



Full wwPDB EM Validation Report ⓘ

Dec 15, 2025 – 11:45 PM EST

PDB ID : 9P9I / pdb_00009p9i
EMDB ID : EMD-71412
Title : In situ human unrotated hibernating without CCDC124 state 80S ribosome
Authors : Wei, Z.; Yong, X.
Deposited on : 2025-06-24
Resolution : 2.77 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

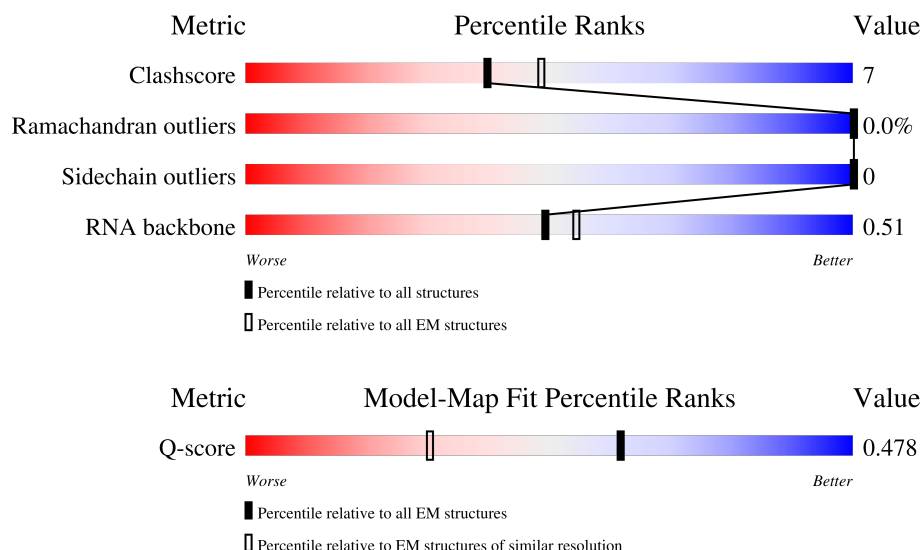
EMDB validation analysis : 0.0.1.dev129
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.47

1 Overall quality at a glance

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

The reported resolution of this entry is 2.77 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.



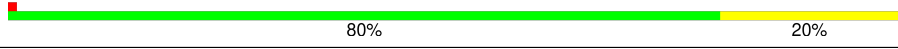
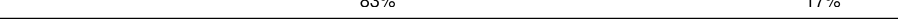
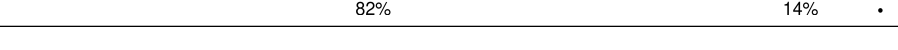
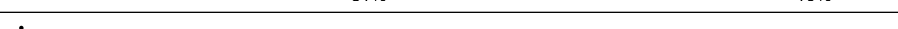
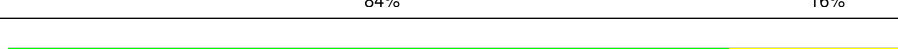
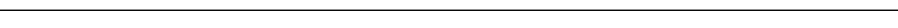
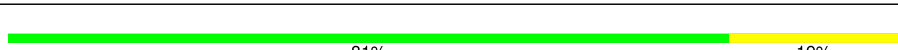
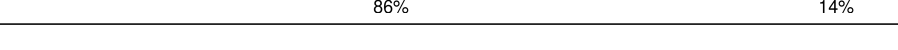
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	10695 (2.27 - 3.27)

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

Mol	Chain	Length	Quality of chain
1	CI	31	 6% 77% 23%
2	L5	3675	 59% 33% 7% •
3	L7	120	 80% 18% •

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Mol	Chain	Length	Quality of chain
4	L8	156	
5	LA	248	
6	LB	402	
7	LC	368	
8	LD	293	
9	LE	250	
10	LF	225	
11	LG	241	
12	LH	190	
13	LI	213	
14	LJ	176	
15	LL	210	
16	LM	139	
17	LN	203	
18	LO	201	
19	LP	153	
20	LQ	187	
21	LR	187	
22	LS	175	
23	LT	159	
24	LU	101	
25	LV	131	
26	LW	124	
27	LX	120	
28	LY	134	

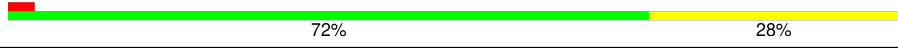
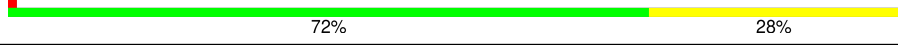
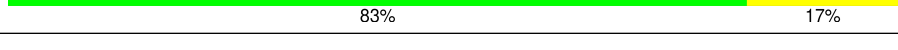
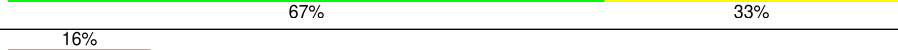
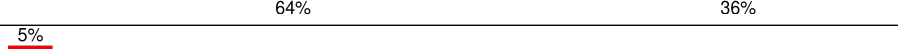
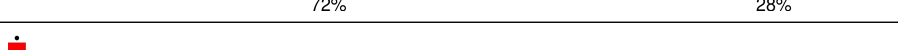
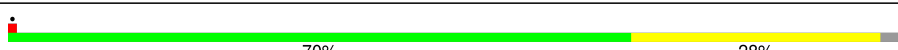
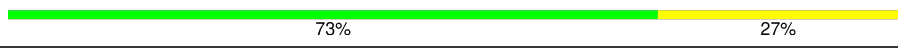
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Mol	Chain	Length	Quality of chain
29	LZ	135	
30	La	147	
31	Lb	121	
32	Lc	98	
33	Ld	107	
34	Le	128	
35	Lf	109	
36	Lg	114	
37	Lh	122	
38	Li	102	
39	Lj	86	
40	Lk	69	
41	Ll	50	
42	Lm	52	
43	Ln	24	
44	Lo	105	
45	Lp	91	
46	Lr	125	
47	Ls	196	
48	Lt	157	
49	SD	227	
50	SF	189	
51	SK	98	
52	SM	122	
53	SP	121	

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Mol	Chain	Length	Quality of chain
54	SQ	144	
55	SR	135	
56	SS	145	
57	ST	143	
58	SU	104	
59	SZ	75	
60	Sc	64	
61	Sd	55	
62	Sf	67	
63	Sg	313	
64	SA	221	
65	SB	214	
66	SC	222	
67	SE	262	
68	SG	237	
69	SH	189	
70	SI	206	
71	SJ	185	
72	SL	153	
73	SN	150	
74	SO	140	
75	SV	83	
76	SW	129	
77	SX	141	
78	SY	131	

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Mol	Chain	Length	Quality of chain
79	Sa	102	83%17%
80	Sb	83	76%24%
81	Se	58	7%81%19%
82	S2	1740	56%36%8%
83	CB	856	15%75%24%.
84	Et	76	8%42%49%8%.

2 Entry composition

There are 88 unique types of molecules in this entry. The entry contains 225001 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Transcription factor BTF3.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	CI	31	Total	C	N	O	S	0	0
			247	153	55	38	1		

- Molecule 2 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	L5	3655	Total	C	N	O	P	1	0
			78445	34968	14346	25476	3655		

- Molecule 3 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	L7	120	Total	C	N	O	P	0	0
			2561	1141	456	844	120		

- Molecule 4 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	L8	156	Total	C	N	O	P	0	0
			3315	1481	585	1094	155		

- Molecule 5 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	LA	248	Total	C	N	O	S	0	0
			1898	1189	389	314	6		

- Molecule 6 is a protein called Large ribosomal subunit protein uL3.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	LB	402	Total	C	N	O	S	0	0
			3238	2060	608	556	14		

- Molecule 7 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	LC	368	Total	C	N	O	S	0	0
			2927	1840	583	489	15		

- Molecule 8 is a protein called Large ribosomal subunit protein uL18.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	LD	293	Total	C	N	O	S	0	0
			2382	1507	434	427	14		

- Molecule 9 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	LE	240	Total	C	N	O	S	0	0
			1935	1242	368	321	4		

- Molecule 10 is a protein called 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	LF	225	Total	C	N	O	S	0	0
			1870	1202	358	301	9		

- Molecule 11 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	LG	241	Total	C	N	O	S	0	0
			1927	1228	371	324	4		

- Molecule 12 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	LH	190	Total	C	N	O	S	0	0
			1518	956	284	272	6		

- Molecule 13 is a protein called Ribosomal protein uL16-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	LI	213	Total	C	N	O	S	0	0
			1711	1082	329	285	15		

- Molecule 14 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	LJ	170	Total	C	N	O	S	0	0
			1362	861	254	241	6		

- Molecule 15 is a protein called Large ribosomal subunit protein eL13.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	LL	210	Total	C	N	O	S	0	0
			1701	1064	352	281	4		

- Molecule 16 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	LM	139	Total	C	N	O	S	0	0
			1138	730	218	183	7		

- Molecule 17 is a protein called 60S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	LN	203	Total	C	N	O	S	0	0
			1701	1072	359	266	4		

- Molecule 18 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	LO	201	Total	C	N	O	S	0	0
			1650	1063	321	261	5		

- Molecule 19 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	LP	153	Total	C	N	O	S	0	0
			1242	776	241	216	9		

- Molecule 20 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	LQ	187	Total	C	N	O	S	0	0
			1513	944	314	250	5		

- Molecule 21 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	LR	187	Total	C	N	O	S	0	0
			1566	971	336	250	9		

- Molecule 22 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	LS	175	Total	C	N	O	S	0	0
			1453	925	283	235	10		

- Molecule 23 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	LT	159	Total	C	N	O	S	0	0
			1298	823	252	217	6		

- Molecule 24 is a protein called Heparin-binding protein HBp15.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	LU	101	Total	C	N	O	S	0	0
			825	529	144	150	2		

- Molecule 25 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	LV	131	Total	C	N	O	S	0	0
			979	618	184	172	5		

- Molecule 26 is a protein called Ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	LW	116	Total	C	N	O	S	0	0
			945	592	193	156	4		

- Molecule 27 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	LX	120	Total	C	N	O	S	0	0
			985	630	185	169	1		

- Molecule 28 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	LY	134	Total	C	N	O	S	0	0
			1115	700	226	186	3		

- Molecule 29 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	LZ	135	Total	C	N	O	S	0	0
			1107	714	208	182	3		

- Molecule 30 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	La	147	Total	C	N	O	S	0	0
			1162	736	237	186	3		

- Molecule 31 is a protein called Large ribosomal subunit protein eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	Lb	109	Total	C	N	O	S	0	0
			876	546	189	137	4		

- Molecule 32 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Lc	98	Total	C	N	O	S	0	0
			764	485	135	138	6		

- Molecule 33 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Ld	107	Total	C	N	O	S	0	0
			888	560	171	155	2		

- Molecule 34 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Le	128	Total	C	N	O	S	0	0
			1053	667	216	165	5		

- Molecule 35 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Lf	109	Total	C	N	O	S	0	0
			876	555	174	144	3		

- Molecule 36 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Lg	114	Total	C	N	O	S	0	0
			906	566	187	147	6		

- Molecule 37 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Lh	122	Total	C	N	O	S	0	0
			1015	641	205	168	1		

- Molecule 38 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Li	102	Total	C	N	O	S	0	0
			832	521	177	129	5		

- Molecule 39 is a protein called 60S ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Lj	86	Total	C	N	O	S	0	0
			705	434	155	111	5		

- Molecule 40 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Lk	69	Total	C	N	O	S	0	0
			569	366	103	99	1		

- Molecule 41 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Ll	50	Total	C	N	O	S	0	0
			444	281	98	64	1		

- Molecule 42 is a protein called Large ribosomal subunit protein eL40.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Lm	52	Total	C	N	O	S	0	0
			429	266	90	67	6		

- Molecule 43 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Ln	24	Total	C	N	O	S	0	0
			230	139	62	26	3		

- Molecule 44 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Lo	105	Total	C	N	O	S	0	0
			862	542	175	139	6		

- Molecule 45 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Lp	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 46 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	Lr	125	Total	C	N	O	S	0	0
			1002	622	207	168	5		

- Molecule 47 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Ls	196	Total	C	N	O	S	0	0
			1496	952	259	276	9		

- Molecule 48 is a protein called Large ribosomal subunit protein uL11.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Lt	134	Total	C	N	O	S	0	0
			998	626	180	189	3		

- Molecule 49 is a protein called Small ribosomal subunit protein uS3.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	SD	227	Total	C	N	O	S	0	0
			1765	1125	317	315	8		

- Molecule 50 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	SF	189	Total	C	N	O	S	0	0
			1495	934	284	270	7		

- Molecule 51 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	SK	98	Total	C	N	O	S	0	0
			827	539	148	134	6		

- Molecule 52 is a protein called Small ribosomal subunit protein eS12.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	SM	122	Total	C	N	O	S	0	0
			940	590	164	177	9		

- Molecule 53 is a protein called Small ribosomal subunit protein uS19.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	SP	121	Total	C	N	O	S	0	0
			985	623	185	170	7		

- Molecule 54 is a protein called Small ribosomal subunit protein uS9.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	SQ	144	Total	C	N	O	S	0	0
			1142	726	216	197	3		

- Molecule 55 is a protein called Small ribosomal subunit protein eS17.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	SR	135	Total	C	N	O	S	0	0
			1090	685	202	198	5		

- Molecule 56 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	SS	145	Total	C	N	O	S	0	0
			1198	751	242	203	2		

- Molecule 57 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	ST	143	Total	C	N	O	S	0	0
			1112	697	214	198	3		

- Molecule 58 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	SU	104	Total	C	N	O	S	0	0
			821	514	155	148	4		

- Molecule 59 is a protein called Small ribosomal subunit protein eS25.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	SZ	75	Total	C	N	O	S	0	0
			598	382	111	104	1		

- Molecule 60 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	Sc	64	Total	C	N	O	S	0	0
			506	308	102	94	2		

- Molecule 61 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	Sd	55	Total	C	N	O	S	0	0
			459	286	94	74	5		

- Molecule 62 is a protein called Ubiquitin-40S ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	Sf	67	Total	C	N	O	S	0	0
			548	346	102	93	7		

- Molecule 63 is a protein called Receptor of activated protein C kinase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	Sg	313	Total	C	N	O	S	0	0
			2436	1535	424	465	12		

- Molecule 64 is a protein called 40S ribosomal protein SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	SA	221	Total	C	N	O	S	0	0
			1741	1106	305	322	8		

- Molecule 65 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	SB	214	Total	C	N	O	S	0	0
			1738	1103	310	311	14		

- Molecule 66 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	SC	220	Total	C	N	O	S	0	0
			1707	1104	293	300	10		

- Molecule 67 is a protein called Small ribosomal subunit protein eS4, X isoform.

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

- Molecule 68 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	SG	237	Total	C	N	O	S	0	0
			1923	1200	387	329	7		

- Molecule 69 is a protein called Small ribosomal subunit protein eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	SH	186	Total	C	N	O	S	0	0
			1497	956	274	266	1		

- Molecule 70 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	SI	206	Total	C	N	O	S	0	0
			1686	1058	332	291	5		

- Molecule 71 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	SJ	185	Total	C	N	O	S	0	0
			1525	969	306	248	2		

- Molecule 72 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	SL	153	Total	C	N	O	S	0	0
			1247	793	234	214	6		

- Molecule 73 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	SN	150	Total	C	N	O	S	0	0
			1208	773	229	205	1		

- Molecule 74 is a protein called Small ribosomal subunit protein uS11.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	SO	137	Total	C	N	O	S	0	0
			1024	627	200	191	6		

- Molecule 75 is a protein called Small ribosomal subunit protein eS21.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	SV	83	Total	C	N	O	S	0	0
			636	393	117	121	5		

- Molecule 76 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	SW	129	Total	C	N	O	S	0	0
			1034	659	193	176	6		

- Molecule 77 is a protein called 40S ribosomal protein S23.

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

- Molecule 78 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	SY	131	Total	C	N	O	S	0	0
			1065	673	209	178	5		

- Molecule 79 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	Sa	102	Total	C	N	O	S	0	0
			821	512	171	133	5		

- Molecule 80 is a protein called Small ribosomal subunit protein eS27.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Sb	83	Total	C	N	O	S	0	0
			651	408	121	115	7		

- Molecule 81 is a protein called Small ribosomal subunit protein eS30.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	Se	58	Total	C	N	O	S	0	0
			459	284	100	74	1		

- Molecule 82 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	S2	1740	Total	C	N	O	P	0	0
			36953	16508	6600	12106	1739		

- Molecule 83 is a protein called Elongation factor 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	CB	846	Total	C	N	O	S	0	0
			6605	4193	1136	1232	44		

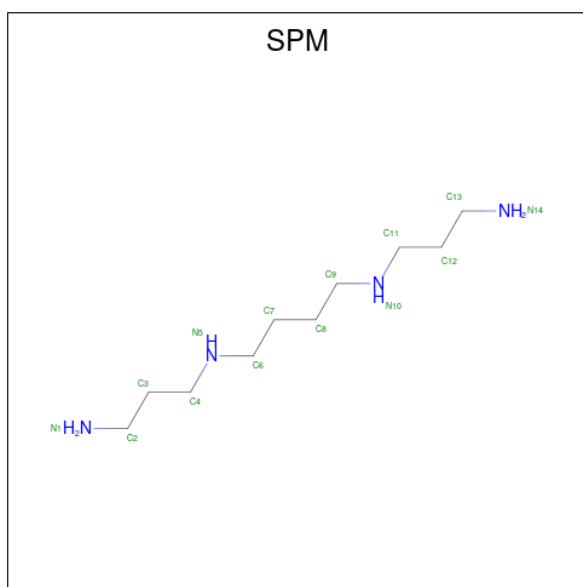
- Molecule 84 is a RNA chain called E site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	Et	75	Total	C	N	O	P	0	0
			1593	712	281	526	74		

- Molecule 85 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

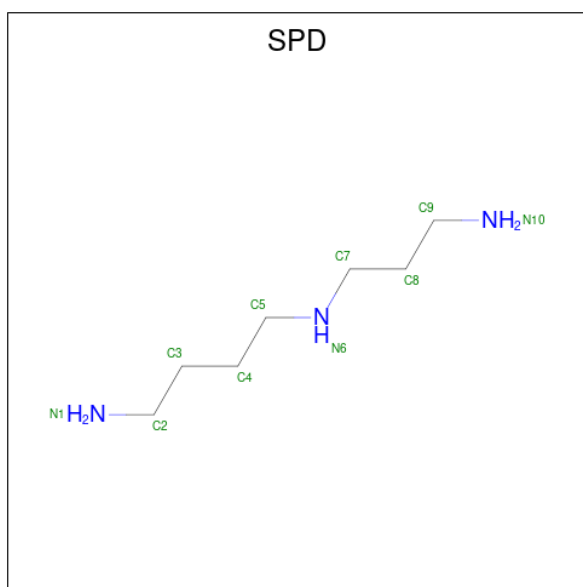
Mol	Chain	Residues	Atoms		AltConf
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			177	177	
85	L7	3	Total	Mg	0
			3	3	
85	L8	5	Total	Mg	0
			5	5	
85	LA	1	Total	Mg	0
			1	1	
85	LB	1	Total	Mg	0
			1	1	
85	LP	1	Total	Mg	0
			1	1	
85	LV	1	Total	Mg	0
			1	1	
85	Le	1	Total	Mg	0
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85	Lj	1	Total	Mg	0
			1	1	
85	SS	1	Total	Mg	0
			1	1	
85	SG	1	Total	Mg	0
			1	1	
85	S2	26	Total	Mg	0
			26	26	

- Molecule 86 is SPERMINE (CCD ID: SPM) (formula: C₁₀H₂₆N₄) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	

- Molecule 87 is SPERMIDINE (CCD ID: SPD) (formula: $C_7H_{19}N_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms			AltConf
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L5	1	Total	C	N	0
			10	7	3	
87	L8	1	Total	C	N	0
			10	7	3	
87	LN	1	Total	C	N	0
			10	7	3	

- Molecule 88 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
88	Lg	1	Total	Zn	0
			1	1	

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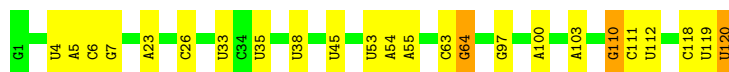
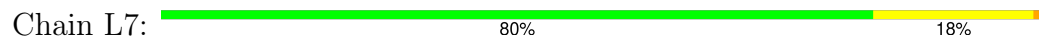
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88	Lm	1	Total 1	Zn 1	0
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88	Lp	1	Total 1	Zn 1	0
88	Sa	1	Total 1	Zn 1	0

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G2706	A2591	C2497	G2407	G2276	G2046	G1961	A1837	U1744	C1662	C1535	C1409	G1320	C
U2707	A2601	C2498	U2408	A2279	G2047	G1962	G1842	G1750	C1663	A1537	C1410	G1321	U
C2708	G2602	G2502	U2409	G2284	U2048	A1962	G1846	G1751	U1538	U1538	C1411	A1322	C
C2710	C2607	G2503	C2410	C2289	G2049	G1969	G1847	G1752	A1669	G1539	C1412	A1323	G
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U2718	G2618	G2516	A2417	G2301	A2069	G1977	U1861	G1760	U1683	A1563	A1420	C1332	G
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G2724	G2627	U2519	G2423	G2306	G2076	U1980	U1867	C1763	C1694	U1577	U1438	A1337	G
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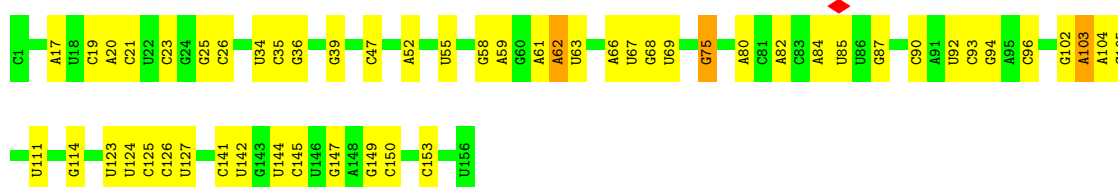
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A5007	C4914	C4621	U4533	C4621	U4533	U4431	U4322	C4237	U4111	A3727	C3843	A3727	U3641	A2879
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C5013	C4921	U4623	C4536	U4623	C4536	U4441	U4324	U4239	C4113	A3729	U3851	A3729	U3645	U2893
A5014	C4922	G4624	C4537	G4624	C4537	A4441	U4325	U4240	C4114	A3730	U3852	A3730	A3646	A2894
G5015	U4925	A4625	G4538	A4625	G4538	U4442	C4327	U4241	C4115	A3731	A3853	A3731	A3647	C2899
A5016	C4926	U4626	G4543	U4626	G4543	U4447	C4328	U4242	C4116	A3732	U3854	A3732	A3648	U2900
G5017	G4927	U4627	U4544	U4627	U4544	C4447	C4329	C4237	G4122	A3733	U3855	A3733	A3649	G2901
C4928	C4928	U4628	U4545	U4628	U4545	C4448	G4330	C4238	C4126	A3734	U3856	A3734	A3652	G2902
U5022	U4932	C4631	U4546	U4631	U4546	A4449	G4331	A4239	C4127	G3744	A3861	G3744	A3653	G2903
C5023	U4932	C4631	U4546	U4631	U4546	A4449	G4331	A4239	C4127	G3744	A3861	G3744	A3653	G2903
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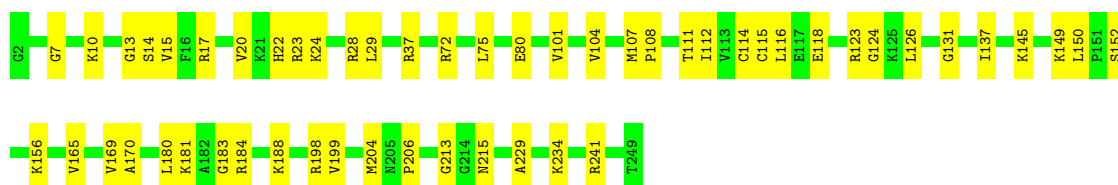
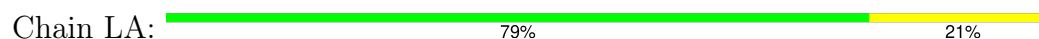
- Molecule 3: 5S rRNA



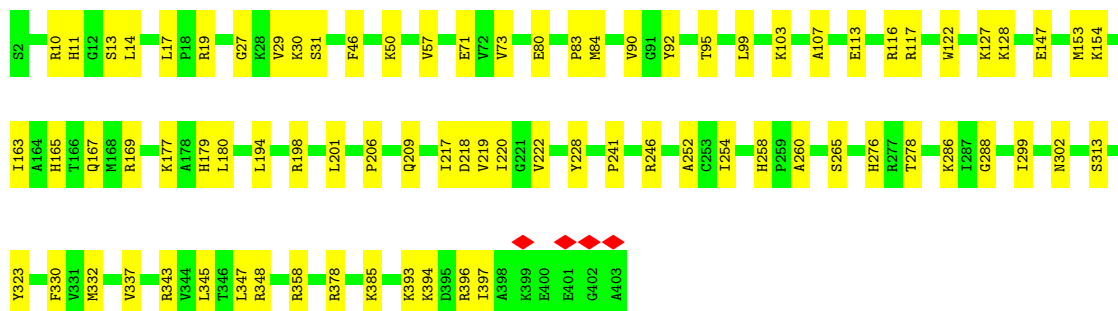
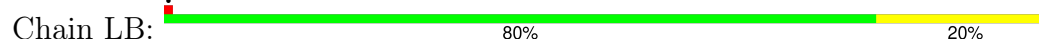
- Molecule 4: 5.8S rRNA



- Molecule 5: 60S ribosomal protein L8

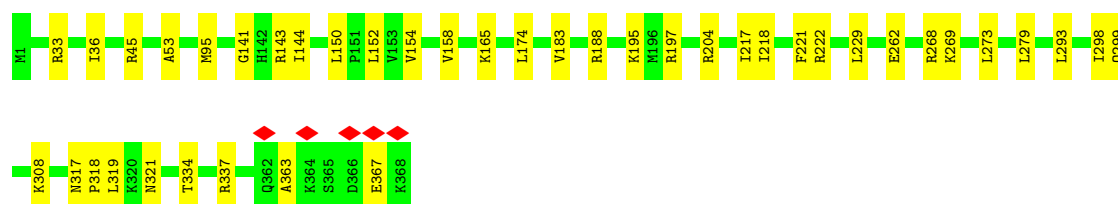


- Molecule 6: Large ribosomal subunit protein uL3

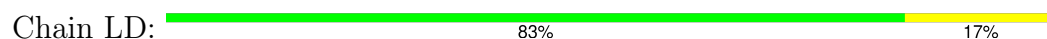


- Molecule 7: 60S ribosomal protein L4

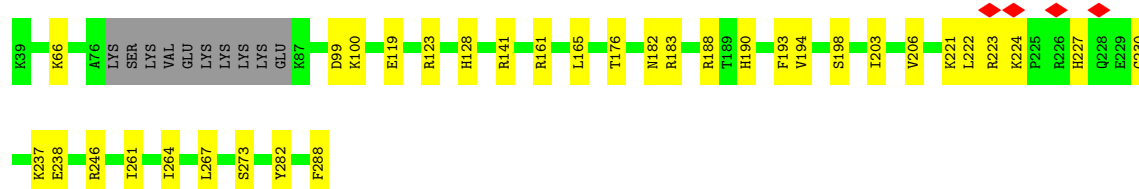
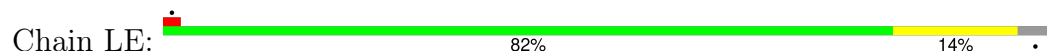




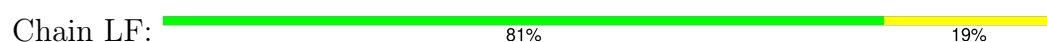
- Molecule 8: Large ribosomal subunit protein uL18



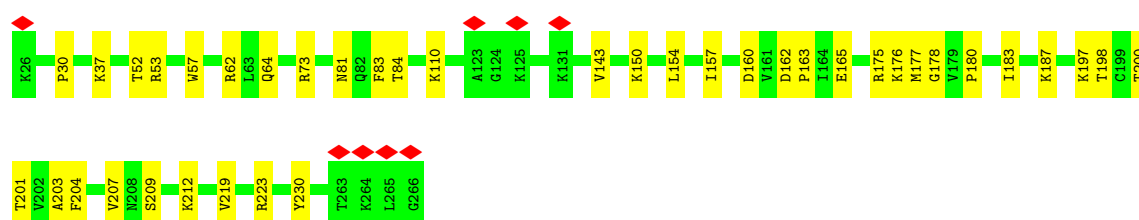
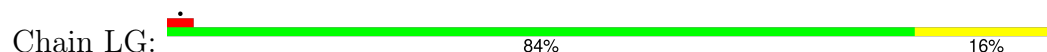
- Molecule 9: Large ribosomal subunit protein eL6



- Molecule 10: 60S ribosomal protein L7

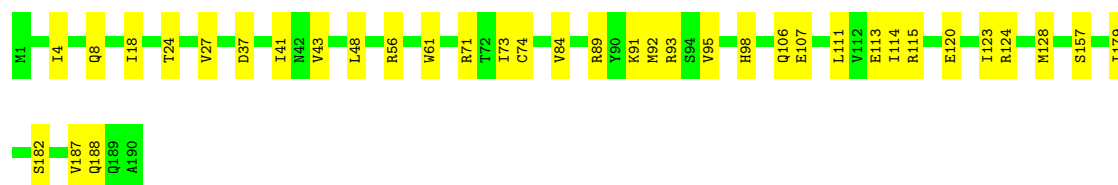


- Molecule 11: 60S ribosomal protein L7a



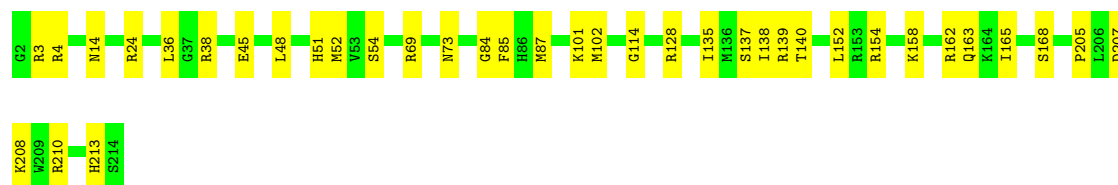
- Molecule 12: 60S ribosomal protein L9

Chain LH:  81% 19%



- Molecule 13: Ribosomal protein uL16-like

Chain LI:  83% 17%



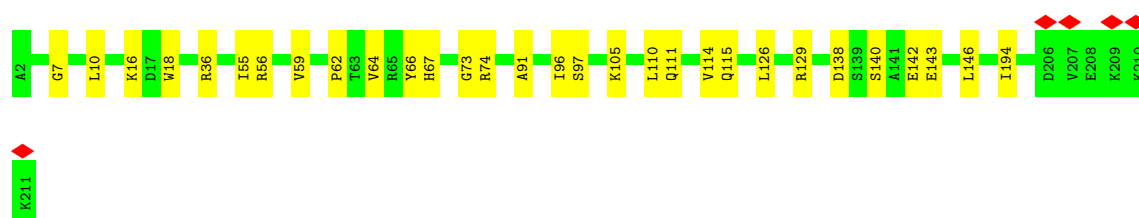
- Molecule 14: 60S ribosomal protein L11

Chain LJ:  78% 18%



- Molecule 15: Large ribosomal subunit protein eL13

Chain LL:  86% 14%



- Molecule 16: 60S ribosomal protein L14

Chain LM:  81% 19%

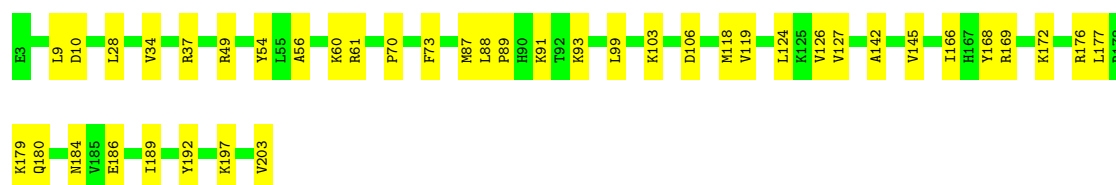
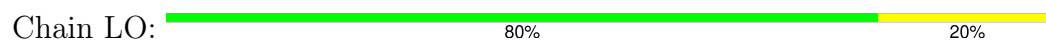


- Molecule 17: 60S ribosomal protein L15

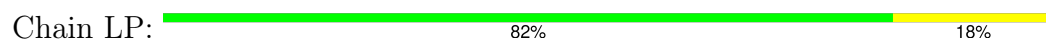
Chain LN:  86% 14%



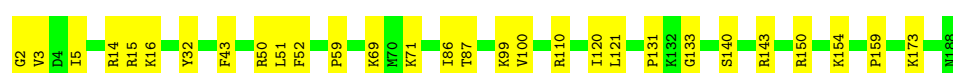
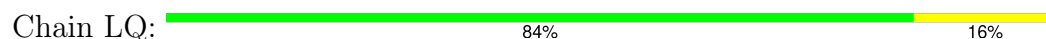
- Molecule 18: 60S ribosomal protein L13a



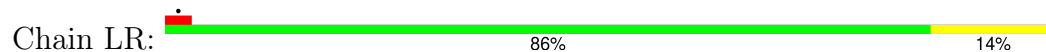
- Molecule 19: 60S ribosomal protein L17



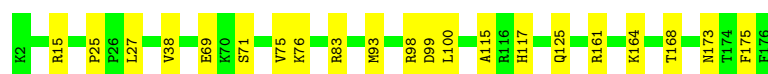
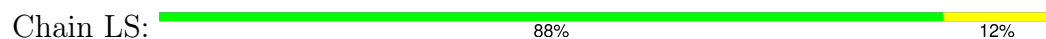
- Molecule 20: 60S ribosomal protein L18



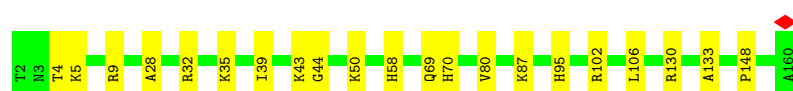
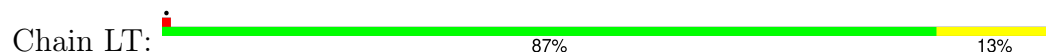
- Molecule 21: 60S ribosomal protein L19



- Molecule 22: 60S ribosomal protein L18a



- Molecule 23: 60S ribosomal protein L21



- Molecule 24: Heparin-binding protein HBp15

Chain LU:  79% 21%



- Molecule 25: 60S ribosomal protein L23

Chain LV:  90% 10%



- Molecule 26: Ribosomal protein L24

Chain LW:  74% 19% 6%



- Molecule 27: 60S ribosomal protein L23a

Chain LX:  88% 12%



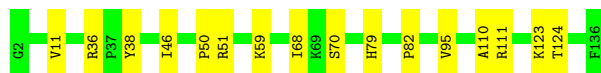
- Molecule 28: 60S ribosomal protein L26

Chain LY:  83% 17%



- Molecule 29: 60S ribosomal protein L27

Chain LZ:  88% 12%

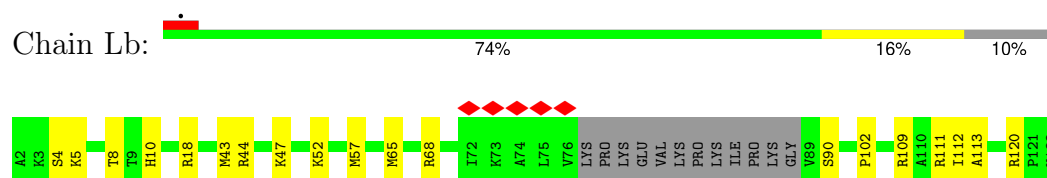


- Molecule 30: 60S ribosomal protein L27a

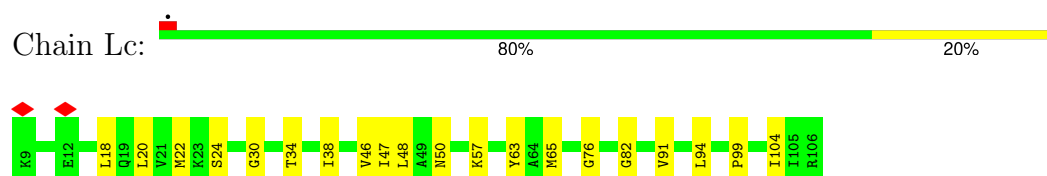
Chain La:  93% 7%



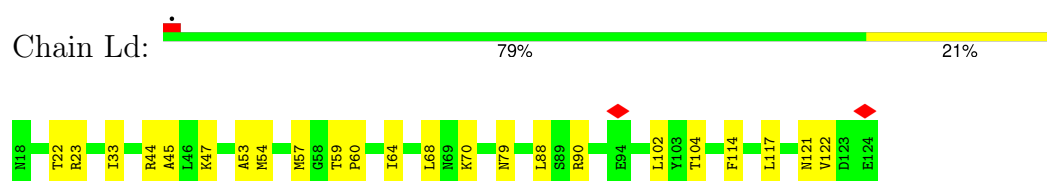
- Molecule 31: Large ribosomal subunit protein eL29



