



## Full wwPDB EM Validation Report ⓘ

Oct 20, 2024 – 03:34 PM EDT

PDB ID : 7MQA  
EMDB ID : EMD-23938  
Title : Cryo-EM structure of the human SSU processome, state post-A1  
Authors : Vanden Broeck, A.; Singh, S.; Klinge, S.  
Deposited on : 2021-05-05  
Resolution : 2.70 Å (reported)  
Based on initial models : 5FAI, 6G4S, 6G18, 2IPX, 2OZB, 6ZQD, 4JXM, 6O16, 6W6C, 5WLC, 6ZOJ

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:

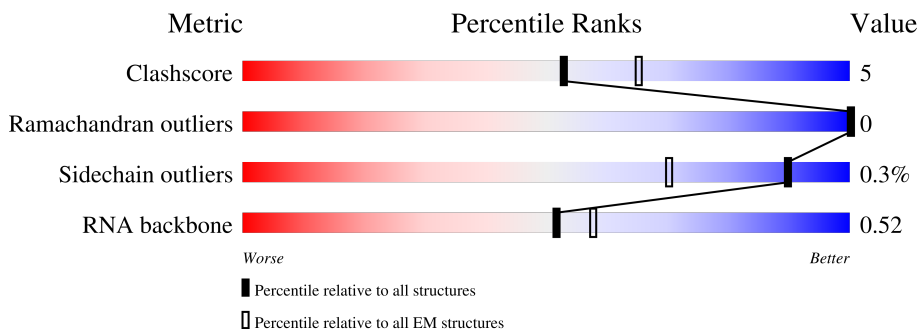
EMDB validation analysis : 0.0.1.dev113  
Mogul : 2022.3.0, CSD as543be (2022)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.39

# 1 Overall quality at a glance

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

The reported resolution of this entry is 2.70 Å.

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



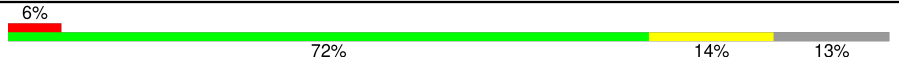


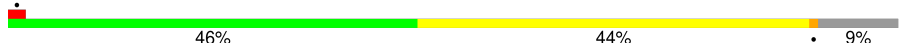




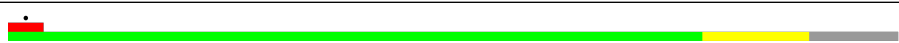

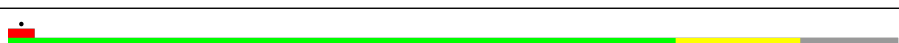


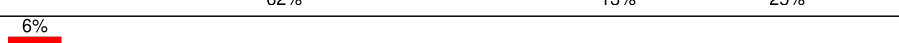
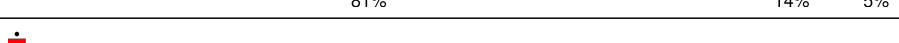
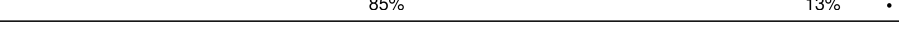
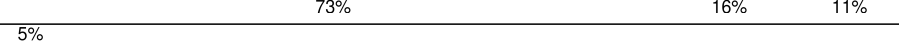
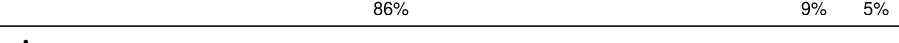
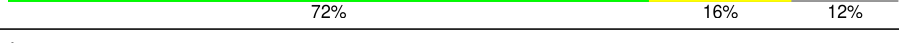






Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415
RNA backbone	6643	2191

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	L0	3617	
2	L1	1872	
3	L2	217	
4	L3	116	
5	L4	263	
6	L5	204	
7	L6	249	




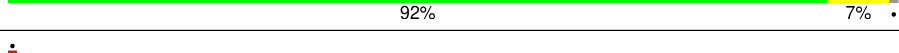
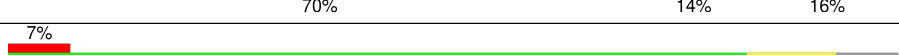

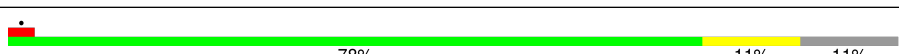


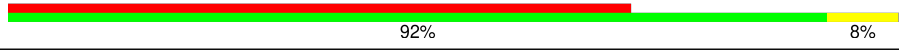

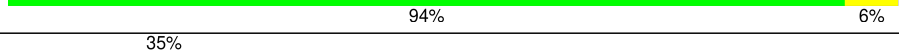
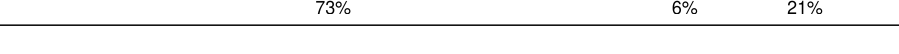
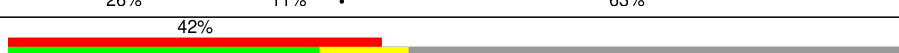
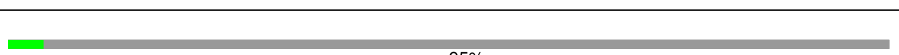





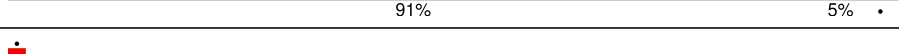




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Mol	Chain	Length	Quality of chain
8	L7	194	
9	L8	208	
10	L9	194	
11	LA	132	
12	LC	146	
13	LD	158	
14	LF	133	
15	LG	69	
16	LH	830	
17	LI	678	
18	LJ	518	
19	LK	677	
19	LL	677	
20	LM	2144	
21	LN	686	
22	LO	919	
23	LP	597	
24	LQ	943	
25	LR	808	
26	LS	556	
27	LT	951	
28	LU	445	
29	LW	610	
30	LY	136	
31	LZ	184	



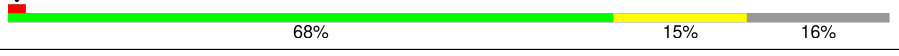



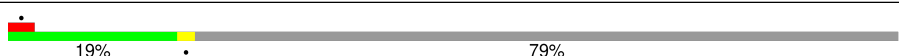
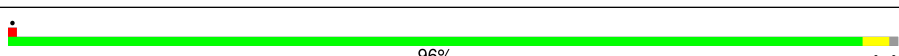
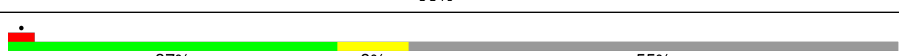
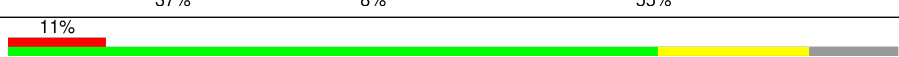
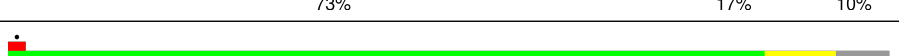


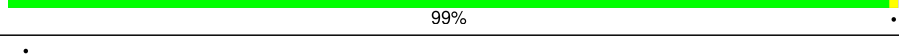

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Mol	Chain	Length	Quality of chain
32	NA	681	
33	NB	479	
34	ND	257	
35	NF	151	
36	NG	151	
37	NH	1146	
38	NI	280	
39	NL	313	
40	NM	264	
41	NO	130	
42	NP	145	
43	NQ	84	
44	NR	861	
45	NS	1157	
46	NT	156	
47	NU	135	
48	NV	885	
49	SA	594	
50	SB	529	
51	SC	321	
51	SD	321	
52	SE	128	
52	SF	128	
53	SG	475	
54	SH	373	

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Mol	Chain	Length	Quality of chain
55	SI	1282	
56	SJ	244	
56	SK	244	
57	SL	198	
58	SM	291	
59	SP	2785	
60	SQ	756	
61	SR	143	
62	SS	771	
63	ST	632	
64	SU	472	
65	SW	252	
66	SX	228	
67	SY	253	
68	SZ	304	

## 2 Entry composition [i](#)

There are 73 unique types of molecules in this entry. The entry contains 242409 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 RNA chain called 5'ETS rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	L0	16	347	154	64	113	16	0	0

- Molecule 2 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	L1	1636	34979	15625	6305	11413	1636	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
L1	1842	4AC	C	conflict	GB 151415227

- Molecule 3 is a RNA chain called U3 snoRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	L2	177	3779	1685	666	1251	177	0	0

- Molecule 4 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	L3	115	854	538	164	151	1	0	0

- Molecule 5 is a protein called 40S ribosomal protein S4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	L4	262	2076	1324	386	358	8	0	0

- Molecule 6 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	L5	190	Total	C	N	O	S	0	0
			1501	939	285	270	7		

- Molecule 7 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	L6	230	Total	C	N	O	S	0	0
			1862	1164	371	320	7		

- Molecule 8 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	L7	168	Total	C	N	O	S	0	0
			1346	862	239	244	1		

- Molecule 9 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	L8	180	Total	C	N	O	S	0	0
			1474	925	294	250	5		

- Molecule 10 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	L9	180	Total	C	N	O	S	0	0
			1499	955	300	242	2		

- Molecule 11 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	LA	120	Total	C	N	O	S	0	0
			931	584	164	174	9		

- Molecule 12 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	LC	136	Total	C	N	O	S	0	0
			1068	679	202	184	3		

- Molecule 13 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	LD	151	1229	782	230	211	6	0	0

- Molecule 14 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	LF	126	1030	650	201	173	6	0	0

- Molecule 15 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	LG	62	488	297	97	92	2	0	0

- Molecule 16 is a protein called WD repeat-containing protein 75.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	LH	746	5987	3846	1005	1101	35	0	0

- Molecule 17 is a protein called Nucleolar protein 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	LI	537	3889	2508	654	706	21	0	0

- Molecule 18 is a protein called U3 small nucleolar RNA-associated protein 15 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	LJ	462	3658	2337	629	678	14	0	0

- Molecule 19 is a protein called WD repeat-containing protein 43.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	LK	118	943	612	163	163	5	0	0
19	LL	510	3982	2538	686	731	27	0	0

- Molecule 20 is a protein called HEAT repeat-containing protein 1.



Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	LM	2041	16094	10437	2639	2936	82	0	0

- Molecule 21 is a protein called U3 small nucleolar RNA-associated protein 4 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	LN	671	5299	3394	925	956	24	0	0

- Molecule 22 is a protein called Periodic tryptophan protein 2 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	LO	819	6454	4118	1107	1196	33	0	0

- Molecule 23 is a protein called U3 small nucleolar RNA-associated protein 6 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	LP	566	4696	3017	806	845	28	0	0

- Molecule 24 is a protein called WD repeat-containing protein 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	LQ	830	6497	4140	1122	1202	33	0	0

- Molecule 25 is a protein called Transducin beta-like protein 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	LR	772	6006	3783	1077	1115	31	0	0

- Molecule 26 is a protein called U3 small nucleolar RNA-associated protein 18 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
26	LS	453	3560	2235	631	671	23	0	0

- Molecule 27 is a protein called WD repeat-containing protein 36.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	LT	855	6645	4257	1133	1223	32	0	0

- Molecule 28 is a protein called DDB1- and CUL4-associated factor 13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
28	LU	445	3611	2282	653	651	25	0	0

- Molecule 29 is a protein called WD repeat-containing protein 46.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
29	LW	452	3519	2217	645	642	15	0	0

- Molecule 30 is a protein called Active regulator of SIRT1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	LY	95	778	480	154	142	2	0	0

- Molecule 31 is a protein called U3 small nucleolar ribonucleoprotein protein IMP3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
31	LZ	162	1344	851	250	239	4	0	0

- Molecule 32 is a protein called U3 small nucleolar ribonucleoprotein protein MPP10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	NA	295	2404	1517	421	459	7	0	0

- Molecule 33 is a protein called Something about silencing protein 10.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
33	NB	103	849	522	181	146	0	0

- Molecule 34 is a protein called Nucleolar protein 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	ND	83	Total	C	N	O	S	0	0
			685	431	139	114	1		

- Molecule 35 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	NF	149	Total	C	N	O	S	0	0
			1202	770	228	203	1		

- Molecule 36 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	NG	127	Total	C	N	O	S	0	0
			957	585	189	177	6		

- Molecule 37 is a protein called Nucleolar protein 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	NH	1066	Total	C	N	O	S	0	0
			8374	5345	1491	1506	32		

- Molecule 38 is a protein called Ribosomal RNA-processing protein 7 homolog A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	NI	234	Total	C	N	O	S	0	0
			1840	1171	329	336	4		

- Molecule 39 is a protein called Probable dimethyladenosine transferase.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	NL	278	Total	C	N	O	S	0	0
			2213	1428	392	384	9		

- Molecule 40 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	NM	233	Total	C	N	O	S	0	0
			1873	1186	339	334	14		

- Molecule 41 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	NO	129	1034	659	193	176	6	0	0

- Molecule 42 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	NP	144	1122	703	217	199	3	0	0

- Molecule 43 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	NQ	82	640	402	118	113	7	0	0

- Molecule 44 is a protein called RRP12-like protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
44	NR	861	4305	2583	861	861	0	0

- Molecule 45 is a protein called Probable ATP-dependent RNA helicase DHX37.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	NS	914	5332	3264	1032	1026	10	0	0

- Molecule 46 is a protein called Ubiquitin-40S ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	NT	58	470	295	89	79	7	0	0

- Molecule 47 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	NU	60	495	314	98	81	2	0	0

- Molecule 48 is a protein called Exosome component 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	NV	42	Total	C	N	O	S	0	0
			344	220	55	68	1		

- Molecule 49 is a protein called Nucleolar protein 56.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	SA	396	Total	C	N	O	S	0	0
			3077	1948	542	575	12		

- Molecule 50 is a protein called Nucleolar protein 58.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	SB	430	Total	C	N	O	S	0	0
			3371	2138	584	628	21		

- Molecule 51 is a protein called rRNA 2'-O-methyltransferase fibrillar.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	SC	229	Total	C	N	O	S	0	0
			1781	1129	322	323	7		
51	SD	236	Total	C	N	O	S	0	0
			1832	1157	335	333	7		

- Molecule 52 is a protein called NHP2-like protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	SE	125	Total	C	N	O	S	0	0
			968	611	172	180	5		
52	SF	123	Total	C	N	O	S	0	0
			955	604	170	176	5		

- Molecule 53 is a protein called U3 small nucleolar RNA-interacting protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	SG	389	Total	C	N	O	S	1	0
			3042	1910	557	562	13		

- Molecule 54 is a protein called RNA 3'-terminal phosphate cyclase-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	SH	368	Total	C	N	O	S	0	0
			2832	1803	495	518	16		

- Molecule 55 is a protein called Ribosome biogenesis protein BMS1 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	SI	803	6493	4154	1184	1122	33	0	0

- Molecule 56 is a protein called Ribosomal RNA small subunit methyltransferase NEP1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
56	SJ	204	1579	1012	272	286	9	0	0
56	SK	204	1579	1012	272	286	9	0	0

- Molecule 57 is a protein called rRNA-processing protein FCF1 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	SL	175	1433	910	259	249	15	0	0

- Molecule 58 is a protein called U3 small nucleolar ribonucleoprotein protein IMP4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	SM	273	2253	1415	433	396	9	0	0

- Molecule 59 is a protein called Small subunit processome component 20 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
59	SP	2485	20032	12970	3354	3606	102	0	0

- Molecule 60 is a protein called Deoxynucleotidyltransferase terminal-interacting protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
60	SQ	156	1275	804	236	230	5	0	0

- Molecule 61 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
61	SR	141	1098	693	219	183	3	0	0

- Molecule 62 is a protein called U3 small nucleolar RNA-associated protein 14 homolog A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
62	SS	350	2824	1788	516	516	4	0	0

- Molecule 63 is a protein called Nucleolar protein 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
63	ST	570	4188	2646	764	757	21	0	0

- Molecule 64 is a protein called Nucleolar complex protein 4 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
64	SU	442	3154	2030	565	551	8	0	0

- Molecule 65 is a protein called RNA-binding protein PNO1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
65	SW	195	1522	977	273	267	5	0	0

- Molecule 66 is a protein called Unassigned peptides.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
66	SX	228	1140	684	228	228	0	0

- Molecule 67 is a protein called Probable U3 small nucleolar RNA-associated protein 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
67	SY	237	2013	1272	385	350	6	0	0

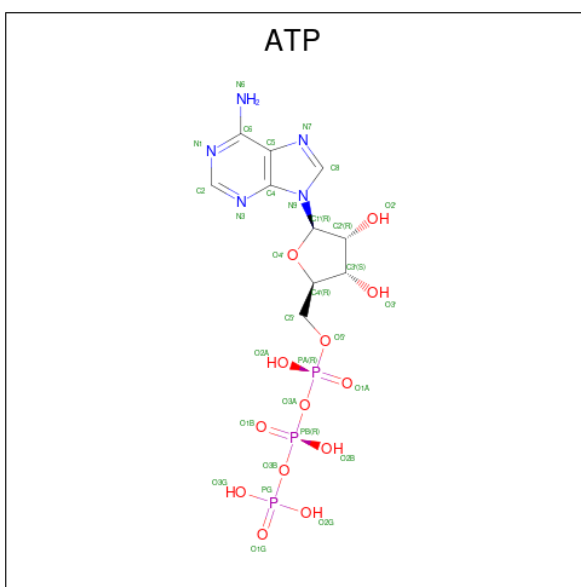
- Molecule 68 is a protein called Bystin.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
68	SZ	290	2222	1438	392	383	9	0	0

- Molecule 69 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	AltConf
69	L1	61	Total Mg 61 61	0
69	NH	1	Total Mg 1 1	0
69	SI	1	Total Mg 1 1	0
69	SL	1	Total Mg 1 1	0

- Molecule 70 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula:  $C_{10}H_{16}N_5O_{13}P_3$ ).



Mol	Chain	Residues	Atoms	AltConf
70	NH	1	Total C N O P 31 10 5 13 3	0

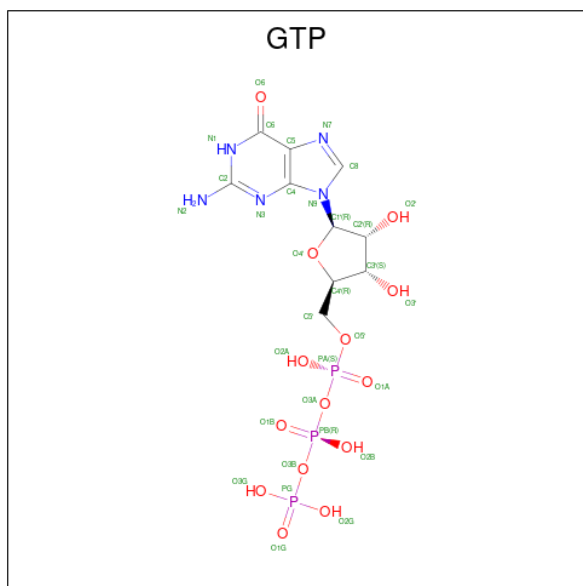
- Molecule 71 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	AltConf
71	NQ	1	Total Zn 1 1	0
71	NT	1	Total Zn 1 1	0
71	SL	1	Total Zn 1 1	0

- Molecule 72 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula:

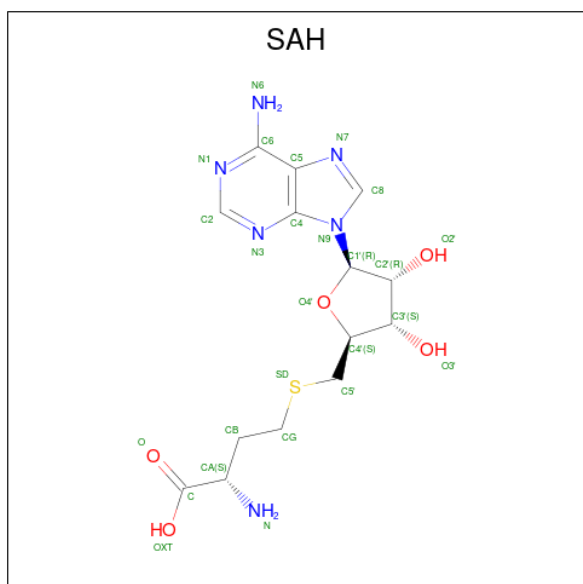


$C_{10}H_{16}N_5O_{14}P_3$ ).



Mol	Chain	Residues	Atoms				AltConf	
			Total	C	N	O		P
72	SI	1	32	10	5	14	3	0

- Molecule 73 is S-ADENOSYL-L-HOMOCYSTEINE (three-letter code: SAH) (formula:  $C_{14}H_{20}N_6O_5S$ ).



Mol	Chain	Residues	Atoms				AltConf	
			Total	C	N	O		S
73	SJ	1	26	14	6	5	1	0

*Continued on next page...*

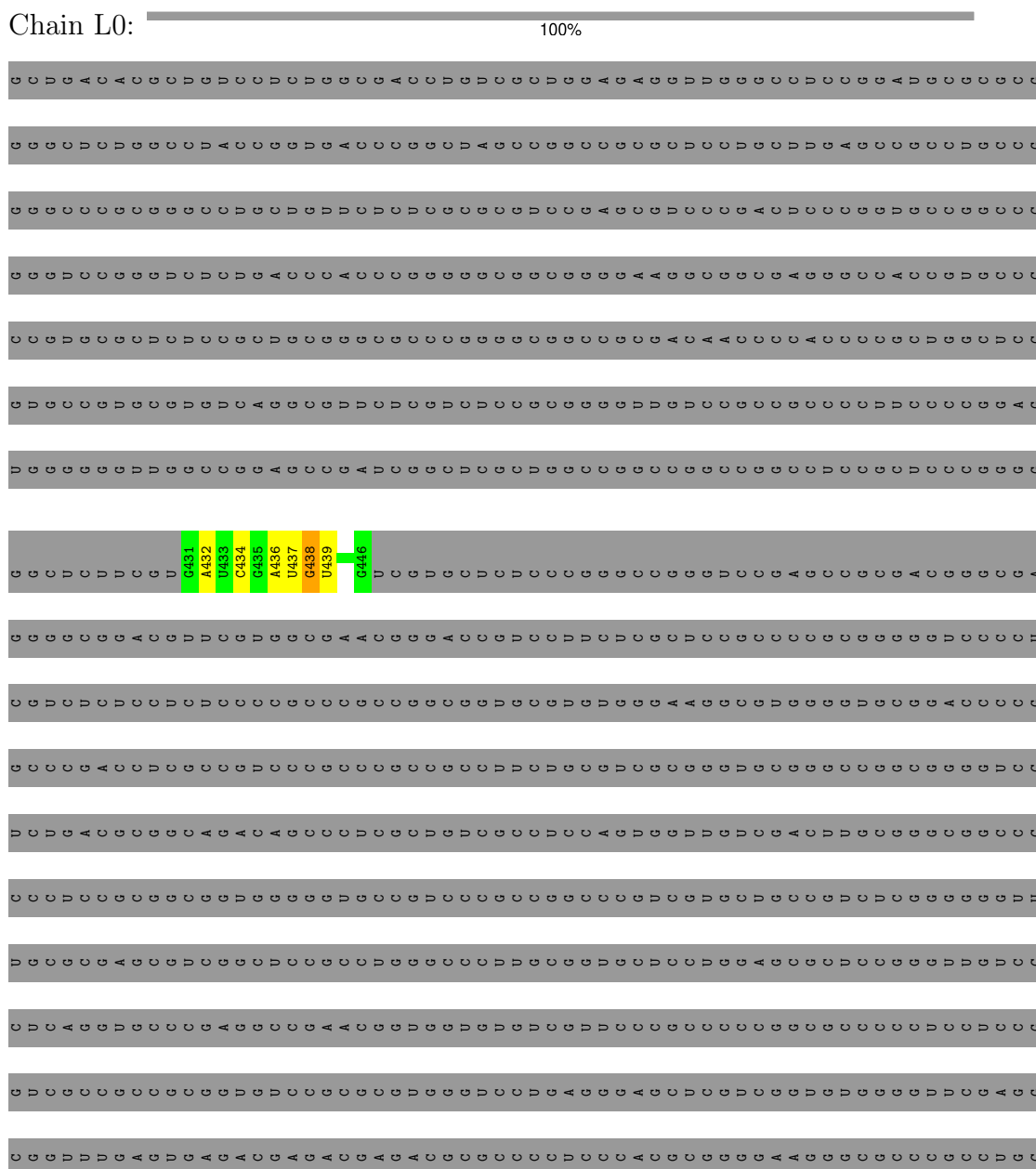
*Continued from previous page...*

Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
73	SK	1	26	14	6	5	1	0

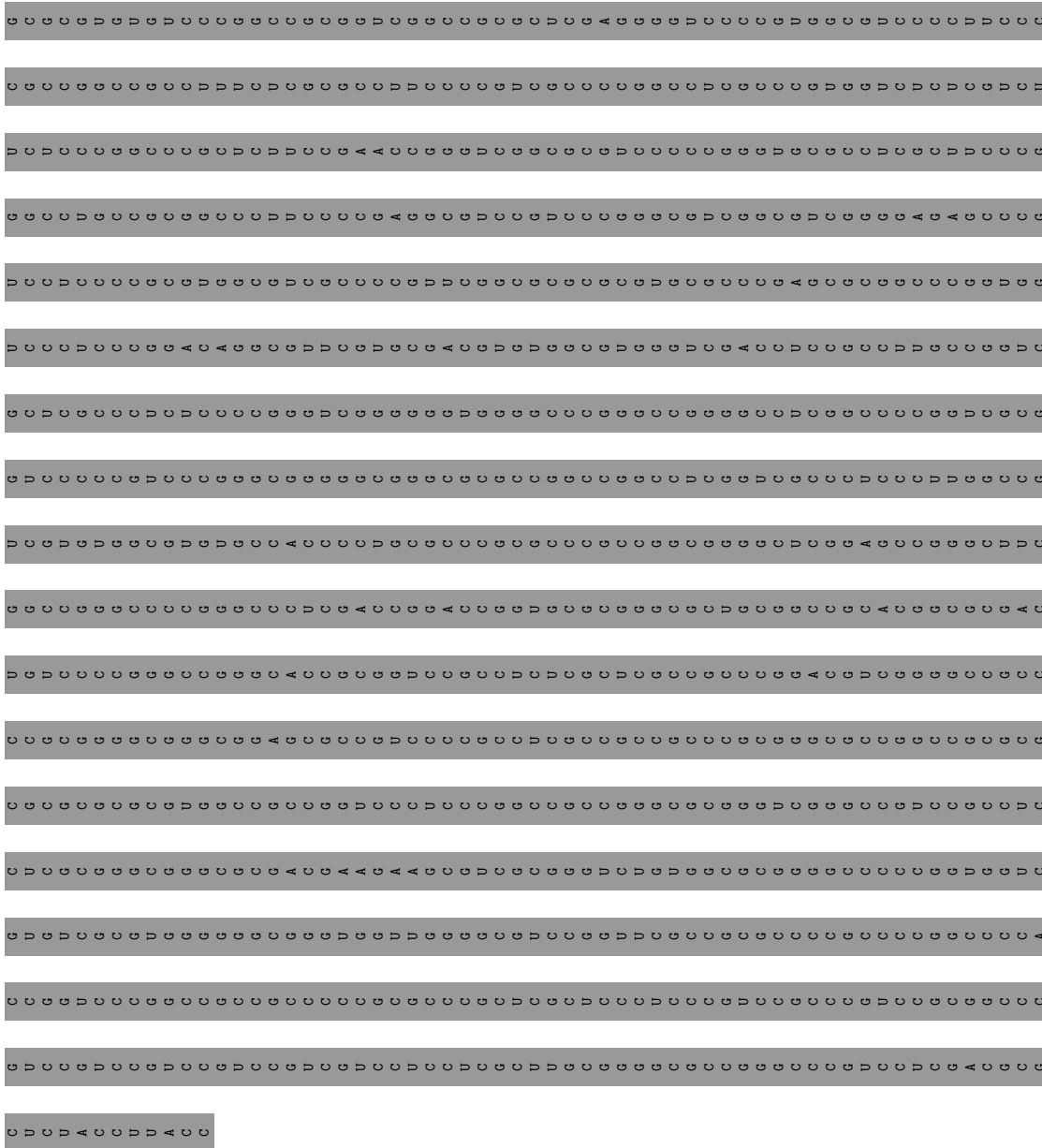
### 3 Residue-property plots

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

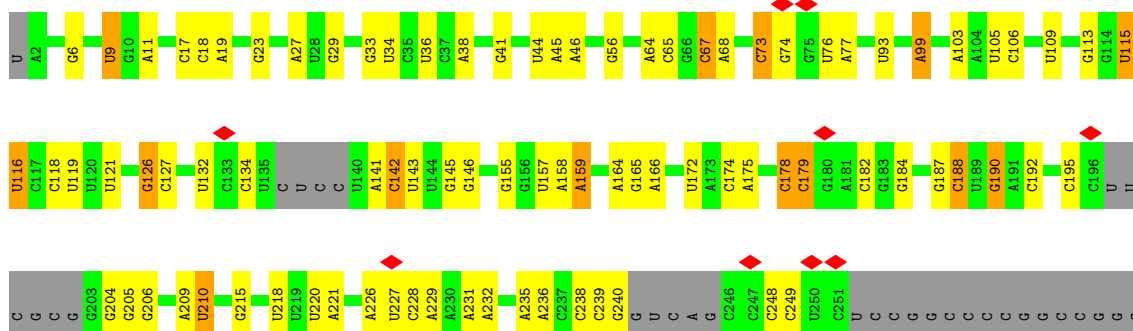
- Molecule 1: 5'ETS rRNA

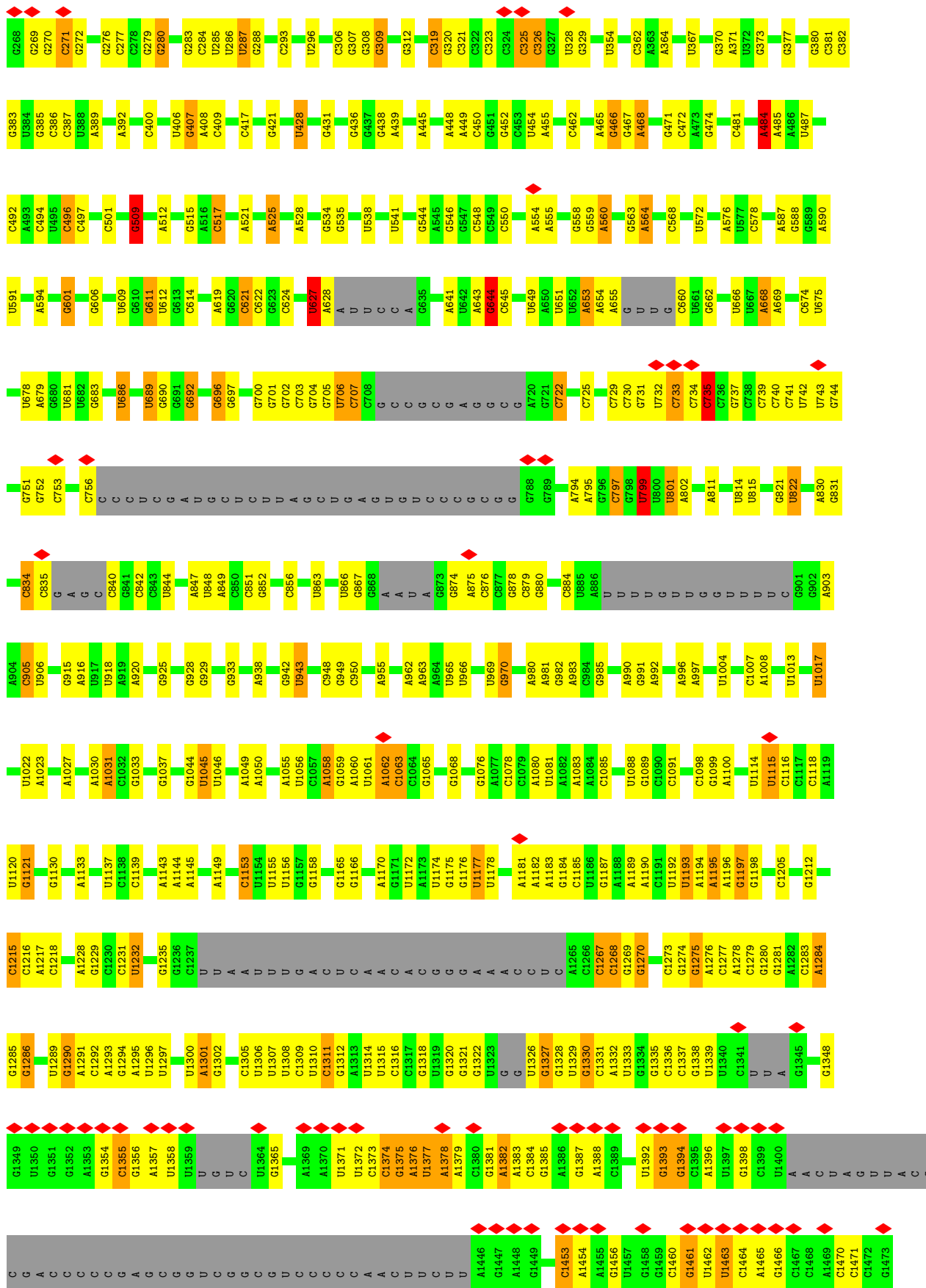


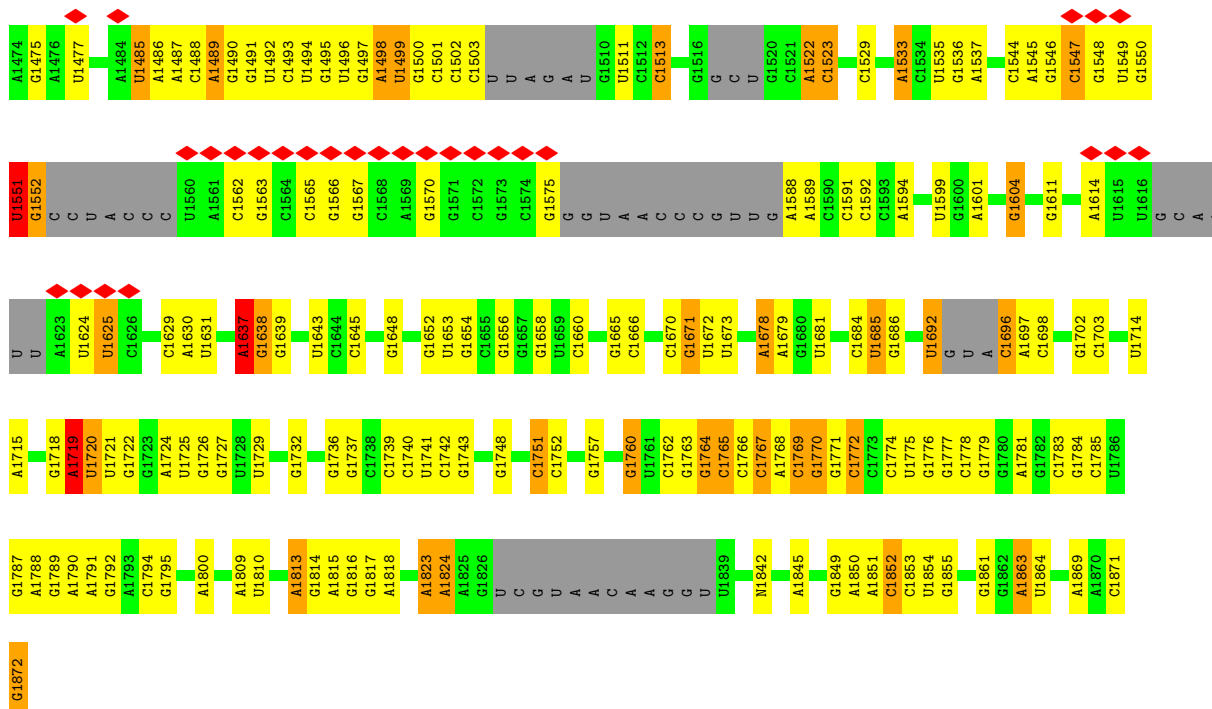
D D D C G G D D G A G C C G A C G G D C C C G D G G C C D C D D G G C C G G D G C C G G C C G G C C G D G D G A G C G G A  
D G G C C G D G G G D D D G G G C C G G D G D G A C G C G D G G C C G C G G C C G G C C G G A G G C D G C C G G D D  
G D G C C D C C G G A C C G G D C C G D D G D D G G A C D D C G G A G G C G C D D G C C D C G G A A G C A A G G A  
G G D G G D D G G A C G G G G G G C C D D G G D G G G D D C G G C A C G C G C G A C C C G G C G G C C C C G  
C C C D G A A C G C G A A C G G D C G A G G D G G C C G C G C G C A G D D D C D G G D A C C G G C A G G C C C C  
G D C C C D D C C C C A G C C G D C C G G C G C C D C D G G G C C G A G A A C C G G C D G C C G G G D  
G G G G G A G D G D G A C C C A C C C D D G G G D G A G A A G C C D D C D A G C G A D U G A G A G C G G D G C  
C D D G G G G G A C C G G A D C C C C G G G C C C C G C C D D C D D C C C D D A G C C D D A G C C C  
D G C C C D A G C G A A C C C G D C C G A G A C C C D C C C D D C C C C D C C G A C G G G D D G G G G  
G G A A A C C G A A C G D D C C G C G G G G C A A C C G C G D G G D G C C G A D G G G C D C G D A C D  
G D G G C C G G C C C C C C C C C D D C C G A D C C G G G G A G G A C C C G C G G C C C C G G G D D  
C C C A G C G G G D D G G A C C G G G G G G C C G G G G C C G G D D G G G C C G G G C C C D D G D C  
G G C C G C G D G G A C C C C D C C G C G A G D D C C G C D C C C C G C C C G G D C C G A G D C G D G A  
C C G G D C C C G A C A C C C C C D D D D G C C D D G C A C G G G D C C C C C D G C C C A A A G C  
G D C C C A C G G D G G G G G C C C C G G D C C C G G A C C G G A C C G G D D G G G A G A G A A  
A D C A C G A C C G G A C G G D D G G C C G D D G D C C G G D D C D G G G D G C C G G D C C G C C C  
G G D D G C C G G G G C C C C G G G D C C C G A G G C G G D D D C C G G D G G G C C G A G G C C G G C  
G D C C C A G G C G G G G C C C G G G G A C C G C C D G D D C D C D D G G G G A D C C C G G C G G  
D G D D D C C D G G C C C G C C G C C D D G C C A G D D D C D C C C C G C C G C C G D D G C G G C  
D C C C G G D D G C C C D D G C C G G D C C C G C C C C G C C D D G D G C C C D D C C C C G C  
C C G C C C C G C G A D C C D D D D C C C G A G C C G G D C A C C G C D D C A C G D C C G D D G D G  
G C C C C G D D G G A C C C G G G C C C C D D G G G G A C C G C C C C G C C G G C C A C D A C C G  
G C C C G C G D C C C G D C C C G G G C C C D D G G G G A C C G G G D D G G C C C C C G G D D G  
G G C C C G G D D C C A G G A G C G D D C C G C G C C D D G C C G C C G G C C C C G G A G G A  
G A C C G D D C C G G G G A C C C C C C C G C C C G C C G G G D D G G D C C G G G G A C C C C G G A D C  
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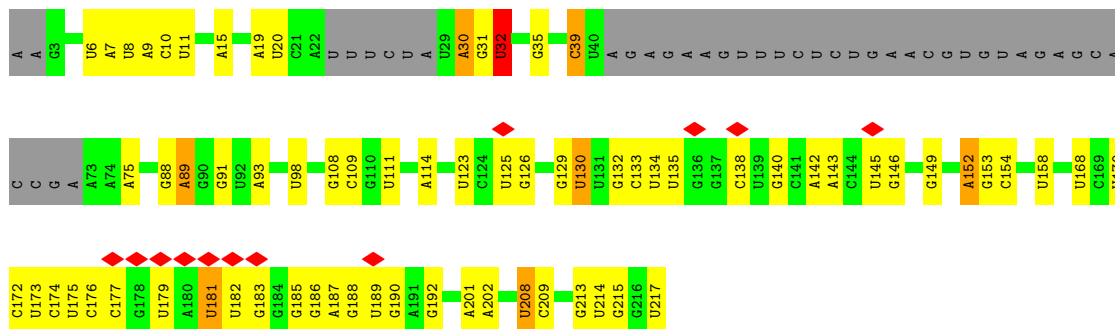
• Molecule 2: 18S rRNA



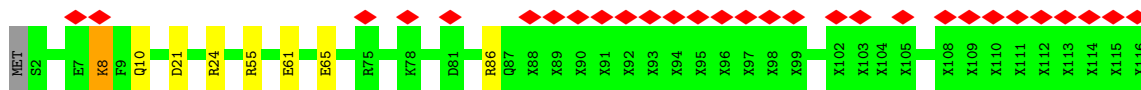
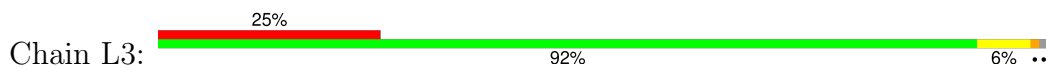




• Molecule 3: U3 snoRNA



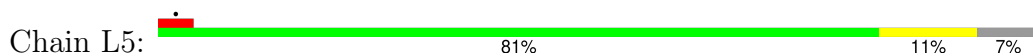
• Molecule 4: 40S ribosomal protein S18



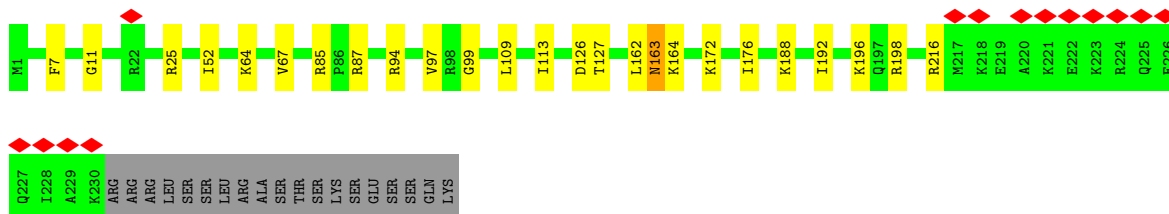
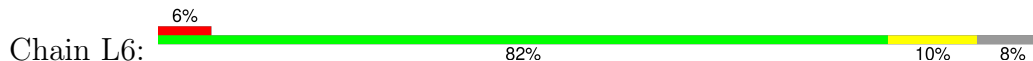
• Molecule 5: 40S ribosomal protein S4, X isoform



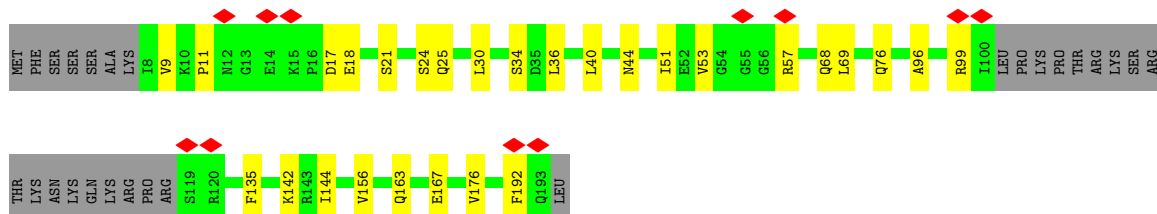
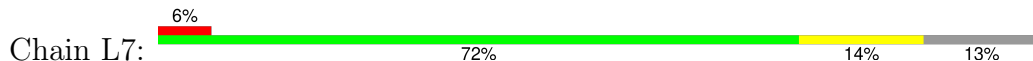
• Molecule 6: 40S ribosomal protein S5



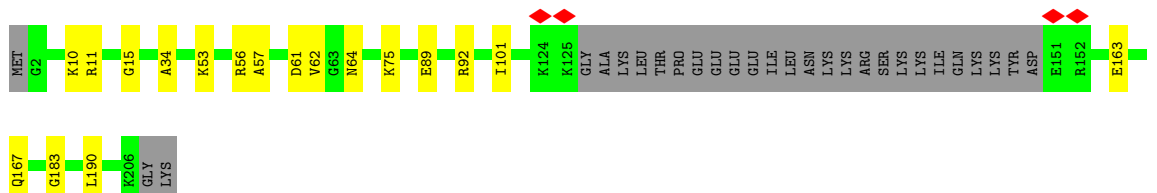
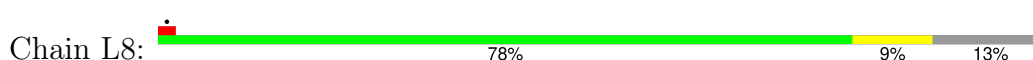
• Molecule 7: 40S ribosomal protein S6



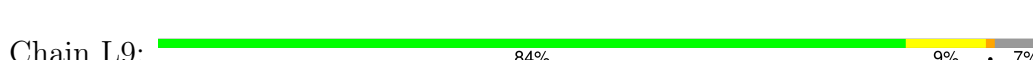
• Molecule 8: 40S ribosomal protein S7



• Molecule 9: 40S ribosomal protein S8

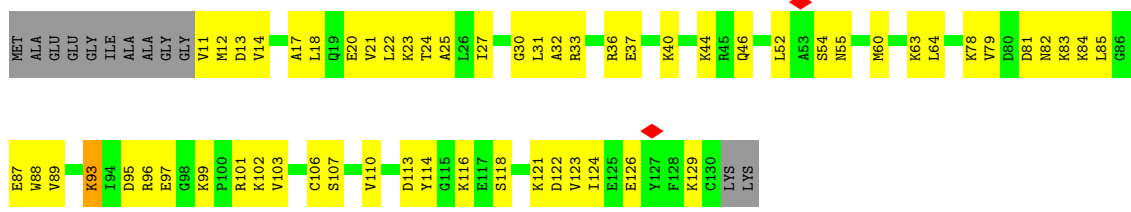


• Molecule 10: 40S ribosomal protein S9

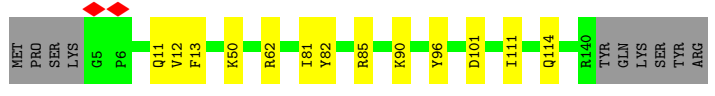
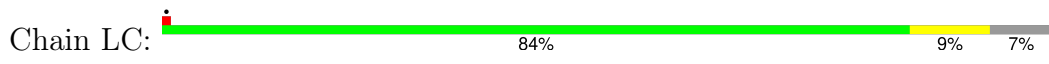


• Molecule 11: 40S ribosomal protein S12

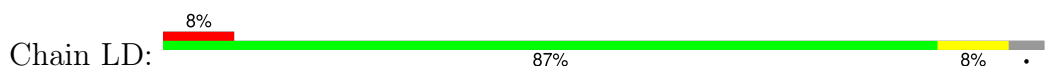




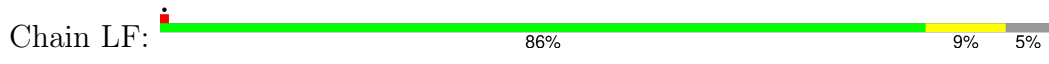
• Molecule 12: 40S ribosomal protein S16



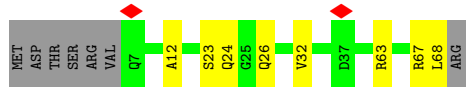
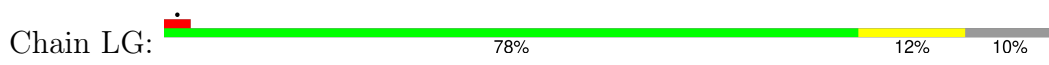
• Molecule 13: 40S ribosomal protein S11



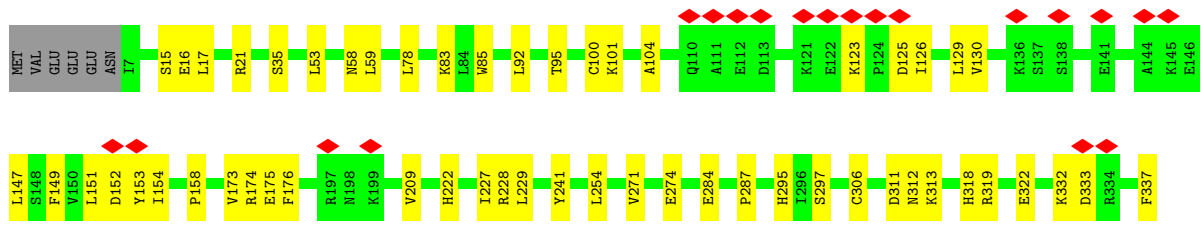
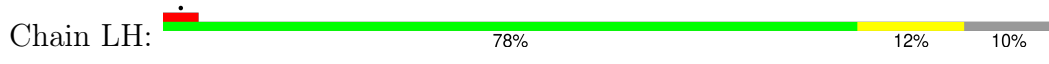
• Molecule 14: 40S ribosomal protein S24

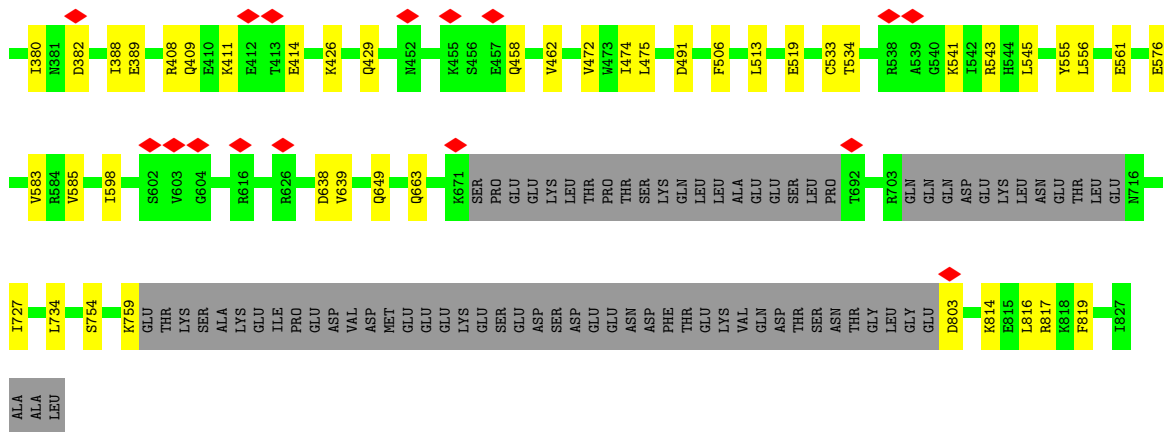


• Molecule 15: 40S ribosomal protein S28

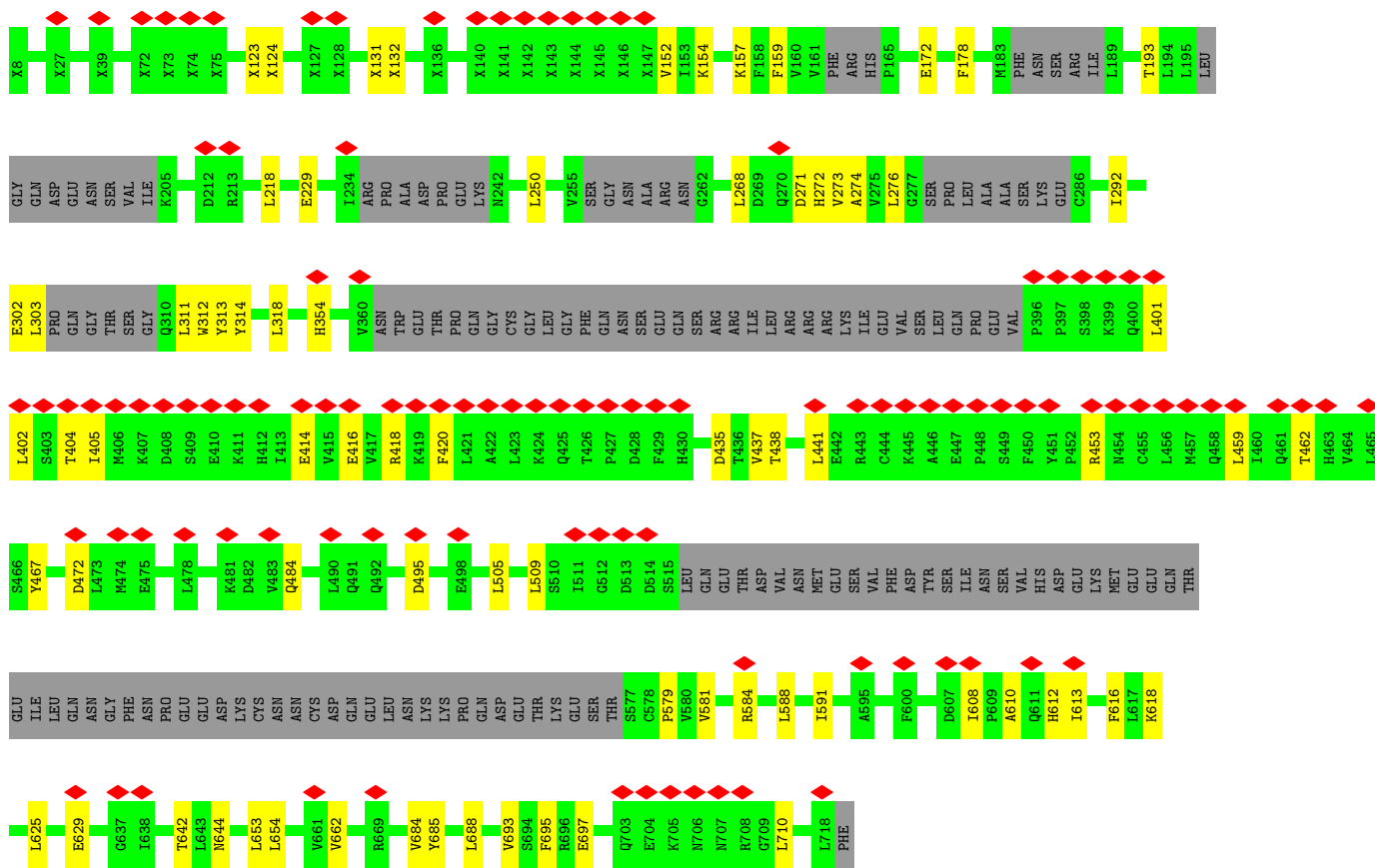


• Molecule 16: WD repeat-containing protein 75

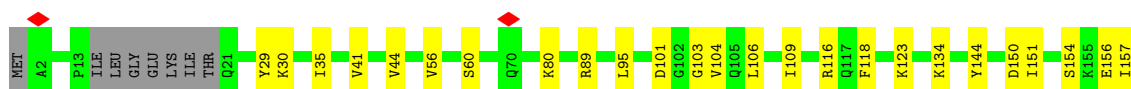
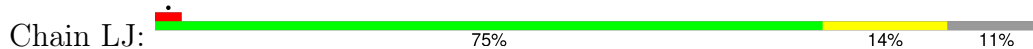




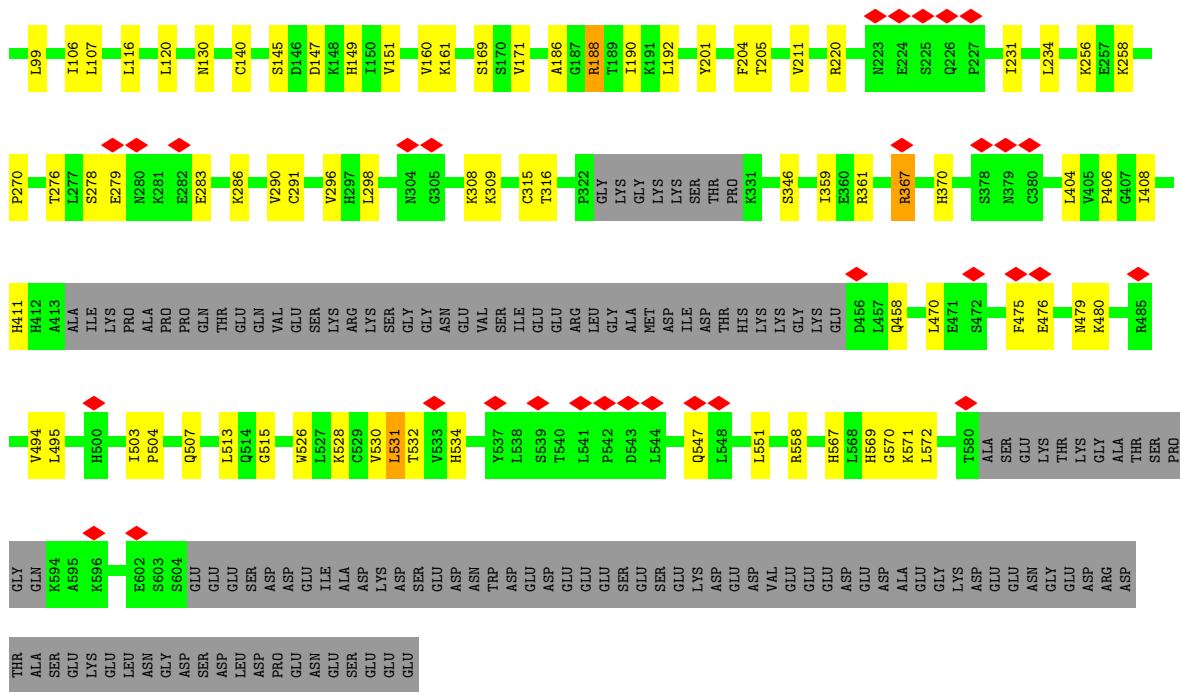
• Molecule 17: Nucleolar protein 11



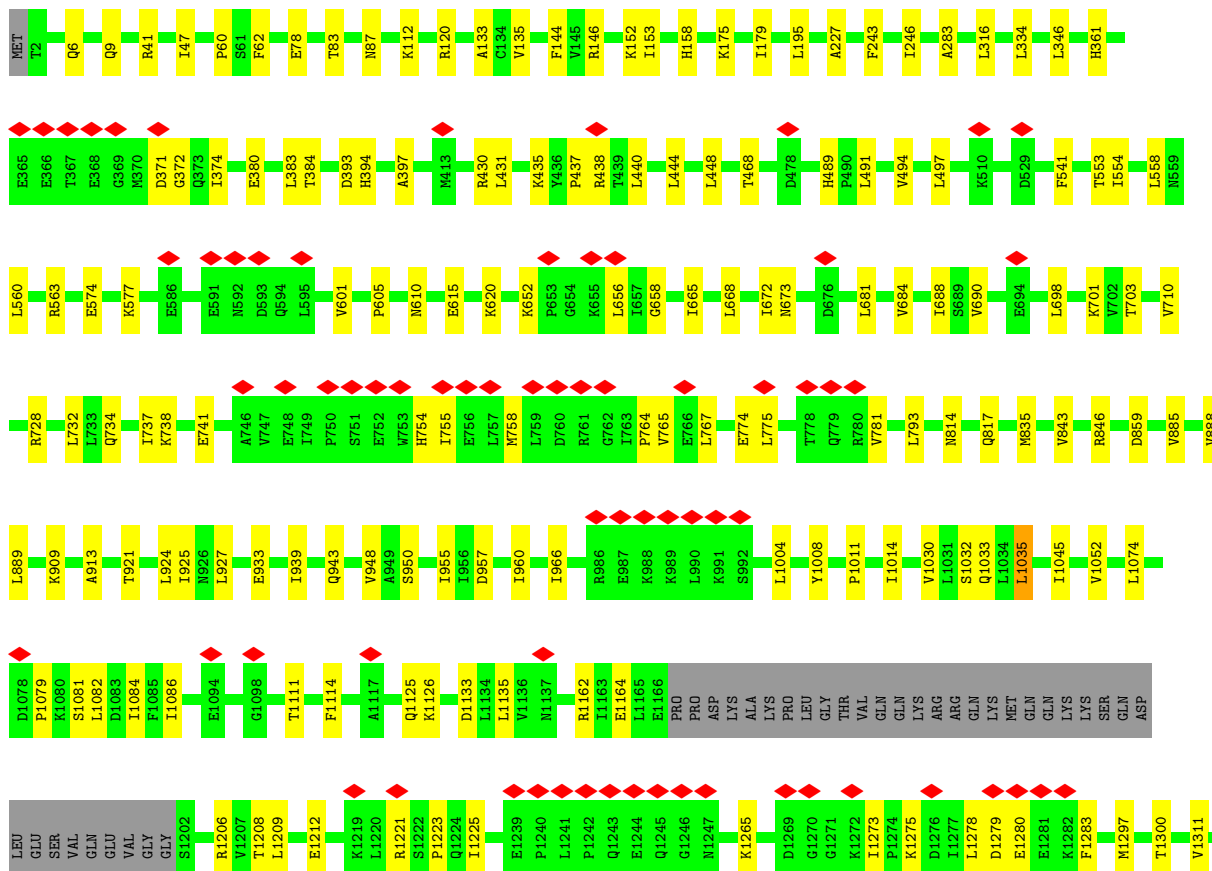
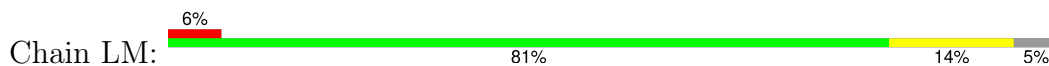
• Molecule 18: U3 small nucleolar RNA-associated protein 15 homolog

