



## Full wwPDB EM Validation Report ⓘ

Aug 19, 2024 – 07:47 PM EDT

PDB ID : 7MQ8  
EMDB ID : EMD-23936  
Title : Cryo-EM structure of the human SSU processome, state pre-A1  
Authors : Vanden Broeck, A.; Singh, S.; Klinge, S.  
Deposited on : 2021-05-05  
Resolution : 3.60 Å (reported)  
Based on initial models : 2OZB, 6G4S, 6ZQD, 6ZOJ, 2IPX, 6G18, 5FAI, 4JXM, 5WLC

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:

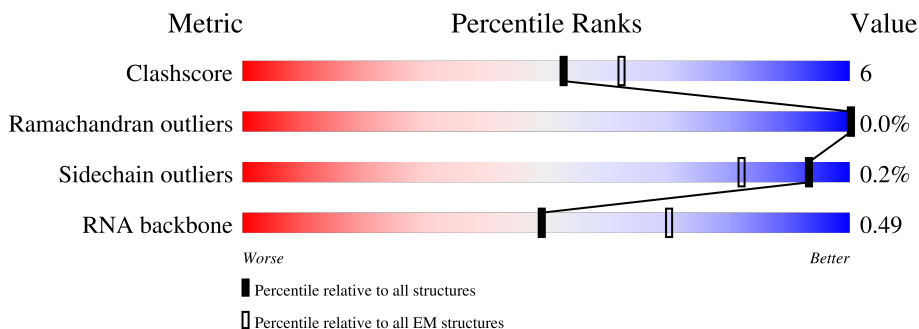
EMDB validation analysis : 0.0.1.dev92  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.37.1

# 1 Overall quality at a glance i

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

The reported resolution of this entry is 3.60 Å.

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



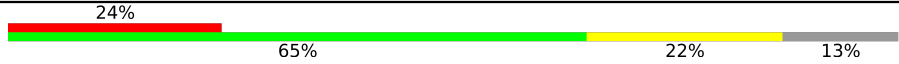


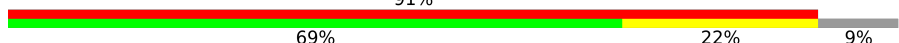




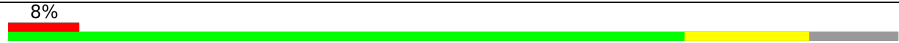

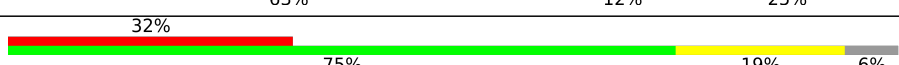


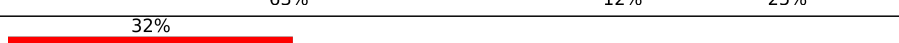
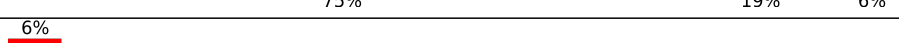
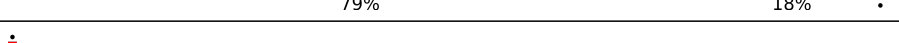
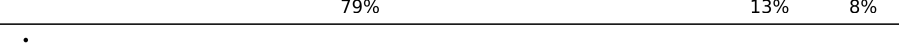
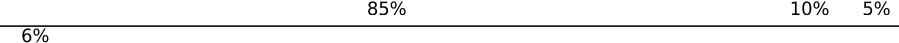
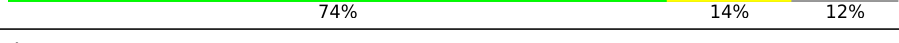





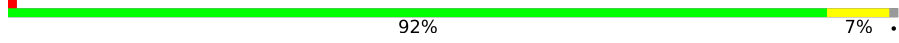
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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	 93%
2	L1	1869	 37% 27% 5% 30% 9%
3	L2	217	 46% 43% 10% 18%
4	L3	116	 75% 24% 53%
5	L4	263	 89% 11% 10%
6	L5	204	 82% 11% 7% 10%
7	L6	249	 76% 13% 10% 10%

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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	LZ	184	
31	N0	22	

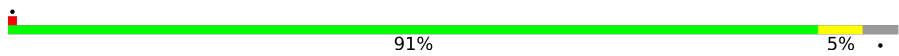









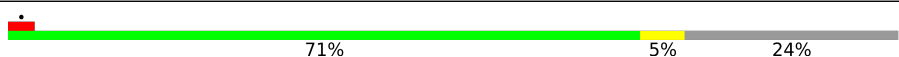


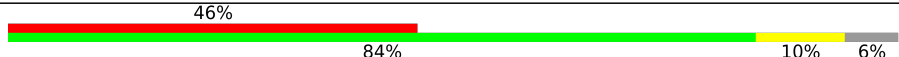
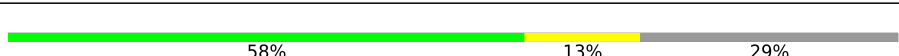

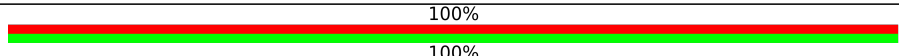
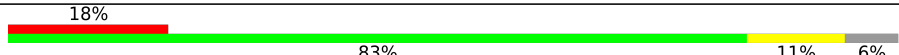
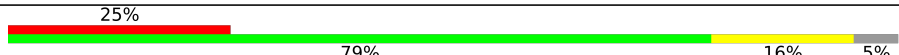
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Mol	Chain	Length	Quality of chain
32	NA	681	32% 5% 63%
33	NB	479	13% 85%
34	NC	315	26% 70%
35	ND	257	8% 28% 5% 67%
36	NE	293	28% 6% 66%
37	NF	151	12% 92% 7%
38	NG	151	69% 8% 23%
39	NH	1146	11% 82% 11% 7%
40	NI	280	32% 75% 8% 16%
41	NJ	1025	71% 10% 19%
41	NK	1025	65% 14% 20%
42	NM	264	78% 10% 12%
43	NN	560	7% 92%
44	NO	130	6% 80% 18%
45	NQ	84	92% 6%
46	NR	861	95% 5%
47	NT	156	37% 26% 11% 63%
48	NU	135	5% 31% 13% 56%
49	NW	688	36% 9% 55%
50	NY	381	11% 64% 8% 28%
51	SA	594	59% 8% 33%
52	SB	529	7% 73% 10% 17%
53	SC	321	15% 56% 15% 29%
53	SD	321	69% 5% 26%
54	SE	128	90% 8%

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Mol	Chain	Length	Quality of chain
54	SF	128	
55	SG	475	
56	SH	373	
57	SI	1282	
58	SJ	244	
58	SK	244	
59	SL	198	
60	SM	291	
61	SP	2785	
62	SQ	756	
63	SR	143	
64	SS	771	
65	ST	632	
66	SU	472	
67	SW	252	
68	Sx	38	
69	SX	139	
70	SY	253	
71	SZ	304	

## 2 Entry composition [i](#)

There are 76 unique types of molecules in this entry. The entry contains 245114 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	242	5152	2289	908	1713	242	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	L1	1301	27777	12396	5002	9078	1301	0	0

- Molecule 3 is a RNA chain called U3 snoRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	L2	215	4589	2047	809	1518	215	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
			Total	C	N	O	S		
6	L5	190	1501	939	285	270	7	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	L6	223	1811	1133	361	311	6	0	0

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

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

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	L9	171	1425	908	284	232	1	0	0

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	LC	139	1098	699	207	189	3	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	LD	147	1204	767	225	206	6	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
14	LF	104	Total	C	N	O	S	0	0
			851	543	158	145	5		

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

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

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

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

- Molecule 17 is a protein called Nucleolar protein 11.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
18	LJ	469	Total	C	N	O	S	0	0
			3711	2372	637	688	14		

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

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
20	LM	2005	Total	C	N	O	S	0	0
			15820	10259	2597	2883	81		

- 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	848	6676	4258	1151	1234	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	567	4705	3022	808	847	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	828	6438	4103	1108	1194	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	773	6015	3789	1079	1116	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	869	6756	4321	1158	1244	33	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	453	3519	2221	637	646	15	0	0

- Molecule 30 is a protein called U3 small nucleolar ribonucleoprotein protein IMP3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
30	LZ	183	1532	966	292	270	4	0	0

- Molecule 31 is a RNA chain called 5'ETS rRNA.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	O	P		
31	N0	22	264	110	132	22	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	249	2055	1299	359	391	6	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	73	617	379	140	98	0	0

- Molecule 34 is a protein called Neuroguidin.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
34	NC	94	779	469	160	147	3	0	0

- Molecule 35 is a protein called Nucleolar protein 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
35	ND	84	696	438	143	114	1	0	0

- Molecule 36 is a protein called Uncharacterized protein C1orf131.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
36	NE	100	799	509	143	146	1	0	0

- Molecule 37 is a protein called 40S ribosomal protein S13.

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

- Molecule 38 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
38	NG	116	861	531	159	165	6	0	0

- Molecule 39 is a protein called Nucleolar protein 6.

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

- Molecule 40 is a protein called Ribosomal RNA-processing protein 7 homolog A.

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

- Molecule 41 is a protein called RNA cytidine acetyltransferase.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	NJ	827	6526	4187	1126	1178	35	0	0
41	NK	815	6419	4118	1109	1160	32	0	0

- Molecule 42 is a protein called 40S ribosomal protein S3a.

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

- Molecule 43 is a protein called Protein AATF.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	NN	42	340	215	63	60	2	0	0

- Molecule 44 is a protein called 40S ribosomal protein S15a.

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

- Molecule 45 is a protein called 40S ribosomal protein S27.

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

- Molecule 46 is a protein called RRP12-like protein.

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

- Molecule 47 is a protein called Ubiquitin-40S ribosomal protein S27a.

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

- Molecule 48 is a protein called 40S ribosomal protein S17.

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

- Molecule 49 is a protein called Nucleolar protein 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
49	NW	311	2498	1599	413	472	14	0	0

- Molecule 50 is a protein called KRR1 small subunit processome component homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	NY	274	2222	1422	391	400	9	0	0

- Molecule 51 is a protein called Nucleolar protein 56.

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

- Molecule 52 is a protein called Nucleolar protein 58.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
52	SB	440	3439	2179	596	642	22	0	0

- Molecule 53 is a protein called rRNA 2'-O-methyltransferase fibrillarin.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
53	SC	229	1781	1129	322	323	7	0	0
53	SD	237	1841	1163	337	334	7	0	0

- Molecule 54 is a protein called NHP2-like protein 1.

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

- Molecule 55 is a protein called U3 small nucleolar RNA-interacting protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
55	SG	389	2884	1809	534	528	13	1	0

- Molecule 56 is a protein called RNA 3'-terminal phosphate cyclase-like protein.

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

- Molecule 57 is a protein called Ribosome biogenesis protein BMS1 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
57	SI	844	6803	4351	1230	1188	34	0	0

- Molecule 58 is a protein called Ribosomal RNA small subunit methyltransferase NEP1.

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

- Molecule 59 is a protein called rRNA-processing protein FCF1 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
59	SL	192	1586	1006	290	275	15	0	0

- Molecule 60 is a protein called U3 small nucleolar ribonucleoprotein protein IMP4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
60	SM	290	2369	1485	451	424	9	0	0

- Molecule 61 is a protein called Small subunit processome component 20 homolog.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
61	SP	1993	16078	10412	2689	2897	80	0	0

- Molecule 62 is a protein called Deoxynucleotidyltransferase terminal-interacting protein 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
62	SQ	187	1533	972	278	277	6	0	0

- Molecule 63 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
63	SR	108	816	521	153	140	2	0	0

- Molecule 64 is a protein called U3 small nucleolar RNA-associated protein 14 homolog A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
64	SS	197	1626	1039	301	285	1	0	0

- Molecule 65 is a protein called Nucleolar protein 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
65	ST	568	4170	2634	760	755	21	0	0

- Molecule 66 is a protein called Nucleolar complex protein 4 homolog.

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

- Molecule 67 is a protein called RNA-binding protein PNO1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
67	SW	180	1413	906	257	246	4	0	0

- Molecule 68 is a protein called Unassigned peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
68	Sx	38	190	114	38	38	0	0

- Molecule 69 is a protein called Unassigned peptides.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
69	SX	139	695	417	139	139	0	0

- Molecule 70 is a protein called Probable U3 small nucleolar RNA-associated protein 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
70	SY	238	2024	1280	385	353	6	0	0

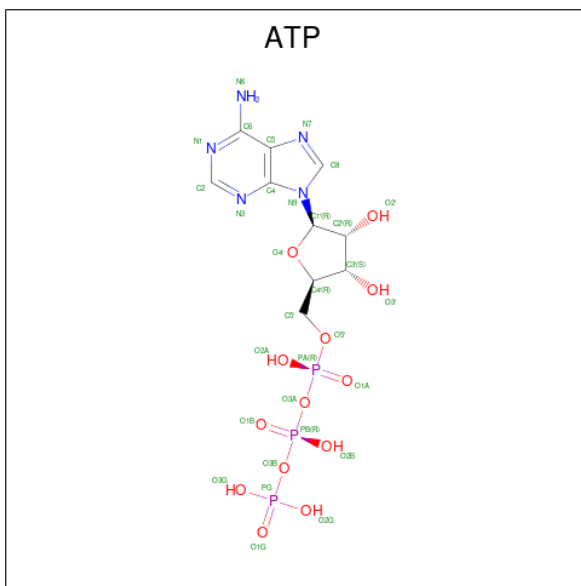
- Molecule 71 is a protein called Bystin.

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

- Molecule 72 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
72	L1	19	19	19	0
72	NH	1	1	1	0
72	SI	1	1	1	0
72	SL	1	1	1	0

- Molecule 73 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula: C<sub>10</sub>H<sub>16</sub>N<sub>5</sub>O<sub>13</sub>P<sub>3</sub>).



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

*Continued on next page...*



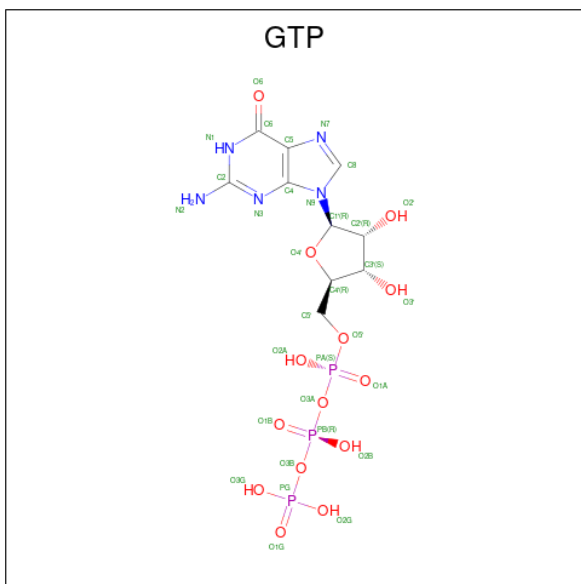
Continued from previous page...

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

- Molecule 74 is ZINC ION (three-letter code: ZN) (formula: Zn).

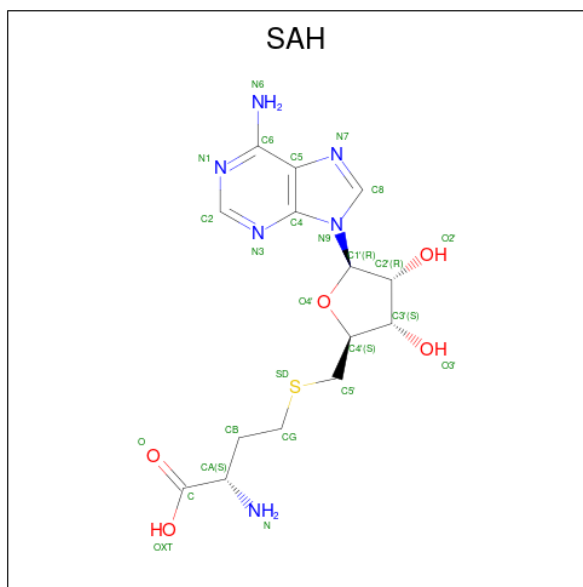
Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
74	NQ	1	1	1	0
74	NT	1	1	1	0
74	SL	1	1	1	0

- Molecule 75 is GUANOSINE-5'-TRIPHOSPHATE (three-letter code: GTP) (formula: C<sub>10</sub>H<sub>16</sub>N<sub>5</sub>O<sub>14</sub>P<sub>3</sub>).



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

- Molecule 76 is S-ADENOSYL-L-HOMOCYSTEINE (three-letter code: SAH) (formula: C<sub>14</sub>H<sub>20</sub>N<sub>6</sub>O<sub>5</sub>S).

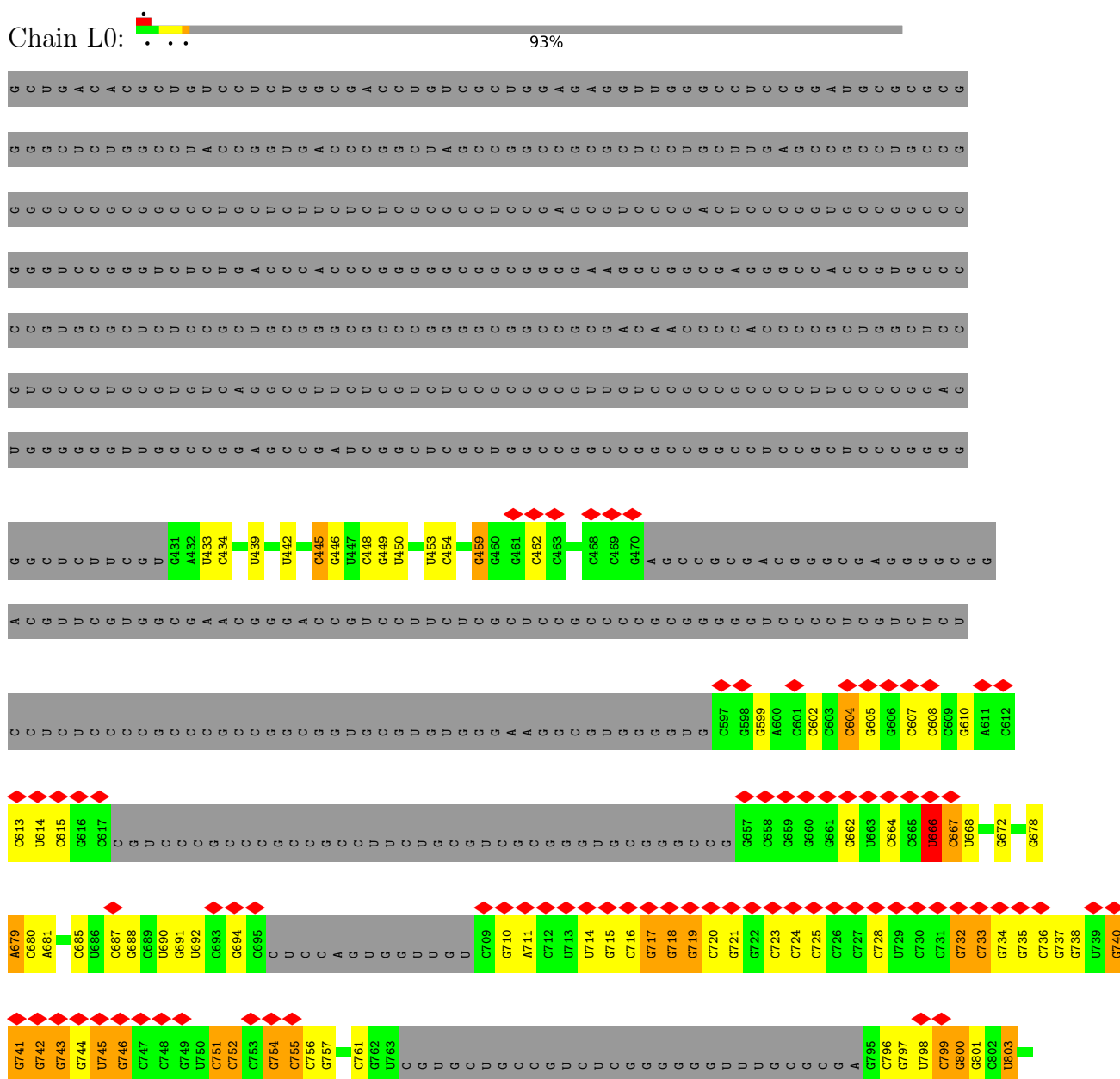


Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
76	SJ	1	Total	C	N	O	S	0
			26	14	6	5	1	
76	SK	1	Total	C	N	O	S	0
			26	14	6	5	1	

### 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

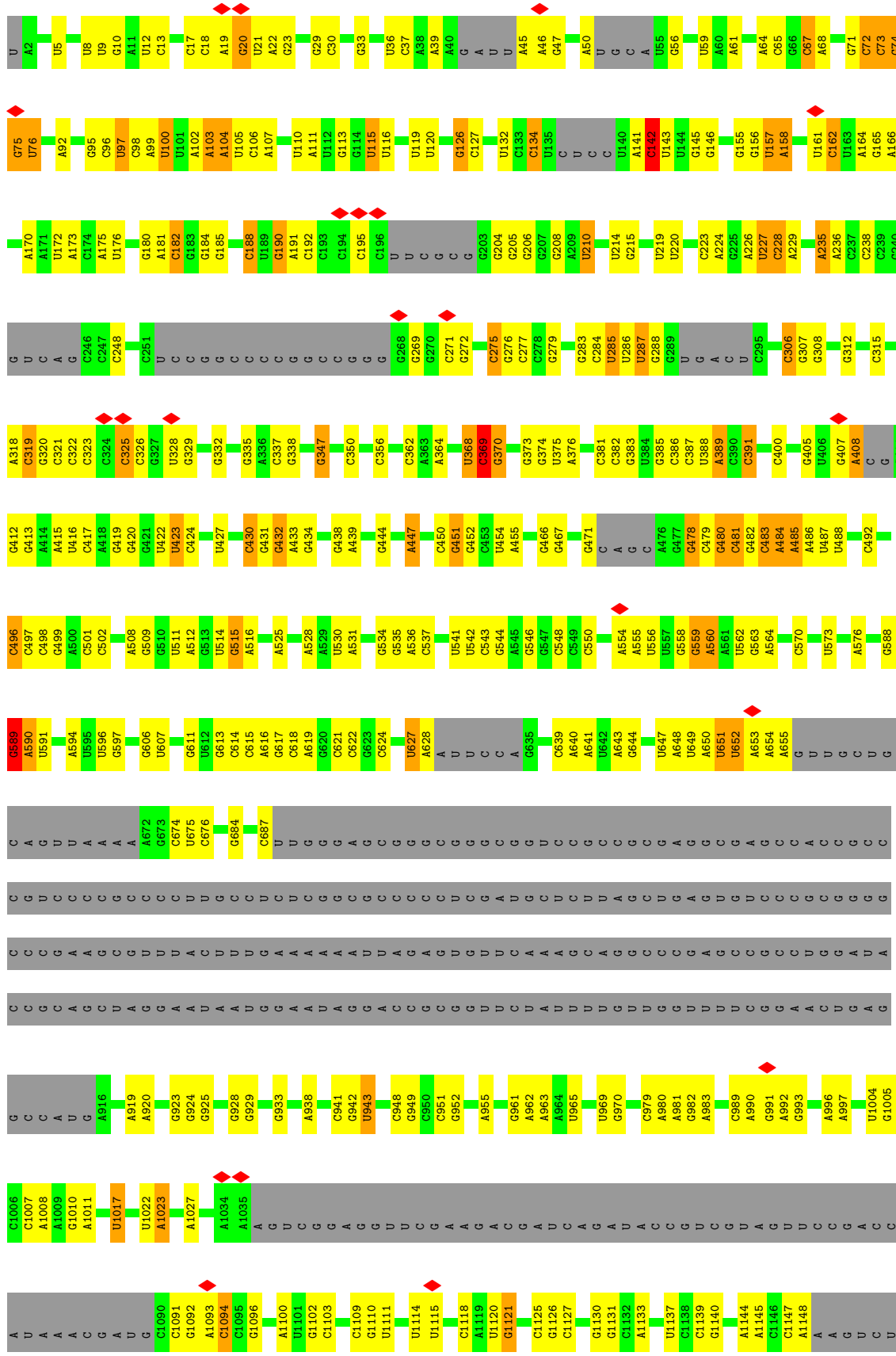


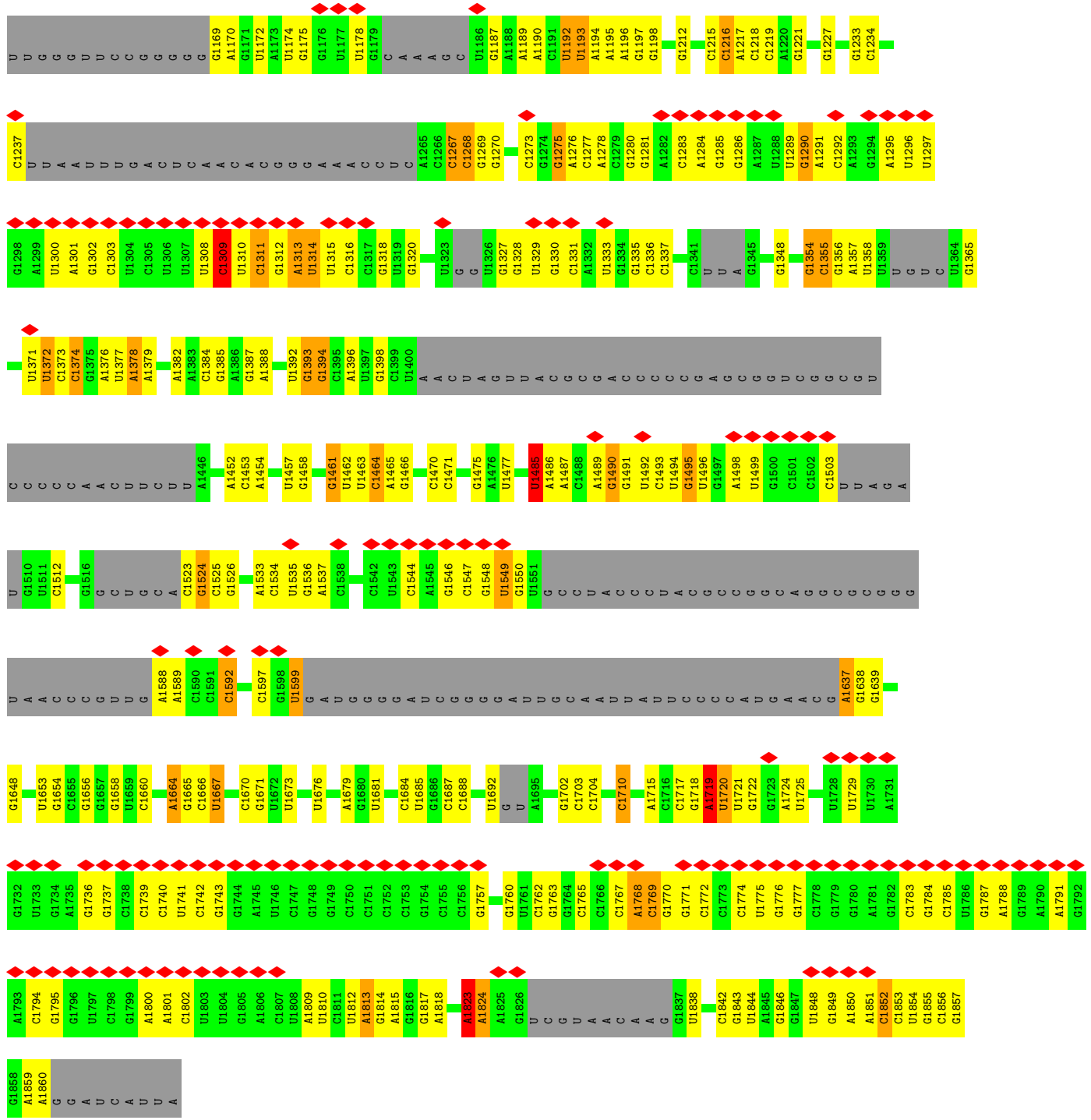


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 G G A G C C G G G D C A C G G G D D D A C G D C C G D D G G G G C C C G C C D G C C G A C C G A A C C G C G A C C G  
 C D C C D G G G C C C C C C C C G C C C C G G C C A C D D G A D G G C C C C G C G D C C G C C G C C G C C G C C  
 C D D G G G A C C C G G D C C G D G G C C C C C G G C C 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 G G G D C G G C C D G G G G C C G D C C C G G G G A G G A G A C C G D D C C G G G G A C C G C C C G A C D D  
 G G C C C G G G D C D G G G G G A G C C C G G G G A D C C C C A G G G C C G G D C C C C C C G C C G G D G  
 C G C C C G G D G C C C C G G G G G G G D G A G G C C C C G G C C G D G D D C C G G C C G G G D C G G C C G  
 C G D C G A G G G G D C C C C C D G G G G D C C C G D D C C C C G C C G C C D D D C D G C C D D C C C C  
 G D C C C C C C C C C D D G C C C G D D C D C D D C D C C C G C C C G C C C C G D D C C C A A C C G G G D  
 G G C C C G D C C C C G G G D C G C C D C G C D D C C C C G G G C C D G C C G C C G C C D C C C G A G C C D  
 C G D C C G G G C C C D G G G C C A G G A C C C G G D C C D C C C C C G D G G C C C C D C C C C D D C C  
 G G G C C G G G D C C C C A G G G G G C C G G D C C C D C C G G A A G G C G D D G D G G G A C G  
 D D G C C G D G G A C C D C C C C D D D C C C G D C C C C C D C D C C C C G G D G G G G G G G G G  
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 G C C C C G G C C C D G G A C C C G G G C D D C G C C G G C C C G G G C C C D C G A C C G G A C C  
 G D C C C G G G C C C D G G C C C C A C C G G G C C A C D D C C C C G G C C G G G C C A C C G C C D C C G C  
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 C D C C C C C C C C C C C C C C C G G G C C C C C C C C C C C C C C C C D G G C C C C G C C C C D C C C  
 G C C C C C G G G C C C G G D C G G C C C D C C C C D C D C C C G G G C C C G C C C A C G A A A G C C D  
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 G D C C G D D C C C C C C C C C G G C C C A C C G D C C C C G C C C C C C C C C C C C C C C C C  
 D C G D C C D C C C G D C G G G G C C G G G C C G D C C G D C C G D C C G D C C G D C C D C C D C  
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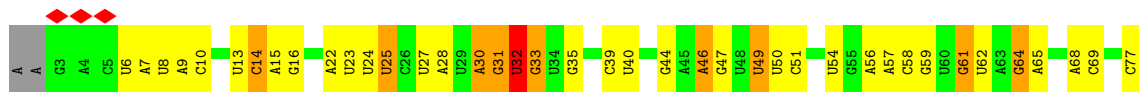
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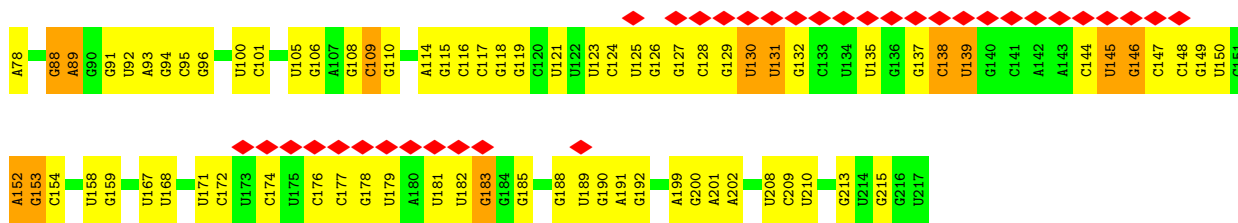




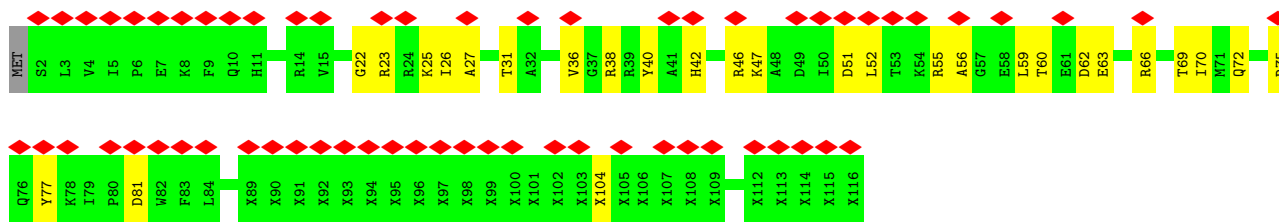
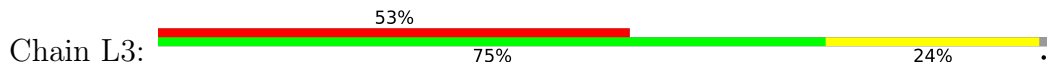


• Molecule 3: U3 snoRNA

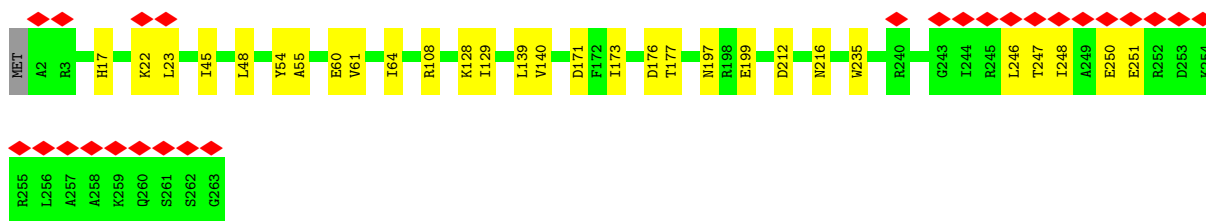
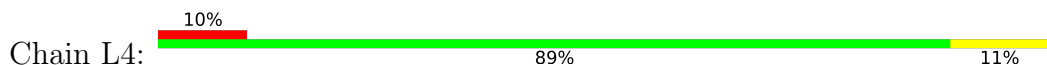




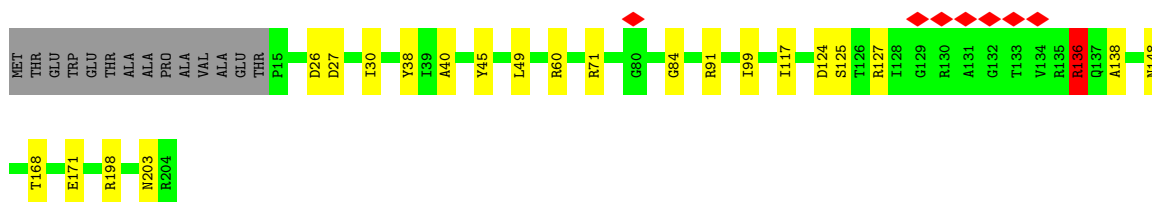
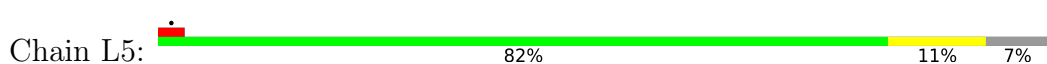
• Molecule 4: 40S ribosomal protein S18



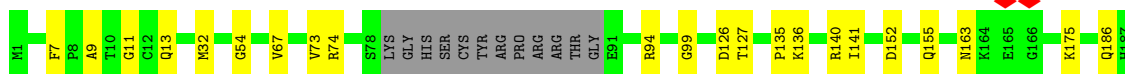
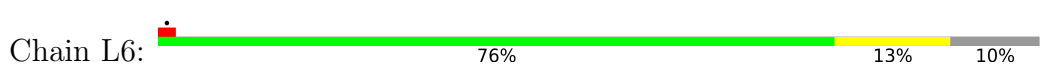
• Molecule 5: 40S ribosomal protein S4, X isoform



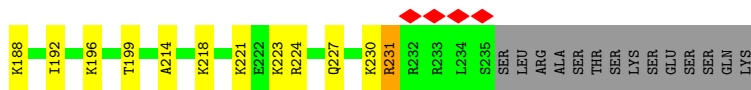
• Molecule 6: 40S ribosomal protein S5



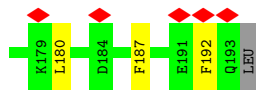
• Molecule 7: 40S ribosomal protein S6



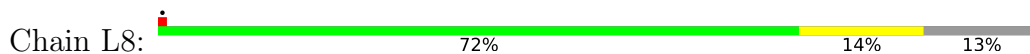




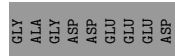
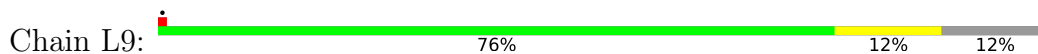
• Molecule 8: 40S ribosomal protein S7



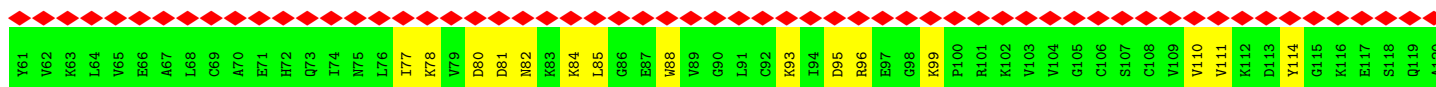
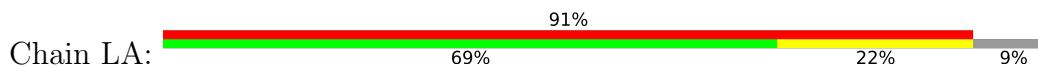
• Molecule 9: 40S ribosomal protein S8



• Molecule 10: 40S ribosomal protein S9

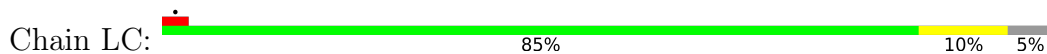


• Molecule 11: 40S ribosomal protein S12

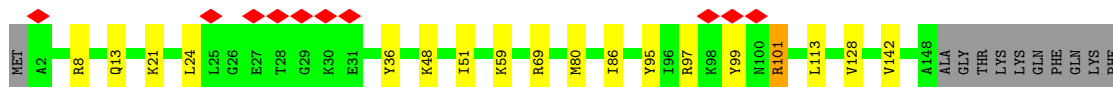
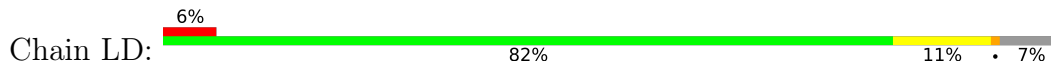




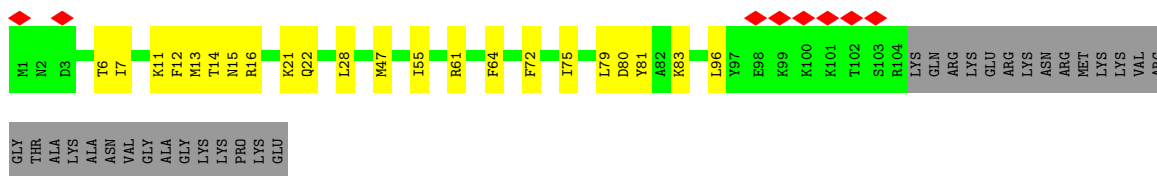
• Molecule 12: 40S ribosomal protein S16



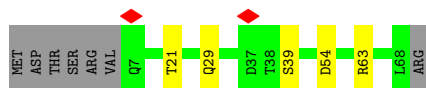
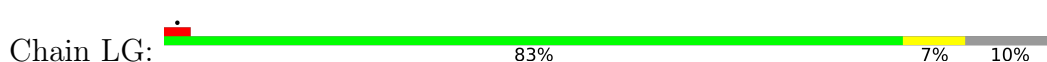
• Molecule 13: 40S ribosomal protein S11



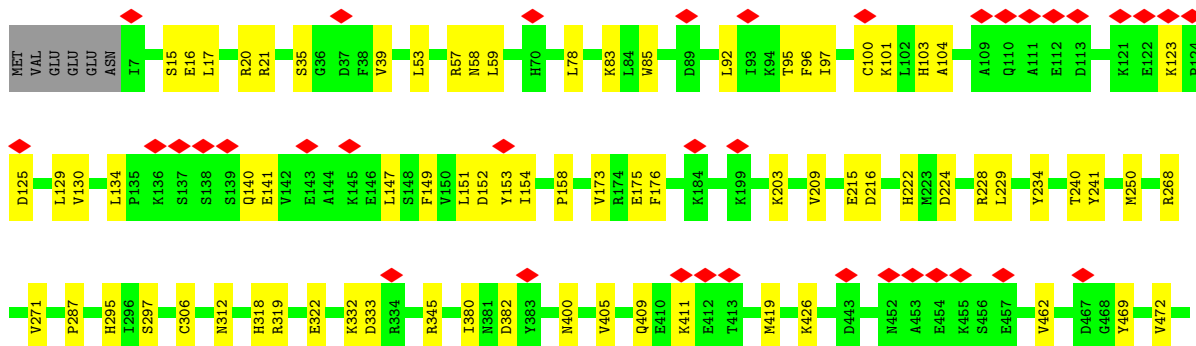
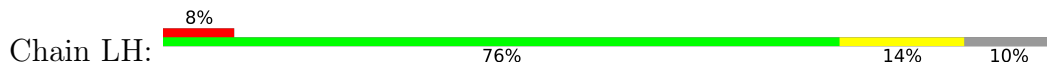
• Molecule 14: 40S ribosomal protein S24

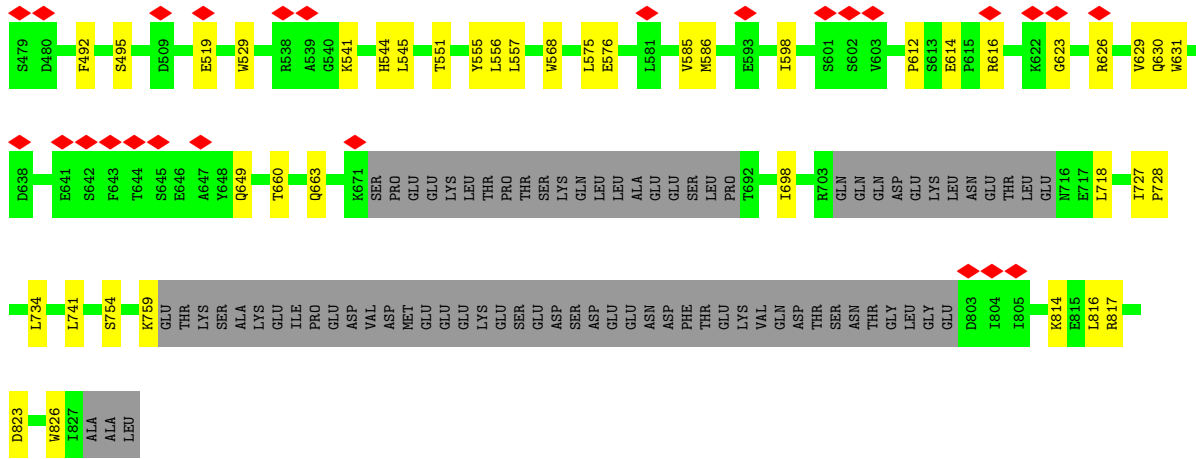


• Molecule 15: 40S ribosomal protein S28

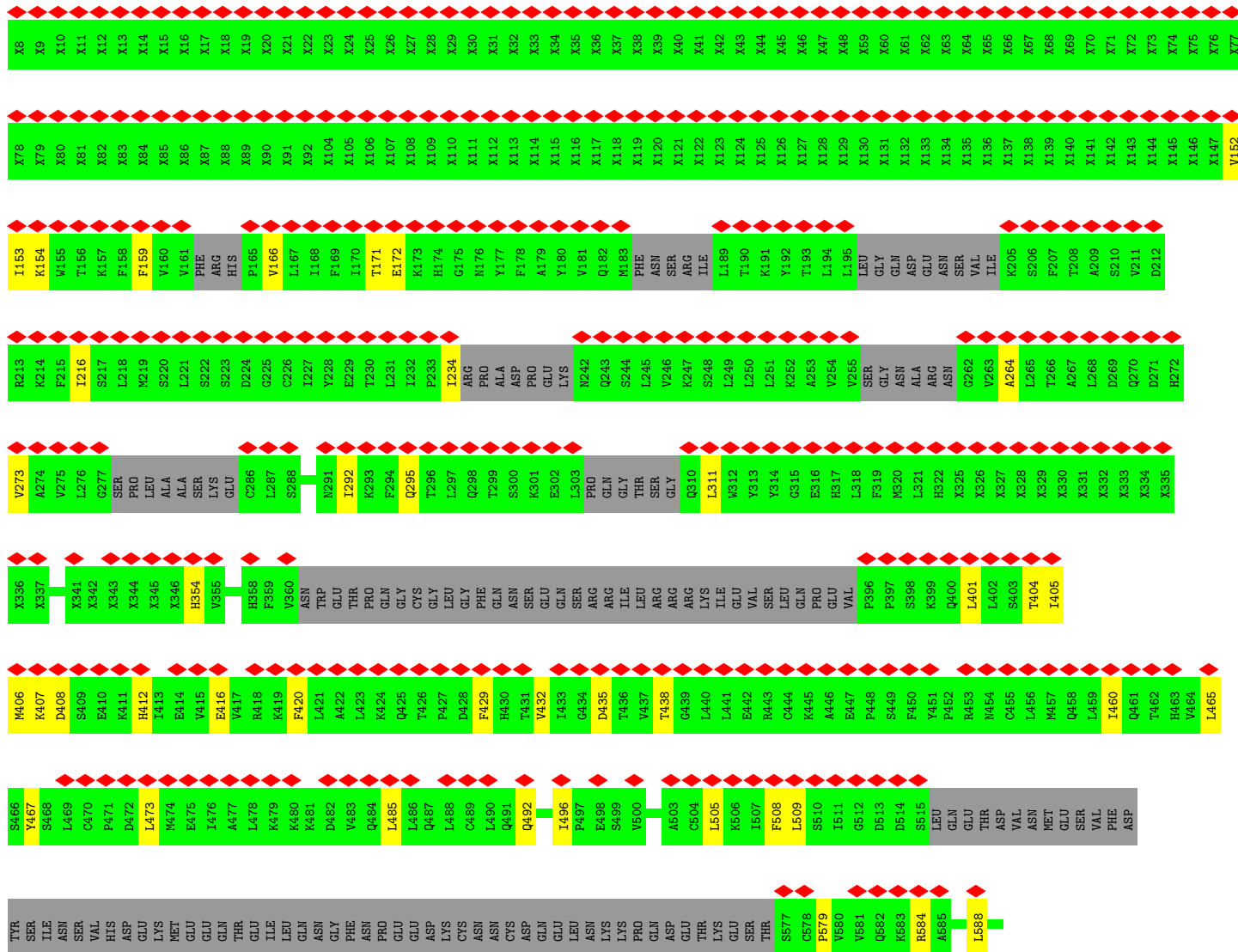


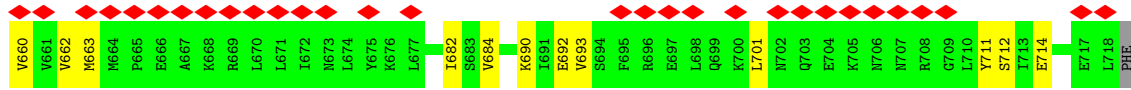
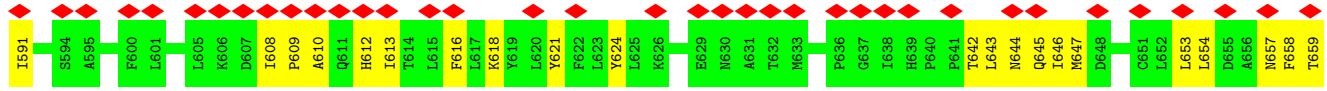
• Molecule 16: WD repeat-containing protein 75



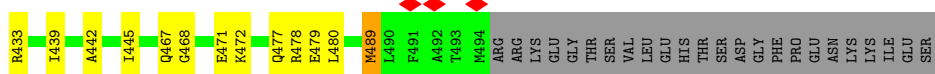
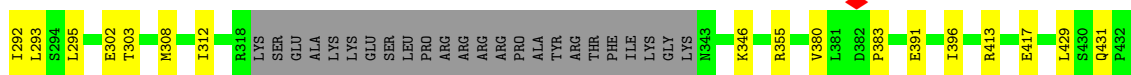
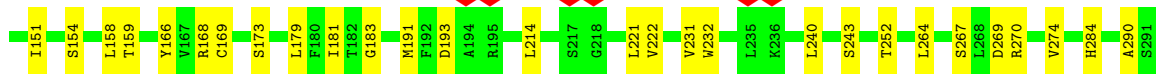
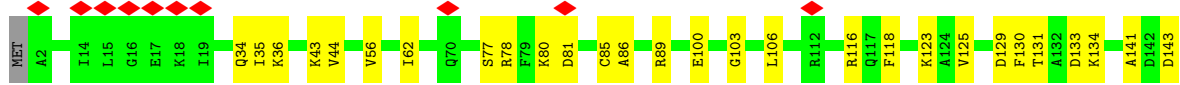
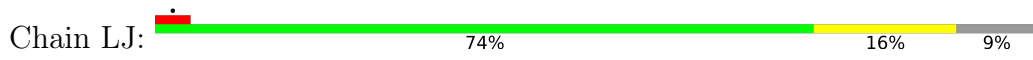


• Molecule 17: Nucleolar protein 11

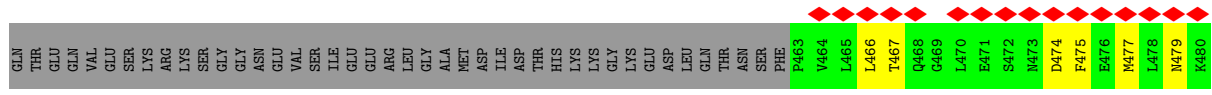
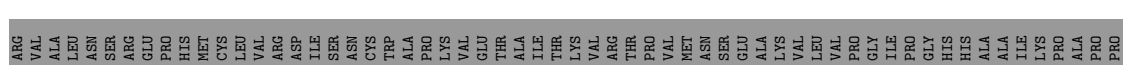
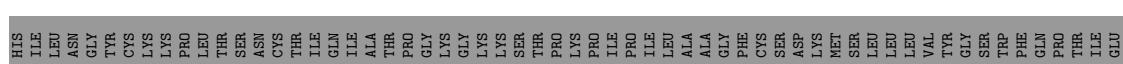
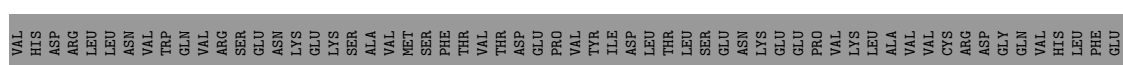
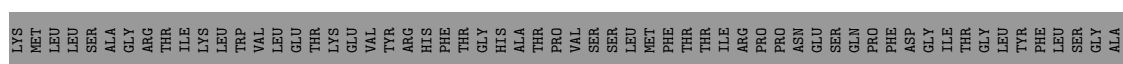
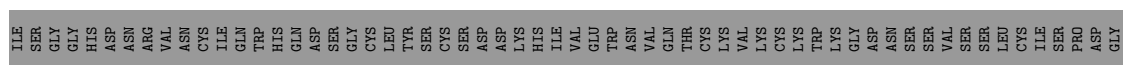
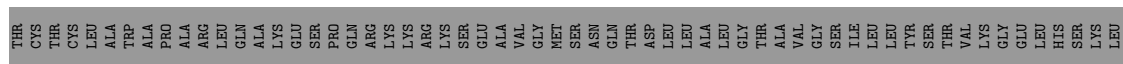
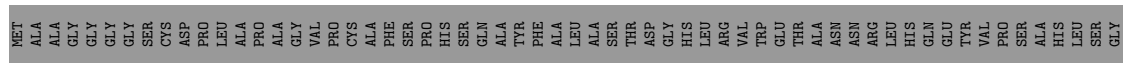