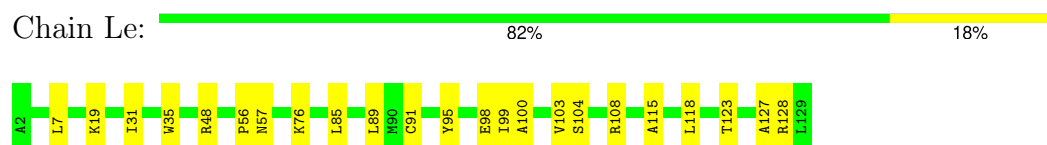
- Molecule 32: 60S ribosomal protein L30



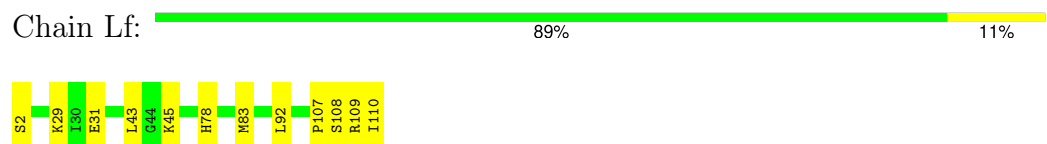
- Molecule 33: 60S ribosomal protein L31



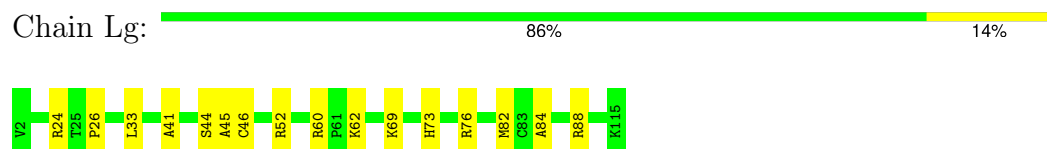
- Molecule 34: 60S ribosomal protein L32



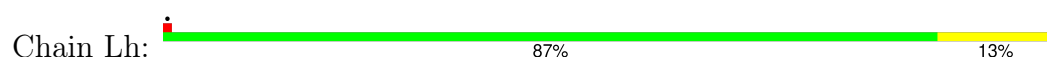
- Molecule 35: 60S ribosomal protein L35a



- Molecule 36: 60S ribosomal protein L34



- Molecule 37: 60S ribosomal protein L35

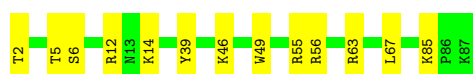
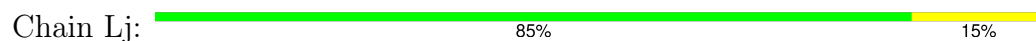




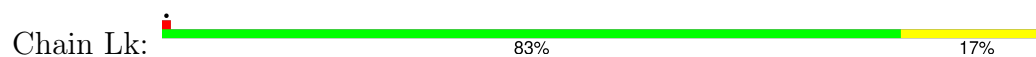
- Molecule 38: 60S ribosomal protein L36



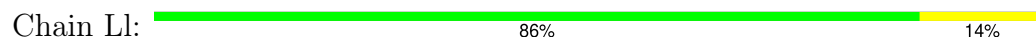
- Molecule 39: 60S ribosomal protein L37



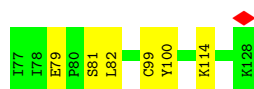
- Molecule 40: 60S ribosomal protein L38



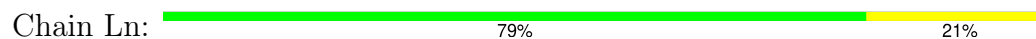
- Molecule 41: 60S ribosomal protein L39



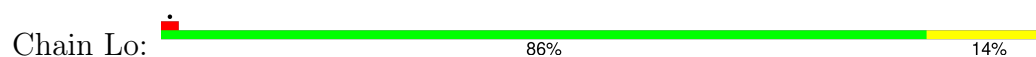
- Molecule 42: Large ribosomal subunit protein eL40



- Molecule 43: 60S ribosomal protein L41



- Molecule 44: 60S ribosomal protein L36a

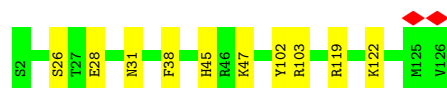




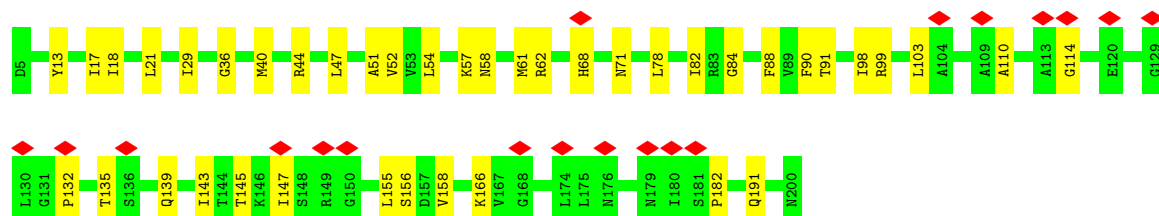
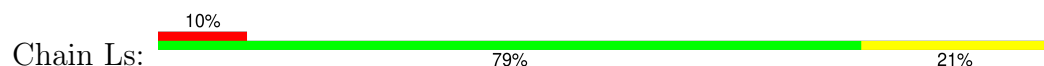
- Molecule 45: 60S ribosomal protein L37a



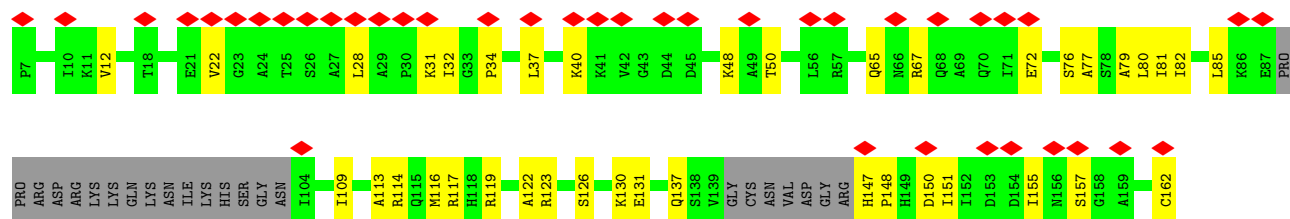
- Molecule 46: 60S ribosomal protein L28



- Molecule 47: 60S acidic ribosomal protein P0



- Molecule 48: Large ribosomal subunit protein uL11

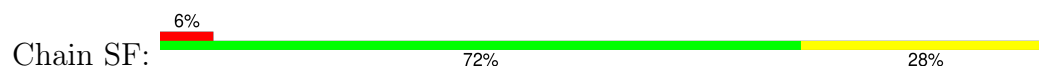


- Molecule 49: Small ribosomal subunit protein uS3

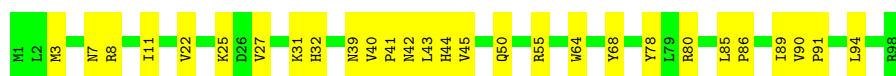




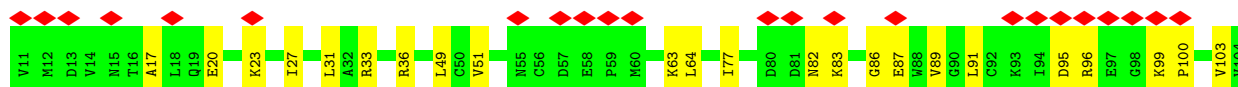
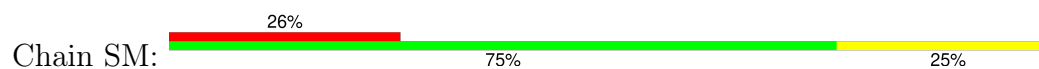
- Molecule 50: 40S ribosomal protein S5



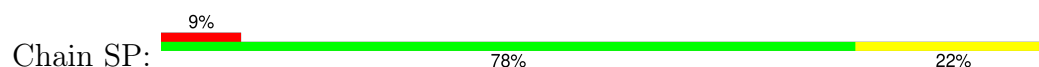
- Molecule 51: 40S ribosomal protein S10



- Molecule 52: Small ribosomal subunit protein eS12

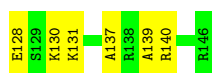


- Molecule 53: Small ribosomal subunit protein uS19

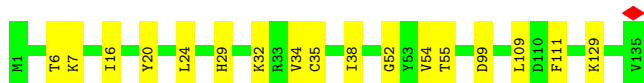
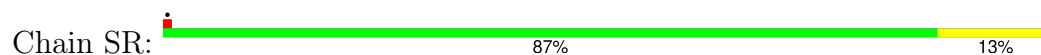


- Molecule 54: Small ribosomal subunit protein uS9

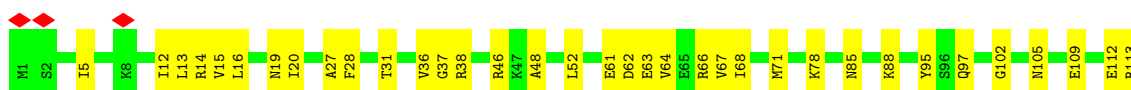




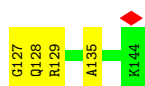
- Molecule 55: Small ribosomal subunit protein eS17



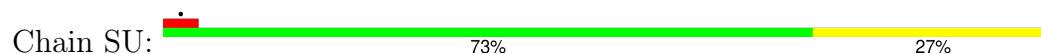
- Molecule 56: 40S ribosomal protein S18



- Molecule 57: 40S ribosomal protein S19



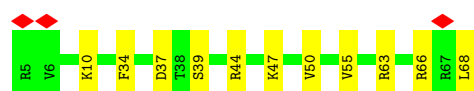
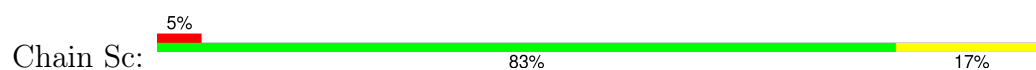
- Molecule 58: 40S ribosomal protein S20



- Molecule 59: Small ribosomal subunit protein eS25



- Molecule 60: 40S ribosomal protein S28



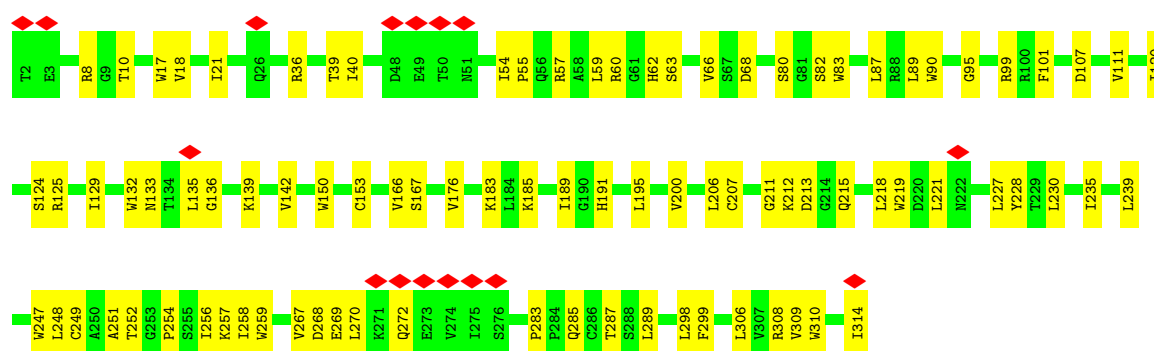
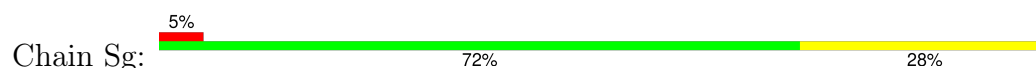
- Molecule 61: 40S ribosomal protein S29



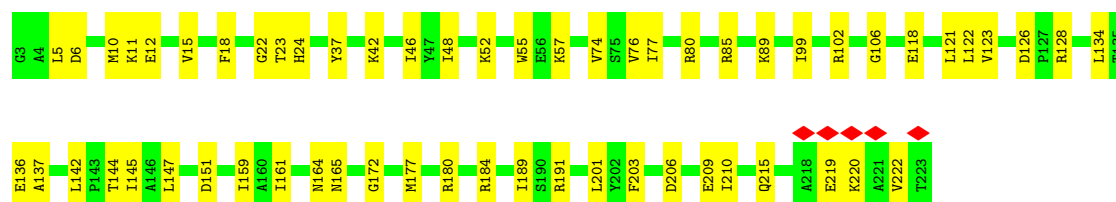
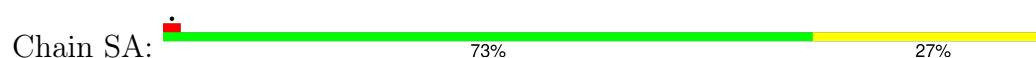
- Molecule 62: Ubiquitin-40S ribosomal protein S27a



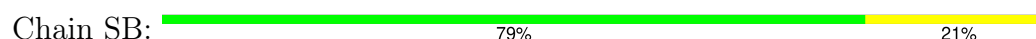
- Molecule 63: Receptor of activated protein C kinase 1

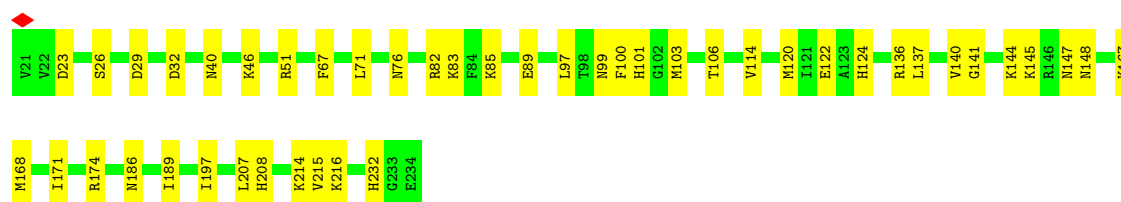


- Molecule 64: 40S ribosomal protein SA



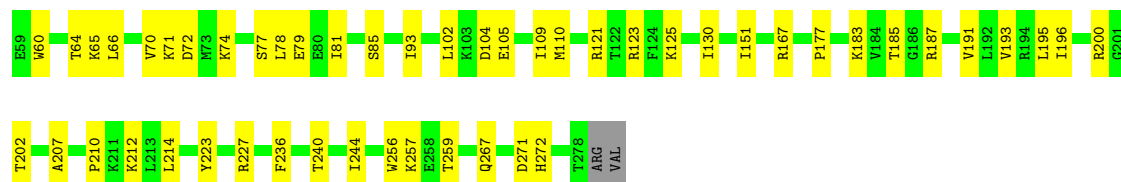
- Molecule 65: 40S ribosomal protein S3a





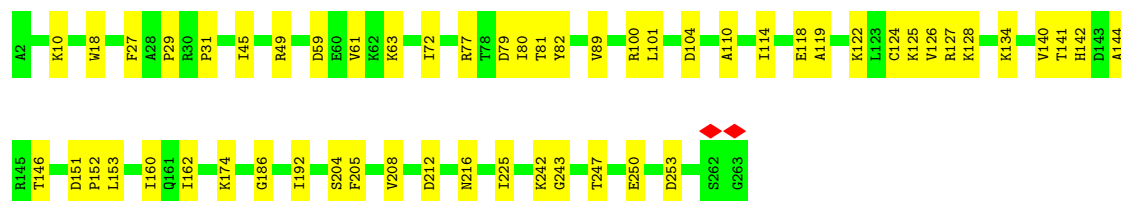
- Molecule 66: 40S ribosomal protein S2

Chain SC: 77% 23%



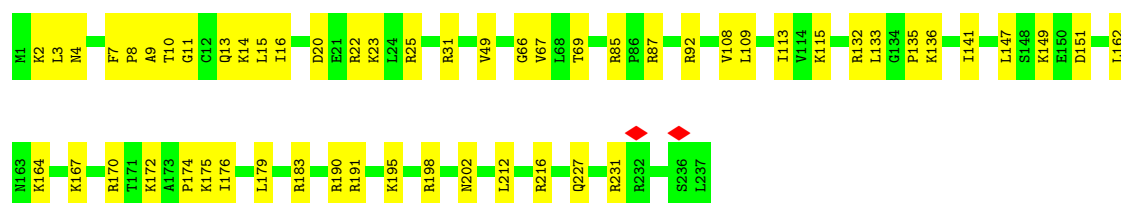
- Molecule 67: Small ribosomal subunit protein eS4, X isoform

Chain SE: 79% 21%



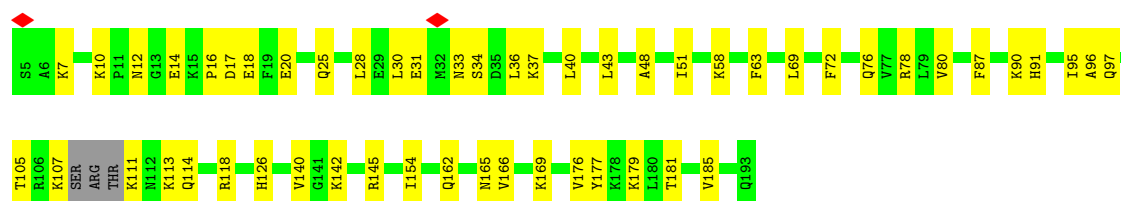
- Molecule 68: 40S ribosomal protein S6

Chain SG: 77% 23%

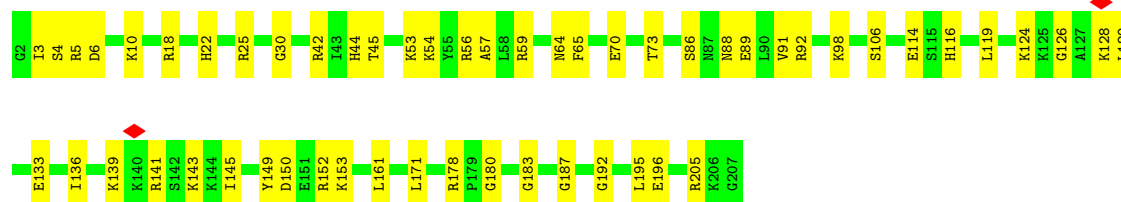


- Molecule 69: Small ribosomal subunit protein eS7

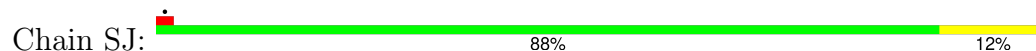
Chain SH: 70% 28%



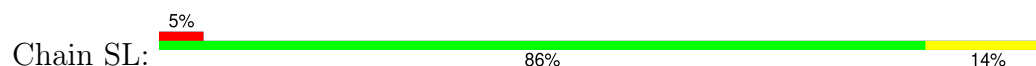
- Molecule 70: 40S ribosomal protein S8



- Molecule 71: 40S ribosomal protein S9



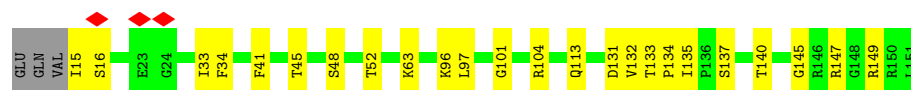
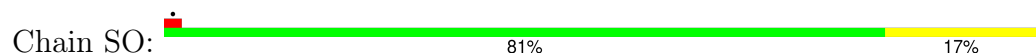
- Molecule 72: 40S ribosomal protein S11



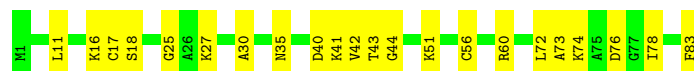
- Molecule 73: 40S ribosomal protein S13



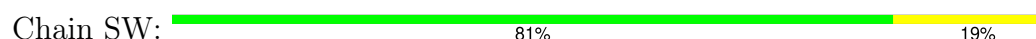
- Molecule 74: Small ribosomal subunit protein uS11



- Molecule 75: Small ribosomal subunit protein eS21



- Molecule 76: 40S ribosomal protein S15a





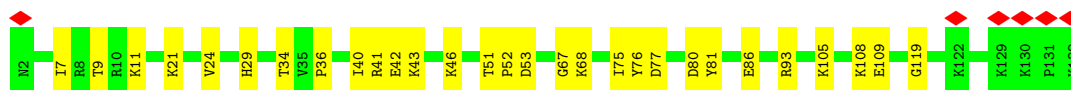
- Molecule 77: 40S ribosomal protein S23

Chain SX: 77% 23%



- Molecule 78: 40S ribosomal protein S24

Chain SY: 5% 78% 22%



- Molecule 79: 40S ribosomal protein S26

Chain Sa: 83% 17%



- Molecule 80: Small ribosomal subunit protein eS27

Chain Sb: 76% 24%



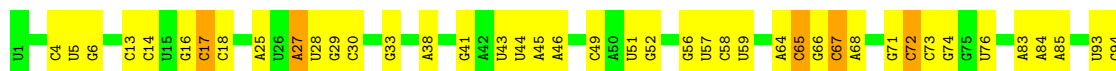
- Molecule 81: Small ribosomal subunit protein eS30

Chain Se: 7% 81% 19%

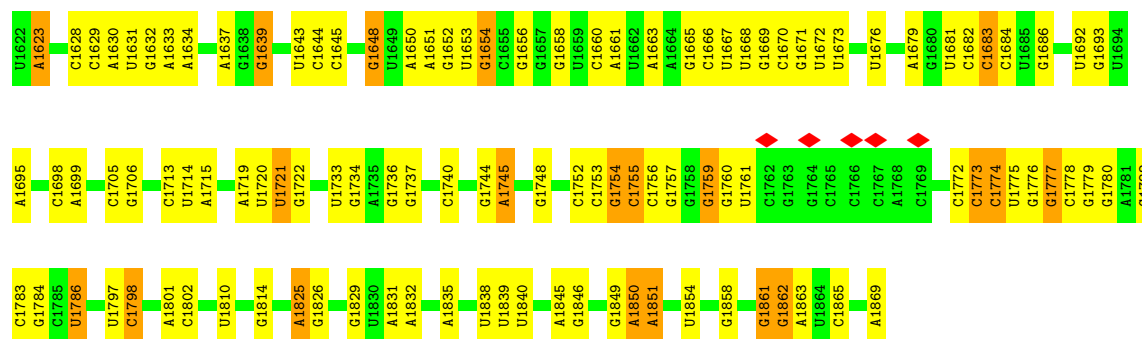


- Molecule 82: 18S rRNA

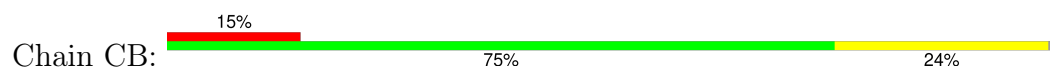
Chain S2: 56% 36% 8%



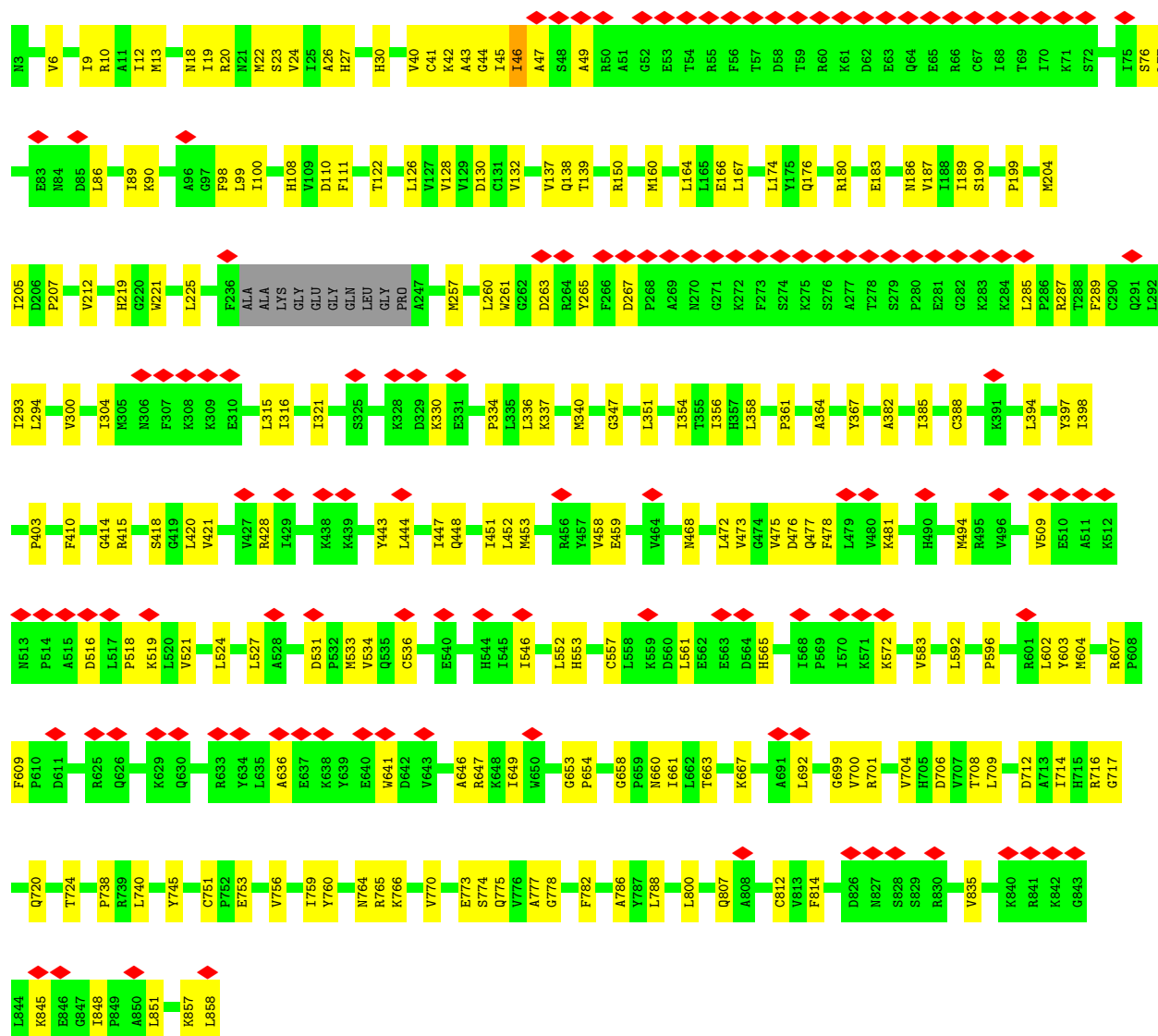
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G1542	C1436	N1337	U1243	G1337	U1244	C1139	C1140	A1023	G928	G838	G692	A604	A520	G437	G329	C186	A95
G1543	C1437	G1338	U1245	G1338	U1246	C1141	C1142	A1024	G929	C840	C693	A605	A521	G438	G330	C187	A102
G1544	A1438	U1342	B8M1248	U1342	B8M1248	A1143	A1144	U1025	C930	G841	C695	G606	A525	C441	G332	G190	A103
G1545	A1439	U1347	A1251	U1347	A1251	A1145	A1146	C1026	C931	G842	C696	G607	A526	C442	G333	G191	A104
G1546	U1442	G1348	C1252	G1348	C1252	A1147	A1148	C1027	G932	G843	C697	G608	C527	C443	C334	G192	U105
G1550	U1551	G1351	C1253	G1351	C1253	A1149	A1150	A1028	G933	G844	C698	G609	A528	C444	A339	C193	C106
G1552	U1552	G1352	C1254	G1352	C1254	A1151	A1152	A1029	G934	G845	C730	C614	A529	C445	C340	C194	A107
G1553	U1553	G1353	C1255	G1353	C1255	A1153	A1154	A1030	G935	G846	C731	C615	U630	C446	G347	C195	G108
A1556	C1557	G1354	G1256	G1354	G1256	C1153	C1154	C1032	U940	A847	C732	C616	A531	C447	A348	C196	U109
C1558	A1559	C1355	G1257	C1355	G1257	C1155	C1156	C1033	U941	C851	C733	C617	A532	C448	A349	U197	G113
C1559	U1560	U1358	C1264	U1358	C1264	U1157	U1158	U1045	G942	C852	C734	C618	A533	C449	C350	U198	G114
U1561	A1562	U1359	C1265	U1359	C1265	A1173	A1174	U1046	U943	C853	C735	C619	A534	C450	G351	U199	U115
C1563	U1477	U1360	C1266	U1360	C1266	U1175	U1176	U1047	U944	C854	C736	C620	A535	C451	C352	U200	U116
G1566	G1478	U1371	C1271	U1371	C1271	U1177	U1178	C1048	U945	C855	C737	C621	A536	C452	G353	U201	G117
G1567	G1479	U1372	C1272	U1372	C1272	U1179	U1180	G1055	G946	C856	C738	C622	A537	C453	U354	G202	C118
C1568	A1480	U1373	G1273	U1373	G1273	A1189	A1190	U1056	U947	C857	C739	C623	A538	C454	A360	G203	U121
A1569	C1482	C1374	G1274	C1374	G1274	A1191	A1192	U1057	U948	C858	C740	C624	A539	C455	U361	G204	G122
C1574	U1487	G1375	G1275	U1375	G1275	A1193	A1194	U1058	U949	C859	C741	C625	A540	C456	A362	G205	C125
G1575	A1488	U1376	C1276	U1376	C1276	A1195	A1196	U1059	U950	C860	C742	C626	A541	C457	A363	G206	G126
U1578	G1490	U1377	C1277	U1377	C1277	U1197	U1198	U1060	U951	C861	C743	C627	A542	C458	A364	U214	G130
A1579	C1491	A1378	G1278	A1378	G1278	U1201	U1202	A1061	G952	C862	C744	C628	A543	C459	U367	C223	C136
U1580	U1492	A1383	C1283	U1492	C1283	U1203	U1204	U1062	G953	C863	C745	C629	A544	C460	U368	A224	U137
C1581	C1493	A1388	G1284	C1493	G1284	A1205	A1206	U1063	G954	C864	C746	C630	A545	C461	A370	G207	G125
C1582	U1494	A1389	C1285	U1494	C1285	U1207	U1208	C1085	G955	C865	C747	C631	A546	C462	A371	G208	G126
G1587	U1496	G1393	U1289	U1496	U1289	A1209	A1210	C1091	A956	C866	C748	C632	A547	C463	U369	U214	G130
A1588	C1497	G1394	G1290	A1588	G1290	C1215	C1216	C1092	A957	C867	C749	C633	A548	C464	U370	C223	C136
U1589	U1498	G1395	A1291	U1498	A1291	U1217	U1218	C1093	A958	C868	C750	C634	A549	C465	A371	A224	U137
C1593	G1500	G1398	G1294	C1593	G1294	U1101	U1102	C1094	A959	C869	C751	C635	A550	C466	A372	G201	G142
A1594	C1512	A1401	A1295	A1594	A1295	U1103	U1104	U1105	A960	C870	C752	C636	A551	C467	A373	A225	U143
U1595	C1513	A1402	G1298	U1595	G1298	C1221	C1222	C1109	A961	C871	C753	C637	A552	C468	A374	C293	U144
U1596	G1514	A1405	G1299	U1596	G1299	A1223	A1224	C1110	A962	C872	C754	C638	A553	C469	A375	C294	G145
C1597	C1515	G1406	A1301	C1597	A1301	U1112	U1113	U1114	A963	C873	C755	C639	A554	C470	A376	C295	G146
U1598	C1516	U1407	G1302	U1598	G1302	U1115	U1116	U1117	A964	C874	C756	C640	A555	C471	A377	G202	G147
G1600	U1519	U1408	C1303	G1600	C1303	U1118	U1119	U1120	A965	C875	C757	C641	A556	C472	A378	G203	G148
A1601	G1520	U1409	U1304	A1601	U1304	U1121	U1122	U1123	A966	C876	C758	C642	A557	C473	A379	G204	G149
U1602	C1521	G1413	U1305	U1602	U1305	U1124	U1125	U1126	A967	C877	C759	C643	A558	C474	A380	G205	G150
G1603	U1522	C1417	U1306	G1603	U1306	U1127	U1128	U1129	A968	C878	C760	C644	A559	C475	A381	G206	G151
G1604	G1523	U1418	C1307	G1604	C1307	U1130	U1131	U1132	A969	C879	C761	C645	A560	C476	A382	G207	G152
G1605	A1531	C1419	U1310	G1605	U1310	U1133	U1134	U1135	A970	C880	C762	C646	A561	C477	A383	G208	G153
G1606	U1532	G1420	C1311	G1606	C1311	U1136	U1137	U1138	A971	C881	C763	C647	A562	C478	A384	G209	G154
A1610	A1533	A1421	G1312	A1610	G1312	U1139	U1140	U1141	A972	C882	C764	C648	A563	C479	A385	G309	A158
G1610	G1534	G1422	U1313	G1610	U1313	U1142	U1143	U1144	A973	C883	C765	C649	A564	C480	A386	G310	A159
A1619	U1536	C1423	U1314	A1619	U1314	U1145	U1146	U1147	A974	C884	C766	C650	A565	C481	A387	G311	U160
A1620	A1537	G1424	U1315	A1620	U1315	U1148	U1149	U1150	A975	C885	C767	C651	A566	C482	A388	G312	U161
U1621	U1538	C1425	U1316	U1621	U1316	U1151	U1152	U1153	A976	C886	C768	C652	A567	C483	A389	G313	C162
			G1327		G1327	U1326	U1327	A1133	U1017	A920	C885	U688	G598	G518	A435	G327	A175



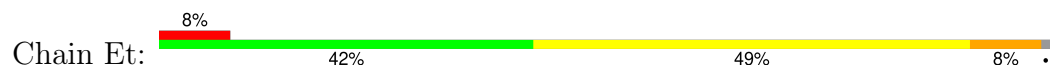
• Molecule 83: Elongation factor 2



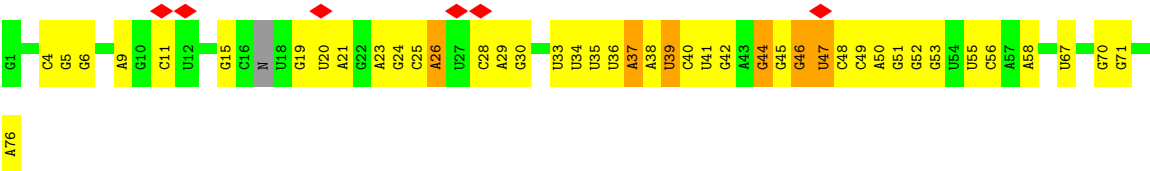
Chain CB:



• Molecule 84: E site tRNA



Chain Et:



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	103321	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TECNAI F30	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.163	Depositor
Minimum map value	-0.048	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.0123	Depositor
Map size (Å)	546.816, 546.816, 546.816	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.068, 1.068, 1.068	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: PSU, MA6, UY1, 6MZ, SPM, 1MA, SPD, G7M, MG, ZN, OMG, 4AC, A2M, 5MC, B8N, UR3, OMC, OMU

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	CI	0.16	0/247	0.30	0/323
2	L5	0.29	0/85098	0.30	0/132762
3	L7	0.27	0/2861	0.25	0/4459
4	L8	0.28	0/3631	0.28	0/5657
5	LA	0.29	0/1936	0.42	0/2596
6	LB	0.26	0/3306	0.40	0/4424
7	LC	0.27	0/2981	0.37	0/4002
8	LD	0.22	0/2428	0.33	0/3252
9	LE	0.22	0/1973	0.40	0/2645
10	LF	0.26	0/1905	0.33	0/2539
11	LG	0.23	0/1960	0.38	0/2637
12	LH	0.23	0/1537	0.36	0/2066
13	LI	0.24	0/1751	0.35	0/2340
14	LJ	0.20	0/1385	0.40	0/1852
15	LL	0.23	0/1732	0.31	0/2315
16	LM	0.26	0/1161	0.40	0/1554
17	LN	0.28	0/1746	0.34	0/2338
18	LO	0.27	0/1682	0.37	0/2250
19	LP	0.28	0/1268	0.41	0/1701
20	LQ	0.28	0/1537	0.37	0/2052
21	LR	0.24	0/1582	0.37	0/2091
22	LS	0.27	0/1493	0.36	0/2003
23	LT	0.24	0/1326	0.33	0/1770
24	LU	0.25	0/839	0.52	0/1126
25	LV	0.25	0/993	0.37	0/1332
26	LW	0.22	0/959	0.37	0/1270
27	LX	0.23	0/1002	0.36	0/1345
28	LY	0.24	0/1132	0.36	0/1504
29	LZ	0.23	0/1130	0.37	0/1507
30	La	0.26	0/1191	0.32	0/1591
31	Lb	0.21	0/889	0.38	0/1175

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
32	Lc	0.25	0/774	0.38	0/1038
33	Ld	0.25	0/903	0.38	0/1216
34	Le	0.27	0/1071	0.33	0/1429
35	Lf	0.28	0/895	0.37	0/1198
36	Lg	0.25	0/916	0.33	0/1220
37	Lh	0.22	0/1023	0.33	0/1351
38	Li	0.21	0/843	0.30	0/1115
39	Lj	0.28	0/720	0.40	0/952
40	Lk	0.21	0/575	0.42	0/761
41	Ll	0.26	0/454	0.30	0/599
42	Lm	0.23	0/435	0.35	0/575
43	Ln	0.26	0/231	0.35	0/294
44	Lo	0.26	0/876	0.35	0/1156
45	Lp	0.25	0/718	0.34	0/953
46	Lr	0.25	0/1017	0.33	0/1364
47	Ls	0.13	0/1519	0.34	0/2052
48	Lt	0.16	0/1009	0.48	0/1363
49	SD	0.15	0/1793	0.30	0/2414
50	SF	0.18	0/1516	0.37	0/2037
51	SK	0.18	0/851	0.46	0/1147
52	SM	0.14	0/950	0.39	0/1275
53	SP	0.17	0/1003	0.39	0/1342
54	SQ	0.18	0/1160	0.40	0/1553
55	SR	0.19	0/1105	0.47	0/1484
56	SS	0.18	0/1216	0.38	0/1628
57	ST	0.17	0/1131	0.38	0/1515
58	SU	0.19	0/831	0.49	0/1115
59	SZ	0.19	0/604	0.46	0/810
60	Sc	0.19	0/508	0.39	0/680
61	Sd	0.18	0/470	0.32	0/623
62	Sf	0.15	0/560	0.46	0/745
63	Sg	0.15	0/2493	0.39	0/3394
64	SA	0.19	0/1778	0.37	0/2416
65	SB	0.19	0/1765	0.38	0/2362
66	SC	0.21	0/1744	0.36	0/2357
67	SE	0.18	0/2118	0.36	0/2849
68	SG	0.16	0/1946	0.36	0/2590
69	SH	0.18	0/1519	0.42	0/2033
70	SI	0.21	0/1715	0.37	0/2287
71	SJ	0.17	0/1550	0.32	0/2069
72	SL	0.21	0/1268	0.31	0/1696
73	SN	0.19	0/1232	0.27	0/1656
74	SO	0.23	0/1037	0.41	0/1391

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
75	SV	0.20	0/643	0.38	0/860
76	SW	0.23	0/1051	0.35	0/1406
77	SX	0.20	0/1116	0.37	0/1490
78	SY	0.18	0/1083	0.42	0/1438
79	Sa	0.22	0/836	0.35	0/1121
80	Sb	0.20	0/665	0.37	0/891
81	Se	0.16	0/465	0.38	0/612
82	S2	0.24	0/39756	0.28	0/61939
83	CB	0.15	0/6734	0.37	1/9094 (0.0%)
84	Et	0.27	0/1778	0.44	0/2767
All	All	0.25	0/236630	0.33	1/346200 (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
54	SQ	0	1
74	SO	0	1
All	All	0	2

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
83	CB	46	ILE	N-CA-C	-6.57	106.89	113.20

There are no chirality outliers.