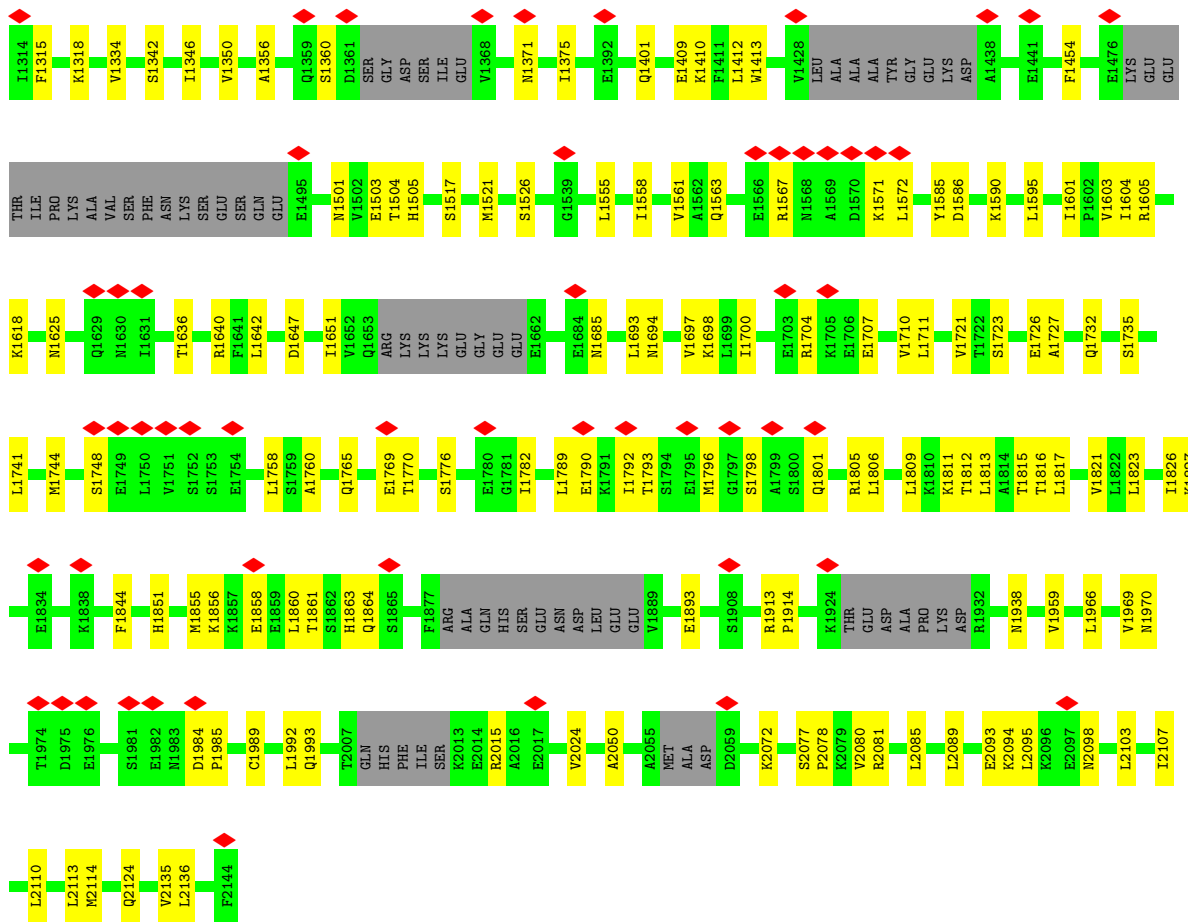




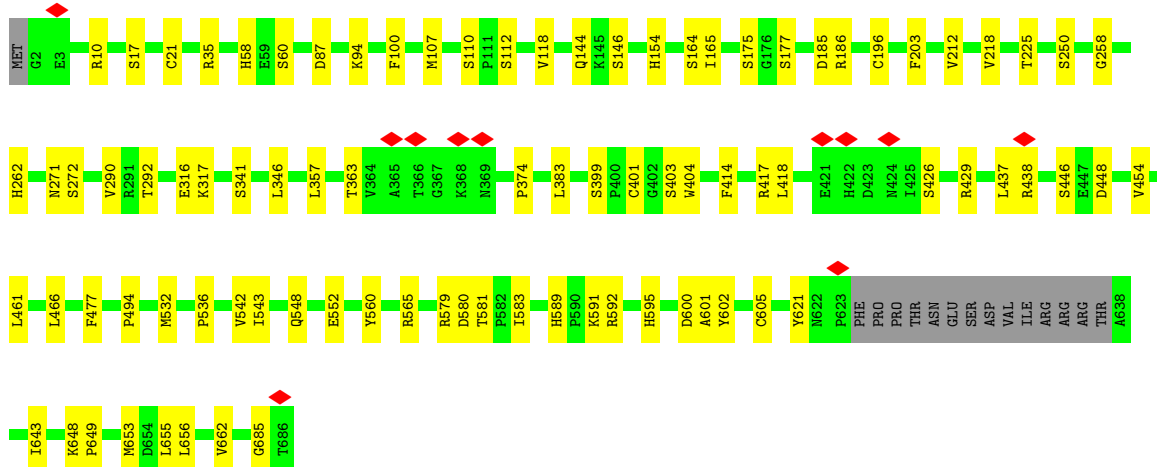
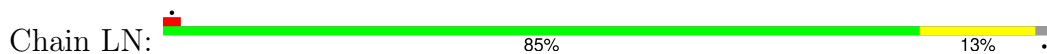


• Molecule 20: HEAT repeat-containing protein 1



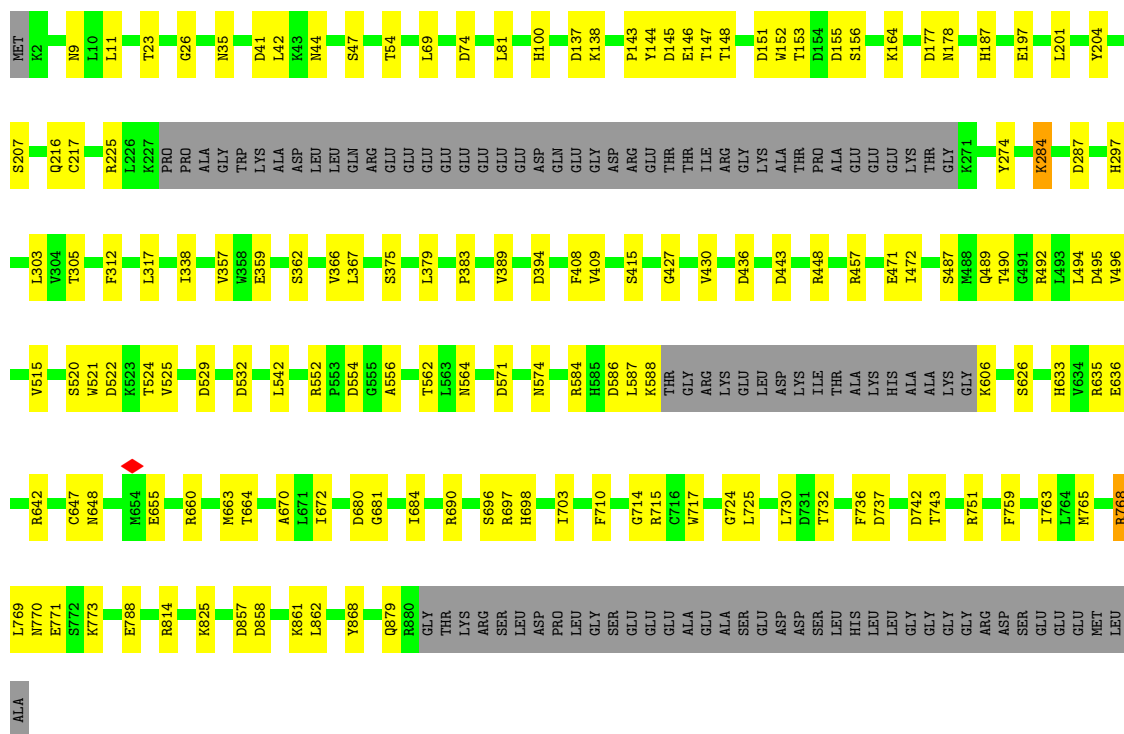


• Molecule 21: U3 small nucleolar RNA-associated protein 4 homolog



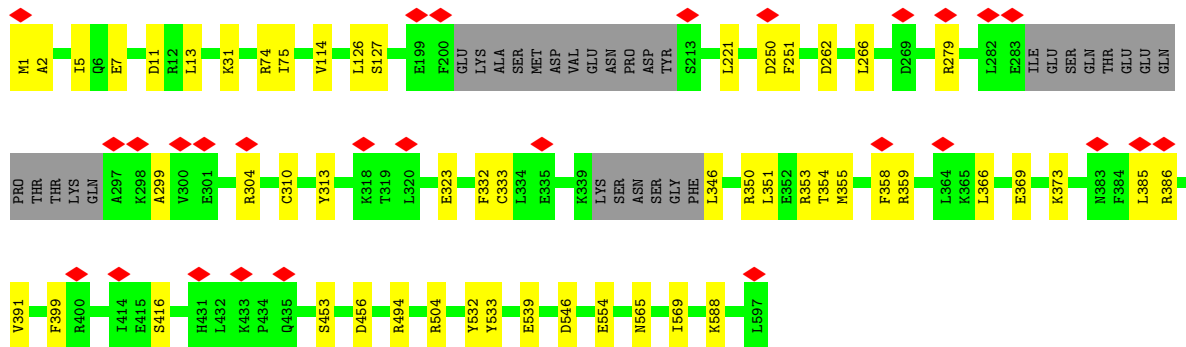
• Molecule 22: Periodic tryptophan protein 2 homolog





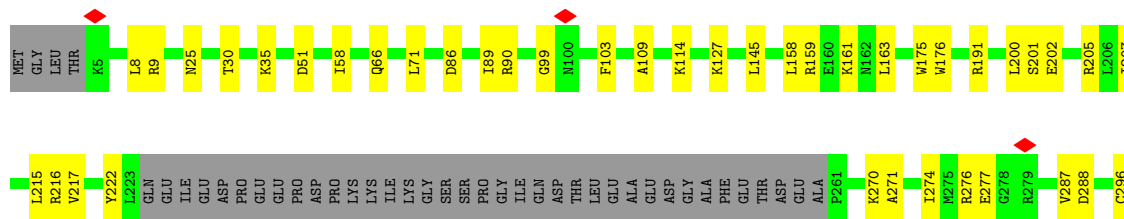
• Molecule 23: U3 small nucleolar RNA-associated protein 6 homolog

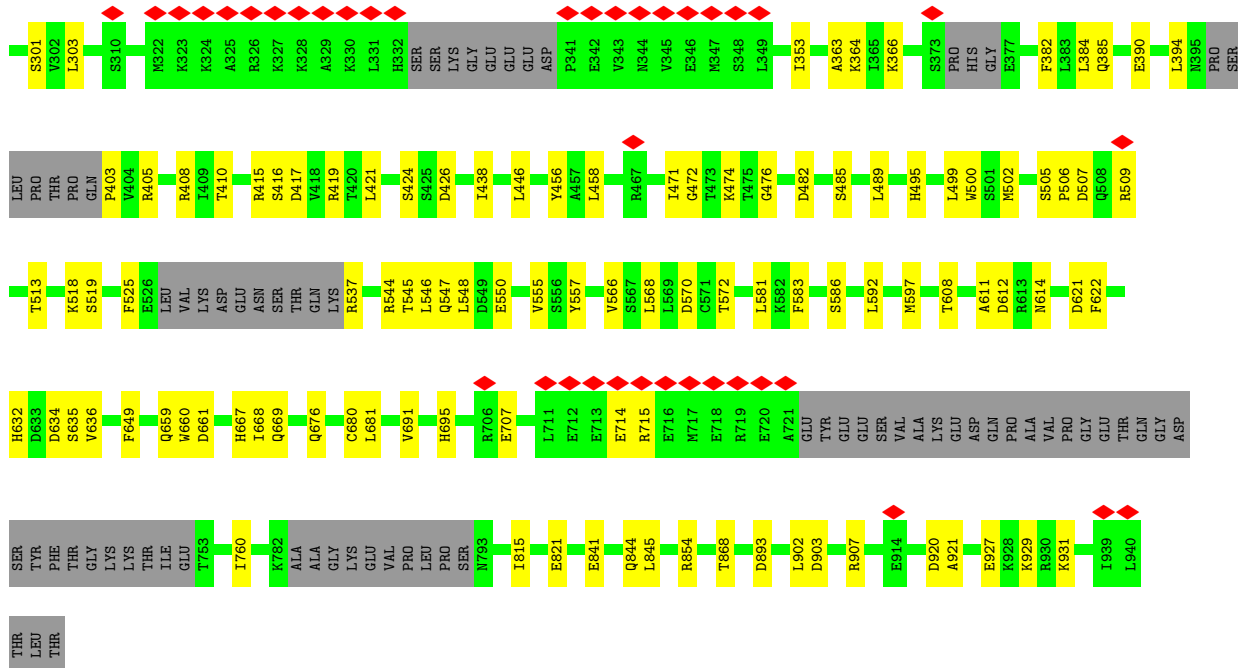
Chain LP: 86% 9% 5% 5%



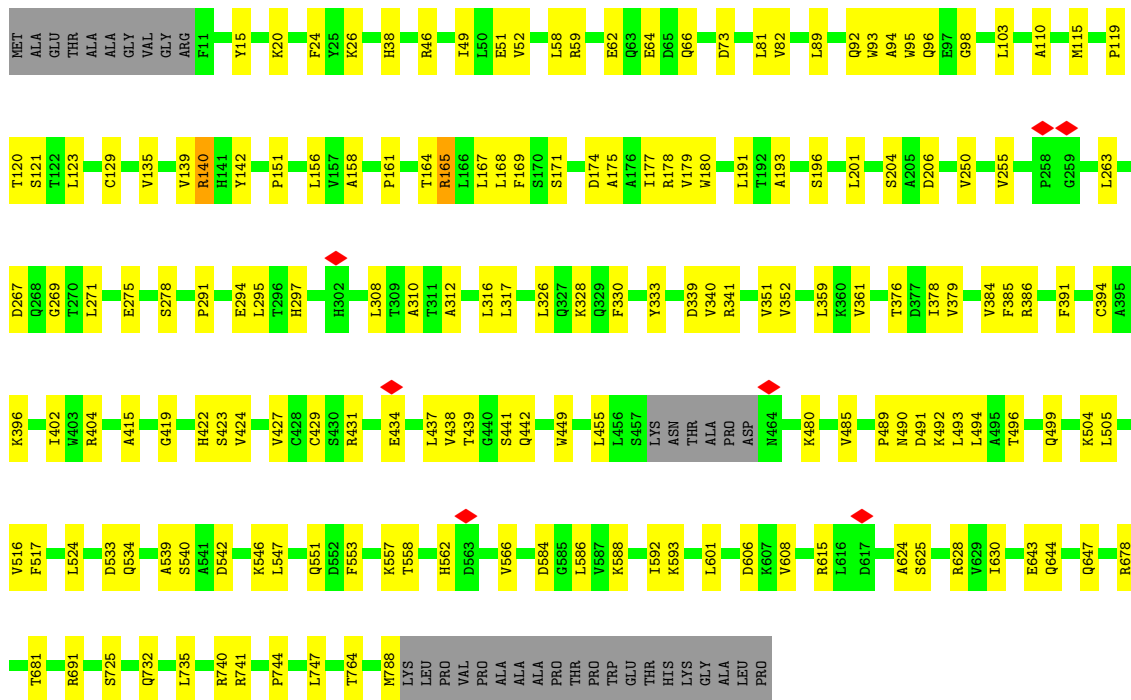
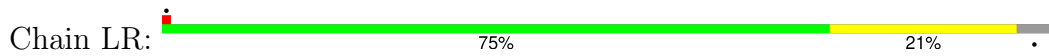
• Molecule 24: WD repeat-containing protein 3

Chain LQ: 72% 16% 12%

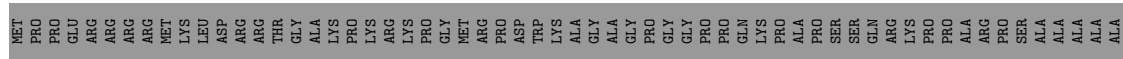


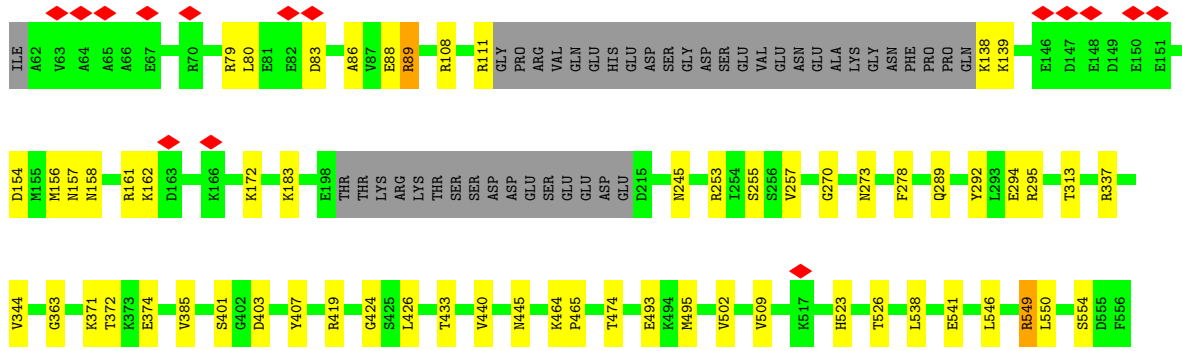


• Molecule 25: Transducin beta-like protein 3

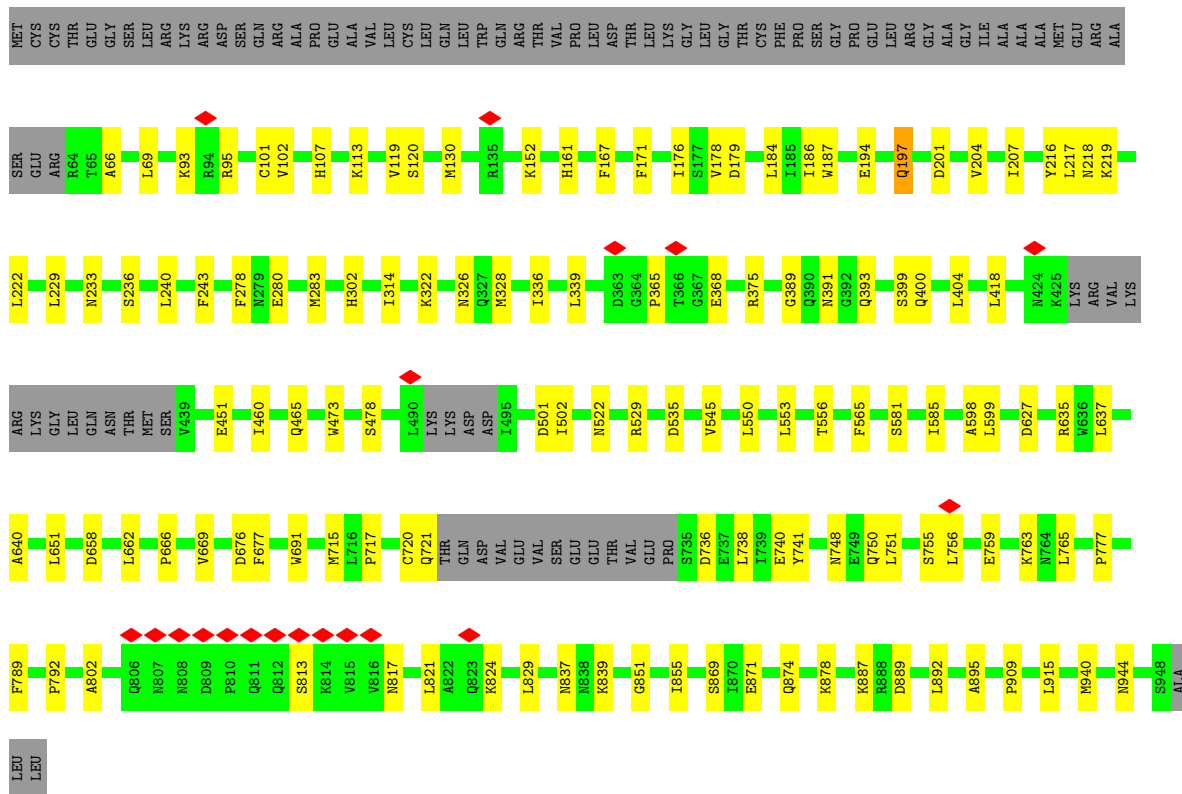
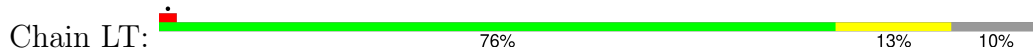


• Molecule 26: U3 small nucleolar RNA-associated protein 18 homolog

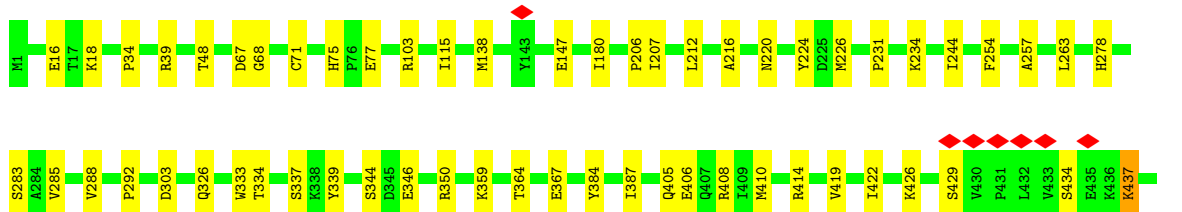
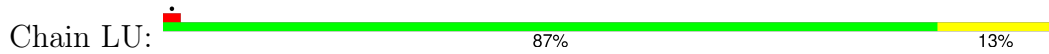




• Molecule 27: WD repeat-containing protein 36

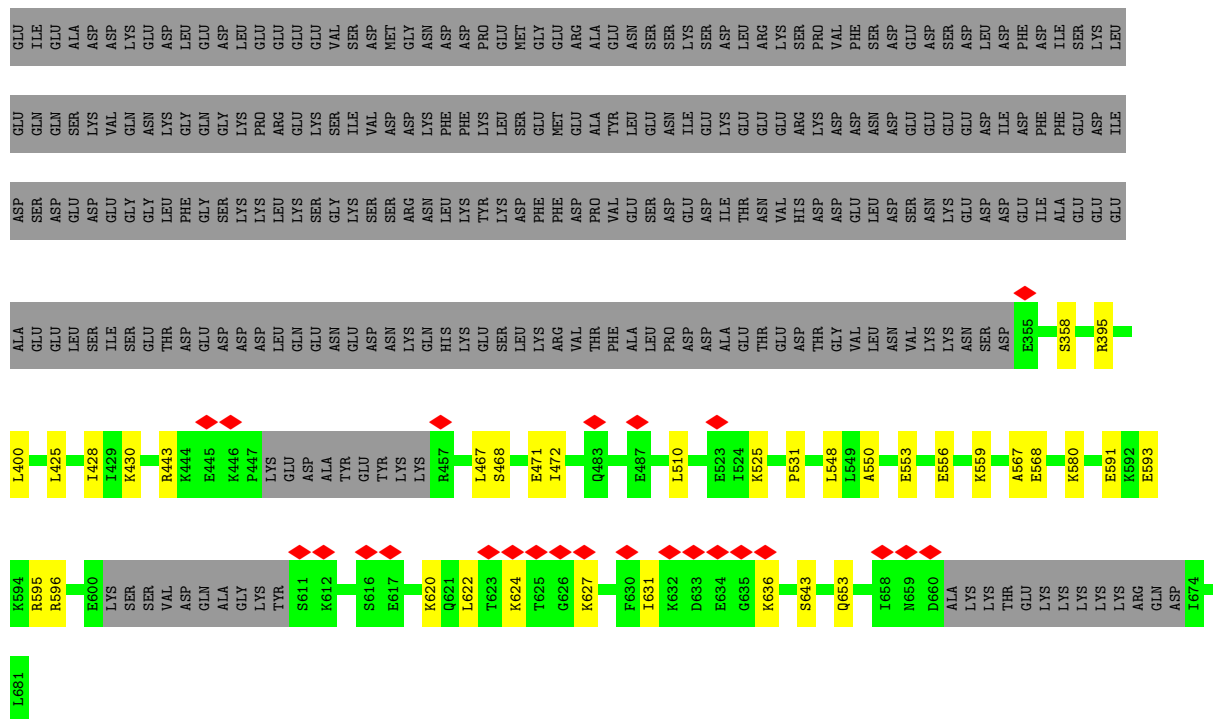


• Molecule 28: DDB1- and CUL4-associated factor 13

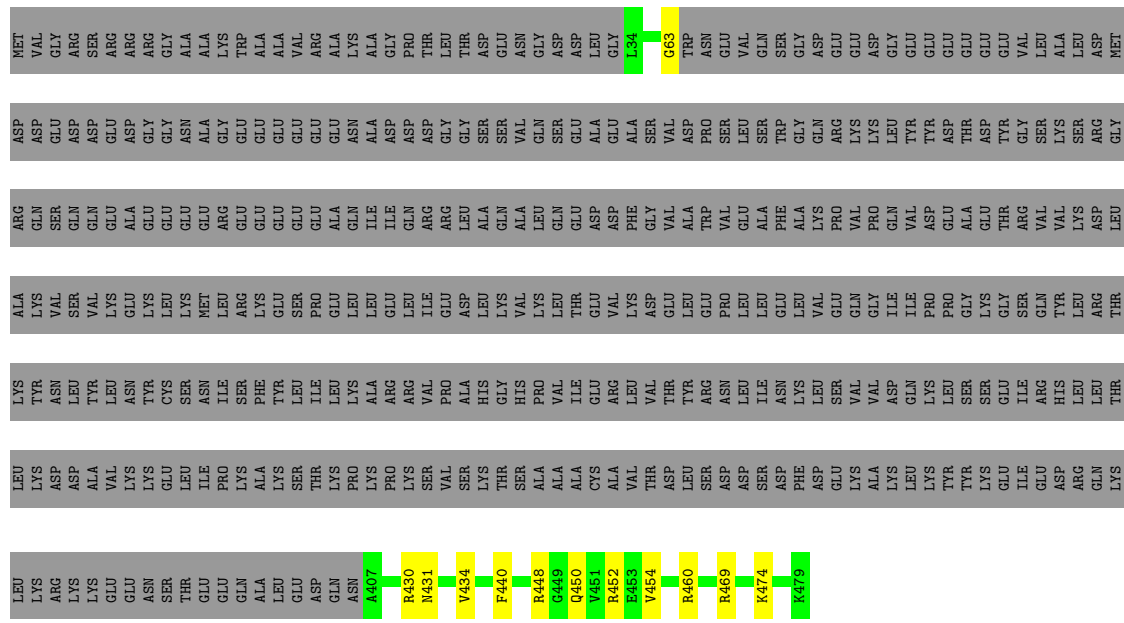




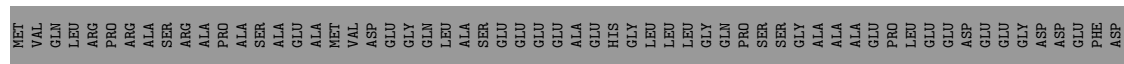


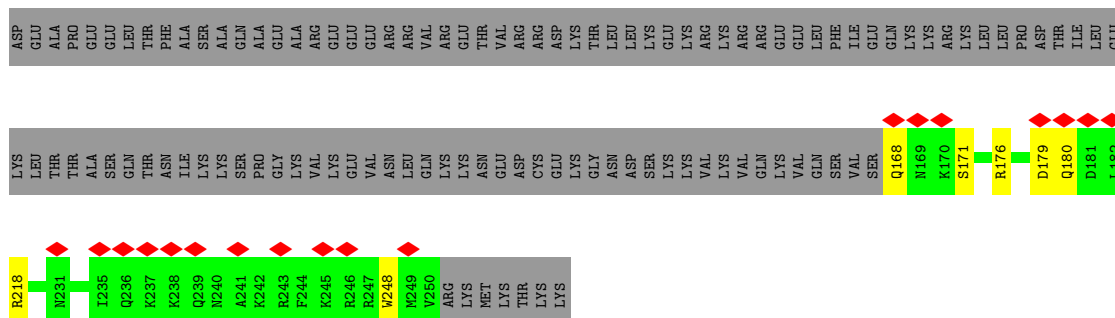


• Molecule 33: Something about silencing protein 10



• Molecule 34: Nucleolar protein 7





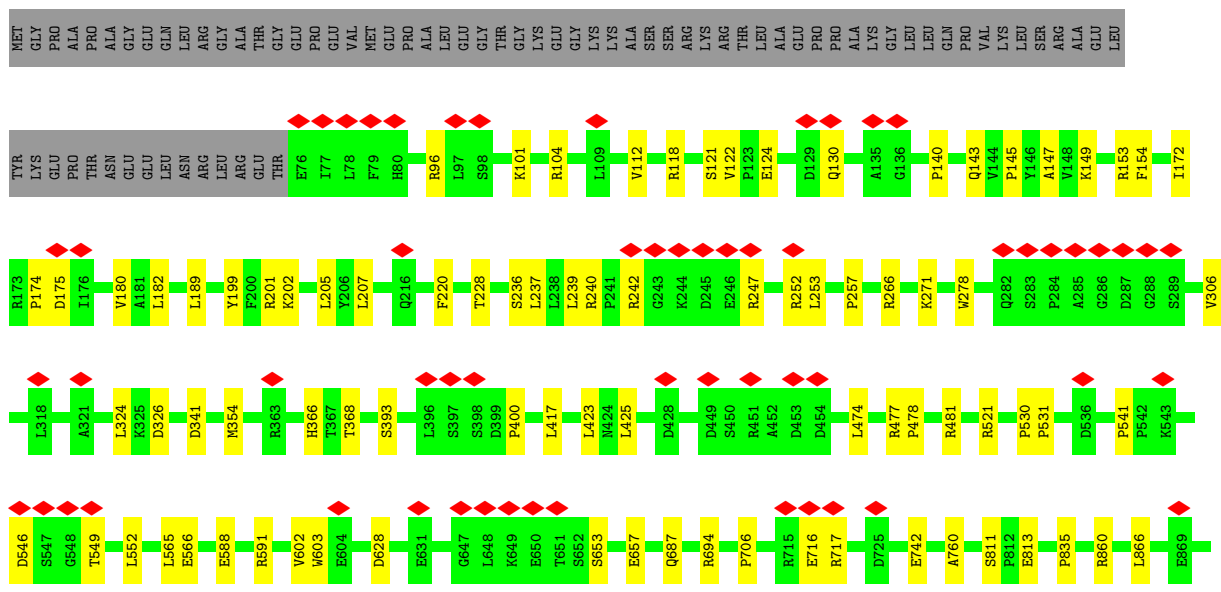
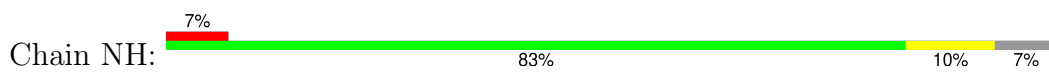
● Molecule 35: 40S ribosomal protein S13

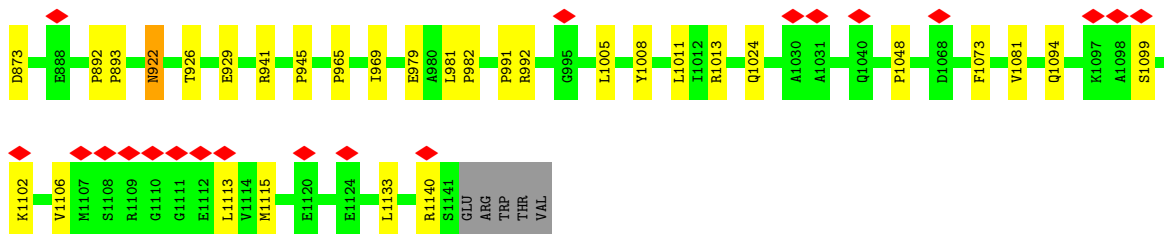


● Molecule 36: 40S ribosomal protein S14

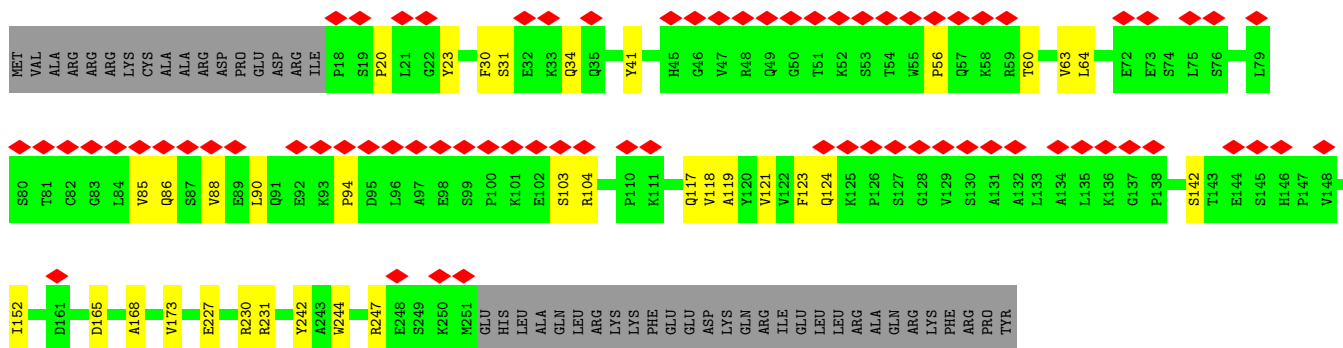
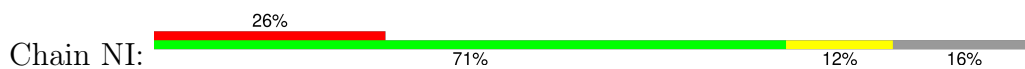


● Molecule 37: Nucleolar protein 6

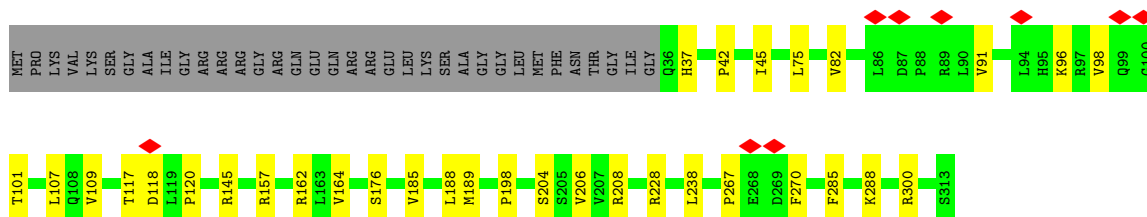
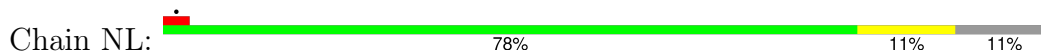




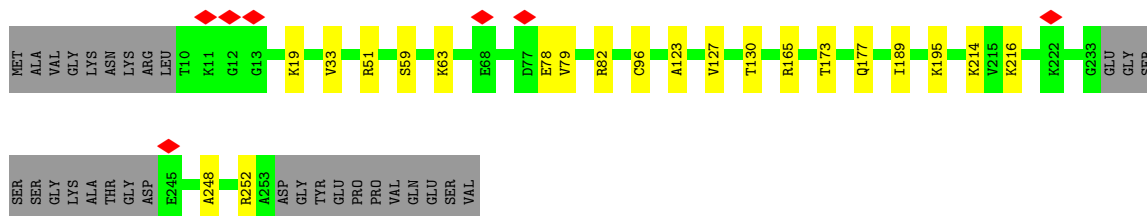
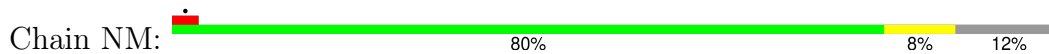
• Molecule 38: Ribosomal RNA-processing protein 7 homolog A



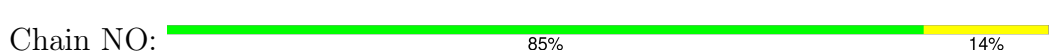
• Molecule 39: Probable dimethyladenosine transferase



• Molecule 40: 40S ribosomal protein S3a

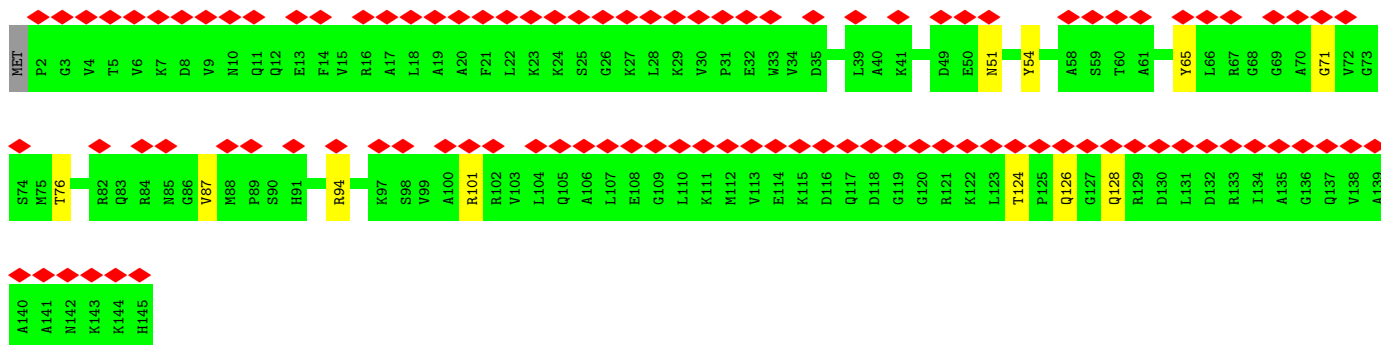
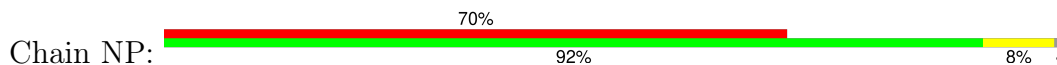


• Molecule 41: 40S ribosomal protein S15a

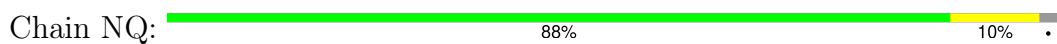




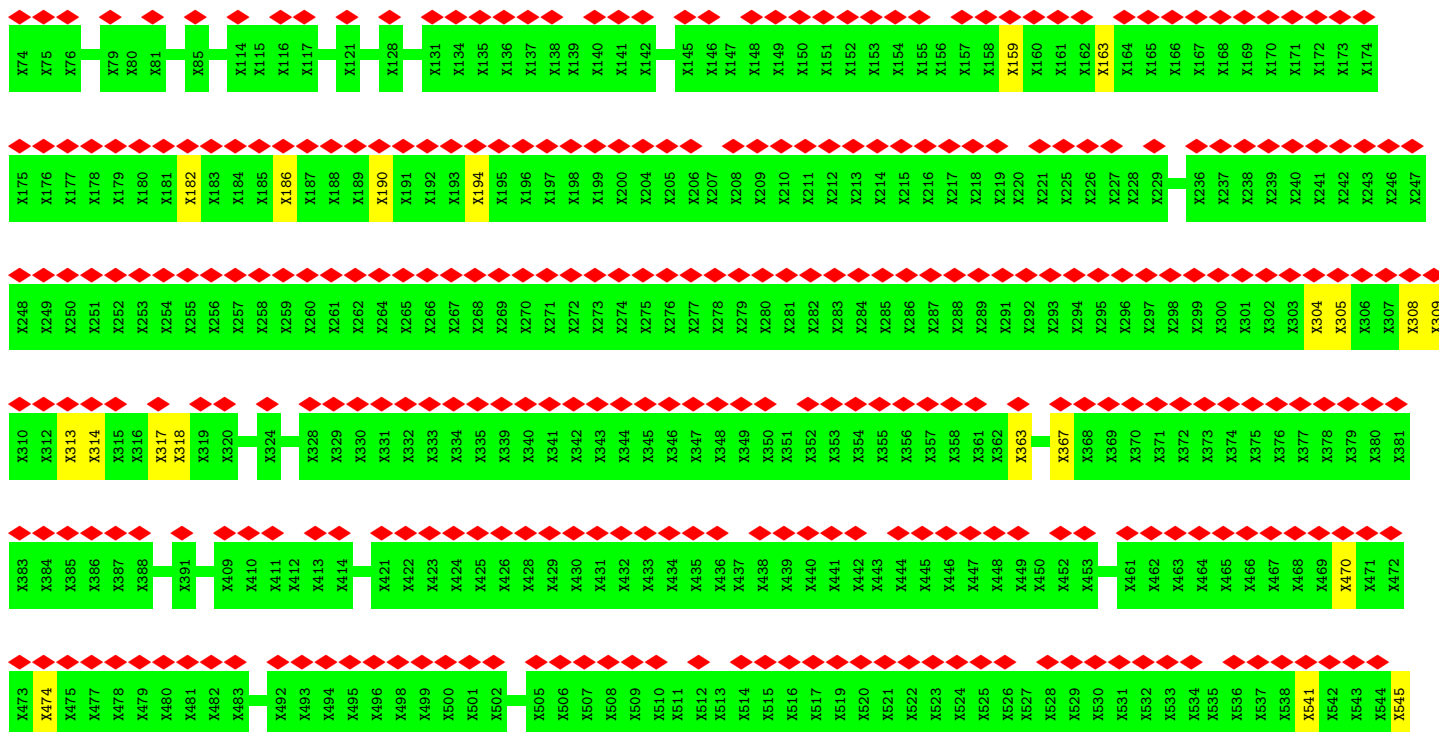
• Molecule 42: 40S ribosomal protein S19

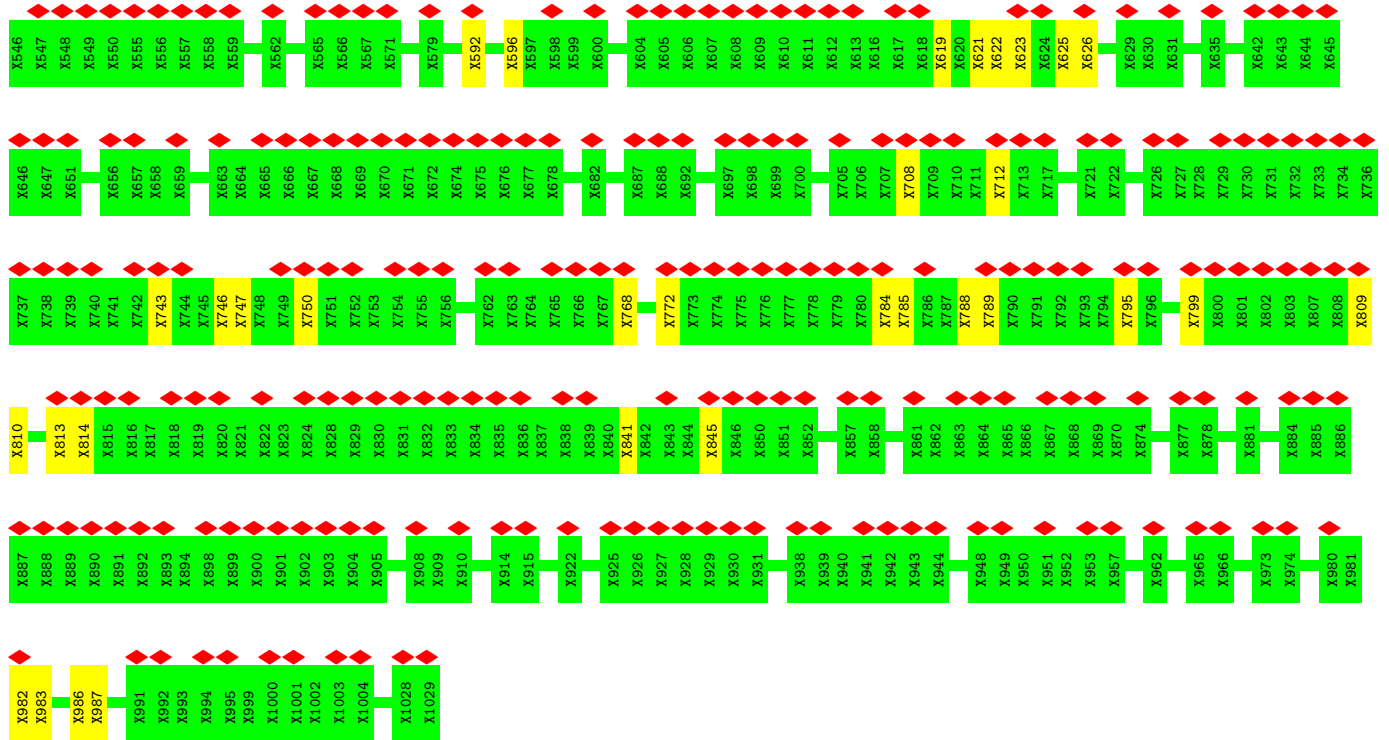


• Molecule 43: 40S ribosomal protein S27

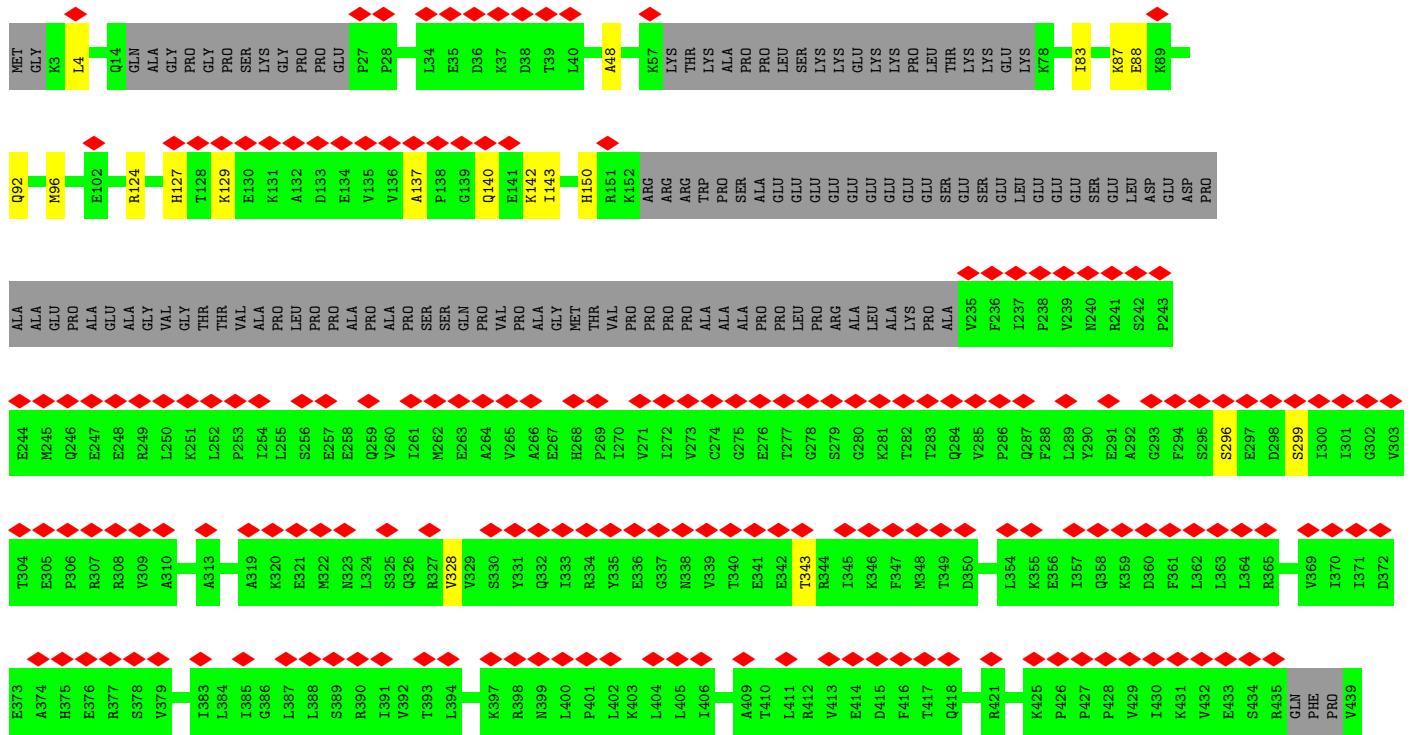
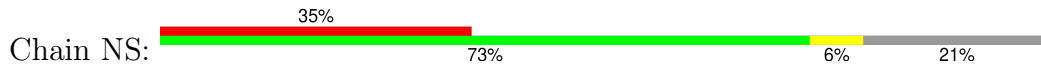


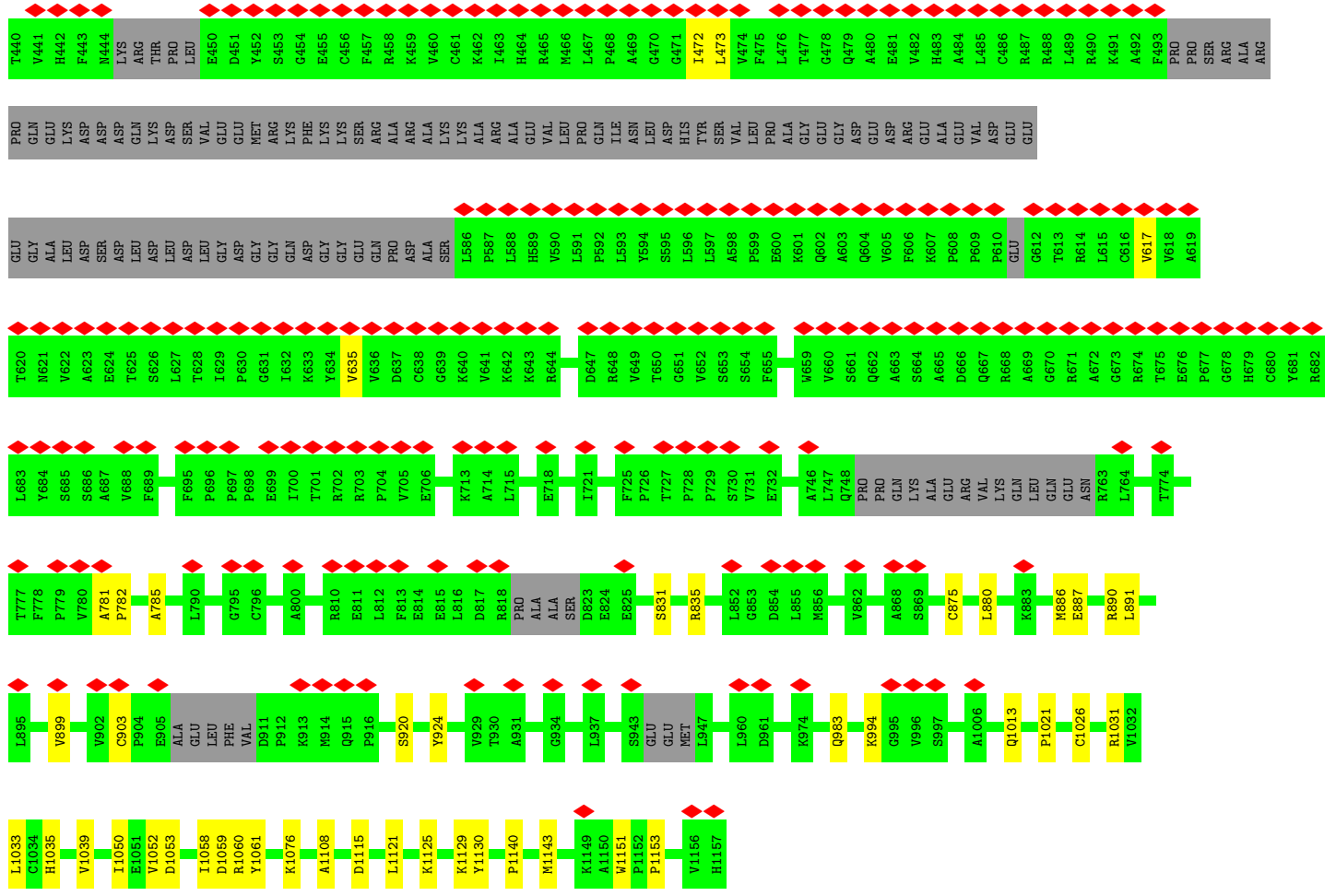
• Molecule 44: RRP12-like protein



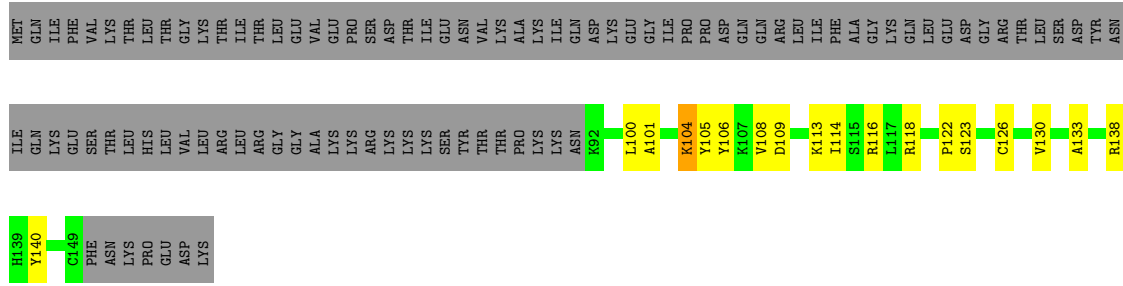


● Molecule 45: Probable ATP-dependent RNA helicase DHX37

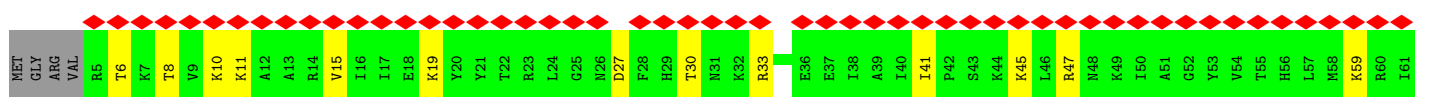
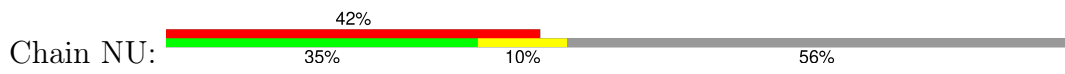




● Molecule 46: Ubiquitin-40S ribosomal protein S27a



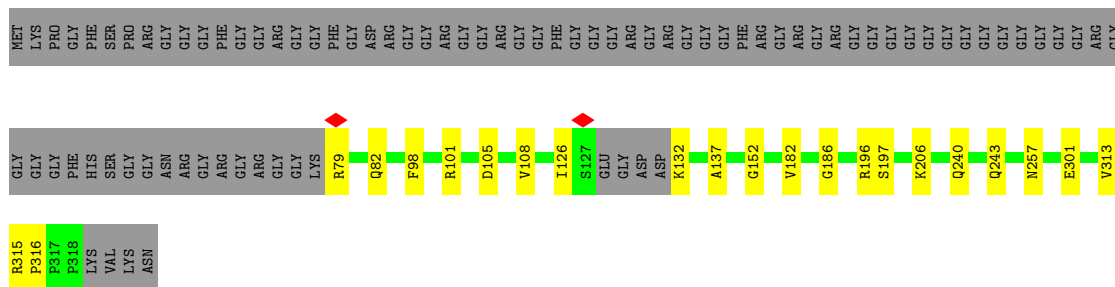
● Molecule 47: 40S ribosomal protein S17



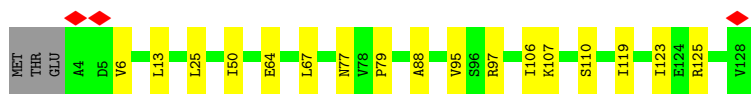
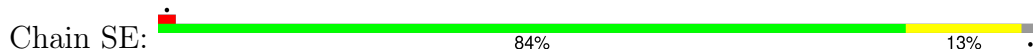




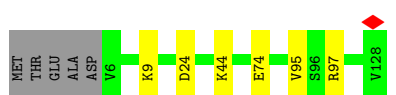




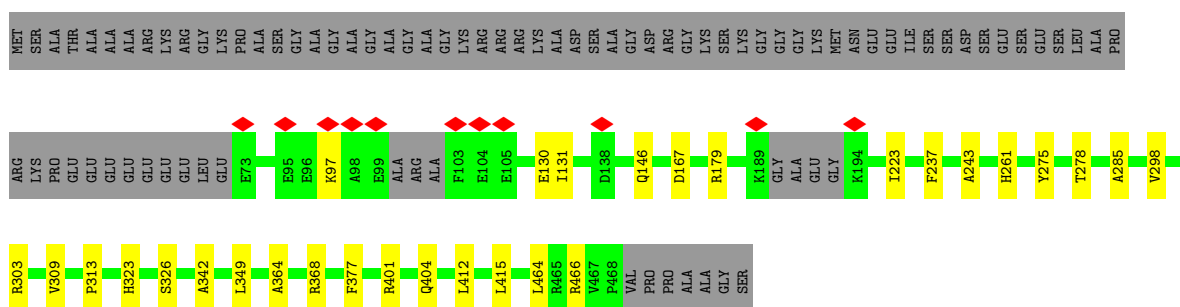
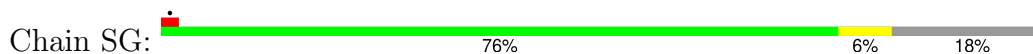
• Molecule 52: NHP2-like protein 1



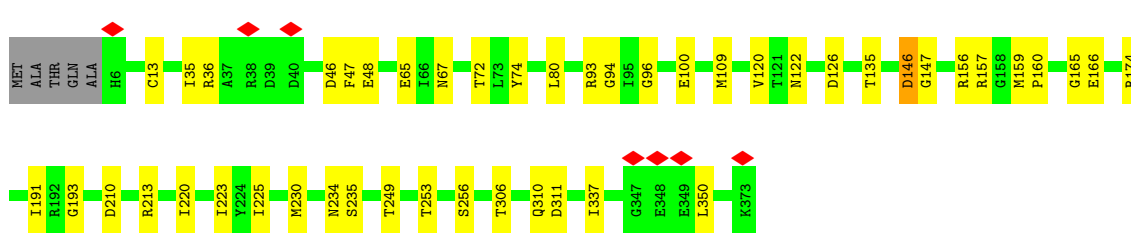
• Molecule 52: NHP2-like protein 1



• Molecule 53: U3 small nucleolar RNA-interacting protein 2



• Molecule 54: RNA 3'-terminal phosphate cyclase-like protein

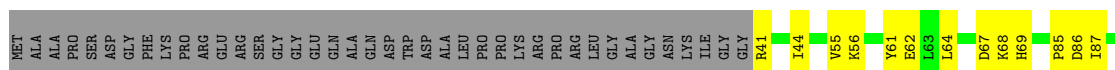


• Molecule 55: Ribosome biogenesis protein BMS1 homolog

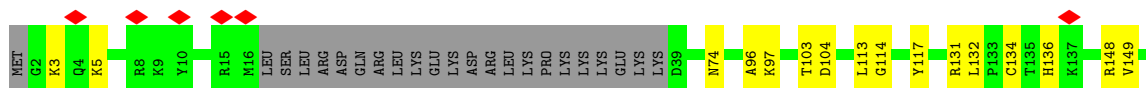




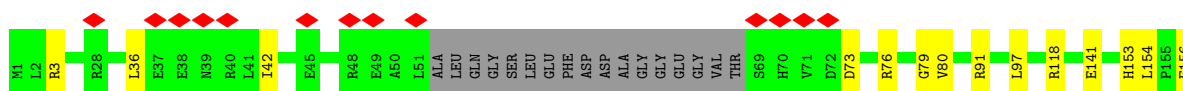
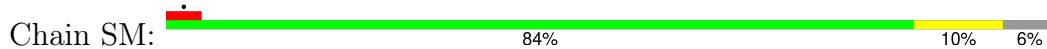
- Molecule 56: Ribosomal RNA small subunit methyltransferase NEP1



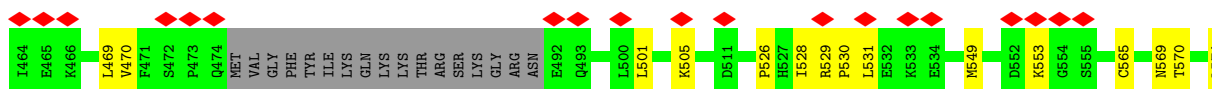
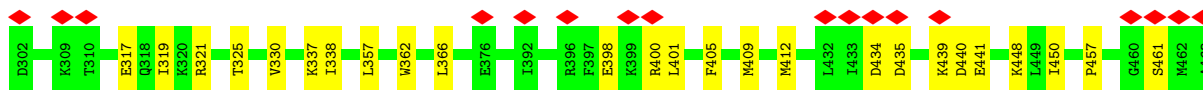
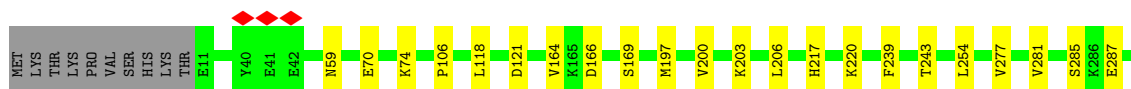
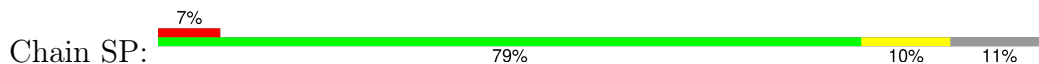
- Molecule 57: rRNA-processing protein FCF1 homolog

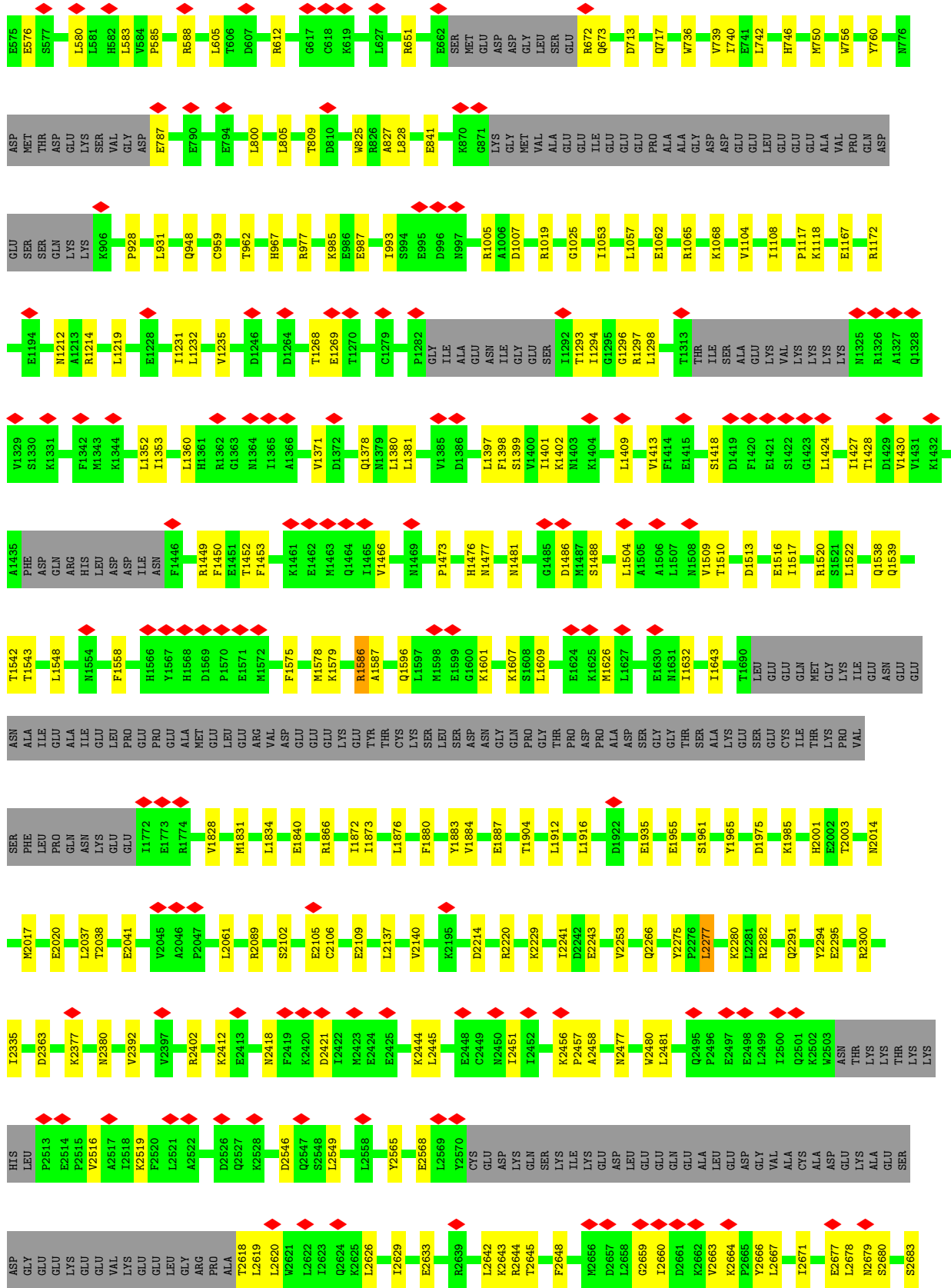


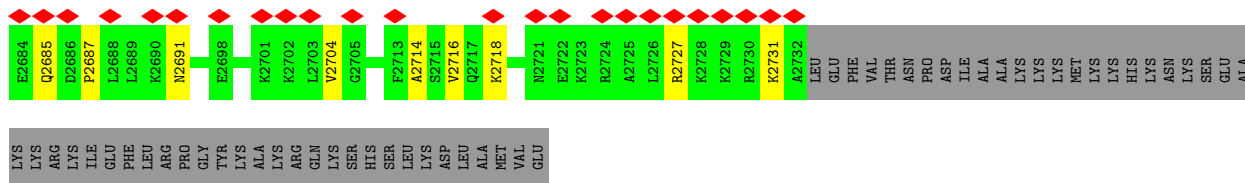
- Molecule 58: U3 small nucleolar ribonucleoprotein protein IMP4