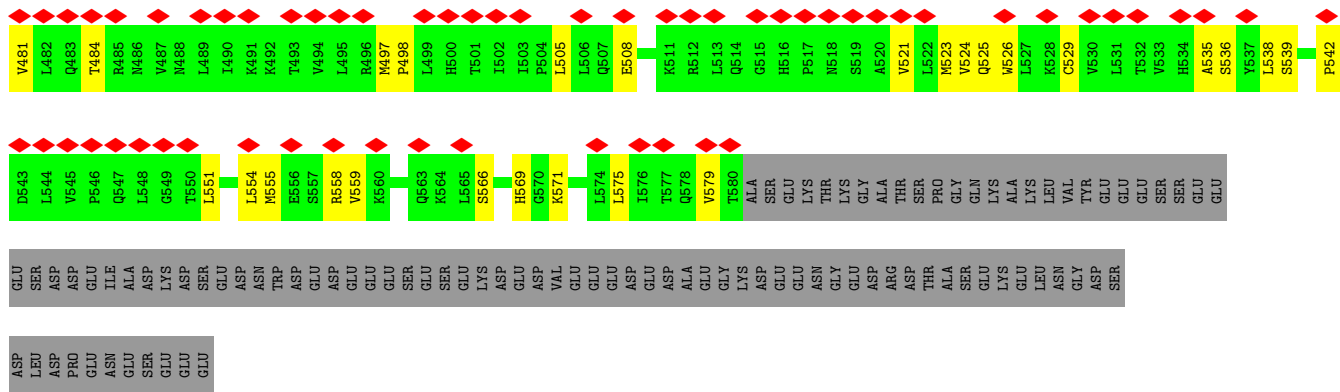


• Molecule 18: U3 small nucleolar RNA-associated protein 15 homolog

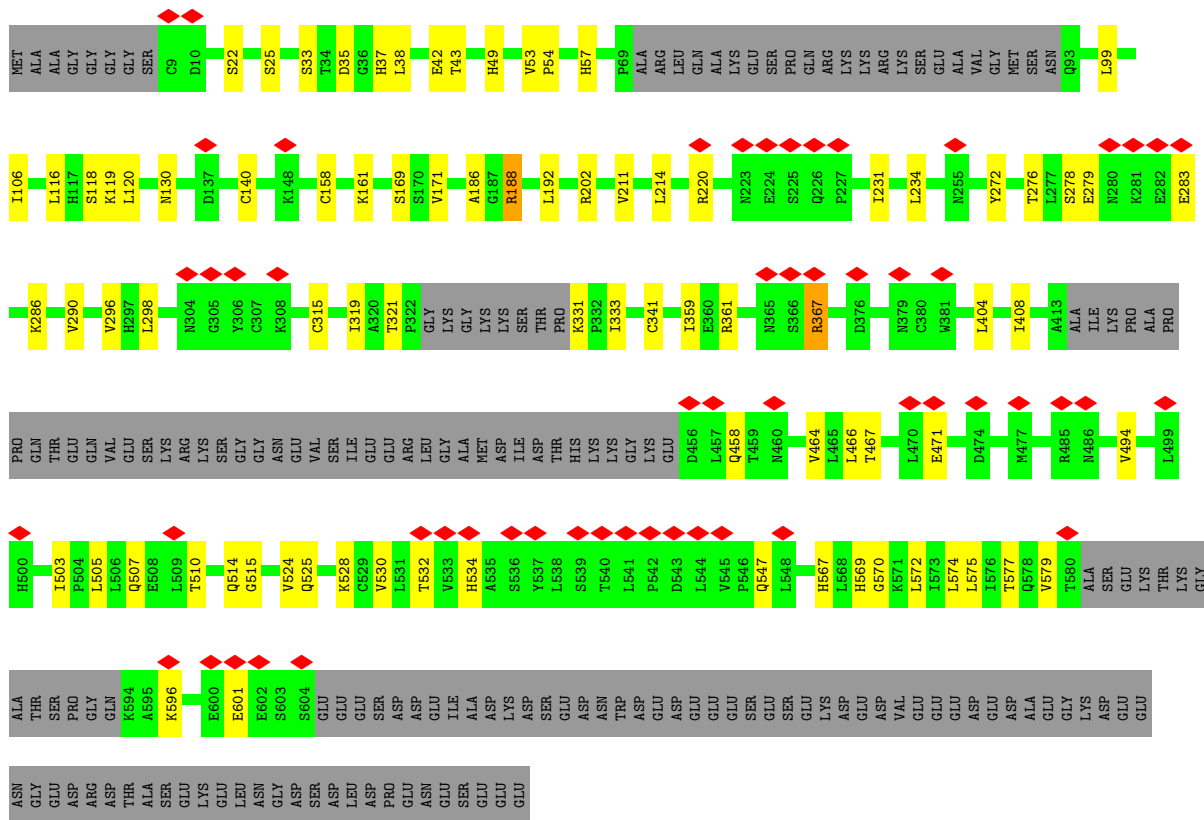


• Molecule 19: WD repeat-containing protein 43

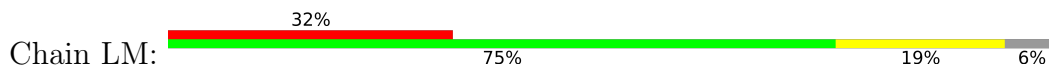


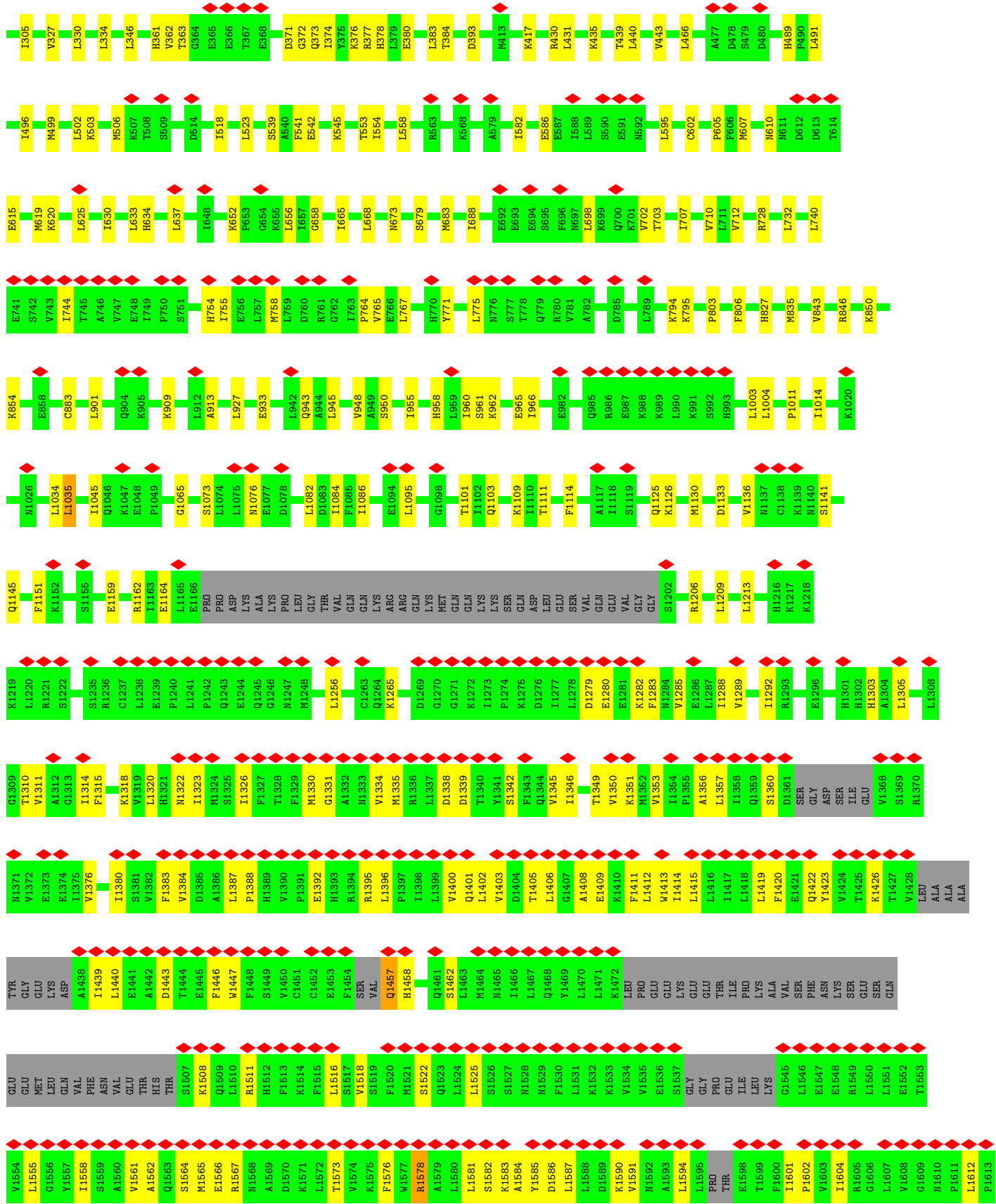


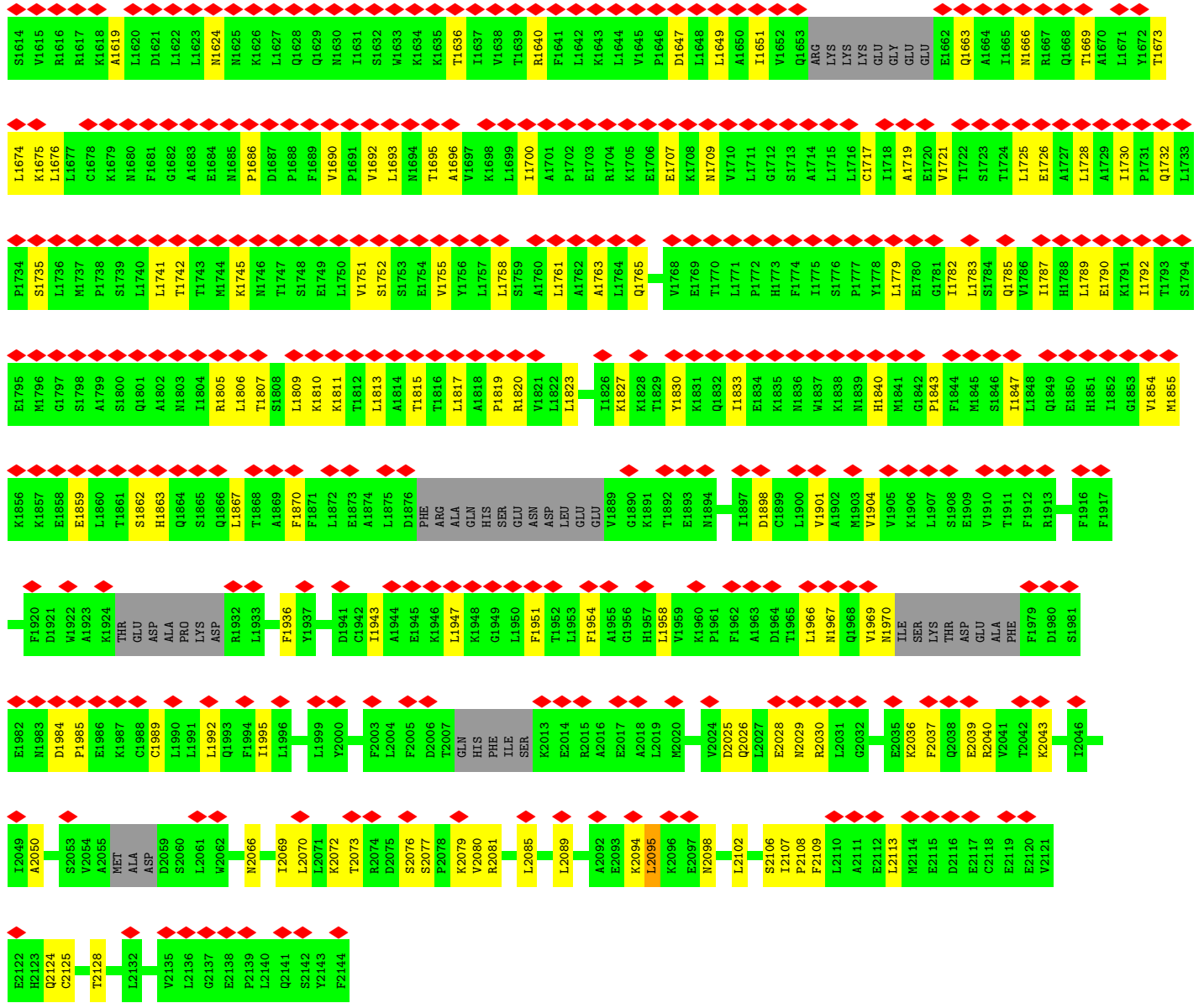
• Molecule 19: WD repeat-containing protein 43



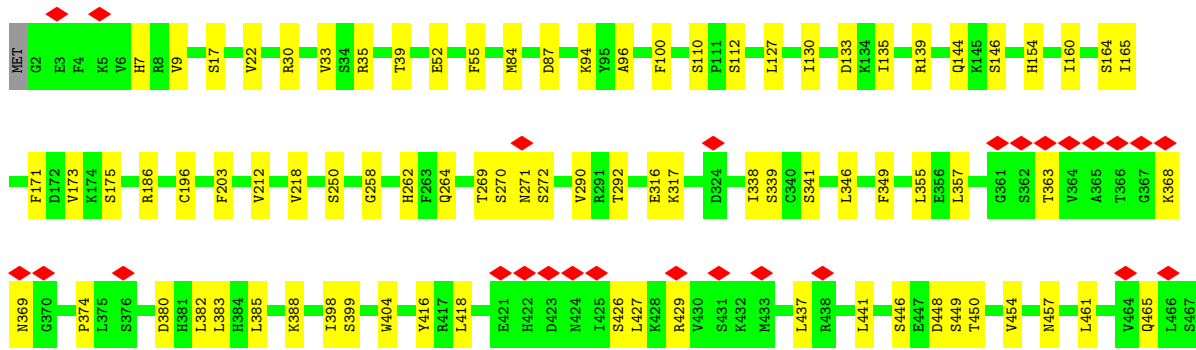
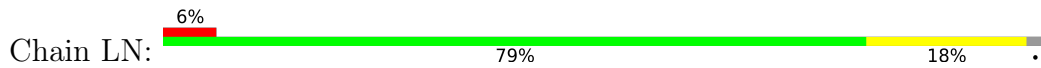
• Molecule 20: HEAT repeat-containing protein 1

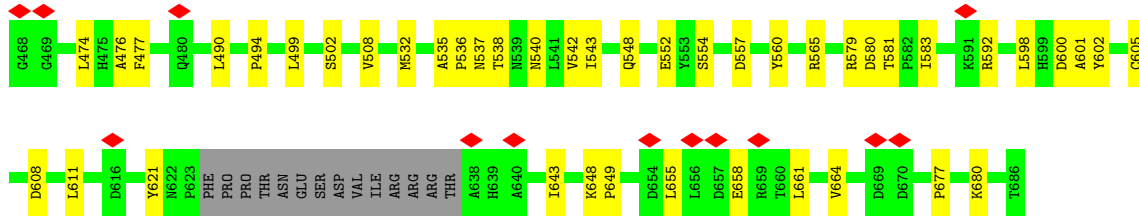




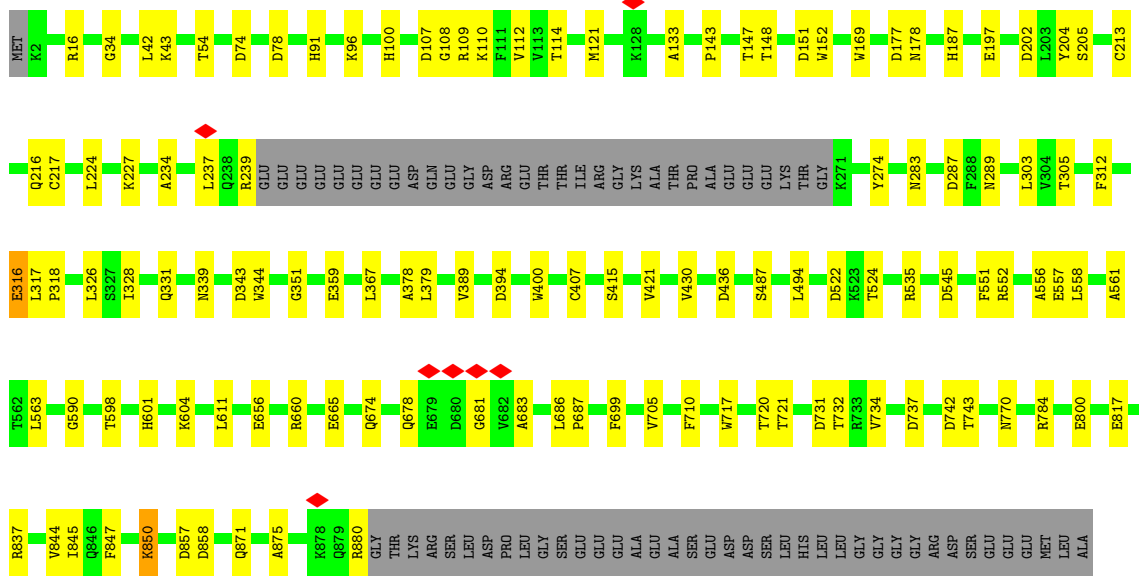
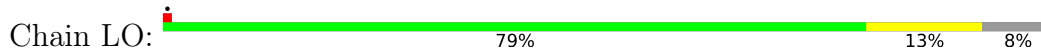


● Molecule 21: U3 small nucleolar RNA-associated protein 4 homolog

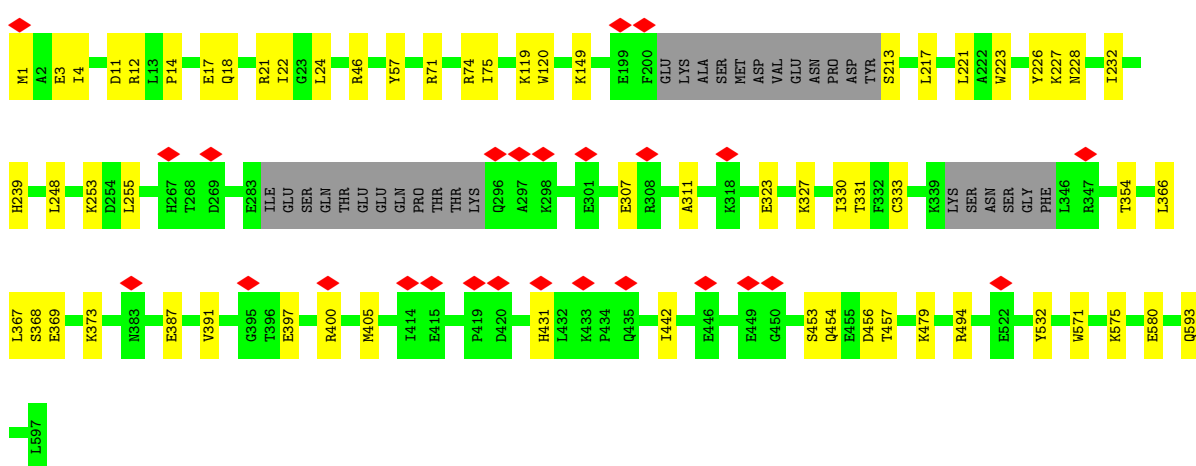
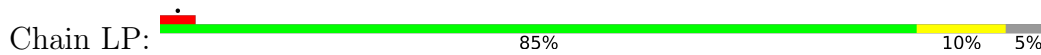




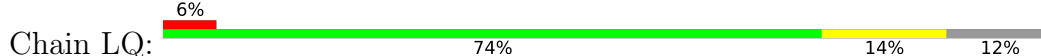
• Molecule 22: Periodic tryptophan protein 2 homolog



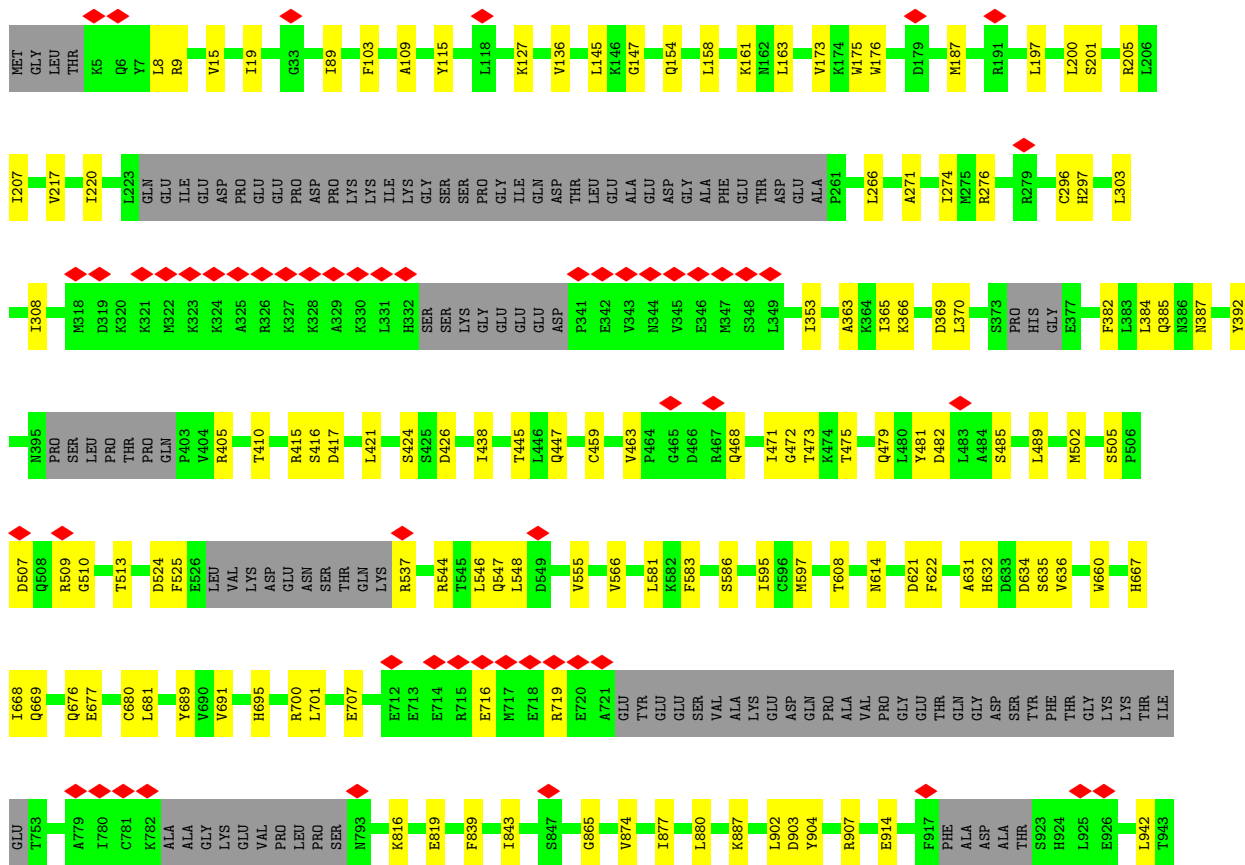
• Molecule 23: U3 small nucleolar RNA-associated protein 6 homolog



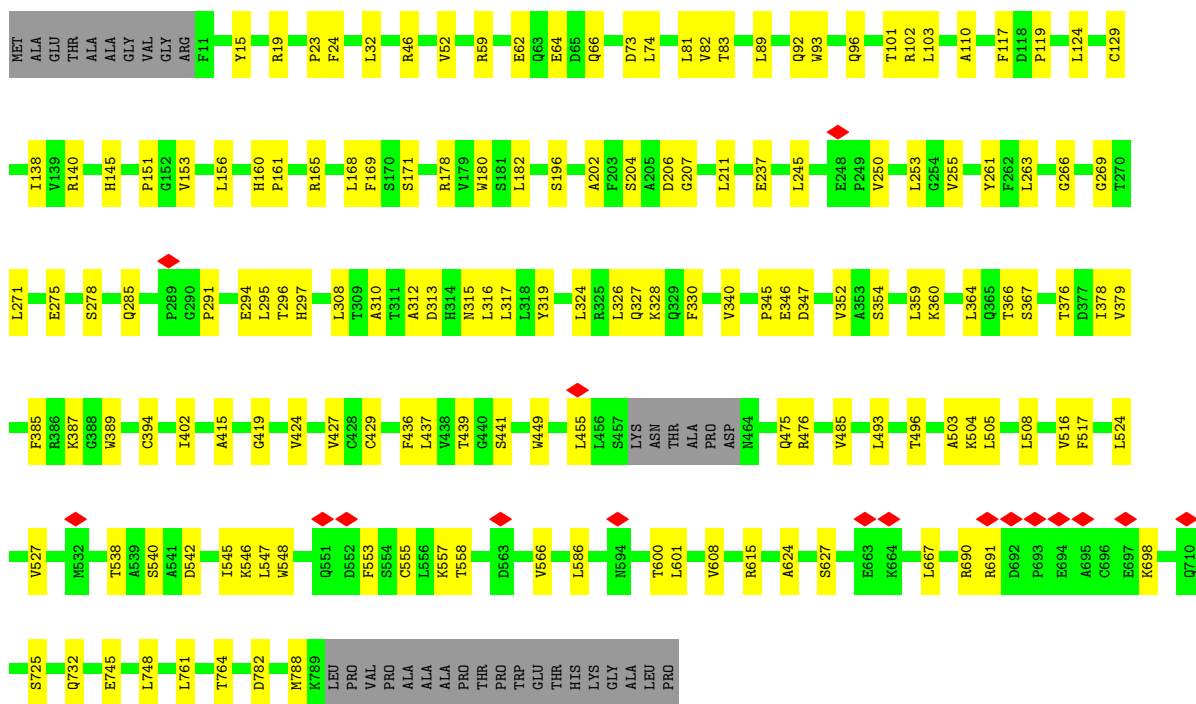
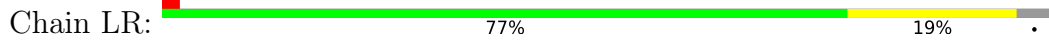
• Molecule 24: WD repeat-containing protein 3



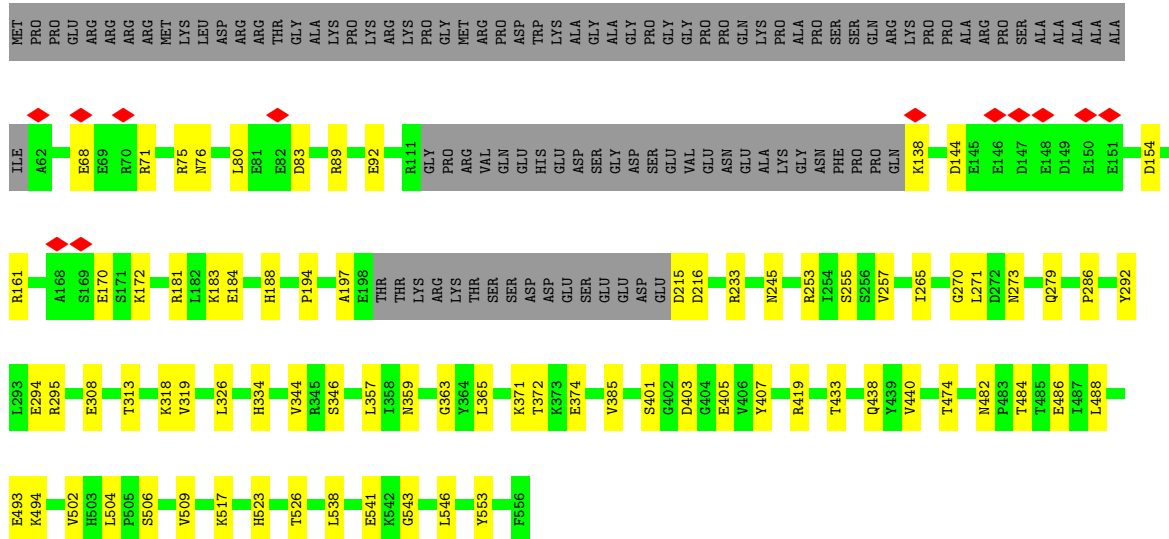




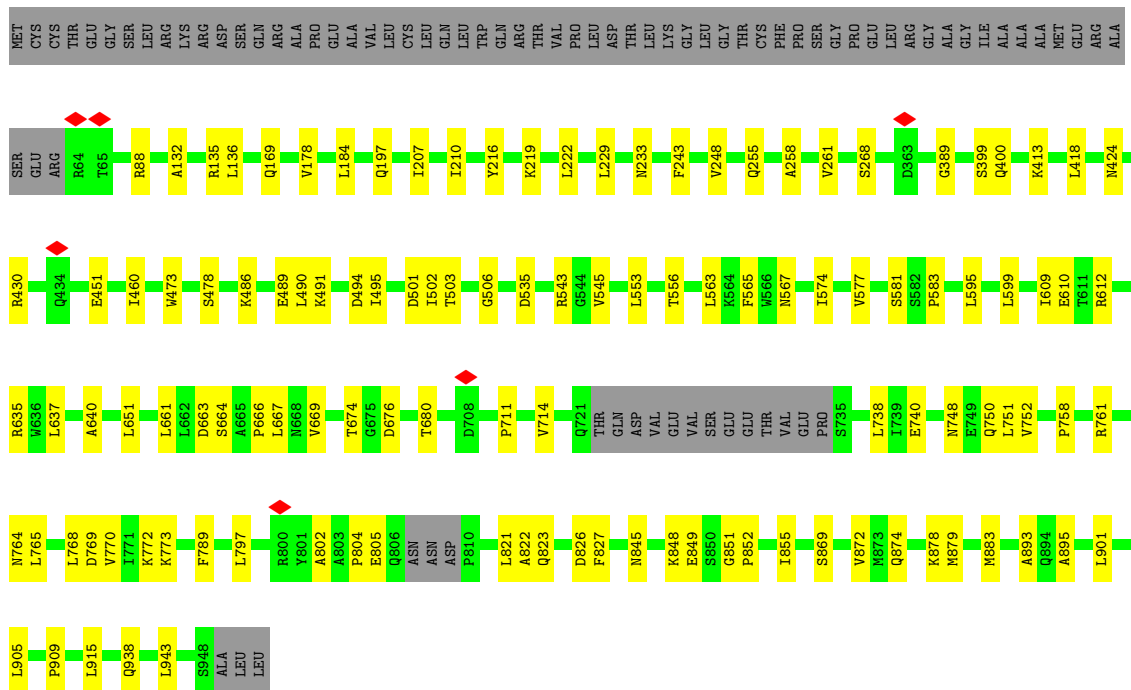
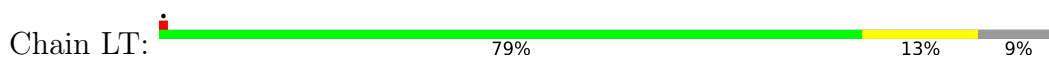
• Molecule 25: Transducin beta-like protein 3



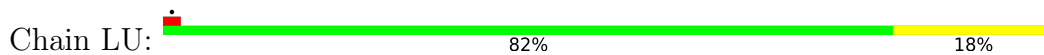
• Molecule 26: U3 small nucleolar RNA-associated protein 18 homolog

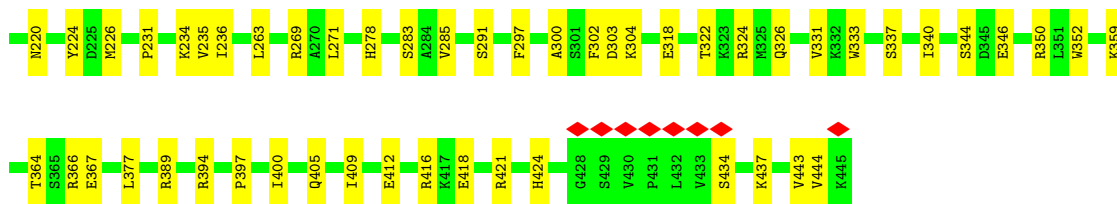


• Molecule 27: WD repeat-containing protein 36

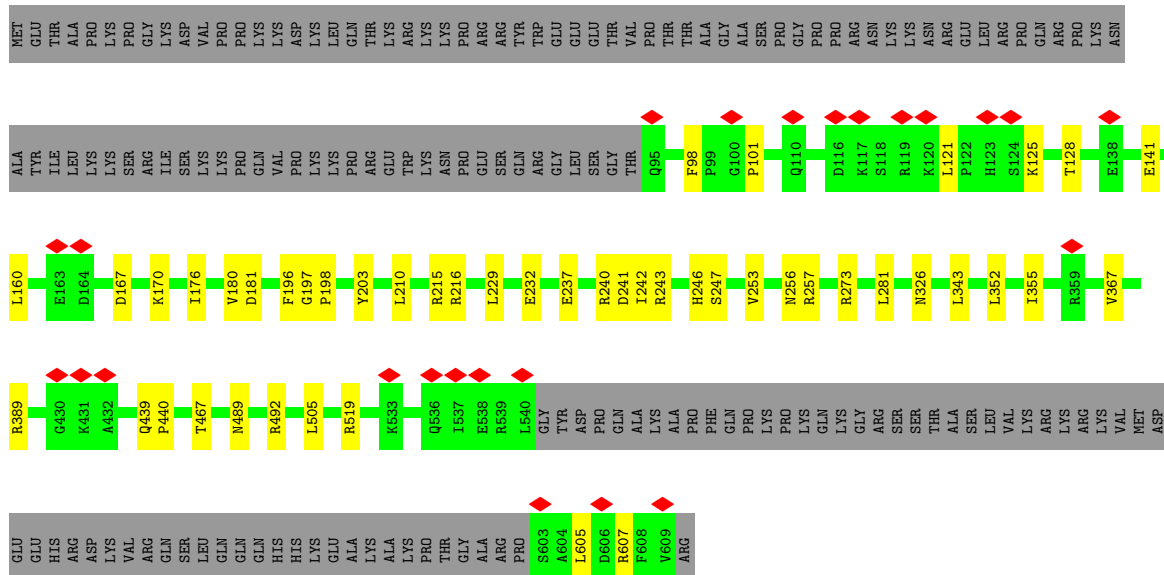


• Molecule 28: DDB1- and CUL4-associated factor 13

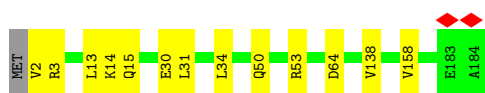




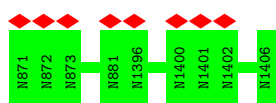
• Molecule 29: WD repeat-containing protein 46



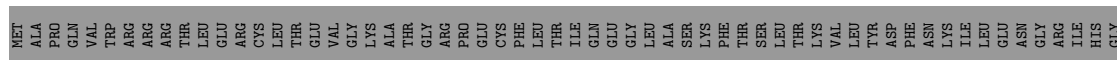
• Molecule 30: U3 small nucleolar ribonucleoprotein protein IMP3

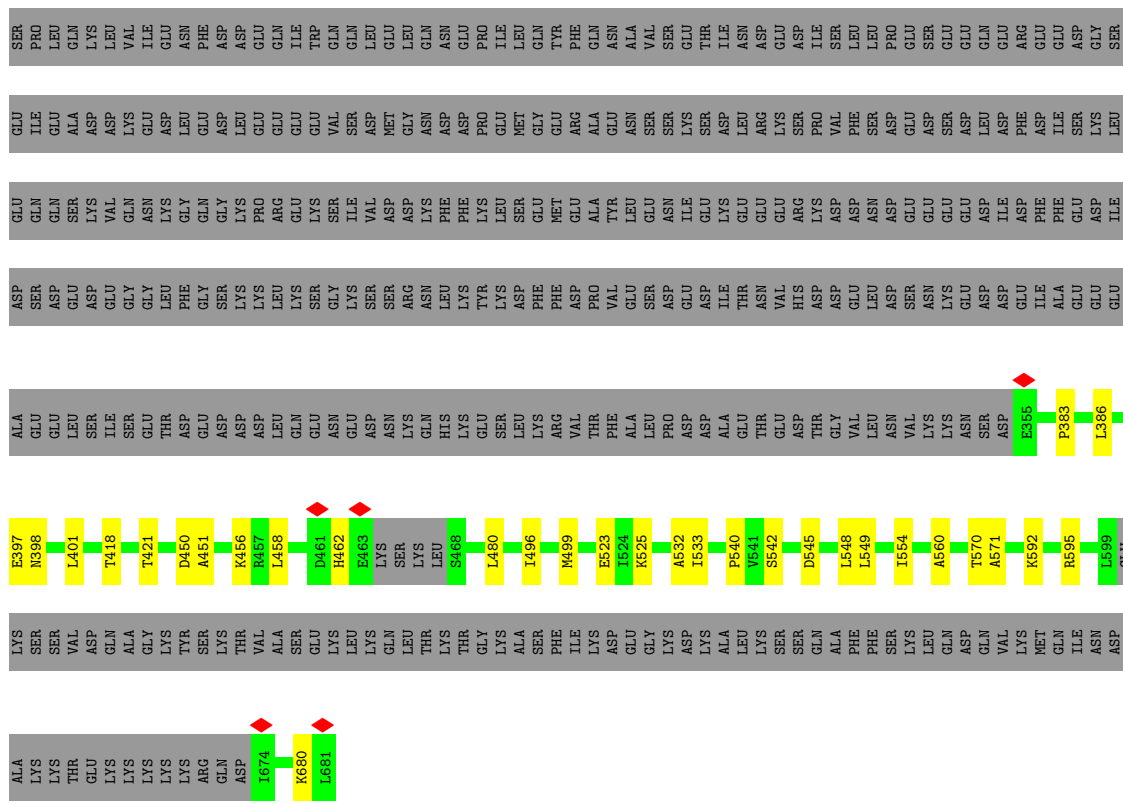


• Molecule 31: 5'ETS rRNA



• Molecule 32: U3 small nucleolar ribonucleoprotein protein MPP10



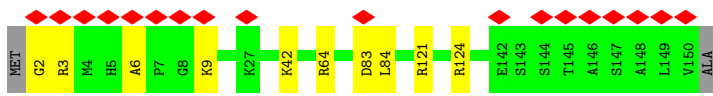


• Molecule 33: Something about silencing protein 10

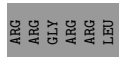
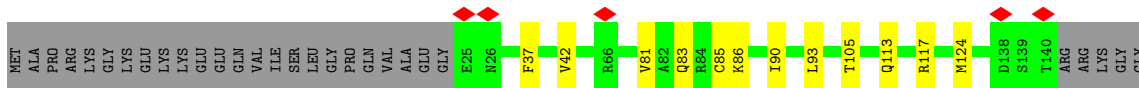


• Molecule 34: Neuroguidin

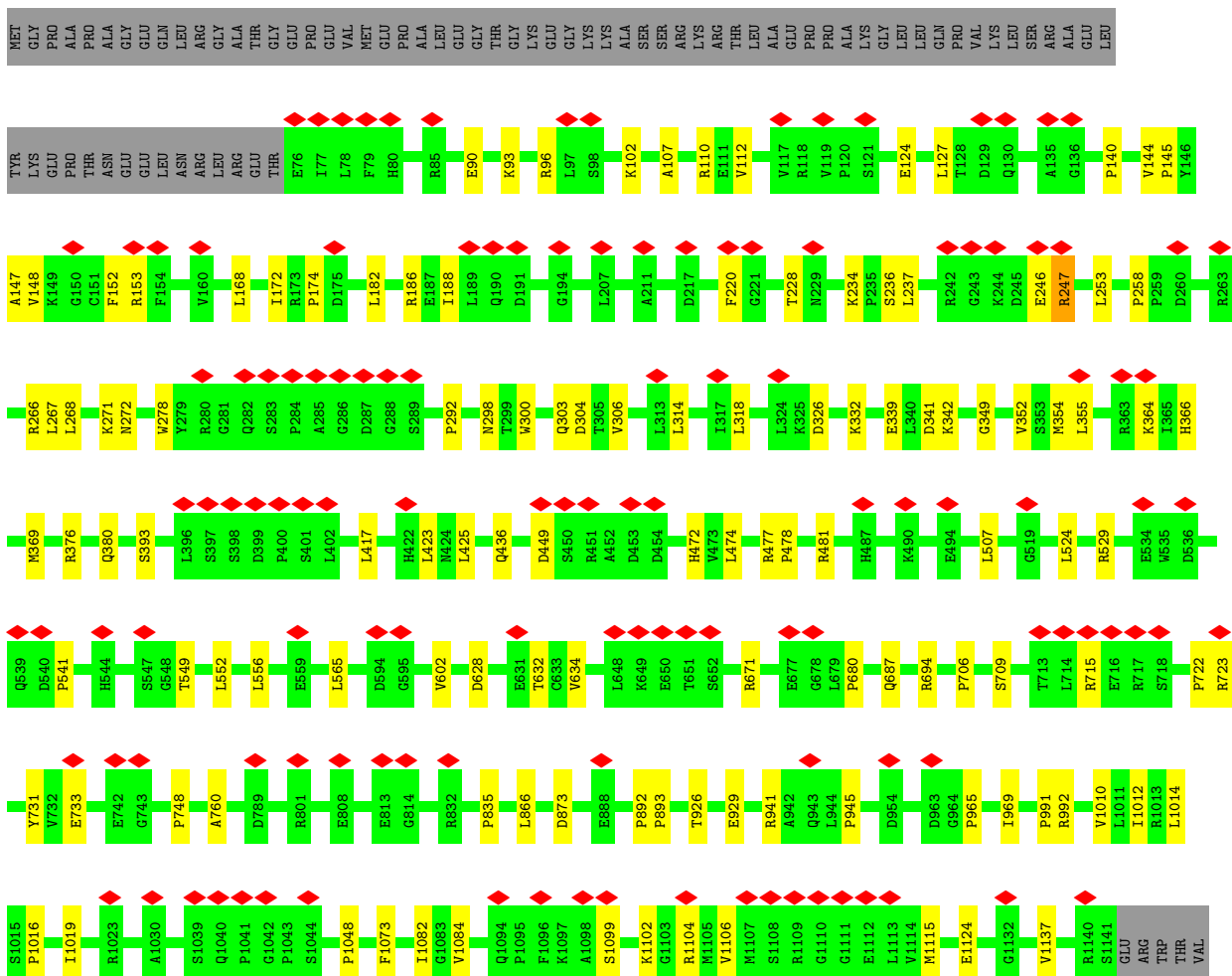
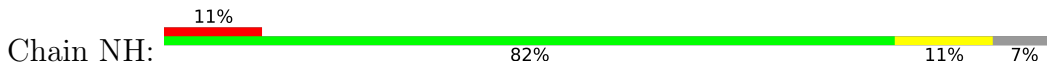




- Molecule 38: 40S ribosomal protein S14

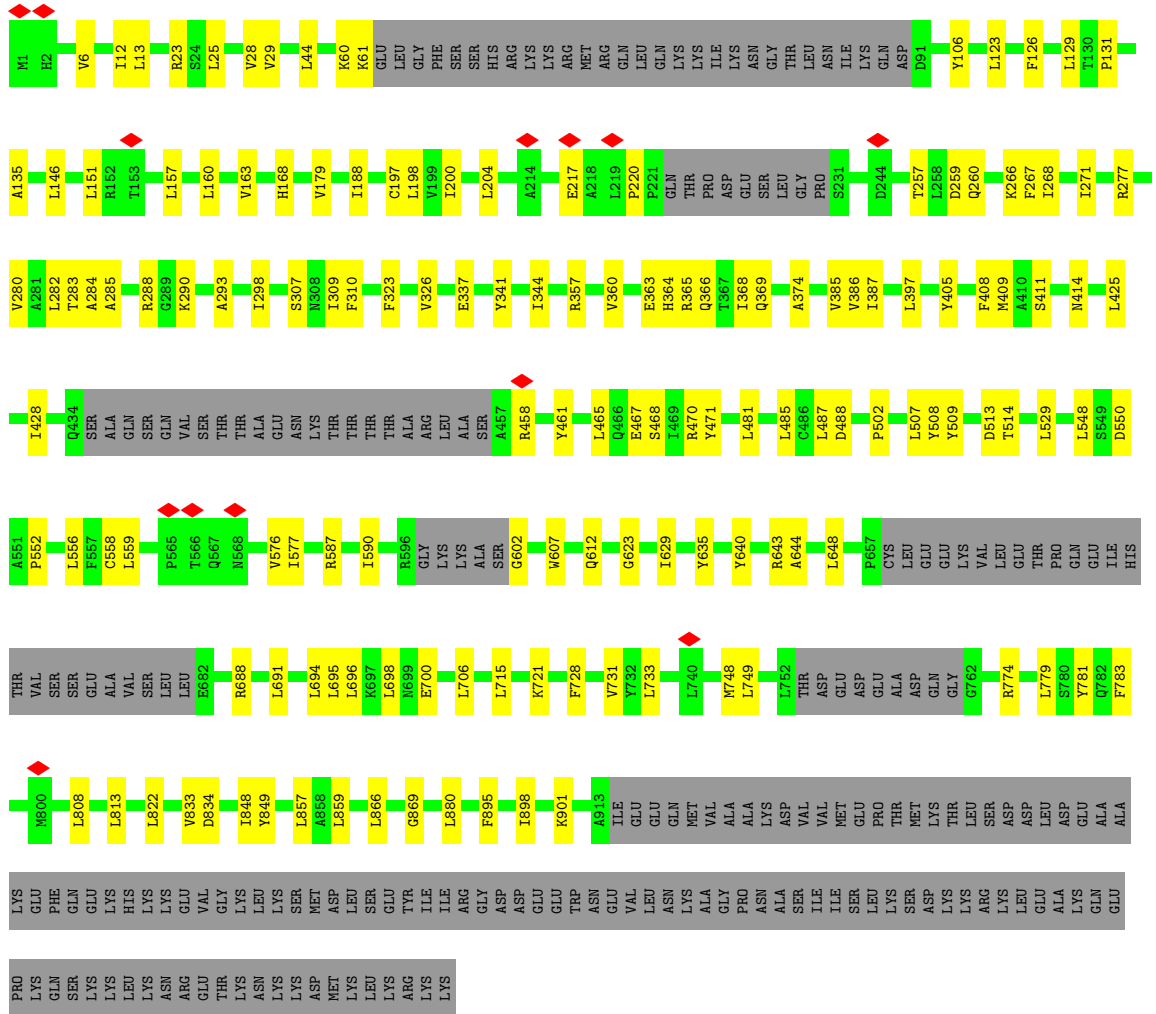


- Molecule 39: Nucleolar protein 6

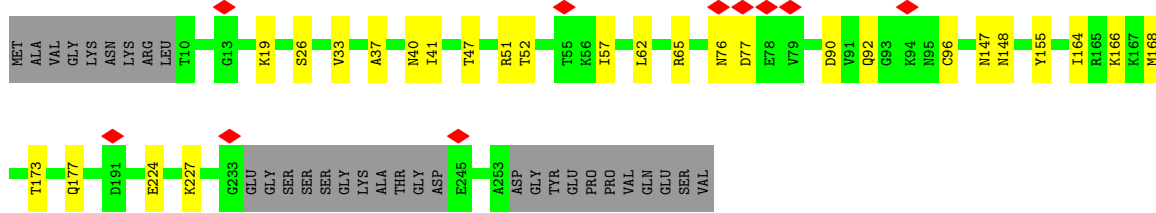
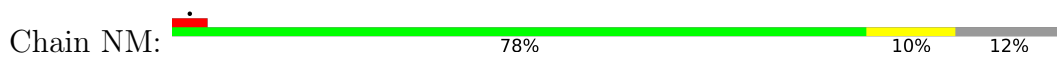


- Molecule 40: Ribosomal RNA-processing protein 7 homolog A

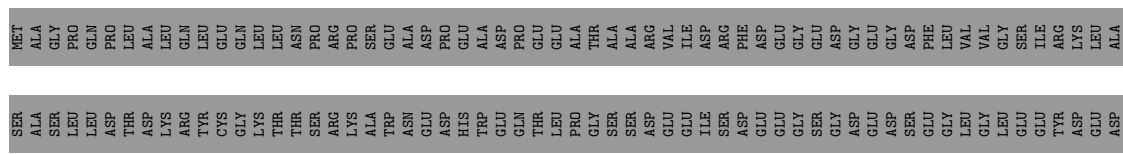




● Molecule 42: 40S ribosomal protein S3a



● Molecule 43: Protein AATF





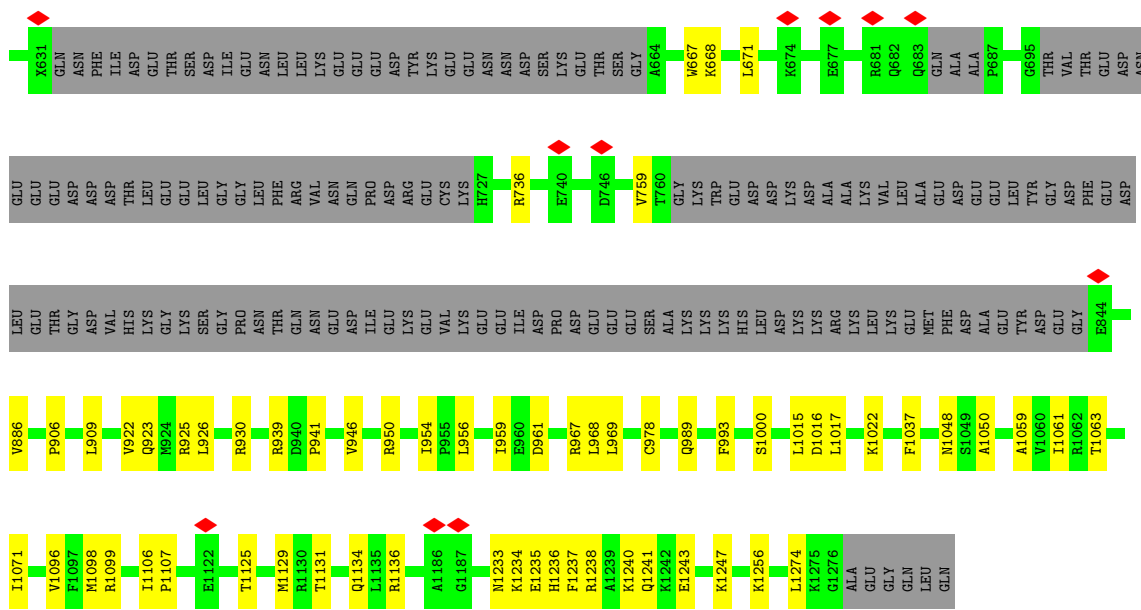




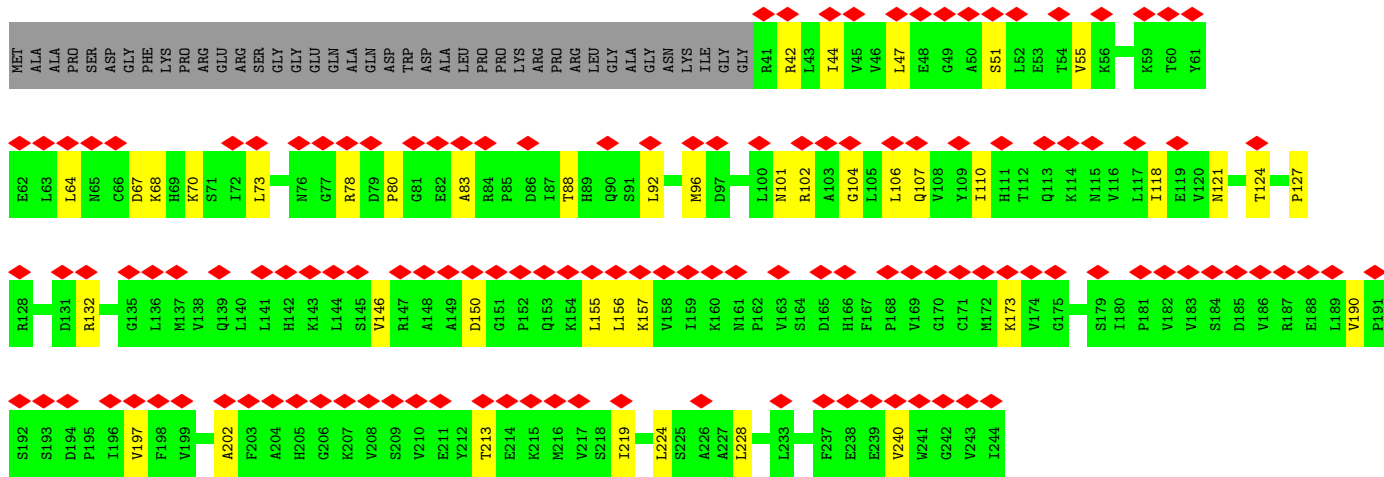




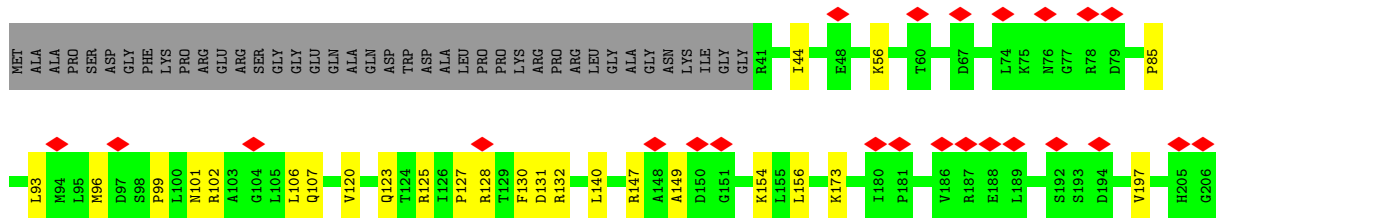


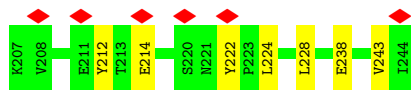


● Molecule 58: Ribosomal RNA small subunit methyltransferase NEP1

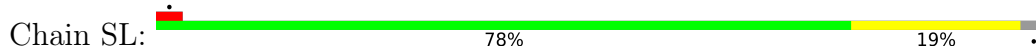


● Molecule 58: Ribosomal RNA small subunit methyltransferase NEP1





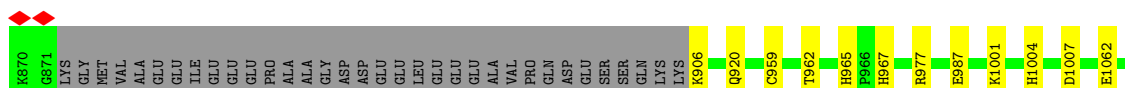
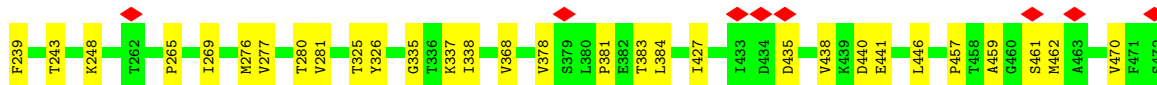
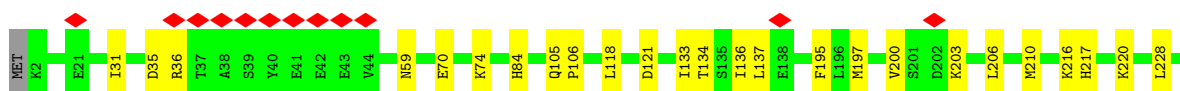
- Molecule 59: rRNA-processing protein FCF1 homolog



- Molecule 60: U3 small nucleolar ribonucleoprotein protein IMP4



- Molecule 61: Small subunit processome component 20 homolog

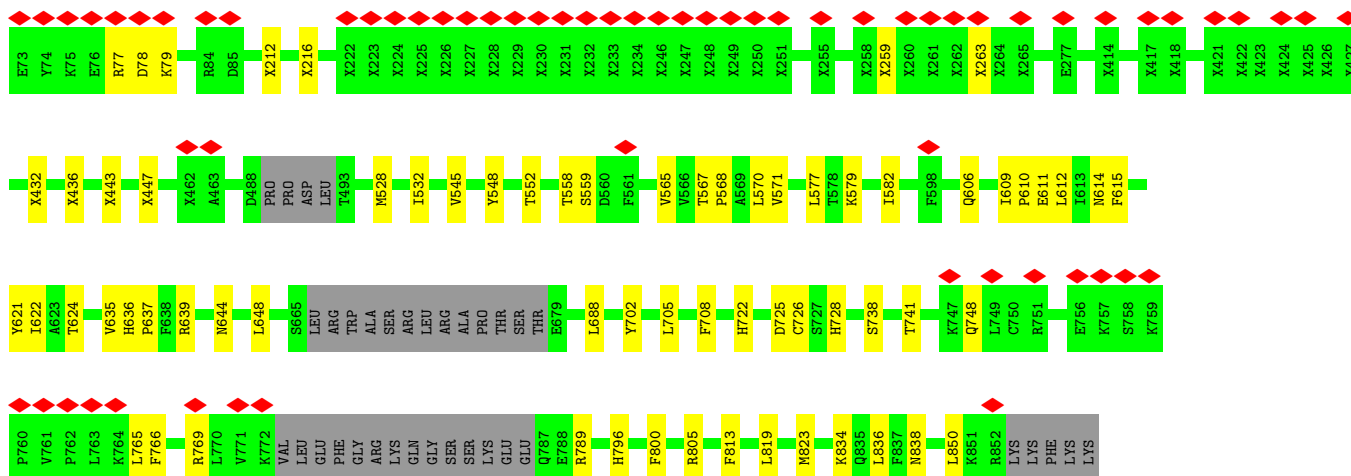


ILE	I1373	M1469	D1573	L1672	PRO	E1816	R1894	P1983	VAL	K2164	R2234	ASN	LEU
GLY	L1374	Y1470	F1574	G1673	ASP	V1819	G1895	L1983	VAL	D2165	K2235	TYR	LEU
GLU	L1471	F1575	F1575	S1675	PRO	R1820	V1898	L1984	VAL	Y2166	K2235	GLU	GLY
SER	C1384	E1576	E1576	S1675	ALA	V1820	V1898	K1985	ARG	A2167	L2236	HIS	ILE
TI292	P1393	M1577	M1577	L1676	ASP	L1823	T1902	E1986	K2077	K2168	L2237	THR	SER
I1294	I1394	M1475	M1475	H1685	GLY	A1826	T1904	I1987	F2083	K2169	V2238	GLY	LEU
R1297	A1395	H1476	H1476	T1690	THR	K1829	V1905	Q1988	Z2084	G2170	PRO	ARG	GLU
V1303	K1396	M1477	M1477	LEU	SER	H1830	H1906	Q1989	Z2085	A2171	GLU	ILE	LYS
S1311	F1398	C1478	C1478	GLU	ALA	M1831	M1907	N1990	Z2086	A2172	ASP	THR	ASP
K1312	V1400	F1479	F1479	GLN	LYS	L1834	L1908	T1991	I2007	R2173	GLU	LEU	TRP
T1313	I1401	L1482	L1482	MET	SER	L1834	L1908	T1992	T2008	G2174	VAL	VAL	PHE
THR	K1402	A1493	A1493	GLY	GLU	L1834	L1912	T2003	L2004	Q2175	ARG	ILE	ASP
ILE	N1403	I1500	I1500	LYS	CYS	M1839	D1922	L2004	R2005	M2176	ALA	ALA	ASP
SER	R1407	I1500	I1500	ILE	THR	E1840	S1923	R2005	R2006	F2177	VAL	VAL	LEU
SER	K1408	L1504	L1504	GLU	THR	A1841	C1924	R2006	I2007	H2178	THR	THR	THR
ALA	L1409	L1504	L1504	ASN	PRO	M1842	E1925	I2007	T2008	H2178	ASP	ASP	TRP
GLU	L1410	D1513	D1513	GLU	VAL	S1845	D1926	T2008	L2011	V2181	LEU	THR	PHE
LYS	V1413	R1515	R1515	GLU	SER	I1846	I1927	L2011	L2011	M2182	ALA	THR	GLY
LYS	S1418	E1516	E1516	ALA	PHE	L1847	I1927	A2019	A2019	C2183	VAL	ALA	VAL
LYS	L1424	Y1517	Y1517	ALA	LEU	L1848	E1930	E2020	E2020	F2184	SER	ALA	SER
LYS	L1427	H1518	H1518	ILE	LEU	K1849	I1931	S2021	S2021	C2186	GLU	ALA	ARG
LYS	T1428	H1519	H1519	ALA	GLN	K1849	I1931	L2024	L2024	C2186	GLU	ALA	LEU
LYS	V1430	I1520	I1520	ALA	ASN	A1852	E1935	L2024	L2024	Y2189	PRO	ALA	LEU
ASN	A1435	R1521	R1521	ALA	LYS	A1852	E1935	L2024	L2024	Y2189	PRO	ALA	LEU
PHE	PHE	L1522	L1522	ALA	GLU	I1855	L1936	I2022	I2022	K2193	ARG	ALA	LEU
ASP	ASP	L1523	L1523	MET	LEU	K1855	F1937	Y2027	Y2027	K2193	ARG	ALA	LEU
GLN	GLN	L1523	L1523	GLU	LEU	M1856	F1937	G2028	G2028	S2196	ARG	ALA	LEU
ARG	ARG	E1524	E1524	LEU	GLU	A1858	L1936	E2032	E2032	Y2197	GLN	PHE	LEU
ARG	ARG	L1526	L1526	VAL	VAL	Q1859	ALA	ASN	ASN	Y2197	GLN	ILE	LEU
HIS	HIS	R1527	R1527	VAL	VAL	Q1859	ALA	LEU	LEU	S2197	GLN	ILE	LEU
LEU	LEU	K1528	K1528	ASP	ASP	E1860	ALA	PRO	PRO	Q2198	ARG	ILE	LEU
ASP	ASP	G1529	G1529	GLU	GLU	I1861	ALA	LEU	LEU	T2200	ASP	ILE	LEU
ASP	ASP	L1530	L1530	GLU	THR	R1862	ALA	LEU	LEU	E2201	ASP	ILE	LEU
ILE	ILE	K1531	K1531	GLU	THR	D1863	ALA	LEU	LEU	L2204	TYR	ASP	LEU
F1446	F1446	Q1538	Q1538	LYS	LYS	I1864	ALA	LEU	LEU	Q2205	TYR	ASP	LEU
D1447	D1447	Y1541	Y1541	TYR	ARG	A1865	ALA	LEU	LEU	V2206	PRO	ASP	VAL
V1448	V1448	L1545	L1545	THR	ARG	R1866	ALA	LEU	LEU	V2206	PRO	ASP	VAL
V1449	V1449	L1545	L1545	THR	ARG	T1868	ALA	LEU	LEU	V2206	PRO	ASP	VAL
F1450	F1450	L1548	L1548	CYS	GLU	L1869	ALA	LEU	LEU	V2206	PRO	ASP	VAL
T1452	T1452	F1552	F1552	LYS	GLY	I1872	ALA	LEU	LEU	V2206	PRO	ASP	VAL
F1453	F1453	Q1555	Q1555	LYS	GLY	L1876	ALA	LEU	LEU	V2206	PRO	ASP	VAL
I1456	I1456	L1556	L1556	LEU	GLN	L1876	ALA	LEU	LEU	V2206	PRO	ASP	VAL
T1457	T1457	E1557	E1557	SER	PRO	G1877	ALA	LEU	LEU	V2206	PRO	ASP	VAL
F1359	F1359	F1558	F1558	ASP	PRO	V1878	ALA	LEU	LEU	V2206	PRO	ASP	VAL
L1360	L1360	Q1670	Q1670	ASN	THR	H1879	ALA	LEU	LEU	V2206	PRO	ASP	VAL
I1365	I1365	M1669	M1669	GLY	THR	F1880	ALA	LEU	LEU	V2206	PRO	ASP	VAL
D1368	D1368	E1671	E1671	GLN	THR	L1885	ALA	LEU	LEU	V2206	PRO	ASP	VAL
T1369	T1369	K1671	K1671	THR	THR	K1886	ALA	LEU	LEU	V2206	PRO	ASP	VAL
V1371	V1371					T1890	ALA	LEU	LEU	V2206	PRO	ASP	VAL
D1372	D1372					T1891	ALA	LEU	LEU	V2206	PRO	ASP	VAL