All (2) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
74	SO	137	SER	Peptide
54	SQ	107	GLU	Peptide

5.2 Too-close contacts

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

the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	CI	247	0	283	12	0
2	L5	78445	0	39719	769	0
3	L7	2561	0	1295	15	0
4	L8	3315	0	1685	26	0
5	LA	1898	0	1993	40	0
6	LB	3238	0	3376	58	0
7	LC	2927	0	3104	32	0
8	LD	2382	0	2410	34	0
9	LE	1935	0	2096	27	0
10	LF	1870	0	1996	33	0
11	LG	1927	0	2074	28	0
12	LH	1518	0	1601	24	0
13	LI	1711	0	1749	25	0
14	LJ	1362	0	1399	21	0
15	LL	1701	0	1818	25	0
16	LM	1138	0	1204	20	0
17	LN	1701	0	1749	23	0
18	LO	1650	0	1794	32	0
19	LP	1242	0	1269	19	0
20	LQ	1513	0	1628	20	0
21	LR	1566	0	1729	21	0
22	LS	1453	0	1490	15	0
23	LT	1298	0	1366	18	0
24	LU	825	0	850	15	0
25	LV	979	0	1039	10	0
26	LW	945	0	1003	23	0
27	LX	985	0	1066	9	0
28	LY	1115	0	1205	16	0
29	LZ	1107	0	1182	12	0
30	La	1162	0	1213	10	0
31	Lb	876	0	948	19	0
32	Lc	764	0	804	12	0
33	Ld	888	0	930	14	0
34	Le	1053	0	1147	16	0
35	Lf	876	0	912	10	0
36	Lg	906	0	998	14	0
37	Lh	1015	0	1148	14	0
38	Li	832	0	917	7	0
39	Lj	705	0	737	13	0
40	Lk	569	0	637	8	0
41	Ll	444	0	483	7	0
42	Lm	429	0	465	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
43	Ln	230	0	276	4	0
44	Lo	862	0	929	11	0
45	Lp	708	0	756	5	0
46	Lr	1002	0	1068	6	0
47	Ls	1496	0	1540	79	0
48	Lt	998	0	1032	54	0
49	SD	1765	0	1865	18	0
50	SF	1495	0	1549	64	0
51	SK	827	0	854	21	0
52	SM	940	0	965	18	0
53	SP	985	0	1031	38	0
54	SQ	1142	0	1213	28	0
55	SR	1090	0	1149	14	0
56	SS	1198	0	1261	28	0
57	ST	1112	0	1146	29	0
58	SU	821	0	883	21	0
59	SZ	598	0	656	17	0
60	Sc	506	0	536	11	0
61	Sd	459	0	452	16	0
62	Sf	548	0	551	19	0
63	Sg	2436	0	2393	57	0
64	SA	1741	0	1746	42	0
65	SB	1738	0	1809	31	0
66	SC	1707	0	1791	35	0
67	SE	2076	0	2177	37	0
68	SG	1923	0	2089	49	0
69	SH	1497	0	1590	39	0
70	SI	1686	0	1772	40	0
71	SJ	1525	0	1640	15	0
72	SL	1247	0	1323	14	0
73	SN	1208	0	1294	14	0
74	SO	1024	0	1050	17	0
75	SV	636	0	637	16	0
76	SW	1034	0	1080	19	0
77	SX	1098	0	1165	28	0
78	SY	1065	0	1142	21	0
79	Sa	821	0	870	13	0
80	Sb	651	0	672	15	0
81	Se	459	0	503	12	0
82	S2	36953	0	18679	454	0
83	CB	6605	0	6678	273	0
84	Et	1593	0	810	50	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
85	L5	177	0	0	0	0
85	L7	3	0	0	0	0
85	L8	5	0	0	0	0
85	LA	1	0	0	0	0
85	LB	1	0	0	0	0
85	LP	1	0	0	0	0
85	LV	1	0	0	0	0
85	Le	1	0	0	0	0
85	Lj	1	0	0	0	0
85	S2	26	0	0	0	0
85	SG	1	0	0	0	0
85	SS	1	0	0	0	0
86	L5	98	0	182	4	0
87	L5	80	0	152	4	0
87	L8	10	0	19	0	0
87	LN	10	0	19	1	0
88	Lg	1	0	0	0	0
88	Lj	1	0	0	0	0
88	Lm	1	0	0	0	0
88	Lo	1	0	0	0	0
88	Lp	1	0	0	0	0
88	Sa	1	0	0	0	0
All	All	225001	0	169505	2670	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 7.

All (2670) 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)
53:SP:130:ARG:NH1	83:CB:858:LEU:HD23	1.24	1.43
82:S2:1825:A:N6	83:CB:717:GLY:HA3	1.12	1.39
53:SP:133:ILE:HG21	83:CB:709:LEU:N	1.36	1.37
82:S2:1825:A:N6	83:CB:717:GLY:CA	1.87	1.37
82:S2:1825:A:C2	83:CB:714:ILE:HG13	1.59	1.37
48:Lt:34:PRO:CG	83:CB:775:GLN:O	1.79	1.31
82:S2:1825:A:H2	83:CB:714:ILE:CG1	1.42	1.30
47:Ls:147:ILE:CG1	83:CB:204:MET:SD	2.20	1.29
53:SP:130:ARG:NH1	83:CB:858:LEU:CD2	1.95	1.28
47:Ls:155:LEU:CD1	83:CB:263:ASP:OD2	1.82	1.27
1:CI:79:ARG:NH1	2:L5:2708:U:O2'	1.68	1.26