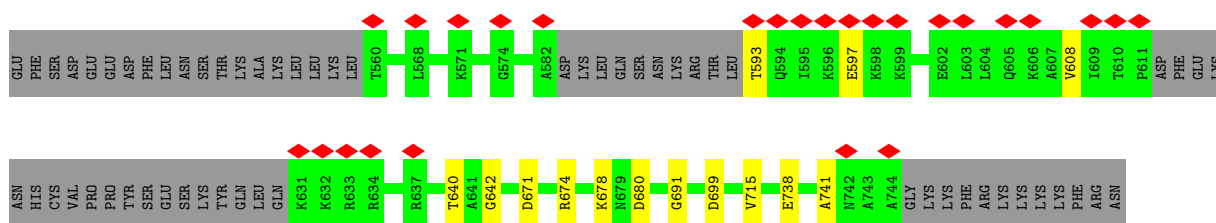
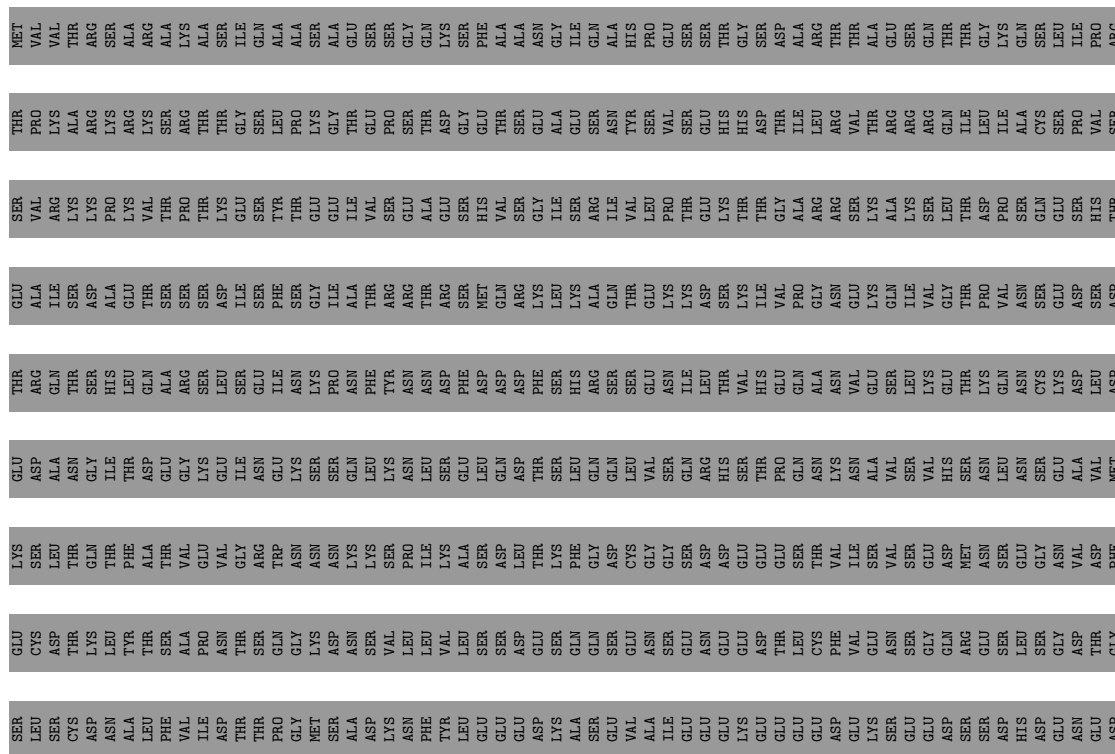
- Molecule 59: Small subunit processome component 20 homolog







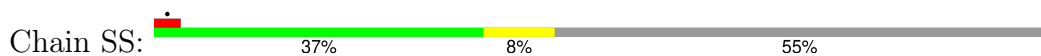
• Molecule 60: Deoxynucleotidyltransferase terminal-interacting protein 2

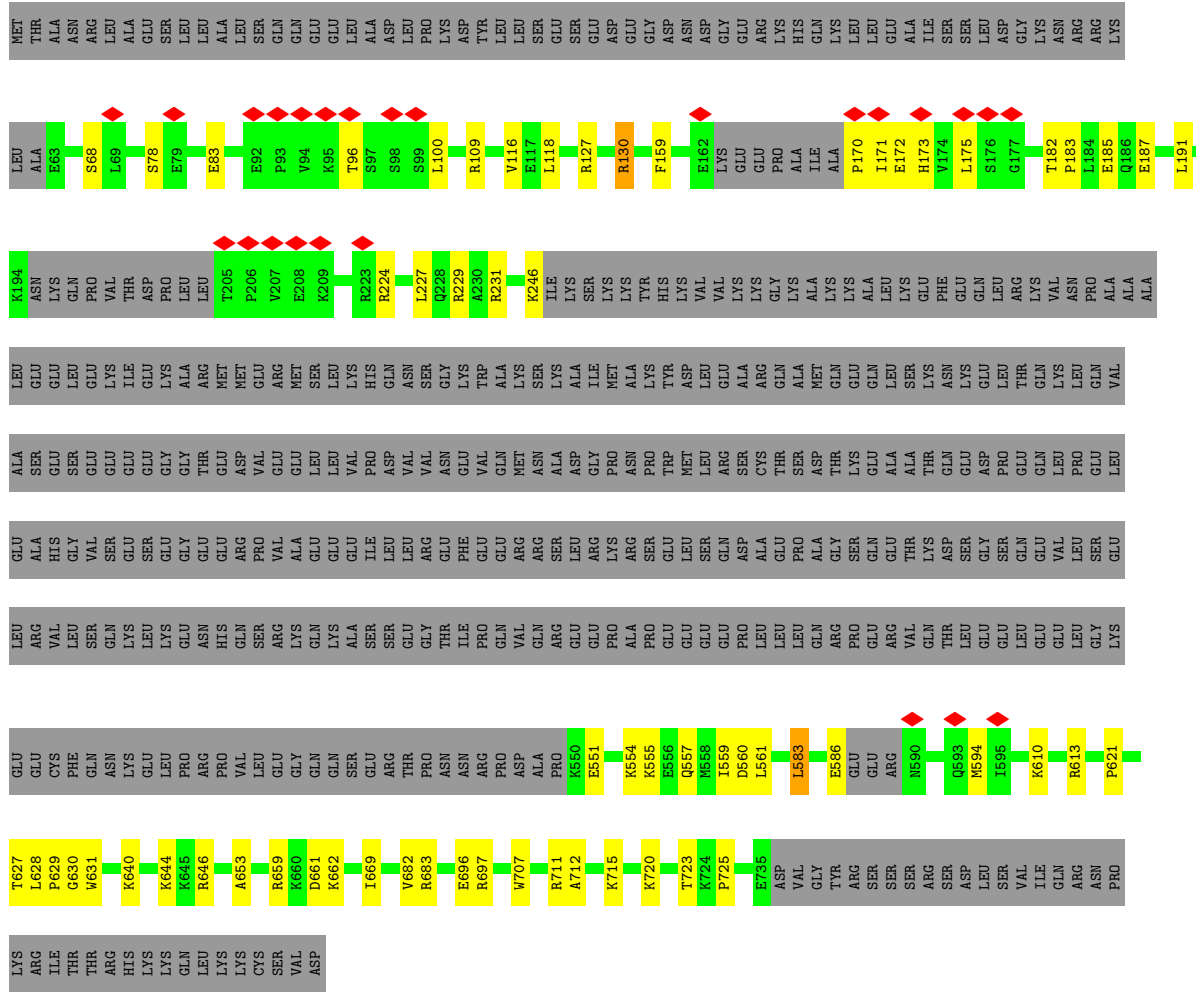


• Molecule 61: 40S ribosomal protein S23

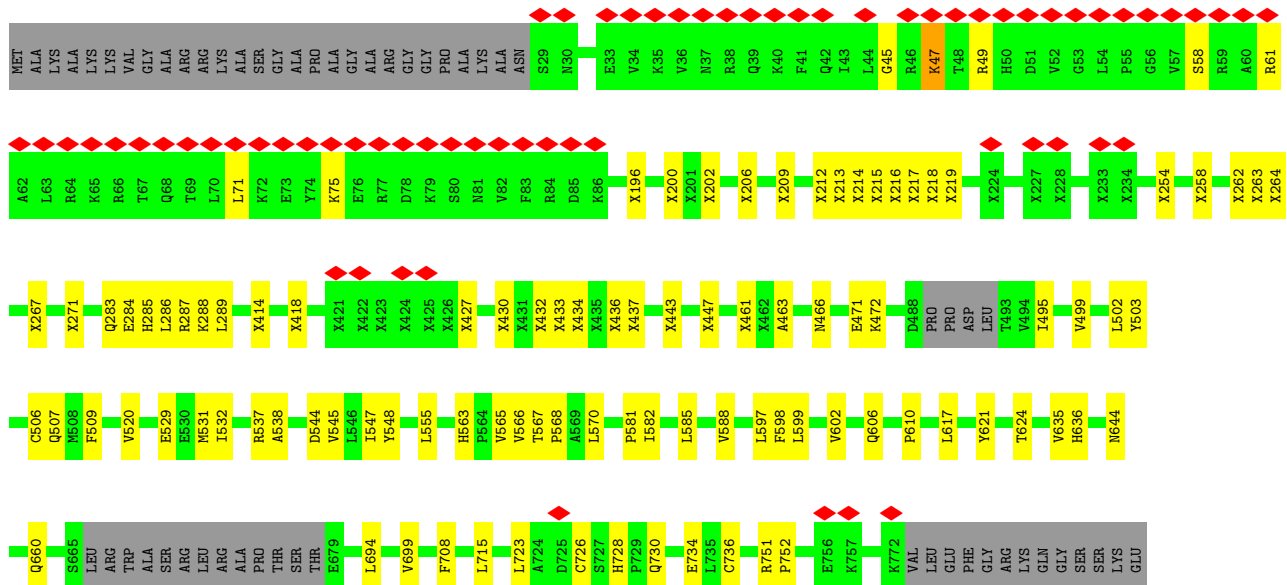
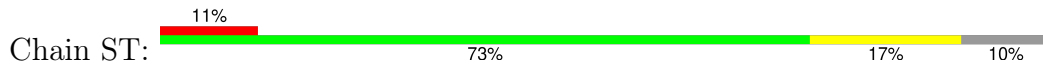


• Molecule 62: U3 small nucleolar RNA-associated protein 14 homolog A



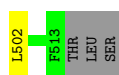
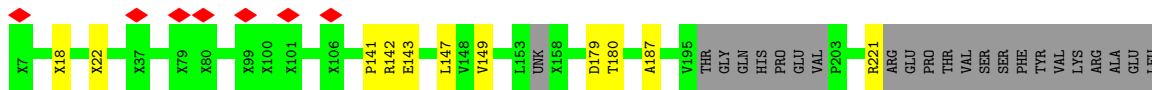
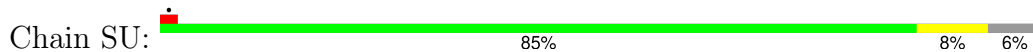


● Molecule 63: Nucleolar protein 14

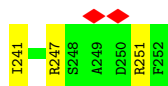
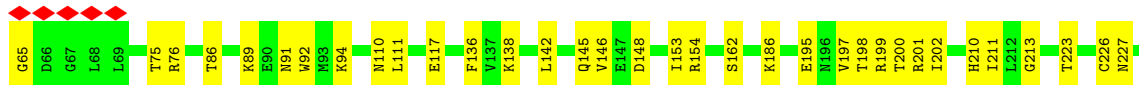
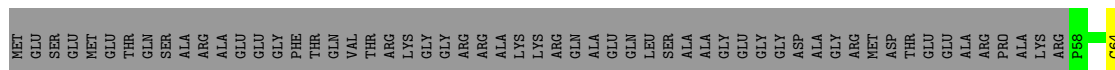




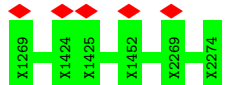
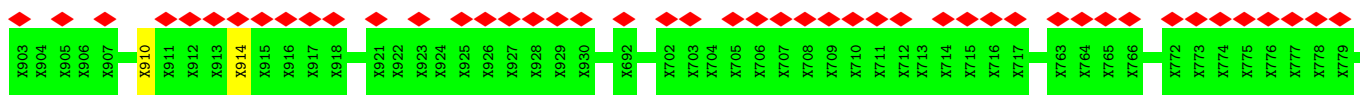
• Molecule 64: Nucleolar complex protein 4 homolog



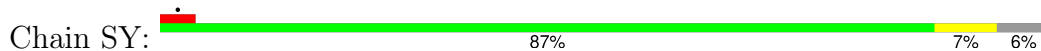
• Molecule 65: RNA-binding protein PNO1



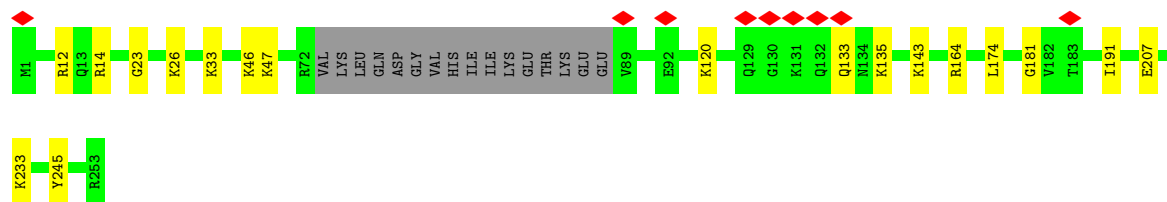
• Molecule 66: Unassigned peptides



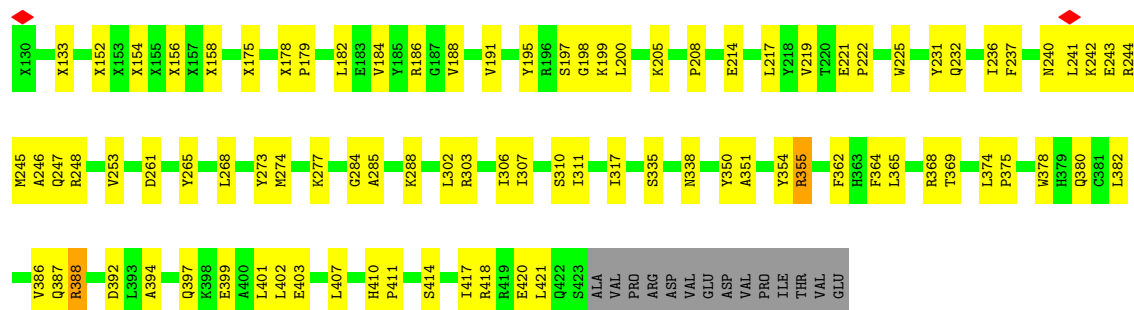
• Molecule 67: Probable U3 small nucleolar RNA-associated protein 11







• Molecule 68: Bystin



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	459775	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	58	Depositor
Minimum defocus (nm)	700	Depositor
Maximum defocus (nm)	2700	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	29.079	Depositor
Minimum map value	-20.930	Depositor
Average map value	0.036	Depositor
Map value standard deviation	0.793	Depositor
Recommended contour level	3.28	Depositor
Map size (Å)	604.80005, 604.80005, 604.80005	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.08, 1.08, 1.08	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: 4AC, OMG, SAH, ATP, A2M, MG, OMU, PSU, ZN, OMC, 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	L0	0.25	0/388	0.70	0/604
2	L1	0.31	0/37548	0.84	72/58496 (0.1%)
3	L2	0.26	0/4222	0.81	6/6575 (0.1%)
4	L3	0.25	0/720	0.58	0/970
5	L4	0.26	0/2118	0.54	0/2849
6	L5	0.26	0/1523	0.53	0/2048
7	L6	0.26	0/1885	0.56	0/2510
8	L7	0.25	0/1365	0.49	0/1830
9	L8	0.26	0/1500	0.57	0/2002
10	L9	0.26	0/1524	0.56	0/2035
11	LA	0.37	0/941	0.72	0/1264
12	LC	0.29	0/1084	0.57	0/1453
13	LD	0.27	0/1250	0.54	0/1673
14	LF	0.27	0/1047	0.55	0/1391
15	LG	0.24	0/490	0.60	0/656
16	LH	0.26	0/6127	0.51	0/8292
17	LI	0.27	0/3245	0.49	0/4386
18	LJ	0.27	0/3734	0.54	0/5054
19	LK	0.27	0/959	0.54	0/1302
19	LL	0.25	0/4072	0.51	1/5539 (0.0%)
20	LM	0.26	0/16395	0.48	2/22212 (0.0%)
21	LN	0.26	0/5438	0.51	0/7377
22	LO	0.32	0/6607	0.54	0/8948
23	LP	0.25	0/4797	0.46	0/6443
24	LQ	0.25	0/6610	0.52	0/8915
25	LR	0.25	0/6132	0.53	0/8337
26	LS	0.26	0/3621	0.51	0/4876
27	LT	0.26	0/6795	0.49	0/9213
28	LU	0.26	0/3695	0.53	0/4986
29	LW	0.27	0/3592	0.53	0/4856
30	LY	0.25	0/785	0.55	0/1043
31	LZ	0.26	0/1368	0.57	0/1844

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
32	NA	0.25	0/2433	0.46	0/3248
33	NB	0.26	0/860	0.60	0/1139
34	ND	0.25	0/697	0.53	0/934
35	NF	0.24	0/1226	0.48	0/1649
36	NG	0.26	0/969	0.59	0/1298
37	NH	0.25	0/8580	0.52	1/11685 (0.0%)
38	NI	0.25	0/1887	0.50	0/2558
39	NL	0.25	0/2261	0.46	0/3061
40	NM	0.24	0/1899	0.49	0/2533
41	NO	0.26	0/1051	0.53	0/1406
42	NP	0.23	0/1142	0.48	0/1530
43	NQ	0.26	0/653	0.53	0/876
45	NS	0.26	0/5371	0.49	0/7371
46	NT	0.37	0/479	0.69	2/635 (0.3%)
47	NU	0.24	0/501	0.52	0/667
48	NV	0.27	0/354	0.42	0/474
49	SA	0.25	0/3122	0.46	0/4208
50	SB	0.25	0/3422	0.46	0/4602
51	SC	0.26	0/1818	0.51	0/2463
51	SD	0.26	0/1869	0.51	0/2529
52	SE	0.25	0/980	0.48	0/1323
52	SF	0.25	0/967	0.49	0/1305
53	SG	0.25	0/3101	0.53	0/4186
54	SH	0.25	0/2882	0.51	1/3887 (0.0%)
55	SI	0.26	0/6638	0.50	1/8919 (0.0%)
56	SJ	0.30	0/1609	0.57	0/2181
56	SK	0.28	0/1609	0.53	0/2181
57	SL	0.27	0/1464	0.54	0/1969
58	SM	0.25	0/2302	0.56	0/3103
59	SP	0.25	0/20427	0.46	2/27617 (0.0%)
60	SQ	0.27	0/1295	0.51	0/1723
61	SR	0.26	0/1116	0.52	0/1490
62	SS	0.28	0/2875	0.54	1/3867 (0.0%)
63	ST	0.28	0/3615	0.52	0/4858
64	SU	0.27	0/2634	0.50	1/3581 (0.0%)
65	SW	0.29	0/1549	0.54	0/2088
67	SY	0.25	0/2041	0.50	0/2709
68	SZ	0.35	0/2043	0.63	1/2763 (0.0%)
All	All	0.27	0/241318	0.59	91/334595 (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
6	L5	0	1
37	NH	0	1
All	All	0	2

There are no bond length outliers.

All (91) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	501	C	C2-N1-C1'	10.69	130.56	118.80
2	L1	501	C	N1-C2-O2	9.84	124.80	118.90
2	L1	1453	C	N1-C2-O2	9.67	124.70	118.90
2	L1	733	C	N1-C2-O2	9.46	124.57	118.90
2	L1	1453	C	C2-N1-C1'	9.41	129.15	118.80
2	L1	1742	C	C2-N1-C1'	8.71	128.39	118.80
2	L1	293	C	N1-C2-O2	8.51	124.01	118.90
2	L1	733	C	C2-N1-C1'	8.42	128.07	118.80
62	SS	583	LEU	CA-CB-CG	7.93	133.54	115.30
2	L1	1535	U	C2-N1-C1'	7.88	127.15	117.70
2	L1	1453	C	N3-C2-O2	-7.78	116.45	121.90
3	L2	32	U	N1-C2-O2	7.61	128.13	122.80
2	L1	501	C	C6-N1-C1'	-7.58	111.70	120.80
2	L1	501	C	N3-C2-O2	-7.55	116.61	121.90
2	L1	1742	C	N1-C2-O2	7.35	123.31	118.90
2	L1	733	C	N3-C2-O2	-7.33	116.77	121.90
2	L1	293	C	C2-N1-C1'	7.21	126.73	118.80
2	L1	1751	C	N1-C2-O2	7.16	123.20	118.90
59	SP	2037	LEU	CA-CB-CG	7.00	131.39	115.30
2	L1	293	C	N3-C2-O2	-6.97	117.02	121.90
3	L2	32	U	C2-N1-C1'	6.96	126.05	117.70
3	L2	32	U	N3-C2-O2	-6.95	117.33	122.20
2	L1	73	C	N1-C2-O2	6.93	123.06	118.90
2	L1	1535	U	N1-C2-O2	6.74	127.52	122.80
2	L1	501	C	C6-N1-C2	-6.47	117.71	120.30
2	L1	1453	C	C6-N1-C2	-6.47	117.71	120.30
2	L1	1453	C	C6-N1-C1'	-6.40	113.12	120.80
2	L1	1535	U	N3-C2-O2	-6.34	117.76	122.20
2	L1	1022	U	C2-N1-C1'	6.29	125.25	117.70
2	L1	73	C	C2-N1-C1'	6.25	125.68	118.80
2	L1	1696	C	N1-C2-O2	6.15	122.59	118.90
2	L1	1742	C	C6-N1-C1'	-6.06	113.53	120.80
2	L1	1765	C	C2-N1-C1'	6.04	125.45	118.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	326	C	C6-N1-C2	-6.03	117.89	120.30
46	NT	100	LEU	CA-CB-CG	6.02	129.15	115.30
2	L1	735	C	C2-N1-C1'	5.99	125.39	118.80
2	L1	1742	C	N3-C2-O2	-5.98	117.72	121.90
2	L1	501	C	C5-C6-N1	5.98	123.99	121.00
2	L1	1637	A	OP2-P-O3'	5.93	118.24	105.20
2	L1	1742	C	C6-N1-C2	-5.91	117.94	120.30
2	L1	733	C	C6-N1-C1'	-5.90	113.72	120.80
19	LL	531	LEU	CA-CB-CG	5.85	128.75	115.30
3	L2	181	U	N1-C2-O2	5.84	126.89	122.80
2	L1	735	C	N1-C2-O2	5.83	122.40	118.90
20	LM	1035	LEU	CA-CB-CG	5.79	128.62	115.30
2	L1	689	U	N1-C2-O2	5.79	126.85	122.80
2	L1	1637	A	P-O3'-C3'	5.75	126.61	119.70
2	L1	1765	C	N1-C2-O2	5.73	122.34	118.90
2	L1	1765	C	C6-N1-C2	-5.72	118.01	120.30
2	L1	1314	U	C2-N1-C1'	5.71	124.55	117.70
64	SU	502	LEU	CA-CB-CG	5.69	128.39	115.30
2	L1	706	U	N1-C2-O2	5.69	126.78	122.80
2	L1	325	C	P-O3'-C3'	5.62	126.44	119.70
37	NH	400	PRO	CA-N-CD	-5.61	103.64	111.50
2	L1	188	C	N1-C2-O2	5.59	122.26	118.90
2	L1	1751	C	N3-C2-O2	-5.59	117.99	121.90
2	L1	73	C	N3-C2-O2	-5.57	118.00	121.90
2	L1	1551	U	P-O3'-C3'	5.57	126.38	119.70
54	SH	146	ASP	CB-CG-OD1	5.57	123.31	118.30
2	L1	1155	U	C2-N1-C1'	5.56	124.37	117.70
2	L1	707	C	N1-C2-O2	5.50	122.20	118.90
2	L1	965	U	N1-C2-O2	5.47	126.63	122.80
3	L2	181	U	C2-N1-C1'	5.46	124.25	117.70
3	L2	181	U	N3-C2-O2	-5.45	118.38	122.20
2	L1	689	U	N3-C2-O2	-5.45	118.39	122.20
2	L1	1751	C	C2-N1-C1'	5.44	124.79	118.80
2	L1	706	U	C2-N1-C1'	5.43	124.22	117.70
2	L1	284	C	N1-C2-O2	5.41	122.15	118.90
2	L1	188	C	C2-N1-C1'	5.38	124.72	118.80
2	L1	293	C	C6-N1-C2	-5.38	118.15	120.30
2	L1	1696	C	C2-N1-C1'	5.33	124.66	118.80
2	L1	1453	C	C5-C6-N1	5.32	123.66	121.00
2	L1	689	U	C2-N1-C1'	5.32	124.08	117.70
2	L1	733	C	C6-N1-C2	-5.27	118.19	120.30
2	L1	1591	C	N1-C2-O2	5.21	122.03	118.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	842	C	N1-C2-O2	5.21	122.03	118.90
2	L1	1719	A	P-O3'-C3'	5.20	125.94	119.70
2	L1	1719	A	OP1-P-O3'	5.18	116.59	105.20
59	SP	2277	LEU	CA-CB-CG	5.17	127.20	115.30
2	L1	326	C	N1-C2-O2	5.16	122.00	118.90
2	L1	326	C	N3-C2-O2	-5.15	118.29	121.90
2	L1	1765	C	N3-C2-O2	-5.15	118.29	121.90
68	SZ	351	ALA	C-N-CA	-5.13	108.87	121.70
20	LM	1035	LEU	CB-CG-CD2	5.13	119.72	111.00
46	NT	122	PRO	CA-N-CD	-5.08	104.38	111.50
2	L1	1547	C	N1-C2-O2	5.07	121.94	118.90
55	SI	1155	LEU	CA-CB-CG	5.07	126.95	115.30
2	L1	856	C	N1-C2-O2	5.03	121.92	118.90
2	L1	1742	C	C5-C6-N1	5.03	123.52	121.00
2	L1	1535	U	C6-N1-C1'	-5.01	114.19	121.20
2	L1	1275	G	N3-C4-N9	5.00	129.00	126.00

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	L5	135	ARG	Peptide
37	NH	922	ASN	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	L0	347	0	173	1	0
2	L1	34979	0	17743	278	0
3	L2	3779	0	1901	21	0
4	L3	854	0	773	5	0
5	L4	2076	0	2177	5	0
6	L5	1501	0	1557	21	0
7	L6	1862	0	2018	18	0
8	L7	1346	0	1410	20	0
9	L8	1474	0	1542	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
10	L9	1499	0	1618	15	0
11	LA	931	0	961	51	0
12	LC	1068	0	1138	9	0
13	LD	1229	0	1302	7	0
14	LF	1030	0	1100	7	0
15	LG	488	0	514	6	0
16	LH	5987	0	5953	62	0
17	LI	3889	0	3466	54	0
18	LJ	3658	0	3695	50	0
19	LK	943	0	1023	21	0
19	LL	3982	0	4031	54	0
20	LM	16094	0	16586	174	0
21	LN	5299	0	5269	56	0
22	LO	6454	0	6342	96	0
23	LP	4696	0	4712	35	0
24	LQ	6497	0	6497	88	0
25	LR	6006	0	5968	111	0
26	LS	3560	0	3570	41	0
27	LT	6645	0	6653	82	0
28	LU	3611	0	3618	41	0
29	LW	3519	0	3532	38	0
30	LY	778	0	794	14	0
31	LZ	1344	0	1360	11	0
32	NA	2404	0	2518	26	0
33	NB	849	0	895	11	0
34	ND	685	0	711	7	0
35	NF	1202	0	1289	7	0
36	NG	957	0	982	15	0
37	NH	8374	0	8456	73	0
38	NI	1840	0	1812	22	0
39	NL	2213	0	2312	22	0
40	NM	1873	0	1968	16	0
41	NO	1034	0	1080	12	0
42	NP	1122	0	1153	8	0
43	NQ	640	0	661	4	0
44	NR	4305	0	945	27	0
45	NS	5332	0	3593	38	0
46	NT	470	0	473	16	0
47	NU	495	0	541	8	0
48	NV	344	0	301	2	0
49	SA	3077	0	3139	32	0
50	SB	3371	0	3483	18	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
51	SC	1781	0	1803	12	0
51	SD	1832	0	1854	17	0
52	SE	968	0	1017	10	0
52	SF	955	0	1008	5	0
53	SG	3042	0	3030	20	0
54	SH	2832	0	2937	28	0
55	SI	6493	0	6679	55	0
56	SJ	1579	0	1646	42	0
56	SK	1579	0	1646	24	0
57	SL	1433	0	1463	17	0
58	SM	2253	0	2273	25	0
59	SP	20032	0	20757	173	0
60	SQ	1275	0	1316	10	0
61	SR	1098	0	1167	4	0
62	SS	2824	0	2932	45	0
63	ST	4188	0	3831	66	0
64	SU	3154	0	2736	26	0
65	SW	1522	0	1602	32	0
66	SX	1140	0	249	1	0
67	SY	2013	0	2136	18	0
68	SZ	2222	0	2142	61	0
69	L1	61	0	0	0	0
69	NH	1	0	0	0	0
69	SI	1	0	0	0	0
69	SL	1	0	0	0	0
70	NH	31	0	12	1	0
71	NQ	1	0	0	0	0
71	NT	1	0	0	0	0
71	SL	1	0	0	0	0
72	SI	32	0	12	0	0
73	SJ	26	0	19	5	0
73	SK	26	0	19	5	0
All	All	242409	0	219594	2260	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 5.