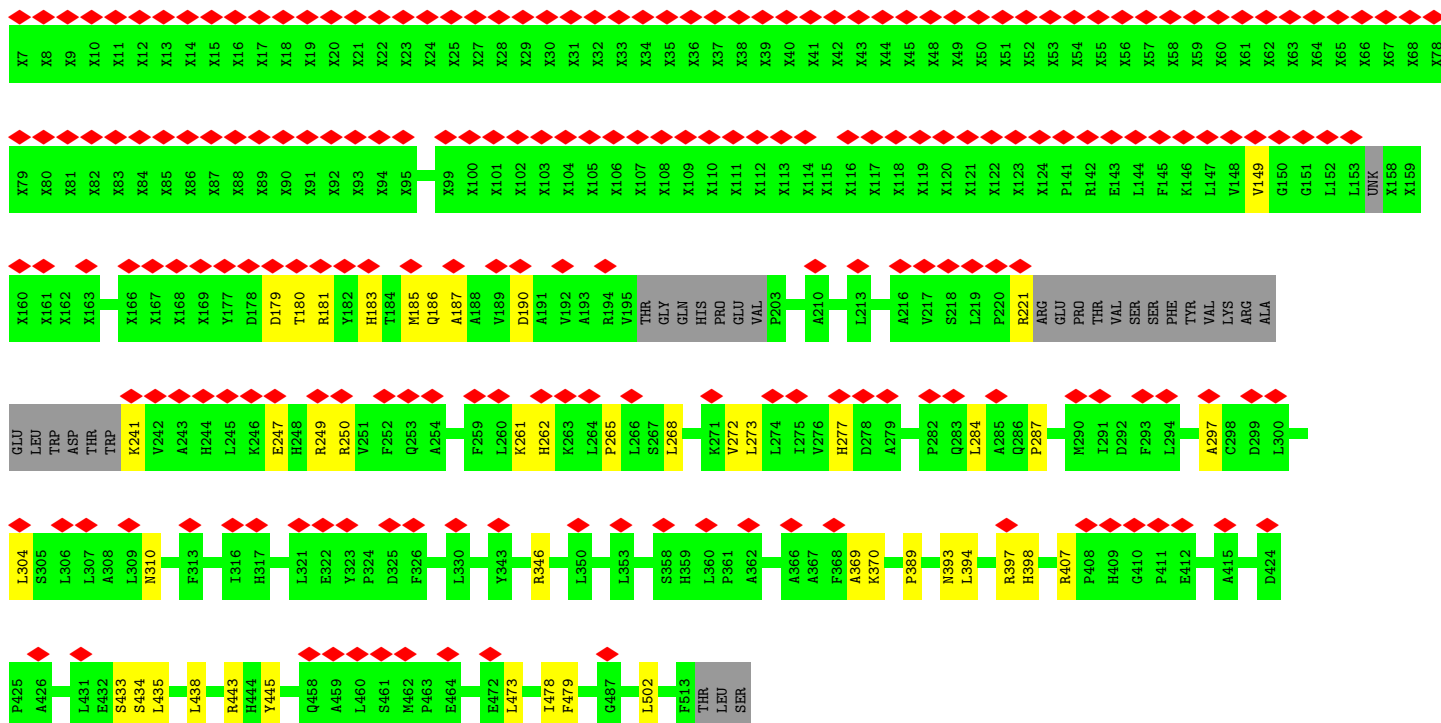
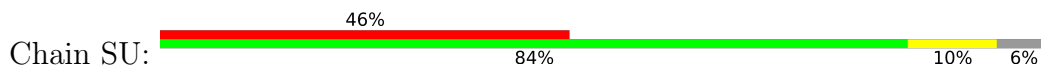




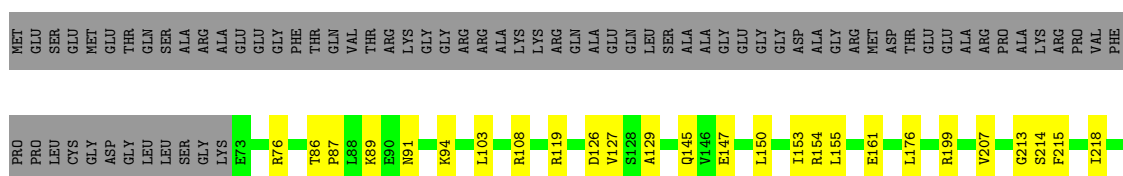




• Molecule 66: Nucleolar complex protein 4 homolog

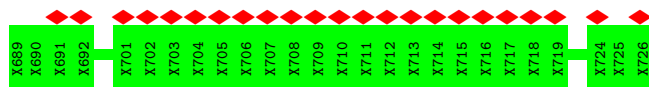


• Molecule 67: RNA-binding protein PNO1

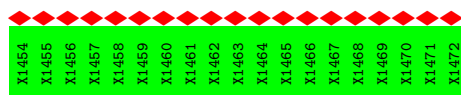
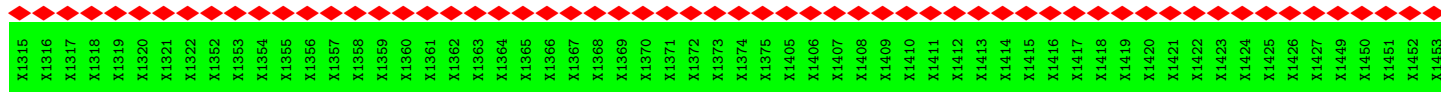
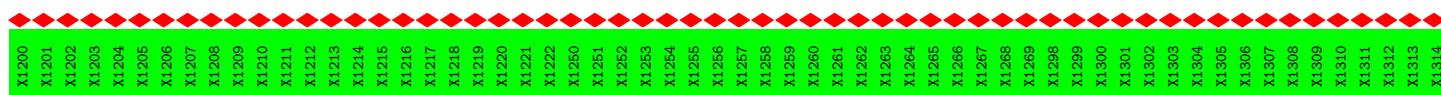




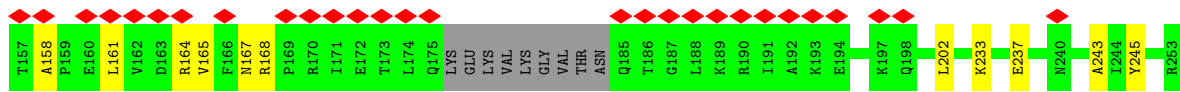
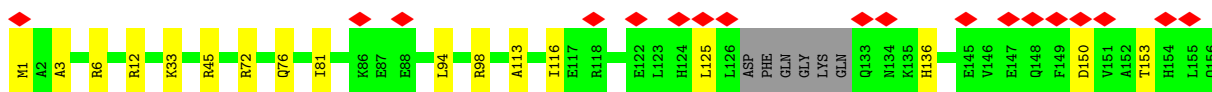
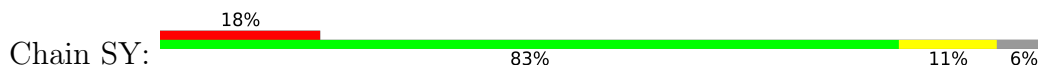
- Molecule 68: Unassigned peptide



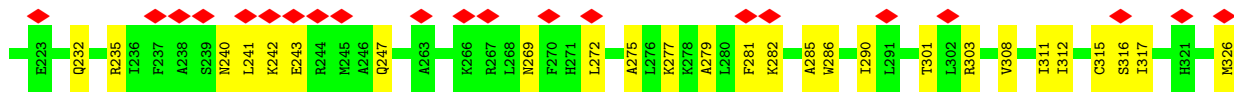
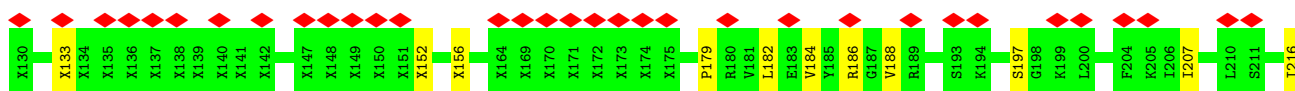
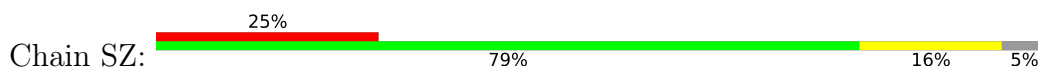
- Molecule 69: Unassigned peptides

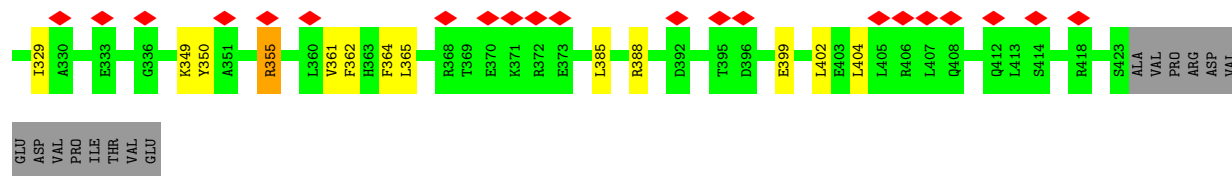


- Molecule 70: Probable U3 small nucleolar RNA-associated protein 11



- Molecule 71: Bystin





## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	42142	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	20.935	Depositor
Minimum map value	-14.456	Depositor
Average map value	0.024	Depositor
Map value standard deviation	0.682	Depositor
Recommended contour level	2.68	Depositor
Map size ( $\text{\AA}$ )	604.80005, 604.80005, 604.80005	wwPDB
Map dimensions	560, 560, 560	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	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: GTP, ATP, MG, ZN, SAH

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	0.19	0/5739	0.85	2/8931 (0.0%)
2	L1	0.19	0/31039	0.85	66/48327 (0.1%)
3	L2	0.18	0/5130	0.81	5/7996 (0.1%)
4	L3	0.26	0/720	0.61	0/970
5	L4	0.25	0/2118	0.56	0/2849
6	L5	0.26	0/1523	0.56	2/2048 (0.1%)
7	L6	0.27	0/1830	0.59	0/2434
8	L7	0.29	0/1365	0.56	0/1830
9	L8	0.26	0/1500	0.57	0/2002
10	L9	0.25	0/1447	0.56	0/1930
11	LA	0.28	0/941	0.54	0/1264
12	LC	0.27	0/1115	0.56	0/1494
13	LD	0.26	0/1225	0.60	0/1640
14	LF	0.25	0/868	0.54	0/1159
15	LG	0.24	0/490	0.62	0/656
16	LH	0.25	0/6127	0.50	0/8292
17	LI	0.26	0/3245	0.48	0/4386
18	LJ	0.27	0/3788	0.56	2/5128 (0.0%)
19	LK	0.29	0/959	0.58	1/1302 (0.1%)
19	LL	0.24	0/4072	0.51	0/5539
20	LM	0.26	0/16110	0.50	3/21817 (0.0%)
21	LN	0.25	0/5438	0.51	1/7377 (0.0%)
22	LO	0.26	0/6835	0.55	0/9256
23	LP	0.25	0/4806	0.47	0/6455
24	LQ	0.24	0/6548	0.51	0/8839
25	LR	0.25	0/6141	0.53	0/8348
26	LS	0.25	0/3621	0.51	0/4876
27	LT	0.25	0/6907	0.50	0/9359
28	LU	0.24	0/3695	0.52	0/4986
29	LW	0.28	1/3594 (0.0%)	0.57	3/4867 (0.1%)
30	LZ	0.25	0/1560	0.56	0/2104
32	NA	0.26	0/2084	0.50	1/2789 (0.0%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
33	NB	0.25	0/622	0.64	0/816
34	NC	0.24	0/788	0.57	0/1049
35	ND	0.25	0/708	0.54	0/947
36	NE	0.25	0/807	0.46	0/1069
37	NF	0.23	0/1226	0.49	0/1649
38	NG	0.25	0/873	0.52	0/1177
39	NH	0.25	0/8580	0.51	0/11685
40	NI	0.25	0/1887	0.52	0/2558
41	NJ	0.25	0/6652	0.50	0/9006
41	NK	0.25	0/6545	0.52	1/8867 (0.0%)
42	NM	0.24	0/1899	0.49	0/2533
43	NN	0.25	0/346	0.59	0/462
44	NO	0.27	0/1051	0.60	1/1406 (0.1%)
45	NQ	0.24	0/653	0.49	0/876
47	NT	0.28	0/479	0.69	1/635 (0.2%)
48	NU	0.25	0/501	0.55	0/667
49	NW	0.25	0/2556	0.54	0/3469
50	NY	0.25	0/2265	0.49	1/3045 (0.0%)
51	SA	0.24	0/3122	0.46	0/4208
52	SB	0.24	0/3491	0.48	0/4695
53	SC	0.29	0/1818	0.56	2/2463 (0.1%)
53	SD	0.24	0/1878	0.50	0/2540
54	SE	0.24	0/980	0.50	0/1323
54	SF	0.25	0/967	0.50	0/1305
55	SG	0.24	0/2941	0.51	0/3988
56	SH	0.24	0/2882	0.50	0/3887
57	SI	0.25	0/6917	0.49	0/9297
58	SJ	0.25	0/1609	0.53	0/2181
58	SK	0.25	0/1609	0.52	0/2181
59	SL	0.25	0/1619	0.53	0/2174
60	SM	0.25	0/2420	0.57	0/3264
61	SP	0.25	0/16393	0.49	2/22173 (0.0%)
62	SQ	0.25	0/1561	0.48	0/2083
63	SR	0.26	0/828	0.51	0/1110
64	SS	0.24	0/1663	0.50	0/2250
65	ST	0.27	0/3597	0.51	0/4836
66	SU	0.25	0/2634	0.52	1/3581 (0.0%)
67	SW	0.27	0/1436	0.59	0/1936
70	SY	0.24	0/2051	0.49	0/2723
71	SZ	0.25	0/2043	0.52	0/2763
All	All	0.24	1/245477 (0.0%)	0.59	95/340127 (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
22	LO	0	1
67	SW	0	1
All	All	0	3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
29	LW	101	PRO	CG-CD	-7.89	1.24	1.50

All (95) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
29	LW	101	PRO	N-CD-CG	-10.97	86.75	103.20
2	L1	1453	C	N1-C2-O2	9.35	124.51	118.90
2	L1	1453	C	C2-N1-C1'	9.25	128.98	118.80
2	L1	1535	U	C2-N1-C1'	8.14	127.47	117.70
2	L1	1742	C	C2-N1-C1'	8.11	127.72	118.80
2	L1	1535	U	N1-C2-O2	7.93	128.35	122.80
2	L1	483	C	N1-C2-O2	7.77	123.56	118.90
53	SC	183	PRO	N-CD-CG	-7.76	91.56	103.20
2	L1	1453	C	N3-C2-O2	-7.58	116.59	121.90
2	L1	483	C	C2-N1-C1'	7.49	127.04	118.80
53	SC	183	PRO	CA-N-CD	-7.48	101.03	111.50
2	L1	369	C	N1-C2-O2	7.36	123.31	118.90
44	NO	85	ASP	CB-CG-OD1	7.30	124.87	118.30
2	L1	1535	U	N3-C2-O2	-7.27	117.11	122.20
20	LM	637	LEU	CA-CB-CG	7.27	132.01	115.30
2	L1	1742	C	N1-C2-O2	7.05	123.13	118.90
2	L1	100	U	C2-N1-C1'	6.94	126.03	117.70
66	SU	502	LEU	CA-CB-CG	6.88	131.13	115.30
19	LK	542	PRO	CA-N-CD	-6.87	101.88	111.50
3	L2	32	U	N1-C2-O2	6.73	127.51	122.80
2	L1	1218	C	N1-C2-O2	6.72	122.93	118.90
3	L2	32	U	C2-N1-C1'	6.67	125.71	117.70
2	L1	501	C	C2-N1-C1'	6.65	126.12	118.80
2	L1	501	C	N1-C2-O2	6.58	122.85	118.90
2	L1	589	G	P-O3'-C3'	6.44	127.42	119.70
2	L1	1453	C	C6-N1-C1'	-6.32	113.22	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	L5	136	ARG	CB-CG-CD	6.29	127.95	111.60
2	L1	1453	C	C6-N1-C2	-6.26	117.79	120.30
2	L1	1022	U	C2-N1-C1'	6.25	125.20	117.70
2	L1	369	C	C2-N1-C1'	6.24	125.66	118.80
47	NT	122	PRO	CA-N-CD	-6.23	102.77	111.50
2	L1	369	C	N3-C2-O2	-6.18	117.57	121.90
2	L1	483	C	N3-C2-O2	-6.17	117.58	121.90
2	L1	1637	A	OP2-P-O3'	6.15	118.72	105.20
2	L1	1218	C	C2-N1-C1'	6.05	125.45	118.80
29	LW	101	PRO	CA-N-CD	-6.04	103.04	111.50
2	L1	481	C	C2-N1-C1'	6.00	125.40	118.80
32	NA	545	ASP	CB-CG-OD1	5.96	123.66	118.30
2	L1	1710	C	N1-C2-O2	5.88	122.43	118.90
2	L1	100	U	N1-C2-O2	5.86	126.90	122.80
3	L2	32	U	N3-C2-O2	-5.84	118.11	122.20
2	L1	481	C	N1-C2-O2	5.76	122.36	118.90
18	LJ	489	MET	CB-CG-SD	-5.75	95.16	112.40
2	L1	1802	C	N1-C2-O2	5.74	122.34	118.90
2	L1	1637	A	P-O3'-C3'	5.73	126.58	119.70
2	L1	1742	C	C6-N1-C2	-5.73	118.01	120.30
2	L1	188	C	N1-C2-O2	5.72	122.33	118.90
2	L1	1309	C	N1-C2-O2	5.70	122.32	118.90
50	NY	234	LEU	CA-CB-CG	5.68	128.37	115.30
2	L1	1742	C	N3-C2-O2	-5.68	117.92	121.90
3	L2	14	C	P-O3'-C3'	5.68	126.51	119.70
2	L1	188	C	C2-N1-C1'	5.68	125.05	118.80
2	L1	325	C	P-O3'-C3'	5.63	126.46	119.70
2	L1	1664	A	P-O3'-C3'	5.62	126.44	119.70
20	LM	1035	LEU	CA-CB-CG	5.61	128.19	115.30
2	L1	100	U	N3-C2-O2	-5.60	118.28	122.20
2	L1	1742	C	C6-N1-C1'	-5.60	114.08	120.80
2	L1	73	C	C2-N1-C1'	5.59	124.95	118.80
2	L1	1022	U	N1-C2-O2	5.54	126.68	122.80
61	SP	1161	ASP	CB-CG-OD2	5.52	123.27	118.30
2	L1	1314	U	C2-N1-C1'	5.49	124.28	117.70
21	LN	133	ASP	CB-CG-OD2	5.48	123.23	118.30
2	L1	423	U	P-O3'-C3'	5.42	126.21	119.70
20	LM	2095	LEU	CA-CB-CG	5.38	127.68	115.30
2	L1	423	U	OP1-P-O3'	5.38	117.04	105.20
2	L1	1523	C	N1-C2-O2	5.36	122.12	118.90
1	L0	666	U	OP2-P-O3'	5.35	116.96	105.20
41	NK	220	PRO	CA-N-CD	-5.34	104.02	111.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L1	451	G	N3-C4-C5	-5.32	125.94	128.60
2	L1	275	C	N1-C2-O2	5.30	122.08	118.90
2	L1	1547	C	N1-C2-O2	5.30	122.08	118.90
2	L1	1022	U	N3-C2-O2	-5.29	118.50	122.20
29	LW	101	PRO	CA-CB-CG	-5.28	93.96	104.00
2	L1	1218	C	N3-C2-O2	-5.26	118.22	121.90
3	L2	130	U	C2-N1-C1'	5.26	124.01	117.70
2	L1	483	C	C6-N1-C1'	-5.25	114.50	120.80
2	L1	1453	C	C5-C6-N1	5.22	123.61	121.00
2	L1	1535	U	C6-N1-C1'	-5.21	113.90	121.20
6	L5	136	ARG	CA-CB-CG	5.19	124.81	113.40
2	L1	142	C	N1-C2-O2	5.18	122.01	118.90
2	L1	1710	C	C2-N1-C1'	5.17	124.49	118.80
2	L1	1485	U	C2-N1-C1'	5.16	123.89	117.70
2	L1	1823	A	P-O3'-C3'	5.14	125.87	119.70
2	L1	1719	A	P-O3'-C3'	5.14	125.87	119.70
18	LJ	489	MET	CA-CB-CG	5.13	122.03	113.30
2	L1	965	U	N1-C2-O2	5.13	126.39	122.80
2	L1	391	C	C2-N1-C1'	5.13	124.44	118.80
2	L1	1802	C	C2-N1-C1'	5.12	124.43	118.80
2	L1	1464	C	N1-C2-O2	5.08	121.95	118.90
2	L1	284	C	N1-C2-O2	5.08	121.95	118.90
2	L1	1549	U	N3-C2-O2	-5.07	118.65	122.20
61	SP	1424	LEU	CA-CB-CG	5.06	126.94	115.30
2	L1	1461	G	C3'-C2'-C1'	5.02	105.52	101.50
1	L0	824	C	N1-C2-O2	5.02	121.91	118.90
2	L1	1549	U	N1-C2-O2	5.01	126.31	122.80

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
6	L5	136	ARG	Sidechain
22	LO	316	GLU	Peptide
67	SW	247	ARG	Sidechain

## 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	5152	0	2630	49	0
2	L1	27777	0	14063	253	0
3	L2	4589	0	2306	44	0
4	L3	854	0	774	24	0
5	L4	2076	0	2177	17	0
6	L5	1501	0	1557	16	0
7	L6	1811	0	1974	22	0
8	L7	1346	0	1410	30	0
9	L8	1474	0	1542	21	0
10	L9	1425	0	1541	16	0
11	LA	931	0	961	18	0
12	LC	1098	0	1168	10	0
13	LD	1204	0	1274	11	0
14	LF	851	0	894	17	0
15	LG	488	0	514	4	0
16	LH	5987	0	5953	72	0
17	LI	3889	0	3464	54	0
18	LJ	3711	0	3758	65	0
19	LK	943	0	1023	25	0
19	LL	3982	0	4031	55	0
20	LM	15820	0	16318	272	0
21	LN	5299	0	5269	78	0
22	LO	6676	0	6579	74	0
23	LP	4705	0	4720	49	0
24	LQ	6438	0	6400	75	0
25	LR	6015	0	5981	90	0
26	LS	3560	0	3570	51	0
27	LT	6756	0	6768	80	0
28	LU	3611	0	3618	59	0
29	LW	3519	0	3518	33	0
30	LZ	1532	0	1553	10	0
31	N0	264	0	178	0	0
32	NA	2055	0	2135	21	0
33	NB	617	0	685	7	0
34	NC	779	0	788	10	0
35	ND	696	0	729	10	0
36	NE	799	0	854	11	0
37	NF	1202	0	1289	9	0
38	NG	861	0	871	8	0
39	NH	8374	0	8456	77	0
40	NI	1840	0	1812	18	0
41	NJ	6526	0	6599	56	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
41	NK	6419	0	6480	87	0
42	NM	1873	0	1968	17	0
43	NN	340	0	345	3	0
44	NO	1034	0	1080	18	0
45	NQ	640	0	661	5	0
46	NR	4305	0	945	22	0
47	NT	470	0	474	14	0
48	NU	495	0	541	10	0
49	NW	2498	0	2456	34	0
50	NY	2222	0	2310	16	0
51	SA	3077	0	3139	32	0
52	SB	3439	0	3559	42	0
53	SC	1781	0	1803	37	0
53	SD	1841	0	1867	14	0
54	SE	968	0	1017	7	0
54	SF	955	0	1008	5	0
55	SG	2884	0	2751	17	0
56	SH	2832	0	2937	28	0
57	SI	6803	0	6966	63	0
58	SJ	1579	0	1646	28	0
58	SK	1579	0	1646	24	0
59	SL	1586	0	1641	31	0
60	SM	2369	0	2376	18	0
61	SP	16078	0	16633	204	0
62	SQ	1533	0	1579	8	0
63	SR	816	0	871	5	0
64	SS	1626	0	1677	19	0
65	ST	4170	0	3804	55	0
66	SU	3154	0	2736	30	0
67	SW	1413	0	1489	26	0
68	Sx	190	0	41	0	0
69	SX	695	0	151	0	0
70	SY	2024	0	2148	19	0
71	SZ	2222	0	2142	32	0
72	L1	19	0	0	0	0
72	NH	1	0	0	0	0
72	SI	1	0	0	0	0
72	SL	1	0	0	0	0
73	NH	31	0	12	2	0
73	NK	31	0	12	1	0
74	NQ	1	0	0	0	0
74	NT	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
74	SL	1	0	0	0	0
75	SI	32	0	12	0	0
76	SJ	26	0	19	3	0
76	SK	26	0	19	0	0
All	All	245114	0	224665	2568	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 6.