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:Ls:155:LEU:HD12	83:CB:263:ASP:OD2	1.23	1.25
50:SF:133:THR:HA	84:Et:40:C:O5'	1.35	1.24
50:SF:131:ALA:O	84:Et:39:U:H4'	1.35	1.24
48:Lt:34:PRO:HB3	83:CB:777:ALA:N	1.52	1.22
82:S2:1825:A:C2	83:CB:714:ILE:CG1	2.19	1.22
47:Ls:139:GLN:HB3	83:CB:180:ARG:CD	1.70	1.20
53:SP:133:ILE:HG23	83:CB:708:THR:CB	1.71	1.19
53:SP:130:ARG:HH11	83:CB:858:LEU:CD2	1.54	1.19
47:Ls:139:GLN:OE1	83:CB:180:ARG:HD3	1.03	1.18
50:SF:133:THR:C	84:Et:39:U:HO2'	1.51	1.17
2:L5:4419:U:O2	83:CB:765:ARG:NE	1.80	1.15
47:Ls:147:ILE:CG2	83:CB:204:MET:SD	2.35	1.14
50:SF:131:ALA:O	84:Et:39:U:C4'	1.96	1.14
47:Ls:147:ILE:HG13	83:CB:204:MET:SD	1.86	1.12
47:Ls:139:GLN:OE1	83:CB:180:ARG:CD	1.97	1.12
50:SF:134:VAL:CG2	84:Et:40:C:O2'	1.99	1.11
47:Ls:139:GLN:CD	83:CB:180:ARG:HD3	1.76	1.11
48:Lt:34:PRO:HG2	83:CB:775:GLN:O	0.94	1.10
50:SF:130:ARG:NH1	84:Et:37:A:H8	1.48	1.10
2:L5:4419:U:O2	83:CB:765:ARG:CD	2.00	1.10
53:SP:133:ILE:HG23	83:CB:708:THR:HB	1.17	1.09
53:SP:133:ILE:HG23	83:CB:708:THR:CA	1.81	1.08
50:SF:130:ARG:NH1	84:Et:37:A:C8	2.17	1.08
48:Lt:37:LEU:HD11	83:CB:777:ALA:HB1	1.20	1.08
50:SF:133:THR:CA	84:Et:39:U:O2'	2.01	1.08
53:SP:133:ILE:CG2	83:CB:709:LEU:N	2.17	1.07
50:SF:133:THR:C	84:Et:39:U:O2'	1.96	1.06
53:SP:133:ILE:CG2	83:CB:708:THR:HB	1.85	1.06
82:S2:1825:A:H62	83:CB:717:GLY:CA	1.56	1.05
48:Lt:34:PRO:HA	83:CB:777:ALA:HA	1.39	1.04
50:SF:134:VAL:HG23	84:Et:40:C:O2'	1.55	1.04
53:SP:133:ILE:HG21	83:CB:709:LEU:H	0.89	1.03
47:Ls:147:ILE:HG12	83:CB:204:MET:SD	1.94	1.03
48:Lt:34:PRO:HG2	83:CB:775:GLN:C	1.84	1.02
2:L5:1996:C:H42	2:L5:2000:G:N2	1.55	1.02
47:Ls:147:ILE:HG23	83:CB:204:MET:SD	1.99	1.02
50:SF:133:THR:CA	84:Et:40:C:O5'	2.11	0.99
2:L5:2009:A:H1'	83:CB:760:TYR:CE2	1.96	0.98
47:Ls:139:GLN:NE2	83:CB:180:ARG:HA	1.78	0.97
47:Ls:132:PRO:O	83:CB:187:VAL:HB	1.64	0.97
48:Lt:34:PRO:CG	83:CB:777:ALA:H	1.78	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:Lt:37:LEU:HD11	83:CB:777:ALA:CB	1.95	0.96
48:Lt:34:PRO:HB3	83:CB:777:ALA:CA	1.95	0.95
48:Lt:34:PRO:CB	83:CB:777:ALA:N	2.29	0.95
47:Ls:139:GLN:HB3	83:CB:180:ARG:HD2	1.44	0.95
53:SP:130:ARG:HH12	83:CB:858:LEU:HD23	1.14	0.95
2:L5:1996:C:N4	2:L5:2000:G:H22	1.66	0.93
47:Ls:155:LEU:CD1	83:CB:263:ASP:CG	2.42	0.93
82:S2:1748:G:H1	82:S2:1786:U:H3	1.00	0.93
82:S2:1825:A:H61	83:CB:717:GLY:CA	1.77	0.92
2:L5:3946:G:H1	2:L5:4067:U:H3	1.13	0.92
53:SP:130:ARG:HH11	83:CB:858:LEU:HD21	1.31	0.92
82:S2:1825:A:H2	83:CB:714:ILE:HG12	1.34	0.92
2:L5:1996:C:H42	2:L5:2000:G:H22	0.96	0.91
12:LH:98:HIS:HE1	83:CB:166:GLU:OE2	1.52	0.91
1:CI:74:LYS:HA	24:LU:116:GLN:O	1.70	0.90
2:L5:4419:U:C1'	83:CB:765:ARG:HG3	2.00	0.90
48:Lt:34:PRO:HG3	83:CB:777:ALA:H	1.34	0.90
50:SF:130:ARG:HH12	84:Et:37:A:H8	0.91	0.90
47:Ls:139:GLN:CD	83:CB:180:ARG:CD	2.42	0.89
47:Ls:147:ILE:HG21	83:CB:204:MET:CG	2.03	0.89
53:SP:133:ILE:CG2	83:CB:708:THR:C	2.45	0.89
50:SF:133:THR:HA	84:Et:39:U:O2'	1.72	0.88
47:Ls:139:GLN:HE22	83:CB:180:ARG:HA	1.39	0.88
82:S2:1825:A:N3	83:CB:714:ILE:HG13	1.87	0.88
48:Lt:34:PRO:CB	83:CB:777:ALA:H	1.87	0.88
47:Ls:139:GLN:HB3	83:CB:180:ARG:NE	1.87	0.88
53:SP:133:ILE:CG2	83:CB:708:THR:CA	2.52	0.88
2:L5:2007:G:H21	2:L5:2012:A:H62	1.20	0.87
65:SB:103:MET:HG3	65:SB:215:VAL:HG12	1.56	0.87
2:L5:4419:U:H1'	83:CB:765:ARG:HG3	1.55	0.86
82:S2:1825:A:N6	83:CB:717:GLY:N	2.25	0.85
62:Sf:126:CYS:SG	62:Sf:144:CYS:N	2.49	0.84
15:LL:64:VAL:HA	15:LL:67:HIS:HD2	1.39	0.84
47:Ls:139:GLN:CB	83:CB:180:ARG:NE	2.41	0.84
47:Ls:139:GLN:CB	83:CB:180:ARG:CD	2.55	0.84
47:Ls:156:SER:HB3	83:CB:263:ASP:OD2	1.76	0.84
48:Lt:34:PRO:CA	83:CB:777:ALA:HA	2.08	0.84
47:Ls:139:GLN:NE2	83:CB:183:GLU:HB2	1.94	0.83
53:SP:133:ILE:CG2	83:CB:709:LEU:H	1.83	0.83
2:L5:1100:U:H3	2:L5:1194:G:H1	1.27	0.83
48:Lt:31:LYS:HA	83:CB:774:SER:HB2	1.60	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:Ls:139:GLN:CG	83:CB:180:ARG:NE	2.43	0.82
47:Ls:147:ILE:HG21	83:CB:204:MET:HB3	1.60	0.82
2:L5:4419:U:O2	83:CB:765:ARG:CG	2.27	0.82
47:Ls:147:ILE:CG1	83:CB:204:MET:CE	2.59	0.80
2:L5:2009:A:H1'	83:CB:760:TYR:HE2	1.41	0.80
47:Ls:147:ILE:HG21	83:CB:204:MET:CB	2.10	0.80
47:Ls:147:ILE:HG21	83:CB:204:MET:SD	2.22	0.80
82:S2:925:G:H1	82:S2:1017:U:H3	1.30	0.80
82:S2:1825:A:H61	83:CB:717:GLY:N	1.78	0.80
47:Ls:139:GLN:CD	83:CB:180:ARG:NE	2.40	0.79
66:SC:210:PRO:HB3	66:SC:240:THR:HG21	1.63	0.79
82:S2:1776:G:N2	82:S2:1777:G:N7	2.31	0.79
82:S2:1239:U:C5	83:CB:667:LYS:HD2	2.18	0.79
26:LW:100:VAL:HG12	26:LW:104:GLN:HE22	1.47	0.79
53:SP:133:ILE:HG23	83:CB:708:THR:HA	1.63	0.78
47:Ls:147:ILE:HG12	83:CB:204:MET:CE	2.13	0.78
2:L5:1095:A:H2	2:L5:1200:G:H1	1.24	0.77
47:Ls:139:GLN:CD	83:CB:180:ARG:HE	1.92	0.77
2:L5:4419:U:O2	83:CB:765:ARG:HG3	1.84	0.77
65:SB:122:GLU:HG2	65:SB:140:VAL:HG12	1.67	0.77
2:L5:4910:G:H4'	6:LB:95:THR:HG22	1.67	0.76
48:Lt:31:LYS:HA	83:CB:774:SER:CB	2.15	0.76
82:S2:1239:U:C4	83:CB:667:LYS:HD3	2.20	0.76
82:S2:1239:U:O4	83:CB:667:LYS:HG3	1.85	0.76
47:Ls:147:ILE:CB	83:CB:204:MET:SD	2.72	0.76
53:SP:133:ILE:HG21	83:CB:708:THR:C	2.11	0.76
82:S2:1239:U:O4	83:CB:667:LYS:CG	2.34	0.76
83:CB:110:ASP:HB3	83:CB:553:HIS:HB2	1.67	0.75
2:L5:5024:C:H41	2:L5:5028:G:H21	1.31	0.75
54:SQ:72:VAL:HG11	54:SQ:80:GLN:HG3	1.68	0.75
66:SC:193:VAL:HG11	66:SC:240:THR:HG22	1.69	0.75
48:Lt:34:PRO:O	83:CB:777:ALA:O	2.04	0.75
48:Lt:34:PRO:CB	83:CB:777:ALA:CA	2.65	0.74
47:Ls:139:GLN:CD	83:CB:180:ARG:HA	2.11	0.74
2:L5:3701:OMC:H5	2:L5:3748:A:H62	1.35	0.74
50:SF:134:VAL:HG12	50:SF:135:ARG:HG2	1.68	0.74
82:S2:1239:U:C4	83:CB:667:LYS:CD	2.69	0.74
50:SF:133:THR:O	84:Et:39:U:O2'	1.93	0.73
19:LP:109:VAL:HA	19:LP:112:LEU:HD13	1.70	0.73
47:Ls:147:ILE:CG2	83:CB:204:MET:HB3	2.18	0.73
2:L5:2611:A:H5'	2:L5:2688:G:H4'	1.71	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:S2:94:G:HO2'	82:S2:508:A:HO2'	1.36	0.72
2:L5:1702:C:H4'	7:LC:308:LYS:HD2	1.72	0.72
33:Ld:90:ARG:HD3	33:Ld:102:LEU:HD13	1.72	0.72
69:SH:154:ILE:HB	69:SH:185:VAL:HG22	1.71	0.72
47:Ls:139:GLN:CG	83:CB:180:ARG:HE	1.99	0.72
63:Sg:247:TRP:HB3	63:Sg:258:ILE:HD11	1.70	0.72
2:L5:497:G:H1	2:L5:657:C:H42	1.38	0.71
2:L5:1982:G:H5'	48:Lt:28:LEU:HD13	1.71	0.71
68:SG:2:LYS:HB2	68:SG:108:VAL:HG12	1.71	0.71
84:Et:44:G:H2'	84:Et:45:G:C8	2.24	0.71
16:LM:15:VAL:HG22	16:LM:50:MET:HE1	1.72	0.71
82:S2:1239:U:O4	83:CB:667:LYS:CD	2.38	0.71
2:L5:3594:C:O2	2:L5:3597:G:N2	2.24	0.71
50:SF:133:THR:CB	84:Et:40:C:O5'	2.39	0.71
57:ST:12:GLN:NE2	82:S2:1593:C:O2	2.23	0.71
2:L5:4546:A:N7	5:LA:215:ASN:ND2	2.39	0.70
69:SH:105:THR:HG23	69:SH:107:LYS:H	1.56	0.70
2:L5:664:G:N2	2:L5:666:G:O6	2.25	0.70
2:L5:387:G:HO2'	2:L5:412:G:H1	1.39	0.70
5:LA:104:VAL:HA	5:LA:107:MET:HE3	1.73	0.70
67:SE:208:VAL:HG11	67:SE:225:ILE:HG13	1.73	0.70
84:Et:15:G:N2	84:Et:48:C:O2	2.25	0.70
47:Ls:155:LEU:HD13	83:CB:263:ASP:CG	2.15	0.70
76:SW:2:VAL:N	82:S2:1091:C:HO2'	1.90	0.70
47:Ls:147:ILE:CG2	83:CB:204:MET:CB	2.70	0.69
83:CB:42:LYS:HG2	83:CB:347:GLY:HA3	1.73	0.69
2:L5:2484:A:H62	2:L5:2494:U:H3	1.41	0.69
83:CB:225:LEU:HD12	83:CB:260:LEU:HB3	1.74	0.69
2:L5:2009:A:C8	83:CB:756:VAL:CG1	2.75	0.69
2:L5:2092:G:O2'	2:L5:2262:G:N2	2.26	0.69
2:L5:2351:OMC:HM22	7:LC:95:MET:HG3	1.74	0.69
2:L5:3954:A:H1'	2:L5:4058:U:H5'	1.75	0.69
82:S2:1658:G:OP2	82:S2:1660:C:N4	2.25	0.69
82:S2:1684:C:HO2'	84:Et:34:U:H6	1.38	0.69
2:L5:184:U:O2	2:L5:253:G:N2	2.23	0.69
2:L5:2702:C:OP1	24:LU:101:ARG:NH2	2.24	0.69
2:L5:4946:U:HO2'	35:Lf:2:SER:N	1.90	0.69
47:Ls:147:ILE:HG13	83:CB:204:MET:CE	2.22	0.69
48:Lt:65:GLN:HG3	48:Lt:67:ARG:H	1.57	0.69
52:SM:51:VAL:HG12	52:SM:77:ILE:HB	1.74	0.69
2:L5:3937:C:H1'	17:LN:125:SER:HB3	1.74	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:4242:U:H3	2:L5:4281:A:H2	1.38	0.68
62:Sf:99:LYS:NZ	82:S2:1287:A:OP1	2.25	0.68
26:LW:80:ARG:NH2	68:SG:8:PRO:O	2.26	0.68
2:L5:748:G:O6	22:LS:98:ARG:NH2	2.26	0.68
49:SD:106:ARG:HG3	49:SD:175:VAL:HG22	1.75	0.68
83:CB:561:LEU:HA	83:CB:565:HIS:HB2	1.74	0.68
2:L5:1995:G:O2'	48:Lt:122:ALA:O	2.11	0.68
13:LI:205:PRO:HD2	13:LI:208:LYS:HE2	1.76	0.68
2:L5:2007:G:N2	2:L5:2012:A:H62	1.91	0.68
68:SG:183:ARG:NH2	82:S2:316:G:OP2	2.26	0.68
80:Sb:14:GLU:HA	80:Sb:17:ARG:HG2	1.76	0.68
5:LA:107:MET:HB3	5:LA:111:THR:HG21	1.73	0.68
66:SC:187:ARG:NH2	82:S2:1143:A:OP2	2.27	0.67
86:L5:5290:SPM:H112	18:LO:91:LYS:HD3	1.75	0.67
57:ST:124:THR:HG23	57:ST:127:GLY:H	1.60	0.67
2:L5:1669:A:OP1	31:Lb:18:ARG:NH2	2.28	0.67
2:L5:4607:A:H4'	83:CB:552:LEU:HD13	1.77	0.67
17:LN:157:LYS:O	17:LN:162:ARG:NH1	2.27	0.67
18:LO:34:VAL:HG22	18:LO:103:LYS:HB2	1.77	0.67
2:L5:665:C:H4'	2:L5:666:G:H5'	1.75	0.67
82:S2:940:U:H3	82:S2:1002:U:H3	1.40	0.67
26:LW:56:ARG:HE	26:LW:61:LYS:HB2	1.59	0.67
84:Et:28:C:H2'	84:Et:29:A:H8	1.60	0.67
50:SF:124:ASP:OD1	50:SF:125:SER:N	2.25	0.67
76:SW:71:LYS:NZ	82:S2:1156:U:OP1	2.28	0.67
63:Sg:87:LEU:HB2	63:Sg:101:PHE:HB2	1.77	0.67
2:L5:2458:C:H5''	17:LN:67:ARG:HD2	1.77	0.67
5:LA:29:LEU:O	5:LA:123:ARG:NH1	2.28	0.67
2:L5:1414:C:H2'	2:L5:1415:G:H8	1.60	0.66
6:LB:90:VAL:HG23	6:LB:163:ILE:HD11	1.77	0.66
74:SO:104:ARG:NH2	82:S2:959:G:OP1	2.27	0.66
82:S2:1239:U:O4	83:CB:667:LYS:HD3	1.95	0.66
2:L5:2554:U:O2	2:L5:2764:A:N7	2.28	0.66
21:LR:172:ARG:NH1	82:S2:909:G:OP1	2.28	0.66
76:SW:107:SER:HB2	82:S2:860:G:H21	1.59	0.66
12:LH:106:GLN:HB2	12:LH:111:LEU:HB3	1.78	0.66
82:S2:747:U:N3	82:S2:796:G:N1	2.44	0.66
12:LH:98:HIS:CE1	83:CB:166:GLU:OE2	2.42	0.66
51:SK:50:GLN:HE22	82:S2:1276:A:H1'	1.60	0.66
68:SG:132:ARG:NH2	82:S2:152:U:O4'	2.28	0.66
6:LB:222:VAL:O	6:LB:343:ARG:NH1	2.29	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:Se:41:ARG:NH2	82:S2:639:C:OP1	2.29	0.66
80:Sb:34:ASP:O	80:Sb:79:PHE:HA	1.95	0.66
1:Cl:79:ARG:NH1	2:L5:2708:U:HO2'	1.93	0.66
25:LV:35:LYS:HB2	25:LV:67:LYS:HG3	1.76	0.66
56:SS:85:ASN:OD1	56:SS:97:GLN:NE2	2.28	0.66
2:L5:2520:C:O2	2:L5:2640:G:N2	2.28	0.66
40:Lk:8:ILE:HD11	40:Lk:56:LEU:HD13	1.77	0.66
83:CB:604:MET:HG2	83:CB:704:VAL:HA	1.78	0.65
82:S2:533:A:H61	82:S2:550:C:H42	1.44	0.65
4:L8:75:OMG:OP2	28:LY:74:TYR:OH	2.15	0.65
30:La:84:GLU:OE1	30:La:87:ARG:NH2	2.30	0.65
48:Lt:151:ILE:O	48:Lt:155:ILE:HB	1.97	0.65
2:L5:1095:A:N1	2:L5:1200:G:O6	2.29	0.65
68:SG:7:PHE:HD2	68:SG:10:THR:HG22	1.62	0.65
2:L5:4525:C:OP1	6:LB:246:ARG:NH2	2.28	0.65
2:L5:4910:G:N2	18:LO:106:ASP:O	2.30	0.65
47:Ls:58:ASN:ND2	47:Ls:84:GLY:O	2.24	0.65
50:SF:168:THR:OG1	50:SF:171:GLU:OE1	2.15	0.65
68:SG:135:PRO:HG2	68:SG:141:ILE:HG22	1.78	0.65
82:S2:1536:G:H2'	82:S2:1537:A:H8	1.62	0.65
83:CB:509:VAL:HG12	83:CB:572:LYS:HG3	1.79	0.65
22:LS:76:LYS:NZ	22:LS:100:LEU:O	2.31	0.64
6:LB:10:ARG:NH1	6:LB:11:HIS:O	2.30	0.64
48:Lt:130:LYS:NZ	48:Lt:157:SER:O	2.30	0.64
82:S2:751:G:H1'	82:S2:793:G:H21	1.61	0.64
1:Cl:78:HIS:NE2	2:L5:2706:G:N7	2.44	0.64
82:S2:628:A:N6	82:S2:1500:G:O2'	2.30	0.64
2:L5:68:U:OP1	17:LN:178:HIS:ND1	2.31	0.64
40:Lk:54:GLU:OE2	40:Lk:58:GLN:NE2	2.27	0.64
2:L5:4281:A:H2'	2:L5:4282:A:H2'	1.79	0.64
19:LP:39:MET:HG2	19:LP:43:LYS:HD3	1.79	0.64
69:SH:114:GLN:HE22	82:S2:874:G:H21	1.45	0.64
23:LT:43:LYS:O	23:LT:58:HIS:ND1	2.31	0.64
64:SA:89:LYS:HD2	64:SA:201:LEU:HG	1.79	0.64
2:L5:2601:A:N6	2:L5:2744:A:OP2	2.28	0.64
82:S2:928:G:H2'	82:S2:929:G:C8	2.32	0.64
2:L5:1994:C:H2'	2:L5:1995:G:C8	2.33	0.64
2:L5:3641:U:OP2	2:L5:3646:A:N6	2.31	0.64
46:Lr:26:SER:OG	46:Lr:28:GLU:OE1	2.15	0.64
49:SD:142:LEU:HD13	49:SD:150:MET:HE2	1.80	0.64
70:SI:98:LYS:HB3	82:S2:377:G:H5'	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:1704:C:O3'	10:LF:46:ARG:NH1	2.31	0.63
53:SP:133:ILE:CG2	83:CB:708:THR:CB	2.52	0.63
24:LU:65:ARG:HG2	24:LU:67:LYS:H	1.63	0.63
58:SU:51:LYS:HB3	58:SU:90:ASP:HB2	1.80	0.63
83:CB:692:LEU:HD11	83:CB:738:PRO:HB2	1.80	0.63
54:SQ:19:ALA:HB2	54:SQ:75:GLY:HA3	1.81	0.63
71:SJ:162:ARG:NH1	82:S2:582:U:OP1	2.30	0.63
83:CB:385:ILE:HG22	83:CB:418:SER:HB2	1.81	0.63
68:SG:22:ARG:HG3	68:SG:25:ARG:HH12	1.64	0.63
82:S2:1829:G:H1'	82:S2:1850:MA6:H2	1.79	0.63
2:L5:1982:G:N2	2:L5:2009:A:O2'	2.32	0.63
2:L5:2495:U:H2'	2:L5:2496:G:H8	1.64	0.63
48:Lt:117:ARG:HE	48:Lt:119:ARG:H	1.45	0.63
67:SE:45:ILE:HG13	67:SE:61:VAL:HG11	1.79	0.63
67:SE:153:LEU:O	67:SE:174:LYS:NZ	2.31	0.63
12:LH:106:GLN:NE2	12:LH:113:GLU:OE2	2.31	0.63
2:L5:3946:G:N2	2:L5:4067:U:O2	2.32	0.63
2:L5:170:C:H42	2:L5:266:C:H42	1.47	0.63
2:L5:4431:PSU:OP2	13:LI:3:ARG:NH2	2.28	0.62
31:Lb:109:ARG:HA	31:Lb:112:ILE:HG12	1.81	0.62
67:SE:79:ASP:HB3	67:SE:82:TYR:HB2	1.81	0.62
2:L5:4092:G:N7	2:L5:4114:C:N4	2.45	0.62
5:LA:137:ILE:HD11	5:LA:149:LYS:HB2	1.82	0.62
63:Sg:252:THR:HG21	63:Sg:257:LYS:HD2	1.81	0.62
2:L5:1100:U:O3'	2:L5:1167:C:N4	2.32	0.62
2:L5:2009:A:C1'	83:CB:760:TYR:CE2	2.78	0.62
14:LJ:146:ARG:HG2	14:LJ:147:ARG:HG3	1.81	0.62
2:L5:327:U:O2'	38:Li:30:ARG:NH1	2.32	0.62
2:L5:4987:C:OP2	6:LB:116:ARG:NH2	2.32	0.62
84:Et:6:G:H1	84:Et:67:U:H3	1.47	0.62
40:Lk:26:LYS:HB2	40:Lk:69:LEU:HD12	1.81	0.62
49:SD:40:ARG:NH2	58:SU:106:ILE:O	2.32	0.62
58:SU:80:PHE:HB3	61:Sd:52:PHE:HB3	1.81	0.62
82:S2:587:A:H5'	82:S2:592:C:H41	1.64	0.62
2:L5:67:C:OP2	2:L5:312:G:N2	2.30	0.62
33:Ld:64:ILE:HG23	33:Ld:68:LEU:HD23	1.82	0.62
47:Ls:145:THR:O	83:CB:183:GLU:CG	2.47	0.62
51:SK:85:LEU:HD21	51:SK:89:ILE:HB	1.80	0.62
67:SE:144:ALA:HB3	82:S2:121:OMU:HM23	1.80	0.62
2:L5:1499:C:OP1	20:LQ:150:ARG:NH2	2.33	0.62
11:LG:209:SER:HA	11:LG:212:LYS:HG3	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:SX:105:PHE:HD1	77:SX:121:LYS:HB3	1.65	0.62
82:S2:106:C:H2'	82:S2:107:A:H8	1.65	0.62
82:S2:1417:C:O2	82:S2:1422:G:O6	2.18	0.62
2:L5:2758:G:O2'	2:L5:2765:A:N3	2.30	0.62
2:L5:4419:U:O4'	83:CB:765:ARG:HG3	2.00	0.61
82:S2:1639:G7M:H5''	84:Et:30:G:OP1	2.00	0.61
2:L5:4992:G:H2'	2:L5:4993:G:C8	2.36	0.61
50:SF:127:ARG:HG2	50:SF:136:ARG:HE	1.64	0.61
64:SA:118:GLU:HG3	66:SC:65:LYS:HE2	1.82	0.61
14:LJ:141:ILE:HA	14:LJ:144:LYS:HD2	1.82	0.61
18:LO:180:GLN:NE2	18:LO:184:ASN:OD1	2.34	0.61
50:SF:34:SER:HA	60:Sc:55:VAL:HG23	1.81	0.61
54:SQ:58:LEU:HB3	54:SQ:62:ARG:HD2	1.82	0.61
70:SI:70:GLU:OE2	72:SL:21:LYS:NZ	2.32	0.61
82:S2:1536:G:H2'	82:S2:1537:A:C8	2.35	0.61
2:L5:3811:G:O2'	2:L5:3814:U:OP2	2.18	0.61
62:Sf:108:VAL:HG12	62:Sf:114:ILE:HA	1.81	0.61
13:LI:87:MET:HG2	13:LI:138:ILE:HG12	1.81	0.61
47:Ls:139:GLN:HE21	83:CB:183:GLU:CD	2.08	0.61
50:SF:84:GLY:O	82:S2:1673:U:O2'	2.16	0.61
59:SZ:99:LEU:HD21	59:SZ:102:LYS:HB2	1.82	0.61
2:L5:2899:C:OP1	21:LR:108:ARG:NH2	2.31	0.61
47:Ls:17:ILE:HD12	47:Ls:54:LEU:HD21	1.82	0.61
48:Lt:37:LEU:CD1	83:CB:777:ALA:HB1	2.13	0.61
82:S2:1422:G:H4'	82:S2:1423:C:H3'	1.82	0.61
62:Sf:144:CYS:HB2	62:Sf:146:LEU:HD23	1.82	0.61
72:SL:85:THR:HG21	82:S2:373:G:H4'	1.83	0.61
2:L5:2695:A:OP1	40:Lk:35:LYS:NZ	2.27	0.61
58:SU:70:CYS:SG	82:S2:1491:G:O2'	2.57	0.61
63:Sg:213:ASP:OD2	63:Sg:215:GLN:NE2	2.34	0.61
83:CB:636:ALA:HA	83:CB:641:TRP:H	1.66	0.61
26:LW:80:ARG:HH22	82:S2:167:G:H4'	1.66	0.61
67:SE:29:PRO:HA	82:S2:496:C:H5'	1.83	0.61
2:L5:1802:A:N3	23:LT:130:ARG:NH2	2.48	0.61
2:L5:3688:U:OP2	5:LA:198:ARG:NH2	2.34	0.61
49:SD:99:ILE:HG23	49:SD:173:ARG:HH21	1.63	0.61
55:SR:109:LEU:HD13	64:SA:52:LYS:HB2	1.83	0.61
2:L5:2557:G:H1	2:L5:2570:U:H3	1.48	0.60
2:L5:4088:C:OP1	5:LA:37:ARG:NH1	2.34	0.60
49:SD:8:LYS:HG2	58:SU:61:LEU:HD11	1.82	0.60
56:SS:27:ALA:HB2	56:SS:52:LEU:HD12	1.82	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:SU:26:SER:HB3	58:SU:110:VAL:HA	1.83	0.60
66:SC:200:ARG:O	71:SJ:54:ARG:NH2	2.30	0.60
2:L5:4472:G:O2'	42:Lm:100:TYR:O	2.20	0.60
5:LA:114:CYS:HB3	5:LA:165:VAL:HB	1.84	0.60
17:LN:155:VAL:O	17:LN:162:ARG:NH2	2.33	0.60
82:S2:1228:A:H2'	82:S2:1229:G:C8	2.36	0.60
83:CB:745:TYR:HB2	83:CB:814:PHE:HA	1.83	0.60
50:SF:131:ALA:O	84:Et:39:U:C5'	2.49	0.60
72:SL:35:ARG:NH2	72:SL:55:TYR:O	2.35	0.60
72:SL:133:PRO:HG2	82:S2:383:G:H21	1.66	0.60
83:CB:137:VAL:HG22	83:CB:807:GLN:HE21	1.64	0.60
2:L5:500:G:N2	2:L5:504:G:O2'	2.28	0.60
2:L5:2658:G:N2	2:L5:2676:A:OP2	2.33	0.60
6:LB:107:ALA:HB2	6:LB:201:LEU:HD22	1.82	0.60
52:SM:91:LEU:HD12	52:SM:106:CYS:HB2	1.82	0.60
53:SP:48:GLY:O	53:SP:50:ARG:NH1	2.35	0.60
61:Sd:54:LYS:NZ	82:S2:1482:C:OP1	2.35	0.60
67:SE:49:ARG:NH2	82:S2:496:C:OP1	2.32	0.60
69:SH:177:TYR:O	69:SH:181:THR:HB	2.02	0.60
82:S2:1239:U:C5	83:CB:667:LYS:CD	2.84	0.60
2:L5:4618:OMG:H5'	25:LV:15:ARG:HB2	1.83	0.60
71:SJ:40:LYS:NZ	82:S2:641:A:OP1	2.32	0.60
83:CB:524:LEU:HD22	83:CB:561:LEU:HD11	1.84	0.60
50:SF:185:SER:H	50:SF:190:ILE:HD11	1.67	0.60
51:SK:25:LYS:NZ	82:S2:1497:G:N7	2.44	0.60
57:ST:22:LEU:HG	57:ST:28:LEU:HD21	1.82	0.60
78:SY:11:LYS:HB2	78:SY:24:VAL:HG12	1.84	0.60
78:SY:21:LYS:HE2	78:SY:75:ILE:HD11	1.83	0.60
82:S2:1550:G:H3'	82:S2:1579:A:H61	1.66	0.60
2:L5:4153:C:H5''	27:LX:38:LYS:HD2	1.83	0.60
21:LR:39:GLN:OE1	21:LR:42:ARG:NH1	2.34	0.60
2:L5:1175:A:H2	2:L5:1185:G:H22	1.49	0.60
2:L5:1366:G:H5''	15:LL:36:ARG:HH12	1.67	0.60
2:L5:2362:U:H2'	2:L5:2363:A2M:H8	1.83	0.60
70:SI:88:ASN:OD1	70:SI:205:ARG:NH2	2.34	0.60
77:SX:107:ARG:HG3	77:SX:110:HIS:HB3	1.83	0.60
82:S2:1277:C:H2'	82:S2:1278:A:H8	1.66	0.60
83:CB:43:ALA:HB2	83:CB:351:LEU:HD21	1.84	0.60
43:Ln:1:MET:HG3	82:S2:1706:G:H5'	1.83	0.60
56:SS:130:ARG:NH2	82:S2:1230:C:OP1	2.35	0.60
59:SZ:58:LEU:HD12	59:SZ:62:VAL:HG21	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:SC:183:LYS:HA	66:SC:195:LEU:O	2.02	0.60
82:S2:1639:G7M:C5'	84:Et:30:G:OP1	2.50	0.60
2:L5:4419:U:O2	83:CB:765:ARG:HD3	1.99	0.60
8:LD:223:PHE:HB3	8:LD:226:TYR:HB2	1.84	0.60
53:SP:130:ARG:HD3	53:SP:131:PRO:HD2	1.84	0.60
2:L5:500:G:OP1	2:L5:504:G:N2	2.35	0.59
2:L5:1503:A:H62	20:LQ:87:THR:HG21	1.66	0.59
47:Ls:147:ILE:HG12	83:CB:204:MET:HE2	1.84	0.59
83:CB:641:TRP:HZ3	83:CB:649:ILE:HD11	1.67	0.59
50:SF:131:ALA:C	84:Et:39:U:H4'	2.23	0.59
68:SG:66:GLY:HA2	82:S2:1745:A:H1'	1.84	0.59
53:SP:130:ARG:HH12	83:CB:858:LEU:CD2	1.87	0.59
82:S2:838:G:H1	82:S2:840:C:HO2'	1.48	0.59
49:SD:172:VAL:HG22	49:SD:185:LYS:HG2	1.85	0.59
82:S2:554:A:HO2'	82:S2:555:A:H8	1.48	0.59
82:S2:874:G:H2'	82:S2:875:A:H8	1.67	0.59
2:L5:4594:U:H2'	2:L5:4595:G:H8	1.67	0.59
64:SA:77:ILE:HG13	64:SA:99:ILE:HB	1.84	0.59
2:L5:659:G:H2'	2:L5:660:A:H8	1.67	0.59
2:L5:4107:G:N2	2:L5:4108:G:O6	2.33	0.59
47:Ls:139:GLN:HE22	83:CB:183:GLU:HB2	1.67	0.59
2:L5:4097:G:O6	2:L5:4098:A:N6	2.36	0.59
16:LM:100:ARG:HA	16:LM:103:LYS:HG2	1.85	0.59
54:SQ:78:VAL:HG12	82:S2:1673:U:H5''	1.85	0.59
63:Sg:206:LEU:HD12	63:Sg:218:LEU:HD12	1.84	0.59
70:SI:150:ASP:HA	70:SI:153:LYS:HG2	1.84	0.59
78:SY:34:THR:O	82:S2:570:C:O2'	2.20	0.59
2:L5:1703:C:O2'	2:L5:1704:C:O4'	2.21	0.59
2:L5:3868:G:H22	2:L5:3900:G:H1'	1.66	0.59
2:L5:513:U:N3	2:L5:516:C:OP2	2.33	0.58
42:Lm:99:CYS:HB2	42:Lm:114:LYS:HE3	1.85	0.58
50:SF:134:VAL:HG22	84:Et:40:C:O2'	1.99	0.58
83:CB:759:ILE:HG12	83:CB:800:LEU:HD11	1.85	0.58
84:Et:5:G:H2'	84:Et:6:G:H8	1.67	0.58
2:L5:1339:U:H2'	2:L5:1340:OMC:C6	2.38	0.58
2:L5:1996:C:O3'	47:Ls:44:ARG:NH1	2.35	0.58
2:L5:3717:A:H2'	2:L5:3718:A2M:H8	1.84	0.58
44:Lo:2:VAL:N	44:Lo:90:HIS:O	2.36	0.58
49:SD:32:ASP:OD1	49:SD:57:ASN:ND2	2.35	0.58
65:SB:99:ASN:OD1	65:SB:100:PHE:N	2.37	0.58
75:SV:51:LYS:NZ	75:SV:76:ASP:OD1	2.23	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:S2:640:A:H2'	82:S2:641:A:C8	2.39	0.58
84:Et:28:C:H2'	84:Et:29:A:C8	2.39	0.58
8:LD:64:ILE:HD13	8:LD:109:LEU:HD22	1.85	0.58
59:SZ:80:ARG:O	82:S2:1598:G:O2'	2.18	0.58
82:S2:1825:A:N6	83:CB:717:GLY:H	2.00	0.58
2:L5:1739:G:N3	2:L5:1742:A:N6	2.51	0.58
2:L5:2017:A:O2'	2:L5:2018:C:H6	1.86	0.58
2:L5:2460:A:OP2	87:LN:301:SPD:N10	2.36	0.58
8:LD:62:CYS:HB3	8:LD:105:LEU:HD22	1.84	0.58
26:LW:80:ARG:NH1	82:S2:167:G:O2'	2.36	0.58
40:Lk:27:LYS:O	40:Lk:70:LYS:NZ	2.35	0.58
72:SL:33:LEU:HD12	72:SL:34:PRO:HD2	1.85	0.58
2:L5:919:C:OP1	16:LM:69:HIS:ND1	2.22	0.58
2:L5:3736:A:H2'	2:L5:3737:A:C8	2.38	0.58
2:L5:4887:C:H42	2:L5:4932:U:H3	1.50	0.58
24:LU:44:GLN:HB2	24:LU:56:LEU:HD21	1.84	0.58
54:SQ:125:ARG:HB2	82:S2:1648:G:H5''	1.86	0.58
63:Sg:68:ASP:HB3	63:Sg:111:VAL:HG22	1.84	0.58
2:L5:2007:G:H21	2:L5:2012:A:N6	1.97	0.58
13:LI:85:PHE:HE2	13:LI:87:MET:HE2	1.67	0.58
28:LY:67:ILE:O	28:LY:84:ARG:NH2	2.36	0.58
52:SM:63:LYS:HD3	52:SM:64:LEU:HD22	1.85	0.58
66:SC:267:GLN:OE1	75:SV:35:ASN:ND2	2.36	0.58
69:SH:7:LYS:HD3	69:SH:10:LYS:HB3	1.84	0.58
2:L5:24:G:N7	39:Lj:46:LYS:NZ	2.50	0.58
2:L5:184:U:O2'	2:L5:189:G:O4'	2.22	0.58
2:L5:1396:G:N7	30:La:110:LYS:NZ	2.49	0.58
2:L5:2020:U:H2'	2:L5:2021:G:H8	1.68	0.58
42:Lm:79:GLU:OE2	42:Lm:81:SER:OG	2.19	0.58
51:SK:31:LYS:HZ3	51:SK:40:VAL:H	1.52	0.58
62:Sf:92:LYS:NZ	82:S2:1271:C:OP1	2.33	0.58
68:SG:176:ILE:HG12	68:SG:179:LEU:HD11	1.86	0.58
83:CB:257:MET:HA	83:CB:260:LEU:HB2	1.86	0.58
83:CB:596:PRO:HD3	83:CB:724:THR:HB	1.86	0.58
52:SM:36:ARG:NH1	82:S2:1310:U:OP1	2.36	0.58
54:SQ:100:VAL:HG22	54:SQ:101:ASP:H	1.68	0.58
74:SO:15:ILE:HG23	74:SO:16:SER:H	1.68	0.58
82:S2:165:G:OP2	82:S2:165:G:N2	2.29	0.58
83:CB:189:ILE:HD11	83:CB:204:MET:HA	1.86	0.58
2:L5:2093:A:N3	2:L5:2094:G:N1	2.51	0.58
2:L5:2468:U:O2'	2:L5:2506:G:N2	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:LB:165:HIS:HB3	6:LB:180:LEU:HD23	1.86	0.58
39:Lj:14:LYS:NZ	41:Ll:51:LEU:OXT	2.37	0.58
2:L5:4076:G:OP1	11:LG:73:ARG:NE	2.36	0.58
8:LD:120:GLU:O	8:LD:248:ARG:NH1	2.36	0.58
69:SH:165:ASN:O	69:SH:169:LYS:NZ	2.31	0.58
70:SI:22:HIS:HB3	82:S2:433:A:H5''	1.84	0.58
84:Et:46:G:H5'	84:Et:47:U:H5''	1.86	0.58
2:L5:935:A:O2'	16:LM:44:GLN:O	2.22	0.57
9:LE:161:ARG:NH1	9:LE:273:SER:OG	2.37	0.57
47:Ls:135:THR:HG21	83:CB:187:VAL:HG11	1.85	0.57
50:SF:133:THR:HA	84:Et:40:C:P	2.43	0.57
51:SK:8:ARG:NH2	82:S2:1314:U:O2'	2.37	0.57
68:SG:133:LEU:HD12	82:S2:65:C:C4	2.39	0.57
83:CB:44:GLY:HA3	83:CB:47:ALA:HB3	1.86	0.57
2:L5:1961:G:N2	2:L5:2024:G:O2'	2.37	0.57
4:L8:52:A:H5'	41:Ll:21:ARG:HD3	1.86	0.57
7:LC:298:ILE:HD13	20:LQ:131:PRO:HB3	1.85	0.57
83:CB:304:ILE:HG21	83:CB:336:LEU:HD13	1.86	0.57
83:CB:447:ILE:HG12	83:CB:472:LEU:HD13	1.85	0.57
