F3087	V2942	R2832	R2771	T2675	R2590	Y2483	K2401	M2293	I2185	E2112	Y2025
LEU	F3087	K2943	K2833	E2772	R2676	M2592	M2485	L2402	D2294	V2198	L2113	P2026
GLN	F3087	E2944	T2834	A2773	A2677	Y2594	E2486	E2404	D2295	F2199	E2115	G2028
THR	S3103	M2951	L2835	D2774	M2678	Y2596	D2487	G2405	M2296	A2204	D2116	A2029
VAL	D3114	D2952	L2836	M2775	Y2679	V2596	K2491	L2406	M2298	A2204	K2117	E2030
SER	D3114	L2953	D2837	A2776	Y2680	P2602	F2492	L2407	L2299	N2220	V2118	G2027
ALA	R3117	L2954	K2838	D2778	Q2681	D2605	Q2493	P2408	T2300	N2220	V2119	F2032
PHE	S2955	L2839	L2682	F2778	I2613	D2606	Y2494	K2409	L2301	S2221	L2119	E2033
GLN	S2955	R2840	I2683	D2779	I2613	K2606	I2495	E2410	L2301	S2222	L2120	S2034
ALA	S3119	E2841	I2684	E2780	T2609	Q2610	P2496	E2411	A2302	S2222	D2125	R2036
GLU	K3120	Y2842	D2684	R2781	Q2610	I2613	G2497	E2412	A2302	S2222	T2132	A2037
CYS	Y2988	M2843	G2685	F2782	I2613	M2619	D2498	V2412	Y2228	Y2228	A2133	L2038
GLU	I2959	E2844	M2689	V2783	I2613	V2620	F2499	R2413	Q2229	Q2229	A2134	F2039
ARG	A2960	E2844	F2690	V2783	I2613	D2621	F2499	R2413	A2230	A2230	D2134	R2040
ASP	D2961	M2846	D2691	T2786	M2619	Y2622	F2499	G2414	A2230	A2230	D2134	R2040
LEU	D2961	N2846	D2691	T2786	M2619	H2623	F2499	G2414	A2230	A2230	D2134	R2040
GLU	T2964	A2847	A2695	K2787	V2620	G2624	F2499	G2414	A2230	A2230	D2134	R2040
ALA	P2965	E2847	K2696	K2788	D2621	G2624	F2499	G2414	A2230	A2230	D2134	R2040
PRO	E2966	M2848	K2696	K2788	D2621	G2624	F2499	G2414	A2230	A2230	D2134	R2040
ILE	D2967	L2850	M2697	F2790	Y2622	G2624	F2499	G2414	A2230	A2230	D2134	R2040
ILE	K2968	D2850	M2697	D2791	Y2622	G2624	F2499	G2414	A2230	A2230	D2134	R2040
GLN	E2969	V2852	M2699	C2794	H2623	G2624	F2499	G2414	A2230	A2230	D2134	R2040
ALA	A2970	A2865	A2720	G2794	H2623	G2624	F2499	G2414	A2230	A2230	D2134	R2040
ALA	F2971	R2866	A2720	G2794	H2623	G2624	F2499	G2414	A2230	A2230	D2134	R2040
GLU	T2972	R2872	V2721	M2796	F2503	G2624	F2499	G2414	A2230	A2230	D2134	R2040
ALA	N2973	G2873	K2722	C2797	F2503	G2624	F2499	G2414	A2230	A2230	D2134	R2040
LEU	A2974	M2874	F2723	M2797	F2503	G2624	F2499	G2414	A2230	A2230	D2134	R2040
ASN	N2977	E2875	H2724	A2798	M2699	G2624	F2499	G2414	A2230	A2230	D2134	R2040
LEU	E2978	V2878	G2738	I2799	M2699	G2624	F2499	G2414	A2230	A2230	D2134	R2040
THR	A2981	G2884	R2741	E2800	M2699	G2624	F2499	G2414	A2230	A2230	D2134	R2040
GLU	A2982	K2885	A2742	E2801	M2699	G2624	F2499	G2414	A2230	A2230	D2134	R2040
LEU	G2983	K2885	A2742	E2801	M2699	G2624	F2499	G2414	A2230	A2230	D2134	R2040
SER	I2984	L2888	L2743	P2803	M2641	A2642	T2551	T2445	K2355	M2264	L2151	K2077
GLU	L2985	L2888	L2743	P2803	M2641	A2642	T2551	T2445	K2355	M2264	L2151	K2077
LEU	D2986	L2888	E2745	L2804	M2641	A2642	T2551	T2445	K2355	M2264	L2151	K2077
LYS	S2987	A2889	E2745	L2804	M2641	A2642	T2551	T2445	K2355	M2264	L2151	K2077
PHE	K3001	A2892	Y2746	L2806	M2641	A2642	T2551	T2445	K2355	M2264	L2151	K2077
GLY	F3002	C2896	Y2746	L2806	M2641	A2642	T2551	T2445	K2355	M2264	L2151	K2077
SER	L3003	C2896	Y2746	L2806	M2641	A2642	T2551	T2445	K2355	M2264	L2151	K2077
PRO	H3004	Q2902	R2751	L2811	M2661	F2662	T2556	T2449	E2357	M2267	L2156	E2080
ALA	I3005	Q2902	R2751	L2811	M2661	F2662	T2556	T2449	E2357	M2267	L2156	E2080
GLU	V3006	Q2902	R2751	L2811	M2661	F2662	T2556	T2449	E2357	M2267	L2156	E2080
ALA	F3011	Q2902	R2751	L2811	M2661	F2662	T2556	T2449	E2357	M2267	L2156	E2080
GLY	A3025	Q2902	R2751	L2811	M2661	F2662	T2556	T2449	E2357	M2267	L2156	E2080
LEU	L3026	Q2902	R2751	L2811	M2661	F2662	T2556	T2449	E2357	M2267	L2156	E2080
GLU	H3031	Q2902	R2751	L2811	M2661	F2662	T2556	T2449	E2357	M2267	L2156	E2080
ASP	F3032	Q2902	R2751	L2811	M2661	F2662	T2556	T2449	E2357	M2267	L2156	E2080
ALA	H3034	Q2902	R2751	L2811	M2661	F2662	T2556	T2449	E2357	M2267	L2156	E2080
GLU												
ILE												

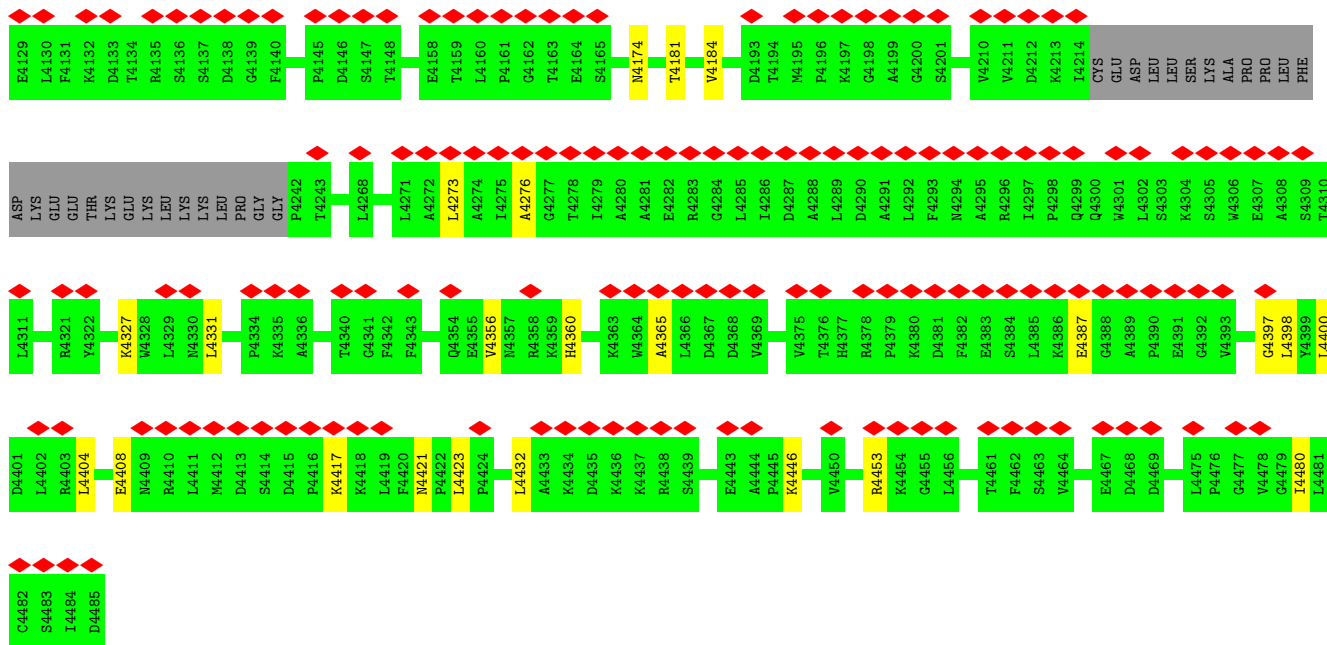




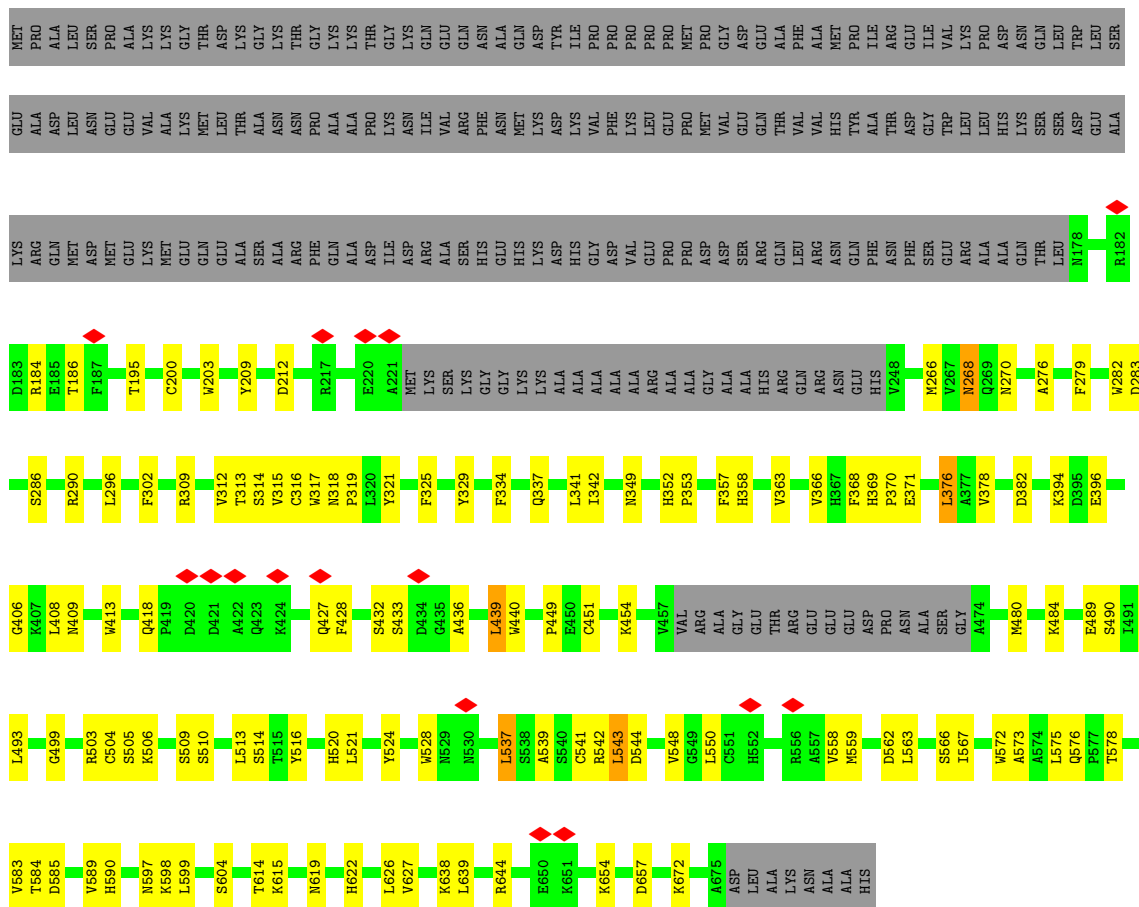




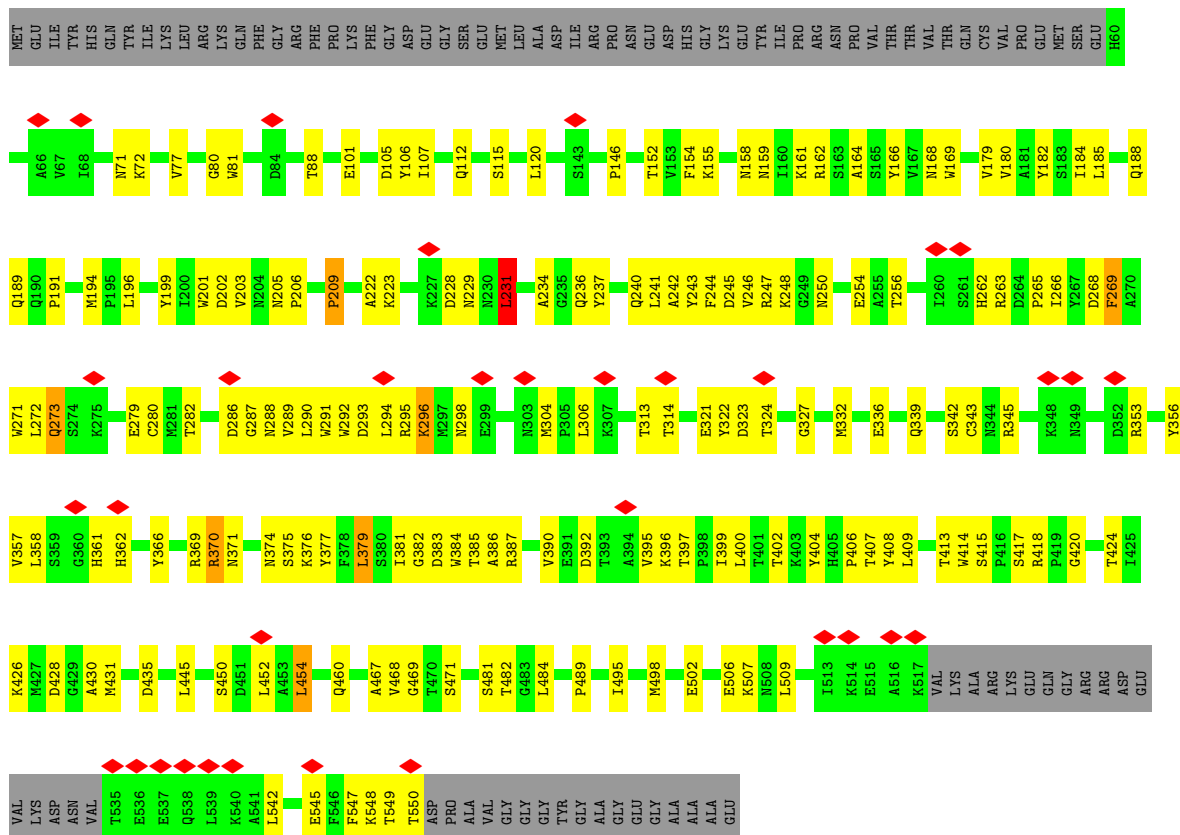




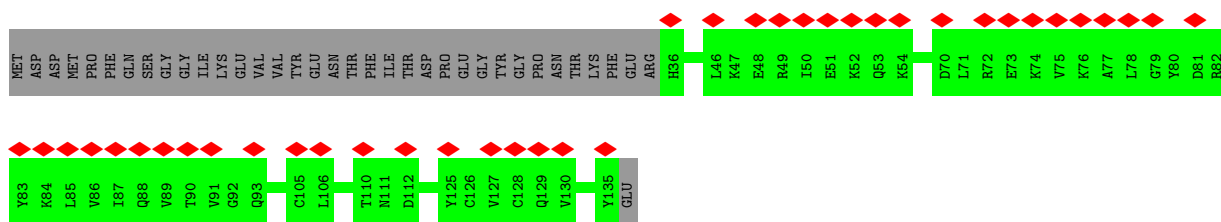
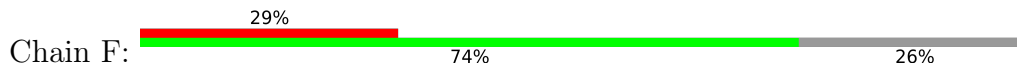
• Molecule 6: Dynein, 78 kDa intermediate chain, flagellar outer arm



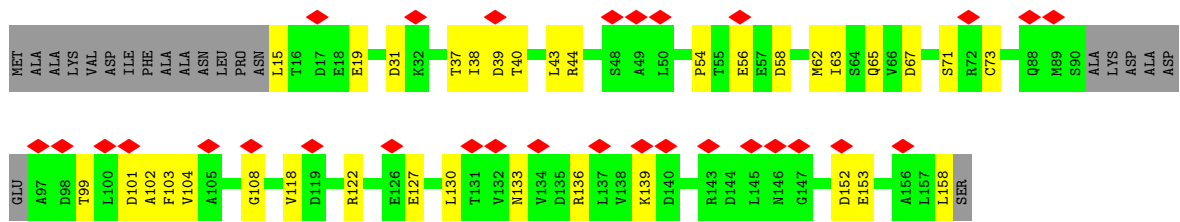
• Molecule 7: Dynein, 70 kDa intermediate chain, flagellar outer arm



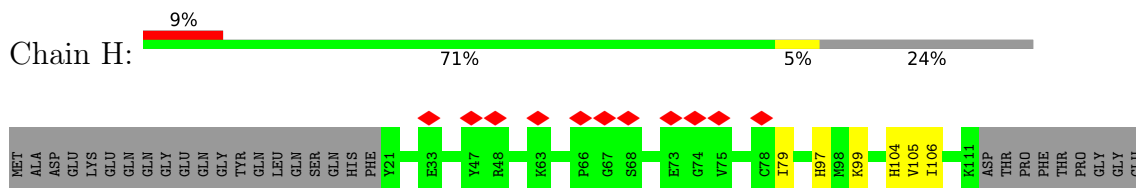
• Molecule 8: Flagellar outer dynein arm light chain 2



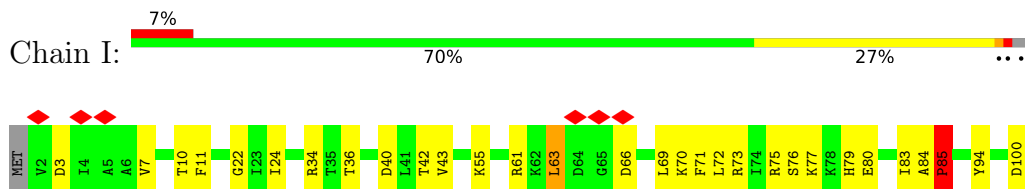
• Molecule 9: Dynein 18 kDa light chain, flagellar outer arm



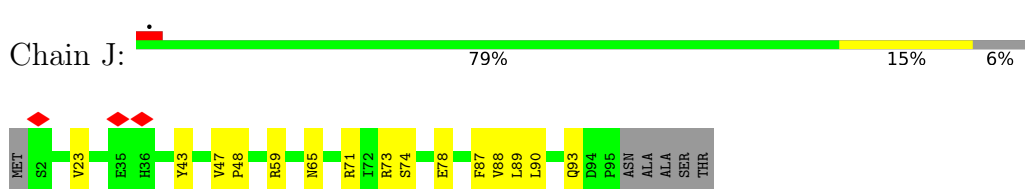
• Molecule 10: Dynein 11 kDa light chain, flagellar outer arm



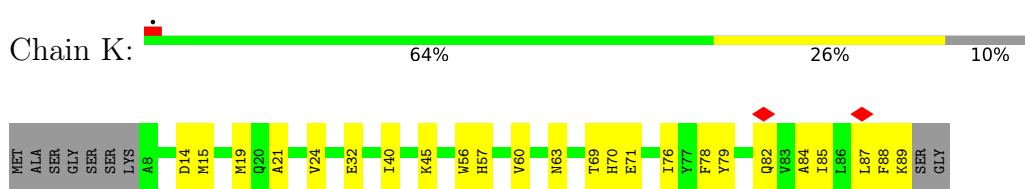
• Molecule 11: Dynein light chain roadblock LC7a



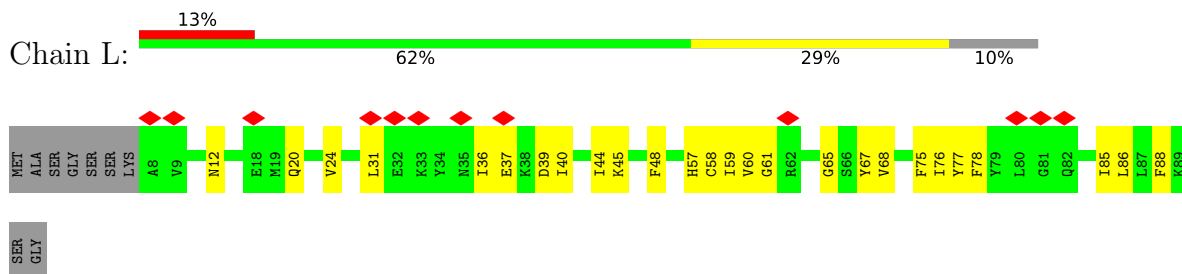
• Molecule 12: Dynein light chain roadblock LC7b



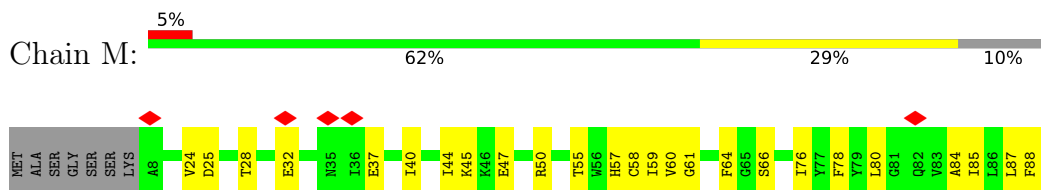
• Molecule 13: Dynein 8 kDa light chain, flagellar outer arm



• Molecule 13: Dynein 8 kDa light chain, flagellar outer arm



• Molecule 13: Dynein 8 kDa light chain, flagellar outer arm

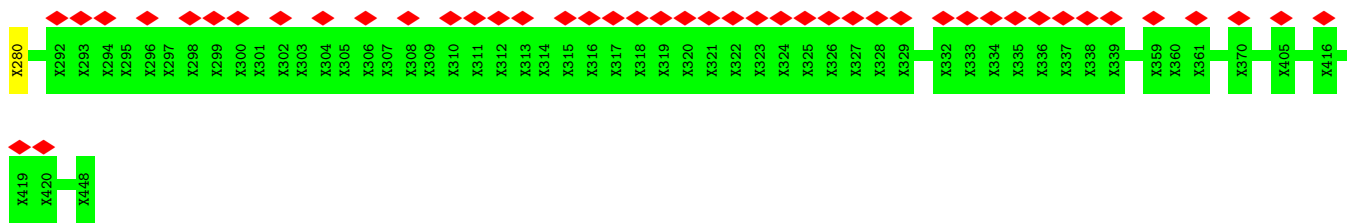


• Molecule 13: Dynein 8 kDa light chain, flagellar outer arm

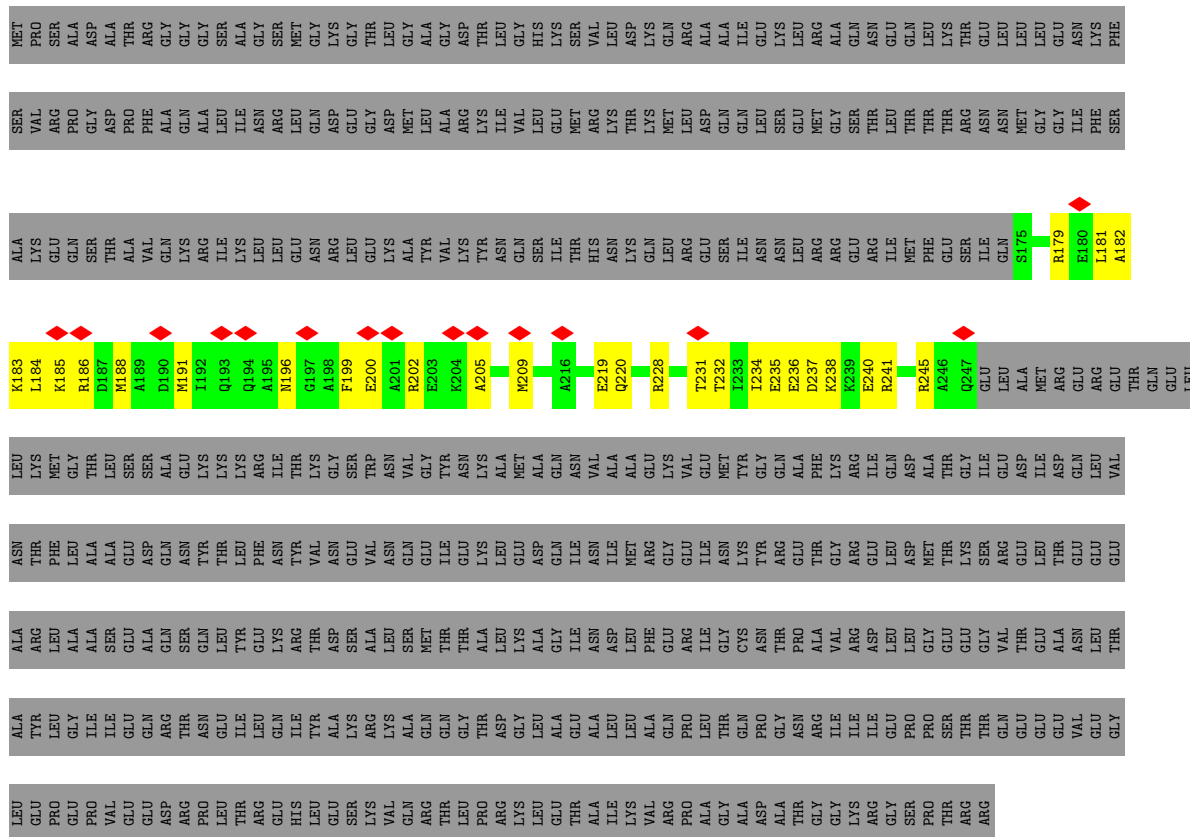




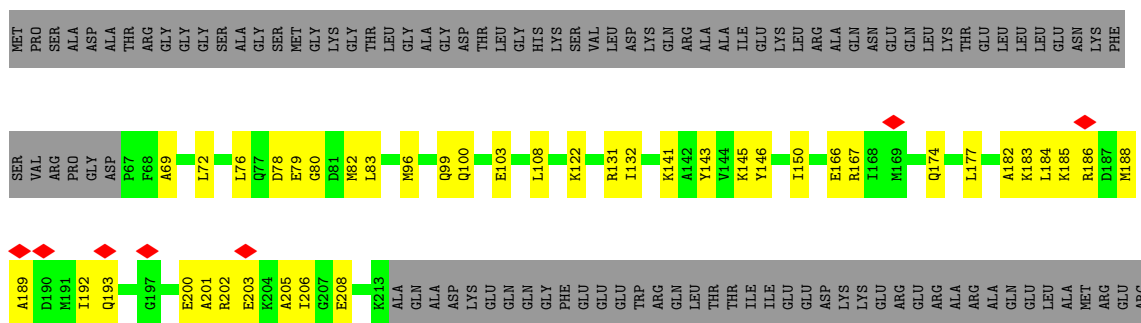




• Molecule 18: Outer dynein arm protein 1



• Molecule 18: Outer dynein arm protein 1







## 4 Experimental information

Property	Value	Source
EM reconstruction method	HELICAL	Depositor
Imposed symmetry	HELICAL, twist=0°, rise=82 Å, axial sym=C1	Depositor
Number of segments used	485694	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION; The composite map was assembled on a box 700 reference map (7.5 Å) using the ODA-DC and ODA core composite maps (deposited separately), and maps targeting the aHC AAA+ domain (4.5 Å), bHC AAA+ domain (6.2 Å), aHC AAA+ domain (11.4 Å), and aHC tail domain (5.3 Å). A second conformation of bHC AAA+ domain (9.8 Å) is also provided.	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{Å}^2$ )	61.48	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.093	Depositor
Minimum map value	0.000	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.01	Depositor
Map size (Å)	952.0, 952.0, 952.0	wwPDB
Map dimensions	700, 700, 700	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.36, 1.36, 1.36	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: GDP, MG, GTP

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	A1	0.28	0/3420	0.53	0/4628
1	A3	0.31	0/3420	0.54	0/4628
1	A5	0.30	0/3420	0.52	0/4628
1	A7	0.28	0/3420	0.51	0/4628
1	B1	0.29	0/3371	0.49	0/4561
1	B3	0.32	0/3295	0.49	0/4454
1	B5	0.31	0/3420	0.51	0/4628
1	B7	0.29	0/3420	0.50	0/4628
2	A2	0.31	0/3410	0.53	0/4623
2	A4	0.34	0/3389	0.58	0/4595
2	A6	0.31	0/3406	0.54	0/4618
2	B2	0.31	0/3271	0.52	0/4434
2	B4	0.32	0/3260	0.52	0/4418
2	B6	0.29	0/3389	0.50	0/4595
3	A	0.32	0/16168	0.55	0/22506
4	B	0.34	1/19223 (0.0%)	0.61	7/26574 (0.0%)
5	C	0.34	0/21839	0.57	7/30089 (0.0%)
6	D	0.70	2/3699 (0.1%)	0.88	6/5023 (0.1%)
7	E	0.71	1/3784 (0.0%)	0.90	7/5152 (0.1%)
8	F	0.24	0/494	0.52	0/687
9	G	0.34	0/1098	0.63	0/1471
10	H	0.26	0/450	0.46	0/626
11	I	0.56	0/840	0.85	3/1133 (0.3%)
12	J	0.55	0/752	0.78	0/1019
13	K	0.53	0/687	0.70	0/926
13	L	0.56	0/687	0.74	0/926
13	M	0.43	0/687	0.73	0/926
13	N	0.25	0/406	0.49	0/565
14	O	0.26	0/480	0.56	0/666
15	P	0.58	0/823	0.87	1/1108 (0.1%)
16	X	0.29	0/485	0.57	0/642
16	X1	0.32	0/1186	0.51	0/1582

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
18	Y	0.30	0/598	0.52	0/793
18	Y1	0.29	0/1192	0.52	0/1585
20	Z	0.34	0/1403	0.67	0/1885
All	All	0.36	4/124292 (0.0%)	0.59	31/169950 (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
3	A	0	21
4	B	0	15
5	C	0	7
All	All	0	43

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	D	314	SER	CA-CB	-5.69	1.44	1.52
4	B	3908	PRO	C-N	-5.56	1.21	1.34
7	E	336	GLU	CA-C	-5.46	1.38	1.52
6	D	378	VAL	CB-CG2	-5.19	1.42	1.52

All (31) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	D	376	LEU	CB-CG-CD1	8.76	125.90	111.00
4	B	4073	GLY	C-N-CA	8.14	142.06	121.70
4	B	4499	SER	C-N-CA	7.97	141.63	121.70
5	C	129	PRO	CA-N-CD	-7.73	100.68	111.50
7	E	370	ARG	C-N-CA	-7.37	103.28	121.70
5	C	455	MET	CB-CG-SD	-6.88	91.76	112.40
4	B	552	LEU	CA-CB-CG	6.71	130.75	115.30
7	E	379	LEU	CB-CG-CD1	-6.70	99.62	111.00
5	C	586	ARG	CA-CB-CG	6.59	127.89	113.40
6	D	184	ARG	N-CA-CB	6.39	122.10	110.60
6	D	543	LEU	CB-CG-CD2	-6.05	100.72	111.00
4	B	795	ASP	CB-CG-OD1	6.00	123.70	118.30
4	B	603	ARG	CB-CG-CD	5.93	127.03	111.60
6	D	537	LEU	CA-CB-CG	5.82	128.68	115.30
7	E	454	LEU	CB-CG-CD1	-5.71	101.29	111.00

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	D	439	LEU	CA-CB-CG	5.69	128.38	115.30
6	D	376	LEU	CB-CG-CD2	-5.67	101.37	111.00
7	E	379	LEU	CA-CB-CG	5.65	128.29	115.30
7	E	231	LEU	CB-CG-CD2	-5.63	101.42	111.00
7	E	293	ASP	CB-CG-OD2	-5.54	113.32	118.30
5	C	586	ARG	CB-CA-C	5.53	121.46	110.40
4	B	566	LEU	CB-CG-CD1	-5.48	101.68	111.00
15	P	58	ASP	CB-CG-OD1	5.40	123.16	118.30
5	C	418	LEU	CA-CB-CG	5.28	127.43	115.30
7	E	431	MET	CA-CB-CG	5.24	122.20	113.30
4	B	280	LEU	CA-CB-CG	-5.18	103.37	115.30
11	I	61	ARG	NE-CZ-NH2	5.17	122.88	120.30
11	I	63	LEU	CA-CB-CG	5.16	127.18	115.30
5	C	323	MET	CG-SD-CE	5.06	108.30	100.20
11	I	85	PRO	N-CA-C	5.06	125.26	112.10
5	C	131	MET	CA-CB-CG	5.06	121.90	113.30

There are no chirality outliers.

All (43) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	A	1300	PHE	Peptide
3	A	1482	PHE	Peptide
3	A	1508	SER	Peptide
3	A	1633	ILE	Peptide
3	A	1654	SER	Peptide
3	A	1660	GLN	Peptide
3	A	1676	ILE	Peptide
3	A	1677	CYS	Peptide
3	A	1792	CYS	Peptide
3	A	1815	VAL	Peptide
3	A	2044	GLY	Peptide
3	A	2804	LEU	Peptide
3	A	2879	PRO	Peptide
3	A	3589	SER	Peptide
3	A	3740	LEU	Peptide
3	A	4137	GLY	Peptide
3	A	4147	ALA	Peptide
3	A	4234	LYS	Peptide
3	A	4342	TRP	Peptide
3	A	4347	ILE	Peptide
3	A	4425	LEU	Peptide

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Mol	Chain	Res	Type	Group
4	B	1611	ASN	Peptide
4	B	1875	CYS	Peptide
4	B	2473	TYR	Peptide
4	B	2498	ASP	Peptide
4	B	2744	LYS	Peptide
4	B	2850	ASP	Peptide
4	B	2959	ILE	Peptide
4	B	3036	HIS	Peptide
4	B	3513	ARG	Peptide
4	B	3580	LYS	Peptide
4	B	3750	LEU	Peptide
4	B	3903	ARG	Peptide
4	B	4143	LEU	Peptide
4	B	4245	ILE	Peptide
4	B	4511	ILE	Peptide
5	C	1414	LYS	Peptide
5	C	1524	LEU	Peptide
5	C	1686	SER	Peptide
5	C	1768	ASP	Peptide
5	C	2568	PRO	Peptide
5	C	2730	MET	Peptide
5	C	3819	TYR	Peptide

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

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A1	3346	0	3238	102	0
1	A3	3346	0	3238	110	0
1	A5	3346	0	3238	102	0
1	A7	3346	0	3238	88	0
1	B1	3298	0	3196	83	0
1	B3	3227	0	3134	80	0
1	B5	3346	0	3238	106	0
1	B7	3346	0	3238	91	0
2	A2	3339	0	3272	102	0
2	A4	3318	0	3259	94	0
2	A6	3335	0	3269	108	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B2	3204	0	3152	84	0
2	B4	3193	0	3141	107	0
2	B6	3318	0	3259	80	0
3	A	16173	0	7306	417	0
4	B	19163	0	10961	281	0
5	C	21756	0	13263	244	0
6	D	3609	0	3534	90	0
7	E	3697	0	3534	133	0
8	F	495	0	221	0	0
9	G	1089	0	1072	24	0
10	H	451	0	204	3	0
11	I	827	0	841	24	0
12	J	741	0	750	12	0
13	K	671	0	654	20	0
13	L	671	0	654	20	0
13	M	671	0	654	23	0
13	N	407	0	192	5	0
14	O	481	0	230	1	0
15	P	805	0	801	19	0
16	X	481	0	488	19	0
16	X1	1178	0	1179	27	0
17	X0	810	0	170	1	0
18	Y	595	0	586	22	0
18	Y1	1185	0	1230	35	0
19	Y0	840	0	181	1	0
20	Z	1384	0	1359	46	0
21	A1	32	0	12	0	0
21	A3	32	0	12	1	0
21	A5	32	0	12	1	0
21	A7	32	0	12	4	0
21	B2	32	0	12	1	0
21	B5	32	0	12	1	0
21	B7	32	0	12	0	0
22	A1	1	0	0	0	0
22	A2	1	0	0	0	0
22	A4	1	0	0	0	0
22	A6	1	0	0	0	0
22	B3	1	0	0	0	0
22	B4	1	0	0	0	0
22	B6	1	0	0	0	0
23	A1	28	0	12	0	0
23	A3	28	0	12	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
23	A5	28	0	12	0	0
23	A7	28	0	12	2	0
23	B1	28	0	12	3	0
23	B3	28	0	12	2	0
23	B5	28	0	12	1	0
23	B7	28	0	12	1	0
All	All	124943	0	95354	2603	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 12.