All (2260) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:1396:A:O2'	2:L1:1398:G:N7	2.14	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:LI:608:ILE:HG23	17:LI:613:ILE:HD11	1.63	0.80
25:LR:49:ILE:HG12	25:LR:95:TRP:HE1	1.49	0.78
37:NH:716:GLU:HG2	37:NH:717:ARG:HD2	1.65	0.78
49:SA:154:ARG:HH21	51:SD:206:LYS:HE2	1.48	0.78
20:LM:1744:MET:HG2	20:LM:1760:ALA:HB1	1.67	0.77
20:LM:1694:ASN:ND2	20:LM:1732:GLN:OE1	2.19	0.76
17:LI:509:LEU:HD23	17:LI:612:HIS:HB3	1.68	0.76
19:LL:276:THR:HB	19:LL:286:LYS:HB2	1.69	0.75
59:SP:317:GLU:OE1	59:SP:321:ARG:NH1	2.19	0.75
11:LA:95:ASP:OD2	11:LA:101:ARG:NH1	2.19	0.75
53:SG:131:ILE:HD11	53:SG:464:LEU:HB3	1.68	0.74
27:LT:748:ASN:HB3	27:LT:751:LEU:HD23	1.68	0.74
19:LL:503:ILE:HG22	19:LL:507:GLN:HE22	1.51	0.74
63:ST:582:ILE:O	63:ST:644:ASN:ND2	2.21	0.74
24:LQ:668:ILE:HG22	24:LQ:669:GLN:HG3	1.70	0.73
29:LW:527:ILE:O	62:SS:683:ARG:NH2	2.21	0.73
11:LA:93:LYS:HE3	11:LA:101:ARG:HB2	1.69	0.73
11:LA:126:GLU:HA	11:LA:129:LYS:HB2	1.70	0.73
62:SS:659:ARG:H	62:SS:662:LYS:HE3	1.52	0.72
6:L5:168:THR:HB	6:L5:171:GLU:HG3	1.70	0.72
2:L1:1354:G:N2	2:L1:1357:A:OP2	2.22	0.72
23:LP:333:CYS:HB3	23:LP:354:THR:HG22	1.71	0.72
57:SL:149:VAL:HG13	57:SL:174:VAL:HG21	1.71	0.72
45:NS:1076:LYS:HD3	45:NS:1153:PRO:HA	1.71	0.72
55:SI:1049:SER:HA	55:SI:1079:GLU:HG3	1.72	0.72
20:LM:658:GLY:HA3	20:LM:765:VAL:HG13	1.70	0.72
22:LO:879:GLN:NE2	25:LR:740:ARG:O	2.22	0.72
24:LQ:274:ILE:HG21	24:LQ:353:ILE:HD11	1.73	0.71
32:NA:358:SER:HB2	55:SI:275:LYS:HD2	1.72	0.71
65:SW:195:GLU:OE2	65:SW:201:ARG:NE	2.15	0.71
6:L5:138:ALA:HB3	15:LG:63:ARG:HH12	1.55	0.71
31:LZ:89:VAL:O	31:LZ:152:ARG:NH2	2.23	0.71
25:LR:732:GLN:HE22	25:LR:764:THR:HG23	1.54	0.71
24:LQ:200:LEU:HD21	24:LQ:287:VAL:HG21	1.73	0.70
68:SZ:133:UNK:HA	68:SZ:303:ARG:HH12	1.55	0.70
20:LM:1356:ALA:O	20:LM:1360:SER:HB3	1.90	0.70
17:LI:693:VAL:HG21	19:LL:567:HIS:HA	1.72	0.70
56:SK:127:PRO:HB3	56:SK:132:ARG:HG3	1.71	0.70
37:NH:130:GLN:HE22	37:NH:143:GLN:HE22	1.38	0.70
68:SZ:200:LEU:O	68:SZ:205:LYS:NZ	2.24	0.70
2:L1:578:C:H5"	55:SI:193:LYS:HG3	1.75	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:L5:203:ASN:HD22	6:L5:203:ASN:C	1.96	0.69
25:LR:404:ARG:NH2	25:LR:455:LEU:O	2.25	0.69
4:L3:8:LYS:NZ	4:L3:10:GLN:OE1	2.25	0.69
2:L1:1312:G:H5'	68:SZ:241:LEU:HD21	1.74	0.69
24:LQ:51:ASP:HB2	24:LQ:58:ILE:HD11	1.74	0.69
59:SP:2282:ARG:HD3	62:SS:109:ARG:HH12	1.57	0.69
59:SP:1430:VAL:HG22	59:SP:1477:ASN:HD21	1.58	0.69
11:LA:81:ASP:OD1	11:LA:84:LYS:NZ	2.21	0.69
63:ST:262:UNK:O	68:SZ:355:ARG:NH2	2.26	0.69
11:LA:118:SER:OG	11:LA:121:LYS:NZ	2.25	0.69
22:LO:303:LEU:HB2	22:LO:317:LEU:HD11	1.75	0.68
56:SJ:42:ARG:NH1	56:SJ:104:GLY:O	2.26	0.68
49:SA:223:LEU:HA	49:SA:227:LYS:HD3	1.75	0.68
20:LM:384:THR:HA	20:LM:435:LYS:HE3	1.75	0.68
25:LR:351:VAL:HG12	25:LR:361:VAL:HG22	1.75	0.68
38:NI:86:GLN:HE21	38:NI:124:GLN:HA	1.58	0.68
59:SP:2667:LEU:HD11	59:SP:2704:VAL:HG11	1.75	0.68
17:LI:581:VAL:HG12	17:LI:584:ARG:HE	1.59	0.68
55:SI:956:LEU:HG	55:SI:1106:ILE:HD13	1.76	0.68
20:LM:843:VAL:HG22	20:LM:846:ARG:HH21	1.58	0.68
68:SZ:268:LEU:HD23	68:SZ:273:TYR:HD1	1.57	0.68
37:NH:172:ILE:HG22	37:NH:174:PRO:HD2	1.75	0.67
37:NH:742:GLU:OE2	40:NM:195:LYS:NZ	2.24	0.67
64:SU:288:THR:HG23	64:SU:321:LEU:HD21	1.75	0.67
59:SP:1424:LEU:HD12	59:SP:1427:ILE:HG13	1.75	0.67
19:LL:106:ILE:HB	19:LL:120:LEU:HB2	1.75	0.67
2:L1:1794:C:H2'	2:L1:1795:G:H8	1.59	0.67
46:NT:108:VAL:HG22	46:NT:114:ILE:HG22	1.75	0.67
27:LT:748:ASN:ND2	27:LT:750:GLN:OE1	2.28	0.67
45:NS:781:ALA:O	45:NS:785:ALA:N	2.28	0.67
65:SW:75:THR:OG1	65:SW:117:GLU:OE2	2.11	0.67
25:LR:89:LEU:HB3	25:LR:103:LEU:HD11	1.75	0.67
27:LT:391:ASN:ND2	27:LT:393:GLN:H	1.93	0.67
19:LL:308:LYS:HG3	19:LL:309:LYS:HG3	1.75	0.67
21:LN:144:GLN:O	52:SE:125:ARG:NH2	2.28	0.67
2:L1:1058:A:O2'	65:SW:247:ARG:NH1	2.27	0.67
25:LR:422:HIS:HD2	25:LR:442:GLN:HB3	1.60	0.67
28:LU:244:ILE:HD11	28:LU:254:PHE:HD2	1.59	0.67
37:NH:477:ARG:HD2	37:NH:992:ARG:HH21	1.59	0.67
56:SJ:206:GLY:O	73:SJ:301:SAH:N	2.28	0.66
28:LU:326:GLN:O	28:LU:344:SER:OG	2.14	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:NA:631:ILE:HB	39:NL:117:THR:HG21	1.77	0.66
2:L1:1284:A:HO2'	11:LA:106:CYS:HG	1.34	0.66
11:LA:97:GLU:HG2	11:LA:99:LYS:H	1.59	0.66
20:LM:1283:PHE:O	20:LM:1318:LYS:NZ	2.28	0.66
2:L1:1652:G:O6	58:SM:118:ARG:NH1	2.26	0.66
21:LN:21:CYS:HA	21:LN:292:THR:HG21	1.76	0.66
2:L1:1279:C:H2'	2:L1:1280:G:H8	1.60	0.66
2:L1:1392:U:H2'	2:L1:1393:G:H8	1.60	0.66
2:L1:1787:G:H2'	2:L1:1788:A:C8	2.30	0.66
56:SJ:163:VAL:HA	56:SJ:166:HIS:HD2	1.60	0.66
20:LM:1741:LEU:HD21	20:LM:1782:ILE:HG22	1.76	0.66
21:LN:461:LEU:HB2	21:LN:477:PHE:HB2	1.78	0.66
16:LH:21:ARG:HG2	16:LH:295:HIS:HB3	1.77	0.66
59:SP:319:ILE:HD12	59:SP:357:LEU:HD11	1.78	0.66
2:L1:1460:C:N4	2:L1:1461:G:O6	2.30	0.65
20:LM:652:LYS:O	20:LM:656:LEU:N	2.29	0.65
59:SP:1418:SER:HB3	59:SP:1428:THR:HG21	1.76	0.65
2:L1:141:A:H4'	2:L1:142:C:H5'	1.77	0.65
65:SW:197:VAL:O	65:SW:251:ARG:NH2	2.29	0.65
20:LM:41:ARG:NH1	28:LU:16:GLU:OE2	2.27	0.65
59:SP:70:GLU:O	59:SP:74:LYS:NZ	2.30	0.65
20:LM:1074:LEU:HD12	20:LM:1079:PRO:HG3	1.77	0.65
22:LO:710:PHE:HD1	22:LO:717:TRP:HB3	1.61	0.65
16:LH:333:ASP:O	16:LH:663:GLN:NE2	2.30	0.65
24:LQ:632:HIS:HD2	24:LQ:636:VAL:HG12	1.62	0.65
2:L1:1485:U:H3'	2:L1:1486:A:H8	1.62	0.65
27:LT:813:SER:O	27:LT:817:ASN:ND2	2.29	0.65
59:SP:197:MET:O	59:SP:203:LYS:NZ	2.30	0.65
21:LN:357:LEU:HB3	21:LN:383:LEU:HB3	1.79	0.65
56:SJ:64:LEU:HD11	56:SJ:73:LEU:HD21	1.79	0.65
59:SP:1449:ARG:O	59:SP:1452:THR:OG1	2.13	0.65
33:NB:448:ARG:O	33:NB:452:ARG:NH2	2.29	0.65
12:LC:62:ARG:O	12:LC:96:TYR:OH	2.13	0.65
24:LQ:555:VAL:HG12	24:LQ:566:VAL:HG12	1.79	0.65
56:SK:206:GLY:O	73:SK:301:SAH:N	2.30	0.65
63:ST:427:UNK:HA	63:ST:472:LYS:HE2	1.77	0.65
26:LS:371:LYS:HG3	26:LS:372:THR:HG23	1.79	0.64
28:LU:263:LEU:HB2	28:LU:278:HIS:HB2	1.78	0.64
2:L1:1192:U:H4'	2:L1:1193:U:H5'	1.76	0.64
18:LJ:222:VAL:HG12	18:LJ:231:VAL:HG22	1.78	0.64
37:NH:182:LEU:HD11	37:NH:253:LEU:HD12	1.78	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:SJ:140:LEU:HD11	56:SJ:156:LEU:HB3	1.80	0.64
20:LM:1164:GLU:OE1	20:LM:1206:ARG:NH2	2.31	0.64
28:LU:333:TRP:HE1	28:LU:337:SER:HA	1.63	0.64
59:SP:2295:GLU:HB2	62:SS:118:LEU:HD11	1.78	0.64
20:LM:688:ILE:HG12	20:LM:732:LEU:HD11	1.80	0.64
28:LU:103:ARG:NH1	28:LU:138:MET:O	2.30	0.64
63:ST:461:UNK:O	63:ST:466:ASN:ND2	2.25	0.64
2:L1:1498:A:N3	68:SZ:380:GLN:NE2	2.45	0.64
20:LM:688:ILE:HD13	20:LM:728:ARG:HB3	1.80	0.64
20:LM:1625:ASN:HD21	30:LY:52:LYS:HA	1.63	0.64
38:NI:90:LEU:HD13	38:NI:117:GLN:HE21	1.63	0.64
46:NT:133:ALA:N	46:NT:140:TYR:O	2.30	0.64
57:SL:134:CYS:HB3	57:SL:148:ARG:HH12	1.63	0.64
38:NI:63:VAL:HB	38:NI:119:ALA:HB3	1.78	0.64
65:SW:94:LYS:HB3	65:SW:146:VAL:HG11	1.80	0.64
23:LP:74:ARG:NH1	26:LS:83:ASP:O	2.31	0.64
57:SL:103:THR:HG22	57:SL:132:LEU:HD11	1.78	0.64
2:L1:925:G:H1	2:L1:1017:U:H3	1.45	0.64
11:LA:85:LEU:HA	11:LA:88:TRP:HB2	1.78	0.64
22:LO:773:LYS:HE3	27:LT:741:TYR:HB3	1.77	0.64
26:LS:257:VAL:H	26:LS:526:THR:HG21	1.63	0.64
26:LS:363:GLY:HA2	26:LS:385:VAL:HG23	1.78	0.64
28:LU:103:ARG:NH2	28:LU:147:GLU:OE2	2.31	0.64
52:SF:95:VAL:HG12	52:SF:97:ARG:H	1.62	0.64
59:SP:59:ASN:HD22	59:SP:106:PRO:HG2	1.63	0.64
5:L4:100:ARG:NH2	5:L4:121:TYR:O	2.31	0.63
2:L1:1139:C:OP2	57:SL:3:LYS:NZ	2.30	0.63
18:LJ:156:GLU:OE2	18:LJ:159:THR:OG1	2.17	0.63
25:LR:340:VAL:HG12	25:LR:352:VAL:HG12	1.81	0.63
51:SD:101:ARG:NH2	60:SQ:680:ASP:OD2	2.30	0.63
2:L1:67:C:H41	7:L6:163:ASN:HA	1.63	0.63
22:LO:495:ASP:OD2	22:LO:496:VAL:N	2.31	0.63
2:L1:164:A:H3'	2:L1:165:G:H21	1.64	0.63
19:LL:476:GLU:HG3	19:LL:480:LYS:HE2	1.81	0.63
37:NH:252:ARG:NH2	70:NH:3000:ATP:O2A	2.32	0.63
47:NU:8:THR:HA	47:NU:11:LYS:HE3	1.80	0.63
10:L9:136:ARG:NH1	10:L9:159:PHE:O	2.31	0.63
20:LM:2050:ALA:HB1	20:LM:2094:LYS:HG3	1.79	0.63
29:LW:240:ARG:NH2	29:LW:256:ASN:OD1	2.32	0.63
20:LM:1563:GLN:HE22	20:LM:1567:ARG:HE	1.47	0.63
17:LI:505:LEU:HD13	17:LI:591:ILE:HG21	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LM:554:ILE:O	20:LM:558:LEU:HB2	1.98	0.63
33:NB:431:ASN:HB3	33:NB:434:VAL:HG22	1.81	0.63
59:SP:2412:LYS:O	59:SP:2418:ASN:ND2	2.31	0.63
56:SJ:48:GLU:O	56:SJ:202:ALA:N	2.26	0.63
11:LA:32:ALA:HB1	11:LA:37:GLU:HB3	1.81	0.62
50:SB:211:VAL:HG13	50:SB:216:ASN:HB2	1.82	0.62
68:SZ:195:TYR:OH	68:SZ:198:GLY:O	2.15	0.62
2:L1:884:C:OP2	59:SP:2727:ARG:NH1	2.32	0.62
2:L1:1743:G:H1'	2:L1:1791:A:H61	1.63	0.62
8:L7:163:GLN:O	8:L7:167:GLU:HB2	1.98	0.62
22:LO:145:ASP:OD1	22:LO:146:GLU:N	2.26	0.62
3:L2:75:A:H61	3:L2:217:U:H3	1.48	0.62
6:L5:49:LEU:HD12	12:LC:50:LYS:HG2	1.81	0.62
20:LM:1776:SER:HB3	20:LM:1821:VAL:HG21	1.81	0.62
25:LR:58:LEU:HD23	25:LR:59:ARG:HG3	1.81	0.62
25:LR:156:LEU:HB3	25:LR:171:SER:HB3	1.81	0.62
25:LR:504:LYS:HG2	25:LR:516:VAL:HG12	1.80	0.62
56:SK:67:ASP:OD1	56:SK:68:LYS:N	2.33	0.62
20:LM:78:GLU:OE1	20:LM:120:ARG:NH2	2.33	0.62
56:SJ:129:THR:HG23	56:SJ:132:ARG:HH21	1.64	0.62
59:SP:2243:GLU:OE1	62:SS:224:ARG:NH2	2.32	0.62
19:LL:186:ALA:HB1	19:LL:211:VAL:HB	1.80	0.62
22:LO:690:ARG:NH1	29:LW:268:GLU:O	2.31	0.62
50:SB:55:GLU:OE2	50:SB:71:GLN:NE2	2.29	0.62
52:SE:95:VAL:HG12	52:SE:97:ARG:H	1.64	0.62
52:SF:24:ASP:OD1	53:SG:303:ARG:NH2	2.33	0.62
6:L5:71:ARG:NH2	6:L5:148:ASN:OD1	2.33	0.62
20:LM:943:GLN:HG2	20:LM:960:ILE:HG13	1.82	0.62
59:SP:526:PRO:HG3	59:SP:570:THR:HG23	1.80	0.62
6:L5:128:ILE:HG12	15:LG:23:SER:HB2	1.81	0.62
20:LM:1586:ASP:OD1	30:LY:48:ARG:NH1	2.32	0.62
24:LQ:546:LEU:HD12	24:LQ:581:LEU:HG	1.80	0.62
37:NH:706:PRO:HG3	37:NH:1048:PRO:HB3	1.81	0.62
59:SP:277:VAL:HG21	59:SP:325:THR:HG23	1.81	0.62
59:SP:967:HIS:ND1	59:SP:1007:ASP:OD2	2.32	0.62
68:SZ:261:ASP:O	68:SZ:265:TYR:N	2.27	0.62
19:LL:220:ARG:NH2	19:LL:279:GLU:O	2.33	0.62
25:LR:540:SER:OG	25:LR:542:ASP:OD1	2.18	0.62
2:L1:1394:G:N2	2:L1:1475:G:O2'	2.32	0.61
11:LA:84:LYS:HD3	11:LA:88:TRP:HE1	1.65	0.61
16:LH:814:LYS:HG2	16:LH:817:ARG:HH21	1.64	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:LN:110:SER:OG	21:LN:112:SER:O	2.15	0.61
49:SA:196:HIS:O	49:SA:220:ARG:NH1	2.32	0.61
64:SU:448:GLU:OE1	64:SU:481:ARG:NH2	2.32	0.61
68:SZ:186:ARG:NH2	68:SZ:219:VAL:O	2.32	0.61
53:SG:243:ALA:HB3	53:SG:261:HIS:HD2	1.65	0.61
55:SI:844:GLU:OE2	61:SR:37:LYS:NZ	2.33	0.61
59:SP:1430:VAL:HG11	59:SP:1473:PRO:HB2	1.82	0.61
18:LJ:44:VAL:HG22	18:LJ:56:VAL:HG22	1.83	0.61
2:L1:621:OMC:O4'	67:SY:12:ARG:NH2	2.34	0.61
11:LA:79:VAL:HG11	11:LA:85:LEU:HD21	1.82	0.61
23:LP:1:MET:HG3	23:LP:2:ALA:H	1.64	0.61
24:LQ:421:LEU:HD21	24:LQ:691:VAL:HG12	1.82	0.61
37:NH:145:PRO:O	37:NH:201:ARG:NH2	2.33	0.61
2:L1:1091:C:HO2'	41:NO:2:VAL:N	1.98	0.61
19:LL:107:LEU:HB3	19:LL:116:LEU:HD11	1.83	0.61
20:LM:1133:ASP:OD2	20:LM:1206:ARG:NH1	2.34	0.61
25:LR:168:LEU:HB3	25:LR:180:TRP:HB2	1.83	0.61
27:LT:821:LEU:HB3	45:NS:1058:ILE:HB	1.83	0.61
55:SI:1055:LYS:O	63:ST:811:ASN:ND2	2.33	0.61
57:SL:134:CYS:HB2	57:SL:136:HIS:CE1	2.36	0.61
6:L5:203:ASN:O	6:L5:203:ASN:ND2	2.27	0.61
20:LM:1011:PRO:HD2	20:LM:1014:ILE:HD12	1.83	0.61
54:SH:94:GLY:HA2	54:SH:120:VAL:HG13	1.83	0.61
22:LO:216:GLN:NE2	22:LO:217:CYS:O	2.34	0.61
54:SH:306:THR:HG22	54:SH:337:ILE:HD13	1.83	0.61
20:LM:361:HIS:CG	20:LM:372:GLY:HA3	2.36	0.61
26:LS:549:ARG:NH1	26:LS:550:LEU:O	2.34	0.61
28:LU:263:LEU:HD21	28:LU:285:VAL:HG11	1.81	0.61
68:SZ:354:TYR:OH	68:SZ:392:ASP:OD2	2.17	0.61
21:LN:560:TYR:O	21:LN:565:ARG:NH1	2.34	0.61
24:LQ:9:ARG:NH1	24:LQ:707:GLU:OE1	2.34	0.61
25:LR:119:PRO:HG3	25:LR:161:PRO:HA	1.82	0.61
20:LM:1893:GLU:OE2	20:LM:1938:ASN:ND2	2.31	0.60
23:LP:31:LYS:NZ	29:LW:150:GLU:O	2.33	0.60
24:LQ:201:SER:HB3	24:LQ:205:ARG:HG3	1.81	0.60
25:LR:744:PRO:HA	25:LR:747:LEU:HD13	1.82	0.60
53:SG:130:GLU:OE1	53:SG:466:ARG:NH2	2.32	0.60
59:SP:1831:MET:HA	59:SP:1834:LEU:HD13	1.82	0.60
12:LC:11:GLN:NE2	31:LZ:177:ARG:O	2.34	0.60
17:LI:688:LEU:HD12	19:LK:555:MET:HG2	1.83	0.60
27:LT:755:SER:OG	27:LT:889:ASP:OD1	2.18	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:LU:359:LYS:NZ	28:LU:367:GLU:OE2	2.34	0.60
55:SI:752:ASN:OD1	55:SI:755:ARG:NH2	2.34	0.60
31:LZ:62:LEU:O	31:LZ:72:ARG:NH1	2.34	0.60
41:NO:80:ASP:OD1	41:NO:124:LYS:NZ	2.33	0.60
22:LO:587:LEU:HB2	22:LO:626:SER:HB2	1.83	0.60
25:LR:269:GLY:HA2	25:LR:295:LEU:HD23	1.83	0.60
26:LS:154:ASP:HA	26:LS:172:LYS:HG2	1.84	0.60
19:LL:404:LEU:HA	19:LL:408:ILE:HD11	1.83	0.60
20:LM:1035:LEU:HD12	20:LM:1084:ILE:HD12	1.82	0.60
33:NB:460:ARG:NH1	60:SQ:699:ASP:OD1	2.35	0.60
34:ND:168:GLN:NE2	67:SY:133:GLN:OE1	2.30	0.60
19:LK:536:SER:O	19:LK:539:SER:OG	2.19	0.60
25:LR:167:LEU:HD21	25:LR:179:VAL:HB	1.83	0.60
37:NH:124:GLU:OE2	37:NH:153:ARG:NH1	2.34	0.60
49:SA:45:ILE:HG13	49:SA:46:VAL:HG23	1.84	0.60
51:SC:102:GLY:HA2	67:SY:191:ILE:HG23	1.82	0.60
2:L1:1672:U:O4	58:SM:118:ARG:NH1	2.35	0.60
55:SI:113:GLU:HG3	55:SI:115:ARG:HE	1.67	0.60
62:SS:696:GLU:OE2	62:SS:697:ARG:NH1	2.34	0.60
2:L1:742:U:H5''	2:L1:743:U:H5'	1.84	0.60
23:LP:221:LEU:HD13	62:SS:191:LEU:HD22	1.84	0.60
38:NI:227:GLU:OE2	38:NI:230:ARG:NH2	2.34	0.60
49:SA:179:ASP:OD1	49:SA:278:ARG:NH1	2.35	0.60
24:LQ:159:ARG:NH2	24:LQ:202:GLU:OE2	2.35	0.60
24:LQ:416:SER:OG	24:LQ:417:ASP:N	2.35	0.60
49:SA:270:ARG:NH1	49:SA:273:SER:OG	2.35	0.60
56:SK:41:ARG:HE	56:SK:193:SER:HA	1.65	0.60
18:LJ:267:SER:OG	18:LJ:269:ASP:OD2	2.20	0.60
22:LO:571:ASP:OD2	22:LO:574:ASN:ND2	2.32	0.60
20:LM:146:ARG:HH12	60:SQ:608:VAL:HG23	1.66	0.59
20:LM:1297:MET:HE3	20:LM:1300:THR:HG23	1.84	0.59
20:LM:1959:VAL:HG11	20:LM:2015:ARG:HB2	1.84	0.59
55:SI:1162:ASN:O	67:SY:47:LYS:NZ	2.29	0.59
17:LI:404:THR:HG21	17:LI:416:GLU:HG3	1.83	0.59
19:LL:507:GLN:OE1	19:LL:547:GLN:NE2	2.35	0.59
27:LT:720:CYS:SG	27:LT:721:GLN:N	2.76	0.59
65:SW:197:VAL:HG11	65:SW:241:ILE:HD12	1.84	0.59
19:LK:506:LEU:HD21	19:LK:530:VAL:HG11	1.84	0.59
20:LM:793:LEU:HD11	20:LM:835:MET:HE1	1.83	0.59
28:LU:180:ILE:HD13	28:LU:226:MET:HG3	1.84	0.59
29:LW:398:ARG:NH2	29:LW:438:GLU:OE1	2.34	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:SK:172:MET:HB3	56:SK:196:ILE:HG13	1.85	0.59
59:SP:1167:GLU:OE1	59:SP:1212:ASN:ND2	2.35	0.59
37:NH:140:PRO:HA	37:NH:541:PRO:HG3	1.84	0.59
46:NT:133:ALA:HB3	46:NT:140:TYR:HB3	1.84	0.59
63:ST:751:ARG:HE	63:ST:752:PRO:HD2	1.68	0.59
21:LN:212:VAL:HG12	21:LN:218:VAL:HG22	1.83	0.59
2:L1:722:C:N3	59:SP:2102:SER:OG	2.30	0.59
3:L2:111:U:OP2	52:SF:44:LYS:NZ	2.31	0.59
25:LR:263:LEU:HD21	25:LR:271:LEU:HD22	1.85	0.59
6:L5:78:MET:HB3	6:L5:79:HIS:ND1	2.17	0.59
18:LJ:355:ARG:HH21	26:LS:295:ARG:HG3	1.67	0.59
22:LO:490:THR:HG22	22:LO:492:ARG:HG3	1.84	0.59
53:SG:303:ARG:HD2	53:SG:326:SER:HB2	1.85	0.59
23:LP:7:GLU:OE2	62:SS:711:ARG:NE	2.36	0.59
59:SP:2291:GLN:HE22	62:SS:116:VAL:HB	1.68	0.59
63:ST:606:GLN:O	64:SU:443:ARG:NH2	2.35	0.59
68:SZ:261:ASP:OD1	68:SZ:261:ASP:N	2.36	0.59
2:L1:1392:U:H2'	2:L1:1393:G:C8	2.36	0.59
56:SJ:85:PRO:O	56:SJ:88:THR:OG1	2.21	0.59
59:SP:1450:PHE:HA	59:SP:1453:PHE:HD2	1.67	0.59
16:LH:506:PHE:HE1	16:LH:513:LEU:HD12	1.67	0.59
25:LR:628:ARG:HH12	25:LR:630:ILE:HD11	1.68	0.59
37:NH:101:LYS:HG2	37:NH:104:ARG:HH21	1.68	0.59
73:SK:301:SAH:H3'	73:SK:301:SAH:HA	1.85	0.59
2:L1:1311:C:H2'	2:L1:1312:G:C8	2.38	0.58
20:LM:605:PRO:HA	20:LM:703:THR:HG21	1.84	0.58
22:LO:710:PHE:CD1	22:LO:717:TRP:HB3	2.38	0.58
24:LQ:217:VAL:HG13	24:LQ:271:ALA:HB3	1.85	0.58
57:SL:104:ASP:OD1	57:SL:131:ARG:NH1	2.35	0.58
11:LA:55:ASN:OD1	11:LA:81:ASP:HA	2.03	0.58
18:LJ:467:GLN:NE2	18:LJ:471:GLU:OE2	2.36	0.58
21:LN:548:GLN:OE1	21:LN:579:ARG:NH2	2.36	0.58
63:ST:529:GLU:HA	63:ST:532:ILE:HD12	1.85	0.58
59:SP:2481:LEU:HD13	59:SP:2549:LEU:HD13	1.84	0.58
2:L1:1794:C:H2'	2:L1:1795:G:C8	2.37	0.58
14:LF:14:THR:HG22	14:LF:16:ARG:HE	1.69	0.58
20:LM:133:ALA:HB1	20:LM:195:LEU:HD13	1.85	0.58
21:LN:621:TYR:HB2	21:LN:643:ILE:HD11	1.85	0.58
24:LQ:303:LEU:HD13	24:LQ:382:PHE:HE2	1.67	0.58
55:SI:1247:LYS:HD2	55:SI:1248:LEU:HD12	1.85	0.58
59:SP:1609:LEU:HD22	59:SP:1643:ILE:HG12	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:LH:543:ARG:NH1	16:LH:583:VAL:O	2.36	0.58
22:LO:379:LEU:HD12	22:LO:725:LEU:HD11	1.84	0.58
51:SC:104:GLU:OE2	51:SC:122:LYS:NZ	2.35	0.58
63:ST:263:UNK:HA	68:SZ:355:ARG:HH22	1.67	0.58
2:L1:834:C:H42	2:L1:840:C:H41	1.51	0.58
20:LM:1350:VAL:HG21	20:LM:1401:GLN:HE22	1.69	0.58
37:NH:240:ARG:HD3	37:NH:247:ARG:HH21	1.68	0.58
38:NI:56:PRO:O	38:NI:60:THR:OG1	2.18	0.58
11:LA:44:LYS:HG3	11:LA:46:GLN:HG3	1.86	0.58
16:LH:59:LEU:HB3	16:LH:78:LEU:HD12	1.84	0.58
63:ST:730:GLN:NE2	63:ST:734:GLU:OE2	2.35	0.58
2:L1:231:A:O2'	7:L6:216:ARG:NH2	2.37	0.58
2:L1:1766:C:H1'	2:L1:1767:C:C4	2.39	0.58
8:L7:9:VAL:HG12	8:L7:11:PRO:HD3	1.86	0.58
20:LM:1125:GLN:NE2	20:LM:1164:GLU:OE2	2.37	0.58
27:LT:171:PHE:HZ	27:LT:218:ASN:HA	1.68	0.58
33:NB:63:GLY:HA2	67:SY:46:LYS:HE2	1.86	0.58
49:SA:140:SER:HB3	49:SA:143:LYS:HE2	1.86	0.58
3:L2:208:U:N3	50:SB:322:GLU:OE2	2.36	0.58
8:L7:30:LEU:O	8:L7:34:SER:OG	2.18	0.58
19:LL:130:ASN:ND2	19:LL:171:VAL:O	2.36	0.58
28:LU:434:SER:H	28:LU:437:LYS:HE3	1.68	0.58
56:SK:62:GLU:OE2	56:SK:69:HIS:NE2	2.37	0.58
59:SP:2214:ASP:HA	59:SP:2220:ARG:HH21	1.67	0.58
18:LJ:116:ARG:NH1	18:LJ:154:SER:OG	2.37	0.58
19:LL:515:GLY:H	19:LL:558:ARG:HH12	1.51	0.58
20:LM:601:VAL:HG11	20:LM:690:VAL:HG21	1.85	0.58
20:LM:1410:LYS:O	20:LM:1413:TRP:NE1	2.37	0.58
24:LQ:509:ARG:HH11	24:LQ:525:PHE:HB2	1.69	0.58
27:LT:738:LEU:HD13	27:LT:740:GLU:HG3	1.85	0.58
62:SS:159:PHE:HB2	62:SS:723:THR:HG22	1.85	0.58
16:LH:734:LEU:O	20:LM:175:LYS:NZ	2.37	0.57
54:SH:159:MET:HG3	54:SH:160:PRO:HD2	1.86	0.57
56:SJ:146:VAL:HB	56:SJ:156:LEU:HB2	1.85	0.57
59:SP:1232:LEU:HA	59:SP:1235:VAL:HG22	1.86	0.57
21:LN:401:CYS:HG	21:LN:403:SER:HG	1.52	0.57
21:LN:494:PRO:HG2	21:LN:536:PRO:HA	1.84	0.57
27:LT:759:GLU:HB3	27:LT:763:LYS:HD2	1.85	0.57
57:SL:74:ASN:HD21	57:SL:161:ASP:HB2	1.68	0.57
8:L7:25:GLN:HE22	62:SS:68:SER:HA	1.69	0.57
25:LR:308:LEU:HD11	25:LR:316:LEU:HD12	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:SU:149:VAL:HG11	64:SU:187:ALA:HB1	1.87	0.57
2:L1:1763:G:OP1	37:NH:149:LYS:NZ	2.37	0.57
11:LA:13:ASP:HB2	11:LA:123:VAL:HG21	1.86	0.57
38:NI:20:PRO:HG2	38:NI:23:TYR:HB2	1.86	0.57
45:NS:887:GLU:O	45:NS:891:LEU:N	2.33	0.57
20:LM:1707:GLU:HB3	20:LM:1710:VAL:HG22	1.87	0.57
22:LO:100:HIS:ND1	22:LO:148:THR:O	2.34	0.57
24:LQ:410:THR:OG1	24:LQ:415:ARG:NH1	2.38	0.57
29:LW:412:ARG:NH1	29:LW:477:GLY:O	2.32	0.57
56:SK:176:THR:O	73:SK:301:SAH:O2'	2.21	0.57
19:LL:140:CYS:SG	19:LL:161:LYS:NZ	2.66	0.57
19:LL:290:VAL:HG22	19:LL:296:VAL:HG22	1.86	0.57
24:LQ:583:PHE:HZ	24:LQ:586:SER:HB2	1.68	0.57
25:LR:592:ILE:HG13	25:LR:593:LYS:HD3	1.86	0.57
37:NH:393:SER:HA	37:NH:417:LEU:HB2	1.85	0.57
59:SP:1294:ILE:HA	59:SP:1297:ARG:HD2	1.87	0.57
2:L1:1277:C:H2'	2:L1:1278:A:H8	1.69	0.57
8:L7:69:LEU:HD22	8:L7:96:ALA:HB2	1.86	0.57
16:LH:15:SER:O	16:LH:312:ASN:ND2	2.38	0.57
20:LM:437:PRO:HB2	20:LM:438:ARG:HD3	1.87	0.57
24:LQ:158:LEU:HD12	24:LQ:163:LEU:HB2	1.86	0.57
31:LZ:44:ASP:OD1	31:LZ:45:TYR:N	2.38	0.57
46:NT:109:ASP:OD1	46:NT:113:LYS:N	2.38	0.57
59:SP:528:ILE:HG22	59:SP:530:PRO:HD2	1.87	0.57
59:SP:2363:ASP:OD1	59:SP:2402:ARG:NH2	2.37	0.57
2:L1:1120:U:H5'	2:L1:1121:G:H5'	1.86	0.57
38:NI:94:PRO:HA	38:NI:118:VAL:HG21	1.87	0.57
59:SP:281:VAL:O	59:SP:337:LYS:NZ	2.37	0.57
64:SU:276:VAL:HA	64:SU:280:ILE:HG12	1.87	0.57
2:L1:286:U:H2'	2:L1:287:U:H4'	1.86	0.57
4:L3:55:ARG:NH2	18:LJ:60:SER:OG	2.38	0.57
38:NI:244:TRP:HA	38:NI:247:ARG:HG2	1.86	0.57
55:SI:1106:ILE:HD12	55:SI:1107:PRO:HD2	1.87	0.57
16:LH:576:GLU:O	17:LI:354:HIS:N	2.38	0.57
20:LM:1805:ARG:NH2	30:LY:17:GLU:OE2	2.38	0.57
44:NR:186:UNK:O	44:NR:190:UNK:N	2.38	0.57
56:SK:92:LEU:HD21	56:SK:110:ILE:HD11	1.85	0.57
58:SM:153:HIS:HB3	58:SM:157:GLY:HA3	1.87	0.57
2:L1:1292:C:H1'	46:NT:140:TYR:HE2	1.70	0.56
2:L1:1311:C:H2'	2:L1:1312:G:H8	1.69	0.56
2:L1:1502:C:O2'	56:SJ:114:LYS:NZ	2.37	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:LA:52:LEU:HD11	11:LA:78:LYS:HG3	1.87	0.56
22:LO:732:THR:O	27:LT:635:ARG:NH2	2.38	0.56
25:LR:386:ARG:O	25:LR:615:ARG:NH2	2.39	0.56
37:NH:811:SER:OG	37:NH:813:GLU:OE1	2.19	0.56
56:SJ:101:ASN:HB2	56:SJ:106:LEU:HD13	1.86	0.56
2:L1:660:C:OP1	41:NO:88:LYS:NZ	2.38	0.56
8:L7:51:ILE:HD11	8:L7:176:VAL:HG22	1.87	0.56
16:LH:409:GLN:NE2	16:LH:411:LYS:O	2.37	0.56
17:LI:616:PHE:HD2	17:LI:653:LEU:HD11	1.70	0.56
20:LM:927:LEU:HD22	20:LM:966:ILE:HG21	1.87	0.56
24:LQ:544:ARG:HH21	24:LQ:581:LEU:HD22	1.71	0.56
36:NG:98:ARG:NH1	36:NG:99:ALA:O	2.38	0.56
38:NI:227:GLU:OE1	38:NI:231:ARG:NH1	2.38	0.56
55:SI:1250:ARG:NH2	61:SR:108:LYS:O	2.31	0.56
56:SJ:173:LYS:HB2	56:SJ:213:THR:HA	1.88	0.56
59:SP:1219:LEU:HA	59:SP:1231:ILE:HD11	1.87	0.56
63:ST:215:UNK:O	63:ST:219:UNK:N	2.37	0.56
64:SU:247:GLU:OE2	64:SU:250:ARG:NH1	2.39	0.56
2:L1:1562:C:H2'	2:L1:1563:G:H8	1.71	0.56
16:LH:409:GLN:NE2	16:LH:414:GLU:O	2.38	0.56
20:LM:615:GLU:O	20:LM:620:LYS:NZ	2.39	0.56
20:LM:1526:SER:HB3	20:LM:1590:LYS:HE3	1.86	0.56
20:LM:2135:VAL:HG23	20:LM:2136:LEU:HD12	1.88	0.56
21:LN:250:SER:OG	21:LN:262:HIS:NE2	2.35	0.56
25:LR:424:VAL:HG12	25:LR:441:SER:HB2	1.86	0.56
26:LS:108:ARG:HH21	26:LS:111:ARG:HD2	1.70	0.56
27:LT:326:ASN:ND2	27:LT:368:GLU:OE2	2.38	0.56
21:LN:363:THR:OG1	21:LN:374:PRO:O	2.24	0.56
29:LW:489:ASN:HB3	29:LW:492:ARG:HB3	1.86	0.56
56:SK:115:ASN:OD1	56:SK:161:ASN:ND2	2.38	0.56
59:SP:531:LEU:HD21	59:SP:574:LEU:HD22	1.87	0.56
63:ST:495:ILE:HD12	64:SU:501:LEU:HD13	1.87	0.56
68:SZ:178:UNK:O	68:SZ:182:LEU:N	2.39	0.56
2:L1:668:A2M:OP1	55:SI:10:ARG:NH1	2.37	0.56
7:L6:64:LYS:HB2	7:L6:97:VAL:HG11	1.88	0.56
24:LQ:903:ASP:OD2	24:LQ:907:ARG:NH1	2.38	0.56
26:LS:253:ARG:HG2	26:LS:541:GLU:HA	1.86	0.56
59:SP:1398:PHE:HA	59:SP:1401:ILE:HG22	1.87	0.56
57:SL:169:ARG:NH1	57:SL:187:GLU:OE2	2.39	0.56
59:SP:1293:THR:HG23	59:SP:1296:GLY:H	1.71	0.56
59:SP:1353:ILE:HG12	59:SP:1380:LEU:HD23	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:SS:227:LEU:HD23	62:SS:231:ARG:HH12	1.71	0.56
68:SZ:200:LEU:HD12	68:SZ:232:GLN:HG2	1.87	0.56
22:LO:137:ASP:O	22:LO:138:LYS:HE2	2.06	0.56
56:SK:222:TYR:O	73:SK:301:SAH:N6	2.39	0.56
2:L1:1692:U:OP2	32:NA:580:LYS:NZ	2.38	0.56
40:NM:59:SER:OG	40:NM:63:LYS:NZ	2.39	0.56
49:SA:225:GLU:O	49:SA:228:LEU:HG	2.06	0.56
59:SP:1873:ILE:HD11	59:SP:1884:VAL:HG21	1.87	0.56
2:L1:1218:C:O2'	15:LG:24:GLN:OE1	2.21	0.56
2:L1:1566:G:N7	42:NP:101:ARG:NH2	2.54	0.56
20:LM:775:LEU:HD13	20:LM:781:VAL:HG11	1.89	0.56
22:LO:383:PRO:HD2	22:LO:427:GLY:HA2	1.88	0.56
27:LT:69:LEU:HD13	27:LT:658:ASP:HB2	1.87	0.56
28:LU:212:LEU:HB2	28:LU:224:TYR:HB2	1.88	0.56
47:NU:41:ILE:HG21	47:NU:47:ARG:HB2	1.87	0.56
55:SI:1063:THR:HG22	55:SI:1096:VAL:HG12	1.88	0.56
11:LA:60:MET:HG3	11:LA:64:LEU:HG	1.87	0.55
25:LR:427:VAL:HG12	25:LR:439:THR:HG22	1.88	0.55
55:SI:1258:LEU:HB2	58:SM:36:LEU:HD21	1.89	0.55
11:LA:93:LYS:HG2	11:LA:102:LYS:HZ3	1.70	0.55
18:LJ:35:ILE:O	18:LJ:312:ILE:HA	2.06	0.55
27:LT:187:TRP:CD1	27:LT:194:GLU:HA	2.41	0.55
32:NA:395:ARG:NH2	55:SI:1046:MET:O	2.40	0.55
59:SP:118:LEU:HB3	59:SP:121:ASP:HB2	1.87	0.55
62:SS:182:THR:HB	62:SS:185:GLU:HG3	1.88	0.55
3:L2:132:G:OP1	30:LY:52:LYS:NZ	2.39	0.55
20:LM:1966:LEU:O	20:LM:1970:ASN:ND2	2.39	0.55
25:LR:94:ALA:O	25:LR:98:GLY:N	2.28	0.55
37:NH:922:ASN:ND2	40:NM:130:THR:O	2.39	0.55
37:NH:1094:GLN:O	37:NH:1115:MET:N	2.37	0.55
51:SC:102:GLY:HA2	67:SY:191:ILE:HD12	1.87	0.55
53:SG:364:ALA:O	53:SG:401:ARG:NH1	2.37	0.55
11:LA:20:GLU:HG3	11:LA:23:LYS:HE3	1.88	0.55
20:LM:1984:ASP:OD1	20:LM:1985:PRO:HD3	2.06	0.55
37:NH:220:PHE:O	37:NH:242:ARG:NH2	2.39	0.55
63:ST:209:UNK:O	63:ST:213:UNK:N	2.39	0.55
2:L1:981:A:H2'	2:L1:982:G:C8	2.41	0.55
59:SP:2253:VAL:HG21	59:SP:2291:GLN:HE21	1.70	0.55
2:L1:1565:C:OP2	42:NP:101:ARG:NH1	2.38	0.55
27:LT:501:ASP:OD1	27:LT:502:ILE:N	2.39	0.55
32:NA:593:GLU:OE2	32:NA:596:ARG:NH2	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:NH:354:MET:HG3	37:NH:425:LEU:HD21	1.88	0.55
54:SH:122:ASN:OD1	54:SH:157:ARG:NH1	2.39	0.55
59:SP:166:ASP:OD2	59:SP:169:SER:OG	2.25	0.55
18:LJ:144:TYR:HB2	18:LJ:161:LYS:HE2	1.89	0.55
19:LL:528:LYS:O	19:LL:532:THR:OG1	2.12	0.55
30:LY:102:LYS:NZ	52:SE:77:ASN:O	2.40	0.55
37:NH:1008:TYR:O	37:NH:1140:ARG:NH1	2.39	0.55
59:SP:2335:ILE:O	62:SS:78:SER:OG	2.24	0.55
68:SZ:368:ARG:HG3	68:SZ:369:THR:HG23	1.88	0.55
12:LC:13:PHE:HE2	31:LZ:176:GLU:HA	1.72	0.55
25:LR:678:ARG:HB3	25:LR:681:THR:HB	1.89	0.55
2:L1:240:G:N2	2:L1:277:C:O2	2.38	0.55
2:L1:1058:A:H61	2:L1:1062:A:H5'	1.71	0.55
4:L3:61:GLU:O	4:L3:65:GLU:HG2	2.06	0.55
22:LO:11:LEU:HB3	22:LO:725:LEU:HD22	1.89	0.55
25:LR:20:LYS:HG2	25:LR:630:ILE:HG12	1.89	0.55
29:LW:365:VAL:HG23	29:LW:376:THR:HG22	1.88	0.55
45:NS:1031:ARG:CZ	45:NS:1060:ARG:HH22	2.19	0.55
2:L1:1296:U:H2'	2:L1:1297:U:O4'	2.07	0.55
8:L7:53:VAL:O	8:L7:57:ARG:HB2	2.06	0.55
9:L8:34:ALA:HB2	9:L8:56:ARG:HD2	1.88	0.55
23:LP:504:ARG:NH1	23:LP:539:GLU:OE2	2.40	0.55
2:L1:1290:G:H2'	2:L1:1291:A:C8	2.42	0.54
7:L6:85:ARG:O	7:L6:87:ARG:NH1	2.40	0.54
11:LA:60:MET:HA	11:LA:63:LYS:HE2	1.89	0.54
26:LS:156:MET:HA	26:LS:162:LYS:HZ1	1.71	0.54
37:NH:239:LEU:HD13	37:NH:253:LEU:HD23	1.89	0.54
40:NM:127:VAL:HG21	40:NM:173:THR:HA	1.89	0.54
42:NP:76:THR:HG22	42:NP:94:ARG:HB3	1.88	0.54
62:SS:127:ARG:HA	62:SS:130:ARG:HE	1.71	0.54
22:LO:715:ARG:HD2	22:LO:730:LEU:HD12	1.89	0.54
24:LQ:920:ASP:OD1	24:LQ:921:ALA:N	2.41	0.54
62:SS:554:LYS:HA	62:SS:557:GLN:HG2	1.88	0.54
17:LI:276:LEU:HD23	17:LI:311:LEU:HD12	1.90	0.54
18:LJ:250:THR:HB	18:LJ:268:LEU:HD23	1.88	0.54
20:LM:334:LEU:HD21	20:LM:346:LEU:HD23	1.89	0.54
24:LQ:207:ILE:HG13	24:LQ:217:VAL:HG23	1.88	0.54
58:SM:97:LEU:HD22	58:SM:141:GLU:HG2	1.89	0.54
59:SP:2038:THR:OG1	59:SP:2041:GLU:OE1	2.25	0.54
63:ST:563:HIS:HB3	63:ST:566:VAL:HB	1.88	0.54
2:L1:1294:G:N7	2:L1:1300:U:N3	2.55	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:1453:C:OP2	47:NU:45:LYS:NZ	2.34	0.54
17:LI:401:LEU:HD11	17:LI:420:PHE:CG	2.42	0.54
18:LJ:89:ARG:NH1	18:LJ:134:LYS:O	2.40	0.54
19:LL:231:ILE:HD12	19:LL:234:LEU:HD12	1.88	0.54
19:LL:298:LEU:HB2	19:LL:315:CYS:HB2	1.89	0.54
23:LP:299:ALA:HB1	23:LP:346:LEU:HD21	1.89	0.54
24:LQ:548:LEU:HD22	24:LQ:568:LEU:HD21	1.89	0.54
45:NS:1108:ALA:O	45:NS:1130:TYR:OH	2.24	0.54
73:SK:301:SAH:SD	73:SK:301:SAH:H8	2.47	0.54
59:SP:928:PRO:HA	59:SP:931:LEU:HD13	1.89	0.54
2:L1:622:C:O2'	55:SI:967:ARG:NH2	2.41	0.54
2:L1:1030:A:H2'	2:L1:1031:A2M:H8	1.89	0.54
16:LH:53:LEU:HD23	16:LH:85:TRP:HE3	1.72	0.54
24:LQ:30:THR:HG22	24:LQ:35:LYS:HG3	1.90	0.54
28:LU:244:ILE:HD11	28:LU:254:PHE:CD2	2.41	0.54
51:SD:101:ARG:NH1	51:SD:105:ASP:OD2	2.38	0.54
59:SP:2456:LYS:HG3	59:SP:2457:PRO:HD3	1.90	0.54
19:LL:145:SER:OG	19:LL:147:ASP:OD1	2.26	0.54
20:LM:2077:SER:HB3	20:LM:2080:VAL:HG22	1.90	0.54
22:LO:647:CYS:HB2	22:LO:703:ILE:HD11	1.89	0.54
37:NH:228:THR:HB	37:NH:236:SER:HB3	1.89	0.54
2:L1:1293:A:N3	46:NT:138:ARG:NH2	2.55	0.54
14:LF:38:THR:O	14:LF:42:GLU:HG2	2.08	0.54
16:LH:15:SER:OG	16:LH:35:SER:OG	2.26	0.54
17:LI:250:LEU:HD12	17:LI:292:ILE:HG23	1.89	0.54
17:LI:697:GLU:OE1	19:LL:571:LYS:NZ	2.33	0.54
19:LL:367:ARG:HD3	19:LL:367:ARG:H	1.73	0.54
20:LM:1813:LEU:HA	20:LM:1817:LEU:HD13	1.88	0.54
30:LY:93:GLN:HE22	67:SY:207:GLU:HB2	1.72	0.54
63:ST:537:ARG:HH11	63:ST:581:PRO:HG3	1.72	0.54
18:LJ:254:LEU:HD21	18:LJ:263:LEU:HD11	1.90	0.54
19:LL:278:SER:HB2	19:LL:283:GLU:HB3	1.88	0.54
24:LQ:424:SER:OG	24:LQ:426:ASP:O	2.22	0.54
37:NH:96:ARG:NH2	37:NH:326:ASP:OD1	2.40	0.54
45:NS:88:GLU:OE2	45:NS:92:GLN:NE2	2.41	0.54
68:SZ:152:UNK:O	68:SZ:156:UNK:N	2.41	0.54
35:NF:140:LYS:NZ	35:NF:142:GLU:OE1	2.41	0.54
44:NR:743:UNK:O	44:NR:747:UNK:N	2.40	0.54
44:NR:982:UNK:O	44:NR:986:UNK:N	2.41	0.54
55:SI:90:PRO:HG2	55:SI:93:VAL:HB	1.89	0.54
60:SQ:640:THR:HG22	60:SQ:642:GLY:H	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:407:G:C8	55:SI:53:MET:HG3	2.42	0.54
17:LI:154:LYS:HD3	17:LI:172:GLU:HB3	1.90	0.54
37:NH:941:ARG:NH1	37:NH:945:PRO:O	2.32	0.54
2:L1:367:U:H4'	2:L1:371:A:C8	2.43	0.53
23:LP:75:ILE:HD11	26:LS:80:LEU:HG	1.90	0.53
23:LP:385:LEU:HD23	23:LP:416:SER:HA	1.90	0.53
24:LQ:438:ILE:HD11	24:LQ:471:ILE:HD13	1.91	0.53
43:NQ:49:HIS:ND1	43:NQ:69:GLY:O	2.41	0.53
51:SD:98:PHE:HB2	51:SD:108:VAL:HG23	1.90	0.53
63:ST:212:UNK:O	63:ST:216:UNK:N	2.42	0.53
16:LH:555:TYR:HE1	16:LH:576:GLU:HG3	1.73	0.53
20:LM:1723:SER:HA	20:LM:1770:THR:HG21	1.90	0.53
14:LF:36:PRO:HG2	14:LF:39:GLU:HG3	1.89	0.53
18:LJ:80:LYS:NZ	18:LJ:101:ASP:OD2	2.39	0.53
20:LM:885:VAL:HG13	20:LM:889:LEU:HD23	1.90	0.53
48:NV:837:SER:OG	48:NV:838:SER:N	2.39	0.53
16:LH:519:GLU:HA	16:LH:541:LYS:HA	1.90	0.53
22:LO:664:THR:HG22	22:LO:670:ALA:HB2	1.90	0.53
22:LO:672:ILE:O	29:LW:195:GLN:NE2	2.37	0.53
25:LR:422:HIS:CG	25:LR:423:SER:H	2.26	0.53
2:L1:1760:G:OP1	37:NH:271:LYS:NZ	2.32	0.53
20:LM:541:PHE:HZ	20:LM:553:THR:HG22	1.74	0.53
26:LS:538:LEU:HD23	26:LS:546:LEU:HD12	1.91	0.53
26:LS:549:ARG:HH22	26:LS:554:SER:HA	1.73	0.53
45:NS:296:SER:N	45:NS:299:SER:O	2.42	0.53
49:SA:97:ASP:HB3	49:SA:100:ILE:HG22	1.90	0.53
55:SI:954:ILE:HG22	55:SI:1106:ILE:HD11	1.91	0.53
56:SK:86:ASP:OD1	56:SK:87:ILE:HD12	2.08	0.53
59:SP:2626:LEU:HA	59:SP:2629:ILE:HD12	1.90	0.53
2:L1:928:G:H2'	2:L1:929:G:C8	2.43	0.53
2:L1:1762:C:H2'	2:L1:1763:G:C8	2.43	0.53
17:LI:402:LEU:HA	17:LI:405:ILE:HD12	1.91	0.53
20:LM:1698:LYS:O	20:LM:1704:ARG:NH1	2.35	0.53
24:LQ:714:GLU:OE1	24:LQ:715:ARG:NH2	2.41	0.53
29:LW:466:HIS:HE2	29:LW:471:THR:HG23	1.72	0.53
2:L1:454:U:H2'	2:L1:455:A:C8	2.43	0.53
2:L1:627:OMU:OP1	55:SI:937:LYS:NZ	2.41	0.53
2:L1:641:A:O2'	2:L1:645:C:OP1	2.27	0.53
17:LI:157:LYS:HE2	17:LI:159:PHE:HB3	1.89	0.53
17:LI:268:LEU:HD11	17:LI:274:ALA:HB2	1.89	0.53
19:LL:475:PHE:O	19:LL:479:ASN:ND2	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LM:1744:MET:O	20:LM:1748:SER:N	2.38	0.53
21:LN:87:ASP:HB2	21:LN:94:LYS:HG3	1.90	0.53
2:L1:454:U:H2'	2:L1:455:A:H8	1.74	0.53
2:L1:1286:G:N2	11:LA:36:ARG:HH21	2.06	0.53
2:L1:1813:A:H2'	2:L1:1814:G:C8	2.44	0.53
16:LH:130:VAL:HG12	16:LH:149:PHE:HA	1.91	0.53
17:LI:435:ASP:O	17:LI:438:THR:OG1	2.23	0.53
26:LS:245:ASN:HA	26:LS:278:PHE:HE2	1.74	0.53
36:NG:143:LYS:HE2	36:NG:149:ARG:HH12	1.74	0.53
25:LR:384:VAL:HG23	25:LR:391:PHE:HB3	1.91	0.53
68:SZ:362:PHE:HA	68:SZ:365:LEU:HG	1.91	0.53
19:LL:458:GLN:O	64:SU:296:ARG:NH2	2.42	0.53
20:LM:1273:ILE:HD11	20:LM:1278:LEU:HB2	1.91	0.53
22:LO:448:ARG:NH2	32:NA:548:LEU:O	2.42	0.53
26:LS:407:TYR:CD1	26:LS:419:ARG:HG2	2.44	0.53
38:NI:31:SER:N	38:NI:34:GLN:OE1	2.35	0.53
55:SI:205:ARG:NH1	55:SI:208:THR:OG1	2.42	0.53
58:SM:73:ASP:HA	58:SM:76:ARG:HH12	1.73	0.53
2:L1:1378:A:OP2	2:L1:1379:A:O2'	2.26	0.52
2:L1:1736:G:H2'	2:L1:1737:G:H8	1.74	0.52
20:LM:1280:GLU:O	20:LM:1318:LYS:NZ	2.41	0.52
22:LO:146:GLU:HB2	22:LO:164:LYS:HD2	1.92	0.52
24:LQ:390:GLU:HG2	24:LQ:408:ARG:HG2	1.90	0.52
54:SH:13:CYS:HB3	54:SH:35:ILE:HG23	1.91	0.52
59:SP:2377:LYS:HB2	59:SP:2380:ASN:HB2	1.91	0.52
7:L6:94:ARG:NH1	45:NS:48:ALA:O	2.41	0.52
16:LH:271:VAL:HG13	16:LH:287:PRO:HA	1.91	0.52
25:LR:678:ARG:HH21	32:NA:567:ALA:HB1	1.73	0.52
54:SH:36:ARG:NH1	54:SH:48:GLU:OE1	2.39	0.52
55:SI:858:GLN:O	55:SI:862:ASN:ND2	2.43	0.52
56:SJ:110:ILE:HD11	56:SJ:118:ILE:HD12	1.91	0.52
59:SP:993:ILE:O	59:SP:1005:ARG:NH2	2.41	0.52
64:SU:141:PRO:HD2	64:SU:142:ARG:HH11	1.75	0.52
2:L1:1310:U:OP2	46:NT:105:TYR:OH	2.28	0.52
20:LM:1812:THR:O	20:LM:1816:THR:OG1	2.24	0.52
22:LO:736:PHE:HB2	27:LT:635:ARG:HG3	1.91	0.52
23:LP:355:MET:HB3	23:LP:359:ARG:HH12	1.74	0.52
16:LH:129:LEU:HB3	16:LH:151:LEU:HB2	1.91	0.52
17:LI:693:VAL:HB	19:LL:570:GLY:HA3	1.91	0.52
19:LL:258:LYS:NZ	27:LT:662:LEU:O	2.39	0.52
39:NL:300:ARG:HA	45:NS:96:MET:HE2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:SJ:224:LEU:HD11	56:SJ:228:LEU:HD22	1.91	0.52
2:L1:546:G:N7	60:SQ:678:LYS:NZ	2.58	0.52
9:L8:101:ILE:HD12	9:L8:190:LEU:HD11	1.92	0.52
21:LN:60:SER:HA	34:ND:183:ARG:HH12	1.74	0.52
24:LQ:109:ALA:HB3	24:LQ:127:LYS:HD2	1.90	0.52
25:LR:394:CYS:HB2	25:LR:424:VAL:HG23	1.92	0.52
40:NM:82:ARG:NH1	40:NM:189:ILE:O	2.41	0.52
54:SH:213:ARG:NH2	54:SH:223:ILE:O	2.43	0.52
2:L1:373:G:H4'	13:LD:85:THR:HG21	1.91	0.52
2:L1:1194:A:N6	24:LQ:614:ASN:OD1	2.41	0.52
11:LA:18:LEU:HA	11:LA:21:VAL:HG22	1.92	0.52
17:LI:453:ARG:HH22	17:LI:484:GLN:HB3	1.74	0.52
17:LI:579:PRO:HB3	17:LI:618:LYS:HE2	1.92	0.52
21:LN:589:HIS:HB2	21:LN:655:LEU:HD13	1.91	0.52
24:LQ:89:ILE:HB	24:LQ:103:PHE:HB2	1.92	0.52
24:LQ:676:GLN:HB3	24:LQ:695:HIS:HB3	1.91	0.52
56:SJ:99:PRO:HD3	56:SK:224:LEU:HD11	1.92	0.52
56:SJ:129:THR:OG1	56:SJ:132:ARG:NE	2.43	0.52
2:L1:387:C:OP2	9:L8:10:LYS:NZ	2.42	0.52
35:NF:99:ARG:NH2	35:NF:119:GLU:OE2	2.42	0.52
63:ST:213:UNK:O	63:ST:217:UNK:N	2.42	0.52
12:LC:82:TYR:HA	12:LC:85:ARG:HD3	1.92	0.52
17:LI:710:LEU:HA	21:LN:10:ARG:HB2	1.90	0.52
20:LM:610:ASN:HD21	20:LM:698:LEU:HG	1.73	0.52
20:LM:1223:PRO:HG3	20:LM:1265:LYS:HE2	1.91	0.52
21:LN:605:CYS:HB2	21:LN:643:ILE:HG22	1.90	0.52
23:LP:250:ASP:OD2	23:LP:251:PHE:N	2.43	0.52
23:LP:369:GLU:HG2	23:LP:373:LYS:HE2	1.92	0.52
24:LQ:505:SER:OG	24:LQ:507:ASP:OD1	2.22	0.52
37:NH:474:LEU:HD22	37:NH:552:LEU:HD12	1.92	0.52
53:SG:298:VAL:HG12	53:SG:309:VAL:HG22	1.92	0.52
62:SS:629:PRO:HD2	65:SW:92:TRP:HZ3	1.75	0.52
2:L1:438:G:H22	2:L1:455:A:H2	1.56	0.52
2:L1:692:G:OP1	8:L7:99:ARG:NH1	2.42	0.52
2:L1:1499:U:H2'	2:L1:1500:G:H8	1.75	0.52
23:LP:2:ALA:HA	23:LP:5:ILE:HD12	1.92	0.52
27:LT:302:HIS:CE1	27:LT:365:PRO:HG3	2.44	0.52
28:LU:48:THR:HG21	28:LU:387:ILE:HG23	1.91	0.52
28:LU:292:PRO:HG2	28:LU:337:SER:HB2	1.91	0.52
59:SP:1167:GLU:O	59:SP:1214:ARG:NH1	2.42	0.52
59:SP:2727:ARG:HG2	59:SP:2731:LYS:HE3	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:SS:627:THR:HG21	62:SS:646:ARG:HA	1.91	0.52
68:SZ:237:PHE:HA	68:SZ:240:ASN:HD21	1.75	0.52
2:L1:236:A:H5''	59:SP:1607:LYS:HE3	1.91	0.52
8:L7:36:LEU:HB3	8:L7:40:LEU:HD23	1.91	0.52
14:LF:102:THR:HG23	14:LF:107:ARG:HH11	1.74	0.52
20:LM:1032:SER:HA	20:LM:1035:LEU:HD23	1.92	0.52
21:LN:225:THR:O	26:LS:419:ARG:NH1	2.43	0.52
30:LY:79:LEU:O	67:SY:164:ARG:NH1	2.43	0.52
59:SP:2642:LEU:O	59:SP:2645:THR:OG1	2.26	0.52
62:SS:551:GLU:HA	62:SS:554:LYS:HG2	1.92	0.52
2:L1:943:U:OP1	40:NM:214:LYS:NZ	2.40	0.51
2:L1:1284:A:H4'	2:L1:1285:G:H5''	1.92	0.51
31:LZ:156:ASP:HA	58:SM:3:ARG:HD2	1.92	0.51
54:SH:146:ASP:O	54:SH:174:ARG:NH2	2.43	0.51
54:SH:156:ARG:HG2	54:SH:166:GLU:HB3	1.92	0.51
62:SS:172:GLU:HA	62:SS:175:LEU:HD12	1.91	0.51
17:LI:313:TYR:HD1	17:LI:318:LEU:HD23	1.76	0.51
20:LM:1856:LYS:HB3	20:LM:1858:GLU:HG2	1.93	0.51
22:LO:143:PRO:HG2	22:LO:147:THR:HG22	1.91	0.51
28:LU:346:GLU:OE2	28:LU:350:ARG:NH1	2.43	0.51
41:NO:3:ARG:HD3	41:NO:6:VAL:HG12	1.92	0.51
49:SA:24:GLU:HG3	49:SA:117:VAL:HB	1.92	0.51
63:ST:283:GLN:HB3	63:ST:287:ARG:CZ	2.40	0.51
2:L1:1326:U:H2'	2:L1:1327:G:H8	1.75	0.51
17:LI:123:UNK:HA	17:LI:132:UNK:O	2.09	0.51
20:LM:83:THR:O	20:LM:87:ASN:ND2	2.39	0.51
20:LM:383:LEU:HB3	20:LM:431:LEU:HD22	1.92	0.51
24:LQ:841:GLU:OE1	24:LQ:844:GLN:NE2	2.42	0.51
2:L1:1268:C:H2'	2:L1:1269:G:H8	1.74	0.51
10:L9:158:ASP:OD1	10:L9:159:PHE:N	2.41	0.51
22:LO:471:GLU:HB3	22:LO:472:ILE:HD12	1.92	0.51
24:LQ:760:ILE:HD11	24:LQ:815:ILE:HD11	1.92	0.51
25:LR:419:GLY:H	25:LR:449:TRP:HH2	1.58	0.51
27:LT:889:ASP:HB3	27:LT:892:LEU:HD13	1.91	0.51
45:NS:1013:GLN:N	45:NS:1039:VAL:O	2.41	0.51
54:SH:67:ASN:HB2	54:SH:72:THR:HG22	1.92	0.51
59:SP:357:LEU:HB2	59:SP:362:TRP:CE2	2.46	0.51
63:ST:570:LEU:HD21	64:SU:445:TYR:HD2	1.75	0.51
2:L1:1739:C:H2'	2:L1:1740:C:H6	1.76	0.51
21:LN:446:SER:OG	21:LN:448:ASP:O	2.26	0.51
23:LP:350:ARG:HG3	23:LP:353:ARG:HH12	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:LP:494:ARG:NH1	23:LP:532:TYR:OH	2.38	0.51
24:LQ:25:ASN:OD1	24:LQ:71:LEU:N	2.42	0.51
29:LW:484:ASP:HB3	29:LW:487:GLU:HG3	1.91	0.51
56:SJ:69:HIS:O	56:SJ:73:LEU:HD23	2.10	0.51
59:SP:2229:LYS:NZ	59:SP:2266:GLN:OE1	2.40	0.51
16:LH:638:ASP:OD1	16:LH:639:VAL:N	2.43	0.51
17:LI:695:PHE:HB3	19:LK:552:TYR:HE1	1.75	0.51
20:LM:1732:GLN:NE2	20:LM:1735:SER:OG	2.28	0.51
25:LR:606:ASP:HB3	25:LR:625:SER:HB2	1.91	0.51
27:LT:187:TRP:HD1	27:LT:194:GLU:HA	1.76	0.51
27:LT:391:ASN:HD22	27:LT:393:GLN:H	1.59	0.51
36:NG:150:ARG:NH1	65:SW:226:CYS:SG	2.83	0.51
44:NR:314:UNK:O	44:NR:318:UNK:N	2.43	0.51
56:SJ:89:HIS:CE1	56:SJ:130:PHE:HA	2.45	0.51
59:SP:1866:ARG:NH2	59:SP:1955:GLU:OE2	2.43	0.51
2:L1:1470:C:H2'	2:L1:1471:C:H6	1.76	0.51
3:L2:176:C:H2'	3:L2:177:C:C6	2.46	0.51
20:LM:1823:LEU:HD23	20:LM:1826:ILE:HD12	1.92	0.51
22:LO:357:VAL:HG12	22:LO:367:LEU:HB3	1.92	0.51
22:LO:525:VAL:HG23	22:LO:542:LEU:HD11	1.93	0.51
37:NH:189:LEU:HA	37:NH:202:LYS:HZ1	1.75	0.51
37:NH:481:ARG:NH2	37:NH:628:ASP:O	2.44	0.51
63:ST:792:LEU:HA	63:ST:795:LYS:HG2	1.93	0.51
68:SZ:386:VAL:HG11	68:SZ:417:ILE:HG23	1.92	0.51
2:L1:848:U:H2'	2:L1:849:A:H8	1.76	0.51
17:LI:273:VAL:HB	17:LI:292:ILE:HD11	1.91	0.51
18:LJ:29:TYR:HA	18:LJ:318:ARG:HA	1.92	0.51
20:LM:393:ASP:OD1	20:LM:394:HIS:N	2.43	0.51
22:LO:552:ARG:HH21	22:LO:556:ALA:HB3	1.76	0.51
23:LP:355:MET:HB3	23:LP:359:ARG:NH1	2.26	0.51
25:LR:551:GLN:HA	45:NS:142:LYS:NZ	2.26	0.51
59:SP:1578:MET:HA	59:SP:1586:ARG:HG3	1.92	0.51
68:SZ:154:UNK:O	68:SZ:158:UNK:N	2.44	0.51
68:SZ:217:LEU:HD21	68:SZ:253:VAL:HG21	1.92	0.51
2:L1:421:G:O2'	2:L1:653:A:N1	2.37	0.51
22:LO:69:LEU:HD12	22:LO:81:LEU:HD11	1.92	0.51
24:LQ:363:ALA:HB3	24:LQ:384:LEU:HD13	1.93	0.51
25:LR:485:VAL:HG12	25:LR:496:THR:HG22	1.93	0.51
37:NH:965:PRO:HA	37:NH:969:ILE:HD11	1.92	0.51
48:NV:840:PHE:HE1	59:SP:1840:GLU:HG3	1.76	0.51
2:L1:380:G:OP1	9:L8:56:ARG:NH2	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:1696:C:H41	32:NA:556:GLU:HG2	1.76	0.51
22:LO:144:TYR:HE2	29:LW:363:ARG:HG3	1.75	0.51
23:LP:13:LEU:HD11	29:LW:152:LEU:HD21	1.93	0.51
24:LQ:621:ASP:OD2	24:LQ:622:PHE:N	2.44	0.51
29:LW:401:PRO:HA	62:SS:594:MET:SD	2.51	0.51
39:NL:37:HIS:ND1	39:NL:198:PRO:O	2.42	0.51
59:SP:2680:SER:HB3	59:SP:2683:SER:HB3	1.93	0.51
65:SW:195:GLU:OE2	65:SW:201:ARG:HA	2.10	0.51
65:SW:200:THR:HG22	65:SW:213:GLY:HA3	1.92	0.51
68:SZ:277:LYS:HG2	68:SZ:311:ILE:HG23	1.93	0.51
2:L1:1692:U:O2	32:NA:559:LYS:NZ	2.35	0.50
11:LA:20:GLU:HA	11:LA:23:LYS:HE3	1.92	0.50
25:LR:204:SER:OG	25:LR:206:ASP:O	2.28	0.50
26:LS:493:GLU:O	26:LS:523:HIS:ND1	2.43	0.50
34:ND:179:ASP:OD1	34:ND:180:GLN:N	2.44	0.50
37:NH:926:THR:HG22	37:NH:929:GLU:HG3	1.92	0.50
59:SP:2648:PHE:HZ	59:SP:2677:GLU:HG3	1.76	0.50
20:LM:665:ILE:HA	20:LM:710:VAL:HG12	1.94	0.50
22:LO:9:ASN:ND2	22:LO:47:SER:O	2.44	0.50
22:LO:151:ASP:OD1	22:LO:152:TRP:N	2.43	0.50
22:LO:562:THR:OG1	22:LO:564:ASN:OD1	2.17	0.50
24:LQ:502:MET:HG2	24:LQ:513:THR:HG22	1.92	0.50
43:NQ:67:THR:OG1	43:NQ:70:LYS:O	2.21	0.50
59:SP:2671:ILE:HG23	59:SP:2716:VAL:HG21	1.92	0.50
63:ST:414:UNK:O	63:ST:418:UNK:N	2.44	0.50
9:L8:57:ALA:HB2	9:L8:183:GLY:HA2	1.92	0.50
25:LR:424:VAL:HA	25:LR:441:SER:HA	1.93	0.50
32:NA:620:LYS:O	32:NA:624:LYS:HG2	2.10	0.50
37:NH:112:VAL:HG22	37:NH:220:PHE:HE1	1.76	0.50
54:SH:310:GLN:O	55:SI:75:ARG:NH1	2.44	0.50
63:ST:58:SER:OG	63:ST:61:ARG:NH2	2.40	0.50
63:ST:443:UNK:O	63:ST:447:UNK:N	2.43	0.50
68:SZ:236:ILE:O	68:SZ:240:ASN:ND2	2.45	0.50
68:SZ:399:GLU:HA	68:SZ:402:LEU:HD13	1.92	0.50
2:L1:830:A:O2'	2:L1:847:A:OP1	2.29	0.50
3:L2:130:U:OP1	30:LY:7:ARG:NH1	2.44	0.50
24:LQ:821:GLU:OE2	24:LQ:854:ARG:NH2	2.41	0.50
31:LZ:57:GLU:HG2	31:LZ:60:ARG:HH21	1.74	0.50
45:NS:1026:CYS:HB2	45:NS:1033:LEU:HD11	1.93	0.50
51:SD:108:VAL:HG12	51:SD:137:ALA:HA	1.94	0.50
59:SP:2392:VAL:HG21	59:SP:2444:LYS:HB3	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:ST:499:VAL:HA	63:ST:502:LEU:HD23	1.93	0.50
2:L1:612:U:OP2	58:SM:285:ARG:NH1	2.41	0.50
2:L1:1588:A:H2'	2:L1:1589:A:C8	2.47	0.50
17:LI:271:ASP:OD1	17:LI:272:HIS:ND1	2.44	0.50
49:SA:294:PRO:HB2	49:SA:391:SER:HB3	1.94	0.50
59:SP:1360:LEU:HB3	59:SP:1397:LEU:HD11	1.92	0.50
59:SP:1510:THR:HG23	59:SP:1513:ASP:H	1.76	0.50
2:L1:1310:U:H5'	46:NT:130:VAL:HG13	1.92	0.50
2:L1:1529:C:O2'	42:NP:87:VAL:O	2.29	0.50
7:L6:162:LEU:HD21	7:L6:172:LYS:HG3	1.94	0.50
11:LA:33:ARG:HD3	11:LA:89:VAL:HG11	1.93	0.50
29:LW:245:LEU:O	29:LW:246:HIS:ND1	2.45	0.50
32:NA:643:SER:OG	39:NL:228:ARG:NH2	2.42	0.50
37:NH:653:SER:OG	37:NH:657:GLU:OE1	2.28	0.50
45:NS:472:ILE:O	45:NS:617:VAL:N	2.43	0.50
45:NS:1059:ASP:OD1	45:NS:1060:ARG:N	2.45	0.50
59:SP:1935:GLU:OE1	59:SP:1961:SER:OG	2.21	0.50
59:SP:2663:VAL:HG12	59:SP:2667:LEU:HG	1.93	0.50
2:L1:1293:A:H3'	2:L1:1294:G:H8	1.76	0.50
18:LJ:169:CYS:O	18:LJ:183:GLY:N	2.42	0.50
18:LJ:264:LEU:HG	18:LJ:274:VAL:HG22	1.94	0.50
25:LR:480:LYS:HB3	25:LR:499:GLN:HB3	1.93	0.50
56:SK:100:LEU:N	56:SK:238:GLU:OE2	2.43	0.50
58:SM:264:GLU:HG3	58:SM:265:GLN:HG3	1.94	0.50
59:SP:580:LEU:HD23	59:SP:583:LEU:HD12	1.93	0.50
59:SP:1352:LEU:HD22	59:SP:1380:LEU:HD22	1.93	0.50
62:SS:557:GLN:O	62:SS:561:LEU:HD23	2.11	0.50
63:ST:430:UNK:O	63:ST:434:UNK:N	2.45	0.50
18:LJ:106:LEU:HD12	18:LJ:116:ARG:HB2	1.92	0.50
18:LJ:252:THR:H	18:LJ:267:SER:HA	1.77	0.50
26:LS:433:THR:HG22	26:LS:440:VAL:HG22	1.93	0.50
27:LT:120:SER:HA	27:LT:152:LYS:HA	1.94	0.50
37:NH:588:GLU:HA	40:NM:252:ARG:HH22	1.75	0.50
37:NH:694:ARG:NH2	37:NH:873:ASP:OD2	2.45	0.50
62:SS:630:GLY:H	65:SW:92:TRP:HH2	1.60	0.50
2:L1:928:G:H1	2:L1:1013:U:H3	1.60	0.50
21:LN:185:ASP:OD1	21:LN:185:ASP:N	2.42	0.50
25:LR:196:SER:HG	40:NM:51:ARG:HH21	1.60	0.50
59:SP:1522:LEU:HD21	59:SP:1548:LEU:HD11	1.93	0.50
65:SW:223:THR:O	65:SW:227:ASN:ND2	2.45	0.50
2:L1:1130:G:OP2	2:L1:1130:G:N2	2.32	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:LI:437:VAL:HG22	17:LI:459:LEU:HD13	1.93	0.49
18:LJ:30:LYS:NZ	18:LJ:318:ARG:O	2.31	0.49
20:LM:1860:LEU:HA	20:LM:1863:HIS:CE1	2.47	0.49
20:LM:2089:LEU:O	20:LM:2093:GLU:HG3	2.12	0.49
21:LN:414:PHE:HD1	21:LN:429:ARG:HE	1.60	0.49
22:LO:697:ARG:NH1	32:NA:510:LEU:O	2.45	0.49
28:LU:283:SER:HB2	28:LU:303:ASP:H	1.77	0.49
31:LZ:171:LEU:HD23	31:LZ:177:ARG:HA	1.93	0.49
44:NR:841:UNK:O	44:NR:845:UNK:N	2.45	0.49
63:ST:267:UNK:O	68:SZ:388:ARG:NH1	2.32	0.49
63:ST:751:ARG:NE	63:ST:752:PRO:HD2	2.27	0.49
68:SZ:175:UNK:O	68:SZ:179:PRO:HD3	2.12	0.49
2:L1:1286:G:H1'	2:L1:1312:G:H2	1.76	0.49
2:L1:1384:C:H2'	2:L1:1385:G:C8	2.47	0.49
5:L4:153:LEU:O	5:L4:174:LYS:NZ	2.45	0.49
25:LR:52:VAL:O	25:LR:328:LYS:HE2	2.12	0.49
27:LT:545:VAL:HG12	27:LT:556:THR:HG22	1.93	0.49
59:SP:2568:GLU:OE2	59:SP:2618:THR:N	2.44	0.49
60:SQ:671:ASP:HB3	60:SQ:674:ARG:HB2	1.94	0.49
65:SW:145:GLN:HB2	65:SW:148:ASP:HB2	1.94	0.49
2:L1:239:C:N4	2:L1:240:G:O6	2.44	0.49
25:LR:294:GLU:O	25:LR:312:ALA:N	2.39	0.49
59:SP:2620:LEU:HG	59:SP:2666:TYR:HE1	1.77	0.49
68:SZ:184:VAL:O	68:SZ:188:VAL:HG23	2.11	0.49
22:LO:765:MET:HG2	22:LO:768:ARG:HH21	1.77	0.49
22:LO:861:LYS:HG3	22:LO:862:LEU:HD12	1.93	0.49
24:LQ:145:LEU:HD12	24:LQ:176:TRP:CE3	2.47	0.49
24:LQ:902:LEU:HD11	25:LR:735:LEU:HD21	1.93	0.49
27:LT:233:ASN:HB3	27:LT:236:SER:HB2	1.95	0.49
37:NH:549:THR:HG21	37:NH:991:PRO:HG2	1.94	0.49
46:NT:106:TYR:OH	46:NT:116:ARG:NE	2.45	0.49
50:SB:25:VAL:HB	50:SB:111:VAL:HG12	1.94	0.49
61:SR:81:ILE:HG22	63:ST:842:THR:HG23	1.94	0.49
68:SZ:247:GLN:HB3	68:SZ:285:ALA:HA	1.95	0.49
2:L1:1726:G:H2'	2:L1:1727:G:H8	1.77	0.49
16:LH:175:GLU:HG3	16:LH:176:PHE:H	1.77	0.49
22:LO:515:VAL:HG12	22:LO:529:ASP:HA	1.93	0.49
28:LU:67:ASP:OD1	28:LU:68:GLY:N	2.42	0.49
37:NH:591:ARG:HG2	40:NM:248:ALA:HB3	1.95	0.49
37:NH:979:GLU:O	37:NH:982:PRO:HD2	2.11	0.49
45:NS:83:ILE:HG22	45:NS:87:LYS:HZ3	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:309:G:OP2	9:L8:53:LYS:NZ	2.46	0.49
2:L1:1115:U:O2'	2:L1:1118:C:N4	2.45	0.49
16:LH:53:LEU:HD23	16:LH:85:TRP:CE3	2.48	0.49
17:LI:509:LEU:HB3	17:LI:612:HIS:HD2	1.78	0.49
20:LM:1045:ILE:HG13	20:LM:1052:VAL:HG11	1.94	0.49
20:LM:1969:VAL:HG11	20:LM:1992:LEU:HG	1.94	0.49
22:LO:23:THR:HG23	22:LO:26:GLY:H	1.77	0.49
23:LP:127:SER:HB3	62:SS:171:ILE:HG22	1.95	0.49
25:LR:294:GLU:HB2	25:LR:312:ALA:HB2	1.94	0.49
37:NH:130:GLN:HG2	37:NH:205:LEU:HD21	1.95	0.49
37:NH:189:LEU:HA	37:NH:202:LYS:NZ	2.27	0.49
40:NM:123:ALA:HB2	40:NM:165:ARG:HG3	1.95	0.49
45:NS:137:ALA:O	45:NS:140:GLN:NE2	2.40	0.49
62:SS:555:LYS:O	62:SS:559:ILE:HG12	2.13	0.49
13:LD:125:ILE:HB	13:LD:146:THR:HG23	1.94	0.49
20:LM:1412:LEU:HD22	20:LM:1454:PHE:HD2	1.78	0.49
21:LN:258:GLY:HA2	21:LN:290:VAL:HG23	1.93	0.49
25:LR:15:TYR:HB2	25:LR:601:LEU:HD21	1.94	0.49
37:NH:122:VAL:HG22	37:NH:154:PHE:HB3	1.94	0.49
37:NH:860:ARG:NH2	37:NH:1024:GLN:O	2.45	0.49
49:SA:223:LEU:HD11	49:SA:231:LEU:HD22	1.94	0.49
64:SU:18:UNK:O	64:SU:22:UNK:N	2.45	0.49
68:SZ:191:VAL:O	68:SZ:195:TYR:N	2.45	0.49
3:L2:7:A:H4'	55:SI:26:LEU:HD11	1.94	0.49
6:L5:168:THR:HG22	6:L5:170:ALA:H	1.78	0.49
25:LR:46:ARG:HG2	25:LR:62:GLU:HB2	1.94	0.49
32:NA:467:LEU:HG	32:NA:471:GLU:HB2	1.93	0.49
59:SP:565:CYS:HA	59:SP:605:LEU:HD12	1.94	0.49
65:SW:199:ARG:HG3	65:SW:251:ARG:HH22	1.78	0.49
2:L1:1284:A:O2'	11:LA:106:CYS:SG	2.51	0.49
6:L5:127:ARG:CZ	6:L5:129:GLY:HA3	2.43	0.49
19:LL:43:THR:HG23	19:LL:359:ILE:HG21	1.94	0.49
20:LM:764:PRO:HG2	20:LM:767:LEU:HB2	1.93	0.49
20:LM:1208:THR:O	20:LM:1212:GLU:HG3	2.13	0.49
23:LP:546:ASP:OD1	23:LP:588:LYS:NZ	2.40	0.49
24:LQ:394:LEU:HD22	24:LQ:403:PRO:HB3	1.95	0.49
27:LT:216:TYR:HB3	27:LT:219:LYS:HB2	1.94	0.49
28:LU:326:GLN:HE22	57:SL:114:GLY:HA2	1.76	0.49
59:SP:985:LYS:HE3	59:SP:1025:GLY:HA3	1.95	0.49
2:L1:1611:G:O2'	4:L3:86:ARG:O	2.28	0.49
2:L1:1788:A:H2'	2:L1:1789:G:O4'	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:LA:82:ASN:HA	11:LA:85:LEU:HD12	1.94	0.49
19:LK:467:THR:HG21	19:LK:498:PRO:HG2	1.95	0.49
20:LM:397:ALA:HB1	20:LM:440:LEU:HD13	1.94	0.49
20:LM:943:GLN:HA	20:LM:960:ILE:HD12	1.95	0.49
25:LR:546:LYS:HG2	25:LR:558:THR:HG22	1.94	0.49
25:LR:547:LEU:HD12	25:LR:557:LYS:HB2	1.95	0.49
35:NF:45:LEU:O	38:NI:242:TYR:OH	2.23	0.49
36:NG:93:LEU:HD12	36:NG:119:LEU:HD21	1.94	0.49
45:NS:886:MET:O	45:NS:890:ARG:N	2.42	0.49
46:NT:113:LYS:NZ	46:NT:114:ILE:O	2.42	0.49
56:SJ:129:THR:H	56:SJ:132:ARG:NH2	2.11	0.49
65:SW:91:ASN:HB3	65:SW:146:VAL:HG21	1.93	0.49
2:L1:1058:A:HO2'	65:SW:247:ARG:HH12	1.61	0.48
2:L1:1384:C:H2'	2:L1:1385:G:H8	1.78	0.48
13:LD:61:PRO:HD3	13:LD:141:ASN:HD21	1.78	0.48
19:LL:503:ILE:O	19:LL:507:GLN:NE2	2.45	0.48
20:LM:1758:LEU:HD11	20:LM:1801:GLN:HB2	1.95	0.48
21:LN:602:TYR:HA	21:LN:648:LYS:O	2.13	0.48
22:LO:487:SER:HB2	22:LO:494:LEU:HD21	1.94	0.48
49:SA:171:SER:HB2	49:SA:285:LEU:HD13	1.95	0.48
56:SJ:99:PRO:O	56:SJ:103:ALA:N	2.39	0.48
59:SP:1104:VAL:HG13	59:SP:1108:ILE:HD11	1.95	0.48
2:L1:559:G:O2'	2:L1:560:A:O5'	2.28	0.48
2:L1:1670:C:OP2	58:SM:91:ARG:NH1	2.46	0.48
17:LI:695:PHE:CZ	19:LK:531:LEU:HD21	2.48	0.48
22:LO:684:ILE:HB	29:LW:234:ASN:HB2	1.94	0.48
37:NH:121:SER:HA	37:NH:154:PHE:HD2	1.78	0.48
7:L6:7:PHE:O	7:L6:11:GLY:N	2.45	0.48
11:LA:40:LYS:O	11:LA:44:LYS:CB	2.61	0.48
11:LA:123:VAL:HG13	11:LA:124:ILE:HD12	1.96	0.48
24:LQ:845:LEU:HB3	25:LR:691:ARG:HH22	1.78	0.48
25:LR:250:VAL:H	25:LR:255:VAL:HB	1.78	0.48
25:LR:378:ILE:HB	25:LR:396:LYS:HD3	1.95	0.48
27:LT:283:MET:HB3	27:LT:322:LYS:HE3	1.96	0.48
55:SI:926:LEU:O	55:SI:978:CYS:N	2.45	0.48
63:ST:254:UNK:O	63:ST:258:UNK:N	2.46	0.48
64:SU:468:ALA:HA	64:SU:471:LEU:HD23	1.96	0.48
2:L1:1762:C:H1'	2:L1:1771:G:H22	1.78	0.48
3:L2:8:U:H2'	3:L2:9:A:C8	2.47	0.48
4:L3:21:ASP:HB3	4:L3:24:ARG:HD3	1.93	0.48
20:LM:1823:LEU:O	20:LM:1827:LYS:HG2	2.12	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LM:1861:THR:HA	20:LM:1864:GLN:NE2	2.28	0.48
22:LO:42:LEU:HD12	22:LO:366:VAL:HG12	1.94	0.48
24:LQ:472:GLY:HA3	24:LQ:499:LEU:HD22	1.94	0.48
25:LR:275:GLU:HG3	25:LR:278:SER:H	1.78	0.48
29:LW:460:ASP:OD1	29:LW:478:ALA:N	2.45	0.48
49:SA:297:SER:HB2	49:SA:302:GLU:HG3	1.93	0.48
51:SD:196:ARG:NH2	52:SF:9:LYS:O	2.46	0.48
54:SH:220:ILE:HD11	55:SI:758:PHE:HB3	1.95	0.48
56:SJ:163:VAL:HA	56:SJ:166:HIS:CD2	2.45	0.48
73:SJ:301:SAH:H3'	73:SJ:301:SAH:HA	1.95	0.48
58:SM:279:THR:HB	58:SM:282:ALA:HB2	1.94	0.48
66:SX:910:UNK:O	66:SX:914:UNK:N	2.45	0.48
7:L6:7:PHE:HD1	7:L6:113:ILE:HB	1.79	0.48
17:LI:610:ALA:HA	17:LI:613:ILE:HD13	1.94	0.48
18:LJ:471:GLU:OE2	19:LL:569:HIS:NE2	2.45	0.48
19:LL:169:SER:OG	19:LL:188:ARG:NH2	2.38	0.48
20:LM:754:HIS:O	20:LM:758:MET:HG2	2.13	0.48
20:LM:1311:VAL:O	20:LM:1315:PHE:N	2.38	0.48
21:LN:186:ARG:HA	21:LN:196:CYS:HB2	1.95	0.48
22:LO:197:GLU:OE2	22:LO:204:TYR:OH	2.16	0.48
56:SK:107:GLN:NE2	56:SK:120:VAL:O	2.41	0.48
59:SP:2014:ASN:HB3	59:SP:2017:MET:HB2	1.95	0.48
62:SS:557:GLN:HA	62:SS:560:ASP:OD1	2.13	0.48
2:L1:1787:G:H2'	2:L1:1788:A:H8	1.76	0.48
2:L1:1823:A:H4'	2:L1:1824:A:O5'	2.13	0.48
6:L5:125:SER:OG	6:L5:136:ARG:NE	2.46	0.48
11:LA:87:GLU:OE1	11:LA:103:VAL:HG21	2.12	0.48
19:LK:518:ASN:OD1	19:LK:519:SER:N	2.47	0.48
20:LM:83:THR:HA	29:LW:181:ASP:HA	1.94	0.48
20:LM:2095:LEU:HD12	20:LM:2098:ASN:HB2	1.96	0.48
22:LO:138:LYS:HZ3	62:SS:583:LEU:HA	1.79	0.48
22:LO:177:ASP:OD2	22:LO:225:ARG:NH1	2.46	0.48
25:LR:81:LEU:O	25:LR:93:TRP:N	2.46	0.48
39:NL:98:VAL:O	39:NL:101:THR:OG1	2.23	0.48
45:NS:831:SER:O	45:NS:835:ARG:N	2.39	0.48
49:SA:220:ARG:HB2	49:SA:248:SER:HB2	1.95	0.48
56:SJ:178:PHE:HB2	73:SJ:301:SAH:N7	2.28	0.48
63:ST:47:LYS:HD3	63:ST:49:ARG:HG2	1.95	0.48
2:L1:1306:U:H2'	2:L1:1307:U:C6	2.48	0.48
2:L1:1589:A:N3	2:L1:1653:U:O2'	2.41	0.48
20:LM:774:GLU:HG3	20:LM:781:VAL:HG22	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LM:1571:LYS:HG3	20:LM:1572:LEU:H	1.79	0.48
27:LT:229:LEU:HB2	27:LT:243:PHE:HB2	1.95	0.48
32:NA:622:LEU:HD22	32:NA:627:LYS:HD2	1.95	0.48
59:SP:217:HIS:HB2	59:SP:220:LYS:HE2	1.95	0.48
59:SP:1466:VAL:HG21	59:SP:1509:VAL:HG12	1.95	0.48
2:L1:1338:G:H2'	2:L1:1339:U:C6	2.49	0.48
6:L5:79:HIS:O	6:L5:81:ARG:N	2.45	0.48
22:LO:394:ASP:OD1	22:LO:394:ASP:N	2.47	0.48
27:LT:113:LYS:O	27:LT:375:ARG:NH2	2.46	0.48
37:NH:341:ASP:OD1	37:NH:341:ASP:N	2.47	0.48
44:NR:619:UNK:O	44:NR:623:UNK:N	2.47	0.48
51:SD:240:GLN:O	51:SD:243:GLN:HG3	2.14	0.48
63:ST:263:UNK:HA	68:SZ:355:ARG:HH12	1.77	0.48
68:SZ:245:MET:O	68:SZ:248:ARG:HB2	2.14	0.48
16:LH:462:VAL:HG22	16:LH:472:VAL:HG22	1.95	0.48
20:LM:560:LEU:HA	20:LM:563:ARG:HG2	1.96	0.48
24:LQ:301:SER:HA	24:LQ:364:LYS:HA	1.95	0.48
25:LR:24:PHE:HZ	25:LR:330:PHE:HB3	1.79	0.48
25:LR:123:LEU:HD12	25:LR:135:VAL:HG12	1.95	0.48
44:NR:190:UNK:O	44:NR:194:UNK:N	2.47	0.48
44:NR:541:UNK:O	44:NR:545:UNK:N	2.46	0.48
44:NR:795:UNK:O	44:NR:799:UNK:N	2.47	0.48
49:SA:228:LEU:HA	49:SA:231:LEU:HB3	1.96	0.48
65:SW:91:ASN:HA	65:SW:94:LYS:HE2	1.96	0.48
68:SZ:242:LYS:O	68:SZ:246:ALA:N	2.44	0.48
8:L7:44:ASN:OD1	8:L7:68:GLN:NE2	2.44	0.48
9:L8:11:ARG:NH1	9:L8:15:GLY:O	2.46	0.48
20:LM:494:VAL:HG23	20:LM:497:LEU:HD12	1.95	0.48
21:LN:399:SER:HB3	21:LN:404:TRP:HB2	1.95	0.48
22:LO:879:GLN:NE2	25:LR:741:ARG:O	2.47	0.48
28:LU:234:LYS:HD2	28:LU:444:VAL:HG21	1.95	0.48
41:NO:96:SER:OG	41:NO:98:GLN:OE1	2.32	0.48
59:SP:959:CYS:O	59:SP:962:THR:OG1	2.20	0.48
2:L1:106:C:OP1	2:L1:431:G:O2'	2.31	0.47
2:L1:1863:A:H1'	65:SW:186:LYS:HG3	1.96	0.47
11:LA:122:ASP:OD1	11:LA:122:ASP:N	2.44	0.47
16:LH:229:LEU:O	16:LH:241:TYR:HA	2.14	0.47
22:LO:457:ARG:HH12	58:SM:80:VAL:HG21	1.79	0.47
25:LR:493:LEU:HD21	45:NS:143:ILE:HG21	1.95	0.47
2:L1:942:G:H2'	2:L1:943:U:C6	2.49	0.47
2:L1:1488:C:H3'	2:L1:1489:A:C8	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:LH:173:VAL:HG21	16:LH:209:VAL:HB	1.95	0.47
19:LL:33:SER:OG	19:LL:35:ASP:OD1	2.22	0.47
19:LL:190:ILE:HB	19:LL:204:PHE:HB2	1.95	0.47
20:LM:60:PRO:O	20:LM:62:PHE:N	2.46	0.47
20:LM:1517:SER:O	20:LM:1521:MET:HG3	2.14	0.47
21:LN:685:GLY:HA3	34:ND:218:ARG:HD3	1.95	0.47
22:LO:187:HIS:ND1	22:LO:207:SER:HB3	2.29	0.47
22:LO:415:SER:OG	22:LO:436:ASP:OD1	2.26	0.47
23:LP:351:LEU:O	23:LP:354:THR:OG1	2.31	0.47
25:LR:539:ALA:HB1	25:LR:566:VAL:HG13	1.96	0.47
27:LT:581:SER:HB3	27:LT:599:LEU:HB3	1.96	0.47
29:LW:280:ARG:HD3	29:LW:280:ARG:HA	1.62	0.47
38:NI:30:PHE:O	38:NI:142:SER:N	2.44	0.47
64:SU:179:ASP:OD1	64:SU:180:THR:N	2.46	0.47
2:L1:77:A:H1'	7:L6:176:ILE:HG13	1.96	0.47
16:LH:474:ILE:HG12	16:LH:491:ASP:HB2	1.95	0.47
19:LL:37:HIS:ND1	19:LL:53:VAL:HG22	2.29	0.47
23:LP:75:ILE:HA	26:LS:79:ARG:HH12	1.78	0.47
53:SG:223:ILE:HB	53:SG:237:PHE:HB2	1.96	0.47
54:SH:311:ASP:OD1	55:SI:75:ARG:NH1	2.35	0.47
55:SI:935:ILE:HD12	55:SI:971:TYR:HB3	1.96	0.47
56:SJ:99:PRO:HB3	56:SK:222:TYR:CD1	2.49	0.47
2:L1:1289:U:H2'	2:L1:1290:G:C8	2.49	0.47
12:LC:111:ILE:HA	12:LC:114:GLN:HG2	1.97	0.47
16:LH:543:ARG:NE	16:LH:561:GLU:OE1	2.40	0.47
20:LM:1693:LEU:HD12	20:LM:1721:VAL:HG12	1.97	0.47
23:LP:11:ASP:OD2	62:SS:711:ARG:NH2	2.47	0.47
29:LW:242:ILE:HD13	29:LW:253:VAL:HG12	1.97	0.47
32:NA:400:LEU:HB2	55:SI:1052:GLU:OE1	2.14	0.47
53:SG:323:HIS:CE1	53:SG:342:ALA:HB2	2.49	0.47
59:SP:2445:LEU:HB3	59:SP:2451:ILE:HG13	1.97	0.47
62:SS:628:LEU:HB2	62:SS:631:TRP:HB2	1.95	0.47
62:SS:659:ARG:N	62:SS:662:LYS:HE3	2.27	0.47
2:L1:962:A:H5''	36:NG:66:ARG:HG3	1.96	0.47
2:L1:1637:A:H4'	2:L1:1638:G:H5'	1.97	0.47
2:L1:1653:U:H3	2:L1:1671:G:H1	1.62	0.47
27:LT:201:ASP:HB3	27:LT:204:VAL:HB	1.96	0.47
32:NA:430:LYS:HG2	58:SM:242:VAL:HG13	1.96	0.47
37:NH:477:ARG:HB2	37:NH:478:PRO:HD3	1.96	0.47
56:SJ:65:ASN:ND2	56:SJ:67:ASP:HB2	2.30	0.47
59:SP:330:VAL:HA	59:SP:338:ILE:HD11	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:ST:286:LEU:O	63:ST:289:LEU:N	2.46	0.47
65:SW:202:ILE:HG22	65:SW:211:ILE:HG12	1.95	0.47
16:LH:284:GLU:HG3	26:LS:337:ARG:HB3	1.96	0.47
46:NT:104:LYS:HD3	46:NT:118:ARG:HH21	1.80	0.47
54:SH:135:THR:HG21	54:SH:256:SER:HB3	1.97	0.47
55:SI:178:LYS:NZ	55:SI:243:LYS:O	2.41	0.47
56:SJ:48:GLU:OE1	56:SJ:48:GLU:N	2.47	0.47
56:SK:125:ARG:NH1	56:SK:126:ILE:O	2.47	0.47
63:ST:599:LEU:HD12	63:ST:694:LEU:HD22	1.96	0.47
67:SY:233:LYS:HG2	67:SY:245:TYR:CE2	2.50	0.47
1:L0:437:U:H4'	1:L0:438:G:H5''	1.96	0.47
2:L1:1461:G:O2'	2:L1:1463:U:OP2	2.24	0.47
2:L1:1763:G:C2	2:L1:1770:G:C2	3.02	0.47
2:L1:1854:U:H2'	2:L1:1855:G:H8	1.79	0.47
10:L9:17:ARG:NH1	57:SL:192:ASP:OD2	2.41	0.47
11:LA:24:THR:O	11:LA:27:ILE:HG22	2.14	0.47
11:LA:30:GLY:HA3	11:LA:113:ASP:OD1	2.15	0.47
11:LA:82:ASN:ND2	11:LA:107:SER:OG	2.47	0.47
18:LJ:104:VAL:HB	18:LJ:118:PHE:HB2	1.96	0.47
19:LK:527:LEU:O	19:LK:530:VAL:HG12	2.14	0.47
20:LM:1811:LYS:HE2	20:LM:1815:THR:HG21	1.97	0.47
22:LO:35:ASN:HD21	22:LO:648:ASN:HB2	1.80	0.47
23:LP:74:ARG:NH2	26:LS:88:GLU:OE1	2.48	0.47
23:LP:279:ARG:HH12	23:LP:332:PHE:HB2	1.79	0.47
24:LQ:8:LEU:O	24:LQ:669:GLN:NE2	2.41	0.47
25:LR:193:ALA:O	37:NH:591:ARG:NH2	2.36	0.47
25:LR:196:SER:OG	40:NM:51:ARG:NH2	2.47	0.47
25:LR:317:LEU:HD12	25:LR:326:LEU:HD11	1.97	0.47
31:LZ:138:VAL:HG22	31:LZ:158:VAL:HG12	1.96	0.47
32:NA:467:LEU:HD23	32:NA:472:ILE:HD13	1.96	0.47
37:NH:1106:VAL:HG21	38:NI:20:PRO:HD3	1.97	0.47
44:NR:622:UNK:O	44:NR:626:UNK:N	2.47	0.47
44:NR:784:UNK:O	44:NR:788:UNK:N	2.48	0.47
55:SI:297:ILE:HG22	55:SI:911:GLY:HA2	1.95	0.47
55:SI:1035:LYS:HE3	55:SI:1037:PHE:CZ	2.50	0.47
59:SP:2277:LEU:HD12	59:SP:2280:LYS:HE2	1.97	0.47
63:ST:617:LEU:HD13	63:ST:715:LEU:HA	1.96	0.47
2:L1:1588:A:N3	2:L1:1654:G:O2'	2.39	0.47
3:L2:215:G:H4'	50:SB:401:ARG:HD2	1.97	0.47
19:LL:316:THR:OG1	19:LL:370:HIS:ND1	2.48	0.47
25:LR:431:ARG:HG3	25:LR:489:PRO:HA	1.95	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:LT:66:ALA:HB1	27:LT:715:MET:HB2	1.97	0.47
59:SP:470:VAL:HG22	59:SP:529:ARG:HG3	1.97	0.47
59:SP:2137:LEU:HA	59:SP:2140:VAL:HG22	1.95	0.47
59:SP:2659:GLY:O	59:SP:2663:VAL:HG23	2.14	0.47
2:L1:996:A:H2'	2:L1:997:A:C8	2.49	0.47
13:LD:151:THR:HG22	35:NF:133:ARG:HE	1.80	0.47
21:LN:250:SER:HG	21:LN:262:HIS:HE2	1.51	0.47
23:LP:1:MET:HG3	23:LP:2:ALA:N	2.29	0.47
25:LR:120:THR:OG1	25:LR:121:SER:N	2.46	0.47
32:NA:636:LYS:HZ1	39:NL:118:ASP:HB2	1.80	0.47
36:NG:34:PHE:HB3	36:NG:41:PHE:HB2	1.97	0.47
36:NG:75:MET:HG3	36:NG:118:ALA:HB2	1.97	0.47
40:NM:33:VAL:HA	40:NM:96:CYS:HB2	1.97	0.47
56:SJ:94:MET:HA	56:SK:228:LEU:HD21	1.95	0.47