All (2568) 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)
20:LM:1457:GLN:HE21	20:LM:1457:GLN:N	1.53	1.06
28:LU:66:ARG:HH12	59:SL:127:PRO:HD3	1.40	0.84
27:LT:748:ASN:HB3	27:LT:751:LEU:HD23	1.60	0.83
21:LN:461:LEU:HB2	21:LN:477:PHE:HB2	1.63	0.81
61:SP:1430:VAL:HG12	61:SP:1477:ASN:HD21	1.45	0.80
61:SP:2085:GLU:HB3	61:SP:2089:ARG:HH12	1.46	0.79
18:LJ:179:LEU:HD12	18:LJ:193:ASP:HB2	1.65	0.78
2:L1:1396:A:O2'	2:L1:1398:G:N7	2.15	0.78
61:SP:1885:LEU:HB3	61:SP:1927:ILE:HG21	1.64	0.77
5:L4:248:ILE:HG22	5:L4:251:GLU:HG2	1.67	0.77
20:LM:605:PRO:HA	20:LM:703:THR:HG21	1.66	0.77
19:LL:276:THR:HB	19:LL:286:LYS:HB2	1.68	0.76
32:NA:383:PRO:HG2	32:NA:386:LEU:HD13	1.68	0.75
2:L1:164:A:H3'	2:L1:165:G:H21	1.51	0.75
8:L7:53:VAL:O	8:L7:57:ARG:HB2	1.86	0.75
4:L3:36:VAL:HG23	4:L3:40:TYR:HD2	1.52	0.75
2:L1:1354:G:N2	2:L1:1357:A:OP2	2.19	0.75
20:LM:843:VAL:HG22	20:LM:846:ARG:HH21	1.51	0.75
1:L0:1434:U:H5'	51:SA:44:SER:HA	1.68	0.74
2:L1:97:U:H3	2:L1:434:G:H1	1.32	0.74
20:LM:688:ILE:HG12	20:LM:732:LEU:HD11	1.68	0.74
19:LL:596:LYS:NZ	21:LN:380:ASP:OD2	2.21	0.74
2:L1:1392:U:H2'	2:L1:1393:G:H8	1.53	0.73
20:LM:1761:LEU:HB3	20:LM:1805:ARG:HH21	1.53	0.73
25:LR:732:GLN:HE22	25:LR:764:THR:HG23	1.54	0.72
24:LQ:668:ILE:HG22	24:LQ:669:GLN:HG3	1.72	0.72
49:NW:151:PHE:HB2	49:NW:159:TYR:HB2	1.72	0.72
51:SA:217:ILE:HG21	51:SA:223:LEU:HD12	1.71	0.72
1:L0:668:U:H5'	35:ND:247:ARG:HD2	1.71	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:LP:333:CYS:HB3	23:LP:354:THR:HG22	1.71	0.72
20:LM:1457:GLN:N	20:LM:1457:GLN:NE2	2.34	0.71
21:LN:250:SER:HG	21:LN:262:HIS:HE2	1.38	0.71
5:L4:246:LEU:HD12	5:L4:247:THR:HG22	1.72	0.71
17:LI:608:ILE:HG23	17:LI:613:ILE:HD11	1.73	0.71
61:SP:565:CYS:HA	61:SP:605:LEU:HD12	1.72	0.71
4:L3:55:ARG:NH2	18:LJ:77:SER:O	2.24	0.70
19:LL:106:ILE:HB	19:LL:120:LEU:HB2	1.72	0.70
2:L1:368:U:OP2	43:NN:516:ARG:NH2	2.24	0.70
59:SL:69:ILE:HG22	59:SL:156:ILE:HB	1.72	0.70
17:LI:693:VAL:HB	19:LL:570:GLY:HA3	1.73	0.70
41:NK:160:LEU:HD23	41:NK:188:ILE:HD11	1.72	0.70
44:NO:91:ASN:O	59:SL:83:LYS:NZ	2.21	0.70
26:LS:68:GLU:HG2	26:LS:71:ARG:HH22	1.56	0.70
41:NK:779:LEU:HA	41:NK:783:PHE:HB2	1.74	0.69
22:LO:389:VAL:HG21	22:LO:430:VAL:HG21	1.74	0.69
25:LR:493:LEU:HD12	25:LR:505:LEU:HD11	1.73	0.69
41:NJ:283:THR:HG22	41:NJ:413:ILE:HD11	1.72	0.69
17:LI:657:ASN:HB3	17:LI:660:VAL:HB	1.73	0.69
25:LR:168:LEU:HB3	25:LR:180:TRP:HB2	1.74	0.69
26:LS:253:ARG:HH21	26:LS:271:LEU:HD21	1.58	0.69
56:SH:13:CYS:HB3	56:SH:35:ILE:HG23	1.73	0.69
2:L1:1130:G:N2	2:L1:1130:G:OP2	2.25	0.69
20:LM:1741:LEU:HD22	20:LM:1785:GLN:HG3	1.75	0.69
16:LH:21:ARG:HG2	16:LH:295:HIS:HB3	1.75	0.69
26:LS:371:LYS:HG3	26:LS:372:THR:HG23	1.74	0.69
1:L0:679:A:O2'	54:SE:28:GLN:NE2	2.26	0.68
61:SP:1191:LEU:HG	61:SP:1238:ILE:HD11	1.75	0.68
41:NK:284:ALA:HB3	41:NK:290:LYS:HD3	1.75	0.68
61:SP:1538:GLN:HE22	61:SP:1619:THR:HG21	1.58	0.68
61:SP:59:ASN:HD22	61:SP:106:PRO:HG2	1.58	0.68
4:L3:104:UNK:HA	65:ST:796:HIS:HD2	1.58	0.68
11:LA:80:ASP:OD1	11:LA:84:LYS:NZ	2.27	0.67
39:NH:393:SER:HA	39:NH:417:LEU:HB2	1.77	0.67
8:L7:57:ARG:HH22	8:L7:90:LYS:HA	1.58	0.67
61:SP:1609:LEU:HA	61:SP:1613:ILE:HD13	1.76	0.67
24:LQ:274:ILE:HG21	24:LQ:353:ILE:HD11	1.76	0.67
61:SP:1303:VAL:HG11	61:SP:1343:MET:HG3	1.77	0.67
61:SP:1826:ALA:HA	61:SP:1829:LYS:HE3	1.76	0.67
66:SU:407:ARG:NH2	66:SU:433:SER:O	2.28	0.67
71:SZ:182:LEU:HG	71:SZ:186:ARG:HH12	1.59	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:LL:298:LEU:HB2	19:LL:315:CYS:HB2	1.74	0.67
20:LM:1989:CYS:SG	20:LM:2040:ARG:NH2	2.67	0.67
21:LN:212:VAL:HG12	21:LN:218:VAL:HG22	1.77	0.67
2:L1:134:C:O2'	61:SP:906:LYS:NZ	2.28	0.67
16:LH:85:TRP:HE1	16:LH:92:LEU:HD13	1.60	0.67
19:LL:503:ILE:HG22	19:LL:507:GLN:HE22	1.60	0.67
53:SD:284:LYS:NZ	59:SL:130:GLU:OE1	2.28	0.67
25:LR:402:ILE:HG21	25:LR:455:LEU:HD21	1.77	0.67
49:NW:160:ARG:HD2	49:NW:172:LEU:HD23	1.76	0.67
44:NO:75:ILE:O	44:NO:78:ARG:NH1	2.27	0.67
58:SJ:96:MET:HA	58:SJ:101:ASN:HD22	1.60	0.67
61:SP:1260:LEU:HB3	61:SP:1338:LYS:HG3	1.75	0.67
6:L5:71:ARG:NH2	6:L5:148:ASN:OD1	2.28	0.66
23:LP:1:MET:SD	28:LU:366:ARG:NH2	2.68	0.66
41:NK:509:TYR:HB3	41:NK:696:LEU:HB2	1.77	0.66
2:L1:1192:U:H4'	2:L1:1193:U:H5'	1.77	0.66
6:L5:168:THR:OG1	6:L5:171:GLU:OE1	2.14	0.66
22:LO:880:ARG:HH22	27:LT:909:PRO:HB2	1.60	0.66
8:L7:148:LEU:HA	44:NO:42:MET:HE2	1.77	0.66
24:LQ:903:ASP:OD2	24:LQ:907:ARG:NH1	2.29	0.66
41:NK:309:ILE:HB	41:NK:368:ILE:HG22	1.78	0.66
49:NW:138:ARG:H	49:NW:153:GLY:HA2	1.61	0.66
2:L1:39:A:H61	2:L1:515:G:H1'	1.61	0.66
23:LP:149:LYS:NZ	62:SQ:564:ILE:O	2.29	0.66
41:NJ:277:ARG:HB3	41:NJ:458:ARG:HG2	1.75	0.66
61:SP:494:PHE:HB3	61:SP:497:LEU:HD13	1.78	0.66
9:L8:205:ARG:HH22	13:LD:8:ARG:HH21	1.44	0.66
20:LM:962:LYS:HB3	20:LM:965:GLU:HB2	1.76	0.66
59:SL:26:GLU:OE1	59:SL:29:ARG:NH1	2.28	0.66
17:LI:693:VAL:HG21	19:LL:567:HIS:HA	1.78	0.66
20:LM:688:ILE:HG23	20:LM:732:LEU:HD21	1.78	0.66
2:L1:1394:G:N2	2:L1:1475:G:O2'	2.26	0.66
39:NH:246:GLU:HG3	39:NH:247:ARG:HD3	1.77	0.66
41:NJ:501:LEU:HD11	41:NJ:638:MET:HG3	1.76	0.66
65:ST:708:PHE:HB3	65:ST:748:GLN:HE22	1.61	0.66
1:L0:1420:G:H1	3:L2:49:U:H3	1.42	0.66
10:L9:136:ARG:NH1	10:L9:159:PHE:O	2.29	0.66
19:LK:535:ALA:HB3	19:LL:577:THR:HG21	1.76	0.66
21:LN:494:PRO:HG2	21:LN:536:PRO:HA	1.76	0.66
52:SB:350:THR:HG21	52:SB:358:ILE:HG13	1.78	0.66
53:SD:195:ARG:NH2	54:SF:9:LYS:O	2.29	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:LJ:103:GLY:HA2	18:LJ:118:PHE:O	1.96	0.65
1:L0:818:G:H5''	26:LS:517:LYS:HZ1	1.60	0.65
18:LJ:489:MET:HE2	19:LK:571:LYS:HA	1.78	0.65
61:SP:1530:LEU:HD13	61:SP:1615:PRO:HG3	1.79	0.65
2:L1:1736:G:H2'	2:L1:1737:G:H8	1.59	0.65
57:SI:178:LYS:NZ	57:SI:243:LYS:O	2.29	0.65
57:SI:1063:THR:HG22	57:SI:1096:VAL:HG12	1.76	0.65
16:LH:409:GLN:NE2	16:LH:411:LYS:O	2.29	0.65
61:SP:2204:LEU:HD23	61:SP:2231:ILE:HG13	1.76	0.65
18:LJ:181:ILE:HG21	18:LJ:221:LEU:HD11	1.77	0.65
39:NH:172:ILE:HG22	39:NH:174:PRO:HD2	1.79	0.65
20:LM:1765:GLN:NE2	20:LM:1805:ARG:O	2.30	0.65
41:NJ:310:PHE:HB2	41:NJ:385:VAL:HG22	1.79	0.65
1:L0:1414:A:N6	59:SL:18:SER:OG	2.29	0.65
2:L1:190:G:HO2'	61:SP:1197:TYR:HH	1.44	0.65
2:L1:508:A:H3'	2:L1:509:G:H8	1.62	0.65
12:LC:62:ARG:O	12:LC:96:TYR:OH	2.14	0.65
1:L0:852:G:N2	22:LO:287:ASP:O	2.30	0.64
20:LM:1863:HIS:HA	20:LM:1867:LEU:HB2	1.79	0.64
24:LQ:632:HIS:HD2	24:LQ:636:VAL:HG12	1.62	0.64
18:LJ:467:GLN:NE2	18:LJ:471:GLU:OE2	2.31	0.64
20:LM:610:ASN:H	20:LM:619:MET:HE1	1.61	0.64
27:LT:772:LYS:HG3	27:LT:773:LYS:HD2	1.78	0.64
60:SM:153:HIS:HB3	60:SM:157:GLY:HA3	1.79	0.64
22:LO:303:LEU:HB2	22:LO:317:LEU:HD11	1.79	0.64
51:SA:45:ILE:HG13	51:SA:46:VAL:HG23	1.78	0.64
67:SW:161:GLU:OE2	67:SW:222:ARG:NH1	2.30	0.64
18:LJ:264:LEU:HG	18:LJ:274:VAL:HG22	1.78	0.64
41:NK:386:VAL:HG22	41:NK:408:PHE:HB2	1.80	0.64
57:SI:90:PRO:HG2	57:SI:93:VAL:HB	1.78	0.64
71:SZ:308:VAL:HA	71:SZ:311:ILE:HD12	1.77	0.64
3:L2:159:G:OP2	54:SF:97:ARG:NH2	2.30	0.64
6:L5:124:ASP:OD1	6:L5:125:SER:N	2.30	0.64
56:SH:159:MET:HG3	56:SH:160:PRO:HD2	1.80	0.64
1:L0:858:C:OP2	30:LZ:53:ARG:NH2	2.28	0.64
2:L1:484:A:OP1	57:SI:215:LYS:NZ	2.30	0.64
5:L4:45:ILE:HG13	5:L4:61:VAL:HG21	1.79	0.64
25:LR:504:LYS:HG2	25:LR:516:VAL:HG12	1.80	0.64
23:LP:213:SER:OG	64:SS:195:ASN:ND2	2.30	0.64
3:L2:59:G:H5''	22:LO:598:THR:HG23	1.79	0.64
20:LM:652:LYS:O	20:LM:656:LEU:N	2.28	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:LO:857:ASP:OD1	22:LO:858:ASP:N	2.30	0.64
20:LM:1125:GLN:NE2	20:LM:1164:GLU:OE2	2.31	0.63
28:LU:318:GLU:HG3	28:LU:394:ARG:HE	1.62	0.63
61:SP:1338:LYS:HD3	61:SP:1341:LYS:HZ3	1.64	0.63
20:LM:1004:LEU:HD12	20:LM:1034:LEU:HD21	1.80	0.63
2:L1:190:G:O2'	61:SP:1197:TYR:OH	2.16	0.63
4:L3:75:ARG:NH2	4:L3:81:ASP:OD2	2.29	0.63
10:L9:72:PHE:HB3	34:NC:205:VAL:HG11	1.80	0.63
23:LP:22:ILE:HD13	29:LW:98:PHE:HZ	1.62	0.63
28:LU:326:GLN:O	28:LU:344:SER:OG	2.17	0.63
40:NI:63:VAL:HB	40:NI:119:ALA:HB3	1.81	0.63
41:NJ:71:LYS:HA	41:NJ:74:ARG:HE	1.64	0.63
61:SP:1866:ARG:HG3	61:SP:1904:THR:HG23	1.80	0.63
65:ST:606:GLN:O	66:SU:443:ARG:NH2	2.31	0.63
2:L1:277:C:H5'	7:L6:231:ARG:HH21	1.63	0.63
16:LH:462:VAL:HG22	16:LH:472:VAL:HG22	1.80	0.63
16:LH:734:LEU:O	20:LM:175:LYS:NZ	2.32	0.63
20:LM:1289:VAL:HG22	20:LM:1326:ILE:HD11	1.81	0.63
41:NJ:285:ALA:HB2	41:NJ:413:ILE:HB	1.79	0.63
1:L0:715:G:H1	1:L0:755:C:H42	1.45	0.63
20:LM:554:ILE:HG21	20:LM:595:LEU:HD12	1.81	0.63
26:LS:363:GLY:HA2	26:LS:385:VAL:HG23	1.80	0.63
16:LH:823:ASP:O	16:LH:826:TRP:NE1	2.32	0.63
19:LL:186:ALA:HB1	19:LL:211:VAL:HB	1.79	0.63
39:NH:477:ARG:HD2	39:NH:992:ARG:HH21	1.64	0.63
48:NU:16:ILE:HA	48:NU:19:LYS:HZ2	1.63	0.63
2:L1:542:U:O2	57:SI:1234:LYS:NZ	2.31	0.63
41:NK:13:LEU:HD22	41:NK:198:LEU:HD13	1.81	0.63
48:NU:30:THR:HA	48:NU:33:ARG:HG2	1.81	0.63
1:L0:717:G:O6	1:L0:752:C:N4	2.32	0.62
39:NH:731:TYR:HE1	39:NH:733:GLU:HB2	1.64	0.62
3:L2:215:G:H4'	52:SB:401:ARG:HD2	1.79	0.62
28:LU:340:ILE:HB	28:LU:352:TRP:HB2	1.80	0.62
57:SI:143:LEU:HD21	57:SI:906:PRO:HG2	1.81	0.62
61:SP:1219:LEU:HA	61:SP:1231:ILE:HD11	1.81	0.62
61:SP:1820:ARG:HA	61:SP:1823:LEU:HD13	1.81	0.62
2:L1:1110:G:N7	40:NI:211:ARG:NH2	2.45	0.62
2:L1:1743:G:H1'	2:L1:1791:A:H61	1.64	0.62
17:LI:408:ASP:OD2	17:LI:412:HIS:ND1	2.31	0.62
17:LI:505:LEU:HD13	17:LI:591:ILE:HG21	1.81	0.62
22:LO:239:ARG:HD2	52:SB:439:CYS:HB2	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:SP:281:VAL:O	61:SP:337:LYS:NZ	2.31	0.62
18:LJ:44:VAL:HG22	18:LJ:56:VAL:HG22	1.82	0.62
21:LN:560:TYR:O	21:LN:565:ARG:NH1	2.33	0.62
6:L5:49:LEU:HD12	12:LC:50:LYS:HG2	1.82	0.62
7:L6:152:ASP:HB3	7:L6:155:GLN:HG3	1.82	0.62
19:LK:535:ALA:HA	19:LK:538:LEU:HD12	1.81	0.62
19:LL:494:VAL:HG21	19:LL:530:VAL:HG23	1.80	0.62
20:LM:1133:ASP:OD1	20:LM:1206:ARG:NH1	2.33	0.62
41:NK:290:LYS:NZ	41:NK:411:SER:O	2.33	0.62
2:L1:621:C:O4'	70:SY:12:ARG:NH2	2.32	0.62
16:LH:576:GLU:O	17:LI:354:HIS:N	2.32	0.62
29:LW:519:ARG:NH1	64:SS:700:GLN:OE1	2.33	0.62
65:ST:582:ILE:O	65:ST:644:ASN:ND2	2.32	0.62
28:LU:185:ARG:HA	61:SP:2169:LEU:HD22	1.80	0.62
20:LM:1331:GLY:O	20:LM:1335:MET:HB2	1.99	0.62
33:NB:448:ARG:O	33:NB:452:ARG:NH2	2.33	0.62
1:L0:604:C:H41	18:LJ:431:GLN:HB3	1.64	0.61
2:L1:1194:A:N6	24:LQ:614:ASN:OD1	2.33	0.61
61:SP:1475:MET:HB3	61:SP:1479:PHE:HE2	1.65	0.61
61:SP:1609:LEU:HD23	61:SP:1613:ILE:HD13	1.80	0.61
22:LO:151:ASP:OD1	22:LO:152:TRP:N	2.33	0.61
32:NA:523:GLU:OE2	32:NA:525:LYS:NZ	2.30	0.61
40:NI:201:GLU:O	45:NQ:80:ARG:NH1	2.33	0.61
20:LM:2:THR:N	22:LO:665:GLU:OE2	2.33	0.61
20:LM:542:GLU:O	20:LM:545:LYS:NZ	2.30	0.61
20:LM:688:ILE:HD13	20:LM:728:ARG:HB3	1.82	0.61
39:NH:706:PRO:HG3	39:NH:1048:PRO:HB3	1.82	0.61
65:ST:577:LEU:HD22	65:ST:611:GLU:HB3	1.82	0.61
71:SZ:275:ALA:O	71:SZ:279:ALA:N	2.33	0.61
20:LM:1602:PRO:HD3	20:LM:1640:ARG:HH12	1.64	0.61
23:LP:373:LYS:NZ	23:LP:405:MET:SD	2.68	0.61
60:SM:279:THR:HB	60:SM:282:ALA:HB2	1.83	0.61
23:LP:74:ARG:NH1	26:LS:83:ASP:O	2.32	0.61
2:L1:412:G:H1	2:L1:430:C:H42	1.46	0.61
16:LH:250:MET:SD	16:LH:268:ARG:NH2	2.73	0.61
27:LT:804:PRO:HD2	27:LT:805:GLU:H	1.65	0.61
57:SI:923:GLN:HB2	57:SI:1016:ASP:HB2	1.80	0.61
21:LN:186:ARG:HA	21:LN:196:CYS:HB2	1.82	0.61
18:LJ:413:ARG:HB3	18:LJ:417:GLU:HB2	1.82	0.61
24:LQ:438:ILE:HD11	24:LQ:471:ILE:HD13	1.82	0.61
2:L1:1702:G:OP2	2:L1:1702:G:N2	2.25	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:LQ:597:MET:HG2	24:LQ:608:THR:HG22	1.82	0.61
61:SP:70:GLU:O	61:SP:74:LYS:NZ	2.33	0.61
21:LN:357:LEU:HB3	21:LN:383:LEU:HB3	1.83	0.61
26:LS:488:LEU:HB2	26:LS:504:LEU:HD21	1.83	0.61
67:SW:247:ARG:NH2	67:SW:250:ASP:OD2	2.34	0.61
53:SC:152:VAL:HG11	53:SC:155:ILE:HD11	1.83	0.60
55:SG:364:ALA:O	55:SG:401:ARG:NH1	2.32	0.60
2:L1:1485:U:H3'	2:L1:1486:A:H8	1.67	0.60
20:LM:1761:LEU:HD21	20:LM:1806:LEU:HB2	1.83	0.60
20:LM:2107:ILE:HG13	20:LM:2108:PRO:HD3	1.82	0.60
22:LO:737:ASP:O	22:LO:770:ASN:ND2	2.25	0.60
25:LR:340:VAL:HG12	25:LR:352:VAL:HG12	1.83	0.60
39:NH:268:LEU:HB2	39:NH:271:LYS:HG2	1.82	0.60
49:NW:239:ASN:O	49:NW:243:THR:OG1	2.19	0.60
61:SP:326:TYR:HB3	61:SP:368:VAL:HG21	1.82	0.60
20:LM:430:ARG:NH1	20:LM:466:LEU:O	2.31	0.60
24:LQ:8:LEU:O	24:LQ:669:GLN:NE2	2.34	0.60
28:LU:346:GLU:OE2	28:LU:350:ARG:NH1	2.33	0.60
41:NJ:6:VAL:HB	57:SI:352:VAL:HB	1.82	0.60
47:NT:92:LYS:HG3	47:NT:93:HIS:H	1.66	0.60
61:SP:1859:GLN:OE1	61:SP:1862:ARG:NH2	2.29	0.60
1:L0:454:C:OP1	21:LN:680:LYS:NZ	2.35	0.60
16:LH:814:LYS:HG2	16:LH:817:ARG:HH21	1.67	0.60
20:LM:1164:GLU:OE1	20:LM:1206:ARG:NH2	2.35	0.60
25:LR:263:LEU:HD21	25:LR:271:LEU:HD22	1.83	0.60
54:SE:95:VAL:HG12	54:SE:97:ARG:H	1.66	0.60
21:LN:110:SER:OG	21:LN:112:SER:O	2.18	0.60
22:LO:710:PHE:HD1	22:LO:717:TRP:HB3	1.66	0.60
61:SP:825:TRP:HA	61:SP:828:LEU:HD12	1.82	0.60
63:SR:112:VAL:HG11	63:SR:118:VAL:HG21	1.83	0.60
28:LU:263:LEU:HD21	28:LU:285:VAL:HG11	1.82	0.60
30:LZ:138:VAL:HG22	30:LZ:158:VAL:HG12	1.82	0.60
41:NK:374:ALA:HA	41:NK:397:LEU:HD11	1.83	0.60
20:LM:658:GLY:HA3	20:LM:765:VAL:HG13	1.84	0.60
20:LM:1406:LEU:HD13	20:LM:1411:PHE:HB3	1.83	0.60
2:L1:369:C:H5	49:NW:132:ARG:HB2	1.66	0.60
2:L1:687:C:HO3'	8:L7:121:THR:HG1	1.42	0.60
51:SA:98:PRO:HA	51:SA:114:THR:HG21	1.84	0.60
61:SP:1294:ILE:HA	61:SP:1297:ARG:HD2	1.83	0.60
70:SY:237:GLU:HB3	70:SY:243:ALA:HB2	1.84	0.60
22:LO:331:GLN:HG3	22:LO:351:GLY:HA3	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:LS:154:ASP:HA	26:LS:172:LYS:HG2	1.84	0.60
20:LM:634:HIS:NE2	20:LM:683:MET:SD	2.68	0.59
20:LM:1280:GLU:O	20:LM:1318:LYS:NZ	2.34	0.59
23:LP:226:TYR:OH	23:LP:239:HIS:NE2	2.34	0.59
25:LR:347:ASP:OD1	25:LR:615:ARG:NH1	2.35	0.59
50:NY:319:LYS:HA	50:NY:322:ILE:HD12	1.83	0.59
2:L1:286:U:H2'	2:L1:287:U:H4'	1.84	0.59
2:L1:1536:G:H2'	2:L1:1537:A:H8	1.66	0.59
19:LL:601:GLU:OE2	21:LN:429:ARG:NH1	2.34	0.59
20:LM:1045:ILE:HG23	20:LM:1095:LEU:HD21	1.84	0.59
25:LR:419:GLY:H	25:LR:449:TRP:HH2	1.49	0.59
57:SI:205:ARG:NH1	57:SI:208:THR:OG1	2.35	0.59
2:L1:454:U:H2'	2:L1:455:A:H8	1.66	0.59
2:L1:961:G:N2	50:NY:235:ARG:O	2.35	0.59
20:LM:1578:ARG:HH12	20:LM:1582:SER:HB3	1.66	0.59
64:SS:159:PHE:HB2	64:SS:723:THR:HG22	1.83	0.59
27:LT:229:LEU:HB2	27:LT:243:PHE:HB2	1.84	0.59
28:LU:206:PRO:HG2	28:LU:207:ILE:HD12	1.83	0.59
41:NK:507:LEU:HB3	41:NK:698:LEU:HD11	1.83	0.59
53:SC:243:THR:HG21	53:SC:285:LYS:HB3	1.84	0.59
57:SI:1106:ILE:HD12	57:SI:1107:PRO:HD2	1.84	0.59
60:SM:97:LEU:HD13	60:SM:141:GLU:HB3	1.83	0.59
61:SP:1457:THR:HA	61:SP:1460:ILE:HD12	1.85	0.59
61:SP:2181:VAL:HG22	61:SP:2223:THR:HG21	1.84	0.59
63:SR:105:PHE:HE2	63:SR:109:GLY:HA2	1.68	0.59
20:LM:2030:ARG:HH21	20:LM:2079:LYS:HB2	1.66	0.59
39:NH:760:ALA:HB2	40:NI:173:VAL:HG11	1.85	0.59
49:NW:318:VAL:HG23	49:NW:329:THR:HG22	1.84	0.59
57:SI:961:ASP:OD1	57:SI:967:ARG:NH1	2.36	0.59
25:LR:690:ARG:HB3	25:LR:691:ARG:HH21	1.68	0.59
41:NJ:779:LEU:HA	41:NJ:783:PHE:HB2	1.82	0.59
57:SI:382:THR:HG23	57:SI:385:ALA:H	1.67	0.59
58:SK:96:MET:HA	58:SK:101:ASN:HD22	1.68	0.59
61:SP:1360:LEU:HD23	61:SP:1365:ILE:HD11	1.85	0.59
65:ST:708:PHE:HB3	65:ST:748:GLN:NE2	2.18	0.59
1:L0:865:G:H1	1:L0:1412:U:H3	1.49	0.59
18:LJ:380:VAL:HG11	18:LJ:396:ILE:HG13	1.85	0.59
20:LM:1345:VAL:O	20:LM:1349:THR:OG1	2.16	0.59
20:LM:1674:LEU:HD13	20:LM:1692:VAL:HG13	1.83	0.59
20:LM:1707:GLU:HG3	20:LM:1709:ASN:H	1.67	0.59
22:LO:845:ILE:HG23	27:LT:943:LEU:HD22	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:LR:269:GLY:HA2	25:LR:295:LEU:HD23	1.84	0.59
40:NI:227:GLU:OE2	40:NI:230:ARG:NH2	2.35	0.59
52:SB:213:ASP:OD1	52:SB:214:ARG:N	2.36	0.59
8:L7:64:VAL:HB	8:L7:72:PHE:HE2	1.68	0.59
28:LU:235:VAL:HG21	28:LU:271:LEU:HB3	1.84	0.59
41:NJ:429:GLN:HA	41:NJ:432:ARG:HD2	1.85	0.59
41:NK:12:ILE:HD12	41:NK:217:GLU:HB3	1.84	0.59
61:SP:502:SER:HA	61:SP:505:LYS:HD2	1.85	0.59
20:LM:1351:LYS:HG3	20:LM:1401:GLN:HE21	1.68	0.59
20:LM:1901:VAL:HA	20:LM:1904:VAL:HG22	1.83	0.59
24:LQ:9:ARG:NH1	24:LQ:707:GLU:OE1	2.36	0.59
27:LT:88:ARG:HD3	27:LT:132:ALA:HB1	1.84	0.59
61:SP:1525:LYS:HG3	61:SP:1526:LEU:N	2.18	0.59
16:LH:15:SER:O	16:LH:312:ASN:ND2	2.36	0.59
29:LW:489:ASN:HB3	29:LW:492:ARG:HB3	1.84	0.59
2:L1:1512:C:H4'	71:SZ:197:SER:HB3	1.85	0.58
20:LM:1311:VAL:O	20:LM:1315:PHE:N	2.29	0.58
61:SP:2159:LEU:O	61:SP:2163:LEU:N	2.27	0.58
20:LM:1787:ILE:HG12	20:LM:1840:HIS:HB3	1.84	0.58
28:LU:12:ASN:O	28:LU:23:ARG:NH1	2.35	0.58
12:LC:82:TYR:HA	12:LC:85:ARG:HD3	1.84	0.58
41:NK:344:ILE:HD12	41:NK:357:ARG:HB3	1.85	0.58
3:L2:54:U:OP1	70:SY:72:ARG:NH2	2.35	0.58
13:LD:95:TYR:HE2	13:LD:97:ARG:HE	1.50	0.58
19:LK:536:SER:O	19:LK:539:SER:OG	2.19	0.58
30:LZ:64:ASP:O	36:NE:185:LYS:NZ	2.26	0.58
2:L1:102:A:OP2	2:L1:408:A:N6	2.37	0.58
2:L1:1762:C:H2'	2:L1:1763:G:C8	2.38	0.58
20:LM:1566:GLU:HG2	20:LM:1612:LEU:HD21	1.85	0.58
39:NH:474:LEU:HD23	39:NH:552:LEU:HD12	1.84	0.58
58:SJ:110:ILE:HB	58:SJ:118:ILE:HB	1.86	0.58
61:SP:2116:SER:HB2	61:SP:2151:LYS:HE2	1.84	0.58
2:L1:1004:U:H2'	2:L1:1005:G:H8	1.68	0.58
14:LF:14:THR:HG23	14:LF:21:LYS:HG2	1.85	0.58
21:LN:146:SER:OG	21:LN:164:SER:OG	2.21	0.58
24:LQ:158:LEU:HD12	24:LQ:163:LEU:HB2	1.86	0.58
26:LS:401:SER:OG	26:LS:403:ASP:OD1	2.22	0.58
41:NK:514:THR:HG21	41:NK:694:LEU:HA	1.85	0.58
6:L5:138:ALA:HB3	15:LG:63:ARG:HH12	1.69	0.58
10:L9:103:GLU:O	10:L9:107:GLU:HG2	2.04	0.58
16:LH:15:SER:OG	16:LH:35:SER:OG	2.20	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:NJ:290:LYS:NZ	41:NJ:388:ASP:OD1	2.36	0.58
41:NK:123:LEU:HD23	41:NK:129:LEU:HD21	1.86	0.58
53:SC:225:MET:N	53:SC:225:MET:SD	2.74	0.58
57:SI:103:ILE:HG21	57:SI:111:LEU:HD12	1.86	0.58
47:NT:105:TYR:HD2	47:NT:131:PHE:HD2	1.50	0.58
20:LM:384:THR:HA	20:LM:435:LYS:HE3	1.85	0.58
20:LM:2030:ARG:NH2	20:LM:2077:SER:OG	2.37	0.58
39:NH:268:LEU:O	39:NH:298:ASN:ND2	2.37	0.58
16:LH:333:ASP:O	16:LH:663:GLN:NE2	2.37	0.58
18:LJ:222:VAL:HG12	18:LJ:231:VAL:HG22	1.86	0.58
20:LM:1413:TRP:HB3	20:LM:1462:SER:HA	1.85	0.58
20:LM:2076:SER:O	20:LM:2081:ARG:NH2	2.34	0.58
21:LN:22:VAL:H	21:LN:292:THR:HG21	1.68	0.58
61:SP:531:LEU:HD21	61:SP:574:LEU:HD22	1.85	0.58
1:L0:812:G:OP2	1:L0:812:G:N2	2.28	0.57
17:LI:509:LEU:HB3	17:LI:612:HIS:HD2	1.69	0.57
39:NH:474:LEU:HD11	39:NH:634:VAL:HG13	1.86	0.57
71:SZ:133:UNK:HA	71:SZ:303:ARG:HH12	1.69	0.57
16:LH:555:TYR:HE1	16:LH:576:GLU:HG3	1.69	0.57
24:LQ:555:VAL:HG12	24:LQ:566:VAL:HG12	1.85	0.57
26:LS:144:ASP:OD1	27:LT:233:ASN:ND2	2.37	0.57
28:LU:263:LEU:HB2	28:LU:278:HIS:HB2	1.86	0.57
39:NH:354:MET:HG3	39:NH:425:LEU:HD21	1.86	0.57
41:NK:310:PHE:HB2	41:NK:385:VAL:HG22	1.86	0.57
41:NK:808:LEU:HD12	41:NK:848:ILE:HG21	1.86	0.57
49:NW:162:ASN:HB2	49:NW:169:LEU:HG	1.86	0.57
61:SP:197:MET:O	61:SP:203:LYS:NZ	2.37	0.57
61:SP:1517:ILE:HG13	61:SP:1518:ILE:HG12	1.86	0.57
2:L1:319:C:H2'	2:L1:320:G:C8	2.39	0.57
4:L3:22:GLY:HA2	4:L3:56:ALA:HB3	1.87	0.57
20:LM:1807:THR:HA	20:LM:1810:LYS:HD3	1.85	0.57
41:NK:470:ARG:NH2	73:NK:1101:ATP:O3'	2.37	0.57
20:LM:2073:THR:HB	20:LM:2113:LEU:HD11	1.87	0.57
26:LS:255:SER:H	26:LS:270:GLY:HA2	1.68	0.57
36:NE:227:GLU:HA	36:NE:230:ARG:HH11	1.68	0.57
41:NK:307:SER:HA	41:NK:366:GLN:HG2	1.84	0.57
61:SP:277:VAL:HG21	61:SP:325:THR:HG23	1.87	0.57
2:L1:67:C:H41	7:L6:163:ASN:HA	1.70	0.57
2:L1:1392:U:H2'	2:L1:1393:G:C8	2.35	0.57
23:LP:221:LEU:HD11	64:SS:188:ILE:HG23	1.86	0.57
27:LT:553:LEU:HD11	27:LT:565:PHE:HB3	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:SB:197:ILE:HG23	52:SB:198:ILE:HG13	1.85	0.57
56:SH:306:THR:HG22	56:SH:337:ILE:HD13	1.86	0.57
16:LH:623:GLY:HA2	16:LH:626:ARG:HH22	1.69	0.57
18:LJ:477:GLN:HA	18:LJ:480:LEU:HD12	1.86	0.57
19:LL:404:LEU:HA	19:LL:408:ILE:HD11	1.86	0.57
28:LU:333:TRP:HE1	28:LU:337:SER:HA	1.69	0.57
41:NJ:507:LEU:HD11	41:NJ:557:PHE:HB3	1.87	0.57
18:LJ:36:LYS:HA	18:LJ:312:ILE:HG22	1.87	0.57
19:LL:42:GLU:OE2	19:LL:49:HIS:ND1	2.37	0.57
20:LM:1636:THR:O	20:LM:1640:ARG:HG3	2.05	0.57
61:SP:1853:LEU:HD23	61:SP:1865:ALA:HB2	1.86	0.57
5:L4:17:HIS:HB2	5:L4:108:ARG:HG3	1.86	0.57
20:LM:1967:ASN:HA	20:LM:1970:ASN:HD22	1.69	0.57
27:LT:772:LYS:HD3	67:SW:247:ARG:NH1	2.18	0.57
10:L9:15:THR:O	59:SL:197:ARG:NH1	2.34	0.57
19:LL:33:SER:OG	19:LL:35:ASP:OD1	2.20	0.57
20:LM:1690:VAL:HG21	20:LM:1728:LEU:HD22	1.85	0.57
21:LN:341:SER:HB3	21:LN:346:LEU:HB2	1.86	0.57
57:SI:1061:ILE:HG22	57:SI:1098:MET:HB3	1.86	0.57
70:SY:158:ALA:HB3	70:SY:161:LEU:HD13	1.86	0.57
2:L1:1525:C:H2'	2:L1:1526:G:H8	1.70	0.57
2:L1:1856:C:O3'	25:LR:140:ARG:NH2	2.38	0.57
19:LK:554:LEU:O	19:LK:558:ARG:HG2	2.05	0.57
26:LS:257:VAL:H	26:LS:526:THR:HG21	1.70	0.57
26:LS:502:VAL:HG22	26:LS:509:VAL:HG22	1.86	0.57
52:SB:4:LEU:HB2	52:SB:87:LEU:HD11	1.85	0.57
58:SK:128:ARG:H	58:SK:132:ARG:HH21	1.52	0.57
65:ST:609:ILE:HD13	65:ST:612:LEU:HB2	1.86	0.57
4:L3:60:THR:OG1	4:L3:62:ASP:OD1	2.21	0.56
7:L6:192:ILE:HG22	7:L6:196:LYS:HE3	1.86	0.56
21:LN:465:GLN:HB2	21:LN:474:LEU:HD21	1.85	0.56
41:NK:259:ASP:OD1	41:NK:260:GLN:N	2.38	0.56
58:SJ:42:ARG:HE	58:SJ:107:GLN:HB2	1.70	0.56
59:SL:103:THR:HG22	59:SL:132:LEU:HD11	1.87	0.56
2:L1:103:A:H4'	2:L1:104:A:C8	2.40	0.56
2:L1:925:G:OP1	37:NF:121:ARG:NH1	2.37	0.56
2:L1:1589:A:H1'	2:L1:1654:G:H4'	1.87	0.56
2:L1:1679:A:OP1	6:L5:60:ARG:NH2	2.38	0.56
18:LJ:181:ILE:HG13	18:LJ:191:MET:HG3	1.86	0.56
20:LM:1111:THR:H	20:LM:1114:PHE:HB3	1.70	0.56
20:LM:1819:PRO:HG3	20:LM:1855:MET:HG3	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:LR:503:ALA:HB3	25:LR:517:PHE:HB2	1.86	0.56
58:SJ:47:LEU:HD12	58:SJ:202:ALA:HB2	1.87	0.56
61:SP:335:GLY:HA3	61:SP:378:VAL:HB	1.87	0.56
2:L1:647:U:H2'	2:L1:648:A:H8	1.70	0.56
2:L1:1297:U:N3	2:L1:1300:U:OP2	2.36	0.56
3:L2:56:A:H2'	3:L2:57:A:C8	2.40	0.56
3:L2:210:U:OP2	54:SE:44:LYS:NZ	2.34	0.56
14:LF:61:ARG:HG2	34:NC:248:ARG:HH12	1.70	0.56
17:LI:509:LEU:HD23	17:LI:612:HIS:HB3	1.88	0.56
18:LJ:355:ARG:HH21	26:LS:295:ARG:HG3	1.69	0.56
22:LO:784:ARG:HD3	27:LT:751:LEU:HD21	1.85	0.56
41:NJ:577:ILE:HG22	41:NJ:629:ILE:HG13	1.87	0.56
41:NK:857:LEU:HD12	41:NK:901:LYS:HB3	1.88	0.56
50:NY:76:TRP:HA	50:NY:79:VAL:HG12	1.88	0.56
51:SA:16:LEU:HB3	51:SA:50:ALA:HB3	1.87	0.56
51:SA:37:LEU:HD11	53:SD:256:ASN:HD22	1.69	0.56
61:SP:967:HIS:ND1	61:SP:1007:ASP:OD2	2.38	0.56
61:SP:1427:ILE:HG13	61:SP:1470:TYR:HD1	1.69	0.56
19:LL:503:ILE:O	19:LL:507:GLN:NE2	2.38	0.56
28:LU:102:ILE:HG22	28:LU:103:ARG:HG3	1.86	0.56
61:SP:959:CYS:O	61:SP:962:THR:OG1	2.22	0.56
20:LM:1086:ILE:HD12	20:LM:1130:MET:HG3	1.87	0.56
21:LN:535:ALA:HB3	21:LN:540:ASN:H	1.69	0.56
24:LQ:546:LEU:HD12	24:LQ:581:LEU:HG	1.85	0.56
25:LR:275:GLU:HG3	25:LR:278:SER:H	1.69	0.56
29:LW:505:LEU:HB3	30:LZ:13:LEU:HD11	1.88	0.56
32:NA:533:ILE:HD12	32:NA:542:SER:HB2	1.88	0.56
36:NE:287:ASN:ND2	44:NO:85:ASP:OD2	2.36	0.56
58:SJ:146:VAL:HB	58:SJ:156:LEU:HB2	1.85	0.56
12:LC:12:VAL:HG21	12:LC:91:ALA:HA	1.86	0.56
15:LG:21:THR:HG22	15:LG:29:GLN:HG3	1.88	0.56
18:LJ:106:LEU:HD12	18:LJ:116:ARG:HB2	1.87	0.56
19:LL:220:ARG:NH2	19:LL:279:GLU:O	2.37	0.56
27:LT:169:GLN:HB2	27:LT:210:ILE:HD12	1.86	0.56
16:LH:16:GLU:OE1	16:LH:332:LYS:NZ	2.38	0.56
19:LK:474:ASP:HB3	19:LK:477:MET:HG2	1.87	0.56
20:LM:1511:ARG:HG2	20:LM:1583:LYS:HE3	1.88	0.56
49:NW:281:GLN:HE22	49:NW:283:SER:HB2	1.70	0.56
61:SP:547:LEU:HB3	61:SP:564:LEU:HD12	1.88	0.56
2:L1:389:A:OP1	49:NW:117:ARG:NH1	2.37	0.56
2:L1:923:G:OP1	37:NF:2:GLY:N	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L2:131:U:O4	3:L2:138:C:N4	2.38	0.56
9:L8:11:ARG:NH1	9:L8:15:GLY:O	2.36	0.56
24:LQ:173:VAL:HB	24:LQ:187:MET:HB2	1.88	0.56
27:LT:821:LEU:O	27:LT:823:GLN:NE2	2.38	0.56
58:SJ:96:MET:SD	58:SJ:101:ASN:ND2	2.79	0.56
61:SP:506:LEU:HD12	61:SP:507:PRO:HD2	1.87	0.56
2:L1:925:G:H1	2:L1:1017:U:H3	1.53	0.56
2:L1:1311:C:H2'	2:L1:1312:G:C8	2.41	0.56
2:L1:1717:C:H2'	2:L1:1718:G:C8	2.41	0.56
18:LJ:116:ARG:NH1	18:LJ:154:SER:OG	2.39	0.56
20:LM:1751:VAL:HG11	20:LM:1792:ILE:HG12	1.86	0.56
25:LR:436:PHE:HZ	25:LR:508:LEU:HD21	1.70	0.56
57:SI:205:ARG:NH1	57:SI:209:GLU:OE2	2.39	0.56
57:SI:954:ILE:HG22	57:SI:1106:ILE:HD11	1.88	0.56
61:SP:526:PRO:HG3	61:SP:570:THR:HG23	1.87	0.56
61:SP:2111:LEU:HB3	61:SP:2145:LEU:HD21	1.87	0.56
20:LM:1402:LEU:HD23	20:LM:1415:LEU:HD13	1.87	0.56
24:LQ:15:VAL:HG22	24:LQ:700:ARG:HG2	1.88	0.56
53:SC:98:ILE:HG23	53:SC:100:ARG:HH12	1.71	0.56
59:SL:169:ARG:NH1	59:SL:187:GLU:OE1	2.39	0.56
3:L2:95:C:H2'	3:L2:96:G:H8	1.71	0.55
8:L7:93:VAL:HG21	8:L7:133:LEU:HD12	1.88	0.55
16:LH:405:VAL:HG22	16:LH:419:MET:HG3	1.87	0.55
20:LM:1280:GLU:HB3	20:LM:1318:LYS:HD2	1.89	0.55
21:LN:144:GLN:O	54:SE:125:ARG:NH2	2.39	0.55
56:SH:60:ASN:ND2	65:ST:79:LYS:O	2.40	0.55
59:SL:149:VAL:HG13	59:SL:174:VAL:HG21	1.88	0.55
61:SP:1530:LEU:HD12	61:SP:1531:LYS:HE3	1.88	0.55
2:L1:981:A:H2'	2:L1:982:G:C8	2.41	0.55
17:LI:153:ILE:HA	17:LI:171:THR:HG22	1.88	0.55
20:LM:1356:ALA:O	20:LM:1360:SER:HB3	2.05	0.55
27:LT:797:LEU:H	67:SW:251:ARG:HG2	1.71	0.55
28:LU:212:LEU:HB2	28:LU:224:TYR:HB2	1.88	0.55
51:SA:163:ARG:NH1	51:SA:386:SER:O	2.33	0.55
2:L1:126:G:H8	7:L6:199:THR:HG21	1.71	0.55
2:L1:170:A:OP2	7:L6:140:ARG:NH1	2.40	0.55
2:L1:1813:A:H2'	2:L1:1814:G:C8	2.40	0.55
18:LJ:35:ILE:O	18:LJ:312:ILE:HA	2.06	0.55
18:LJ:116:ARG:NH1	18:LJ:151:ILE:O	2.39	0.55
20:LM:1663:GLN:HB2	20:LM:1666:ASN:HD22	1.70	0.55
21:LN:154:HIS:HD2	21:LN:203:PHE:HE2	1.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:LT:389:GLY:HA2	27:LT:451:GLU:HG2	1.88	0.55
33:NB:473:LYS:HE2	59:SL:47:GLU:HG2	1.89	0.55
40:NI:94:PRO:HA	40:NI:118:VAL:HG21	1.88	0.55
59:SL:22:GLN:HA	59:SL:29:ARG:HE	1.71	0.55
61:SP:1669:ASN:HB3	61:SP:1672:LEU:HB3	1.87	0.55
66:SU:389:PRO:O	66:SU:393:ASN:ND2	2.39	0.55
18:LJ:89:ARG:NH1	18:LJ:134:LYS:O	2.39	0.55
51:SA:217:ILE:HG22	51:SA:227:LYS:HE3	1.88	0.55
56:SH:133:LYS:NZ	56:SH:152:LEU:O	2.37	0.55
61:SP:1167:GLU:O	61:SP:1214:ARG:NH1	2.40	0.55
61:SP:1311:SER:HB3	61:SP:1355:LEU:HD21	1.89	0.55
71:SZ:286:TRP:HH2	71:SZ:312:ILE:HG13	1.70	0.55
2:L1:1378:A:OP2	2:L1:1379:A:O2'	2.22	0.55
16:LH:380:ILE:HG22	16:LH:382:ASP:H	1.71	0.55
16:LH:718:LEU:HB2	26:LS:438:GLN:HE22	1.71	0.55
20:LM:615:GLU:O	20:LM:620:LYS:NZ	2.40	0.55
28:LU:173:THR:OG1	28:LU:181:TRP:NE1	2.40	0.55
39:NH:1124:GLU:HG2	40:NI:36:ALA:HB3	1.89	0.55
49:NW:288:LEU:HG	49:NW:297:MET:HG2	1.89	0.55
57:SI:941:PRO:HG3	57:SI:1129:MET:HG2	1.87	0.55
65:ST:43:ILE:HB	65:ST:46:ARG:HG2	1.88	0.55
6:L5:198:ARG:NH2	58:SK:214:GLU:OE2	2.39	0.55
20:LM:503:LYS:O	20:LM:506:MET:HB3	2.06	0.55
27:LT:501:ASP:OD1	27:LT:502:ILE:N	2.39	0.55
51:SA:375:LYS:HD3	51:SA:397:LEU:HD22	1.88	0.55
2:L1:613:G:N7	70:SY:45:ARG:NH2	2.43	0.55
20:LM:1334:VAL:O	20:LM:1338:ASP:N	2.40	0.55
24:LQ:502:MET:HG2	24:LQ:513:THR:HG22	1.88	0.55
40:NI:244:TRP:HA	40:NI:247:ARG:HG2	1.88	0.55
55:SG:332:LEU:HD23	55:SG:338:MET:HB3	1.87	0.55
60:SM:15:ARG:NH2	60:SM:68:THR:OG1	2.39	0.55
16:LH:698:ILE:HG22	26:LS:265:ILE:HD11	1.88	0.55
20:LM:1843:PRO:O	20:LM:1847:ILE:HG12	2.06	0.55
22:LO:731:ASP:HB3	22:LO:734:VAL:HG23	1.89	0.55
2:L1:1127:C:H4'	45:NQ:17:ARG:HH11	1.72	0.55
16:LH:59:LEU:HB3	16:LH:78:LEU:HD12	1.87	0.55
18:LJ:267:SER:OG	18:LJ:269:ASP:OD1	2.24	0.55
19:LL:278:SER:HB2	19:LL:283:GLU:HB3	1.89	0.55
20:LM:1419:LEU:HD22	20:LM:1447:TRP:HE1	1.72	0.55
21:LN:418:LEU:HA	21:LN:426:SER:O	2.06	0.55
25:LR:196:SER:HG	42:NM:51:ARG:HH21	1.52	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:SA:12:VAL:HG21	51:SA:137:THR:HG21	1.89	0.55
58:SK:173:LYS:HD2	58:SK:212:TYR:HD2	1.72	0.55
20:LM:1145:GLN:NE2	52:SB:84:HIS:O	2.40	0.54
22:LO:817:GLU:HG2	27:LT:752:VAL:HB	1.88	0.54
39:NH:1099:SER:O	39:NH:1102:LYS:NZ	2.40	0.54
41:NJ:356:ILE:HG23	41:NJ:370:TYR:HB3	1.88	0.54
41:NK:298:ILE:HD11	41:NK:386:VAL:HG21	1.89	0.54
57:SI:1059:ALA:HB3	57:SI:1071:ILE:HD12	1.89	0.54
2:L1:1702:G:O2'	32:NA:560:ALA:O	2.24	0.54
4:L3:38:ARG:O	4:L3:42:HIS:ND1	2.29	0.54
55:SG:223:ILE:HB	55:SG:237:PHE:HB2	1.89	0.54
61:SP:1645:LYS:HD3	61:SP:1685:HIS:HB3	1.89	0.54
61:SP:1857:ARG:O	61:SP:1862:ARG:NH1	2.40	0.54
16:LH:519:GLU:HA	16:LH:541:LYS:HA	1.89	0.54
39:NH:90:GLU:HA	39:NH:93:LYS:HD3	1.87	0.54
39:NH:941:ARG:NH1	39:NH:945:PRO:O	2.36	0.54
2:L1:447:A:OP1	9:L8:49:ARG:NH1	2.39	0.54
58:SK:140:LEU:HD22	58:SK:156:LEU:HD13	1.90	0.54
66:SU:435:LEU:HB3	66:SU:438:LEU:HD23	1.90	0.54
2:L1:649:U:H2'	2:L1:650:A:C8	2.43	0.54
20:LM:1392:GLU:HA	20:LM:1395:ARG:HB2	1.88	0.54
21:LN:17:SER:O	21:LN:35:ARG:NH1	2.40	0.54
21:LN:621:TYR:HB2	21:LN:643:ILE:HD11	1.90	0.54
25:LR:204:SER:OG	25:LR:206:ASP:O	2.25	0.54
41:NJ:697:LYS:HB2	41:NJ:700:GLU:HG3	1.89	0.54
49:NW:152:VAL:HG21	49:NW:182:CYS:HB3	1.90	0.54
61:SP:1418:SER:HB3	61:SP:1428:THR:HG21	1.88	0.54
2:L1:1524:G:H21	65:ST:37:ASN:HD21	1.54	0.54
18:LJ:252:THR:H	18:LJ:267:SER:HA	1.71	0.54
46:NR:186:UNK:O	46:NR:190:UNK:N	2.41	0.54
47:NT:119:ARG:HG3	47:NT:132:MET:HG3	1.89	0.54
71:SZ:365:LEU:HA	71:SZ:404:LEU:HD21	1.90	0.54
4:L3:23:ARG:HH22	18:LJ:80:LYS:HA	1.72	0.54
20:LM:374:ILE:HG13	20:LM:378:HIS:CE1	2.43	0.54
20:LM:1408:ALA:HA	20:LM:1411:PHE:HB2	1.90	0.54
21:LN:448:ASP:OD2	21:LN:450:THR:OG1	2.22	0.54
24:LQ:363:ALA:HB3	24:LQ:384:LEU:HD13	1.89	0.54
41:NJ:344:ILE:HD12	41:NJ:357:ARG:HG2	1.89	0.54
53:SC:220:PRO:HG3	53:SC:248:LEU:HB3	1.88	0.54
61:SP:239:PHE:HB3	61:SP:243:THR:HG21	1.89	0.54
2:L1:370:G:O2'	9:L8:10:LYS:NZ	2.36	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:LH:123:LYS:NZ	16:LH:125:ASP:OD2	2.40	0.54
20:LM:83:THR:O	20:LM:87:ASN:ND2	2.41	0.54
21:LN:127:LEU:HB3	21:LN:139:ARG:HG2	1.89	0.54
22:LO:187:HIS:NE2	22:LO:205:SER:OG	2.29	0.54
24:LQ:621:ASP:OD1	24:LQ:622:PHE:N	2.41	0.54
25:LR:15:TYR:HB2	25:LR:601:LEU:HD21	1.90	0.54
39:NH:722:PRO:HG2	40:NI:156:ILE:HG12	1.90	0.54
41:NJ:158:LYS:HB2	41:NJ:678:VAL:HG21	1.89	0.54
41:NJ:431:LEU:HB3	41:NJ:460:LEU:HD13	1.90	0.54
58:SJ:121:ASN:HB3	58:SJ:124:THR:HG23	1.90	0.54
20:LM:1351:LYS:HA	20:LM:1405:THR:HG21	1.89	0.54
24:LQ:421:LEU:HD21	24:LQ:691:VAL:HG12	1.89	0.54
26:LS:538:LEU:HD23	26:LS:546:LEU:HD12	1.89	0.54
61:SP:1482:LEU:HD13	61:SP:1541:TYR:HE1	1.72	0.54
2:L1:1762:C:H2'	2:L1:1763:G:H8	1.73	0.54
20:LM:47:ILE:HG12	62:SQ:600:LYS:HG3	1.90	0.54
20:LM:1011:PRO:HD2	20:LM:1014:ILE:HD12	1.90	0.54
24:LQ:595:ILE:HG23	32:NA:680:LYS:HD2	1.90	0.54
25:LR:129:CYS:HA	25:LR:153:VAL:HG23	1.90	0.54
28:LU:359:LYS:NZ	28:LU:367:GLU:OE2	2.41	0.54
17:LI:682:ILE:HG13	19:LK:569:HIS:CD2	2.43	0.53
20:LM:1320:LEU:O	20:LM:1323:ILE:HG22	2.07	0.53
21:LN:548:GLN:OE1	21:LN:579:ARG:NH2	2.41	0.53
51:SA:382:ILE:O	51:SA:386:SER:OG	2.22	0.53
20:LM:1827:LYS:HE2	20:LM:1870:PHE:HB2	1.90	0.53
25:LR:424:VAL:HG12	25:LR:441:SER:HB2	1.90	0.53
26:LS:184:GLU:O	26:LS:188:HIS:ND1	2.41	0.53
26:LS:215:ASP:OD1	26:LS:216:ASP:N	2.40	0.53
61:SP:1303:VAL:HG13	61:SP:1339:ILE:HG23	1.90	0.53
14:LF:6:THR:HB	14:LF:28:LEU:HB2	1.91	0.53
49:NW:9:VAL:HG21	49:NW:307:THR:HB	1.91	0.53
61:SP:585:PRO:HG2	61:SP:588:ARG:HD3	1.89	0.53
65:ST:570:LEU:HD21	66:SU:445:TYR:HD2	1.74	0.53
17:LI:642:THR:OG1	17:LI:644:ASN:OD1	2.17	0.53
20:LM:707:ILE:HA	20:LM:710:VAL:HG22	1.91	0.53
20:LM:1693:LEU:HB2	20:LM:1721:VAL:HG11	1.90	0.53
24:LQ:509:ARG:NH2	24:LQ:525:PHE:O	2.41	0.53
41:NK:280:VAL:HG22	41:NK:461:TYR:HD2	1.73	0.53
71:SZ:207:ILE:HD12	71:SZ:216:ILE:HG21	1.90	0.53
2:L1:1856:C:H2'	2:L1:1857:G:C8	2.44	0.53
4:L3:46:ARG:HH22	4:L3:52:LEU:HG	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:LJ:302:GLU:OE1	18:LJ:303:THR:OG1	2.24	0.53
20:LM:334:LEU:HD21	20:LM:346:LEU:HD23	1.91	0.53
22:LO:732:THR:O	27:LT:635:ARG:NH2	2.38	0.53
40:NI:42:VAL:HB	40:NI:61:LEU:HD11	1.90	0.53
41:NK:468:SER:OG	41:NK:471:TYR:O	2.25	0.53
61:SP:1187:GLN:HB2	61:SP:1202:LEU:HD13	1.89	0.53
2:L1:1457:U:H2'	2:L1:1458:G:H8	1.72	0.53
8:L7:44:ASN:OD1	8:L7:68:GLN:NE2	2.42	0.53
18:LJ:391:GLU:OE2	18:LJ:433:ARG:NH1	2.42	0.53
18:LJ:479:GLU:HB3	19:LL:524:VAL:HG11	1.90	0.53
20:LM:83:THR:HA	29:LW:181:ASP:HA	1.89	0.53
25:LR:540:SER:OG	25:LR:542:ASP:OD1	2.24	0.53
29:LW:273:ARG:NH2	30:LZ:30:GLU:OE2	2.41	0.53
32:NA:458:LEU:O	32:NA:462:HIS:ND1	2.41	0.53
32:NA:549:LEU:HB3	32:NA:554:ILE:HD11	1.91	0.53
56:SH:187:LYS:HD3	57:SI:759:VAL:HA	1.90	0.53
57:SI:956:LEU:HG	57:SI:1106:ILE:HD13	1.89	0.53
65:ST:635:VAL:HG23	65:ST:637:PRO:HD2	1.90	0.53
3:L2:46:A:H2'	3:L2:47:G:H8	1.73	0.53
20:LM:901:LEU:HD22	20:LM:945:LEU:HD21	1.91	0.53
20:LM:2070:LEU:O	20:LM:2073:THR:OG1	2.20	0.53
24:LQ:297:HIS:CE1	24:LQ:365:ILE:HB	2.44	0.53
47:NT:104:LYS:HZ2	47:NT:118:ARG:HE	1.55	0.53
49:NW:195:THR:H	49:NW:233:ILE:HD12	1.73	0.53
56:SH:321:SER:HB2	56:SH:324:THR:HG23	1.91	0.53
58:SK:127:PRO:HB3	58:SK:132:ARG:HG3	1.90	0.53
61:SP:1512:LYS:HA	61:SP:1515:ARG:HH21	1.74	0.53
65:ST:51:ASP:OD1	65:ST:51:ASP:N	2.41	0.53
2:L1:1120:U:H5'	2:L1:1121:G:H5'	1.91	0.53
8:L7:69:LEU:O	8:L7:73:GLN:HG2	2.09	0.53
20:LM:1350:VAL:HB	20:LM:1401:GLN:HE22	1.74	0.53
25:LR:82:VAL:HG22	25:LR:92:GLN:HG3	1.90	0.53
27:LT:764:ASN:ND2	32:NA:540:PRO:O	2.40	0.53
39:NH:687:GLN:HB3	39:NH:835:PRO:HB3	1.89	0.53
58:SJ:173:LYS:HB2	58:SJ:213:THR:HA	1.90	0.53
65:ST:725:ASP:OD1	65:ST:726:CYS:N	2.42	0.53
1:L0:667:C:H5	35:ND:246:ARG:HG2	1.73	0.53
2:L1:546:G:H5'	33:NB:472:VAL:HG11	1.91	0.53
2:L1:1702:G:H1	25:LR:725:SER:HG	1.57	0.53
14:LF:61:ARG:HG2	34:NC:248:ARG:NH1	2.23	0.53
27:LT:135:ARG:HB2	27:LT:136:LEU:HD12	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:ND:178:LYS:HA	35:ND:178:LYS:HE3	1.91	0.53
61:SP:2178:HIS:O	61:SP:2182:ASN:ND2	2.41	0.53
1:L0:1431:C:H2'	1:L0:1432:G:H8	1.74	0.53
19:LL:321:THR:HG1	19:LL:331:LYS:N	2.07	0.53
20:LM:2025:ASP:O	20:LM:2029:ASN:N	2.42	0.53
21:LN:537:ASN:OD1	21:LN:538:THR:N	2.42	0.53
61:SP:1068:LYS:HE3	61:SP:1118:LYS:HD2	1.91	0.53
4:L3:70:ILE:HA	4:L3:77:TYR:CE2	2.43	0.52
16:LH:175:GLU:HG3	16:LH:176:PHE:H	1.73	0.52
33:NB:431:ASN:HB3	33:NB:434:VAL:HG22	1.90	0.52
37:NF:3:ARG:HB2	37:NF:6:ALA:HB3	1.90	0.52
61:SP:826:ARG:O	61:SP:829:THR:OG1	2.27	0.52
1:L0:817:U:OP1	27:LT:424:ASN:ND2	2.38	0.52
3:L2:152:A:O2'	3:L2:153:G:OP1	2.27	0.52
16:LH:53:LEU:HD23	16:LH:85:TRP:CE3	2.44	0.52
18:LJ:169:CYS:O	18:LJ:183:GLY:N	2.42	0.52
20:LM:542:GLU:HB3	20:LM:582:ILE:HD11	1.91	0.52
20:LM:1392:GLU:HA	20:LM:1395:ARG:HE	1.74	0.52
20:LM:1649:LEU:HB3	20:LM:1695:THR:HG21	1.90	0.52
24:LQ:479:GLN:OE1	24:LQ:481:TYR:OH	2.24	0.52
25:LR:546:LYS:HG2	25:LR:558:THR:HG22	1.91	0.52
27:LT:874:GLN:O	27:LT:878:LYS:HG3	2.09	0.52
2:L1:45:A:N1	2:L1:480:G:O2'	2.40	0.52
5:L4:48:LEU:HD23	5:L4:61:VAL:HG13	1.90	0.52
20:LM:1419:LEU:HD13	20:LM:1447:TRP:CD1	2.44	0.52
23:LP:307:GLU:O	23:LP:311:ALA:N	2.38	0.52
24:LQ:220:ILE:HD11	24:LQ:266:LEU:HD22	1.90	0.52
41:NJ:381:GLN:NE2	41:NK:369:GLN:OE1	2.42	0.52
51:SA:140:SER:HB3	51:SA:143:LYS:HE2	1.91	0.52
2:L1:559:G:O2'	2:L1:560:A:O5'	2.27	0.52
14:LF:11:LYS:HE3	34:NC:243:GLU:HB3	1.91	0.52
18:LJ:129:ASP:OD2	18:LJ:130:PHE:N	2.43	0.52
20:LM:1159:GLU:OE2	20:LM:1162:ARG:NH2	2.42	0.52
24:LQ:147:GLY:HA3	24:LQ:176:TRP:HH2	1.74	0.52
25:LR:83:THR:HG1	25:LR:93:TRP:HE1	1.56	0.52
42:NM:26:SER:O	42:NM:51:ARG:NH1	2.43	0.52
50:NY:281:GLU:HG2	50:NY:287:TYR:HB2	1.92	0.52
61:SP:1337:SER:O	61:SP:1341:LYS:NZ	2.41	0.52
2:L1:948:C:H2'	2:L1:949:G:H8	1.75	0.52
19:LL:290:VAL:HG22	19:LL:296:VAL:HG22	1.91	0.52
20:LM:1035:LEU:HD12	20:LM:1084:ILE:HD12	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:LR:424:VAL:HA	25:LR:441:SER:HA	1.91	0.52
61:SP:718:GLU:OE2	61:SP:722:ARG:NE	2.41	0.52
61:SP:1583:ILE:HA	61:SP:1586:ARG:HE	1.74	0.52
66:SU:473:LEU:HD13	66:SU:478:ILE:HD11	1.92	0.52
71:SZ:247:GLN:HG2	71:SZ:285:ALA:HA	1.90	0.52
20:LM:1305:LEU:HD21	20:LM:1345:VAL:HG13	1.92	0.52
20:LM:1936:PHE:HE2	20:LM:1958:LEU:HD21	1.75	0.52
23:LP:369:GLU:HG2	23:LP:373:LYS:HE2	1.91	0.52
25:LR:402:ILE:HD11	25:LR:437:LEU:HD11	1.91	0.52
27:LT:883:MET:HE2	27:LT:893:ALA:HB2	1.90	0.52
41:NK:277:ARG:NH1	41:NK:405:TYR:O	2.43	0.52
45:NQ:37:CYS:HB3	45:NQ:63:LEU:HD21	1.92	0.52
61:SP:1399:SER:HB2	61:SP:1476:HIS:HB3	1.92	0.52
20:LM:909:LYS:HB3	20:LM:948:VAL:HG21	1.91	0.52
20:LM:1732:GLN:OE1	20:LM:1735:SER:OG	2.28	0.52
32:NA:386:LEU:HD23	57:SI:939:ARG:HH12	1.74	0.52
41:NK:731:VAL:HG11	41:NK:749:LEU:HD12	1.92	0.52
61:SP:1374:LEU:HD22	61:SP:1413:VAL:HG21	1.92	0.52
20:LM:383:LEU:HB3	20:LM:431:LEU:HD22	1.92	0.52
53:SC:107:VAL:HB	53:SC:134:TYR:HB3	1.92	0.52
2:L1:1718:G:HO2'	2:L1:1719:A:H8	1.57	0.52
20:LM:133:ALA:HB1	20:LM:195:LEU:HD13	1.92	0.52
21:LN:583:ILE:HG12	21:LN:598:LEU:HD12	1.92	0.52
51:SA:297:SER:HB2	51:SA:302:GLU:HG3	1.91	0.52
61:SP:1780:GLN:HG3	61:SP:1834:LEU:HG	1.90	0.52
17:LI:154:LYS:HD3	17:LI:172:GLU:HB3	1.92	0.52
22:LO:487:SER:HB2	22:LO:494:LEU:HD21	1.91	0.52
53:SD:179:ASP:OD1	53:SD:207:ARG:NH1	2.35	0.52
1:L0:710:G:H2'	1:L0:711:A:H8	1.75	0.51
2:L1:1227:G:OP1	65:ST:40:LYS:NZ	2.35	0.51
3:L2:77:C:H2'	3:L2:78:A:H8	1.75	0.51
20:LM:1403:VAL:HB	20:LM:1415:LEU:HD22	1.91	0.51
25:LR:46:ARG:HG2	25:LR:62:GLU:HB2	1.91	0.51
26:LS:255:SER:O	26:LS:526:THR:OG1	2.28	0.51
52:SB:25:VAL:HB	52:SB:111:VAL:HG12	1.92	0.51
1:L0:757:G:H1	1:L0:803:U:H3	1.56	0.51
20:LM:60:PRO:O	20:LM:62:PHE:N	2.43	0.51
20:LM:1984:ASP:OD1	20:LM:1985:PRO:HD3	2.10	0.51
24:LQ:489:LEU:HD12	24:LQ:537:ARG:HH11	1.75	0.51
61:SP:335:GLY:HA2	61:SP:338:ILE:HD12	1.92	0.51
62:SQ:549:LEU:HD13	62:SQ:570:ILE:HG12	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:530:U:H2'	2:L1:531:A:H8	1.75	0.51
2:L1:1787:G:H2'	2:L1:1788:A:C8	2.45	0.51
8:L7:145:ARG:NE	44:NO:51:GLU:OE1	2.43	0.51
13:LD:99:TYR:HB2	13:LD:101:ARG:HD2	1.91	0.51
19:LL:464:VAL:HA	19:LL:467:THR:HG22	1.91	0.51
19:LL:507:GLN:OE1	19:LL:547:GLN:NE2	2.43	0.51
28:LU:224:TYR:HA	28:LU:231:PRO:HA	1.90	0.51
38:NG:83:GLN:HA	38:NG:86:LYS:NZ	2.26	0.51
39:NH:96:ARG:NH2	39:NH:326:ASP:OD1	2.43	0.51
52:SB:31:GLU:HB3	52:SB:41:ILE:HG13	1.92	0.51
71:SZ:315:CYS:SG	71:SZ:316:SER:N	2.83	0.51
7:L6:136:LYS:NZ	7:L6:175:LYS:O	2.39	0.51
18:LJ:34:GLN:HE21	18:LJ:312:ILE:HD12	1.76	0.51
20:LM:1721:VAL:O	20:LM:1725:LEU:N	2.40	0.51
27:LT:761:ARG:NH2	27:LT:849:GLU:O	2.43	0.51
39:NH:549:THR:HG21	39:NH:991:PRO:HG2	1.92	0.51
39:NH:866:LEU:HB3	39:NH:1073:PHE:HB3	1.91	0.51
39:NH:1106:VAL:HG21	40:NI:20:PRO:HD3	1.92	0.51
41:NK:728:PHE:HB3	41:NK:748:MET:HB3	1.92	0.51
51:SA:97:ASP:HB3	51:SA:100:ILE:HG22	1.92	0.51
51:SA:196:HIS:O	51:SA:220:ARG:NH1	2.44	0.51
2:L1:928:G:H2'	2:L1:929:G:C8	2.45	0.51
2:L1:1275:G:C6	71:SZ:277:LYS:HE3	2.46	0.51
4:L3:62:ASP:OD1	4:L3:63:GLU:N	2.43	0.51
18:LJ:468:GLY:O	18:LJ:472:LYS:HG3	2.09	0.51
21:LN:9:VAL:HB	21:LN:664:VAL:HA	1.92	0.51
39:NH:481:ARG:NH2	39:NH:628:ASP:O	2.41	0.51
57:SI:668:LYS:HA	57:SI:671:LEU:HG	1.93	0.51
58:SJ:73:LEU:HD12	58:SJ:78:ARG:HG3	1.92	0.51
60:SM:262:THR:HG22	60:SM:263:LEU:HD23	1.92	0.51
2:L1:1457:U:H2'	2:L1:1458:G:C8	2.46	0.51
8:L7:9:VAL:HG12	8:L7:11:PRO:HD3	1.91	0.51
21:LN:100:PHE:HZ	53:SC:288:GLN:HG3	1.75	0.51
25:LR:124:LEU:HB2	25:LR:138:ILE:HD11	1.93	0.51
25:LR:285:GLN:NE2	25:LR:319:TYR:OH	2.43	0.51
55:SG:298:VAL:HG12	55:SG:309:VAL:HG22	1.93	0.51
61:SP:1614:MET:HB3	61:SP:1618:MET:HG2	1.92	0.51
1:L0:830:G:H3'	1:L0:831:A:H5''	1.93	0.51
2:L1:1310:U:H4'	47:NT:143:LYS:HD3	1.91	0.51
2:L1:1546:G:O2'	2:L1:1670:C:O2'	2.23	0.51
13:LD:113:LEU:HD23	13:LD:142:VAL:HG21	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:LK:505:LEU:O	19:LK:508:GLU:HG3	2.10	0.51
20:LM:1686:PRO:HB2	20:LM:1725:LEU:HD21	1.93	0.51
52:SB:211:VAL:HG13	52:SB:216:ASN:HB2	1.92	0.51
56:SH:230:MET:O	56:SH:235:SER:OG	2.27	0.51
61:SP:459:ALA:HB3	61:SP:462:MET:HG3	1.93	0.51
1:L0:666:U:H4'	1:L0:667:C:OP2	2.08	0.51
1:L0:1423:U:H2'	1:L0:1424:U:C6	2.46	0.51
2:L1:573:U:N3	2:L1:576:A:OP2	2.37	0.51
16:LH:53:LEU:HD23	16:LH:85:TRP:HE3	1.76	0.51
20:LM:1586:ASP:O	20:LM:1590:LYS:N	2.44	0.51
41:NK:135:ALA:HA	41:NK:481:LEU:HD21	1.92	0.51
53:SC:166:LEU:HB2	53:SC:235:ALA:HA	1.93	0.51
61:SP:1333:LEU:HD21	61:SP:1372:ASP:HB3	1.93	0.51
61:SP:1779:ILE:O	61:SP:1783:ILE:HG12	2.10	0.51
65:ST:443:UNK:O	65:ST:447:UNK:N	2.44	0.51
67:SW:150:LEU:HD12	67:SW:153:ILE:HD12	1.92	0.51
2:L1:1007:C:H2'	2:L1:1008:A:C8	2.45	0.51
2:L1:1597:C:H5''	4:L3:25:LYS:HD2	1.93	0.51
8:L7:144:ILE:HB	44:NO:52:ILE:HB	1.92	0.51
17:LI:644:ASN:OD1	17:LI:645:GLN:N	2.44	0.51
18:LJ:292:ILE:HA	18:LJ:308:MET:HE2	1.93	0.51
26:LS:433:THR:HG22	26:LS:440:VAL:HG22	1.91	0.51
28:LU:269:ARG:NH1	64:SS:145:ASP:OD1	2.38	0.51
28:LU:377:LEU:HD23	64:SS:703:ILE:HD11	1.93	0.51
29:LW:607:ARG:HH22	39:NH:748:PRO:HG3	1.75	0.51
39:NH:376:ARG:NH2	39:NH:449:ASP:OD1	2.44	0.51
48:NU:41:ILE:HG21	48:NU:47:ARG:HB2	1.93	0.51
61:SP:1573:ASP:OD1	61:SP:1576:GLU:N	2.40	0.51
2:L1:1118:C:O2'	42:NM:166:LYS:NZ	2.35	0.51
17:LI:692:GLU:HG3	19:LK:559:VAL:HG21	1.92	0.51
20:LM:955:ILE:HD13	20:LM:1003:LEU:HD21	1.92	0.51
20:LM:1256:LEU:HD22	20:LM:1303:HIS:HB3	1.93	0.51
22:LO:178:ASN:HD21	22:LO:224:LEU:HA	1.74	0.51
24:LQ:547:GLN:NE2	24:LQ:548:LEU:O	2.43	0.51
27:LT:503:THR:HG23	27:LT:506:GLY:H	1.76	0.51
56:SH:135:THR:HG21	56:SH:256:SER:HB3	1.93	0.51
56:SH:146:ASP:O	56:SH:174:ARG:NH2	2.44	0.51
71:SZ:399:GLU:HA	71:SZ:402:LEU:HD13	1.93	0.51
22:LO:100:HIS:ND1	22:LO:148:THR:O	2.44	0.50
25:LR:359:LEU:HD21	25:LR:379:VAL:HG11	1.93	0.50
25:LR:667:LEU:HD11	25:LR:698:LYS:HG3	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:LS:75:ARG:NH2	26:LS:76:ASN:OD1	2.44	0.50