All (2603) 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)
4:B:3879:ASP:HA	5:C:1534:GLU:CB	1.40	1.48
4:B:3879:ASP:CB	5:C:1530:PRO:O	1.86	1.23
4:B:3879:ASP:CA	5:C:1534:GLU:CB	2.17	1.23
3:A:1676:ILE:O	3:A:1679:ALA:HB3	1.56	1.05
3:A:2399:SER:HA	3:A:2438:PHE:O	1.57	1.03
10:H:79:ILE:O	10:H:105:VAL:HA	1.63	0.99
3:A:3420:ILE:HA	3:A:3443:TYR:HA	1.45	0.98
3:A:1764:ALA:HB1	3:A:1835:LEU:HA	1.47	0.95
3:A:1344:ILE:O	3:A:1348:GLN:N	1.98	0.95
3:A:4031:ALA:HB1	3:A:4034:ALA:HB3	1.48	0.94
5:C:4360:HIS:HA	5:C:4387:GLU:HA	1.47	0.94
3:A:3880:ILE:O	3:A:3970:PHE:HA	1.68	0.92
4:B:382:MET:O	4:B:386:VAL:HG23	1.69	0.92
1:A3:215:LEU:HB3	1:A3:217:LEU:HD13	1.54	0.90
3:A:2604:SER:O	3:A:2608:TYR:CB	2.20	0.90
3:A:3396:ARG:O	3:A:3400:ALA:N	2.06	0.89
1:B5:175:VAL:HG22	2:B6:329:ASN:HD21	1.35	0.89
3:A:4125:LEU:O	3:A:4129:ILE:N	2.06	0.89
3:A:3724:PHE:O	3:A:3728:LYS:N	2.06	0.88
3:A:4031:ALA:O	3:A:4035:ILE:N	2.07	0.88
4:B:503:GLU:HG2	6:D:510:SER:HB2	1.56	0.88
1:B3:330:MET:HE2	1:B3:349:VAL:HG11	1.57	0.86
3:A:1655:PHE:O	3:A:1659:SER:N	2.09	0.86
1:A3:121:ARG:HD2	18:Y1:141:LYS:HZ2	1.41	0.85
1:B7:113:ILE:HD13	1:B7:150:LEU:HD11	1.55	0.85
4:B:627:LEU:HG	4:B:631:MET:HE2	1.57	0.85
3:A:3616:PRO:HA	3:A:3623:LYS:HA	1.56	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2372:PHE:N	3:A:2486:ALA:O	2.10	0.85
4:B:2885:LYS:O	4:B:2889:ALA:HB2	1.76	0.84
1:A1:215:LEU:HB3	1:A1:217:LEU:HD13	1.59	0.84
3:A:4185:MET:HA	3:A:4491:ALA:HA	1.60	0.84
3:A:1788:VAL:O	3:A:1792:CYS:N	2.10	0.84
1:B7:113:ILE:HD11	1:B7:147:MET:HG3	1.58	0.83
20:Z:59:ILE:HG13	20:Z:70:ILE:HD11	1.60	0.83
3:A:2316:TYR:HA	3:A:2327:PRO:HA	1.60	0.83
1:B5:256:ASN:HD22	1:B5:350:LYS:HD2	1.44	0.82
1:B5:173:PRO:HB3	1:B5:384:GLN:HE22	1.40	0.82
3:A:2514:GLY:O	3:A:2518:LEU:N	2.10	0.82
3:A:2540:MET:O	3:A:2544:ILE:N	2.11	0.82
2:A2:417:GLU:HA	2:A2:420:GLU:HG2	1.62	0.82
3:A:2029:GLY:O	3:A:2033:CYS:N	2.13	0.82
3:A:2401:SER:HA	3:A:2440:ASP:H	1.45	0.82
3:A:1347:TRP:O	3:A:1351:LEU:N	2.12	0.81
3:A:2350:THR:O	3:A:2354:SER:N	2.13	0.81
3:A:2439:VAL:H	3:A:2486:ALA:HA	1.45	0.81
20:Z:32:LYS:NZ	20:Z:71:SER:OG	2.13	0.81
2:A2:402:ARG:HH11	20:Z:168:ARG:HH22	1.29	0.80
1:A3:218:THR:O	2:A4:326:LYS:NZ	2.14	0.80
1:B3:175:VAL:HG12	2:B4:329:ASN:HD21	1.45	0.80
13:M:61:GLY:O	13:M:84:ALA:HB3	1.80	0.80
1:A1:73:MET:HE1	1:A1:92:PHE:HB2	1.64	0.80
1:A5:156:ARG:NH1	1:A5:195:ASN:O	2.14	0.80
3:A:3976:ILE:H	3:A:3982:ALA:HB1	1.47	0.79
3:A:2910:PHE:O	3:A:2914:SER:N	2.15	0.79
3:A:1290:ASN:O	3:A:1294:THR:N	2.13	0.78
1:A5:309:ARG:H	1:A5:372:THR:HG22	1.44	0.78
3:A:2441:ASP:HA	3:A:2488:MET:HA	1.63	0.78
2:B4:155:GLU:HG2	2:B4:197:HIS:CE1	2.19	0.78
1:B1:218:THR:O	2:B2:326:LYS:NZ	2.16	0.78
3:A:3987:GLU:O	3:A:3991:GLN:N	2.13	0.78
6:D:318:ASN:HD21	6:D:321:TYR:HB2	1.49	0.78
3:A:4151:GLU:HA	3:A:4157:PHE:HA	1.64	0.78
3:A:2437:TYR:H	3:A:2484:TYR:HA	1.48	0.78
6:D:200:CYS:SG	15:P:89:TYR:OH	2.41	0.78
1:B7:100:ASN:HD22	1:B7:103:LYS:HG3	1.47	0.77
3:A:2719:LEU:O	3:A:2851:ALA:N	2.18	0.77
2:B4:88:HIS:CD2	2:B4:90:GLU:HG3	2.19	0.77
3:A:3390:MET:O	3:A:3394:MET:N	2.13	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:75:VAL:HG11	2:A2:94:SER:HB2	1.67	0.77
3:A:3721:ARG:O	3:A:3997:SER:N	2.14	0.77
3:A:2231:HIS:HA	3:A:2282:LEU:HA	1.66	0.77
2:A4:11:GLN:OE1	2:A4:15:GLN:NE2	2.18	0.77
2:A6:82:THR:HG23	2:A6:83:TYR:HD1	1.48	0.77
1:A3:397:TRP:HH2	2:A4:260:VAL:HG23	1.51	0.76
6:D:520:HIS:H	6:D:542:ARG:HD2	1.49	0.76
1:A1:377:MET:SD	1:A1:380:ARG:NH2	2.58	0.76
1:B5:2:ARG:HE	1:B5:240:LEU:HD22	1.50	0.76
3:A:2218:ILE:O	3:A:2222:LEU:CB	2.33	0.76
2:A6:71:GLU:OE1	1:A7:247:ASN:ND2	2.19	0.76
3:A:2707:SER:O	3:A:2711:SER:N	2.17	0.76
1:B3:5:VAL:HG23	1:B3:62:ARG:HG2	1.65	0.76
3:A:3793:HIS:O	3:A:3797:ASP:N	2.18	0.76
3:A:3915:MET:N	3:A:3940:ASP:O	2.19	0.76
2:B2:91:GLN:HG3	2:B2:121:ARG:HH21	1.51	0.76
3:A:1298:PHE:N	3:A:1410:LYS:O	2.19	0.76
5:C:1877:ASN:O	5:C:1881:LEU:N	2.17	0.75
3:A:2466:GLY:O	3:A:2479:ILE:N	2.18	0.75
3:A:3358:SER:HA	3:A:3469:THR:O	1.86	0.75
3:A:1805:GLY:HA2	3:A:1827:ALA:HA	1.67	0.75
1:A1:268:VAL:HG23	1:A1:300:MET:HB2	1.69	0.75
2:B4:11:GLN:OE1	2:B4:15:GLN:NE2	2.20	0.75
3:A:1359:GLN:O	3:A:1363:GLU:N	2.17	0.75
4:B:743:GLN:HE22	7:E:263:ARG:HD2	1.51	0.75
1:B7:275:SER:HG	1:B7:278:SER:HG	1.35	0.74
2:B4:88:HIS:HD2	2:B4:90:GLU:HG3	1.53	0.74
1:A7:139:LEU:HD12	1:A7:170:VAL:HG12	1.70	0.74
18:Y:182:ALA:O	18:Y:186:ARG:HD3	1.86	0.74
1:A3:139:LEU:HD12	1:A3:170:VAL:HG12	1.70	0.74
2:B4:178:SER:HB3	1:B5:347:ASN:HD21	1.52	0.74
3:A:1327:GLN:O	3:A:1331:MET:N	2.21	0.74
3:A:2794:ASP:O	3:A:2799:GLY:N	2.21	0.74
3:A:1420:GLY:O	3:A:1424:ASN:N	2.19	0.73
3:A:1745:PHE:O	3:A:1772:PHE:HA	1.88	0.73
3:A:1968:ASN:HA	3:A:1972:PRO:HA	1.69	0.73
2:A6:69:ASP:OD1	2:A6:70:LEU:N	2.22	0.73
2:B6:259:LEU:HD11	2:B6:316:CYS:HB2	1.71	0.73
3:A:3926:VAL:O	3:A:3930:TYR:N	2.18	0.73
1:B5:107:THR:OG1	1:B5:108:GLU:OE1	2.06	0.73
4:B:4529:CYS:O	4:B:4545:ALA:N	2.21	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:819:ILE:HG21	7:E:205:ASN:HB3	1.71	0.73
1:B3:99:ASN:ND2	2:B4:254:GLU:OE1	2.22	0.73
4:B:2751:VAL:HA	4:B:2795:GLY:HA2	1.71	0.73
2:B4:116:ASP:OD1	2:B4:156:ARG:NH1	2.22	0.72
7:E:168:ASN:ND2	7:E:222:ALA:O	2.21	0.72
1:A3:131:GLN:HE21	1:A3:250:LEU:HB2	1.54	0.72
1:B3:2:ARG:HE	1:B3:240:LEU:HD22	1.55	0.72
2:B4:278:ALA:HA	2:B4:369:ALA:HB2	1.71	0.72
3:A:2592:SER:O	3:A:2596:TRP:N	2.17	0.72
2:A2:98:ASP:O	2:A2:105:ARG:NH2	2.21	0.72
3:A:3752:GLU:O	3:A:3756:ARG:N	2.20	0.72
2:A4:102:ASN:ND2	2:A4:411:GLU:OE1	2.23	0.72
3:A:3959:ALA:O	3:A:3963:ALA:HB2	1.90	0.72
3:A:3740:LEU:O	3:A:3746:VAL:N	2.21	0.72
3:A:4135:PRO:HA	3:A:4148:PRO:HA	1.71	0.72
6:D:319:PRO:HG2	6:D:370:PRO:HA	1.72	0.72
2:B4:75:VAL:HG11	2:B4:94:SER:HB2	1.72	0.71
3:A:1717:THR:O	3:A:1842:PHE:HA	1.90	0.71
3:A:2696:PHE:H	3:A:2699:ALA:HB3	1.54	0.71
7:E:286:ASP:OD2	7:E:288:ASN:ND2	2.23	0.71
1:B1:99:ASN:ND2	2:B2:254:GLU:OE1	2.23	0.71
3:A:2542:THR:O	3:A:2545:LEU:CB	2.39	0.71
5:C:813:GLN:O	5:C:816:LEU:HB2	1.89	0.71
7:E:158:ASN:ND2	7:E:199:TYR:OH	2.23	0.71
3:A:4484:MET:O	3:A:4488:TRP:N	2.19	0.71
16:X1:216:MET:HE1	18:Y1:167:ARG:HA	1.73	0.71
3:A:2178:GLN:O	3:A:2182:MET:N	2.22	0.71
3:A:3956:LEU:HA	3:A:3959:ALA:HB3	1.71	0.71
5:C:2137:GLN:O	5:C:2153:ILE:N	2.20	0.71
5:C:2411:LEU:O	5:C:2415:TYR:N	2.20	0.71
7:E:266:ILE:HG22	7:E:268:ASP:H	1.55	0.71
1:B1:30:ILE:HD11	1:B1:47:ILE:HD11	1.72	0.70
3:A:1341:LYS:O	3:A:1345:LEU:N	2.24	0.70
5:C:569:ARG:NH1	6:D:614:THR:OG1	2.24	0.70
1:A3:36:TYR:HB2	1:A3:59:TYR:HE2	1.56	0.70
3:A:4451:ASN:O	3:A:4455:TYR:N	2.23	0.70
1:A1:175:VAL:HG13	2:A2:329:ASN:HD21	1.56	0.70
5:C:2153:ILE:HA	5:C:2528:GLY:HA3	1.73	0.70
2:B6:192:HIS:HD2	2:B6:421:ALA:HA	1.57	0.70
20:Z:152:GLU:O	20:Z:155:HIS:ND1	2.25	0.70
1:A5:375:GLN:HB2	1:A5:419:VAL:HG23	1.71	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A6:82:THR:HG23	2:A6:83:TYR:CD1	2.25	0.70
1:B3:52:ASN:OD1	1:B3:62:ARG:NH2	2.24	0.70
5:C:3812:ASP:O	5:C:3816:ARG:N	2.25	0.70
2:A6:11:GLN:OE1	2:A6:15:GLN:NE2	2.24	0.70
3:A:1735:SER:O	3:A:1739:GLY:N	2.25	0.70
6:D:282:TRP:O	6:D:638:LYS:NZ	2.23	0.70
3:A:2334:ASP:N	3:A:2349:PRO:O	2.25	0.69
7:E:162:ARG:HD3	7:E:196:LEU:HD22	1.74	0.69
2:B2:288:VAL:HG13	2:B2:319:TYR:HE2	1.57	0.69
4:B:1918:ALA:N	4:B:2042:VAL:O	2.25	0.69
1:A7:396:HIS:HA	1:A7:399:THR:HG22	1.74	0.69
3:A:2552:HIS:O	3:A:2556:SER:N	2.17	0.69
3:A:2689:ALA:HB3	3:A:3425:THR:H	1.58	0.69
3:A:3370:TRP:O	3:A:3374:ARG:CB	2.41	0.69
4:B:1961:LEU:HA	4:B:1966:ALA:HB3	1.74	0.69
2:A4:317:LEU:HB3	2:A4:319:TYR:HE1	1.57	0.69
2:B6:405:VAL:HG13	2:B6:418:PHE:HE2	1.55	0.69
1:B3:293:MET:HG3	1:B3:367:PHE:HB2	1.74	0.69
5:C:666:GLN:HG2	5:C:667:LEU:HD23	1.74	0.69
1:B7:113:ILE:CD1	1:B7:150:LEU:HD11	2.23	0.69
3:A:3287:ALA:HB1	3:A:3295:ARG:HA	1.75	0.69
3:A:3781:ALA:HB1	3:A:3837:ALA:HB1	1.74	0.69
15:P:62:LYS:HG3	15:P:63:LYS:HD3	1.75	0.69
2:A4:51:THR:HG21	2:A4:243:ARG:HG2	1.75	0.69
1:B5:52:ASN:OD1	1:B5:62:ARG:NH2	2.26	0.69
3:A:1792:CYS:HA	3:A:1824:SER:O	1.93	0.69
3:A:3868:ALA:O	3:A:3873:GLU:N	2.24	0.69
6:D:436:ALA:HB3	6:D:454:LYS:HA	1.75	0.68
7:E:304:MET:SD	7:E:353:ARG:NH2	2.65	0.68
16:X:266:ARG:HH11	18:Y:219:GLU:HG2	1.57	0.68
20:Z:103:ASN:ND2	20:Z:117:MET:SD	2.66	0.68
2:B4:259:LEU:HD11	2:B4:316:CYS:HB2	1.75	0.68
7:E:101:GLU:OE1	11:I:34:ARG:NH2	2.24	0.68
2:A6:172:TYR:CE2	2:A6:203:MET:HG3	2.28	0.68
2:A4:195:LEU:HD21	2:A4:264:ARG:HE	1.58	0.68
6:D:503:ARG:NH1	6:D:514:SER:OG	2.26	0.68
7:E:414:TRP:CD1	7:E:420:GLY:HA2	2.28	0.68
1:B1:2:ARG:HE	1:B1:240:LEU:HD22	1.59	0.68
5:C:4356:VAL:O	5:C:4360:HIS:N	2.26	0.68
1:B1:68:LEU:HB3	1:B1:96:GLY:HA2	1.75	0.68
3:A:2439:VAL:O	3:A:2487:CYS:N	2.15	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:3879:ASP:CB	5:C:1530:PRO:C	2.62	0.68
4:B:4106:GLU:O	4:B:4110:GLU:N	2.27	0.68
3:A:3401:GLY:HA2	3:A:3446:ASN:O	1.93	0.68
1:B1:139:LEU:HD12	1:B1:170:VAL:HG12	1.75	0.68
15:P:74:LYS:HE3	15:P:95:ARG:HD3	1.75	0.68
1:A5:159:TYR:HB3	1:A5:162:ARG:HD3	1.74	0.67
1:A5:172:SER:HB2	1:A5:380:ARG:HH12	1.59	0.67
6:D:286:SER:O	6:D:290:ARG:NH1	2.28	0.67
2:B2:51:THR:HG21	2:B2:243:ARG:HG2	1.76	0.67
2:B4:170:THR:HG21	2:B4:194:LEU:HD11	1.75	0.67
4:B:596:ARG:NE	7:E:404:TYR:OH	2.24	0.67
5:C:3507:PRO:O	5:C:3511:ARG:N	2.27	0.67
2:A4:403:ALA:HB2	1:A5:344:TRP:HZ3	1.59	0.67
3:A:1804:PRO:HA	3:A:1834:PRO:HA	1.76	0.67
3:A:4418:TRP:HA	3:A:4422:ASP:O	1.95	0.67
4:B:3879:ASP:N	5:C:1534:GLU:CB	2.56	0.67
1:A1:11:GLN:HG2	1:A1:72:THR:HG21	1.77	0.67
3:A:1967:LEU:O	3:A:1971:PHE:N	2.27	0.67
4:B:4483:THR:HA	4:B:4507:PRO:HA	1.76	0.67
1:B5:248:ALA:HA	1:B5:252:LYS:HD2	1.76	0.67
5:C:1595:ASP:O	5:C:1599:LYS:N	2.16	0.67
7:E:332:MET:HG3	7:E:342:SER:HB2	1.76	0.67
16:X1:216:MET:O	16:X1:220:VAL:HG23	1.94	0.67
1:A1:113:ILE:HG21	1:A1:150:LEU:HD22	1.77	0.67
5:C:3845:VAL:O	5:C:3849:ARG:N	2.27	0.67
6:D:598:LYS:O	6:D:598:LYS:NZ	2.28	0.67
7:E:375:SER:OG	7:E:376:LYS:N	2.27	0.67
1:A7:9:GLY:HA2	1:A7:66:MET:HG3	1.76	0.67
3:A:1664:TYR:O	3:A:1672:CYS:HA	1.94	0.67
5:C:1763:TRP:HA	5:C:1770:VAL:HA	1.77	0.67
1:A1:107:THR:OG1	1:A1:401:GLU:OE2	2.13	0.67
13:K:15:MET:HE1	13:K:19:MET:HG3	1.76	0.67
1:B7:330:MET:HB3	1:B7:349:VAL:HG21	1.76	0.67
3:A:3394:MET:O	3:A:3398:ILE:N	2.23	0.67
4:B:2806:TYR:HA	4:B:2824:ALA:HB2	1.77	0.67
2:A4:274:PRO:HG3	2:A4:286:LEU:HD11	1.77	0.67
1:B1:304:ASP:HB3	1:B1:307:HIS:CD2	2.30	0.67
1:B5:175:VAL:HG22	2:B6:329:ASN:ND2	2.07	0.67
20:Z:154:LEU:HB3	20:Z:158:HIS:HE1	1.60	0.67
1:A1:27:GLU:HA	1:A1:359:LYS:HD2	1.76	0.66
2:A2:50:ASN:O	2:A2:64:ARG:NH2	2.28	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:619:GLU:HA	4:B:622:ARG:HG2	1.77	0.66
3:A:2501:LEU:O	3:A:2504:LEU:N	2.20	0.66
4:B:1669:SER:HA	4:B:1722:ASP:HA	1.78	0.66
2:B4:178:SER:HB3	1:B5:347:ASN:ND2	2.09	0.66
1:B5:139:LEU:HD12	1:B5:170:VAL:HG12	1.76	0.66
7:E:454:LEU:HD13	7:E:468:VAL:HG11	1.77	0.66
2:A2:262:TYR:HB2	2:A2:265:ILE:HD12	1.76	0.66
3:A:2379:GLY:O	3:A:2383:LEU:N	2.25	0.66
2:A2:72:PRO:HG3	1:A3:1:MET:HG2	1.76	0.66
1:A3:65:LEU:HD12	1:A3:90:PHE:CE1	2.30	0.66
1:A7:45:GLU:HG3	1:A7:46:ARG:HG2	1.78	0.66
1:B1:49:VAL:HG11	1:B1:241:ARG:HG2	1.77	0.66
1:B5:114:ASP:OD1	1:B5:115:SER:N	2.28	0.66
1:B5:135:VAL:HG21	1:B5:152:ILE:HD11	1.76	0.66
2:B6:102:ASN:ND2	2:B6:105:ARG:HG3	2.11	0.66
3:A:1965:GLY:O	3:A:1969:ASP:N	2.28	0.66
3:A:3611:GLY:HA3	3:A:3711:CYS:HA	1.78	0.66
18:Y1:122:LYS:HA	18:Y1:122:LYS:HE3	1.78	0.66
1:B1:165:LEU:HD21	1:B1:250:LEU:HD11	1.78	0.66
2:B6:75:VAL:HG11	2:B6:94:SER:HB2	1.78	0.66
4:B:590:VAL:HG11	4:B:635:ARG:HB3	1.76	0.66
2:A2:27:GLU:OE1	2:A2:243:ARG:NH1	2.27	0.66
2:A6:287:SER:N	2:A6:290:GLU:OE2	2.27	0.66
1:B5:100:ASN:HD22	1:B5:103:LYS:HG3	1.61	0.66
4:B:349:GLN:NE2	4:B:353:ASN:OD1	2.29	0.66
4:B:1498:SER:N	4:B:1507:ALA:O	2.29	0.66
5:C:784:ILE:HG12	5:C:820:ARG:HD3	1.77	0.66
1:B5:220:PRO:HD2	2:B6:326:LYS:HD3	1.77	0.66
3:A:1792:CYS:O	3:A:1794:THR:N	2.29	0.66
4:B:4263:ALA:O	4:B:4267:PHE:CB	2.44	0.66
11:I:84:ALA:O	11:I:94:TYR:HA	1.96	0.66
1:A1:311:LEU:HD11	1:A1:372:THR:HB	1.78	0.66
3:A:2547:ALA:O	3:A:2551:LEU:N	2.23	0.66
2:A2:415:GLU:OE2	20:Z:168:ARG:NH1	2.29	0.65
2:A6:176:GLN:NE2	2:A6:207:GLU:OE1	2.28	0.65
1:B3:391:ARG:HH21	2:B4:346:TRP:HE1	1.44	0.65
2:B4:5:ILE:HG22	2:B4:64:ARG:HB3	1.78	0.65
3:A:1995:LEU:HA	3:A:2198:ALA:HB3	1.78	0.65
5:C:696:LYS:O	5:C:700:ASN:ND2	2.28	0.65
6:D:418:GLN:HB2	6:D:427:GLN:HB2	1.78	0.65
7:E:321:GLU:HG2	7:E:370:ARG:H	1.61	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:L:68:VAL:HG23	13:M:57:HIS:HB3	1.78	0.65
18:Y:205:ALA:O	18:Y:209:MET:HG2	1.96	0.65
5:C:2325:THR:O	5:C:2329:GLY:N	2.29	0.65
9:G:15:LEU:N	9:G:19:GLU:OE2	2.29	0.65
1:A1:36:TYR:HB2	1:A1:59:TYR:HE2	1.60	0.65
6:D:349:ASN:ND2	6:D:352:HIS:O	2.29	0.65
7:E:454:LEU:HB3	7:E:468:VAL:HG11	1.78	0.65
1:A1:77:ARG:NH1	1:A1:87:PRO:HG3	2.11	0.65
2:B6:222:PRO:O	1:B7:322:SER:OG	2.14	0.65
4:B:392:ASN:HA	4:B:395:PHE:HD2	1.60	0.65
2:A2:71:GLU:HG3	1:A3:2:ARG:HH12	1.62	0.65
2:A4:76:ASP:OD1	2:A4:79:ARG:NH2	2.29	0.65
3:A:1489:ARG:O	3:A:1504:LEU:N	2.30	0.65
3:A:1966:LEU:O	3:A:1970:LEU:N	2.29	0.65
3:A:2719:LEU:HA	3:A:2875:ASP:O	1.97	0.65
6:D:195:THR:HG22	15:P:81:THR:HG22	1.78	0.65
18:Y:179:ARG:O	18:Y:183:LYS:HG3	1.97	0.65
1:B3:213:ARG:HH12	1:B3:297:LYS:HD2	1.61	0.65
2:B6:271:SER:OG	2:B6:301:MET:SD	2.55	0.65
7:E:399:ILE:HG12	7:E:400:LEU:HD12	1.79	0.65
1:A3:49:VAL:HG11	1:A3:241:ARG:HG2	1.79	0.65
4:B:2561:SER:HA	4:B:2602:PRO:HA	1.79	0.65
5:C:1902:GLN:HA	5:C:1906:GLY:HA2	1.79	0.65
1:B7:135:VAL:HG21	1:B7:152:ILE:HD11	1.77	0.65
3:A:2070:SER:HA	3:A:2458:LEU:HA	1.79	0.65
4:B:4020:ALA:O	4:B:4024:GLY:N	2.30	0.65
13:K:60:VAL:HG22	13:K:85:ILE:HG12	1.79	0.65
3:A:1920:ILE:O	3:A:1924:LEU:N	2.26	0.64
3:A:3481:GLU:O	3:A:3577:ALA:HB1	1.97	0.64
4:B:3865:SER:O	4:B:3869:TRP:N	2.30	0.64
11:I:72:LEU:HB3	11:I:83:ILE:HB	1.78	0.64
1:A1:67:ASP:OD2	1:A1:72:THR:OG1	2.15	0.64
5:C:586:ARG:HH21	6:D:520:HIS:CG	2.15	0.64
1:B5:91:VAL:HG11	1:B5:116:VAL:HG12	1.79	0.64
3:A:1289:LEU:O	3:A:1293:TRP:CB	2.45	0.64
9:G:99:THR:O	9:G:103:PHE:CB	2.45	0.64
1:B1:282:ARG:NH2	1:B1:292:GLN:OE1	2.31	0.64
3:A:1878:GLU:HA	3:A:1889:ALA:HB1	1.79	0.64
16:X:244:MET:HG3	18:Y:199:PHE:HE1	1.62	0.64
1:A3:268:VAL:HG23	1:A3:300:MET:HB3	1.79	0.64
4:B:1499:THR:HA	4:B:1506:MET:HA	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2726:GLY:O	3:A:2730:LEU:N	2.25	0.64
4:B:1701:ILE:HA	4:B:1720:SER:HA	1.80	0.64
7:E:452:LEU:HB3	7:E:471:SER:HB3	1.80	0.64
2:B2:259:LEU:HD11	2:B2:316:CYS:HB2	1.79	0.64
2:B4:180:ALA:O	1:B5:347:ASN:ND2	2.30	0.64
3:A:2900:GLU:O	3:A:2904:ARG:N	2.30	0.64
9:G:99:THR:O	9:G:103:PHE:HB2	1.97	0.64
1:B7:211:CYS:HA	1:B7:215:LEU:HB2	1.78	0.64
1:A1:215:LEU:HD11	1:A1:228:LEU:HD21	1.79	0.63
2:A6:56:THR:HA	2:B6:285:GLN:HB2	1.79	0.63
2:A6:120:ASP:OD1	2:A6:121:ARG:N	2.31	0.63
1:A7:200:MET:HE1	1:A7:368:ILE:HD12	1.80	0.63
1:B7:183:TYR:HB3	1:B7:398:TYR:HE2	1.63	0.63
3:A:1343:GLU:O	3:A:1347:TRP:N	2.29	0.63
9:G:44:ARG:NH1	9:G:54:PRO:O	2.30	0.63
18:Y:181:LEU:O	18:Y:185:LYS:HG2	1.98	0.63
3:A:4150:LEU:O	3:A:4158:ALA:N	2.30	0.63
6:D:203:TRP:HB2	12:J:59:ARG:HE	1.63	0.63
11:I:76:SER:HB3	11:I:79:HIS:H	1.63	0.63
13:K:45:LYS:HG3	13:K:56:TRP:HB2	1.81	0.63
1:A5:373:ALA:O	1:A5:376:GLU:HG3	1.98	0.63
3:A:2714:SER:H	3:A:2843:THR:HA	1.63	0.63
1:A1:235:GLY:HA3	1:A1:366:THR:HG21	1.79	0.63
2:A2:14:ILE:HD11	2:A2:74:VAL:HG13	1.79	0.63
2:A4:7:ILE:HG13	2:A4:66:ILE:HG13	1.80	0.63
2:B2:174:SER:OG	2:B2:177:VAL:O	2.16	0.63
2:B4:279:GLU:OE1	2:B4:279:GLU:N	2.31	0.63
4:B:2106:MET:O	4:B:2110:ALA:N	2.31	0.63
1:B3:211:CYS:HA	1:B3:215:LEU:HB2	1.78	0.63
3:A:4016:THR:O	3:A:4020:CYS:N	2.31	0.63
4:B:418:PHE:O	4:B:422:ASP:HB2	1.98	0.63
4:B:4351:LYS:O	4:B:4355:LEU:N	2.29	0.63
5:C:2196:THR:HA	5:C:2200:GLY:HA2	1.81	0.63
9:G:136:ARG:HA	9:G:139:LYS:HE2	1.81	0.63
2:A6:172:TYR:HE2	2:A6:203:MET:HG3	1.62	0.63
1:B3:139:LEU:HD12	1:B3:170:VAL:HG22	1.81	0.63
3:A:2369:PRO:HA	3:A:2484:TYR:O	1.98	0.63
3:A:3617:GLY:HA2	3:A:3695:MET:HA	1.80	0.63
5:C:573:PRO:O	5:C:577:ASN:ND2	2.31	0.63
13:N:10:ILE:HA	13:N:78:PHE:HA	1.80	0.63
1:A1:165:LEU:HD11	1:A1:250:LEU:HD23	1.79	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:816:LEU:HD23	7:E:205:ASN:HD21	1.62	0.63
1:B7:167:PHE:CE2	1:B7:233:MET:HG2	2.33	0.63
3:A:4261:LEU:O	3:A:4265:THR:N	2.22	0.63
3:A:2806:PRO:O	3:A:2810:ARG:N	2.24	0.63
20:Z:14:ASN:O	20:Z:17:ASN:ND2	2.32	0.63
2:A2:210:TYR:HH	2:A2:224:TYR:HE1	1.47	0.62
1:B5:99:ASN:ND2	2:B6:254:GLU:OE1	2.32	0.62
5:C:1514:ASN:O	5:C:1518:THR:N	2.32	0.62
6:D:583:VAL:HG22	6:D:589:VAL:HG22	1.79	0.62
1:A5:375:GLN:NE2	1:A5:423:GLN:OE1	2.30	0.62
3:A:3611:GLY:HA2	3:A:3615:ALA:HB2	1.79	0.62
1:A1:374:ILE:HD11	1:A1:422:TYR:CZ	2.34	0.62
1:A5:173:PRO:HD2	1:A5:380:ARG:NH1	2.14	0.62
3:A:1392:PHE:O	3:A:1395:ILE:N	2.32	0.62
3:A:3615:ALA:HB3	3:A:3618:GLY:H	1.63	0.62
1:A7:345:ILE:O	1:A7:348:ASN:ND2	2.30	0.62
1:B5:253:LEU:HD11	1:B5:316:LEU:HD21	1.81	0.62
3:A:3391:LEU:O	3:A:3395:GLU:N	2.31	0.62
4:B:1611:ASN:H	4:B:1615:ALA:HB2	1.63	0.62
5:C:1029:GLY:O	9:G:65:GLN:NE2	2.32	0.62
4:B:2755:ARG:HA	4:B:2798:ALA:HB2	1.81	0.62
5:C:417:PHE:O	5:C:421:ASP:HB2	1.99	0.62
5:C:2338:PRO:O	5:C:2342:GLN:N	2.28	0.62
13:K:78:PHE:HB2	13:K:85:ILE:HB	1.81	0.62
20:Z:75:PHE:HE1	20:Z:98:VAL:HG11	1.64	0.62
2:A2:188:VAL:HG13	2:A2:425:LEU:HD12	1.80	0.62
1:A7:204:ASN:ND2	23:A7:502:GDP:O2'	2.33	0.62
1:B1:156:ARG:HD2	1:B1:195:ASN:O	1.99	0.62
3:A:1672:CYS:O	3:A:1683:TYR:N	2.32	0.62
3:A:2437:TYR:N	3:A:2484:TYR:HA	2.14	0.62
2:A2:383:ALA:O	2:A2:386:GLU:HG2	2.00	0.62
1:A5:379:LYS:HG2	1:A5:419:VAL:HG21	1.82	0.62
4:B:4021:HIS:O	4:B:4055:HIS:N	2.26	0.62
6:D:408:LEU:O	6:D:409:ASN:ND2	2.32	0.62
1:B7:139:LEU:HD12	1:B7:170:VAL:HG12	1.82	0.62
1:B1:175:VAL:HG13	2:B2:329:ASN:ND2	2.15	0.62
4:B:743:GLN:OE1	7:E:263:ARG:NH2	2.33	0.62
5:C:469:LYS:NZ	5:C:484:ASP:OD2	2.33	0.62
20:Z:132:GLN:O	20:Z:151:THR:OG1	2.17	0.62
1:A1:73:MET:O	1:A1:76:VAL:HG22	2.00	0.61
1:A5:49:VAL:HG11	1:A5:241:ARG:HG2	1.81	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B2:319:TYR:HB3	2:B2:323:VAL:HG11	1.81	0.61
4:B:2199:PHE:N	4:B:2334:GLY:O	2.30	0.61
5:C:226:ASP:H	5:C:230:ARG:HH12	1.48	0.61
2:A6:20:CYS:HB3	2:A6:24:TYR:HE1	1.65	0.61
3:A:1381:VAL:O	3:A:1385:LEU:N	2.32	0.61
3:A:3417:LEU:O	3:A:3421:ILE:N	2.33	0.61
3:A:3720:ARG:HA	3:A:3723:LEU:CB	2.30	0.61
4:B:506:ARG:HH22	4:B:540:VAL:HG12	1.64	0.61
20:Z:85:ASP:OD2	20:Z:90:GLU:HB2	2.00	0.61
1:B3:175:VAL:HG12	2:B4:329:ASN:ND2	2.13	0.61
3:A:3868:ALA:HA	3:A:3872:ASP:CB	2.31	0.61
4:B:1498:SER:O	4:B:1507:ALA:N	2.33	0.61
13:L:67:TYR:HD2	13:M:45:LYS:HD3	1.65	0.61
1:A3:64:ILE:HD11	1:A3:123:GLU:HG3	1.82	0.61
2:A6:145:THR:OG1	21:A7:501:GTP:O1B	2.19	0.61
3:A:1558:ARG:O	3:A:1562:LEU:CB	2.48	0.61
4:B:147:GLU:OE2	5:C:154:LYS:NZ	2.34	0.61
5:C:476:TYR:O	5:C:479:ASN:ND2	2.33	0.61
5:C:2160:ARG:O	5:C:2164:ASN:N	2.33	0.61
6:D:283:ASP:OD1	6:D:644:ARG:NH1	2.31	0.61
3:A:3788:LEU:O	3:A:3792:ALA:N	2.33	0.61
5:C:2414:SER:O	5:C:2418:ASP:N	2.33	0.61
5:C:3049:ALA:O	5:C:3053:MET:CB	2.49	0.61
3:A:2605:GLU:O	3:A:2609:ALA:N	2.32	0.61
5:C:789:LEU:H	5:C:875:LEU:HD21	1.65	0.61
6:D:451:CYS:SG	6:D:454:LYS:NZ	2.73	0.61
1:B1:131:GLN:HE21	1:B1:250:LEU:HB3	1.66	0.61
2:B4:267:PHE:HB2	2:B4:384:ILE:HD12	1.83	0.61
4:B:2169:ALA:O	4:B:2173:LEU:N	2.32	0.61
4:B:2273:GLN:O	4:B:2314:ARG:N	2.33	0.61
1:A5:220:PRO:HD2	2:A6:326:LYS:HD3	1.82	0.61
1:A7:156:ARG:NE	1:A7:195:ASN:O	2.33	0.61
3:A:1762:GLY:O	3:A:1766:SER:CB	2.49	0.61
20:Z:119:ILE:HD12	20:Z:123:ARG:HE	1.66	0.61
1:B1:211:CYS:HA	1:B1:215:LEU:HB2	1.83	0.61
2:B6:189:LEU:HD11	2:B6:418:PHE:HE1	1.66	0.61
3:A:1996:GLY:O	3:A:2189:ARG:N	2.34	0.61
2:A2:379:SER:OG	2:A2:380:ASN:N	2.34	0.61
1:A3:272:PRO:HD3	1:A3:364:SER:HA	1.82	0.61
1:B1:140:GLY:O	1:B1:184:ASN:ND2	2.34	0.61
2:B2:107:HIS:O	2:B2:112:LYS:NZ	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:172:SER:OG	1:B5:380:ARG:NH1	2.34	0.61
5:C:669:ARG:NH2	5:C:692:GLU:OE2	2.34	0.60
1:A3:222:PHE:O	1:A3:226:ASN:ND2	2.33	0.60
1:A5:222:PHE:O	1:A5:226:ASN:ND2	2.33	0.60
3:A:274:ASP:O	3:A:278:GLN:N	2.33	0.60
4:B:2592:MET:O	4:B:2640:GLN:N	2.27	0.60
5:C:4327:LYS:O	5:C:4331:LEU:N	2.32	0.60
2:B4:172:TYR:CD2	2:B4:203:MET:HG3	2.37	0.60
1:B5:309:ARG:H	1:B5:372:THR:HG22	1.67	0.60
3:A:2795:LEU:HA	3:A:2799:GLY:HA2	1.83	0.60
4:B:627:LEU:HG	4:B:631:MET:CE	2.31	0.60
5:C:838:TYR:HD1	5:C:839:PRO:HD2	1.65	0.60
2:A4:98:ASP:OD1	2:A4:99:ALA:N	2.34	0.60
1:B1:175:VAL:HG13	2:B2:329:ASN:HD21	1.65	0.60
1:A1:232:VAL:HG22	1:A1:270:PHE:HB2	1.82	0.60
2:B4:14:ILE:HD11	2:B4:74:VAL:HG13	1.83	0.60
1:B5:186:THR:HG22	1:B5:411:ALA:HB1	1.84	0.60
4:B:526:PHE:HB2	4:B:603:ARG:HH21	1.67	0.60
4:B:1875:CYS:O	4:B:1877:ALA:N	2.34	0.60
13:M:55:THR:OG1	13:M:89:LYS:NZ	2.35	0.60
18:Y:232:THR:HA	18:Y:235:GLU:HG2	1.83	0.60
3:A:1628:MET:HA	3:A:1883:ALA:CB	2.31	0.60
3:A:2544:ILE:HA	3:A:2547:ALA:HB3	1.83	0.60
7:E:418:ARG:HD3	7:E:484:LEU:HD13	1.83	0.60
2:A4:417:GLU:HA	2:A4:420:GLU:HG3	1.83	0.60
2:A6:403:ALA:HB2	1:A7:344:TRP:HZ3	1.65	0.60
1:A7:376:GLU:O	1:A7:380:ARG:HG3	2.00	0.60
2:B2:88:HIS:CE1	2:B2:90:GLU:HG2	2.36	0.60
2:B2:387:ILE:HG12	2:B2:390:ARG:HH22	1.67	0.60
1:B5:125:GLU:OE1	1:B5:159:TYR:OH	2.18	0.60
1:B7:282:ARG:NH1	1:B7:288:GLU:OE1	2.35	0.60
4:B:235:THR:O	4:B:239:PHE:HB2	2.01	0.60
1:A1:102:ALA:HB2	1:A1:403:MET:HE3	1.84	0.60
1:A1:152:ILE:HG22	1:A1:195:ASN:HB3	1.84	0.60
3:A:3628:THR:H	3:A:3676:GLY:HA2	1.67	0.60
4:B:321:PHE:HB3	4:B:324:ILE:HD12	1.84	0.60
4:B:2204:ALA:HB1	4:B:2660:ARG:HA	1.84	0.60
5:C:2412:ASN:O	5:C:2416:ASN:N	2.33	0.60
6:D:654:LYS:HG3	6:D:657:ASP:HB2	1.83	0.60
7:E:262:HIS:HB2	7:E:290:LEU:HD13	1.82	0.60
16:X:254:GLU:O	16:X:257:ARG:HG2	2.01	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A1:103:LYS:NZ	1:A1:397:TRP:O	2.34	0.60
2:A2:224:TYR:O	2:A2:228:ASN:ND2	2.34	0.60
18:Y1:145:LYS:HA	18:Y1:145:LYS:HE3	1.83	0.60
2:A2:413:MET:HB3	2:A2:417:GLU:OE2	2.02	0.60
1:B3:49:VAL:HG11	1:B3:241:ARG:HG2	1.82	0.60
1:B7:113:ILE:HA	1:B7:116:VAL:HG22	1.83	0.60
7:E:385:THR:OG1	7:E:387:ARG:NE	2.35	0.60
3:A:1411:ASN:O	3:A:1414:SER:N	2.35	0.59
3:A:1772:PHE:O	3:A:1843:ILE:HA	2.02	0.59
3:A:3956:LEU:O	3:A:3961:GLU:N	2.28	0.59
10:H:99:LYS:HA	10:H:104:HIS:HA	1.84	0.59
1:A3:121:ARG:NH2	1:A3:158:GLU:OE2	2.34	0.59
2:A6:251:ASP:H	2:A6:254:GLU:HG2	1.67	0.59
2:B4:398:MET:HE2	1:B5:345:ILE:HD12	1.84	0.59
5:C:1833:GLY:O	5:C:1837:GLY:N	2.35	0.59
3:A:4137:GLY:HA2	3:A:4162:VAL:HA	1.84	0.59
4:B:155:PHE:HZ	5:C:152:THR:HG22	1.67	0.59
4:B:1918:ALA:HA	4:B:2021:MET:H	1.67	0.59
7:E:185:LEU:O	7:E:189:GLN:NE2	2.35	0.59
1:A1:345:ILE:O	1:A1:348:ASN:ND2	2.36	0.59
1:A3:121:ARG:HH11	18:Y1:141:LYS:NZ	2.01	0.59
2:A6:384:ILE:O	2:A6:387:ILE:HG22	2.02	0.59
1:A7:173:PRO:HB3	1:A7:384:GLN:HE22	1.66	0.59
1:B3:257:LEU:HD21	1:B3:314:SER:HB3	1.85	0.59
1:B7:165:LEU:HD23	1:B7:167:PHE:CZ	2.37	0.59
3:A:3610:ARG:O	3:A:3614:LEU:N	2.34	0.59
5:C:574:VAL:HG11	5:C:631:TRP:HB2	1.84	0.59
5:C:3930:ARG:O	5:C:3934:ALA:N	2.33	0.59
1:A3:391:ARG:NH2	2:A4:262:TYR:OH	2.35	0.59
3:A:1621:LYS:HA	3:A:1624:ARG:CB	2.32	0.59
3:A:3319:ASP:O	3:A:3323:VAL:N	2.25	0.59
1:A1:208:TYR:HE2	2:A2:329:ASN:HD22	1.49	0.59
1:A3:392:LYS:HD2	1:A3:395:LEU:HD22	1.85	0.59
2:A4:222:PRO:HD2	1:A5:324:LYS:HE3	1.83	0.59
2:A4:339:ARG:HG2	2:A4:339:ARG:HH11	1.67	0.59
2:B2:167:LEU:HD13	2:B2:200:VAL:HB	1.84	0.59
4:B:2273:GLN:N	4:B:2312:SER:O	2.34	0.59
1:A3:128:ASP:OD1	1:A3:129:CYS:N	2.34	0.59
1:B3:5:VAL:HG12	1:B3:133:PHE:HD1	1.67	0.59
3:A:1505:GLY:HA2	3:A:1517:PHE:H	1.67	0.59
4:B:1818:THR:O	4:B:1822:ARG:N	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:2595:VAL:HA	5:C:2598:ALA:HB3	1.84	0.59
2:A4:14:ILE:HD11	2:A4:74:VAL:HG13	1.83	0.59
2:A4:286:LEU:O	2:A4:373:ARG:NH1	2.35	0.59
1:B1:139:LEU:HD22	1:B1:188:SER:HB3	1.85	0.59
1:B5:256:ASN:ND2	1:B5:350:LYS:HD2	2.16	0.59
4:B:2178:ASP:O	4:B:2181:PHE:N	2.30	0.59
5:C:869:GLN:OE1	5:C:956:ARG:NH1	2.34	0.59
3:A:1677:CYS:CB	3:A:1679:ALA:H	2.16	0.59
5:C:129:PRO:HD2	5:C:130:ILE:H	1.67	0.59
7:E:481:SER:OG	7:E:482:THR:N	2.33	0.59
1:A1:153:SER:OG	1:A1:195:ASN:OD1	2.14	0.59
2:A4:31:GLN:HE22	2:A4:37:PRO:HG3	1.68	0.59
6:D:575:LEU:HD11	6:D:644:ARG:HB2	1.85	0.59
20:Z:154:LEU:O	20:Z:158:HIS:ND1	2.36	0.59
2:A2:286:LEU:O	2:A2:373:ARG:NH1	2.35	0.58
1:A3:102:ALA:HB2	1:A3:403:MET:HE2	1.84	0.58
1:A5:286:VAL:HG12	1:A5:329:GLN:HG3	1.84	0.58
2:B2:358:GLN:OE1	2:B2:359:PRO:HD2	2.03	0.58
4:B:3980:VAL:O	4:B:3984:VAL:N	2.25	0.58
1:A1:361:LEU:HG	1:A1:363:MET:H	1.68	0.58
1:A7:113:ILE:HG21	1:A7:150:LEU:HD22	1.85	0.58
4:B:2762:GLU:O	4:B:2766:ARG:N	2.27	0.58
4:B:2885:LYS:O	4:B:2889:ALA:CB	2.48	0.58
20:Z:143:ASN:OD1	20:Z:144:SER:N	2.36	0.58
1:A5:337:ASN:HB3	1:A5:340:TYR:HD2	1.68	0.58
2:B2:165:SER:HB3	2:B2:256:GLN:HE21	1.67	0.58
1:B5:102:ALA:HB2	1:B5:403:MET:HE3	1.85	0.58
3:A:1785:VAL:HA	3:A:3916:GLY:O	2.03	0.58
3:A:4104:GLY:O	3:A:4109:GLY:N	2.33	0.58
4:B:424:PHE:HA	4:B:427:ARG:HD3	1.85	0.58
5:C:2666:GLY:O	5:C:2670:GLY:N	2.28	0.58
6:D:639:LEU:O	6:D:644:ARG:NH2	2.37	0.58
1:B3:388:MET:HE2	2:B4:348:PRO:HD2	1.85	0.58
3:A:1667:ARG:HA	3:A:1670:SER:HA	1.84	0.58
3:A:2689:ALA:H	3:A:3426:PHE:N	2.02	0.58
13:L:57:HIS:HB2	13:L:88:PHE:CE1	2.38	0.58
1:A3:289:LEU:HD11	1:A3:365:ALA:HB2	1.85	0.58
2:A4:120:ASP:OD1	2:A4:123:ARG:NH1	2.34	0.58
3:A:2399:SER:CA	3:A:2438:PHE:O	2.43	0.58
3:A:3525:LEU:HA	3:A:3528:ALA:HB3	1.85	0.58
9:G:44:ARG:NH1	9:G:56:GLU:OE2	2.27	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Z:153:PHE:O	20:Z:157:LEU:HD13	2.04	0.58
2:A2:155:GLU:HG2	2:A2:197:HIS:CD2	2.38	0.58
1:A3:374:ILE:HD11	1:A3:422:TYR:CZ	2.39	0.58
3:A:1791:LYS:O	3:A:1825:PHE:HA	2.03	0.58
4:B:729:SER:OG	4:B:730:ALA:N	2.37	0.58
4:B:3554:CYS:O	4:B:3558:GLY:N	2.37	0.58
5:C:823:GLU:O	5:C:827:ALA:N	2.36	0.58
6:D:366:VAL:HB	6:D:376:LEU:HD11	1.85	0.58
1:A3:5:VAL:HG12	1:A3:62:ARG:HD3	1.85	0.58
1:A3:200:MET:SD	1:A3:268:VAL:HG11	2.43	0.58
1:B7:238:CYS:SG	1:B7:318:ARG:NE	2.77	0.58
3:A:3727:ASP:HA	3:A:3730:ILE:CB	2.34	0.58
6:D:342:ILE:HG23	6:D:357:PHE:HB2	1.85	0.58
12:J:47:VAL:HG11	12:J:90:LEU:HD11	1.86	0.58
2:A2:394:LYS:HB2	1:A3:346:PRO:HG3	1.83	0.58
2:A6:405:VAL:HG13	2:A6:418:PHE:HE2	1.69	0.58
1:B3:388:MET:HE1	2:B4:347:CYS:HA	1.85	0.58
3:A:3625:LEU:O	3:A:3677:GLY:HA2	2.04	0.58
1:A1:77:ARG:HH12	1:A1:87:PRO:HG3	1.66	0.58
2:A6:278:ALA:HA	2:A6:369:ALA:HB2	1.84	0.58
1:A7:309:ARG:H	1:A7:372:THR:HG22	1.68	0.58
1:B1:61:PRO:HD3	1:B1:84:ILE:HG13	1.86	0.58
2:B2:323:VAL:HG13	2:B2:355:ILE:HG23	1.86	0.58
4:B:591:ARG:HH21	4:B:693:LEU:HD21	1.68	0.58
5:C:3891:LEU:CB	5:C:3974:LEU:O	2.51	0.58
13:L:61:GLY:HA3	13:M:64:PHE:HA	1.86	0.58
2:A2:288:VAL:HG21	2:A2:323:VAL:HG13	1.86	0.58
1:A3:252:LYS:O	1:A3:256:ASN:ND2	2.37	0.58
4:B:319:ASP:O	4:B:322:LYS:NZ	2.37	0.58
4:B:4245:ILE:HA	4:B:4248:VAL:H	1.69	0.58
7:E:164:ALA:HB3	7:E:469:GLY:HA3	1.85	0.58
7:E:418:ARG:HD3	7:E:484:LEU:HA	1.84	0.58
1:A1:254:ALA:O	1:A1:258:ILE:HG22	2.04	0.57
1:A3:113:ILE:HD12	1:A3:150:LEU:HD22	1.86	0.57
1:B1:330:MET:SD	1:B1:349:VAL:HG11	2.44	0.57
1:B7:105:HIS:HA	1:B7:150:LEU:HD23	1.86	0.57
3:A:2537:ILE:O	3:A:2541:GLY:N	2.37	0.57
3:A:3866:SER:O	3:A:3870:MET:N	2.32	0.57
3:A:4260:ALA:HB1	3:A:4343:THR:O	2.04	0.57
4:B:348:MET:HA	4:B:351:ILE:HD12	1.84	0.57
5:C:781:LEU:HD21	5:C:824:VAL:HG21	1.84	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:379:LEU:HB2	7:E:414:TRP:CZ3	2.39	0.57
1:A1:39:ASP:OD1	1:A1:40:SER:N	2.35	0.57
1:B1:191:GLN:HG3	1:B1:195:ASN:HD22	1.69	0.57
2:A2:116:ASP:OD1	2:A2:117:LEU:N	2.37	0.57
2:B4:129:CYS:SG	2:B4:130:THR:N	2.76	0.57
1:B3:135:VAL:HG21	1:B3:152:ILE:HD11	1.86	0.57
2:A4:328:VAL:HG21	2:A4:355:ILE:HD11	1.86	0.57
1:B5:100:ASN:ND2	1:B5:103:LYS:HG3	2.19	0.57
1:B7:152:ILE:HG22	1:B7:195:ASN:HB3	1.86	0.57
4:B:324:ILE:O	4:B:327:THR:HB	2.04	0.57
5:C:116:LEU:HD12	5:C:163:VAL:HB	1.87	0.57
5:C:394:ARG:NH1	5:C:413:GLU:OE1	2.38	0.57
20:Z:154:LEU:HB3	20:Z:158:HIS:CE1	2.38	0.57
1:B7:8:GLN:NE2	1:B7:17:GLY:HA3	2.18	0.57
1:B7:248:ALA:HA	1:B7:252:LYS:HD2	1.86	0.57
6:D:503:ARG:HB3	6:D:514:SER:HB2	1.86	0.57
1:A7:253:LEU:HD11	1:A7:316:LEU:HD21	1.87	0.57
2:B4:28:HIS:CE1	2:B4:49:PHE:HA	2.40	0.57
2:B4:288:VAL:HG13	2:B4:319:TYR:HE2	1.69	0.57
2:B4:384:ILE:HD11	2:B4:432:PHE:CZ	2.40	0.57
3:A:3360:MET:N	3:A:3451:LEU:O	2.37	0.57
4:B:251:HIS:NE2	4:B:285:GLU:OE1	2.38	0.57
1:B1:262:ARG:NE	1:B1:421:GLU:OE2	2.36	0.57
9:G:71:SER:OG	9:G:73:CYS:O	2.21	0.57
2:A4:237:SER:HA	2:A4:320:ARG:HD2	1.86	0.57
4:B:2260:THR:O	4:B:2264:MET:CB	2.53	0.57
4:B:3646:VAL:O	4:B:3650:ARG:N	2.35	0.57
4:B:4556:TRP:O	4:B:4560:GLY:N	2.33	0.57
5:C:569:ARG:NH1	6:D:614:THR:HG1	2.02	0.57
5:C:1030:VAL:HA	9:G:65:GLN:HE22	1.69	0.57
5:C:4047:GLY:HA2	5:C:4050:GLY:H	1.69	0.57
2:A2:422:ARG:O	2:A2:422:ARG:NE	2.37	0.57
1:B5:45:GLU:HG2	1:B5:46:ARG:HG2	1.86	0.57
7:E:379:LEU:HB2	7:E:414:TRP:CH2	2.40	0.57
1:A1:376:GLU:HG3	1:A1:380:ARG:HH12	1.70	0.56
1:B3:303:ALA:HA	1:B3:376:GLU:OE2	2.05	0.56
1:B7:36:TYR:O	1:B7:37:HIS:ND1	2.38	0.56
1:B7:334:GLN:HE22	1:B7:347:ASN:H	1.52	0.56
4:B:2056:MET:O	4:B:2060:GLU:N	2.38	0.56
5:C:120:LYS:HB3	5:C:159:LEU:HD21	1.86	0.56
6:D:212:ASP:CG	15:P:20:LEU:HG	2.25	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Z:85:ASP:O	20:Z:88:GLY:N	2.38	0.56
2:B6:172:TYR:CE1	2:B6:203:MET:HG3	2.39	0.56
3:A:4152:LEU:N	3:A:4156:PHE:O	2.38	0.56
1:A1:274:THR:OG1	1:A1:279:GLN:OE1	2.22	0.56
1:A5:203:ASP:OD1	1:A5:204:ASN:N	2.38	0.56
1:A7:135:VAL:HB	1:A7:166:THR:HG22	1.87	0.56
2:B2:298:PRO:HB3	2:B2:307:PRO:HD2	1.88	0.56
2:B6:167:LEU:HD13	2:B6:200:VAL:HB	1.87	0.56
3:A:2403:ASN:H	3:A:2406:THR:CB	2.19	0.56
4:B:147:GLU:OE2	4:B:151:ASN:ND2	2.38	0.56
4:B:624:TYR:O	4:B:628:TRP:HB2	2.04	0.56
7:E:289:VAL:HB	7:E:306:LEU:HD13	1.87	0.56
2:A6:60:LYS:HD2	2:B6:282:TYR:CZ	2.40	0.56
2:A6:206:ASN:ND2	21:A7:501:GTP:O2'	2.38	0.56
1:B3:309:ARG:H	1:B3:372:THR:HG22	1.69	0.56
2:B4:417:GLU:HA	2:B4:420:GLU:HG2	1.87	0.56
4:B:526:PHE:HB2	4:B:603:ARG:NH2	2.20	0.56
4:B:2937:THR:O	4:B:2941:ILE:N	2.35	0.56
5:C:131:MET:O	5:C:135:GLN:N	2.37	0.56
5:C:1041:HIS:O	5:C:1045:ASN:N	2.31	0.56
7:E:180:VAL:HG21	7:E:201:TRP:HE1	1.71	0.56
2:A6:403:ALA:HB2	1:A7:344:TRP:CZ3	2.40	0.56
2:B2:72:PRO:HG2	1:B3:1:MET:SD	2.46	0.56
1:B5:31:ASP:OD1	1:B5:35:THR:N	2.38	0.56
4:B:768:LEU:O	4:B:772:LYS:N	2.38	0.56
5:C:225:LYS:HB2	5:C:344:ARG:HH22	1.71	0.56
6:D:619:ASN:ND2	6:D:622:HIS:O	2.39	0.56
1:A1:52:ASN:OD1	1:A1:62:ARG:NH2	2.38	0.56
5:C:341:HIS:O	5:C:345:LEU:HB2	2.06	0.56
1:B5:211:CYS:HA	1:B5:215:LEU:HB2	1.86	0.56
5:C:1872:GLU:H	5:C:1921:MET:HA	1.70	0.56
2:B2:90:GLU:OE2	2:B2:121:ARG:NH1	2.39	0.56
2:B2:401:LYS:HD3	1:B3:344:TRP:CG	2.41	0.56
1:B7:11:GLN:N	23:B7:502:GDP:O2B	2.35	0.56
1:B7:183:TYR:HA	1:B7:385:PHE:HE1	1.71	0.56
3:A:4269:ALA:O	3:A:4272:SER:CB	2.54	0.56
4:B:2967:ASP:O	4:B:2971:PHE:CB	2.53	0.56
5:C:3506:ASP:O	5:C:3510:GLU:N	2.34	0.56
7:E:107:ILE:HG21	11:I:3:ASP:HB3	1.88	0.56
7:E:374:ASN:HD21	7:E:489:PRO:HB2	1.71	0.56
7:E:384:TRP:HB3	7:E:408:TYR:HA	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:X1:251:ALA:O	16:X1:255:LEU:HG	2.06	0.56
1:A1:164:MET:HB3	1:A1:197:ASP:HB2	1.88	0.56
2:A2:403:ALA:HB2	1:A3:344:TRP:HZ3	1.70	0.56
2:B4:346:TRP:CH2	2:B4:435:VAL:HG13	2.41	0.56
2:B6:9:ILE:HD13	2:B6:150:GLY:HA2	1.88	0.56
3:A:1805:GLY:HA2	3:A:1827:ALA:CA	2.36	0.56
5:C:230:ARG:HG3	5:C:348:LYS:HE3	1.88	0.56
1:A3:193:VAL:HG11	1:A3:418:LEU:HD21	1.88	0.56
2:A4:72:PRO:HG3	1:A5:1:MET:HE3	1.88	0.56
1:A5:161:ASP:OD1	1:A5:162:ARG:HD2	2.06	0.56
2:A4:398:MET:HE2	1:A5:346:PRO:HD2	1.87	0.55
1:A5:293:MET:HG3	1:A5:367:PHE:HB2	1.88	0.55
2:A6:381:SER:OG	2:A6:382:THR:N	2.39	0.55
1:A7:285:THR:O	1:A7:289:LEU:HD12	2.06	0.55
1:B5:423:GLN:O	1:B5:426:GLN:HG3	2.05	0.55
1:B7:394:PHE:HA	1:B7:397:TRP:CZ3	2.41	0.55
3:A:2670:TYR:O	3:A:2674:TYR:CB	2.54	0.55
3:A:2720:VAL:O	3:A:2877:PHE:N	2.40	0.55
3:A:4248:LEU:HA	3:A:4258:VAL:HA	1.88	0.55
3:A:4261:LEU:O	3:A:4264:ALA:HB3	2.06	0.55
1:A5:145:SER:O	1:A5:149:THR:OG1	2.18	0.55
1:A5:179:VAL:HG23	2:A6:349:THR:O	2.06	0.55
4:B:3879:ASP:CB	5:C:1534:GLU:CB	2.84	0.55
5:C:676:ARG:HG3	5:C:689:LEU:HD21	1.87	0.55
5:C:784:ILE:HG23	5:C:817:LEU:HD22	1.87	0.55
7:E:120:LEU:HD11	11:I:73:ARG:HH11	1.71	0.55
2:A2:70:LEU:HD21	2:A2:114:ILE:HG21	1.87	0.55
1:A3:262:ARG:NH1	1:A3:421:GLU:OE1	2.39	0.55
1:B3:114:ASP:OD1	1:B3:115:SER:N	2.40	0.55
1:B5:209:ASP:OD2	1:B5:213:ARG:NH1	2.34	0.55
7:E:112:GLN:O	7:E:115:SER:OG	2.22	0.55
1:A1:139:LEU:HD12	1:A1:170:VAL:HG22	1.88	0.55
2:A4:221:ARG:NH1	1:A5:325:GLU:OE2	2.39	0.55
1:B1:177:ASP:N	1:B1:181:GLU:OE2	2.36	0.55
1:B1:293:MET:HG3	1:B1:367:PHE:HB2	1.88	0.55
2:B4:66:ILE:HG13	2:B4:121:ARG:HH21	1.71	0.55
3:A:1967:LEU:O	3:A:1970:LEU:N	2.37	0.55
3:A:3879:PRO:O	3:A:3994:ILE:N	2.32	0.55
4:B:2594:TYR:O	4:B:2642:ALA:N	2.39	0.55
4:B:2807:ALA:H	4:B:2824:ALA:HA	1.72	0.55
7:E:72:LYS:HA	13:K:69:THR:HA	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:168:ASN:OD1	7:E:179:VAL:HB	2.06	0.55
2:A4:383:ALA:O	2:A4:386:GLU:HG2	2.06	0.55
1:B5:144:GLY:N	23:B5:502:GDP:O1B	2.34	0.55
3:A:2714:SER:N	3:A:2843:THR:HA	2.22	0.55
3:A:3319:ASP:O	3:A:3322:LYS:N	2.40	0.55
2:A6:9:ILE:HG22	2:A6:68:LEU:HD11	1.88	0.55
1:B1:309:ARG:H	1:B1:372:THR:HG22	1.71	0.55
2:B4:277:SER:OG	2:B4:278:ALA:N	2.39	0.55
7:E:243:TYR:HD2	7:E:254:GLU:HB2	1.69	0.55
7:E:345:ARG:HA	7:E:353:ARG:HE	1.72	0.55
1:A3:3:GLU:OE2	1:A3:127:CYS:HB2	2.07	0.55
1:B3:226:ASN:OD1	23:B3:502:GDP:N1	2.38	0.55
5:C:296:TYR:HE2	5:C:332:ILE:HG21	1.72	0.55
6:D:428:PHE:HB2	6:D:440:TRP:HB2	1.89	0.55
1:A1:218:THR:O	2:A2:326:LYS:NZ	2.39	0.55
2:A2:317:LEU:HB3	2:A2:319:TYR:HE1	1.71	0.55
1:A3:3:GLU:CD	1:A3:127:CYS:HB2	2.26	0.55
1:A5:401:GLU:OE1	1:A5:401:GLU:N	2.39	0.55
1:B1:3:GLU:HG3	1:B1:127:CYS:HB2	1.89	0.55
2:B2:91:GLN:CG	2:B2:121:ARG:HH21	2.18	0.55
1:B7:5:VAL:HG23	1:B7:62:ARG:HG2	1.87	0.55
4:B:649:THR:HG22	4:B:653:LYS:HE2	1.89	0.55
4:B:1918:ALA:O	4:B:2044:MET:N	2.30	0.55
1:A1:382:SER:OG	1:A1:415:MET:HG2	2.07	0.55
1:A3:102:ALA:HB2	1:A3:403:MET:CE	2.36	0.55
1:B1:175:VAL:HG11	1:B1:204:ASN:HB2	1.88	0.55
3:A:3724:PHE:H	3:A:3727:ASP:CB	2.19	0.55
5:C:3934:ALA:O	5:C:3938:LEU:N	2.37	0.55
7:E:366:TYR:H	7:E:382:GLY:HA3	1.71	0.55
2:A6:223:THR:HG23	2:A6:225:THR:H	1.72	0.55
2:B2:124:LYS:HA	2:B2:127:ASP:HB2	1.88	0.55
3:A:1666:ASP:O	3:A:1670:SER:HA	2.06	0.55
5:C:2123:HIS:HA	5:C:2169:THR:HA	1.89	0.55
2:A2:415:GLU:CD	20:Z:168:ARG:HH12	2.10	0.54
1:A5:27:GLU:HA	1:A5:359:LYS:HE3	1.89	0.54
13:L:76:ILE:O	13:L:86:LEU:HA	2.07	0.54
16:X1:125:ILE:HD13	18:Y1:72:LEU:HD23	1.89	0.54
1:A3:11:GLN:N	23:A3:502:GDP:O2B	2.35	0.54
2:A4:7:ILE:HD13	2:A4:153:LEU:HD21	1.88	0.54
1:A7:135:VAL:HG21	1:A7:152:ILE:HD11	1.89	0.54
3:A:3395:GLU:O	3:A:3399:GLU:N	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:2584:TYR:N	4:B:2635:GLU:O	2.40	0.54
4:B:4530:PRO:HA	4:B:4544:GLU:HA	1.89	0.54
18:Y1:188:MET:O	18:Y1:192:ILE:HG12	2.07	0.54
2:A4:174:SER:HB3	2:A4:177:VAL:O	2.07	0.54
2:A6:14:ILE:HD11	2:A6:74:VAL:HG22	1.90	0.54
2:B2:265:ILE:HG22	2:B2:380:ASN:HD21	1.72	0.54
3:A:1589:MET:HA	3:A:1651:GLN:CB	2.37	0.54
4:B:211:GLN:OE1	4:B:253:GLN:NE2	2.40	0.54
6:D:503:ARG:HD2	6:D:550:LEU:HD11	1.89	0.54
7:E:168:ASN:HD22	7:E:223:LYS:HA	1.72	0.54
16:X1:160:THR:HG22	18:Y1:108:LEU:HD13	1.88	0.54
1:A1:35:THR:HA	1:A1:57:GLY:O	2.07	0.54
1:A5:289:LEU:HD23	1:A5:365:ALA:HB2	1.89	0.54
1:A7:189:VAL:HA	1:A7:192:LEU:HG	1.89	0.54
2:B4:102:ASN:HD21	2:B4:411:GLU:HG3	1.72	0.54
2:B6:9:ILE:HG12	2:B6:68:LEU:HD11	1.89	0.54
3:A:2442:LEU:CB	3:A:2486:ALA:HB1	2.38	0.54
3:A:4181:VAL:HA	3:A:4185:MET:O	2.08	0.54
4:B:3841:TYR:O	4:B:3845:GLU:CB	2.56	0.54
15:P:42:VAL:HG21	15:P:92:VAL:HG11	1.88	0.54
1:A7:293:MET:SD	1:A7:367:PHE:HB2	2.48	0.54
1:B5:203:ASP:OD1	1:B5:204:ASN:N	2.41	0.54
3:A:1718:ALA:N	3:A:1864:ARG:O	2.25	0.54
3:A:4378:LEU:O	3:A:4381:ASP:N	2.40	0.54
7:E:361:HIS:HE1	7:E:383:ASP:H	1.55	0.54
1:A1:215:LEU:HB3	1:A1:217:LEU:CD1	2.34	0.54
1:A1:232:VAL:O	1:A1:236:ILE:HD12	2.07	0.54
1:A3:397:TRP:CH2	2:A4:260:VAL:HG23	2.37	0.54
2:B4:11:GLN:NE2	1:B5:247:ASN:OD1	2.40	0.54
2:B6:408:TYR:HD2	2:B6:418:PHE:HZ	1.56	0.54
4:B:2577:GLU:N	4:B:2585:GLY:O	2.40	0.54
1:B3:7:ILE:HG21	1:B3:151:LEU:HD21	1.89	0.54
3:A:1662:ARG:O	3:A:1674:ILE:HA	2.07	0.54
4:B:443:ARG:NH2	4:B:533:GLU:O	2.41	0.54
6:D:329:TYR:HD2	6:D:341:LEU:HD23	1.72	0.54
1:B5:101:TRP:HE1	1:B5:145:SER:HG	1.55	0.54
1:B7:43:GLN:O	1:B7:47:ILE:HG23	2.08	0.54
3:A:1359:GLN:O	3:A:1362:ALA:HB3	2.07	0.54
5:C:500:GLN:NE2	5:C:504:ASN:OD1	2.41	0.54
15:P:21:VAL:HG12	15:P:90:ILE:HG22	1.89	0.54
1:A3:373:ALA:O	1:A3:376:GLU:HG2	2.07	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A5:317:PHE:HB3	1:A5:321:MET:SD	2.48	0.54
1:A7:404:ASP:HB2	1:A7:406:MET:SD	2.47	0.54
2:B4:298:PRO:HB3	2:B4:307:PRO:HD2	1.89	0.54
1:B5:69:GLU:HG2	2:B6:2:ARG:HH22	1.73	0.54
1:B7:173:PRO:HB3	1:B7:384:GLN:OE1	2.08	0.54
3:A:4451:ASN:O	3:A:4454:GLY:N	2.41	0.54
4:B:630:GLU:O	4:B:633:GLU:HB2	2.08	0.54
5:C:132:GLN:O	5:C:135:GLN:HB2	2.07	0.54
5:C:792:LEU:HD21	5:C:882:LEU:HD13	1.88	0.54
6:D:504:CYS:SG	6:D:505:SER:N	2.80	0.54
11:I:69:LEU:HA	12:J:74:SER:HA	1.89	0.54
16:X1:248:LYS:HZ3	18:Y1:201:ALA:C	2.10	0.54
4:B:2564:GLU:O	4:B:2568:LEU:N	2.39	0.54
5:C:4033:VAL:O	5:C:4037:LEU:N	2.37	0.54
11:I:85:PRO:HA	11:I:94:TYR:HA	1.90	0.54
1:A3:215:LEU:HB3	1:A3:217:LEU:CD1	2.33	0.53
2:A4:183:GLU:HA	2:A4:186:ASN:HD22	1.72	0.53
1:A7:319:GLY:N	1:A7:354:CYS:O	2.37	0.53
3:A:3852:GLU:O	3:A:3856:GLY:N	2.40	0.53
4:B:2623:HIS:O	4:B:2636:ILE:N	2.42	0.53
13:M:76:ILE:HB	13:M:87:LEU:HB2	1.89	0.53
1:A1:330:MET:HE2	1:A1:349:VAL:HG21	1.89	0.53
2:B6:417:GLU:HA	2:B6:420:GLU:HG2	1.90	0.53
3:A:4257:VAL:O	3:A:4260:ALA:HB3	2.08	0.53
4:B:1916:ALA:O	4:B:2042:VAL:N	2.31	0.53
6:D:369:HIS:HE1	6:D:371:GLU:HB3	1.73	0.53
1:A1:258:ILE:HD12	1:A1:264:HIS:HB3	1.91	0.53
1:B5:39:ASP:OD1	1:B5:40:SER:N	2.42	0.53
3:A:4373:ALA:HB1	3:A:4379:PRO:HA	1.89	0.53
2:A4:318:MET:HB2	2:A4:376:CYS:HB3	1.90	0.53
3:A:3291:THR:O	3:A:3295:ARG:N	2.33	0.53
2:A2:119:LEU:HD21	2:A2:156:ARG:HB3	1.91	0.53
2:A2:145:THR:OG1	21:A3:501:GTP:O1B	2.27	0.53
2:A4:407:TRP:CG	1:A5:255:VAL:HG23	2.44	0.53
1:A5:7:ILE:HD13	1:A5:151:LEU:HD21	1.91	0.53
2:B4:66:ILE:CG1	2:B4:121:ARG:HH21	2.22	0.53
4:B:682:ARG:HH11	7:E:188:GLN:HG2	1.73	0.53
6:D:382:ASP:OD1	6:D:382:ASP:N	2.36	0.53
7:E:450:SER:OG	7:E:452:LEU:N	2.40	0.53
9:G:37:THR:HB	9:G:73:CYS:HB3	1.89	0.53
18:Y1:183:LYS:O	18:Y1:186:ARG:HG3	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A2:69:ASP:OD1	2:A2:70:LEU:N	2.42	0.53
2:A2:206:ASN:O	2:A2:210:TYR:HD2	1.91	0.53
1:B7:373:ALA:O	1:B7:376:GLU:HG2	2.08	0.53
3:A:2290:TYR:O	3:A:2294:PHE:N	2.25	0.53
4:B:134:PRO:HA	4:B:137:GLN:HG3	1.89	0.53
4:B:330:LEU:HA	4:B:333:LYS:HB2	1.89	0.53
4:B:1915:GLY:N	4:B:2017:ALA:O	2.29	0.53
1:A1:217:LEU:HD21	1:A1:224:ASP:OD2	2.09	0.53
1:A5:345:ILE:O	1:A5:348:ASN:ND2	2.42	0.53
2:B4:319:TYR:HB3	2:B4:323:VAL:HG21	1.90	0.53
2:B6:407:TRP:O	2:B6:411:GLU:HG2	2.09	0.53
1:B7:52:ASN:OD1	1:B7:62:ARG:NH2	2.41	0.53
5:C:1843:PHE:N	5:C:1869:CYS:O	2.41	0.53
5:C:3384:GLU:O	5:C:3388:ASN:N	2.40	0.53
1:A1:114:ASP:OD1	1:A1:114:ASP:N	2.39	0.53
1:A5:2:ARG:HE	1:A5:240:LEU:HD22	1.74	0.53
1:A5:36:TYR:HB2	1:A5:59:TYR:HE2	1.74	0.53
2:B6:51:THR:HG21	2:B6:243:ARG:HG2	1.91	0.53
2:B6:102:ASN:HD22	2:B6:105:ARG:HG3	1.73	0.53