58:SM:165:CYS:HB2	58:SM:252:GLU:HB2	1.96	0.47
63:ST:699:VAL:HG13	63:ST:708:PHE:HZ	1.80	0.47
65:SW:75:THR:O	65:SW:76:ARG:HD3	2.15	0.47
68:SZ:403:GLU:O	68:SZ:407:LEU:N	2.34	0.47
2:L1:612:U:P	58:SM:285:ARG:HH12	2.38	0.47
22:LO:529:ASP:OD1	22:LO:532:ASP:HB2	2.16	0.47
25:LR:64:GLU:O	25:LR:66:GLN:NE2	2.48	0.47
29:LW:222:LEU:HA	29:LW:230:MET:HG3	1.97	0.47
49:SA:12:VAL:HG21	49:SA:137:THR:HG21	1.97	0.47
52:SE:50:ILE:HA	52:SE:106:ILE:HD12	1.96	0.47
57:SL:97:LYS:HD2	59:SP:2061:LEU:HD23	1.97	0.47
59:SP:1062:GLU:OE2	59:SP:1065:ARG:NE	2.48	0.47
59:SP:1399:SER:HB2	59:SP:1476:HIS:HB3	1.97	0.47
59:SP:2565:TYR:HB2	59:SP:2619:LEU:HD12	1.97	0.47
63:ST:289:LEU:HD13	64:SU:495:PHE:HB3	1.97	0.47
2:L1:1720:U:OP1	24:LQ:419:ARG:NH2	2.48	0.46
16:LH:816:LEU:HB3	20:LM:933:GLU:HG2	1.95	0.46
17:LI:229:GLU:HG2	17:LI:250:LEU:HD21	1.97	0.46
21:LN:592:ARG:HD3	21:LN:595:HIS:HB2	1.97	0.46
42:NP:124:THR:HG22	42:NP:126:GLN:H	1.80	0.46
43:NQ:46:VAL:HG22	43:NQ:54:VAL:HG11	1.97	0.46
51:SC:90:GLU:HB2	51:SC:99:ILE:HG23	1.97	0.46
63:ST:520:VAL:HG11	63:ST:548:TYR:CD2	2.50	0.46
2:L1:1355:C:H2'	2:L1:1356:G:O4'	2.15	0.46
2:L1:1533:A:N7	2:L1:1604:G:H1'	2.31	0.46
2:L1:1762:C:H2'	2:L1:1763:G:H8	1.80	0.46
3:L2:175:U:H2'	3:L2:176:C:C6	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:LJ:181:ILE:HG13	18:LJ:191:MET:HG2	1.97	0.46
22:LO:879:GLN:HE22	25:LR:741:ARG:C	2.19	0.46
24:LQ:66:GLN:HG3	24:LQ:86:ASP:HB2	1.95	0.46
25:LR:402:ILE:HD11	25:LR:437:LEU:HD11	1.97	0.46
25:LR:584:ASP:HB2	25:LR:586:LEU:HD22	1.96	0.46
45:NS:83:ILE:HG22	45:NS:87:LYS:NZ	2.30	0.46
51:SC:88:MET:HA	67:SY:181:GLY:HA3	1.96	0.46
68:SZ:302:LEU:O	68:SZ:306:ILE:HG13	2.15	0.46
2:L1:126:G:OP2	7:L6:198:ARG:NH1	2.48	0.46
2:L1:1144:A:H2'	2:L1:1145:A:C8	2.50	0.46
16:LH:16:GLU:OE1	16:LH:332:LYS:NZ	2.48	0.46
20:LM:2078:PRO:HA	20:LM:2081:ARG:HE	1.80	0.46
22:LO:357:VAL:HG13	22:LO:366:VAL:HB	1.98	0.46
25:LR:517:PHE:HE1	25:LR:553:PHE:HA	1.80	0.46
28:LU:257:ALA:HB2	28:LU:288:VAL:HG13	1.96	0.46
29:LW:510:PRO:HD2	29:LW:513:LEU:HD12	1.98	0.46
39:NL:188:LEU:HD11	39:NL:208:ARG:HB2	1.96	0.46
40:NM:78:GLU:HG3	40:NM:79:VAL:H	1.79	0.46
44:NR:304:UNK:O	44:NR:308:UNK:N	2.49	0.46
49:SA:22:VAL:HG11	49:SA:117:VAL:HG21	1.97	0.46
53:SG:404:GLN:HB2	53:SG:415:LEU:HD21	1.97	0.46
55:SI:1022:LYS:HG2	55:SI:1022:LYS:O	2.15	0.46
68:SZ:186:ARG:HH12	68:SZ:219:VAL:HG13	1.79	0.46
2:L1:484:A2M:HM'3	2:L1:484:A2M:H1'	1.69	0.46
2:L1:1330:G:C2	2:L1:1500:G:C5	3.03	0.46
11:LA:13:ASP:OD1	11:LA:14:VAL:N	2.48	0.46
13:LD:49:GLU:OE1	13:LD:116:CYS:HA	2.15	0.46
16:LH:17:LEU:HG	16:LH:312:ASN:HD21	1.80	0.46
17:LI:662:VAL:HG13	19:LK:579:VAL:HG22	1.98	0.46
17:LI:684:VAL:HG13	19:LK:524:VAL:HG21	1.96	0.46
22:LO:389:VAL:HG21	22:LO:430:VAL:HG11	1.98	0.46
24:LQ:489:LEU:HD12	24:LQ:537:ARG:HH11	1.80	0.46
37:NH:306:VAL:HG11	37:NH:423:LEU:HD22	1.97	0.46
56:SJ:176:THR:O	73:SJ:301:SAH:O2'	2.34	0.46
11:LA:12:MET:HG3	11:LA:13:ASP:N	2.31	0.46
17:LI:124:UNK:O	17:LI:131:UNK:HA	2.15	0.46
17:LI:642:THR:OG1	17:LI:644:ASN:OD1	2.22	0.46
20:LM:489:HIS:CE1	20:LM:491:LEU:HB2	2.51	0.46
20:LM:1605:ARG:NH1	20:LM:1647:ASP:OD2	2.44	0.46
24:LQ:634:ASP:OD1	24:LQ:635:SER:N	2.45	0.46
25:LR:139:VAL:HG13	25:LR:140:ARG:HD3	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:LR:608:VAL:HA	25:LR:624:ALA:HA	1.98	0.46
26:LS:157:ASN:H	26:LS:162:LYS:HZ2	1.62	0.46
39:NL:82:VAL:HG11	39:NL:120:PRO:HG3	1.97	0.46
49:SA:392:VAL:HG12	49:SA:396:LYS:HE3	1.97	0.46
54:SH:46:ASP:OD2	54:SH:47:PHE:N	2.49	0.46
59:SP:398:GLU:HB2	59:SP:401:LEU:HD13	1.97	0.46
59:SP:713:ASP:OD1	59:SP:717:GLN:NE2	2.49	0.46
64:SU:300:LEU:HD11	64:SU:304:LEU:HB2	1.97	0.46
17:LI:414:GLU:HB3	17:LI:418:ARG:HH12	1.81	0.46
20:LM:1789:LEU:O	20:LM:1792:ILE:HG22	2.16	0.46
22:LO:737:ASP:O	22:LO:770:ASN:ND2	2.49	0.46
22:LO:814:ARG:NH1	27:LT:756:LEU:HD23	2.31	0.46
55:SI:1131:THR:HG22	55:SI:1134:GLN:HG3	1.97	0.46
59:SP:2633:GLU:OE1	59:SP:2643:LYS:HB2	2.16	0.46
62:SS:661:ASP:HB3	62:SS:669:ILE:HG13	1.97	0.46
68:SZ:221:GLU:O	68:SZ:225:TRP:NE1	2.49	0.46
16:LH:545:LEU:HD11	16:LH:556:LEU:HD21	1.98	0.46
19:LL:38:LEU:HD22	19:LL:99:LEU:HD21	1.97	0.46
20:LM:1601:ILE:HA	20:LM:1604:ILE:HG22	1.96	0.46
25:LR:158:ALA:HB3	25:LR:169:PHE:HB2	1.98	0.46
49:SA:21:GLU:HB2	62:SS:725:PRO:HG2	1.98	0.46
50:SB:180:ILE:HD13	50:SB:201:ASN:HB3	1.97	0.46
55:SI:1077:ALA:HB3	55:SI:1078:PRO:HD3	1.98	0.46
59:SP:435:ASP:O	59:SP:439:LYS:HG2	2.16	0.46
59:SP:549:MET:O	59:SP:553:LYS:HG2	2.16	0.46
67:SY:33:LYS:HA	67:SY:33:LYS:HD3	1.83	0.46
2:L1:1062:A:H4'	2:L1:1063:C:H5'	1.98	0.46
2:L1:1740:C:H2'	2:L1:1741:U:H6	1.81	0.46
17:LI:441:LEU:HD13	17:LI:472:ASP:HB2	1.96	0.46
18:LJ:252:THR:HG21	18:LJ:293:LEU:HA	1.98	0.46
21:LN:146:SER:OG	21:LN:164:SER:OG	2.23	0.46
22:LO:769:LEU:HG	22:LO:771:GLU:OE1	2.16	0.46
29:LW:368:ASP:OD2	29:LW:370:THR:OG1	2.34	0.46
32:NA:425:LEU:HA	32:NA:428:ILE:HD12	1.97	0.46
34:ND:176:ARG:NH1	67:SY:143:LYS:HG2	2.31	0.46
54:SH:230:MET:O	54:SH:235:SER:OG	2.26	0.46
56:SK:85:PRO:HG2	56:SK:130:PHE:HZ	1.81	0.46
64:SU:221:ARG:O	64:SU:249:ARG:NH2	2.49	0.46
2:L1:601:OMG:HM23	2:L1:601:OMG:H1'	1.75	0.46
2:L1:662:G:H1	2:L1:1165:G:H22	1.64	0.46
16:LH:318:HIS:NE2	16:LH:322:GLU:HB3	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LM:1111:THR:H	20:LM:1114:PHE:HB3	1.79	0.46
20:LM:1765:GLN:HE21	20:LM:1769:GLU:HG3	1.81	0.46
21:LN:581:THR:HG21	21:LN:601:ALA:HB3	1.98	0.46
26:LS:255:SER:H	26:LS:270:GLY:HA2	1.80	0.46
26:LS:424:GLY:HA2	52:SE:88:ALA:HA	1.98	0.46
27:LT:637:LEU:HB2	27:LT:651:LEU:HD11	1.97	0.46
27:LT:676:ASP:OD1	27:LT:677:PHE:N	2.48	0.46
35:NF:19:ARG:NH1	35:NF:21:SER:O	2.48	0.46
36:NG:92:ALA:HA	36:NG:125:LYS:HB2	1.97	0.46
50:SB:117:ARG:NH2	51:SC:255:LEU:O	2.47	0.46
55:SI:282:LEU:HD13	55:SI:909:LEU:HD11	1.96	0.46
55:SI:956:LEU:HD22	55:SI:968:LEU:HD11	1.98	0.46
57:SL:167:ARG:HA	57:SL:170:LYS:HE2	1.98	0.46
59:SP:1828:VAL:HG21	59:SP:1872:ILE:HG12	1.98	0.46
11:LA:96:ARG:HH22	63:ST:264:UNK:HA	1.80	0.46
16:LH:380:ILE:HG22	16:LH:382:ASP:H	1.81	0.46
17:LI:414:GLU:HB3	17:LI:418:ARG:NH1	2.31	0.46
20:LM:1647:ASP:O	20:LM:1651:ILE:HG12	2.16	0.46
24:LQ:550:GLU:OE1	24:LQ:570:ASP:N	2.49	0.46
27:LT:765:LEU:HD12	27:LT:895:ALA:HB1	1.98	0.46
32:NA:550:ALA:HB3	32:NA:553:GLU:HG2	1.98	0.46
56:SJ:118:ILE:HG12	56:SJ:158:VAL:HG22	1.98	0.46
59:SP:1912:LEU:O	59:SP:1916:LEU:HG	2.15	0.46
62:SS:621:PRO:HB2	62:SS:653:ALA:HB3	1.97	0.46
68:SZ:208:PRO:HG2	68:SZ:240:ASN:ND2	2.31	0.46
2:L1:970:G:O6	25:LR:422:HIS:ND1	2.49	0.45
2:L1:1545:A:H2'	2:L1:1546:G:C8	2.51	0.45
19:LK:535:ALA:HA	19:LK:538:LEU:HD12	1.98	0.45
20:LM:701:LYS:HD2	20:LM:775:LEU:HD21	1.98	0.45
20:LM:1334:VAL:HG13	20:LM:1346:ILE:HD11	1.97	0.45
20:LM:1984:ASP:OD1	20:LM:1984:ASP:N	2.50	0.45
27:LT:874:GLN:HG2	27:LT:878:LYS:NZ	2.32	0.45
28:LU:71:CYS:HB3	28:LU:115:ILE:HG22	1.97	0.45
30:LY:130:GLN:NE2	30:LY:131:GLN:OE1	2.49	0.45
59:SP:1371:VAL:HG23	59:SP:1409:LEU:HG	1.98	0.45
64:SU:261:LYS:HE2	64:SU:262:HIS:CE1	2.51	0.45
2:L1:494:C:N4	2:L1:509:OMG:HN22	2.14	0.45
2:L1:697:G:H1	2:L1:735:C:H42	1.64	0.45
16:LH:585:VAL:HB	16:LH:598:ILE:HB	1.98	0.45
20:LM:688:ILE:HG23	20:LM:732:LEU:HD21	1.99	0.45
21:LN:418:LEU:HA	21:LN:426:SER:O	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:LO:217:CYS:HB3	22:LO:274:TYR:CE1	2.51	0.45
22:LO:408:PHE:CD2	22:LO:409:VAL:HG23	2.50	0.45
26:LS:426:LEU:HB2	26:LS:445:ASN:HD21	1.82	0.45
41:NO:30:CYS:SG	41:NO:31:SER:N	2.89	0.45
45:NS:124:ARG:HA	45:NS:127:HIS:CD2	2.51	0.45
67:SY:233:LYS:HE2	67:SY:245:TYR:OH	2.16	0.45
2:L1:1280:G:H2'	2:L1:1281:G:H8	1.81	0.45
20:LM:1555:LEU:HA	20:LM:1558:ILE:HG22	1.99	0.45
21:LN:589:HIS:CD2	21:LN:591:LYS:HB2	2.51	0.45
23:LP:533:TYR:CE2	23:LP:554:GLU:HG3	2.51	0.45
37:NH:687:GLN:HB3	37:NH:835:PRO:HB3	1.98	0.45
55:SI:1175:PRO:O	55:SI:1179:LYS:HG3	2.16	0.45
68:SZ:410:HIS:N	68:SZ:414:SER:OG	2.49	0.45
20:LM:754:HIS:CE1	20:LM:755:ILE:HG23	2.52	0.45
20:LM:814:ASN:HD22	20:LM:817:GLN:HG2	1.80	0.45
20:LM:1008:TYR:OH	20:LM:1033:GLN:O	2.33	0.45
22:LO:868:TYR:OH	24:LQ:893:ASP:OD1	2.33	0.45
27:LT:529:ARG:HA	27:LT:529:ARG:HD3	1.75	0.45
27:LT:777:PRO:HB2	32:NA:531:PRO:HB2	1.99	0.45
27:LT:792:PRO:HB2	27:LT:802:ALA:HB3	1.97	0.45
53:SG:275:TYR:OH	53:SG:278:THR:OG1	2.29	0.45
54:SH:249:THR:HG1	54:SH:253:THR:HG1	1.62	0.45
59:SP:448:LYS:HE3	59:SP:800:LEU:HD12	1.98	0.45
59:SP:1053:ILE:HG13	59:SP:1057:LEU:HD13	1.97	0.45
59:SP:1399:SER:O	59:SP:1402:LYS:NZ	2.50	0.45
23:LP:565:ASN:O	23:LP:569:ILE:HG12	2.17	0.45
24:LQ:519:SER:OG	24:LQ:545:THR:OG1	2.35	0.45
27:LT:824:LYS:NZ	27:LT:829:LEU:HD23	2.32	0.45
28:LU:75:HIS:CE1	28:LU:77:GLU:HB2	2.51	0.45
53:SG:243:ALA:HB3	53:SG:261:HIS:CD2	2.49	0.45
54:SH:146:ASP:OD1	54:SH:147:GLY:N	2.50	0.45
2:L1:1678:A2M:HM'3	2:L1:1678:A2M:H1'	1.68	0.45
12:LC:101:ASP:OD1	27:LT:522:ASN:ND2	2.49	0.45
21:LN:107:MET:HG3	21:LN:118:VAL:HG22	1.98	0.45
22:LO:297:HIS:HB2	22:LO:338:ILE:HD13	1.99	0.45
24:LQ:114:LYS:HE2	24:LQ:114:LYS:HB2	1.70	0.45
24:LQ:276:ARG:NE	24:LQ:296:CYS:SG	2.79	0.45
28:LU:39:ARG:HD2	62:SS:707:TRP:CZ2	2.52	0.45
35:NF:87:ASP:N	35:NF:87:ASP:OD1	2.49	0.45
37:NH:566:GLU:HG2	37:NH:603:TRP:HE1	1.81	0.45
42:NP:65:TYR:HE2	42:NP:128:GLN:HG3	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:NT:123:SER:HB2	46:NT:126:CYS:HB2	1.99	0.45
50:SB:313:ALA:HA	50:SB:367:VAL:HG11	1.97	0.45
54:SH:210:ASP:OD2	54:SH:210:ASP:N	2.50	0.45
56:SK:55:VAL:HG13	56:SK:64:LEU:HB2	1.99	0.45
59:SP:197:MET:HE2	59:SP:206:LEU:HD21	1.97	0.45
59:SP:2106:CYS:HB2	59:SP:2109:GLU:HB2	1.97	0.45
65:SW:138:LYS:HB2	65:SW:138:LYS:HE3	1.66	0.45
2:L1:963:A:OP1	36:NG:66:ARG:NH1	2.48	0.45
2:L1:1752:C:H42	2:L1:1781:A:H62	1.64	0.45
16:LH:123:LYS:NZ	16:LH:125:ASP:OD1	2.49	0.45
20:LM:1371:ASN:O	20:LM:1375:ILE:HG12	2.16	0.45
21:LN:542:VAL:HG12	21:LN:552:GLU:HG3	1.99	0.45
22:LO:41:ASP:OD2	22:LO:44:ASN:ND2	2.50	0.45
24:LQ:506:PRO:HD3	24:LQ:557:TYR:HD2	1.81	0.45
27:LT:535:ASP:OD1	27:LT:535:ASP:N	2.48	0.45
28:LU:224:TYR:HA	28:LU:231:PRO:HA	1.98	0.45
37:NH:147:ALA:O	37:NH:278:TRP:NE1	2.44	0.45
39:NL:75:LEU:HD11	39:NL:107:LEU:HB2	1.99	0.45
40:NM:173:THR:O	40:NM:177:GLN:HG2	2.16	0.45
51:SD:197:SER:OG	52:SF:74:GLU:OE1	2.26	0.45
55:SI:925:ARG:HB2	55:SI:1015:LEU:HD11	1.98	0.45
68:SZ:307:ILE:O	68:SZ:310:SER:OG	2.23	0.45
2:L1:496:C:P	5:L4:49:ARG:HH22	2.40	0.45
2:L1:1269:G:H2'	2:L1:1270:G:C8	2.52	0.45
2:L1:1284:A:H5'	2:L1:1286:G:O4'	2.17	0.45
2:L1:1373:C:H2'	2:L1:1374:C:H6	1.82	0.45
2:L1:1513:C:P	68:SZ:197:SER:HG	2.39	0.45
17:LI:654:LEU:HG	19:LK:575:LEU:HD11	1.97	0.45
18:LJ:275:TYR:CE1	18:LJ:282:VAL:HG22	2.52	0.45
18:LJ:301:ASP:HB2	18:LJ:318:ARG:HH22	1.81	0.45
24:LQ:9:ARG:HA	24:LQ:669:GLN:NE2	2.32	0.45
27:LT:161:HIS:ND1	27:LT:179:ASP:OD1	2.50	0.45
27:LT:336:ILE:HG21	27:LT:339:LEU:HD23	1.99	0.45
36:NG:101:GLY:HA3	36:NG:134:PRO:HG2	1.98	0.45
38:NI:103:SER:O	38:NI:104:ARG:NE	2.49	0.45
45:NS:782:PRO:HA	45:NS:785:ALA:HB3	1.99	0.45
59:SP:1504:LEU:HD22	59:SP:1509:VAL:HG11	1.99	0.45
59:SP:2477:ASN:HA	59:SP:2480:TRP:NE1	2.31	0.45
64:SU:143:GLU:O	64:SU:147:LEU:HD12	2.15	0.45
2:L1:1702:G:N1	25:LR:725:SER:OG	2.50	0.45
2:L1:1726:G:H5'	45:NS:150:HIS:CE1	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L4:100:ARG:HG2	5:L4:102:ILE:HG12	1.99	0.45
8:L7:21:SER:O	8:L7:25:GLN:HG2	2.16	0.45
16:LH:85:TRP:CD1	16:LH:92:LEU:HA	2.51	0.45
20:LM:371:ASP:O	20:LM:374:ILE:HG22	2.17	0.45
20:LM:814:ASN:ND2	20:LM:817:GLN:HG2	2.31	0.45
20:LM:2110:LEU:O	20:LM:2114:MET:HG3	2.17	0.45
29:LW:303:ASP:OD1	29:LW:305:SER:OG	2.28	0.45
44:NR:708:UNK:O	44:NR:712:UNK:N	2.50	0.45
49:SA:20:LYS:HB3	49:SA:20:LYS:HE2	1.72	0.45
51:SD:126:ILE:HD13	60:SQ:691:GLY:HA3	1.99	0.45
55:SI:946:VAL:HG22	55:SI:993:PHE:HB2	1.99	0.45
63:ST:567:THR:OG1	63:ST:568:PRO:HD3	2.17	0.45
2:L1:1228:A:H2'	2:L1:1229:G:H8	1.81	0.45
3:L2:6:U:H2'	3:L2:7:A:C8	2.52	0.45
9:L8:64:ASN:HA	9:L8:75:LYS:HA	1.99	0.45
16:LH:533:CYS:SG	16:LH:534:THR:N	2.90	0.45
18:LJ:355:ARG:N	26:LS:294:GLU:OE1	2.48	0.45
20:LM:1342:SER:O	20:LM:1346:ILE:HG12	2.17	0.45
20:LM:1595:LEU:HD21	20:LM:1603:VAL:HG21	1.99	0.45
24:LQ:482:ASP:HB2	24:LQ:485:SER:HB2	1.99	0.45
25:LR:73:ASP:OD2	25:LR:115:MET:HG3	2.17	0.45
27:LT:404:LEU:HB3	27:LT:418:LEU:HB2	1.99	0.45
28:LU:206:PRO:HG2	28:LU:207:ILE:HD12	1.99	0.45
55:SI:1207:ILE:HG23	60:SQ:715:VAL:HG11	1.98	0.45
57:SL:113:LEU:HB3	57:SL:117:TYR:CD1	2.51	0.45
58:SM:97:LEU:HD13	58:SM:141:GLU:HB3	1.99	0.45
58:SM:255:LEU:HD21	58:SM:258:ILE:HD11	1.99	0.45
59:SP:1378:GLN:HA	59:SP:1381:LEU:HD12	1.98	0.45
59:SP:2458:ALA:HA	59:SP:2516:VAL:HG21	1.99	0.45
63:ST:71:LEU:HD22	63:ST:75:LYS:HE3	1.97	0.45
2:L1:1565:C:H2'	2:L1:1566:G:C8	2.52	0.44
3:L2:152:A:H5'	53:SG:179:ARG:NH2	2.33	0.44
6:L5:42:LYS:HD3	6:L5:42:LYS:HA	1.83	0.44
16:LH:152:ASP:OD1	16:LH:153:TYR:N	2.50	0.44
16:LH:458:GLN:NE2	16:LH:475:LEU:O	2.41	0.44
19:LL:151:VAL:HG13	19:LL:160:VAL:HG13	1.99	0.44
20:LM:135:VAL:HG22	20:LM:144:PHE:HD1	1.80	0.44
20:LM:1697:VAL:HA	20:LM:1700:ILE:HG22	1.98	0.44
20:LM:1826:ILE:HG23	20:LM:1844:PHE:HZ	1.82	0.44
21:LN:154:HIS:HA	21:LN:203:PHE:CD2	2.53	0.44
22:LO:655:GLU:O	22:LO:660:ARG:NH2	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:LQ:597:MET:HG2	24:LQ:608:THR:HG22	1.99	0.44
25:LR:177:ILE:HB	25:LR:191:LEU:HB2	1.98	0.44
25:LR:678:ARG:HG3	32:NA:568:GLU:HG3	1.97	0.44
27:LT:460:ILE:HB	27:LT:473:TRP:HB2	1.98	0.44
27:LT:640:ALA:HB1	27:LT:666:PRO:HG2	1.98	0.44
30:LY:87:ALA:HB3	30:LY:90:VAL:HG23	1.99	0.44
37:NH:1113:LEU:HD13	38:NI:20:PRO:HA	1.98	0.44
39:NL:267:PRO:HG2	39:NL:270:PHE:HB2	1.97	0.44
44:NR:313:UNK:O	44:NR:317:UNK:N	2.50	0.44
45:NS:875:CYS:O	45:NS:880:LEU:N	2.50	0.44
59:SP:457:PRO:HD2	59:SP:569:ASN:HD21	1.82	0.44
59:SP:2546:ASP:H	59:SP:2549:LEU:HB2	1.81	0.44
63:ST:432:UNK:O	63:ST:436:UNK:N	2.50	0.44
68:SZ:231:TYR:CE1	68:SZ:274:MET:HG3	2.52	0.44
18:LJ:123:LYS:HE3	64:SU:400:ALA:HA	1.99	0.44
23:LP:369:GLU:HB2	23:LP:399:PHE:CE2	2.52	0.44
24:LQ:158:LEU:HD11	24:LQ:175:TRP:HZ3	1.83	0.44
24:LQ:366:LYS:HE2	24:LQ:385:GLN:HG3	1.99	0.44
25:LR:533:ASP:OD1	25:LR:534:GLN:N	2.43	0.44
29:LW:407:LEU:HD23	29:LW:417:ALA:HA	1.98	0.44
39:NL:188:LEU:HD12	39:NL:206:VAL:HG12	2.00	0.44
44:NR:785:UNK:O	44:NR:789:UNK:N	2.50	0.44
45:NS:473:LEU:O	45:NS:635:VAL:HA	2.17	0.44
50:SB:173:ASP:OD2	50:SB:268:ARG:NE	2.50	0.44
55:SI:1024:VAL:HG21	55:SI:1101:TRP:HB3	1.98	0.44
68:SZ:208:PRO:HG3	68:SZ:237:PHE:CZ	2.52	0.44
2:L1:644:OMG:HM23	2:L1:644:OMG:H1'	1.71	0.44
2:L1:1739:C:H2'	2:L1:1740:C:C6	2.52	0.44
20:LM:1601:ILE:O	20:LM:1604:ILE:HG22	2.17	0.44
23:LP:323:GLU:HG3	23:LP:366:LEU:HB3	2.00	0.44
23:LP:358:PHE:CZ	23:LP:391:VAL:HG13	2.53	0.44
24:LQ:509:ARG:NH1	24:LQ:525:PHE:HB2	2.31	0.44
24:LQ:592:LEU:HB3	24:LQ:611:ALA:HB3	1.99	0.44
26:LS:154:ASP:OD1	26:LS:154:ASP:N	2.50	0.44
33:NB:454:VAL:HG22	51:SD:301:GLU:O	2.17	0.44
37:NH:892:PRO:HA	37:NH:893:PRO:HD3	1.90	0.44
44:NR:621:UNK:O	44:NR:625:UNK:N	2.51	0.44
45:NS:1129:LYS:HA	45:NS:1151:TRP:CD1	2.52	0.44
51:SD:257:ASN:OD1	51:SD:315:ARG:HD2	2.16	0.44
52:SE:6:VAL:HG11	52:SE:13:LEU:HD22	1.99	0.44
59:SP:461:SER:H	59:SP:651:ARG:NH2	2.15	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:1321:G:H2'	2:L1:1322:G:C8	2.52	0.44
2:L1:1326:U:H2'	2:L1:1327:G:C8	2.52	0.44
2:L1:1456:G:OP1	47:NU:59:LYS:NZ	2.51	0.44
2:L1:1714:U:H2'	2:L1:1715:A:C8	2.53	0.44
2:L1:1771:G:H2'	2:L1:1772:C:O4'	2.18	0.44
11:LA:36:ARG:NH2	11:LA:37:GLU:OE2	2.49	0.44
18:LJ:351:ILE:HD12	26:LS:289:GLN:HE21	1.81	0.44
21:LN:404:TRP:CE2	21:LN:466:LEU:HD21	2.53	0.44
22:LO:144:TYR:HD2	29:LW:363:ARG:HE	1.65	0.44
22:LO:552:ARG:NH2	22:LO:554:ASP:OD2	2.51	0.44
24:LQ:215:LEU:HD22	24:LQ:274:ILE:HD11	1.99	0.44
27:LT:869:SER:OG	27:LT:871:GLU:OE1	2.29	0.44
37:NH:521:ARG:NE	37:NH:566:GLU:OE2	2.49	0.44
53:SG:146:GLN:HB3	53:SG:167:ASP:HB3	1.98	0.44
57:SL:192:ASP:N	57:SL:192:ASP:OD1	2.50	0.44
59:SP:672:ARG:HB3	59:SP:673:GLN:H	1.64	0.44
59:SP:740:ILE:HD12	59:SP:827:ALA:HB2	1.97	0.44
59:SP:1975:ASP:OD1	59:SP:1975:ASP:N	2.50	0.44
65:SW:64:CYS:SG	65:SW:65:GLY:N	2.90	0.44
68:SZ:243:GLU:HG2	68:SZ:244:ARG:N	2.33	0.44
2:L1:1374:C:H3'	2:L1:1375:G:H8	1.81	0.44
2:L1:1588:A:H2	2:L1:1654:G:H1'	1.82	0.44
17:LI:685:TYR:CE1	19:LK:558:ARG:HD2	2.52	0.44
20:LM:1082:LEU:HD21	20:LM:1126:LYS:HD3	1.99	0.44
25:LR:297:HIS:HB2	25:LR:310:ALA:HB3	2.00	0.44
27:LT:101:CYS:HB2	27:LT:130:MET:SD	2.58	0.44
49:SA:228:LEU:O	49:SA:232:GLU:N	2.47	0.44
50:SB:231:GLU:HG2	50:SB:235:LYS:HD2	2.00	0.44
55:SI:166:GLU:OE1	55:SI:1007:ARG:NH2	2.37	0.44
56:SJ:50:ALA:HB3	56:SJ:112:THR:HA	1.99	0.44
56:SK:55:VAL:HG11	56:SK:64:LEU:HD13	1.99	0.44
2:L1:178:C:H2'	2:L1:179:C:O4'	2.18	0.44
2:L1:276:G:H2'	2:L1:277:C:C6	2.53	0.44
8:L7:142:LYS:HB2	8:L7:142:LYS:HE3	1.75	0.44
16:LH:727:ILE:HD13	16:LH:754:SER:HB3	1.99	0.44
18:LJ:134:LYS:H	18:LJ:134:LYS:HG2	1.58	0.44
18:LJ:275:TYR:HE1	18:LJ:282:VAL:HG22	1.82	0.44
20:LM:6:GLN:O	20:LM:9:GLN:HG3	2.18	0.44
25:LR:164:THR:O	25:LR:165:ARG:HD3	2.16	0.44
25:LR:316:LEU:HB2	25:LR:330:PHE:HB2	1.99	0.44
27:LT:909:PRO:HA	27:LT:915:LEU:HD21	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:LU:426:LYS:HB2	28:LU:429:SER:HB3	1.98	0.44
29:LW:241:ASP:OD2	29:LW:242:ILE:N	2.48	0.44
59:SP:948:GLN:O	59:SP:1019:ARG:NH2	2.50	0.44
59:SP:1538:GLN:O	59:SP:1542:THR:HG23	2.18	0.44
59:SP:1596:GLN:HG3	59:SP:1601:LYS:HD2	1.99	0.44
8:L7:142:LYS:HE2	8:L7:156:VAL:HG22	2.00	0.44
17:LI:312:TRP:HB3	17:LI:314:TYR:CE2	2.53	0.44
19:LL:147:ASP:O	19:LL:149:HIS:N	2.47	0.44
19:LL:406:PRO:HA	19:LL:411:HIS:CG	2.53	0.44
20:LM:574:GLU:HA	20:LM:577:LYS:HD3	1.99	0.44
20:LM:1558:ILE:HA	20:LM:1561:VAL:HG12	2.00	0.44
22:LO:153:THR:OG1	22:LO:155:ASP:O	2.22	0.44
22:LO:680:ASP:OD1	22:LO:681:GLY:N	2.50	0.44
26:LS:138:LYS:HD3	26:LS:138:LYS:HA	1.87	0.44
27:LT:940:MET:O	27:LT:944:ASN:ND2	2.50	0.44
37:NH:565:LEU:HG	37:NH:602:VAL:HG22	1.98	0.44
55:SI:143:LEU:HD21	55:SI:906:PRO:HG2	2.00	0.44
59:SP:1486:ASP:OD1	59:SP:1488:SER:OG	2.32	0.44
59:SP:2664:LYS:HA	59:SP:2667:LEU:HD12	1.99	0.44
63:ST:284:GLU:HA	63:ST:287:ARG:HD2	2.00	0.44
2:L1:18:C:H2'	2:L1:19:A:H8	1.82	0.44
2:L1:1301:A:H4'	68:SZ:199:LYS:HE2	1.99	0.44
2:L1:1872:G:H5'	65:SW:111:LEU:HD13	1.99	0.44
11:LA:129:LYS:HA	11:LA:129:LYS:HD2	1.81	0.44
14:LF:100:LYS:HB3	14:LF:102:THR:HG22	1.99	0.44
16:LH:153:TYR:HD2	16:LH:174:ARG:HH12	1.66	0.44
16:LH:297:SER:HB2	16:LH:306:CYS:SG	2.58	0.44
20:LM:668:LEU:O	20:LM:672:ILE:HG13	2.17	0.44
22:LO:696:SER:OG	31:LZ:47:ARG:NH1	2.41	0.44
23:LP:453:SER:OG	23:LP:456:ASP:OD2	2.35	0.44
24:LQ:277:GLU:OE2	24:LQ:277:GLU:N	2.39	0.44
24:LQ:456:TYR:HD2	24:LQ:474:LYS:HD3	1.83	0.44
25:LR:438:VAL:HG11	25:LR:494:LEU:HD11	2.00	0.44
26:LS:183:LYS:HE2	26:LS:183:LYS:HB2	1.85	0.44
29:LW:243:ARG:HD3	29:LW:243:ARG:HA	1.83	0.44
29:LW:439:GLN:HG3	29:LW:440:PRO:HD2	1.99	0.44
32:NA:591:GLU:O	32:NA:595:ARG:N	2.39	0.44
51:SD:182:VAL:HB	51:SD:186:GLY:HA3	1.99	0.44
59:SP:239:PHE:HB3	59:SP:243:THR:HG21	1.99	0.44
59:SP:2001:HIS:CE1	59:SP:2089:ARG:HH22	2.36	0.44
59:SP:2241:ILE:HG21	59:SP:2275:TYR:HE2	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:ST:506:CYS:SG	63:ST:555:LEU:HD22	2.58	0.44
65:SW:198:THR:OG1	65:SW:200:THR:OG1	2.29	0.44
2:L1:1143:A:H2'	2:L1:1144:A:C8	2.53	0.44
2:L1:1268:C:H2'	2:L1:1269:G:C8	2.53	0.44
2:L1:1279:C:H2'	2:L1:1280:G:C8	2.48	0.44
2:L1:1522:A:OP1	2:L1:1523:C:H4'	2.18	0.44
11:LA:99:LYS:NZ	11:LA:101:ARG:HE	2.15	0.44
16:LH:174:ARG:HG2	16:LH:175:GLU:HG2	1.99	0.44
19:LK:486:ASN:C	19:LK:486:ASN:HD22	2.15	0.44
20:LM:1700:ILE:HD12	20:LM:1711:LEU:HD11	2.00	0.44
21:LN:579:ARG:NE	21:LN:600:ASP:OD2	2.39	0.44
22:LO:742:ASP:OD1	22:LO:743:THR:N	2.51	0.44
25:LR:26:LYS:HG2	25:LR:333:TYR:CG	2.53	0.44
27:LT:627:ASP:HB3	27:LT:669:VAL:HG12	1.99	0.44
30:LY:66:ARG:HG3	30:LY:67:GLU:HG3	2.00	0.44
32:NA:443:ARG:NH1	58:SM:79:GLY:O	2.51	0.44
37:NH:175:ASP:N	37:NH:175:ASP:OD1	2.49	0.44
38:NI:88:VAL:HG12	38:NI:121:VAL:HG13	2.00	0.44
44:NR:809:UNK:O	44:NR:813:UNK:N	2.51	0.44
54:SH:193:GLY:HA3	54:SH:225:ILE:HD12	2.00	0.44
2:L1:558:G:H2'	2:L1:559:G:C8	2.53	0.43
5:L4:173:ILE:HD11	5:L4:235:TRP:CD2	2.53	0.43
10:L9:33:GLY:HA3	33:NB:440:PHE:CG	2.53	0.43
17:LI:178:PHE:CD1	17:LI:193:THR:HG22	2.53	0.43
20:LM:1409:GLU:HB2	20:LM:1410:LYS:HD3	2.00	0.43
21:LN:154:HIS:CD2	21:LN:203:PHE:HE2	2.36	0.43
22:LO:586:ASP:O	22:LO:642:ARG:NH1	2.49	0.43
22:LO:633:HIS:HE1	22:LO:635:ARG:HB2	1.83	0.43
26:LS:401:SER:OG	26:LS:403:ASP:OD1	2.36	0.43
27:LT:399:SER:OG	27:LT:400:GLN:N	2.50	0.43
28:LU:384:TYR:HA	62:SS:682:VAL:HG12	1.99	0.43
33:NB:469:ARG:HE	33:NB:469:ARG:HB3	1.67	0.43
39:NL:238:LEU:HD12	39:NL:285:PHE:HB3	1.99	0.43
55:SI:1255:ARG:NH1	58:SM:36:LEU:O	2.46	0.43
56:SJ:171:CYS:SG	56:SJ:197:VAL:HG23	2.58	0.43
62:SS:712:ALA:HA	62:SS:715:LYS:HE3	2.00	0.43
63:ST:433:UNK:O	63:ST:437:UNK:N	2.51	0.43
2:L1:1033:G:N1	2:L1:1080:A:O2'	2.46	0.43
2:L1:1153:C:H5''	41:NO:19:LYS:HZ1	1.84	0.43
2:L1:1267:C:H2'	2:L1:1268:C:C6	2.53	0.43
2:L1:1280:G:H2'	2:L1:1281:G:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:1533:A:H2	2:L1:1536:G:N3	2.17	0.43
10:L9:15:THR:O	57:SL:197:ARG:NH2	2.33	0.43
10:L9:88:ASP:OD2	10:L9:89:GLU:N	2.50	0.43
11:LA:20:GLU:HA	11:LA:23:LYS:HG2	2.00	0.43
11:LA:25:ALA:HB3	11:LA:31:LEU:HD12	1.99	0.43
20:LM:1585:TYR:OH	20:LM:1618:LYS:NZ	2.48	0.43
27:LT:418:LEU:HD13	27:LT:478:SER:HA	2.00	0.43
29:LW:253:VAL:HG23	29:LW:255:GLN:HG3	1.99	0.43
49:SA:270:ARG:NH2	50:SB:260:GLN:OE1	2.48	0.43
59:SP:576:GLU:HA	59:SP:612:ARG:HH12	1.83	0.43
63:ST:196:UNK:O	63:ST:200:UNK:N	2.50	0.43
2:L1:1286:G:H1'	2:L1:1312:G:N2	2.31	0.43
10:L9:131:ARG:HA	10:L9:131:ARG:HD2	1.75	0.43
11:LA:17:ALA:HA	11:LA:20:GLU:OE1	2.18	0.43
11:LA:124:ILE:HD12	11:LA:124:ILE:H	1.83	0.43
17:LI:625:LEU:O	17:LI:629:GLU:HG2	2.17	0.43
22:LO:155:ASP:OD1	22:LO:156:SER:N	2.51	0.43
24:LQ:927:GLU:O	24:LQ:931:LYS:HG2	2.19	0.43
25:LR:415:ALA:HB2	25:LR:455:LEU:HD11	1.99	0.43
28:LU:257:ALA:HA	28:LU:263:LEU:HD23	2.00	0.43
42:NP:51:ASN:HB3	42:NP:54:TYR:HD2	1.82	0.43
45:NS:4:LEU:HD11	55:SI:38:ARG:HH21	1.83	0.43
59:SP:164:VAL:HG23	59:SP:200:VAL:HG22	2.00	0.43
59:SP:1068:LYS:HE3	59:SP:1118:LYS:HD2	1.99	0.43
59:SP:1539:GLN:O	59:SP:1542:THR:OG1	2.27	0.43
2:L1:1376:A:O2'	2:L1:1378:A:H3'	2.18	0.43
2:L1:1536:G:H5'	6:L5:81:ARG:HH21	1.83	0.43
3:L2:89:A:H5'	50:SB:336:PRO:HB3	2.01	0.43
11:LA:83:LYS:HA	11:LA:83:LYS:HD2	1.80	0.43
19:LL:42:GLU:OE2	19:LL:49:HIS:ND1	2.50	0.43
22:LO:359:GLU:OE1	22:LO:362:SER:OG	2.22	0.43
24:LQ:660:TRP:CZ3	24:LQ:667:HIS:HB2	2.53	0.43
24:LQ:661:ASP:HB2	24:LQ:668:ILE:HD11	2.00	0.43
49:SA:217:ILE:HG22	49:SA:227:LYS:HE3	2.01	0.43
56:SJ:81:GLY:O	56:SJ:84:ARG:NE	2.52	0.43
59:SP:739:VAL:HA	59:SP:742:LEU:HD12	1.99	0.43
68:SZ:364:PHE:CG	68:SZ:382:LEU:HD11	2.54	0.43
3:L2:30:A:O2'	3:L2:32:U:O4	2.31	0.43
16:LH:227:ILE:HD13	16:LH:254:LEU:HD21	2.00	0.43
25:LR:96:GLN:OE1	25:LR:96:GLN:N	2.46	0.43
25:LR:140:ARG:HB3	25:LR:142:TYR:CE1	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:NR:470:UNK:O	44:NR:474:UNK:N	2.52	0.43
59:SP:1398:PHE:CE2	59:SP:1477:ASN:HB3	2.53	0.43
59:SP:1866:ARG:HG3	59:SP:1904:THR:HG23	2.00	0.43
61:SR:28:LYS:HE2	61:SR:28:LYS:HB3	1.79	0.43
63:ST:621:TYR:O	63:ST:624:THR:OG1	2.33	0.43
2:L1:38:A:H5'	10:L9:5:ARG:HB3	1.99	0.43
2:L1:1536:G:H2'	2:L1:1537:A:H8	1.83	0.43
3:L2:201:A:H2'	3:L2:202:A:C8	2.54	0.43
6:L5:78:MET:O	6:L5:82:ASN:ND2	2.51	0.43
20:LM:859:ASP:N	20:LM:859:ASP:OD1	2.50	0.43
21:LN:580:ASP:OD1	21:LN:581:THR:N	2.51	0.43
27:LT:391:ASN:ND2	27:LT:393:GLN:OE1	2.46	0.43
29:LW:389:ARG:HD3	29:LW:389:ARG:HA	1.72	0.43
36:NG:37:PHE:CZ	36:NG:100:THR:HG21	2.53	0.43
59:SP:1504:LEU:HD11	59:SP:1517:ILE:HG21	2.01	0.43
63:ST:471:GLU:HG3	63:ST:509:PHE:CD1	2.54	0.43
64:SU:328:ARG:NH1	64:SU:424:ASP:HB3	2.33	0.43
65:SW:162:SER:HG	65:SW:210:HIS:CE1	2.34	0.43
68:SZ:386:VAL:HG22	68:SZ:420:GLU:HG3	2.01	0.43
2:L1:279:G:H3'	2:L1:280:G:H8	1.83	0.43
3:L2:19:A:H2'	3:L2:20:U:C6	2.54	0.43
10:L9:111:GLN:HE21	10:L9:123:ILE:HG13	1.83	0.43
11:LA:32:ALA:HB3	11:LA:110:VAL:HG23	2.00	0.43
18:LJ:116:ARG:NH1	18:LJ:151:ILE:O	2.52	0.43
20:LM:1636:THR:O	20:LM:1640:ARG:HG2	2.18	0.43
20:LM:1851:HIS:O	20:LM:1855:MET:HG3	2.19	0.43
25:LR:38:HIS:CD2	25:LR:51:GLU:HG3	2.54	0.43
28:LU:434:SER:HB3	28:LU:437:LYS:HG3	2.00	0.43
58:SM:154:LEU:O	58:SM:156:PHE:N	2.52	0.43
59:SP:1965:TYR:CE2	59:SP:2003:THR:HG23	2.53	0.43
63:ST:531:MET:SD	63:ST:538:ALA:HA	2.59	0.43
25:LR:422:HIS:CG	25:LR:423:SER:N	2.87	0.43
27:LT:789:PHE:HA	65:SW:154:ARG:HH21	1.84	0.43
29:LW:561:SER:O	29:LW:562:THR:OG1	2.32	0.43
39:NL:42:PRO:HA	39:NL:45:ILE:HD12	2.01	0.43
51:SC:317:PRO:HA	51:SC:318:PRO:HD3	1.90	0.43
54:SH:93:ARG:NH2	54:SH:126:ASP:OD1	2.45	0.43
59:SP:805:LEU:O	59:SP:809:THR:OG1	2.29	0.43
59:SP:977:ARG:NH1	59:SP:987:GLU:OE1	2.48	0.43
62:SS:610:LYS:HE2	62:SS:613:ARG:NH1	2.33	0.43
2:L1:525:A:H5'	33:NB:431:ASN:HD22	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:678:U:H2'	2:L1:679:A:H8	1.83	0.43
2:L1:1231:C:H2'	2:L1:1232:PSU:C6	2.54	0.43
11:LA:18:LEU:O	11:LA:22:LEU:HD12	2.18	0.43
16:LH:819:PHE:CE2	20:LM:888:VAL:HG13	2.54	0.43
17:LI:509:LEU:HB3	17:LI:612:HIS:CD2	2.54	0.43
18:LJ:464:LEU:HD22	34:ND:248:TRP:CE2	2.54	0.43
20:LM:1801:GLN:O	20:LM:1805:ARG:HG3	2.19	0.43
22:LO:137:ASP:OD1	22:LO:138:LYS:HE3	2.19	0.43
22:LO:788:GLU:HB3	22:LO:825:LYS:HE2	1.99	0.43
27:LT:178:VAL:HG22	27:LT:184:LEU:HD12	2.01	0.43
28:LU:344:SER:OG	28:LU:346:GLU:OE1	2.27	0.43
28:LU:364:THR:HG23	28:LU:367:GLU:H	1.83	0.43
52:SE:107:LYS:HB3	52:SE:110:SER:HB3	2.00	0.43
53:SG:97:LYS:HD2	53:SG:97:LYS:HA	1.92	0.43
59:SP:440:ASP:OD1	59:SP:441:GLU:N	2.52	0.43
59:SP:1477:ASN:O	59:SP:1481:ASN:ND2	2.51	0.43
59:SP:1985:LYS:HD3	59:SP:2038:THR:HG23	2.00	0.43
63:ST:563:HIS:CE1	63:ST:565:VAL:HG22	2.53	0.43
63:ST:723:LEU:HD11	63:ST:736:CYS:HB3	2.01	0.43
68:SZ:394:ALA:H	68:SZ:397:GLN:NE2	2.17	0.43
2:L1:319:C:H2'	2:L1:320:G:C8	2.54	0.43
2:L1:1228:A:H2'	2:L1:1229:G:C8	2.54	0.43
2:L1:1286:G:H1'	2:L1:1312:G:H1	1.84	0.43
2:L1:1764:G:N2	2:L1:1769:C:O2	2.52	0.43
17:LI:152:VAL:HG12	17:LI:154:LYS:HG3	2.01	0.43
17:LI:584:ARG:O	17:LI:588:LEU:HG	2.19	0.43
19:LK:466:LEU:O	19:LK:470:LEU:HG	2.19	0.43
20:LM:754:HIS:ND1	20:LM:755:ILE:HG23	2.34	0.43
22:LO:201:LEU:HB2	22:LO:217:CYS:SG	2.59	0.43
24:LQ:90:ARG:NH2	24:LQ:99:GLY:O	2.52	0.43
24:LQ:288:ASP:OD1	24:LQ:288:ASP:N	2.52	0.43
26:LS:464:LYS:HD2	26:LS:465:PRO:HD2	2.01	0.43
28:LU:419:VAL:HA	28:LU:422:ILE:HG12	2.01	0.43
30:LY:75:ASN:ND2	67:SY:174:LEU:O	2.48	0.43
35:NF:82:PRO:HA	38:NI:242:TYR:HA	2.00	0.43
44:NR:983:UNK:O	44:NR:987:UNK:N	2.52	0.43
59:SP:501:LEU:O	59:SP:505:LYS:HG2	2.19	0.43
59:SP:760:TYR:CE1	59:SP:841:GLU:HB3	2.54	0.43
63:ST:598:PHE:O	63:ST:602:VAL:HG22	2.18	0.43
2:L1:496:C:H2'	2:L1:497:C:H6	1.83	0.42
2:L1:1215:C:O2'	2:L1:1645:C:OP2	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:1373:C:H2'	2:L1:1374:C:C6	2.54	0.42
3:L2:39:C:O2'	28:LU:18:LYS:O	2.37	0.42
14:LF:8:ARG:HD3	53:SG:313:PRO:HA	2.01	0.42
14:LF:88:LYS:HD2	14:LF:97:TYR:CD2	2.54	0.42
15:LG:67:ARG:NH1	15:LG:68:LEU:HB2	2.34	0.42
18:LJ:489:MET:SD	19:LK:574:LEU:HD23	2.59	0.42
19:LK:525:GLN:NE2	19:LK:529:CYS:SG	2.92	0.42
19:LL:45:ASN:OD1	19:LL:47:ARG:HG2	2.19	0.42
20:LM:283:ALA:HB3	20:LM:316:LEU:HD13	2.01	0.42
20:LM:1501:ASN:O	20:LM:1505:HIS:ND1	2.53	0.42
22:LO:751:ARG:NH1	27:LT:736:ASP:O	2.52	0.42
23:LP:310:CYS:O	23:LP:313:TYR:N	2.52	0.42
24:LQ:868:THR:HA	25:LR:788:MET:SD	2.59	0.42
26:LS:86:ALA:HA	26:LS:89:ARG:HE	1.82	0.42
27:LT:93:LYS:HG2	27:LT:95:ARG:HB2	2.00	0.42
27:LT:233:ASN:HB2	27:LT:240:LEU:HD21	2.00	0.42
37:NH:143:GLN:HB3	37:NH:201:ARG:NH1	2.33	0.42
37:NH:530:PRO:HA	37:NH:531:PRO:HD3	1.90	0.42
50:SB:214:ARG:HA	50:SB:217:TYR:HD1	1.84	0.42
59:SP:736:TRP:O	59:SP:740:ILE:HG12	2.18	0.42
60:SQ:593:THR:O	60:SQ:597:GLU:HG2	2.18	0.42
68:SZ:397:GLN:O	68:SZ:401:LEU:HG	2.19	0.42
2:L1:1871:C:N4	65:SW:86:THR:OG1	2.52	0.42
16:LH:803:ASP:N	16:LH:803:ASP:OD1	2.52	0.42
18:LJ:170:GLY:HA2	18:LJ:182:THR:HA	2.01	0.42
19:LK:554:LEU:O	19:LK:558:ARG:HG2	2.19	0.42
20:LM:921:THR:O	20:LM:925:ILE:HG12	2.19	0.42
24:LQ:191:ARG:HH22	25:LR:644:GLN:HG2	1.83	0.42
24:LQ:476:GLY:HA3	24:LQ:495:HIS:O	2.19	0.42
26:LS:273:ASN:HB2	26:LS:292:TYR:CE1	2.55	0.42
26:LS:474:THR:OG1	26:LS:495:MET:SD	2.70	0.42
33:NB:474:LYS:HE2	51:SD:152:GLY:HA3	2.01	0.42
37:NH:207:LEU:HD11	37:NH:237:LEU:HB2	2.00	0.42
39:NL:98:VAL:HG11	39:NL:107:LEU:HD22	2.00	0.42
44:NR:363:UNK:O	44:NR:367:UNK:N	2.52	0.42
45:NS:1061:TYR:HE1	45:NS:1115:ASP:OD1	2.02	0.42
49:SA:286:ARG:NH1	49:SA:286:ARG:HB2	2.34	0.42
55:SI:5:ASP:OD1	55:SI:5:ASP:N	2.51	0.42
58:SM:279:THR:HG22	58:SM:281:THR:H	1.84	0.42
59:SP:746:HIS:O	59:SP:750:MET:HG2	2.19	0.42
59:SP:1548:LEU:HD23	59:SP:1558:PHE:CZ	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:SS:170:PRO:HA	62:SS:173:HIS:ND1	2.34	0.42
63:ST:214:UNK:O	63:ST:218:UNK:N	2.52	0.42
2:L1:740:C:H2'	2:L1:741:C:C6	2.54	0.42
11:LA:40:LYS:O	11:LA:44:LYS:HB2	2.18	0.42
12:LC:81:ILE:O	12:LC:85:ARG:HG3	2.19	0.42
18:LJ:41:VAL:HG13	18:LJ:56:VAL:HG13	2.01	0.42
18:LJ:106:LEU:HD11	18:LJ:151:ILE:HG12	2.01	0.42
18:LJ:305:VAL:HG22	18:LJ:315:VAL:HG22	2.02	0.42
18:LJ:381:LEU:O	18:LJ:420:HIS:NE2	2.51	0.42
22:LO:284:LYS:HE3	22:LO:287:ASP:HB3	2.02	0.42
25:LR:110:ALA:HB1	25:LR:129:CYS:HB2	2.01	0.42
49:SA:138:ASP:OD2	49:SA:139:LEU:N	2.52	0.42
51:SC:108:VAL:HB	51:SC:135:TYR:HB3	2.00	0.42
54:SH:80:LEU:HD22	54:SH:109:MET:HE1	2.02	0.42
54:SH:350:LEU:HB3	55:SI:756:ASP:OD2	2.20	0.42
58:SM:262:THR:HG22	58:SM:263:LEU:HD23	2.02	0.42
63:ST:202:UNK:O	63:ST:206:UNK:N	2.52	0.42
63:ST:726:CYS:SG	63:ST:728:HIS:NE2	2.91	0.42
2:L1:270:G:H3'	2:L1:271:C:H4'	2.00	0.42
2:L1:382:C:H2'	2:L1:383:G:H8	1.84	0.42
2:L1:1293:A:C4	2:L1:1294:G:C8	3.07	0.42
2:L1:1336:C:H2'	2:L1:1337:C:C6	2.54	0.42
2:L1:1378:A:H4'	2:L1:1379:A:O4'	2.18	0.42
6:L5:63:LYS:HD2	6:L5:71:ARG:HH12	1.84	0.42
8:L7:142:LYS:HB3	41:NO:54:ASP:HB3	2.02	0.42
16:LH:58:ASN:HD22	16:LH:78:LEU:HB2	1.84	0.42
16:LH:83:LYS:HG2	16:LH:95:THR:HG23	2.02	0.42
16:LH:100:CYS:SG	16:LH:101:LYS:N	2.92	0.42
17:LI:302:GLU:OE2	17:LI:303:LEU:N	2.51	0.42
19:LL:12:LEU:HD21	27:LT:465:GLN:HG2	2.01	0.42
26:LS:245:ASN:HA	26:LS:278:PHE:CE2	2.55	0.42
27:LT:102:VAL:HG21	27:LT:107:HIS:HD2	1.84	0.42
27:LT:197:GLN:HE21	27:LT:197:GLN:HB3	1.69	0.42
36:NG:143:LYS:HE2	36:NG:149:ARG:NH1	2.34	0.42
39:NL:162:ARG:O	39:NL:176:SER:HB3	2.19	0.42
39:NL:285:PHE:HD1	39:NL:288:LYS:HG3	1.85	0.42
41:NO:104:LEU:HD23	41:NO:125:ILE:HA	2.00	0.42
44:NR:159:UNK:O	44:NR:163:UNK:N	2.53	0.42
50:SB:177:ASN:O	50:SB:181:MET:HG2	2.19	0.42
59:SP:825:TRP:HA	59:SP:828:LEU:HD12	2.02	0.42
59:SP:1965:TYR:CD2	59:SP:2003:THR:HG23	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:ST:597:LEU:HD23	63:ST:597:LEU:HA	1.86	0.42
65:SW:76:ARG:O	65:SW:117:GLU:HG2	2.19	0.42
68:SZ:222:PRO:HA	68:SZ:225:TRP:CE2	2.54	0.42
2:L1:538:U:H4'	33:NB:450:GLN:HG3	2.00	0.42
2:L1:1852:C:H2'	2:L1:1853:C:C6	2.54	0.42
7:L6:126:ASP:OD1	7:L6:127:THR:N	2.53	0.42
7:L6:188:LYS:O	7:L6:192:ILE:HG12	2.20	0.42
10:L9:139:LYS:NZ	53:SG:278:THR:O	2.48	0.42
18:LJ:467:GLN:HA	19:LL:572:LEU:HD13	2.00	0.42
19:LL:270:PRO:HA	19:LL:291:CYS:HA	2.00	0.42
20:LM:1079:PRO:HG2	20:LM:1081:SER:HB3	2.01	0.42
22:LO:54:THR:HG21	22:LO:74:ASP:HB3	2.00	0.42
22:LO:522:ASP:OD1	22:LO:524:THR:OG1	2.34	0.42
22:LO:663:MET:HG3	22:LO:698:HIS:HB2	2.02	0.42
25:LR:267:ASP:N	25:LR:267:ASP:OD1	2.51	0.42
27:LT:167:PHE:HB2	27:LT:178:VAL:HB	2.00	0.42
37:NH:324:LEU:HD23	37:NH:324:LEU:HA	1.93	0.42
56:SJ:47:LEU:HB2	56:SJ:110:ILE:HG22	2.00	0.42
2:L1:9:U:O2'	2:L1:11:A:OP2	2.24	0.42
2:L1:525:A:OP2	33:NB:430:ARG:NH2	2.38	0.42
2:L1:980:A:H2'	2:L1:981:A:C8	2.55	0.42
2:L1:1377:U:H4'	2:L1:1378:A:H5'	2.01	0.42
2:L1:1485:U:H3'	2:L1:1486:A:C8	2.49	0.42
18:LJ:95:LEU:HD23	18:LJ:109:ILE:HG22	2.00	0.42
20:LM:939:ILE:O	20:LM:943:GLN:HG3	2.20	0.42
20:LM:2085:LEU:HD23	20:LM:2124:GLN:HG3	2.00	0.42
24:LQ:161:LYS:NZ	24:LQ:222:TYR:HB3	2.35	0.42
25:LR:151:PRO:HD3	25:LR:178:ARG:HH21	1.83	0.42
37:NH:546:ASP:OD2	37:NH:546:ASP:N	2.47	0.42
44:NR:305:UNK:O	44:NR:309:UNK:N	2.52	0.42
51:SD:313:VAL:HG13	51:SD:316:PRO:HG3	2.01	0.42
59:SP:277:VAL:O	59:SP:281:VAL:HG23	2.18	0.42
59:SP:2377:LYS:NZ	62:SS:83:GLU:HG3	2.35	0.42
59:SP:2421:ASP:OD1	59:SP:2421:ASP:N	2.52	0.42
2:L1:145:G:H2'	2:L1:146:G:C8	2.54	0.42
2:L1:521:A:OP1	10:L9:45:ARG:NH1	2.43	0.42
2:L1:948:C:H2'	2:L1:949:G:H8	1.84	0.42
2:L1:1143:A:OP2	57:SL:5:LYS:NZ	2.52	0.42
20:LM:1913:ARG:HB3	20:LM:1914:PRO:HD3	2.02	0.42
21:LN:341:SER:HB3	21:LN:346:LEU:HB2	2.00	0.42
22:LO:759:PHE:O	22:LO:763:ILE:HG12	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:LQ:458:LEU:HD13	24:LQ:500:TRP:CE3	2.54	0.42
27:LT:837:ASN:O	27:LT:839:LYS:N	2.51	0.42
36:NG:84:ARG:HH21	36:NG:87:GLU:HB2	1.84	0.42
44:NR:768:UNK:O	44:NR:772:UNK:N	2.53	0.42
45:NS:1021:PRO:HD2	45:NS:1035:HIS:CG	2.55	0.42
50:SB:202:LEU:HD12	50:SB:202:LEU:HA	1.85	0.42
56:SJ:90:GLN:HG2	56:SJ:91:SER:N	2.34	0.42
58:SM:244:LEU:HD23	58:SM:244:LEU:HA	1.94	0.42
59:SP:409:MET:O	59:SP:412:MET:HG2	2.19	0.42
59:SP:585:PRO:HG2	59:SP:588:ARG:HG3	2.02	0.42
59:SP:2660:ILE:HG23	59:SP:2704:VAL:HA	2.01	0.42
2:L1:1007:C:H2'	2:L1:1008:A:C8	2.55	0.42
2:L1:1719:A:HO2'	24:LQ:419:ARG:HH22	1.67	0.42
16:LH:130:VAL:HG21	16:LH:147:LEU:HD12	2.01	0.42
19:LL:526:TRP:O	19:LL:530:VAL:HG23	2.19	0.42
20:LM:47:ILE:HG22	20:LM:112:LYS:HB3	2.01	0.42
20:LM:1004:LEU:HD11	20:LM:1030:VAL:HG13	2.02	0.42
20:LM:1082:LEU:O	20:LM:1086:ILE:HG12	2.19	0.42
20:LM:1796:MET:SD	20:LM:1798:SER:N	2.86	0.42
21:LN:532:MET:HG2	21:LN:543:ILE:HG12	2.01	0.42
24:LQ:570:ASP:O	24:LQ:572:THR:N	2.51	0.42
28:LU:34:PRO:O	28:LU:39:ARG:NH2	2.53	0.42
28:LU:405:GLN:OE1	28:LU:408:ARG:NH1	2.49	0.42
51:SC:166:TYR:CE2	51:SC:169:ALA:HA	2.55	0.42
52:SE:64:GLU:HA	52:SE:67:LEU:HG	2.01	0.42
55:SI:111:LEU:HG	55:SI:342:VAL:HG21	2.02	0.42
55:SI:267:PRO:O	55:SI:271:ARG:HG3	2.20	0.42
56:SJ:47:LEU:O	56:SJ:111:HIS:N	2.28	0.42
59:SP:1516:GLU:HA	59:SP:1520:ARG:HG2	2.00	0.42
59:SP:2294:TYR:O	59:SP:2300:ARG:NH2	2.52	0.42
65:SW:142:LEU:HD23	65:SW:142:LEU:HA	1.86	0.42
68:SZ:374:LEU:HD22	68:SZ:378:TRP:CG	2.54	0.42
8:L7:76:GLN:HG2	8:L7:135:PHE:CD2	2.55	0.42
13:LD:128:VAL:HG12	13:LD:142:VAL:HA	2.01	0.42
16:LH:53:LEU:HB3	16:LH:85:TRP:CZ3	2.55	0.42
16:LH:274:GLU:HB3	16:LH:284:GLU:HB2	2.02	0.42
17:LI:467:TYR:HB3	17:LI:495:ASP:HB3	2.01	0.42
19:LL:192:LEU:HD23	19:LL:201:TYR:HD2	1.85	0.42
19:LL:470:LEU:HD13	19:LL:504:PRO:HB2	2.02	0.42
20:LM:153:ILE:HG22	20:LM:158:HIS:CE1	2.54	0.42
21:LN:437:LEU:HD22	21:LN:454:VAL:HG11	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:LO:857:ASP:OD1	22:LO:858:ASP:N	2.52	0.42
25:LR:359:LEU:HD21	25:LR:379:VAL:HG11	2.02	0.42
25:LR:385:PHE:CE1	25:LR:429:CYS:HB3	2.54	0.42
26:LS:158:ASN:HB3	26:LS:161:ARG:HB2	2.00	0.42
26:LS:502:VAL:HG22	26:LS:509:VAL:HG22	2.01	0.42
38:NI:165:ASP:HB3	38:NI:168:ALA:HB3	2.01	0.42
41:NO:47:ILE:HG13	41:NO:48:GLY:H	1.85	0.42
49:SA:375:LYS:HD3	49:SA:397:LEU:HD22	2.02	0.42
59:SP:1398:PHE:HE2	59:SP:1477:ASN:HB3	1.84	0.42
59:SP:1626:MET:HB3	59:SP:1632:ILE:HD11	2.01	0.42
63:ST:547:ILE:HD12	64:SU:501:LEU:HD11	2.02	0.42
68:SZ:241:LEU:HB3	68:SZ:242:LYS:H	1.73	0.42
2:L1:1037:G:H4'	2:L1:1845:A:H4'	2.00	0.42
2:L1:1332:A:C6	2:L1:1497:G:C6	3.08	0.42
2:L1:1470:C:H2'	2:L1:1471:C:C6	2.53	0.42
2:L1:1562:C:H5''	42:NP:71:GLY:HA3	2.01	0.42
3:L2:186:G:H2'	3:L2:187:A:C8	2.55	0.42
10:L9:17:ARG:H	10:L9:17:ARG:HG2	1.65	0.42
16:LH:17:LEU:N	16:LH:312:ASN:OD1	2.47	0.42
20:LM:1726:GLU:HG2	20:LM:1727:ALA:N	2.35	0.42
20:LM:2024:VAL:HB	20:LM:2072:LYS:HE2	2.02	0.42
22:LO:636:GLU:HG3	27:LT:550:LEU:HD23	2.01	0.42
28:LU:334:THR:HG22	28:LU:339:TYR:H	1.85	0.42
29:LW:163:GLU:N	29:LW:163:GLU:OE2	2.53	0.42
37:NH:760:ALA:HB2	38:NI:173:VAL:HG11	2.02	0.42
49:SA:37:LEU:HD21	51:SD:257:ASN:ND2	2.35	0.42
54:SH:96:GLY:O	54:SH:100:GLU:HG3	2.19	0.42
54:SH:230:MET:HE2	54:SH:234:ASN:HB3	2.01	0.42
56:SJ:164:SER:HA	56:SJ:167:PHE:CE2	2.55	0.42
59:SP:400:ARG:HG3	59:SP:401:LEU:HD12	2.02	0.42
59:SP:2678:LEU:HD12	59:SP:2678:LEU:HA	1.92	0.42
63:ST:271:UNK:HA	68:SZ:387:GLN:OE1	2.19	0.42
68:SZ:214:GLU:H	68:SZ:214:GLU:CD	2.22	0.42
68:SZ:418:ARG:HA	68:SZ:421:LEU:HG	2.01	0.42
2:L1:115:U:H2'	2:L1:116:OMU:C6	2.50	0.41
2:L1:729:C:H2'	2:L1:730:C:C6	2.55	0.41
2:L1:1297:U:H1'	2:L1:1301:A:N1	2.35	0.41
2:L1:1740:C:H2'	2:L1:1741:U:C6	2.55	0.41
9:L8:89:GLU:OE2	9:L8:92:ARG:NH2	2.41	0.41
15:LG:12:ALA:HB1	15:LG:32:VAL:HB	2.02	0.41
16:LH:129:LEU:HB2	16:LH:154:ILE:HD13	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:LJ:291:SER:HB2	18:LJ:309:THR:HG23	2.01	0.41
19:LL:494:VAL:O	19:LL:534:HIS:CE1	2.73	0.41
20:LM:924:LEU:HD21	20:LM:955:ILE:HG21	2.02	0.41
21:LN:58:HIS:CE1	21:LN:60:SER:HB2	2.55	0.41
21:LN:165:ILE:H	21:LN:165:ILE:HD12	1.85	0.41
25:LR:89:LEU:HD13	25:LR:103:LEU:HD21	2.02	0.41
27:LT:217:LEU:O	27:LT:219:LYS:HG3	2.20	0.41
45:NS:328:VAL:HA	45:NS:343:THR:HA	2.02	0.41
59:SP:1268:THR:HG22	59:SP:1269:GLU:H	1.85	0.41
59:SP:1575:PHE:O	59:SP:1579:LYS:HG2	2.20	0.41
2:L1:220:U:H2'	2:L1:221:A:H8	1.85	0.41
2:L1:1629:C:C2	2:L1:1630:A:C8	3.08	0.41
7:L6:67:VAL:HG23	7:L6:99:GLY:HA2	2.02	0.41
12:LC:12:VAL:HG11	12:LC:90:LYS:HB3	2.01	0.41
17:LI:695:PHE:CE2	19:LK:531:LEU:HD21	2.55	0.41
20:LM:1135:LEU:HB3	20:LM:1209:LEU:HD13	2.01	0.41
24:LQ:405:ARG:CZ	24:LQ:408:ARG:HE	2.33	0.41
27:LT:176:ILE:HG12	27:LT:186:ILE:HG13	2.02	0.41
29:LW:535:GLU:HB3	29:LW:539:ARG:HH21	1.85	0.41
45:NS:1031:ARG:HE	45:NS:1053:ASP:HB3	1.85	0.41
50:SB:64:MET:SD	51:SC:223:LYS:HA	2.60	0.41
55:SI:1254:LEU:HD21	58:SM:42:ILE:HG21	2.01	0.41
59:SP:285:SER:OG	59:SP:287:GLU:OE1	2.33	0.41
59:SP:450:ILE:HD11	59:SP:469:LEU:HD11	2.02	0.41
59:SP:2519:LYS:HE3	59:SP:2519:LYS:HB3	1.89	0.41
59:SP:2687:PRO:HB2	59:SP:2691:ASN:ND2	2.35	0.41
64:SU:265:PRO:HD2	64:SU:268:LEU:HD12	2.02	0.41
68:SZ:133:UNK:HA	68:SZ:303:ARG:NH1	2.28	0.41
68:SZ:374:LEU:HA	68:SZ:375:PRO:HD3	1.91	0.41
2:L1:159:A2M:O5'	2:L1:159:A2M:H8	2.20	0.41
2:L1:563:G:O2'	2:L1:564:A:H8	2.04	0.41
2:L1:1624:U:H2'	2:L1:1625:PSU:C6	2.55	0.41
2:L1:1791:A:H2'	2:L1:1792:G:O4'	2.21	0.41
8:L7:9:VAL:HG23	8:L7:24:SER:HB3	2.02	0.41
16:LH:319:ARG:HG2	26:LS:374:GLU:HG2	2.02	0.41
19:LL:528:LYS:HA	19:LL:531:LEU:HD23	2.01	0.41
20:LM:737:ILE:O	20:LM:741:GLU:HG3	2.20	0.41
20:LM:913:ALA:O	20:LM:950:SER:OG	2.33	0.41
20:LM:957:ASP:HA	20:LM:960:ILE:HG22	2.02	0.41
22:LO:765:MET:HA	22:LO:768:ARG:HE	1.84	0.41
25:LR:59:ARG:HH12	25:LR:96:GLN:C	2.24	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:LR:378:ILE:HD11	40:NM:19:LYS:HG2	2.01	0.41
25:LR:437:LEU:HB2	25:LR:449:TRP:HB2	2.03	0.41
25:LR:562:HIS:CD2	25:LR:588:LYS:HD3	2.55	0.41
27:LT:585:ILE:HG12	27:LT:598:ALA:HB3	2.02	0.41
36:NG:36:SER:OG	36:NG:37:PHE:N	2.53	0.41
37:NH:180:VAL:HB	37:NH:253:LEU:HD13	2.02	0.41
38:NI:41:TYR:HB2	38:NI:64:LEU:HB2	2.02	0.41
39:NL:157:ARG:NH2	39:NL:204:SER:O	2.43	0.41
49:SA:321:TYR:HB3	49:SA:325:THR:OG1	2.19	0.41
59:SP:756:TRP:NE1	59:SP:841:GLU:OE1	2.54	0.41
59:SP:1587:ALA:HB2	59:SP:1632:ILE:HG22	2.03	0.41
62:SS:96:THR:HA	62:SS:100:LEU:HD23	2.02	0.41
68:SZ:335:SER:OG	68:SZ:338:ASN:HB2	2.19	0.41
2:L1:190:G:O2'	2:L1:209:A:N6	2.50	0.41
2:L1:1536:G:H2'	2:L1:1537:A:C8	2.56	0.41
2:L1:1778:C:H2'	2:L1:1779:G:C8	2.56	0.41
17:LI:218:LEU:O	17:LI:229:GLU:HA	2.20	0.41
18:LJ:399:GLU:OE2	18:LJ:402:ARG:NH2	2.43	0.41
19:LL:22:SER:OG	19:LL:25:SER:O	2.24	0.41
19:LL:513:LEU:HD12	19:LL:551:LEU:HD11	2.02	0.41
21:LN:653:MET:HA	21:LN:662:VAL:O	2.20	0.41
22:LO:177:ASP:OD1	22:LO:178:ASN:N	2.53	0.41
23:LP:262:ASP:HB3	23:LP:266:LEU:HD13	2.03	0.41
26:LS:138:LYS:HB3	26:LS:139:LYS:H	1.66	0.41
29:LW:203:TYR:CE1	29:LW:210:LEU:HD12	2.55	0.41
37:NH:1005:LEU:HD21	37:NH:1081:VAL:HG11	2.02	0.41
37:NH:1011:LEU:HB3	37:NH:1013:ARG:HH12	1.84	0.41
49:SA:358:GLY:O	49:SA:359:ARG:HD3	2.20	0.41
59:SP:1117:PRO:HB3	59:SP:1172:ARG:HH22	1.85	0.41
59:SP:1883:TYR:O	59:SP:1887:GLU:HG2	2.20	0.41
63:ST:463:ALA:HB3	63:ST:466:ASN:CG	2.41	0.41
64:SU:272:VAL:HG23	64:SU:273:LEU:HD12	2.00	0.41
67:SY:23:GLY:HA2	67:SY:26:LYS:HE2	2.02	0.41
68:SZ:284:GLY:O	68:SZ:288:LYS:HG2	2.20	0.41
2:L1:116:OMU:H6	2:L1:116:OMU:O5'	2.19	0.41
2:L1:1312:G:C8	11:LA:36:ARG:NH2	2.89	0.41
2:L1:1501:C:H2'	2:L1:1502:C:C6	2.55	0.41
10:L9:11:LYS:HE2	10:L9:11:LYS:HB3	1.85	0.41
17:LI:654:LEU:HD21	19:LK:571:LYS:HB3	2.03	0.41
21:LN:154:HIS:CD2	21:LN:203:PHE:CE2	3.07	0.41
21:LN:271:ASN:OD1	21:LN:272:SER:N	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:LO:587:LEU:HD11	22:LO:606:LYS:HA	2.02	0.41
27:LT:691:TRP:CH2	27:LT:717:PRO:HA	2.55	0.41
27:LT:892:LEU:H	27:LT:892:LEU:HD12	1.86	0.41
28:LU:406:GLU:O	28:LU:410:MET:HG3	2.21	0.41
34:ND:171:SER:HA	67:SY:135:LYS:NZ	2.36	0.41
39:NL:189:MET:HG2	39:NL:206:VAL:HB	2.02	0.41
44:NR:182:UNK:O	44:NR:186:UNK:N	2.53	0.41
47:NU:6:THR:HG22	47:NU:8:THR:H	1.85	0.41
59:SP:434:ASP:HA	59:SP:439:LYS:NZ	2.35	0.41
65:SW:136:PHE:CG	65:SW:153:ILE:HD11	2.54	0.41
67:SY:12:ARG:NH1	67:SY:14:ARG:HB2	2.36	0.41
2:L1:248:C:H2'	2:L1:249:C:C6	2.56	0.41
2:L1:1679:A:H2'	6:L5:60:ARG:HD2	2.03	0.41
6:L5:127:ARG:HB2	6:L5:136:ARG:NH2	2.35	0.41
8:L7:17:ASP:OD2	8:L7:18:GLU:N	2.50	0.41
11:LA:54:SER:N	11:LA:79:VAL:O	2.44	0.41
18:LJ:187:HIS:HB3	18:LJ:205:HIS:O	2.21	0.41
20:LM:1275:LYS:HE3	20:LM:1279:ASP:OD1	2.20	0.41
21:LN:648:LYS:HB2	21:LN:649:PRO:HD3	2.03	0.41
25:LR:434:GLU:N	25:LR:434:GLU:OE1	2.54	0.41
25:LR:643:GLU:OE1	25:LR:647:GLN:NE2	2.52	0.41
30:LY:62:GLU:O	30:LY:66:ARG:NH1	2.53	0.41
37:NH:866:LEU:HB3	37:NH:1073:PHE:HB3	2.02	0.41
37:NH:1133:LEU:HB2	38:NI:152:ILE:HD11	2.03	0.41
46:NT:104:LYS:HE3	46:NT:105:TYR:CE1	2.56	0.41
51:SD:79:ARG:HB3	51:SD:82:GLN:HE22	1.85	0.41
54:SH:156:ARG:HG3	54:SH:165:GLY:HA2	2.02	0.41
60:SQ:738:GLU:HA	60:SQ:741:ALA:HB3	2.03	0.41
63:ST:544:ASP:OD1	63:ST:545:VAL:N	2.53	0.41
2:L1:466:G:H3'	2:L1:466:G:N3	2.36	0.41
2:L1:801:PSU:H2'	2:L1:802:A:H8	1.86	0.41
2:L1:943:U:OP2	40:NM:216:LYS:NZ	2.46	0.41
2:L1:1195:A:OP2	2:L1:1197:G:N2	2.39	0.41
2:L1:1588:A:C2	2:L1:1654:G:H1'	2.55	0.41
2:L1:1673:U:O2'	6:L5:84:GLY:O	2.28	0.41
7:L6:25:ARG:HA	7:L6:25:ARG:HD3	1.86	0.41
10:L9:54:ARG:NH2	57:SL:96:ALA:HB2	2.35	0.41
16:LH:104:ALA:HB2	16:LH:158:PRO:HG3	2.01	0.41
18:LJ:150:ASP:HB2	18:LJ:157:ILE:HD11	2.03	0.41
20:LM:541:PHE:CZ	20:LM:553:THR:HG22	2.55	0.41
21:LN:316:GLU:HG2	21:LN:317:LYS:HG3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:LN:583:ILE:HG13	21:LN:600:ASP:OD1	2.20	0.41
22:LO:520:SER:OG	22:LO:521:TRP:N	2.53	0.41
22:LO:633:HIS:CE1	22:LO:635:ARG:HB2	2.55	0.41
24:LQ:592:LEU:HB2	24:LQ:612:ASP:H	1.86	0.41
25:LR:174:ASP:OD1	25:LR:175:ALA:N	2.54	0.41
30:LY:60:LEU:HD23	30:LY:60:LEU:HA	1.87	0.41
36:NG:34:PHE:CD1	36:NG:98:ARG:HD3	2.56	0.41
39:NL:91:VAL:HG13	39:NL:109:VAL:HG11	2.03	0.41
45:NS:1121:LEU:O	45:NS:1125:LYS:HG2	2.21	0.41
46:NT:106:TYR:CE1	46:NT:114:ILE:HD12	2.55	0.41
47:NU:15:VAL:O	47:NU:19:LYS:HG2	2.21	0.41
56:SJ:42:ARG:NH2	56:SJ:106:LEU:O	2.50	0.41
59:SP:2714:ALA:O	59:SP:2718:LYS:HG2	2.21	0.41
65:SW:195:GLU:HG3	65:SW:201:ARG:HH21	1.85	0.41
2:L1:1375:G:H2'	2:L1:1376:A:C8	2.56	0.41
2:L1:1387:G:H3'	2:L1:1388:A:H8	1.86	0.41
2:L1:1658:G:H2'	55:SI:1037:PHE:HB3	2.03	0.41
7:L6:192:ILE:HG22	7:L6:196:LYS:HE3	2.02	0.41
11:LA:36:ARG:C	11:LA:40:LYS:HZ2	2.24	0.41
16:LH:337:PHE:HE2	16:LH:389:GLU:HG2	1.86	0.41
19:LK:494:VAL:HG12	19:LK:533:VAL:HG11	2.02	0.41
20:LM:430:ARG:HG2	20:LM:468:THR:HG23	2.03	0.41
20:LM:1989:CYS:O	20:LM:1993:GLN:HG3	2.20	0.41
21:LN:656:LEU:HD23	21:LN:656:LEU:HA	1.93	0.41
25:LR:156:LEU:HD21	25:LR:201:LEU:HG	2.02	0.41
25:LR:339:ASP:OD1	25:LR:341:ARG:NH1	2.53	0.41
25:LR:524:LEU:HA	25:LR:540:SER:HA	2.01	0.41
26:LS:313:THR:OG1	26:LS:344:VAL:O	2.37	0.41
27:LT:553:LEU:HD21	27:LT:565:PHE:HD2	1.86	0.41
37:NH:1099:SER:O	37:NH:1102:LYS:NZ	2.54	0.41
39:NL:75:LEU:HD23	39:NL:75:LEU:HA	1.94	0.41
50:SB:73:LYS:HB2	50:SB:73:LYS:HE3	1.89	0.41
51:SC:202:ILE:HG22	51:SC:206:LYS:HE3	2.01	0.41
53:SG:349:LEU:HD11	53:SG:412:LEU:HD13	2.03	0.41
56:SJ:62:GLU:OE1	56:SJ:69:HIS:NE2	2.51	0.41
63:ST:635:VAL:HG12	63:ST:636:HIS:H	1.84	0.41
2:L1:67:C:H41	7:L6:164:LYS:H	1.68	0.41
2:L1:232:A:H5'	7:L6:216:ARG:NH1	2.36	0.41
2:L1:686:PSU:OP1	41:NO:32:LYS:HG2	2.20	0.41
2:L1:696:G:N2	2:L1:737:G:H1'	2.36	0.41
2:L1:1098:C:OP1	28:LU:414:ARG:NH1	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:1718:G:OP1	24:LQ:366:LYS:NZ	2.50	0.41
2:L1:1726:G:H2'	2:L1:1727:G:C8	2.54	0.41
8:L7:144:ILE:HB	41:NO:52:ILE:HB	2.02	0.41
11:LA:114:TYR:O	11:LA:116:LYS:HD3	2.21	0.41
13:LD:76:VAL:HG12	13:LD:125:ILE:HD13	2.03	0.41
16:LH:123:LYS:HB3	16:LH:126:ILE:HG12	2.02	0.41
16:LH:311:ASP:O	16:LH:313:LYS:N	2.53	0.41
16:LH:388:ILE:HG13	16:LH:408:ARG:HB2	2.03	0.41
16:LH:426:LYS:O	16:LH:429:GLN:NE2	2.54	0.41
18:LJ:346:LYS:NZ	18:LJ:347:GLN:O	2.38	0.41
19:LL:169:SER:HG	19:LL:188:ARG:HH22	1.64	0.41
20:LM:179:ILE:HG23	20:LM:227:ALA:HA	2.03	0.41
20:LM:440:LEU:HD12	20:LM:440:LEU:HA	1.84	0.41
20:LM:734:GLN:O	20:LM:738:LYS:HG2	2.21	0.41
20:LM:1693:LEU:HB2	20:LM:1721:VAL:HG11	2.03	0.41
24:LQ:649:PHE:CE1	24:LQ:659:GLN:HB3	2.56	0.41
25:LR:82:VAL:HG22	25:LR:92:GLN:HG3	2.02	0.41
25:LR:291:PRO:HD3	25:LR:376:THR:HG22	2.03	0.41
27:LT:107:HIS:ND1	27:LT:119:VAL:HG22	2.35	0.41
29:LW:263:ASP:OD2	31:LZ:21:TRP:NE1	2.52	0.41
37:NH:981:LEU:HB3	37:NH:982:PRO:HD3	2.03	0.41
45:NS:899:VAL:O	45:NS:903:CYS:N	2.33	0.41
45:NS:1050:ILE:O	45:NS:1052:VAL:HG23	2.21	0.41
46:NT:101:ALA:O	46:NT:104:LYS:HG3	2.21	0.41
50:SB:194:LEU:HD12	50:SB:194:LEU:HA	1.89	0.41
52:SE:79:PRO:HB2	52:SE:123:ILE:HG21	2.03	0.41
54:SH:65:GLU:HB2	54:SH:74:TYR:HB3	2.02	0.41
55:SI:328:LEU:HD22	55:SI:331:LYS:HD2	2.02	0.41
56:SJ:131:ASP:OD1	56:SJ:132:ARG:N	2.53	0.41
56:SJ:234:THR:O	56:SJ:238:GLU:HG2	2.21	0.41
56:SJ:239:GLU:OE1	56:SJ:239:GLU:N	2.53	0.41
59:SP:254:LEU:HD12	59:SP:254:LEU:HA	1.91	0.41
59:SP:2020:GLU:OE2	59:SP:2105:GLU:HG3	2.20	0.41
2:L1:468:A2M:H1'	2:L1:468:A2M:HM'3	1.86	0.41
2:L1:560:A:H5'	10:L9:174:LYS:HG2	2.02	0.41
2:L1:674:C:H2'	2:L1:675:U:C6	2.56	0.41
2:L1:1292:C:H1'	46:NT:140:TYR:CE2	2.53	0.41
8:L7:44:ASN:H	8:L7:68:GLN:HE22	1.68	0.41
16:LH:222:HIS:CE1	16:LH:228:ARG:HH11	2.39	0.41
18:LJ:103:GLY:HA2	18:LJ:118:PHE:O	2.21	0.41
19:LL:205:THR:HG23	19:LL:256:LYS:NZ	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:LL:346:SER:OG	19:LL:361:ARG:NH2	2.54	0.41
20:LM:444:LEU:O	20:LM:448:LEU:HG	2.20	0.41
20:LM:1790:GLU:HA	20:LM:1793:THR:HG22	2.02	0.41
22:LO:305:THR:O	22:LO:312:PHE:HA	2.21	0.41
23:LP:114:VAL:HG13	23:LP:126:LEU:HD11	2.03	0.41
24:LQ:216:ARG:HB3	24:LQ:270:LYS:HE3	2.03	0.41
24:LQ:518:LYS:HB2	24:LQ:547:GLN:HE22	1.86	0.41
25:LR:385:PHE:CD1	25:LR:434:GLU:HG3	2.56	0.41
25:LR:628:ARG:NH1	25:LR:630:ILE:HD11	2.36	0.41
27:LT:824:LYS:HZ2	27:LT:829:LEU:HD23	1.86	0.41
28:LU:231:PRO:O	62:SS:130:ARG:HG3	2.21	0.41
32:NA:653:GLN:NE2	39:NL:145:ARG:HD3	2.36	0.41
56:SK:229:THR:O	56:SK:233:LEU:HD23	2.20	0.41
62:SS:631:TRP:CZ2	65:SW:89:LYS:HG2	2.57	0.41
62:SS:720:LYS:HE3	62:SS:720:LYS:HB3	1.92	0.41
67:SY:120:LYS:HB3	67:SY:120:LYS:HE2	1.93	0.41
2:L1:611:G:C5	58:SM:279:THR:HG23	2.55	0.40
2:L1:621:OMC:O2	2:L1:621:OMC:HM22	2.21	0.40
2:L1:797:OMC:HM23	2:L1:797:OMC:H1'	1.90	0.40
2:L1:1382:A:H2'	2:L1:1383:A:H8	1.85	0.40
2:L1:1697:A:O2'	22:LO:443:ASP:OD2	2.30	0.40
7:L6:52:ILE:HG23	7:L6:109:LEU:HD11	2.03	0.40
9:L8:61:ASP:OD2	9:L8:62:VAL:HG13	2.20	0.40
17:LI:459:LEU:O	17:LI:462:THR:OG1	2.31	0.40
18:LJ:393:THR:O	18:LJ:397:ILE:HG13	2.21	0.40
20:LM:243:PHE:HD1	20:LM:246:ILE:HD12	1.86	0.40
20:LM:1642:LEU:HD11	20:LM:1685:ASN:ND2	2.36	0.40
20:LM:2103:LEU:O	20:LM:2107:ILE:HG12	2.20	0.40
22:LO:375:SER:HB2	22:LO:724:GLY:HA2	2.03	0.40
29:LW:143:SER:O	29:LW:147:ALA:N	2.50	0.40
32:NA:468:SER:O	32:NA:472:ILE:HG12	2.21	0.40
45:NS:983:GLN:N	45:NS:994:LYS:O	2.46	0.40
47:NU:27:ASP:O	47:NU:30:THR:OG1	2.29	0.40
52:SE:25:LEU:HD22	52:SE:119:ILE:HG13	2.03	0.40
55:SI:315:ASP:OD1	55:SI:315:ASP:N	2.53	0.40
56:SK:56:LYS:HB2	56:SK:61:TYR:CE1	2.56	0.40
62:SS:183:PRO:O	62:SS:187:GLU:HG3	2.21	0.40
63:ST:285:HIS:HA	63:ST:288:LYS:NZ	2.35	0.40
2:L1:115:U:O2'	2:L1:381:C:O2	2.36	0.40
2:L1:1551:U:H4'	2:L1:1552:G:O5'	2.21	0.40
6:L5:126:THR:OG1	15:LG:26:GLN:NE2	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LM:1162:ARG:HD2	20:LM:1225:ILE:HG22	2.02	0.40
21:LN:17:SER:O	21:LN:35:ARG:NH1	2.50	0.40
24:LQ:446:LEU:HD23	24:LQ:446:LEU:HA	1.85	0.40
24:LQ:680:CYS:SG	24:LQ:681:LEU:N	2.94	0.40
27:LT:207:ILE:HG12	27:LT:222:LEU:HD22	2.02	0.40
27:LT:314:ILE:HB	27:LT:328:MET:HB2	2.03	0.40
49:SA:220:ARG:NH2	49:SA:253:GLY:O	2.54	0.40
53:SG:261:HIS:ND1	53:SG:285:ALA:HB1	2.36	0.40
56:SJ:119:GLU:HG3	56:SJ:157:LYS:O	2.20	0.40
56:SJ:219:ILE:HG12	73:SJ:301:SAH:C2	2.51	0.40
56:SK:56:LYS:H	63:ST:45:GLY:HA3	1.86	0.40
68:SZ:397:GLN:OE1	68:SZ:397:GLN:N	2.47	0.40
2:L1:799:OMU:HM23	2:L1:799:OMU:H1'	1.80	0.40
2:L1:905:C:H5'	59:SP:2685:GLN:OE1	2.20	0.40
2:L1:1685:U:H2'	2:L1:1686:G:O4'	2.22	0.40
3:L2:10:C:H2'	3:L2:11:U:C6	2.56	0.40
18:LJ:415:GLU:HA	18:LJ:418:ILE:HG22	2.03	0.40
20:LM:909:LYS:HB3	20:LM:948:VAL:HG21	2.03	0.40
20:LM:1503:GLU:HG3	20:LM:1504:THR:HG23	2.02	0.40
21:LN:100:PHE:CE2	51:SC:245:ARG:HB2	2.56	0.40
22:LO:584:ARG:NH1	22:LO:606:LYS:HB3	2.36	0.40
37:NH:266:ARG:HA	37:NH:266:ARG:HD2	1.86	0.40
37:NH:366:HIS:ND1	37:NH:368:THR:OG1	2.51	0.40
39:NL:164:VAL:HG12	39:NL:185:VAL:HG22	2.03	0.40
44:NR:592:UNK:O	44:NR:596:UNK:N	2.54	0.40
47:NU:30:THR:HA	47:NU:33:ARG:HG2	2.03	0.40
49:SA:150:HIS:O	49:SA:154:ARG:HD3	2.21	0.40
59:SP:366:LEU:HD13	59:SP:405:PHE:HB2	2.02	0.40
59:SP:2679:ASN:OD1	59:SP:2679:ASN:N	2.54	0.40
2:L1:118:C:H1'	2:L1:445:A:C5	2.57	0.40
2:L1:949:G:H2'	2:L1:950:C:C6	2.56	0.40
2:L1:1762:C:H1'	2:L1:1771:G:N2	2.36	0.40
2:L1:1814:G:H2'	2:L1:1815:A:C8	2.56	0.40
3:L2:10:C:H2'	3:L2:11:U:H6	1.86	0.40
6:L5:81:ARG:HG3	6:L5:82:ASN:OD1	2.22	0.40
8:L7:192:PHE:CD1	43:NQ:12:PRO:HB3	2.56	0.40
11:LA:11:VAL:HG12	11:LA:13:ASP:OD1	2.21	0.40
18:LJ:297:LEU:HD23	18:LJ:304:ILE:HG12	2.03	0.40
20:LM:380:GLU:O	20:LM:384:THR:HG23	2.22	0.40
20:LM:681:LEU:HA	20:LM:684:VAL:HG12	2.04	0.40
20:LM:1806:LEU:O	20:LM:1809:LEU:HG	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:LN:175:SER:O	21:LN:177:SER:N	2.50	0.40
22:LO:710:PHE:CE2	22:LO:714:GLY:HA2	2.56	0.40
25:LR:491:ASP:C	25:LR:492:LYS:HD3	2.42	0.40
27:LT:389:GLY:HA2	27:LT:451:GLU:HG2	2.04	0.40
27:LT:750:GLN:HA	27:LT:887:LYS:NZ	2.36	0.40
28:LU:216:ALA:HB3	28:LU:220:ASN:OD1	2.21	0.40
38:NI:85:VAL:HG22	38:NI:123:PHE:CE1	2.57	0.40
44:NR:810:UNK:O	44:NR:814:UNK:N	2.55	0.40
51:SD:132:LYS:HE3	51:SD:132:LYS:HB2	1.94	0.40
54:SH:191:ILE:HB	54:SH:223:ILE:HG13	2.04	0.40
56:SK:44:ILE:HB	56:SK:197:VAL:HG22	2.03	0.40
59:SP:787:GLU:OE1	59:SP:787:GLU:N	2.55	0.40
59:SP:1232:LEU:HD12	59:SP:1298:LEU:HD12	2.02	0.40
59:SP:1378:GLN:HB2	59:SP:1413:VAL:HG22	2.02	0.40
59:SP:1543:THR:HG22	59:SP:1579:LYS:NZ	2.36	0.40
59:SP:1876:LEU:HB3	59:SP:1880:PHE:CD1	2.56	0.40
62:SS:583:LEU:HB2	62:SS:586:GLU:OE1	2.22	0.40
63:ST:503:TYR:O	63:ST:507:GLN:HG2	2.21	0.40
63:ST:610:PRO:HD2	64:SU:445:TYR:HE1	1.85	0.40
63:ST:790:LYS:HE3	63:ST:790:LYS:HB2	1.79	0.40
64:SU:261:LYS:HB2	64:SU:262:HIS:ND1	2.35	0.40
64:SU:424:ASP:OD1	64:SU:424:ASP:N	2.55	0.40
3:L2:170:U:H2'	3:L2:171:U:O4'	2.22	0.40
9:L8:163:GLU:O	9:L8:167:GLN:HG2	2.21	0.40
17:LI:152:VAL:HG12	17:LI:152:VAL:O	2.21	0.40
19:LL:495:LEU:HA	19:LL:534:HIS:CE1	2.56	0.40
20:LM:1992:LEU:HD23	20:LM:1992:LEU:HA	1.92	0.40
20:LM:2113:LEU:HD23	20:LM:2113:LEU:HA	1.88	0.40
21:LN:404:TRP:CE2	21:LN:417:ARG:HD3	2.56	0.40
24:LQ:547:GLN:NE2	24:LQ:548:LEU:O	2.46	0.40
25:LR:490:ASN:ND2	25:LR:492:LYS:HE2	2.37	0.40
25:LR:493:LEU:HD22	25:LR:505:LEU:HD11	2.04	0.40
27:LT:216:TYR:HB3	27:LT:219:LYS:HD2	2.02	0.40
27:LT:278:PHE:HB2	27:LT:280:GLU:OE1	2.21	0.40
27:LT:851:GLY:O	27:LT:855:ILE:HG12	2.21	0.40
29:LW:383:LEU:HB2	29:LW:400:LEU:HD11	2.04	0.40
37:NH:130:GLN:HE22	37:NH:143:GLN:NE2	2.11	0.40
37:NH:199:TYR:OH	37:NH:257:PRO:HD3	2.20	0.40
44:NR:746:UNK:O	44:NR:750:UNK:N	2.54	0.40
45:NS:920:SER:O	45:NS:924:TYR:N	2.42	0.40
45:NS:1140:PRO:HG2	45:NS:1143:MET:HE1	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:SG:368:ARG:HB3	53:SG:377:PHE:CZ	2.57	0.40
63:ST:585:LEU:HA	63:ST:588:VAL:HG12	2.03	0.40
68:SZ:317:ILE:O	68:SZ:350:TYR:OH	2.22	0.40
68:SZ:410:HIS:HA	68:SZ:411:PRO:HD3	1.96	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	L3	85/116 (73%)	83 (98%)	2 (2%)	0	100	100
5	L4	260/263 (99%)	256 (98%)	4 (2%)	0	100	100
6	L5	188/204 (92%)	182 (97%)	6 (3%)	0	100	100
7	L6	228/249 (92%)	224 (98%)	4 (2%)	0	100	100
8	L7	164/194 (84%)	162 (99%)	2 (1%)	0	100	100
9	L8	176/208 (85%)	173 (98%)	3 (2%)	0	100	100
10	L9	178/194 (92%)	176 (99%)	2 (1%)	0	100	100
11	LA	118/132 (89%)	111 (94%)	7 (6%)	0	100	100
12	LC	134/146 (92%)	133 (99%)	1 (1%)	0	100	100
13	LD	149/158 (94%)	145 (97%)	4 (3%)	0	100	100
14	LF	124/133 (93%)	124 (100%)	0	0	100	100
15	LG	60/69 (87%)	58 (97%)	2 (3%)	0	100	100
16	LH	738/830 (89%)	720 (98%)	18 (2%)	0	100	100
17	LI	374/678 (55%)	370 (99%)	4 (1%)	0	100	100
18	LJ	456/518 (88%)	440 (96%)	16 (4%)	0	100	100
19	LK	116/677 (17%)	113 (97%)	3 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
19	LL	500/677 (74%)	480 (96%)	20 (4%)	0	100	100
20	LM	2021/2144 (94%)	1980 (98%)	41 (2%)	0	100	100
21	LN	667/686 (97%)	646 (97%)	21 (3%)	0	100	100
22	LO	813/919 (88%)	798 (98%)	15 (2%)	0	100	100
23	LP	558/597 (94%)	553 (99%)	5 (1%)	0	100	100
24	LQ	814/943 (86%)	797 (98%)	17 (2%)	0	100	100
25	LR	768/808 (95%)	751 (98%)	17 (2%)	0	100	100
26	LS	447/556 (80%)	435 (97%)	12 (3%)	0	100	100
27	LT	847/951 (89%)	831 (98%)	16 (2%)	0	100	100
28	LU	443/445 (100%)	432 (98%)	11 (2%)	0	100	100
29	LW	448/610 (73%)	436 (97%)	12 (3%)	0	100	100
30	LY	89/136 (65%)	89 (100%)	0	0	100	100
31	LZ	158/184 (86%)	155 (98%)	3 (2%)	0	100	100
32	NA	287/681 (42%)	285 (99%)	2 (1%)	0	100	100
33	NB	99/479 (21%)	97 (98%)	2 (2%)	0	100	100
34	ND	81/257 (32%)	80 (99%)	1 (1%)	0	100	100
35	NF	147/151 (97%)	145 (99%)	2 (1%)	0	100	100
36	NG	125/151 (83%)	122 (98%)	3 (2%)	0	100	100
37	NH	1064/1146 (93%)	1038 (98%)	26 (2%)	0	100	100
38	NI	232/280 (83%)	229 (99%)	3 (1%)	0	100	100
39	NL	276/313 (88%)	274 (99%)	2 (1%)	0	100	100
40	NM	229/264 (87%)	225 (98%)	4 (2%)	0	100	100
41	NO	127/130 (98%)	125 (98%)	2 (2%)	0	100	100
42	NP	142/145 (98%)	141 (99%)	1 (1%)	0	100	100
43	NQ	80/84 (95%)	76 (95%)	4 (5%)	0	100	100
45	NS	890/1157 (77%)	860 (97%)	30 (3%)	0	100	100
46	NT	56/156 (36%)	54 (96%)	2 (4%)	0	100	100
47	NU	58/135 (43%)	58 (100%)	0	0	100	100
48	NV	34/885 (4%)	34 (100%)	0	0	100	100
49	SA	390/594 (66%)	386 (99%)	4 (1%)	0	100	100
50	SB	426/529 (80%)	424 (100%)	2 (0%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
51	SC	225/321 (70%)	220 (98%)	5 (2%)	0	100	100
51	SD	232/321 (72%)	226 (97%)	6 (3%)	0	100	100
52	SE	123/128 (96%)	122 (99%)	1 (1%)	0	100	100
52	SF	121/128 (94%)	120 (99%)	1 (1%)	0	100	100
53	SG	383/475 (81%)	372 (97%)	11 (3%)	0	100	100
54	SH	366/373 (98%)	357 (98%)	9 (2%)	0	100	100
55	SI	793/1282 (62%)	779 (98%)	14 (2%)	0	100	100
56	SJ	202/244 (83%)	194 (96%)	8 (4%)	0	100	100
56	SK	202/244 (83%)	198 (98%)	4 (2%)	0	100	100
57	SL	171/198 (86%)	167 (98%)	4 (2%)	0	100	100
58	SM	269/291 (92%)	263 (98%)	6 (2%)	0	100	100
59	SP	2463/2785 (88%)	2426 (98%)	37 (2%)	0	100	100
60	SQ	150/756 (20%)	148 (99%)	2 (1%)	0	100	100
61	SR	139/143 (97%)	135 (97%)	4 (3%)	0	100	100
62	SS	340/771 (44%)	335 (98%)	5 (2%)	0	100	100
63	ST	434/632 (69%)	424 (98%)	10 (2%)	0	100	100
64	SU	316/472 (67%)	307 (97%)	9 (3%)	0	100	100
65	SW	193/252 (77%)	192 (100%)	1 (0%)	0	100	100
67	SY	233/253 (92%)	231 (99%)	2 (1%)	0	100	100
68	SZ	244/304 (80%)	234 (96%)	10 (4%)	0	100	100
All	All	24463/32335 (76%)	23956 (98%)	507 (2%)	0	100	100