2:L5:1094:G:O6	2:L5:1201:U:O2	2.22	0.57
2:L5:2017:A:O2'	2:L5:2018:C:O5'	2.19	0.57
6:LB:10:ARG:NH2	6:LB:265:SER:O	2.36	0.57
83:CB:524:LEU:HD12	83:CB:536:CYS:HB3	1.86	0.57
2:L5:4098:A:H2'	2:L5:4099:G:H4'	1.86	0.57
68:SG:11:GLY:HA2	82:S2:166:A2M:HM'1	1.86	0.57
2:L5:1992:U:H4'	2:L5:1993:C:H5''	1.86	0.57
2:L5:4873:G:N7	18:LO:179:LYS:NZ	2.49	0.57
63:Sg:107:ASP:HB2	63:Sg:125:ARG:HG3	1.87	0.57
69:SH:63:PHE:HA	69:SH:95:ILE:O	2.05	0.57
57:ST:126:GLN:HB2	57:ST:129:ARG:HH21	1.69	0.57
70:SI:106:SER:HB3	70:SI:171:LEU:HG	1.87	0.57
2:L5:2295:C:O2'	7:LC:45:ARG:NH2	2.38	0.57
6:LB:80:GLU:OE1	6:LB:323:TYR:OH	2.23	0.57
8:LD:41:LYS:NZ	23:LT:32:ARG:O	2.35	0.57
46:Lr:28:GLU:OE2	46:Lr:31:ASN:ND2	2.32	0.57
67:SE:100:ARG:HB2	67:SE:114:ILE:HD13	1.86	0.57
68:SG:92:ARG:O	82:S2:453:C:O2'	2.21	0.57
83:CB:607:ARG:HD3	83:CB:701:ARG:HD3	1.87	0.57
2:L5:62:A:N3	2:L5:77:U:O2'	2.33	0.57
2:L5:2516:G:O2'	36:Lg:62:LYS:NZ	2.38	0.57
4:L8:62:A:OP1	37:Lh:52:LYS:NZ	2.34	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:LU:28:PRO:HB2	24:LU:34:MET:HG3	1.87	0.57
50:SF:133:THR:OG1	84:Et:40:C:O5'	2.22	0.57
63:Sg:63:SER:HB2	82:S2:1398:G:HI'	1.86	0.57
63:Sg:254:PRO:O	63:Sg:272:GLN:NE2	2.38	0.57
77:SX:68:LYS:HB3	77:SX:91:LEU:HD13	1.85	0.57
2:L5:4725:C:OP1	6:LB:103:LYS:NZ	2.37	0.57
17:LN:164:LEU:O	17:LN:169:ARG:NH2	2.37	0.57
47:Ls:68:HIS:O	47:Ls:71:ASN:ND2	2.38	0.57
54:SQ:67:ASP:OD2	54:SQ:69:ARG:NH1	2.38	0.57
54:SQ:80:GLN:O	54:SQ:84:ILE:HG13	2.05	0.57
82:S2:695:C:N4	82:S2:736:C:O2'	2.38	0.57
47:Ls:145:THR:O	83:CB:183:GLU:HG2	2.05	0.57
58:SU:85:HIS:ND1	82:S2:1447:G:OP1	2.37	0.57
82:S2:508:A:H3'	82:S2:509:OMG:H8	1.69	0.57
2:L5:966:A:OP2	2:L5:2092:G:N2	2.38	0.56
11:LG:180:PRO:HG3	11:LG:219:VAL:HG13	1.86	0.56
16:LM:71:LYS:O	16:LM:75:GLN:HG3	2.05	0.56
56:SS:5:ILE:N	59:SZ:50:PHE:O	2.36	0.56
69:SH:12:ASN:ND2	69:SH:14:GLU:OE2	2.38	0.56
83:CB:27:HIS:ND1	83:CB:138:GLN:HB2	2.20	0.56
2:L5:267:G:OP1	37:Lh:109:ARG:NH2	2.37	0.56
2:L5:1281:G:N1	9:LE:128:HIS:HB2	2.20	0.56
2:L5:5002:U:OP2	6:LB:385:LYS:NZ	2.39	0.56
48:Lt:77:ALA:HB3	48:Lt:80:LEU:HB2	1.87	0.56
74:SO:135:ILE:O	82:S2:943:U:O2'	2.22	0.56
83:CB:76:SER:HB3	83:CB:99:LEU:HD11	1.87	0.56
2:L5:1914:C:H4'	18:LO:89:PRO:HD3	1.86	0.56
2:L5:1942:A:H2'	2:L5:1943:A:C8	2.39	0.56
2:L5:2613:C:OP1	36:Lg:24:ARG:NH2	2.38	0.56
3:L7:6:C:O2'	8:LD:50:ARG:NH2	2.38	0.56
6:LB:17:LEU:O	6:LB:19:ARG:N	2.37	0.56
9:LE:165:LEU:HD11	9:LE:176:THR:HG22	1.87	0.56
21:LR:176:ARG:NH2	82:S2:910:G:OP1	2.38	0.56
48:Lt:37:LEU:HD21	83:CB:777:ALA:C	2.30	0.56
51:SK:31:LYS:NZ	51:SK:40:VAL:H	2.04	0.56
62:Sf:97:LYS:NZ	82:S2:1289:U:OP2	2.36	0.56
74:SO:134:PRO:HB3	82:S2:944:A:H5''	1.87	0.56
82:S2:1228:A:H2'	82:S2:1229:G:H8	1.70	0.56
2:L5:1993:C:H2'	2:L5:1994:C:C6	2.41	0.56
2:L5:4094:G:N2	2:L5:4115:G:OP2	2.39	0.56
16:LM:36:ALA:HB3	16:LM:55:MET:HE1	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:SG:198:ARG:NH1	82:S2:126:G:OP2	2.37	0.56
74:SO:34:PHE:HB3	74:SO:41:PHE:HB2	1.88	0.56
82:S2:1354:G:N2	82:S2:1357:A:OP2	2.34	0.56
2:L5:966:A:H5''	2:L5:2092:G:H22	1.69	0.56
6:LB:83:PRO:O	6:LB:167:GLN:NE2	2.39	0.56
19:LP:17:SER:HB2	19:LP:98:ALA:HB2	1.88	0.56
50:SF:36:GLN:NE2	50:SF:37:ASP:OD1	2.39	0.56
53:SP:31:GLU:HA	53:SP:34:MET:HE2	1.86	0.56
73:SN:55:ARG:HD3	82:S2:1017:U:H5'	1.88	0.56
82:S2:1226:G:N1	82:S2:1639:G7M:OP2	2.30	0.56
2:L5:1079:C:O2	2:L5:1221:G:N2	2.29	0.56
41:Ll:28:ARG:HA	41:Ll:33:ASN:HD22	1.71	0.56
48:Lt:34:PRO:CA	83:CB:777:ALA:CA	2.83	0.56
69:SH:111:LYS:HE3	82:S2:796:G:H21	1.71	0.56
78:SY:80:ASP:OD1	78:SY:81:TYR:N	2.39	0.56
2:L5:2478:C:N3	2:L5:2591:A:O2'	2.39	0.56
2:L5:4220:6MZ:H2'	2:L5:4222:G:H5''	1.88	0.56
2:L5:4340:U:O2	87:L5:5260:SPD:N10	2.39	0.56
19:LP:116:HIS:HB3	19:LP:149:ILE:HB	1.86	0.56
44:Lo:33:LEU:HA	44:Lo:38:LYS:HG2	1.88	0.56
61:Sd:19:ARG:NH2	82:S2:1661:A:OP1	2.38	0.56
82:S2:543:C:H3'	82:S2:544:G:H8	1.71	0.56
2:L5:1969:G:H4'	47:Ls:36:GLY:HA2	1.88	0.56
2:L5:2832:A:OP1	33:Ld:47:LYS:NZ	2.29	0.56
2:L5:3611:A:H2	2:L5:5016:A:H8	1.52	0.56
2:L5:4279:A:H5'	2:L5:4281:A:H1'	1.87	0.56
83:CB:745:TYR:HE2	83:CB:812:CYS:HB2	1.71	0.56
28:LY:4:ASN:HB3	28:LY:7:VAL:HG22	1.86	0.56
2:L5:2407:G:O6	41:Ll:2:SER:N	2.39	0.56
11:LG:165:GLU:OE2	17:LN:26:ARG:NH1	2.36	0.56
18:LO:9:LEU:HD23	18:LO:118:MET:HB2	1.88	0.56
52:SM:96:ARG:NH2	52:SM:100:PRO:O	2.39	0.56
2:L5:184:U:H3	2:L5:253:G:H1	1.54	0.55
36:Lg:45:ALA:HB3	36:Lg:82:MET:HE2	1.88	0.55
64:SA:22:GLY:O	64:SA:24:HIS:ND1	2.38	0.55
83:CB:835:VAL:HG11	83:CB:848:ILE:HD11	1.88	0.55
2:L5:2083:C:OP2	20:LQ:14:ARG:NH2	2.33	0.55
2:L5:4163:U:OP2	11:LG:53:ARG:NH2	2.40	0.55
5:LA:118:GLU:OE2	5:LA:156:LYS:NZ	2.39	0.55
6:LB:219:VAL:HG11	6:LB:337:VAL:HG13	1.88	0.55
66:SC:259:THR:HG23	75:SV:16:LYS:HZ3	1.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:SG:136:LYS:NZ	68:SG:175:LYS:O	2.34	0.55
69:SH:34:SER:OG	69:SH:78:ARG:NH2	2.38	0.55
2:L5:158:A:N1	2:L5:276:C:O2'	2.37	0.55
2:L5:4098:A:N1	2:L5:4112:C:N4	2.53	0.55
13:LI:152:LEU:HB3	13:LI:165:ILE:HD12	1.88	0.55
32:Lc:38:ILE:HD11	32:Lc:46:VAL:HG21	1.89	0.55
48:Lt:50:THR:OG1	48:Lt:72:GLU:OE1	2.23	0.55
58:SU:48:LEU:HG	58:SU:93:SER:HB3	1.88	0.55
2:L5:2009:A:C1'	83:CB:760:TYR:HE2	2.14	0.55
2:L5:5023:C:OP2	70:SI:124:LYS:NZ	2.40	0.55
72:SL:103:GLU:HG3	77:SX:11:ARG:HB2	1.87	0.55
82:S2:795:A:H2'	82:S2:796:G:C8	2.42	0.55
83:CB:388:CYS:HB2	83:CB:418:SER:HA	1.88	0.55
2:L5:1759:G:H1	2:L5:1773:U:H3	1.54	0.55
2:L5:4537:C:H2'	2:L5:4538:G:H8	1.70	0.55
22:LS:173:ASN:ND2	22:LS:175:PHE:O	2.40	0.55
67:SE:146:THR:HG21	82:S2:122:G:H21	1.70	0.55
69:SH:31:GLU:HA	69:SH:37:LYS:HG3	1.89	0.55
1:CI:50:MET:HG3	24:LU:114:TYR:CD2	2.42	0.55
2:L5:109:G:OP2	15:LL:74:ARG:NH2	2.35	0.55
5:LA:229:ALA:HB3	5:LA:234:LYS:HB3	1.87	0.55
8:LD:204:VAL:HB	8:LD:236:MET:HE1	1.88	0.55
8:LD:232:THR:OG1	8:LD:234:ASP:OD1	2.20	0.55
10:LF:243:LEU:O	10:LF:247:MET:HB2	2.06	0.55
13:LI:38:ARG:NH1	13:LI:45:GLU:OE1	2.37	0.55
26:LW:100:VAL:O	26:LW:104:GLN:NE2	2.40	0.55
50:SF:39:ILE:HG23	50:SF:68:ILE:HD13	1.88	0.55
60:Sc:37:ASP:OD1	60:Sc:39:SER:OG	2.25	0.55
64:SA:126:ASP:OD1	64:SA:165:ASN:ND2	2.39	0.55
83:CB:453:MET:HA	83:CB:458:VAL:HG12	1.89	0.55
83:CB:583:VAL:HG22	83:CB:700:VAL:HG22	1.87	0.55
2:L5:1332:C:H2'	2:L5:1333:A:H8	1.72	0.55
54:SQ:4:LYS:HE3	82:S2:1423:C:H41	1.72	0.55
66:SC:109:ILE:HD11	66:SC:151:ILE:HD11	1.88	0.55
2:L5:702:U:H2'	2:L5:703:G:O4'	2.07	0.55
2:L5:1726:U:H5'	10:LF:135:ILE:HD11	1.89	0.55
2:L5:2318:G:N2	2:L5:2321:G:OP2	2.34	0.55
7:LC:262:GLU:HB3	7:LC:273:LEU:HD13	1.89	0.55
11:LG:57:TRP:O	11:LG:62:ARG:NH1	2.40	0.55
50:SF:40:ALA:HB3	50:SF:67:PRO:HA	1.88	0.55
57:ST:2:PRO:HD2	82:S2:1419:C:H42	1.71	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:Sg:89:LEU:HB3	63:Sg:99:ARG:HB3	1.88	0.55
67:SE:151:ASP:HA	68:SG:212:LEU:HD21	1.89	0.55
2:L5:121:A:OP1	11:LG:110:LYS:NZ	2.32	0.55
2:L5:261:G:H2'	2:L5:262:G:C8	2.42	0.55
2:L5:4413:C:O2	13:LI:158:LYS:NZ	2.40	0.55
26:LW:105:ARG:NH2	68:SG:149:LYS:O	2.40	0.55
33:Ld:22:THR:HG23	33:Ld:122:VAL:HG13	1.88	0.55
47:Ls:110:ALA:HA	47:Ls:182:PRO:HG2	1.89	0.55
66:SC:102:LEU:HD22	66:SC:130:ILE:HD12	1.87	0.55
68:SG:7:PHE:HD1	68:SG:113:ILE:HB	1.72	0.55
70:SI:91:VAL:HG11	70:SI:205:ARG:HH12	1.72	0.55
82:S2:888:U:H4'	82:S2:889:U:H5'	1.89	0.55
2:L5:1100:U:O4	2:L5:1194:G:O6	2.25	0.55
29:LZ:46:ILE:HA	29:LZ:70:SER:HA	1.88	0.55
57:ST:74:SER:O	57:ST:78:ILE:HD12	2.07	0.55
65:SB:144:LYS:HD3	65:SB:208:HIS:HB3	1.88	0.55
83:CB:18:ASN:HD22	83:CB:98:PHE:HE1	1.53	0.55
50:SF:171:GLU:OE2	59:SZ:106:GLN:NE2	2.37	0.54
56:SS:36:VAL:HG21	56:SS:71:MET:HE3	1.89	0.54
62:Sf:110:GLU:HG2	62:Sf:113:LYS:HD3	1.89	0.54
74:SO:145:GLY:O	79:Sa:22:ARG:NH2	2.40	0.54
75:SV:42:VAL:HG23	75:SV:43:THR:HG23	1.88	0.54
82:S2:942:G:H2'	82:S2:943:U:C6	2.42	0.54
82:S2:1255:G:OP1	82:S2:1256:G:O2'	2.23	0.54
2:L5:502:C:H3'	2:L5:503:C:H3'	1.89	0.54
2:L5:2486:G:O6	2:L5:2493:G:O6	2.26	0.54
15:LL:64:VAL:HA	15:LL:67:HIS:CD2	2.31	0.54
22:LS:161:ARG:HD2	22:LS:164:LYS:HB2	1.88	0.54
24:LU:23:LEU:HD23	24:LU:110:TYR:HB2	1.89	0.54
36:Lg:44:SER:OG	36:Lg:46:CYS:SG	2.65	0.54
63:Sg:258:ILE:HG23	63:Sg:267:VAL:HG23	1.89	0.54
2:L5:1328:G:O2'	2:L5:2349:A:OP1	2.25	0.54
5:LA:101:VAL:HG22	5:LA:165:VAL:HG22	1.88	0.54
56:SS:88:LYS:H	56:SS:95:TYR:HD1	1.55	0.54
83:CB:26:ALA:HB2	83:CB:128:VAL:HB	1.90	0.54
83:CB:354:ILE:HG23	83:CB:358:LEU:HD12	1.90	0.54
2:L5:2495:U:H2'	2:L5:2496:G:C8	2.42	0.54
40:Lk:24:LYS:HD3	40:Lk:69:LEU:HD21	1.89	0.54
70:SI:143:LYS:NZ	82:S2:202:G:OP1	2.41	0.54
82:S2:981:A:H2'	82:S2:982:G:C8	2.42	0.54
82:S2:1513:C:H2'	82:S2:1514:G:H8	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:305:A:OP2	17:LN:15:GLN:NE2	2.36	0.54
2:L5:729:G:H5''	10:LF:76:ARG:HD2	1.90	0.54
2:L5:2845:A:H61	2:L5:3843:C:H42	1.54	0.54
2:L5:4363:A:H5''	44:Lo:36:GLN:HG2	1.89	0.54
15:LL:91:ALA:HB1	15:LL:96:ILE:HB	1.90	0.54
50:SF:30:ILE:HG23	50:SF:117:ILE:HD11	1.89	0.54
55:SR:16:ILE:HD11	55:SR:54:VAL:HG21	1.89	0.54
61:Sd:17:GLY:O	61:Sd:27:ARG:NH1	2.41	0.54
82:S2:1606:G:N2	82:S2:1632:G:H1'	2.22	0.54
83:CB:12:ILE:HD12	83:CB:99:LEU:HB2	1.88	0.54
2:L5:223:G:OP2	7:LC:165:LYS:NZ	2.40	0.54
2:L5:1333:A:H2'	2:L5:1334:A:C8	2.43	0.54
2:L5:4620:OMU:OP2	2:L5:4670:C:N4	2.33	0.54
2:L5:4774:C:O2'	2:L5:4775:C:O2	2.25	0.54
18:LO:54:TYR:OH	18:LO:73:PHE:O	2.25	0.54
57:ST:62:ARG:NH2	82:S2:1543:U:OP2	2.36	0.54
63:Sg:8:ARG:HB3	63:Sg:309:VAL:HG13	1.89	0.54
69:SH:10:LYS:NZ	69:SH:16:PRO:O	2.41	0.54
2:L5:4617:G:OP2	6:LB:358:ARG:NH2	2.40	0.54
2:L5:4941:G:OP2	9:LE:188:ARG:NH2	2.32	0.54
8:LD:156:GLY:HA2	8:LD:181:PRO:HG3	1.89	0.54
18:LO:186:GLU:OE1	18:LO:186:GLU:N	2.40	0.54
57:ST:65:TYR:HE1	57:ST:128:GLN:HG3	1.72	0.54
63:Sg:249:CYS:HB3	63:Sg:258:ILE:HD13	1.90	0.54
2:L5:4967:A:H2'	2:L5:4968:A:C8	2.42	0.54
8:LD:291:GLN:NE2	13:LI:213:HIS:O	2.32	0.54
30:La:87:ARG:HG3	30:La:120:GLN:HE22	1.73	0.54
50:SF:133:THR:N	84:Et:39:U:O2'	2.41	0.54
54:SQ:3:SER:OG	54:SQ:4:LYS:N	2.40	0.54
57:ST:121:ARG:HH21	82:S2:1563:G:H5''	1.71	0.54
1:CI:79:ARG:HH22	2:L5:2708:U:H1'	1.72	0.54
2:L5:1591:U:OP2	2:L5:2856:C:O2'	2.20	0.54
2:L5:1933:G:H2'	2:L5:1934:A:C8	2.43	0.54
2:L5:2745:A:H2'	2:L5:2746:A:C8	2.43	0.54
2:L5:3717:A:H2'	2:L5:3718:A2M:C8	2.38	0.54
5:LA:108:PRO:HB2	45:Lp:86:LEU:HD23	1.90	0.54
48:Lt:82:ILE:HG12	48:Lt:137:GLN:HG2	1.90	0.54
48:Lt:114:ARG:NH2	48:Lt:126:SER:OG	2.41	0.54
51:SK:27:VAL:HB	51:SK:43:LEU:HD12	1.90	0.54
56:SS:109:GLU:HA	56:SS:112:GLU:HG2	1.90	0.54
66:SC:72:ASP:OD2	66:SC:272:HIS:NE2	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:CI:50:MET:HG3	24:LU:114:TYR:CE2	2.42	0.54
2:L5:88:A:N7	20:LQ:173:LYS:NZ	2.56	0.54
2:L5:364:G:O6	39:Lj:55:ARG:NH2	2.41	0.54
16:LM:119:ARG:HG3	18:LO:189:ILE:HG23	1.89	0.54
20:LQ:99:LYS:HZ2	20:LQ:121:LEU:HD11	1.73	0.54
35:Lf:43:LEU:O	35:Lf:109:ARG:NH2	2.41	0.54
63:Sg:18:VAL:O	63:Sg:287:THR:OG1	2.26	0.54
63:Sg:129:ILE:HB	63:Sg:142:VAL:HB	1.89	0.54
82:S2:557:U:H2'	82:S2:558:G:C8	2.43	0.54
82:S2:889:U:OP2	82:S2:896:U:N3	2.41	0.54
82:S2:1203:G:H2'	82:S2:1204:A:C8	2.42	0.54
83:CB:40:VAL:HG13	83:CB:47:ALA:HB1	1.88	0.54
2:L5:4220:6MZ:O5'	2:L5:4220:6MZ:H8	2.09	0.53
4:L8:58:G:N7	39:Lj:63:ARG:NH2	2.44	0.53
10:LF:96:ARG:HH12	10:LF:224:THR:HG22	1.72	0.53
14:LJ:84:GLU:OE2	14:LJ:92:TYR:OH	2.25	0.53
50:SF:134:VAL:HG23	84:Et:40:C:HO2'	1.70	0.53
54:SQ:130:LYS:NZ	54:SQ:131:LYS:O	2.41	0.53
64:SA:37:TYR:OH	64:SA:57:LYS:NZ	2.38	0.53
82:S2:118:C:H1'	82:S2:445:A:C5	2.43	0.53
2:L5:1214:C:N3	31:Lb:90:SER:OG	2.41	0.53
2:L5:1734:G:N2	2:L5:1735:U:O4	2.34	0.53
2:L5:1837:A:OP2	23:LT:130:ARG:NH1	2.38	0.53
2:L5:4537:C:H2'	2:L5:4538:G:C8	2.42	0.53
32:Lc:99:PRO:HG3	32:Lc:104:ILE:HB	1.90	0.53
48:Lt:34:PRO:HB3	83:CB:777:ALA:C	2.32	0.53
58:SU:68:THR:O	61:Sd:40:ARG:NH1	2.40	0.53
64:SA:18:PHE:HD1	64:SA:23:THR:HG21	1.71	0.53
70:SI:10:LYS:O	70:SI:18:ARG:NH1	2.41	0.53
2:L5:4694:G:H4'	12:LH:71:ARG:HH12	1.73	0.53
51:SK:55:ARG:NH1	51:SK:78:TYR:OH	2.41	0.53
66:SC:77:SER:OG	66:SC:79:GLU:OE1	2.26	0.53
74:SO:33:ILE:HB	74:SO:97:LEU:HD23	1.91	0.53
83:CB:150:ARG:HH22	83:CB:199:PRO:HD2	1.73	0.53
72:SL:128:VAL:HG12	72:SL:142:VAL:HA	1.90	0.53
76:SW:111:MET:HE1	76:SW:119:LYS:HD2	1.89	0.53
80:Sb:20:LYS:NZ	82:S2:1016:U:OP2	2.41	0.53
82:S2:851:C:H5''	82:S2:852:G:H5'	1.89	0.53
83:CB:27:HIS:HB2	83:CB:139:THR:HG23	1.90	0.53
49:SD:138:VAL:HG13	49:SD:182:LEU:HD21	1.91	0.53
72:SL:133:PRO:O	82:S2:383:G:O2'	2.25	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:SX:70:VAL:HG11	77:SX:94:ILE:HG21	1.89	0.53
82:S2:1013:U:OP1	82:S2:1129:G:O2'	2.26	0.53
2:L5:1994:C:H2'	2:L5:1995:G:H8	1.73	0.53
2:L5:3911:C:H2'	2:L5:3912:U:H6	1.73	0.53
2:L5:4260:U:H2'	2:L5:4261:C:C6	2.44	0.53
7:LC:218:ILE:HA	7:LC:229:LEU:HD22	1.89	0.53
28:LY:2:LYS:HD2	28:LY:7:VAL:HG23	1.89	0.53
47:Ls:139:GLN:HG2	83:CB:180:ARG:HE	1.74	0.53
73:SN:70:LYS:NZ	82:S2:1020:A:N7	2.55	0.53
80:Sb:62:VAL:HG23	80:Sb:74:THR:HG21	1.91	0.53
82:S2:1581:C:H5'	82:S2:1582:C:H5	1.74	0.53
82:S2:1825:A:C2	83:CB:714:ILE:HG12	2.19	0.53
2:L5:691:C:H2'	2:L5:692:A:C8	2.43	0.53
2:L5:735:G:H5''	16:LM:70:GLN:HG3	1.91	0.53
9:LE:223:ARG:HH22	9:LE:238:GLU:HG3	1.74	0.53
18:LO:168:TYR:CE2	18:LO:172:LYS:HD2	2.44	0.53
59:SZ:106:GLN:HG3	59:SZ:108:ILE:HD11	1.89	0.53
66:SC:257:LYS:O	75:SV:16:LYS:NZ	2.40	0.53
73:SN:66:VAL:HG13	73:SN:67:THR:HG23	1.90	0.53
82:S2:902:G:O2'	82:S2:903:A:O4'	2.27	0.53
2:L5:71:C:H1'	15:LL:62:PRO:O	2.09	0.53
19:LP:118:GLN:OE1	19:LP:120:ASN:ND2	2.41	0.53
28:LY:76:LYS:HE2	41:Ll:31:THR:HB	1.89	0.53
47:Ls:29:ILE:HG22	47:Ls:88:PHE:HD1	1.72	0.53
50:SF:78:MET:HE3	82:S2:1222:G:H5''	1.90	0.53
80:Sb:11:SER:N	80:Sb:14:GLU:OE2	2.42	0.53
25:LV:92:ASP:O	26:LW:2:LYS:NZ	2.42	0.53
46:Lr:38:PHE:O	46:Lr:45:HIS:NE2	2.31	0.53
82:S2:455:A:H2'	82:S2:456:C:H6	1.74	0.53
2:L5:267:G:H2'	2:L5:268:G:H8	1.74	0.53
2:L5:1756:U:O2'	2:L5:1758:G:OP2	2.24	0.53
26:LW:123:LYS:HD2	82:S2:320:G:H5''	1.90	0.53
47:Ls:135:THR:CG2	83:CB:187:VAL:HG11	2.39	0.53
51:SK:3:MET:HE1	51:SK:11:ILE:HD12	1.90	0.53
64:SA:85:ARG:NH1	64:SA:203:PHE:O	2.40	0.53
2:L5:1241:C:O2'	31:Lb:120:ARG:O	2.27	0.52
2:L5:1258:G:H2'	2:L5:1259:G:C8	2.44	0.52
2:L5:1548:G:O2'	2:L5:2812:A:N3	2.38	0.52
2:L5:2084:C:O2	20:LQ:16:LYS:NZ	2.42	0.52
7:LC:293:LEU:O	7:LC:299:GLN:NE2	2.39	0.52
31:Lb:102:PRO:O	31:Lb:109:ARG:NH2	2.41	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:SQ:131:LYS:HB2	54:SQ:140:ARG:HH22	1.74	0.52
56:SS:48:ALA:O	56:SS:66:ARG:NH2	2.42	0.52
60:Sc:66:ARG:HH12	60:Sc:68:LEU:HD23	1.74	0.52
81:Se:58:ASN:ND2	82:S2:608:C:O4'	2.42	0.52
82:S2:553:U:O4	82:S2:554:A:N6	2.40	0.52
82:S2:1684:C:O2'	84:Et:34:U:H6	1.92	0.52
82:S2:1773:C:H2'	82:S2:1774:C:H5''	1.91	0.52
35:Lf:78:HIS:HB3	35:Lf:83:MET:HB3	1.91	0.52
39:Lj:2:THR:HB	39:Lj:6:SER:HB2	1.90	0.52
79:Sa:41:ILE:HD12	79:Sa:68:TYR:HD2	1.74	0.52
83:CB:410:PHE:HB2	83:CB:476:ASP:CG	2.34	0.52
2:L5:2624:G:OP2	24:LU:97:ARG:NH2	2.42	0.52
2:L5:5016:A:C2	2:L5:5033:G:N2	2.74	0.52
20:LQ:15:ARG:NH1	20:LQ:52:PHE:O	2.41	0.52
72:SL:3:ASP:OD1	72:SL:4:ILE:N	2.42	0.52
2:L5:93:G:H2'	2:L5:94:A:C8	2.45	0.52
2:L5:2568:C:H2'	2:L5:2569:G:H8	1.73	0.52
2:L5:4612:C:C2	12:LH:120:GLU:HB2	2.44	0.52
2:L5:4717:A:OP2	6:LB:30:LYS:NZ	2.32	0.52
18:LO:54:TYR:CD1	18:LO:145:VAL:HG21	2.44	0.52
52:SM:82:ASN:OD1	52:SM:83:LYS:N	2.42	0.52
53:SP:79:HIS:HD2	82:S2:1298:G:C4	2.28	0.52
66:SC:60:TRP:O	66:SC:71:LYS:NZ	2.37	0.52
68:SG:13:GLN:NE2	82:S2:153:G:N3	2.57	0.52
83:CB:394:LEU:HD11	83:CB:421:VAL:HG23	1.92	0.52
84:Et:26:A:H62	84:Et:44:G:H21	1.58	0.52
2:L5:2696:A:OP1	40:Lk:26:LYS:NZ	2.42	0.52
47:Ls:99:ARG:HG3	47:Ls:103:LEU:HD13	1.92	0.52
66:SC:207:ALA:HB2	82:S2:4:C:H4'	1.92	0.52
69:SH:51:ILE:HG21	69:SH:179:LYS:HG2	1.91	0.52
82:S2:1777:G:H2'	82:S2:1778:C:H6	1.73	0.52
83:CB:30:HIS:CE1	83:CB:130:ASP:H	2.28	0.52
10:LF:41:MET:HE2	31:Lb:113:ALA:HB2	1.90	0.52
18:LO:197:LYS:NZ	18:LO:203:VAL:O	2.42	0.52
50:SF:60:ARG:HD2	82:S2:1679:A:H2'	1.92	0.52
54:SQ:42:ILE:HG23	54:SQ:44:PRO:HD2	1.91	0.52
56:SS:15:VAL:HG12	56:SS:16:LEU:HG	1.91	0.52
67:SE:125:LYS:O	67:SE:142:HIS:N	2.42	0.52
2:L5:1270:A:H8	2:L5:2106:G:H21	1.57	0.52
2:L5:2745:A:H2'	2:L5:2746:A:H8	1.75	0.52
2:L5:2756:G:O6	29:LZ:51:ARG:NH2	2.30	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:Lh:80:PRO:HD2	37:Lh:83:LEU:HD12	1.91	0.52
54:SQ:89:SER:OG	54:SQ:119:LEU:O	2.25	0.52
58:SU:40:ILE:O	58:SU:44:LYS:HG2	2.09	0.52
64:SA:10:MET:HE3	64:SA:55:TRP:HB2	1.90	0.52
73:SN:64:ARG:NH2	82:S2:919:A:OP2	2.41	0.52
48:Lt:119:ARG:NH1	48:Lt:123:ARG:HH12	2.08	0.52
49:SD:161:GLY:HA3	82:S2:1388:A:H61	1.75	0.52
61:Sd:2:GLY:N	82:S2:1271:C:O2	2.42	0.52
82:S2:367:U:H4'	82:S2:371:A:C8	2.45	0.52
82:S2:1010:G:H2'	82:S2:1011:A:C8	2.45	0.52
82:S2:1405:A:H2'	82:S2:1406:G:O4'	2.10	0.52
2:L5:2517:A:H5'	36:Lg:62:LYS:HD3	1.91	0.52
2:L5:4601:U:H2'	2:L5:4602:A:H8	1.75	0.52
9:LE:264:ILE:HD11	9:LE:267:LEU:HD22	1.92	0.52
48:Lt:85:LEU:HD13	48:Lt:109:ILE:HD12	1.90	0.52
57:ST:11:GLN:HB2	82:S2:1542:C:H4'	1.92	0.52
72:SL:61:PRO:HG3	72:SL:141:ASN:HB3	1.92	0.52
83:CB:646:ALA:HA	83:CB:649:ILE:HG12	1.92	0.52
2:L5:4478:G:O2'	2:L5:4602:A:N1	2.42	0.52
4:L8:39:G:OP1	37:Lh:86:LYS:NZ	2.43	0.52
65:SB:32:ASP:OD1	65:SB:46:LYS:NZ	2.38	0.52
68:SG:20:ASP:HB3	68:SG:23:LYS:HB2	1.91	0.52
2:L5:1961:G:O2'	2:L5:2025:A:N6	2.44	0.51
2:L5:3823:G:OP2	2:L5:3823:G:N2	2.35	0.51
33:Ld:23:ARG:HG2	33:Ld:121:ASN:HA	1.92	0.51
54:SQ:140:ARG:HB2	82:S2:1644:C:H4'	1.92	0.51
78:SY:119:GLY:HA2	82:S2:85:A:H5'	1.91	0.51
83:CB:518:PRO:HA	83:CB:521:VAL:HG22	1.91	0.51
2:L5:268:G:H2'	2:L5:269:G:H8	1.75	0.51
2:L5:1070:G:O2'	2:L5:1071:C:O5'	2.26	0.51
2:L5:1509:C:H5''	30:La:2:PRO:HD3	1.92	0.51
7:LC:363:ALA:O	7:LC:367:GLU:HB3	2.10	0.51
51:SK:85:LEU:HD12	51:SK:86:PRO:HD2	1.91	0.51
62:Sf:102:VAL:HG22	62:Sf:104:LYS:HG2	1.92	0.51
76:SW:6:VAL:HG12	76:SW:34:ILE:HD11	1.93	0.51
76:SW:6:VAL:HG13	76:SW:29:PRO:HB2	1.91	0.51
83:CB:527:LEU:HD21	83:CB:557:CYS:HB3	1.93	0.51
48:Lt:34:PRO:HB3	83:CB:777:ALA:O	2.10	0.51
64:SA:76:VAL:HG12	64:SA:123:VAL:HB	1.91	0.51
65:SB:167:LYS:O	65:SB:171:ILE:HG12	2.10	0.51
68:SG:3:LEU:HD23	68:SG:109:LEU:HB3	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
68:SG:191:ARG:HH12	82:S2:312:G:H2'	1.75	0.51
69:SH:162:GLN:HE22	69:SH:166:VAL:HB	1.75	0.51
76:SW:111:MET:HE3	76:SW:116:ALA:HA	1.93	0.51
82:S2:672:A:N6	82:S2:1027:A:OP1	2.41	0.51
82:S2:1130:G:OP2	82:S2:1130:G:N2	2.34	0.51
82:S2:1748:G:O6	82:S2:1786:U:O4	2.28	0.51
82:S2:1801:A:H2'	82:S2:1802:C:C6	2.46	0.51
2:L5:1718:C:O2'	10:LF:181:LYS:NZ	2.43	0.51
2:L5:3898:G:H5'	6:LB:254:ILE:HG13	1.92	0.51
6:LB:50:LYS:HB2	6:LB:345:LEU:HD11	1.92	0.51
17:LN:146:PRO:HB2	37:Lh:104:THR:HG23	1.93	0.51
53:SP:37:TYR:O	56:SS:88:LYS:NZ	2.43	0.51
77:SX:124:LYS:NZ	82:S2:29:G:OP1	2.40	0.51
82:S2:1610:G:O6	82:S2:1630:A:N6	2.43	0.51
2:L5:1268:G:N7	31:Lb:111:ARG:NH2	2.53	0.51
2:L5:1411:C:H2'	2:L5:1412:G:C8	2.45	0.51
2:L5:4274:A:H2'	2:L5:4275:G:C8	2.45	0.51
2:L5:4967:A:H2'	2:L5:4968:A:H8	1.75	0.51
59:SZ:41:ARG:HH12	59:SZ:44:LEU:HG	1.75	0.51
62:Sf:103:LEU:HB2	62:Sf:105:TYR:CE2	2.45	0.51
65:SB:26:SER:O	65:SB:51:ARG:NH2	2.43	0.51
77:SX:48:LYS:HB3	77:SX:75:ILE:HD12	1.91	0.51
2:L5:1683:PSU:OP1	30:La:44:ASN:ND2	2.42	0.51
9:LE:141:ARG:NH2	35:Lf:110:ILE:O	2.44	0.51
11:LG:157:ILE:HA	11:LG:201:THR:HG22	1.93	0.51
17:LN:46:ASP:OD1	17:LN:47:LYS:N	2.43	0.51
56:SS:28:PHE:O	56:SS:31:THR:OG1	2.25	0.51
66:SC:121:ARG:NH1	66:SC:123:ARG:HE	2.09	0.51
82:S2:525:A:H2'	82:S2:526:A:H8	1.75	0.51
2:L5:308:G:OP2	2:L5:308:G:N2	2.35	0.51
2:L5:1867:A:H2'	2:L5:1868:A:C8	2.46	0.51
6:LB:288:GLY:HA3	6:LB:330:PHE:CE1	2.46	0.51
10:LF:171:ASP:OD1	10:LF:172:ASN:N	2.43	0.51
14:LJ:104:ASN:HD22	14:LJ:133:VAL:HG13	1.75	0.51
47:Ls:29:ILE:HG22	47:Ls:88:PHE:CD1	2.46	0.51
52:SM:23:LYS:O	52:SM:27:ILE:HG12	2.10	0.51
58:SU:96:GLU:OE1	58:SU:99:LYS:N	2.36	0.51
63:Sg:239:LEU:HD11	63:Sg:248:LEU:HD21	1.93	0.51
67:SE:204:SER:OG	67:SE:205:PHE:N	2.39	0.51
67:SE:247:THR:N	67:SE:250:GLU:OE2	2.39	0.51
70:SI:3:ILE:O	70:SI:30:GLY:N	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:S2:145:G:H2'	82:S2:146:G:C8	2.45	0.51
6:LB:57:VAL:HG22	6:LB:73:VAL:HG22	1.93	0.51
47:Ls:139:GLN:NE2	83:CB:183:GLU:CB	2.70	0.51
70:SI:45:THR:HG23	70:SI:53:LYS:HG3	1.93	0.51
80:Sb:67:THR:OG1	80:Sb:70:LYS:O	2.21	0.51
2:L5:2009:A:C8	83:CB:756:VAL:HG13	2.46	0.51
47:Ls:13:TYR:O	47:Ls:17:ILE:HG12	2.11	0.51
67:SE:31:PRO:HA	67:SE:81:THR:HB	1.93	0.51
67:SE:126:VAL:HA	67:SE:141:THR:HA	1.93	0.51
82:S2:57:U:OP1	82:S2:504:G:O2'	2.29	0.51
82:S2:964:A:H2'	82:S2:965:U:H6	1.76	0.51
82:S2:1421:A:H5''	82:S2:1422:G:H2'	1.92	0.51
82:S2:1588:A:H2'	82:S2:1589:A:C8	2.46	0.51
12:LH:92:MET:HE2	12:LH:179:ILE:HG22	1.93	0.51
33:Ld:59:THR:OG1	33:Ld:104:THR:OG1	2.25	0.51
38:Li:55:ARG:O	38:Li:59:GLU:HG2	2.11	0.51
56:SS:14:ARG:HH11	56:SS:19:ASN:HB3	1.76	0.51
61:Sd:12:ARG:NH1	82:S2:1513:C:OP1	2.31	0.51
66:SC:191:VAL:HG11	66:SC:236:PHE:HA	1.93	0.51
69:SH:10:LYS:HE3	69:SH:17:ASP:HB3	1.93	0.51
2:L5:351:C:OP2	7:LC:197:ARG:NH1	2.34	0.50
2:L5:2102:G:H1'	2:L5:2103:G:C8	2.46	0.50
2:L5:4636:PSU:N1	33:Ld:79:ASN:OD1	2.43	0.50
2:L5:4896:G:H2'	2:L5:4897:G:C8	2.47	0.50
12:LH:107:GLU:N	12:LH:107:GLU:OE1	2.44	0.50
18:LO:126:VAL:HG13	18:LO:127:VAL:HG13	1.92	0.50
47:Ls:147:ILE:CG2	83:CB:186:ASN:HB3	2.41	0.50
78:SY:108:LYS:NZ	82:S2:506:G:OP1	2.38	0.50
2:L5:387:G:O2'	2:L5:412:G:N1	2.36	0.50
2:L5:717:U:H2'	2:L5:718:C:C6	2.46	0.50
2:L5:1438:U:H4'	10:LF:31:LYS:HE3	1.93	0.50
2:L5:4927:G:H5''	2:L5:4928:C:H5	1.76	0.50
18:LO:10:ASP:OD2	18:LO:37:ARG:NH2	2.44	0.50
53:SP:56:LEU:HD22	53:SP:80:LEU:HD11	1.92	0.50
57:ST:44:GLU:HG3	57:ST:45:LEU:HD12	1.93	0.50
65:SB:40:ASN:HD21	65:SB:76:ASN:HB2	1.77	0.50
71:SJ:136:ARG:NH1	71:SJ:159:PHE:O	2.40	0.50
77:SX:142:ARG:C	83:CB:477:GLN:O	2.54	0.50
82:S2:28:U:H2'	82:S2:29:G:H8	1.76	0.50
82:S2:107:A:H2'	82:S2:108:G:C8	2.46	0.50
2:L5:2577:C:OP1	29:LZ:111:ARG:NH2	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L8:21:C:OP1	7:LC:195:LYS:NZ	2.42	0.50