1:B7:2:ARG:HE	1:B7:240:LEU:HD22	1.74	0.53
3:A:2439:VAL:N	3:A:2486:ALA:HA	2.21	0.53
4:B:381:ARG:HH12	4:B:431:MET:HG3	1.74	0.53
4:B:2595:PHE:HA	4:B:2642:ALA:HB3	1.90	0.53
5:C:328:MET:O	5:C:331:THR:OG1	2.26	0.53
5:C:675:GLN:HB2	5:C:689:LEU:HD23	1.91	0.53
5:C:864:TYR:HA	5:C:867:ILE:HD12	1.91	0.53
1:A5:274:THR:HG21	1:A5:282:ARG:NE	2.24	0.53
4:B:4025:GLY:O	4:B:4059:ARG:N	2.35	0.53
5:C:2065:LYS:O	5:C:2069:GLU:CB	2.57	0.53
5:C:2937:LYS:O	5:C:2941:ARG:N	2.30	0.53
2:A2:381:SER:OG	2:A2:382:THR:N	2.42	0.53
1:A3:210:ILE:O	1:A3:214:THR:OG1	2.24	0.53
1:B3:289:LEU:HD11	1:B3:363:MET:HG2	1.91	0.53
1:B3:309:ARG:H	1:B3:372:THR:CG2	2.22	0.53
2:B4:431:ASP:O	2:B4:434:GLU:HG2	2.09	0.53
4:B:685:ARG:HH12	7:E:265:PRO:HG3	1.73	0.53
4:B:743:GLN:HA	4:B:746:ALA:HB3	1.90	0.53
5:C:1846:SER:HA	5:C:1876:ILE:HA	1.90	0.53
11:I:7:VAL:O	11:I:10:THR:OG1	2.23	0.53
1:A1:314:SER:HB3	1:A1:368:ILE:HG23	1.92	0.52
1:A3:177:ASP:O	2:A4:352:LYS:HA	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B3:238:CYS:SG	1:B3:318:ARG:NE	2.82	0.52
3:A:1349:LYS:O	3:A:1353:ASP:N	2.23	0.52
3:A:3876:SER:CB	3:A:3965:PRO:HA	2.38	0.52
6:D:510:SER:HB3	6:D:513:LEU:HD23	1.91	0.52
15:P:13:LEU:HD21	15:P:95:ARG:HH11	1.72	0.52
1:A3:8:GLN:O	1:A3:66:MET:HG3	2.08	0.52
2:A6:291:ILE:HD12	2:A6:375:VAL:HG13	1.90	0.52
1:A7:186:THR:HG23	1:A7:187:LEU:HD12	1.90	0.52
2:B2:317:LEU:HB3	2:B2:319:TYR:HE1	1.74	0.52
1:B5:117:LEU:HA	1:B5:120:VAL:HG12	1.90	0.52
1:B7:8:GLN:HB2	1:B7:65:LEU:HA	1.91	0.52
3:A:1946:ALA:O	3:A:1950:PHE:CB	2.57	0.52
3:A:2786:GLU:O	3:A:2788:MET:N	2.42	0.52
3:A:4135:PRO:HA	3:A:4148:PRO:CA	2.39	0.52
11:I:76:SER:OG	12:J:65:ASN:OD1	2.27	0.52
16:X:263:GLU:O	16:X:267:VAL:HG23	2.09	0.52
20:Z:33:LYS:HB3	20:Z:69:CYS:SG	2.49	0.52
2:A2:88:HIS:CE1	2:A2:90:GLU:HB2	2.45	0.52
2:A2:93:ILE:HD12	2:A2:117:LEU:HD21	1.90	0.52
1:B1:198:GLU:HA	1:B1:264:HIS:HB2	1.90	0.52
2:B2:264:ARG:NH1	2:B2:431:ASP:OD2	2.41	0.52
2:B4:91:GLN:HA	2:B4:121:ARG:HH22	1.73	0.52
2:B4:221:ARG:HG2	1:B5:322:SER:HB3	1.90	0.52
1:B5:178:THR:HG22	2:B6:352:LYS:HZ3	1.74	0.52
2:B6:203:MET:HE3	2:B6:267:PHE:HB3	1.92	0.52
3:A:2410:SER:HA	3:A:2803:ASP:CB	2.39	0.52
4:B:1861:TYR:HA	4:B:1872:VAL:HA	1.90	0.52
4:B:2057:LEU:O	4:B:2062:PHE:N	2.42	0.52
5:C:503:VAL:HG21	5:C:536:LEU:HD11	1.90	0.52
5:C:1404:GLU:HA	5:C:1411:VAL:HA	1.90	0.52
5:C:4032:PHE:O	5:C:4036:PHE:N	2.34	0.52
1:A7:4:ILE:HB	1:A7:50:TYR:HE1	1.74	0.52
1:A7:5:VAL:HG23	1:A7:62:ARG:HG2	1.91	0.52
2:B4:172:TYR:CE2	2:B4:203:MET:HG3	2.44	0.52
4:B:3772:THR:O	4:B:3775:GLY:N	2.42	0.52
5:C:3931:LYS:O	5:C:3934:ALA:HB3	2.08	0.52
1:A7:114:ASP:OD1	1:A7:114:ASP:N	2.43	0.52
1:B1:417:ASP:O	1:B1:421:GLU:HG2	2.10	0.52
2:B2:223:THR:HG23	2:B2:225:THR:H	1.75	0.52
1:B3:222:PHE:HE2	2:B4:248:LEU:HD11	1.74	0.52
1:B5:173:PRO:HB3	1:B5:384:GLN:NE2	2.17	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:G:39:ASP:OD1	9:G:40:THR:N	2.39	0.52
11:I:11:PHE:CE2	11:I:34:ARG:HD2	2.44	0.52
13:K:71:GLU:HG2	13:K:89:LYS:HB3	1.92	0.52
18:Y:199:PHE:O	18:Y:202:ARG:HG3	2.10	0.52
2:A6:102:ASN:OD1	1:A7:255:VAL:HG11	2.10	0.52
1:A7:169:VAL:HG23	1:A7:203:ASP:HA	1.91	0.52
3:A:4261:LEU:HA	3:A:4264:ALA:HB3	1.90	0.52
4:B:560:LEU:HD22	4:B:624:TYR:HE1	1.75	0.52
4:B:2106:MET:HA	4:B:2109:ALA:HB3	1.91	0.52
5:C:2465:MET:O	5:C:2469:GLY:N	2.34	0.52
7:E:80:GLY:HA2	13:K:79:TYR:CE2	2.45	0.52
13:L:67:TYR:CD2	13:M:45:LYS:HD3	2.45	0.52
2:B4:99:ALA:O	2:B4:105:ARG:HD3	2.09	0.52
18:Y1:79:GLU:O	18:Y1:82:MET:HG3	2.10	0.52
2:A4:306:ASP:HB3	2:A4:309:HIS:ND1	2.24	0.52
2:B2:402:ARG:NH2	2:B2:415:GLU:OE2	2.42	0.52
2:B4:317:LEU:HB3	2:B4:319:TYR:HE1	1.74	0.52
2:B6:222:PRO:HD2	1:B7:324:LYS:HE3	1.92	0.52
3:A:1612:ILE:HA	3:A:1882:MET:O	2.09	0.52
3:A:2372:PHE:O	3:A:2487:CYS:HA	2.10	0.52
4:B:64:LEU:CB	4:B:75:THR:O	2.58	0.52
4:B:1771:VAL:O	4:B:1775:PHE:CB	2.58	0.52
5:C:204:GLU:HG2	5:C:205:GLU:N	2.25	0.52
2:A2:102:ASN:HB3	2:A2:105:ARG:HB2	1.92	0.52
2:A6:326:LYS:HG3	2:A6:327:ASP:N	2.25	0.52
1:B3:27:GLU:OE1	1:B3:241:ARG:NH1	2.26	0.52
1:B3:124:ALA:HB1	1:B3:130:LEU:HD11	1.91	0.52
3:A:219:ASP:O	3:A:223:MET:HA	2.10	0.52
3:A:1576:ILE:HA	3:A:1663:SER:O	2.10	0.52
3:A:1771:CYS:HA	3:A:1842:PHE:CB	2.40	0.52
3:A:2689:ALA:HB1	3:A:3423:ARG:HA	1.90	0.52
4:B:380:LEU:HD12	4:B:381:ARG:HG3	1.92	0.52
4:B:2472:ASP:O	4:B:2485:TRP:N	2.34	0.52
4:B:2892:ALA:O	4:B:2896:CYS:N	2.42	0.52
5:C:4404:LEU:HA	5:C:4408:GLU:O	2.09	0.52
2:A4:139:ASN:OD1	2:A4:170:THR:HG22	2.09	0.52
2:A6:317:LEU:HB3	2:A6:319:TYR:HE1	1.75	0.52
1:B7:100:ASN:ND2	1:B7:103:LYS:HG3	2.19	0.52
4:B:4476:GLY:HA3	4:B:4513:VAL:O	2.09	0.52
7:E:386:ALA:O	7:E:402:THR:OG1	2.27	0.52
16:X1:256:ALA:O	16:X1:261:ARG:NE	2.38	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A4:105:ARG:HB2	2:A4:411:GLU:OE1	2.09	0.51
1:A7:334:GLN:OE1	1:A7:348:ASN:N	2.43	0.51
1:B5:66:MET:SD	1:B5:116:VAL:HG11	2.51	0.51
2:B6:53:PHE:HB3	2:B6:61:HIS:HB3	1.91	0.51
4:B:1895:THR:O	4:B:1899:ASP:N	2.32	0.51
4:B:3565:ASN:N	4:B:3609:GLN:O	2.33	0.51
4:B:4531:VAL:O	4:B:4542:VAL:N	2.35	0.51
6:D:334:PHE:O	6:D:337:GLN:NE2	2.43	0.51
1:A1:7:ILE:HD13	1:A1:64:ILE:HB	1.92	0.51
2:A2:387:ILE:HG12	2:A2:390:ARG:HH22	1.74	0.51
1:A3:72:THR:O	1:A3:76:VAL:HG23	2.09	0.51
1:A3:191:GLN:HG3	1:A3:195:ASN:ND2	2.24	0.51
2:B6:102:ASN:HD21	2:B6:411:GLU:HG3	1.74	0.51
3:A:4260:ALA:HA	3:A:4342:TRP:O	2.11	0.51
4:B:2605:ASP:H	4:B:2609:THR:H	1.58	0.51
5:C:1353:HIS:O	5:C:1357:GLN:N	2.44	0.51
1:B3:326:VAL:O	1:B3:330:MET:HG2	2.10	0.51
1:B5:49:VAL:HG11	1:B5:241:ARG:HG2	1.91	0.51
1:B5:212:PHE:HZ	2:B6:326:LYS:HG3	1.76	0.51
3:A:2438:PHE:HA	3:A:2485:VAL:C	2.31	0.51
5:C:803:PHE:O	5:C:806:GLN:HB2	2.10	0.51
5:C:823:GLU:O	5:C:826:ARG:HB2	2.09	0.51
5:C:830:ASP:O	5:C:833:THR:OG1	2.22	0.51
2:A2:402:ARG:HH11	20:Z:168:ARG:NH2	2.03	0.51
1:A3:133:PHE:HZ	1:A3:159:TYR:HD2	1.57	0.51
1:B1:153:SER:O	1:B1:157:GLU:HG2	2.10	0.51
2:B2:15:GLN:NE2	21:B2:501:GTP:O6	2.44	0.51
1:B5:345:ILE:HG23	1:B5:348:ASN:OD1	2.11	0.51
3:A:3724:PHE:O	3:A:3727:ASP:N	2.43	0.51
3:A:4101:TYR:O	3:A:4105:GLU:N	2.44	0.51
3:A:4284:GLY:O	3:A:4290:ASN:N	2.43	0.51
4:B:3876:LYS:HA	4:B:3882:GLN:HA	1.92	0.51
5:C:781:LEU:HB3	5:C:867:ILE:HD11	1.92	0.51
5:C:4398:LEU:O	5:C:4423:LEU:CB	2.59	0.51
13:L:31:LEU:HD12	13:L:40:ILE:HD13	1.93	0.51
1:A1:8:GLN:CD	1:A1:17:GLY:HA3	2.30	0.51
1:B1:236:ILE:HG23	1:B1:237:THR:HG23	1.92	0.51
1:B7:199:CYS:HB3	1:B7:265:PHE:HD1	1.75	0.51
1:B7:292:GLN:HG2	1:B7:298:ASN:ND2	2.25	0.51
1:B7:334:GLN:HE22	1:B7:347:ASN:N	2.08	0.51
3:A:2319:ASN:N	3:A:2324:LYS:O	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:4484:LEU:N	4:B:4506:CYS:O	2.44	0.51
1:B1:328:GLU:HA	1:B1:331:LEU:HG	1.91	0.51
1:B3:186:THR:HG23	1:B3:415:MET:HG3	1.91	0.51
2:B4:383:ALA:O	2:B4:386:GLU:HG2	2.11	0.51
3:A:2426:ASN:HA	3:A:2478:ASN:N	2.25	0.51
3:A:3739:ILE:O	3:A:3742:ARG:N	2.39	0.51
3:A:4017:PRO:HA	3:A:4021:ASP:H	1.75	0.51
1:A3:5:VAL:HG22	1:A3:133:PHE:HD1	1.75	0.51
3:A:1992:ILE:O	3:A:1997:LEU:N	2.44	0.51
3:A:3769:ASP:O	3:A:3772:ARG:N	2.32	0.51
4:B:327:THR:HG23	7:E:542:LEU:HD11	1.93	0.51
5:C:316:THR:OG1	5:C:317:GLU:OE1	2.28	0.51
5:C:785:SER:HB2	5:C:867:ILE:HA	1.93	0.51
16:X1:220:VAL:HG13	18:Y1:174:GLN:OE1	2.11	0.51
20:Z:82:CYS:HA	20:Z:85:ASP:HB2	1.93	0.51
2:A2:224:TYR:CE2	1:A3:246:LEU:HD11	2.45	0.51
1:A3:317:PHE:HE2	1:A3:326:VAL:HG13	1.76	0.51
2:A4:274:PRO:HB2	2:A4:276:ILE:HG23	1.93	0.51
2:A4:384:ILE:HD11	2:A4:432:PHE:CE1	2.45	0.51
1:B1:67:ASP:OD2	1:B1:72:THR:OG1	2.28	0.51
2:B2:11:GLN:NE2	2:B2:15:GLN:OE1	2.44	0.51
3:A:3350:ILE:O	3:A:3354:SER:N	2.44	0.51
3:A:3363:PRO:CB	3:A:3456:SER:HA	2.40	0.51
5:C:1507:SER:O	5:C:1510:LEU:N	2.43	0.51
1:A1:272:PRO:HD3	1:A1:364:SER:HA	1.92	0.51
1:A5:118:ASP:OD1	1:A5:122:LYS:NZ	2.44	0.51
2:B4:266:HIS:ND1	2:B4:266:HIS:O	2.43	0.51
1:B5:177:ASP:O	2:B6:352:LYS:HA	2.10	0.51
3:A:2040:ALA:O	3:A:2044:GLY:N	2.44	0.51
3:A:2696:PHE:N	3:A:2699:ALA:HB3	2.24	0.51
5:C:826:ARG:O	5:C:829:GLU:HB3	2.10	0.51
2:A2:398:MET:SD	1:A3:346:PRO:HD2	2.51	0.51
1:A3:409:THR:O	1:A3:412:GLU:HG3	2.11	0.51
1:A5:77:ARG:HE	1:A5:90:PHE:HE2	1.57	0.51
2:A6:240:ALA:O	2:A6:356:ASN:ND2	2.43	0.51
2:B2:381:SER:OG	2:B2:382:THR:N	2.43	0.51
2:B2:407:TRP:CG	1:B3:255:VAL:HG23	2.46	0.51
3:A:1908:SER:O	3:A:1910:GLN:N	2.42	0.51
3:A:2210:LEU:O	3:A:2214:PHE:N	2.44	0.51
3:A:2467:HIS:HA	3:A:2478:ASN:HA	1.93	0.51
4:B:4146:ALA:N	4:B:4266:GLY:HA3	2.26	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:785:SER:O	5:C:785:SER:OG	2.28	0.51
2:A6:151:SER:O	2:A6:155:GLU:HG3	2.12	0.50
1:A7:236:ILE:HD11	1:A7:368:ILE:HD11	1.91	0.50
1:A7:272:PRO:HD3	1:A7:364:SER:HA	1.93	0.50
2:B6:317:LEU:HB3	2:B6:319:TYR:HE1	1.75	0.50
4:B:2042:VAL:HA	4:B:4196:GLY:HA3	1.92	0.50
5:C:1588:SER:O	5:C:1608:GLN:N	2.37	0.50
5:C:1679:GLU:O	5:C:1683:ALA:N	2.42	0.50
7:E:81:TRP:HE1	7:E:88:THR:HG1	1.58	0.50
12:J:48:PRO:HG3	12:J:88:VAL:HG11	1.93	0.50
1:A1:65:LEU:HD12	1:A1:90:PHE:CE1	2.45	0.50
2:A2:286:LEU:HD12	2:A2:371:VAL:HG23	1.94	0.50
2:A4:266:HIS:O	2:A4:266:HIS:ND1	2.43	0.50
2:B6:116:ASP:OD1	2:B6:117:LEU:N	2.44	0.50
4:B:813:ASN:O	4:B:816:LYS:HG2	2.11	0.50
4:B:2261:PHE:O	4:B:2265:ALA:HB3	2.10	0.50
5:C:791:GLU:OE2	5:C:813:GLN:NE2	2.45	0.50
20:Z:62:VAL:HG11	20:Z:94:LEU:HB3	1.93	0.50
1:B1:144:GLY:N	23:B1:501:GDP:O1B	2.38	0.50
2:B2:66:ILE:O	2:B2:66:ILE:HG13	2.11	0.50
1:B3:212:PHE:CZ	2:B4:326:LYS:HE2	2.47	0.50
2:B4:167:LEU:HD22	2:B4:200:VAL:HB	1.94	0.50
3:A:3922:PRO:O	3:A:3925:ALA:HB3	2.11	0.50
4:B:2583:ARG:HA	4:B:2635:GLU:N	2.26	0.50
6:D:544:ASP:N	6:D:544:ASP:OD1	2.43	0.50
7:E:272:LEU:HD11	7:E:291:TRP:HZ3	1.75	0.50
1:A1:91:VAL:HG11	1:A1:116:VAL:HB	1.93	0.50
1:A3:2:ARG:HB3	1:A3:131:GLN:HB2	1.92	0.50
1:A3:8:GLN:CD	1:A3:17:GLY:HA3	2.31	0.50
2:A6:76:ASP:OD1	2:A6:79:ARG:NH2	2.44	0.50
1:A7:3:GLU:OE1	1:A7:127:CYS:HB2	2.11	0.50
1:A7:27:GLU:OE2	1:A7:318:ARG:NH2	2.44	0.50
1:B1:36:TYR:CZ	1:B1:44:LEU:HD21	2.47	0.50
1:B3:121:ARG:NH1	1:B3:158:GLU:OE2	2.44	0.50
1:B3:128:ASP:OD1	1:B3:129:CYS:N	2.41	0.50
3:A:1938:VAL:O	3:A:1942:VAL:N	2.40	0.50
3:A:2555:VAL:HA	3:A:2558:THR:CB	2.41	0.50
3:A:2585:SER:HA	3:A:2664:TYR:CB	2.41	0.50
4:B:4093:LEU:O	4:B:4097:LEU:CB	2.59	0.50
6:D:499:GLY:HA2	6:D:521:LEU:O	2.11	0.50
7:E:245:ASP:OD1	7:E:246:VAL:N	2.41	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A1:313:ALA:O	1:A1:349:VAL:HA	2.12	0.50
2:A2:339:ARG:NH1	2:A2:339:ARG:HB2	2.26	0.50
1:A3:189:VAL:HG11	1:A3:378:PHE:HE1	1.76	0.50
3:A:1568:GLN:N	3:A:1689:GLY:O	2.45	0.50
3:A:2020:VAL:O	3:A:2151:ILE:HA	2.12	0.50
5:C:239:TRP:HZ3	5:C:290:SER:HA	1.77	0.50
5:C:580:TRP:HZ3	5:C:623:PHE:HE2	1.58	0.50
6:D:539:ALA:HB1	6:D:567:ILE:HG21	1.92	0.50
11:I:55:LYS:NZ	13:K:32:GLU:O	2.45	0.50
16:X1:178:ILE:HD12	18:Y1:131:ARG:HG2	1.94	0.50
20:Z:104:ASP:O	20:Z:105:LYS:HD3	2.11	0.50
1:A1:334:GLN:HA	1:A1:341:PHE:CE2	2.47	0.50
1:A5:337:ASN:HB3	1:A5:340:TYR:CD2	2.47	0.50
2:A6:21:TRP:HZ2	2:A6:65:CYS:HB3	1.77	0.50
2:A6:137:VAL:HG22	2:A6:168:GLY:HA2	1.94	0.50
1:A7:215:LEU:HB3	1:A7:217:LEU:HG	1.93	0.50
2:B4:98:ASP:OD1	2:B4:99:ALA:N	2.44	0.50
1:B5:342:VAL:HG12	1:B5:345:ILE:HG22	1.94	0.50
2:B6:129:CYS:SG	2:B6:132:LEU:HB2	2.52	0.50
4:B:3768:GLY:HA3	4:B:3804:THR:HA	1.92	0.50
5:C:1592:VAL:HA	5:C:1605:MET:HA	1.93	0.50
16:X1:191:GLU:O	16:X1:194:GLU:HG3	2.11	0.50
2:A6:60:LYS:HD2	2:B6:282:TYR:CE2	2.47	0.50
1:A7:11:GLN:HG3	1:A7:15:GLN:HE22	1.76	0.50
4:B:3528:ILE:O	4:B:3532:GLU:N	2.39	0.50
13:M:25:ASP:HA	13:M:28:THR:HG22	1.93	0.50
16:X:240:HIS:O	16:X:243:GLU:HG3	2.11	0.50
1:A1:26:ASP:OD1	1:A1:359:LYS:NZ	2.44	0.50
1:A3:156:ARG:NH1	1:A3:195:ASN:O	2.44	0.50
1:A5:246:LEU:HD22	1:A5:352:SER:HA	1.94	0.50
1:B3:3:GLU:HG3	1:B3:127:CYS:HB2	1.94	0.50
3:A:1745:PHE:HA	3:A:2137:PRO:HA	1.93	0.50
4:B:507:ARG:HD3	6:D:509:SER:HB3	1.94	0.50
5:C:669:ARG:HH12	5:C:692:GLU:HG3	1.77	0.50
7:E:169:TRP:NE1	7:E:460:GLN:OE1	2.44	0.50
1:A1:21:TRP:HA	1:A1:24:VAL:HG22	1.93	0.50
2:A2:151:SER:O	2:A2:155:GLU:HG3	2.11	0.50
2:A6:21:TRP:CZ2	2:A6:65:CYS:HB3	2.47	0.50
2:A6:139:ASN:OD1	2:A6:170:THR:HG22	2.12	0.50
2:A6:183:GLU:HG2	2:A6:184:PRO:HD3	1.94	0.50
1:A7:211:CYS:HA	1:A7:215:LEU:HB2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B2:267:PHE:HB2	2:B2:384:ILE:HD12	1.94	0.50
1:B3:179:VAL:H	2:B4:258:ASN:ND2	2.10	0.50
3:A:2316:TYR:HA	3:A:2328:TRP:H	1.77	0.50
3:A:2347:PHE:CB	3:A:2383:LEU:HA	2.42	0.50
3:A:3326:ASP:O	3:A:3330:VAL:N	2.37	0.50
4:B:525:THR:O	4:B:529:LEU:CB	2.60	0.50
4:B:3083:PHE:O	4:B:3087:PHE:N	2.30	0.50
4:B:4138:PHE:C	4:B:4151:GLY:H	2.16	0.50
5:C:578:ILE:HD11	5:C:627:TRP:HB2	1.93	0.50
6:D:542:ARG:NH1	6:D:544:ASP:OD2	2.45	0.50
2:A4:326:LYS:HG3	2:A4:327:ASP:N	2.26	0.49
2:A4:384:ILE:O	2:A4:387:ILE:HG22	2.12	0.49
1:B1:378:PHE:HB3	1:B1:415:MET:HE3	1.94	0.49
2:B4:251:ASP:H	2:B4:254:GLU:HG3	1.77	0.49
2:B6:425:LEU:O	2:B6:429:GLU:HG2	2.13	0.49
3:A:1651:GLN:C	3:A:1653:ASP:H	2.15	0.49
3:A:2036:VAL:O	3:A:2040:ALA:HB3	2.12	0.49
3:A:2561:LYS:HA	3:A:2568:TYR:O	2.12	0.49
3:A:2720:VAL:C	3:A:2877:PHE:H	2.15	0.49
3:A:3536:VAL:O	3:A:3540:GLU:N	2.28	0.49
4:B:2474:TYR:O	4:B:2483:VAL:N	2.44	0.49
2:A4:200:VAL:HG13	2:A4:268:MET:CE	2.42	0.49
2:A4:276:ILE:HD11	2:A4:371:VAL:HG22	1.94	0.49
1:B3:39:ASP:N	1:B3:39:ASP:OD1	2.45	0.49
1:B5:330:MET:SD	1:B5:349:VAL:HG11	2.53	0.49
4:B:380:LEU:O	4:B:383:THR:OG1	2.25	0.49
4:B:520:THR:HG22	4:B:521:THR:HG23	1.93	0.49
6:D:597:ASN:OD1	6:D:598:LYS:N	2.44	0.49
7:E:280:CYS:SG	7:E:292:TRP:HB2	2.51	0.49
18:Y:234:ILE:O	18:Y:238:LYS:HG2	2.12	0.49
1:A1:200:MET:SD	1:A1:268:VAL:HG11	2.52	0.49
1:A3:121:ARG:HH11	18:Y1:141:LYS:HZ2	1.60	0.49
1:A3:211:CYS:HA	1:A3:215:LEU:HB2	1.94	0.49
1:A5:257:LEU:HD21	1:A5:314:SER:HB2	1.93	0.49
1:A7:2:ARG:HH21	1:A7:240:LEU:HA	1.77	0.49
2:B4:21:TRP:CZ2	2:B4:65:CYS:HB3	2.47	0.49
1:B5:31:ASP:OD2	1:B5:35:THR:OG1	2.30	0.49
4:B:264:LYS:HA	4:B:267:GLU:HB2	1.94	0.49
16:X:248:LYS:O	16:X:252:GLU:OE1	2.30	0.49
19:Y0:275:UNK:O	19:Y0:279:UNK:CB	2.61	0.49
18:Y1:96:MET:O	18:Y1:99:GLN:HG2	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A1:137:HIS:NE2	1:A1:166:THR:OG1	2.45	0.49
2:A4:223:THR:HG23	2:A4:225:THR:H	1.77	0.49
2:A4:251:ASP:H	2:A4:254:GLU:HG3	1.78	0.49
2:A6:9:ILE:HG13	2:A6:139:ASN:HB3	1.92	0.49
1:B1:285:THR:HG23	1:B1:288:GLU:H	1.76	0.49
2:B4:384:ILE:O	2:B4:387:ILE:HG12	2.12	0.49
1:B5:113:ILE:HA	1:B5:116:VAL:HG22	1.94	0.49
3:A:2518:LEU:O	3:A:2523:GLY:N	2.32	0.49
4:B:499:VAL:O	4:B:503:GLU:HB2	2.12	0.49
4:B:2041:PRO:O	4:B:4196:GLY:HA3	2.12	0.49
5:C:671:ALA:O	5:C:675:GLN:NE2	2.44	0.49
20:Z:157:LEU:O	20:Z:161:GLN:HG2	2.12	0.49
2:A2:11:GLN:HG3	2:A2:74:VAL:HG21	1.93	0.49
1:A3:203:ASP:OD1	1:A3:301:CYS:HA	2.13	0.49
1:A3:337:ASN:HB3	1:A3:340:TYR:HD2	1.77	0.49
1:A3:385:PHE:HZ	1:A3:408:PHE:HD1	1.59	0.49
1:A7:49:VAL:HG11	1:A7:241:ARG:HG2	1.94	0.49
1:B1:121:ARG:NH2	1:B1:158:GLU:OE2	2.43	0.49
1:B1:260:PHE:HB2	1:B1:263:LEU:HD23	1.95	0.49
1:B1:271:THR:OG1	1:B1:365:ALA:HB3	2.13	0.49
1:B5:252:LYS:HG2	1:B5:350:LYS:HE2	1.93	0.49
1:B7:100:ASN:HD21	1:B7:102:ALA:HB3	1.78	0.49
3:A:1718:ALA:O	3:A:1865:PRO:HA	2.12	0.49
4:B:522:ILE:O	4:B:556:TYR:OH	2.25	0.49
4:B:3878:LEU:O	4:B:3882:GLN:N	2.46	0.49
20:Z:49:LYS:H	20:Z:146:LYS:NZ	2.11	0.49
2:A4:371:VAL:HG12	2:A4:373:ARG:H	1.78	0.49
3:A:3375:GLU:O	3:A:3378:ASN:N	2.43	0.49
3:A:3916:GLY:H	3:A:3920:GLU:CB	2.25	0.49
3:A:4153:ALA:HB3	3:A:4156:PHE:CB	2.42	0.49
5:C:1273:TRP:CB	5:C:1352:ASP:H	2.25	0.49
5:C:2518:GLY:O	5:C:2533:ILE:N	2.41	0.49
7:E:287:GLY:O	7:E:289:VAL:N	2.41	0.49
11:I:24:ILE:HD11	11:I:42:THR:HG23	1.94	0.49
15:P:51:LYS:HA	15:P:54:GLN:HB2	1.94	0.49
1:A1:257:LEU:HB3	1:A1:266:PHE:HE2	1.77	0.49
2:A6:362:VAL:HG12	2:A6:368:LEU:HD12	1.93	0.49
1:A7:70:PRO:HD3	1:A7:92:PHE:HZ	1.77	0.49
2:B2:312:TYR:HD1	2:B2:381:SER:HB2	1.78	0.49
1:B3:208:TYR:CD1	2:B4:326:LYS:HD3	2.48	0.49
2:B6:119:LEU:HA	2:B6:122:ILE:HG22	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:2346:VAL:HA	3:A:2386:GLY:CA	2.42	0.49
4:B:166:MET:HG2	4:B:167:LYS:HD3	1.93	0.49
4:B:4139:GLY:N	4:B:4149:GLY:O	2.45	0.49
5:C:959:LYS:HE2	9:G:158:LEU:HA	1.94	0.49
7:E:162:ARG:NH1	7:E:194:MET:SD	2.83	0.49
13:M:40:ILE:HB	13:M:60:VAL:HG11	1.94	0.49
2:A2:88:HIS:CD2	2:A2:89:PRO:HD2	2.48	0.49
1:A5:237:THR:O	1:A5:237:THR:HG22	2.13	0.49
2:B4:91:GLN:HA	2:B4:121:ARG:NH2	2.27	0.49
2:B6:174:SER:HB3	2:B6:177:VAL:O	2.13	0.49
2:B6:183:GLU:HG3	2:B6:184:PRO:HD3	1.94	0.49
3:A:2275:ILE:O	3:A:2279:GLY:N	2.35	0.49
3:A:2448:ASP:H	3:A:2451:GLU:HA	1.77	0.49
4:B:515:ALA:HB1	4:B:528:LEU:HD21	1.94	0.49
4:B:4135:ARG:O	4:B:4151:GLY:HA3	2.13	0.49
5:C:358:LYS:NZ	5:C:475:ASP:OD1	2.40	0.49
5:C:3929:ALA:O	5:C:3933:MET:N	2.31	0.49
20:Z:27:ASP:HA	20:Z:38:GLU:OE1	2.13	0.49
1:A1:103:LYS:HA	1:A1:107:THR:HB	1.94	0.49
2:A6:20:CYS:O	2:A6:24:TYR:HD1	1.95	0.49
1:B1:334:GLN:HA	1:B1:341:PHE:CE2	2.48	0.49
2:B4:407:TRP:CG	1:B5:255:VAL:HG23	2.48	0.49
1:B5:100:ASN:HD22	1:B5:103:LYS:H	1.59	0.49
2:B6:172:TYR:CD1	2:B6:203:MET:HG3	2.48	0.49
2:B6:323:VAL:HG23	2:B6:355:ILE:HG23	1.94	0.49
3:A:1388:ALA:HB2	3:A:1438:ALA:HB3	1.95	0.49
4:B:323:PRO:HA	4:B:326:HIS:ND1	2.28	0.49
4:B:625:ASP:O	4:B:629:GLU:HB2	2.12	0.49
5:C:4400:LEU:O	5:C:4421:ASN:CB	2.60	0.49
11:I:75:ARG:HG2	11:I:80:GLU:HG3	1.95	0.49
18:Y:237:ASP:O	18:Y:240:GLU:HG3	2.13	0.49
1:A1:167:PHE:CZ	1:A1:233:MET:HG3	2.48	0.49
2:A6:234:VAL:HG13	2:A6:376:CYS:SG	2.52	0.49
1:A7:36:TYR:CZ	1:A7:44:LEU:HD21	2.48	0.49
2:B2:327:ASP:N	2:B2:327:ASP:OD1	2.45	0.49
1:B5:141:GLY:O	1:B5:145:SER:HB3	2.13	0.49
1:B7:49:VAL:HG11	1:B7:241:ARG:HG2	1.94	0.49
1:B7:270:PHE:HD2	1:B7:273:LEU:HD21	1.78	0.49
3:A:238:ILE:HA	3:A:261:LYS:HA	1.95	0.49
3:A:1930:LEU:O	3:A:1934:GLU:N	2.46	0.49
4:B:4211:LEU:O	4:B:4215:VAL:N	2.46	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:361:ILE:HG12	5:C:378:ASN:HB3	1.95	0.49
5:C:1580:HIS:O	5:C:1584:GLY:N	2.46	0.49
7:E:236:GLN:OE1	7:E:240:GLN:HB2	2.13	0.49
7:E:384:TRP:HA	7:E:409:LEU:HB2	1.95	0.49
1:A5:7:ILE:HB	1:A5:135:VAL:HG22	1.95	0.48
1:A5:272:PRO:HD3	1:A5:364:SER:HA	1.94	0.48
2:A6:185:TYR:HA	2:A6:395:PHE:CE2	2.48	0.48
3:A:1931:LEU:O	3:A:1935:ALA:HA	2.13	0.48
3:A:2280:GLY:O	3:A:2509:ALA:N	2.34	0.48
3:A:2282:LEU:O	3:A:2509:ALA:HB3	2.13	0.48
3:A:4267:MET:O	3:A:4271:LEU:N	2.27	0.48
4:B:566:LEU:HD11	7:E:407:THR:H	1.77	0.48
4:B:812:LEU:HA	4:B:815:ILE:HG22	1.95	0.48
4:B:2624:GLY:HA3	4:B:2635:GLU:HA	1.95	0.48
5:C:931:THR:HA	5:C:934:LYS:HZ3	1.76	0.48
7:E:272:LEU:HD11	7:E:291:TRP:CZ3	2.47	0.48
18:Y1:82:MET:SD	18:Y1:83:LEU:HD12	2.52	0.48
2:A2:7:ILE:HG13	2:A2:66:ILE:HG13	1.94	0.48
1:A3:22:GLU:HG3	1:A3:81:TYR:CD2	2.48	0.48
1:A3:313:ALA:HB3	1:A3:349:VAL:HG22	1.95	0.48
2:A4:16:VAL:HA	2:A4:228:ASN:HD22	1.78	0.48
2:B2:272:TYR:HB3	2:B2:275:ILE:HD11	1.95	0.48
1:B3:144:GLY:N	23:B3:502:GDP:O1B	2.38	0.48
1:B5:152:ILE:HG22	1:B5:195:ASN:HB3	1.95	0.48
2:B6:298:PRO:HB3	2:B6:307:PRO:HD2	1.96	0.48
1:B7:114:ASP:N	1:B7:114:ASP:OD1	2.45	0.48
3:A:1808:LEU:H	3:A:1824:SER:CB	2.26	0.48
3:A:2610:ASP:CB	3:A:2875:ASP:HA	2.44	0.48
3:A:3935:GLY:H	3:A:3967:PHE:HA	1.77	0.48
4:B:563:VAL:HG13	4:B:593:LEU:HD22	1.95	0.48
4:B:4358:ASP:O	4:B:4362:LYS:N	2.45	0.48
5:C:782:GLY:O	5:C:786:SER:OG	2.31	0.48
5:C:1658:ASP:O	5:C:1662:GLY:N	2.25	0.48
5:C:4052:ASN:O	5:C:4453:ARG:HA	2.12	0.48
1:A5:2:ARG:HH21	1:A5:240:LEU:HA	1.78	0.48
1:A5:3:GLU:OE1	1:A5:127:CYS:HB2	2.14	0.48
1:A5:67:ASP:OD1	1:A5:68:LEU:N	2.43	0.48
1:A5:139:LEU:HD12	1:A5:170:VAL:HG12	1.94	0.48
2:A6:70:LEU:HG	2:A6:145:THR:HG22	1.94	0.48
2:A6:121:ARG:NH1	2:A6:124:LYS:HE2	2.28	0.48
1:B1:117:LEU:HD11	1:B1:154:LYS:HB3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B2:129:CYS:SG	2:B2:130:THR:N	2.85	0.48
4:B:4456:VAL:N	4:B:4516:VAL:O	2.32	0.48
5:C:224:ILE:HD13	5:C:238:TYR:CZ	2.49	0.48
5:C:789:LEU:N	5:C:875:LEU:HD21	2.28	0.48
5:C:1019:ALA:HA	5:C:1022:THR:HG22	1.94	0.48
5:C:3750:LEU:O	5:C:3752:SER:N	2.46	0.48
7:E:381:ILE:HD11	7:E:424:THR:HA	1.94	0.48
9:G:99:THR:O	9:G:103:PHE:HB3	2.14	0.48
13:N:79:TYR:HA	13:N:84:ALA:HA	1.95	0.48
2:A2:132:LEU:HD23	2:A2:164:LYS:HD3	1.95	0.48
2:A6:123:ARG:NH1	2:A6:161:TYR:OH	2.46	0.48
1:B5:166:THR:OG1	1:B5:199:CYS:SG	2.52	0.48
3:A:2425:ILE:O	3:A:2477:LYS:HA	2.13	0.48
3:A:2437:TYR:N	3:A:2483:GLN:O	2.45	0.48
3:A:3395:GLU:HA	3:A:3398:ILE:CB	2.44	0.48
4:B:134:PRO:HA	4:B:137:GLN:HE21	1.77	0.48
4:B:816:LYS:O	4:B:820:LYS:HG2	2.14	0.48
5:C:864:TYR:O	5:C:867:ILE:HB	2.13	0.48
7:E:247:ARG:HH21	7:E:248:LYS:HZ1	1.61	0.48
18:Y:196:ASN:O	18:Y:200:GLU:HG2	2.13	0.48
18:Y1:78:ASP:OD1	18:Y1:79:GLU:N	2.46	0.48
2:A4:9:ILE:HD11	2:A4:139:ASN:HB3	1.96	0.48
1:A5:173:PRO:O	1:A5:176:SER:OG	2.29	0.48
1:B3:317:PHE:HB3	1:B3:321:MET:SD	2.53	0.48
2:B6:345:ASP:N	2:B6:345:ASP:OD1	2.47	0.48
1:B7:8:GLN:O	1:B7:66:MET:HG3	2.12	0.48
1:B7:139:LEU:HD22	1:B7:188:SER:HB3	1.95	0.48
3:A:1636:HIS:CB	3:A:1696:ILE:H	2.27	0.48
3:A:1642:LEU:O	3:A:1646:GLU:N	2.47	0.48
5:C:583:GLN:NE2	6:D:543:LEU:HD13	2.28	0.48
6:D:368:PHE:CD1	6:D:376:LEU:HD13	2.49	0.48
11:I:40:ASP:HA	11:I:43:VAL:HG22	1.96	0.48
16:X1:193:VAL:O	16:X1:196:GLU:HG2	2.12	0.48
1:B1:259:PRO:HG3	1:B1:311:LEU:HD23	1.95	0.48
2:B2:250:VAL:HG23	2:B2:254:GLU:HG3	1.95	0.48
2:B4:91:GLN:HG2	2:B4:121:ARG:HH12	1.79	0.48
4:B:296:LYS:NZ	7:E:549:THR:O	2.44	0.48
4:B:506:ARG:NH2	4:B:540:VAL:HG12	2.27	0.48
5:C:2982:LYS:O	5:C:2985:LYS:N	2.39	0.48
7:E:324:THR:HG22	7:E:376:LYS:HD3	1.95	0.48
11:I:75:ARG:NH1	11:I:76:SER:O	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:Y:232:THR:O	18:Y:236:GLU:HG2	2.13	0.48
1:A1:54:ALA:HB3	1:A1:58:ARG:HB3	1.96	0.48
2:B6:403:ALA:HB2	1:B7:344:TRP:HZ3	1.79	0.48
3:A:2554:ARG:O	3:A:2558:THR:N	2.44	0.48
4:B:678:PRO:N	7:E:188:GLN:HE22	2.12	0.48
5:C:876:GLN:HG3	5:C:960:ALA:HB1	1.95	0.48
5:C:2594:VAL:HA	5:C:2662:ALA:HA	1.96	0.48
16:X1:156:GLN:O	16:X1:160:THR:HG23	2.14	0.48
2:A2:137:VAL:HG22	2:A2:168:GLY:HA2	1.95	0.48
2:A2:317:LEU:HB3	2:A2:319:TYR:CE1	2.47	0.48
1:A3:414:ASN:O	1:A3:418:LEU:HD23	2.14	0.48
1:A3:421:GLU:O	1:A3:424:GLN:HG2	2.13	0.48
2:A6:287:SER:OG	2:A6:288:VAL:N	2.47	0.48
2:B2:72:PRO:HD2	1:B3:2:ARG:NH1	2.29	0.48
1:B5:8:GLN:OE1	1:B5:17:GLY:HA3	2.13	0.48
4:B:385:ARG:HH12	4:B:428:CYS:HB2	1.77	0.48
4:B:633:GLU:O	4:B:636:THR:OG1	2.29	0.48
4:B:1707:SER:N	4:B:1711:GLU:O	2.39	0.48
4:B:4531:VAL:N	4:B:4543:PHE:O	2.46	0.48
5:C:675:GLN:OE1	5:C:675:GLN:N	2.46	0.48
6:D:509:SER:O	6:D:509:SER:OG	2.31	0.48
13:M:58:CYS:HB2	13:M:87:LEU:HD13	1.95	0.48
16:X1:255:LEU:HD11	18:Y1:205:ALA:HB1	1.95	0.48
1:B1:31:ASP:OD1	1:B1:35:THR:N	2.28	0.48
1:B1:220:PRO:HD2	2:B2:326:LYS:HE2	1.96	0.48
2:B4:388:PHE:HB2	2:B4:429:GLU:OE2	2.14	0.48
1:B5:153:SER:O	1:B5:157:GLU:HG2	2.14	0.48
3:A:75:ALA:HB1	3:A:92:GLY:HA3	1.95	0.48
3:A:3615:ALA:HB3	3:A:3618:GLY:O	2.14	0.48
3:A:3699:ALA:O	3:A:3703:ARG:N	2.40	0.48
4:B:2849:MET:O	4:B:2884:GLY:HA2	2.12	0.48
5:C:696:LYS:HA	5:C:696:LYS:HD2	1.69	0.48
15:P:45:TYR:CD2	15:P:51:LYS:HG3	2.49	0.48
2:A6:237:SER:HA	2:A6:320:ARG:HD2	1.96	0.48
2:B2:170:THR:HG21	2:B2:194:LEU:HD21	1.96	0.48
2:B2:246:GLY:HA2	2:B2:357:TYR:CD2	2.49	0.48
2:B2:288:VAL:HG13	2:B2:319:TYR:CE2	2.45	0.48
2:B2:377:MET:SD	2:B2:379:SER:HB3	2.54	0.48
2:B4:241:SER:OG	2:B4:250:VAL:O	2.20	0.48
3:A:1947:LEU:O	3:A:1951:ASN:N	2.33	0.48
3:A:4335:ARG:HA	3:A:4357:GLY:HA2	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:1916:ALA:HB3	4:B:2041:PRO:HA	1.96	0.48
6:D:428:PHE:O	6:D:439:LEU:HD12	2.14	0.48
6:D:537:LEU:HD23	6:D:572:TRP:CE2	2.49	0.48
9:G:152:ASP:OD1	9:G:153:GLU:N	2.46	0.48
20:Z:4:ALA:O	20:Z:7:ARG:HG2	2.14	0.48
1:A5:8:GLN:CD	1:A5:17:GLY:HA3	2.34	0.47
2:A6:141:VAL:HG22	2:A6:172:TYR:HA	1.95	0.47
1:B5:134:GLN:HE21	1:B5:167:PHE:HE2	1.62	0.47
1:B5:268:VAL:HG23	1:B5:300:MET:HB2	1.96	0.47
1:B7:7:ILE:HG12	1:B7:64:ILE:HD11	1.96	0.47
3:A:3622:GLY:HA2	3:A:3696:ALA:HB2	1.94	0.47
3:A:4260:ALA:O	3:A:4343:THR:HA	2.14	0.47
4:B:254:LEU:HD12	4:B:255:THR:HG23	1.95	0.47
5:C:1060:GLN:HA	5:C:1063:HIS:HB3	1.95	0.47
7:E:154:PHE:CZ	7:E:203:VAL:HG22	2.49	0.47
16:X:244:MET:HG3	18:Y:199:PHE:CE1	2.47	0.47
1:A3:317:PHE:HB3	1:A3:321:MET:SD	2.54	0.47
1:B3:208:TYR:CE1	1:B3:225:LEU:HD11	2.49	0.47
2:B4:307:PRO:HA	2:B4:383:ALA:HB2	1.96	0.47
1:B5:309:ARG:H	1:B5:372:THR:CG2	2.27	0.47
4:B:687:THR:O	4:B:691:LEU:HB3	2.13	0.47
4:B:1970:PHE:N	4:B:2018:PHE:O	2.35	0.47
4:B:4525:ASP:O	4:B:4549:SER:N	2.41	0.47
5:C:226:ASP:O	5:C:230:ARG:NH1	2.47	0.47
5:C:1028:ASN:HD21	5:C:1048:LYS:HE3	1.79	0.47
13:K:57:HIS:HB2	13:K:88:PHE:CE1	2.49	0.47
1:A1:178:THR:OG1	1:A1:181:GLU:HG3	2.14	0.47
1:A3:238:CYS:SG	1:A3:318:ARG:NE	2.87	0.47
1:A3:364:SER:OG	1:A3:365:ALA:N	2.47	0.47
1:A5:179:VAL:HG11	2:A6:258:ASN:HA	1.97	0.47
2:A6:361:THR:HA	2:A6:370:LYS:NZ	2.30	0.47
1:A7:282:ARG:HH12	1:A7:284:LEU:HD13	1.79	0.47
1:A7:309:ARG:H	1:A7:372:THR:CG2	2.27	0.47
2:B4:287:SER:OG	2:B4:288:VAL:N	2.45	0.47
3:A:1677:CYS:CA	3:A:1679:ALA:H	2.27	0.47
4:B:234:LEU:HD13	4:B:237:LEU:HD22	1.95	0.47
4:B:822:THR:HA	4:B:825:ILE:HD12	1.95	0.47
7:E:231:LEU:HA	7:E:244:PHE:O	2.15	0.47
16:X1:230:SER:HB3	18:Y1:184:LEU:HD22	1.96	0.47
1:A7:169:VAL:HG21	1:A7:204:ASN:OD1	2.15	0.47
2:B4:203:MET:HE1	2:B4:267:PHE:HB3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B5:5:VAL:HG22	1:B5:62:ARG:HD3	1.96	0.47
3:A:1375:PHE:CB	3:A:1389:THR:HA	2.45	0.47
3:A:1677:CYS:C	3:A:1679:ALA:H	2.18	0.47
3:A:3697:PRO:CB	3:A:3703:ARG:HA	2.45	0.47
4:B:326:HIS:O	4:B:329:MET:HG2	2.14	0.47
4:B:2610:GLN:O	4:B:2613:ILE:N	2.39	0.47
6:D:615:LYS:O	6:D:627:VAL:HA	2.14	0.47
16:X1:135:LYS:NZ	18:Y1:80:GLY:O	2.35	0.47
1:A1:214:THR:HG23	1:A1:297:LYS:NZ	2.30	0.47
1:B7:8:GLN:OE1	1:B7:14:ASN:HA	2.14	0.47
1:B7:150:LEU:O	1:B7:153:SER:OG	2.29	0.47
3:A:1710:ALA:O	3:A:1714:SER:N	2.48	0.47
3:A:2562:THR:HA	3:A:2566:PHE:HA	1.96	0.47
3:A:4053:GLY:HA2	3:A:4066:PHE:H	1.79	0.47
4:B:632:THR:HA	4:B:635:ARG:HG3	1.95	0.47
5:C:2609:TRP:O	5:C:2613:GLN:N	2.47	0.47
7:E:146:PRO:HB2	7:E:445:LEU:HD22	1.95	0.47
18:Y:228:ARG:HA	18:Y:231:THR:HG22	1.97	0.47
2:A4:176:GLN:HG2	2:A4:177:VAL:N	2.30	0.47
2:B4:213:CYS:HA	2:B4:217:LEU:HB2	1.97	0.47
2:B4:326:LYS:HD2	2:B4:326:LYS:HA	1.51	0.47
1:B5:3:GLU:HB2	1:B5:130:LEU:HA	1.96	0.47
1:B5:67:ASP:N	1:B5:67:ASP:OD1	2.48	0.47
2:B6:79:ARG:O	2:B6:84:ARG:HG3	2.15	0.47
2:B6:194:LEU:O	2:B6:198:THR:HG22	2.15	0.47
1:B7:210:ILE:O	1:B7:214:THR:OG1	2.29	0.47
3:A:189:PRO:HA	3:A:198:ASP:HA	1.97	0.47
3:A:1504:LEU:O	3:A:1517:PHE:N	2.47	0.47
4:B:544:ASP:O	4:B:547:LYS:NZ	2.37	0.47
4:B:2279:GLY:O	4:B:2319:ILE:HA	2.14	0.47
4:B:4051:VAL:HA	4:B:4054:ALA:HB2	1.94	0.47
5:C:1594:PHE:HA	5:C:1602:MET:HA	1.96	0.47
11:I:76:SER:OG	11:I:77:LYS:N	2.47	0.47
1:A1:8:GLN:NE2	1:A1:17:GLY:HA3	2.30	0.47
1:A1:392:LYS:HD2	1:A1:395:LEU:HD22	1.96	0.47
2:A2:296:PHE:HZ	2:A2:351:PHE:HE1	1.60	0.47
2:A6:50:ASN:O	2:A6:64:ARG:NH2	2.47	0.47
2:A6:198:THR:HG21	2:A6:201:ALA:HB2	1.96	0.47
1:A7:105:HIS:CD2	1:A7:150:LEU:HD12	2.49	0.47
2:B2:269:LEU:HD23	2:B2:301:MET:SD	2.55	0.47
1:B3:244:GLY:HA2	1:B3:355:ASP:OD2	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B3:417:ASP:O	1:B3:421:GLU:HG3	2.14	0.47
2:B4:379:SER:OG	2:B4:380:ASN:N	2.48	0.47
2:B6:9:ILE:HG22	2:B6:146:GLY:HA2	1.97	0.47
2:B6:250:VAL:HG11	2:B6:352:LYS:HE3	1.96	0.47
1:B7:100:ASN:ND2	1:B7:103:LYS:H	2.13	0.47
1:B7:178:THR:HG23	1:B7:181:GLU:HG3	1.95	0.47
3:A:1360:ILE:HA	3:A:1363:GLU:CB	2.45	0.47
3:A:2370:ILE:HA	3:A:2506:MET:O	2.14	0.47
3:A:2467:HIS:HA	3:A:2477:LYS:O	2.15	0.47
3:A:2531:LYS:HA	3:A:2534:SER:O	2.14	0.47
3:A:2666:GLU:H	3:A:2668:ALA:N	2.12	0.47
3:A:3385:MET:H	3:A:3408:ASN:CB	2.27	0.47
6:D:490:SER:OG	6:D:505:SER:OG	2.25	0.47
7:E:241:LEU:HD11	7:E:282:THR:HG21	1.96	0.47
7:E:306:LEU:O	7:E:313:THR:OG1	2.32	0.47
7:E:342:SER:HB3	7:E:356:TYR:HB2	1.97	0.47
13:L:59:ILE:HG22	13:M:66:SER:HB2	1.97	0.47
13:L:77:TYR:HD1	13:L:86:LEU:HD12	1.80	0.47
16:X:226:LEU:HA	16:X:229:ASP:OD2	2.14	0.47
1:A3:175:VAL:HG22	1:A3:205:GLU:HG3	1.97	0.47
1:A5:4:ILE:HD11	1:A5:250:LEU:HD11	1.96	0.47
1:A5:330:MET:SD	1:A5:349:VAL:HG11	2.55	0.47
2:A6:220:GLU:HG2	2:A6:221:ARG:HG3	1.97	0.47
2:B2:72:PRO:HG3	2:B2:95:GLY:O	2.13	0.47
2:B2:319:TYR:CZ	2:B2:328:VAL:HG23	2.50	0.47
1:B3:392:LYS:HD2	1:B3:395:LEU:HD22	1.97	0.47
2:B4:100:ALA:HA	1:B5:252:LYS:HE3	1.97	0.47
2:B6:306:ASP:HB3	2:B6:309:HIS:ND1	2.29	0.47
3:A:3392:GLN:O	3:A:3396:ARG:N	2.25	0.47
3:A:3797:ASP:O	3:A:3801:ASN:N	2.38	0.47
3:A:3956:LEU:CA	3:A:3960:ALA:H	2.28	0.47
1:A1:19:LYS:HD2	1:A1:22:GLU:OE1	2.15	0.47
1:A7:289:LEU:HD11	1:A7:363:MET:CE	2.45	0.47
1:B1:69:GLU:OE2	1:B1:96:GLY:HA3	2.15	0.47
1:B1:220:PRO:HD2	2:B2:326:LYS:CE	2.45	0.47
2:B2:222:PRO:O	1:B3:322:SER:OG	2.33	0.47
2:B6:76:ASP:HA	2:B6:79:ARG:HD2	1.97	0.47
3:A:1878:GLU:CA	3:A:1889:ALA:HB1	2.45	0.47
3:A:2067:ASN:HA	3:A:2114:GLY:HA3	1.97	0.47
3:A:2347:PHE:H	3:A:2386:GLY:HA3	1.79	0.47
5:C:322:LEU:HD21	5:C:349:ILE:HD11	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A5:4:ILE:HB	1:A5:50:TYR:HE1	1.80	0.47
1:A5:135:VAL:O	1:A5:166:THR:HA	2.15	0.47
1:B3:69:GLU:C	1:B3:92:PHE:HZ	2.18	0.47
2:B4:9:ILE:HG12	2:B4:68:LEU:HD21	1.96	0.47
3:A:2707:SER:N	3:A:2734:ALA:HB1	2.30	0.47
3:A:3322:LYS:HA	3:A:3325:VAL:O	2.15	0.47
3:A:3899:ASN:HA	3:A:3908:GLY:HA2	1.97	0.47
3:A:4260:ALA:HB1	3:A:4343:THR:C	2.36	0.47
5:C:790:VAL:HG22	5:C:875:LEU:HD22	1.97	0.47
6:D:186:THR:OG1	13:L:65:GLY:HA2	2.15	0.47
6:D:598:LYS:HG3	6:D:599:LEU:HD12	1.96	0.47
7:E:248:LYS:HD3	7:E:250:ASN:HD21	1.80	0.47
7:E:272:LEU:HD21	7:E:291:TRP:CZ3	2.49	0.47
13:L:58:CYS:O	13:M:66:SER:OG	2.25	0.47
16:X1:129:ARG:HG3	18:Y1:76:LEU:HD21	1.97	0.47
2:A2:31:GLN:HG2	2:A2:37:PRO:HD3	1.97	0.46
2:A4:81:GLY:O	2:A4:84:ARG:HG3	2.15	0.46
1:B1:309:ARG:H	1:B1:372:THR:CG2	2.28	0.46
1:B1:388:MET:HG2	2:B2:346:TRP:O	2.16	0.46
2:B6:28:HIS:CE1	2:B6:49:PHE:HA	2.49	0.46
2:B6:431:ASP:O	2:B6:434:GLU:HG3	2.15	0.46
1:B7:183:TYR:HA	1:B7:385:PHE:CE1	2.49	0.46
3:A:1578:TRP:HA	3:A:1600:TYR:CB	2.45	0.46
3:A:3770:LEU:HA	3:A:3771:SER:HA	1.53	0.46
3:A:4341:ALA:O	3:A:4344:ALA:HB3	2.14	0.46
4:B:742:GLN:O	4:B:746:ALA:N	2.47	0.46
4:B:2745:GLU:N	4:B:2822:TYR:O	2.48	0.46
5:C:2718:TYR:O	5:C:2745:SER:HA	2.15	0.46
16:X1:249:GLU:HA	16:X1:252:GLU:OE2	2.15	0.46
20:Z:59:ILE:HG13	20:Z:70:ILE:CD1	2.37	0.46
1:A1:291:GLN:OE1	1:A1:291:GLN:N	2.48	0.46
2:A2:121:ARG:NH1	2:A2:124:LYS:HD2	2.30	0.46
2:A2:402:ARG:NH1	20:Z:168:ARG:HH22	2.06	0.46
1:A5:213:ARG:O	1:A5:216:LYS:NZ	2.41	0.46
1:A7:94:GLN:OE1	1:A7:94:GLN:N	2.48	0.46
1:B1:178:THR:HG22	1:B1:181:GLU:HG3	1.97	0.46
2:B2:398:MET:HE2	1:B3:345:ILE:HG23	1.97	0.46
6:D:584:THR:OG1	6:D:585:ASP:N	2.47	0.46
7:E:294:LEU:O	7:E:296:LYS:N	2.47	0.46
7:E:426:LYS:HE3	7:E:430:ALA:HB3	1.97	0.46
13:L:77:TYR:CD1	13:L:86:LEU:HD12	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:60:VAL:HA	13:M:84:ALA:O	2.15	0.46
1:A1:102:ALA:HB1	1:A1:401:GLU:OE1	2.15	0.46
1:A3:54:ALA:HB3	1:A3:58:ARG:HB3	1.97	0.46
1:A3:67:ASP:OD2	1:A3:72:THR:OG1	2.30	0.46
1:A3:287:PRO:HG3	1:A3:329:GLN:NE2	2.29	0.46
2:A4:317:LEU:HB3	2:A4:319:TYR:CE1	2.44	0.46
2:A6:107:HIS:HB3	2:A6:108:TYR:CD2	2.50	0.46
2:A6:206:ASN:OD1	21:A7:501:GTP:N2	2.48	0.46
1:A7:242:PHE:CD1	1:A7:356:ILE:HG13	2.51	0.46
1:B1:134:GLN:HE21	1:B1:167:PHE:HE2	1.63	0.46
1:B7:74:ASP:N	1:B7:74:ASP:OD1	2.49	0.46
3:A:2639:ASP:O	3:A:2642:TYR:CB	2.63	0.46
4:B:115:PRO:HG2	4:B:116:LEU:HD12	1.97	0.46
5:C:449:ILE:HD13	5:C:523:PHE:HE1	1.80	0.46
5:C:551:LEU:HD11	5:C:613:TYR:HB2	1.96	0.46
5:C:1041:HIS:NE2	9:G:58:ASP:OD2	2.40	0.46
7:E:77:VAL:HG21	13:K:84:ALA:HB2	1.96	0.46
7:E:105:ASP:OD1	7:E:106:TYR:N	2.48	0.46
12:J:59:ARG:HG3	12:J:65:ASN:O	2.15	0.46
2:A2:98:ASP:OD1	2:A2:99:ALA:N	2.48	0.46
1:A3:186:THR:HG23	1:A3:187:LEU:HD12	1.97	0.46
2:A4:22:GLU:O	2:A4:26:LEU:HD23	2.16	0.46
2:A4:221:ARG:HG3	1:A5:325:GLU:OE2	2.16	0.46
1:A5:219:THR:HG23	2:A6:324:VAL:HG21	1.97	0.46
2:A6:316:CYS:SG	2:A6:352:LYS:HB3	2.55	0.46
2:B2:69:ASP:OD1	2:B2:70:LEU:N	2.44	0.46
3:A:4132:GLU:HA	3:A:4145:TRP:CB	2.45	0.46
3:A:4484:MET:O	3:A:4487:LYS:N	2.49	0.46
4:B:499:VAL:O	4:B:503:GLU:CB	2.64	0.46
4:B:2786:THR:O	4:B:2790:PHE:N	2.48	0.46
5:C:578:ILE:HD12	5:C:624:GLU:HA	1.97	0.46
5:C:3949:HIS:CB	5:C:3979:GLU:H	2.29	0.46
15:P:55:MET:O	15:P:59:GLN:HG2	2.15	0.46
1:A1:371:SER:OG	1:A1:372:THR:N	2.49	0.46
1:A5:208:TYR:HE1	1:A5:225:LEU:HD11	1.79	0.46
2:A6:266:HIS:O	2:A6:266:HIS:ND1	2.48	0.46
2:A6:336:LYS:HZ2	2:A6:343:PHE:HE2	1.64	0.46
1:B1:249:ASP:O	1:B1:253:LEU:HD13	2.15	0.46
1:B3:207:LEU:HB3	1:B3:225:LEU:HD22	1.97	0.46
3:A:36:CYS:HA	3:A:43:ALA:HA	1.98	0.46
3:A:1378:SER:O	3:A:1382:LYS:N	2.34	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:4063:GLY:HA3	3:A:4189:ALA:HA	1.98	0.46
4:B:128:MET:SD	4:B:129:PRO:HD3	2.55	0.46
4:B:3925:PHE:O	4:B:3929:ARG:N	2.45	0.46
5:C:4446:LYS:HA	5:C:4480:ILE:O	2.15	0.46
7:E:152:THR:HG21	7:E:206:PRO:HG3	1.96	0.46
1:A3:390:ARG:O	1:A3:390:ARG:HD3	2.15	0.46
2:A4:344:VAL:HG23	2:A4:347:CYS:HB2	1.97	0.46
2:A6:213:CYS:HA	2:A6:217:LEU:HB2	1.97	0.46
1:B3:70:PRO:N	1:B3:92:PHE:HZ	2.13	0.46
3:A:1583:GLU:HA	3:A:1586:PHE:CB	2.46	0.46
3:A:4246:VAL:O	3:A:4248:LEU:N	2.48	0.46
4:B:274:TYR:HA	4:B:277:PHE:HD2	1.81	0.46
5:C:324:THR:HG22	5:C:327:ARG:HH22	1.81	0.46
5:C:581:ALA:HB2	5:C:623:PHE:HD2	1.81	0.46
5:C:4181:THR:O	5:C:4184:VAL:N	2.49	0.46
9:G:31:ASP:HB2	9:G:38:ILE:HD13	1.97	0.46
1:A1:100:ASN:OD1	2:A2:257:THR:HG21	2.16	0.46
1:A1:141:GLY:O	1:A1:145:SER:HB3	2.16	0.46
2:A6:5:ILE:HD11	2:A6:135:PHE:CE2	2.50	0.46
1:A7:286:VAL:HG12	1:A7:329:GLN:HG3	1.97	0.46
1:B1:113:ILE:HA	1:B1:116:VAL:HG22	1.96	0.46
2:B4:183:GLU:HG3	2:B4:184:PRO:HD3	1.98	0.46
1:B5:102:ALA:HB2	1:B5:403:MET:CE	2.45	0.46
1:B5:296:ALA:HB1	1:B5:304:ASP:OD1	2.15	0.46
2:B6:69:ASP:OD1	2:B6:69:ASP:N	2.47	0.46
1:B7:117:LEU:HA	1:B7:120:VAL:HG12	1.98	0.46
1:B7:165:LEU:HD23	1:B7:167:PHE:HZ	1.79	0.46
1:B7:317:PHE:HE2	1:B7:326:VAL:HG13	1.81	0.46
3:A:1829:ASP:C	3:A:1831:VAL:H	2.19	0.46
3:A:4324:THR:H	3:A:4327:ALA:HB3	1.80	0.46
3:A:4409:HIS:HA	3:A:4439:VAL:HA	1.98	0.46
4:B:122:ILE:HA	4:B:126:VAL:HG22	1.97	0.46
4:B:592:GLY:O	7:E:362:HIS:NE2	2.45	0.46
4:B:649:THR:O	4:B:652:GLU:HG3	2.15	0.46
5:C:239:TRP:HB3	5:C:294:VAL:HG22	1.97	0.46
2:A2:88:HIS:HD2	2:B2:283:HIS:HB2	1.80	0.46
2:A2:155:GLU:HG2	2:A2:197:HIS:NE2	2.31	0.46
1:A3:144:GLY:N	23:A3:502:GDP:O1B	2.49	0.46
2:A4:243:ARG:HH11	2:A4:243:ARG:HG3	1.80	0.46
2:A6:395:PHE:HD1	2:A6:422:ARG:HH11	1.62	0.46
1:B3:259:PRO:HG3	1:B3:311:LEU:HD23	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:1379:GLU:O	3:A:1383:LYS:N	2.38	0.46
3:A:2375:GLY:O	3:A:2377:GLY:N	2.46	0.46
3:A:2438:PHE:HA	3:A:2485:VAL:H	1.81	0.46
3:A:2719:LEU:N	3:A:2849:PHE:O	2.47	0.46
4:B:517:ASP:OD1	4:B:517:ASP:N	2.48	0.46
4:B:1700:LYS:O	4:B:1721:CYS:N	2.42	0.46
4:B:2244:TYR:O	4:B:2253:LYS:N	2.26	0.46
4:B:4223:MET:O	4:B:4231:MET:N	2.49	0.46
5:C:564:GLU:OE1	5:C:564:GLU:N	2.49	0.46
5:C:1407:ASN:O	5:C:1409:GLY:N	2.49	0.46
7:E:155:LYS:NZ	7:E:159:ASN:O	2.48	0.46
13:L:39:ASP:N	13:L:39:ASP:OD1	2.47	0.46
13:M:24:VAL:HG22	13:M:78:PHE:HE1	1.81	0.46
16:X:255:LEU:HD13	18:Y:209:MET:SD	2.56	0.46
2:A2:223:THR:HG23	2:A2:225:THR:H	1.81	0.46
2:A4:422:ARG:NH2	2:A4:425:LEU:HD23	2.31	0.46
1:A5:114:ASP:N	1:A5:114:ASP:OD1	2.49	0.46
2:A6:27:GLU:HG3	2:A6:361:THR:HG21	1.97	0.46
2:A6:217:LEU:HB3	2:A6:219:ILE:HD12	1.97	0.46
2:A6:413:MET:HB3	2:A6:417:GLU:OE2	2.16	0.46
1:A7:113:ILE:HA	1:A7:116:VAL:HG12	1.98	0.46
1:B1:395:LEU:HD23	1:B1:395:LEU:HA	1.79	0.46
3:A:1991:THR:CB	3:A:2040:ALA:HB2	2.45	0.46
3:A:2651:ILE:H	3:A:2667:VAL:CB	2.29	0.46
13:M:59:ILE:O	13:M:85:ILE:HA	2.15	0.46
13:M:80:LEU:HD12	13:M:80:LEU:HA	1.81	0.46
20:Z:92:ARG:HG3	20:Z:92:ARG:HH21	1.81	0.46
1:A1:100:ASN:HB3	1:A1:103:LYS:HD3	1.97	0.46
1:A3:114:ASP:N	1:A3:114:ASP:OD1	2.48	0.46
2:A6:195:LEU:HD21	2:A6:264:ARG:NH1	2.31	0.46
1:A7:91:VAL:HG11	1:A7:116:VAL:HG23	1.97	0.46
1:B1:242:PHE:CD1	1:B1:356:ILE:HG13	2.50	0.46
2:B2:98:ASP:OD1	2:B2:99:ALA:N	2.48	0.46
2:B4:8:HIS:O	2:B4:68:LEU:HD23	2.16	0.46
3:A:2654:HIS:HA	3:A:2663:ALA:HA	1.97	0.46
3:A:2720:VAL:HA	3:A:2851:ALA:C	2.36	0.46
3:A:3537:ALA:O	3:A:3541:SER:CB	2.64	0.46
4:B:391:LYS:HA	4:B:391:LYS:HD2	1.80	0.46
4:B:570:TYR:OH	7:E:428:ASP:OD2	2.33	0.46
4:B:1596:ASN:O	4:B:1600:GLN:CB	2.64	0.46
4:B:1968:GLY:O	4:B:2017:ALA:HA	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:149:LEU:O	5:C:152:THR:OG1	2.30	0.46
5:C:422:LEU:HB3	5:C:476:TYR:CG	2.51	0.46
7:E:414:TRP:HB3	7:E:415:SER:H	1.57	0.46
7:E:418:ARG:NH1	7:E:435:ASP:OD2	2.48	0.46
13:K:56:TRP:HA	13:K:88:PHE:O	2.15	0.46
20:Z:90:GLU:HB3	20:Z:91:PRO:HD2	1.97	0.46
1:A1:292:GLN:HG2	1:A1:298:ASN:ND2	2.30	0.45
1:A5:54:ALA:O	1:B5:283:ALA:HA	2.15	0.45
1:A5:112:LEU:O	1:A5:115:SER:OG	2.27	0.45
2:A6:316:CYS:HB2	2:A6:378:ILE:HG23	1.98	0.45
1:A7:315:ALA:HB1	1:A7:317:PHE:CE1	2.51	0.45
1:A7:377:MET:O	1:A7:381:VAL:HG22	2.16	0.45
1:B1:6:HIS:CD2	1:B1:8:GLN:HG2	2.51	0.45
1:B1:334:GLN:HE22	1:B1:348:ASN:H	1.64	0.45
2:B4:405:VAL:HG23	2:B4:418:PHE:CE2	2.50	0.45
3:A:4145:TRP:O	3:A:4147:ALA:N	2.49	0.45
4:B:525:THR:O	4:B:529:LEU:HB2	2.15	0.45
4:B:2403:LEU:O	4:B:2407:LEU:N	2.49	0.45
4:B:3986:ALA:O	4:B:3990:LYS:N	2.45	0.45
4:B:4409:HIS:O	4:B:4413:VAL:N	2.34	0.45
5:C:1441:SER:O	5:C:1445:ARG:N	2.49	0.45
5:C:1872:GLU:N	5:C:1921:MET:HA	2.30	0.45
6:D:266:MET:HG3	12:J:71:ARG:NH2	2.30	0.45
6:D:315:VAL:HG11	6:D:626:LEU:HD12	1.97	0.45
6:D:528:TRP:CH2	6:D:550:LEU:HD13	2.51	0.45
2:A2:183:GLU:HG3	2:A2:184:PRO:HD3	1.98	0.45
2:A2:265:ILE:HG12	2:A2:432:PHE:CE1	2.51	0.45
1:A3:191:GLN:HE21	1:A3:195:ASN:HD21	1.63	0.45
1:A7:60:VAL:HG11	1:A7:86:ARG:NH2	2.31	0.45
1:B5:11:GLN:HE21	1:B5:15:GLN:HE22	1.64	0.45
3:A:2644:LYS:C	3:A:2646:ASP:H	2.18	0.45
3:A:2878:GLN:O	3:A:2879:PRO:C	2.55	0.45
3:A:3589:SER:CB	3:A:4208:VAL:HA	2.46	0.45
4:B:164:GLY:O	4:B:168:GLY:N	2.49	0.45
4:B:4309:LYS:N	4:B:4417:ALA:O	2.49	0.45
5:C:261:VAL:HA	5:C:264:ILE:HD12	1.98	0.45
5:C:611:LYS:HA	5:C:611:LYS:HD2	1.70	0.45
5:C:789:LEU:HD23	5:C:875:LEU:HD11	1.98	0.45
9:G:104:VAL:HA	9:G:108:GLY:HA3	1.96	0.45
13:K:76:ILE:HB	13:K:87:LEU:HD23	1.98	0.45
2:A4:287:SER:N	2:A4:290:GLU:OE2	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A7:103:LYS:HA	1:A7:107:THR:HB	1.98	0.45
1:A7:262:ARG:HH21	1:A7:418:LEU:HB3	1.81	0.45
1:B1:232:VAL:HG11	1:B1:268:VAL:HG11	1.98	0.45
2:B2:88:HIS:ND1	2:B2:90:GLU:HG2	2.30	0.45
2:B4:66:ILE:HD12	2:B4:121:ARG:HE	1.81	0.45
2:B4:70:LEU:HD12	2:B4:99:ALA:HB2	1.97	0.45
2:B6:151:SER:HB2	2:B6:193:SER:OG	2.17	0.45
1:B7:152:ILE:HA	1:B7:155:ILE:HG22	1.98	0.45
3:A:2113:ASP:HA	3:A:2153:GLU:CB	2.47	0.45
4:B:1537:ASN:O	4:B:1539:MET:N	2.42	0.45
5:C:1681:GLN:O	5:C:1685:SER:N	2.48	0.45
5:C:4174:ASN:CB	5:C:4417:LYS:HA	2.46	0.45
6:D:489:GLU:OE1	6:D:506:LYS:NZ	2.45	0.45
6:D:562:ASP:OD1	6:D:563:LEU:N	2.49	0.45
6:D:573:ALA:HB1	6:D:575:LEU:HD23	1.98	0.45
7:E:164:ALA:HA	7:E:182:TYR:HA	1.98	0.45
7:E:241:LEU:HB2	7:E:256:THR:HB	1.99	0.45
7:E:323:ASP:HB3	7:E:327:GLY:HA2	1.97	0.45
2:A4:269:LEU:HD21	2:A4:384:ILE:HG22	1.98	0.45
2:A4:428:LEU:HD11	2:A4:432:PHE:HE2	1.82	0.45
2:A6:306:ASP:HB3	2:A6:309:HIS:ND1	2.32	0.45
1:B1:207:LEU:HB3	1:B1:225:LEU:HD22	1.98	0.45
2:B4:289:ALA:HA	2:B4:331:SER:OG	2.17	0.45
2:B6:246:GLY:HA2	2:B6:357:TYR:CD2	2.52	0.45
2:B6:305:CYS:HB3	2:B6:387:ILE:HD11	1.99	0.45
4:B:4027:VAL:O	4:B:4061:PHE:N	2.43	0.45
6:D:342:ILE:HD11	6:D:376:LEU:HD21	1.99	0.45
6:D:484:LYS:HG2	6:D:492:TYR:HB3	1.98	0.45