39:NH:694:ARG:NH2	39:NH:873:ASP:OD2	2.43	0.50
41:NJ:808:LEU:HD11	41:NJ:848:ILE:HG21	1.93	0.50
41:NK:502:PRO:HA	41:NK:643:ARG:HD3	1.93	0.50
66:SU:370:LYS:NZ	66:SU:434:SER:O	2.34	0.50
2:L1:674:C:H2'	2:L1:675:U:C6	2.46	0.50
2:L1:1842:C:H2'	2:L1:1843:G:C8	2.45	0.50
17:LI:654:LEU:HG	19:LK:575:LEU:HD11	1.93	0.50
41:NJ:60:LYS:HG3	41:NJ:61:LYS:HG3	1.91	0.50
58:SJ:127:PRO:HB3	58:SJ:132:ARG:HE	1.76	0.50
61:SP:1576:GLU:OE1	61:SP:1585:ARG:NH2	2.45	0.50
61:SP:1583:ILE:HG22	61:SP:1632:ILE:HD11	1.92	0.50
67:SW:233:PRO:HG2	67:SW:236:LYS:HE3	1.92	0.50
19:LL:37:HIS:HD1	19:LL:53:VAL:HG22	1.75	0.50
24:LQ:276:ARG:NE	24:LQ:296:CYS:SG	2.80	0.50
27:LT:640:ALA:HB1	27:LT:666:PRO:HG2	1.93	0.50
27:LT:748:ASN:ND2	27:LT:750:GLN:OE1	2.44	0.50
52:SB:60:PHE:O	52:SB:64:MET:HG2	2.11	0.50
2:L1:103:A:O4'	2:L1:356:C:N4	2.43	0.50
2:L1:1216:C:H42	60:SM:179:MET:HB2	1.76	0.50
2:L1:1599:U:OP2	18:LJ:78:ARG:NH2	2.45	0.50
24:LQ:303:LEU:HD13	24:LQ:382:PHE:HE2	1.77	0.50
26:LS:161:ARG:NH2	52:SB:434:SER:O	2.41	0.50
41:NJ:694:LEU:HG	41:NJ:695:LEU:HD12	1.92	0.50
41:NK:363:GLU:HG2	41:NK:364:HIS:ND1	2.27	0.50
44:NO:83:LEU:HD11	44:NO:117:ARG:HA	1.94	0.50
46:NR:743:UNK:O	46:NR:747:UNK:N	2.44	0.50
53:SD:125:ILE:HD13	62:SQ:691:GLY:HA3	1.92	0.50
56:SH:122:ASN:OD1	56:SH:157:ARG:NH1	2.44	0.50
67:SW:145:GLN:NE2	67:SW:147:GLU:OE1	2.40	0.50
11:LA:81:ASP:OD1	11:LA:84:LYS:NZ	2.36	0.50
19:LK:475:PHE:O	19:LK:479:ASN:ND2	2.44	0.50
26:LS:170:GLU:OE1	26:LS:181:ARG:NH1	2.41	0.50
39:NH:182:LEU:HD11	39:NH:253:LEU:HD12	1.93	0.50
41:NJ:635:TYR:HB3	41:NJ:640:TYR:HE2	1.76	0.50
44:NO:18:GLU:HG2	44:NO:69:LEU:HB3	1.91	0.50
2:L1:374:G:OP1	13:LD:59:LYS:NZ	2.45	0.50
5:L4:197:ASN:ND2	5:L4:199:GLU:OE2	2.43	0.50
7:L6:223:LYS:O	7:L6:227:GLN:HG2	2.11	0.50
16:LH:129:LEU:HB3	16:LH:151:LEU:HB2	1.94	0.50
19:LK:477:MET:O	19:LK:481:VAL:HG23	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LM:1966:LEU:O	20:LM:1970:ASN:ND2	2.45	0.50
27:LT:758:PRO:HD2	27:LT:761:ARG:HD2	1.93	0.50
61:SP:1104:VAL:HG13	61:SP:1108:ILE:HD11	1.93	0.50
64:SS:121:ASN:N	64:SS:124:GLU:OE2	2.44	0.50
65:ST:577:LEU:HD21	65:ST:615:PHE:HB2	1.94	0.50
2:L1:166:A:H1'	7:L6:13:GLN:HE21	1.77	0.50
17:LI:643:LEU:HA	17:LI:646:ILE:HD12	1.92	0.50
19:LL:466:LEU:HD11	19:LL:505:LEU:HD21	1.93	0.50
20:LM:1289:VAL:HG13	20:LM:1326:ILE:HG12	1.93	0.50
21:LN:542:VAL:HG12	21:LN:552:GLU:HG3	1.93	0.50
24:LQ:89:ILE:HB	24:LQ:103:PHE:HB2	1.94	0.50
24:LQ:843:ILE:O	24:LQ:887:LYS:NZ	2.41	0.50
25:LR:202:ALA:HB3	25:LR:211:LEU:HB3	1.93	0.50
41:NJ:357:ARG:HD2	41:NJ:369:GLN:HG2	1.93	0.50
65:ST:688:LEU:HD11	65:ST:722:HIS:HE1	1.77	0.50
18:LJ:383:PRO:HG2	35:ND:251:ARG:HH12	1.77	0.50
20:LM:1555:LEU:HA	20:LM:1558:ILE:HG12	1.93	0.50
22:LO:216:GLN:NE2	22:LO:217:CYS:O	2.45	0.50
24:LQ:158:LEU:HD11	24:LQ:175:TRP:HZ3	1.75	0.50
25:LR:547:LEU:HD12	25:LR:557:LYS:HB2	1.94	0.50
38:NG:117:ARG:HH11	50:NY:45:PHE:HB2	1.77	0.50
41:NJ:403:GLY:O	41:NJ:458:ARG:NH1	2.44	0.50
41:NK:357:ARG:HD2	41:NK:369:GLN:HB2	1.92	0.50
46:NR:622:UNK:O	46:NR:626:UNK:N	2.45	0.50
49:NW:287:ILE:HD11	49:NW:300:LYS:HG3	1.94	0.50
51:SA:340:LYS:HD2	51:SA:353:HIS:HB2	1.94	0.50
57:SI:1243:GLU:O	57:SI:1247:LYS:N	2.39	0.50
58:SK:173:LYS:HG2	58:SK:197:VAL:HB	1.94	0.50
60:SM:7:ARG:NH1	60:SM:11:GLU:OE2	2.45	0.50
61:SP:826:ARG:NH1	61:SP:920:GLN:OE1	2.43	0.50
67:SW:126:ASP:OD2	67:SW:127:VAL:N	2.45	0.50
2:L1:444:G:N2	2:L1:447:A:OP2	2.44	0.50
4:L3:47:LYS:HE3	4:L3:77:TYR:HB3	1.92	0.50
9:L8:67:TRP:NE1	9:L8:191:GLU:OE2	2.40	0.50
20:LM:1823:LEU:O	20:LM:1827:LYS:HG2	2.12	0.50
21:LN:87:ASP:HB2	21:LN:94:LYS:HG3	1.94	0.50
27:LT:661:LEU:HD23	27:LT:714:VAL:HG12	1.94	0.50
44:NO:68:ARG:HA	59:SL:118:ARG:HH22	1.77	0.50
57:SI:120:ILE:HG22	57:SI:335:VAL:HG22	1.94	0.50
3:L2:137:G:N2	3:L2:139:U:O2'	2.43	0.49
11:LA:49:LEU:HB3	11:LA:111:VAL:HB	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:LI:618:LYS:HZ3	17:LI:621:TYR:HD2	1.58	0.49
24:LQ:874:VAL:HG22	25:LR:788:MET:HG2	1.92	0.49
25:LR:64:GLU:O	25:LR:66:GLN:NE2	2.45	0.49
44:NO:104:LEU:HD23	44:NO:125:ILE:HA	1.94	0.49
61:SP:1476:HIS:HA	61:SP:1479:PHE:HD2	1.77	0.49
61:SP:2085:GLU:HA	61:SP:2088:LEU:HD12	1.94	0.49
18:LJ:471:GLU:OE2	19:LL:569:HIS:NE2	2.45	0.49
20:LM:489:HIS:CE1	20:LM:491:LEU:HB2	2.47	0.49
20:LM:2070:LEU:HD21	20:LM:2106:SER:HA	1.94	0.49
25:LR:385:PHE:CE1	25:LR:429:CYS:HB3	2.47	0.49
41:NK:529:LEU:HD11	41:NK:576:VAL:HG21	1.92	0.49
41:NK:577:ILE:HG22	41:NK:629:ILE:HG13	1.93	0.49
52:SB:113:ASN:ND2	53:SC:251:HIS:CE1	2.80	0.49
55:SG:404:GLN:HB2	55:SG:415:LEU:HD21	1.95	0.49
16:LH:83:LYS:HG2	16:LH:95:THR:HG23	1.95	0.49
18:LJ:131:THR:OG1	18:LJ:133:ASP:OD1	2.23	0.49
20:LM:541:PHE:HZ	20:LM:553:THR:HG22	1.76	0.49
20:LM:1065:GLY:HA2	20:LM:1109:LYS:HE2	1.92	0.49
24:LQ:19:ILE:HB	24:LQ:387:ASN:HB2	1.94	0.49
27:LT:822:ALA:HB3	67:SW:215:PHE:HZ	1.77	0.49
28:LU:300:ALA:HB2	28:LU:331:VAL:HG23	1.93	0.49
32:NA:496:ILE:HA	32:NA:499:MET:HG2	1.93	0.49
38:NG:37:PHE:HE2	38:NG:105:THR:HG21	1.76	0.49
61:SP:1188:ILE:HG12	61:SP:1231:ILE:HG22	1.94	0.49
61:SP:1393:PRO:HA	61:SP:1396:LYS:HG2	1.94	0.49
61:SP:2023:LEU:HD22	61:SP:2114:PHE:HE2	1.77	0.49
71:SZ:362:PHE:HA	71:SZ:365:LEU:HG	1.94	0.49
8:L7:160:LYS:O	8:L7:162:GLN:N	2.45	0.49
16:LH:318:HIS:NE2	16:LH:322:GLU:HB3	2.28	0.49
20:LM:361:HIS:CG	20:LM:372:GLY:HA3	2.47	0.49
20:LM:1859:GLU:O	20:LM:1862:SER:HB3	2.12	0.49
20:LM:2028:GLU:HG2	20:LM:2072:LYS:HD2	1.93	0.49
24:LQ:583:PHE:HZ	24:LQ:586:SER:HB2	1.77	0.49
28:LU:434:SER:HB3	28:LU:437:LYS:HG2	1.93	0.49
41:NK:485:LEU:HB2	41:NK:487:LEU:HG	1.95	0.49
9:L8:57:ALA:HB2	9:L8:183:GLY:HA2	1.95	0.49
21:LN:127:LEU:HD23	21:LN:139:ARG:HD3	1.93	0.49
22:LO:16:ARG:HB3	22:LO:34:GLY:H	1.77	0.49
23:LP:21:ARG:HH21	29:LW:98:PHE:HD2	1.61	0.49
27:LT:418:LEU:HD22	27:LT:478:SER:HA	1.94	0.49
41:NJ:235:LEU:HD13	41:NJ:258:LEU:HA	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:SJ:55:VAL:HG11	58:SJ:64:LEU:HD13	1.94	0.49
62:SQ:568:LEU:HD23	62:SQ:573:LEU:HD21	1.94	0.49
1:L0:740:G:H3'	1:L0:741:G:H5''	1.95	0.49
2:L1:141:A:H4'	2:L1:142:C:H5'	1.95	0.49
2:L1:454:U:H2'	2:L1:455:A:C8	2.45	0.49
2:L1:941:C:H2'	2:L1:942:G:H8	1.77	0.49
2:L1:1673:U:O2'	6:L5:84:GLY:O	2.24	0.49
4:L3:23:ARG:NH1	18:LJ:80:LYS:O	2.46	0.49
20:LM:1581:LEU:HB3	20:LM:1585:TYR:CE2	2.47	0.49
20:LM:2085:LEU:HD21	20:LM:2125:CYS:HA	1.93	0.49
23:LP:442:ILE:HD12	23:LP:479:LYS:HD2	1.95	0.49
24:LQ:510:GLY:HA2	24:LQ:524:ASP:HA	1.94	0.49
39:NH:1102:LYS:HB3	40:NI:116:PHE:HD2	1.78	0.49
41:NK:61:LYS:HA	41:NK:106:TYR:HE2	1.78	0.49
46:NR:619:UNK:O	46:NR:623:UNK:N	2.45	0.49
48:NU:7:LYS:HA	48:NU:10:LYS:HG2	1.94	0.49
71:SZ:286:TRP:CD1	71:SZ:290:ILE:HD13	2.47	0.49
2:L1:1842:C:H2'	2:L1:1843:G:H8	1.77	0.49
3:L2:46:A:H2'	3:L2:47:G:C8	2.47	0.49
16:LH:17:LEU:N	16:LH:312:ASN:OD1	2.44	0.49
16:LH:629:VAL:HG22	16:LH:660:THR:HG22	1.93	0.49
20:LM:1141:SER:HA	52:SB:84:HIS:HB3	1.93	0.49
22:LO:710:PHE:CD1	22:LO:717:TRP:HB3	2.47	0.49
25:LR:119:PRO:HG3	25:LR:161:PRO:HA	1.93	0.49
25:LR:316:LEU:HB2	25:LR:330:PHE:HB2	1.94	0.49
28:LU:173:THR:HG1	28:LU:181:TRP:HE1	1.59	0.49
39:NH:147:ALA:O	39:NH:278:TRP:NE1	2.37	0.49
58:SK:123:GLN:HB3	65:ST:766:PHE:HD2	1.78	0.49
71:SZ:317:ILE:O	71:SZ:350:TYR:OH	2.24	0.49
1:L0:817:U:OP2	27:LT:430:ARG:NH2	2.46	0.49
19:LL:192:LEU:HB3	19:LL:202:ARG:HB2	1.94	0.49
20:LM:1136:VAL:HG12	20:LM:1209:LEU:HD12	1.95	0.49
28:LU:412:GLU:HG3	28:LU:416:ARG:HH12	1.78	0.49
39:NH:234:LYS:NZ	39:NH:304:ASP:OD1	2.35	0.49
39:NH:671:ARG:HH12	42:NM:37:ALA:HB1	1.78	0.49
39:NH:926:THR:HG22	39:NH:929:GLU:HG3	1.93	0.49
41:NJ:577:ILE:HD12	41:NJ:648:LEU:HD11	1.95	0.49
42:NM:47:THR:OG1	42:NM:65:ARG:NH1	2.46	0.49
46:NR:982:UNK:O	46:NR:986:UNK:N	2.46	0.49
52:SB:64:MET:HE2	53:SC:222:LYS:HA	1.95	0.49
61:SP:1349:SER:HB3	61:SP:1384:CYS:HA	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:SP:1448:VAL:O	61:SP:1452:THR:OG1	2.28	0.49
61:SP:1475:MET:HB3	61:SP:1479:PHE:CE2	2.47	0.49
66:SU:149:VAL:HG11	66:SU:187:ALA:HB1	1.94	0.49
20:LM:1601:ILE:HA	20:LM:1604:ILE:HG22	1.95	0.49
22:LO:344:TRP:NE1	22:LO:359:GLU:OE1	2.39	0.49
25:LR:378:ILE:HD11	42:NM:19:LYS:HG2	1.95	0.49
42:NM:90:ASP:OD2	42:NM:92:GLN:NE2	2.45	0.49
44:NO:3:ARG:HD3	44:NO:6:VAL:HG12	1.94	0.49
46:NR:314:UNK:O	46:NR:318:UNK:N	2.46	0.49
49:NW:51:MET:HG2	49:NW:71:GLY:HA3	1.93	0.49
51:SA:284:TYR:OH	52:SB:250:ASP:OD1	2.27	0.49
56:SH:175:LYS:NZ	57:SI:989:GLN:OE1	2.46	0.49
65:ST:834:LYS:O	65:ST:838:ASN:ND2	2.41	0.49
66:SU:369:ALA:HB2	66:SU:394:LEU:HD23	1.94	0.49
67:SW:91:ASN:HA	67:SW:94:LYS:HE2	1.94	0.49
2:L1:641:A:OP1	10:L9:40:LYS:NZ	2.42	0.49
4:L3:47:LYS:HG3	4:L3:70:ILE:HD13	1.95	0.49
14:LF:72:PHE:HE2	34:NC:248:ARG:HE	1.60	0.49
16:LH:727:ILE:HD13	16:LH:754:SER:HB3	1.93	0.49
19:LL:458:GLN:HE22	66:SU:262:HIS:HB3	1.78	0.49
20:LM:1073:SER:HA	20:LM:1076:ASN:HD22	1.77	0.49
23:LP:46:ARG:HD2	28:LU:20:ASP:HA	1.94	0.49
24:LQ:676:GLN:HB3	24:LQ:695:HIS:HB3	1.94	0.49
25:LR:545:ILE:HD11	25:LR:566:VAL:HG21	1.94	0.49
38:NG:93:LEU:HG	38:NG:124:MET:HE2	1.94	0.49
41:NJ:386:VAL:HG22	41:NJ:408:PHE:HB2	1.95	0.49
49:NW:51:MET:HG3	49:NW:52:PRO:HD2	1.95	0.49
53:SD:97:PHE:HB2	53:SD:107:VAL:HG23	1.95	0.49
56:SH:57:LYS:NZ	56:SH:86:GLU:O	2.45	0.49
2:L1:1234:C:O2	65:ST:35:LYS:NZ	2.45	0.48
2:L1:1787:G:H2'	2:L1:1788:A:H8	1.77	0.48
3:L2:61:G:OP2	22:LO:660:ARG:NH1	2.40	0.48
7:L6:67:VAL:HG13	7:L6:99:GLY:HA2	1.95	0.48
14:LF:83:LYS:HE2	14:LF:96:LEU:HD12	1.95	0.48
17:LI:584:ARG:O	17:LI:588:LEU:HG	2.12	0.48
21:LN:605:CYS:HB2	21:LN:643:ILE:HG22	1.94	0.48
23:LP:119:LYS:HG2	23:LP:120:TRP:CD1	2.48	0.48
24:LQ:877:ILE:HA	24:LQ:880:LEU:HB2	1.94	0.48
25:LR:250:VAL:H	25:LR:255:VAL:HB	1.77	0.48
29:LW:326:ASN:HA	29:LW:367:VAL:HG21	1.95	0.48
39:NH:127:LEU:HB2	39:NH:148:VAL:HG21	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:NM:147:ASN:OD1	42:NM:148:ASN:N	2.46	0.48
58:SJ:42:ARG:NH1	58:SJ:104:GLY:O	2.46	0.48
61:SP:1674:VAL:HG21	61:SP:1819:VAL:HB	1.93	0.48
1:L0:604:C:H42	18:LJ:433:ARG:HE	1.61	0.48
2:L1:1536:G:H2'	2:L1:1537:A:C8	2.46	0.48
23:LP:24:LEU:HD22	23:LP:71:ARG:HB3	1.94	0.48
37:NF:2:GLY:HA2	37:NF:9:LYS:HG2	1.94	0.48
39:NH:127:LEU:HD23	39:NH:152:PHE:HB2	1.94	0.48
41:NK:29:VAL:HG12	41:NK:151:LEU:HD12	1.95	0.48
58:SJ:73:LEU:HD21	58:SJ:80:PRO:HA	1.95	0.48
59:SL:20:ARG:HH12	59:SL:31:LYS:HB3	1.78	0.48
65:ST:432:UNK:O	65:ST:436:UNK:N	2.46	0.48
66:SU:179:ASP:O	66:SU:183:HIS:ND1	2.41	0.48
4:L3:46:ARG:HH12	4:L3:52:LEU:HD11	1.76	0.48
11:LA:26:LEU:HB2	11:LA:31:LEU:HD13	1.95	0.48
11:LA:52:LEU:HD11	11:LA:78:LYS:HG3	1.95	0.48
20:LM:1342:SER:O	20:LM:1346:ILE:HG12	2.13	0.48
20:LM:1966:LEU:HD21	20:LM:1995:ILE:HG21	1.96	0.48
21:LN:579:ARG:NE	21:LN:600:ASP:OD2	2.45	0.48
23:LP:221:LEU:HD13	64:SS:191:LEU:HD23	1.95	0.48
25:LR:527:VAL:HG22	25:LR:538:THR:HG22	1.94	0.48
28:LU:75:HIS:HD2	28:LU:78:LYS:H	1.61	0.48
36:NE:189:ARG:O	36:NE:193:GLN:HG2	2.12	0.48
61:SP:805:LEU:O	61:SP:809:THR:OG1	2.28	0.48
61:SP:1902:THR:HG21	61:SP:1935:GLU:HB2	1.95	0.48
65:ST:545:VAL:HA	65:ST:548:TYR:HD1	1.78	0.48
2:L1:1139:C:H2'	2:L1:1140:G:H8	1.78	0.48
2:L1:1859:A:H2'	2:L1:1860:A:C8	2.48	0.48
16:LH:345:ARG:NH2	16:LH:400:ASN:OD1	2.46	0.48
20:LM:1719:ALA:HB2	20:LM:1763:ALA:HA	1.94	0.48
25:LR:394:CYS:HB2	25:LR:424:VAL:HG23	1.96	0.48
27:LT:674:THR:OG1	27:LT:676:ASP:OD1	2.31	0.48
50:NY:88:VAL:HG23	50:NY:103:THR:HA	1.94	0.48
58:SK:238:GLU:HB3	58:SK:243:VAL:HB	1.96	0.48
60:SM:232:HIS:HB3	60:SM:244:LEU:HD22	1.95	0.48
5:L4:22:LYS:HG3	5:L4:23:LEU:HG	1.96	0.48
20:LM:109:PRO:HA	20:LM:112:LYS:HD3	1.95	0.48
20:LM:174:ALA:HB2	52:SB:403:ILE:HG22	1.96	0.48
20:LM:764:PRO:HG2	20:LM:767:LEU:HB2	1.94	0.48
20:LM:1409:GLU:HA	20:LM:1458:HIS:CD2	2.49	0.48
20:LM:1815:THR:HG22	20:LM:1854:VAL:HG21	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:LT:543:ARG:NH1	27:LT:583:PRO:O	2.46	0.48
40:NI:20:PRO:HG2	40:NI:23:TYR:HB2	1.94	0.48
58:SJ:190:VAL:HG11	58:SJ:240:VAL:HG21	1.96	0.48
58:SK:93:LEU:HD11	58:SK:128:ARG:HG3	1.96	0.48
61:SP:1524:GLU:HG3	61:SP:1528:LYS:HZ1	1.79	0.48
1:L0:459:G:H22	35:ND:245:LYS:NZ	2.12	0.48
2:L1:104:A:OP1	9:L8:12:ARG:NE	2.46	0.48
5:L4:129:ILE:HD11	5:L4:139:LEU:HD12	1.94	0.48
16:LH:97:ILE:HD11	16:LH:141:GLU:HG3	1.94	0.48
18:LJ:125:VAL:HA	18:LJ:141:ALA:HA	1.94	0.48
23:LP:223:TRP:HB2	23:LP:255:LEU:HD11	1.94	0.48
25:LR:297:HIS:HB2	25:LR:310:ALA:HB3	1.95	0.48
27:LT:789:PHE:O	67:SW:199:ARG:NH2	2.36	0.48
44:NO:75:ILE:HG22	44:NO:77:PRO:HD2	1.96	0.48
60:SM:29:LYS:HA	60:SM:53:LEU:HD23	1.96	0.48
61:SP:967:HIS:HA	61:SP:1004:HIS:HD2	1.78	0.48
61:SP:1479:PHE:CD1	61:SP:1525:LYS:HD3	2.49	0.48
64:SS:207:VAL:HG21	64:SS:223:ARG:HH22	1.79	0.48
66:SU:179:ASP:OD1	66:SU:180:THR:N	2.47	0.48
5:L4:128:LYS:HB3	5:L4:140:VAL:HB	1.95	0.48
10:L9:54:ARG:NH2	59:SL:96:ALA:HB2	2.29	0.48
14:LF:14:THR:HG22	14:LF:16:ARG:HE	1.79	0.48
20:LM:1376:VAL:HG21	20:LM:1411:PHE:HD1	1.79	0.48
20:LM:1387:LEU:O	20:LM:1395:ARG:NH1	2.44	0.48
22:LO:674:GLN:HA	22:LO:699:PHE:CZ	2.48	0.48
24:LQ:217:VAL:HG13	24:LQ:271:ALA:HB3	1.95	0.48
24:LQ:410:THR:OG1	24:LQ:415:ARG:NH1	2.47	0.48
27:LT:769:ASP:OD1	27:LT:770:VAL:N	2.47	0.48
28:LU:235:VAL:HG22	28:LU:443:VAL:HG22	1.95	0.48
32:NA:450:ASP:OD1	32:NA:451:ALA:N	2.45	0.48
47:NT:108:VAL:HG22	47:NT:114:ILE:HG12	1.95	0.48
2:L1:210:U:OP2	61:SP:1137:ARG:NH2	2.47	0.48
2:L1:597:G:H5''	70:SY:1:MET:HG3	1.96	0.48
12:LC:53:GLU:OE1	12:LC:85:ARG:NH2	2.33	0.48
18:LJ:81:ASP:HB3	18:LJ:100:GLU:HG2	1.96	0.48
18:LJ:181:ILE:HD13	18:LJ:214:LEU:HD11	1.96	0.48
20:LM:374:ILE:HD12	20:LM:377:ARG:HE	1.79	0.48
21:LN:418:LEU:HB3	21:LN:427:LEU:HD23	1.96	0.48
28:LU:322:THR:HG22	28:LU:324:ARG:H	1.79	0.48
41:NK:513:ASP:OD1	41:NK:514:THR:N	2.46	0.48
53:SC:168:ALA:N	53:SC:191:GLU:OE2	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:SD:107:VAL:HG12	53:SD:136:ALA:HA	1.96	0.48
56:SH:220:ILE:HG22	56:SH:222:ASP:H	1.79	0.48
61:SP:1192:GLY:HA2	61:SP:1238:ILE:HG12	1.96	0.48
66:SU:221:ARG:O	66:SU:249:ARG:NH2	2.47	0.48
17:LI:684:VAL:HG23	19:LK:524:VAL:HG21	1.95	0.48
20:LM:1558:ILE:HA	20:LM:1561:VAL:HG12	1.95	0.48
24:LQ:109:ALA:HB3	24:LQ:127:LYS:HD2	1.96	0.48
26:LS:482:ASN:OD1	26:LS:484:THR:OG1	2.29	0.48
35:ND:176:ARG:HG2	35:ND:178:LYS:H	1.79	0.48
41:NK:360:VAL:HG23	41:NK:366:GLN:HB2	1.95	0.48
67:SW:176:LEU:HD21	67:SW:207:VAL:HG12	1.94	0.48
1:L0:827:C:C4	27:LT:413:LYS:HA	2.48	0.48
2:L1:382:C:H2'	2:L1:383:G:H8	1.78	0.48
3:L2:32:U:O2'	3:L2:33:G:O5'	2.28	0.48
3:L2:135:U:H3	3:L2:138:C:P	2.37	0.48
3:L2:139:U:OP2	20:LM:1752:SER:OG	2.19	0.48
18:LJ:166:TYR:HB3	18:LJ:168:ARG:HD2	1.96	0.48
20:LM:1693:LEU:HD21	20:LM:1732:GLN:HG2	1.96	0.48
39:NH:366:HIS:H	39:NH:369:MET:HE3	1.79	0.48
55:SG:308:ARG:NH1	55:SG:317:GLN:OE1	2.36	0.48
1:L0:811:G:C8	27:LT:486:LYS:HD2	2.49	0.47
2:L1:106:C:H2'	2:L1:107:A:H8	1.79	0.47
2:L1:1125:C:H2'	2:L1:1126:G:H8	1.79	0.47
7:L6:126:ASP:OD1	7:L6:127:THR:N	2.47	0.47
16:LH:173:VAL:HG21	16:LH:209:VAL:HB	1.96	0.47
16:LH:544:HIS:HB3	16:LH:586:MET:HE2	1.95	0.47
17:LI:435:ASP:O	17:LI:438:THR:OG1	2.24	0.47
21:LN:581:THR:HG21	21:LN:601:ALA:HB3	1.96	0.47
40:NI:88:VAL:HG12	40:NI:121:VAL:HG23	1.96	0.47
41:NJ:691:LEU:HD21	57:SI:392:VAL:HA	1.95	0.47
42:NM:33:VAL:HA	42:NM:96:CYS:HB2	1.95	0.47
58:SJ:219:ILE:HG12	76:SJ:301:SAH:N1	2.29	0.47
2:L1:219:U:H1'	9:L8:184:ARG:HD2	1.95	0.47
2:L1:1280:G:H2'	2:L1:1281:G:H8	1.79	0.47
8:L7:61:ILE:HG23	8:L7:95:ILE:HD13	1.95	0.47
9:L8:155:ASN:O	13:LD:21:LYS:NZ	2.44	0.47
20:LM:2095:LEU:HD12	20:LM:2098:ASN:HB2	1.96	0.47
39:NH:124:GLU:OE2	39:NH:153:ARG:NH1	2.45	0.47
65:ST:77:ARG:HD3	65:ST:77:ARG:HA	1.72	0.47
2:L1:924:G:OP2	37:NF:3:ARG:NH2	2.42	0.47
3:L2:6:U:H2'	3:L2:7:A:C8	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:L9:88:ASP:OD1	10:L9:89:GLU:N	2.48	0.47
17:LI:152:VAL:O	17:LI:152:VAL:HG12	2.15	0.47
20:LM:1565:MET:HG3	20:LM:1581:LEU:HD11	1.95	0.47
24:LQ:366:LYS:HE2	24:LQ:385:GLN:HG3	1.97	0.47
39:NH:477:ARG:NH2	39:NH:632:THR:O	2.47	0.47
46:NR:190:UNK:O	46:NR:194:UNK:N	2.48	0.47
50:NY:132:ALA:O	50:NY:135:ILE:HG12	2.13	0.47
53:SD:100:ARG:NH1	53:SD:104:ASP:OD1	2.46	0.47
66:SU:265:PRO:HD2	66:SU:268:LEU:HD12	1.96	0.47
2:L1:919:A:OP2	37:NF:64:ARG:NH2	2.45	0.47
2:L1:1280:G:H2'	2:L1:1281:G:C8	2.50	0.47
3:L2:93:A:H2'	3:L2:94:G:C8	2.50	0.47
10:L9:48:PHE:CE2	10:L9:52:LYS:HE2	2.49	0.47
10:L9:152:ASP:OD2	10:L9:153:SER:N	2.47	0.47
20:LM:1742:THR:HG23	20:LM:1745:LYS:HE3	1.95	0.47
22:LO:177:ASP:HB2	22:LO:227:LYS:HA	1.96	0.47
27:LT:789:PHE:C	67:SW:199:ARG:HH22	2.17	0.47
41:NK:277:ARG:NE	41:NK:458:ARG:HG2	2.28	0.47
52:SB:120:ARG:HG2	53:SC:229:MET:SD	2.54	0.47
58:SJ:44:ILE:HG13	58:SJ:107:GLN:HB3	1.96	0.47
58:SJ:67:ASP:OD2	58:SJ:68:LYS:N	2.47	0.47
71:SZ:326:MET:HA	71:SZ:329:ILE:HG22	1.97	0.47
71:SZ:364:PHE:HE2	71:SZ:385:LEU:HD22	1.80	0.47
2:L1:433:A:H2'	2:L1:434:G:C8	2.49	0.47
2:L1:511:U:H2'	2:L1:512:A:C8	2.49	0.47
7:L6:74:ARG:HB3	7:L6:94:ARG:HG2	1.96	0.47
17:LI:273:VAL:HB	17:LI:292:ILE:HD11	1.96	0.47
18:LJ:43:LYS:HD3	18:LJ:85:CYS:HA	1.97	0.47
18:LJ:123:LYS:HE2	18:LJ:143:ASP:HB3	1.96	0.47
18:LJ:181:ILE:HD13	18:LJ:214:LEU:HD21	1.96	0.47
20:LM:607:MET:SD	20:LM:625:LEU:HD23	2.55	0.47
20:LM:1813:LEU:HA	20:LM:1817:LEU:HD13	1.96	0.47
21:LN:250:SER:OG	21:LN:262:HIS:NE2	2.30	0.47
26:LS:493:GLU:O	26:LS:523:HIS:ND1	2.48	0.47
39:NH:332:LYS:HD3	39:NH:349:GLY:HA3	1.96	0.47
41:NJ:130:THR:HG23	41:NJ:133:LEU:H	1.80	0.47
41:NK:257:THR:HG21	41:NK:467:GLU:HB2	1.97	0.47
53:SC:87:MET:N	53:SC:87:MET:SD	2.87	0.47
57:SI:282:LEU:HD13	57:SI:909:LEU:HD11	1.95	0.47
57:SI:926:LEU:O	57:SI:978:CYS:N	2.46	0.47
58:SK:125:ARG:NH2	65:ST:765:LEU:O	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:SP:200:VAL:HG21	61:SP:206:LEU:HD22	1.95	0.47
61:SP:858:ASP:OD1	61:SP:859:LEU:N	2.47	0.47
61:SP:1552:PHE:HB3	61:SP:1555:GLN:HG2	1.94	0.47
1:L0:1414:A:H5'	1:L0:1415:G:H5''	1.95	0.47
3:L2:64:G:H2'	3:L2:65:A:C8	2.49	0.47
7:L6:67:VAL:HG21	7:L6:73:VAL:HG21	1.97	0.47
8:L7:52:GLU:OE2	8:L7:56:GLY:N	2.42	0.47
14:LF:64:PHE:HB3	34:NC:224:ARG:HH22	1.80	0.47
16:LH:130:VAL:HG12	16:LH:149:PHE:HA	1.96	0.47
20:LM:702:VAL:HG12	20:LM:771:TYR:HE2	1.80	0.47
24:LQ:482:ASP:OD1	24:LQ:489:LEU:HD21	2.14	0.47
27:LT:663:ASP:OD1	27:LT:664:SER:N	2.48	0.47
28:LU:220:ASN:HB3	28:LU:236:ILE:HG12	1.95	0.47
29:LW:605:LEU:HB3	39:NH:680:PRO:HG2	1.96	0.47
39:NH:341:ASP:OD1	39:NH:341:ASP:N	2.48	0.47
41:NJ:210:SER:HB2	41:NJ:213:VAL:HG13	1.96	0.47
41:NJ:358:VAL:HB	41:NJ:368:ILE:HB	1.96	0.47
41:NK:602:GLY:HA2	41:NK:607:TRP:HE1	1.79	0.47
61:SP:1256:VAL:O	61:SP:1260:LEU:HG	2.15	0.47
2:L1:375:U:H2'	2:L1:376:A:C8	2.50	0.47
2:L1:650:A:H2'	2:L1:651:U:O4'	2.15	0.47
2:L1:996:A:H2'	2:L1:997:A:C8	2.49	0.47
2:L1:1592:C:H5''	6:L5:91:ARG:HH12	1.80	0.47
7:L6:214:ALA:O	7:L6:218:LYS:HG3	2.14	0.47
8:L7:131:GLU:HG3	8:L7:139:ILE:HD12	1.97	0.47
14:LF:7:ILE:HD12	14:LF:47:MET:HE1	1.97	0.47
17:LI:658:PHE:CZ	18:LJ:489:MET:HB3	2.50	0.47
20:LM:758:MET:HA	20:LM:794:LYS:HD2	1.96	0.47
20:LM:1101:THR:HG22	20:LM:1103:GLN:H	1.80	0.47
20:LM:1525:LEU:HD22	20:LM:1594:LEU:HB3	1.96	0.47
24:LQ:392:TYR:OH	24:LQ:405:ARG:NH2	2.43	0.47
25:LR:586:LEU:HD12	25:LR:600:THR:HG22	1.95	0.47
41:NJ:499:CYS:SG	41:NJ:561:PRO:HB3	2.54	0.47
41:NK:44:LEU:HD22	41:NK:146:LEU:HG	1.97	0.47
41:NK:696:LEU:HD12	41:NK:700:GLU:HB2	1.96	0.47
49:NW:253:VAL:HG22	49:NW:275:ILE:HD13	1.97	0.47
52:SB:45:LYS:HE2	52:SB:79:ILE:HG23	1.96	0.47
52:SB:97:VAL:HG13	52:SB:101:LYS:NZ	2.29	0.47
57:SI:946:VAL:HG22	57:SI:993:PHE:HB2	1.97	0.47
58:SJ:101:ASN:HB2	58:SJ:106:LEU:HD12	1.97	0.47
58:SJ:127:PRO:HB3	58:SJ:132:ARG:NE	2.30	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:SK:99:PRO:HA	58:SK:102:ARG:HB2	1.96	0.47
61:SP:134:THR:HA	61:SP:137:LEU:HD13	1.96	0.47
61:SP:1583:ILE:HA	61:SP:1586:ARG:HH21	1.80	0.47
65:ST:259:UNK:HA	71:SZ:355:ARG:HH21	1.79	0.47
65:ST:621:TYR:O	65:ST:624:THR:OG1	2.30	0.47
11:LA:85:LEU:HA	11:LA:88:TRP:HD1	1.79	0.47
20:LM:186:LEU:HB3	20:LM:241:LYS:HE3	1.97	0.47
20:LM:374:ILE:O	20:LM:378:HIS:ND1	2.36	0.47
20:LM:1726:GLU:O	20:LM:1730:ILE:HG13	2.15	0.47
22:LO:871:GLN:O	22:LO:875:ALA:N	2.48	0.47
23:LP:248:LEU:HD21	62:SQ:562:SER:HB3	1.97	0.47
25:LR:101:THR:HG23	25:LR:102:ARG:HG2	1.97	0.47
28:LU:291:SER:HA	28:LU:333:TRP:CD1	2.50	0.47
41:NK:715:LEU:HD22	41:NK:733:LEU:HD11	1.96	0.47
61:SP:1001:LYS:HD2	61:SP:1004:HIS:CE1	2.50	0.47
61:SP:1522:LEU:HD21	61:SP:1548:LEU:HD11	1.96	0.47
61:SP:1975:ASP:OD1	61:SP:1975:ASP:N	2.46	0.47
2:L1:1588:A:H2'	2:L1:1589:A:C8	2.49	0.47
9:L8:8:TRP:CZ3	9:L8:20:PRO:HB3	2.50	0.47
17:LI:401:LEU:HD11	17:LI:420:PHE:CG	2.49	0.47
18:LJ:429:LEU:HD11	18:LJ:439:ILE:HG13	1.97	0.47
20:LM:1649:LEU:HD21	20:LM:1692:VAL:HG22	1.96	0.47
21:LN:399:SER:HB3	21:LN:404:TRP:HB2	1.97	0.47
25:LR:117:PHE:CE1	25:LR:124:LEU:HD12	2.50	0.47
25:LR:313:ASP:O	25:LR:315:ASN:N	2.46	0.47
25:LR:485:VAL:HG12	25:LR:496:THR:HG22	1.97	0.47
25:LR:782:ASP:OD2	27:LT:938:GLN:NE2	2.47	0.47
27:LT:768:LEU:C	27:LT:772:LYS:HZ2	2.18	0.47
36:NE:184:GLY:O	36:NE:188:GLU:N	2.41	0.47
50:NY:114:ILE:HG23	50:NY:117:ARG:HH12	1.80	0.47
57:SI:959:ILE:HB	57:SI:969:LEU:HD11	1.97	0.47
61:SP:133:ILE:HA	61:SP:136:ILE:HD12	1.97	0.47
2:L1:485:A:N6	57:SI:216:LEU:O	2.48	0.47
2:L1:1470:C:H2'	2:L1:1471:C:H6	1.79	0.47
3:L2:105:U:OP1	51:SA:337:ARG:NH1	2.47	0.47
16:LH:20:ARG:NH2	16:LH:103:HIS:O	2.48	0.47
17:LI:662:VAL:HG13	19:LK:579:VAL:HG22	1.96	0.47
19:LL:494:VAL:HG22	19:LL:534:HIS:CD2	2.49	0.47
20:LM:843:VAL:HG22	20:LM:846:ARG:NH2	2.26	0.47
20:LM:2070:LEU:HD23	20:LM:2109:PHE:CD2	2.50	0.47
22:LO:312:PHE:HE1	22:LO:328:ILE:HD11	1.78	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:LT:494:ASP:OD1	27:LT:495:ILE:N	2.48	0.47
41:NK:179:VAL:HG12	41:NK:552:PRO:HD3	1.95	0.47
57:SI:1050:ALA:HB3	65:ST:800:PHE:HZ	1.80	0.47
65:ST:259:UNK:O	65:ST:263:UNK:N	2.48	0.47
1:L0:719:G:N2	1:L0:751:C:N3	2.63	0.46
2:L1:387:C:OP2	9:L8:10:LYS:NZ	2.48	0.46
2:L1:649:U:H2'	2:L1:650:A:H8	1.79	0.46
2:L1:1237:C:H42	65:ST:805:ARG:HH22	1.62	0.46
19:LL:116:LEU:HD21	19:LL:119:LYS:HG3	1.96	0.46
19:LL:169:SER:OG	19:LL:188:ARG:NH1	2.37	0.46
28:LU:179:ASP:HB3	28:LU:188:PRO:HB3	1.97	0.46
28:LU:364:THR:HG23	28:LU:367:GLU:H	1.80	0.46
29:LW:241:ASP:OD1	29:LW:242:ILE:N	2.48	0.46
41:NK:387:ILE:HB	41:NK:409:MET:HG2	1.98	0.46
46:NR:901:UNK:O	46:NR:905:UNK:N	2.49	0.46
60:SM:49:GLU:HG2	60:SM:52:ALA:HB3	1.96	0.46
1:L0:1433:A:N7	51:SA:40:GLY:HA3	2.30	0.46
2:L1:388:U:H2'	2:L1:389:A:H8	1.80	0.46
2:L1:562:U:H2'	2:L1:563:G:C8	2.50	0.46
2:L1:617:G:H2'	2:L1:618:C:C6	2.51	0.46
2:L1:1823:A:H4'	2:L1:1824:A:O5'	2.14	0.46
3:L2:8:U:H2'	3:L2:9:A:C8	2.50	0.46
7:L6:7:PHE:CE2	7:L6:9:ALA:HB3	2.50	0.46
19:LL:38:LEU:HD22	19:LL:99:LEU:HD21	1.96	0.46
20:LM:2036:LYS:HZ2	20:LM:2040:ARG:HB2	1.79	0.46
20:LM:2089:LEU:HD12	20:LM:2128:THR:HA	1.98	0.46
21:LN:441:LEU:HG	21:LN:457:ASN:HA	1.97	0.46
21:LN:532:MET:HG2	21:LN:543:ILE:HG12	1.97	0.46
41:NK:268:ILE:HD13	41:NK:271:ILE:HD12	1.96	0.46
44:NO:111:MET:HE3	44:NO:115:GLU:HG3	1.97	0.46
50:NY:208:ASP:OD1	50:NY:213:ILE:HB	2.15	0.46
53:SD:246:VAL:HG11	53:SD:262:ILE:HD11	1.97	0.46
56:SH:211:SER:OG	56:SH:273:GLU:OE2	2.33	0.46
61:SP:528:ILE:HG22	61:SP:530:PRO:HD2	1.98	0.46
64:SS:159:PHE:HB3	64:SS:729:ILE:HG12	1.97	0.46
2:L1:1221:G:O2'	2:L1:1676:U:O2	2.33	0.46
3:L2:49:U:H2'	3:L2:50:U:C6	2.50	0.46
6:L5:38:TYR:OH	15:LG:54:ASP:OD1	2.30	0.46
11:LA:123:VAL:HG13	11:LA:124:ILE:HD12	1.97	0.46
16:LH:585:VAL:HB	16:LH:598:ILE:HB	1.97	0.46
19:LK:467:THR:HG21	19:LK:498:PRO:HG2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:LP:323:GLU:HG3	23:LP:366:LEU:HB3	1.96	0.46
61:SP:1409:LEU:O	61:SP:1413:VAL:HG23	2.15	0.46
2:L1:1004:U:H2'	2:L1:1005:G:C8	2.49	0.46
17:LI:610:ALA:HA	17:LI:613:ILE:HD13	1.97	0.46
21:LN:437:LEU:HD22	21:LN:454:VAL:HG11	1.97	0.46
21:LN:446:SER:OG	21:LN:448:ASP:O	2.31	0.46
23:LP:226:TYR:HH	23:LP:239:HIS:CD2	2.33	0.46
23:LP:253:LYS:O	23:LP:253:LYS:HD2	2.16	0.46
23:LP:330:ILE:HD13	23:LP:367:LEU:HD11	1.98	0.46
26:LS:233:ARG:NH1	26:LS:506:SER:OG	2.48	0.46
29:LW:241:ASP:OD2	29:LW:281:LEU:N	2.43	0.46
39:NH:237:LEU:HB3	39:NH:253:LEU:HB2	1.97	0.46
39:NH:1104:ARG:HD3	39:NH:1115:MET:HB3	1.97	0.46
41:NK:813:LEU:HD11	41:NK:822:LEU:HD21	1.97	0.46
52:SB:190:HIS:NE2	52:SB:213:ASP:OD1	2.45	0.46
61:SP:216:LYS:HD3	61:SP:216:LYS:HA	1.73	0.46
61:SP:1398:PHE:HD2	61:SP:1410:LEU:HD21	1.80	0.46
2:L1:942:G:H2'	2:L1:943:U:C6	2.50	0.46
17:LI:467:TYR:HB2	17:LI:496:ILE:HD13	1.97	0.46
20:LM:440:LEU:HA	20:LM:443:VAL:HG12	1.96	0.46
20:LM:1741:LEU:HD21	20:LM:1782:ILE:HG22	1.98	0.46
22:LO:522:ASP:OD1	22:LO:524:THR:OG1	2.27	0.46
22:LO:844:VAL:O	22:LO:847:PHE:HB3	2.15	0.46
23:LP:453:SER:OG	23:LP:456:ASP:OD2	2.33	0.46
24:LQ:424:SER:OG	24:LQ:426:ASP:O	2.28	0.46
25:LR:24:PHE:HZ	25:LR:330:PHE:HB3	1.81	0.46
39:NH:1010:VAL:HB	39:NH:1084:VAL:HB	1.97	0.46
40:NI:104:ARG:HG2	40:NI:111:LYS:NZ	2.30	0.46
41:NJ:823:LYS:O	41:NJ:827:MET:HG2	2.15	0.46
41:NJ:881:GLU:HG3	41:NJ:888:SER:HB2	1.97	0.46
42:NM:173:THR:O	42:NM:177:GLN:HG2	2.16	0.46
58:SJ:224:LEU:HD22	58:SJ:228:LEU:HD22	1.98	0.46
61:SP:1670:GLN:HG3	61:SP:1819:VAL:HG21	1.98	0.46
1:L0:1429:A:H2'	1:L0:1430:G:C8	2.51	0.46
2:L1:75:G:H1'	2:L1:76:U:H2'	1.97	0.46
18:LJ:252:THR:HG21	18:LJ:293:LEU:HA	1.98	0.46
21:LN:368:LYS:HD2	21:LN:369:ASN:H	1.81	0.46
23:LP:11:ASP:OD2	64:SS:711:ARG:NH2	2.48	0.46
27:LT:610:GLU:O	27:LT:612:ARG:NH1	2.48	0.46
27:LT:768:LEU:HD21	27:LT:852:PRO:HB2	1.96	0.46
39:NH:306:VAL:HG11	39:NH:423:LEU:HD22	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:SA:21:GLU:HB2	64:SS:725:PRO:HG2	1.97	0.46
60:SM:255:LEU:HD21	60:SM:258:ILE:HD11	1.98	0.46
61:SP:1797:SER:O	61:SP:1820:ARG:NH1	2.48	0.46
61:SP:1861:ILE:HA	61:SP:1864:ILE:HG22	1.97	0.46
71:SZ:152:UNK:O	71:SZ:156:UNK:N	2.49	0.46
2:L1:1653:U:H3	2:L1:1671:G:H1	1.63	0.46
3:L2:59:G:N3	59:SL:8:ARG:NH1	2.63	0.46
7:L6:227:GLN:O	7:L6:230:LYS:HG2	2.15	0.46
8:L7:82:GLU:OE2	8:L7:83:LEU:HD22	2.14	0.46
16:LH:229:LEU:O	16:LH:241:TYR:HA	2.15	0.46
19:LL:467:THR:O	19:LL:471:GLU:HG2	2.16	0.46
20:LM:214:ARG:NE	23:LP:593:GLN:O	2.45	0.46
22:LO:545:ASP:HB3	22:LO:563:LEU:HB2	1.98	0.46
25:LR:52:VAL:O	25:LR:328:LYS:HE2	2.14	0.46
33:NB:438:GLU:OE2	33:NB:441:ARG:NH2	2.42	0.46
55:SG:338:MET:HG2	55:SG:350:TRP:HB2	1.97	0.46
56:SH:210:ASP:N	56:SH:210:ASP:OD1	2.49	0.46
61:SP:1167:GLU:OE1	61:SP:1212:ASN:ND2	2.48	0.46
61:SP:1842:ASN:OD1	61:SP:1845:SER:OG	2.33	0.46
71:SZ:269:ASN:HB2	71:SZ:272:LEU:HD12	1.97	0.46
71:SZ:282:LYS:HD3	71:SZ:282:LYS:HA	1.80	0.46
2:L1:432:G:H2'	2:L1:433:A:C8	2.51	0.46
2:L1:615:C:H2'	2:L1:616:A:C8	2.50	0.46
2:L1:1739:C:H2'	2:L1:1740:C:H6	1.81	0.46
3:L2:57:A:H2'	3:L2:58:C:C6	2.50	0.46
10:L9:69:ARG:O	10:L9:73:GLU:HG2	2.16	0.46
18:LJ:355:ARG:N	26:LS:294:GLU:OE1	2.46	0.46
20:LM:362:VAL:HG12	20:LM:363:THR:HG23	1.98	0.46
22:LO:197:GLU:OE2	22:LO:204:TYR:OH	2.16	0.46
22:LO:400:TRP:HA	22:LO:407:CYS:HA	1.96	0.46
38:NG:85:CYS:HB3	38:NG:90:ILE:HB	1.97	0.46
41:NK:694:LEU:HG	41:NK:695:LEU:HG	1.97	0.46
52:SB:191:PHE:CD2	52:SB:194:LEU:HB2	2.51	0.46
52:SB:351:SER:OG	52:SB:354:HIS:ND1	2.43	0.46
53:SC:183:PRO:HD2	53:SC:184:ASP:H	1.80	0.46
57:SI:96:SER:HA	57:SI:99:ILE:HD12	1.98	0.46
67:SW:214:SER:O	67:SW:218:ILE:HG12	2.16	0.46
1:L0:718:G:N2	1:L0:752:C:N3	2.64	0.46
9:L8:92:ARG:HH12	49:NW:138:ARG:NE	2.14	0.46
11:LA:32:ALA:HB3	11:LA:110:VAL:HB	1.98	0.46
13:LD:128:VAL:HG12	13:LD:142:VAL:HA	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:LI:509:LEU:HB3	17:LI:612:HIS:CD2	2.48	0.46
20:LM:803:PRO:HG2	20:LM:806:PHE:HB2	1.97	0.46
20:LM:1584:ALA:O	20:LM:1587:LEU:HB3	2.16	0.46
22:LO:74:ASP:OD1	22:LO:78:ASP:N	2.49	0.46
23:LP:575:LYS:HD3	52:SB:349:GLN:HB3	1.98	0.46
39:NH:352:VAL:HA	39:NH:355:LEU:HB2	1.98	0.46
39:NH:715:ARG:HH11	39:NH:715:ARG:HA	1.81	0.46
41:NJ:162:THR:HG21	41:NJ:171:TYR:HB2	1.97	0.46
41:NK:323:PHE:HA	41:NK:326:VAL:HG12	1.98	0.46
61:SP:1633:THR:O	61:SP:1637:THR:OG1	2.23	0.46
61:SP:1863:ASP:OD1	61:SP:1866:ARG:NH1	2.47	0.46
65:ST:622:ILE:HG22	65:ST:648:LEU:H	1.81	0.46
65:ST:819:LEU:O	65:ST:823:MET:HG2	2.16	0.46
9:L8:67:TRP:O	9:L8:71:CYS:N	2.48	0.46
16:LH:104:ALA:HB2	16:LH:158:PRO:HG3	1.98	0.46
17:LI:579:PRO:HG3	17:LI:618:LYS:HG3	1.98	0.46
20:LM:1779:LEU:O	20:LM:1783:LEU:HG	2.16	0.46
20:LM:2029:ASN:O	20:LM:2037:PHE:HE2	1.99	0.46
21:LN:490:LEU:HD22	21:LN:499:LEU:HD11	1.97	0.46
25:LR:427:VAL:HG12	25:LR:439:THR:HG22	1.98	0.46
27:LT:802:ALA:HB2	27:LT:826:ASP:HB3	1.98	0.46
41:NJ:307:SER:HA	41:NJ:366:GLN:HG2	1.97	0.46
47:NT:123:SER:HB2	47:NT:126:CYS:HB2	1.98	0.46
51:SA:294:PRO:HB2	51:SA:391:SER:HB3	1.97	0.46
59:SL:86:LEU:O	59:SL:90:MET:HG3	2.16	0.46
59:SL:87:VAL:HA	59:SL:90:MET:HE2	1.98	0.46
70:SY:76:GLN:HB2	70:SY:81:ILE:HD13	1.97	0.46
2:L1:1169:G:O6	57:SI:1256:LYS:NZ	2.32	0.45
2:L1:1309:C:OP1	47:NT:104:LYS:NZ	2.47	0.45
19:LL:341:CYS:SG	19:LL:361:ARG:NH1	2.89	0.45
20:LM:1330:MET:O	20:LM:1334:VAL:HG22	2.16	0.45
22:LO:552:ARG:NH1	22:LO:557:GLU:OE1	2.50	0.45
24:LQ:816:LYS:HB3	24:LQ:819:GLU:HG2	1.97	0.45
25:LR:110:ALA:HB1	25:LR:129:CYS:HB2	1.98	0.45
42:NM:76:ASN:OD1	42:NM:77:ASP:N	2.49	0.45
42:NM:164:ILE:O	42:NM:168:MET:HG3	2.17	0.45
61:SP:381:PRO:HG2	61:SP:384:LEU:HD23	1.98	0.45
61:SP:753:LYS:HD3	61:SP:838:ARG:HH12	1.81	0.45
61:SP:1513:ASP:O	61:SP:1517:ILE:HG12	2.16	0.45
61:SP:1965:TYR:CE2	61:SP:2003:THR:HG23	2.51	0.45
70:SY:165:VAL:HG23	70:SY:168:ARG:HH12	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:L0:445:C:H5''	26:LS:318:LYS:HD2	1.98	0.45
1:L0:857:C:OP1	30:LZ:50:GLN:NE2	2.50	0.45
2:L1:1687:C:H2'	2:L1:1688:C:H6	1.81	0.45
8:L7:60:ILE:HD13	8:L7:92:VAL:HG22	1.98	0.45
8:L7:192:PHE:HZ	45:NQ:12:PRO:HA	1.81	0.45
19:LL:231:ILE:HD12	19:LL:234:LEU:HD12	1.97	0.45
20:LM:384:THR:HG22	20:LM:431:LEU:HD11	1.97	0.45
20:LM:927:LEU:HD22	20:LM:966:ILE:HG21	1.98	0.45
20:LM:1322:ASN:O	20:LM:1326:ILE:HG13	2.17	0.45
20:LM:1811:LYS:HE2	20:LM:1815:THR:HG21	1.98	0.45
23:LP:71:ARG:NH2	26:LS:92:GLU:OE1	2.40	0.45
24:LQ:689:TYR:HB3	24:LQ:701:LEU:HD11	1.98	0.45
25:LR:387:LYS:HG3	25:LR:389:TRP:H	1.81	0.45
53:SC:225:MET:HG2	53:SC:226:LEU:HD22	1.98	0.45
61:SP:1775:THR:O	61:SP:1779:ILE:HG12	2.16	0.45
2:L1:1094:C:H4'	44:NO:20:ARG:NH2	2.32	0.45
3:L2:176:C:H2'	3:L2:177:C:C6	2.52	0.45
16:LH:568:TRP:HA	16:LH:575:LEU:HA	1.98	0.45
19:LK:521:VAL:O	19:LK:524:VAL:HB	2.16	0.45
22:LO:343:ASP:OD2	67:SW:251:ARG:HD2	2.16	0.45
27:LT:489:GLU:HG3	27:LT:490:LEU:HD22	1.98	0.45
27:LT:661:LEU:HB2	27:LT:711:PRO:HG2	1.98	0.45
29:LW:125:LYS:HB2	29:LW:128:THR:HG23	1.98	0.45
29:LW:439:GLN:HG3	29:LW:440:PRO:HD2	1.98	0.45
41:NJ:623:GLY:HA2	41:NJ:706:LEU:HG	1.98	0.45
43:NN:514:LYS:HA	43:NN:514:LYS:HD3	1.66	0.45
49:NW:333:THR:HG22	49:NW:335:LYS:H	1.80	0.45
52:SB:313:ALA:HA	52:SB:367:VAL:HG11	1.97	0.45
53:SD:284:LYS:HE3	59:SL:132:LEU:HA	1.98	0.45
61:SP:1504:LEU:HD13	61:SP:1517:ILE:HD12	1.99	0.45
61:SP:1653:MET:HA	61:SP:1656:LEU:HD12	1.97	0.45
2:L1:115:U:O2'	2:L1:381:C:O2	2.23	0.45
2:L1:478:G:H2'	2:L1:479:C:C6	2.52	0.45
2:L1:1292:C:H1'	47:NT:140:TYR:CE1	2.51	0.45
17:LI:711:TYR:OH	21:LN:7:HIS:ND1	2.49	0.45
19:LK:481:VAL:O	19:LK:484:THR:HG23	2.17	0.45
20:LM:259:ALA:O	20:LM:263:MET:HG3	2.17	0.45
20:LM:668:LEU:HD12	20:LM:710:VAL:HG11	1.97	0.45
20:LM:1624:ASN:OD1	20:LM:1676:LEU:HD12	2.17	0.45
22:LO:107:ASP:OD1	22:LO:108:GLY:N	2.50	0.45
27:LT:765:LEU:HD12	27:LT:895:ALA:HB1	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:NH:339:GLU:O	39:NH:529:ARG:NH2	2.48	0.45
49:NW:341:ILE:HG22	49:NW:344:LEU:H	1.82	0.45
59:SL:102:ILE:HG21	59:SL:107:MET:HE2	1.98	0.45
61:SP:1555:GLN:HE21	61:SP:1557:GLU:HB3	1.81	0.45
61:SP:1886:LYS:NZ	61:SP:1927:ILE:HD11	2.30	0.45
61:SP:2138:ILE:HD11	61:SP:2182:ASN:HB3	1.98	0.45
2:L1:157:U:O2'	2:L1:158:A:OP1	2.33	0.45
2:L1:1010:G:H2'	2:L1:1011:A:H8	1.82	0.45
8:L7:170:VAL:HG13	8:L7:187:PHE:HB2	1.98	0.45
10:L9:87:LEU:HD11	10:L9:97:ILE:HG12	1.99	0.45
17:LI:508:PHE:O	17:LI:584:ARG:NH1	2.49	0.45
18:LJ:489:MET:CE	19:LK:571:LYS:HA	2.46	0.45
20:LM:740:LEU:O	20:LM:744:ILE:HG12	2.16	0.45
21:LN:30:ARG:NH1	21:LN:52:GLU:OE2	2.49	0.45
22:LO:316:GLU:OE1	22:LO:318:PRO:HD2	2.17	0.45
25:LR:745:GLU:HA	25:LR:748:LEU:HD12	1.98	0.45
39:NH:436:GLN:HG2	39:NH:524:LEU:HD21	1.98	0.45
41:NK:160:LEU:HD12	41:NK:163:VAL:HG21	1.99	0.45
44:NO:30:CYS:SG	44:NO:31:SER:N	2.90	0.45
57:SI:107:THR:HG23	57:SI:109:GLN:H	1.82	0.45
1:L0:863:C:N3	60:SM:11:GLU:HG2	2.32	0.45
2:L1:227:U:H4'	2:L1:228:C:O5'	2.16	0.45
2:L1:1311:C:H4'	71:SZ:241:LEU:HD11	1.99	0.45
25:LR:165:ARG:HH22	25:LR:207:GLY:HA3	1.82	0.45
25:LR:475:GLN:NE2	25:LR:476:ARG:O	2.49	0.45
29:LW:121:LEU:HD13	64:SS:694:GLN:HG2	1.98	0.45
39:NH:234:LYS:HE2	39:NH:300:TRP:HB3	1.98	0.45
41:NJ:112:LYS:HB3	41:NJ:112:LYS:HE3	1.85	0.45
58:SK:101:ASN:HB2	58:SK:106:LEU:HD23	1.99	0.45
61:SP:1215:TYR:HA	61:SP:1218:LEU:HD13	1.98	0.45
2:L1:478:G:H2'	2:L1:479:C:H6	1.82	0.45
13:LD:48:LYS:O	13:LD:51:ILE:N	2.50	0.45
16:LH:630:GLN:HG3	16:LH:631:TRP:CD1	2.52	0.45
17:LI:159:PHE:CE1	17:LI:166:VAL:HB	2.52	0.45
18:LJ:346:LYS:HB2	26:LS:292:TYR:CE2	2.51	0.45
19:LK:497:MET:HG3	19:LK:498:PRO:HD2	1.98	0.45
19:LK:525:GLN:NE2	19:LK:529:CYS:SG	2.89	0.45
19:LL:22:SER:OG	19:LL:25:SER:O	2.21	0.45
20:LM:417:LYS:HA	20:LM:417:LYS:HD3	1.73	0.45
20:LM:502:LEU:O	20:LM:506:MET:N	2.45	0.45
23:LP:46:ARG:NH1	28:LU:20:ASP:OD1	2.43	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:SP:1230:ASP:O	61:SP:1234:ASN:ND2	2.49	0.45
61:SP:1424:LEU:HB2	61:SP:1427:ILE:HD13	1.99	0.45
61:SP:1450:PHE:HA	61:SP:1453:PHE:CD2	2.52	0.45
2:L1:110:U:H2'	2:L1:111:A:C8	2.52	0.45
2:L1:639:C:H2'	2:L1:640:A:H8	1.82	0.45
2:L1:1373:C:H2'	2:L1:1374:C:C6	2.52	0.45
5:L4:55:ALA:HB1	5:L4:60:GLU:HG3	1.99	0.45
5:L4:171:ASP:OD1	5:L4:171:ASP:N	2.49	0.45
8:L7:61:ILE:HD13	8:L7:180:LEU:HD11	1.99	0.45
16:LH:319:ARG:HG2	26:LS:374:GLU:HG2	1.99	0.45
17:LI:460:ILE:HG12	17:LI:465:LEU:HD23	1.99	0.45
17:LI:712:SER:OG	17:LI:714:GLU:OE2	2.34	0.45
20:LM:1966:LEU:HD22	20:LM:2026:GLN:HG3	1.99	0.45
21:LN:258:GLY:HA2	21:LN:290:VAL:HG23	1.98	0.45
24:LQ:463:VAL:HG11	24:LQ:468:GLN:HB2	1.98	0.45
24:LQ:473:THR:OG1	24:LQ:475:THR:O	2.23	0.45
27:LT:563:LEU:HB3	27:LT:577:VAL:HB	1.99	0.45
29:LW:242:ILE:HD13	29:LW:253:VAL:HG12	1.99	0.45
30:LZ:14:LYS:O	30:LZ:15:GLN:HG2	2.16	0.45
39:NH:1016:PRO:HA	39:NH:1019:ILE:HD12	1.99	0.45
46:NR:159:UNK:O	46:NR:163:UNK:N	2.50	0.45
61:SP:470:VAL:HG22	61:SP:529:ARG:HG3	1.99	0.45
61:SP:1783:ILE:HG13	61:SP:1834:LEU:HD21	1.99	0.45
66:SU:181:ARG:O	66:SU:185:MET:HG2	2.15	0.45
2:L1:36:U:H2'	2:L1:37:C:C6	2.51	0.45
2:L1:191:A:N6	2:L1:208:G:O2'	2.48	0.45
2:L1:1844:U:H3	2:L1:1855:G:H1	1.65	0.45
2:L1:1852:C:H2'	2:L1:1853:C:C6	2.52	0.45
3:L2:31:G:H5''	3:L2:32:U:C2	2.52	0.45
16:LH:39:VAL:O	16:LH:53:LEU:HB2	2.17	0.45
17:LI:460:ILE:HG22	17:LI:492:GLN:HG3	1.99	0.45
18:LJ:478:ARG:NH1	18:LJ:479:GLU:OE2	2.50	0.45
20:LM:327:VAL:HG23	20:LM:330:LEU:HB2	1.97	0.45
21:LN:160:ILE:HB	21:LN:171:PHE:HB2	1.98	0.45
22:LO:601:HIS:HA	22:LO:604:LYS:HD3	1.99	0.45
23:LP:18:GLN:O	23:LP:22:ILE:HG12	2.16	0.45
23:LP:75:ILE:HD11	26:LS:80:LEU:HG	1.99	0.45
25:LR:253:LEU:HD21	25:LR:324:LEU:HD13	1.98	0.45
25:LR:436:PHE:CZ	25:LR:508:LEU:HD21	2.51	0.45
27:LT:216:TYR:HB3	27:LT:219:LYS:HB2	1.97	0.45
27:LT:535:ASP:OD1	27:LT:535:ASP:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:NK:266:LYS:HE3	41:NK:461:TYR:CG	2.52	0.45
48:NU:56:HIS:O	48:NU:60:ARG:HG2	2.17	0.45
49:NW:178:GLU:HB3	49:NW:196:ILE:HB	1.99	0.45
56:SH:94:GLY:HA2	56:SH:120:VAL:HG13	1.98	0.45
61:SP:427:ILE:HG21	61:SP:446:LEU:HD21	1.99	0.45
61:SP:1452:THR:O	61:SP:1456:ILE:HG12	2.16	0.45
65:ST:610:PRO:HD2	66:SU:445:TYR:HE1	1.81	0.45
65:ST:636:HIS:O	65:ST:639:ARG:NH1	2.50	0.45
2:L1:980:A:H2'	2:L1:981:A:C8	2.52	0.45
3:L2:30:A:O2'	3:L2:32:U:O4	2.30	0.45
19:LL:43:THR:HG23	19:LL:359:ILE:HG21	1.98	0.45
20:LM:1647:ASP:O	20:LM:1651:ILE:HG12	2.17	0.45
21:LN:461:LEU:O	21:LN:476:ALA:HA	2.17	0.45
27:LT:595:LEU:HB2	27:LT:609:ILE:HD11	1.99	0.45
35:ND:240:ASN:HA	35:ND:243:ARG:HH21	1.82	0.45
40:NI:23:TYR:HE1	40:NI:43:ARG:HD3	1.82	0.45
46:NR:621:UNK:O	46:NR:625:UNK:N	2.50	0.45
56:SH:284:LEU:HA	56:SH:287:ILE:HD12	1.99	0.45
56:SH:368:LEU:O	57:SI:989:GLN:NE2	2.45	0.45
61:SP:644:LYS:NZ	61:SP:810:ASP:O	2.42	0.45
62:SQ:682:ASP:OD1	62:SQ:683:GLY:N	2.50	0.45
2:L1:219:U:H2'	2:L1:220:U:C6	2.52	0.44
2:L1:618:C:H2'	2:L1:619:A:O4'	2.18	0.44
16:LH:816:LEU:HB3	20:LM:933:GLU:HG2	1.97	0.44
19:LL:130:ASN:ND2	19:LL:171:VAL:O	2.47	0.44
23:LP:3:GLU:HG2	23:LP:4:ILE:HD12	1.99	0.44
23:LP:22:ILE:HD13	29:LW:98:PHE:CZ	2.49	0.44
25:LR:32:LEU:HG	25:LR:308:LEU:HD22	1.99	0.44
25:LR:151:PRO:HD3	25:LR:178:ARG:HH21	1.82	0.44
29:LW:229:LEU:HD21	29:LW:232:GLU:HB2	1.99	0.44
41:NK:28:VAL:HG12	41:NK:200:ILE:HG13	1.98	0.44
41:NK:284:ALA:HB2	41:NK:465:LEU:H	1.82	0.44
49:NW:167:ARG:HD3	50:NY:324:PRO:HG3	2.00	0.44
53:SC:92:ARG:HH11	70:SY:168:ARG:HG3	1.82	0.44
58:SJ:190:VAL:HG11	58:SJ:240:VAL:HG11	2.00	0.44
1:L0:751:C:H2'	1:L0:752:C:C6	2.52	0.44
17:LI:406:MET:SD	17:LI:407:LYS:HG2	2.57	0.44
20:LM:135:VAL:HG22	20:LM:144:PHE:HD1	1.83	0.44
20:LM:1830:TYR:O	20:LM:1833:ILE:HG22	2.16	0.44
22:LO:217:CYS:HB3	22:LO:274:TYR:CE1	2.53	0.44
23:LP:213:SER:O	23:LP:217:LEU:HD23	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:LR:291:PRO:HD3	25:LR:376:THR:HG22	1.99	0.44
25:LR:294:GLU:HB2	25:LR:312:ALA:HB2	2.00	0.44
26:LS:319:VAL:HA	26:LS:334:HIS:HA	1.98	0.44
27:LT:851:GLY:O	27:LT:855:ILE:HG12	2.17	0.44
41:NJ:866:LEU:HD21	41:NJ:895:PHE:HB2	1.99	0.44
57:SI:88:MET:HB3	57:SI:133:CYS:HB3	1.98	0.44
58:SK:44:ILE:HB	58:SK:197:VAL:HG22	1.99	0.44
65:ST:571:VAL:HG11	66:SU:479:PHE:HB2	1.99	0.44
70:SY:33:LYS:HA	70:SY:33:LYS:HD3	1.86	0.44
2:L1:119:U:H2'	2:L1:120:U:H6	1.83	0.44
3:L2:89:A:H5'	52:SB:336:PRO:HB3	1.99	0.44
20:LM:1383:PHE:O	20:LM:1387:LEU:HG	2.18	0.44
20:LM:1422:GLN:O	20:LM:1426:LYS:HG2	2.17	0.44
20:LM:1573:THR:O	20:LM:1576:PHE:HB3	2.18	0.44
20:LM:1669:THR:O	20:LM:1673:THR:HG23	2.16	0.44
20:LM:1992:LEU:HD23	20:LM:1992:LEU:HA	1.88	0.44
24:LQ:660:TRP:CZ3	24:LQ:667:HIS:HB2	2.51	0.44
25:LR:81:LEU:O	25:LR:93:TRP:N	2.41	0.44
26:LS:346:SER:OG	26:LS:359:ASN:OD1	2.32	0.44
29:LW:243:ARG:HD3	29:LW:243:ARG:HA	1.82	0.44
34:NC:235:ASP:OD1	34:NC:259:ARG:NE	2.50	0.44
39:NH:186:ARG:HG2	39:NH:258:PRO:HG2	1.99	0.44
39:NH:892:PRO:HA	39:NH:893:PRO:HD3	1.89	0.44
41:NK:623:GLY:HA2	41:NK:706:LEU:HG	1.98	0.44
49:NW:282:ASP:OD1	49:NW:283:SER:N	2.49	0.44
56:SH:124:GLN:NE2	56:SH:260:ALA:O	2.42	0.44
58:SK:131:ASP:OD1	58:SK:132:ARG:N	2.49	0.44
61:SP:1399:SER:O	61:SP:1402:LYS:NZ	2.41	0.44
71:SZ:240:ASN:O	71:SZ:242:LYS:HG3	2.17	0.44
2:L1:103:A:H4'	2:L1:104:A:H8	1.81	0.44
2:L1:223:C:H2'	2:L1:224:A:H8	1.81	0.44
2:L1:498:C:H2'	2:L1:499:G:C8	2.53	0.44
2:L1:1355:C:H2'	2:L1:1356:G:O4'	2.17	0.44
9:L8:101:ILE:HD12	9:L8:190:LEU:HD11	1.99	0.44
16:LH:469:TYR:HD1	16:LH:495:SER:HB3	1.82	0.44
20:LM:1604:ILE:HD11	20:LM:1619:ALA:HA	1.98	0.44
20:LM:1951:PHE:HE1	20:LM:1954:PHE:HB2	1.82	0.44
21:LN:554:SER:HB3	21:LN:557:ASP:HB2	1.99	0.44
22:LO:54:THR:HG21	22:LO:74:ASP:HB3	2.00	0.44
22:LO:339:ASN:ND2	22:LO:343:ASP:OD1	2.39	0.44
39:NH:709:SER:O	39:NH:723:ARG:NH1	2.49	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:NJ:256:LYS:HD3	41:NJ:469:ILE:HG23	1.99	0.44
41:NK:131:PRO:HB3	41:NK:485:LEU:HD22	1.98	0.44
41:NK:425:LEU:HA	41:NK:428:ILE:HG22	2.00	0.44
57:SI:310:ILE:HD11	57:SI:886:VAL:HB	1.99	0.44
58:SJ:88:THR:O	58:SJ:92:LEU:HG	2.18	0.44
58:SK:56:LYS:O	65:ST:45:GLY:HA3	2.18	0.44
63:SR:66:ILE:HG23	65:ST:836:LEU:HD23	1.97	0.44
1:L0:799:C:O2'	1:L0:800:G:OP2	2.31	0.44
2:L1:337:C:H2'	2:L1:338:G:C8	2.52	0.44
19:LL:575:LEU:O	19:LL:579:VAL:HG23	2.18	0.44
20:LM:1288:ILE:O	20:LM:1292:ILE:HG13	2.18	0.44
20:LM:1810:LYS:HE3	20:LM:1847:ILE:HD11	2.00	0.44
27:LT:460:ILE:HB	27:LT:473:TRP:HB2	1.99	0.44
27:LT:567:ASN:ND2	27:LT:574:ILE:HD11	2.33	0.44
29:LW:197:GLY:HA3	29:LW:215:ARG:HB3	2.00	0.44
29:LW:246:HIS:CG	29:LW:247:SER:H	2.35	0.44
39:NH:364:LYS:HE3	39:NH:364:LYS:HB3	1.81	0.44
41:NK:341:TYR:HB3	41:NK:360:VAL:HG12	1.99	0.44
41:NK:548:LEU:HD21	41:NK:556:LEU:HD11	2.00	0.44
42:NM:40:ASN:OD1	42:NM:41:ILE:N	2.51	0.44
47:NT:104:LYS:HD3	47:NT:118:ARG:HH21	1.82	0.44
47:NT:133:ALA:HB3	47:NT:140:TYR:HB3	1.99	0.44
53:SC:224:ARG:HA	53:SC:253:PHE:CZ	2.53	0.44
60:SM:6:ALA:HB1	60:SM:10:ARG:HH12	1.82	0.44
61:SP:1656:LEU:O	61:SP:1660:ILE:HD12	2.18	0.44
2:L1:558:G:H2'	2:L1:559:G:C8	2.53	0.44
3:L2:144:C:H3'	3:L2:145:U:C5'	2.48	0.44
5:L4:48:LEU:HD21	5:L4:64:ILE:HG21	2.00	0.44
5:L4:248:ILE:HG23	5:L4:250:GLU:H	1.83	0.44
20:LM:586:GLU:HA	20:LM:633:LEU:HD11	2.00	0.44
20:LM:754:HIS:CD2	20:LM:755:ILE:HG23	2.52	0.44
20:LM:1423:TYR:OH	20:LM:1440:LEU:HG	2.17	0.44
26:LS:313:THR:OG1	26:LS:344:VAL:O	2.35	0.44
26:LS:405:GLU:HG2	26:LS:407:TYR:HE1	1.83	0.44
27:LT:826:ASP:OD1	27:LT:827:PHE:N	2.50	0.44
27:LT:869:SER:HB3	27:LT:872:VAL:HG23	2.00	0.44
28:LU:234:LYS:HB3	28:LU:444:VAL:HB	2.00	0.44
32:NA:532:ALA:HA	32:NA:548:LEU:HD13	2.00	0.44
35:ND:235:ILE:HG23	35:ND:236:GLN:HG2	1.99	0.44
39:NH:965:PRO:HA	39:NH:969:ILE:HD11	2.00	0.44