There are no Ramachandran outliers to report.

### 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	
4	L3	76/77 (99%)	75 (99%)	1 (1%)	65	85

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
5	L4	224/225 (100%)	224 (100%)	0	100	100
6	L5	160/170 (94%)	158 (99%)	2 (1%)	65	85
7	L6	200/218 (92%)	199 (100%)	1 (0%)	86	95
8	L7	149/174 (86%)	149 (100%)	0	100	100
9	L8	155/180 (86%)	155 (100%)	0	100	100
10	L9	160/168 (95%)	158 (99%)	2 (1%)	65	85
11	LA	102/108 (94%)	101 (99%)	1 (1%)	73	89
12	LC	111/121 (92%)	111 (100%)	0	100	100
13	LD	135/142 (95%)	133 (98%)	2 (2%)	60	83
14	LF	110/115 (96%)	110 (100%)	0	100	100
15	LG	55/62 (89%)	55 (100%)	0	100	100
16	LH	670/748 (90%)	668 (100%)	2 (0%)	91	97
17	LI	368/497 (74%)	368 (100%)	0	100	100
18	LJ	406/456 (89%)	405 (100%)	1 (0%)	92	98
19	LK	112/594 (19%)	111 (99%)	1 (1%)	75	90
19	LL	456/594 (77%)	454 (100%)	2 (0%)	89	96
20	LM	1813/1943 (93%)	1810 (100%)	3 (0%)	92	98
21	LN	582/597 (98%)	581 (100%)	1 (0%)	92	98
22	LO	705/783 (90%)	701 (99%)	4 (1%)	84	94
23	LP	498/527 (94%)	496 (100%)	2 (0%)	89	96
24	LQ	701/828 (85%)	700 (100%)	1 (0%)	92	98
25	LR	647/672 (96%)	645 (100%)	2 (0%)	91	97
26	LS	393/476 (83%)	391 (100%)	2 (0%)	86	95
27	LT	733/823 (89%)	732 (100%)	1 (0%)	92	98
28	LU	399/399 (100%)	398 (100%)	1 (0%)	91	97
29	LW	372/512 (73%)	372 (100%)	0	100	100
30	LY	83/114 (73%)	83 (100%)	0	100	100
31	LZ	146/167 (87%)	146 (100%)	0	100	100
32	NA	270/626 (43%)	269 (100%)	1 (0%)	89	96
33	NB	87/413 (21%)	87 (100%)	0	100	100
34	ND	71/222 (32%)	71 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
35	NF	130/131 (99%)	130 (100%)	0	100	100
36	NG	100/119 (84%)	100 (100%)	0	100	100
37	NH	917/984 (93%)	916 (100%)	1 (0%)	92	98
38	NI	193/246 (78%)	193 (100%)	0	100	100
39	NL	250/276 (91%)	249 (100%)	1 (0%)	89	96
40	NM	207/231 (90%)	207 (100%)	0	100	100
41	NO	112/113 (99%)	112 (100%)	0	100	100
42	NP	114/115 (99%)	114 (100%)	0	100	100
43	NQ	74/76 (97%)	73 (99%)	1 (1%)	62	84
45	NS	224/992 (23%)	223 (100%)	1 (0%)	89	96
46	NT	51/140 (36%)	50 (98%)	1 (2%)	50	78
47	NU	53/122 (43%)	52 (98%)	1 (2%)	52	79
48	NV	38/784 (5%)	38 (100%)	0	100	100
49	SA	334/511 (65%)	334 (100%)	0	100	100
50	SB	365/455 (80%)	365 (100%)	0	100	100
51	SC	192/234 (82%)	192 (100%)	0	100	100
51	SD	197/234 (84%)	197 (100%)	0	100	100
52	SE	108/111 (97%)	108 (100%)	0	100	100
52	SF	107/111 (96%)	107 (100%)	0	100	100
53	SG	327/382 (86%)	327 (100%)	0	100	100
54	SH	315/318 (99%)	315 (100%)	0	100	100
55	SI	702/1119 (63%)	702 (100%)	0	100	100
56	SJ	181/209 (87%)	178 (98%)	3 (2%)	56	81
56	SK	181/209 (87%)	181 (100%)	0	100	100
57	SL	159/182 (87%)	158 (99%)	1 (1%)	84	94
58	SM	242/254 (95%)	242 (100%)	0	100	100
59	SP	2260/2522 (90%)	2258 (100%)	2 (0%)	92	98
60	SQ	135/676 (20%)	135 (100%)	0	100	100
61	SR	113/115 (98%)	113 (100%)	0	100	100
62	SS	311/686 (45%)	306 (98%)	5 (2%)	58	82
63	ST	391/439 (89%)	388 (99%)	3 (1%)	79	91

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
64	SU	269/303 (89%)	269 (100%)	0	100	100
65	SW	165/208 (79%)	164 (99%)	1 (1%)	84	94
67	SY	217/232 (94%)	217 (100%)	0	100	100
68	SZ	214/227 (94%)	212 (99%)	2 (1%)	75	90
All	All	21097/27817 (76%)	21041 (100%)	56 (0%)	90	97

All (56) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	L3	8	LYS
6	L5	29	GLN
6	L5	203	ASN
7	L6	163	ASN
10	L9	17	ARG
10	L9	58	ARG
11	LA	93	LYS
13	LD	35	ARG
13	LD	69	ARG
16	LH	649	GLN
16	LH	759	LYS
18	LJ	281	LYS
19	LK	486	ASN
19	LL	188	ARG
19	LL	367	ARG
20	LM	152	LYS
20	LM	673	ASN
20	LM	1221	ARG
21	LN	438	ARG
22	LO	284	LYS
22	LO	489	GLN
22	LO	588	LYS
22	LO	768	ARG
23	LP	304	ARG
23	LP	386	ARG
24	LQ	929	LYS
25	LR	140	ARG
25	LR	165	ARG
26	LS	89	ARG
26	LS	549	ARG
27	LT	197	GLN
28	LU	437	LYS

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Mol	Chain	Res	Type
32	NA	525	LYS
37	NH	118	ARG
39	NL	96	LYS
43	NQ	16	LYS
45	NS	129	LYS
46	NT	104	LYS
47	NU	10	LYS
56	SJ	101	ASN
56	SJ	147	ARG
56	SJ	160	LYS
57	SL	185	ASN
59	SP	1586	ARG
59	SP	2644	ARG
62	SS	130	ARG
62	SS	229	ARG
62	SS	246	LYS
62	SS	640	LYS
62	SS	644	LYS
63	ST	47	LYS
63	ST	660	GLN
63	ST	789	ARG
65	SW	110	ASN
68	SZ	355	ARG
68	SZ	388	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (32) such sidechains are listed below:

Mol	Chain	Res	Type
6	L5	203	ASN
8	L7	25	GLN
8	L7	126	HIS
16	LH	368	GLN
16	LH	621	GLN
16	LH	655	GLN
19	LL	507	GLN
19	LL	547	GLN
20	LM	1125	GLN
20	LM	1253	GLN
22	LO	35	ASN
22	LO	648	ASN
22	LO	879	GLN
25	LR	145	HIS

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Mol	Chain	Res	Type
27	LT	85	HIS
27	LT	302	HIS
37	NH	130	GLN
38	NI	86	GLN
39	NL	303	HIS
53	SG	132	GLN
55	SI	1160	HIS
56	SK	115	ASN
56	SK	161	ASN
57	SL	115	GLN
57	SL	136	HIS
57	SL	185	ASN
59	SP	635	GLN
59	SP	2291	GLN
65	SW	110	ASN
65	SW	115	ASN
65	SW	232	ASN
68	SZ	240	ASN

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	L0	15/3617 (0%)	5 (33%)	0
2	L1	1611/1872 (86%)	393 (24%)	22 (1%)
3	L2	174/217 (80%)	50 (28%)	3 (1%)
All	All	1800/5706 (31%)	448 (24%)	25 (1%)

All (448) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	L0	432	A
1	L0	434	C
1	L0	436	A
1	L0	438	G
1	L0	439	U
2	L1	6	G
2	L1	9	U
2	L1	17	C
2	L1	23	G
2	L1	29	G
2	L1	33	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	41	G
2	L1	44	U
2	L1	45	A
2	L1	46	A
2	L1	56	G
2	L1	64	A
2	L1	65	C
2	L1	67	C
2	L1	68	A
2	L1	73	C
2	L1	74	G
2	L1	76	U
2	L1	99	A2M
2	L1	103	A
2	L1	113	G
2	L1	115	U
2	L1	126	G
2	L1	127	C
2	L1	132	U
2	L1	134	C
2	L1	142	C
2	L1	143	U
2	L1	155	G
2	L1	158	A
2	L1	175	A
2	L1	178	C
2	L1	179	C
2	L1	182	C
2	L1	184	G
2	L1	187	G
2	L1	188	C
2	L1	190	G
2	L1	192	C
2	L1	195	C
2	L1	204	G
2	L1	205	G
2	L1	206	G
2	L1	210	PSU
2	L1	215	G
2	L1	226	A
2	L1	227	U
2	L1	228	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	229	A
2	L1	235	A
2	L1	238	C
2	L1	269	G
2	L1	271	C
2	L1	272	G
2	L1	280	G
2	L1	283	G
2	L1	285	U
2	L1	287	U
2	L1	288	G
2	L1	306	C
2	L1	307	G
2	L1	308	G
2	L1	309	G
2	L1	312	G
2	L1	319	C
2	L1	321	C
2	L1	323	C
2	L1	325	C
2	L1	326	C
2	L1	328	U
2	L1	329	G
2	L1	362	C
2	L1	364	A
2	L1	370	G
2	L1	377	G
2	L1	385	G
2	L1	386	C
2	L1	389	A
2	L1	392	A
2	L1	400	C
2	L1	407	G
2	L1	408	A
2	L1	409	C
2	L1	417	C
2	L1	428	OMU
2	L1	439	A
2	L1	448	A
2	L1	449	A
2	L1	450	C
2	L1	452	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	465	A
2	L1	467	G
2	L1	471	G
2	L1	472	C
2	L1	474	G
2	L1	481	C
2	L1	484	A2M
2	L1	485	A
2	L1	487	U
2	L1	492	C
2	L1	496	C
2	L1	509	OMG
2	L1	515	G
2	L1	517	OMC
2	L1	525	A
2	L1	528	A
2	L1	534	G
2	L1	535	G
2	L1	541	U
2	L1	544	G
2	L1	548	C
2	L1	550	C
2	L1	554	A
2	L1	555	A
2	L1	560	A
2	L1	564	A
2	L1	568	C
2	L1	587	A
2	L1	588	G
2	L1	591	U
2	L1	594	A
2	L1	606	G
2	L1	611	G
2	L1	614	C
2	L1	619	A
2	L1	624	C
2	L1	627	OMU
2	L1	628	A
2	L1	643	A
2	L1	644	OMG
2	L1	653	A
2	L1	654	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	655	A
2	L1	666	U
2	L1	669	A
2	L1	689	U
2	L1	690	G
2	L1	692	G
2	L1	696	G
2	L1	700	G
2	L1	701	G
2	L1	702	G
2	L1	703	C
2	L1	704	G
2	L1	705	G
2	L1	706	U
2	L1	707	C
2	L1	722	C
2	L1	725	C
2	L1	731	G
2	L1	732	U
2	L1	733	C
2	L1	734	C
2	L1	735	C
2	L1	739	C
2	L1	744	G
2	L1	751	G
2	L1	752	G
2	L1	753	C
2	L1	756	C
2	L1	794	A
2	L1	795	A
2	L1	799	OMU
2	L1	811	A
2	L1	821	G
2	L1	822	PSU
2	L1	831	G
2	L1	834	C
2	L1	835	C
2	L1	844	U
2	L1	851	C
2	L1	852	G
2	L1	874	G
2	L1	875	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	876	C
2	L1	878	G
2	L1	879	C
2	L1	880	G
2	L1	903	A
2	L1	905	C
2	L1	906	U
2	L1	915	G
2	L1	916	A
2	L1	920	A
2	L1	933	G
2	L1	938	A
2	L1	943	U
2	L1	955	A
2	L1	969	U
2	L1	970	G
2	L1	983	A
2	L1	985	G
2	L1	990	A
2	L1	991	G
2	L1	992	A
2	L1	1017	U
2	L1	1023	A
2	L1	1027	A
2	L1	1044	G
2	L1	1045	PSU
2	L1	1049	A
2	L1	1050	A
2	L1	1055	A
2	L1	1058	A
2	L1	1059	G
2	L1	1060	A
2	L1	1061	U
2	L1	1062	A
2	L1	1063	C
2	L1	1065	G
2	L1	1068	G
2	L1	1076	G
2	L1	1078	C
2	L1	1083	A
2	L1	1085	C
2	L1	1088	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	1089	G
2	L1	1099	G
2	L1	1100	A
2	L1	1114	U
2	L1	1115	U
2	L1	1116	C
2	L1	1121	G
2	L1	1133	A
2	L1	1137	U
2	L1	1149	A
2	L1	1153	C
2	L1	1156	U
2	L1	1158	G
2	L1	1166	G
2	L1	1170	A
2	L1	1172	U
2	L1	1175	G
2	L1	1176	G
2	L1	1177	PSU
2	L1	1178	U
2	L1	1181	A
2	L1	1182	A
2	L1	1183	A
2	L1	1184	G
2	L1	1185	C
2	L1	1187	G
2	L1	1189	A
2	L1	1190	A
2	L1	1193	U
2	L1	1195	A
2	L1	1196	A
2	L1	1198	G
2	L1	1205	C
2	L1	1212	G
2	L1	1215	C
2	L1	1216	C
2	L1	1217	A
2	L1	1235	G
2	L1	1267	C
2	L1	1268	C
2	L1	1270	G
2	L1	1273	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	1274	G
2	L1	1275	G
2	L1	1276	A
2	L1	1283	C
2	L1	1284	A
2	L1	1286	G
2	L1	1290	G
2	L1	1295	A
2	L1	1301	A
2	L1	1302	G
2	L1	1305	C
2	L1	1308	U
2	L1	1309	C
2	L1	1311	C
2	L1	1315	U
2	L1	1316	C
2	L1	1318	G
2	L1	1320	G
2	L1	1327	G
2	L1	1328	G
2	L1	1329	U
2	L1	1330	G
2	L1	1331	C
2	L1	1333	U
2	L1	1335	G
2	L1	1348	G
2	L1	1355	C
2	L1	1358	U
2	L1	1365	G
2	L1	1371	U
2	L1	1372	U
2	L1	1374	C
2	L1	1375	G
2	L1	1376	A
2	L1	1377	U
2	L1	1378	A
2	L1	1381	G
2	L1	1382	A
2	L1	1394	G
2	L1	1454	A
2	L1	1462	U
2	L1	1463	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	1464	C
2	L1	1465	A
2	L1	1466	G
2	L1	1477	U
2	L1	1485	U
2	L1	1487	A
2	L1	1489	A
2	L1	1490	G
2	L1	1491	G
2	L1	1492	U
2	L1	1493	C
2	L1	1494	U
2	L1	1495	G
2	L1	1496	U
2	L1	1498	A
2	L1	1499	U
2	L1	1503	C
2	L1	1511	U
2	L1	1513	C
2	L1	1522	A
2	L1	1523	C
2	L1	1533	A
2	L1	1544	C
2	L1	1547	C
2	L1	1548	G
2	L1	1549	U
2	L1	1550	G
2	L1	1552	G
2	L1	1567	G
2	L1	1570	G
2	L1	1575	G
2	L1	1592	C
2	L1	1594	A
2	L1	1599	U
2	L1	1601	A
2	L1	1604	G
2	L1	1614	A
2	L1	1631	U
2	L1	1637	A
2	L1	1638	G
2	L1	1639	G
2	L1	1648	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	1656	G
2	L1	1660	C
2	L1	1665	G
2	L1	1666	C
2	L1	1671	G
2	L1	1681	U
2	L1	1685	U
2	L1	1692	U
2	L1	1698	C
2	L1	1720	U
2	L1	1721	U
2	L1	1722	G
2	L1	1724	A
2	L1	1725	U
2	L1	1729	U
2	L1	1732	G
2	L1	1748	G
2	L1	1751	C
2	L1	1757	G
2	L1	1760	G
2	L1	1764	G
2	L1	1765	C
2	L1	1767	C
2	L1	1768	A
2	L1	1769	C
2	L1	1770	G
2	L1	1772	C
2	L1	1774	C
2	L1	1775	U
2	L1	1776	G
2	L1	1777	G
2	L1	1783	C
2	L1	1784	G
2	L1	1785	C
2	L1	1790	A
2	L1	1800	A
2	L1	1809	A
2	L1	1810	U
2	L1	1813	A
2	L1	1816	G
2	L1	1818	A
2	L1	1824	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	1849	G
2	L1	1850	A
2	L1	1851	A
2	L1	1852	C
2	L1	1861	G
2	L1	1863	A
2	L1	1864	U
2	L1	1869	A
2	L1	1872	G
3	L2	15	A
3	L2	30	A
3	L2	31	G
3	L2	32	U
3	L2	35	G
3	L2	39	C
3	L2	88	G
3	L2	89	A
3	L2	91	G
3	L2	93	A
3	L2	98	U
3	L2	108	G
3	L2	109	C
3	L2	114	A
3	L2	123	U
3	L2	125	U
3	L2	126	G
3	L2	129	G
3	L2	130	U
3	L2	133	C
3	L2	134	U
3	L2	135	U
3	L2	138	C
3	L2	140	G
3	L2	142	A
3	L2	143	A
3	L2	145	U
3	L2	146	G
3	L2	149	G
3	L2	152	A
3	L2	153	G
3	L2	154	C
3	L2	158	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	L2	168	U
3	L2	171	U
3	L2	172	C
3	L2	173	U
3	L2	174	C
3	L2	179	U
3	L2	181	U
3	L2	182	U
3	L2	183	G
3	L2	185	G
3	L2	189	U
3	L2	190	G
3	L2	192	G
3	L2	208	U
3	L2	209	C
3	L2	213	G
3	L2	214	U

All (25) RNA pucker outliers are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	157	U
2	L1	227	U
2	L1	306	C
2	L1	325	C
2	L1	466	G
2	L1	732	U
2	L1	734	C
2	L1	834	C
2	L1	851	C
2	L1	915	G
2	L1	969	U
2	L1	1177	PSU
2	L1	1197	G
2	L1	1393	G
2	L1	1461	G
2	L1	1489	A
2	L1	1551	U
2	L1	1637	A
2	L1	1684	C
2	L1	1719	A
2	L1	1817	G

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Mol	Chain	Res	Type
2	L1	1823	A
3	L2	125	U
3	L2	153	G
3	L2	188	G

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

66 non-standard protein/DNA/RNA residues are modelled in this entry.