7:E:356:TYR:HB3	7:E:358:LEU:HD12	1.98	0.45
7:E:369:ARG:HH21	7:E:413:THR:HG21	1.82	0.45
11:I:63:LEU:HD11	12:J:43:TYR:HE1	1.82	0.45
13:K:79:TYR:OH	13:K:82:GLN:OE1	2.35	0.45
1:A1:95:THR:OG1	1:A1:96:GLY:N	2.50	0.45
1:A1:272:PRO:HD2	1:A1:361:LEU:HD21	1.99	0.45
2:B2:399:TYR:O	2:B2:402:ARG:NH1	2.49	0.45
1:B7:199:CYS:HB3	1:B7:265:PHE:CD1	2.51	0.45
3:A:2438:PHE:HA	3:A:2485:VAL:O	2.16	0.45
4:B:637:ARG:HA	4:B:637:ARG:HD3	1.77	0.45
4:B:687:THR:O	4:B:691:LEU:CB	2.64	0.45
4:B:807:ASP:O	4:B:811:VAL:HG23	2.16	0.45
4:B:3757:SER:N	4:B:4080:GLN:O	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:3750:LEU:O	5:C:3755:LYS:N	2.50	0.45
7:E:272:LEU:HD13	7:E:322:TYR:CE2	2.51	0.45
13:M:28:THR:O	13:M:32:GLU:HG2	2.16	0.45
13:M:57:HIS:HB2	13:M:88:PHE:CE1	2.51	0.45
1:A1:47:ILE:HG22	1:A1:51:PHE:HB2	1.99	0.45
2:A2:315:CYS:N	2:A2:350:GLY:O	2.48	0.45
1:A3:52:ASN:OD1	1:A3:62:ARG:NH2	2.49	0.45
1:A5:5:VAL:HG22	1:A5:62:ARG:HD3	1.99	0.45
2:A6:417:GLU:HA	2:A6:420:GLU:HG2	1.99	0.45
2:B2:133:GLN:HG3	2:B2:242:LEU:HD11	1.98	0.45
1:B7:342:VAL:HG11	1:B7:345:ILE:HD13	1.99	0.45
5:C:825:ARG:HE	5:C:864:TYR:HE2	1.64	0.45
13:L:24:VAL:HG22	13:L:78:PHE:CE1	2.51	0.45
18:Y1:100:GLN:HA	18:Y1:103:GLU:HG3	1.98	0.45
2:A4:222:PRO:O	1:A5:322:SER:OG	2.34	0.45
2:B2:28:HIS:CE1	2:B2:49:PHE:HA	2.52	0.45
2:B4:4:VAL:HG23	2:B4:134:GLY:O	2.16	0.45
1:B5:128:ASP:OD1	1:B5:128:ASP:N	2.41	0.45
1:B5:417:ASP:O	1:B5:421:GLU:HG3	2.17	0.45
2:B6:319:TYR:CZ	2:B6:328:VAL:HG23	2.52	0.45
4:B:2878:VAL:N	4:B:3033:ASP:O	2.48	0.45
5:C:804:VAL:O	5:C:807:ASN:HB2	2.17	0.45
5:C:2408:GLY:O	5:C:2412:ASN:N	2.37	0.45
5:C:4273:LEU:HA	5:C:4276:ALA:HB3	1.99	0.45
6:D:394:LYS:O	6:D:396:GLU:N	2.48	0.45
6:D:541:CYS:HA	6:D:566:SER:HB2	1.99	0.45
13:M:47:GLU:HG2	13:M:50:ARG:NH1	2.32	0.45
2:A2:335:ILE:HG23	2:A2:341:ILE:HD11	1.98	0.45
1:A3:9:GLY:HA2	1:A3:66:MET:O	2.17	0.45
1:A3:401:GLU:N	1:A3:401:GLU:OE1	2.50	0.45
1:A5:47:ILE:HG22	1:A5:51:PHE:HB2	1.98	0.45
1:A5:388:MET:HB3	1:A5:393:ALA:HB3	1.97	0.45
2:A6:185:TYR:HA	2:A6:395:PHE:HE2	1.81	0.45
1:A7:386:THR:O	1:A7:390:ARG:HG2	2.16	0.45
2:B2:4:VAL:HG13	2:B2:52:PHE:HE1	1.82	0.45
2:B4:234:VAL:HG21	2:B4:302:MET:HE2	1.99	0.45
1:B7:100:ASN:OD1	1:B7:398:TYR:HE1	2.00	0.45
3:A:3289:PRO:HA	3:A:3470:LEU:CB	2.47	0.45
5:C:1434:SER:O	5:C:1438:ASN:N	2.50	0.45
13:K:57:HIS:O	13:K:87:LEU:HA	2.16	0.45
2:A4:145:THR:OG1	21:A5:501:GTP:O1B	2.33	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A5:68:LEU:HD12	1:A5:143:THR:HB	1.98	0.45
2:B2:434:GLU:OE2	2:B2:435:VAL:HG23	2.17	0.45
1:B5:44:LEU:O	1:B5:47:ILE:HG12	2.17	0.45
1:B7:73:MET:O	1:B7:76:VAL:HB	2.17	0.45
1:B7:296:ALA:HB1	1:B7:305:PRO:HD2	1.99	0.45
3:A:2040:ALA:C	3:A:2043:LYS:H	2.20	0.45
3:A:2350:THR:O	3:A:2351:ALA:C	2.55	0.45
3:A:3366:GLN:O	3:A:3370:TRP:CB	2.65	0.45
3:A:3611:GLY:CA	3:A:3615:ALA:HB2	2.46	0.45
4:B:4244:PHE:O	4:B:4248:VAL:N	2.50	0.45
5:C:443:LEU:HD11	5:C:452:LEU:HD22	1.99	0.45
15:P:45:TYR:HB2	15:P:52:CYS:SG	2.57	0.45
1:A5:137:HIS:O	1:A5:168:SER:HA	2.17	0.45
1:A7:102:ALA:HB3	1:A7:401:GLU:OE2	2.17	0.45
1:B1:186:THR:HG22	1:B1:411:ALA:HB1	1.99	0.45
1:B1:204:ASN:OD1	23:B1:501:GDP:O2'	2.35	0.45
1:B1:278:SER:O	1:B1:278:SER:OG	2.35	0.45
1:B7:150:LEU:HD12	1:B7:151:LEU:N	2.32	0.45
3:A:4230:LEU:C	3:A:4232:THR:H	2.20	0.45
4:B:2873:GLY:H	4:B:3004:HIS:HA	1.82	0.45
6:D:413:TRP:CZ3	6:D:433:SER:HB2	2.51	0.45
6:D:558:VAL:HG23	6:D:559:MET:HG3	1.99	0.45
12:J:78:GLU:HB3	12:J:93:GLN:O	2.17	0.45
16:X:230:SER:HB2	18:Y:184:LEU:HD22	1.98	0.45
2:A4:339:ARG:HG2	2:A4:339:ARG:NH1	2.30	0.44
1:A5:8:GLN:O	1:A5:66:MET:HG3	2.17	0.44
2:B4:260:VAL:O	2:B4:260:VAL:HG23	2.18	0.44
2:B6:213:CYS:HA	2:B6:217:LEU:HB2	1.99	0.44
3:A:2882:GLU:O	3:A:2886:PHE:CB	2.65	0.44
3:A:3601:LEU:O	3:A:3605:VAL:CB	2.65	0.44
3:A:4004:MET:H	3:A:4178:GLU:CB	2.31	0.44
3:A:4335:ARG:HA	3:A:4357:GLY:CA	2.47	0.44
4:B:280:LEU:O	4:B:284:VAL:HG23	2.16	0.44
4:B:647:ALA:O	4:B:650:SER:OG	2.27	0.44
4:B:693:LEU:HD23	4:B:693:LEU:HA	1.78	0.44
5:C:811:LYS:O	5:C:814:ALA:HB3	2.17	0.44
6:D:576:GLN:NE2	6:D:578:THR:OG1	2.50	0.44
20:Z:96:ASN:HA	20:Z:99:GLU:HG3	1.99	0.44
1:A1:180:VAL:HG23	1:A1:184:ASN:HD21	1.82	0.44
1:A1:271:THR:HG23	1:A1:292:GLN:OE1	2.16	0.44
1:A7:8:GLN:CD	1:A7:17:GLY:HA3	2.38	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B1:167:PHE:CZ	1:B1:233:MET:HG2	2.52	0.44
1:B5:2:ARG:NE	1:B5:240:LEU:HD22	2.27	0.44
1:B5:403:MET:HE2	1:B5:403:MET:HB2	1.51	0.44
3:A:3462:PRO:O	3:A:3466:ALA:HB2	2.18	0.44
4:B:266:LEU:HB3	4:B:274:TYR:CZ	2.53	0.44
4:B:2872:ARG:O	4:B:2874:ASN:N	2.49	0.44
5:C:1403:ALA:N	5:C:1412:ILE:O	2.50	0.44
5:C:3388:ASN:HA	5:C:3389:ARG:HA	1.58	0.44
7:E:399:ILE:HG23	7:E:400:LEU:H	1.82	0.44
15:P:31:LYS:O	15:P:35:MET:HB2	2.17	0.44
16:X:260:ARG:N	16:X:260:ARG:HD3	2.32	0.44
20:Z:72:LEU:O	20:Z:76:GLN:OE1	2.35	0.44
20:Z:96:ASN:O	20:Z:99:GLU:HG3	2.17	0.44
2:A4:395:PHE:CE2	2:A4:422:ARG:HD2	2.53	0.44
2:A4:398:MET:CE	1:A5:346:PRO:HD2	2.47	0.44
1:A7:173:PRO:HB3	1:A7:384:GLN:NE2	2.31	0.44
1:B3:232:VAL:HG11	1:B3:268:VAL:HG11	1.99	0.44
2:B4:119:LEU:HD21	2:B4:156:ARG:HD3	1.99	0.44
1:B5:22:GLU:HG3	1:B5:81:TYR:CD2	2.52	0.44
1:B7:105:HIS:CD2	1:B7:150:LEU:HB3	2.52	0.44
3:A:2424:GLY:N	3:A:2425:ILE:HA	2.32	0.44
4:B:510:ALA:HA	4:B:513:ILE:HG22	1.98	0.44
5:C:120:LYS:HG2	5:C:159:LEU:HD11	1.99	0.44
7:E:395:VAL:O	7:E:397:THR:N	2.50	0.44
1:A1:237:THR:O	1:A1:237:THR:HG22	2.18	0.44
2:A2:136:LEU:HA	2:A2:167:LEU:O	2.17	0.44
1:A3:170:VAL:N	1:A3:202:LEU:O	2.49	0.44
1:A3:189:VAL:O	1:A3:193:VAL:HG23	2.18	0.44
1:A7:367:PHE:O	1:A7:368:ILE:HD13	2.18	0.44
1:B1:312:THR:HG22	1:B1:313:ALA:N	2.32	0.44
3:A:1677:CYS:C	3:A:1679:ALA:N	2.68	0.44
3:A:4057:GLY:HA2	3:A:4196:SER:CB	2.48	0.44
3:A:4130:ARG:C	3:A:4132:GLU:H	2.20	0.44
3:A:4385:PHE:HA	3:A:4443:LYS:O	2.18	0.44
4:B:4309:LYS:H	4:B:4417:ALA:HB3	1.80	0.44
5:C:1052:VAL:HA	5:C:1055:LYS:NZ	2.32	0.44
7:E:361:HIS:CE1	7:E:383:ASP:H	2.33	0.44
16:X1:177:TYR:CD2	18:Y1:132:ILE:HD12	2.52	0.44
20:Z:73:LEU:HA	20:Z:76:GLN:OE1	2.17	0.44
1:A1:30:ILE:HD12	1:A1:36:TYR:HA	1.99	0.44
1:A1:40:SER:OG	1:A1:41:ASP:N	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A1:384:GLN:HB3	2:A2:348:PRO:HG3	1.99	0.44
2:A4:203:MET:SD	2:A4:267:PHE:HB3	2.57	0.44
2:A4:246:GLY:HA3	2:A4:356:ASN:HA	1.99	0.44
2:A6:66:ILE:HD11	2:A6:122:ILE:HD11	1.99	0.44
1:B3:91:VAL:HG11	1:B3:116:VAL:HG22	2.00	0.44
2:B4:246:GLY:HA3	2:B4:356:ASN:HA	2.00	0.44
1:B5:389:PHE:HZ	1:B5:405:GLU:HG3	1.83	0.44
1:B7:263:LEU:HD22	1:B7:422:TYR:CZ	2.53	0.44
3:A:1683:TYR:HA	3:A:1738:LEU:O	2.16	0.44
3:A:3615:ALA:CB	3:A:3618:GLY:H	2.27	0.44
3:A:3791:PHE:HA	3:A:3794:LEU:CB	2.48	0.44
3:A:3935:GLY:O	3:A:3968:ARG:N	2.37	0.44
4:B:266:LEU:HB3	4:B:274:TYR:CE1	2.53	0.44
5:C:3054:PHE:O	5:C:3058:ALA:N	2.31	0.44
7:E:199:TYR:CE2	7:E:209:PRO:HG3	2.53	0.44
13:N:9:VAL:O	13:N:79:TYR:N	2.49	0.44
1:A1:208:TYR:O	1:A1:212:PHE:HD1	2.01	0.44
1:A3:189:VAL:HG11	1:A3:378:PHE:CE1	2.53	0.44
1:B1:201:VAL:HG11	1:B1:377:MET:HE3	2.00	0.44
2:B4:72:PRO:HD2	1:B5:2:ARG:HH12	1.83	0.44
2:B4:72:PRO:HD2	1:B5:2:ARG:NH1	2.33	0.44
2:B6:170:THR:HG21	2:B6:194:LEU:HD11	2.00	0.44
1:B7:128:ASP:N	1:B7:128:ASP:OD1	2.44	0.44
3:A:4248:LEU:CA	3:A:4258:VAL:HA	2.48	0.44
4:B:330:LEU:HB3	7:E:542:LEU:HD22	1.99	0.44
4:B:3489:LYS:O	4:B:3493:GLU:N	2.48	0.44
5:C:224:ILE:HG13	5:C:344:ARG:NH2	2.32	0.44
5:C:399:THR:HB	5:C:403:GLN:HE22	1.83	0.44
7:E:481:SER:HG	7:E:482:THR:H	1.61	0.44
11:I:100:ASP:OD1	11:I:100:ASP:N	2.50	0.44
13:K:14:ASP:OD1	13:K:14:ASP:N	2.48	0.44
15:P:20:LEU:HD13	15:P:20:LEU:HA	1.81	0.44
2:A2:90:GLU:OE1	2:A2:121:ARG:NH2	2.50	0.44
1:A5:113:ILE:HD11	1:A5:151:LEU:HB2	2.00	0.44
1:A5:385:PHE:HZ	1:A5:408:PHE:HD2	1.65	0.44
1:A7:213:ARG:HD3	1:A7:297:LYS:HD2	1.99	0.44
1:B3:91:VAL:CG1	1:B3:116:VAL:HG22	2.47	0.44
1:B5:209:ASP:CG	1:B5:213:ARG:HH12	2.18	0.44
3:A:3827:THR:O	3:A:3831:GLN:N	2.48	0.44
4:B:520:THR:HG21	7:E:402:THR:HA	1.99	0.44
4:B:3103:SER:CB	4:B:3586:GLY:HA3	2.48	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:2160:ARG:O	5:C:2163:LYS:N	2.51	0.44
7:E:366:TYR:H	7:E:382:GLY:CA	2.31	0.44
13:K:40:ILE:HD13	13:K:40:ILE:HA	1.85	0.44
14:O:63:LYS:O	14:O:65:PHE:N	2.51	0.44
16:X:277:ARG:O	17:X0:280:UNK:N	2.41	0.44
2:A2:346:TRP:CZ3	2:A2:347:CYS:HB2	2.53	0.44
2:A4:392:ASP:OD1	2:A4:422:ARG:NH1	2.51	0.44
2:A6:434:GLU:OE1	2:A6:435:VAL:HG23	2.18	0.44
1:B1:114:ASP:N	1:B1:114:ASP:OD1	2.50	0.44
2:B4:402:ARG:HD2	2:B4:405:VAL:HG11	1.99	0.44
1:B7:267:MET:CE	1:B7:299:MET:HG3	2.48	0.44
3:A:3598:GLN:O	3:A:3991:GLN:HA	2.17	0.44
3:A:3926:VAL:HA	3:A:3929:LYS:CB	2.48	0.44
4:B:464:ILE:HD13	4:B:508:LEU:HD12	1.99	0.44
4:B:622:ARG:O	4:B:625:ASP:HB2	2.18	0.44
4:B:1966:ALA:O	4:B:2015:VAL:HA	2.17	0.44
4:B:2176:GLN:O	4:B:2178:ASP:N	2.46	0.44
4:B:4529:CYS:N	4:B:4545:ALA:O	2.51	0.44
6:D:318:ASN:HA	6:D:368:PHE:HD2	1.83	0.44
6:D:516:TYR:CZ	6:D:548:VAL:HG11	2.52	0.44
7:E:545:GLU:HA	7:E:548:LYS:HD2	2.00	0.44
2:A4:387:ILE:HG23	2:A4:388:PHE:HD1	1.83	0.44
2:A6:70:LEU:CD2	2:A6:114:ILE:HD12	2.48	0.44
2:A6:304:LYS:HA	2:A6:304:LYS:HD3	1.74	0.44
1:B5:274:THR:HG21	1:B5:282:ARG:HD2	2.00	0.44
2:B6:405:VAL:HG13	2:B6:418:PHE:CE2	2.44	0.44
5:C:225:LYS:HA	5:C:344:ARG:HH12	1.82	0.44
5:C:3438:MET:O	5:C:3442:ALA:N	2.23	0.44
6:D:408:LEU:HD23	6:D:408:LEU:HA	1.87	0.44
18:Y:241:ARG:HD2	18:Y:245:ARG:NH2	2.32	0.44
2:A2:81:GLY:O	2:A2:84:ARG:HG3	2.18	0.43
2:A2:150:GLY:O	2:A2:154:LEU:HD23	2.18	0.43
1:A3:103:LYS:HA	1:A3:107:THR:HB	1.99	0.43
2:A6:179:THR:O	1:A7:350:LYS:HD2	2.18	0.43
2:A6:407:TRP:O	2:A6:411:GLU:HG3	2.18	0.43
2:B4:287:SER:HB3	2:B4:290:GLU:OE2	2.18	0.43
1:B5:70:PRO:HD2	2:B6:2:ARG:NH2	2.32	0.43
1:B5:236:ILE:HD13	1:B5:368:ILE:HD11	1.99	0.43
3:A:2397:SER:O	3:A:2835:ALA:HB2	2.18	0.43
3:A:4461:TYR:O	3:A:4497:LEU:N	2.28	0.43
4:B:239:PHE:HD2	4:B:240:TRP:HD1	1.65	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:4113:ALA:HB2	4:B:4236:ALA:HB2	2.00	0.43
4:B:4222:ASN:HA	4:B:4231:MET:O	2.18	0.43
5:C:129:PRO:HD2	5:C:130:ILE:N	2.31	0.43
5:C:203:MET:HE3	5:C:266:SER:HB2	2.00	0.43
5:C:1024:VAL:HG13	5:C:1044:LYS:NZ	2.33	0.43
5:C:3471:THR:O	5:C:3494:ILE:HA	2.18	0.43
11:I:55:LYS:HD3	11:I:55:LYS:HA	1.80	0.43
2:A2:189:LEU:HD11	2:A2:418:PHE:HE1	1.82	0.43
1:B1:91:VAL:CG1	1:B1:116:VAL:HG12	2.47	0.43
1:B3:152:ILE:HG22	1:B3:195:ASN:HB3	2.00	0.43
2:B4:102:ASN:HB3	2:B4:105:ARG:HB3	2.00	0.43
2:B6:179:THR:HG22	1:B7:327:ASP:OD1	2.18	0.43
1:B7:130:LEU:HD21	1:B7:133:PHE:CE1	2.52	0.43
1:B7:224:ASP:OD1	1:B7:225:LEU:N	2.50	0.43
3:A:1782:VAL:HA	3:A:1785:VAL:CB	2.48	0.43
3:A:2102:MET:HA	3:A:2103:PRO:C	2.38	0.43
3:A:3883:ILE:HA	3:A:3973:ALA:O	2.17	0.43
4:B:293:ASP:O	4:B:296:LYS:HG2	2.18	0.43
4:B:453:LYS:O	4:B:455:LYS:N	2.51	0.43
4:B:583:TYR:HB3	4:B:642:TRP:CZ3	2.53	0.43
4:B:4092:GLY:O	4:B:4096:ASN:N	2.38	0.43
5:C:211:CYS:SG	5:C:276:TRP:NE1	2.90	0.43
5:C:500:GLN:HG2	5:C:535:ASP:OD2	2.18	0.43
7:E:247:ARG:HG3	7:E:248:LYS:NZ	2.34	0.43
20:Z:70:ILE:HG22	20:Z:71:SER:N	2.33	0.43
2:A2:326:LYS:HB3	2:A2:326:LYS:HE2	1.70	0.43
2:A6:72:PRO:HA	2:A6:94:SER:HB2	1.99	0.43
1:A7:122:LYS:HA	1:A7:125:GLU:HG3	1.99	0.43
2:B2:21:TRP:CZ2	2:B2:65:CYS:HB3	2.54	0.43
3:A:1300:PHE:HA	3:A:1312:LYS:H	1.83	0.43
4:B:603:ARG:HH11	4:B:603:ARG:HD3	1.60	0.43
4:B:820:LYS:HA	4:B:823:GLN:HG3	2.00	0.43
4:B:2933:THR:HA	4:B:3003:LEU:O	2.18	0.43
5:C:2823:PHE:HA	5:C:2853:TYR:O	2.18	0.43
6:D:352:HIS:CD2	6:D:353:PRO:HD2	2.53	0.43
7:E:236:GLN:HB3	7:E:237:TYR:H	1.63	0.43
13:N:15:MET:HA	13:N:74:HIS:HA	2.00	0.43
1:A1:362:LYS:HB2	1:A1:362:LYS:HE3	1.62	0.43
1:A3:8:GLN:NE2	1:A3:17:GLY:HA3	2.34	0.43
1:A3:135:VAL:HG21	1:A3:152:ILE:HD11	2.00	0.43
2:A4:178:SER:HB2	2:A4:183:GLU:OE1	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A6:283:HIS:CG	2:A6:283:HIS:O	2.70	0.43
1:A7:200:MET:CE	1:A7:368:ILE:HD12	2.47	0.43
1:B1:5:VAL:HG22	1:B1:62:ARG:HD3	2.01	0.43
1:B1:40:SER:O	1:B1:43:GLN:HG2	2.19	0.43
1:B1:91:VAL:HG11	1:B1:116:VAL:HG12	1.99	0.43
2:B4:66:ILE:CB	2:B4:121:ARG:HH21	2.32	0.43
1:B5:205:GLU:OE1	1:B5:205:GLU:N	2.52	0.43
3:A:1558:ARG:CB	3:A:1607:GLN:HA	2.47	0.43
3:A:3623:LYS:CB	3:A:3680:SER:HA	2.48	0.43
3:A:4410:GLY:N	3:A:4438:PRO:O	2.32	0.43
4:B:3484:ASP:O	4:B:3488:ALA:HB2	2.19	0.43
5:C:2043:ILE:O	5:C:2047:PHE:N	2.48	0.43
5:C:2310:ALA:HB3	5:C:2369:THR:O	2.18	0.43
1:A1:204:ASN:HA	1:A1:207:LEU:HD12	2.00	0.43
2:A2:265:ILE:HG23	2:A2:432:PHE:HE1	1.82	0.43
2:A4:21:TRP:CZ3	2:A4:63:PRO:HB3	2.53	0.43
2:A6:52:PHE:HE2	2:A6:239:THR:HG21	1.83	0.43
2:B2:196:GLU:OE2	2:B2:197:HIS:NE2	2.51	0.43
1:B5:113:ILE:HD12	1:B5:116:VAL:HG21	2.00	0.43
3:A:3392:GLN:HA	3:A:3395:GLU:CB	2.48	0.43
5:C:669:ARG:O	5:C:673:TYR:N	2.51	0.43
13:K:21:ALA:HA	13:K:24:VAL:HG22	2.00	0.43
16:X:237:LEU:HB3	18:Y:191:MET:CE	2.48	0.43
1:A1:258:ILE:O	1:A1:258:ILE:HG23	2.18	0.43
1:A3:309:ARG:H	1:A3:372:THR:HG22	1.84	0.43
2:A4:413:MET:HB3	2:A4:417:GLU:OE2	2.18	0.43
1:A5:21:TRP:CZ2	1:A5:63:ALA:HB2	2.53	0.43
1:A5:271:THR:CG2	1:A5:365:ALA:HB3	2.49	0.43
1:A7:113:ILE:HD13	1:A7:150:LEU:HD21	1.99	0.43
1:A7:192:LEU:HD13	1:A7:199:CYS:SG	2.58	0.43
2:B2:47:ASP:OD1	2:B2:48:ALA:N	2.51	0.43
1:B3:249:ASP:OD1	1:B3:252:LYS:HB2	2.18	0.43
1:B5:271:THR:OG1	1:B5:365:ALA:HB3	2.19	0.43
2:B6:155:GLU:HG2	2:B6:197:HIS:CD2	2.53	0.43
3:A:2051:ASP:C	3:A:2106:ASP:HA	2.39	0.43
3:A:3732:LEU:O	3:A:3736:THR:CB	2.67	0.43
4:B:1949:MET:HA	4:B:1953:ALA:HB3	1.99	0.43
5:C:2520:MET:O	5:C:2531:LYS:N	2.51	0.43
7:E:71:ASN:O	13:K:70:HIS:N	2.52	0.43
2:A2:425:LEU:HD23	2:A2:425:LEU:HA	1.85	0.43
1:A3:253:LEU:HD11	1:A3:316:LEU:HD21	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A5:215:LEU:HB3	1:A5:217:LEU:HG	2.01	0.43
2:A6:200:VAL:HG13	2:A6:268:MET:CE	2.48	0.43
2:A6:345:ASP:OD1	2:A6:346:TRP:N	2.51	0.43
2:B4:121:ARG:HD2	2:B4:121:ARG:C	2.39	0.43
1:B5:3:GLU:HB2	1:B5:130:LEU:HD12	2.01	0.43
3:A:2040:ALA:O	3:A:2043:LYS:N	2.46	0.43
3:A:2764:TYR:O	3:A:2768:GLY:N	2.35	0.43
3:A:3882:PHE:HA	3:A:3996:ILE:O	2.19	0.43
3:A:3936:TRP:HA	3:A:3968:ARG:O	2.19	0.43
4:B:583:TYR:HB3	4:B:642:TRP:CH2	2.54	0.43
5:C:296:TYR:O	5:C:299:THR:OG1	2.33	0.43
5:C:784:ILE:HD13	5:C:784:ILE:HG21	1.81	0.43
5:C:872:LEU:O	5:C:876:GLN:HG2	2.19	0.43
5:C:1399:ASN:HA	5:C:1513:GLN:O	2.18	0.43
6:D:406:GLY:HA3	6:D:449:PRO:HG3	2.01	0.43
9:G:43:LEU:HD12	9:G:43:LEU:HA	1.84	0.43
16:X1:123:ASN:HA	16:X1:126:LYS:HG2	1.99	0.43
16:X1:200:ARG:HA	16:X1:200:ARG:HD2	1.86	0.43
18:Y1:200:GLU:O	18:Y1:203:GLU:HG3	2.18	0.43
1:A1:309:ARG:H	1:A1:372:THR:HG22	1.83	0.43
2:A2:353:CYS:SG	2:A2:354:GLY:N	2.91	0.43
2:A2:387:ILE:HG12	2:A2:390:ARG:NH2	2.32	0.43
1:A3:296:ALA:HB1	1:A3:304:ASP:OD1	2.18	0.43
2:A6:52:PHE:CE2	2:A6:239:THR:HG21	2.54	0.43
1:B1:220:PRO:HD2	2:B2:326:LYS:HD3	2.00	0.43
2:B2:372:GLN:OE1	2:B2:372:GLN:HA	2.19	0.43
2:B4:143:GLY:O	2:B4:147:SER:HB3	2.19	0.43
1:B5:3:GLU:HG3	1:B5:127:CYS:HB2	1.99	0.43
2:B6:70:LEU:HB3	2:B6:97:GLU:O	2.19	0.43
1:B7:367:PHE:O	1:B7:368:ILE:HD13	2.18	0.43
3:A:3306:LEU:O	3:A:3311:MET:N	2.51	0.43
3:A:3339:PRO:CB	3:A:3483:GLN:HA	2.49	0.43
4:B:1495:LEU:N	4:B:1610:THR:O	2.50	0.43
4:B:2551:THR:O	4:B:2553:SER:N	2.51	0.43
4:B:3565:ASN:HA	4:B:3610:THR:HA	2.00	0.43
5:C:446:HIS:HD2	5:C:526:ILE:HG12	1.84	0.43
5:C:589:GLU:OE1	5:C:613:TYR:OH	2.24	0.43
5:C:728:ASP:OD1	5:C:732:ARG:NH1	2.51	0.43
7:E:272:LEU:CG	7:E:291:TRP:HZ3	2.32	0.43
7:E:377:TYR:CD1	7:E:390:VAL:HG22	2.53	0.43
7:E:502:GLU:O	7:E:506:GLU:HG3	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:M:44:ILE:HG22	13:M:87:LEU:HD11	2.00	0.43
1:A3:191:GLN:HG3	1:A3:195:ASN:HD22	1.84	0.43
2:A6:12:ALA:HB2	21:A7:501:GTP:C8	2.54	0.43
1:A7:289:LEU:HD11	1:A7:363:MET:HE3	2.00	0.43
1:B1:170:VAL:HG22	1:B1:202:LEU:O	2.18	0.43
1:B3:242:PHE:CD1	1:B3:356:ILE:HG13	2.54	0.43
3:A:1716:GLY:O	3:A:1864:ARG:N	2.29	0.43
3:A:1747:CYS:H	3:A:1773:ASP:H	1.66	0.43
3:A:3381:GLN:N	3:A:3404:VAL:HA	2.34	0.43
5:C:859:TYR:O	5:C:863:MET:HG2	2.19	0.43
6:D:490:SER:HA	6:D:506:LYS:HD3	1.99	0.43
12:J:87:PHE:HE1	12:J:89:LEU:HB2	1.84	0.43
13:M:55:THR:O	13:M:89:LYS:NZ	2.52	0.43
20:Z:86:LYS:HB2	20:Z:86:LYS:HE2	1.81	0.43
2:A2:9:ILE:HG12	2:A2:68:LEU:HD21	2.00	0.43
1:A5:107:THR:OG1	1:A5:108:GLU:OE1	2.28	0.43
1:A5:421:GLU:HA	1:A5:424:GLN:HG3	2.01	0.43
2:A6:311:LYS:HG2	2:A6:342:GLN:HG3	2.00	0.43
2:B2:102:ASN:OD1	1:B3:255:VAL:HG21	2.19	0.43
2:B4:258:ASN:CG	2:B4:352:LYS:HD3	2.39	0.43
1:B5:385:PHE:HZ	1:B5:408:PHE:HD1	1.67	0.43
1:B5:397:TRP:CH2	2:B6:256:GLN:HB3	2.54	0.43
1:B7:167:PHE:CD2	1:B7:233:MET:HG2	2.54	0.43
3:A:2345:THR:HA	3:A:2385:LYS:CB	2.48	0.43
3:A:4130:ARG:C	3:A:4132:GLU:N	2.72	0.43
3:A:4352:SER:HA	3:A:4409:HIS:CB	2.49	0.43
4:B:2230:ALA:HA	4:B:2276:VAL:O	2.19	0.43
5:C:394:ARG:HH12	5:C:416:ILE:HG21	1.84	0.43
5:C:1013:GLU:HA	5:C:1016:LYS:HE3	2.01	0.43
7:E:77:VAL:HG13	13:K:63:ASN:H	1.84	0.43
7:E:184:ILE:HD12	7:E:191:PRO:HG3	2.00	0.43
7:E:199:TYR:CZ	7:E:209:PRO:HG3	2.54	0.43
9:G:130:LEU:HD11	9:G:133:ASN:ND2	2.34	0.43
11:I:22:GLY:HA2	11:I:36:THR:HG21	2.01	0.43
2:A4:377:MET:SD	2:A4:379:SER:HB3	2.59	0.42
1:A5:149:THR:HG22	1:A5:191:GLN:HG2	2.01	0.42
2:B2:9:ILE:HD13	2:B2:150:GLY:HA2	2.01	0.42
1:B5:264:HIS:ND1	1:B5:264:HIS:O	2.48	0.42
1:B7:190:HIS:ND1	1:B7:414:ASN:OD1	2.51	0.42
1:B7:293:MET:SD	1:B7:367:PHE:HB2	2.59	0.42
3:A:219:ASP:O	3:A:223:MET:CA	2.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:1861:ALA:HA	3:A:4073:ASN:CB	2.48	0.42
3:A:2371:MET:HA	3:A:2486:ALA:HB3	2.01	0.42
3:A:2538:GLN:C	3:A:2541:GLY:H	2.23	0.42
4:B:68:ASP:O	4:B:70:LYS:N	2.51	0.42
4:B:434:LEU:HD12	4:B:434:LEU:HA	1.77	0.42
4:B:457:LEU:HD22	4:B:511:ILE:HG23	2.00	0.42
4:B:2564:GLU:H	4:B:2567:ALA:HB3	1.83	0.42
4:B:2596:VAL:N	4:B:2642:ALA:O	2.43	0.42
4:B:3563:ILE:O	4:B:3609:GLN:N	2.52	0.42
5:C:789:LEU:HA	5:C:813:GLN:OE1	2.19	0.42
5:C:1819:GLY:HA3	5:C:1944:MET:CB	2.49	0.42
6:D:209:TYR:CZ	15:P:94:GLY:HA2	2.54	0.42
7:E:269:PHE:HE2	7:E:271:TRP:CZ2	2.37	0.42
11:I:71:PHE:CD1	12:J:73:ARG:HB2	2.54	0.42
16:X:266:ARG:HH12	18:Y:220:GLN:HA	1.84	0.42
18:Y1:146:TYR:O	18:Y1:150:ILE:HG12	2.19	0.42
20:Z:99:GLU:HA	20:Z:102:MET:HG2	2.00	0.42
1:A1:146:GLY:O	1:A1:149:THR:HG22	2.20	0.42
1:A1:378:PHE:HA	1:A1:381:VAL:HG22	2.00	0.42
2:A2:4:VAL:HG23	2:A2:134:GLY:O	2.19	0.42
1:A3:133:PHE:HD2	1:A3:164:MET:HE3	1.84	0.42
2:A4:171:VAL:HA	2:A4:204:LEU:O	2.18	0.42
1:B1:213:ARG:NH1	1:B1:297:LYS:HE2	2.34	0.42
1:B3:8:GLN:CD	1:B3:17:GLY:HA3	2.40	0.42
1:B5:175:VAL:HG23	1:B5:205:GLU:CD	2.39	0.42
2:B6:66:ILE:HG13	2:B6:66:ILE:O	2.19	0.42
3:A:2404:TYR:HA	3:A:2444:MET:O	2.19	0.42
3:A:2559:PHE:HA	3:A:2563:ALA:HB2	1.99	0.42
3:A:3574:ARG:O	3:A:3577:ALA:HB3	2.20	0.42
4:B:210:LYS:HA	4:B:210:LYS:HD3	1.77	0.42
4:B:4255:LEU:C	4:B:4258:GLY:H	2.22	0.42
5:C:764:GLU:O	5:C:767:ARG:HG3	2.19	0.42
7:E:228:ASP:OD1	7:E:229:ASN:N	2.52	0.42
10:H:97:HIS:HA	10:H:106:ILE:HA	2.02	0.42
13:L:60:VAL:HG12	13:L:85:ILE:HG23	2.01	0.42
16:X1:248:LYS:HD3	18:Y1:202:ARG:HG2	2.01	0.42
18:Y:234:ILE:HB	18:Y:238:LYS:NZ	2.34	0.42
2:A2:8:HIS:CD2	2:A2:138:PHE:HD2	2.37	0.42
2:A4:291:ILE:HD12	2:A4:375:VAL:HG23	2.01	0.42
1:A5:271:THR:OG1	1:A5:272:PRO:HA	2.20	0.42
1:B1:395:LEU:O	1:B1:399:THR:HG23	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B2:8:HIS:O	2:B2:68:LEU:HD23	2.19	0.42
2:B2:402:ARG:O	2:B2:405:VAL:HG12	2.19	0.42
1:B3:392:LYS:HE3	1:B3:405:GLU:OE1	2.19	0.42
1:B5:69:GLU:HG2	2:B6:2:ARG:NH2	2.34	0.42
1:B5:257:LEU:HD21	1:B5:314:SER:HB2	2.01	0.42
2:B6:278:ALA:HA	2:B6:369:ALA:HB2	2.00	0.42
5:C:53:GLN:HA	5:C:83:HIS:HA	2.01	0.42
5:C:549:LYS:O	5:C:552:ASP:HB3	2.19	0.42
6:D:357:PHE:O	6:D:358:HIS:ND1	2.52	0.42
7:E:392:ASP:O	7:E:396:LYS:NZ	2.33	0.42
16:X1:169:GLY:O	16:X1:171:LEU:HD12	2.20	0.42
1:A3:245:GLN:C	1:A3:246:LEU:HD12	2.39	0.42
1:A3:406:MET:O	1:A3:410:GLU:HG3	2.18	0.42
2:A4:431:ASP:O	2:A4:434:GLU:HG3	2.19	0.42
2:A6:155:GLU:HG2	2:A6:197:HIS:CD2	2.54	0.42
1:A7:11:GLN:N	23:A7:502:GDP:O2B	2.45	0.42
1:A7:314:SER:OG	1:A7:368:ILE:HB	2.18	0.42
1:B1:226:ASN:OD1	23:B1:501:GDP:N1	2.39	0.42
1:B3:208:TYR:CG	2:B4:326:LYS:HD3	2.55	0.42
2:B4:121:ARG:O	2:B4:124:LYS:HG2	2.19	0.42
1:B5:68:LEU:HB3	1:B5:96:GLY:HA2	2.02	0.42
1:B5:175:VAL:N	1:B5:205:GLU:OE2	2.51	0.42
2:B6:394:LYS:HB2	1:B7:346:PRO:HG3	2.01	0.42
3:A:1553:TYR:HA	3:A:1555:SER:N	2.33	0.42
5:C:1015:LYS:HD3	5:C:1015:LYS:HA	1.78	0.42
6:D:212:ASP:OD2	15:P:20:LEU:HG	2.18	0.42
6:D:276:ALA:O	6:D:279:PHE:HB3	2.18	0.42
16:X:272:LYS:O	16:X:275:GLU:HG2	2.19	0.42
18:Y1:177:LEU:HD23	18:Y1:177:LEU:HA	1.83	0.42
2:A2:198:THR:HG21	2:A2:201:ALA:HB2	2.01	0.42
2:A2:328:VAL:O	2:A2:332:VAL:HG23	2.19	0.42
1:A3:232:VAL:O	1:A3:236:ILE:HG12	2.20	0.42
1:A3:391:ARG:NH2	2:A4:262:TYR:CZ	2.87	0.42
2:A4:241:SER:OG	2:A4:250:VAL:O	2.24	0.42
2:A6:67:PHE:HB2	2:A6:92:LEU:HD23	2.01	0.42
2:A6:102:ASN:ND2	2:A6:411:GLU:OE2	2.51	0.42
2:A6:209:ILE:HG23	2:A6:230:LEU:HD11	2.01	0.42
1:A7:232:VAL:HG11	1:A7:268:VAL:HG11	2.01	0.42
1:A7:383:GLU:HA	1:A7:386:THR:HG22	2.01	0.42
1:B1:3:GLU:HG3	1:B1:127:CYS:CB	2.49	0.42
2:B4:3:GLU:HA	2:B4:51:THR:OG1	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B4:53:PHE:C	2:B4:64:ARG:HH22	2.22	0.42
3:A:2407:ASP:H	3:A:2410:SER:CB	2.32	0.42
3:A:3930:TYR:O	3:A:3934:GLY:N	2.46	0.42
3:A:4094:ILE:O	3:A:4096:TRP:N	2.45	0.42
4:B:2878:VAL:O	4:B:3035:PHE:N	2.35	0.42
5:C:528:GLN:HE22	5:C:533:GLN:HG3	1.84	0.42
5:C:2182:ILE:O	5:C:2185:LEU:N	2.42	0.42
6:D:615:LYS:HB2	6:D:615:LYS:HE2	1.78	0.42
9:G:101:ASP:OD1	9:G:102:ALA:N	2.52	0.42
13:M:37:GLU:OE1	13:M:60:VAL:HG13	2.19	0.42
13:N:8:ALA:HA	13:N:80:LEU:HA	2.01	0.42
16:X1:190:GLU:O	16:X1:193:VAL:HG12	2.20	0.42
1:A1:173:PRO:HG3	1:A1:380:ARG:HD2	2.02	0.42
2:A2:104:ALA:HB2	2:A2:413:MET:SD	2.59	0.42
2:A4:100:ALA:HB1	1:A5:252:LYS:HA	2.00	0.42
1:A7:109:GLY:O	1:A7:113:ILE:HG12	2.19	0.42
1:A7:267:MET:SD	1:A7:303:ALA:HB3	2.59	0.42
2:B2:171:VAL:HA	2:B2:204:LEU:O	2.19	0.42
1:B3:67:ASP:CG	1:B3:68:LEU:H	2.22	0.42
2:B4:192:HIS:ND1	2:B4:424:ASP:OD2	2.41	0.42
3:A:2274:MET:O	3:A:2278:PHE:CB	2.67	0.42
3:A:2408:VAL:H	3:A:2454:MET:CB	2.32	0.42
4:B:4359:LEU:O	4:B:4363:GLY:N	2.53	0.42
5:C:632:ILE:O	5:C:635:ILE:HG22	2.19	0.42
6:D:516:TYR:CE2	6:D:548:VAL:HG11	2.55	0.42
7:E:371:ASN:HB3	7:E:414:TRP:CH2	2.55	0.42
7:E:547:PHE:HA	7:E:550:THR:HG23	2.00	0.42
16:X1:188:ILE:HG13	18:Y1:143:TYR:CE1	2.55	0.42
18:Y1:182:ALA:HA	18:Y1:185:LYS:HG2	2.01	0.42
1:A1:4:ILE:HB	1:A1:50:TYR:HE1	1.83	0.42
1:A1:109:GLY:O	1:A1:113:ILE:HG12	2.20	0.42
2:A2:210:TYR:OH	2:A2:224:TYR:HE1	2.01	0.42
2:A2:213:CYS:HA	2:A2:217:LEU:HB2	2.01	0.42
2:A4:267:PHE:HB2	2:A4:384:ILE:CD1	2.50	0.42
1:A5:35:THR:HA	1:A5:57:GLY:O	2.19	0.42
2:B2:80:THR:O	2:B2:80:THR:HG22	2.20	0.42
2:B4:26:LEU:HD21	2:B4:364:PRO:HD2	2.01	0.42
1:B5:69:GLU:CG	2:B6:2:ARG:HH22	2.32	0.42
1:B7:203:ASP:O	1:B7:207:LEU:HG	2.20	0.42
3:A:2594:THR:HA	3:A:2638:ILE:CB	2.50	0.42
3:A:4416:ALA:HA	3:A:4425:LEU:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:3833:LEU:O	4:B:3837:GLY:N	2.52	0.42
5:C:783:ALA:HA	5:C:786:SER:HG	1.83	0.42
5:C:1687:ALA:HB2	5:C:1749:ASP:N	2.34	0.42
5:C:2248:TRP:O	5:C:2252:ARG:N	2.49	0.42
6:D:313:THR:HG23	6:D:363:VAL:O	2.19	0.42
18:Y1:205:ALA:O	18:Y1:208:GLU:HG3	2.19	0.42
2:A6:422:ARG:HA	2:A6:422:ARG:HD2	1.88	0.42
1:B3:3:GLU:HG3	1:B3:127:CYS:SG	2.59	0.42
2:B4:91:GLN:CA	2:B4:121:ARG:HH22	2.32	0.42
2:B4:215:ARG:HG2	2:B4:215:ARG:HH11	1.84	0.42
2:B4:327:ASP:OD1	2:B4:327:ASP:N	2.51	0.42
2:B6:7:ILE:HD12	2:B6:153:LEU:HD23	2.00	0.42
1:B7:64:ILE:O	1:B7:64:ILE:HG13	2.20	0.42
3:A:2466:GLY:O	3:A:2478:ASN:HA	2.18	0.42
4:B:475:PHE:HE1	4:B:493:ASP:HB3	1.85	0.42
5:C:1286:GLN:O	5:C:1290:TYR:CB	2.67	0.42
5:C:1354:PHE:HA	5:C:1357:GLN:CB	2.49	0.42
5:C:4397:GLY:HA2	5:C:4423:LEU:O	2.20	0.42
7:E:161:LYS:O	7:E:184:ILE:HD11	2.20	0.42
7:E:169:TRP:HZ3	7:E:467:ALA:HB2	1.85	0.42
7:E:414:TRP:HD1	7:E:420:GLY:HA2	1.82	0.42
15:P:59:GLN:HB3	15:P:63:LYS:HZ1	1.83	0.42
18:Y1:78:ASP:OD1	18:Y1:79:GLU:HG2	2.20	0.42
1:A1:317:PHE:CE2	1:A1:326:VAL:HG13	2.54	0.42
1:A3:149:THR:HG23	1:A3:191:GLN:HG2	2.02	0.42
2:A6:9:ILE:HG22	2:A6:68:LEU:CD1	2.49	0.42
2:A6:104:ALA:HB3	2:A6:411:GLU:OE1	2.20	0.42
1:B1:145:SER:OG	1:B1:146:GLY:N	2.52	0.42
1:B5:392:LYS:HD2	1:B5:395:LEU:HD22	2.01	0.42
1:B7:170:VAL:HG22	1:B7:202:LEU:O	2.19	0.42
3:A:1829:ASP:O	3:A:1831:VAL:N	2.53	0.42
3:A:2793:ASN:O	3:A:2797:SER:CB	2.68	0.42
3:A:3443:TYR:CB	3:A:3447:PHE:H	2.33	0.42
4:B:273:TYR:HB3	4:B:277:PHE:CE2	2.55	0.42
5:C:2409:ALA:O	5:C:2413:LEU:N	2.33	0.42
6:D:480:MET:SD	6:D:524:TYR:HA	2.60	0.42
6:D:493:LEU:HD21	6:D:550:LEU:HD11	2.01	0.42
16:X:230:SER:OG	18:Y:184:LEU:HD13	2.19	0.42
1:A1:64:ILE:HA	1:A1:89:ASN:HB3	2.02	0.42
1:A1:334:GLN:HA	1:A1:341:PHE:HE2	1.83	0.42
1:A3:163:MET:HE2	1:A3:251:ARG:HG3	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A3:317:PHE:CE2	1:A3:326:VAL:HG13	2.54	0.42
2:A4:422:ARG:HH22	2:A4:425:LEU:HD23	1.85	0.42
1:A5:103:LYS:HD2	1:A5:107:THR:OG1	2.20	0.42
1:A5:325:GLU:O	1:A5:329:GLN:HG2	2.20	0.42
1:A7:60:VAL:HG23	1:A7:84:ILE:O	2.20	0.42
1:A7:203:ASP:OD1	1:A7:204:ASN:N	2.53	0.42
1:A7:293:MET:CG	1:A7:367:PHE:HB2	2.50	0.42
2:B2:326:LYS:HB2	2:B2:326:LYS:HE3	1.81	0.42
1:B3:172:SER:HB3	1:B3:175:VAL:HG22	2.02	0.42
1:B3:421:GLU:HA	1:B3:424:GLN:HB3	2.02	0.42
2:B4:174:SER:HB3	2:B4:177:VAL:O	2.19	0.42
2:B6:223:THR:OG1	2:B6:224:TYR:N	2.53	0.42
1:B7:292:GLN:HG2	1:B7:298:ASN:HD22	1.85	0.42
1:B7:310:TYR:CD1	1:B7:371:SER:HB2	2.55	0.42
3:A:3593:ILE:O	3:A:3595:ALA:HA	2.20	0.42
3:A:3598:GLN:C	3:A:3991:GLN:HA	2.40	0.42
3:A:4229:ALA:HB1	3:A:4272:SER:O	2.19	0.42
4:B:271:SER:OG	4:B:272:THR:N	2.52	0.42
4:B:389:THR:O	4:B:393:TYR:HB2	2.20	0.42
4:B:2228:TYR:HA	4:B:2274:TRP:O	2.20	0.42
11:I:66:ASP:OD1	11:I:66:ASP:N	2.53	0.42
15:P:92:VAL:HG13	15:P:96:THR:OG1	2.20	0.42
16:X:256:ALA:O	16:X:260:ARG:HG2	2.19	0.42
20:Z:7:ARG:HD3	20:Z:120:MET:HA	2.00	0.42
1:A1:175:VAL:HG13	2:A2:329:ASN:ND2	2.29	0.41
1:A3:137:HIS:O	1:A3:168:SER:HA	2.20	0.41
2:A4:119:LEU:HA	2:A4:122:ILE:HG22	2.01	0.41
2:A4:141:VAL:O	2:A4:147:SER:OG	2.31	0.41
1:A5:26:ASP:O	1:A5:359:LYS:NZ	2.38	0.41
2:A6:71:GLU:HB2	2:A6:98:ASP:OD1	2.19	0.41
2:A6:267:PHE:HB2	2:A6:384:ILE:HD12	2.02	0.41
1:B1:138:SER:O	1:B1:139:LEU:HD23	2.20	0.41
2:B2:330:ALA:O	2:B2:334:THR:HG23	2.20	0.41
1:B3:103:LYS:HA	1:B3:107:THR:OG1	2.20	0.41
1:B3:391:ARG:NH2	2:B4:346:TRP:HE1	2.14	0.41
2:B4:344:VAL:HG13	2:B4:346:TRP:H	1.84	0.41
3:A:2903:VAL:O	3:A:2906:ALA:HB3	2.20	0.41
3:A:4095:PRO:O	3:A:4098:ASP:N	2.52	0.41
4:B:3913:TRP:O	4:B:3917:GLN:N	2.53	0.41
4:B:4376:LYS:O	4:B:4380:THR:N	2.26	0.41
6:D:268:ASN:O	6:D:268:ASN:ND2	2.51	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:234:ALA:HB3	7:E:242:ALA:HB3	2.02	0.41
7:E:506:GLU:HA	7:E:509:LEU:HG	2.02	0.41
9:G:118:VAL:O	9:G:122:ARG:HG3	2.20	0.41
13:L:44:ILE:O	13:L:48:PHE:HB2	2.20	0.41
20:Z:31:ASP:OD1	20:Z:32:LYS:N	2.43	0.41
2:A2:63:PRO:HB2	2:A2:65:CYS:SG	2.61	0.41
1:A5:186:THR:HG23	1:A5:415:MET:SD	2.60	0.41
2:B2:189:LEU:HD11	2:B2:418:PHE:CE1	2.56	0.41
1:B7:305:PRO:HA	1:B7:373:ALA:CB	2.51	0.41
3:A:1523:LEU:O	3:A:1525:ASN:N	2.53	0.41
3:A:2571:THR:O	3:A:2574:HIS:N	2.53	0.41
3:A:2717:ALA:O	3:A:2848:VAL:HA	2.20	0.41
3:A:2867:ALA:HA	3:A:2871:SER:H	1.84	0.41
4:B:729:SER:N	4:B:732:ASP:OD2	2.52	0.41
5:C:129:PRO:O	5:C:133:GLU:N	2.42	0.41
7:E:273:GLN:HE21	7:E:273:GLN:HB3	1.53	0.41
13:L:12:ASN:HB2	13:L:75:PHE:HE2	1.84	0.41
1:A1:289:LEU:HD11	1:A1:365:ALA:HB2	2.03	0.41
2:A2:274:PRO:HB2	2:A2:276:ILE:HG12	2.02	0.41
1:A5:376:GLU:O	1:A5:380:ARG:HB2	2.19	0.41
2:B6:150:GLY:O	2:B6:154:LEU:HD23	2.20	0.41
1:B7:145:SER:OG	1:B7:146:GLY:N	2.53	0.41
1:B7:253:LEU:HD11	1:B7:316:LEU:HD21	2.02	0.41
3:A:1505:GLY:CA	3:A:1517:PHE:H	2.31	0.41
3:A:1804:PRO:HA	3:A:1834:PRO:CA	2.47	0.41
3:A:2666:GLU:H	3:A:2667:VAL:C	2.22	0.41
3:A:3956:LEU:HA	3:A:3960:ALA:H	1.83	0.41
4:B:583:TYR:CE2	4:B:682:ARG:HD3	2.55	0.41
5:C:562:LYS:HA	5:C:623:PHE:HZ	1.86	0.41
5:C:1015:LYS:HA	5:C:1018:MET:HB2	2.03	0.41
5:C:1957:LEU:HA	5:C:1960:ALA:HB3	2.02	0.41
5:C:2045:ASP:O	5:C:4365:ALA:HA	2.20	0.41
7:E:342:SER:OG	7:E:343:CYS:N	2.53	0.41
1:A1:135:VAL:HG12	1:A1:137:HIS:HD2	1.86	0.41
2:A2:428:LEU:HD21	2:A2:432:PHE:HE2	1.84	0.41
2:A4:91:GLN:NE2	2:A4:121:ARG:HH21	2.19	0.41
1:A5:117:LEU:HD23	1:A5:117:LEU:HA	1.82	0.41
2:A6:313:MET:HE3	2:A6:382:THR:HG22	2.02	0.41
2:B2:425:LEU:O	2:B2:429:GLU:HG2	2.20	0.41
1:B3:50:TYR:OH	1:B3:237:THR:HG21	2.21	0.41
3:A:1399:VAL:O	3:A:1400:LYS:C	2.58	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:1734:LEU:O	3:A:1738:LEU:CB	2.69	0.41
4:B:385:ARG:HH22	4:B:428:CYS:HB3	1.84	0.41
4:B:543:HIS:HA	4:B:546:GLU:OE1	2.20	0.41
5:C:975:VAL:O	5:C:979:ILE:HD12	2.20	0.41
5:C:1025:THR:HA	5:C:1028:ASN:ND2	2.35	0.41
5:C:1028:ASN:ND2	5:C:1048:LYS:HE3	2.36	0.41
6:D:408:LEU:HD22	6:D:432:SER:HB3	2.02	0.41
9:G:63:ILE:O	9:G:67:ASP:N	2.39	0.41
2:A2:370:LYS:H	2:A2:370:LYS:HG2	1.61	0.41
2:A4:331:SER:O	2:A4:334:THR:OG1	2.36	0.41
1:A7:21:TRP:CZ2	1:A7:63:ALA:HB2	2.55	0.41
1:B3:3:GLU:HB2	1:B3:130:LEU:HD23	2.03	0.41
2:B4:165:SER:HA	2:B4:199:ASP:OD2	2.21	0.41
6:D:296:LEU:HA	6:D:638:LYS:O	2.20	0.41
6:D:316:CYS:SG	6:D:317:TRP:N	2.93	0.41
6:D:520:HIS:CE1	6:D:542:ARG:HH21	2.39	0.41
7:E:154:PHE:HZ	7:E:203:VAL:HG22	1.85	0.41
18:Y:184:LEU:O	18:Y:188:MET:HG2	2.20	0.41
18:Y1:189:ALA:O	18:Y1:193:GLN:HG2	2.21	0.41
2:A2:264:ARG:NH1	2:A2:431:ASP:OD2	2.54	0.41
1:A5:235:GLY:HA2	1:A5:318:ARG:HH11	1.85	0.41
1:A7:48:ASN:OD1	1:A7:48:ASN:N	2.54	0.41
1:B1:244:GLY:HA2	1:B1:355:ASP:OD2	2.20	0.41
2:B2:317:LEU:HB3	2:B2:319:TYR:CE1	2.55	0.41
1:B3:113:ILE:HD12	1:B3:113:ILE:HA	1.85	0.41
1:B5:172:SER:HB3	1:B5:205:GLU:OE2	2.21	0.41
2:B6:288:VAL:HG21	2:B6:327:ASP:CG	2.41	0.41
1:B7:267:MET:HE1	1:B7:299:MET:HG3	2.01	0.41
3:A:1688:LEU:O	3:A:1690:ASN:N	2.54	0.41
3:A:3610:ARG:O	3:A:3615:ALA:N	2.53	0.41
4:B:2691:ASP:O	4:B:2695:ALA:N	2.53	0.41
5:C:759:LEU:HD12	5:C:759:LEU:HA	1.83	0.41
2:A2:66:ILE:HG13	2:A2:66:ILE:O	2.21	0.41
2:A4:179:THR:O	1:A5:350:LYS:HA	2.20	0.41
2:A4:272:TYR:HD2	2:A4:275:ILE:HD11	1.85	0.41
1:A5:224:ASP:O	1:A5:228:LEU:HG	2.20	0.41
1:A5:273:LEU:HD23	1:A5:273:LEU:HA	1.93	0.41
2:A6:167:LEU:HB3	2:A6:169:PHE:CE1	2.55	0.41
2:B4:91:GLN:CG	2:B4:121:ARG:HH12	2.33	0.41
3:A:1747:CYS:O	3:A:1775:PHE:HA	2.20	0.41
3:A:2372:PHE:HA	3:A:2508:LEU:O	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:762:LEU:O	4:B:766:LYS:N	2.53	0.41
4:B:3766:LYS:O	4:B:3770:ASP:CB	2.69	0.41
5:C:390:ARG:HH22	5:C:421:ASP:N	2.19	0.41
5:C:927:LYS:O	5:C:931:THR:HG23	2.20	0.41
5:C:2447:THR:HA	5:C:2487:MET:HA	2.03	0.41
5:C:4025:GLN:O	5:C:4029:GLN:N	2.36	0.41
6:D:590:HIS:HB3	6:D:604:SER:HA	2.02	0.41
13:L:20:GLN:O	13:L:24:VAL:HG23	2.20	0.41
16:X:271:LYS:HA	16:X:271:LYS:HD3	1.84	0.41
1:A1:140:GLY:O	1:A1:184:ASN:ND2	2.54	0.41
2:A4:80:THR:HA	2:A4:84:ARG:HG2	2.02	0.41
1:A5:135:VAL:HG12	1:A5:137:HIS:HD2	1.86	0.41
1:A5:320:ARG:NH1	1:A5:355:ASP:HB3	2.36	0.41
2:A6:66:ILE:HG21	2:A6:121:ARG:HG3	2.02	0.41
2:B2:387:ILE:HG12	2:B2:390:ARG:NH2	2.33	0.41
1:B3:156:ARG:NH2	1:B3:197:ASP:OD1	2.52	0.41
1:B5:233:MET:O	1:B5:236:ILE:HG22	2.20	0.41
2:B6:2:ARG:HE	2:B6:2:ARG:HB3	1.68	0.41
2:B6:255:PHE:N	2:B6:255:PHE:CD1	2.88	0.41
3:A:1967:LEU:HA	3:A:1971:PHE:H	1.86	0.41
3:A:1996:GLY:HA3	3:A:2189:ARG:HA	2.01	0.41
3:A:3397:ALA:HA	3:A:3401:GLY:H	1.86	0.41
4:B:2056:MET:HA	4:B:2059:ALA:HB3	2.03	0.41
4:B:2528:PHE:O	4:B:2644:CYS:HA	2.21	0.41
5:C:752:LEU:HD23	5:C:752:LEU:HA	1.68	0.41
5:C:1772:ILE:O	5:C:1778:ASP:HA	2.21	0.41
7:E:495:ILE:HA	7:E:498:MET:HG2	2.03	0.41
18:Y1:202:ARG:HE	18:Y1:206:ILE:HD11	1.86	0.41
20:Z:155:HIS:CG	20:Z:156:CYS:N	2.89	0.41
2:A2:8:HIS:O	2:A2:68:LEU:HD23	2.21	0.41
2:A2:55:GLU:OE1	2:A2:61:HIS:ND1	2.53	0.41
2:A2:392:ASP:OD1	2:A2:422:ARG:NH1	2.53	0.41
2:A2:405:VAL:HG21	20:Z:168:ARG:NH2	2.36	0.41
1:A3:23:VAL:HG11	1:A3:230:SER:HB2	2.03	0.41
1:A3:135:VAL:HG12	1:A3:137:HIS:HD2	1.86	0.41
1:A3:257:LEU:HD13	1:A3:314:SER:OG	2.20	0.41
2:A4:381:SER:OG	2:A4:382:THR:N	2.54	0.41
1:A5:91:VAL:CG1	1:A5:116:VAL:HG22	2.51	0.41
1:A5:112:LEU:HD12	1:A5:112:LEU:HA	1.93	0.41
1:A5:313:ALA:HB3	1:A5:349:VAL:HG22	2.02	0.41
1:A5:404:ASP:CG	1:A5:405:GLU:H	2.25	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A7:6:HIS:CE1	1:A7:8:GLN:HG2	2.56	0.41
1:B1:322:SER:OG	1:B1:325:GLU:HG3	2.21	0.41
2:B2:155:GLU:HG2	2:B2:197:HIS:NE2	2.35	0.41
2:B2:304:LYS:HD3	2:B2:304:LYS:HA	1.89	0.41
1:B3:139:LEU:HD22	1:B3:188:SER:HB2	2.03	0.41
1:B5:73:MET:HA	1:B5:73:MET:CE	2.50	0.41
1:B5:91:VAL:CG1	1:B5:116:VAL:HG12	2.49	0.41
2:B6:21:TRP:CZ2	2:B6:65:CYS:HB3	2.55	0.41
1:B7:359:LYS:HD2	1:B7:359:LYS:HA	1.88	0.41
3:A:1572:VAL:O	3:A:1576:ILE:CB	2.69	0.41
3:A:1780:PRO:O	3:A:3944:LEU:O	2.39	0.41
3:A:2706:ILE:O	3:A:2710:VAL:CB	2.69	0.41
3:A:4379:PRO:HA	3:A:4380:LEU:HA	1.54	0.41
4:B:738:ASP:HA	4:B:741:ARG:HH11	1.86	0.41
4:B:2807:ALA:HB3	4:B:2823:ASN:O	2.20	0.41
5:C:931:THR:HG22	5:C:934:LYS:HZ1	1.85	0.41
6:D:302:PHE:CZ	6:D:325:PHE:HE2	2.39	0.41
7:E:243:TYR:CD2	7:E:254:GLU:HB2	2.53	0.41
7:E:272:LEU:HD13	7:E:322:TYR:HE2	1.86	0.41
7:E:371:ASN:N	7:E:377:TYR:O	2.53	0.41
7:E:417:SER:O	7:E:417:SER:OG	2.29	0.41
12:J:23:VAL:O	12:J:87:PHE:HB2	2.21	0.41
16:X1:132:LEU:HD12	18:Y1:83:LEU:HD22	2.03	0.41
2:A2:155:GLU:HA	2:A2:197:HIS:CE1	2.56	0.41
2:A2:222:PRO:HD2	1:A3:324:LYS:HD3	2.01	0.41
1:A3:199:CYS:HB3	1:A3:265:PHE:CD1	2.56	0.41
2:A4:7:ILE:CG2	2:A4:137:VAL:HG12	2.51	0.41
1:A5:9:GLY:HA2	1:A5:66:MET:O	2.21	0.41
1:A5:67:ASP:CG	1:A5:68:LEU:H	2.22	0.41
1:A5:183:TYR:HD2	1:A5:398:TYR:CE2	2.39	0.41
1:A7:416:ASN:O	1:A7:419:VAL:HG22	2.21	0.41
1:B7:150:LEU:HD12	1:B7:150:LEU:C	2.41	0.41
3:A:1490:LEU:HA	3:A:1503:ALA:HA	2.02	0.41
3:A:2066:ILE:O	3:A:2113:ASP:N	2.53	0.41
3:A:2560:ARG:C	3:A:2569:GLU:HA	2.42	0.41
4:B:155:PHE:HE1	5:C:155:PHE:HE2	1.68	0.41
4:B:3988:GLY:C	4:B:3998:GLY:HA2	2.40	0.41
5:C:672:LYS:NZ	5:C:687:MET:O	2.44	0.41
5:C:732:ARG:NH1	5:C:732:ARG:HB2	2.35	0.41
5:C:2493:ASP:HA	5:C:2542:MET:HA	2.03	0.41
6:D:318:ASN:HB3	6:D:368:PHE:CE2	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:D:432:SER:OG	6:D:433:SER:N	2.53	0.41
7:E:339:GLN:HB3	7:E:357:VAL:HG23	2.02	0.41
13:K:40:ILE:HG22	13:K:60:VAL:HG21	2.02	0.41
20:Z:152:GLU:HA	20:Z:155:HIS:ND1	2.36	0.41
1:A1:240:LEU:HD11	1:A1:250:LEU:HD13	2.03	0.40
1:A1:285:THR:HG22	1:A1:288:GLU:OE1	2.20	0.40
1:A1:391:ARG:O	1:A1:391:ARG:HG2	2.21	0.40
2:A2:434:GLU:HG3	2:A2:435:VAL:N	2.36	0.40
1:A3:14:ASN:OD1	1:A3:65:LEU:HD22	2.22	0.40
1:A3:178:THR:HG22	1:A3:179:VAL:H	1.86	0.40
2:A4:73:THR:CG2	1:A5:2:ARG:HH22	2.34	0.40
1:A7:105:HIS:CD2	1:A7:150:LEU:HB2	2.55	0.40
1:B3:145:SER:OG	1:B3:146:GLY:N	2.53	0.40
1:B3:391:ARG:HE	2:B4:346:TRP:HE1	1.69	0.40
2:B4:11:GLN:HB3	21:B5:501:GTP:PA	2.61	0.40
2:B4:114:ILE:HG23	2:B4:149:LEU:HD11	2.03	0.40
1:B7:314:SER:OG	1:B7:368:ILE:HB	2.21	0.40
3:A:1282:MET:HA	3:A:1285:ALA:HB3	2.02	0.40
3:A:2544:ILE:HA	3:A:2547:ALA:CB	2.50	0.40
3:A:3280:ALA:HA	3:A:3320:PRO:CB	2.51	0.40
3:A:3616:PRO:HA	3:A:3623:LYS:CA	2.39	0.40
4:B:756:LYS:HA	4:B:759:ARG:HG2	2.03	0.40
16:X1:121:GLN:OE1	18:Y1:69:ALA:HB3	2.21	0.40
16:X1:147:ARG:O	16:X1:150:GLU:HG2	2.21	0.40
20:Z:148:LEU:HD12	20:Z:148:LEU:HA	1.88	0.40
1:A1:409:THR:O	1:A1:412:GLU:HG3	2.22	0.40
1:A3:283:ALA:HB3	1:A3:288:GLU:OE2	2.21	0.40
2:A4:157:LEU:HD23	2:A4:157:LEU:HA	1.91	0.40
2:A4:407:TRP:CD1	1:A5:255:VAL:HG23	2.57	0.40
2:A6:123:ARG:NE	2:A6:123:ARG:HA	2.37	0.40
1:A7:304:ASP:OD2	1:A7:306:ARG:HG2	2.22	0.40
2:B2:276:ILE:HG23	2:B2:281:ALA:HB2	2.01	0.40
2:B2:322:ASP:HB2	2:B2:373:ARG:HH21	1.86	0.40
1:B3:167:PHE:CE2	1:B3:200:MET:HE2	2.55	0.40
1:B3:167:PHE:CZ	1:B3:233:MET:HG2	2.56	0.40
2:B4:221:ARG:HG2	1:B5:322:SER:CB	2.52	0.40
2:B6:273:ALA:HA	2:B6:274:PRO:HA	1.80	0.40
1:B7:3:GLU:HG3	1:B7:127:CYS:HB2	2.04	0.40
1:B7:399:THR:HA	1:B7:403:MET:O	2.21	0.40
3:A:4406:VAL:O	3:A:4442:VAL:CB	2.69	0.40
4:B:597:ILE:HG23	4:B:628:TRP:NE1	2.35	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:681:CYS:SG	5:C:682:SER:N	2.95	0.40
5:C:850:LYS:O	5:C:853:SER:OG	2.31	0.40
13:L:78:PHE:N	13:L:85:ILE:O	2.53	0.40
15:P:57:LYS:HB3	15:P:70:VAL:HG23	2.03	0.40
16:X:249:GLU:OE1	16:X:253:ARG:NH2	2.48	0.40
20:Z:73:LEU:O	20:Z:77:THR:HG23	2.21	0.40
1:A1:303:ALA:HB2	1:A1:377:MET:HE2	2.03	0.40
2:A2:167:LEU:HB3	2:A2:169:PHE:CE1	2.57	0.40
1:A3:35:THR:HA	1:A3:57:GLY:O	2.20	0.40
1:A3:170:VAL:HG22	1:A3:202:LEU:O	2.21	0.40
2:A4:151:SER:HB2	2:A4:193:SER:OG	2.21	0.40
1:A5:407:GLU:O	1:A5:410:GLU:HG2	2.22	0.40
2:A6:210:TYR:CG	1:A7:324:LYS:HG3	2.55	0.40
2:A6:312:TYR:HD1	2:A6:381:SER:HB2	1.86	0.40
1:A7:157:GLU:HA	1:A7:157:GLU:OE1	2.21	0.40
1:A7:260:PHE:HB2	1:A7:263:LEU:HD23	2.02	0.40
1:A7:415:MET:O	1:A7:418:LEU:HG	2.21	0.40
1:B1:350:LYS:HD2	1:B1:351:SER:H	1.86	0.40
2:B2:335:ILE:HD13	2:B2:335:ILE:HA	1.93	0.40
2:B4:75:VAL:HG11	2:B4:94:SER:CB	2.47	0.40
2:B6:62:VAL:HA	2:B6:63:PRO:HD3	1.93	0.40
2:B6:100:ALA:HA	1:B7:252:LYS:HE3	2.03	0.40
1:B7:167:PHE:CD1	1:B7:167:PHE:N	2.88	0.40
1:B7:267:MET:HG2	1:B7:369:GLY:O	2.21	0.40
3:A:1897:ALA:O	3:A:1901:TYR:N	2.46	0.40
3:A:2223:LEU:O	3:A:2227:LYS:N	2.54	0.40
3:A:2501:LEU:O	3:A:2503:ARG:N	2.54	0.40
3:A:2688:ASN:HA	3:A:3426:PHE:HA	2.02	0.40
4:B:3415:ARG:HA	4:B:3418:ALA:HB3	2.03	0.40
7:E:202:ASP:OD1	7:E:203:VAL:N	2.54	0.40
7:E:248:LYS:HE3	7:E:248:LYS:HB3	1.96	0.40
7:E:374:ASN:ND2	7:E:489:PRO:HB2	2.36	0.40
2:A2:306:ASP:OD2	2:A2:308:ARG:HB2	2.22	0.40
1:A3:421:GLU:HA	1:A3:424:GLN:HG2	2.02	0.40
2:A6:327:ASP:N	2:A6:327:ASP:OD1	2.55	0.40
1:A7:140:GLY:O	1:A7:184:ASN:ND2	2.48	0.40
1:B1:139:LEU:HD22	1:B1:188:SER:CB	2.51	0.40
1:B5:86:ARG:HB3	1:B5:89:ASN:ND2	2.37	0.40
3:A:2713:PRO:HA	3:A:2843:THR:O	2.20	0.40
3:A:3898:ALA:HB2	3:A:3936:TRP:CB	2.51	0.40
3:A:4096:TRP:O	3:A:4100:GLN:CB	2.70	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:B:4482:LEU:HA	4:B:4564:PHE:O	2.21	0.40
5:C:151:SER:O	5:C:154:LYS:HG3	2.20	0.40
7:E:166:TYR:HE1	7:E:168:ASN:HB3	1.85	0.40
7:E:286:ASP:O	7:E:314:THR:HA	2.21	0.40
11:I:79:HIS:O	11:I:79:HIS:ND1	2.54	0.40
13:L:36:ILE:HG12	13:L:37:GLU:H	1.87	0.40
13:M:40:ILE:HG21	13:M:60:VAL:HG21	2.04	0.40
20:Z:172:LYS:HA	20:Z:172:LYS:HD3	1.84	0.40
2:A2:219:ILE:HG13	2:A2:219:ILE:O	2.21	0.40
2:A2:312:TYR:O	2:A2:344:VAL:HG23	2.21	0.40
1:A3:185:ALA:HB3	1:A3:381:VAL:HG21	2.04	0.40
1:A3:256:ASN:HD22	1:A3:350:LYS:HE2	1.86	0.40
1:A3:330:MET:SD	1:A3:349:VAL:HG11	2.62	0.40
2:A4:55:GLU:HG3	2:A4:57:GLY:H	1.87	0.40
1:A5:70:PRO:HG2	2:A6:2:ARG:NH2	2.36	0.40
2:A6:66:ILE:HG23	2:A6:125:LEU:HD11	2.04	0.40
2:A6:124:LYS:HA	2:A6:127:ASP:HB2	2.04	0.40
2:A6:175:PRO:HG2	2:A6:176:GLN:OE1	2.21	0.40
2:A6:205:ASP:CB	2:A6:303:VAL:HA	2.52	0.40
1:B1:21:TRP:O	1:B1:25:SER:OG	2.32	0.40
1:B1:256:ASN:O	1:B1:312:THR:HG21	2.22	0.40
2:B2:5:ILE:HG22	2:B2:64:ARG:HD3	2.02	0.40
1:B3:396:HIS:CD2	2:B4:263:PRO:HG3	2.56	0.40
1:B5:8:GLN:CD	1:B5:17:GLY:HA3	2.42	0.40
1:B5:117:LEU:HA	1:B5:117:LEU:HD23	1.91	0.40
3:A:1399:VAL:O	3:A:1402:VAL:N	2.54	0.40
3:A:4057:GLY:O	3:A:4322:VAL:HA	2.22	0.40
4:B:566:LEU:HD11	7:E:406:PRO:HA	2.03	0.40
4:B:2143:LEU:O	4:B:2147:PHE:N	2.39	0.40
4:B:3103:SER:HA	4:B:3585:LYS:O	2.22	0.40
5:C:2104:GLY:O	5:C:2107:ALA:N	2.54	0.40
7:E:304:MET:O	7:E:306:LEU:HD12	2.21	0.40
9:G:62:MET:O	9:G:65:GLN:HG2	2.22	0.40
9:G:127:GLU:H	9:G:127:GLU:HG2	1.75	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles

### 5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A1	424/443 (96%)	399 (94%)	25 (6%)	0	100	100
1	A3	424/443 (96%)	405 (96%)	19 (4%)	0	100	100
1	A5	424/443 (96%)	407 (96%)	17 (4%)	0	100	100
1	A7	424/443 (96%)	405 (96%)	19 (4%)	0	100	100
1	B1	415/443 (94%)	396 (95%)	19 (5%)	0	100	100
1	B3	404/443 (91%)	392 (97%)	12 (3%)	0	100	100
1	B5	424/443 (96%)	403 (95%)	21 (5%)	0	100	100
1	B7	424/443 (96%)	405 (96%)	19 (4%)	0	100	100
2	A2	426/451 (94%)	402 (94%)	24 (6%)	0	100	100
2	A4	423/451 (94%)	409 (97%)	14 (3%)	0	100	100
2	A6	425/451 (94%)	408 (96%)	17 (4%)	0	100	100
2	B2	405/451 (90%)	391 (96%)	14 (4%)	0	100	100
2	B4	403/451 (89%)	385 (96%)	18 (4%)	0	100	100
2	B6	423/451 (94%)	407 (96%)	16 (4%)	0	100	100
3	A	3266/4503 (72%)	2704 (83%)	550 (17%)	12 (0%)	34	72
4	B	3500/4568 (77%)	3121 (89%)	377 (11%)	2 (0%)	51	86
5	C	3840/4485 (86%)	3484 (91%)	353 (9%)	3 (0%)	51	86
6	D	450/683 (66%)	387 (86%)	63 (14%)	0	100	100
7	E	470/567 (83%)	371 (79%)	94 (20%)	5 (1%)	14	52
8	F	98/136 (72%)	94 (96%)	4 (4%)	0	100	100
9	G	134/159 (84%)	125 (93%)	9 (7%)	0	100	100
10	H	89/120 (74%)	77 (86%)	12 (14%)	0	100	100
11	I	101/105 (96%)	89 (88%)	11 (11%)	1 (1%)	15	54
12	J	92/100 (92%)	81 (88%)	11 (12%)	0	100	100
13	K	80/91 (88%)	73 (91%)	7 (9%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
13	L	80/91 (88%)	72 (90%)	8 (10%)	0	100	100
13	M	80/91 (88%)	73 (91%)	7 (9%)	0	100	100
13	N	80/91 (88%)	68 (85%)	12 (15%)	0	100	100
14	O	95/117 (81%)	92 (97%)	3 (3%)	0	100	100
15	P	96/103 (93%)	89 (93%)	7 (7%)	0	100	100
16	X	54/749 (7%)	54 (100%)	0	0	100	100
16	X1	140/749 (19%)	140 (100%)	0	0	100	100
18	Y	71/552 (13%)	71 (100%)	0	0	100	100
18	Y1	145/552 (26%)	145 (100%)	0	0	100	100
20	Z	168/184 (91%)	155 (92%)	11 (6%)	2 (1%)	13	50
All	All	18997/25046 (76%)	17179 (90%)	1793 (9%)	25 (0%)	54	86