41:NK:721:LYS:HE2	41:NK:721:LYS:HB3	1.86	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:SA:123:ARG:NH2	53:SD:254:LEU:O	2.51	0.44
53:SC:164:LEU:HB3	53:SC:233:ILE:HG12	1.99	0.44
54:SE:64:GLU:HA	54:SE:67:LEU:HG	1.99	0.44
55:SG:171:ILE:HG12	55:SG:183:VAL:HG22	2.00	0.44
61:SP:217:HIS:HB2	61:SP:220:LYS:HE2	1.99	0.44
61:SP:1578:MET:HA	61:SP:1586:ARG:HG3	2.00	0.44
65:ST:528:MET:O	65:ST:532:ILE:HG13	2.17	0.44
71:SZ:232:GLN:OE1	71:SZ:235:ARG:NE	2.43	0.44
2:L1:1312:G:O6	11:LA:36:ARG:NH1	2.51	0.44
17:LI:429:PHE:O	17:LI:432:VAL:HB	2.17	0.44
18:LJ:232:TRP:CH2	18:LJ:240:LEU:HD12	2.52	0.44
20:LM:180:THR:HA	20:LM:183:TYR:CE2	2.53	0.44
20:LM:1696:ALA:O	20:LM:1700:ILE:HG12	2.17	0.44
20:LM:1806:LEU:O	20:LM:1809:LEU:HG	2.18	0.44
22:LO:234:ALA:HA	22:LO:237:LEU:HG	2.00	0.44
23:LP:24:LEU:O	23:LP:71:ARG:NH1	2.48	0.44
23:LP:397:GLU:HA	23:LP:400:ARG:HH22	1.83	0.44
24:LQ:145:LEU:HD12	24:LQ:176:TRP:CE3	2.53	0.44
24:LQ:904:TYR:CD1	27:LT:905:LEU:HD22	2.52	0.44
29:LW:237:GLU:OE1	29:LW:257:ARG:N	2.47	0.44
39:NH:272:ASN:ND2	39:NH:292:PRO:O	2.51	0.44
39:NH:1014:LEU:HD11	39:NH:1082:ILE:HG13	1.98	0.44
56:SH:242:GLY:HA2	56:SH:275:LEU:HD21	2.00	0.44
61:SP:1137:ARG:HA	61:SP:1140:ILE:HG12	2.00	0.44
67:SW:103:LEU:HB3	67:SW:129:ALA:HB1	2.00	0.44
1:L0:817:U:H4'	26:LS:517:LYS:HG2	1.99	0.44
2:L1:640:A:H2'	2:L1:641:A:C8	2.52	0.44
2:L1:1125:C:H2'	2:L1:1126:G:C8	2.53	0.44
11:LA:99:LYS:HE2	11:LA:99:LYS:HB3	1.75	0.44
17:LI:404:THR:HG21	17:LI:416:GLU:HG3	1.99	0.44
20:LM:1400:VAL:HG22	20:LM:1446:PHE:CZ	2.53	0.44
21:LN:130:ILE:HG12	21:LN:135:ILE:HG22	1.99	0.44
22:LO:109:ARG:HG3	22:LO:110:LYS:HG3	2.00	0.44
24:LQ:505:SER:OG	24:LQ:507:ASP:OD1	2.22	0.44
25:LR:73:ASP:OD2	25:LR:74:LEU:N	2.51	0.44
25:LR:402:ILE:HB	25:LR:415:ALA:HB3	1.99	0.44
27:LT:258:ALA:HB3	27:LT:261:VAL:HB	2.00	0.44
28:LU:66:ARG:NH1	59:SL:127:PRO:HD3	2.21	0.44
28:LU:180:ILE:HD13	28:LU:226:MET:HG3	1.99	0.44
29:LW:196:PHE:HA	29:LW:216:ARG:HH11	1.81	0.44
32:NA:480:LEU:HD13	32:NA:523:GLU:HG3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:NK:577:ILE:HD12	41:NK:648:LEU:HD22	1.99	0.44
46:NR:363:UNK:O	46:NR:367:UNK:N	2.50	0.44
50:NY:179:THR:HG21	50:NY:202:VAL:HG23	1.99	0.44
53:SC:104:ASP:O	70:SY:125:LEU:HD13	2.18	0.44
53:SD:284:LYS:HE3	59:SL:133:PRO:HD3	1.98	0.44
57:SI:1237:PHE:O	57:SI:1241:GLN:HG2	2.18	0.44
58:SJ:96:MET:HA	58:SJ:101:ASN:ND2	2.31	0.44
61:SP:210:MET:HE1	61:SP:228:LEU:HD21	2.00	0.44
66:SU:261:LYS:HE3	66:SU:261:LYS:HB2	1.86	0.44
2:L1:615:C:H2'	2:L1:616:A:H8	1.82	0.44
16:LH:222:HIS:CE1	16:LH:228:ARG:HH11	2.36	0.44
20:LM:1663:GLN:HB2	20:LM:1666:ASN:ND2	2.33	0.44
21:LN:271:ASN:OD1	21:LN:272:SER:N	2.51	0.44
39:NH:112:VAL:HG22	39:NH:220:PHE:HE1	1.83	0.44
41:NK:365:ARG:HG3	57:SI:667:TRP:CD1	2.52	0.44
46:NR:140:UNK:O	46:NR:144:UNK:N	2.51	0.44
48:NU:5:ARG:HH11	48:NU:53:TYR:HD1	1.65	0.44
49:NW:74:LYS:O	49:NW:76:ARG:HG3	2.18	0.44
52:SB:150:ARG:NE	53:SC:214:ILE:O	2.51	0.44
55:SG:323:HIS:CE1	55:SG:342:ALA:HB2	2.53	0.44
61:SP:248:LYS:HA	61:SP:248:LYS:HD3	1.74	0.44
61:SP:740:ILE:HD12	61:SP:827:ALA:HB2	2.00	0.44
61:SP:1516:GLU:HA	61:SP:1520:ARG:HG2	2.00	0.44
66:SU:247:GLU:CD	66:SU:250:ARG:HH12	2.21	0.44
67:SW:108:ARG:CZ	67:SW:119:ARG:HH22	2.31	0.44
1:L0:854:U:H4'	1:L0:855:G:O5'	2.17	0.43
2:L1:1109:C:H1'	28:LU:424:HIS:O	2.18	0.43
2:L1:1284:A:H4'	2:L1:1285:G:H5''	1.99	0.43
2:L1:1854:U:H2'	2:L1:1855:G:H8	1.82	0.43
17:LI:692:GLU:HG2	19:LK:555:MET:HB3	2.00	0.43
22:LO:96:LYS:HD2	22:LO:96:LYS:HA	1.86	0.43
26:LS:273:ASN:HB2	26:LS:292:TYR:CE1	2.53	0.43
28:LU:3:VAL:HG22	29:LW:160:LEU:HD13	1.99	0.43
36:NE:212:LYS:O	36:NE:216:GLU:HG2	2.18	0.43
41:NJ:132:ASN:HD21	41:NJ:543:ASN:HB2	1.81	0.43
56:SH:67:ASN:HB2	56:SH:72:THR:HG22	1.99	0.43
56:SH:123:ASP:OD1	56:SH:124:GLN:N	2.48	0.43
57:SI:381:SER:HB2	57:SI:386:LYS:HE3	2.00	0.43
61:SP:1398:PHE:CD2	61:SP:1410:LEU:HD21	2.53	0.43
66:SU:397:ARG:HG3	66:SU:398:HIS:ND1	2.32	0.43
2:L1:306:C:O2	9:L8:53:LYS:NZ	2.45	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:589:G:HO2'	2:L1:590:A:P	2.40	0.43
8:L7:64:VAL:O	8:L7:97:GLN:N	2.49	0.43
11:LA:24:THR:O	11:LA:27:ILE:HG22	2.18	0.43
12:LC:47:LEU:O	12:LC:50:LYS:HB2	2.18	0.43
12:LC:97:GLN:HB2	12:LC:105:LYS:HG3	1.99	0.43
18:LJ:270:ARG:HG2	18:LJ:290:ALA:C	2.39	0.43
20:LM:2066:ASN:HD22	20:LM:2102:LEU:HB3	1.82	0.43
22:LO:847:PHE:O	22:LO:850:LYS:HG3	2.18	0.43
23:LP:494:ARG:NH1	23:LP:532:TYR:OH	2.42	0.43
24:LQ:482:ASP:HB2	24:LQ:485:SER:HB2	2.00	0.43
25:LR:524:LEU:HA	25:LR:540:SER:HA	1.99	0.43
26:LS:245:ASN:ND2	26:LS:543:GLY:O	2.47	0.43
41:NJ:209:ILE:O	57:SI:382:THR:OG1	2.36	0.43
42:NM:224:GLU:OE1	42:NM:227:LYS:N	2.50	0.43
46:NR:746:UNK:O	46:NR:750:UNK:N	2.51	0.43
56:SH:124:GLN:O	57:SI:736:ARG:NH1	2.51	0.43
59:SL:86:LEU:HD23	59:SL:129:PHE:CZ	2.53	0.43
61:SP:31:ILE:HD11	61:SP:195:PHE:HB2	2.01	0.43
61:SP:1235:VAL:HA	61:SP:1238:ILE:HD12	1.99	0.43
61:SP:2088:LEU:HD13	61:SP:2132:GLY:HA3	2.00	0.43
2:L1:145:G:H2'	2:L1:146:G:C8	2.53	0.43
2:L1:979:C:H2'	2:L1:980:A:H8	1.82	0.43
4:L3:36:VAL:HG23	4:L3:40:TYR:CD2	2.41	0.43
5:L4:212:ASP:OD1	5:L4:216:ASN:N	2.51	0.43
8:L7:37:LYS:HG2	8:L7:41:ARG:HG3	2.00	0.43
11:LA:55:ASN:OD1	11:LA:81:ASP:HA	2.18	0.43
12:LC:138:ARG:HG3	22:LO:535:ARG:HG2	2.00	0.43
16:LH:318:HIS:HE2	16:LH:322:GLU:HB3	1.83	0.43
20:LM:302:SER:HA	20:LM:305:ILE:HD12	1.99	0.43
20:LM:1323:ILE:HD12	20:LM:1353:VAL:HG21	2.00	0.43
24:LQ:369:ASP:OD1	24:LQ:370:LEU:N	2.52	0.43
26:LS:407:TYR:CD1	26:LS:419:ARG:HG2	2.54	0.43
39:NH:140:PRO:HA	39:NH:541:PRO:HG3	2.00	0.43
41:NJ:290:LYS:HD3	41:NJ:410:ALA:HB1	2.00	0.43
48:NU:8:THR:HA	48:NU:11:LYS:NZ	2.33	0.43
58:SJ:44:ILE:HB	58:SJ:197:VAL:HG22	2.00	0.43
58:SJ:102:ARG:NH2	58:SK:222:TYR:OH	2.51	0.43
61:SP:1670:GLN:HG2	61:SP:1816:GLU:HG3	2.00	0.43
61:SP:1976:GLN:NE2	61:SP:1979:LYS:HD2	2.33	0.43
2:L1:1336:C:H2'	2:L1:1337:C:C6	2.53	0.43
2:L1:1794:C:H2'	2:L1:1795:G:H8	1.84	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:L9:54:ARG:HH21	59:SL:96:ALA:HB2	1.84	0.43
16:LH:557:LEU:HD11	16:LH:612:PRO:HB3	2.00	0.43
23:LP:227:LYS:HE3	23:LP:227:LYS:HB3	1.76	0.43
24:LQ:902:LEU:HD23	25:LR:761:LEU:HD22	2.01	0.43
27:LT:845:ASN:O	27:LT:848:LYS:HG2	2.19	0.43
28:LU:283:SER:HB3	28:LU:302:PHE:HB3	2.01	0.43
28:LU:418:GLU:OE1	28:LU:421:ARG:NH1	2.51	0.43
40:NI:42:VAL:HG12	40:NI:63:VAL:HG13	2.00	0.43
58:SJ:150:ASP:OD1	58:SJ:150:ASP:N	2.52	0.43
61:SP:118:LEU:HB3	61:SP:121:ASP:HB2	2.00	0.43
61:SP:276:MET:O	61:SP:280:THR:OG1	2.33	0.43
61:SP:457:PRO:HD2	61:SP:569:ASN:HD21	1.82	0.43
65:ST:565:VAL:C	65:ST:568:PRO:HD2	2.39	0.43
2:L1:318:A:H61	7:L6:186:GLN:HE22	1.67	0.43
2:L1:989:C:OP2	42:NM:155:TYR:OH	2.26	0.43
3:L2:88:G:O6	52:SB:333:ARG:NH1	2.51	0.43
6:L5:30:ILE:HG23	6:L5:117:ILE:HD11	2.01	0.43
8:L7:153:LEU:HD21	28:LU:196:PHE:CD2	2.54	0.43
20:LM:363:THR:HG22	20:LM:417:LYS:HD2	2.00	0.43
20:LM:1790:GLU:OE1	20:LM:1806:LEU:HD22	2.18	0.43
26:LS:486:GLU:OE1	26:LS:553:TYR:OH	2.31	0.43
46:NR:810:UNK:O	46:NR:814:UNK:N	2.51	0.43
61:SP:2186:CYS:HA	61:SP:2189:ILE:HD12	2.00	0.43
3:L2:50:U:H2'	3:L2:51:C:C6	2.54	0.43
4:L3:23:ARG:NH2	18:LJ:80:LYS:HA	2.34	0.43
16:LH:614:GLU:HG3	16:LH:616:ARG:HG2	2.00	0.43
18:LJ:264:LEU:HB3	18:LJ:295:LEU:HD21	1.99	0.43
22:LO:590:GLY:HA2	22:LO:656:GLU:HA	2.00	0.43
24:LQ:200:LEU:HD22	24:LQ:308:ILE:HD13	2.00	0.43
28:LU:180:ILE:HD12	28:LU:192:MET:HE3	2.01	0.43
41:NK:508:TYR:N	41:NK:558:CYS:O	2.51	0.43
48:NU:55:THR:HA	48:NU:58:MET:HB3	1.99	0.43
57:SI:956:LEU:HD22	57:SI:968:LEU:HD11	2.00	0.43
61:SP:977:ARG:NH1	61:SP:987:GLU:OE1	2.49	0.43
8:L7:30:LEU:O	8:L7:34:SER:HB3	2.18	0.43
8:L7:64:VAL:HB	8:L7:72:PHE:CE2	2.51	0.43
9:L8:61:ASP:OD2	9:L8:61:ASP:N	2.52	0.43
16:LH:345:ARG:HE	16:LH:426:LYS:NZ	2.16	0.43
17:LI:509:LEU:HD21	17:LI:616:PHE:HB2	2.01	0.43
17:LI:690:LYS:O	19:LL:569:HIS:ND1	2.50	0.43
20:LM:373:GLN:HA	20:LM:376:LYS:HZ3	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LM:502:LEU:HD11	20:LM:518:ILE:HG12	2.01	0.43
20:LM:1518:VAL:HB	20:LM:1590:LYS:HD3	2.00	0.43
20:LM:1587:LEU:O	20:LM:1591:VAL:N	2.51	0.43
21:LN:363:THR:OG1	21:LN:374:PRO:O	2.37	0.43
21:LN:404:TRP:HE1	21:LN:449:SER:HB2	1.83	0.43
21:LN:502:SER:HB3	21:LN:508:VAL:HG22	2.01	0.43
25:LR:317:LEU:HD12	25:LR:326:LEU:HD11	2.01	0.43
25:LR:517:PHE:HE1	25:LR:553:PHE:HA	1.84	0.43
27:LT:248:VAL:HG11	27:LT:268:SER:H	1.84	0.43
38:NG:83:GLN:HA	38:NG:86:LYS:HZ3	1.83	0.43
39:NH:267:LEU:HD22	39:NH:298:ASN:HA	2.01	0.43
39:NH:477:ARG:HB2	39:NH:478:PRO:HD3	2.01	0.43
40:NI:63:VAL:O	40:NI:119:ALA:N	2.39	0.43
61:SP:1631:ASN:OD1	61:SP:1632:ILE:HD12	2.19	0.43
61:SP:1985:LYS:HG3	61:SP:2083:PHE:HE2	1.83	0.43
2:L1:285:U:H2'	2:L1:286:U:C6	2.54	0.43
2:L1:1387:G:H3'	2:L1:1388:A:H8	1.84	0.43
5:L4:54:TYR:O	14:LF:15:ASN:ND2	2.52	0.43
5:L4:176:ASP:OD1	5:L4:177:THR:N	2.51	0.43
9:L8:64:ASN:HA	9:L8:75:LYS:HA	2.01	0.43
9:L8:80:ASP:OD2	9:L8:81:VAL:N	2.52	0.43
19:LL:118:SER:HG	19:LL:158:CYS:HG	1.66	0.43
20:LM:249:GLY:HA2	20:LM:257:TYR:CE2	2.54	0.43
25:LR:524:LEU:HD23	25:LR:538:THR:HB	2.01	0.43
28:LU:9:ASN:HB2	28:LU:12:ASN:ND2	2.33	0.43
28:LU:164:HIS:CE1	28:LU:169:ALA:HA	2.54	0.43
29:LW:355:ILE:HG13	64:SS:667:VAL:HG13	2.00	0.43
41:NJ:330:PHE:HA	41:NJ:335:TYR:HD2	1.84	0.43
41:NK:285:ALA:HB3	41:NK:288:ARG:HE	1.84	0.43
41:NK:587:ARG:O	41:NK:590:ILE:HG22	2.19	0.43
50:NY:239:TRP:HA	50:NY:242:PHE:HD2	1.84	0.43
55:SG:349:LEU:HD11	55:SG:412:LEU:HD13	2.00	0.43
60:SM:97:LEU:HD22	60:SM:141:GLU:HG2	2.01	0.43
61:SP:635:GLN:HE21	61:SP:722:ARG:HE	1.65	0.43
61:SP:1204:LYS:O	61:SP:1208:ILE:HG12	2.19	0.43
66:SU:186:GLN:NE2	66:SU:190:ASP:OD1	2.51	0.43
66:SU:241:LYS:HB2	66:SU:247:GLU:HG3	2.00	0.43
12:LC:63:PHE:CZ	12:LC:92:LEU:HD22	2.54	0.43
16:LH:57:ARG:HD3	16:LH:57:ARG:HA	1.81	0.43
17:LI:658:PHE:HZ	18:LJ:489:MET:HB3	1.84	0.43
20:LM:558:LEU:HD11	20:LM:602:CYS:HB2	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
26:LS:183:LYS:HB2	26:LS:183:LYS:HE2	1.82	0.43
26:LS:279:GLN:HB3	26:LS:286:PRO:HD2	2.00	0.43
29:LW:343:LEU:O	29:LW:352:LEU:N	2.44	0.43
48:NU:54:VAL:O	48:NU:58:MET:N	2.43	0.43
49:NW:119:ILE:HD11	49:NW:133:ILE:HB	2.01	0.43
50:NY:101:VAL:HG21	50:NY:116:ALA:HB1	2.01	0.43
59:SL:113:LEU:HB3	59:SL:117:TYR:CD1	2.53	0.43
66:SU:277:HIS:CE1	66:SU:346:ARG:HH22	2.36	0.43
66:SU:310:ASN:HD22	66:SU:346:ARG:NH2	2.17	0.43
70:SY:116:ILE:HG23	70:SY:202:LEU:HD11	2.01	0.43
2:L1:175:A:H2'	2:L1:176:U:C6	2.54	0.43
2:L1:219:U:H2'	2:L1:220:U:H6	1.84	0.43
2:L1:1289:U:H2'	2:L1:1290:G:C8	2.54	0.43
2:L1:1670:C:OP2	60:SM:91:ARG:NH1	2.52	0.43
7:L6:188:LYS:O	7:L6:192:ILE:HG12	2.19	0.43
9:L8:192:GLY:O	9:L8:195:LEU:N	2.51	0.43
10:L9:131:ARG:HA	10:L9:131:ARG:HD2	1.80	0.43
16:LH:152:ASP:OD1	16:LH:153:TYR:N	2.50	0.43
18:LJ:173:SER:OG	18:LJ:179:LEU:HB3	2.19	0.43
22:LO:705:VAL:HA	22:LO:721:THR:HG22	2.00	0.43
23:LP:12:ARG:NH2	23:LP:57:TYR:OH	2.52	0.43
23:LP:580:GLU:OE2	23:LP:580:GLU:N	2.42	0.43
24:LQ:680:CYS:SG	24:LQ:681:LEU:N	2.92	0.43
26:LS:357:LEU:HD11	26:LS:365:LEU:HB3	2.00	0.43
27:LT:491:LYS:HE2	27:LT:491:LYS:HB2	1.82	0.43
28:LU:234:LYS:HD2	28:LU:444:VAL:HG21	2.00	0.43
37:NF:83:ASP:OD1	37:NF:84:LEU:N	2.52	0.43
41:NJ:388:ASP:OD1	41:NJ:389:GLU:N	2.51	0.43
41:NK:612:GLN:HB3	41:NK:774:ARG:HH12	1.83	0.43
42:NM:52:THR:HG23	42:NM:57:ILE:HA	2.01	0.43
49:NW:143:HIS:CD2	49:NW:145:PRO:HD2	2.54	0.43
53:SC:155:ILE:HG22	53:SC:157:ILE:HG12	2.01	0.43
58:SJ:51:SER:OG	58:SJ:83:ALA:HA	2.19	0.43
58:SJ:124:THR:HG22	58:SJ:155:LEU:HB3	2.01	0.43
61:SP:1637:THR:HG23	61:SP:1676:LEU:HD23	2.01	0.43
64:SS:720:LYS:HE3	64:SS:720:LYS:HB3	1.92	0.43
65:ST:738:SER:O	65:ST:741:THR:OG1	2.29	0.43
66:SU:284:LEU:HD23	66:SU:287:PRO:HA	2.00	0.43
66:SU:297:ALA:HB1	66:SU:304:LEU:HD21	2.00	0.43
2:L1:980:A:H2'	2:L1:981:A:H8	1.84	0.42
2:L1:1384:C:H2'	2:L1:1385:G:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:1687:C:H2'	2:L1:1688:C:C6	2.54	0.42
8:L7:142:LYS:HE2	8:L7:156:VAL:HG22	2.00	0.42
14:LF:13:MET:SD	14:LF:22:GLN:NE2	2.85	0.42
14:LF:55:ILE:HG13	14:LF:75:ILE:HD13	2.01	0.42
17:LI:624:TYR:HE1	17:LI:647:MET:HE2	1.84	0.42
17:LI:682:ILE:HD11	19:LK:566:SER:HA	2.01	0.42
20:LM:1334:VAL:HB	20:LM:1339:ASP:HB3	2.01	0.42
20:LM:1396:LEU:O	20:LM:1400:VAL:HG23	2.19	0.42
21:LN:100:PHE:CZ	53:SC:288:GLN:HG3	2.53	0.42
24:LQ:445:THR:HG22	24:LQ:447:GLN:OE1	2.18	0.42
25:LR:345:PRO:HG2	25:LR:346:GLU:OE1	2.19	0.42
27:LT:207:ILE:HG12	27:LT:222:LEU:HD22	2.00	0.42
29:LW:198:PRO:HB3	29:LW:467:THR:HG22	2.01	0.42
39:NH:266:ARG:HD2	39:NH:266:ARG:HA	1.83	0.42
47:NT:99:LYS:HB2	47:NT:99:LYS:HE2	1.84	0.42
53:SC:97:PHE:CE1	53:SC:109:LYS:HE3	2.54	0.42
54:SF:36:ARG:HA	54:SF:36:ARG:HD2	1.81	0.42
61:SP:1398:PHE:HA	61:SP:1401:ILE:HG22	2.01	0.42
61:SP:1895:GLY:O	61:SP:1898:VAL:HG22	2.19	0.42
3:L2:178:G:H1'	3:L2:183:G:C2	2.54	0.42
4:L3:26:ILE:HD12	4:L3:59:LEU:HD11	2.00	0.42
14:LF:12:PHE:HZ	14:LF:21:LYS:HD3	1.83	0.42
16:LH:130:VAL:HG21	16:LH:147:LEU:HD12	2.00	0.42
16:LH:297:SER:HB2	16:LH:306:CYS:SG	2.59	0.42
20:LM:1755:VAL:O	20:LM:1758:LEU:HG	2.18	0.42
20:LM:2085:LEU:HD23	20:LM:2124:GLN:HG3	2.01	0.42
21:LN:602:TYR:HA	21:LN:648:LYS:O	2.19	0.42
22:LO:742:ASP:OD1	22:LO:743:THR:N	2.51	0.42
23:LP:400:ARG:HG2	23:LP:431:HIS:HB3	2.02	0.42
28:LU:127:VAL:HG11	28:LU:159:TYR:HB2	2.01	0.42
30:LZ:2:VAL:HG23	30:LZ:3:ARG:H	1.84	0.42
52:SB:59:ALA:HA	52:SB:69:ASN:OD1	2.19	0.42
52:SB:64:MET:CE	53:SC:222:LYS:HA	2.48	0.42
54:SF:50:ILE:HA	54:SF:106:ILE:HD12	2.01	0.42
55:SG:382:VAL:HG12	55:SG:393:THR:HG22	2.01	0.42
65:ST:548:TYR:O	65:ST:552:THR:HG23	2.19	0.42
2:L1:375:U:H2'	2:L1:376:A:H8	1.82	0.42
2:L1:993:G:OP1	2:L1:1131:G:N2	2.48	0.42
2:L1:1091:C:H2'	2:L1:1092:G:C8	2.54	0.42
2:L1:1387:G:C2	2:L1:1388:A:H1'	2.54	0.42
3:L2:9:A:H2'	3:L2:10:C:C6	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L2:25:U:O4	28:LU:389:ARG:NH1	2.52	0.42
4:L3:66:ARG:O	4:L3:70:ILE:HG13	2.18	0.42
11:LA:51:VAL:HG22	11:LA:77:ILE:HG22	2.02	0.42
14:LF:72:PHE:HB3	34:NC:246:MET:HE2	2.02	0.42
20:LM:99:ILE:HD11	20:LM:198:LYS:HE3	2.02	0.42
20:LM:1420:PHE:HB3	20:LM:1516:LEU:HD21	2.01	0.42
21:LN:39:THR:HA	21:LN:55:PHE:O	2.19	0.42
22:LO:202:ASP:OD1	22:LO:216:GLN:HA	2.20	0.42
25:LR:354:SER:OG	25:LR:360:LYS:NZ	2.52	0.42
39:NH:376:ARG:O	39:NH:380:GLN:HG3	2.19	0.42
41:NK:267:PHE:HZ	41:NK:282:LEU:HD11	1.84	0.42
46:NR:304:UNK:O	46:NR:308:UNK:N	2.52	0.42
47:NT:104:LYS:HE3	47:NT:105:TYR:CE1	2.54	0.42
49:NW:249:THR:HA	49:NW:274:PRO:HB3	2.01	0.42
53:SC:295:GLU:OE2	70:SY:136:HIS:NE2	2.52	0.42
54:SF:84:ARG:HB2	55:SG:375:GLN:HE21	1.84	0.42
56:SH:46:ASP:OD1	56:SH:47:PHE:N	2.52	0.42
56:SH:156:ARG:HG2	56:SH:166:GLU:HB3	2.01	0.42
3:L2:40:U:H5'	28:LU:18:LYS:HE3	2.01	0.42
8:L7:153:LEU:HD21	28:LU:196:PHE:HD2	1.84	0.42
16:LH:545:LEU:HD11	16:LH:556:LEU:HD21	2.01	0.42
17:LI:609:PRO:HB2	17:LI:612:HIS:ND1	2.34	0.42
18:LJ:240:LEU:HD21	18:LJ:243:SER:HB2	2.01	0.42
20:LM:1522:SER:HA	20:LM:1594:LEU:HD11	2.00	0.42
25:LR:237:GLU:OE1	25:LR:266:GLY:HA3	2.18	0.42
27:LT:210:ILE:HG22	27:LT:222:LEU:HD23	2.01	0.42
27:LT:901:LEU:O	27:LT:905:LEU:HB2	2.19	0.42
38:NG:42:VAL:HG13	38:NG:81:VAL:HG21	2.00	0.42
47:NT:121:CYS:HB3	47:NT:126:CYS:HB3	2.02	0.42
48:NU:5:ARG:HG2	48:NU:49:LYS:NZ	2.35	0.42
49:NW:73:TYR:O	49:NW:76:ARG:NH1	2.52	0.42
53:SC:239:GLN:O	53:SC:242:GLN:HG3	2.19	0.42
57:SI:930:ARG:NH1	63:SR:136:GLY:O	2.47	0.42
61:SP:383:THR:HG23	61:SP:384:LEU:HD22	2.01	0.42
61:SP:461:SER:H	61:SP:651:ARG:HH21	1.68	0.42
61:SP:1325:ASN:HD21	61:SP:1328:GLN:HG3	1.84	0.42
70:SY:164:ARG:HH21	70:SY:167:ASN:HB3	1.84	0.42
71:SZ:349:LYS:HB3	71:SZ:388:ARG:HD3	2.01	0.42
1:L0:856:C:H2'	1:L0:857:C:C6	2.54	0.42
2:L1:19:A:O2'	2:L1:20:G:O4'	2.37	0.42
11:LA:80:ASP:OD1	11:LA:80:ASP:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:LL:510:THR:O	19:LL:514:GLN:NE2	2.43	0.42
20:LM:698:LEU:HB2	20:LM:775:LEU:HD22	2.01	0.42
20:LM:1508:LYS:HA	20:LM:1511:ARG:HE	1.84	0.42
20:LM:1789:LEU:HA	20:LM:1792:ILE:HG22	2.00	0.42
21:LN:404:TRP:NE1	21:LN:449:SER:HB2	2.35	0.42
22:LO:800:GLU:OE2	22:LO:837:ARG:NH2	2.39	0.42
24:LQ:544:ARG:HD2	24:LQ:544:ARG:HA	1.83	0.42
24:LQ:839:PHE:O	24:LQ:843:ILE:HG12	2.20	0.42
37:NF:42:LYS:HD2	37:NF:42:LYS:HA	1.76	0.42
39:NH:153:ARG:HE	39:NH:188:ILE:HG22	1.85	0.42
39:NH:303:GLN:HG3	73:NH:3000:ATP:C2	2.55	0.42
41:NJ:125:ASP:OD1	41:NJ:152:ARG:NH2	2.52	0.42
41:NJ:266:LYS:HD2	41:NJ:461:TYR:CG	2.54	0.42
41:NJ:617:ASP:OD1	41:NJ:618:PHE:N	2.52	0.42
41:NK:280:VAL:HA	41:NK:461:TYR:HB2	2.01	0.42
41:NK:859:LEU:HD22	41:NK:898:ILE:HG12	2.01	0.42
51:SA:249:ARG:HA	51:SA:249:ARG:HD3	1.92	0.42
65:ST:702:TYR:HB3	65:ST:705:LEU:HD12	2.01	0.42
2:L1:74:G:H1'	2:L1:76:U:OP1	2.20	0.42
2:L1:639:C:H2'	2:L1:640:A:C8	2.54	0.42
2:L1:1373:C:H2'	2:L1:1374:C:H6	1.85	0.42
6:L5:99:ILE:HD13	6:L5:171:GLU:HG3	2.00	0.42
8:L7:192:PHE:CZ	45:NQ:12:PRO:HA	2.55	0.42
11:LA:95:ASP:OD1	11:LA:95:ASP:N	2.53	0.42
16:LH:96:PHE:CE1	16:LH:134:LEU:HB3	2.55	0.42
16:LH:271:VAL:HG13	16:LH:287:PRO:HA	2.02	0.42
17:LI:401:LEU:O	17:LI:405:ILE:HG13	2.19	0.42
20:LM:1265:LYS:HE2	20:LM:1265:LYS:HB3	1.76	0.42
21:LN:580:ASP:N	21:LN:580:ASP:OD1	2.52	0.42
23:LP:14:PRO:HA	23:LP:17:GLU:HG2	2.02	0.42
25:LR:160:HIS:HB2	25:LR:169:PHE:HE2	1.84	0.42
27:LT:669:VAL:HG23	27:LT:680:THR:HG22	2.02	0.42
28:LU:71:CYS:HB3	28:LU:115:ILE:HG22	2.01	0.42
36:NE:176:HIS:CE1	36:NE:180:ILE:HD11	2.55	0.42
39:NH:228:THR:HB	39:NH:236:SER:HB3	2.01	0.42
53:SC:137:TRP:CE2	53:SC:145:ALA:HB2	2.55	0.42
55:SG:168:CYS:HB2	55:SG:186:ARG:HB2	2.01	0.42
61:SP:746:HIS:O	61:SP:750:MET:HG2	2.19	0.42
65:ST:212:UNK:O	65:ST:216:UNK:N	2.52	0.42
67:SW:213:GLY:N	67:SW:218:ILE:HD11	2.34	0.42
2:L1:675:U:H2'	2:L1:676:C:C6	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L1:951:C:H2'	2:L1:952:G:H8	1.84	0.42
20:LM:913:ALA:O	20:LM:950:SER:OG	2.25	0.42
20:LM:1283:PHE:HE2	20:LM:1285:VAL:HG22	1.83	0.42
20:LM:1562:ALA:HB1	20:LM:1612:LEU:HD12	2.02	0.42
20:LM:1966:LEU:O	20:LM:2026:GLN:NE2	2.51	0.42
20:LM:2036:LYS:NZ	20:LM:2040:ARG:HB2	2.34	0.42
20:LM:2066:ASN:ND2	20:LM:2102:LEU:HB3	2.35	0.42
21:LN:677:PRO:HB3	35:ND:206:THR:O	2.19	0.42
22:LO:91:HIS:ND1	22:LO:133:ALA:HB2	2.34	0.42
24:LQ:154:GLN:HG2	24:LQ:197:LEU:HB3	2.02	0.42
26:LS:474:THR:HG21	26:LS:494:LYS:HB2	2.02	0.42
30:LZ:31:LEU:HD23	30:LZ:34:LEU:HD12	2.01	0.42
39:NH:102:LYS:HE3	39:NH:102:LYS:HB2	1.90	0.42
41:NK:635:TYR:HB3	41:NK:640:TYR:HE2	1.85	0.42
52:SB:194:LEU:HD12	52:SB:194:LEU:HA	1.93	0.42
53:SC:97:PHE:HB2	53:SC:107:VAL:HG23	2.02	0.42
55:SG:363:GLU:HG2	55:SG:376:PRO:HB3	2.01	0.42
57:SI:1235:GLU:HG3	57:SI:1238:ARG:HH21	1.84	0.42
58:SK:85:PRO:HG2	58:SK:130:PHE:HZ	1.84	0.42
61:SP:435:ASP:HB3	61:SP:438:VAL:HG12	2.01	0.42
61:SP:1610:GLN:HA	61:SP:1614:MET:CE	2.50	0.42
61:SP:1906:HIS:HB2	61:SP:1960:LYS:HB3	2.01	0.42
3:L2:46:A:O2'	59:SL:22:GLN:NE2	2.51	0.42
6:L5:26:ASP:OD1	6:L5:27:ASP:N	2.52	0.42
13:LD:80:MET:HA	13:LD:86:ILE:HG22	2.01	0.42
19:LL:272:TYR:HB3	19:LL:290:VAL:HB	2.01	0.42
19:LL:319:ILE:HG22	19:LL:333:ILE:HD12	2.01	0.42
20:LM:610:ASN:ND2	20:LM:702:VAL:HG21	2.35	0.42
20:LM:943:GLN:HG2	20:LM:960:ILE:HG23	2.02	0.42
20:LM:1279:ASP:HB3	20:LM:1282:LYS:HE2	2.02	0.42
20:LM:1376:VAL:O	20:LM:1380:ILE:HG12	2.19	0.42
21:LN:608:ASP:OD2	21:LN:611:LEU:N	2.50	0.42
24:LQ:201:SER:HB3	24:LQ:205:ARG:HG3	2.02	0.42
25:LR:19:ARG:NE	25:LR:364:LEU:O	2.41	0.42
34:NC:203:SER:O	34:NC:207:ARG:HG3	2.20	0.42
46:NR:317:UNK:O	46:NR:321:UNK:N	2.52	0.42
52:SB:63:LEU:O	52:SB:94:LEU:HD21	2.19	0.42
52:SB:346:LEU:HD12	52:SB:362:LEU:HD13	2.02	0.42
52:SB:362:LEU:O	52:SB:366:THR:OG1	2.24	0.42
70:SY:233:LYS:HG2	70:SY:245:TYR:HE1	1.84	0.42
2:L1:1219:C:OP1	6:L5:127:ARG:NH2	2.48	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L3:27:ALA:O	4:L3:31:THR:HG23	2.20	0.42
16:LH:529:TRP:CE3	16:LH:529:TRP:HA	2.55	0.42
16:LH:741:LEU:HD23	20:LM:218:ALA:HB1	2.01	0.42
19:LK:466:LEU:HD13	19:LK:481:VAL:HG11	2.01	0.42
20:LM:2069:ILE:O	20:LM:2073:THR:HG23	2.20	0.42
22:LO:552:ARG:HH21	22:LO:556:ALA:HB3	1.85	0.42
24:LQ:631:ALA:HA	24:LQ:660:TRP:CZ2	2.54	0.42
27:LT:667:LEU:HD23	27:LT:667:LEU:HA	1.87	0.42
28:LU:283:SER:HB2	28:LU:303:ASP:H	1.85	0.42
36:NE:282:ASP:O	36:NE:286:ILE:HG13	2.20	0.42
46:NR:880:UNK:O	46:NR:884:UNK:N	2.53	0.42
53:SC:292:LYS:HE2	53:SC:315:PRO:HG3	2.02	0.42
61:SP:751:GLU:OE1	61:SP:754:GLN:N	2.46	0.42
61:SP:1471:LEU:O	61:SP:1475:MET:HG2	2.19	0.42
61:SP:1580:HIS:CG	61:SP:1585:ARG:HD3	2.55	0.42
61:SP:1831:MET:HE2	61:SP:1839:MET:HA	2.01	0.42
1:L0:453:U:H2'	1:L0:454:C:C6	2.55	0.42
2:L1:1667:U:H5'	60:SM:142:HIS:HA	2.00	0.42
11:LA:82:ASN:HA	11:LA:85:LEU:HD12	2.02	0.42
22:LO:674:GLN:O	22:LO:678:GLN:HG2	2.20	0.42
23:LP:571:TRP:HZ3	52:SB:392:GLU:HG2	1.84	0.42
25:LR:89:LEU:HD22	25:LR:103:LEU:HD21	2.01	0.42
27:LT:637:LEU:HB2	27:LT:651:LEU:HD11	2.02	0.42
29:LW:141:GLU:HG2	64:SS:715:LYS:HE2	2.02	0.42
36:NE:278:LEU:HB2	44:NO:77:PRO:HG2	2.01	0.42
41:NK:414:ASN:HB2	41:NK:488:ASP:HA	2.01	0.42
53:SC:92:ARG:NH2	53:SC:153:ASP:OD1	2.52	0.42
53:SC:304:ARG:O	53:SC:306:HIS:ND1	2.47	0.42
55:SG:125:LYS:H	55:SG:125:LYS:HD2	1.83	0.42
57:SI:1236:HIS:O	57:SI:1240:LYS:HG2	2.20	0.42
58:SK:224:LEU:HD23	58:SK:228:LEU:HG	2.00	0.42
59:SL:140:TYR:CZ	59:SL:142:ASP:HB2	2.55	0.42
64:SS:169:ALA:HA	64:SS:170:PRO:HD3	1.86	0.42
67:SW:86:THR:OG1	67:SW:87:PRO:HD3	2.20	0.42
2:L1:29:G:H2'	2:L1:30:C:C6	2.55	0.41
2:L1:607:U:OP1	57:SI:1099:ARG:NH1	2.53	0.41
2:L1:1102:G:H2'	2:L1:1103:C:C6	2.55	0.41
17:LI:701:LEU:HD21	19:LL:574:LEU:HG	2.01	0.41
20:LM:850:LYS:O	20:LM:854:LYS:HG2	2.20	0.41
21:LN:592:ARG:NH2	21:LN:658:GLU:OE2	2.53	0.41
22:LO:42:LEU:HD11	22:LO:367:LEU:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:LO:112:VAL:HG22	22:LO:121:MET:HG3	2.02	0.41
22:LO:681:GLY:O	22:LO:683:ALA:N	2.49	0.41
24:LQ:459:CYS:O	24:LQ:472:GLY:N	2.47	0.41
27:LT:769:ASP:HA	27:LT:772:LYS:NZ	2.35	0.41
29:LW:240:ARG:NH2	29:LW:256:ASN:OD1	2.53	0.41
57:SI:260:ARG:HD3	57:SI:338:PRO:HB2	2.01	0.41
57:SI:1274:LEU:HA	57:SI:1274:LEU:HD12	1.87	0.41
59:SL:78:PHE:CD1	59:SL:160:VAL:HG21	2.55	0.41
61:SP:1395:ALA:HA	61:SP:1398:PHE:CE2	2.55	0.41
65:ST:579:LYS:O	65:ST:579:LYS:HG2	2.20	0.41
67:SW:89:LYS:HD3	67:SW:89:LYS:HA	1.89	0.41
67:SW:154:ARG:HG3	67:SW:155:LEU:HD12	2.02	0.41
2:L1:1267:C:H2'	2:L1:1268:C:C6	2.55	0.41
2:L1:1269:G:H2'	2:L1:1270:G:C8	2.54	0.41
2:L1:1495:G:OP1	71:SZ:301:THR:OG1	2.26	0.41
3:L2:109:C:N4	33:NB:457:GLU:HG2	2.36	0.41
3:L2:145:U:O2'	3:L2:146:G:OP2	2.31	0.41
8:L7:15:LYS:HE2	8:L7:15:LYS:HB3	1.79	0.41
9:L8:106:SER:HB3	9:L8:171:LEU:HG	2.02	0.41
16:LH:240:THR:HG21	21:LN:264:GLN:HE22	1.85	0.41
17:LI:216:ILE:HD11	17:LI:234:ILE:HG13	2.01	0.41
19:LL:528:LYS:O	19:LL:532:THR:OG1	2.10	0.41
19:LL:601:GLU:OE1	21:LN:416:TYR:OH	2.26	0.41
20:LM:374:ILE:HD12	20:LM:374:ILE:HA	1.94	0.41
20:LM:630:ILE:HD12	20:LM:630:ILE:H	1.86	0.41
24:LQ:115:TYR:HE1	24:LQ:136:VAL:HG21	1.86	0.41
24:LQ:207:ILE:HG13	24:LQ:217:VAL:HG23	2.01	0.41
28:LU:304:LYS:HG2	28:LU:326:GLN:HA	2.01	0.41
28:LU:397:PRO:HD2	28:LU:400:ILE:HD12	2.02	0.41
28:LU:405:GLN:O	28:LU:409:ILE:HG12	2.20	0.41
35:ND:194:ILE:HD12	35:ND:194:ILE:HA	1.88	0.41
41:NK:157:LEU:HB3	41:NK:188:ILE:HD13	2.02	0.41
44:NO:32:LYS:O	44:NO:36:ARG:HG3	2.21	0.41
52:SB:351:SER:HB3	62:SQ:617:HIS:CG	2.55	0.41
57:SI:922:VAL:HG22	57:SI:1017:LEU:HD23	2.02	0.41
57:SI:1131:THR:HG22	57:SI:1134:GLN:HG3	2.01	0.41
58:SK:149:ALA:HB2	65:ST:769:ARG:HA	2.01	0.41
61:SP:736:TRP:O	61:SP:740:ILE:HG12	2.20	0.41
1:L0:742:G:H3'	1:L0:743:G:H8	1.85	0.41
1:L0:858:C:P	30:LZ:53:ARG:HH22	2.43	0.41
2:L1:941:C:H2'	2:L1:942:G:C8	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L6:221:LYS:HD2	7:L6:224:ARG:HH11	1.85	0.41
18:LJ:442:ALA:HA	18:LJ:445:ILE:HG12	2.02	0.41
19:LL:169:SER:HG	19:LL:188:ARG:HH12	1.66	0.41
20:LM:1082:LEU:HD21	20:LM:1126:LYS:HD3	2.01	0.41
20:LM:1601:ILE:O	20:LM:1604:ILE:HG22	2.20	0.41
22:LO:114:THR:HB	22:LO:147:THR:OG1	2.20	0.41
22:LO:143:PRO:HG3	22:LO:169:TRP:CD1	2.55	0.41
22:LO:283:ASN:HD21	22:LO:289:ASN:HB3	1.84	0.41
23:LP:368:SER:OG	23:LP:369:GLU:N	2.53	0.41
24:LQ:716:GLU:HA	24:LQ:719:ARG:HD2	2.02	0.41
25:LR:156:LEU:HB3	25:LR:171:SER:HB3	2.01	0.41
27:LT:399:SER:OG	27:LT:400:GLN:N	2.54	0.41
27:LT:879:MET:O	27:LT:883:MET:HG3	2.21	0.41
34:NC:269:LEU:HD22	34:NC:272:LEU:HD11	2.02	0.41
36:NE:183:TYR:HB3	36:NE:187:LYS:HB2	2.02	0.41
39:NH:472:HIS:CE1	39:NH:556:LEU:HD11	2.55	0.41
53:SC:238:ALA:H	53:SC:242:GLN:HE21	1.68	0.41
54:SE:25:LEU:HD22	54:SE:119:ILE:HG13	2.02	0.41
61:SP:1356:LEU:HG	61:SP:1373:ILE:HG23	2.01	0.41
65:ST:558:THR:OG1	65:ST:559:SER:N	2.52	0.41
65:ST:570:LEU:HD11	66:SU:445:TYR:HB2	2.01	0.41
66:SU:261:LYS:HG2	66:SU:262:HIS:HD2	1.85	0.41
2:L1:1314:U:O2'	71:SZ:281:PHE:O	2.32	0.41
19:LL:596:LYS:HZ1	21:LN:382:LEU:HA	1.86	0.41
20:LM:523:LEU:HD23	20:LM:523:LEU:HA	1.88	0.41
20:LM:539:SER:O	20:LM:542:GLU:HG3	2.21	0.41
20:LM:1898:ASP:HA	20:LM:1901:VAL:HG22	2.02	0.41
21:LN:22:VAL:HG12	21:LN:33:VAL:HG22	2.02	0.41
21:LN:338:ILE:HG12	21:LN:349:PHE:CD1	2.55	0.41
22:LO:561:ALA:HB2	22:LO:611:LEU:HD11	2.01	0.41
25:LR:59:ARG:NH2	25:LR:96:GLN:O	2.53	0.41
28:LU:326:GLN:HE22	59:SL:114:GLY:HA2	1.85	0.41
29:LW:176:ILE:O	29:LW:180:VAL:HG23	2.20	0.41
41:NK:283:THR:HG22	41:NK:411:SER:HB2	2.02	0.41
41:NK:337:GLU:HA	41:NK:341:TYR:CZ	2.55	0.41
42:NM:62:LEU:HD12	42:NM:62:LEU:HA	1.92	0.41
51:SA:252:MET:HB3	53:SC:205:LYS:HG2	2.02	0.41
53:SC:200:LEU:O	53:SC:204:ALA:N	2.48	0.41
54:SE:20:LYS:HA	54:SE:20:LYS:HD2	1.91	0.41
55:SG:368:ARG:HB3	55:SG:377:PHE:CZ	2.55	0.41
56:SH:191:ILE:HB	56:SH:223:ILE:HG13	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:SI:391:ARG:HA	57:SI:402:GLY:HA3	2.02	0.41
57:SI:925:ARG:HB2	57:SI:1015:LEU:HD11	2.03	0.41
58:SK:173:LYS:HD2	58:SK:212:TYR:CD2	2.55	0.41
61:SP:74:LYS:HD2	61:SP:84:HIS:HB3	2.01	0.41
61:SP:1524:GLU:HG3	61:SP:1528:LYS:NZ	2.35	0.41
61:SP:1878:VAL:HG12	61:SP:1912:LEU:HD13	2.02	0.41
65:ST:726:CYS:SG	65:ST:728:HIS:NE2	2.92	0.41
70:SY:3:ALA:HA	70:SY:6:ARG:HE	1.85	0.41
2:L1:71:G:H2'	2:L1:72:C:O4'	2.20	0.41
2:L1:438:G:N2	49:NW:125:SER:OG	2.53	0.41
2:L1:1740:C:H2'	2:L1:1741:U:H6	1.85	0.41
6:L5:40:ALA:HB1	6:L5:45:TYR:CG	2.56	0.41
12:LC:81:ILE:O	12:LC:85:ARG:HG3	2.21	0.41
19:LL:54:PRO:HG2	19:LL:57:HIS:HB3	2.02	0.41
20:LM:665:ILE:HA	20:LM:710:VAL:HG12	2.03	0.41
22:LO:379:LEU:HD22	22:LO:720:THR:HG23	2.02	0.41
24:LQ:9:ARG:HA	24:LQ:669:GLN:NE2	2.35	0.41
25:LR:245:LEU:HD12	25:LR:261:TYR:HB3	2.02	0.41
26:LS:253:ARG:HB3	26:LS:271:LEU:HG	2.02	0.41
32:NA:418:THR:HG22	32:NA:421:THR:HG23	2.03	0.41
39:NH:425:LEU:HD12	73:NH:3000:ATP:N1	2.35	0.41
46:NR:249:UNK:O	46:NR:253:UNK:N	2.53	0.41
52:SB:11:TYR:HE1	52:SB:63:LEU:HD11	1.85	0.41
53:SD:312:VAL:HG13	53:SD:315:PRO:HG3	2.02	0.41
57:SI:320:PRO:HB3	57:SI:332:GLU:OE1	2.19	0.41
57:SI:1022:LYS:NZ	65:ST:78:ASP:OD2	2.53	0.41
58:SK:147:ARG:HG2	58:SK:154:LYS:HD3	2.02	0.41
59:SL:132:LEU:HA	59:SL:133:PRO:HD3	1.90	0.41
60:SM:165:CYS:HB2	60:SM:252:GLU:HB2	2.01	0.41
1:L0:614:U:H2'	1:L0:615:C:C6	2.55	0.41
2:L1:373:G:H2'	2:L1:374:G:H8	1.85	0.41
2:L1:496:C:H2'	2:L1:497:C:H6	1.86	0.41
2:L1:979:C:H2'	2:L1:980:A:C8	2.56	0.41
2:L1:1702:G:N1	25:LR:725:SER:OG	2.51	0.41
14:LF:80:ASP:OD1	14:LF:81:TYR:N	2.52	0.41
16:LH:129:LEU:HB2	16:LH:154:ILE:HD13	2.03	0.41
18:LJ:158:LEU:HD23	18:LJ:159:THR:N	2.36	0.41
20:LM:496:ILE:HA	20:LM:499:MET:HE2	2.02	0.41
20:LM:794:LYS:HB3	20:LM:794:LYS:HE3	1.89	0.41
20:LM:827:HIS:CD2	20:LM:883:CYS:HB3	2.56	0.41
20:LM:958:HIS:O	20:LM:961:SER:OG	2.27	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LM:1387:LEU:HD23	20:LM:1395:ARG:HD2	2.01	0.41
21:LN:316:GLU:HG2	21:LN:317:LYS:HG3	2.03	0.41
41:NJ:172:ARG:HE	41:NJ:172:ARG:HB3	1.76	0.41
41:NJ:884:ILE:HG22	41:NJ:886:LEU:H	1.85	0.41
41:NK:849:TYR:CZ	41:NK:859:LEU:HD12	2.55	0.41
52:SB:329:LEU:HD23	52:SB:329:LEU:HA	1.89	0.41
61:SP:965:HIS:CD2	61:SP:967:HIS:H	2.39	0.41
61:SP:1370:GLU:CD	61:SP:1403:ASN:HD22	2.23	0.41
63:SR:38:ALA:O	65:ST:850:LEU:HD23	2.21	0.41
2:L1:1091:C:H2'	2:L1:1092:G:H8	1.86	0.41
2:L1:1313:A:H4'	2:L1:1314:U:O4'	2.20	0.41
3:L2:100:U:H2'	3:L2:101:C:H6	1.85	0.41
3:L2:121:U:H1'	3:L2:153:G:N2	2.35	0.41
11:LA:25:ALA:HB3	11:LA:31:LEU:HD12	2.03	0.41
14:LF:79:LEU:HG	14:LF:83:LYS:HE3	2.01	0.41
15:LG:39:SER:HB3	24:LQ:865:GLY:HA3	2.03	0.41
16:LH:58:ASN:HD22	16:LH:78:LEU:HB2	1.85	0.41
16:LH:271:VAL:HG22	16:LH:287:PRO:HA	2.02	0.41
16:LH:551:THR:HB	17:LI:295:GLN:HE21	1.86	0.41
19:LL:367:ARG:H	19:LL:367:ARG:HD3	1.85	0.41
20:LM:1408:ALA:HB1	20:LM:1412:LEU:HB2	2.02	0.41
20:LM:1969:VAL:HG12	20:LM:2029:ASN:HD21	1.84	0.41
22:LO:43:LYS:HG3	67:SW:252:PHE:CE2	2.56	0.41
22:LO:551:PHE:CE1	22:LO:558:LEU:HD12	2.56	0.41
25:LR:608:VAL:HA	25:LR:624:ALA:HA	2.02	0.41
27:LT:255:GLN:NE2	27:LT:261:VAL:O	2.54	0.41
27:LT:797:LEU:HB2	67:SW:251:ARG:NE	2.35	0.41
32:NA:398:ASN:HB3	32:NA:401:LEU:HD12	2.02	0.41
49:NW:142:TYR:HD1	49:NW:149:LEU:HB2	1.85	0.41
49:NW:254:LEU:HG	49:NW:266:VAL:HG12	2.02	0.41
76:SJ:301:SAH:H8	76:SJ:301:SAH:SD	2.61	0.41
61:SP:1510:THR:HG23	61:SP:1513:ASP:H	1.86	0.41
61:SP:1876:LEU:HB3	61:SP:1880:PHE:CD2	2.55	0.41
61:SP:2096:LYS:HB2	61:SP:2139:TRP:CZ3	2.55	0.41
70:SY:94:LEU:HG	70:SY:98:ARG:HE	1.84	0.41
71:SZ:361:VAL:HG12	71:SZ:365:LEU:HD23	2.02	0.41
1:L0:745:U:O2'	1:L0:746:G:H5''	2.20	0.41
1:L0:754:G:H2'	1:L0:755:C:C5	2.55	0.41
2:L1:110:U:H2'	2:L1:111:A:H8	1.86	0.41
2:L1:1296:U:H2'	2:L1:1297:U:O4'	2.21	0.41
2:L1:1768:A:H2'	2:L1:1769:C:H4'	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L3:25:LYS:HA	4:L3:55:ARG:HA	2.02	0.41
7:L6:32:MET:SD	7:L6:54:GLY:HA2	2.61	0.41
13:LD:24:LEU:HD23	13:LD:24:LEU:HA	1.91	0.41
17:LI:473:LEU:HD21	17:LI:485:LEU:HD21	2.03	0.41
20:LM:380:GLU:O	20:LM:384:THR:HG23	2.20	0.41
20:LM:1310:THR:O	20:LM:1314:ILE:HG12	2.20	0.41
20:LM:2030:ARG:NH2	20:LM:2080:VAL:HG13	2.35	0.41
21:LN:269:THR:OG1	21:LN:271:ASN:OD1	2.29	0.41
22:LO:305:THR:O	22:LO:312:PHE:HA	2.21	0.41
24:LQ:416:SER:OG	24:LQ:417:ASP:N	2.53	0.41
26:LS:194:PRO:HG2	26:LS:197:ALA:HB2	2.03	0.41
27:LT:545:VAL:HG12	27:LT:556:THR:HG22	2.03	0.41
28:LU:75:HIS:HD2	28:LU:78:LYS:N	2.19	0.41
28:LU:263:LEU:HD13	28:LU:297:PHE:HE1	1.86	0.41
32:NA:592:LYS:HA	32:NA:595:ARG:NH1	2.35	0.41
41:NJ:502:PRO:HA	41:NJ:643:ARG:HD3	2.02	0.41
41:NK:833:VAL:HG23	41:NK:834:ASP:OD1	2.20	0.41
52:SB:44:LEU:HD23	52:SB:44:LEU:HA	1.80	0.41
76:SJ:301:SAH:HG2	76:SJ:301:SAH:H3'	2.03	0.41
2:L1:22:A:H61	2:L1:652:U:H3	1.68	0.41
2:L1:61:A:HO2'	2:L1:315:C:HO2'	1.65	0.41
2:L1:1233:G:H2'	2:L1:1234:C:C6	2.56	0.41
3:L2:106:G:N2	3:L2:167:U:OP2	2.45	0.41
7:L6:7:PHE:O	7:L6:11:GLY:N	2.53	0.41
7:L6:135:PRO:HG2	7:L6:141:ILE:HG12	2.03	0.41
9:L8:121:LEU:HD21	9:L8:166:PHE:CG	2.55	0.41
10:L9:110:LEU:HB2	10:L9:147:PHE:HB3	2.01	0.41
13:LD:13:GLN:NE2	13:LD:36:TYR:HB3	2.36	0.41
16:LH:203:LYS:H	16:LH:224:ASP:HB3	1.85	0.41
18:LJ:479:GLU:OE1	19:LL:525:GLN:NE2	2.54	0.41
19:LL:140:CYS:SG	19:LL:161:LYS:NZ	2.70	0.41
20:LM:147:VAL:HA	20:LM:150:LEU:HD12	2.03	0.41
20:LM:679:SER:O	20:LM:683:MET:HG2	2.20	0.41
20:LM:1151:PHE:CE2	20:LM:1213:LEU:HB3	2.56	0.41
20:LM:1384:VAL:O	20:LM:1388:PRO:HD3	2.20	0.41
20:LM:1555:LEU:HD23	20:LM:1558:ILE:HD11	2.02	0.41
20:LM:1675:LYS:HG3	20:LM:1717:CYS:SG	2.61	0.41
20:LM:2039:GLU:HB3	20:LM:2043:LYS:HZ1	1.86	0.41
20:LM:2050:ALA:HB1	20:LM:2094:LYS:HG3	2.02	0.41
20:LM:2077:SER:O	20:LM:2081:ARG:HG3	2.21	0.41
21:LN:139:ARG:NH2	21:LN:173:VAL:O	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:LN:165:ILE:H	21:LN:165:ILE:HD12	1.86	0.41
21:LN:339:SER:HB2	21:LN:398:ILE:HG22	2.03	0.41
21:LN:388:LYS:HE2	21:LN:388:LYS:HB2	1.78	0.41
22:LO:312:PHE:CE1	22:LO:326:LEU:HB2	2.55	0.41
22:LO:415:SER:OG	22:LO:436:ASP:OD1	2.27	0.41
23:LP:454:GLN:O	23:LP:457:THR:OG1	2.31	0.41
25:LR:23:PRO:HG3	25:LR:627:SER:OG	2.21	0.41
27:LT:178:VAL:HG22	27:LT:184:LEU:HD12	2.03	0.41
27:LT:738:LEU:HD13	27:LT:740:GLU:HG3	2.02	0.41
27:LT:770:VAL:HG12	32:NA:533:ILE:HB	2.02	0.41
27:LT:909:PRO:HA	27:LT:915:LEU:HD21	2.02	0.41
28:LU:40:GLU:OE2	64:SS:704:GLY:N	2.54	0.41
28:LU:165:HIS:N	28:LU:170:VAL:O	2.43	0.41
29:LW:167:ASP:HB3	29:LW:170:LYS:HE2	2.03	0.41
33:NB:465:LEU:HD12	53:SD:103:GLU:OE2	2.21	0.41
39:NH:107:ALA:HA	39:NH:110:ARG:HE	1.86	0.41
39:NH:314:LEU:HD12	39:NH:318:LEU:HD13	2.03	0.41
39:NH:507:LEU:HD23	39:NH:507:LEU:HA	1.90	0.41
41:NJ:234:GLU:HB2	41:NJ:258:LEU:HD22	2.03	0.41
41:NJ:843:PRO:HD3	41:NK:781:TYR:OH	2.20	0.41
41:NK:6:VAL:HG12	41:NK:204:LEU:HG	2.03	0.41
41:NK:25:LEU:HD23	41:NK:197:CYS:SG	2.61	0.41
41:NK:688:ARG:O	41:NK:691:LEU:HD22	2.21	0.41
41:NK:866:LEU:HD21	41:NK:895:PHE:HB2	2.02	0.41
44:NO:119:LYS:HA	44:NO:119:LYS:HD3	1.84	0.41
46:NR:541:UNK:O	46:NR:545:UNK:N	2.54	0.41
51:SA:197:PHE:CD2	51:SA:200:LEU:HB2	2.56	0.41
51:SA:365:LYS:HB2	51:SA:365:LYS:HE2	1.83	0.41
53:SC:201:ILE:HG22	53:SC:205:LYS:HE3	2.03	0.41
55:SG:130:GLU:OE1	55:SG:466:ARG:NH2	2.54	0.41
57:SI:1000:SER:HB2	57:SI:1125:THR:HA	2.03	0.41
61:SP:1609:LEU:HD22	61:SP:1643:ILE:HD12	2.03	0.41
61:SP:1925:LEU:HD23	61:SP:1976:GLN:HE21	1.85	0.41
61:SP:2005:ARG:O	61:SP:2008:THR:OG1	2.31	0.41
61:SP:2112:ASP:HB3	61:SP:2113:PRO:HD3	2.02	0.41
67:SW:251:ARG:HD3	67:SW:251:ARG:O	2.21	0.41
2:L1:530:U:H2'	2:L1:531:A:C8	2.55	0.41
2:L1:596:U:H2'	2:L1:597:G:C8	2.56	0.41
2:L1:1336:C:H2'	2:L1:1337:C:H6	1.85	0.41
2:L1:1658:G:H2'	57:SI:1037:PHE:HB3	2.02	0.41
2:L1:1814:G:H2'	2:L1:1815:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L3:51:ASP:OD1	4:L3:51:ASP:N	2.53	0.41
16:LH:100:CYS:SG	16:LH:101:LYS:N	2.94	0.41
17:LI:616:PHE:HD2	17:LI:653:LEU:HD11	1.86	0.41
18:LJ:467:GLN:HA	19:LL:572:LEU:HD13	2.03	0.41
20:LM:1564:SER:O	20:LM:1567:ARG:HG2	2.21	0.41
20:LM:1741:LEU:HD23	20:LM:1741:LEU:HA	1.92	0.41
21:LN:84:MET:HG2	21:LN:96:ALA:HB2	2.04	0.41
22:LO:378:ALA:HB1	22:LO:421:VAL:HG22	2.02	0.41
22:LO:686:LEU:HD12	22:LO:687:PRO:HD2	2.03	0.41
23:LP:327:LYS:HA	23:LP:330:ILE:HG12	2.03	0.41
24:LQ:634:ASP:OD1	24:LQ:635:SER:N	2.46	0.41
29:LW:203:TYR:CE1	29:LW:210:LEU:HD12	2.56	0.41
39:NH:342:LYS:HA	39:NH:342:LYS:HD2	1.78	0.41
46:NR:463:UNK:O	46:NR:467:UNK:N	2.54	0.41
49:NW:170:ASN:HA	49:NW:171:PRO:HD3	1.95	0.41
51:SA:286:ARG:NH1	51:SA:302:GLU:OE1	2.54	0.41
51:SA:325:THR:HA	51:SA:328:ILE:HD12	2.03	0.41
52:SB:226:LEU:HD21	52:SB:230:VAL:HG12	2.03	0.41
57:SI:138:ASN:HB3	57:SI:950:ARG:HH12	1.86	0.41
58:SK:107:GLN:NE2	58:SK:120:VAL:O	2.53	0.41
60:SM:166:ASN:O	60:SM:251:PHE:HA	2.20	0.41
61:SP:105:GLN:HB3	61:SP:106:PRO:HD3	2.02	0.41
61:SP:1858:ALA:HB3	61:SP:1861:ILE:HG12	2.03	0.41
65:ST:567:THR:OG1	65:ST:568:PRO:HD3	2.20	0.41
65:ST:570:LEU:HD21	66:SU:445:TYR:CD2	2.55	0.41
65:ST:614:ASN:HB3	65:ST:635:VAL:HG21	2.02	0.41
66:SU:272:VAL:HG13	66:SU:273:LEU:HD12	2.02	0.41
2:L1:115:U:H2'	2:L1:116:U:C6	2.56	0.40
2:L1:181:A:H2'	2:L1:182:C:C6	2.56	0.40
2:L1:543:C:OP2	57:SI:1233:ASN:ND2	2.53	0.40
2:L1:627:U:OP1	57:SI:1136:ARG:NH2	2.41	0.40
3:L2:177:C:H2'	3:L2:178:G:O4'	2.21	0.40
18:LJ:274:VAL:HB	18:LJ:284:HIS:HB3	2.02	0.40
21:LN:648:LYS:HB2	21:LN:649:PRO:HD3	2.03	0.40
23:LP:228:ASN:O	23:LP:232:ILE:HG12	2.21	0.40
24:LQ:161:LYS:HE3	24:LQ:161:LYS:HB3	1.89	0.40
24:LQ:942:LEU:HD21	32:NA:451:ALA:HB2	2.03	0.40
25:LR:296:THR:HG23	25:LR:297:HIS:ND1	2.36	0.40
25:LR:366:THR:O	25:LR:367:SER:OG	2.30	0.40
27:LT:581:SER:HB3	27:LT:599:LEU:HB3	2.02	0.40
36:NE:171:ALA:HB1	50:NY:220:LYS:HG3	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:NG:113:GLN:HE21	38:NG:117:ARG:HH21	1.67	0.40
41:NJ:372:HIS:CG	41:NJ:373:PRO:HD2	2.56	0.40
41:NJ:739:ASP:OD1	41:NJ:739:ASP:N	2.53	0.40
41:NK:168:HIS:NE2	41:NK:550:ASP:OD2	2.52	0.40
49:NW:129:TYR:CE2	49:NW:131:THR:HB	2.56	0.40
50:NY:214:HIS:CE1	50:NY:216:ILE:HG12	2.56	0.40
51:SA:20:LYS:HB3	51:SA:20:LYS:HE2	1.72	0.40
61:SP:35:ASP:OD1	61:SP:35:ASP:N	2.45	0.40
61:SP:1925:LEU:HD22	61:SP:1976:GLN:HG3	2.02	0.40
65:ST:70:LEU:HD12	65:ST:813:PHE:CD2	2.57	0.40
65:ST:579:LYS:HE3	65:ST:579:LYS:HB3	1.87	0.40
71:SZ:240:ASN:O	71:SZ:241:LEU:HG	2.21	0.40
2:L1:12:U:H2'	2:L1:13:C:H6	1.86	0.40
2:L1:235:A:C4	2:L1:236:A:C8	3.09	0.40
2:L1:370:G:N7	43:NN:511:LYS:HE3	2.36	0.40
2:L1:1490:G:H2'	2:L1:1490:G:N3	2.36	0.40
5:L4:173:ILE:HD11	5:L4:235:TRP:CD2	2.56	0.40
17:LI:264:ALA:HB3	17:LI:311:LEU:HD13	2.03	0.40
18:LJ:62:ILE:HD13	18:LJ:86:ALA:HB2	2.04	0.40
20:LM:371:ASP:O	20:LM:374:ILE:HG22	2.21	0.40
20:LM:712:VAL:HG12	20:LM:795:LYS:HD2	2.02	0.40
20:LM:1819:PRO:O	20:LM:1823:LEU:HG	2.20	0.40
24:LQ:914:GLU:OE2	67:SW:242:ARG:NH2	2.54	0.40
32:NA:456:LYS:HE2	32:NA:456:LYS:HB2	1.85	0.40
39:NH:144:VAL:HB	39:NH:145:PRO:HD3	2.03	0.40
41:NJ:397:LEU:HD12	41:NJ:397:LEU:HA	1.94	0.40
41:NK:559:LEU:HD23	41:NK:644:ALA:HB2	2.02	0.40
41:NK:587:ARG:HG2	41:NK:587:ARG:HH11	1.86	0.40
46:NR:137:UNK:O	46:NR:141:UNK:N	2.54	0.40
46:NR:985:UNK:O	46:NR:989:UNK:N	2.55	0.40
53:SC:143:LYS:HZ1	53:SC:306:HIS:HD2	1.67	0.40
57:SI:114:ILE:HA	57:SI:340:SER:OG	2.21	0.40
61:SP:503:ILE:HD13	61:SP:517:GLN:HB3	2.02	0.40
61:SP:1596:GLN:HB3	61:SP:1602:VAL:HG12	2.03	0.40
71:SZ:243:GLU:O	71:SZ:247:GLN:HG3	2.21	0.40
1:L0:732:G:O2'	1:L0:733:C:OP1	2.34	0.40
2:L1:1023:A:OP2	37:NF:124:ARG:NH1	2.55	0.40
2:L1:1736:G:H2'	2:L1:1737:G:C8	2.49	0.40
10:L9:180:LYS:HE2	10:L9:180:LYS:HB3	1.69	0.40
11:LA:48:HIS:CE1	11:LA:114:TYR:HB2	2.55	0.40
16:LH:333:ASP:N	16:LH:663:GLN:HE22	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:LH:727:ILE:HA	16:LH:728:PRO:HD3	1.97	0.40
19:LK:523:MET:O	19:LK:526:TRP:HB2	2.22	0.40
20:LM:393:ASP:HB3	20:LM:439:THR:HG21	2.03	0.40
20:LM:1320:LEU:HD11	20:LM:1357:LEU:HD11	2.02	0.40
20:LM:1423:TYR:HE1	20:LM:1439:ILE:HB	1.85	0.40
22:LO:394:ASP:N	22:LO:394:ASP:OD1	2.54	0.40
23:LP:330:ILE:HG13	23:LP:331:THR:N	2.36	0.40
23:LP:387:GLU:O	23:LP:391:VAL:HG23	2.21	0.40
25:LR:145:HIS:CE1	25:LR:182:LEU:HD12	2.57	0.40
25:LR:548:TRP:CZ3	25:LR:555:CYS:HB2	2.57	0.40
26:LS:138:LYS:HD3	26:LS:138:LYS:HA	1.87	0.40
26:LS:253:ARG:HG2	26:LS:541:GLU:HA	2.04	0.40
29:LW:389:ARG:HD3	29:LW:389:ARG:HA	1.78	0.40
32:NA:570:THR:OG1	32:NA:571:ALA:N	2.53	0.40
39:NH:565:LEU:HG	39:NH:602:VAL:HG22	2.03	0.40
51:SA:228:LEU:HD22	51:SA:245:LEU:HD13	2.02	0.40
51:SA:270:ARG:HA	51:SA:270:ARG:HH11	1.85	0.40
61:SP:1583:ILE:HD12	61:SP:1583:ILE:H	1.85	0.40
61:SP:1922:ASP:OD1	61:SP:1923:SER:N	2.54	0.40
70:SY:113:ALA:HA	70:SY:116:ILE:HD12	2.04	0.40
71:SZ:184:VAL:O	71:SZ:188:VAL:HG23	2.22	0.40
1:L0:604:C:H3'	19:LL:515:GLY:HA2	2.03	0.40
2:L1:276:G:H2'	2:L1:277:C:C6	2.56	0.40
2:L1:536:A:H3'	2:L1:537:C:H6	1.86	0.40
2:L1:962:A:H2'	2:L1:963:A:O4'	2.21	0.40
2:L1:1719:A:H2'	2:L1:1720:U:O4'	2.22	0.40
6:L5:136:ARG:HG3	6:L5:203:ASN:OD1	2.20	0.40
8:L7:44:ASN:H	8:L7:68:GLN:HE22	1.70	0.40
16:LH:215:GLU:HG2	16:LH:216:ASP:N	2.37	0.40
16:LH:472:VAL:HB	16:LH:492:PHE:HB3	2.03	0.40
17:LI:659:THR:O	17:LI:663:MET:HG2	2.21	0.40
20:LM:489:HIS:HE1	20:LM:491:LEU:HB2	1.85	0.40
20:LM:1414:ILE:H	20:LM:1414:ILE:HG13	1.78	0.40
20:LM:1742:THR:O	20:LM:1745:LYS:HG2	2.21	0.40
21:LN:355:LEU:HB2	21:LN:385:LEU:HG	2.03	0.40
24:LQ:677:GLU:OE2	24:LQ:677:GLU:N	2.52	0.40
25:LR:327:GLN:OE1	25:LR:327:GLN:N	2.54	0.40
26:LS:308:GLU:HB3	26:LS:326:LEU:HD23	2.04	0.40
32:NA:397:GLU:HA	57:SI:1048:ASN:ND2	2.36	0.40
41:NK:869:GLY:HA3	41:NK:880:LEU:HD11	2.03	0.40
49:NW:157:GLU:OE2	49:NW:171:PRO:HB3	2.20	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:SB:68:ILE:HD12	52:SB:101:LYS:HE3	2.04	0.40
53:SC:183:PRO:HD2	53:SC:184:ASP:N	2.37	0.40
58:SK:99:PRO:HB2	58:SK:238:GLU:OE1	2.22	0.40
61:SP:440:ASP:OD1	61:SP:441:GLU:N	2.55	0.40
61:SP:1062:GLU:OE2	61:SP:1065:ARG:NE	2.52	0.40
61:SP:1403:ASN:O	61:SP:1407:ARG:HG2	2.22	0.40
67:SW:233:PRO:HA	67:SW:234:PRO:HD3	1.96	0.40
70:SY:150:ASP:HB3	70:SY:153:THR:HB	2.02	0.40
2:L1:116:U:H3	2:L1:347:G:H1	1.69	0.40
2:L1:156:G:H1	2:L1:162:C:H42	1.69	0.40
2:L1:382:C:H2'	2:L1:383:G:C8	2.55	0.40
2:L1:589:G:O2'	2:L1:590:A:O5'	2.32	0.40
2:L1:1010:G:H2'	2:L1:1011:A:C8	2.56	0.40
2:L1:1290:G:H2'	2:L1:1291:A:C8	2.56	0.40
2:L1:1372:U:H2'	2:L1:1373:C:C6	2.55	0.40
4:L3:69:THR:O	4:L3:72:GLN:HG2	2.21	0.40
10:L9:27:GLN:HG3	59:SL:59:TYR:CZ	2.57	0.40
16:LH:234:TYR:CE1	21:LN:270:SER:HB2	2.56	0.40
19:LK:551:LEU:O	19:LK:555:MET:HG3	2.22	0.40
19:LL:214:LEU:HD23	19:LL:214:LEU:HA	1.97	0.40
20:LM:88:LYS:HB3	20:LM:88:LYS:HE3	1.90	0.40
20:LM:835:MET:HE3	20:LM:835:MET:HB3	1.76	0.40
20:LM:1443:ASP:HB3	20:LM:1447:TRP:CZ2	2.56	0.40
20:LM:1943:ILE:HG23	20:LM:1947:LEU:HD13	2.03	0.40
21:LN:655:LEU:HD23	21:LN:661:LEU:HG	2.04	0.40
22:LO:205:SER:OG	22:LO:213:CYS:HB3	2.20	0.40
39:NH:168:LEU:HD23	39:NH:168:LEU:HA	1.92	0.40
39:NH:1012:ILE:HD12	39:NH:1137:VAL:HG22	2.03	0.40
41:NK:126:PHE:CD2	41:NK:160:LEU:HD11	2.56	0.40
41:NK:260:GLN:HG3	41:NK:293:ALA:HB2	2.03	0.40
50:NY:310:ILE:O	50:NY:314:GLN:HG2	2.21	0.40
51:SA:308:LEU:HD23	51:SA:308:LEU:HA	1.90	0.40
52:SB:176:LEU:HD12	52:SB:176:LEU:HA	1.96	0.40
56:SH:121:THR:HG23	56:SH:165:GLY:HA3	2.03	0.40
61:SP:265:PRO:O	61:SP:269:ILE:HG13	2.21	0.40
61:SP:1456:ILE:O	61:SP:1460:ILE:HG13	2.21	0.40
64:SS:170:PRO:O	64:SS:172:GLU:N	2.46	0.40
71:SZ:179:PRO:O	71:SZ:182:LEU:HB3	2.21	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles

### 5.3.1 Protein backbone

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	L3	85/116 (73%)	84 (99%)	1 (1%)	0	100	100
5	L4	260/263 (99%)	259 (100%)	1 (0%)	0	100	100
6	L5	188/204 (92%)	182 (97%)	6 (3%)	0	100	100
7	L6	219/249 (88%)	218 (100%)	1 (0%)	0	100	100
8	L7	164/194 (84%)	160 (98%)	4 (2%)	0	100	100
9	L8	176/208 (85%)	174 (99%)	2 (1%)	0	100	100
10	L9	169/194 (87%)	168 (99%)	1 (1%)	0	100	100
11	LA	118/132 (89%)	111 (94%)	7 (6%)	0	100	100
12	LC	137/146 (94%)	136 (99%)	1 (1%)	0	100	100
13	LD	145/158 (92%)	141 (97%)	4 (3%)	0	100	100
14	LF	102/133 (77%)	102 (100%)	0	0	100	100
15	LG	60/69 (87%)	59 (98%)	1 (2%)	0	100	100
16	LH	738/830 (89%)	721 (98%)	17 (2%)	0	100	100
17	LI	374/678 (55%)	370 (99%)	4 (1%)	0	100	100
18	LJ	465/518 (90%)	448 (96%)	17 (4%)	0	100	100
19	LK	116/677 (17%)	113 (97%)	3 (3%)	0	100	100
19	LL	500/677 (74%)	483 (97%)	17 (3%)	0	100	100
20	LM	1977/2144 (92%)	1933 (98%)	44 (2%)	0	100	100
21	LN	667/686 (97%)	647 (97%)	19 (3%)	1 (0%)	51	83
22	LO	844/919 (92%)	826 (98%)	18 (2%)	0	100	100
23	LP	559/597 (94%)	556 (100%)	3 (0%)	0	100	100
24	LQ	810/943 (86%)	792 (98%)	18 (2%)	0	100	100
25	LR	769/808 (95%)	748 (97%)	21 (3%)	0	100	100
26	LS	447/556 (80%)	440 (98%)	7 (2%)	0	100	100
27	LT	863/951 (91%)	847 (98%)	16 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
28	LU	443/445 (100%)	435 (98%)	8 (2%)	0	100	100
29	LW	449/610 (74%)	436 (97%)	13 (3%)	0	100	100
30	LZ	181/184 (98%)	179 (99%)	2 (1%)	0	100	100
32	NA	243/681 (36%)	242 (100%)	1 (0%)	0	100	100
33	NB	71/479 (15%)	69 (97%)	2 (3%)	0	100	100
34	NC	92/315 (29%)	90 (98%)	2 (2%)	0	100	100
35	ND	82/257 (32%)	81 (99%)	1 (1%)	0	100	100
36	NE	94/293 (32%)	94 (100%)	0	0	100	100
37	NF	147/151 (97%)	145 (99%)	2 (1%)	0	100	100
38	NG	114/151 (76%)	113 (99%)	1 (1%)	0	100	100
39	NH	1064/1146 (93%)	1044 (98%)	20 (2%)	0	100	100
40	NI	232/280 (83%)	229 (99%)	3 (1%)	0	100	100
41	NJ	809/1025 (79%)	783 (97%)	26 (3%)	0	100	100
41	NK	801/1025 (78%)	782 (98%)	19 (2%)	0	100	100
42	NM	229/264 (87%)	226 (99%)	3 (1%)	0	100	100
43	NN	40/560 (7%)	39 (98%)	1 (2%)	0	100	100
44	NO	127/130 (98%)	124 (98%)	3 (2%)	0	100	100
45	NQ	80/84 (95%)	79 (99%)	1 (1%)	0	100	100
47	NT	56/156 (36%)	55 (98%)	1 (2%)	0	100	100
48	NU	58/135 (43%)	57 (98%)	1 (2%)	0	100	100
49	NW	305/688 (44%)	293 (96%)	12 (4%)	0	100	100
50	NY	270/381 (71%)	270 (100%)	0	0	100	100
51	SA	390/594 (66%)	388 (100%)	2 (0%)	0	100	100
52	SB	438/529 (83%)	437 (100%)	1 (0%)	0	100	100
53	SC	225/321 (70%)	219 (97%)	6 (3%)	0	100	100
53	SD	233/321 (73%)	227 (97%)	6 (3%)	0	100	100
54	SE	123/128 (96%)	122 (99%)	1 (1%)	0	100	100
54	SF	121/128 (94%)	119 (98%)	2 (2%)	0	100	100
55	SG	383/475 (81%)	374 (98%)	9 (2%)	0	100	100
56	SH	366/373 (98%)	362 (99%)	4 (1%)	0	100	100
57	SI	825/1282 (64%)	812 (98%)	13 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
58	SJ	202/244 (83%)	200 (99%)	2 (1%)	0	100	100
58	SK	202/244 (83%)	200 (99%)	2 (1%)	0	100	100
59	SL	190/198 (96%)	186 (98%)	4 (2%)	0	100	100
60	SM	288/291 (99%)	280 (97%)	8 (3%)	0	100	100
61	SP	1967/2785 (71%)	1933 (98%)	34 (2%)	0	100	100
62	SQ	183/756 (24%)	182 (100%)	1 (0%)	0	100	100
63	SR	106/143 (74%)	104 (98%)	2 (2%)	0	100	100
64	SS	191/771 (25%)	187 (98%)	4 (2%)	0	100	100
65	ST	432/632 (68%)	424 (98%)	8 (2%)	0	100	100
66	SU	316/472 (67%)	311 (98%)	5 (2%)	0	100	100
67	SW	178/252 (71%)	175 (98%)	3 (2%)	0	100	100
70	SY	232/253 (92%)	230 (99%)	2 (1%)	0	100	100
71	SZ	244/304 (80%)	237 (97%)	7 (3%)	0	100	100
All	All	24774/33986 (73%)	24292 (98%)	481 (2%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
21	LN	175	SER

### 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%)	76 (100%)	0	100	100
5	L4	224/225 (100%)	224 (100%)	0	100	100
6	L5	160/170 (94%)	160 (100%)	0	100	100
7	L6	195/218 (89%)	194 (100%)	1 (0%)	88	95
8	L7	149/174 (86%)	149 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	L8	155/180 (86%)	155 (100%)	0	100	100
10	L9	152/168 (90%)	151 (99%)	1 (1%)	84	93
11	LA	102/108 (94%)	100 (98%)	2 (2%)	55	79
12	LC	114/121 (94%)	114 (100%)	0	100	100
13	LD	133/142 (94%)	131 (98%)	2 (2%)	65	84
14	LF	92/115 (80%)	92 (100%)	0	100	100
15	LG	55/62 (89%)	55 (100%)	0	100	100
16	LH	670/748 (90%)	667 (100%)	3 (0%)	91	97
17	LI	368/497 (74%)	368 (100%)	0	100	100
18	LJ	412/456 (90%)	412 (100%)	0	100	100
19	LK	112/594 (19%)	112 (100%)	0	100	100
19	LL	456/594 (77%)	454 (100%)	2 (0%)	91	97
20	LM	1783/1943 (92%)	1779 (100%)	4 (0%)	93	98
21	LN	582/597 (98%)	582 (100%)	0	100	100
22	LO	726/783 (93%)	725 (100%)	1 (0%)	93	98
23	LP	499/527 (95%)	499 (100%)	0	100	100
24	LQ	690/828 (83%)	690 (100%)	0	100	100
25	LR	648/672 (96%)	648 (100%)	0	100	100
26	LS	393/476 (83%)	392 (100%)	1 (0%)	92	97
27	LT	744/823 (90%)	743 (100%)	1 (0%)	93	98
28	LU	399/399 (100%)	399 (100%)	0	100	100
29	LW	373/512 (73%)	373 (100%)	0	100	100
30	LZ	166/167 (99%)	166 (100%)	0	100	100
32	NA	229/626 (37%)	229 (100%)	0	100	100
33	NB	63/413 (15%)	63 (100%)	0	100	100
34	NC	87/282 (31%)	87 (100%)	0	100	100
35	ND	72/222 (32%)	72 (100%)	0	100	100
36	NE	86/253 (34%)	85 (99%)	1 (1%)	71	87
37	NF	130/131 (99%)	130 (100%)	0	100	100
38	NG	92/119 (77%)	92 (100%)	0	100	100
39	NH	917/984 (93%)	916 (100%)	1 (0%)	93	98

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
40	NI	193/246 (78%)	193 (100%)	0	100	100
41	NJ	707/899 (79%)	705 (100%)	2 (0%)	92	97
41	NK	692/899 (77%)	690 (100%)	2 (0%)	92	97
42	NM	207/231 (90%)	207 (100%)	0	100	100
43	NN	37/484 (8%)	37 (100%)	0	100	100
44	NO	112/113 (99%)	112 (100%)	0	100	100
45	NQ	74/76 (97%)	74 (100%)	0	100	100
47	NT	51/140 (36%)	50 (98%)	1 (2%)	55	79
48	NU	53/122 (43%)	53 (100%)	0	100	100
49	NW	282/635 (44%)	280 (99%)	2 (1%)	84	93
50	NY	245/340 (72%)	244 (100%)	1 (0%)	91	97
51	SA	334/511 (65%)	334 (100%)	0	100	100
52	SB	372/455 (82%)	371 (100%)	1 (0%)	92	97
53	SC	192/234 (82%)	191 (100%)	1 (0%)	88	95
53	SD	198/234 (85%)	198 (100%)	0	100	100
54	SE	108/111 (97%)	108 (100%)	0	100	100
54	SF	107/111 (96%)	107 (100%)	0	100	100
55	SG	287/382 (75%)	287 (100%)	0	100	100
56	SH	315/318 (99%)	315 (100%)	0	100	100
57	SI	738/1114 (66%)	738 (100%)	0	100	100
58	SJ	181/209 (87%)	179 (99%)	2 (1%)	73	88
58	SK	181/209 (87%)	181 (100%)	0	100	100
59	SL	177/182 (97%)	177 (100%)	0	100	100
60	SM	253/254 (100%)	253 (100%)	0	100	100
61	SP	1822/2522 (72%)	1818 (100%)	4 (0%)	93	98
62	SQ	165/676 (24%)	165 (100%)	0	100	100
63	SR	85/115 (74%)	85 (100%)	0	100	100
64	SS	177/686 (26%)	176 (99%)	1 (1%)	86	94
65	ST	389/439 (89%)	388 (100%)	1 (0%)	92	97
66	SU	269/303 (89%)	269 (100%)	0	100	100
67	SW	152/208 (73%)	151 (99%)	1 (1%)	84	93

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
70	SY	219/232 (94%)	219 (100%)	0	100	100
71	SZ	214/227 (94%)	213 (100%)	1 (0%)	88	95
All	All	21892/29323 (75%)	21852 (100%)	40 (0%)	93	98

All (40) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
7	L6	231	ARG
10	L9	58	ARG
11	LA	93	LYS
11	LA	96	ARG
13	LD	69	ARG
13	LD	101	ARG
16	LH	140	GLN
16	LH	649	GLN
16	LH	759	LYS
19	LL	188	ARG
19	LL	367	ARG
20	LM	673	ASN
20	LM	1457	GLN
20	LM	1578	ARG
20	LM	1820	ARG
22	LO	850	LYS
26	LS	89	ARG
27	LT	197	GLN
36	NE	229	LYS
39	NH	247	ARG
41	NJ	69	ARG
41	NJ	430	GLN
41	NK	23	ARG
41	NK	60	LYS
47	NT	104	LYS
49	NW	7	ASN
49	NW	208	ARG
50	NY	327	LYS
52	SB	70	LYS
53	SC	87	MET
58	SJ	70	LYS
58	SJ	157	LYS
61	SP	36	ARG
61	SP	1087	LYS

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Mol	Chain	Res	Type
61	SP	1774	ARG
61	SP	2052	ARG
64	SS	130	ARG
65	ST	789	ARG
67	SW	76	ARG
71	SZ	355	ARG

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

Mol	Chain	Res	Type
8	L7	162	GLN
19	LL	458	GLN
19	LL	507	GLN
19	LL	547	GLN
20	LM	373	GLN
20	LM	489	HIS
20	LM	1125	GLN
20	LM	1401	GLN
20	LM	1666	ASN
20	LM	1765	GLN
20	LM	1970	ASN
23	LP	267	HIS
24	LQ	632	HIS
28	LU	75	HIS
28	LU	176	GLN
35	ND	236	GLN
41	NK	372	HIS
41	NK	543	ASN
41	NK	831	ASN
52	SB	113	ASN
53	SC	251	HIS
54	SE	28	GLN
58	SJ	101	ASN
61	SP	635	GLN
61	SP	1403	ASN
61	SP	1538	GLN
61	SP	1976	GLN
61	SP	2182	ASN
64	SS	195	ASN
65	ST	37	ASN
65	ST	722	HIS
65	ST	748	GLN

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Mol	Chain	Res	Type
65	ST	796	HIS
66	SU	262	HIS
66	SU	310	ASN

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	L0	234/3617 (6%)	101 (43%)	6 (2%)
2	L1	1275/1869 (68%)	346 (27%)	23 (1%)
3	L2	214/217 (98%)	80 (37%)	4 (1%)
31	N0	0/22	-	-
All	All	1723/5725 (30%)	527 (30%)	33 (1%)

All (527) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	L0	434	C
1	L0	439	U
1	L0	442	U
1	L0	445	C
1	L0	446	G
1	L0	448	C
1	L0	449	G
1	L0	450	U
1	L0	459	G
1	L0	462	C
1	L0	599	G
1	L0	602	C
1	L0	604	C
1	L0	605	G
1	L0	607	C
1	L0	608	C
1	L0	610	G
1	L0	613	C
1	L0	662	G
1	L0	664	C
1	L0	666	U
1	L0	667	C
1	L0	672	G
1	L0	678	G
1	L0	679	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	L0	680	C
1	L0	681	A
1	L0	685	C
1	L0	687	C
1	L0	688	G
1	L0	690	U
1	L0	691	G
1	L0	692	U
1	L0	694	G
1	L0	714	U
1	L0	716	C
1	L0	717	G
1	L0	718	G
1	L0	719	G
1	L0	720	C
1	L0	721	G
1	L0	723	C
1	L0	724	C
1	L0	725	C
1	L0	728	C
1	L0	732	G
1	L0	733	C
1	L0	734	G
1	L0	735	G
1	L0	736	C
1	L0	737	G
1	L0	738	G
1	L0	740	G
1	L0	741	G
1	L0	742	G
1	L0	743	G
1	L0	744	G
1	L0	745	U
1	L0	746	G
1	L0	751	C
1	L0	752	C
1	L0	754	G
1	L0	755	C
1	L0	756	C
1	L0	761	C
1	L0	796	C
1	L0	797	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	L0	798	U
1	L0	800	G
1	L0	801	G
1	L0	803	U
1	L0	814	C
1	L0	818	G
1	L0	819	C
1	L0	820	G
1	L0	822	U
1	L0	823	G
1	L0	829	G
1	L0	831	A
1	L0	832	G
1	L0	833	C
1	L0	840	G
1	L0	843	U
1	L0	844	G
1	L0	855	G
1	L0	859	G
1	L0	860	A
1	L0	862	G
1	L0	863	C
1	L0	864	C
1	L0	865	G
1	L0	1414	A
1	L0	1415	G
1	L0	1418	A
1	L0	1419	A
1	L0	1420	G
1	L0	1421	C
1	L0	1428	U
1	L0	1430	G
1	L0	1433	A
1	L0	1435	C
2	L1	5	U
2	L1	8	U
2	L1	9	U
2	L1	10	G
2	L1	17	C
2	L1	18	C
2	L1	20	G
2	L1	21	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	23	G
2	L1	33	G
2	L1	46	A
2	L1	47	G
2	L1	50	A
2	L1	56	G
2	L1	59	U
2	L1	64	A
2	L1	65	C
2	L1	67	C
2	L1	68	A
2	L1	72	C
2	L1	73	C
2	L1	74	G
2	L1	75	G
2	L1	76	U
2	L1	92	A
2	L1	95	G
2	L1	96	C
2	L1	97	U
2	L1	98	C
2	L1	99	A
2	L1	100	U
2	L1	103	A
2	L1	104	A
2	L1	105	U
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	161	U
2	L1	162	C
2	L1	172	U
2	L1	173	A
2	L1	180	G
2	L1	182	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	184	G
2	L1	185	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	U
2	L1	214	U
2	L1	215	G
2	L1	226	A
2	L1	227	U
2	L1	228	C
2	L1	229	A
2	L1	235	A
2	L1	238	C
2	L1	248	C
2	L1	269	G
2	L1	271	C
2	L1	272	G
2	L1	275	C
2	L1	279	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	312	G
2	L1	319	C
2	L1	321	C
2	L1	322	C
2	L1	323	C
2	L1	325	C
2	L1	326	C
2	L1	328	U
2	L1	329	G
2	L1	332	G
2	L1	335	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	347	G
2	L1	350	C
2	L1	362	C
2	L1	364	A
2	L1	368	U
2	L1	369	C
2	L1	370	G
2	L1	385	G
2	L1	386	C
2	L1	389	A
2	L1	391	C
2	L1	400	C
2	L1	405	G
2	L1	407	G
2	L1	408	A
2	L1	413	G
2	L1	415	A
2	L1	416	U
2	L1	417	C
2	L1	419	G
2	L1	420	G
2	L1	422	U
2	L1	423	U
2	L1	424	C
2	L1	427	U
2	L1	430	C
2	L1	431	G
2	L1	432	G
2	L1	439	A
2	L1	447	A
2	L1	451	G
2	L1	452	G
2	L1	467	G
2	L1	471	G
2	L1	478	G
2	L1	480	G
2	L1	481	C
2	L1	482	G
2	L1	483	C
2	L1	484	A
2	L1	485	A
2	L1	486	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	487	U
2	L1	488	U
2	L1	492	C
2	L1	496	C
2	L1	502	C
2	L1	514	U
2	L1	515	G
2	L1	516	A
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	556	U
2	L1	559	G
2	L1	560	A
2	L1	564	A
2	L1	570	C
2	L1	588	G
2	L1	590	A
2	L1	591	U
2	L1	594	A
2	L1	606	G
2	L1	611	G
2	L1	614	C
2	L1	622	C
2	L1	624	C
2	L1	627	U
2	L1	628	A
2	L1	643	A
2	L1	644	G
2	L1	651	U
2	L1	652	U
2	L1	653	A
2	L1	654	A
2	L1	655	A
2	L1	684	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
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	990	A
2	L1	991	G
2	L1	992	A
2	L1	1017	U
2	L1	1023	A
2	L1	1027	A
2	L1	1093	A
2	L1	1094	C
2	L1	1096	G
2	L1	1100	A
2	L1	1111	U
2	L1	1114	U
2	L1	1115	U
2	L1	1121	G
2	L1	1133	A
2	L1	1137	U
2	L1	1144	A
2	L1	1145	A
2	L1	1147	C
2	L1	1148	A
2	L1	1170	A
2	L1	1172	U
2	L1	1174	U
2	L1	1175	G
2	L1	1178	U
2	L1	1187	G
2	L1	1189	A
2	L1	1190	A
2	L1	1192	U
2	L1	1193	U
2	L1	1195	A
2	L1	1196	A
2	L1	1198	G
2	L1	1212	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	1215	C
2	L1	1216	C
2	L1	1217	A
2	L1	1267	C
2	L1	1268	C
2	L1	1273	C
2	L1	1275	G
2	L1	1276	A
2	L1	1277	C
2	L1	1278	A
2	L1	1283	C
2	L1	1286	G
2	L1	1290	G
2	L1	1295	A
2	L1	1301	A
2	L1	1302	G
2	L1	1303	C
2	L1	1308	U
2	L1	1309	C
2	L1	1311	C
2	L1	1313	A
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	1354	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	1376	A
2	L1	1377	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	1378	A
2	L1	1382	A
2	L1	1394	G
2	L1	1452	A
2	L1	1454	A
2	L1	1461	G
2	L1	1462	U
2	L1	1463	U
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	1524	G
2	L1	1533	A
2	L1	1534	C
2	L1	1544	C
2	L1	1548	G
2	L1	1549	U
2	L1	1550	G
2	L1	1592	C
2	L1	1599	U
2	L1	1638	G
2	L1	1639	G
2	L1	1648	G
2	L1	1656	G
2	L1	1660	C
2	L1	1664	A
2	L1	1665	G
2	L1	1666	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	1667	U
2	L1	1681	U
2	L1	1685	U
2	L1	1692	U
2	L1	1704	C
2	L1	1710	C
2	L1	1715	A
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	1757	G
2	L1	1760	G
2	L1	1765	C
2	L1	1767	C
2	L1	1768	A
2	L1	1769	C
2	L1	1770	G
2	L1	1771	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	1800	A
2	L1	1801	A
2	L1	1809	A
2	L1	1810	U
2	L1	1812	U
2	L1	1813	A
2	L1	1818	A
2	L1	1824	A
2	L1	1838	U
2	L1	1846	G
2	L1	1848	U
2	L1	1849	G
2	L1	1850	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	L1	1851	A
2	L1	1852	C
3	L2	13	U
3	L2	14	C
3	L2	15	A
3	L2	16	G
3	L2	22	A
3	L2	23	U
3	L2	24	U
3	L2	25	U
3	L2	27	U
3	L2	28	A
3	L2	30	A
3	L2	31	G
3	L2	32	U
3	L2	33	G
3	L2	35	G
3	L2	39	C
3	L2	44	G
3	L2	46	A
3	L2	49	U
3	L2	61	G
3	L2	62	U
3	L2	64	G
3	L2	68	A
3	L2	69	C
3	L2	88	G
3	L2	89	A
3	L2	91	G
3	L2	92	U
3	L2	108	G
3	L2	109	C
3	L2	110	G
3	L2	114	A
3	L2	115	G
3	L2	116	C
3	L2	117	C
3	L2	118	G
3	L2	119	G
3	L2	123	U
3	L2	124	C
3	L2	125	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	L2	126	G
3	L2	127	G
3	L2	128	C
3	L2	129	G
3	L2	130	U
3	L2	131	U
3	L2	132	G
3	L2	138	C
3	L2	139	U
3	L2	145	U
3	L2	146	G
3	L2	147	C
3	L2	148	C
3	L2	149	G
3	L2	150	U
3	L2	152	A
3	L2	153	G
3	L2	154	C
3	L2	158	U
3	L2	168	U
3	L2	171	U
3	L2	172	C
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	188	G
3	L2	189	U
3	L2	190	G
3	L2	191	A
3	L2	192	G
3	L2	199	A
3	L2	200	G
3	L2	201	A
3	L2	202	A
3	L2	208	U
3	L2	209	C
3	L2	213	G

All (33) RNA pucker outliers are listed below:



Mol	Chain	Res	Type
1	L0	433	U
1	L0	604	C
1	L0	666	U
1	L0	732	G
1	L0	799	C
1	L0	854	U
2	L1	157	U
2	L1	226	A
2	L1	227	U
2	L1	325	C
2	L1	368	U
2	L1	369	C
2	L1	423	U
2	L1	450	C
2	L1	466	G
2	L1	487	U
2	L1	589	G
2	L1	969	U
2	L1	1197	G
2	L1	1393	G
2	L1	1461	G
2	L1	1637	A
2	L1	1664	A
2	L1	1684	C
2	L1	1703	C
2	L1	1719	A
2	L1	1765	C
2	L1	1817	G
2	L1	1823	A
3	L2	14	C
3	L2	145	U
3	L2	152	A
3	L2	188	G

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

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

#### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 30 ligands modelled in this entry, 25 are monoatomic - leaving 5 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
76	SAH	SK	301	-	24,28,28	1.19	3 (12%)	25,40,40	1.71	5 (20%)
73	ATP	NH	3000	72	26,33,33	0.58	0	31,52,52	0.81	2 (6%)
76	SAH	SJ	301	-	24,28,28	1.20	3 (12%)	25,40,40	1.70	5 (20%)
75	GTP	SI	2001	72	26,34,34	1.13	2 (7%)	32,54,54	1.54	6 (18%)
73	ATP	NK	1101	-	26,33,33	0.59	0	31,52,52	0.74	2 (6%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
76	SAH	SK	301	-	-	9/11/31/31	0/3/3/3
73	ATP	NH	3000	72	-	6/18/38/38	0/3/3/3
76	SAH	SJ	301	-	-	3/11/31/31	0/3/3/3
75	GTP	SI	2001	72	-	7/18/38/38	0/3/3/3
73	ATP	NK	1101	-	-	7/18/38/38	0/3/3/3

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
75	SI	2001	GTP	C5-C6	-4.16	1.39	1.47
76	SJ	301	SAH	C2-N3	3.92	1.38	1.32
76	SK	301	SAH	C2-N3	3.86	1.38	1.32
76	SK	301	SAH	C2-N1	2.47	1.38	1.33
76	SJ	301	SAH	C2-N1	2.45	1.38	1.33
75	SI	2001	GTP	C2-N3	2.15	1.38	1.33
76	SK	301	SAH	OXT-C	-2.12	1.23	1.30
76	SJ	301	SAH	OXT-C	-2.12	1.23	1.30

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
76	SK	301	SAH	N3-C2-N1	-5.40	120.25	128.68
76	SJ	301	SAH	N3-C2-N1	-5.39	120.25	128.68
75	SI	2001	GTP	PB-O3B-PG	-3.57	120.57	132.83
76	SK	301	SAH	C5'-SD-CG	-3.42	92.02	102.27
76	SJ	301	SAH	C5'-SD-CG	-3.31	92.33	102.27
75	SI	2001	GTP	C8-N7-C5	3.15	108.99	102.99
75	SI	2001	GTP	C3'-C2'-C1'	3.13	105.69	100.98
75	SI	2001	GTP	C5-C6-N1	3.07	119.38	113.95
76	SJ	301	SAH	C3'-C2'-C1'	2.85	105.27	100.98
76	SK	301	SAH	C3'-C2'-C1'	2.77	105.15	100.98
75	SI	2001	GTP	C2-N1-C6	-2.76	120.02	125.10
76	SK	301	SAH	OXT-C-O	-2.69	117.99	124.09
75	SI	2001	GTP	PA-O3A-PB	-2.69	123.60	132.83
76	SJ	301	SAH	OXT-C-O	-2.64	118.09	124.09
73	NK	1101	ATP	C5-C6-N6	2.31	123.87	120.35
73	NH	3000	ATP	C5-C6-N6	2.30	123.85	120.35
76	SK	301	SAH	OXT-C-CA	2.24	121.02	113.38
76	SJ	301	SAH	OXT-C-CA	2.24	121.00	113.38
73	NK	1101	ATP	PB-O3B-PG	2.07	139.95	132.83
73	NH	3000	ATP	PB-O3B-PG	2.03	139.79	132.83

There are no chirality outliers.

All (32) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
73	NH	3000	ATP	C5'-O5'-PA-O1A
73	NH	3000	ATP	C5'-O5'-PA-O3A
73	NK	1101	ATP	C5'-O5'-PA-O1A
75	SI	2001	GTP	C5'-O5'-PA-O1A
75	SI	2001	GTP	C5'-O5'-PA-O2A
76	SK	301	SAH	O4'-C4'-C5'-SD
76	SK	301	SAH	OXT-C-CA-CB
76	SK	301	SAH	O-C-CA-CB
73	NH	3000	ATP	O4'-C4'-C5'-O5'
76	SK	301	SAH	C-CA-CB-CG
73	NK	1101	ATP	O4'-C4'-C5'-O5'
76	SJ	301	SAH	OXT-C-CA-N
73	NH	3000	ATP	C3'-C4'-C5'-O5'
76	SJ	301	SAH	O-C-CA-N
73	NK	1101	ATP	C4'-C5'-O5'-PA
76	SJ	301	SAH	CA-CB-CG-SD

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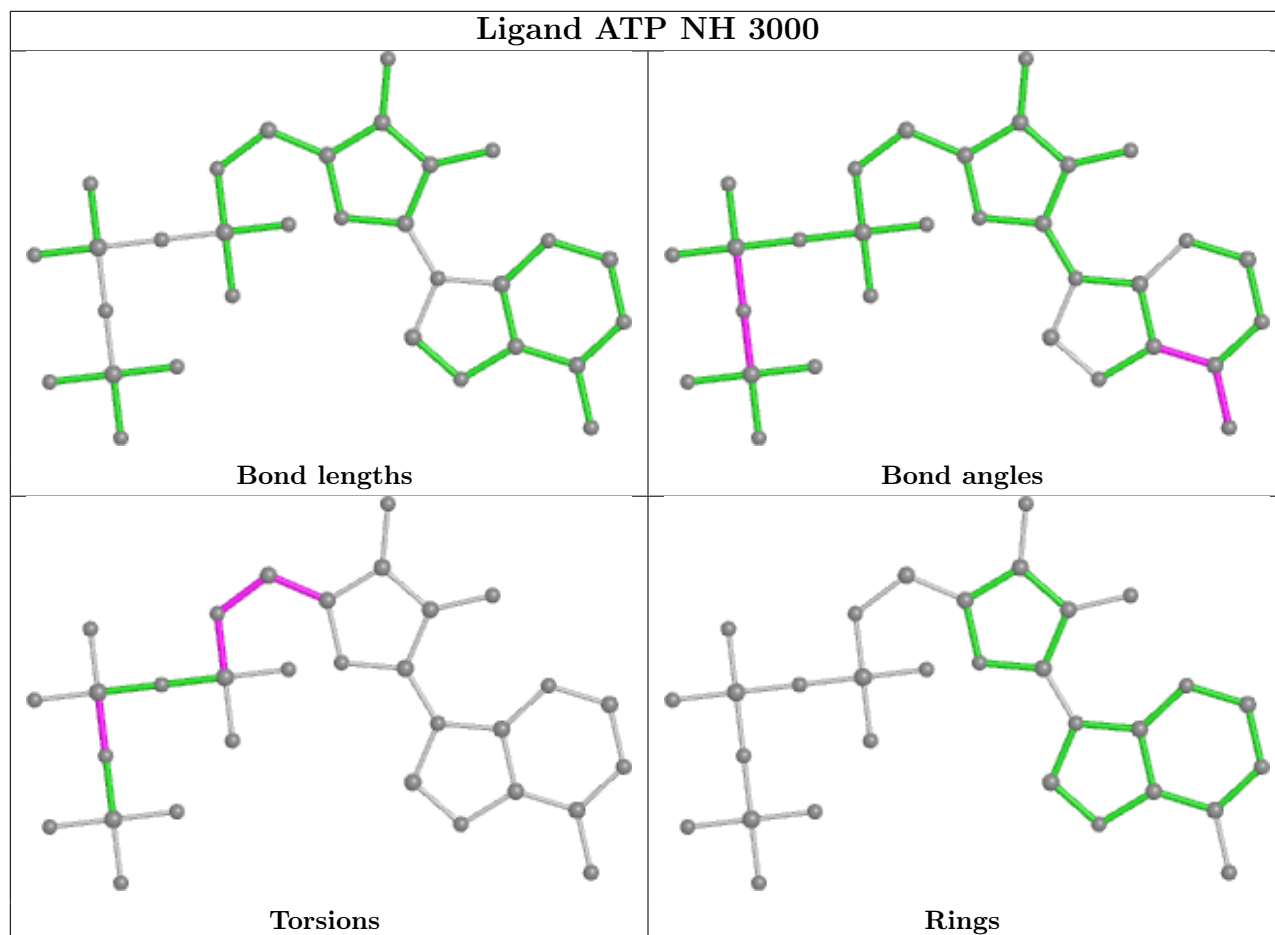
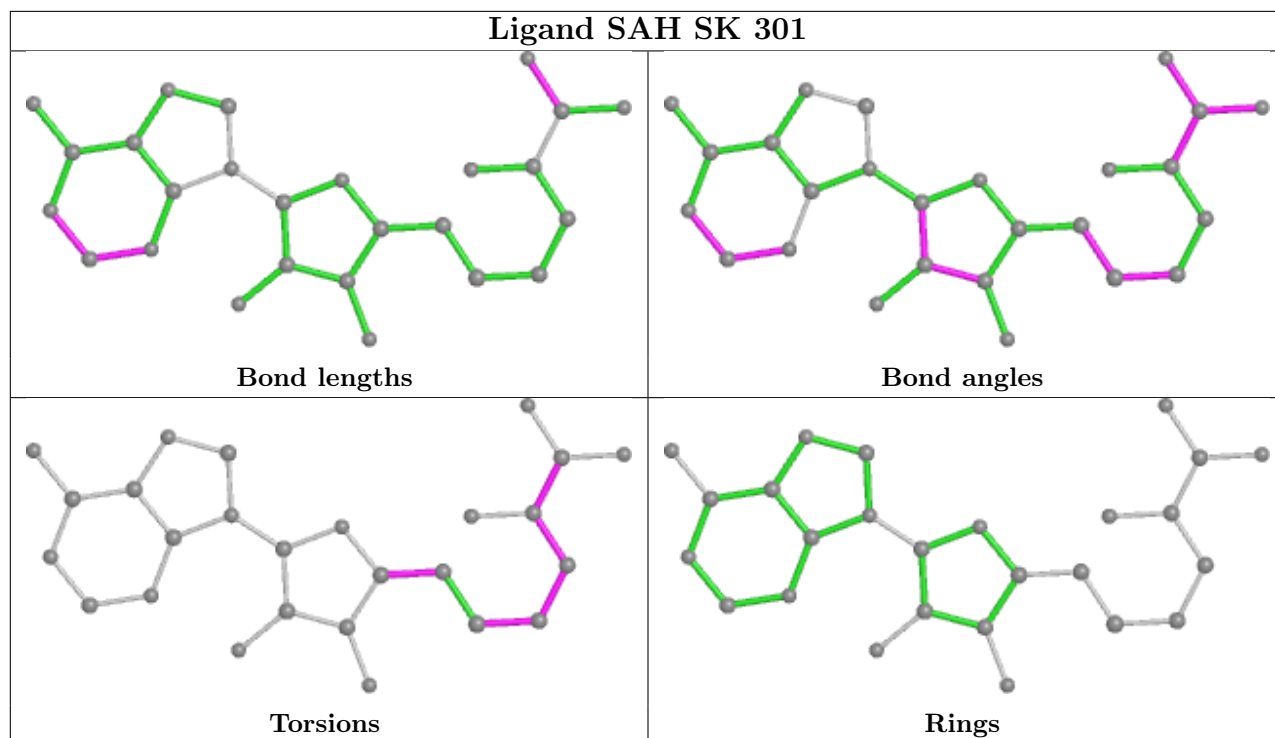
Mol	Chain	Res	Type	Atoms
76	SK	301	SAH	OXT-C-CA-N
73	NH	3000	ATP	C4'-C5'-O5'-PA
73	NK	1101	ATP	C5'-O5'-PA-O3A
73	NK	1101	ATP	PA-O3A-PB-O1B
76	SK	301	SAH	C3'-C4'-C5'-SD
73	NK	1101	ATP	C5'-O5'-PA-O2A
76	SK	301	SAH	CB-CG-SD-C5'
75	SI	2001	GTP	PG-O3B-PB-O2B
75	SI	2001	GTP	PB-O3A-PA-O1A
76	SK	301	SAH	O-C-CA-N
75	SI	2001	GTP	PB-O3A-PA-O2A
75	SI	2001	GTP	C5'-O5'-PA-O3A
73	NH	3000	ATP	PG-O3B-PB-O1B
73	NK	1101	ATP	PG-O3B-PB-O2B
75	SI	2001	GTP	PG-O3B-PB-O1B
76	SK	301	SAH	CA-CB-CG-SD

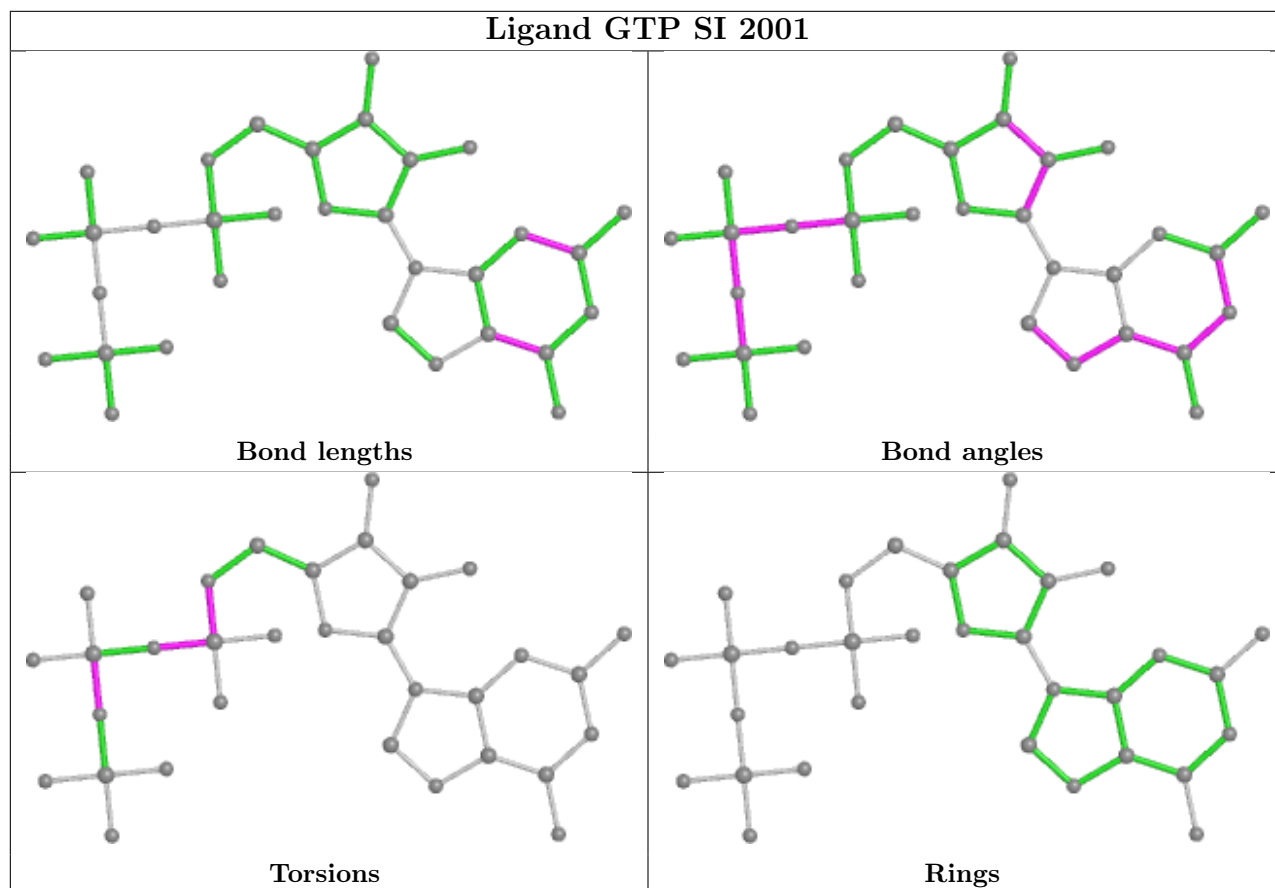
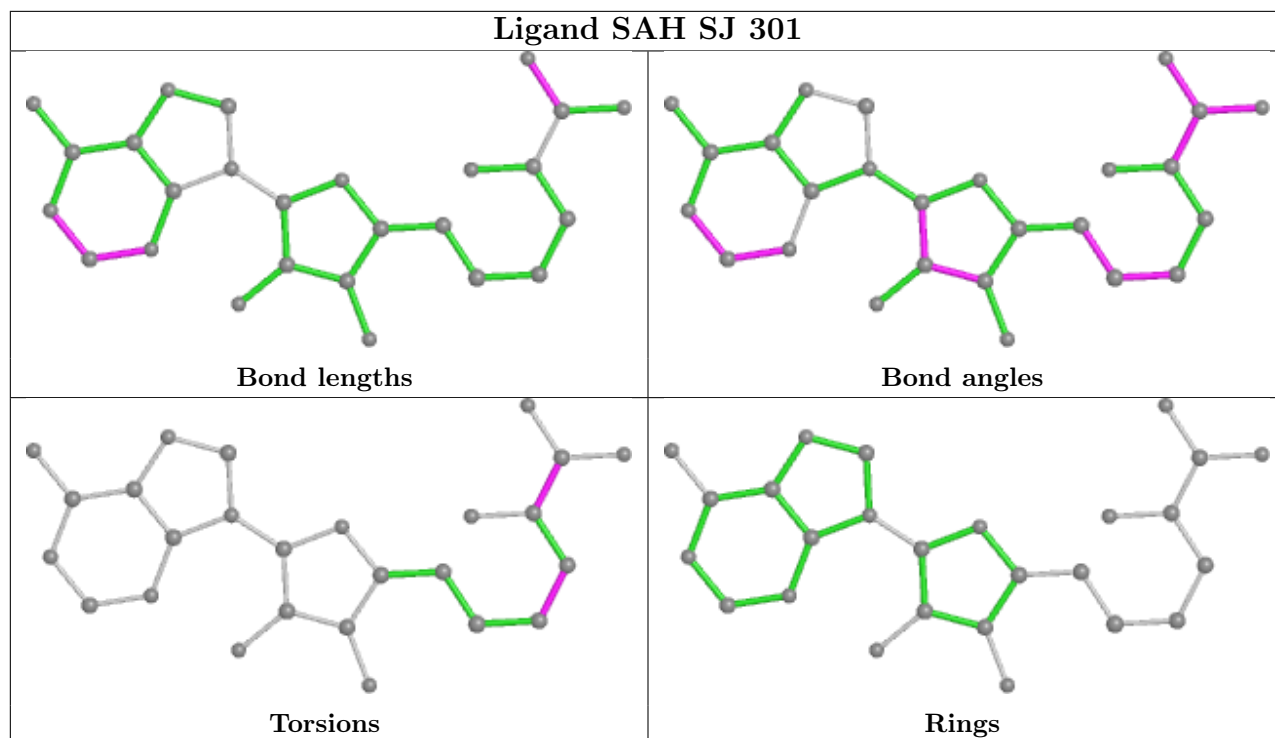
There are no ring outliers.