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$
2	A2M	L1	468	2	18,25,26	4.65	8 (44%)	20,36,39	1.87	3 (15%)
2	OMU	L1	121	2	19,22,23	3.36	7 (36%)	25,31,34	1.97	5 (20%)
2	PSU	L1	34	2	18,21,22	3.58	4 (22%)	21,30,33	2.42	6 (28%)
2	OMU	L1	428	2	19,22,23	3.33	7 (36%)	25,31,34	2.15	7 (28%)
2	OMC	L1	517	69,2	19,22,23	0.99	2 (10%)	25,31,34	0.78	0
2	PSU	L1	1046	2	18,21,22	3.55	4 (22%)	21,30,33	2.44	6 (28%)
2	PSU	L1	1177	2,3	18,21,22	3.62	5 (27%)	21,30,33	2.46	6 (28%)
2	OMC	L1	1703	2	19,22,23	0.95	2 (10%)	25,31,34	0.66	0
2	PSU	L1	649	2	18,21,22	3.54	5 (27%)	21,30,33	2.39	6 (28%)
2	PSU	L1	651	2	18,21,22	3.56	4 (22%)	21,30,33	2.42	6 (28%)
2	PSU	L1	1625	2	18,21,22	3.63	4 (22%)	21,30,33	2.40	6 (28%)
2	OMC	L1	797	2	19,22,23	1.00	2 (10%)	25,31,34	0.70	0
2	OMU	L1	172	2	19,22,23	3.38	7 (36%)	25,31,34	2.09	5 (20%)
2	PSU	L1	1643	2	18,21,22	3.57	4 (22%)	21,30,33	2.39	6 (28%)
2	A2M	L1	1678	2	18,25,26	4.67	7 (38%)	20,36,39	1.95	3 (15%)
2	A2M	L1	668	2,3	18,25,26	4.62	8 (44%)	20,36,39	2.47	4 (20%)
2	OMC	L1	174	69,2	19,22,23	0.90	1 (5%)	25,31,34	0.69	0
2	OMG	L1	644	2	19,26,27	2.93	5 (26%)	21,38,41	1.28	3 (14%)
2	PSU	L1	105	2	18,21,22	3.55	4 (22%)	21,30,33	2.43	6 (28%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	PSU	L1	119	2	18,21,22	3.54	4 (22%)	21,30,33	2.41	5 (23%)
2	PSU	L1	815	2	18,21,22	3.53	4 (22%)	21,30,33	2.43	6 (28%)
2	PSU	L1	822	2	18,21,22	3.57	5 (27%)	21,30,33	2.43	7 (33%)
2	PSU	L1	1004	2	18,21,22	3.56	5 (27%)	21,30,33	2.46	6 (28%)
2	PSU	L1	1045	2	18,21,22	3.57	4 (22%)	21,30,33	2.40	6 (28%)
2	PSU	L1	1232	2	18,21,22	3.57	4 (22%)	21,30,33	2.44	6 (28%)
2	A2M	L1	512	2	18,25,26	4.65	7 (38%)	20,36,39	1.75	3 (15%)
2	OMG	L1	867	2	19,26,27	2.93	5 (26%)	21,38,41	1.24	3 (14%)
2	PSU	L1	572	2	18,21,22	3.51	4 (22%)	21,30,33	2.39	7 (33%)
2	PSU	L1	218	2	18,21,22	3.52	4 (22%)	21,30,33	2.41	7 (33%)
2	A2M	L1	1031	2	18,25,26	4.66	8 (44%)	20,36,39	1.76	2 (10%)
2	PSU	L1	686	2	18,21,22	3.57	5 (27%)	21,30,33	2.34	6 (28%)
2	PSU	L1	296	2	18,21,22	3.56	4 (22%)	21,30,33	2.44	6 (28%)
2	A2M	L1	484	2	18,25,26	4.59	8 (44%)	20,36,39	2.20	5 (25%)
2	OMU	L1	627	2	19,22,23	3.34	7 (36%)	25,31,34	2.08	5 (20%)
2	PSU	L1	406	2	18,21,22	3.51	4 (22%)	21,30,33	2.43	6 (28%)
2	OMC	L1	462	2	19,22,23	0.89	2 (10%)	25,31,34	0.66	0
2	PSU	L1	1081	2	18,21,22	3.55	4 (22%)	21,30,33	2.40	6 (28%)
2	PSU	L1	1174	2,3	18,21,22	3.60	4 (22%)	21,30,33	2.40	6 (28%)
2	OMG	L1	436	2	19,26,27	2.93	5 (26%)	21,38,41	1.29	3 (14%)
2	A2M	L1	99	69,2	18,25,26	4.69	7 (38%)	20,36,39	1.73	2 (10%)
2	OMU	L1	116	2	19,22,23	3.36	7 (36%)	25,31,34	2.00	5 (20%)
2	A2M	L1	576	2	18,25,26	4.64	7 (38%)	20,36,39	1.75	2 (10%)
2	PSU	L1	966	2	18,21,22	3.56	4 (22%)	21,30,33	2.36	6 (28%)
2	PSU	L1	609	2	18,21,22	3.52	5 (27%)	21,30,33	2.40	6 (28%)
2	PSU	L1	866	2	18,21,22	3.56	4 (22%)	21,30,33	2.41	6 (28%)
2	PSU	L1	681	2	18,21,22	3.55	5 (27%)	21,30,33	2.41	6 (28%)
2	4AC	L1	1842	2	21,24,25	1.91	6 (28%)	28,34,37	2.16	6 (21%)
2	PSU	L1	93	2	18,21,22	3.53	4 (22%)	21,30,33	2.40	6 (28%)
2	PSU	L1	918	2	18,21,22	3.56	5 (27%)	21,30,33	2.53	7 (33%)
2	A2M	L1	166	2	18,25,26	4.69	8 (44%)	20,36,39	1.87	2 (10%)
2	OMU	L1	354	2	19,22,23	3.36	7 (36%)	25,31,34	2.03	5 (20%)
2	OMG	L1	509	69,2	19,26,27	2.92	5 (26%)	21,38,41	1.24	3 (14%)
2	A2M	L1	590	2	18,25,26	4.59	8 (44%)	20,36,39	2.49	3 (15%)
2	OMG	L1	683	2	19,26,27	2.95	5 (26%)	21,38,41	1.21	3 (14%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
2	PSU	L1	801	2	18,21,22	3.58	4 (22%)	21,30,33	2.37	6 (28%)
2	PSU	L1	36	2	18,21,22	3.51	5 (27%)	21,30,33	2.40	6 (28%)
2	OMU	L1	799	2	19,22,23	3.35	7 (36%)	25,31,34	1.97	6 (24%)
2	PSU	L1	1056	2	18,21,22	3.61	4 (22%)	21,30,33	2.43	7 (33%)
2	A2M	L1	159	2	18,25,26	4.63	7 (38%)	20,36,39	1.69	3 (15%)
2	OMC	L1	621	2	19,22,23	1.00	2 (10%)	25,31,34	0.99	2 (8%)
2	PSU	L1	210	2	18,21,22	3.62	4 (22%)	21,30,33	2.37	6 (28%)
2	PSU	L1	814	2	18,21,22	3.53	4 (22%)	21,30,33	2.40	6 (28%)
2	PSU	L1	863	2	18,21,22	3.50	4 (22%)	21,30,33	2.42	6 (28%)
2	PSU	L1	109	2	18,21,22	3.56	4 (22%)	21,30,33	2.47	6 (28%)
2	A2M	L1	27	2	18,25,26	4.66	8 (44%)	20,36,39	1.86	3 (15%)
2	OMG	L1	601	2	19,26,27	2.95	5 (26%)	21,38,41	1.32	3 (14%)

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
2	A2M	L1	468	2	-	1/5/27/28	0/3/3/3
2	OMU	L1	121	2	-	0/9/27/28	0/2/2/2
2	PSU	L1	34	2	-	0/7/25/26	0/2/2/2
2	OMU	L1	428	2	-	6/9/27/28	0/2/2/2
2	OMC	L1	517	69,2	-	2/9/27/28	0/2/2/2
2	PSU	L1	1046	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	1177	2,3	-	3/7/25/26	0/2/2/2
2	OMC	L1	1703	2	-	5/9/27/28	0/2/2/2
2	PSU	L1	649	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	651	2	-	1/7/25/26	0/2/2/2
2	PSU	L1	1625	2	-	1/7/25/26	0/2/2/2
2	OMC	L1	797	2	-	0/9/27/28	0/2/2/2
2	OMU	L1	172	2	-	0/9/27/28	0/2/2/2
2	PSU	L1	1643	2	-	0/7/25/26	0/2/2/2
2	A2M	L1	1678	2	-	1/5/27/28	0/3/3/3
2	A2M	L1	668	2,3	-	2/5/27/28	0/3/3/3
2	OMC	L1	174	69,2	-	0/9/27/28	0/2/2/2
2	OMG	L1	644	2	-	4/5/27/28	0/3/3/3
2	PSU	L1	105	2	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PSU	L1	119	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	815	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	822	2	-	2/7/25/26	0/2/2/2
2	PSU	L1	1004	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	1045	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	1232	2	-	0/7/25/26	0/2/2/2
2	A2M	L1	512	2	-	0/5/27/28	0/3/3/3
2	OMG	L1	867	2	-	0/5/27/28	0/3/3/3
2	PSU	L1	572	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	218	2	-	0/7/25/26	0/2/2/2
2	A2M	L1	1031	2	-	0/5/27/28	0/3/3/3
2	PSU	L1	686	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	296	2	-	0/7/25/26	0/2/2/2
2	A2M	L1	484	2	-	1/5/27/28	0/3/3/3
2	OMU	L1	627	2	-	4/9/27/28	0/2/2/2
2	PSU	L1	406	2	-	0/7/25/26	0/2/2/2
2	OMC	L1	462	2	-	0/9/27/28	0/2/2/2
2	PSU	L1	1081	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	1174	2,3	-	0/7/25/26	0/2/2/2
2	OMG	L1	436	2	-	0/5/27/28	0/3/3/3
2	A2M	L1	99	69,2	-	2/5/27/28	0/3/3/3
2	OMU	L1	116	2	-	0/9/27/28	0/2/2/2
2	A2M	L1	576	2	-	2/5/27/28	0/3/3/3
2	PSU	L1	966	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	609	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	866	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	681	2	-	0/7/25/26	0/2/2/2
2	4AC	L1	1842	2	-	2/11/29/30	0/2/2/2
2	PSU	L1	93	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	918	2	-	1/7/25/26	0/2/2/2
2	A2M	L1	166	2	-	0/5/27/28	0/3/3/3
2	OMU	L1	354	2	-	0/9/27/28	0/2/2/2
2	OMG	L1	509	69,2	-	2/5/27/28	0/3/3/3
2	A2M	L1	590	2	-	1/5/27/28	0/3/3/3
2	OMG	L1	683	2	-	0/5/27/28	0/3/3/3
2	PSU	L1	801	2	-	1/7/25/26	0/2/2/2
2	PSU	L1	36	2	-	0/7/25/26	0/2/2/2
2	OMU	L1	799	2	-	4/9/27/28	0/2/2/2
2	PSU	L1	1056	2	-	0/7/25/26	0/2/2/2
2	A2M	L1	159	2	-	1/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	OMC	L1	621	2	-	3/9/27/28	0/2/2/2
2	PSU	L1	210	2	-	2/7/25/26	0/2/2/2
2	PSU	L1	814	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	863	2	-	0/7/25/26	0/2/2/2
2	PSU	L1	109	2	-	0/7/25/26	0/2/2/2
2	A2M	L1	27	2	-	1/5/27/28	0/3/3/3
2	OMG	L1	601	2	-	2/5/27/28	0/3/3/3

All (332) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L1	99	A2M	C3'-C2'	-13.45	1.23	1.53
2	L1	166	A2M	C3'-C2'	-13.45	1.23	1.53
2	L1	512	A2M	C3'-C2'	-13.37	1.23	1.53
2	L1	27	A2M	C3'-C2'	-13.35	1.23	1.53
2	L1	576	A2M	C3'-C2'	-13.33	1.23	1.53
2	L1	1031	A2M	C3'-C2'	-13.32	1.23	1.53
2	L1	468	A2M	C3'-C2'	-13.30	1.23	1.53
2	L1	1678	A2M	C3'-C2'	-13.29	1.23	1.53
2	L1	159	A2M	C3'-C2'	-13.22	1.24	1.53
2	L1	590	A2M	C3'-C2'	-13.12	1.24	1.53
2	L1	668	A2M	C3'-C2'	-12.99	1.24	1.53
2	L1	484	A2M	C3'-C2'	-12.46	1.25	1.53
2	L1	867	OMG	O6-C6	10.72	1.48	1.23
2	L1	683	OMG	O6-C6	10.71	1.48	1.23
2	L1	601	OMG	O6-C6	10.71	1.48	1.23
2	L1	644	OMG	O6-C6	10.66	1.48	1.23
2	L1	436	OMG	O6-C6	10.63	1.48	1.23
2	L1	509	OMG	O6-C6	10.57	1.48	1.23
2	L1	1625	PSU	C2-N1	10.37	1.50	1.36
2	L1	210	PSU	C2-N1	10.31	1.50	1.36
2	L1	1174	PSU	C2-N1	10.30	1.50	1.36
2	L1	1056	PSU	C2-N1	10.29	1.50	1.36
2	L1	801	PSU	C2-N1	10.17	1.49	1.36
2	L1	1643	PSU	C2-N1	10.12	1.49	1.36
2	L1	866	PSU	C2-N1	10.11	1.49	1.36
2	L1	34	PSU	C2-N1	10.10	1.49	1.36
2	L1	1177	PSU	C2-N1	10.07	1.49	1.36
2	L1	651	PSU	C2-N1	10.05	1.49	1.36
2	L1	686	PSU	C2-N1	10.04	1.49	1.36
2	L1	296	PSU	C2-N1	10.03	1.49	1.36
2	L1	1045	PSU	C2-N1	10.03	1.49	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L1	609	PSU	C2-N1	10.01	1.49	1.36
2	L1	966	PSU	C2-N1	10.01	1.49	1.36
2	L1	1232	PSU	C2-N1	10.01	1.49	1.36
2	L1	109	PSU	C2-N1	10.00	1.49	1.36
2	L1	1046	PSU	C2-N1	9.99	1.49	1.36
2	L1	649	PSU	C2-N1	9.97	1.49	1.36
2	L1	105	PSU	C2-N1	9.95	1.49	1.36
2	L1	1004	PSU	C2-N1	9.95	1.49	1.36
2	L1	822	PSU	C2-N1	9.94	1.49	1.36
2	L1	681	PSU	C2-N1	9.93	1.49	1.36
2	L1	815	PSU	C2-N1	9.93	1.49	1.36
2	L1	1081	PSU	C2-N1	9.92	1.49	1.36
2	L1	918	PSU	C2-N1	9.91	1.49	1.36
2	L1	814	PSU	C2-N1	9.89	1.49	1.36
2	L1	36	PSU	C2-N1	9.86	1.49	1.36
2	L1	93	PSU	C2-N1	9.86	1.49	1.36
2	L1	863	PSU	C2-N1	9.85	1.49	1.36
2	L1	406	PSU	C2-N1	9.82	1.49	1.36
2	L1	428	OMU	O2-C2	9.80	1.40	1.23
2	L1	572	PSU	C2-N1	9.76	1.49	1.36
2	L1	210	PSU	C6-C5	9.76	1.46	1.35
2	L1	1177	PSU	C6-C5	9.73	1.46	1.35
2	L1	119	PSU	C2-N1	9.72	1.49	1.36
2	L1	1056	PSU	C6-C5	9.71	1.46	1.35
2	L1	218	PSU	C2-N1	9.70	1.49	1.36
2	L1	1625	PSU	C6-C5	9.69	1.46	1.35
2	L1	116	OMU	O2-C2	9.68	1.40	1.23
2	L1	1232	PSU	C6-C5	9.68	1.46	1.35
2	L1	172	OMU	O2-C2	9.67	1.40	1.23
2	L1	354	OMU	O2-C2	9.66	1.40	1.23
2	L1	799	OMU	O2-C2	9.65	1.40	1.23
2	L1	801	PSU	C6-C5	9.65	1.46	1.35
2	L1	1004	PSU	C6-C5	9.64	1.46	1.35
2	L1	1174	PSU	C6-C5	9.64	1.46	1.35
2	L1	34	PSU	C6-C5	9.62	1.45	1.35
2	L1	966	PSU	C6-C5	9.61	1.45	1.35
2	L1	822	PSU	C6-C5	9.59	1.45	1.35
2	L1	121	OMU	O2-C2	9.58	1.40	1.23
2	L1	296	PSU	C6-C5	9.57	1.45	1.35
2	L1	93	PSU	C6-C5	9.57	1.45	1.35
2	L1	218	PSU	C6-C5	9.56	1.45	1.35
2	L1	686	PSU	C6-C5	9.55	1.45	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L1	1643	PSU	C6-C5	9.55	1.45	1.35
2	L1	1045	PSU	C6-C5	9.55	1.45	1.35
2	L1	627	OMU	O2-C2	9.54	1.40	1.23
2	L1	119	PSU	C6-C5	9.53	1.45	1.35
2	L1	1046	PSU	C6-C5	9.51	1.45	1.35
2	L1	105	PSU	C6-C5	9.51	1.45	1.35
2	L1	109	PSU	C6-C5	9.49	1.45	1.35
2	L1	814	PSU	C6-C5	9.48	1.45	1.35
2	L1	681	PSU	C6-C5	9.47	1.45	1.35
2	L1	649	PSU	C6-C5	9.46	1.45	1.35
2	L1	815	PSU	C6-C5	9.46	1.45	1.35
2	L1	651	PSU	C6-C5	9.46	1.45	1.35
2	L1	866	PSU	C6-C5	9.44	1.45	1.35
2	L1	918	PSU	C6-C5	9.43	1.45	1.35
2	L1	572	PSU	C6-C5	9.41	1.45	1.35
2	L1	36	PSU	C6-C5	9.41	1.45	1.35
2	L1	1081	PSU	C6-C5	9.39	1.45	1.35
2	L1	609	PSU	C6-C5	9.35	1.45	1.35
2	L1	406	PSU	C6-C5	9.35	1.45	1.35
2	L1	863	PSU	C6-C5	9.31	1.45	1.35
2	L1	484	A2M	O4'-C1'	8.53	1.52	1.40
2	L1	668	A2M	O4'-C1'	8.25	1.51	1.40
2	L1	166	A2M	O4'-C1'	8.23	1.51	1.40
2	L1	99	A2M	O4'-C1'	8.22	1.51	1.40
2	L1	428	OMU	O4-C4	8.18	1.40	1.24
2	L1	799	OMU	O4-C4	8.17	1.40	1.24
2	L1	627	OMU	O4-C4	8.14	1.40	1.24
2	L1	172	OMU	O4-C4	8.13	1.40	1.24
2	L1	27	A2M	O4'-C1'	8.08	1.51	1.40
2	L1	116	OMU	O4-C4	8.07	1.40	1.24
2	L1	121	OMU	O4-C4	8.07	1.40	1.24
2	L1	1031	A2M	O4'-C1'	8.03	1.51	1.40
2	L1	468	A2M	O4'-C1'	8.00	1.51	1.40
2	L1	354	OMU	O4-C4	7.97	1.40	1.24
2	L1	512	A2M	O4'-C1'	7.97	1.51	1.40
2	L1	1678	A2M	O4'-C1'	7.94	1.51	1.40
2	L1	159	A2M	O4'-C1'	7.92	1.51	1.40
2	L1	590	A2M	O4'-C1'	7.89	1.51	1.40
2	L1	576	A2M	O4'-C1'	7.81	1.51	1.40
2	L1	1678	A2M	O4'-C4'	-6.72	1.30	1.45
2	L1	512	A2M	C1'-N9	-6.66	1.33	1.49
2	L1	576	A2M	C1'-N9	-6.64	1.33	1.49

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L1	1031	A2M	C1'-N9	-6.61	1.33	1.49
2	L1	590	A2M	O4'-C4'	-6.60	1.30	1.45
2	L1	468	A2M	C1'-N9	-6.55	1.33	1.49
2	L1	1678	A2M	C1'-N9	-6.54	1.33	1.49
2	L1	159	A2M	C1'-N9	-6.54	1.33	1.49
2	L1	27	A2M	C1'-N9	-6.54	1.33	1.49
2	L1	99	A2M	C1'-N9	-6.53	1.33	1.49
2	L1	159	A2M	O4'-C4'	-6.48	1.30	1.45
2	L1	166	A2M	C1'-N9	-6.47	1.33	1.49
2	L1	576	A2M	O4'-C4'	-6.46	1.30	1.45
2	L1	99	A2M	O4'-C4'	-6.45	1.30	1.45
2	L1	512	A2M	O4'-C4'	-6.44	1.30	1.45
2	L1	166	A2M	O4'-C4'	-6.42	1.30	1.45
2	L1	1031	A2M	O4'-C4'	-6.39	1.30	1.45
2	L1	484	A2M	O4'-C4'	-6.39	1.30	1.45
2	L1	27	A2M	O4'-C4'	-6.38	1.30	1.45
2	L1	468	A2M	O4'-C4'	-6.36	1.30	1.45
2	L1	484	A2M	C1'-N9	-6.17	1.34	1.49
2	L1	668	A2M	C1'-N9	-6.16	1.34	1.49
2	L1	590	A2M	C1'-N9	-6.16	1.34	1.49
2	L1	668	A2M	O4'-C4'	-6.16	1.31	1.45
2	L1	668	A2M	C3'-C4'	5.65	1.67	1.53
2	L1	1842	4AC	C4-N4	5.58	1.48	1.39
2	L1	484	A2M	C3'-C4'	5.39	1.66	1.53
2	L1	159	A2M	C3'-C4'	5.30	1.66	1.53
2	L1	1678	A2M	C3'-C4'	5.30	1.66	1.53
2	L1	468	A2M	C3'-C4'	5.29	1.66	1.53
2	L1	27	A2M	C3'-C4'	5.27	1.66	1.53
2	L1	1031	A2M	C3'-C4'	5.26	1.66	1.53
2	L1	166	A2M	C3'-C4'	5.21	1.66	1.53
2	L1	99	A2M	C3'-C4'	5.20	1.66	1.53
2	L1	590	A2M	C3'-C4'	5.13	1.66	1.53
2	L1	576	A2M	C3'-C4'	5.12	1.66	1.53
2	L1	601	OMG	C2-N2	4.93	1.45	1.34
2	L1	512	A2M	C3'-C4'	4.91	1.65	1.53
2	L1	683	OMG	C2-N2	4.89	1.45	1.34
2	L1	436	OMG	C2-N2	4.87	1.45	1.34
2	L1	867	OMG	C2-N2	4.86	1.45	1.34
2	L1	644	OMG	C2-N2	4.81	1.45	1.34
2	L1	509	OMG	C2-N2	4.74	1.45	1.34
2	L1	918	PSU	C6-N1	-4.36	1.29	1.36
2	L1	109	PSU	C6-N1	-4.33	1.29	1.36

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L1	406	PSU	C6-N1	-4.33	1.29	1.36
2	L1	1081	PSU	C6-N1	-4.32	1.29	1.36
2	L1	119	PSU	C6-N1	-4.31	1.29	1.36
2	L1	681	PSU	C6-N1	-4.31	1.29	1.36
2	L1	218	PSU	C6-N1	-4.27	1.29	1.36
2	L1	105	PSU	C6-N1	-4.25	1.29	1.36
2	L1	863	PSU	C6-N1	-4.24	1.29	1.36
2	L1	651	PSU	C6-N1	-4.24	1.29	1.36
2	L1	572	PSU	C6-N1	-4.21	1.29	1.36
2	L1	815	PSU	C6-N1	-4.20	1.29	1.36
2	L1	1004	PSU	C6-N1	-4.17	1.29	1.36
2	L1	1232	PSU	C6-N1	-4.17	1.29	1.36
2	L1	296	PSU	C6-N1	-4.16	1.29	1.36
2	L1	814	PSU	C6-N1	-4.16	1.29	1.36
2	L1	36	PSU	C6-N1	-4.15	1.29	1.36
2	L1	822	PSU	C6-N1	-4.15	1.29	1.36
2	L1	866	PSU	C6-N1	-4.15	1.29	1.36
2	L1	649	PSU	C6-N1	-4.14	1.29	1.36
2	L1	686	PSU	C6-N1	-4.13	1.29	1.36
2	L1	1046	PSU	C6-N1	-4.13	1.29	1.36
2	L1	1643	PSU	C6-N1	-4.13	1.29	1.36
2	L1	34	PSU	C6-N1	-4.12	1.29	1.36
2	L1	966	PSU	C6-N1	-4.10	1.29	1.36
2	L1	93	PSU	C6-N1	-4.09	1.29	1.36
2	L1	1045	PSU	C6-N1	-4.09	1.29	1.36
2	L1	609	PSU	C6-N1	-4.08	1.29	1.36
2	L1	172	OMU	C2-N1	-4.08	1.32	1.38
2	L1	1625	PSU	C6-N1	-4.05	1.29	1.36
2	L1	354	OMU	C2-N1	-4.03	1.32	1.38
2	L1	1177	PSU	C6-N1	-4.02	1.29	1.36
2	L1	801	PSU	C6-N1	-4.01	1.29	1.36
2	L1	1056	PSU	C6-N1	-3.99	1.29	1.36
2	L1	1174	PSU	C6-N1	-3.97	1.29	1.36
2	L1	121	OMU	C2-N1	-3.94	1.32	1.38
2	L1	354	OMU	C4-N3	-3.93	1.31	1.38
2	L1	116	OMU	C2-N1	-3.92	1.32	1.38
2	L1	210	PSU	C6-N1	-3.92	1.29	1.36
2	L1	627	OMU	C2-N1	-3.89	1.32	1.38
2	L1	121	OMU	C4-N3	-3.83	1.32	1.38
2	L1	799	OMU	C4-N3	-3.81	1.32	1.38
2	L1	627	OMU	C4-N3	-3.80	1.32	1.38
2	L1	172	OMU	C4-N3	-3.73	1.32	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L1	116	OMU	C4-N3	-3.71	1.32	1.38
2	L1	484	A2M	O2'-C2'	3.69	1.51	1.42
2	L1	799	OMU	C2-N1	-3.68	1.32	1.38
2	L1	428	OMU	C4-N3	-3.68	1.32	1.38
2	L1	159	A2M	O2'-C2'	3.62	1.51	1.42
2	L1	1842	4AC	C7-N4	3.61	1.44	1.37
2	L1	27	A2M	O2'-C2'	3.58	1.51	1.42
2	L1	99	A2M	O2'-C2'	3.56	1.51	1.42
2	L1	590	A2M	O2'-C2'	3.56	1.51	1.42
2	L1	1031	A2M	O2'-C2'	3.56	1.51	1.42
2	L1	468	A2M	O2'-C2'	3.56	1.51	1.42
2	L1	576	A2M	O2'-C2'	3.55	1.51	1.42
2	L1	668	A2M	O2'-C2'	3.55	1.51	1.42
2	L1	1678	A2M	C6-N6	3.54	1.46	1.34
2	L1	1678	A2M	O2'-C2'	3.53	1.51	1.42
2	L1	484	A2M	C6-N6	3.52	1.46	1.34
2	L1	166	A2M	C6-N6	3.52	1.46	1.34
2	L1	512	A2M	O2'-C2'	3.52	1.51	1.42
2	L1	468	A2M	C6-N6	3.51	1.46	1.34
2	L1	166	A2M	O2'-C2'	3.51	1.51	1.42
2	L1	119	PSU	C4-C5	3.50	1.54	1.44
2	L1	121	OMU	C2-N3	-3.49	1.31	1.38
2	L1	576	A2M	C6-N6	3.48	1.46	1.34
2	L1	590	A2M	C6-N6	3.48	1.46	1.34
2	L1	172	OMU	C2-N3	-3.47	1.31	1.38
2	L1	27	A2M	C6-N6	3.47	1.46	1.34
2	L1	159	A2M	C6-N6	3.47	1.46	1.34
2	L1	99	A2M	C6-N6	3.46	1.46	1.34
2	L1	512	A2M	C6-N6	3.46	1.46	1.34
2	L1	668	A2M	C6-N6	3.45	1.46	1.34
2	L1	354	OMU	C2-N3	-3.44	1.32	1.38
2	L1	1045	PSU	C4-C5	3.44	1.53	1.44
2	L1	1031	A2M	C6-N6	3.43	1.46	1.34
2	L1	116	OMU	C2-N3	-3.39	1.32	1.38
2	L1	627	OMU	C2-N3	-3.36	1.32	1.38
2	L1	799	OMU	C2-N3	-3.34	1.32	1.38
2	L1	1177	PSU	C4-C5	3.26	1.53	1.44
2	L1	683	OMG	C5-C6	-3.25	1.41	1.47
2	L1	428	OMU	C2-N3	-3.25	1.32	1.38
2	L1	218	PSU	C4-C5	3.25	1.53	1.44
2	L1	436	OMG	C5-C6	-3.25	1.41	1.47
2	L1	509	OMG	C5-C6	-3.24	1.41	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L1	210	PSU	C4-C5	3.23	1.53	1.44
2	L1	1081	PSU	C4-C5	3.23	1.53	1.44
2	L1	572	PSU	C4-C5	3.23	1.53	1.44
2	L1	966	PSU	C4-C5	3.20	1.53	1.44
2	L1	644	OMG	C5-C6	-3.20	1.41	1.47
2	L1	93	PSU	C4-C5	3.19	1.53	1.44
2	L1	686	PSU	C4-C5	3.18	1.53	1.44
2	L1	867	OMG	C5-C6	-3.18	1.41	1.47
2	L1	601	OMG	C5-C6	-3.18	1.41	1.47
2	L1	822	PSU	C4-C5	3.16	1.53	1.44
2	L1	814	PSU	C4-C5	3.15	1.53	1.44
2	L1	105	PSU	C4-C5	3.13	1.53	1.44
2	L1	651	PSU	C4-C5	3.12	1.53	1.44
2	L1	866	PSU	C4-C5	3.11	1.53	1.44
2	L1	863	PSU	C4-C5	3.11	1.52	1.44
2	L1	1056	PSU	C4-C5	3.11	1.52	1.44
2	L1	484	A2M	O3'-C3'	3.11	1.50	1.43
2	L1	1046	PSU	C4-C5	3.08	1.52	1.44
2	L1	1174	PSU	C4-C5	3.08	1.52	1.44
2	L1	428	OMU	C2-N1	-3.07	1.33	1.38
2	L1	1842	4AC	C5-C4	3.07	1.47	1.41
2	L1	1625	PSU	C4-C5	3.06	1.52	1.44
2	L1	801	PSU	C4-C5	3.06	1.52	1.44
2	L1	34	PSU	C4-C5	3.06	1.52	1.44
2	L1	681	PSU	C4-C5	3.06	1.52	1.44
2	L1	296	PSU	C4-C5	3.03	1.52	1.44
2	L1	815	PSU	C4-C5	3.02	1.52	1.44
2	L1	109	PSU	C4-C5	3.01	1.52	1.44
2	L1	621	OMC	C2-N1	3.00	1.46	1.40
2	L1	36	PSU	C4-C5	3.00	1.52	1.44
2	L1	1643	PSU	C4-C5	2.99	1.52	1.44
2	L1	406	PSU	C4-C5	2.99	1.52	1.44
2	L1	609	PSU	C4-C5	2.96	1.52	1.44
2	L1	1004	PSU	C4-C5	2.96	1.52	1.44
2	L1	649	PSU	C4-C5	2.94	1.52	1.44
2	L1	517	OMC	C2-N1	2.93	1.46	1.40
2	L1	797	OMC	C2-N1	2.93	1.46	1.40
2	L1	1232	PSU	C4-C5	2.92	1.52	1.44
2	L1	918	PSU	C4-C5	2.89	1.52	1.44
2	L1	1842	4AC	C2-N3	2.72	1.41	1.36
2	L1	668	A2M	O3'-C3'	2.62	1.49	1.43
2	L1	509	OMG	C2-N1	-2.60	1.31	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L1	1177	PSU	O4'-C1'	-2.57	1.40	1.43
2	L1	918	PSU	O4'-C1'	-2.56	1.40	1.43
2	L1	1703	OMC	C2-N1	2.56	1.45	1.40
2	L1	683	OMG	C2-N1	-2.53	1.31	1.37
2	L1	601	OMG	C2-N1	-2.50	1.31	1.37
2	L1	174	OMC	C2-N1	2.50	1.45	1.40
2	L1	436	OMG	C2-N1	-2.49	1.31	1.37
2	L1	172	OMU	C6-N1	-2.49	1.32	1.38
2	L1	644	OMG	C2-N1	-2.48	1.31	1.37
2	L1	116	OMU	C6-N1	-2.42	1.32	1.38
2	L1	462	OMC	C2-N1	2.41	1.45	1.40
2	L1	627	OMU	C6-N1	-2.41	1.32	1.38
2	L1	867	OMG	C2-N1	-2.37	1.31	1.37
2	L1	121	OMU	C5-C4	-2.36	1.38	1.43
2	L1	116	OMU	C5-C4	-2.33	1.38	1.43
2	L1	121	OMU	C6-N1	-2.32	1.32	1.38
2	L1	354	OMU	C6-N1	-2.32	1.32	1.38
2	L1	601	OMG	C5-C4	-2.32	1.37	1.43
2	L1	428	OMU	C6-N1	-2.29	1.32	1.38
2	L1	428	OMU	C5-C4	-2.29	1.38	1.43
2	L1	1703	OMC	C2-N3	2.28	1.40	1.36
2	L1	799	OMU	C6-N1	-2.28	1.32	1.38
2	L1	683	OMG	C5-C4	-2.26	1.37	1.43
2	L1	797	OMC	C2-N3	2.26	1.40	1.36
2	L1	621	OMC	C2-N3	2.25	1.40	1.36
2	L1	644	OMG	C5-C4	-2.25	1.37	1.43
2	L1	436	OMG	C5-C4	-2.25	1.37	1.43
2	L1	867	OMG	C5-C4	-2.22	1.37	1.43
2	L1	627	OMU	C5-C4	-2.20	1.38	1.43
2	L1	509	OMG	C5-C4	-2.19	1.37	1.43
2	L1	354	OMU	C5-C4	-2.19	1.39	1.43
2	L1	799	OMU	C5-C4	-2.18	1.39	1.43
2	L1	517	OMC	C2-N3	2.15	1.40	1.36
2	L1	1842	4AC	CM7-C7	2.15	1.55	1.50
2	L1	172	OMU	C5-C4	-2.14	1.39	1.43
2	L1	822	PSU	O4'-C1'	-2.14	1.40	1.43
2	L1	649	PSU	C4-N3	-2.07	1.35	1.38
2	L1	166	A2M	O3'-C3'	2.06	1.48	1.43
2	L1	681	PSU	C4-N3	-2.04	1.35	1.38
2	L1	27	A2M	O3'-C3'	2.04	1.48	1.43
2	L1	590	A2M	O3'-C3'	2.03	1.48	1.43
2	L1	1031	A2M	O3'-C3'	2.03	1.48	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L1	1842	4AC	C6-N1	2.03	1.42	1.38
2	L1	468	A2M	O3'-C3'	2.02	1.48	1.43
2	L1	1004	PSU	C4-N3	-2.02	1.35	1.38
2	L1	462	OMC	C2-N3	2.02	1.40	1.36
2	L1	36	PSU	C4-N3	-2.01	1.35	1.38
2	L1	609	PSU	C4-N3	-2.01	1.35	1.38
2	L1	686	PSU	C4-N3	-2.01	1.35	1.38

All (307) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	590	A2M	C4'-O4'-C1'	-8.59	102.06	109.92
2	L1	1842	4AC	CM7-C7-N4	8.25	128.59	115.27
2	L1	918	PSU	O2-C2-N1	-6.18	116.42	122.79
2	L1	109	PSU	O2-C2-N1	-6.08	116.52	122.79
2	L1	296	PSU	O2-C2-N1	-6.02	116.59	122.79
2	L1	406	PSU	O2-C2-N1	-5.99	116.62	122.79
2	L1	1004	PSU	O2-C2-N1	-5.97	116.63	122.79
2	L1	1046	PSU	O2-C2-N1	-5.96	116.64	122.79
2	L1	863	PSU	O2-C2-N1	-5.94	116.66	122.79
2	L1	1056	PSU	O2-C2-N1	-5.93	116.67	122.79
2	L1	651	PSU	O2-C2-N1	-5.91	116.69	122.79
2	L1	1081	PSU	O2-C2-N1	-5.89	116.72	122.79
2	L1	668	A2M	O4'-C1'-N9	5.89	116.55	108.75
2	L1	866	PSU	O2-C2-N1	-5.88	116.72	122.79
2	L1	822	PSU	O2-C2-N1	-5.88	116.72	122.79
2	L1	627	OMU	N3-C2-N1	5.88	122.55	114.89
2	L1	815	PSU	O2-C2-N1	-5.88	116.73	122.79
2	L1	1174	PSU	O2-C2-N1	-5.85	116.76	122.79
2	L1	1232	PSU	O2-C2-N1	-5.84	116.77	122.79
2	L1	105	PSU	O2-C2-N1	-5.83	116.78	122.79
2	L1	1625	PSU	O2-C2-N1	-5.83	116.78	122.79
2	L1	814	PSU	O2-C2-N1	-5.82	116.78	122.79
2	L1	218	PSU	O2-C2-N1	-5.82	116.79	122.79
2	L1	172	OMU	N3-C2-N1	5.79	122.43	114.89
2	L1	354	OMU	N3-C2-N1	5.77	122.41	114.89
2	L1	1177	PSU	O2-C2-N1	-5.77	116.84	122.79
2	L1	609	PSU	O2-C2-N1	-5.75	116.86	122.79
2	L1	649	PSU	O2-C2-N1	-5.74	116.87	122.79
2	L1	681	PSU	O2-C2-N1	-5.74	116.88	122.79
2	L1	119	PSU	O2-C2-N1	-5.70	116.91	122.79
2	L1	34	PSU	O2-C2-N1	-5.69	116.92	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	966	PSU	O2-C2-N1	-5.69	116.92	122.79
2	L1	1045	PSU	O2-C2-N1	-5.68	116.93	122.79
2	L1	121	OMU	N3-C2-N1	5.68	122.28	114.89
2	L1	116	OMU	N3-C2-N1	5.67	122.27	114.89
2	L1	1643	PSU	O2-C2-N1	-5.65	116.96	122.79
2	L1	93	PSU	O2-C2-N1	-5.64	116.97	122.79
2	L1	36	PSU	O2-C2-N1	-5.63	116.98	122.79
2	L1	210	PSU	O2-C2-N1	-5.61	117.00	122.79
2	L1	799	OMU	N3-C2-N1	5.59	122.17	114.89
2	L1	572	PSU	O2-C2-N1	-5.54	117.08	122.79
2	L1	484	A2M	C4'-O4'-C1'	-5.52	104.87	109.92
2	L1	1678	A2M	C4'-O4'-C1'	-5.51	104.88	109.92
2	L1	686	PSU	O2-C2-N1	-5.49	117.12	122.79
2	L1	801	PSU	O2-C2-N1	-5.48	117.14	122.79
2	L1	172	OMU	C4-N3-C2	-5.39	119.92	126.61
2	L1	627	OMU	C4-N3-C2	-5.38	119.94	126.61
2	L1	428	OMU	N3-C2-N1	5.32	121.82	114.89
2	L1	468	A2M	N3-C2-N1	-5.31	121.46	128.67
2	L1	27	A2M	N3-C2-N1	-5.31	121.47	128.67
2	L1	166	A2M	N3-C2-N1	-5.30	121.47	128.67
2	L1	109	PSU	N1-C2-N3	5.30	120.75	115.17
2	L1	119	PSU	C6-C5-C4	-5.28	114.61	118.17
2	L1	159	A2M	N3-C2-N1	-5.26	121.54	128.67
2	L1	1031	A2M	N3-C2-N1	-5.25	121.54	128.67
2	L1	668	A2M	C4'-O4'-C1'	-5.23	105.13	109.92
2	L1	590	A2M	N3-C2-N1	-5.23	121.57	128.67
2	L1	512	A2M	N3-C2-N1	-5.22	121.58	128.67
2	L1	99	A2M	N3-C2-N1	-5.22	121.59	128.67
2	L1	576	A2M	N3-C2-N1	-5.21	121.60	128.67
2	L1	918	PSU	N1-C2-N3	5.21	120.66	115.17
2	L1	1678	A2M	N3-C2-N1	-5.19	121.63	128.67
2	L1	1004	PSU	N1-C2-N3	5.15	120.60	115.17
2	L1	484	A2M	N3-C2-N1	-5.12	121.72	128.67
2	L1	296	PSU	N1-C2-N3	5.12	120.57	115.17
2	L1	354	OMU	C4-N3-C2	-5.11	120.27	126.61
2	L1	34	PSU	N1-C2-N3	5.10	120.55	115.17
2	L1	814	PSU	N1-C2-N3	5.10	120.55	115.17
2	L1	166	A2M	C4'-O4'-C1'	-5.10	105.26	109.92
2	L1	406	PSU	N1-C2-N3	5.09	120.54	115.17
2	L1	681	PSU	N1-C2-N3	5.09	120.53	115.17
2	L1	815	PSU	N1-C2-N3	5.08	120.53	115.17
2	L1	651	PSU	N1-C2-N3	5.06	120.50	115.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	1046	PSU	N1-C2-N3	5.05	120.49	115.17
2	L1	1081	PSU	N1-C2-N3	5.04	120.49	115.17
2	L1	1174	PSU	N1-C2-N3	5.03	120.47	115.17
2	L1	609	PSU	N1-C2-N3	5.03	120.47	115.17
2	L1	649	PSU	N1-C2-N3	5.02	120.47	115.17
2	L1	210	PSU	N1-C2-N3	5.01	120.45	115.17
2	L1	668	A2M	N3-C2-N1	-5.00	121.88	128.67
2	L1	1643	PSU	N1-C2-N3	5.00	120.45	115.17
2	L1	966	PSU	N1-C2-N3	5.00	120.44	115.17
2	L1	468	A2M	C4'-O4'-C1'	-4.99	105.35	109.92
2	L1	866	PSU	N1-C2-N3	4.99	120.43	115.17
2	L1	36	PSU	N1-C2-N3	4.98	120.43	115.17
2	L1	1625	PSU	N1-C2-N3	4.98	120.42	115.17
2	L1	822	PSU	N1-C2-N3	4.98	120.42	115.17
2	L1	863	PSU	N1-C2-N3	4.96	120.40	115.17
2	L1	116	OMU	C4-N3-C2	-4.96	120.45	126.61
2	L1	105	PSU	N1-C2-N3	4.96	120.39	115.17
2	L1	1232	PSU	N1-C2-N3	4.95	120.39	115.17
2	L1	27	A2M	C4'-O4'-C1'	-4.95	105.39	109.92
2	L1	1056	PSU	N1-C2-N3	4.95	120.39	115.17
2	L1	1045	PSU	N1-C2-N3	4.92	120.36	115.17
2	L1	93	PSU	N1-C2-N3	4.90	120.34	115.17
2	L1	121	OMU	C4-N3-C2	-4.89	120.54	126.61
2	L1	801	PSU	N1-C2-N3	4.89	120.33	115.17
2	L1	686	PSU	N1-C2-N3	4.87	120.31	115.17
2	L1	799	OMU	C4-N3-C2	-4.86	120.58	126.61
2	L1	1177	PSU	N1-C2-N3	4.84	120.27	115.17
2	L1	572	PSU	N1-C2-N3	4.83	120.27	115.17
2	L1	218	PSU	N1-C2-N3	4.82	120.25	115.17
2	L1	1045	PSU	C6-C5-C4	-4.79	114.94	118.17
2	L1	119	PSU	N1-C2-N3	4.77	120.20	115.17
2	L1	572	PSU	C6-C5-C4	-4.69	115.01	118.17
2	L1	1177	PSU	C6-C5-C4	-4.65	115.03	118.17
2	L1	576	A2M	C4'-O4'-C1'	-4.63	105.69	109.92
2	L1	428	OMU	C4-N3-C2	-4.61	120.89	126.61
2	L1	218	PSU	C6-C5-C4	-4.60	115.07	118.17
2	L1	93	PSU	C6-C5-C4	-4.54	115.11	118.17
2	L1	1842	4AC	O7-C7-CM7	-4.52	114.00	122.05
2	L1	1031	A2M	C4'-O4'-C1'	-4.38	105.92	109.92
2	L1	105	PSU	C6-C5-C4	-4.34	115.24	118.17
2	L1	99	A2M	C4'-O4'-C1'	-4.30	105.99	109.92
2	L1	109	PSU	C4-N3-C2	-4.21	120.58	126.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	686	PSU	C6-C5-C4	-4.20	115.34	118.17
2	L1	822	PSU	C6-C5-C4	-4.16	115.36	118.17
2	L1	34	PSU	C4-N3-C2	-4.16	120.64	126.37
2	L1	428	OMU	C1'-N1-C2	4.14	125.03	117.59
2	L1	296	PSU	C4-N3-C2	-4.12	120.69	126.37
2	L1	668	A2M	O3'-C3'-C4'	4.12	122.91	111.08
2	L1	815	PSU	C4-N3-C2	-4.12	120.70	126.37
2	L1	801	PSU	C6-C5-C4	-4.11	115.40	118.17
2	L1	918	PSU	C4-N3-C2	-4.11	120.71	126.37
2	L1	863	PSU	C6-C5-C4	-4.10	115.41	118.17
2	L1	866	PSU	C6-C5-C4	-4.10	115.41	118.17
2	L1	609	PSU	C4-N3-C2	-4.07	120.76	126.37
2	L1	1174	PSU	C4-N3-C2	-4.07	120.77	126.37
2	L1	966	PSU	C6-C5-C4	-4.07	115.43	118.17
2	L1	36	PSU	C6-C5-C4	-4.06	115.43	118.17
2	L1	1643	PSU	C4-N3-C2	-4.06	120.78	126.37
2	L1	866	PSU	C4-N3-C2	-4.06	120.78	126.37
2	L1	651	PSU	C4-N3-C2	-4.05	120.80	126.37
2	L1	1046	PSU	C4-N3-C2	-4.04	120.80	126.37
2	L1	406	PSU	C4-N3-C2	-4.04	120.80	126.37
2	L1	814	PSU	C6-C5-C4	-4.04	115.45	118.17
2	L1	822	PSU	C4-N3-C2	-4.03	120.81	126.37
2	L1	1081	PSU	C6-C5-C4	-4.03	115.45	118.17
2	L1	681	PSU	C6-C5-C4	-4.03	115.45	118.17
2	L1	512	A2M	C4'-O4'-C1'	-4.02	106.25	109.92
2	L1	36	PSU	C4-N3-C2	-4.01	120.84	126.37
2	L1	863	PSU	C4-N3-C2	-4.01	120.84	126.37
2	L1	210	PSU	C4-N3-C2	-4.01	120.84	126.37
2	L1	34	PSU	C6-C5-C4	-4.01	115.47	118.17
2	L1	1625	PSU	C4-N3-C2	-4.01	120.85	126.37
2	L1	1081	PSU	C4-N3-C2	-4.00	120.86	126.37
2	L1	681	PSU	C4-N3-C2	-4.00	120.86	126.37
2	L1	814	PSU	C4-N3-C2	-4.00	120.86	126.37
2	L1	1004	PSU	C4-N3-C2	-3.99	120.87	126.37
2	L1	1232	PSU	C6-C5-C4	-3.98	115.48	118.17
2	L1	801	PSU	C4-N3-C2	-3.98	120.88	126.37
2	L1	1046	PSU	C6-C5-C4	-3.98	115.49	118.17
2	L1	105	PSU	C4-N3-C2	-3.97	120.91	126.37
2	L1	1056	PSU	C4-N3-C2	-3.95	120.93	126.37
2	L1	649	PSU	C4-N3-C2	-3.95	120.94	126.37
2	L1	210	PSU	C6-C5-C4	-3.91	115.54	118.17
2	L1	966	PSU	C4-N3-C2	-3.91	120.99	126.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	1232	PSU	C4-N3-C2	-3.89	121.01	126.37
2	L1	93	PSU	C4-N3-C2	-3.88	121.02	126.37
2	L1	1056	PSU	C6-C5-C4	-3.88	115.56	118.17
2	L1	815	PSU	C6-C5-C4	-3.85	115.58	118.17
2	L1	651	PSU	C6-C5-C4	-3.84	115.58	118.17
2	L1	572	PSU	C4-N3-C2	-3.84	121.08	126.37
2	L1	1045	PSU	C4-N3-C2	-3.82	121.11	126.37
2	L1	1004	PSU	C6-C5-C4	-3.81	115.61	118.17
2	L1	1643	PSU	C6-C5-C4	-3.80	115.61	118.17
2	L1	686	PSU	C4-N3-C2	-3.80	121.14	126.37
2	L1	1177	PSU	C4-N3-C2	-3.75	121.21	126.37
2	L1	296	PSU	C6-C5-C4	-3.74	115.65	118.17
2	L1	609	PSU	C6-C5-C4	-3.72	115.67	118.17
2	L1	649	PSU	C6-C5-C4	-3.72	115.67	118.17
2	L1	436	OMG	C8-N7-C5	3.66	108.78	102.55
2	L1	218	PSU	C4-N3-C2	-3.66	121.33	126.37
2	L1	406	PSU	C6-C5-C4	-3.65	115.71	118.17
2	L1	601	OMG	C8-N7-C5	3.65	108.77	102.55
2	L1	354	OMU	C5-C4-N3	3.63	119.88	114.80
2	L1	172	OMU	C5-C4-N3	3.62	119.88	114.80
2	L1	1004	PSU	C6-N1-C2	-3.60	119.35	122.69
2	L1	119	PSU	C4-N3-C2	-3.60	121.41	126.37
2	L1	644	OMG	C8-N7-C5	3.60	108.67	102.55
2	L1	1174	PSU	C6-C5-C4	-3.58	115.76	118.17
2	L1	509	OMG	C8-N7-C5	3.58	108.64	102.55
2	L1	683	OMG	C8-N7-C5	3.58	108.64	102.55
2	L1	1625	PSU	C6-C5-C4	-3.58	115.76	118.17
2	L1	1232	PSU	C6-N1-C2	-3.55	119.39	122.69
2	L1	867	OMG	C8-N7-C5	3.55	108.59	102.55
2	L1	918	PSU	C6-N1-C2	-3.54	119.40	122.69
2	L1	627	OMU	C5-C4-N3	3.54	119.76	114.80
2	L1	116	OMU	C5-C4-N3	3.54	119.75	114.80
2	L1	121	OMU	C5-C4-N3	3.53	119.74	114.80
2	L1	1177	PSU	C6-N1-C2	-3.52	119.42	122.69
2	L1	799	OMU	C5-C4-N3	3.51	119.71	114.80
2	L1	428	OMU	C5-C4-N3	3.47	119.66	114.80
2	L1	681	PSU	C6-N1-C2	-3.46	119.48	122.69
2	L1	918	PSU	C6-C5-C4	-3.46	115.84	118.17
2	L1	649	PSU	C6-N1-C2	-3.46	119.48	122.69
2	L1	218	PSU	C6-N1-C2	-3.46	119.48	122.69
2	L1	1056	PSU	C6-N1-C2	-3.44	119.50	122.69
2	L1	119	PSU	C6-N1-C2	-3.43	119.51	122.69

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	1045	PSU	C6-N1-C2	-3.41	119.53	122.69
2	L1	109	PSU	C6-N1-C2	-3.41	119.53	122.69
2	L1	1046	PSU	C6-N1-C2	-3.39	119.54	122.69
2	L1	159	A2M	C4'-O4'-C1'	-3.39	106.83	109.92
2	L1	109	PSU	C6-C5-C4	-3.38	115.89	118.17
2	L1	484	A2M	O3'-C3'-C2'	3.37	120.63	111.19
2	L1	1625	PSU	C6-N1-C2	-3.37	119.57	122.69
2	L1	814	PSU	C6-N1-C2	-3.36	119.57	122.69
2	L1	609	PSU	C6-N1-C2	-3.34	119.59	122.69
2	L1	686	PSU	C6-N1-C2	-3.34	119.59	122.69
2	L1	651	PSU	C6-N1-C2	-3.33	119.60	122.69
2	L1	1643	PSU	C6-N1-C2	-3.33	119.60	122.69
2	L1	93	PSU	C6-N1-C2	-3.32	119.61	122.69
2	L1	1174	PSU	C6-N1-C2	-3.32	119.61	122.69
2	L1	406	PSU	C6-N1-C2	-3.32	119.61	122.69
2	L1	296	PSU	C6-N1-C2	-3.31	119.62	122.69
2	L1	966	PSU	C6-N1-C2	-3.31	119.62	122.69
2	L1	105	PSU	C6-N1-C2	-3.31	119.62	122.69
2	L1	36	PSU	C6-N1-C2	-3.30	119.63	122.69
2	L1	572	PSU	C6-N1-C2	-3.30	119.63	122.69
2	L1	866	PSU	C6-N1-C2	-3.27	119.66	122.69
2	L1	815	PSU	C6-N1-C2	-3.26	119.67	122.69
2	L1	34	PSU	C6-N1-C2	-3.25	119.68	122.69
2	L1	863	PSU	C6-N1-C2	-3.23	119.69	122.69
2	L1	801	PSU	C6-N1-C2	-3.21	119.72	122.69
2	L1	1081	PSU	C6-N1-C2	-3.20	119.72	122.69
2	L1	210	PSU	C6-N1-C2	-3.20	119.72	122.69
2	L1	822	PSU	C6-N1-C2	-3.18	119.74	122.69
2	L1	1842	4AC	C6-C5-C4	3.18	120.83	117.00
2	L1	428	OMU	O2-C2-N3	-3.10	115.77	121.49
2	L1	116	OMU	O4-C4-C5	-3.08	119.85	125.16
2	L1	172	OMU	O2-C2-N1	-3.06	118.81	122.80
2	L1	1625	PSU	O4-C4-C5	-3.02	116.51	124.01
2	L1	1232	PSU	O4-C4-C5	-3.00	116.56	124.01
2	L1	428	OMU	O4-C4-C5	-2.99	120.00	125.16
2	L1	109	PSU	O4-C4-C5	-2.98	116.60	124.01
2	L1	1056	PSU	O4-C4-C5	-2.94	116.69	124.01
2	L1	815	PSU	O4-C4-C5	-2.94	116.70	124.01
2	L1	1643	PSU	O4-C4-C5	-2.92	116.75	124.01
2	L1	1004	PSU	O4-C4-C5	-2.91	116.78	124.01
2	L1	609	PSU	O4-C4-C5	-2.90	116.79	124.01
2	L1	1174	PSU	O4-C4-C5	-2.89	116.83	124.01

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	918	PSU	O4-C4-C5	-2.89	116.83	124.01
2	L1	36	PSU	O4-C4-C5	-2.88	116.86	124.01
2	L1	406	PSU	O4-C4-C5	-2.87	116.86	124.01
2	L1	34	PSU	O4-C4-C5	-2.87	116.87	124.01
2	L1	354	OMU	O4-C4-C5	-2.86	120.23	125.16
2	L1	1842	4AC	O7-C7-N4	-2.86	117.40	121.90
2	L1	121	OMU	O4-C4-C5	-2.84	120.27	125.16
2	L1	649	PSU	O4-C4-C5	-2.84	116.96	124.01
2	L1	799	OMU	O4-C4-C5	-2.83	120.28	125.16
2	L1	296	PSU	O4-C4-C5	-2.82	116.99	124.01
2	L1	801	PSU	O4-C4-C5	-2.82	117.00	124.01
2	L1	1046	PSU	O4-C4-C5	-2.81	117.03	124.01
2	L1	627	OMU	O4-C4-C5	-2.80	120.33	125.16
2	L1	172	OMU	O4-C4-C5	-2.77	120.39	125.16
2	L1	590	A2M	O4'-C1'-N9	2.76	112.40	108.75
2	L1	484	A2M	O4'-C1'-N9	2.74	112.38	108.75
2	L1	105	PSU	O4-C4-C5	-2.74	117.20	124.01
2	L1	822	PSU	O4-C4-C5	-2.73	117.22	124.01
2	L1	681	PSU	O4-C4-C5	-2.73	117.22	124.01
2	L1	651	PSU	O4-C4-C5	-2.71	117.27	124.01
2	L1	210	PSU	O4-C4-C5	-2.71	117.28	124.01
2	L1	601	OMG	C5-C6-N1	2.70	119.22	114.07
2	L1	436	OMG	C5-C6-N1	2.70	119.21	114.07
2	L1	509	OMG	C5-C6-N1	2.67	119.16	114.07
2	L1	1842	4AC	C5-C4-N3	-2.65	118.45	122.60
2	L1	866	PSU	O4-C4-C5	-2.65	117.43	124.01
2	L1	863	PSU	O4-C4-C5	-2.65	117.43	124.01
2	L1	93	PSU	O4-C4-C5	-2.61	117.51	124.01
2	L1	644	OMG	C5-C6-N1	2.61	119.05	114.07
2	L1	621	OMC	O2'-C2'-C1'	2.59	113.91	108.99
2	L1	867	OMG	C5-C6-N1	2.58	119.00	114.07
2	L1	683	OMG	C5-C6-N1	2.56	118.96	114.07
2	L1	428	OMU	C1'-N1-C6	-2.55	115.33	120.78
2	L1	1177	PSU	O4-C4-C5	-2.54	117.68	124.01
2	L1	116	OMU	O2-C2-N1	-2.54	119.49	122.80
2	L1	814	PSU	O4-C4-C5	-2.53	117.71	124.01
2	L1	918	PSU	O4'-C1'-C2'	2.52	108.64	105.15
2	L1	1081	PSU	O4-C4-C5	-2.49	117.82	124.01
2	L1	686	PSU	O4-C4-C5	-2.49	117.83	124.01
2	L1	121	OMU	O2-C2-N1	-2.45	119.61	122.80
2	L1	354	OMU	O2-C2-N1	-2.45	119.61	122.80
2	L1	966	PSU	O4-C4-C5	-2.44	117.93	124.01

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	627	OMU	O2-C2-N1	-2.42	119.64	122.80
2	L1	572	PSU	O4-C4-C5	-2.40	118.05	124.01
2	L1	218	PSU	O4-C4-C5	-2.35	118.16	124.01
2	L1	509	OMG	C2-N1-C6	-2.34	120.82	125.11
2	L1	621	OMC	CM2-O2'-C2'	2.28	120.33	114.47
2	L1	601	OMG	C2-N1-C6	-2.25	120.98	125.11
2	L1	436	OMG	C2-N1-C6	-2.20	121.08	125.11
2	L1	867	OMG	C2-N1-C6	-2.20	121.09	125.11
2	L1	1842	4AC	C5-C6-N1	-2.18	118.29	121.84
2	L1	799	OMU	C1'-N1-C2	2.17	121.50	117.59
2	L1	644	OMG	C2-N1-C6	-2.17	121.14	125.11
2	L1	799	OMU	O2-C2-N3	-2.13	117.56	121.49
2	L1	1045	PSU	O4-C4-C5	-2.10	118.78	124.01
2	L1	484	A2M	O3'-C3'-C4'	2.08	117.07	111.08
2	L1	468	A2M	C4-C5-N7	-2.08	107.14	109.34
2	L1	572	PSU	O4'-C1'-C2'	2.07	108.02	105.15
2	L1	683	OMG	C2-N1-C6	-2.06	121.34	125.11
2	L1	218	PSU	O4'-C1'-C2'	2.04	107.97	105.15
2	L1	512	A2M	C4-C5-N7	-2.03	107.19	109.34
2	L1	1678	A2M	C2'-C1'-N9	2.03	117.06	112.56
2	L1	822	PSU	O4'-C1'-C2'	2.02	107.95	105.15
2	L1	1056	PSU	O4'-C1'-C2'	2.02	107.94	105.15
2	L1	159	A2M	C4-C5-N7	-2.01	107.21	109.34
2	L1	27	A2M	O4'-C1'-N9	2.00	111.40	108.75

There are no chirality outliers.

All (57) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	L1	27	A2M	C1'-C2'-O2'-CM'
2	L1	159	A2M	C1'-C2'-O2'-CM'
2	L1	468	A2M	C1'-C2'-O2'-CM'
2	L1	484	A2M	C1'-C2'-O2'-CM'
2	L1	517	OMC	O4'-C4'-C5'-O5'
2	L1	601	OMG	C1'-C2'-O2'-CM2
2	L1	621	OMC	C1'-C2'-O2'-CM2
2	L1	627	OMU	O4'-C1'-N1-C2
2	L1	627	OMU	O4'-C1'-N1-C6
2	L1	644	OMG	O4'-C4'-C5'-O5'
2	L1	644	OMG	C1'-C2'-O2'-CM2
2	L1	668	A2M	C1'-C2'-O2'-CM'
2	L1	799	OMU	C1'-C2'-O2'-CM2

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Mol	Chain	Res	Type	Atoms
2	L1	1678	A2M	C1'-C2'-O2'-CM'
2	L1	99	A2M	O4'-C4'-C5'-O5'
2	L1	210	PSU	O4'-C4'-C5'-O5'
2	L1	428	OMU	O4'-C4'-C5'-O5'
2	L1	509	OMG	O4'-C4'-C5'-O5'
2	L1	509	OMG	C3'-C4'-C5'-O5'
2	L1	517	OMC	C3'-C4'-C5'-O5'
2	L1	627	OMU	O4'-C4'-C5'-O5'
2	L1	822	PSU	C3'-C4'-C5'-O5'
2	L1	822	PSU	O4'-C4'-C5'-O5'
2	L1	1177	PSU	C3'-C4'-C5'-O5'
2	L1	428	OMU	C3'-C4'-C5'-O5'
2	L1	627	OMU	C3'-C4'-C5'-O5'
2	L1	1703	OMC	C2'-C1'-N1-C6
2	L1	644	OMG	C3'-C4'-C5'-O5'
2	L1	1177	PSU	O4'-C4'-C5'-O5'
2	L1	210	PSU	C3'-C4'-C5'-O5'
2	L1	799	OMU	C3'-C4'-C5'-O5'
2	L1	1703	OMC	C2'-C1'-N1-C2
2	L1	99	A2M	C3'-C4'-C5'-O5'
2	L1	621	OMC	O4'-C4'-C5'-O5'
2	L1	799	OMU	O4'-C4'-C5'-O5'
2	L1	1842	4AC	O7-C7-N4-C4
2	L1	1842	4AC	CM7-C7-N4-C4
2	L1	621	OMC	C3'-C4'-C5'-O5'
2	L1	576	A2M	C3'-C4'-C5'-O5'
2	L1	668	A2M	C3'-C4'-C5'-O5'
2	L1	1703	OMC	O4'-C1'-N1-C6
2	L1	918	PSU	O4'-C4'-C5'-O5'
2	L1	1703	OMC	O4'-C1'-N1-C2
2	L1	1625	PSU	O4'-C4'-C5'-O5'
2	L1	590	A2M	C3'-C2'-O2'-CM'
2	L1	428	OMU	O4'-C1'-N1-C6
2	L1	651	PSU	O4'-C4'-C5'-O5'
2	L1	644	OMG	C4'-C5'-O5'-P
2	L1	799	OMU	C4'-C5'-O5'-P
2	L1	601	OMG	O4'-C4'-C5'-O5'
2	L1	801	PSU	O4'-C4'-C5'-O5'
2	L1	1703	OMC	O4'-C4'-C5'-O5'
2	L1	428	OMU	C2'-C1'-N1-C6
2	L1	1177	PSU	C4'-C5'-O5'-P
2	L1	576	A2M	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
2	L1	428	OMU	O4'-C1'-N1-C2
2	L1	428	OMU	C2'-C1'-N1-C2

There are no ring outliers.