All (25) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	A	1677	CYS
4	B	625	ASP
4	B	1876	ASP
5	C	4432	LEU
7	E	298	ASN
11	I	85	PRO
20	Z	86	LYS
20	Z	141	ASP
3	A	1793	VAL
7	E	295	ARG
3	A	1678	ASP
3	A	4231	GLU
5	C	114	TRP
7	E	269	PHE
3	A	4139	PRO
3	A	4247	GLU
7	E	231	LEU
3	A	4147	ALA
3	A	4148	PRO
3	A	1830	GLY
3	A	4138	ASN
7	E	209	PRO
3	A	1805	GLY

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Mol	Chain	Res	Type
3	A	4438	PRO
5	C	839	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	A1	367/379 (97%)	367 (100%)	0	100	100
1	A3	367/379 (97%)	366 (100%)	1 (0%)	92	95
1	A5	367/379 (97%)	367 (100%)	0	100	100
1	A7	367/379 (97%)	367 (100%)	0	100	100
1	B1	363/379 (96%)	363 (100%)	0	100	100
1	B3	356/379 (94%)	356 (100%)	0	100	100
1	B5	367/379 (97%)	367 (100%)	0	100	100
1	B7	367/379 (97%)	366 (100%)	1 (0%)	92	95
2	A2	361/374 (96%)	360 (100%)	1 (0%)	92	95
2	A4	359/374 (96%)	354 (99%)	5 (1%)	67	80
2	A6	361/374 (96%)	361 (100%)	0	100	100
2	B2	347/374 (93%)	347 (100%)	0	100	100
2	B4	346/374 (92%)	346 (100%)	0	100	100
2	B6	359/374 (96%)	359 (100%)	0	100	100
4	B	463/3998 (12%)	455 (98%)	8 (2%)	60	78
5	C	702/3945 (18%)	696 (99%)	6 (1%)	78	87
6	D	401/584 (69%)	396 (99%)	5 (1%)	71	83
7	E	400/489 (82%)	396 (99%)	4 (1%)	76	86
9	G	121/136 (89%)	121 (100%)	0	100	100
11	I	90/91 (99%)	89 (99%)	1 (1%)	73	84
12	J	83/87 (95%)	83 (100%)	0	100	100
13	K	70/76 (92%)	70 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
13	L	70/76 (92%)	69 (99%)	1 (1%)	67	80
13	M	70/76 (92%)	70 (100%)	0	100	100
15	P	86/90 (96%)	86 (100%)	0	100	100
16	X	50/618 (8%)	50 (100%)	0	100	100
16	X1	125/618 (20%)	121 (97%)	4 (3%)	39	61
18	Y	59/462 (13%)	59 (100%)	0	100	100
18	Y1	128/462 (28%)	127 (99%)	1 (1%)	81	89
20	Z	150/162 (93%)	146 (97%)	4 (3%)	44	65
All	All	8122/17246 (47%)	8080 (100%)	42 (0%)	89	93