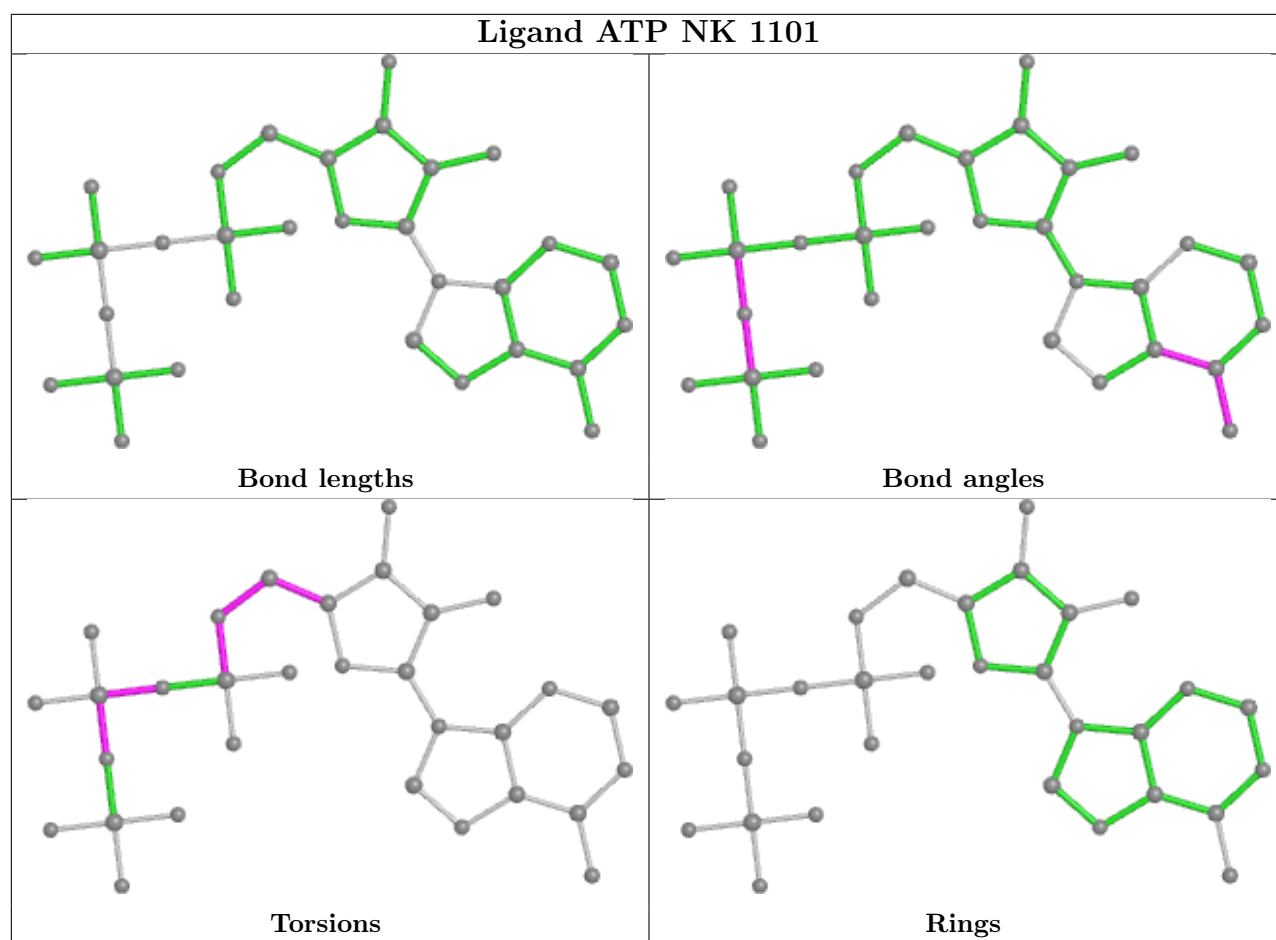
3 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
73	NH	3000	ATP	2	0
76	SJ	301	SAH	3	0
73	NK	1101	ATP	1	0

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







## 5.7 Other polymers [i](#)

There are no such residues in this entry.

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

The following chains have linkage breaks:

Mol	Chain	Number of breaks
46	NR	41
69	SX	5
17	LI	5
66	SU	5
65	ST	3
31	N0	1
71	SZ	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	ST	298:LEU	C	414:UNK	N	52.49
1	SX	1269:UNK	C	1298:UNK	N	38.16
1	ST	86:LYS	C	186:UNK	N	37.14
1	SX	1427:UNK	C	1449:UNK	N	35.74
1	SX	1375:UNK	C	1405:UNK	N	33.56
1	LI	48:UNK	C	59:UNK	N	26.45
1	ST	234:UNK	C	246:UNK	N	22.17
1	LI	92:UNK	C	104:UNK	N	18.16
1	SX	1322:UNK	C	1352:UNK	N	17.59
1	NR	567:UNK	C	571:UNK	N	16.63
1	NR	310:UNK	C	312:UNK	N	16.61
1	NR	803:UNK	C	807:UNK	N	16.44
1	SX	1222:UNK	C	1250:UNK	N	15.85
1	NR	131:UNK	C	134:UNK	N	15.65
1	N0	881:N	O3'	1396:N	P	15.50
1	LI	346:UNK	C	354:HIS	N	15.48
1	NR	358:UNK	C	361:UNK	N	15.11
1	NR	450:UNK	C	452:UNK	N	14.79
1	NR	976:UNK	C	980:UNK	N	14.36
1	NR	915:UNK	C	919:UNK	N	13.77
1	NR	496:UNK	C	498:UNK	N	13.11
1	NR	101:UNK	C	112:UNK	N	13.01
1	NR	647:UNK	C	651:UNK	N	12.81
1	NR	953:UNK	C	957:UNK	N	12.49
1	NR	613:UNK	C	616:UNK	N	12.32
1	NR	517:UNK	C	519:UNK	N	12.19
1	SU	68:UNK	C	78:UNK	N	12.19
1	LI	147:UNK	C	152:VAL	N	12.09
1	NR	688:UNK	C	692:UNK	N	12.06
1	NR	475:UNK	C	477:UNK	N	11.96
1	NR	426:UNK	C	428:UNK	N	11.89
1	NR	221:UNK	C	225:UNK	N	11.77
1	NR	870:UNK	C	874:UNK	N	11.74
1	NR	995:UNK	C	999:UNK	N	11.59
1	NR	335:UNK	C	339:UNK	N	11.11
1	NR	672:UNK	C	674:UNK	N	11.07
1	NR	713:UNK	C	717:UNK	N	10.68
1	NR	846:UNK	C	850:UNK	N	10.28
1	NR	934:UNK	C	936:UNK	N	10.24
1	NR	894:UNK	C	898:UNK	N	10.23
1	SZ	164:UNK	C	169:UNK	N	10.07
1	NR	631:UNK	C	633:UNK	N	9.93
1	NR	780:UNK	C	784:UNK	N	9.87

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	NR	590:UNK	C	592:UNK	N	9.00
1	NR	538:UNK	C	541:UNK	N	8.70
1	NR	824:UNK	C	828:UNK	N	8.69
1	NR	550:UNK	C	555:UNK	N	8.55
1	SU	169:UNK	C	177:TYR	N	8.34
1	SU	25:UNK	C	27:UNK	N	7.92
1	NR	1008:UNK	C	1010:UNK	N	7.73
1	NR	243:UNK	C	246:UNK	N	7.72
1	NR	262:UNK	C	264:UNK	N	7.28
1	NR	756:UNK	C	760:UNK	N	7.03
1	NR	734:UNK	C	736:UNK	N	6.94
1	NR	381:UNK	C	383:UNK	N	5.74
1	SU	45:UNK	C	48:UNK	N	5.53
1	NR	200:UNK	C	204:UNK	N	5.43
1	LI	322:HIS	C	325:UNK	N	5.34
1	SU	124:UNK	C	141:PRO	N	4.96
1	NR	289:UNK	C	291:UNK	N	4.86
1	NR	404:UNK	C	407:UNK	N	3.63

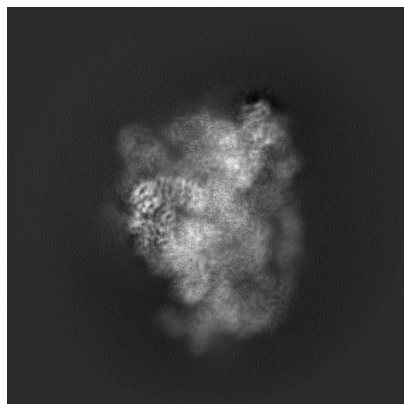
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-23936. These allow visual inspection of the internal detail of the map and identification of artifacts.

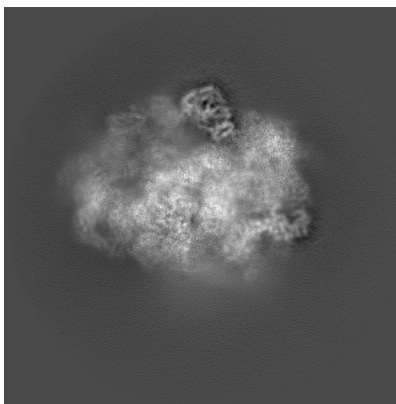
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

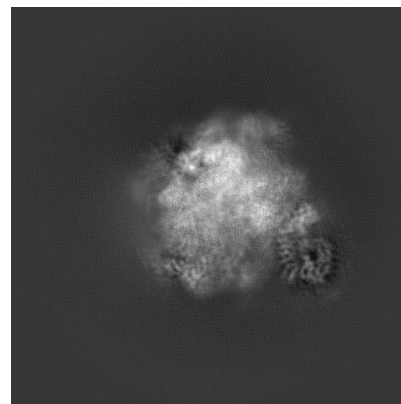
#### 6.1.1 Primary map



X

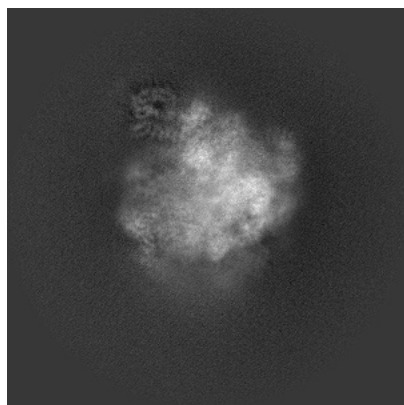


Y

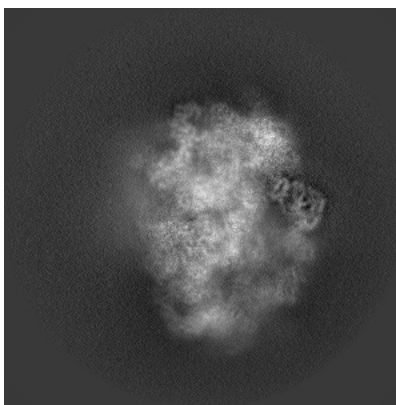


Z

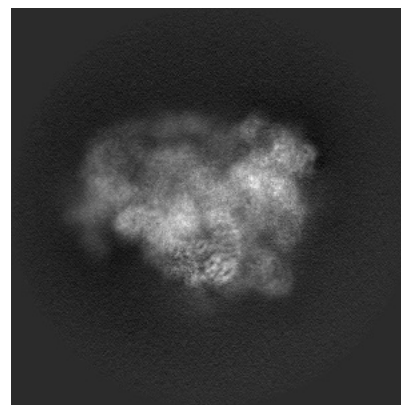
#### 6.1.2 Raw map



X



Y

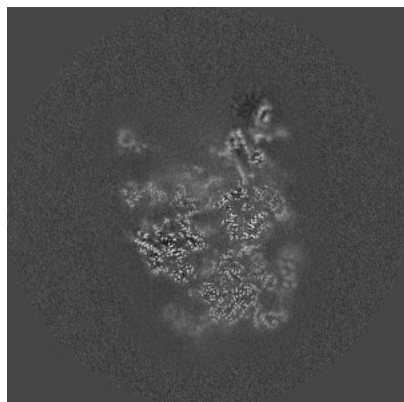


Z

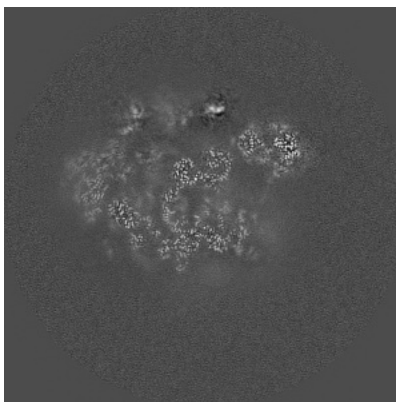
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

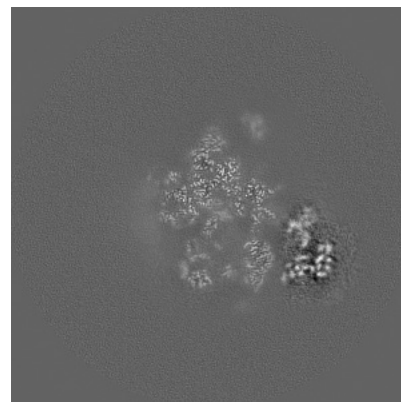
### 6.2.1 Primary map



X Index: 280

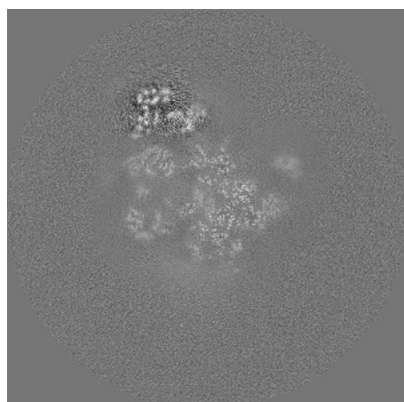


Y Index: 280

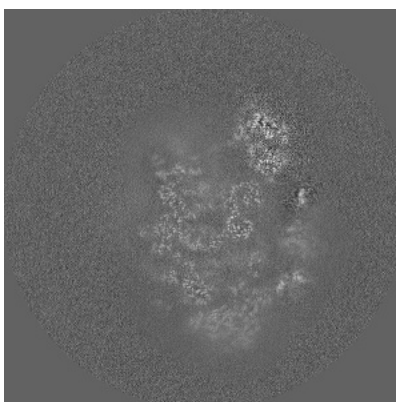


Z Index: 280

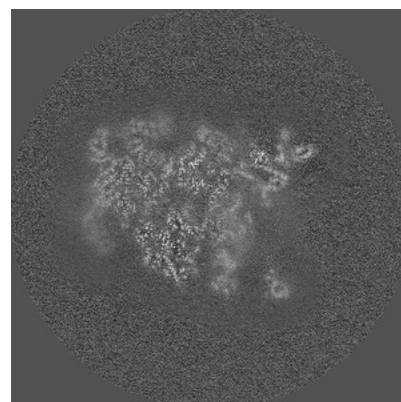
### 6.2.2 Raw map



X Index: 280



Y Index: 280

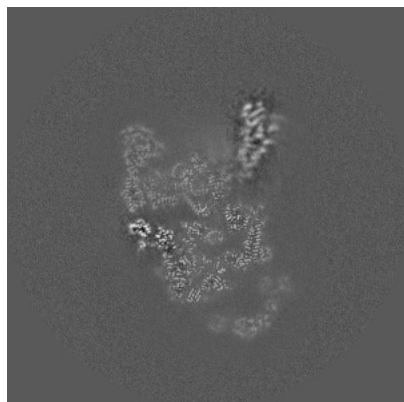


Z Index: 280

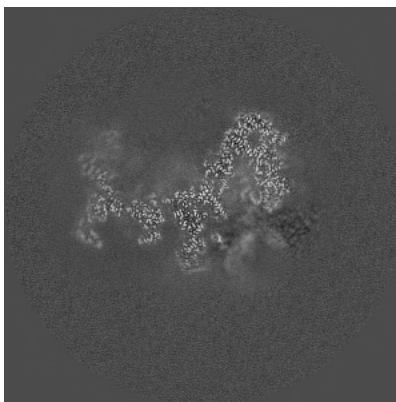
The images above show central slices of the map in three orthogonal directions.

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

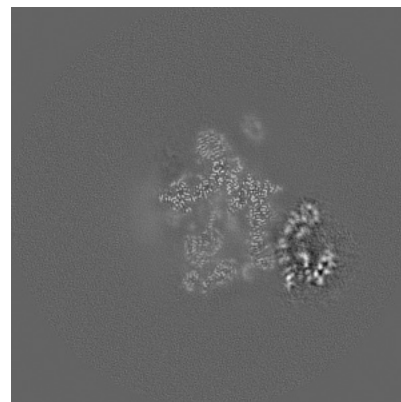
### 6.3.1 Primary map



X Index: 254

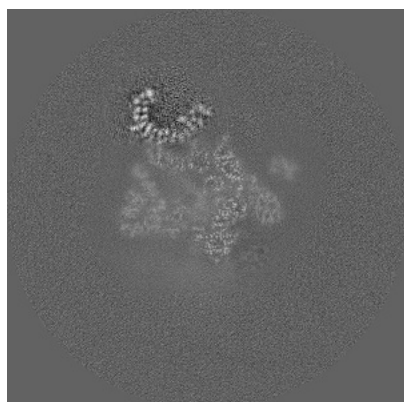


Y Index: 318

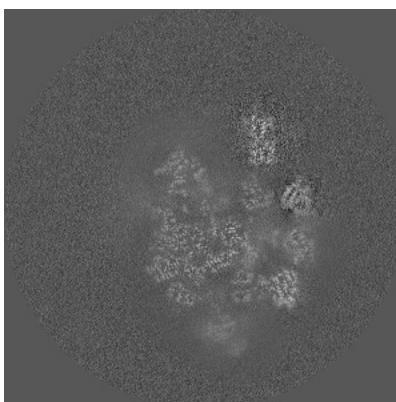


Z Index: 291

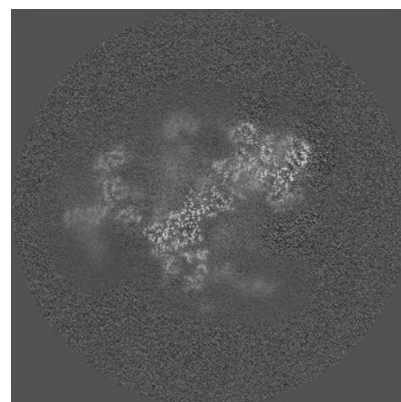
### 6.3.2 Raw map



X Index: 298



Y Index: 261



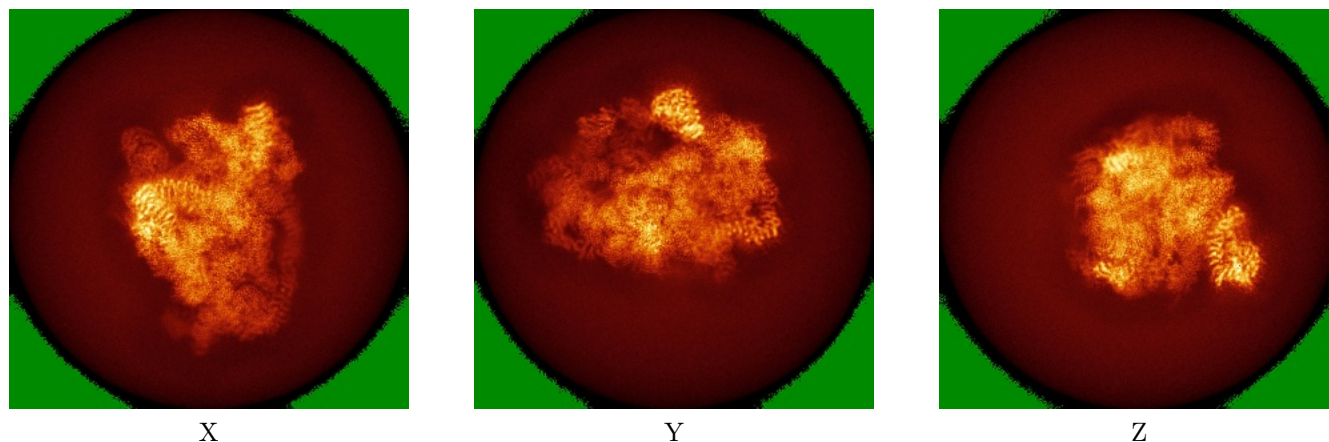
Z Index: 320

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

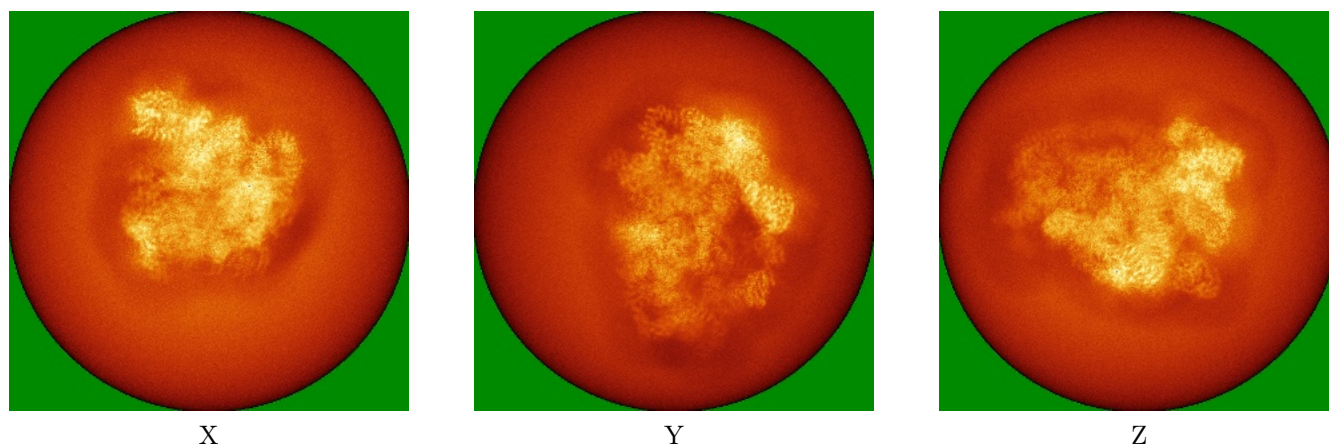


## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

### 6.4.1 Primary map



### 6.4.2 Raw map



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

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

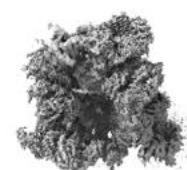
### 6.5.1 Primary map



X



Y



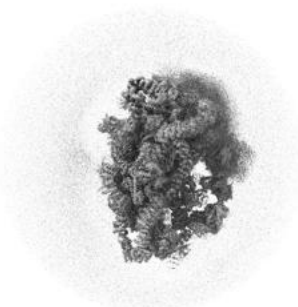
Z

The images above show the 3D surface view of the map at the recommended contour level 2.68. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

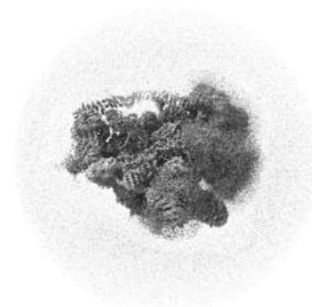
### 6.5.2 Raw map



X



Y



Z

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.

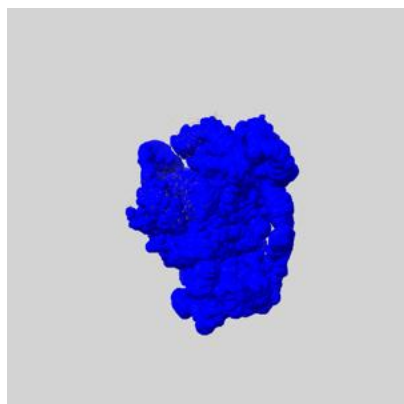
## 6.6 Mask visualisation [i](#)

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

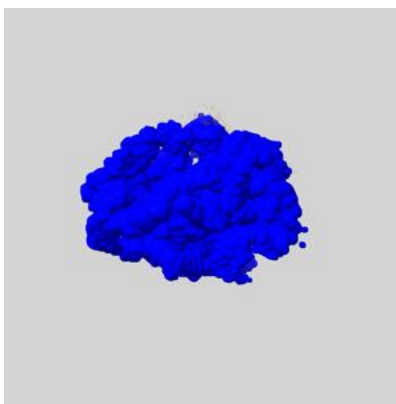
A mask typically either:

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

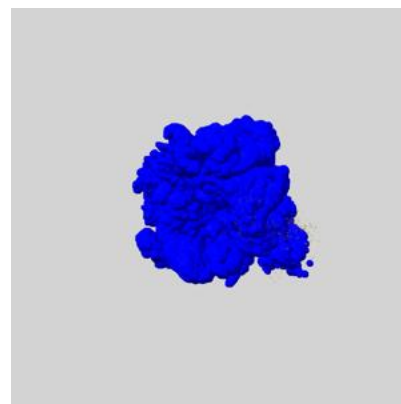
### 6.6.1 emd\_23936\_msk\_1.map [i](#)



X



Y

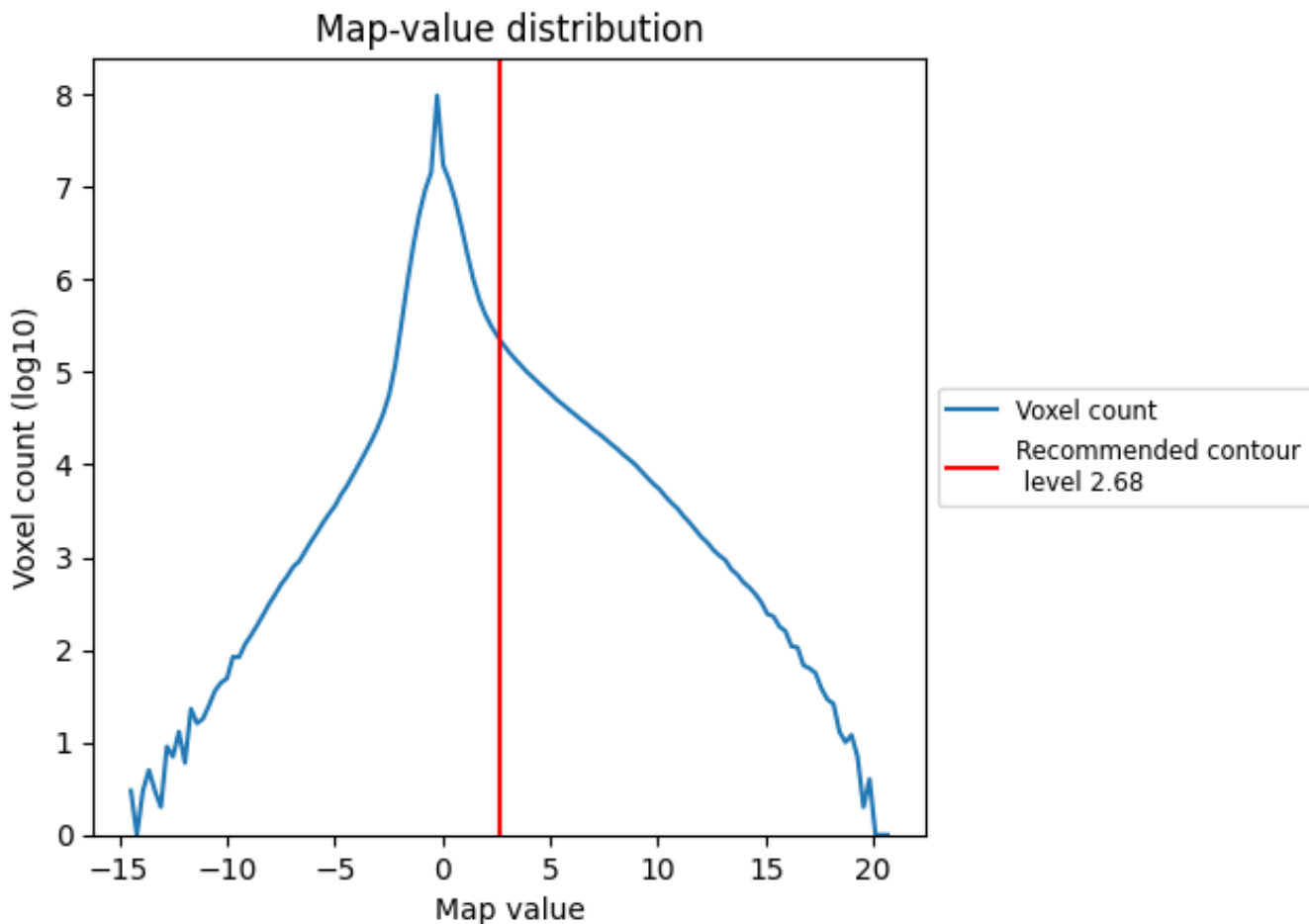


Z

## 7 Map analysis [i](#)

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

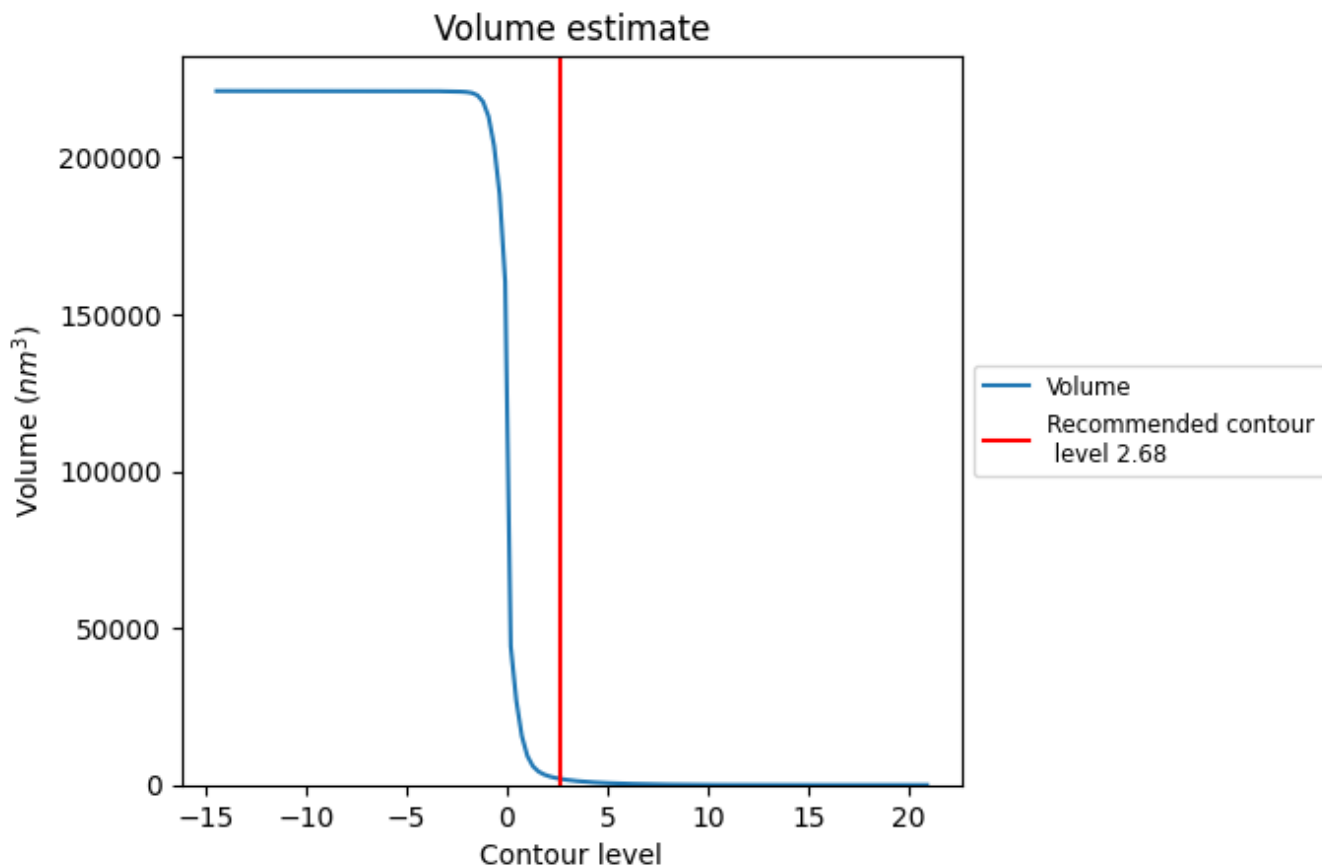
### 7.1 Map-value distribution [i](#)



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.



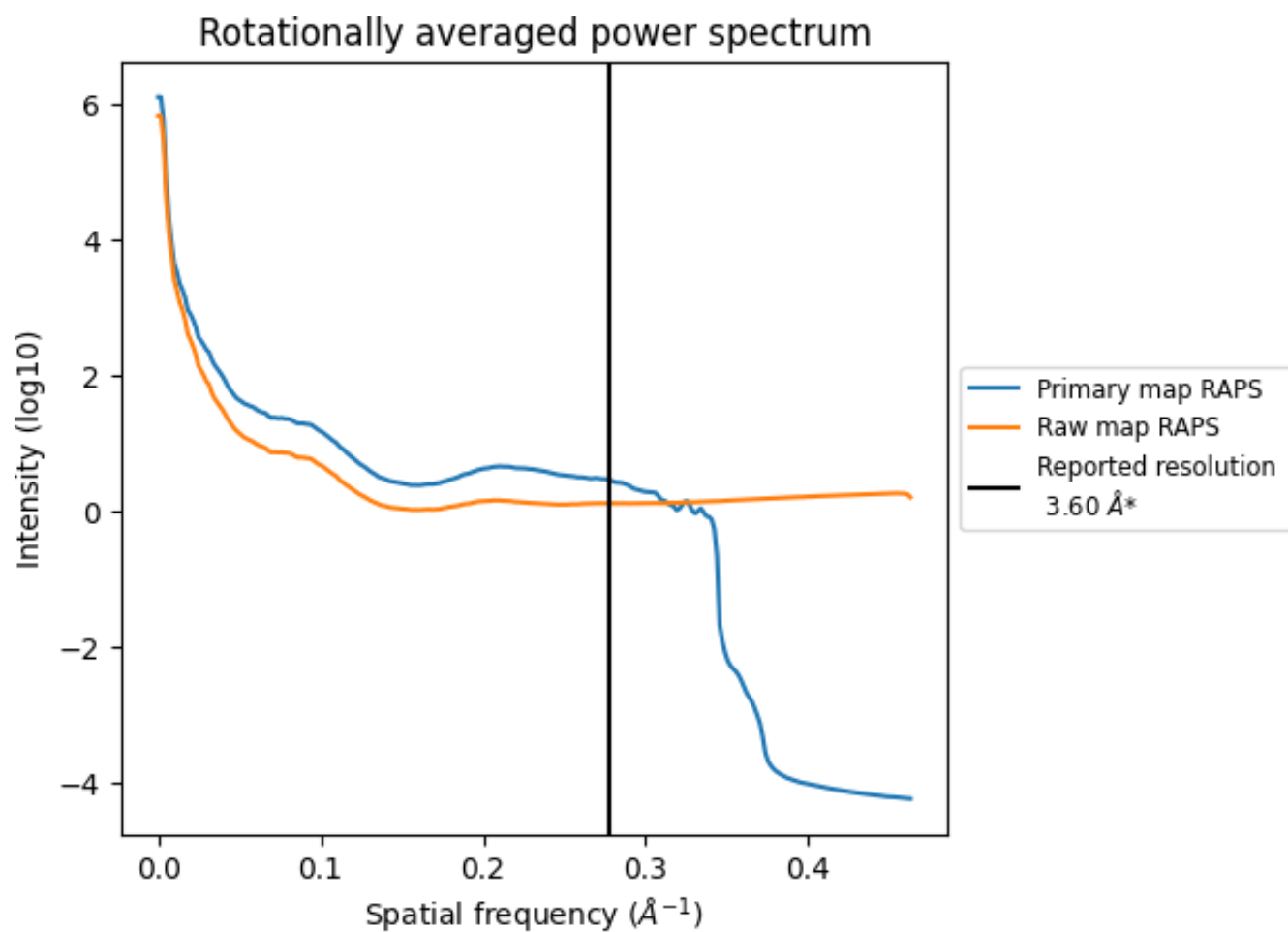
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1931  $\text{nm}^3$ ; this corresponds to an approximate mass of 1744 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

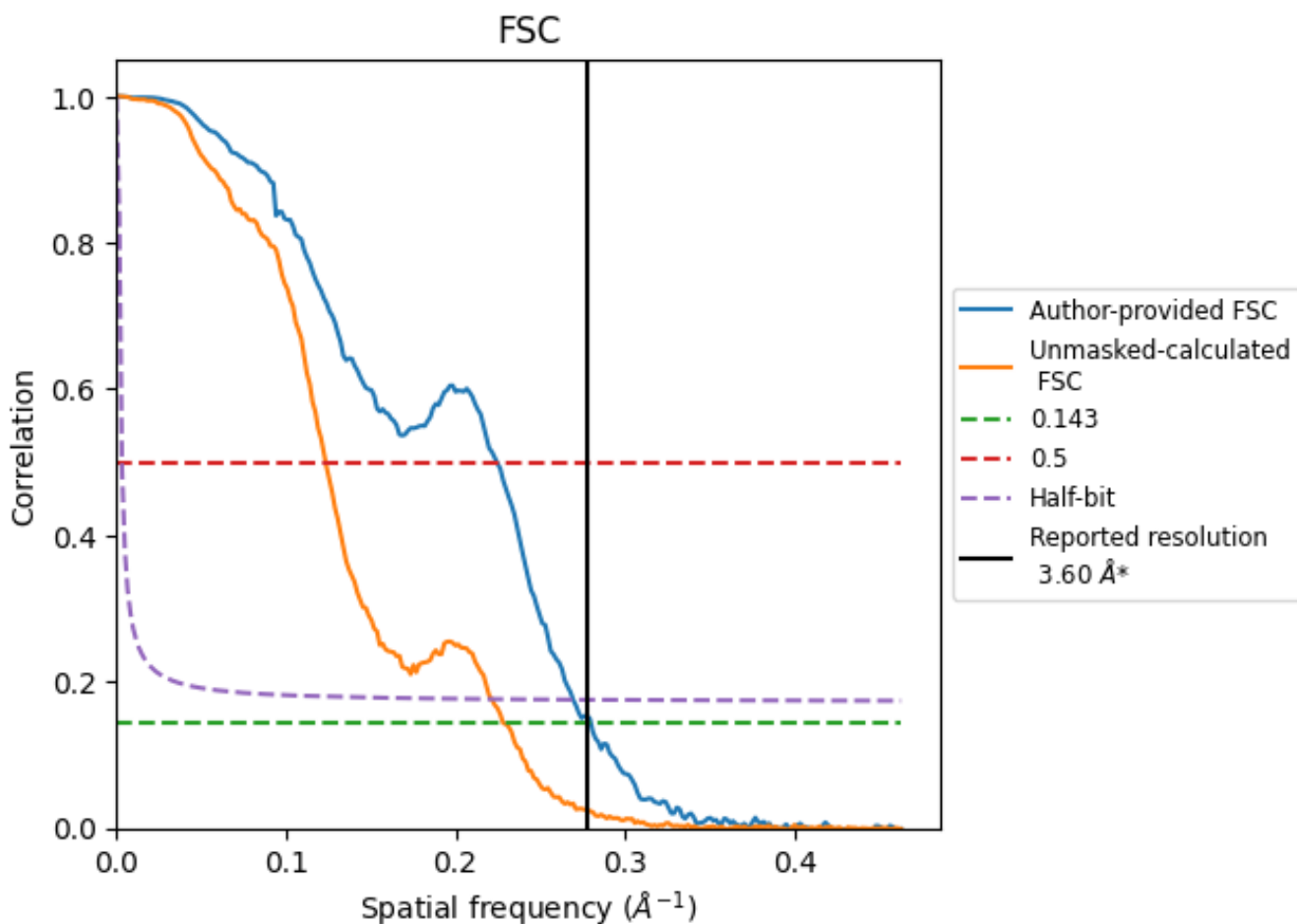


\*Reported resolution corresponds to spatial frequency of 0.278 Å<sup>-1</sup>

## 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 0.278 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

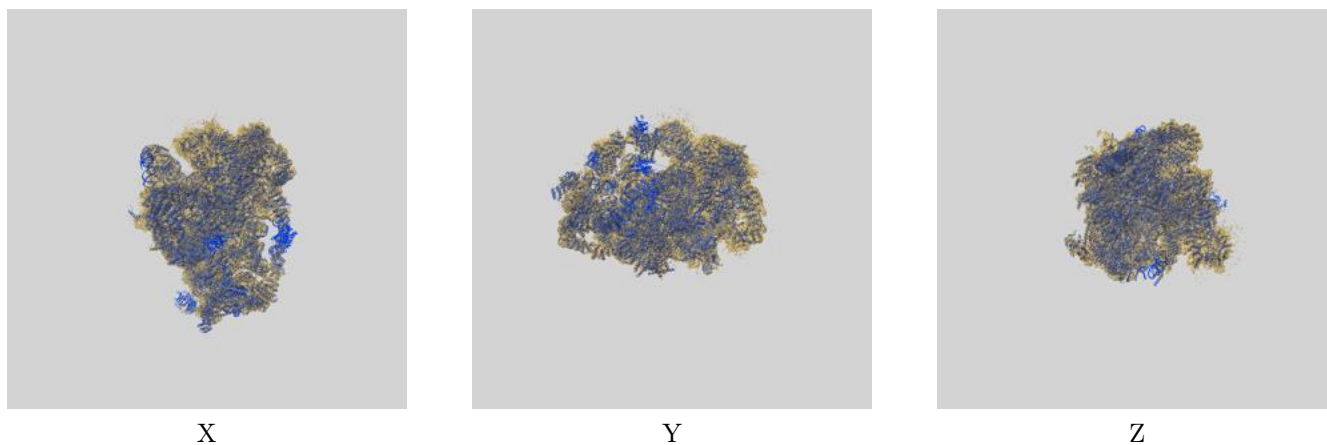
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.60	-	-
Author-provided FSC curve	3.57	4.46	3.71
Unmasked-calculated*	4.38	8.10	4.52

\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.38 differs from the reported value 3.6 by more than 10 %

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

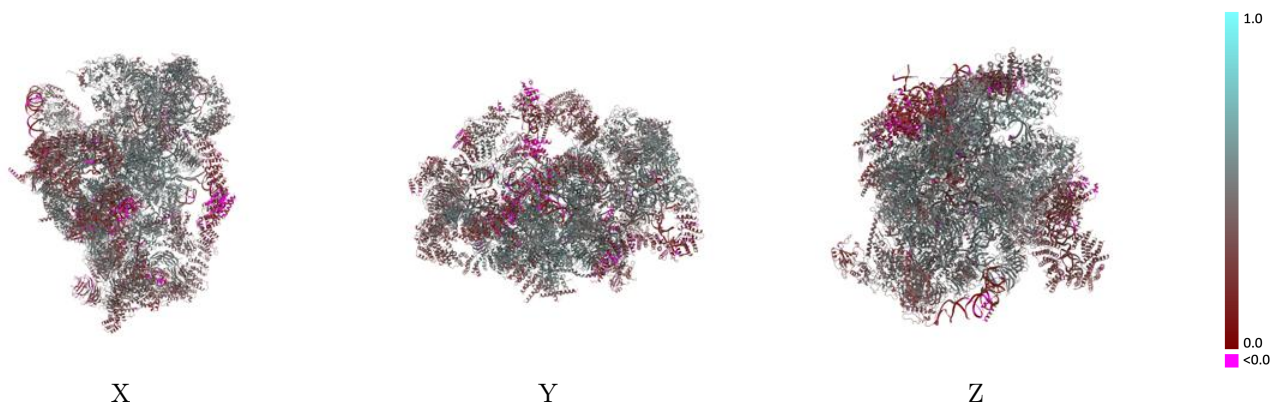
This section contains information regarding the fit between EMDB map EMD-23936 and PDB model 7MQ8. Per-residue inclusion information can be found in section 3 on page 19.

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



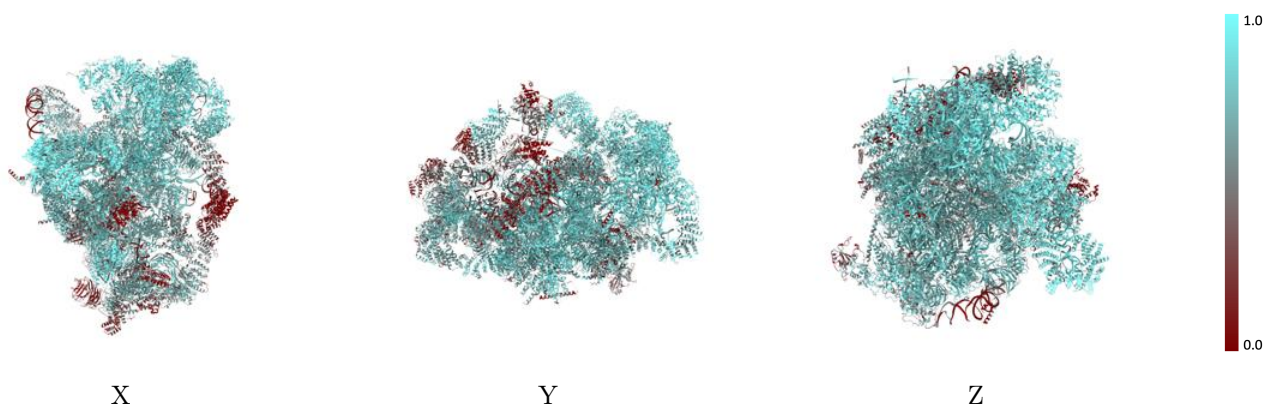
The images above show the 3D surface view of the map at the recommended contour level 2.68 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



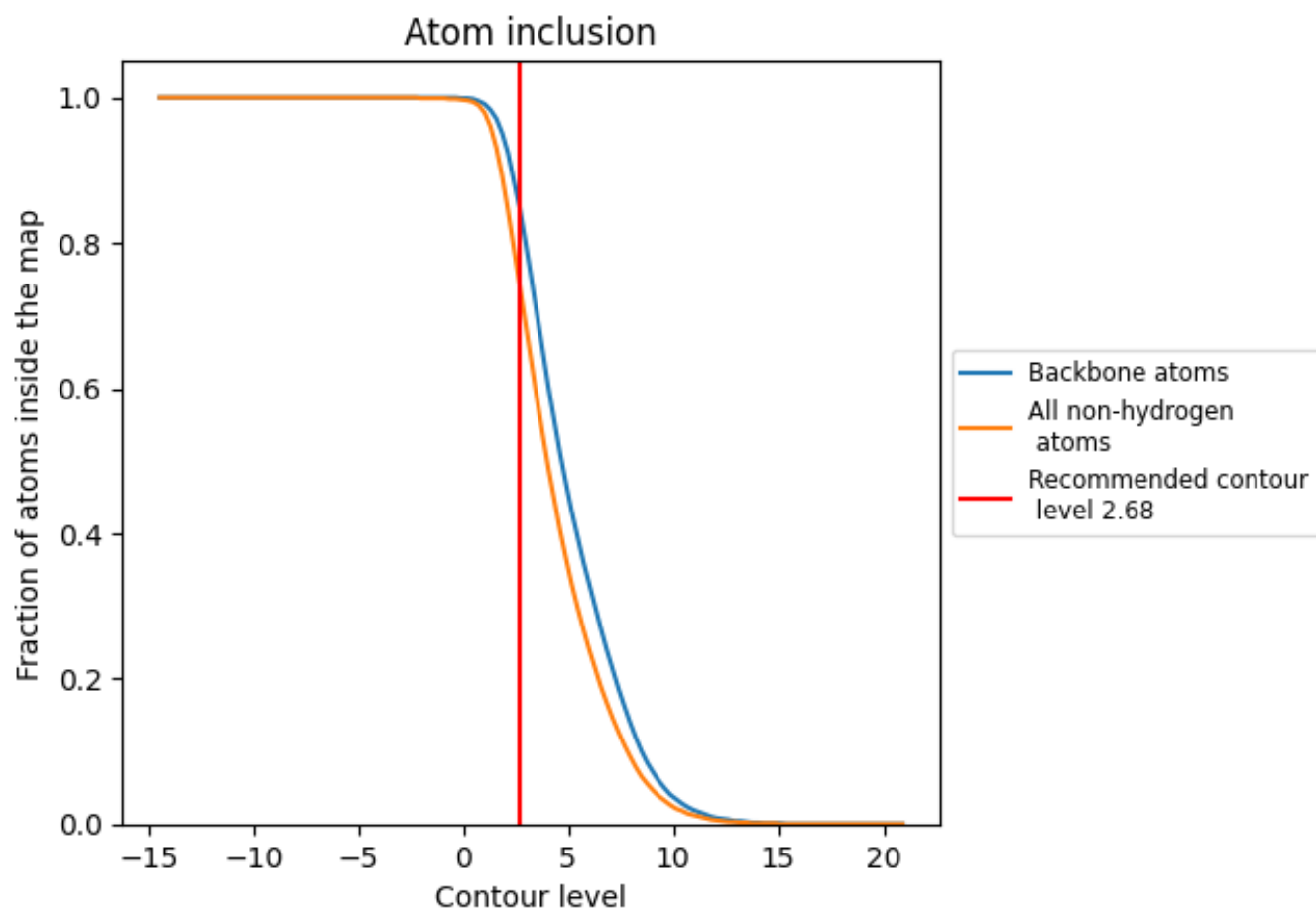
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (2.68).







































































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 85% of all backbone atoms, 74% 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 (2.68) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7440	 0.4170
L0	 0.5930	 0.3800
L1	 0.8240	 0.3850
L2	 0.7870	 0.4060
L3	 0.3730	 0.3330
L4	 0.8270	 0.4270
L5	 0.8640	 0.5070
L6	 0.8730	 0.4700
L7	 0.5340	 0.3320
L8	 0.9090	 0.4960
L9	 0.9010	 0.5360
LA	 0.0020	 0.0770
LC	 0.8590	 0.5180
LD	 0.8340	 0.4070
LF	 0.8150	 0.4490
LG	 0.8570	 0.5030
LH	 0.7380	 0.4450
LI	 0.1930	 0.2410
LJ	 0.7520	 0.4570
LK	 0.3240	 0.3190
LL	 0.7280	 0.4550
LM	 0.5090	 0.2910
LN	 0.7620	 0.4500
LO	 0.8740	 0.5190
LP	 0.7730	 0.4530
LQ	 0.7590	 0.4540
LR	 0.7840	 0.4430
LS	 0.8280	 0.5170
LT	 0.8670	 0.5220
LU	 0.8530	 0.5120
LW	 0.8220	 0.5080
LZ	 0.8780	 0.5340
N0	 0.5300	 0.3920
NA	 0.7890	 0.4960
NB	 0.9140	 0.5630



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Chain	Atom inclusion	Q-score
NC	0.7540	0.4330
ND	0.6010	0.4040
NE	0.6560	0.4580
NF	0.6800	0.4240
NG	0.7670	0.4680
NH	0.6650	0.3730
NI	0.4700	0.3110
NJ	0.8630	0.4660
NK	0.8890	0.4630
NM	0.7030	0.4550
NN	0.8550	0.4880
NO	0.7100	0.4780
NQ	0.7710	0.5090
NR	0.9110	0.2750
NT	0.0350	0.1220
NU	0.7070	0.2240
NW	0.8850	0.4900
NY	0.6540	0.4250
SA	0.8380	0.4900
SB	0.7290	0.4540
SC	0.6170	0.3780
SD	0.9280	0.5620
SE	0.8620	0.5220
SF	0.8800	0.5270
SG	0.7850	0.4290
SH	0.8560	0.5200
SI	0.8630	0.5100
SJ	0.3440	0.2800
SK	0.5870	0.4270
SL	0.8710	0.5300
SM	0.8860	0.5350
SP	0.7810	0.3450
SQ	0.7580	0.4580
SR	0.8750	0.5290
SS	0.6780	0.4560
ST	0.7310	0.3820
SU	0.4610	0.3320
SW	0.8380	0.3510
SX	0.0010	0.0460
SY	0.6790	0.4100
SZ	0.5930	0.2680
Sx	0.3740	0.2470