15:LL:7:GLY:O	30:La:49:HIS:NE2	2.40	0.50
63:Sg:40:ILE:HB	63:Sg:59:LEU:HB2	1.93	0.50
79:Sa:41:ILE:HD12	79:Sa:68:TYR:CD2	2.45	0.50
82:S2:1033:G:N1	82:S2:1080:A:O2'	2.39	0.50
82:S2:1845:A:H2'	82:S2:1846:G:C8	2.46	0.50
1:CI:78:HIS:NE2	2:L5:2706:G:C8	2.75	0.50
2:L5:2018:C:H2'	2:L5:2019:C:C6	2.46	0.50
2:L5:4589:A:N1	2:L5:4621:C:O2'	2.41	0.50
13:LI:207:ASP:OD1	13:LI:210:ARG:NH1	2.44	0.50
26:LW:7:SER:OG	26:LW:8:PHE:N	2.45	0.50
50:SF:22:LYS:HG3	50:SF:23:TRP:CD2	2.46	0.50
64:SA:128:ARG:NH2	64:SA:151:ASP:O	2.44	0.50
2:L5:418:A:C2	4:L8:17:A:H1'	2.47	0.50
2:L5:1802:A:H5''	2:L5:1803:G:H5'	1.93	0.50
2:L5:3732:A:H2'	2:L5:3733:A:H8	1.76	0.50
7:LC:144:ILE:HG13	7:LC:144:ILE:O	2.11	0.50
24:LU:36:ALA:HB1	24:LU:70:ILE:HD11	1.93	0.50
47:Ls:139:GLN:CG	83:CB:180:ARG:CD	2.88	0.50
64:SA:137:ALA:HB1	64:SA:142:LEU:HB3	1.94	0.50
69:SH:140:VAL:HG12	73:SN:19:ARG:HD3	1.94	0.50
71:SJ:38:ARG:N	71:SJ:42:GLU:OE2	2.30	0.50
82:S2:436:OMG:OP2	82:S2:471:G:O2'	2.23	0.50
83:CB:27:HIS:HB3	83:CB:30:HIS:CD2	2.47	0.50
2:L5:1697:G:H22	2:L5:2084:C:P	2.35	0.50
2:L5:3707:U:H2'	2:L5:3708:C:C6	2.46	0.50
2:L5:5064:G:N2	19:LP:75:GLN:HE22	2.10	0.50
6:LB:378:ARG:HE	26:LW:32:LEU:HD21	1.75	0.50
21:LR:92:LYS:HG2	21:LR:96:MET:HE3	1.94	0.50
63:Sg:57:ARG:HE	63:Sg:95:GLY:HA3	1.76	0.50
66:SC:78:LEU:HD12	66:SC:81:ILE:HD12	1.93	0.50
66:SC:196:ILE:HB	66:SC:223:TYR:HB2	1.92	0.50
82:S2:455:A:H2'	82:S2:456:C:C6	2.46	0.50
2:L5:654:C:H2'	2:L5:655:C:C6	2.47	0.50
2:L5:2300:A:N7	7:LC:143:ARG:NH1	2.60	0.50
2:L5:3910:C:H2'	2:L5:3911:C:C6	2.47	0.50
19:LP:107:LEU:HD13	19:LP:152:GLU:HG3	1.93	0.50
63:Sg:176:VAL:HG23	63:Sg:185:LYS:HB2	1.94	0.50
70:SI:133:GLU:HA	70:SI:136:ILE:HG12	1.92	0.50
82:S2:159:A2M:O5'	82:S2:159:A2M:H8	2.12	0.50
2:L5:137:G:H2'	2:L5:138:G:H8	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:1617:G:H1'	2:L5:2513:A:N6	2.26	0.50
14:LJ:38:LYS:HD2	14:LJ:123:ILE:HD11	1.94	0.50
58:SU:79:ARG:NH2	82:S2:1669:G:OP1	2.42	0.50
68:SG:135:PRO:HA	82:S2:169:U:H5''	1.93	0.50
68:SG:190:ARG:NH2	82:S2:334:C:OP2	2.40	0.50
82:S2:482:G:N1	82:S2:485:A:OP2	2.39	0.50
2:L5:1655:C:OP2	30:La:26:ARG:NH1	2.45	0.50
2:L5:3697:U:H5''	2:L5:3698:G:H5'	1.93	0.50
2:L5:4239:A:H2'	2:L5:4240:G:C8	2.47	0.50
2:L5:4591:U:H2'	2:L5:4592:C:C6	2.47	0.50
4:L8:141:C:H2'	4:L8:142:U:C6	2.47	0.50
6:LB:147:GLU:OE2	6:LB:198:ARG:NH2	2.32	0.50
8:LD:182:GLY:HA2	8:LD:194:VAL:HG23	1.93	0.50
12:LH:48:LEU:HD21	12:LH:56:ARG:HB2	1.93	0.50
45:Lp:75:SER:O	45:Lp:79:VAL:HG23	2.12	0.50
51:SK:22:VAL:HG22	51:SK:68:TYR:HD1	1.76	0.50
51:SK:64:TRP:HB3	61:Sd:23:VAL:HA	1.94	0.50
63:Sg:195:LEU:HA	63:Sg:211:GLY:HA3	1.93	0.50
66:SC:85:SER:OG	75:SV:25:GLY:O	2.29	0.50
69:SH:20:GLU:HG2	69:SH:48:ALA:HB3	1.93	0.50
70:SI:141:ARG:HD3	70:SI:145:ILE:HG21	1.93	0.50
74:SO:45:THR:HA	74:SO:52:THR:HA	1.94	0.50
78:SY:51:THR:OG1	78:SY:53:ASP:OD1	2.23	0.50
78:SY:119:GLY:O	82:S2:84:A:O2'	2.27	0.50
82:S2:149:A:H3'	82:S2:150:A:H8	1.76	0.50
83:CB:609:PHE:CZ	83:CB:661:ILE:HG12	2.46	0.50
2:L5:1628:C:OP1	5:LA:14:SER:OG	2.29	0.49
2:L5:2809:G:O2'	2:L5:4644:G:OP1	2.28	0.49
5:LA:181:LYS:HB2	5:LA:184:ARG:HG3	1.94	0.49
6:LB:218:ASP:OD2	6:LB:348:ARG:NH2	2.32	0.49
15:LL:111:GLN:O	15:LL:115:GLN:HG2	2.12	0.49
57:ST:60:THR:HG22	57:ST:75:MET:HE2	1.94	0.49
65:SB:97:LEU:HB3	65:SB:232:HIS:NE2	2.27	0.49
82:S2:960:U:O2'	82:S2:962:A:N7	2.37	0.49
2:L5:1662:C:H2'	2:L5:1663:C:C6	2.47	0.49
2:L5:3641:U:H5	2:L5:3646:A:N7	2.09	0.49
10:LF:157:ARG:HE	10:LF:248:ASN:HB2	1.77	0.49
50:SF:60:ARG:NH2	82:S2:1679:A:OP1	2.43	0.49
50:SF:141:VAL:HG12	60:Sc:47:LYS:HG2	1.92	0.49
64:SA:184:ARG:HE	64:SA:191:ARG:HA	1.77	0.49
68:SG:170:ARG:HG3	82:S2:72:C:N3	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:S2:1562:C:H2'	82:S2:1563:G:H8	1.76	0.49
2:L5:433:A:C2	2:L5:3867:A2M:H4'	2.46	0.49
6:LB:394:LYS:HA	6:LB:397:ILE:HG12	1.94	0.49
8:LD:217:ASP:N	8:LD:217:ASP:OD1	2.41	0.49
9:LE:190:HIS:HB3	9:LE:193:PHE:HD2	1.77	0.49
12:LH:18:ILE:HG12	12:LH:27:VAL:HG22	1.94	0.49
26:LW:2:LYS:HE3	26:LW:15:PRO:HB3	1.94	0.49
47:Ls:139:GLN:OE1	83:CB:180:ARG:HA	2.12	0.49
47:Ls:143:ILE:HD12	47:Ls:158:VAL:HG11	1.95	0.49
52:SM:49:LEU:HD21	52:SM:123:VAL:HG11	1.94	0.49
77:SX:28:LYS:HE2	77:SX:32:LEU:HD22	1.93	0.49
78:SY:105:LYS:NZ	82:S2:507:G:O6	2.36	0.49
82:S2:1337:4AC:O5'	82:S2:1337:4AC:H6	2.12	0.49
2:L5:173:C:OP1	15:LL:129:ARG:NH1	2.46	0.49
2:L5:325:U:H2'	2:L5:326:C:C6	2.47	0.49
2:L5:512:U:H3	2:L5:647:G:H1	1.60	0.49
2:L5:1283:G:N1	2:L5:2076:G:OP1	2.33	0.49
2:L5:3659:G:OP1	5:LA:241:ARG:NH1	2.45	0.49
6:LB:258:HIS:HA	6:LB:260:ALA:N	2.26	0.49
8:LD:66:TYR:HE2	8:LD:68:ARG:HE	1.60	0.49
22:LS:27:LEU:HB3	23:LT:148:PRO:HB3	1.94	0.49
48:Lt:76:SER:OG	48:Lt:116:MET:SD	2.69	0.49
61:Sd:46:TYR:O	61:Sd:50:ILE:HD12	2.12	0.49
73:SN:14:SER:HB3	82:S2:1016:U:H5''	1.95	0.49
76:SW:3:ARG:HH22	76:SW:28:ARG:HH21	1.60	0.49
76:SW:44:HIS:NE2	76:SW:112:ASP:OD2	2.42	0.49
79:Sa:8:ASN:ND2	82:S2:1861:G:OP1	2.42	0.49
82:S2:928:G:H1	82:S2:1013:U:H3	1.59	0.49
2:L5:10:A:H2'	2:L5:11:G:C8	2.48	0.49
2:L5:1480:C:O2'	2:L5:1482:G:OP2	2.31	0.49
2:L5:1516:G:O2'	15:LL:18:TRP:NE1	2.45	0.49
2:L5:3880:G:H2'	2:L5:3881:G:C8	2.47	0.49
2:L5:4188:U:H2'	2:L5:4189:U:C6	2.48	0.49
50:SF:81:ARG:O	50:SF:85:LYS:NZ	2.34	0.49
56:SS:46:ARG:NH1	57:ST:50:GLU:OE2	2.45	0.49
82:S2:1288:OMU:HN3	82:S2:1311:C:H42	1.60	0.49
82:S2:1720:U:H5''	82:S2:1721:U:H5''	1.94	0.49
2:L5:2279:A:O2'	34:Le:48:ARG:NH2	2.46	0.49
2:L5:2491:C:H2'	2:L5:2492:C:C6	2.47	0.49
2:L5:2739:C:O2	5:LA:188:LYS:NZ	2.43	0.49
2:L5:3615:G:H1'	26:LW:44:ARG:HD3	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:3720:G:H22	2:L5:3733:A:H2	1.58	0.49
75:SV:73:ALA:HB1	75:SV:78:ILE:HB	1.95	0.49
82:S2:49:C:H2'	82:S2:472:C:H41	1.76	0.49
2:L5:2101:C:H2'	2:L5:2102:G:C8	2.47	0.49
2:L5:2539:C:H2'	2:L5:2540:C:C6	2.48	0.49
2:L5:2568:C:H2'	2:L5:2569:G:C8	2.48	0.49
2:L5:4459:U:H2'	2:L5:4460:U:C6	2.47	0.49
6:LB:299:ILE:HB	6:LB:313:SER:HB3	1.94	0.49
29:LZ:50:PRO:HD3	29:LZ:68:ILE:HG12	1.95	0.49
56:SS:132:ARG:NH1	82:S2:1623:A:N1	2.60	0.49
67:SE:104:ASP:HB3	67:SE:110:ALA:HB2	1.93	0.49
69:SH:87:PHE:HB3	69:SH:90:LYS:HD2	1.95	0.49
70:SI:116:HIS:O	70:SI:152:ARG:NH2	2.38	0.49
71:SJ:60:LEU:HD22	71:SJ:70:ARG:HA	1.95	0.49
82:S2:1098:C:H2'	82:S2:1099:G:C8	2.47	0.49
82:S2:1407:U:H2'	82:S2:1408:U:C6	2.47	0.49
83:CB:403:PRO:HA	83:CB:410:PHE:HA	1.94	0.49
1:CI:78:HIS:CD2	2:L5:2706:G:N7	2.81	0.49
2:L5:1646:A:O2'	39:Lj:49:TRP:O	2.25	0.49
2:L5:1985:G:N2	2:L5:2003:G:O2'	2.46	0.49
2:L5:4699:U:H1'	2:L5:4700:A:H5''	1.94	0.49
18:LO:119:VAL:N	22:LS:168:THR:O	2.44	0.49
25:LV:87:SER:OG	26:LW:19:ARG:NH1	2.46	0.49
55:SR:32:LYS:NZ	82:S2:1452:A:OP2	2.45	0.49
64:SA:106:GLY:N	64:SA:136:GLU:OE2	2.34	0.49
82:S2:207:G:H3'	82:S2:208:G:H8	1.78	0.49
82:S2:1277:C:H2'	82:S2:1278:A:C8	2.47	0.49
82:S2:1528:G:O2'	82:S2:1666:C:OP1	2.30	0.49
82:S2:1684:C:H1'	84:Et:34:U:OP1	2.13	0.49
2:L5:148:C:OP2	11:LG:197:LYS:NZ	2.42	0.49
2:L5:280:G:H5''	17:LN:14:LYS:HE2	1.93	0.49
2:L5:308:G:O6	17:LN:12:ARG:NH1	2.46	0.49
2:L5:2764:A:H2'	2:L5:2765:A:H8	1.78	0.49
2:L5:2835:A:O2'	6:LB:228:TYR:O	2.27	0.49
2:L5:4966:A:H5''	6:LB:128:LYS:HG3	1.93	0.49
6:LB:217:ILE:HD12	6:LB:347:LEU:HB3	1.95	0.49
53:SP:132:GLY:HA2	83:CB:708:THR:HG21	1.95	0.49
77:SX:128:VAL:HG23	77:SX:138:LYS:HD2	1.95	0.49
78:SY:7:ILE:HG12	78:SY:43:LYS:HD3	1.94	0.49
78:SY:41:ARG:NH2	78:SY:52:PRO:O	2.45	0.49
2:L5:1097:C:H2'	2:L5:1098:G:C8	2.48	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:1332:C:H2'	2:L5:1333:A:C8	2.47	0.49
2:L5:1500:A:H5''	2:L5:1501:C:H5''	1.95	0.49
2:L5:1743:A:N1	2:L5:1789:C:O2'	2.44	0.49
2:L5:1998:A:O2'	2:L5:1999:A:O4'	2.29	0.49
2:L5:2744:A:H2'	2:L5:2745:A:C8	2.47	0.49
2:L5:4225:G:OP1	13:LI:24:ARG:NH2	2.39	0.49
2:L5:4457:PSU:H1'	6:LB:252:ALA:HB3	1.95	0.49
2:L5:4935:C:H2'	2:L5:4936:G:C8	2.47	0.49
14:LJ:22:LEU:HD22	14:LJ:128:LEU:HD12	1.94	0.49
15:LL:56:ARG:NH1	15:LL:74:ARG:O	2.40	0.49
26:LW:56:ARG:HE	26:LW:61:LYS:CB	2.26	0.49
43:Ln:12:ARG:HG2	43:Ln:15:ARG:HH21	1.78	0.49
50:SF:49:LEU:HD12	50:SF:50:PRO:HD2	1.94	0.49
50:SF:161:ALA:O	50:SF:165:ASN:ND2	2.40	0.49
51:SK:41:PRO:HG2	51:SK:44:HIS:CG	2.48	0.49
68:SG:172:LYS:NZ	82:S2:67:C:OP2	2.34	0.49
73:SN:29:THR:OG1	73:SN:31:ASP:OD1	2.27	0.49
2:L5:158:A:H5''	2:L5:159:C:H2'	1.96	0.48
2:L5:2716:C:O3'	24:LU:107:LYS:NZ	2.46	0.48
2:L5:3664:G:H2'	2:L5:3665:G:H8	1.78	0.48
22:LS:99:ASP:OD1	22:LS:100:LEU:N	2.43	0.48
34:Le:108:ARG:HD2	34:Le:128:ARG:HB2	1.93	0.48
54:SQ:96:TYR:HA	54:SQ:100:VAL:HG12	1.95	0.48
65:SB:171:ILE:HG22	65:SB:174:ARG:HE	1.78	0.48
81:Se:11:LYS:O	81:Se:15:GLN:HG3	2.13	0.48
82:S2:84:A:N3	82:S2:150:A:O2'	2.46	0.48
2:L5:1326:A2M:H2'	2:L5:1327:C:C6	2.48	0.48
2:L5:1503:A:H4'	2:L5:1504:G:H5'	1.95	0.48
7:LC:154:VAL:HG11	7:LC:174:LEU:HD11	1.95	0.48
9:LE:119:GLU:HG3	34:Le:7:LEU:HD22	1.94	0.48
31:Lb:5:LYS:HE2	31:Lb:8:THR:HB	1.94	0.48
69:SH:69:LEU:HD13	69:SH:96:ALA:HB2	1.96	0.48
75:SV:30:ALA:O	75:SV:60:ARG:HD3	2.13	0.48
80:Sb:49:HIS:ND1	80:Sb:69:GLY:O	2.46	0.48
82:S2:1533:A:H62	82:S2:1602:U:H3	1.61	0.48
82:S2:1568:C:H2'	82:S2:1569:A:C8	2.48	0.48
82:S2:1595:U:H2'	82:S2:1596:U:C6	2.48	0.48
2:L5:121:A:H62	2:L5:152:U:H3	1.62	0.48
2:L5:369:G:N2	2:L5:372:A:OP2	2.42	0.48
2:L5:497:G:N2	2:L5:498:C:H41	2.11	0.48
2:L5:1344:C:H1'	15:LL:10:LEU:HD11	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:1866:U:OP1	13:LI:4:ARG:NH1	2.36	0.48
2:L5:2903:G:H1'	2:L5:2904:U:H5	1.78	0.48
2:L5:3619:G:H22	2:L5:3624:A:H1'	1.77	0.48
2:L5:4940:C:O2'	9:LE:246:ARG:NH2	2.45	0.48
5:LA:180:LEU:HD22	45:Lp:18:TYR:HB3	1.96	0.48
34:Le:91:CYS:HB3	34:Le:95:TYR:HD2	1.77	0.48
60:Sc:39:SER:HB2	79:Sa:51:ARG:HH12	1.77	0.48
62:Sf:95:ARG:HH12	82:S2:1291:A:H62	1.60	0.48
63:Sg:207:CYS:HB3	63:Sg:221:LEU:HD21	1.95	0.48
64:SA:134:LEU:HD21	64:SA:144:THR:HG21	1.96	0.48
70:SI:54:LYS:NZ	82:S2:381:C:OP2	2.45	0.48
2:L5:467:U:C4	2:L5:468:U:H1'	2.48	0.48
2:L5:1320:U:O2'	2:L5:1891:A:N1	2.45	0.48
2:L5:1461:C:H2'	2:L5:1462:A:C8	2.48	0.48
2:L5:4584:A:H2'	2:L5:4585:U:O4'	2.13	0.48
12:LH:41:ILE:HG22	12:LH:43:VAL:HG13	1.95	0.48
12:LH:61:TRP:CZ3	16:LM:33:GLN:HG3	2.49	0.48
13:LI:54:SER:HB3	13:LI:135:ILE:HD11	1.95	0.48
19:LP:54:GLN:HA	19:LP:83:TRP:CD1	2.47	0.48
27:LX:122:ALA:N	27:LX:139:ARG:O	2.43	0.48
63:Sg:82:SER:OG	63:Sg:83:TRP:N	2.45	0.48
65:SB:85:LYS:HB2	65:SB:101:HIS:HB3	1.94	0.48
70:SI:89:GLU:OE1	70:SI:92:ARG:NH2	2.46	0.48
82:S2:5:U:H2'	82:S2:6:G:H8	1.78	0.48
82:S2:106:C:H2'	82:S2:107:A:C8	2.46	0.48
82:S2:1144:A:H2'	82:S2:1145:A:C8	2.48	0.48
82:S2:1652:G:H1	82:S2:1672:U:H3	1.60	0.48
83:CB:205:ILE:HD12	83:CB:212:VAL:HG22	1.96	0.48
2:L5:1095:A:N1	2:L5:1200:G:C6	2.81	0.48
2:L5:1324:A:O2'	2:L5:1326:A2M:OP1	2.24	0.48
2:L5:2049:G:HO2'	2:L5:3884:PSU:HO2'	1.54	0.48
2:L5:2588:C:OP1	2:L5:2768:C:O2'	2.27	0.48
2:L5:4769:G:H5''	18:LO:176:ARG:HD3	1.96	0.48
7:LC:268:ARG:NH1	7:LC:269:LYS:HE2	2.29	0.48
11:LG:150:LYS:NZ	11:LG:177:MET:O	2.46	0.48
78:SY:29:HIS:O	78:SY:67:GLY:HA2	2.14	0.48
82:S2:1115:U:O2'	82:S2:1117:C:OP2	2.30	0.48
2:L5:1326:A2M:HM'3	2:L5:1326:A2M:H1'	1.63	0.48
2:L5:4347:G:H2'	2:L5:4348:A:C8	2.48	0.48
70:SI:25:ARG:HA	82:S2:448:A:H5''	1.95	0.48
82:S2:1438:A:H2'	82:S2:1439:A:C8	2.49	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:172:C:H4'	2:L5:173:C:H5'	1.96	0.48
2:L5:423:G:H21	19:LP:118:GLN:NE2	2.10	0.48
2:L5:500:G:H1'	2:L5:504:G:H3'	1.95	0.48
2:L5:4345:C:H2'	2:L5:4346:U:C6	2.48	0.48
6:LB:153:MET:HB3	6:LB:194:LEU:HD11	1.95	0.48
14:LJ:63:ARG:HH11	44:Lo:106:PHE:HB2	1.79	0.48
50:SF:142:SER:HB3	60:Sc:50:VAL:HG22	1.94	0.48
51:SK:32:HIS:CD2	51:SK:45:VAL:HG11	2.48	0.48
52:SM:128:PHE:HA	52:SM:131:LYS:HG2	1.96	0.48
54:SQ:110:ASP:OD1	54:SQ:111:ILE:HD12	2.13	0.48
59:SZ:42:ASP:OD1	59:SZ:42:ASP:N	2.44	0.48
62:Sf:139:HIS:O	62:Sf:147:THR:HA	2.13	0.48
63:Sg:166:VAL:HG12	63:Sg:176:VAL:HG12	1.95	0.48
68:SG:202:ASN:ND2	82:S2:125:C:OP1	2.39	0.48
69:SH:51:ILE:HD11	69:SH:176:VAL:HG12	1.96	0.48
70:SI:57:ALA:HB2	70:SI:183:GLY:HA2	1.95	0.48
82:S2:17:C:O2'	82:S2:1194:A:N1	2.38	0.48
82:S2:1337:4AC:H2'	82:S2:1338:G:H8	1.78	0.48
82:S2:1435:C:O2'	82:S2:1436:C:O4'	2.30	0.48
83:CB:221:TRP:CG	83:CB:340:MET:HB3	2.49	0.48
2:L5:1367:C:O2'	2:L5:1369:C:OP2	2.26	0.48
2:L5:2009:A:N6	83:CB:782:PHE:CZ	2.82	0.48
2:L5:2583:C:OP2	36:Lg:76:ARG:NH1	2.46	0.48
2:L5:4113:U:H4'	2:L5:4115:G:C6	2.48	0.48
2:L5:4897:G:OP1	16:LM:128:LYS:NZ	2.45	0.48
7:LC:141:GLY:O	7:LC:204:ARG:NH1	2.35	0.48
12:LH:114:ILE:HB	12:LH:124:ARG:HB2	1.95	0.48
15:LL:142:GLU:HA	15:LL:146:LEU:HD12	1.95	0.48
21:LR:127:VAL:HG12	21:LR:132:PHE:HD2	1.78	0.48
24:LU:63:ILE:HD13	24:LU:72:VAL:HG22	1.96	0.48
56:SS:64:VAL:O	56:SS:68:ILE:HG12	2.13	0.48
82:S2:329:G:H2'	82:S2:330:G:C8	2.49	0.48
82:S2:907:G:H2'	82:S2:908:A:C8	2.48	0.48
83:CB:361:PRO:HB3	83:CB:415:ARG:NH2	2.29	0.48
2:L5:2411:C:H2'	2:L5:2412:A:C8	2.49	0.48
2:L5:4305:G:N7	23:LT:87:LYS:NZ	2.53	0.48
2:L5:4769:G:OP1	18:LO:176:ARG:NH1	2.43	0.48
4:L8:19:C:H2'	4:L8:20:A:C8	2.48	0.48
8:LD:234:ASP:OD1	8:LD:235:MET:N	2.47	0.48
10:LF:127:LYS:HB2	23:LT:133:ALA:HB3	1.96	0.48
10:LF:237:GLU:HG2	22:LS:38:VAL:HG22	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:SU:56:MET:HB2	58:SU:86:LYS:HG3	1.95	0.48
65:SB:168:MET:HB2	65:SB:197:ILE:HD13	1.96	0.48
69:SH:30:LEU:O	69:SH:33:ASN:ND2	2.47	0.48
83:CB:41:CYS:HA	83:CB:49:ALA:HA	1.96	0.48
2:L5:138:G:H2'	2:L5:139:G:H8	1.79	0.48
2:L5:737:C:C5	2:L5:739:G:H5''	2.49	0.48
2:L5:1095:A:C2	2:L5:1200:G:N1	2.65	0.48
2:L5:2018:C:H2'	2:L5:2019:C:H6	1.79	0.48
2:L5:2846:G:OP1	25:LV:85:ARG:NH2	2.47	0.48
2:L5:3732:A:H2'	2:L5:3733:A:C8	2.49	0.48
3:L7:23:A:N3	3:L7:118:C:O2'	2.36	0.48
8:LD:86:TYR:HE1	8:LD:247:ILE:HG13	1.78	0.48
19:LP:114:ILE:HA	19:LP:150:LEU:HD23	1.96	0.48
55:SR:29:HIS:CD2	63:Sg:36:ARG:HH21	2.32	0.48
57:ST:40:ALA:HB3	57:ST:43:LYS:HG2	1.96	0.48
59:SZ:85:ARG:NH2	82:S2:1597:C:OP2	2.39	0.48
67:SE:192:ILE:HG12	67:SE:243:GLY:HA3	1.96	0.48
73:SN:15:ALA:HB2	80:Sb:20:LYS:HD3	1.95	0.48
77:SX:105:PHE:CD1	77:SX:121:LYS:HB3	2.45	0.48
2:L5:374:G:OP2	39:Lj:56:ARG:NH1	2.38	0.47
2:L5:490:C:H2'	2:L5:491:G:C8	2.48	0.47
2:L5:1942:A:H2'	2:L5:1943:A:H8	1.78	0.47
6:LB:27:GLY:HA2	6:LB:276:HIS:CD2	2.49	0.47
24:LU:39:PHE:HD1	24:LU:90:TYR:CD2	2.32	0.47
50:SF:26:ASP:N	50:SF:26:ASP:OD1	2.46	0.47
50:SF:83:ASN:OD1	82:S2:1651:A:O2'	2.28	0.47
65:SB:171:ILE:HD11	65:SB:197:ILE:HA	1.95	0.47
80:Sb:11:SER:OG	80:Sb:14:GLU:OE1	2.30	0.47
83:CB:19:ILE:HD12	83:CB:99:LEU:HD23	1.95	0.47
2:L5:178:C:N4	2:L5:179:G:O6	2.47	0.47
2:L5:1176:C:H42	2:L5:1184:A:H61	1.61	0.47
2:L5:4622:A:H4'	6:LB:13:SER:HB2	1.95	0.47
6:LB:14:LEU:HD22	6:LB:17:LEU:HD11	1.94	0.47
15:LL:110:LEU:O	15:LL:114:VAL:HG13	2.15	0.47
25:LV:43:LYS:HE2	25:LV:62:MET:HE3	1.95	0.47
63:Sg:212:LYS:HA	63:Sg:235:ILE:HG13	1.95	0.47
78:SY:105:LYS:O	78:SY:109:GLU:HG2	2.14	0.47
79:Sa:13:LYS:HD3	79:Sa:13:LYS:HA	1.71	0.47
82:S2:325:C:N3	82:S2:326:C:O2'	2.45	0.47
82:S2:1383:A2M:HM'3	82:S2:1383:A2M:H1'	1.64	0.47
2:L5:256:G:H2'	2:L5:257:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:519:C:H1'	2:L5:643:C:C2	2.49	0.47
2:L5:667:A:H5''	2:L5:668:C:H5''	1.96	0.47
2:L5:2029:A:H2'	2:L5:2030:A:C8	2.48	0.47
2:L5:4095:G:H2'	2:L5:4096:C:C6	2.50	0.47
2:L5:4149:C:OP1	29:LZ:59:LYS:N	2.47	0.47
4:L8:150:C:N4	11:LG:52:THR:O	2.47	0.47
10:LF:213:LEU:HB3	10:LF:247:MET:HG3	1.97	0.47
10:LF:241:ASN:O	10:LF:245:ARG:HG2	2.14	0.47
12:LH:89:ARG:HD3	12:LH:91:LYS:HE3	1.96	0.47
13:LI:36:LEU:HD11	13:LI:69:ARG:HD2	1.97	0.47
21:LR:157:ASP:OD1	21:LR:158:GLN:N	2.47	0.47
37:Lh:89:ARG:O	37:Lh:93:ARG:HG2	2.15	0.47
50:SF:19:LEU:HD11	50:SF:50:PRO:HD3	1.95	0.47
51:SK:42:ASN:HA	51:SK:45:VAL:HG12	1.96	0.47
63:Sg:133:ASN:HB3	63:Sg:139:LYS:HD2	1.97	0.47
68:SG:162:LEU:HG	68:SG:167:LYS:HE3	1.95	0.47
82:S2:1550:G:O2'	82:S2:1558:C:O2	2.25	0.47
2:L5:1461:C:H2'	2:L5:1462:A:H8	1.78	0.47
2:L5:1727:U:OP1	10:LF:131:ASN:ND2	2.46	0.47
2:L5:2811:G:N1	2:L5:2814:C:OP2	2.42	0.47
2:L5:4301:U:OP2	2:L5:4303:C:N4	2.47	0.47
47:Ls:114:GLY:HA2	47:Ls:166:LYS:HD2	1.96	0.47
52:SM:110:VAL:O	52:SM:112:LYS:NZ	2.45	0.47
63:Sg:124:SER:OG	63:Sg:125:ARG:N	2.46	0.47
82:S2:223:C:H2'	82:S2:224:A:C8	2.50	0.47
82:S2:329:G:H2'	82:S2:330:G:H8	1.79	0.47
2:L5:97:G:OP1	15:LL:16:LYS:NZ	2.37	0.47
2:L5:170:C:H42	2:L5:266:C:N4	2.12	0.47
2:L5:2284:G:OP1	30:La:7:LYS:NZ	2.43	0.47
2:L5:2411:C:H2'	2:L5:2412:A:H8	1.78	0.47
2:L5:2580:U:OP1	29:LZ:36:ARG:NH1	2.41	0.47
2:L5:2640:G:H2'	2:L5:2641:A:C8	2.50	0.47
2:L5:3917:A:H2'	2:L5:3918:G:H8	1.79	0.47
4:L8:75:OMG:HM23	4:L8:75:OMG:H1'	1.70	0.47
17:LN:140:LYS:HD3	17:LN:140:LYS:HA	1.66	0.47
47:Ls:139:GLN:HA	83:CB:180:ARG:CZ	2.44	0.47
54:SQ:102:GLU:HA	54:SQ:105:LYS:HB3	1.97	0.47
63:Sg:39:THR:HG22	63:Sg:60:ARG:HG2	1.96	0.47
67:SE:247:THR:OG1	67:SE:250:GLU:OE1	2.33	0.47
68:SG:191:ARG:HH22	82:S2:312:G:H2'	1.80	0.47
82:S2:17:C:H2'	82:S2:18:C:C6	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:S2:604:A:N3	82:S2:639:C:O2'	2.42	0.47
82:S2:996:A:H2'	82:S2:997:A:C8	2.49	0.47
83:CB:6:VAL:HA	83:CB:9:ILE:HB	1.96	0.47
83:CB:190:SER:HB2	83:CB:204:MET:HE2	1.96	0.47
2:L5:169:G:O6	2:L5:170:C:N4	2.48	0.47
2:L5:1194:G:H2'	2:L5:1195:G:C8	2.50	0.47
2:L5:3661:G:N7	5:LA:152:SER:OG	2.44	0.47
6:LB:29:VAL:HG12	6:LB:31:SER:H	1.80	0.47
23:LT:102:ARG:O	23:LT:106:LEU:HG	2.14	0.47
57:ST:83:GLN:OE1	57:ST:93:SER:OG	2.30	0.47
82:S2:747:U:C2	82:S2:796:G:N1	2.83	0.47
82:S2:1491:G:H2'	82:S2:1492:U:C6	2.49	0.47
2:L5:99:A:H5''	17:LN:184:ILE:HD12	1.96	0.47
2:L5:257:C:H2'	2:L5:258:G:C8	2.50	0.47
2:L5:1846:G:H2'	2:L5:1847:C:C6	2.49	0.47
2:L5:1855:G:OP1	31:Lb:4:SER:HB2	2.14	0.47
2:L5:1899:G:O2'	34:Le:57:ASN:OD1	2.31	0.47
2:L5:2910:G:N2	2:L5:3585:G:O2'	2.47	0.47
2:L5:3796:U:HO2'	82:S2:1720:U:HO2'	1.56	0.47
2:L5:4251:A:H5''	14:LJ:108:GLY:HA3	1.96	0.47
10:LF:57:TYR:OH	10:LF:189:ASP:OD1	2.30	0.47
12:LH:115:ARG:HD3	12:LH:123:ILE:HD12	1.96	0.47
20:LQ:154:LYS:NZ	20:LQ:159:PRO:O	2.46	0.47
46:Lr:119:ARG:HA	46:Lr:122:LYS:HE3	1.95	0.47
49:SD:32:ASP:OD2	49:SD:65:ARG:NH1	2.48	0.47
49:SD:77:PHE:HB2	49:SD:79:PHE:CE1	2.49	0.47
51:SK:32:HIS:HD2	51:SK:45:VAL:HG11	1.80	0.47
57:ST:84:ARG:NH1	82:S2:1605:G:OP1	2.41	0.47
62:Sf:105:TYR:HE1	62:Sf:131:PHE:HD2	1.62	0.47
66:SC:110:MET:HG2	66:SC:125:LYS:HB3	1.97	0.47
66:SC:227:ARG:NH2	82:S2:663:C:O2'	2.47	0.47
67:SE:127:ARG:HG3	67:SE:142:HIS:HA	1.96	0.47
75:SV:74:LYS:HZ1	75:SV:83:PHE:HB3	1.80	0.47
82:S2:16:G:H2'	82:S2:17:C:C6	2.50	0.47
82:S2:349:A:H2'	82:S2:350:C:C6	2.49	0.47
82:S2:520:A:O2'	82:S2:825:A:N3	2.40	0.47
2:L5:1194:G:H2'	2:L5:1195:G:H8	1.80	0.47
2:L5:1877:G:O6	31:Lb:10:HIS:NE2	2.46	0.47
2:L5:1932:A:OP1	18:LO:49:ARG:NH2	2.27	0.47
9:LE:223:ARG:HB3	9:LE:224:LYS:HB2	1.96	0.47
10:LF:182:TYR:HB3	10:LF:200:ARG:HG3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:LH:4:ILE:HG12	12:LH:61:TRP:CH2	2.50	0.47
16:LM:130:LEU:HB3	18:LO:177:LEU:HD11	1.96	0.47
20:LQ:50:ARG:HH21	20:LQ:140:SER:HB2	1.80	0.47
63:Sg:120:ILE:HB	63:Sg:132:TRP:HB2	1.97	0.47
65:SB:23:ASP:N	65:SB:23:ASP:OD1	2.48	0.47
70:SI:4:SER:OG	70:SI:6:ASP:OD2	2.26	0.47
82:S2:66:G:H2'	82:S2:67:C:H4'	1.97	0.47
82:S2:159:A2M:HM'3	82:S2:159:A2M:H1'	1.58	0.47
83:CB:653:GLY:HA2	83:CB:660:ASN:HB2	1.97	0.47
2:L5:715:G:OP1	7:LC:321:ASN:ND2	2.44	0.47
2:L5:2382:A:N1	2:L5:2829:U:O2'	2.45	0.47
2:L5:3923:A:H2'	2:L5:3924:C:C6	2.50	0.47
2:L5:4441:A:H5''	13:LI:114:GLY:HA2	1.97	0.47
2:L5:4606:G:P	83:CB:27:HIS:HE2	2.37	0.47
11:LG:154:LEU:HB3	11:LG:204:PHE:HB2	1.97	0.47
47:Ls:91:THR:HG21	47:Ls:98:ILE:HG13	1.97	0.47
71:SJ:64:ASP:OD1	71:SJ:65:GLU:N	2.48	0.47
79:Sa:87:ARG:NH1	79:Sa:94:ASP:OD1	2.48	0.47
81:Se:41:ARG:HG3	81:Se:42:PHE:HD1	1.80	0.47
81:Se:41:ARG:HG3	81:Se:42:PHE:CD1	2.50	0.47
82:S2:1144:A:H5'	82:S2:1355:C:H41	1.80	0.47
82:S2:1736:G:H2'	82:S2:1737:G:C8	2.49	0.47
2:L5:1298:C:H2'	2:L5:1299:G:C8	2.50	0.47
2:L5:2021:G:OP1	47:Ls:58:ASN:N	2.44	0.47
2:L5:3799:A:N3	2:L5:4506:C:O2'	2.42	0.47
2:L5:3841:OMC:HM23	2:L5:3841:OMC:H1'	1.76	0.47
2:L5:4742:G:H2'	2:L5:4743:G:H8	1.80	0.47
11:LG:162:ASP:HB3	11:LG:163:PRO:HD3	1.96	0.47
14:LJ:56:THR:OG1	14:LJ:64:ARG:N	2.44	0.47
50:SF:187:SER:OG	50:SF:190:ILE:HG12	2.15	0.47
64:SA:206:ASP:HB3	64:SA:209:GLU:OE1	2.15	0.47
82:S2:793:G:H2'	82:S2:794:A:H8	1.80	0.47
84:Et:51:G:H2'	84:Et:52:G:H8	1.81	0.47
2:L5:106:A:H2'	2:L5:107:G:O4'	2.15	0.46
2:L5:444:G:H2'	2:L5:445:U:C6	2.50	0.46
2:L5:1188:C:H2'	2:L5:1189:G:H8	1.80	0.46
2:L5:1333:A:H2'	2:L5:1334:A:H8	1.78	0.46
2:L5:1601:A:OP1	39:Lj:5:THR:OG1	2.22	0.46
2:L5:1995:G:H2'	2:L5:1996:C:C6	2.50	0.46
2:L5:2299:G:O6	7:LC:188:ARG:NH2	2.48	0.46
2:L5:3908:A:N7	2:L5:4449:A:N6	2.63	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:4954:G:H2'	2:L5:4955:A:C8	2.49	0.46
5:LA:206:PRO:HG3	5:LA:213:GLY:HA3	1.96	0.46
8:LD:205:ALA:HB1	8:LD:233:PRO:HB3	1.97	0.46
17:LN:75:VAL:HG21	17:LN:80:THR:HG22	1.97	0.46
49:SD:115:VAL:HG21	49:SD:138:VAL:HG11	1.97	0.46
54:SQ:8:GLN:HG3	54:SQ:27:ARG:HE	1.80	0.46
63:Sg:289:LEU:HD11	63:Sg:298:LEU:HD21	1.97	0.46
78:SY:77:ASP:OD1	78:SY:77:ASP:N	2.47	0.46
82:S2:51:U:H2'	82:S2:52:G:C8	2.50	0.46
82:S2:454:U:H2'	82:S2:455:A:H8	1.80	0.46
82:S2:656:G:N2	82:S2:663:C:H5''	2.30	0.46
82:S2:656:G:H5'	82:S2:662:G:N2	2.30	0.46
82:S2:1692:U:H2'	82:S2:1693:G:C8	2.50	0.46
83:CB:207:PRO:HG2	83:CB:261:TRP:CE2	2.50	0.46
2:L5:497:G:H21	2:L5:498:C:H41	1.63	0.46
2:L5:2298:U:OP1	7:LC:204:ARG:NE	2.47	0.46
2:L5:2637:U:HO2'	2:L5:2718:U:HO2'	1.62	0.46
2:L5:3950:U:H3	2:L5:4063:U:H3	1.62	0.46
2:L5:4504:C:H2'	2:L5:4505:C:C6	2.50	0.46
20:LQ:3:VAL:HG13	20:LQ:5:ILE:HG12	1.97	0.46
32:Lc:47:ILE:HD12	32:Lc:94:LEU:HD11	1.96	0.46
49:SD:223:ILE:HD11	63:Sg:189:ILE:HD12	1.97	0.46
51:SK:7:ASN:HB2	51:SK:40:VAL:HG22	1.98	0.46
64:SA:102:ARG:NH1	82:S2:1378:A:OP2	2.46	0.46
66:SC:70:VAL:HG21	66:SC:93:ILE:HG23	1.97	0.46
68:SG:85:ARG:O	68:SG:87:ARG:NH1	2.49	0.46
82:S2:528:A:H2'	82:S2:529:A:C8	2.50	0.46