All (42) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	A2	73	THR
1	A3	390	ARG
2	A4	51	THR
2	A4	62	VAL
2	A4	346	TRP
2	A4	347	CYS
2	A4	349	THR
1	B7	72	THR
4	B	124	GLN
4	B	596	ARG
4	B	598	LYS
4	B	627	LEU
4	B	628	TRP
4	B	629	GLU
4	B	731	LYS
4	B	799	LYS
5	C	120	LYS
5	C	154	LYS
5	C	200	LEU
5	C	204	GLU
5	C	295	LYS
5	C	956	ARG
6	D	268	ASN
6	D	270	ASN
6	D	309	ARG
6	D	312	VAL

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Mol	Chain	Res	Type
6	D	672	LYS
7	E	273	GLN
7	E	279	GLU
7	E	296	LYS
7	E	507	LYS
11	I	70	LYS
13	L	45	LYS
16	X1	204	LEU
16	X1	208	ARG
16	X1	213	HIS
16	X1	214	LEU
18	Y1	166	GLU
20	Z	9	ARG
20	Z	10	TYR
20	Z	122	LEU
20	Z	123	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (46) such sidechains are listed below:

Mol	Chain	Res	Type
2	A2	11	GLN
2	A2	101	ASN
2	A2	329	ASN
1	A3	6	HIS
1	A3	131	GLN
1	A3	134	GLN
1	A3	195	ASN
1	A3	256	ASN
2	A4	91	GLN
2	A4	102	ASN
2	A4	228	ASN
1	A7	190	HIS
1	A7	204	ASN
1	B1	6	HIS
1	B1	131	GLN
1	B1	334	GLN
2	B2	256	GLN
2	B2	329	ASN
1	B3	15	GLN
1	B3	190	HIS
2	B4	88	HIS
2	B4	102	ASN

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Mol	Chain	Res	Type
2	B4	258	ASN
2	B4	329	ASN
1	B5	15	GLN
1	B5	99	ASN
1	B5	100	ASN
1	B5	347	ASN
1	B5	348	ASN
1	B5	384	GLN
2	B6	102	ASN
2	B6	329	ASN
1	B7	100	ASN
1	B7	334	GLN
1	B7	375	GLN
5	C	500	GLN
5	C	504	ASN
5	C	515	HIS
6	D	576	GLN
7	E	158	ASN
7	E	205	ASN
7	E	273	GLN
7	E	374	ASN
9	G	65	GLN
16	X1	240	HIS
20	Z	17	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

Of 22 ligands modelled in this entry, 7 are monoatomic - leaving 15 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
23	GDP	A7	502	-	24,30,30	0.94	1 (4%)	30,47,47	1.27	5 (16%)
23	GDP	B7	502	-	24,30,30	0.94	1 (4%)	30,47,47	1.41	5 (16%)
21	GTP	B2	501	22	26,34,34	1.19	2 (7%)	32,54,54	1.73	7 (21%)
23	GDP	B1	501	-	24,30,30	0.97	1 (4%)	30,47,47	1.34	4 (13%)
23	GDP	A5	502	-	24,30,30	0.94	1 (4%)	30,47,47	1.32	5 (16%)
23	GDP	A1	503	-	24,30,30	0.95	1 (4%)	30,47,47	1.28	4 (13%)
23	GDP	B3	502	-	24,30,30	0.93	1 (4%)	30,47,47	1.35	4 (13%)
21	GTP	B7	501	22	26,34,34	1.20	2 (7%)	32,54,54	1.58	7 (21%)
23	GDP	A3	502	-	24,30,30	0.96	1 (4%)	30,47,47	1.34	5 (16%)
21	GTP	A5	501	22	26,34,34	1.22	2 (7%)	32,54,54	1.66	7 (21%)
21	GTP	A3	501	22	26,34,34	1.18	2 (7%)	32,54,54	1.72	7 (21%)
23	GDP	B5	502	-	24,30,30	0.95	1 (4%)	30,47,47	1.33	4 (13%)
21	GTP	A7	501	22	26,34,34	1.20	2 (7%)	32,54,54	1.67	7 (21%)
21	GTP	A1	501	22	26,34,34	1.13	2 (7%)	32,54,54	1.64	7 (21%)
21	GTP	B5	501	22	26,34,34	1.21	2 (7%)	32,54,54	1.62	7 (21%)

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
23	GDP	A7	502	-	-	4/12/32/32	0/3/3/3
23	GDP	B7	502	-	-	6/12/32/32	0/3/3/3
21	GTP	B2	501	22	-	4/18/38/38	0/3/3/3
23	GDP	B1	501	-	-	2/12/32/32	0/3/3/3
23	GDP	A5	502	-	-	1/12/32/32	0/3/3/3
23	GDP	A1	503	-	-	3/12/32/32	0/3/3/3
23	GDP	B3	502	-	-	3/12/32/32	0/3/3/3
21	GTP	B7	501	22	-	6/18/38/38	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
23	GDP	A3	502	-	-	1/12/32/32	0/3/3/3
21	GTP	A5	501	22	-	6/18/38/38	0/3/3/3
21	GTP	A3	501	22	-	7/18/38/38	0/3/3/3
23	GDP	B5	502	-	-	4/12/32/32	0/3/3/3
21	GTP	A7	501	22	-	7/18/38/38	0/3/3/3
21	GTP	A1	501	22	-	5/18/38/38	0/3/3/3
21	GTP	B5	501	22	-	7/18/38/38	0/3/3/3

All (22) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
21	A7	501	GTP	C5-C6	-4.28	1.38	1.47
21	B7	501	GTP	C5-C6	-4.26	1.38	1.47
21	A5	501	GTP	C5-C6	-4.26	1.38	1.47
21	B5	501	GTP	C5-C6	-4.24	1.38	1.47
21	B2	501	GTP	C5-C6	-4.16	1.39	1.47
21	A3	501	GTP	C5-C6	-4.07	1.39	1.47
21	A1	501	GTP	C5-C6	-3.93	1.39	1.47
23	A3	502	GDP	C6-N1	-2.64	1.33	1.37
23	B5	502	GDP	C6-N1	-2.62	1.34	1.37
23	B1	501	GDP	C6-N1	-2.59	1.34	1.37
23	B3	502	GDP	C6-N1	-2.54	1.34	1.37
23	A7	502	GDP	C6-N1	-2.53	1.34	1.37
23	B7	502	GDP	C6-N1	-2.49	1.34	1.37
23	A5	502	GDP	C6-N1	-2.38	1.34	1.37
23	A1	503	GDP	C6-N1	-2.38	1.34	1.37
21	A1	501	GTP	C2-N3	2.21	1.38	1.33
21	A3	501	GTP	C2-N3	2.17	1.38	1.33
21	B7	501	GTP	C2-N3	2.17	1.38	1.33
21	B5	501	GTP	C2-N3	2.12	1.38	1.33
21	A5	501	GTP	C2-N3	2.12	1.38	1.33
21	B2	501	GTP	C2-N3	2.07	1.38	1.33
21	A7	501	GTP	C2-N3	2.02	1.38	1.33

All (85) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
21	B2	501	GTP	PB-O3B-PG	-5.00	115.69	132.83
21	A5	501	GTP	PA-O3A-PB	-4.67	116.82	132.83
21	A3	501	GTP	PB-O3B-PG	-4.46	117.52	132.83
21	A3	501	GTP	PA-O3A-PB	-4.46	117.53	132.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
21	A7	501	GTP	PA-O3A-PB	-4.46	117.53	132.83
21	B5	501	GTP	PA-O3A-PB	-4.33	117.98	132.83
21	A1	501	GTP	PA-O3A-PB	-4.06	118.90	132.83
21	A1	501	GTP	PB-O3B-PG	-3.97	119.19	132.83
23	B3	502	GDP	PA-O3A-PB	-3.93	119.34	132.83
21	B2	501	GTP	PA-O3A-PB	-3.85	119.61	132.83
21	A7	501	GTP	PB-O3B-PG	-3.82	119.72	132.83
23	B7	502	GDP	PA-O3A-PB	-3.65	120.32	132.83
21	B7	501	GTP	PB-O3B-PG	-3.63	120.38	132.83
23	B5	502	GDP	PA-O3A-PB	-3.52	120.75	132.83
21	B5	501	GTP	C5-C6-N1	3.45	120.04	113.95
21	A3	501	GTP	C5-C6-N1	3.44	120.03	113.95
23	B1	501	GDP	PA-O3A-PB	-3.43	121.06	132.83
21	B7	501	GTP	PA-O3A-PB	-3.40	121.16	132.83
21	A5	501	GTP	PB-O3B-PG	-3.37	121.25	132.83
21	A5	501	GTP	C5-C6-N1	3.31	119.80	113.95
21	B7	501	GTP	C5-C6-N1	3.30	119.78	113.95
21	B2	501	GTP	C5-C6-N1	3.30	119.78	113.95
21	A7	501	GTP	C5-C6-N1	3.28	119.75	113.95
23	B1	501	GDP	C3'-C2'-C1'	3.25	105.87	100.98
21	A1	501	GTP	C5-C6-N1	3.23	119.66	113.95
23	A1	503	GDP	PA-O3A-PB	-3.22	121.76	132.83
23	B7	502	GDP	C3'-C2'-C1'	3.20	105.80	100.98
21	B5	501	GTP	PB-O3B-PG	-3.17	121.96	132.83
23	A3	502	GDP	PA-O3A-PB	-3.15	122.01	132.83
21	B2	501	GTP	C8-N7-C5	3.11	108.91	102.99
23	A5	502	GDP	PA-O3A-PB	-3.11	122.16	132.83
21	A1	501	GTP	C8-N7-C5	3.06	108.82	102.99
23	A3	502	GDP	C3'-C2'-C1'	3.05	105.56	100.98
21	A7	501	GTP	C8-N7-C5	3.04	108.78	102.99
21	A3	501	GTP	C2-N1-C6	-3.04	119.50	125.10
21	B5	501	GTP	C2-N1-C6	-3.04	119.50	125.10
23	A1	503	GDP	C3'-C2'-C1'	3.04	105.55	100.98
21	A3	501	GTP	C8-N7-C5	3.03	108.75	102.99
21	B7	501	GTP	C2-N1-C6	-3.02	119.54	125.10
23	A5	502	GDP	C3'-C2'-C1'	3.01	105.50	100.98
21	B5	501	GTP	C8-N7-C5	2.99	108.69	102.99
21	B7	501	GTP	C8-N7-C5	2.99	108.69	102.99
21	A5	501	GTP	C8-N7-C5	2.98	108.67	102.99
23	A7	502	GDP	PA-O3A-PB	-2.96	122.66	132.83
21	B2	501	GTP	C2-N1-C6	-2.94	119.69	125.10
21	A7	501	GTP	C2-N1-C6	-2.92	119.71	125.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
21	A5	501	GTP	C2-N1-C6	-2.92	119.71	125.10
21	B2	501	GTP	O4'-C1'-C2'	-2.90	102.69	106.93
23	B3	502	GDP	C3'-C2'-C1'	2.87	105.29	100.98
21	A1	501	GTP	C2-N1-C6	-2.86	119.83	125.10
23	A7	502	GDP	C3'-C2'-C1'	2.84	105.25	100.98
23	B5	502	GDP	C3'-C2'-C1'	2.77	105.14	100.98
21	B5	501	GTP	C3'-C2'-C1'	2.70	105.04	100.98
21	A5	501	GTP	C3'-C2'-C1'	2.58	104.86	100.98
21	A5	501	GTP	O6-C6-C5	-2.53	119.43	124.37
21	A1	501	GTP	C3'-C2'-C1'	2.52	104.78	100.98
21	A7	501	GTP	C3'-C2'-C1'	2.49	104.73	100.98
23	A3	502	GDP	C5-C6-N1	2.47	118.31	113.95
21	A3	501	GTP	C3'-C2'-C1'	2.43	104.64	100.98
21	A7	501	GTP	O6-C6-C5	-2.40	119.67	124.37
23	A5	502	GDP	C5-C6-N1	2.39	118.18	113.95
23	B1	501	GDP	C8-N7-C5	2.39	107.55	102.99
23	B1	501	GDP	C5-C6-N1	2.39	118.17	113.95
23	A5	502	GDP	C8-N7-C5	2.38	107.53	102.99
23	A1	503	GDP	C5-C6-N1	2.38	118.15	113.95
23	B5	502	GDP	C5-C6-N1	2.37	118.13	113.95
21	B7	501	GTP	C3'-C2'-C1'	2.36	104.53	100.98
23	B3	502	GDP	C5-C6-N1	2.35	118.10	113.95
23	A1	503	GDP	C8-N7-C5	2.32	107.42	102.99
23	B3	502	GDP	C8-N7-C5	2.31	107.40	102.99
23	A7	502	GDP	C8-N7-C5	2.31	107.39	102.99
23	B5	502	GDP	C8-N7-C5	2.29	107.35	102.99
23	A7	502	GDP	C5-C6-N1	2.29	118.00	113.95
23	B7	502	GDP	C8-N7-C5	2.29	107.34	102.99
23	B7	502	GDP	O4'-C4'-C5'	-2.28	101.86	109.37
23	B7	502	GDP	C5-C6-N1	2.28	117.98	113.95
23	A3	502	GDP	C8-N7-C5	2.27	107.32	102.99
21	B2	501	GTP	O6-C6-C5	-2.26	119.96	124.37
21	B7	501	GTP	O6-C6-C5	-2.24	120.00	124.37
21	B5	501	GTP	O6-C6-C5	-2.19	120.09	124.37
23	A3	502	GDP	O3B-PB-O3A	2.17	111.91	104.64
21	A1	501	GTP	O6-C6-C5	-2.09	120.28	124.37
21	A3	501	GTP	O6-C6-C5	-2.08	120.31	124.37
23	A7	502	GDP	O3B-PB-O3A	2.08	111.60	104.64
23	A5	502	GDP	O3B-PB-O3A	2.02	111.41	104.64

There are no chirality outliers.

All (66) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
21	A1	501	GTP	C5'-O5'-PA-O1A
21	A3	501	GTP	C5'-O5'-PA-O1A
21	A3	501	GTP	C5'-O5'-PA-O2A
21	A5	501	GTP	C5'-O5'-PA-O1A
21	A7	501	GTP	C5'-O5'-PA-O1A
21	A7	501	GTP	C5'-O5'-PA-O2A
21	B2	501	GTP	C5'-O5'-PA-O3A
21	B5	501	GTP	C5'-O5'-PA-O1A
21	B5	501	GTP	C5'-O5'-PA-O2A
21	B7	501	GTP	C5'-O5'-PA-O3A
21	B7	501	GTP	C5'-O5'-PA-O2A
23	A1	503	GDP	PA-O3A-PB-O3B
23	A1	503	GDP	C5'-O5'-PA-O1A
23	A7	502	GDP	PA-O3A-PB-O3B
23	B1	501	GDP	C5'-O5'-PA-O3A
23	B1	501	GDP	C5'-O5'-PA-O1A
23	B3	502	GDP	PA-O3A-PB-O3B
23	B3	502	GDP	C5'-O5'-PA-O1A
23	B5	502	GDP	C5'-O5'-PA-O1A
23	B7	502	GDP	PA-O3A-PB-O3B
23	B7	502	GDP	C5'-O5'-PA-O3A
23	B7	502	GDP	C5'-O5'-PA-O1A
23	B7	502	GDP	C3'-C4'-C5'-O5'
21	A7	501	GTP	C3'-C4'-C5'-O5'
21	A5	501	GTP	C3'-C4'-C5'-O5'
23	B7	502	GDP	O4'-C4'-C5'-O5'
21	A5	501	GTP	O4'-C4'-C5'-O5'
21	B5	501	GTP	C3'-C4'-C5'-O5'
23	B7	502	GDP	PA-O3A-PB-O1B
21	A7	501	GTP	O4'-C4'-C5'-O5'
21	A3	501	GTP	C4'-C5'-O5'-PA
21	A7	501	GTP	C4'-C5'-O5'-PA
21	B2	501	GTP	C4'-C5'-O5'-PA
21	B7	501	GTP	PB-O3A-PA-O5'
23	A1	503	GDP	PA-O3A-PB-O2B
21	A7	501	GTP	C5'-O5'-PA-O3A
21	A1	501	GTP	C4'-C5'-O5'-PA
21	B5	501	GTP	C4'-C5'-O5'-PA
21	B7	501	GTP	C4'-C5'-O5'-PA
21	A1	501	GTP	C5'-O5'-PA-O2A
21	A5	501	GTP	C5'-O5'-PA-O2A
21	B2	501	GTP	C5'-O5'-PA-O2A
21	A5	501	GTP	C4'-C5'-O5'-PA

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Mol	Chain	Res	Type	Atoms
21	B5	501	GTP	O4'-C4'-C5'-O5'
21	A7	501	GTP	PA-O3A-PB-O2B
23	A7	502	GDP	C3'-C4'-C5'-O5'
23	B3	502	GDP	PA-O3A-PB-O1B
21	A3	501	GTP	C3'-C4'-C5'-O5'
21	B7	501	GTP	PA-O3A-PB-O1B
23	A7	502	GDP	PA-O3A-PB-O1B
23	B5	502	GDP	PA-O3A-PB-O1B
21	B2	501	GTP	PB-O3B-PG-O3G
21	A1	501	GTP	C5'-O5'-PA-O3A
21	A3	501	GTP	C5'-O5'-PA-O3A
21	A5	501	GTP	C5'-O5'-PA-O3A
21	B5	501	GTP	C5'-O5'-PA-O3A
23	B5	502	GDP	C5'-O5'-PA-O3A
21	A1	501	GTP	C3'-C4'-C5'-O5'
23	B5	502	GDP	C3'-C4'-C5'-O5'
21	A3	501	GTP	PA-O3A-PB-O1B
21	A3	501	GTP	PA-O3A-PB-O2B
21	B5	501	GTP	PA-O3A-PB-O2B
21	B7	501	GTP	PA-O3A-PB-O2B
23	A3	502	GDP	C5'-O5'-PA-O1A
23	A5	502	GDP	C5'-O5'-PA-O1A
23	A7	502	GDP	C5'-O5'-PA-O1A

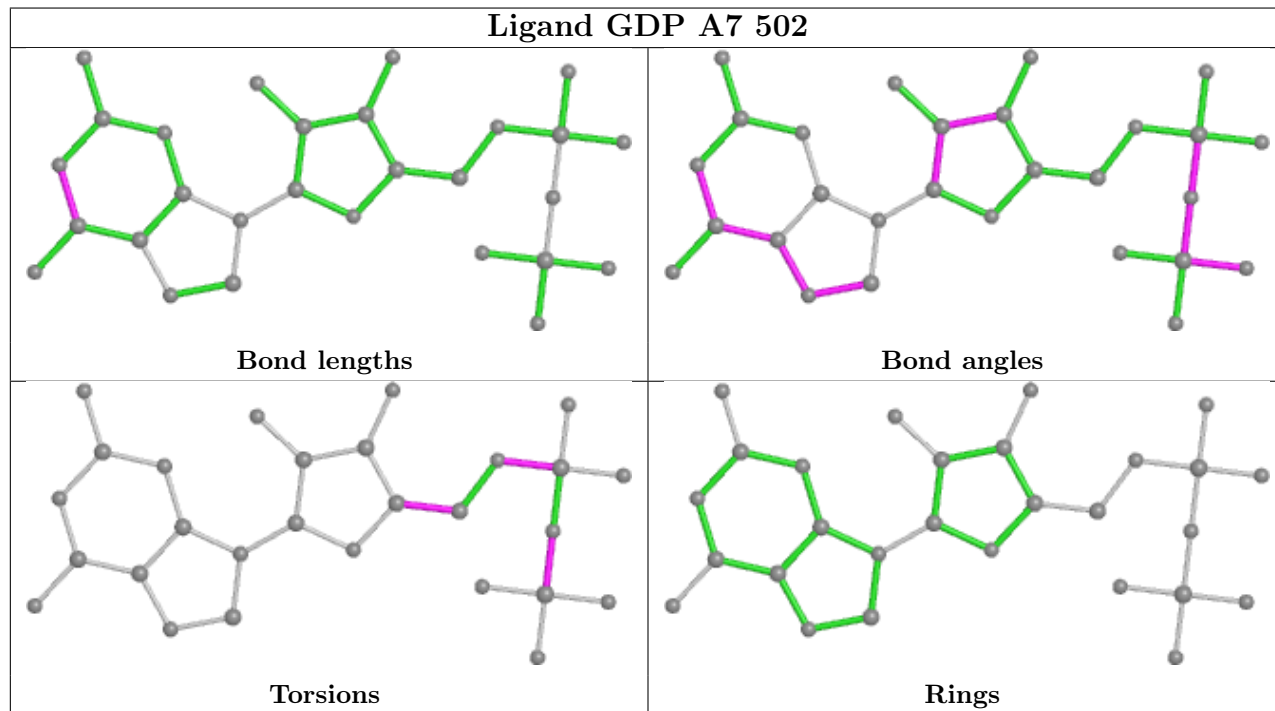
There are no ring outliers.

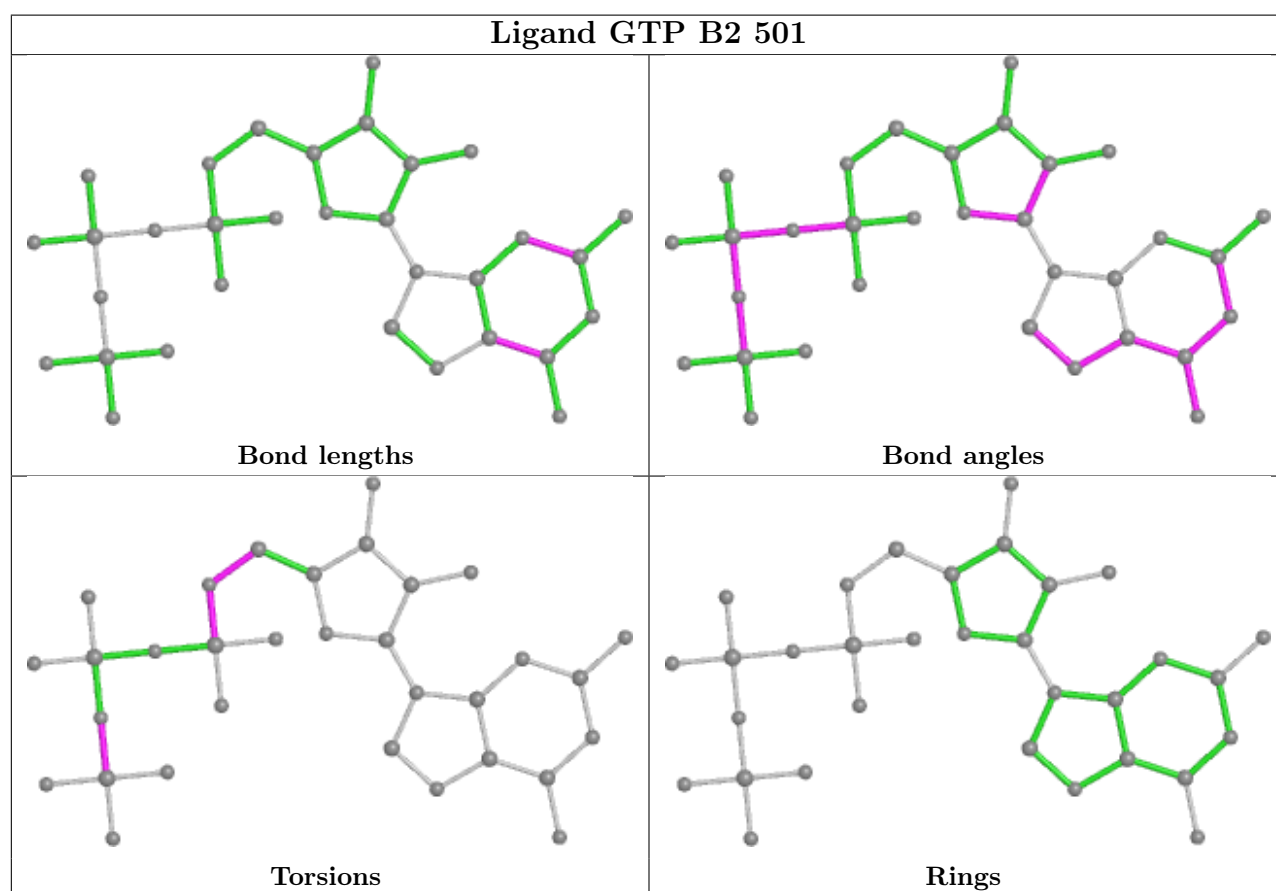
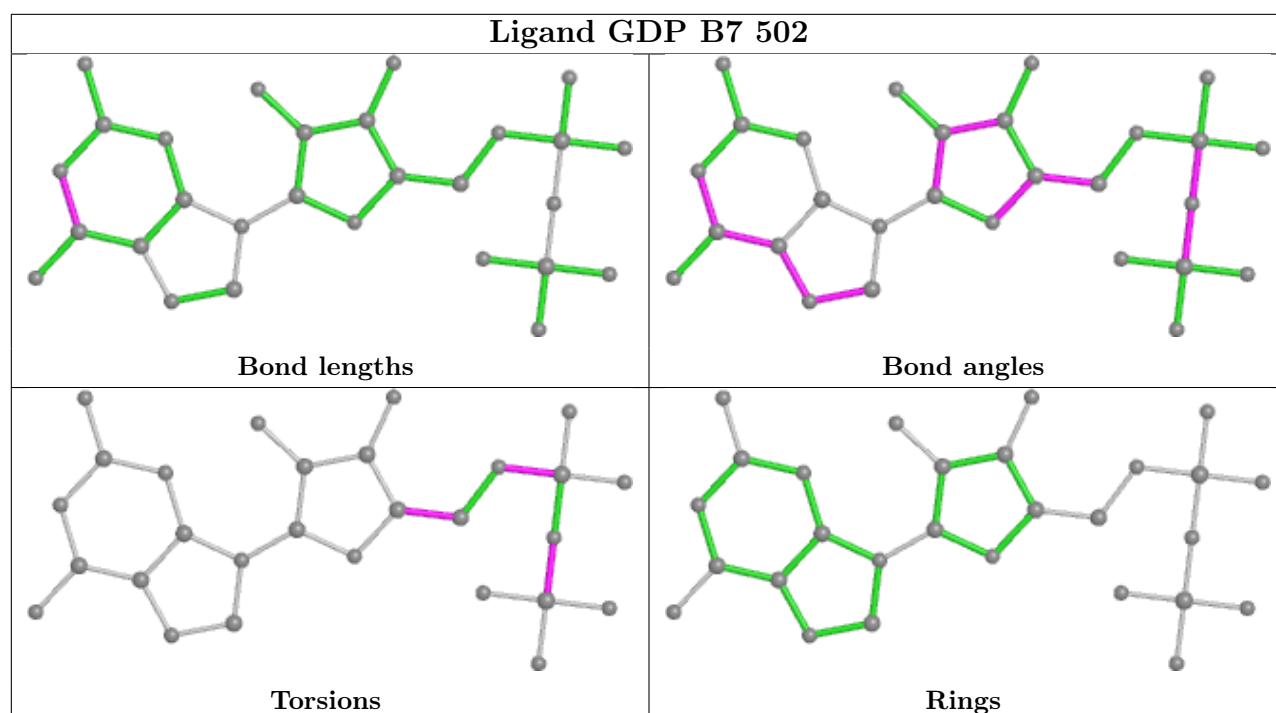
11 monomers are involved in 19 short contacts:

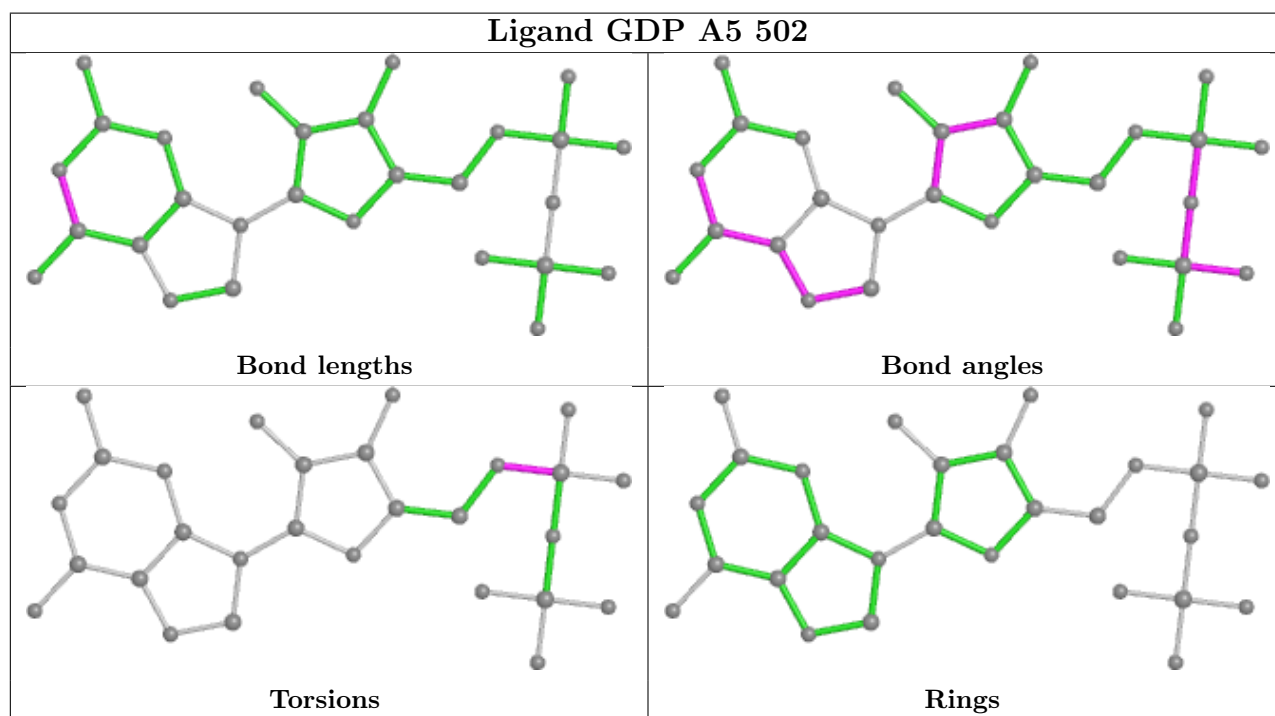
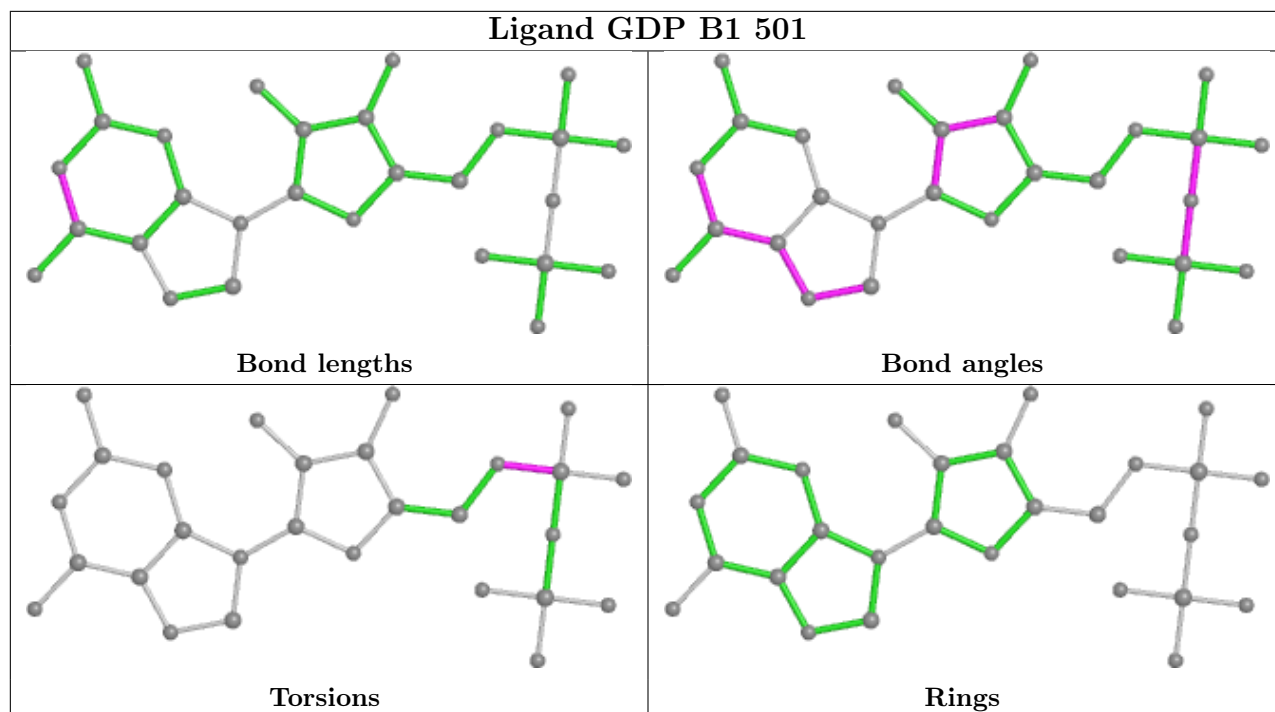
Mol	Chain	Res	Type	Clashes	Symm-Clashes
23	A7	502	GDP	2	0
23	B7	502	GDP	1	0
21	B2	501	GTP	1	0
23	B1	501	GDP	3	0
23	B3	502	GDP	2	0
23	A3	502	GDP	2	0
21	A5	501	GTP	1	0
21	A3	501	GTP	1	0
23	B5	502	GDP	1	0
21	A7	501	GTP	4	0
21	B5	501	GTP	1	0

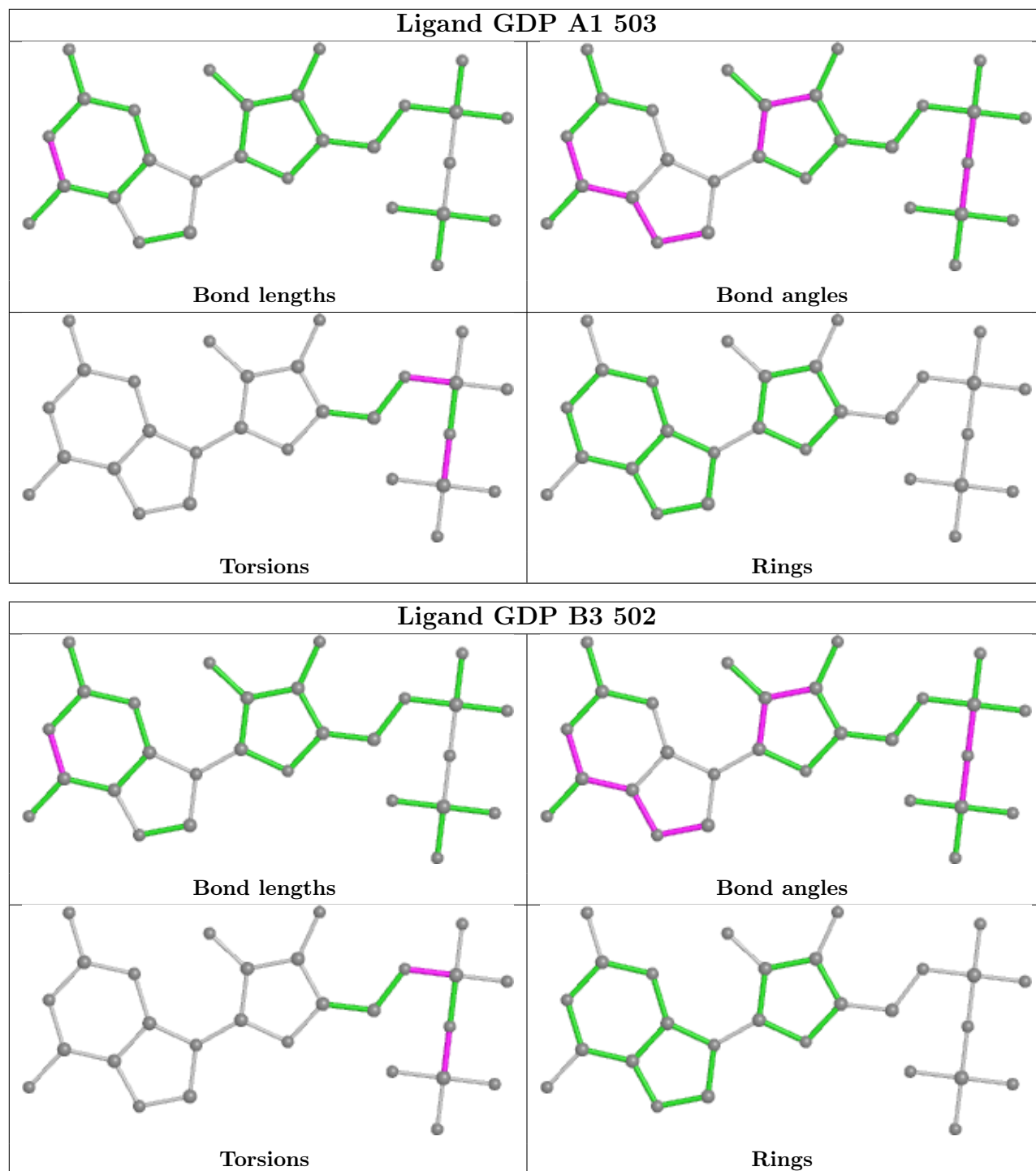
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In

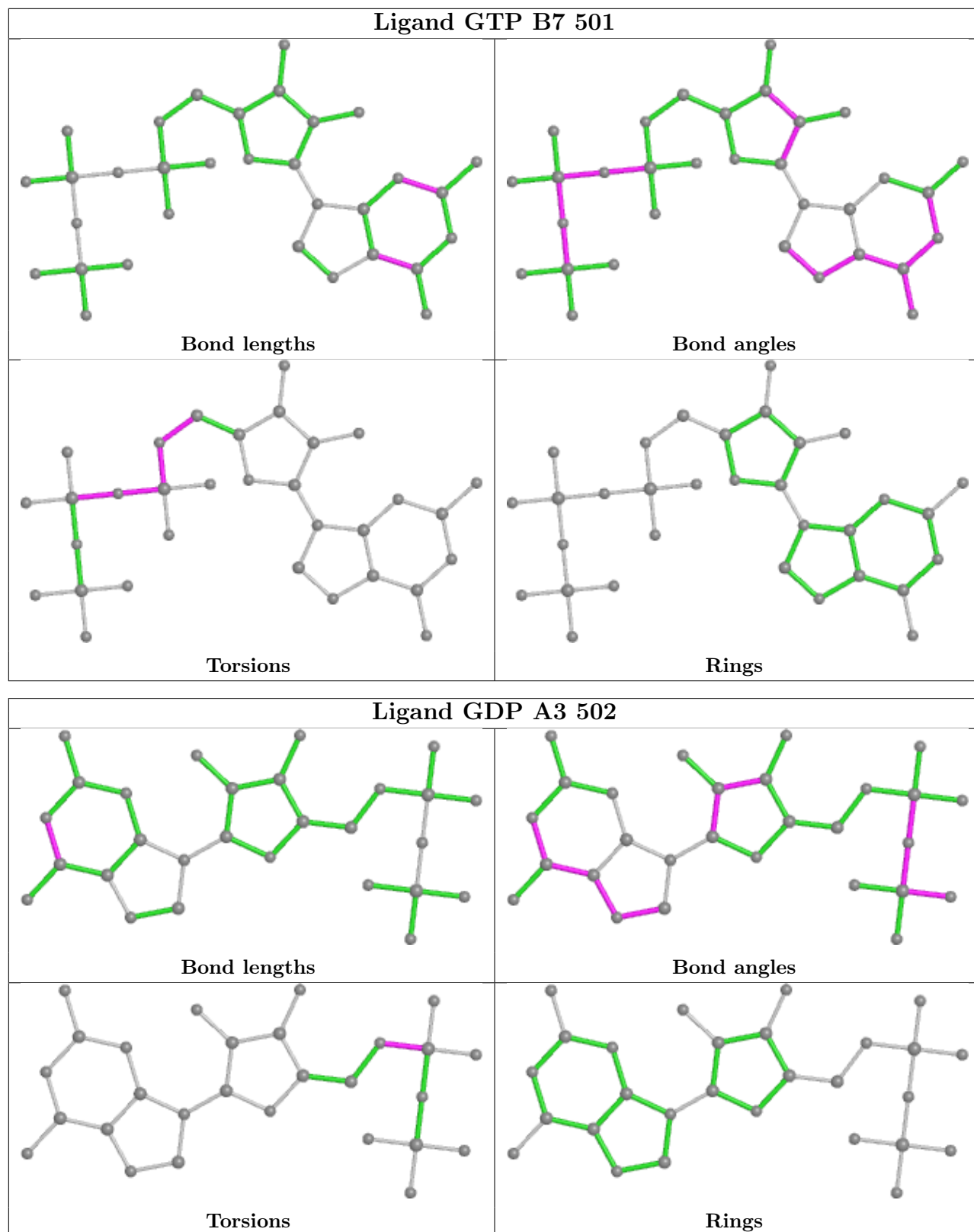
addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. 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.