18 monomers are involved in 20 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	L1	468	A2M	1	0
2	L1	1625	PSU	1	0
2	L1	797	OMC	1	0
2	L1	1678	A2M	1	0
2	L1	668	A2M	1	0
2	L1	644	OMG	1	0
2	L1	1232	PSU	1	0
2	L1	1031	A2M	1	0
2	L1	686	PSU	1	0
2	L1	484	A2M	1	0
2	L1	627	OMU	1	0
2	L1	116	OMU	2	0
2	L1	509	OMG	1	0
2	L1	801	PSU	1	0
2	L1	799	OMU	1	0
2	L1	159	A2M	1	0
2	L1	621	OMC	2	0
2	L1	601	OMG	1	0

## 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 71 ligands modelled in this entry, 67 are monoatomic - leaving 4 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
73	SAH	SK	301	-	23,28,28	1.27	3 (13%)	22,40,40	1.79	3 (13%)
72	GTP	SI	2001	69	29,34,34	1.22	2 (6%)	35,54,54	1.30	4 (11%)
70	ATP	NH	3000	69	28,33,33	0.66	0	34,52,52	0.59	1 (2%)
73	SAH	SJ	301	-	23,28,28	1.26	3 (13%)	22,40,40	1.79	3 (13%)

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
73	SAH	SK	301	-	-	8/11/31/31	0/3/3/3
72	GTP	SI	2001	69	-	8/18/38/38	0/3/3/3
70	ATP	NH	3000	69	-	3/18/38/38	0/3/3/3
73	SAH	SJ	301	-	-	4/11/31/31	0/3/3/3

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
72	SI	2001	GTP	C5-C6	-4.20	1.39	1.47
73	SK	301	SAH	C2-N3	4.13	1.38	1.32
73	SJ	301	SAH	C2-N3	4.07	1.38	1.32
73	SK	301	SAH	C2-N1	2.46	1.38	1.33
73	SJ	301	SAH	C2-N1	2.46	1.38	1.33
73	SJ	301	SAH	OXT-C	-2.29	1.23	1.30
73	SK	301	SAH	OXT-C	-2.26	1.23	1.30
72	SI	2001	GTP	C2-N3	2.07	1.38	1.33

All (11) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
73	SK	301	SAH	N3-C2-N1	-6.17	120.30	128.67
73	SJ	301	SAH	N3-C2-N1	-6.03	120.49	128.67
72	SI	2001	GTP	C8-N7-C5	3.60	108.68	102.55
73	SJ	301	SAH	C5'-SD-CG	-3.41	92.14	102.26
73	SK	301	SAH	C5'-SD-CG	-3.30	92.47	102.26
72	SI	2001	GTP	C2-N1-C6	-3.01	119.59	125.11
72	SI	2001	GTP	C5-C6-N1	2.99	119.78	114.07
73	SJ	301	SAH	OXT-C-O	-2.64	118.09	124.08
73	SK	301	SAH	OXT-C-O	-2.56	118.27	124.08

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
70	NH	3000	ATP	C5-C6-N6	2.31	123.84	120.31
72	SI	2001	GTP	O6-C6-C5	-2.12	120.13	124.32

There are no chirality outliers.

All (23) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
72	SI	2001	GTP	C5'-O5'-PA-O3A
72	SI	2001	GTP	C5'-O5'-PA-O1A
72	SI	2001	GTP	C5'-O5'-PA-O2A
73	SJ	301	SAH	N-CA-CB-CG
73	SJ	301	SAH	C-CA-CB-CG
73	SK	301	SAH	C-CA-CB-CG
73	SK	301	SAH	OXT-C-CA-CB
73	SK	301	SAH	O-C-CA-CB
73	SK	301	SAH	OXT-C-CA-N
73	SK	301	SAH	CA-CB-CG-SD
73	SK	301	SAH	N-CA-CB-CG
73	SJ	301	SAH	O-C-CA-CB
73	SJ	301	SAH	OXT-C-CA-CB
72	SI	2001	GTP	PB-O3A-PA-O2A
73	SK	301	SAH	O-C-CA-N
70	NH	3000	ATP	PA-O3A-PB-O1B
73	SK	301	SAH	CB-CG-SD-C5'
72	SI	2001	GTP	C3'-C4'-C5'-O5'
72	SI	2001	GTP	PG-O3B-PB-O1B
72	SI	2001	GTP	PG-O3B-PB-O2B
72	SI	2001	GTP	PB-O3A-PA-O1A
70	NH	3000	ATP	PA-O3A-PB-O3B
70	NH	3000	ATP	PG-O3B-PB-O2B

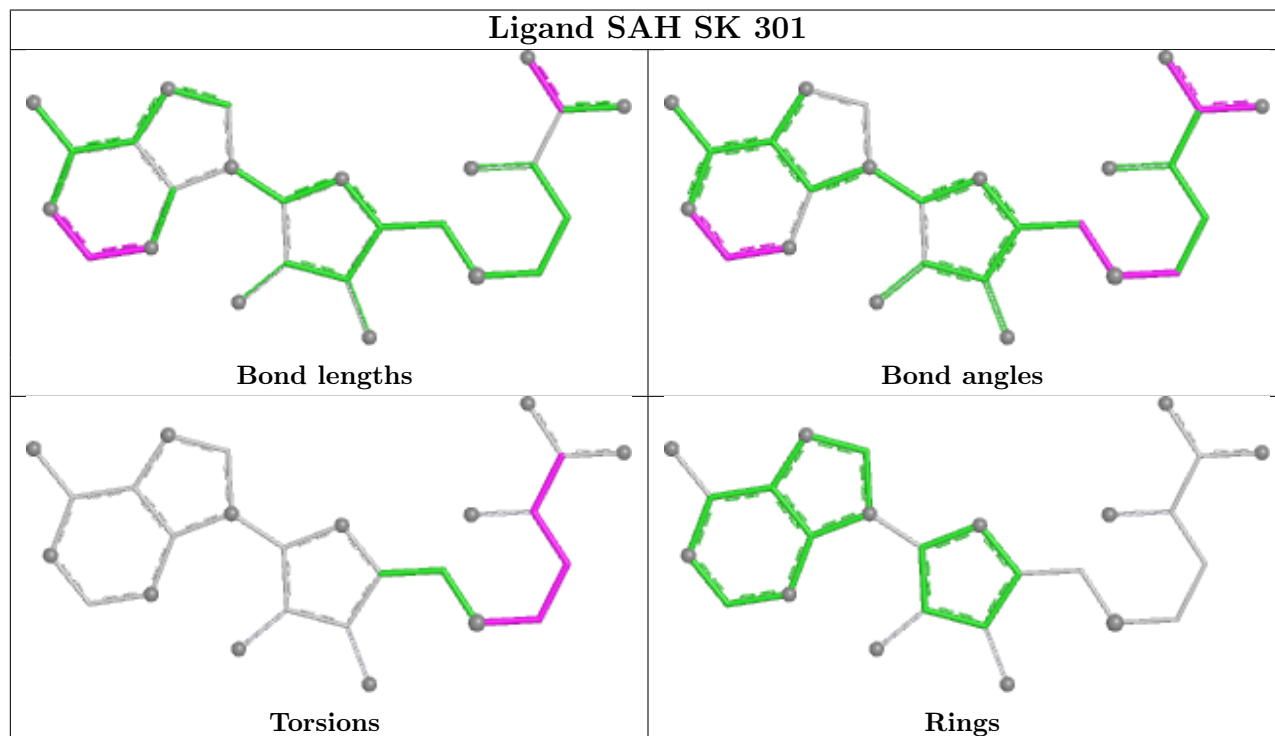
There are no ring outliers.

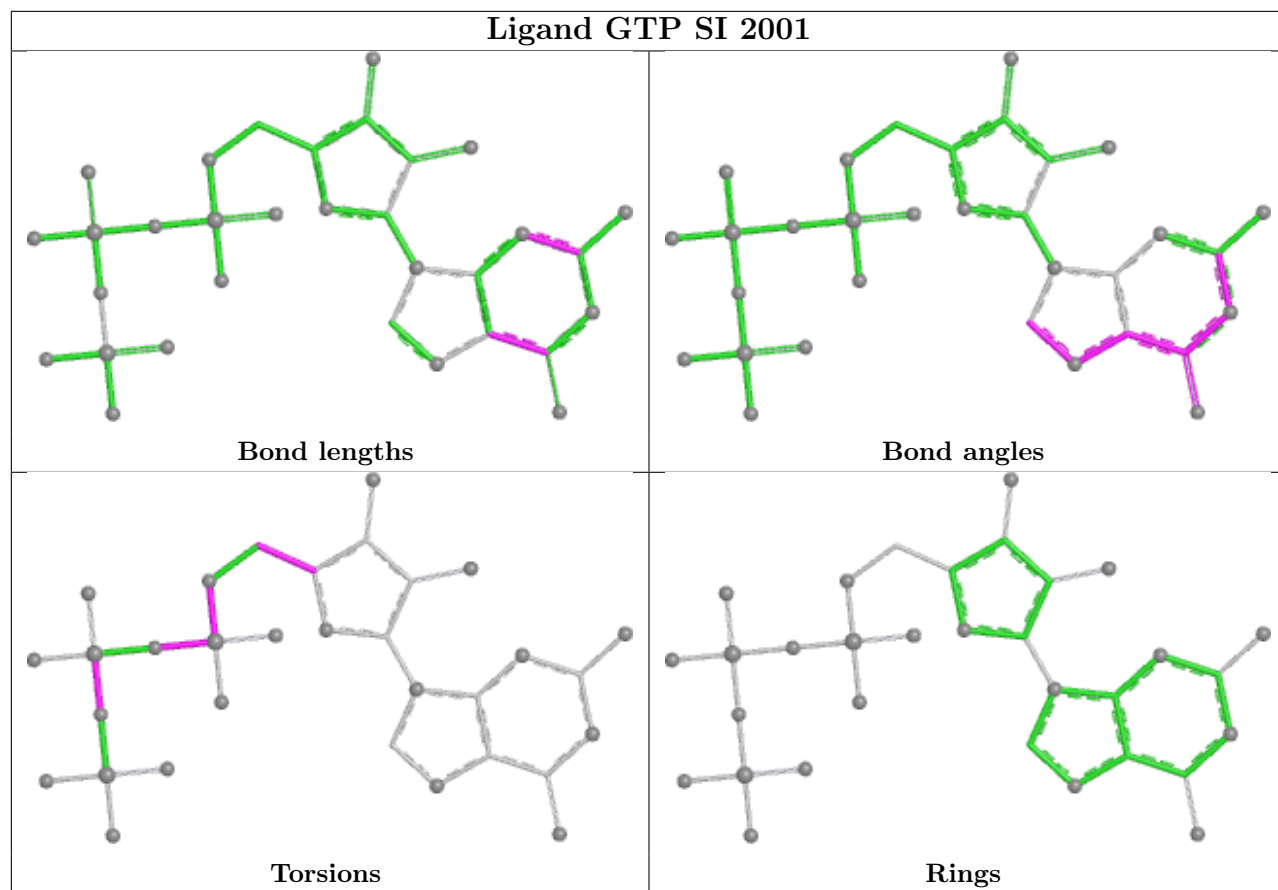
3 monomers are involved in 11 short contacts:

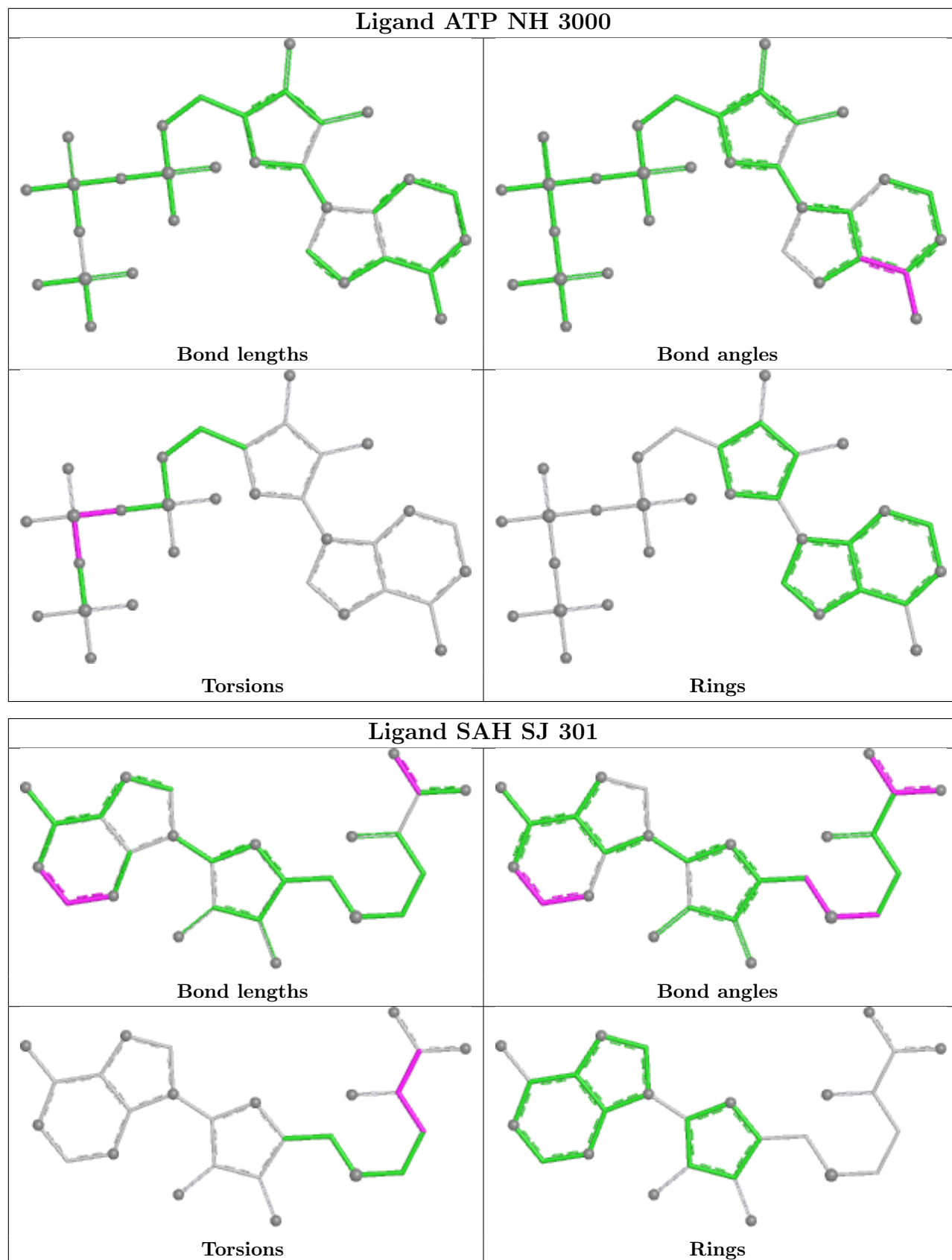
Mol	Chain	Res	Type	Clashes	Symm-Clashes
73	SK	301	SAH	5	0
70	NH	3000	ATP	1	0
73	SJ	301	SAH	5	0

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
44	NR	41
66	SX	9
17	LI	5
64	SU	5
63	ST	3
68	SZ	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	SX	726:UNK	C	763:UNK	N	250.94
1	SX	779:UNK	C	1200:UNK	N	226.33
1	SX	1472:UNK	C	2269:UNK	N	103.10
1	SX	930:UNK	C	689:UNK	N	85.48
1	ST	298:LEU	C	414:UNK	N	52.29
1	SX	1269:UNK	C	1298:UNK	N	39.06
1	SX	1427:UNK	C	1449:UNK	N	36.11
1	ST	86:LYS	C	186:UNK	N	35.49
1	SX	1375:UNK	C	1405:UNK	N	32.97
1	LI	48:UNK	C	59:UNK	N	26.20
1	LI	92:UNK	C	104:UNK	N	17.95
1	SX	1322:UNK	C	1352:UNK	N	17.84
1	ST	234:UNK	C	246:UNK	N	17.08
1	NR	310:UNK	C	312:UNK	N	16.86
1	NR	567:UNK	C	571:UNK	N	16.68
1	NR	803:UNK	C	807:UNK	N	16.38
1	SX	1222:UNK	C	1250:UNK	N	15.77
1	NR	131:UNK	C	134:UNK	N	15.61
1	NR	358:UNK	C	361:UNK	N	15.32
1	NR	976:UNK	C	980:UNK	N	14.73
1	NR	450:UNK	C	452:UNK	N	14.68
1	LI	346:UNK	C	354:HIS	N	14.65
1	SU	68:UNK	C	78:UNK	N	13.82
1	NR	915:UNK	C	919:UNK	N	13.76
1	NR	496:UNK	C	498:UNK	N	13.37

*Continued on next page...*

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	NR	101:UNK	C	112:UNK	N	13.06
1	NR	647:UNK	C	651:UNK	N	13.02
1	NR	613:UNK	C	616:UNK	N	12.59
1	NR	953:UNK	C	957:UNK	N	12.52
1	LI	147:UNK	C	152:VAL	N	12.47
1	NR	517:UNK	C	519:UNK	N	12.40
1	NR	688:UNK	C	692:UNK	N	12.27
1	NR	475:UNK	C	477:UNK	N	12.11
1	NR	426:UNK	C	428:UNK	N	11.88
1	NR	221:UNK	C	225:UNK	N	11.87
1	NR	995:UNK	C	999:UNK	N	11.64
1	NR	870:UNK	C	874:UNK	N	11.50
1	NR	672:UNK	C	674:UNK	N	11.47
1	NR	335:UNK	C	339:UNK	N	11.28
1	NR	713:UNK	C	717:UNK	N	10.74
1	NR	894:UNK	C	898:UNK	N	10.30
1	SZ	164:UNK	C	169:UNK	N	10.12
1	NR	846:UNK	C	850:UNK	N	10.11
1	NR	934:UNK	C	936:UNK	N	10.04
1	NR	780:UNK	C	784:UNK	N	10.00
1	NR	631:UNK	C	633:UNK	N	9.87
1	NR	590:UNK	C	592:UNK	N	8.87
1	NR	824:UNK	C	828:UNK	N	8.87
1	NR	538:UNK	C	541:UNK	N	8.65
1	NR	550:UNK	C	555:UNK	N	8.27
1	NR	1008:UNK	C	1010:UNK	N	7.62
1	NR	243:UNK	C	246:UNK	N	7.56
1	NR	262:UNK	C	264:UNK	N	7.46
1	NR	756:UNK	C	760:UNK	N	7.45
1	NR	734:UNK	C	736:UNK	N	7.28
1	SU	25:UNK	C	27:UNK	N	7.13
1	SU	169:UNK	C	177:TYR	N	6.61
1	LI	322:HIS	C	325:UNK	N	5.78
1	NR	381:UNK	C	383:UNK	N	5.72
1	NR	200:UNK	C	204:UNK	N	5.64
1	SU	124:UNK	C	141:PRO	N	5.43
1	NR	289:UNK	C	291:UNK	N	4.79
1	SU	45:UNK	C	48:UNK	N	4.43
1	NR	404:UNK	C	407:UNK	N	3.87



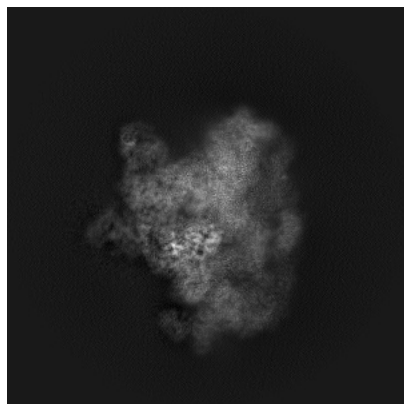
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-23938. These allow visual inspection of the internal detail of the map and identification of artifacts.

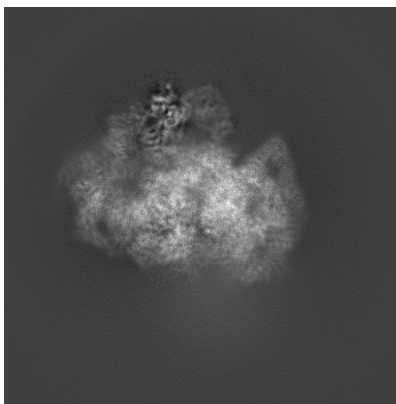
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

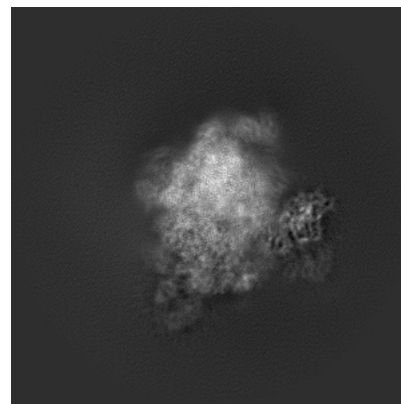
#### 6.1.1 Primary map



X

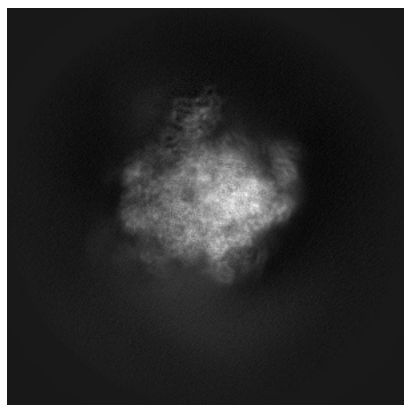


Y

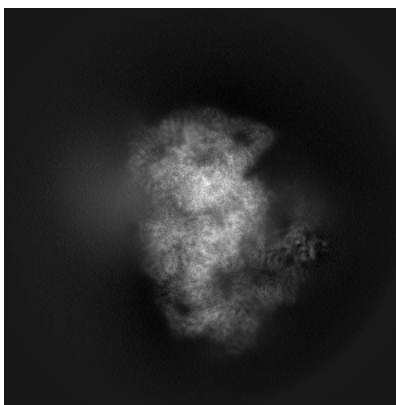


Z

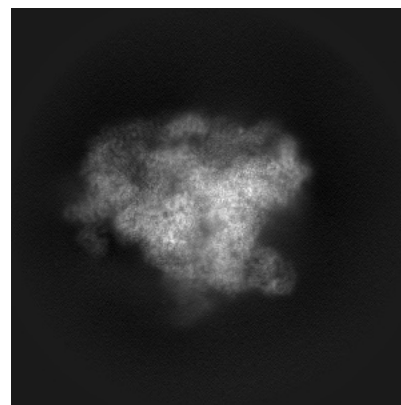
#### 6.1.2 Raw map



X



Y

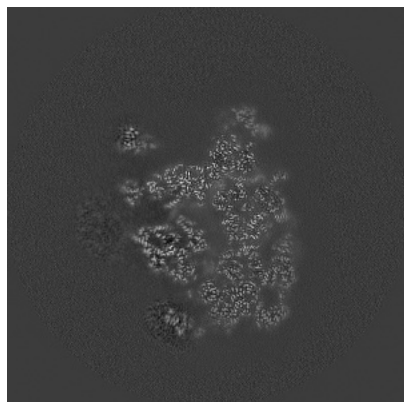


Z

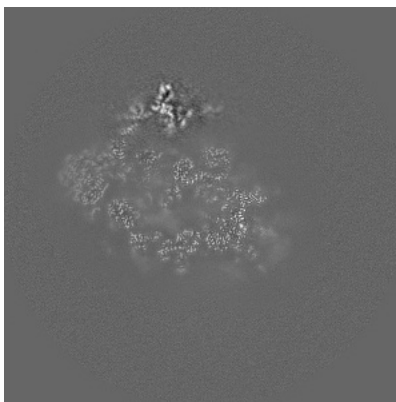
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

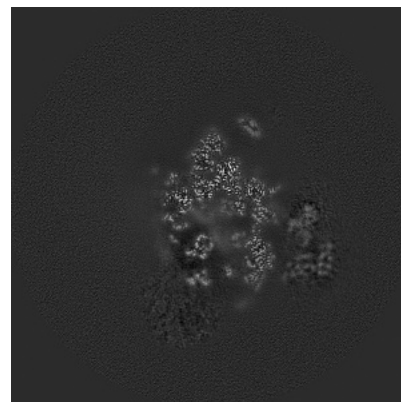
### 6.2.1 Primary map



X Index: 280

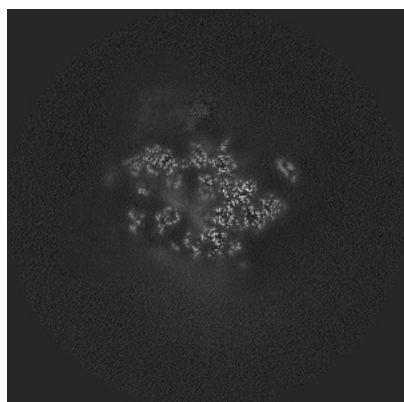


Y Index: 280

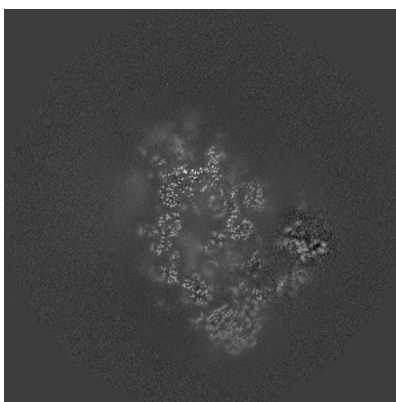


Z Index: 280

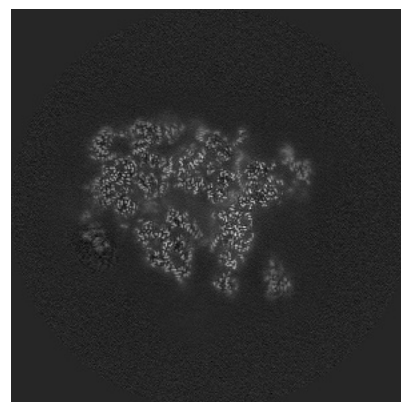
### 6.2.2 Raw map



X Index: 280



Y Index: 280

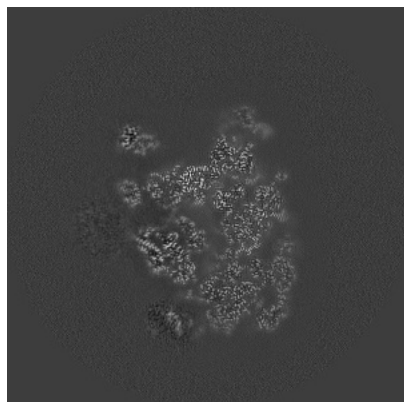


Z Index: 280

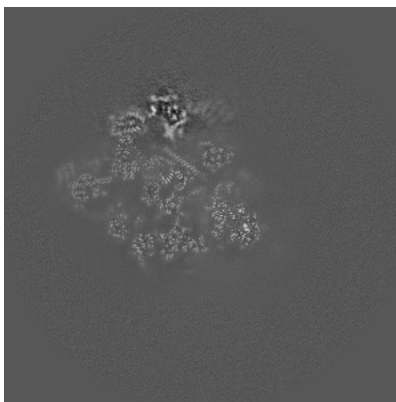
The images above show central slices of the map in three orthogonal directions.

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

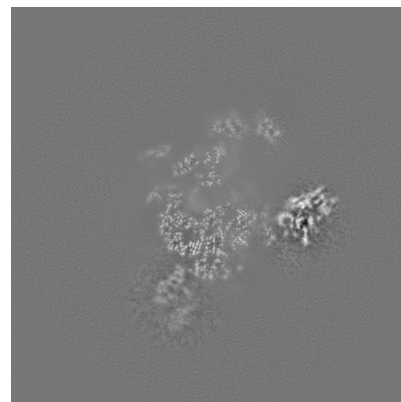
### 6.3.1 Primary map



X Index: 277

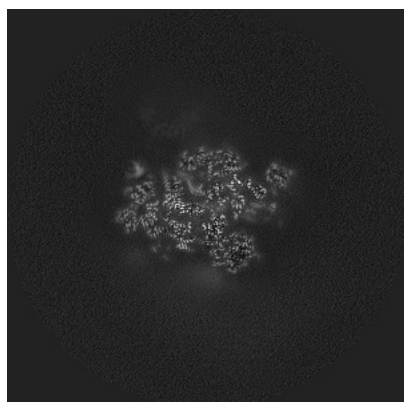


Y Index: 268

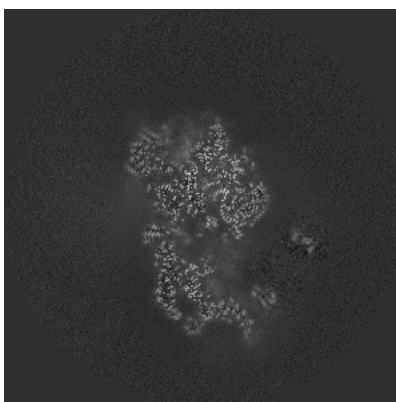


Z Index: 234

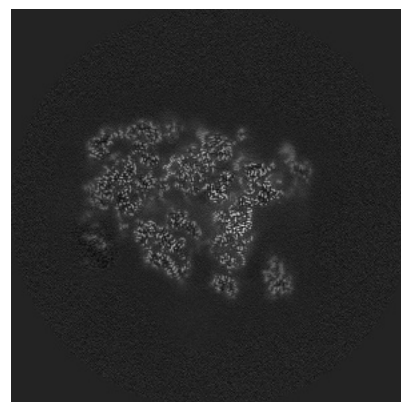
### 6.3.2 Raw map



X Index: 313



Y Index: 299

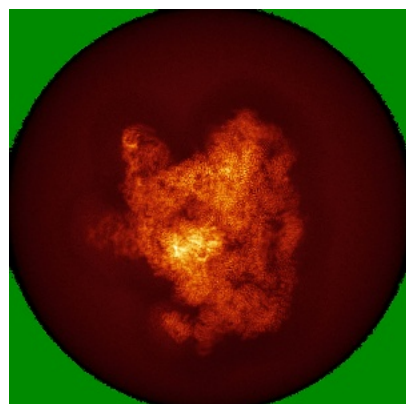


Z Index: 277

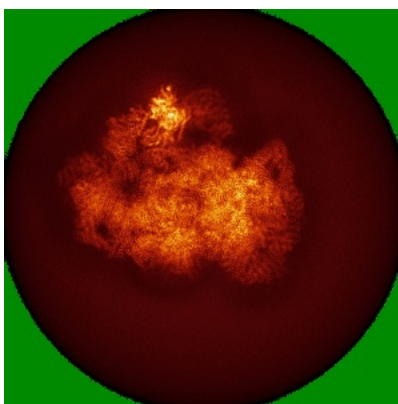
The images above show the largest variance slices of the map in three orthogonal directions.

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

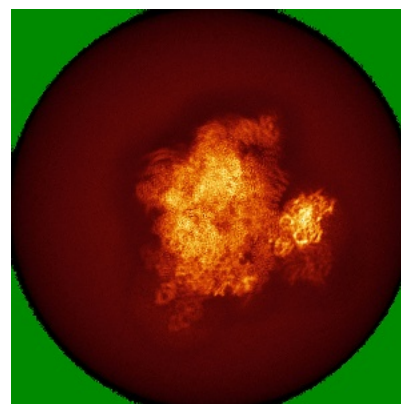
### 6.4.1 Primary map



X

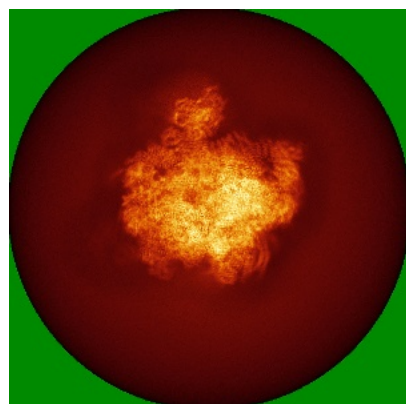


Y

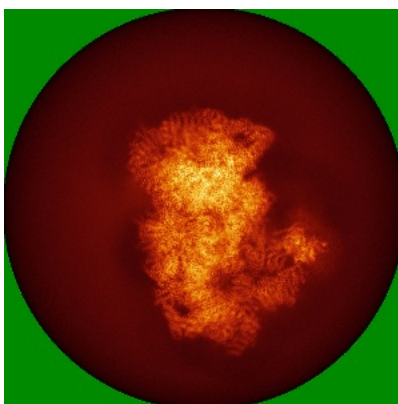


Z

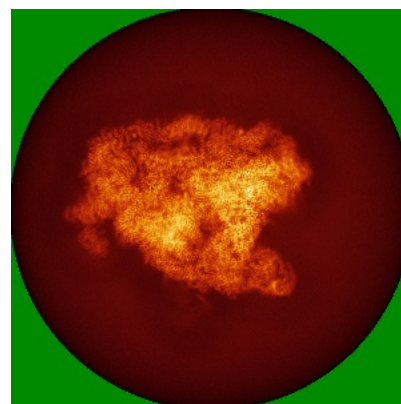
### 6.4.2 Raw map



X



Y



Z

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



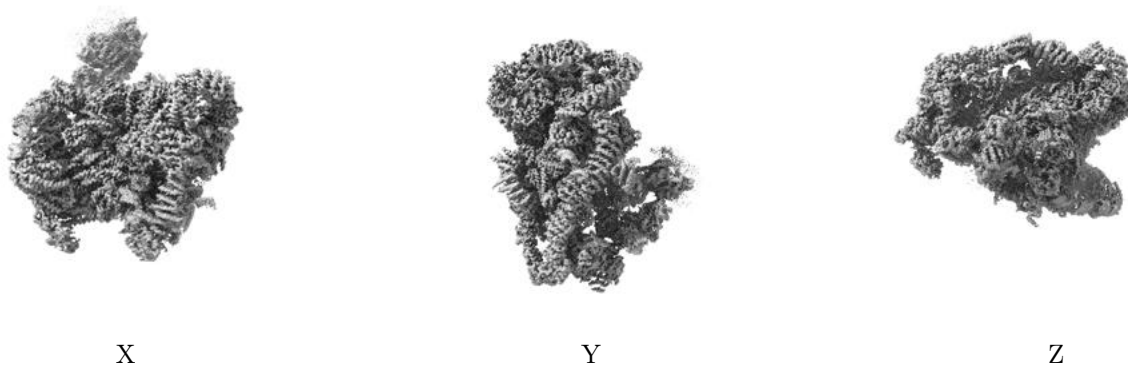
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 3.28. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

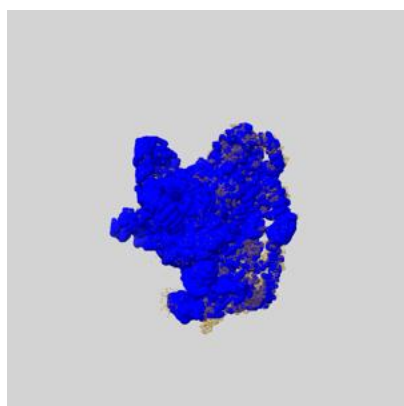
## 6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

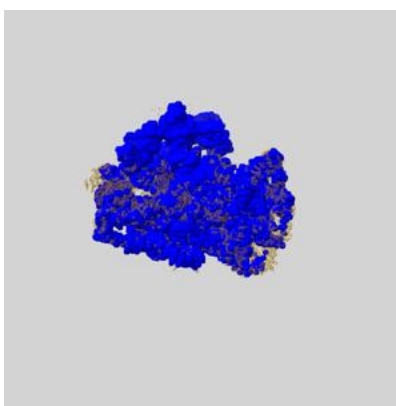
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

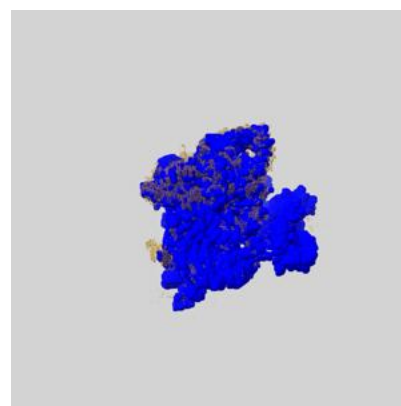
### 6.6.1 emd\_23938\_msk\_1.map [i](#)



X



Y

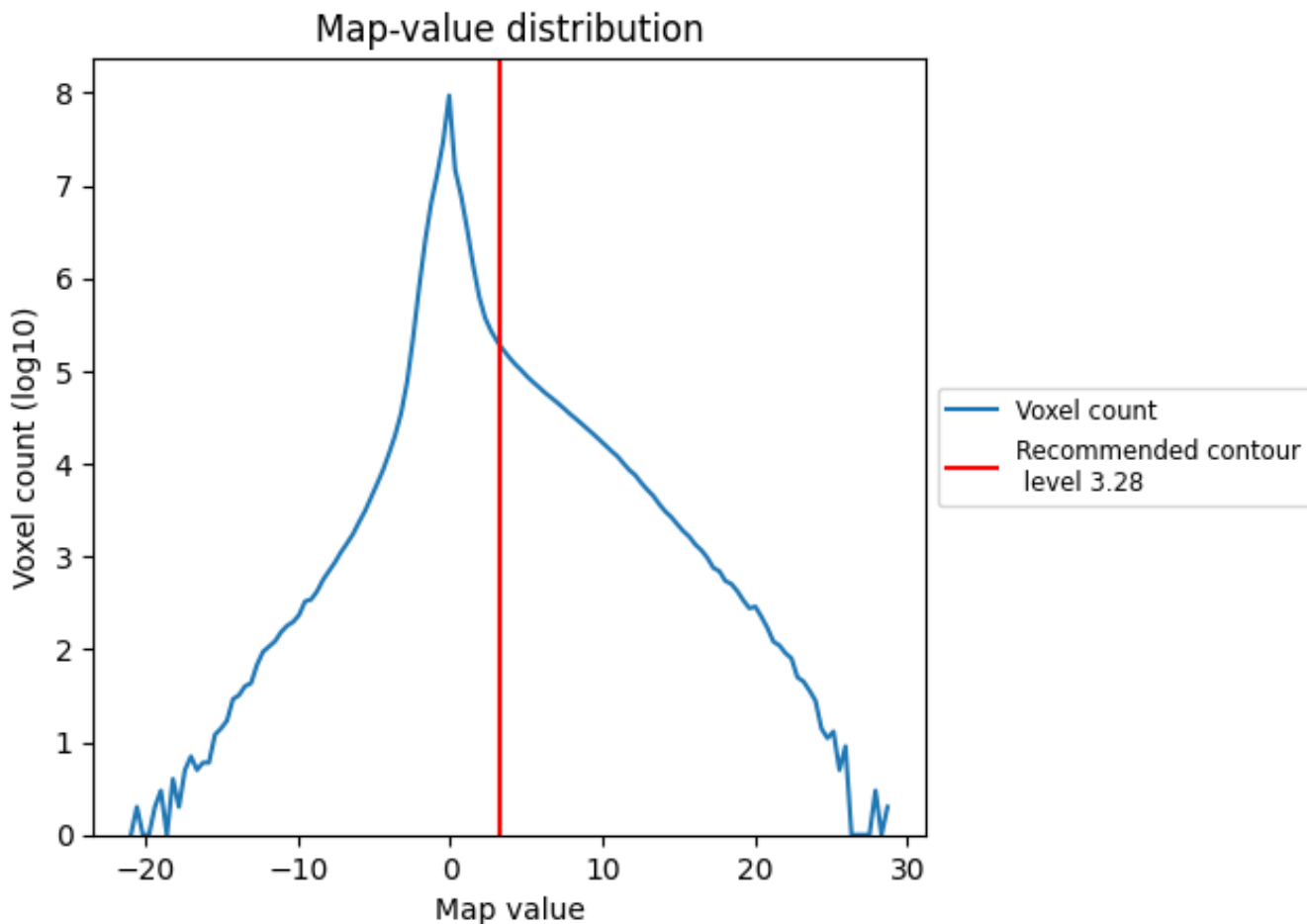


Z

## 7 Map analysis [i](#)

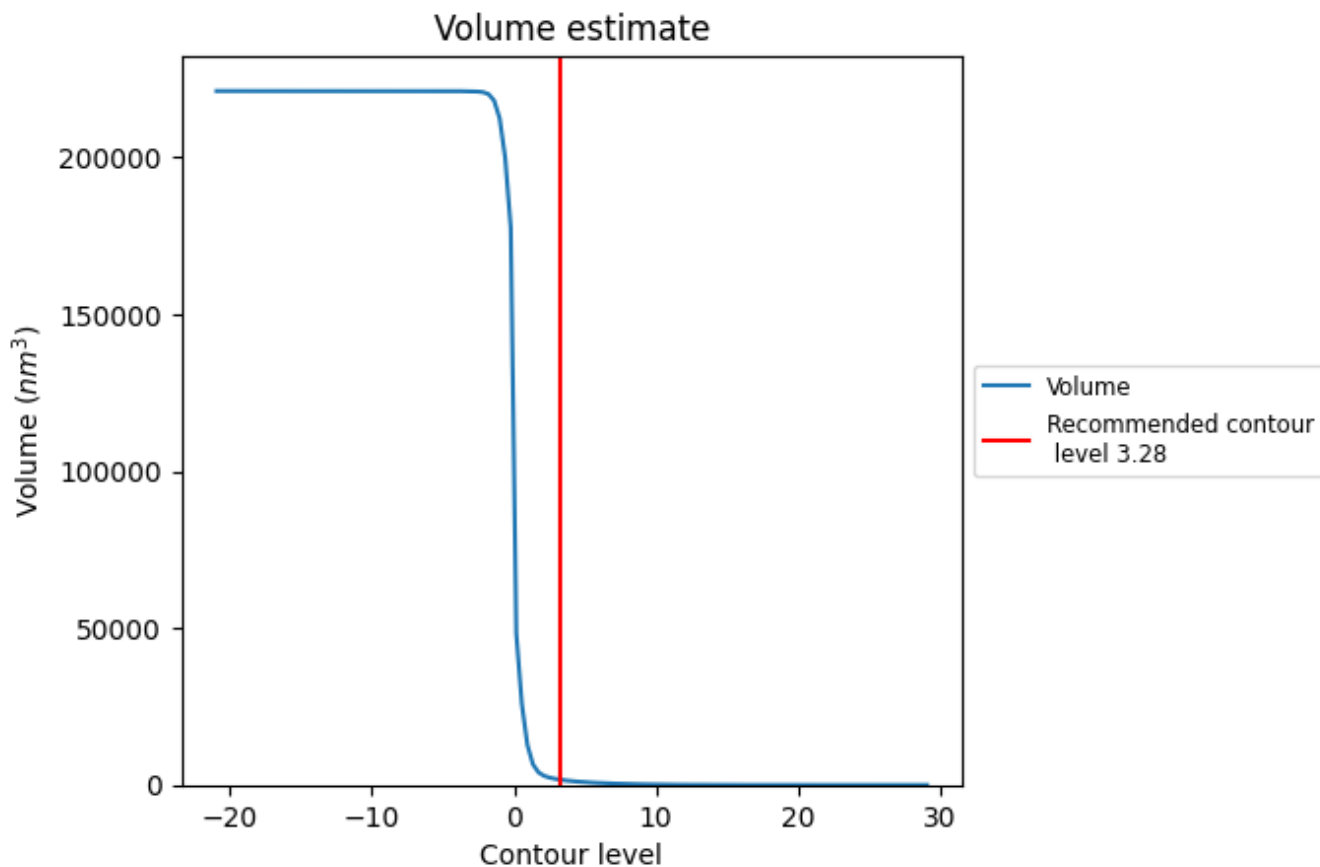
This section contains the results of statistical analysis of the map.

### 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](#)

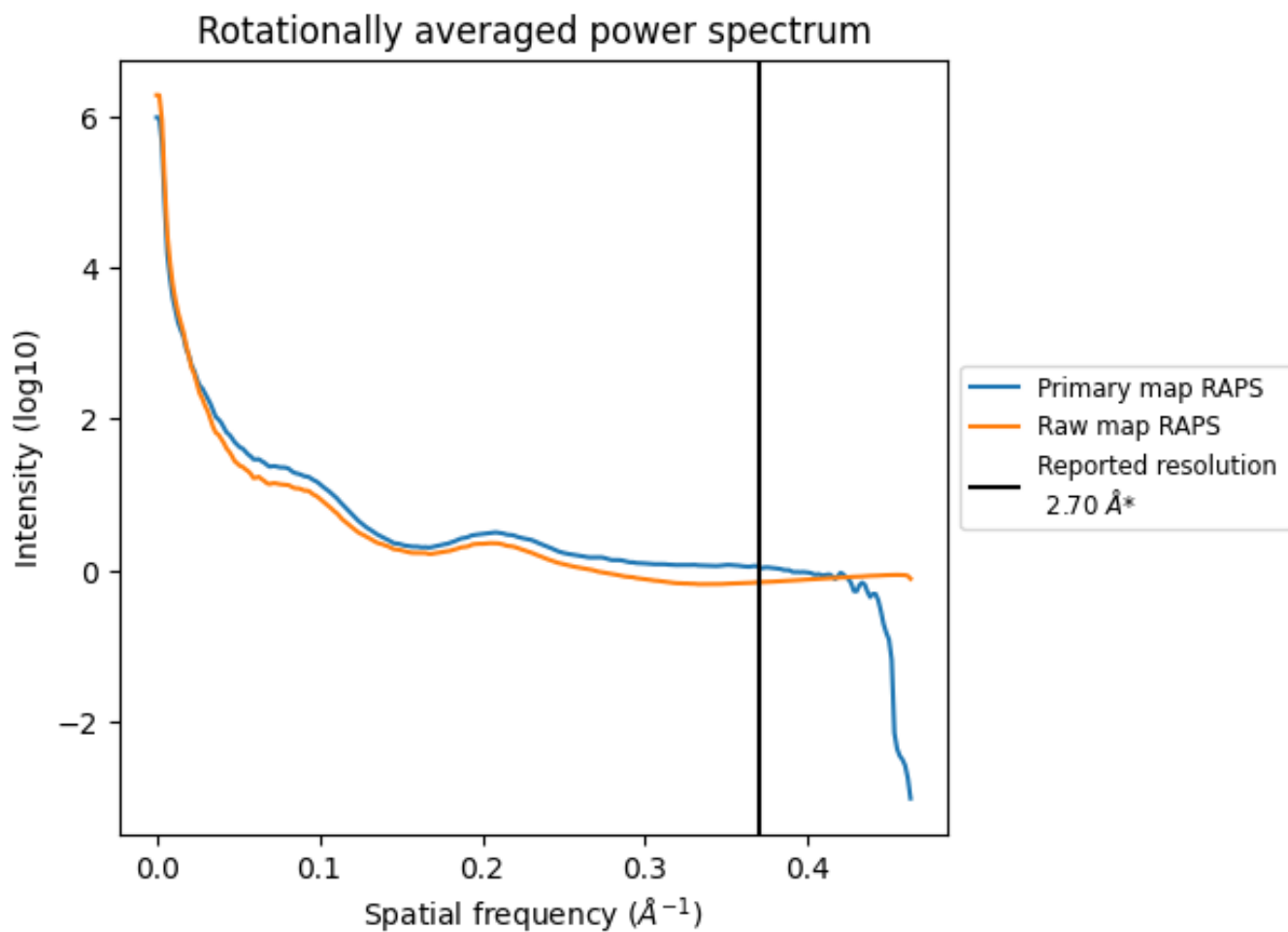


The volume at the recommended contour level is 1662  $\text{nm}^3$ ; this corresponds to an approximate mass of 1501 kDa.

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

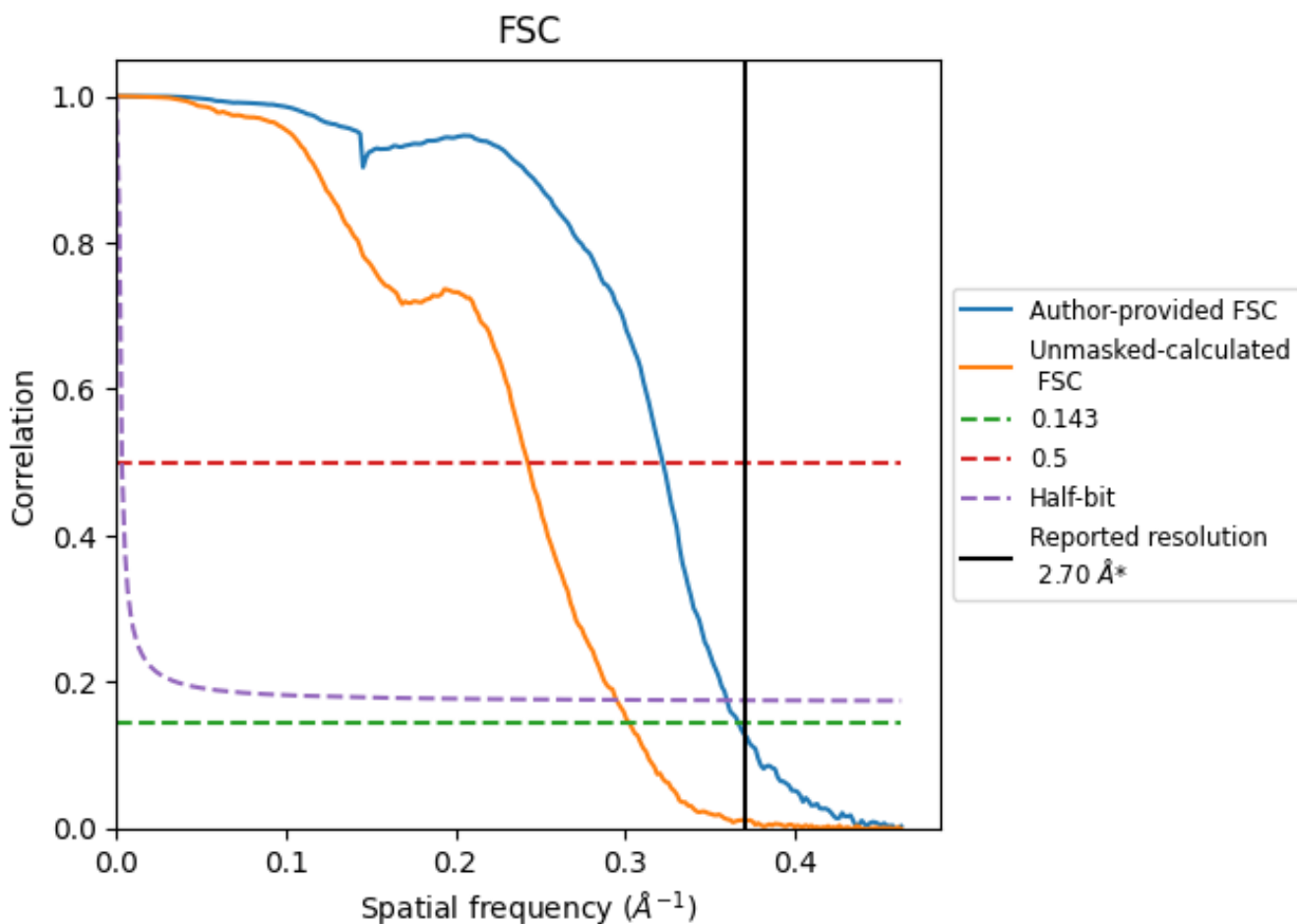


\*Reported resolution corresponds to spatial frequency of 0.370 Å<sup>-1</sup>

## 8 Fourier-Shell correlation [i](#)

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

### 8.1 FSC [i](#)



\*Reported resolution corresponds to spatial frequency of 0.370 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

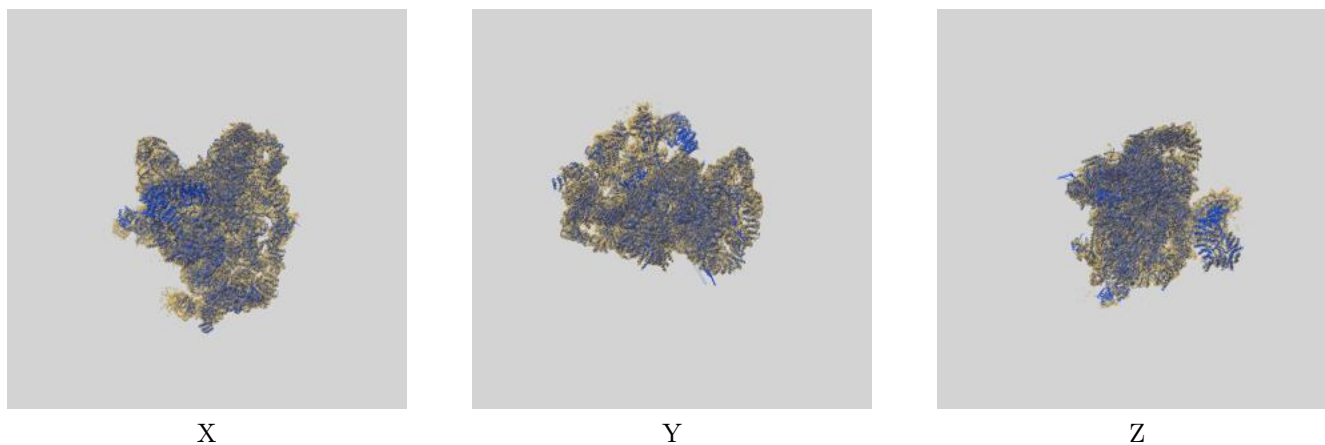
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.70	-	-
Author-provided FSC curve	2.72	3.10	2.78
Unmasked-calculated*	3.30	4.12	3.39

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.30 differs from the reported value 2.7 by more than 10 %

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

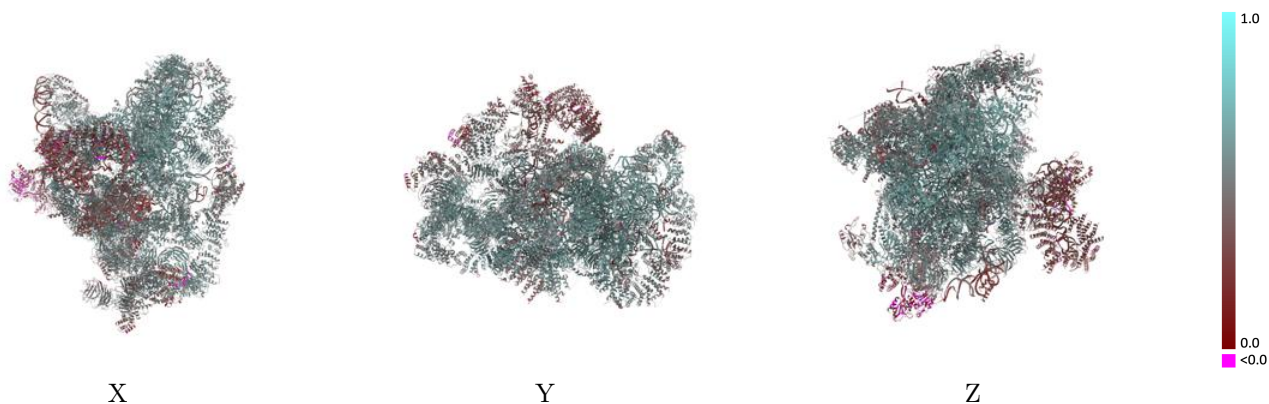
This section contains information regarding the fit between EMDB map EMD-23938 and PDB model 7MQA. Per-residue inclusion information can be found in section [3](#) on page [19](#).

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



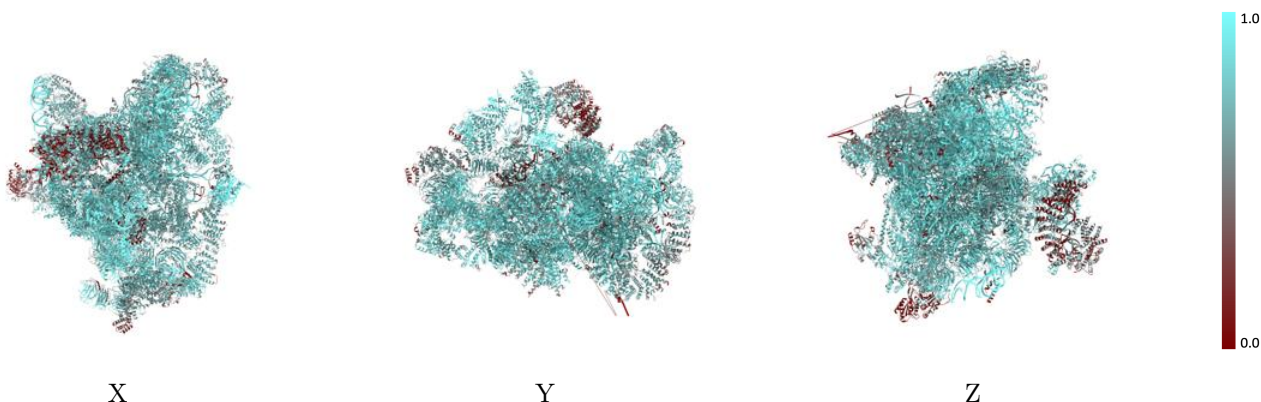
The images above show the 3D surface view of the map at the recommended contour level 3.28 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



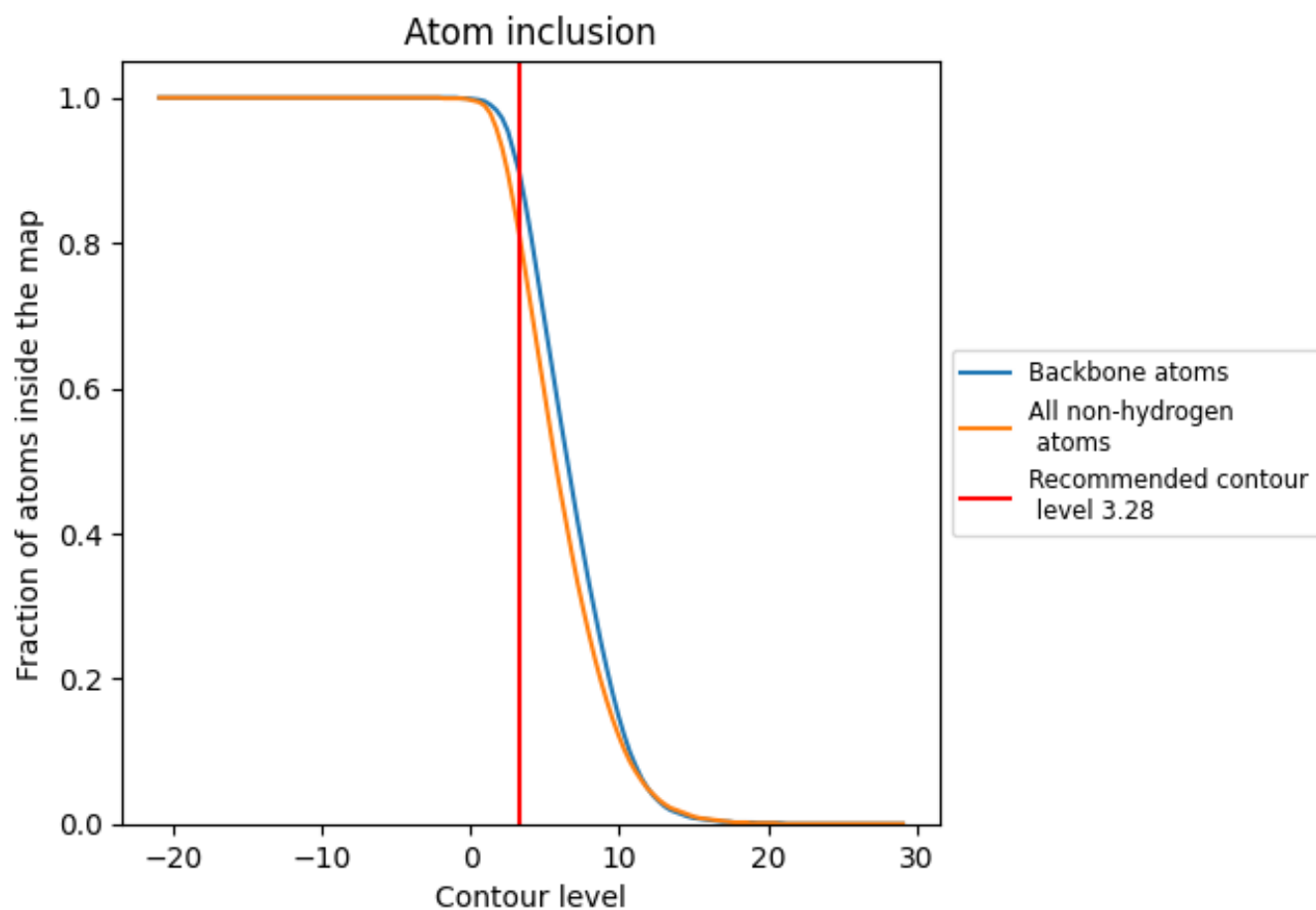
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (3.28).







































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 81% 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 (3.28) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8120	 0.5260
L0	 0.9480	 0.6010
L1	 0.8950	 0.5410
L2	 0.8820	 0.5390
L3	 0.6210	 0.5020
L4	 0.9230	 0.6290
L5	 0.8660	 0.5630
L6	 0.8580	 0.5760
L7	 0.8070	 0.5570
L8	 0.9030	 0.6100
L9	 0.9490	 0.6370
LA	 0.8280	 0.2670
LC	 0.8860	 0.5840
LD	 0.8880	 0.6140
LF	 0.9400	 0.6390
LG	 0.8260	 0.5360
LH	 0.7810	 0.5370
LI	 0.6160	 0.4110
LJ	 0.7990	 0.5220
LK	 0.5670	 0.4120
LL	 0.7790	 0.5350
LM	 0.7770	 0.5150
LN	 0.8770	 0.5840
LO	 0.9010	 0.5550
LP	 0.7970	 0.5260
LQ	 0.8110	 0.5220
LR	 0.8460	 0.5230
LS	 0.8620	 0.5810
LT	 0.8890	 0.5640
LU	 0.9170	 0.6230
LW	 0.8970	 0.5810
LY	 0.4330	 0.4920
LZ	 0.8680	 0.5480
NA	 0.7600	 0.5050
NB	 0.9100	 0.6170



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Chain	Atom inclusion	Q-score
ND	0.6770	0.5130
NF	0.9060	0.6190
NG	0.8890	0.5660
NH	0.7380	0.5010
NI	0.5750	0.4670
NL	0.8220	0.5640
NM	0.8530	0.5930
NO	0.9680	0.6610
NP	0.2720	0.5080
NQ	0.9300	0.6260
NR	0.3640	0.2700
NS	0.5400	0.2530
NT	0.8340	0.3110
NU	0.0570	0.2180
NV	0.8080	0.5760
SA	0.8780	0.5790
SB	0.8280	0.5690
SC	0.8710	0.5850
SD	0.9480	0.6340
SE	0.8780	0.5880
SF	0.9170	0.6120
SG	0.8740	0.5830
SH	0.8670	0.5770
SI	0.8630	0.5820
SJ	0.8280	0.3410
SK	0.7860	0.4580
SL	0.9070	0.6120
SM	0.8600	0.5680
SP	0.7620	0.5380
SQ	0.7520	0.5640
SR	0.9220	0.6160
SS	0.7680	0.5200
ST	0.7720	0.4210
SU	0.8630	0.4700
SW	0.8640	0.5390
SX	0.7560	0.3760
SY	0.8050	0.5620
SZ	0.8360	0.3420