82:S2:1286:G:N2	82:S2:1312:G:O2'	2.49	0.46
82:S2:1337:4AC:H2'	82:S2:1338:G:C8	2.50	0.46
2:L5:907:C:H2'	2:L5:908:G:H8	1.81	0.46
2:L5:908:G:H2'	2:L5:909:A:H8	1.79	0.46
2:L5:1308:C:OP1	18:LO:93:LYS:NZ	2.46	0.46
2:L5:1408:G:O2'	2:L5:1411:C:N4	2.48	0.46
2:L5:1696:C:H5'	2:L5:1719:A:H1'	1.97	0.46
2:L5:2009:A:C8	83:CB:756:VAL:HG11	2.49	0.46
2:L5:2725:A:N6	21:LR:88:ARG:O	2.48	0.46
2:L5:4115:G:O2'	2:L5:4116:C:O5'	2.32	0.46
11:LG:83:PHE:HA	11:LG:183:ILE:HD13	1.97	0.46
18:LO:166:ILE:HG12	18:LO:169:ARG:HH21	1.80	0.46
19:LP:122:ALA:HB3	19:LP:143:PRO:HG2	1.97	0.46
34:Le:76:LYS:HD2	34:Le:98:GLU:CD	2.41	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:SQ:139:ALA:HB2	82:S2:1650:A:H5''	1.96	0.46
57:ST:42:HIS:NE2	57:ST:43:LYS:HE3	2.30	0.46
57:ST:114:GLU:OE1	57:ST:114:GLU:N	2.47	0.46
77:SX:90:CYS:HA	77:SX:93:PHE:HD2	1.79	0.46
82:S2:51:U:H2'	82:S2:52:G:H8	1.81	0.46
82:S2:468:A2M:HM'3	82:S2:468:A2M:H1'	1.68	0.46
82:S2:693:A:H2'	82:S2:694:G:C8	2.51	0.46
82:S2:962:A:N1	82:S2:1055:A:O2'	2.47	0.46
82:S2:1755:C:H2'	82:S2:1756:C:C6	2.51	0.46
83:CB:132:VAL:HG13	83:CB:167:LEU:HD11	1.97	0.46
2:L5:965:G:N2	2:L5:2092:G:H1'	2.30	0.46
14:LJ:83:LEU:HD22	14:LJ:132:VAL:HG11	1.97	0.46
16:LM:96:GLU:O	16:LM:100:ARG:HG2	2.15	0.46
25:LV:42:VAL:HB	25:LV:45:ILE:HG13	1.98	0.46
61:Sd:14:PHE:HB2	82:S2:1661:A:H8	1.81	0.46
65:SB:186:ASN:HA	65:SB:189:ILE:HD12	1.98	0.46
67:SE:100:ARG:NH2	67:SE:118:GLU:OE2	2.48	0.46
69:SH:145:ARG:HE	76:SW:51:GLU:HB2	1.81	0.46
82:S2:598:G:O2'	82:S2:605:A:N1	2.46	0.46
82:S2:1189:A:H2'	82:S2:1190:A:H8	1.81	0.46
82:S2:1656:G:H1	82:S2:1668:U:H3	1.63	0.46
83:CB:219:HIS:HB2	83:CB:221:TRP:CD1	2.50	0.46
2:L5:2111:G:N2	2:L5:2251:G:O2'	2.48	0.46
2:L5:2112:G:H5''	2:L5:2251:G:H1	1.79	0.46
2:L5:3796:U:O2'	82:S2:1720:U:O2'	2.26	0.46
33:Ld:53:ALA:HA	33:Ld:88:LEU:HD21	1.97	0.46
50:SF:103:LEU:HD11	59:SZ:67:LEU:HD22	1.97	0.46
55:SR:52:GLY:O	55:SR:55:THR:OG1	2.33	0.46
62:Sf:124:ASP:OD1	62:Sf:124:ASP:N	2.45	0.46
68:SG:2:LYS:HB3	68:SG:15:LEU:HD11	1.97	0.46
71:SJ:145:PRO:HD2	82:S2:522:A:H5''	1.98	0.46
73:SN:5:HIS:HB3	73:SN:117:LEU:HD13	1.98	0.46
82:S2:1643:U:H2'	82:S2:1644:C:C6	2.50	0.46
2:L5:300:A:H2'	2:L5:301:G:H8	1.81	0.46
2:L5:1414:C:H2'	2:L5:1415:G:C8	2.47	0.46
2:L5:1695:U:O2'	2:L5:1719:A:N3	2.39	0.46
2:L5:4476:C:O2'	2:L5:4478:G:OP2	2.26	0.46
2:L5:4543:G:H2'	2:L5:4544:A:C8	2.50	0.46
4:L8:96:C:H5''	37:Lh:66:LYS:HG2	1.98	0.46
9:LE:161:ARG:O	9:LE:182:ASN:ND2	2.49	0.46
10:LF:46:ARG:HH21	31:Lb:102:PRO:HG3	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:Lc:48:LEU:HD13	32:Lc:57:LYS:HG3	1.98	0.46
47:Ls:139:GLN:HE22	83:CB:180:ARG:CA	2.19	0.46
60:Sc:10:LYS:HE2	60:Sc:34:PHE:HD2	1.81	0.46
70:SI:141:ARG:NH2	82:S2:192:C:OP2	2.49	0.46
70:SI:149:TYR:O	70:SI:153:LYS:HG2	2.16	0.46
76:SW:27:ILE:HG13	76:SW:61:ILE:HB	1.97	0.46
80:Sb:68:GLY:O	82:S2:928:G:N2	2.44	0.46
83:CB:164:LEU:HD21	83:CB:174:LEU:HD22	1.98	0.46
2:L5:455:C:O2'	2:L5:456:C:H5'	2.15	0.46
2:L5:1390:G:N2	2:L5:1393:G:OP2	2.40	0.46
2:L5:3867:A2M:HM'3	2:L5:3867:A2M:H1'	1.65	0.46
6:LB:302:ASN:HB2	6:LB:313:SER:HA	1.98	0.46
50:SF:127:ARG:HG2	50:SF:136:ARG:HB2	1.98	0.46
56:SS:137:LYS:NZ	82:S2:1236:G:O6	2.49	0.46
63:Sg:10:THR:HG22	63:Sg:308:ARG:HG2	1.97	0.46
64:SA:184:ARG:HG2	64:SA:189:ILE:HB	1.97	0.46
65:SB:136:ARG:HB3	65:SB:216:LYS:HG3	1.96	0.46
65:SB:214:LYS:NZ	82:S2:943:U:OP1	2.39	0.46
69:SH:126:HIS:CE1	69:SH:181:THR:HG23	2.51	0.46
77:SX:52:LEU:HD11	77:SX:73:GLN:HB2	1.97	0.46
82:S2:5:U:H2'	82:S2:6:G:C8	2.51	0.46
82:S2:327:G:H5''	82:S2:328:U:C2	2.50	0.46
82:S2:1775:U:H2'	82:S2:1776:G:C2	2.51	0.46
2:L5:4088:C:H2'	2:L5:4089:G:C8	2.51	0.46
7:LC:183:VAL:HA	7:LC:204:ARG:HB3	1.97	0.46
26:LW:7:SER:HB2	26:LW:13:ILE:HD11	1.97	0.46
28:LY:10:ASP:HB3	28:LY:13:LYS:HB2	1.98	0.46
30:La:72:THR:HG22	30:La:110:LYS:HB3	1.98	0.46
48:Lt:31:LYS:CB	83:CB:773:GLU:O	2.64	0.46
66:SC:121:ARG:HH12	66:SC:123:ARG:HE	1.63	0.46
66:SC:271:ASP:OD1	66:SC:272:HIS:N	2.49	0.46
67:SE:134:LYS:N	82:S2:298:G:OP1	2.45	0.46
69:SH:30:LEU:HG	69:SH:33:ASN:HD22	1.81	0.46
70:SI:126:GLY:O	70:SI:128:LYS:NZ	2.48	0.46
82:S2:102:A:H4'	82:S2:104:A:C8	2.51	0.46
82:S2:1189:A:H2'	82:S2:1190:A:C8	2.51	0.46
83:CB:89:ILE:HG12	83:CB:356:ILE:HA	1.97	0.46
2:L5:162:A:H2'	2:L5:163:A:C8	2.51	0.46
2:L5:1647:U:OP1	87:L5:5288:SPD:H51	2.16	0.46
2:L5:2474:G:H2'	2:L5:2502:G:N2	2.30	0.46
5:LA:116:LEU:HB3	5:LA:126:LEU:HB2	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:LE:261:ILE:HG23	9:LE:267:LEU:HD23	1.97	0.46
48:Lt:28:LEU:HD23	48:Lt:28:LEU:H	1.81	0.46
50:SF:132:GLY:C	84:Et:39:U:O2'	2.59	0.46
54:SQ:37:ARG:NH2	82:S2:1543:U:OP1	2.39	0.46
56:SS:37:GLY:N	82:S2:1630:A:H5'	2.31	0.46
68:SG:4:ASN:ND2	82:S2:154:U:O2	2.47	0.46
70:SI:98:LYS:HG3	70:SI:178:ARG:HG2	1.98	0.46
76:SW:62:VAL:HG11	80:Sb:8:LEU:HG	1.97	0.46
78:SY:76:TYR:OH	78:SY:86:GLU:OE1	2.19	0.46
82:S2:420:G:O2'	82:S2:660:C:N3	2.45	0.46
2:L5:197:A:N1	2:L5:225:G:O2'	2.47	0.46
2:L5:233:U:HO2'	2:L5:234:G:H8	1.63	0.46
2:L5:417:G:OP1	2:L5:2329:U:O2'	2.28	0.46
2:L5:1398:A:N1	2:L5:1419:G:O2'	2.48	0.46
2:L5:1725:U:H2'	2:L5:1726:U:H6	1.81	0.46
2:L5:2033:A:OP1	13:LI:162:ARG:NH2	2.46	0.46
86:L5:5290:SPM:H31	86:L5:5290:SPM:H62	1.79	0.46
3:L7:120:U:H5''	8:LD:262:LYS:HG2	1.96	0.46
8:LD:181:PRO:HD2	8:LD:195:HIS:CD2	2.51	0.46
10:LF:162:ILE:HD12	10:LF:167:ILE:HB	1.98	0.46
19:LP:52:THR:HG23	19:LP:85:LYS:HG3	1.98	0.46
35:Lf:45:LYS:NZ	35:Lf:108:SER:HA	2.31	0.46
36:Lg:82:MET:HE3	36:Lg:82:MET:HB2	1.88	0.46
46:Lr:47:LYS:O	46:Lr:103:ARG:HD2	2.16	0.46
52:SM:87:GLU:HG3	52:SM:103:VAL:HG11	1.98	0.46
67:SE:59:ASP:O	67:SE:63:LYS:HG3	2.16	0.46
69:SH:33:ASN:ND2	69:SH:36:LEU:HB3	2.30	0.46
70:SI:44:HIS:ND1	82:S2:1740:C:OP1	2.38	0.46
82:S2:1420:G:O2'	82:S2:1421:A:N3	2.49	0.46
82:S2:1667:U:H2'	82:S2:1668:U:C6	2.50	0.46
2:L5:659:G:H2'	2:L5:660:A:C8	2.50	0.45
2:L5:1340:OMC:HM23	2:L5:1340:OMC:H1'	1.75	0.45
2:L5:2580:U:O2'	29:LZ:79:HIS:ND1	2.44	0.45
2:L5:2724:G:O2'	2:L5:2726:G:OP2	2.31	0.45
8:LD:179:ARG:HD3	8:LD:179:ARG:HA	1.72	0.45
11:LG:187:LYS:HB2	11:LG:198:THR:HG23	1.97	0.45
64:SA:74:VAL:HG23	64:SA:121:LEU:HB3	1.97	0.45
72:SL:132:ARG:HD3	82:S2:114:G:H5'	1.97	0.45
77:SX:60:LYS:H	77:SX:114:ASP:HB2	1.81	0.45
2:L5:4389:C:H2'	2:L5:4390:A:C8	2.51	0.45
2:L5:4775:C:H41	2:L5:4859:C:N4	2.14	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:5004:C:H2'	2:L5:5005:G:O4'	2.15	0.45
5:LA:114:CYS:N	5:LA:165:VAL:O	2.49	0.45
12:LH:93:ARG:HG2	12:LH:182:SER:HB3	1.97	0.45
21:LR:175:GLU:O	21:LR:178:GLN:HG3	2.17	0.45
53:SP:22:LEU:HA	53:SP:25:LEU:HB2	1.99	0.45
57:ST:6:VAL:HG12	57:ST:135:ALA:HB2	1.99	0.45
81:Se:31:ARG:NH2	82:S2:525:A:O3'	2.49	0.45
82:S2:115:U:H2'	82:S2:116:OMU:C6	2.46	0.45
82:S2:1010:G:H2'	82:S2:1011:A:H8	1.81	0.45
83:CB:531:ASP:HB3	83:CB:534:VAL:HG12	1.98	0.45
2:L5:150:U:OP2	11:LG:200:THR:OG1	2.27	0.45
2:L5:498:C:C2	2:L5:499:G:H1'	2.51	0.45
2:L5:2009:A:N6	83:CB:782:PHE:HZ	2.14	0.45
2:L5:3856:A:H5''	19:LP:83:TRP:O	2.16	0.45
2:L5:4401:G:H2'	2:L5:4402:C:H6	1.80	0.45
14:LJ:15:LEU:HD12	14:LJ:165:TRP:HB2	1.98	0.45
26:LW:19:ARG:NH2	26:LW:37:GLU:OE2	2.50	0.45
29:LZ:123:LYS:O	29:LZ:124:THR:OG1	2.24	0.45
47:Ls:18:ILE:HD12	47:Ls:21:LEU:HD11	1.98	0.45
53:SP:81:ARG:NH1	53:SP:120:SER:OG	2.49	0.45
63:Sg:21:ILE:HG21	63:Sg:299:PHE:HB2	1.98	0.45
69:SH:18:GLU:OE1	69:SH:18:GLU:N	2.49	0.45
70:SI:56:ARG:HA	70:SI:180:GLY:HA2	1.98	0.45
82:S2:932:G:O2'	82:S2:934:G:OP2	2.28	0.45
82:S2:1240:A:N3	82:S2:1267:C:O2'	2.41	0.45
83:CB:18:ASN:HB3	83:CB:98:PHE:HD1	1.81	0.45
2:L5:318:A:H2'	2:L5:319:A:C8	2.52	0.45
2:L5:1494:U:H2'	2:L5:1495:G:H8	1.81	0.45
2:L5:3595:U:H5''	2:L5:3597:G:OP2	2.16	0.45
6:LB:258:HIS:HA	6:LB:260:ALA:H	1.80	0.45
9:LE:222:LEU:HB2	9:LE:237:LYS:HD2	1.97	0.45
11:LG:73:ARG:HD3	11:LG:73:ARG:HA	1.81	0.45
18:LO:61:ARG:HA	18:LO:70:PRO:HD2	1.98	0.45
57:ST:72:VAL:O	57:ST:76:THR:HG23	2.16	0.45
68:SG:170:ARG:NH1	82:S2:72:C:O2	2.50	0.45
83:CB:428:ARG:HG2	83:CB:444:LEU:HD13	1.99	0.45
2:L5:252:C:H2'	2:L5:253:G:H8	1.82	0.45
2:L5:1269:G:O2'	2:L5:1270:A:O4'	2.30	0.45
2:L5:1733:G:N3	2:L5:4214:A:H2'	2.31	0.45
2:L5:2072:C:OP1	20:LQ:2:GLY:N	2.50	0.45
2:L5:4508:C:N3	2:L5:4512:U:H5	2.14	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:4536:OMC:HM22	2:L5:4537:C:O4'	2.17	0.45
4:L8:66:A:H2'	4:L8:67:U:C6	2.51	0.45
4:L8:67:U:H2'	4:L8:68:G:H8	1.81	0.45
8:LD:108:ARG:CZ	8:LD:253:TYR:HB2	2.47	0.45
33:Ld:114:PHE:HA	33:Ld:117:LEU:HD12	1.99	0.45
47:Ls:29:ILE:HD11	47:Ls:191:GLN:HG2	1.97	0.45
54:SQ:98:LYS:O	63:Sg:57:ARG:NH1	2.38	0.45
56:SS:63:GLU:O	56:SS:67:VAL:HG23	2.17	0.45
61:Sd:8:TRP:HZ3	82:S2:1512:C:H5''	1.82	0.45
63:Sg:17:TRP:HB2	63:Sg:36:ARG:HD3	1.98	0.45
66:SC:104:ASP:OD1	66:SC:105:GLU:N	2.49	0.45
68:SG:49:VAL:HB	68:SG:115:LYS:HG2	1.97	0.45
78:SY:68:LYS:HE2	78:SY:68:LYS:HB3	1.78	0.45
80:Sb:42:LYS:HE3	80:Sb:57:VAL:HG22	1.98	0.45
82:S2:1221:G:O2'	82:S2:1676:U:O2	2.33	0.45
2:L5:303:C:OP2	17:LN:68:ARG:NH2	2.44	0.45
2:L5:327:U:HO2'	38:Li:30:ARG:HH11	1.60	0.45
2:L5:1577:G:O2'	2:L5:1612:G:H4'	2.16	0.45
2:L5:1912:G:N2	18:LO:87:MET:HE2	2.32	0.45
2:L5:2306:G:H1'	2:L5:2332:A:N6	2.32	0.45
2:L5:2611:A:H2'	2:L5:2612:G:C8	2.51	0.45
2:L5:3861:A:H2'	2:L5:3862:A:C8	2.52	0.45
2:L5:3932:U:H2'	2:L5:3933:G:C8	2.52	0.45
2:L5:4345:C:H2'	2:L5:4346:U:H6	1.81	0.45
2:L5:4775:C:H41	2:L5:4859:C:H42	1.65	0.45
5:LA:28:ARG:HD2	5:LA:123:ARG:HG3	1.99	0.45
37:Lh:95:LEU:HD22	37:Lh:99:GLU:HG3	1.97	0.45
48:Lt:34:PRO:HG3	83:CB:775:GLN:O	1.98	0.45
50:SF:132:GLY:C	84:Et:39:U:H4'	2.41	0.45
54:SQ:97:GLN:HB2	54:SQ:105:LYS:HG3	1.98	0.45
55:SR:99:ASP:OD2	64:SA:42:LYS:NZ	2.31	0.45
64:SA:42:LYS:HD3	64:SA:46:ILE:HB	1.98	0.45
68:SG:7:PHE:CE2	68:SG:9:ALA:HB3	2.51	0.45
77:SX:142:ARG:CG	83:CB:443:TYR:OH	2.65	0.45
81:Se:12:VAL:HG23	82:S2:616:A:H1'	1.97	0.45
82:S2:525:A:H2'	82:S2:526:A:C8	2.51	0.45
82:S2:563:G:O2'	82:S2:564:A:OP1	2.33	0.45
82:S2:929:G:H2'	82:S2:930:C:O4'	2.17	0.45
83:CB:23:SER:HB3	83:CB:122:THR:HG21	1.98	0.45
2:L5:162:A:H2'	2:L5:163:A:H8	1.81	0.45
2:L5:381:U:H4'	2:L5:415:G:H5'	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:1811:G:H21	31:Lb:57:MET:HE2	1.82	0.45
2:L5:2846:G:O2'	25:LV:19:GLY:O	2.28	0.45
2:L5:3664:G:H2'	2:L5:3665:G:C8	2.52	0.45
2:L5:3726:A:H2'	2:L5:3727:A:C8	2.51	0.45
2:L5:4587:G:OP1	18:LO:61:ARG:NH1	2.46	0.45
6:LB:50:LYS:NZ	6:LB:337:VAL:O	2.47	0.45
8:LD:152:ARG:HG3	8:LD:154:THR:HG23	1.99	0.45
10:LF:37:PHE:HZ	31:Lb:113:ALA:HB1	1.82	0.45
10:LF:182:TYR:CZ	10:LF:203:GLU:HG2	2.52	0.45
38:Li:35:LYS:HE3	38:Li:35:LYS:HB3	1.81	0.45
49:SD:55:THR:HA	49:SD:58:VAL:HG12	1.98	0.45
81:Se:8:ARG:HG2	81:Se:11:LYS:HD3	1.99	0.45
82:S2:29:G:H2'	82:S2:30:C:C6	2.52	0.45
82:S2:629:A:O2'	82:S2:631:U:OP1	2.34	0.45
82:S2:1201:U:H2'	82:S2:1202:U:C6	2.52	0.45
82:S2:1231:C:O2'	82:S2:1253:A:N6	2.50	0.45
82:S2:1232:PSU:H2'	82:S2:1233:G:C8	2.52	0.45
82:S2:1736:G:H2'	82:S2:1737:G:H8	1.82	0.45
82:S2:1825:A:H62	83:CB:717:GLY:HA3	0.60	0.45
83:CB:316:ILE:HA	83:CB:321:ILE:HD12	1.98	0.45
2:L5:1613:A:H5''	5:LA:183:GLY:CA	2.47	0.45
2:L5:2521:G:H4'	36:Lg:26:PRO:HD2	1.98	0.45
2:L5:4315:A:OP1	23:LT:69:GLN:NE2	2.47	0.45
2:L5:4524:G:C2	6:LB:252:ALA:HB1	2.52	0.45
16:LM:24:LEU:HB2	16:LM:43:THR:HG21	1.99	0.45
21:LR:19:LYS:HB2	21:LR:19:LYS:HE2	1.82	0.45
53:SP:24:GLN:O	53:SP:28:MET:HB2	2.16	0.45
55:SR:29:HIS:HA	55:SR:32:LYS:HG2	1.99	0.45
56:SS:62:ASP:OD1	56:SS:62:ASP:N	2.49	0.45
56:SS:121:ARG:HG3	56:SS:131:VAL:HB	1.99	0.45
57:ST:39:LEU:HA	57:ST:39:LEU:HD23	1.74	0.45
59:SZ:91:LEU:HG	59:SZ:96:LEU:HD21	1.99	0.45
64:SA:145:ILE:HG12	64:SA:159:ILE:HB	1.98	0.45
69:SH:142:LYS:HB3	76:SW:54:ASP:HB3	1.98	0.45
80:Sb:42:LYS:HZ1	80:Sb:58:GLY:H	1.65	0.45
83:CB:160:MET:HE3	83:CB:174:LEU:HD21	1.99	0.45
83:CB:516:ASP:HA	83:CB:519:LYS:HE2	1.97	0.45
83:CB:603:TYR:HE2	83:CB:708:THR:HG23	1.81	0.45
2:L5:2676:A:OP2	2:L5:2676:A:H8	2.00	0.45
2:L5:4093:G:H3'	2:L5:4094:G:H8	1.82	0.45
20:LQ:32:TYR:HD2	20:LQ:51:LEU:HD11	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:Lc:65:MET:HE3	32:Lc:65:MET:HB3	1.90	0.45
48:Lt:81:ILE:HD13	48:Lt:113:ALA:HB1	1.99	0.45
53:SP:130:ARG:NH1	83:CB:858:LEU:HD21	2.00	0.45
68:SG:67:VAL:HG12	68:SG:69:THR:HG22	1.99	0.45
73:SN:83:ASP:OD1	73:SN:84:LEU:N	2.49	0.45
77:SX:105:PHE:CE2	77:SX:112:VAL:HB	2.51	0.45
2:L5:424:U:H2'	2:L5:425:U:C6	2.52	0.45
2:L5:3611:A:C2	2:L5:5016:A:H8	2.34	0.45
6:LB:113:GLU:OE2	6:LB:169:ARG:NH1	2.50	0.45
12:LH:8:GLN:HG2	12:LH:74:CYS:SG	2.57	0.45
13:LI:52:MET:HE3	13:LI:163:GLN:HG2	1.99	0.45
37:Lh:107:GLN:O	37:Lh:111:GLU:HG3	2.17	0.45
64:SA:6:ASP:OD1	64:SA:6:ASP:N	2.49	0.45
67:SE:10:LYS:NZ	82:S2:95:G:OP1	2.33	0.45
82:S2:563:G:HO2'	82:S2:564:A:P	2.39	0.45
82:S2:1259:A:N6	82:S2:1519:U:O5'	2.50	0.45
2:L5:965:G:H21	2:L5:2092:G:H1'	1.82	0.44
2:L5:1895:G:OP1	10:LF:96:ARG:NH2	2.47	0.44
2:L5:4742:G:OP1	2:L5:4900:C:N4	2.35	0.44
15:LL:126:LEU:N	15:LL:138:ASP:OD2	2.27	0.44
19:LP:5:SER:OG	19:LP:118:GLN:NE2	2.50	0.44
27:LX:121:VAL:HA	27:LX:140:LEU:HA	1.99	0.44
54:SQ:98:LYS:HE3	54:SQ:99:TYR:CZ	2.53	0.44
63:Sg:62:HIS:NE2	63:Sg:80:SER:OG	2.35	0.44
68:SG:87:ARG:HD3	68:SG:87:ARG:HA	1.70	0.44
82:S2:674:C:H2'	82:S2:675:U:C6	2.52	0.44
82:S2:1139:C:H5	82:S2:1149:A:H62	1.66	0.44
82:S2:1217:A:H2'	82:S2:1218:C:C6	2.50	0.44
82:S2:1681:U:H2'	82:S2:1682:C:C6	2.51	0.44
2:L5:197:A:N3	2:L5:222:C:O2'	2.49	0.44
2:L5:4302:U:H4'	23:LT:5:LYS:HD3	2.00	0.44
7:LC:150:LEU:O	7:LC:152:LEU:N	2.50	0.44
15:LL:55:ILE:O	15:LL:97:SER:OG	2.32	0.44
33:Ld:54:MET:HE3	33:Ld:60:PRO:HA	1.98	0.44
47:Ls:52:VAL:HG12	47:Ls:90:PHE:HB2	1.99	0.44
63:Sg:191:HIS:ND1	63:Sg:195:LEU:HD21	2.32	0.44
65:SB:29:ASP:OD1	65:SB:29:ASP:N	2.51	0.44
65:SB:145:LYS:HB2	65:SB:145:LYS:HE3	1.73	0.44
74:SO:149:ARG:NH2	82:S2:961:G:OP1	2.50	0.44
77:SX:28:LYS:NZ	82:S2:1189:A:OP1	2.40	0.44
82:S2:99:A2M:H8	82:S2:99:A2M:O5'	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:S2:576:A2M:HM'3	82:S2:576:A2M:H1'	1.82	0.44
82:S2:1084:A:OP1	82:S2:1858:G:O2'	2.28	0.44
83:CB:654:PRO:HD2	83:CB:658:GLY:HA3	1.98	0.44
2:L5:423:G:H5'	19:LP:26:PHE:HZ	1.83	0.44
2:L5:684:G:H5''	9:LE:100:LYS:HE3	1.99	0.44
2:L5:2079:G:H2'	2:L5:2080:U:C6	2.53	0.44
2:L5:4274:A:H2'	2:L5:4275:G:H8	1.82	0.44
2:L5:4291:G:H5'	2:L5:4293:PSU:C6	2.52	0.44
2:L5:4524:G:N3	6:LB:252:ALA:HB1	2.32	0.44
5:LA:131:GLY:H	5:LA:169:VAL:HG13	1.82	0.44
20:LQ:86:ILE:HD11	20:LQ:100:VAL:HG11	1.98	0.44
21:LR:176:ARG:NH1	21:LR:177:LEU:HG	2.33	0.44
33:Ld:57:MET:HG2	33:Ld:88:LEU:HD23	2.00	0.44
51:SK:31:LYS:HZ3	51:SK:39:ASN:N	2.15	0.44
56:SS:38:ARG:HD2	57:ST:45:LEU:HD11	1.99	0.44
57:ST:39:LEU:HD21	57:ST:52:TRP:CZ3	2.53	0.44
58:SU:19:ARG:HB3	58:SU:92:HIS:CD2	2.53	0.44
59:SZ:86:ALA:HA	59:SZ:89:GLN:HE21	1.81	0.44
63:Sg:268:ASP:OD1	63:Sg:269:GLU:N	2.50	0.44
67:SE:101:LEU:HD12	67:SE:101:LEU:HA	1.85	0.44
82:S2:1850:MA6:H8	82:S2:1850:MA6:O5'	2.18	0.44
83:CB:219:HIS:CE1	83:CB:337:LYS:HE2	2.51	0.44
2:L5:4456:OMC:HM21	6:LB:241:PRO:HD3	1.99	0.44
2:L5:4594:U:H2'	2:L5:4595:G:C8	2.48	0.44
9:LE:183:ARG:HA	9:LE:183:ARG:HD2	1.80	0.44
13:LI:101:LYS:NZ	13:LI:102:MET:O	2.48	0.44
15:LL:140:SER:HA	15:LL:143:GLU:HG2	1.99	0.44
25:LV:107:ASN:ND2	25:LV:111:GLU:OE2	2.45	0.44
42:Lm:79:GLU:CD	42:Lm:81:SER:HG	2.21	0.44
53:SP:37:TYR:HB3	53:SP:41:GLN:HB2	1.98	0.44
55:SR:35:CYS:HA	55:SR:38:ILE:HG12	1.99	0.44
64:SA:18:PHE:CD1	64:SA:23:THR:HG21	2.51	0.44
68:SG:136:LYS:HB2	82:S2:65:C:H41	1.83	0.44
82:S2:27:A2M:HM'3	82:S2:27:A2M:H1'	1.63	0.44
82:S2:830:A:OP2	82:S2:846:G:N2	2.50	0.44
83:CB:225:LEU:HB2	83:CB:257:MET:HE3	1.99	0.44
2:L5:72:C:H5	15:LL:67:HIS:HD1	1.64	0.44
2:L5:138:G:H2'	2:L5:139:G:C8	2.52	0.44
2:L5:662:C:H2'	2:L5:663:G:H8	1.83	0.44
2:L5:979:C:OP2	9:LE:66:LYS:HD3	2.17	0.44
2:L5:1282:G:OP2	9:LE:128:HIS:NE2	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:1537:A:H2'	2:L5:1538:U:C6	2.53	0.44
2:L5:1751:A:H2'	2:L5:1752:G:C8	2.53	0.44
2:L5:2347:A:C4	34:Le:31:ILE:HD11	2.53	0.44
2:L5:2570:U:H2'	2:L5:2571:C:C6	2.53	0.44
11:LG:143:VAL:HG22	11:LG:203:ALA:HB2	1.99	0.44
49:SD:27:ARG:NH1	82:S2:1498:A:OP2	2.42	0.44
50:SF:131:ALA:O	84:Et:39:U:O4'	2.33	0.44
72:SL:127:THR:HB	72:SL:144:LYS:HB3	1.99	0.44
82:S2:136:C:H5''	82:S2:137:U:H5''	2.00	0.44
82:S2:194:C:H2'	82:S2:195:C:H6	1.83	0.44
82:S2:835:C:H4'	82:S2:836:G:C8	2.53	0.44
82:S2:1215:C:O2'	82:S2:1645:C:OP2	2.34	0.44
82:S2:1628:C:H2'	82:S2:1629:C:C6	2.51	0.44
82:S2:1801:A:H2'	82:S2:1802:C:H6	1.82	0.44
83:CB:10:ARG:HH22	83:CB:420:LEU:HD11	1.83	0.44
2:L5:1327:C:H2'	2:L5:1328:G:C8	2.53	0.44
2:L5:1818:G:O2'	2:L5:1820:C:OP2	2.27	0.44
2:L5:2864:A:H2'	2:L5:2865:U:C6	2.52	0.44
2:L5:4126:C:OP1	11:LG:37:LYS:NZ	2.51	0.44
7:LC:334:THR:HG22	7:LC:337:ARG:HH21	1.82	0.44
9:LE:198:SER:OG	9:LE:288:PHE:O	2.25	0.44
12:LH:187:VAL:HG12	12:LH:188:GLN:HG3	2.00	0.44
13:LI:48:LEU:O	13:LI:139:ARG:HA	2.17	0.44
47:Ls:139:GLN:O	83:CB:180:ARG:NH1	2.50	0.44
49:SD:163:PRO:O	49:SD:167:TYR:HB2	2.18	0.44
62:Sf:85:TYR:CA	83:CB:647:ARG:HH22	2.30	0.44
82:S2:1037:G:H4'	82:S2:1845:A:H4'	1.98	0.44
82:S2:1653:U:H2'	82:S2:1654:G:C8	2.52	0.44
83:CB:176:GLN:O	83:CB:180:ARG:HG2	2.18	0.44
84:Et:51:G:H2'	84:Et:52:G:C8	2.52	0.44
2:L5:132:G:H2'	2:L5:133:C:H4'	1.99	0.44
2:L5:268:G:H2'	2:L5:269:G:C8	2.52	0.44
2:L5:1359:G:H4'	17:LN:203:TYR:HB2	2.00	0.44
2:L5:1662:C:H2'	2:L5:1663:C:H6	1.83	0.44
2:L5:2848:G:O2'	2:L5:3838:U:O4	2.25	0.44
2:L5:3813:A:N3	2:L5:4538:G:O2'	2.45	0.44
2:L5:3932:U:H2'	2:L5:3933:G:H8	1.83	0.44
6:LB:165:HIS:HA	6:LB:179:HIS:O	2.17	0.44
9:LE:99:ASP:OD1	9:LE:99:ASP:N	2.50	0.44
36:Lg:69:LYS:HG3	36:Lg:73:HIS:CD2	2.53	0.44
44:Lo:74:GLU:HB3	44:Lo:77:CYS:HB3	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:Ls:139:GLN:HE21	83:CB:183:GLU:HB2	1.76	0.44
53:SP:34:MET:HB3	53:SP:42:ARG:HG3	1.98	0.44
58:SU:87:ARG:HH22	82:S2:1447:G:P	2.41	0.44
64:SA:220:LYS:HA	64:SA:220:LYS:HD3	1.84	0.44
68:SG:147:LEU:HD12	68:SG:151:ASP:HB2	2.00	0.44
69:SH:37:LYS:HA	69:SH:40:LEU:HB3	1.99	0.44
74:SO:101:GLY:HA3	74:SO:134:PRO:HD2	1.99	0.44
77:SX:63:ASN:OD1	82:S2:624:C:N4	2.42	0.44
82:S2:494:C:N4	82:S2:509:OMG:HN22	2.16	0.44
82:S2:1221:G:H2'	82:S2:1222:G:C8	2.53	0.44
82:S2:1589:A:N3	82:S2:1653:U:O2'	2.44	0.44
2:L5:1084:C:H2'	2:L5:1085:C:H6	1.83	0.44
2:L5:2326:G:H5''	34:Le:127:ALA:HB1	1.99	0.44
2:L5:3911:C:H2'	2:L5:3912:U:C6	2.51	0.44
3:L7:119:U:C2	8:LD:261:VAL:HG11	2.53	0.44
6:LB:46:PHE:CZ	6:LB:84:MET:HG2	2.52	0.44
8:LD:33:ARG:O	8:LD:37:VAL:HG22	2.18	0.44
11:LG:81:ASN:O	11:LG:84:THR:OG1	2.32	0.44
11:LG:175:ARG:HG2	11:LG:230:TYR:CD2	2.53	0.44
16:LM:115:ALA:HB1	18:LO:192:TYR:HB3	2.00	0.44
17:LN:200:LEU:HD22	17:LN:204:ARG:NH1	2.32	0.44
47:Ls:78:LEU:O	47:Ls:82:ILE:HG12	2.17	0.44
49:SD:215:ASP:OD1	49:SD:216:GLU:N	2.45	0.44
62:Sf:107:LYS:NZ	62:Sf:108:VAL:O	2.51	0.44
70:SI:45:THR:OG1	82:S2:308:G:OP1	2.28	0.44
70:SI:86:SER:OG	82:S2:376:A:N3	2.44	0.44
82:S2:116:OMU:HN3	82:S2:347:G:H1	1.65	0.44
82:S2:659:G:O2'	82:S2:662:G:O2'	2.28	0.44
2:L5:1677:PSU:H4'	2:L5:1680:G:C2	2.53	0.44
2:L5:1741:G:O6	3:L7:103:A:O2'	2.27	0.44
2:L5:3599:A:H2'	2:L5:3600:G:C8	2.52	0.44
10:LF:46:ARG:NH2	31:Lb:102:PRO:HG3	2.33	0.44
26:LW:5:LEU:HD12	26:LW:30:GLN:NE2	2.33	0.44
33:Ld:44:ARG:HA	33:Ld:47:LYS:HE3	1.99	0.44
57:ST:104:LEU:HD22	57:ST:121:ARG:HD2	2.00	0.44
69:SH:18:GLU:C	69:SH:20:GLU:H	2.26	0.44
78:SY:9:THR:HG22	82:S2:837:A:N6	2.32	0.44
82:S2:573:U:O2	82:S2:576:A2M:H8	2.17	0.44
82:S2:1777:G:H2'	82:S2:1778:C:C6	2.53	0.44
2:L5:66:A:O2'	2:L5:326:C:O2	2.36	0.43
2:L5:454:U:H2'	2:L5:455:C:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:2399:G:O2'	2:L5:2822:G:O2'	2.34	0.43
2:L5:2730:U:H2'	2:L5:2731:C:C6	2.53	0.43
2:L5:3873:G:H2'	2:L5:3874:G:C8	2.53	0.43
2:L5:4156:G:H5''	2:L5:4157:A:H2'	2.00	0.43
2:L5:4419:U:OP1	2:L5:4475:G:N2	2.49	0.43
2:L5:4611:A:H2'	2:L5:4612:C:H6	1.83	0.43
2:L5:4743:G:H2'	2:L5:4744:A:C8	2.53	0.43
2:L5:4897:G:H2'	2:L5:4898:G:H8	1.81	0.43
14:LJ:17:ILE:HD12	14:LJ:80:GLU:HG2	2.00	0.43
16:LM:104:MET:HG3	16:LM:108:ASP:HB2	2.00	0.43
16:LM:118:MET:HG2	18:LO:192:TYR:CZ	2.53	0.43
23:LT:28:ALA:O	23:LT:32:ARG:HG2	2.18	0.43
29:LZ:11:VAL:HG12	29:LZ:82:PRO:HA	2.00	0.43
41:LI:12:PHE:CE2	41:LI:51:LEU:HD22	2.53	0.43
66:SC:64:THR:HG22	66:SC:66:LEU:H	1.83	0.43
67:SE:72:ILE:HD12	67:SE:77:ARG:HB2	2.00	0.43
79:Sa:12:LYS:HG3	79:Sa:15:ARG:HB2	2.00	0.43
82:S2:495:U:H2'	82:S2:496:C:O4'	2.18	0.43
2:L5:696:C:H42	9:LE:221:LYS:HG3	1.82	0.43
2:L5:711:A:H2'	2:L5:712:C:C6	2.53	0.43
2:L5:3928:A:H2'	2:L5:3929:G:O4'	2.17	0.43
2:L5:4111:U:H2'	2:L5:4112:C:H5	1.83	0.43
2:L5:4419:U:O2'	83:CB:764:ASN:HB3	2.18	0.43
4:L8:26:C:O2'	7:LC:53:ALA:O	2.35	0.43
18:LO:88:LEU:HD12	18:LO:99:LEU:HD13	2.01	0.43
52:SM:91:LEU:HD23	52:SM:91:LEU:HA	1.80	0.43
56:SS:102:GLY:HA2	56:SS:105:ASN:HD21	1.83	0.43
60:Sc:10:LYS:HE2	60:Sc:34:PHE:CD2	2.53	0.43
67:SE:18:TRP:HH2	67:SE:31:PRO:HD3	1.82	0.43
67:SE:80:ILE:HG23	67:SE:81:THR:HG23	2.00	0.43
67:SE:152:PRO:HG2	68:SG:216:ARG:HG3	2.00	0.43
82:S2:186:C:H2'	82:S2:187:G:H8	1.83	0.43
2:L5:473:C:H2'	2:L5:474:C:C6	2.53	0.43
2:L5:1081:C:C2'	2:L5:1082:C:H5'	2.49	0.43
2:L5:4913:G:H4'	2:L5:4914:C:O5'	2.17	0.43
4:L8:102:G:OP2	4:L8:104:A:O2'	2.30	0.43
6:LB:206:PRO:HG2	6:LB:209:GLN:HG3	1.99	0.43
27:LX:127:LEU:HD11	27:LX:135:LYS:HE3	2.01	0.43
55:SR:111:PHE:HE1	64:SA:12:GLU:HG3	1.84	0.43
57:ST:101:ARG:NH2	82:S2:1566:G:N7	2.65	0.43
59:SZ:86:ALA:O	59:SZ:90:GLU:HG2	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:Sg:10:THR:HB	63:Sg:306:LEU:HD21	2.00	0.43
64:SA:177:MET:SD	64:SA:180:ARG:NH2	2.92	0.43
66:SC:185:THR:OG1	82:S2:1155:U:OP1	2.27	0.43
68:SG:174:PRO:HB3	82:S2:65:C:C6	2.54	0.43
70:SI:65:PHE:HA	70:SI:187:GLY:O	2.18	0.43
77:SX:54:LYS:NZ	77:SX:94:ILE:O	2.49	0.43
77:SX:107:ARG:HG2	77:SX:112:VAL:HG22	2.00	0.43
82:S2:441:C:H2'	82:S2:442:C:C6	2.53	0.43
82:S2:1047:C:H2'	82:S2:1048:G:O4'	2.18	0.43
83:CB:24:VAL:HG12	83:CB:126:LEU:HD23	2.00	0.43