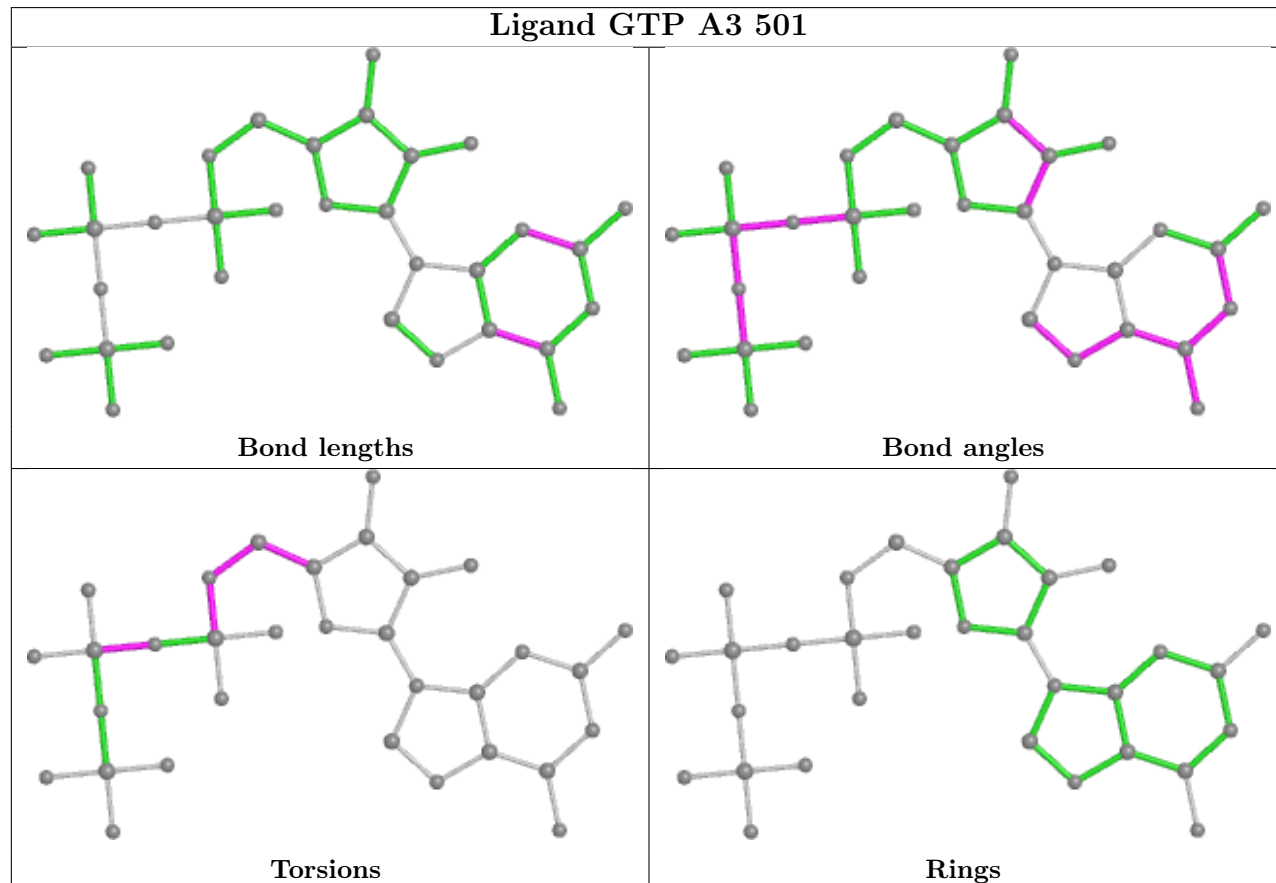
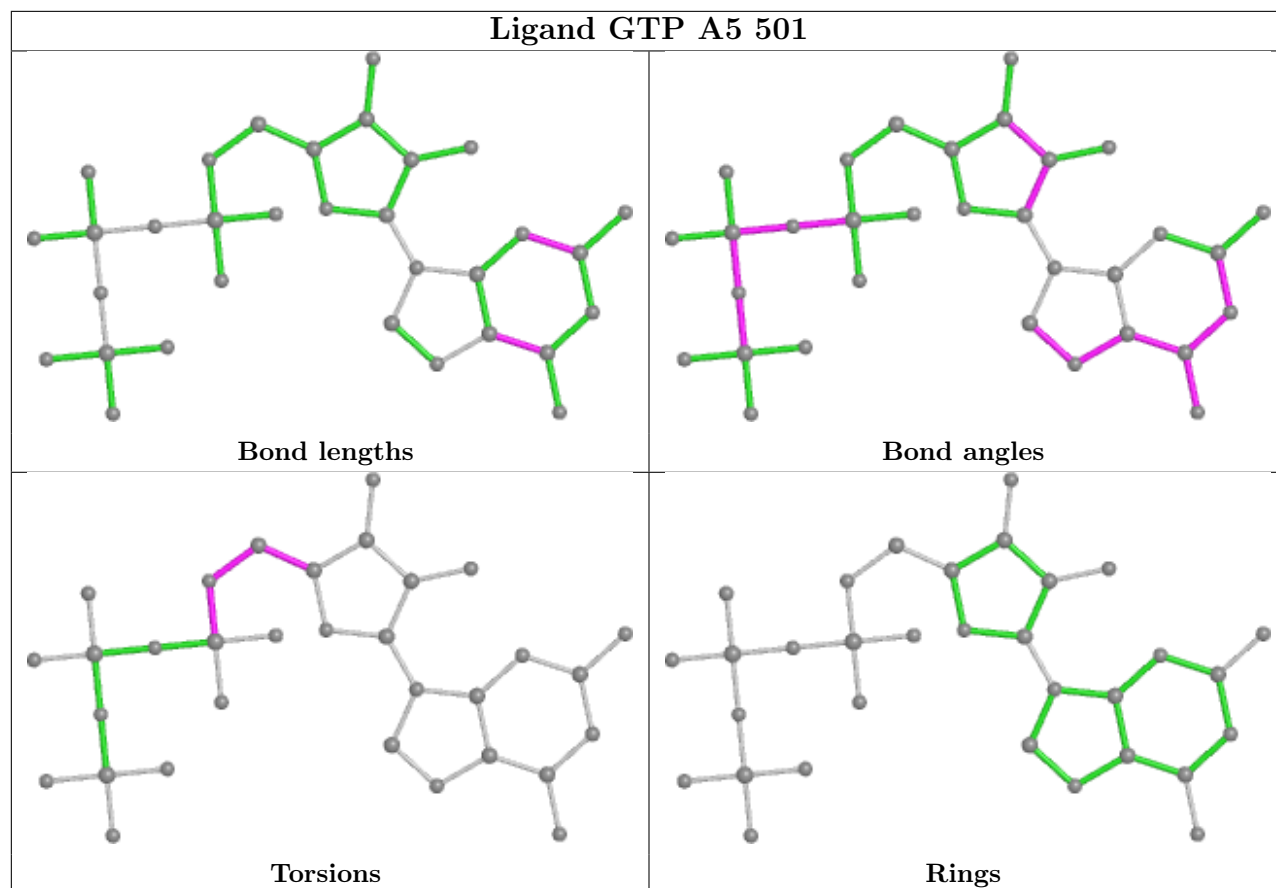


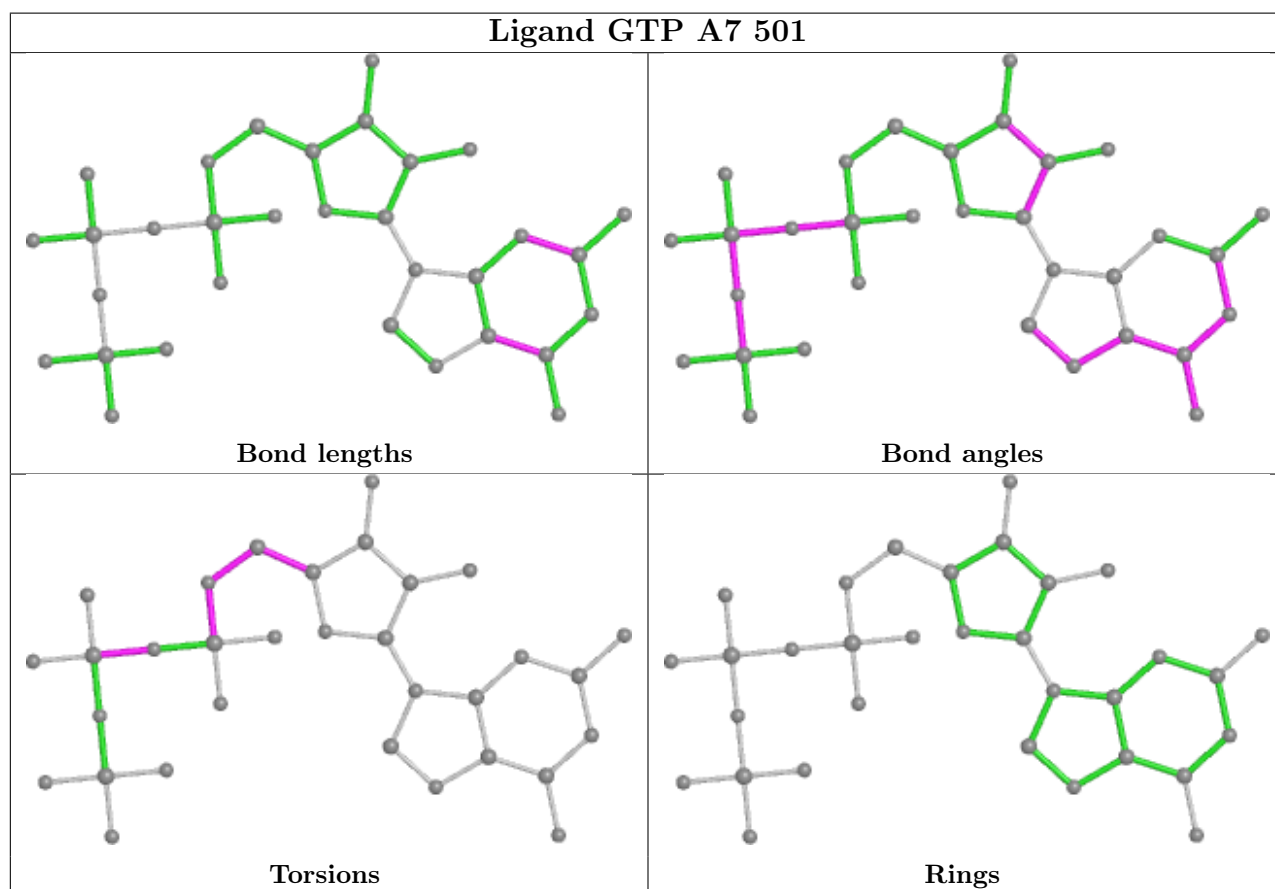
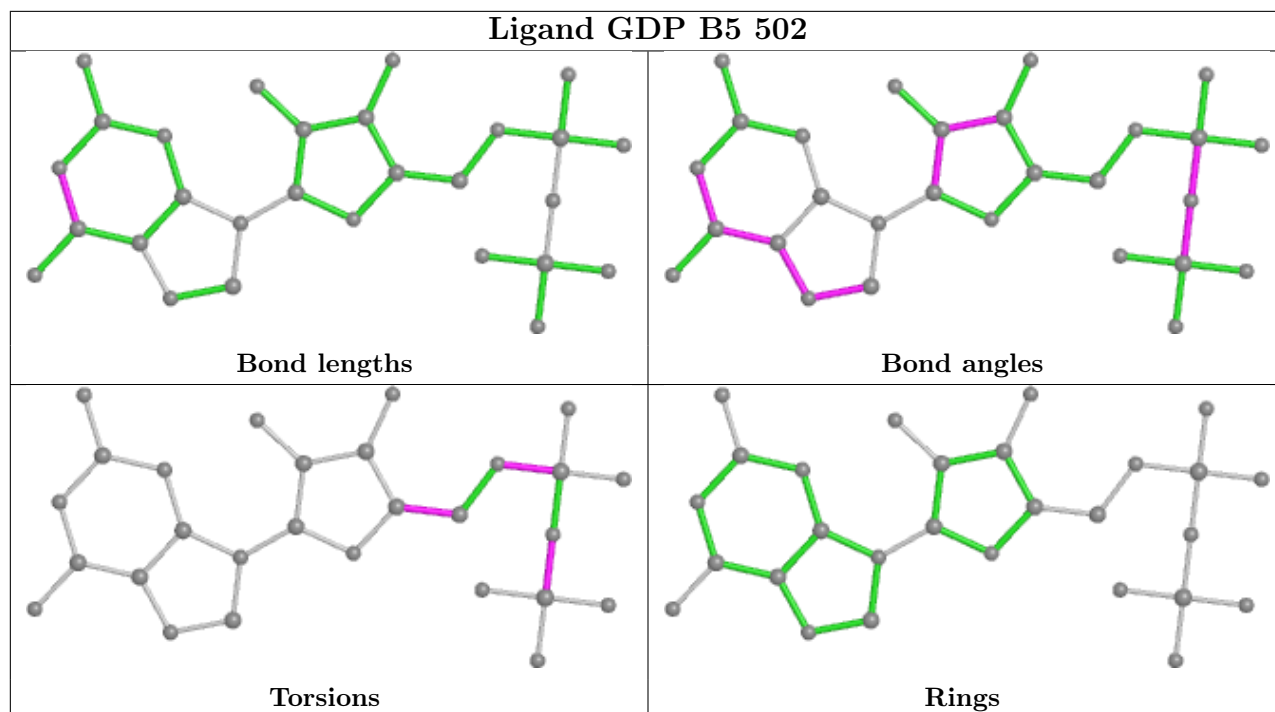


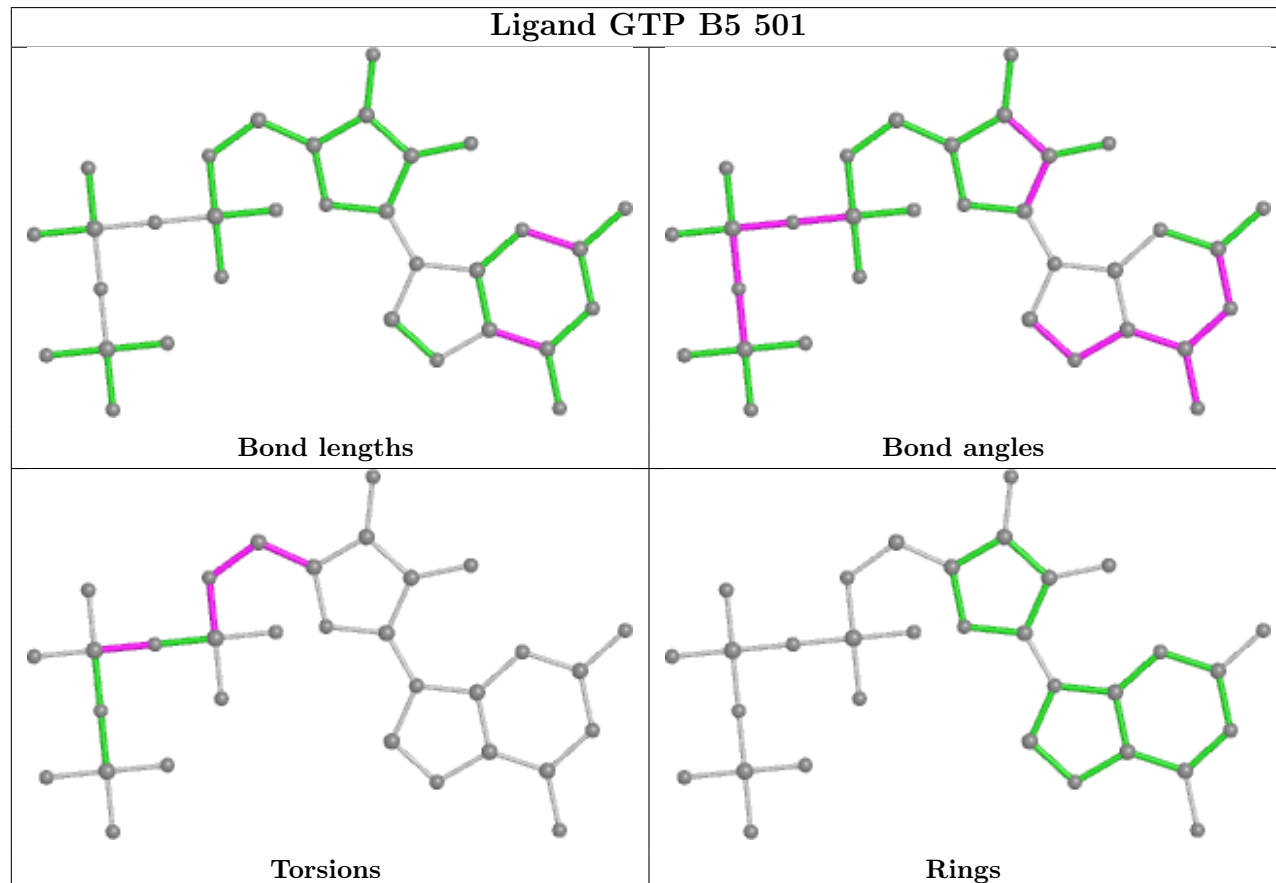
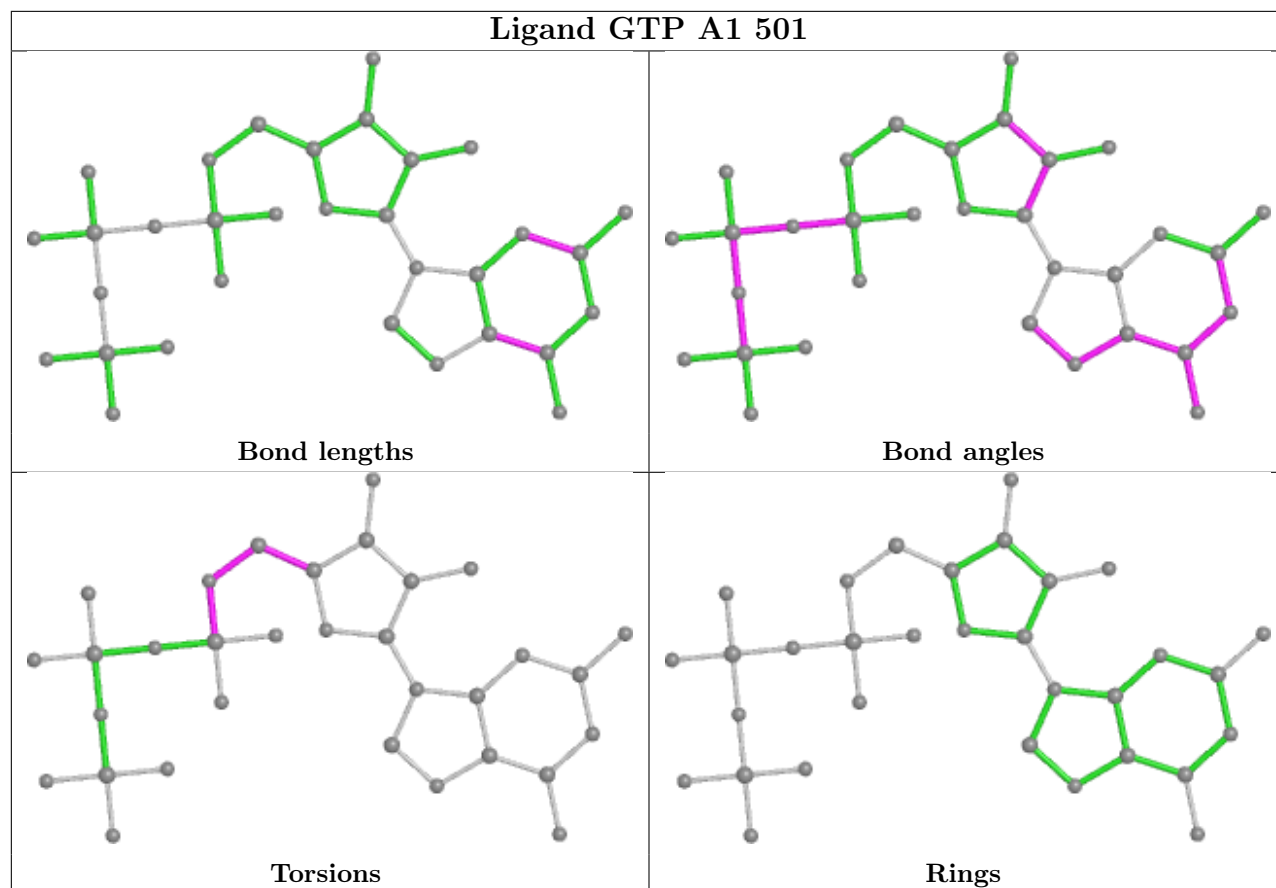












## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

The following chains have linkage breaks:

Mol	Chain	Number of breaks
19	Y0	3
17	X0	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	X0	396:UNK	C	403:UNK	N	28.65
1	Y0	387:UNK	C	394:UNK	N	22.26
1	Y0	420:UNK	C	424:UNK	N	12.82
1	X0	346:UNK	C	348:UNK	N	9.65
1	Y0	281:UNK	C	284:UNK	N	6.72

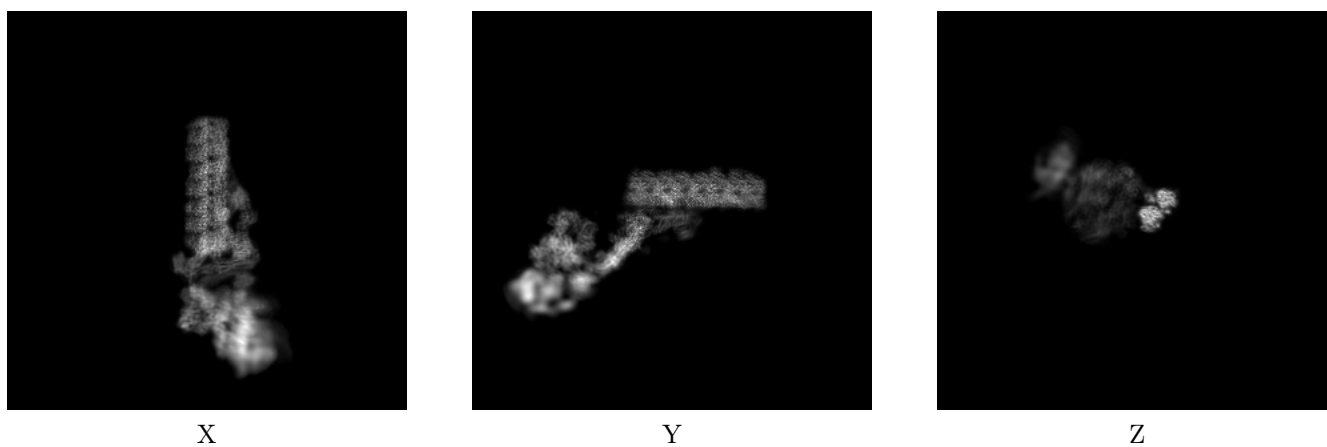
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-23082. 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](#)

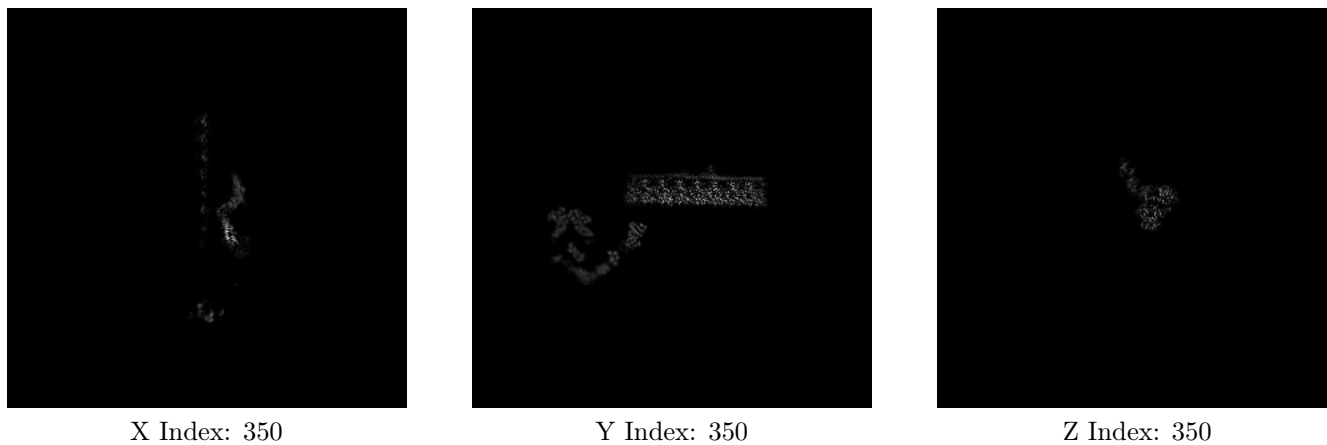
#### 6.1.1 Primary map



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

### 6.2 Central slices [i](#)

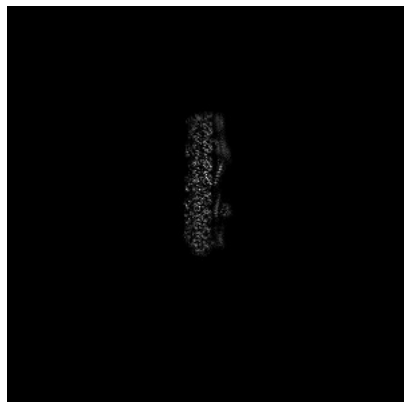
#### 6.2.1 Primary map



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: 372



Y Index: 347

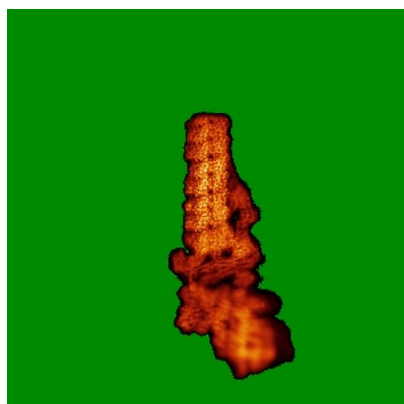


Z Index: 294

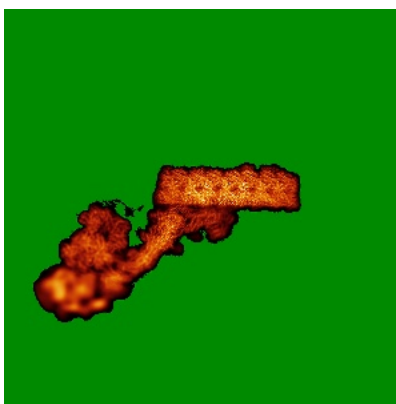
The images above show the largest variance slices of the map in three orthogonal directions.

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

### 6.4.1 Primary map



X



Y



Z

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

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

### 6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

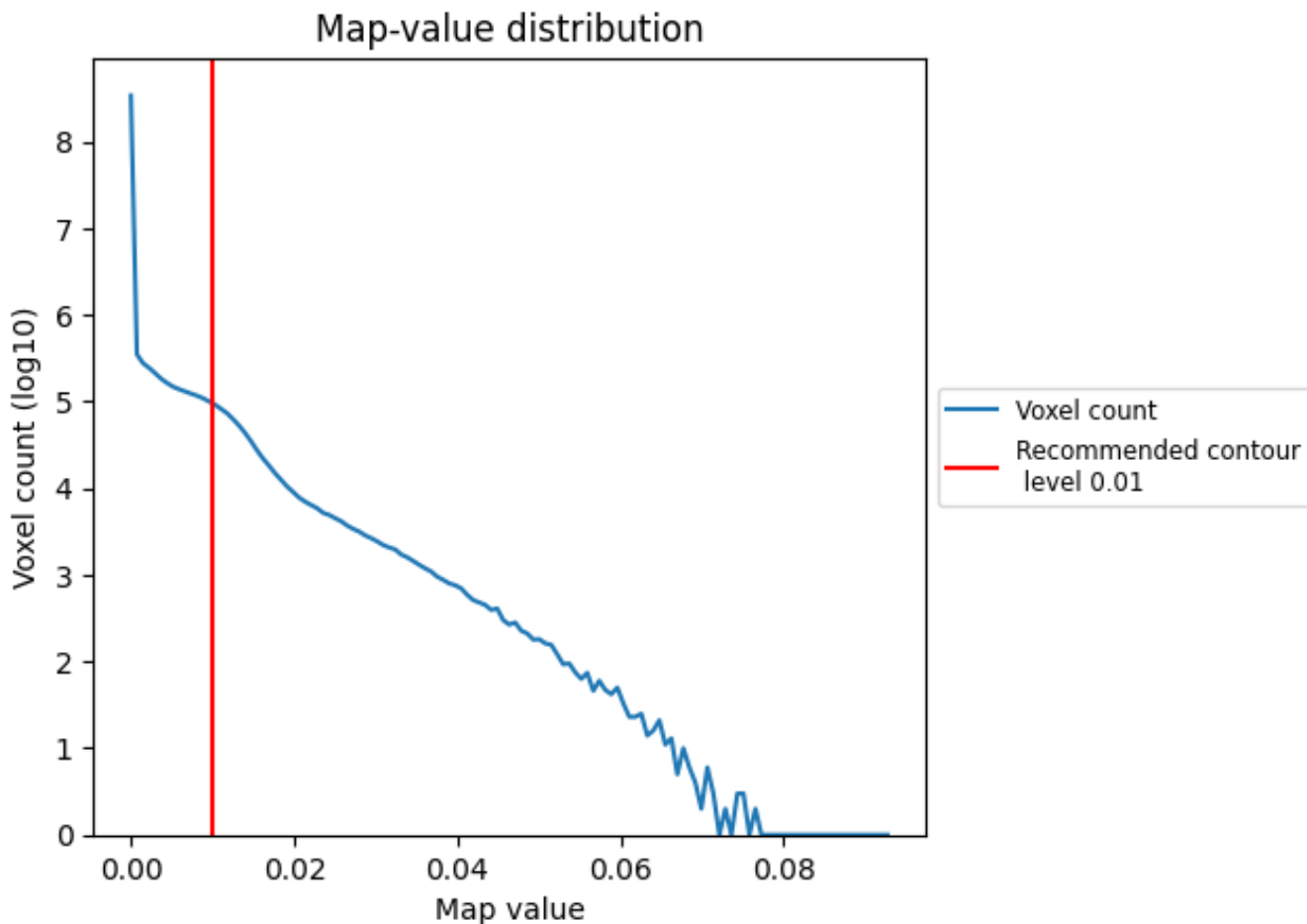
## 6.6 Mask visualisation [i](#)

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.

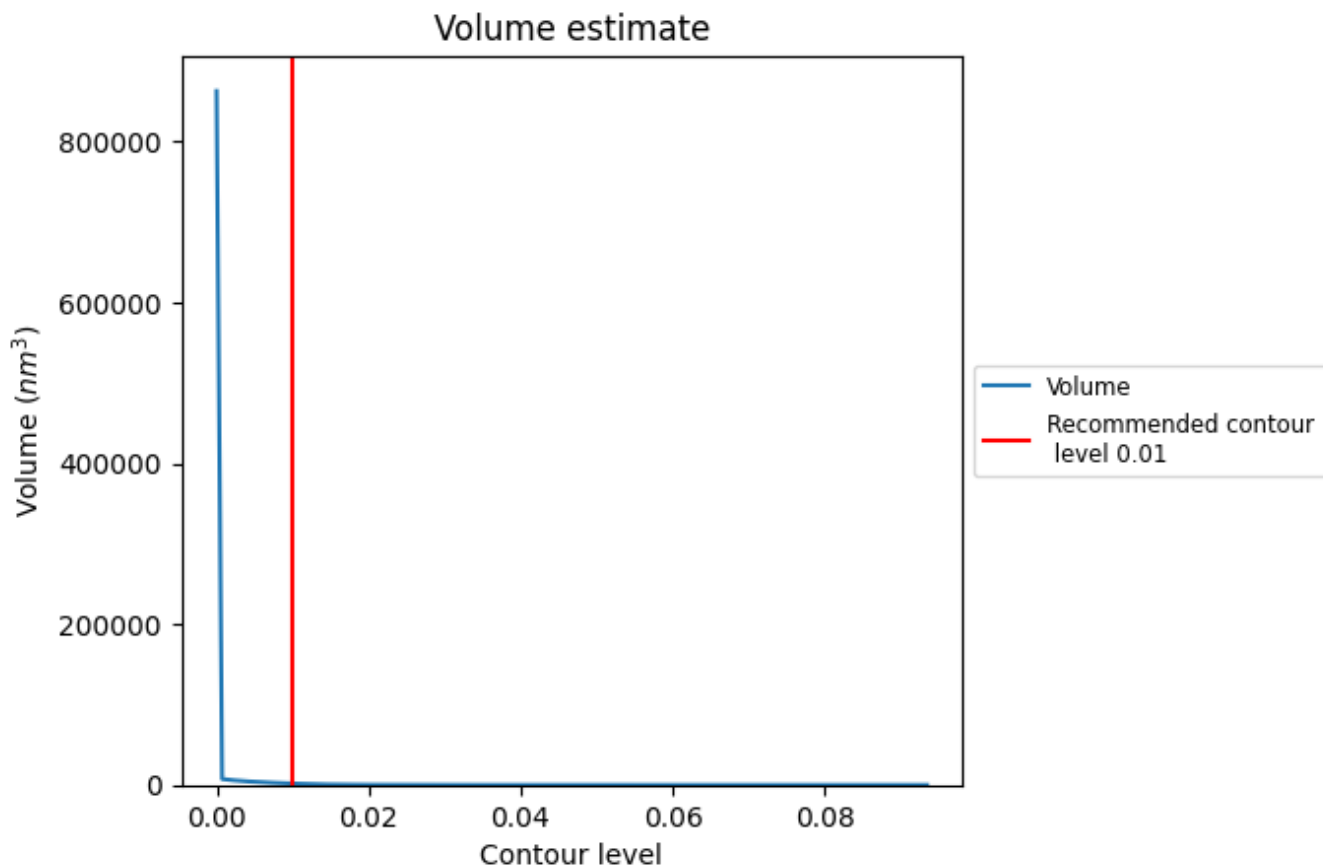
### 7.1 Map-value distribution [i](#)



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.



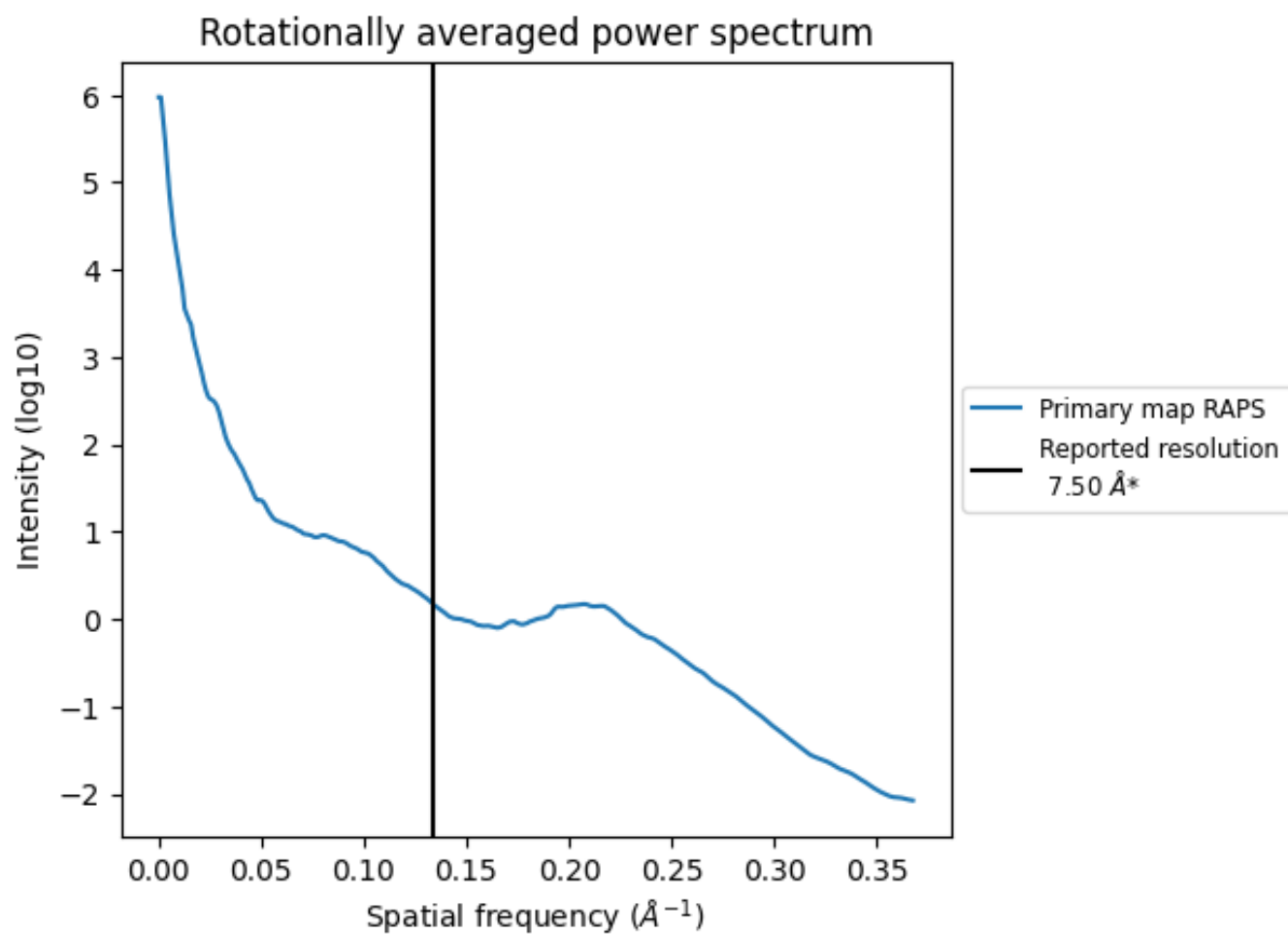
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1728  $\text{nm}^3$ ; this corresponds to an approximate mass of 1561 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 0.133 Å<sup>-1</sup>

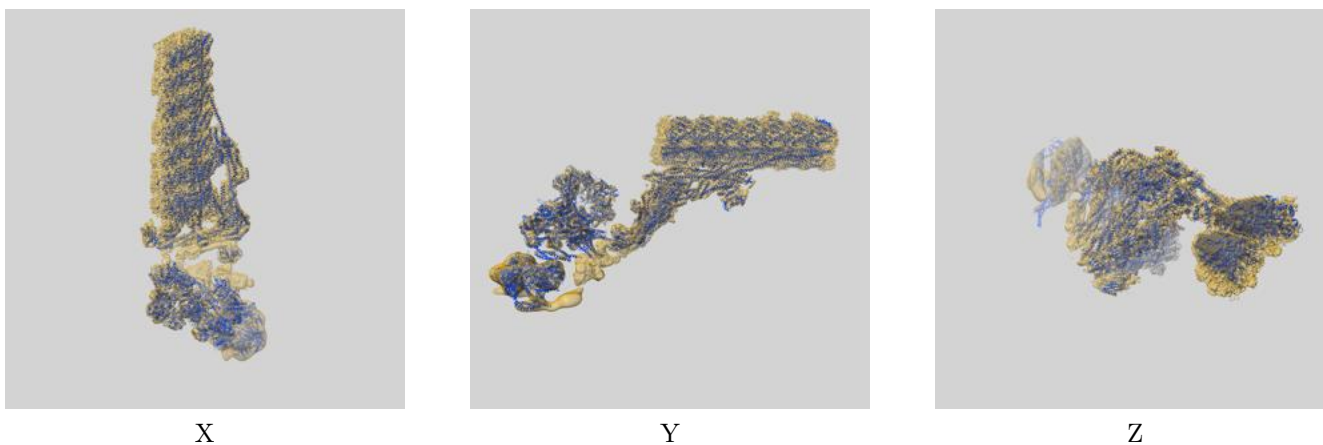
## 8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

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

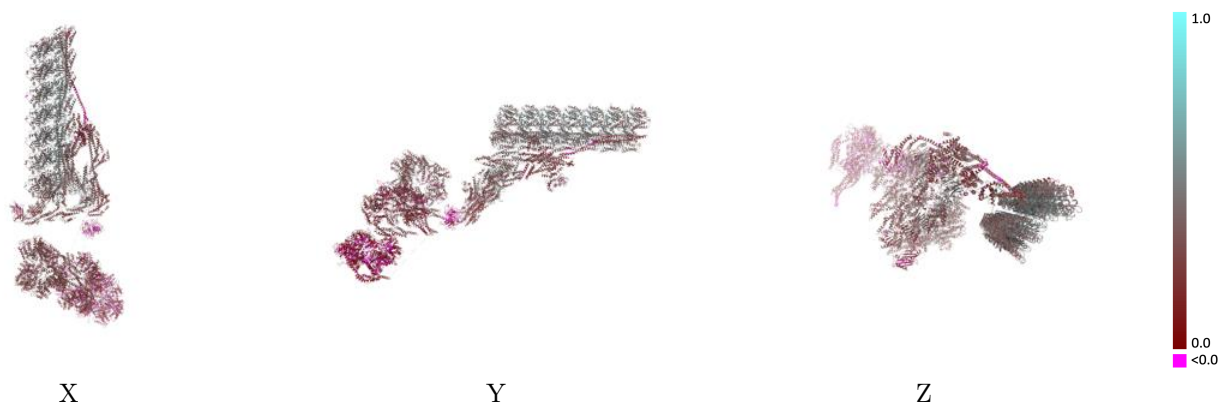
This section contains information regarding the fit between EMDB map EMD-23082 and PDB model 7KZM. Per-residue inclusion information can be found in section [3](#) on page [11](#).

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



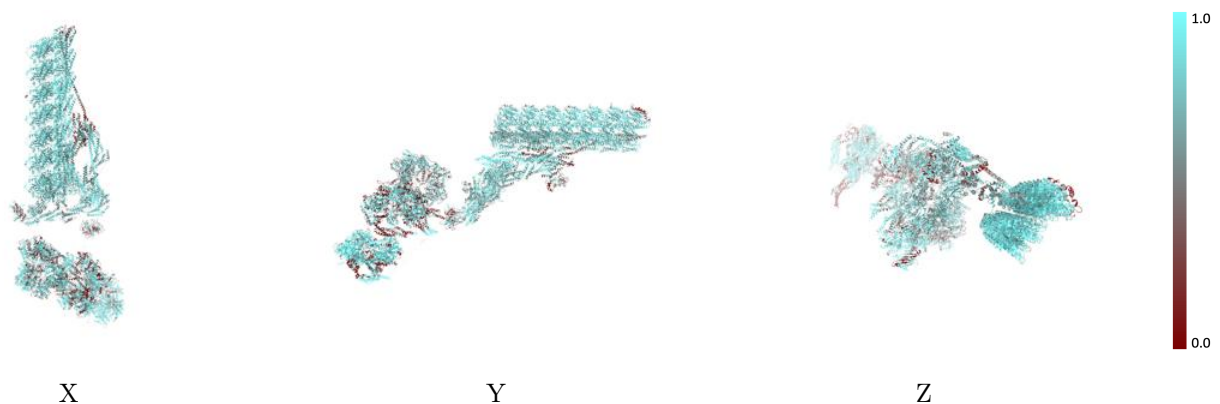
The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



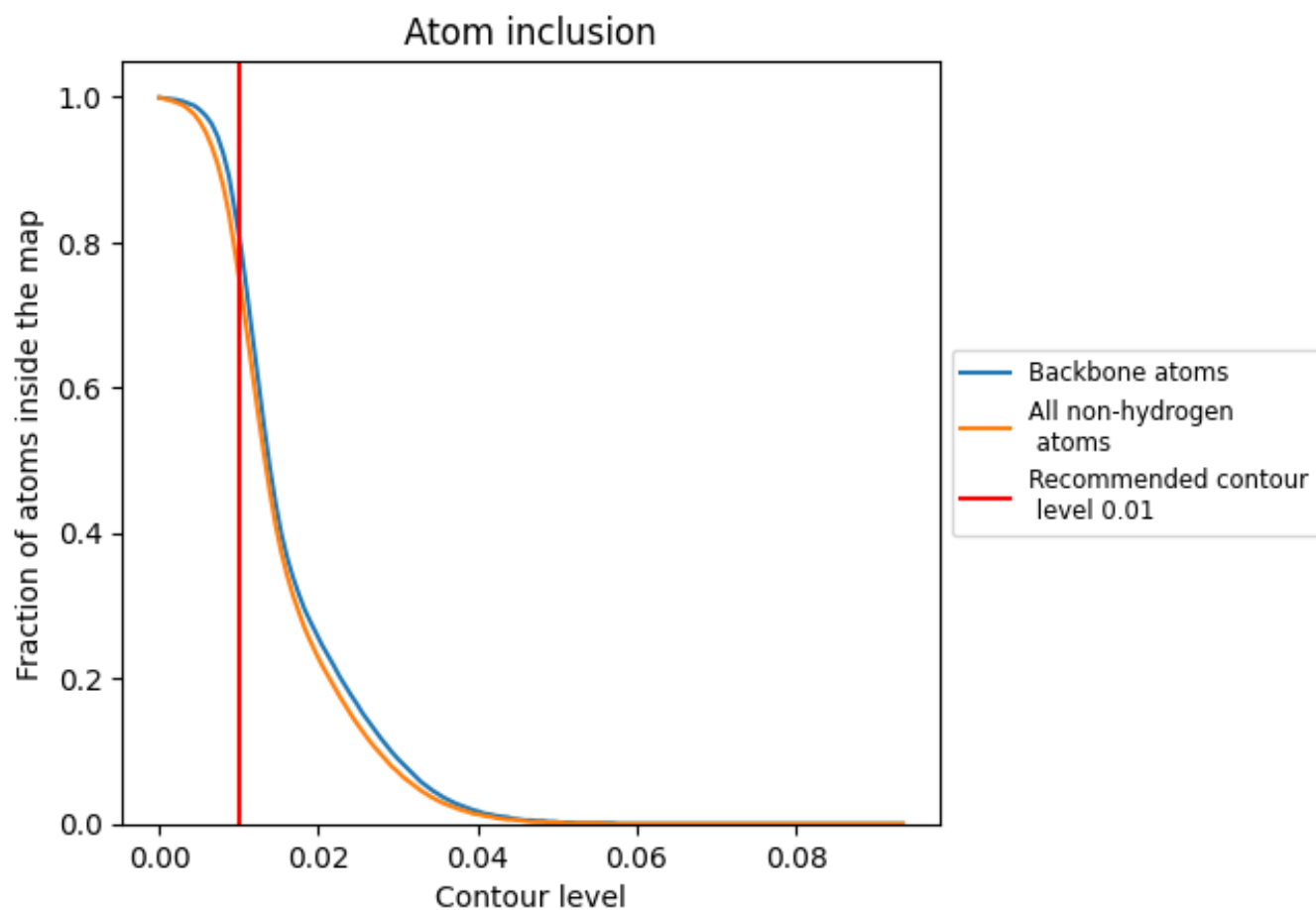
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.01).







































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 81% of all backbone atoms, 75% 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 (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7540	 0.3150
A	 0.7810	 0.0650
A1	 0.8450	 0.3840
A2	 0.8870	 0.4210
A3	 0.8970	 0.4330
A4	 0.9160	 0.4440
A5	 0.8980	 0.4460
A6	 0.8770	 0.4270
A7	 0.8660	 0.4160
B	 0.6070	 0.2190
B1	 0.8400	 0.4360
B2	 0.8840	 0.4760
B3	 0.8990	 0.4820
B4	 0.8970	 0.4800
B5	 0.9160	 0.4850
B6	 0.8640	 0.4590
B7	 0.7600	 0.4270
C	 0.6330	 0.2820
D	 0.7970	 0.4230
E	 0.7600	 0.3780
F	 0.5860	 0.1700
G	 0.6020	 0.3060
H	 0.8030	 0.2800
I	 0.7090	 0.3720
J	 0.7690	 0.4100
K	 0.7760	 0.3300
L	 0.6550	 0.2720
M	 0.7190	 0.2500
N	 0.7940	 0.2540
O	 0.5340	 0.1970
P	 0.7180	 0.3530
X	 0.5990	 0.2680
X0	 0.6880	 0.2490
X1	 0.7470	 0.4100
Y	 0.6530	 0.2380



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Chain	Atom inclusion	Q-score
Y0	 0.8320	 0.3350
Y1	 0.7730	 0.4060
Z	 0.6060	 0.2750