83:CB:108:HIS:HB2	83:CB:111:PHE:CD2	2.52	0.43
2:L5:907:C:H2'	2:L5:908:G:C8	2.53	0.43
2:L5:2864:A:H2'	2:L5:2865:U:H6	1.83	0.43
2:L5:2870:A:H2'	2:L5:2871:A:C8	2.53	0.43
2:L5:3684:G:H2'	2:L5:3685:C:C6	2.54	0.43
2:L5:4238:G:H2'	2:L5:4239:A:C8	2.53	0.43
87:L5:5282:SPD:H82	87:L5:5282:SPD:H51	1.78	0.43
9:LE:194:VAL:O	35:Lf:108:SER:OG	2.29	0.43
13:LI:73:ASN:HB2	13:LI:87:MET:HE1	2.00	0.43
50:SF:130:ARG:CZ	84:Et:37:A:C8	2.97	0.43
55:SR:24:LEU:HD23	55:SR:34:VAL:HG21	2.00	0.43
57:ST:96:SER:HB3	57:ST:99:VAL:HB	1.99	0.43
67:SE:186:GLY:HA3	82:S2:809:A:OP1	2.19	0.43
70:SI:150:ASP:HA	70:SI:153:LYS:CG	2.48	0.43
72:SL:23:VAL:HG23	72:SL:25:LEU:HG	2.00	0.43
75:SV:74:LYS:NZ	75:SV:83:PHE:HB3	2.33	0.43
83:CB:603:TYR:CD2	83:CB:706:ASP:HB3	2.54	0.43
83:CB:770:VAL:HA	83:CB:786:ALA:HA	2.01	0.43
2:L5:173:C:H2'	2:L5:174:C:C6	2.53	0.43
2:L5:264:C:H2'	2:L5:265:C:C4	2.53	0.43
2:L5:494:U:H2'	2:L5:495:C:C6	2.54	0.43
2:L5:1981:G:N1	2:L5:1982:G:O6	2.51	0.43
2:L5:4076:G:H5'	11:LG:73:ARG:HG3	2.00	0.43
5:LA:80:GLU:HB2	5:LA:170:ALA:HA	1.99	0.43
10:LF:236:ARG:HD3	10:LF:239:GLN:HB2	2.01	0.43
12:LH:128:MET:SD	12:LH:157:SER:HB3	2.58	0.43
62:Sf:85:TYR:C	83:CB:647:ARG:HH22	2.27	0.43
63:Sg:54:ILE:HD12	63:Sg:55:PRO:HD2	2.00	0.43
70:SI:141:ARG:NE	82:S2:191:A:OP1	2.52	0.43
82:S2:291:G:HO2'	82:S2:292:A:P	2.41	0.43
82:S2:348:A:H2'	82:S2:349:A:C8	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
84:Et:5:G:H2'	84:Et:6:G:C8	2.51	0.43
1:CI:66:GLY:HA3	33:Ld:70:LYS:NZ	2.34	0.43
2:L5:491:G:H2'	2:L5:492:U:C6	2.54	0.43
2:L5:716:C:OP1	7:LC:317:ASN:HB2	2.19	0.43
2:L5:1466:G:OP2	31:Lb:44:ARG:NH2	2.51	0.43
2:L5:2465:C:H2'	2:L5:2466:G:O4'	2.19	0.43
2:L5:4088:C:H2'	2:L5:4089:G:H8	1.83	0.43
2:L5:4392:OMG:H2'	2:L5:4447:5MC:HM51	2.01	0.43
2:L5:5057:C:H2'	2:L5:5058:A:C8	2.54	0.43
4:L8:58:G:O6	39:Lj:63:ARG:NH1	2.52	0.43
8:LD:203:ASN:OD1	8:LD:203:ASN:N	2.51	0.43
14:LJ:104:ASN:HB2	14:LJ:133:VAL:HA	1.99	0.43
17:LN:90:ASN:O	44:Lo:48:TYR:OH	2.33	0.43
28:LY:22:PRO:HD2	28:LY:25:ILE:HD11	2.00	0.43
65:SB:124:HIS:HA	65:SB:137:LEU:O	2.19	0.43
70:SI:64:ASN:OD1	70:SI:73:THR:HG22	2.18	0.43
70:SI:139:LYS:HE2	70:SI:139:LYS:HB2	1.70	0.43
71:SJ:28:GLU:OE2	71:SJ:44:TRP:NE1	2.41	0.43
82:S2:194:C:H2'	82:S2:195:C:C6	2.53	0.43
82:S2:1278:A:H2'	82:S2:1279:C:C6	2.54	0.43
2:L5:2404:A:H1'	39:Lj:12:ARG:HH21	1.82	0.43
2:L5:2667:C:O4'	21:LR:96:MET:HG2	2.18	0.43
2:L5:3690:U:H2'	2:L5:3691:G:O4'	2.19	0.43
2:L5:4322:G:N2	2:L5:4325:A:OP2	2.43	0.43
3:L7:110:G:H2'	3:L7:111:C:C6	2.54	0.43
5:LA:13:GLY:O	5:LA:17:ARG:HG3	2.18	0.43
5:LA:22:HIS:O	5:LA:24:LYS:NZ	2.49	0.43
6:LB:393:LYS:HG3	6:LB:396:ARG:HH21	1.83	0.43
9:LE:203:ILE:O	9:LE:206:VAL:HG22	2.19	0.43
10:LF:105:VAL:HG13	10:LF:136:VAL:HG12	2.01	0.43
19:LP:76:TRP:CD1	19:LP:76:TRP:H	2.36	0.43
26:LW:52:THR:O	26:LW:56:ARG:HG2	2.18	0.43
50:SF:79:HIS:O	50:SF:81:ARG:N	2.47	0.43
58:SU:38:ASP:OD1	58:SU:39:LEU:N	2.51	0.43
63:Sg:183:LYS:HA	63:Sg:183:LYS:HD2	1.85	0.43
75:SV:17:CYS:HB2	75:SV:56:CYS:HB3	2.01	0.43
78:SY:36:PRO:O	78:SY:40:ILE:HD12	2.18	0.43
82:S2:152:U:H2'	82:S2:153:G:C8	2.54	0.43
82:S2:1243:U:OP2	82:S2:1518:C:O2'	2.25	0.43
83:CB:382:ALA:HA	83:CB:385:ILE:HG12	2.00	0.43
84:Et:23:A:H2'	84:Et:24:G:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:262:G:H2'	2:L5:263:G:C8	2.53	0.43
2:L5:1195:G:H2'	2:L5:1196:G:C8	2.54	0.43
2:L5:3827:G:O2'	2:L5:3829:G:OP2	2.36	0.43
2:L5:4238:G:H2'	2:L5:4239:A:H8	1.84	0.43
3:L7:63:C:H5'	3:L7:64:G:H5''	2.01	0.43
4:L8:36:G:C5	37:Lh:89:ARG:HD3	2.54	0.43
4:L8:144:U:H2'	4:L8:145:C:C6	2.53	0.43
7:LC:279:LEU:HD23	7:LC:279:LEU:HA	1.87	0.43
12:LH:24:THR:HA	12:LH:37:ASP:HA	2.01	0.43
18:LO:124:LEU:HD23	18:LO:124:LEU:HA	1.87	0.43
54:SQ:90:LYS:HA	54:SQ:93:VAL:HG22	2.00	0.43
64:SA:184:ARG:NE	64:SA:191:ARG:HD3	2.33	0.43
65:SB:83:LYS:HD3	65:SB:106:THR:HG22	2.01	0.43
68:SG:14:LYS:HE2	68:SG:16:ILE:HD11	2.01	0.43
71:SJ:5:ARG:HB3	82:S2:38:A:H5''	2.01	0.43
75:SV:18:SER:HB3	75:SV:72:LEU:HD21	2.01	0.43
76:SW:28:ARG:HB3	76:SW:29:PRO:HD3	2.00	0.43
78:SY:9:THR:HG22	82:S2:837:A:H61	1.84	0.43
79:Sa:59:PHE:HB2	79:Sa:62:TYR:HB2	2.01	0.43
82:S2:293:C:O2'	82:S2:294:U:H3'	2.19	0.43
82:S2:517:OMC:H2'	82:S2:518:G:O4'	2.18	0.43
83:CB:851:LEU:HD23	83:CB:857:LYS:HZ1	1.84	0.43
2:L5:922:C:H2'	2:L5:923:C:O4'	2.19	0.43
2:L5:1175:A:H2	2:L5:1185:G:H1	1.66	0.43
2:L5:2421:G:OP2	2:L5:2828:U:H1'	2.19	0.43
2:L5:4887:C:N4	2:L5:4932:U:H3	2.15	0.43
7:LC:318:PRO:O	7:LC:319:LEU:HB2	2.19	0.43
10:LF:147:LEU:O	10:LF:151:ASN:ND2	2.43	0.43
10:LF:214:SER:OG	10:LF:215:SER:N	2.51	0.43
34:Le:35:TRP:CZ2	34:Le:56:PRO:HD2	2.54	0.43
37:Lh:52:LYS:HA	37:Lh:52:LYS:HD3	1.81	0.43
47:Ls:156:SER:CB	83:CB:263:ASP:OD2	2.58	0.43
48:Lt:37:LEU:HD21	83:CB:778:GLY:N	2.34	0.43
63:Sg:59:LEU:HD23	63:Sg:90:TRP:CD2	2.54	0.43
69:SH:58:LYS:HA	69:SH:58:LYS:HD2	1.82	0.43
82:S2:639:C:H2'	82:S2:640:A:C8	2.54	0.43
82:S2:1560:U:O2	82:S2:1575:G:O6	2.37	0.43
82:S2:1683:C:H2'	82:S2:1684:C:H6	1.84	0.43
83:CB:20:ARG:HB3	83:CB:100:ILE:HG23	2.01	0.43
2:L5:1563:A:N6	82:S2:1028:A:N1	2.66	0.43
2:L5:1683:PSU:H2'	2:L5:1684:A:C8	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:1826:G:H4'	31:Lb:43:MET:HE3	2.01	0.43
2:L5:1998:A:N6	47:Ls:40:MET:SD	2.92	0.43
2:L5:2664:G:H4'	2:L5:2677:G:H4'	2.00	0.43
2:L5:2671:C:H2'	2:L5:2672:C:C6	2.54	0.43
3:L7:55:A:H4'	14:LJ:155:HIS:HB2	2.00	0.43
6:LB:154:LYS:HE2	6:LB:154:LYS:HB2	1.70	0.43
14:LJ:77:ALA:O	14:LJ:81:GLU:HG2	2.18	0.43
14:LJ:113:ILE:HD11	56:SS:14:ARG:HD3	2.00	0.43
15:LL:111:GLN:HA	15:LL:114:VAL:HG22	2.01	0.43
28:LY:72:GLN:HE21	28:LY:74:TYR:HD1	1.67	0.43
32:Lc:38:ILE:HG21	32:Lc:63:TYR:HB3	1.99	0.43
51:SK:91:PRO:HB2	51:SK:94:LEU:HD23	2.01	0.43
56:SS:13:LEU:HD22	56:SS:20:ILE:HD11	2.00	0.43
63:Sg:270:LEU:HD13	63:Sg:310:TRP:CE3	2.54	0.43
64:SA:11:LYS:O	64:SA:15:VAL:HG23	2.18	0.43
67:SE:122:LYS:HE2	67:SE:124:CYS:SG	2.58	0.43
82:S2:166:A2M:HM'3	82:S2:166:A2M:H1'	1.68	0.43
82:S2:693:A:H2'	82:S2:694:G:N7	2.33	0.43
82:S2:834:C:H42	82:S2:839:C:H42	1.66	0.43
82:S2:1101:U:H2'	82:S2:1102:G:C8	2.54	0.43
82:S2:1217:A:H2'	82:S2:1218:C:H6	1.83	0.43
83:CB:452:LEU:HD23	83:CB:459:GLU:O	2.19	0.43
2:L5:1278:C:H2'	2:L5:1279:A:O4'	2.18	0.42
2:L5:1404:G:N7	2:L5:1408:G:N1	2.67	0.42
2:L5:1613:A:H5''	5:LA:183:GLY:HA2	2.01	0.42
2:L5:1631:A:C2	5:LA:204:MET:HG2	2.53	0.42
2:L5:1847:C:H2'	2:L5:1848:C:C6	2.54	0.42
2:L5:2017:A:HO2'	2:L5:2018:C:C5'	2.31	0.42
2:L5:2809:G:H5''	21:LR:63:CYS:SG	2.59	0.42
2:L5:3654:G:O2'	2:L5:3693:U:OP1	2.28	0.42
2:L5:3782:5MC:OP1	43:Ln:23:ARG:NH2	2.52	0.42
2:L5:4084:G:O6	5:LA:72:ARG:NH2	2.51	0.42
2:L5:4590:A2M:HM'3	2:L5:4590:A2M:H1'	1.79	0.42
2:L5:4859:C:H2'	2:L5:4860:G:H8	1.84	0.42
2:L5:4927:G:H5''	2:L5:4928:C:C5	2.54	0.42
7:LC:33:ARG:HG2	7:LC:36:ILE:HD12	2.01	0.42
12:LH:95:VAL:HG12	42:Lm:82:LEU:HD13	2.01	0.42
26:LW:47:ARG:HE	26:LW:54:LEU:HD22	1.84	0.42
28:LY:23:SER:HA	28:LY:26:ARG:HB2	2.00	0.42
35:Lf:45:LYS:HA	35:Lf:107:PRO:HD2	2.01	0.42
60:Sc:44:ARG:NH2	60:Sc:63:ARG:HH11	2.17	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:SC:167:ARG:HB3	66:SC:177:PRO:HB2	2.00	0.42
82:S2:1259:A:H1'	82:S2:1264:C:N4	2.34	0.42
2:L5:490:C:H2'	2:L5:491:G:H8	1.83	0.42
2:L5:1669:A:H4'	2:L5:1685:G:N2	2.34	0.42
2:L5:3861:A:H2'	2:L5:3862:A:H8	1.84	0.42
2:L5:4327:C:OP1	23:LT:70:HIS:NE2	2.51	0.42
2:L5:5006:U:H4'	2:L5:5007:A:H5'	2.01	0.42
6:LB:92:TYR:HB3	6:LB:99:LEU:HD22	2.00	0.42
7:LC:221:PHE:O	7:LC:222:ARG:HG2	2.20	0.42
23:LT:44:GLY:HA2	23:LT:95:HIS:HB3	2.01	0.42
32:Lc:47:ILE:HB	32:Lc:94:LEU:HG	2.02	0.42
38:Li:76:ARG:HD3	38:Li:76:ARG:HA	1.79	0.42
48:Lt:114:ARG:NH2	48:Lt:162:CYS:SG	2.92	0.42
56:SS:61:GLU:HA	56:SS:64:VAL:HG12	2.01	0.42
57:ST:62:ARG:CZ	82:S2:1542:C:H5''	2.49	0.42
63:Sg:135:LEU:HD23	63:Sg:135:LEU:HA	1.89	0.42
63:Sg:200:VAL:HA	63:Sg:206:LEU:O	2.19	0.42
64:SA:42:LYS:HD2	64:SA:48:ILE:HD11	2.01	0.42
65:SB:147:ASN:OD1	65:SB:148:ASN:N	2.52	0.42
73:SN:29:THR:O	73:SN:33:VAL:HG23	2.19	0.42
82:S2:454:U:H2'	82:S2:455:A:C8	2.54	0.42
82:S2:1139:C:H2'	82:S2:1140:G:O4'	2.18	0.42
82:S2:1705:C:H2'	82:S2:1706:G:C8	2.54	0.42
83:CB:90:LYS:HE3	83:CB:90:LYS:HB2	1.74	0.42
2:L5:92:C:OP2	2:L5:4341:C:O2'	2.28	0.42
2:L5:457:G:H2'	2:L5:458:C:C6	2.54	0.42
2:L5:1346:C:H2'	2:L5:1347:G:H8	1.84	0.42
2:L5:1979:A:H1'	2:L5:1988:G:N2	2.34	0.42
2:L5:4187:G:OP1	86:L5:5266:SPM:H111	2.19	0.42
2:L5:4742:G:H2'	2:L5:4743:G:C8	2.54	0.42
3:L7:111:C:H2'	3:L7:112:U:O4'	2.19	0.42
6:LB:17:LEU:HD23	6:LB:17:LEU:HA	1.78	0.42
10:LF:92:VAL:O	10:LF:120:GLY:HA2	2.19	0.42
13:LI:14:ASN:O	13:LI:128:ARG:NH2	2.24	0.42
18:LO:56:ALA:O	18:LO:60:LYS:HG2	2.18	0.42
31:Lb:43:MET:HE2	31:Lb:47:LYS:NZ	2.34	0.42
32:Lc:18:LEU:O	32:Lc:22:MET:HG2	2.19	0.42
43:Ln:17:ARG:NH1	82:S2:1173:A:OP1	2.53	0.42
48:Lt:34:PRO:CG	83:CB:777:ALA:N	2.58	0.42
54:SQ:110:ASP:OD1	54:SQ:110:ASP:N	2.49	0.42
65:SB:167:LYS:HE2	65:SB:167:LYS:HB2	1.82	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:SI:161:LEU:HD23	70:SI:195:LEU:HG	2.00	0.42
74:SO:63:LYS:HD3	74:SO:63:LYS:HA	1.87	0.42
74:SO:147:ARG:HH22	82:S2:1854:U:P	2.43	0.42
76:SW:5:ASN:HB3	76:SW:8:ALA:HB3	2.00	0.42
82:S2:1347:U:H2'	82:S2:1348:G:N3	2.34	0.42
82:S2:1540:G:H2'	82:S2:1541:G:H8	1.85	0.42
82:S2:1779:G:H2'	82:S2:1780:G:C8	2.53	0.42
83:CB:86:LEU:HD12	83:CB:89:ILE:HD12	2.00	0.42
2:L5:89:C:OP1	30:La:59:LYS:NZ	2.41	0.42
2:L5:1084:C:H2'	2:L5:1085:C:C6	2.54	0.42
2:L5:1625:OMG:HM23	17:LN:81:TYR:HE2	1.84	0.42
2:L5:2073:C:OP1	10:LF:212:LYS:HE3	2.19	0.42
2:L5:2765:A:H2'	2:L5:2766:A:C8	2.54	0.42
2:L5:2808:G:O3'	21:LR:60:ARG:NH1	2.51	0.42
4:L8:102:G:H5''	39:Lj:39:TYR:HE1	1.83	0.42
6:LB:220:ILE:HG12	6:LB:278:THR:HG23	2.00	0.42
11:LG:176:LYS:HD3	38:Li:43:MET:HE1	2.02	0.42
19:LP:85:LYS:O	19:LP:89:GLU:HG3	2.20	0.42
27:LX:82:THR:HG21	37:Lh:37:THR:HG22	2.01	0.42
44:Lo:78:ARG:O	44:Lo:80:LYS:NZ	2.52	0.42
47:Ls:47:LEU:HD11	47:Ls:51:ALA:HB3	2.02	0.42
65:SB:214:LYS:HE2	65:SB:216:LYS:HE3	2.02	0.42
82:S2:1733:U:H2'	82:S2:1734:G:O4'	2.20	0.42
82:S2:1797:U:H2'	82:S2:1798:C:C6	2.54	0.42
2:L5:120:A:H2'	2:L5:149:A:H61	1.85	0.42
2:L5:252:C:H2'	2:L5:253:G:C8	2.54	0.42
2:L5:408:A:O2'	2:L5:411:G:OP2	2.26	0.42
2:L5:1703:C:O2'	2:L5:1704:C:O5'	2.37	0.42
2:L5:2368:A:N6	2:L5:2827:G:O2'	2.51	0.42
2:L5:2424:OMG:H1'	2:L5:2424:OMG:HM23	1.80	0.42
2:L5:2492:C:H2'	2:L5:2493:G:C8	2.54	0.42
2:L5:2558:C:H2'	2:L5:2559:G:H8	1.84	0.42
2:L5:2638:G:H22	2:L5:2719:C:P	2.42	0.42
2:L5:3718:A2M:H2'	2:L5:3719:A:O4'	2.19	0.42
2:L5:3937:C:O2'	17:LN:124:ASP:OD1	2.38	0.42
2:L5:4685:U:H2'	2:L5:4686:G:C8	2.54	0.42
5:LA:20:VAL:HA	5:LA:23:ARG:HG3	1.99	0.42
10:LF:228:VAL:HG12	22:LS:38:VAL:HG12	2.02	0.42
16:LM:86:TRP:O	16:LM:89:THR:OG1	2.33	0.42
26:LW:97:LYS:O	26:LW:99:GLU:N	2.51	0.42
64:SA:180:ARG:HH11	64:SA:184:ARG:HH11	1.68	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:SA:206:ASP:O	64:SA:210:ILE:HD12	2.18	0.42
67:SE:253:ASP:N	67:SE:253:ASP:OD1	2.51	0.42
75:SV:40:ASP:OD1	75:SV:44:GLY:N	2.52	0.42
82:S2:804:U:H2'	82:S2:805:U:C6	2.54	0.42
83:CB:265:TYR:HA	83:CB:287:ARG:HA	2.01	0.42
83:CB:448:GLN:HB3	83:CB:473:VAL:HG23	2.01	0.42
2:L5:37:U:H2'	2:L5:38:A:O4'	2.19	0.42
2:L5:400:A2M:H1'	2:L5:400:A2M:HM'3	1.63	0.42
2:L5:959:G:C8	9:LE:123:ARG:HG2	2.55	0.42
2:L5:2303:C:H5''	34:Le:104:SER:HB3	2.02	0.42
2:L5:2492:C:H2'	2:L5:2493:G:H8	1.85	0.42
2:L5:2517:A:N3	2:L5:2539:C:O2'	2.50	0.42
2:L5:2607:C:O5'	21:LR:96:MET:HE1	2.20	0.42
2:L5:3725:G:N7	38:Li:67:LYS:NZ	2.50	0.42
2:L5:4419:U:C2	83:CB:765:ARG:HG3	2.54	0.42
4:L8:90:C:H1'	28:LY:24:HIS:HB3	2.01	0.42
23:LT:4:THR:OG1	23:LT:9:ARG:HD3	2.19	0.42
28:LY:74:TYR:HE2	28:LY:77:LYS:HG3	1.85	0.42
44:Lo:4:VAL:HG23	44:Lo:93:LEU:HD23	2.02	0.42
63:Sg:227:LEU:HD23	63:Sg:228:TYR:HB2	2.01	0.42
66:SC:202:THR:HG23	71:SJ:54:ARG:HH22	1.85	0.42
67:SE:128:LYS:HG2	67:SE:140:VAL:HB	2.01	0.42
67:SE:242:LYS:HD3	67:SE:242:LYS:HA	1.75	0.42
68:SG:31:ARG:NH1	82:S2:1745:A:O3'	2.52	0.42
68:SG:164:LYS:HE2	68:SG:164:LYS:HB2	1.90	0.42
68:SG:227:GLN:HB3	68:SG:231:ARG:HH21	1.84	0.42
77:SX:28:LYS:O	77:SX:32:LEU:HB2	2.19	0.42
77:SX:34:THR:HG21	82:S2:1189:A:H4'	2.01	0.42
83:CB:174:LEU:HD23	83:CB:294:LEU:HD13	2.02	0.42
83:CB:289:PHE:HA	83:CB:293:ILE:HD12	2.00	0.42
83:CB:592:LEU:HA	83:CB:602:LEU:O	2.20	0.42
83:CB:609:PHE:CD2	83:CB:699:GLY:HA2	2.55	0.42
84:Et:52:G:H2'	84:Et:53:G:C8	2.54	0.42
2:L5:398:A2M:HM'3	2:L5:398:A2M:H1'	1.79	0.42
2:L5:1396:G:HO2'	2:L5:1468:C:HO2'	1.57	0.42
2:L5:1410:U:H3	31:Lb:52:LYS:NZ	2.17	0.42
2:L5:4535:A:H2'	2:L5:4536:OMC:H6	1.84	0.42
2:L5:4940:C:H5'	2:L5:4941:G:H5''	2.01	0.42
5:LA:7:GLY:HA2	5:LA:10:LYS:HG3	2.02	0.42
8:LD:211:LEU:HB3	8:LD:219:TYR:HB2	2.02	0.42
16:LM:37:LEU:HD12	16:LM:37:LEU:HA	1.82	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LQ:110:ARG:HG3	20:LQ:120:ILE:HD12	2.01	0.42
22:LS:69:GLU:HG3	22:LS:71:SER:H	1.84	0.42
32:Lc:30:GLY:O	32:Lc:34:THR:OG1	2.26	0.42
33:Ld:33:ILE:HD11	33:Ld:45:ALA:HA	2.00	0.42
39:Lj:67:LEU:HD23	39:Lj:67:LEU:HA	1.87	0.42
41:Ll:28:ARG:HA	41:Ll:33:ASN:ND2	2.33	0.42
59:SZ:48:VAL:HG23	59:SZ:80:ARG:HD2	2.01	0.42
63:Sg:101:PHE:CD2	63:Sg:136:GLY:HA2	2.54	0.42
63:Sg:207:CYS:SG	63:Sg:219:TRP:HB2	2.60	0.42
66:SC:214:LEU:HD22	66:SC:244:ILE:HD11	2.02	0.42
72:SL:48:LYS:HD3	72:SL:52:GLU:OE2	2.20	0.42
77:SX:88:ASP:HA	82:S2:617:G:H4'	2.01	0.42
82:S2:1393:G:H2'	82:S2:1394:G:C8	2.55	0.42
82:S2:1401:A:H2'	82:S2:1402:A:C8	2.54	0.42
2:L5:85:G:O2'	2:L5:97:G:O6	2.31	0.42
2:L5:137:G:H2'	2:L5:138:G:C8	2.53	0.42
2:L5:1281:G:C6	9:LE:128:HIS:HB2	2.55	0.42
2:L5:1444:G:H22	2:L5:2104:G:N2	2.18	0.42
2:L5:1824:G:H5''	23:LT:35:LYS:HE2	2.01	0.42
2:L5:3867:A2M:H2'	2:L5:3868:G:O4'	2.19	0.42
2:L5:4458:C:H2'	2:L5:4459:U:C6	2.55	0.42
2:L5:4859:C:H2'	2:L5:4860:G:C8	2.55	0.42
15:LL:59:VAL:HG21	15:LL:73:GLY:HA3	2.01	0.42
15:LL:194:ILE:HD12	15:LL:194:ILE:HA	1.88	0.42
20:LQ:43:PHE:CD2	20:LQ:133:GLY:HA3	2.55	0.42
23:LT:39:ILE:HG13	23:LT:102:ARG:HE	1.85	0.42
28:LY:47:MET:HE3	28:LY:48:PRO:HD2	2.01	0.42
28:LY:50:ARG:NH1	28:LY:51:LYS:HB3	2.35	0.42
34:Le:98:GLU:HG2	34:Le:123:THR:OG1	2.20	0.42
39:Lj:85:LYS:HB3	39:Lj:85:LYS:HE3	1.71	0.42
50:SF:167:LYS:HA	59:SZ:71:ALA:HB1	2.02	0.42
64:SA:5:LEU:HD11	75:SV:41:LYS:HD2	2.01	0.42
64:SA:215:GLN:O	64:SA:219:GLU:HG2	2.19	0.42
67:SE:212:ASP:OD1	67:SE:216:ASN:N	2.52	0.42
69:SH:63:PHE:HB3	69:SH:97:GLN:HG3	2.01	0.42
81:Se:56:ASN:ND2	82:S2:606:G:O4'	2.48	0.42
82:S2:601:OMG:HM23	82:S2:601:OMG:H1'	1.71	0.42
82:S2:888:U:O2'	82:S2:898:U:N3	2.49	0.42
1:CI:63:ARG:HD2	1:CI:63:ARG:HA	1.85	0.42
2:L5:108:A:N1	2:L5:333:U:O2'	2.50	0.42
2:L5:1178:G:H2'	8:LD:286:SER:HB3	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:1392:A:H2'	2:L5:1393:G:C8	2.55	0.42
2:L5:2521:G:H5'	2:L5:2640:G:H1'	2.02	0.42
2:L5:3610:A:H2'	2:L5:3611:A:C8	2.55	0.42
2:L5:4113:U:H4'	2:L5:4115:G:C5	2.55	0.42
2:L5:4195:G:OP1	2:L5:4221:C:O2'	2.36	0.42
6:LB:117:ARG:HA	6:LB:177:LYS:HD2	2.01	0.42
13:LI:51:HIS:CD2	13:LI:168:SER:HB3	2.54	0.42
16:LM:38:VAL:O	16:LM:47:ARG:HA	2.18	0.42
28:LY:50:ARG:HB3	28:LY:53:ASP:OD2	2.20	0.42
48:Lt:34:PRO:CB	83:CB:777:ALA:O	2.68	0.42
48:Lt:147:HIS:HA	48:Lt:148:PRO:HD3	1.83	0.42
52:SM:20:GLU:HG2	52:SM:119:GLN:HB2	2.00	0.42
52:SM:31:LEU:HG	52:SM:33:ARG:HG3	2.01	0.42
53:SP:93:MET:HE1	53:SP:106:GLU:OE1	2.19	0.42
56:SS:78:LYS:HD3	56:SS:78:LYS:HA	1.76	0.42
66:SC:74:LYS:HA	66:SC:74:LYS:HD3	1.89	0.42
69:SH:76:GLN:O	69:SH:80:VAL:HG23	2.20	0.42
74:SO:113:GLN:OE1	79:Sa:46:GLU:N	2.53	0.42
79:Sa:34:LYS:NZ	82:S2:1862:G:N7	2.61	0.42
83:CB:9:ILE:O	83:CB:13:MET:HB2	2.20	0.42
83:CB:398:ILE:HD13	83:CB:414:GLY:HA3	2.02	0.42
1:CI:72:ARG:NH2	21:LR:25:ASP:OD2	2.48	0.42
2:L5:462:G:H2'	2:L5:463:A:C8	2.54	0.42
2:L5:499:G:H2'	2:L5:499:G:N3	2.35	0.42
2:L5:691:C:H2'	2:L5:692:A:H8	1.85	0.42
2:L5:730:G:OP2	10:LF:76:ARG:NE	2.48	0.42
2:L5:982:U:H2'	2:L5:983:C:C6	2.55	0.42
2:L5:1345:A:H2'	2:L5:1346:C:C6	2.55	0.42
2:L5:1538:U:H2'	2:L5:1539:G:H8	1.85	0.42
2:L5:2335:C:H2'	2:L5:2336:G:H8	1.85	0.42
2:L5:2415:U:H2'	2:L5:2416:G:C8	2.55	0.42
2:L5:2845:A:H61	2:L5:3843:C:N4	2.18	0.42
2:L5:4638:U:H2'	2:L5:4639:G:N3	2.35	0.42
2:L5:4987:C:P	6:LB:116:ARG:HH22	2.42	0.42
4:L8:67:U:H2'	4:L8:68:G:C8	2.55	0.42
4:L8:92:U:H2'	4:L8:93:C:O4'	2.20	0.42
9:LE:227:HIS:HE1	9:LE:230:GLY:HA2	1.83	0.42
14:LJ:35:ARG:O	14:LJ:39:VAL:HG23	2.20	0.42
19:LP:32:THR:HG23	19:LP:58:VAL:HG11	2.00	0.42
21:LR:105:LEU:HD23	21:LR:138:LEU:HD23	2.01	0.42
32:Lc:82:GLY:HA2	32:Lc:91:VAL:HG12	2.02	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:Lg:41:ALA:O	36:Lg:52:ARG:HD3	2.20	0.42
50:SF:112:LEU:HD13	50:SF:177:LEU:HD21	2.02	0.42
52:SM:17:ALA:O	52:SM:20:GLU:HG3	2.18	0.42
58:SU:104:ILE:HB	58:SU:106:ILE:HG12	2.01	0.42
60:Sc:44:ARG:HH22	60:Sc:63:ARG:HH11	1.68	0.42
65:SB:71:LEU:HD22	65:SB:82:ARG:HD2	2.02	0.42
74:SO:96:LYS:HD3	74:SO:132:VAL:HG11	2.02	0.42
78:SY:93:ARG:HH21	82:S2:575:A:P	2.42	0.42
82:S2:562:U:H2'	82:S2:563:G:C8	2.55	0.42
82:S2:867:OMG:H1'	82:S2:867:OMG:HM23	1.75	0.42
82:S2:1232:PSU:H2'	82:S2:1233:G:H8	1.85	0.42
82:S2:1759:G:N2	82:S2:1760:G:O6	2.51	0.42
83:CB:300:VAL:HG12	83:CB:315:LEU:HD13	2.01	0.42
83:CB:475:VAL:HA	83:CB:478:PHE:CD2	2.55	0.42
2:L5:223:G:H4'	2:L5:225:G:C8	2.54	0.41
2:L5:1870:C:H2'	2:L5:1871:A2M:H8	2.02	0.41
2:L5:2622:G:O6	24:LU:81:ARG:NH2	2.53	0.41
2:L5:2823:G:N7	21:LR:20:LYS:HD3	2.35	0.41
2:L5:3760:A:N6	83:CB:720:GLN:OE1	2.53	0.41
2:L5:3893:C:O2'	2:L5:4979:A:N1	2.50	0.41
2:L5:4524:G:OP1	2:L5:4559:A:N6	2.47	0.41
5:LA:115:CYS:SG	5:LA:124:GLY:HA3	2.60	0.41
21:LR:99:MET:HE2	21:LR:99:MET:HA	2.02	0.41
22:LS:15:ARG:HD2	22:LS:25:PRO:HG2	2.01	0.41
25:LV:111:GLU:H	25:LV:111:GLU:CD	2.28	0.41
31:Lb:65:MET:HG3	31:Lb:68:ARG:HH12	1.85	0.41
48:Lt:79:ALA:HA	48:Lt:82:ILE:HG22	2.01	0.41
57:ST:71:GLY:O	57:ST:75:MET:HG2	2.20	0.41
58:SU:19:ARG:HH11	58:SU:92:HIS:HB3	1.85	0.41
58:SU:32:LEU:CD1	58:SU:85:HIS:HB2	2.50	0.41
82:S2:186:C:H2'	82:S2:187:G:C8	2.55	0.41
82:S2:838:G:N1	82:S2:840:C:O2'	2.50	0.41
82:S2:1597:C:H4'	82:S2:1603:G:O6	2.19	0.41
82:S2:1713:C:H2'	82:S2:1714:U:C6	2.55	0.41
83:CB:740:LEU:HD11	83:CB:835:VAL:HG23	2.01	0.41
2:L5:513:U:H3'	2:L5:514:U:H4'	2.01	0.41
2:L5:1172:C:O2'	2:L5:1173:G:H8	2.03	0.41
2:L5:1382:G:OP1	15:LL:66:TYR:OH	2.34	0.41
2:L5:2264:C:H2'	2:L5:2265:G:O4'	2.20	0.41
2:L5:3822:PSU:OP1	86:L5:5289:SPM:N5	2.32	0.41
2:L5:4389:C:H2'	2:L5:4390:A:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L7:35:U:O2	3:L7:45:U:O2'	2.35	0.41
6:LB:29:VAL:HA	6:LB:220:ILE:HD13	2.01	0.41
11:LG:178:GLY:O	11:LG:223:ARG:NH2	2.53	0.41
21:LR:35:ALA:HA	21:LR:40:GLN:OE1	2.20	0.41
46:Lr:47:LYS:HB2	46:Lr:102:TYR:CZ	2.55	0.41
49:SD:213:PRO:HB3	55:SR:20:TYR:CE1	2.55	0.41
53:SP:29:SER:HB3	53:SP:32:GLN:NE2	2.34	0.41
69:SH:25:GLN:O	69:SH:28:LEU:HG	2.20	0.41
74:SO:131:ASP:OD1	74:SO:133:THR:OG1	2.33	0.41
82:S2:1348:G:OP2	82:S2:1348:G:N2	2.50	0.41
82:S2:1417:C:O2	82:S2:1422:G:C6	2.74	0.41
83:CB:364:ALA:HA	83:CB:367:TYR:CZ	2.56	0.41
83:CB:533:MET:HE3	83:CB:533:MET:HB3	1.75	0.41
2:L5:956:A:H1'	2:L5:2076:G:H5''	2.01	0.41
2:L5:3722:G:H2'	2:L5:3723:A:H8	1.84	0.41
2:L5:4227:OMU:HM23	2:L5:4227:OMU:H1'	1.85	0.41
5:LA:112:ILE:HD11	45:Lp:79:VAL:HG22	2.03	0.41
14:LJ:119:TYR:CG	56:SS:12:ILE:HG12	2.56	0.41
27:LX:64:SER:HB2	37:Lh:69:LEU:HD13	2.01	0.41
50:SF:123:GLU:OE1	60:Sc:63:ARG:NH2	2.53	0.41
50:SF:131:ALA:HB3	84:Et:39:U:H1'	2.02	0.41
58:SU:61:LEU:HB2	58:SU:82:MET:HB3	2.02	0.41
61:Sd:56:ASP:OXT	82:S2:1480:A:O2'	2.32	0.41
63:Sg:283:PRO:O	63:Sg:285:GLN:NE2	2.53	0.41
68:SG:174:PRO:HG3	82:S2:65:C:C2	2.55	0.41
69:SH:118:ARG:HA	69:SH:118:ARG:HD3	1.91	0.41
78:SY:42:GLU:O	78:SY:46:LYS:HG3	2.20	0.41
82:S2:1839:U:H2'	82:S2:1840:U:C6	2.55	0.41
83:CB:753:GLU:HA	83:CB:756:VAL:HB	2.01	0.41
2:L5:302:C:H2'	2:L5:303:C:C6	2.55	0.41
2:L5:1869:G:C6	87:L5:5284:SPD:H32	2.55	0.41
2:L5:2409:U:H5	2:L5:2783:A:N1	2.18	0.41
2:L5:3865:A:H61	2:L5:3881:G:H1	1.67	0.41
2:L5:4619:U:H2'	2:L5:4620:OMU:H6	2.01	0.41
7:LC:334:THR:HG21	10:LF:51:TYR:OH	2.20	0.41
20:LQ:69:LYS:HA	20:LQ:69:LYS:HD3	1.90	0.41
50:SF:130:ARG:NH2	84:Et:37:A:N7	2.69	0.41
56:SS:113:ARG:O	56:SS:117:ILE:HG12	2.19	0.41
61:Sd:13:LYS:HG3	82:S2:1556:A:C8	2.55	0.41
62:Sf:108:VAL:HB	62:Sf:113:LYS:H	1.86	0.41
63:Sg:153:CYS:O	63:Sg:167:SER:HA	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:SB:141:GLY:HA3	65:SB:207:LEU:HD23	2.03	0.41
71:SJ:176:LYS:HA	71:SJ:179:LYS:HG2	2.01	0.41
79:Sa:39:PHE:CE2	79:Sa:41:ILE:HD11	2.54	0.41
81:Se:8:ARG:NH1	82:S2:615:C:O3'	2.53	0.41
83:CB:766:LYS:HB3	83:CB:788:LEU:HD11	2.02	0.41
2:L5:2861:OMC:H1'	2:L5:2861:OMC:HM23	1.86	0.41
2:L5:4522:G:O2'	2:L5:4525:C:OP2	2.31	0.41
2:L5:4607:A:H5'	83:CB:552:LEU:HD22	2.02	0.41
2:L5:4637:OMG:HM23	2:L5:4637:OMG:H1'	1.78	0.41
6:LB:337:VAL:HG11	6:LB:345:LEU:HD13	2.03	0.41
9:LE:282:TYR:HE1	35:Lf:31:GLU:HG2	1.85	0.41
13:LI:84:GLY:O	13:LI:140:THR:OG1	2.29	0.41
19:LP:95:LEU:HD23	19:LP:95:LEU:HA	1.95	0.41
22:LS:93:MET:HE1	22:LS:117:HIS:CE1	2.55	0.41
32:Lc:50:ASN:ND2	32:Lc:76:GLY:O	2.54	0.41
50:SF:59:LYS:HB3	50:SF:62:ARG:HG3	2.03	0.41
50:SF:60:ARG:HE	82:S2:1679:A:P	2.43	0.41
63:Sg:101:PHE:CE2	63:Sg:136:GLY:HA2	2.55	0.41
63:Sg:125:ARG:HD3	63:Sg:150:TRP:CE2	2.56	0.41
69:SH:43:LEU:HB3	69:SH:72:PHE:CE1	2.56	0.41
82:S2:71:G:H2'	82:S2:72:C:H4'	2.01	0.41
82:S2:1328:OMG:H1'	82:S2:1328:OMG:HM23	1.81	0.41
82:S2:1670:C:H2'	82:S2:1671:G:C8	2.55	0.41
82:S2:1845:A:H2'	82:S2:1846:G:H8	1.84	0.41
83:CB:44:GLY:HA2	83:CB:77:LEU:HA	2.02	0.41
83:CB:451:ILE:HG13	83:CB:459:GLU:O	2.20	0.41
84:Et:25:C:H2'	84:Et:26:A:H5''	2.02	0.41
2:L5:279:A:OP2	17:LN:8:GLN:NE2	2.42	0.41
2:L5:654:C:O3'	7:LC:268:ARG:NH1	2.52	0.41
2:L5:1973:G:O2'	48:Lt:117:ARG:NH2	2.48	0.41
2:L5:2743:A:H2'	2:L5:2744:A:C8	2.56	0.41
2:L5:4318:C:H4'	44:Lo:17:LYS:HA	2.02	0.41
2:L5:4739:C:H2'	2:L5:4740:G:H5'	2.03	0.41
8:LD:52:ILE:HA	8:LD:147:ASP:HB3	2.02	0.41
8:LD:86:TYR:CE1	8:LD:247:ILE:HG13	2.55	0.41
11:LG:30:PRO:HG2	29:LZ:124:THR:HA	2.02	0.41
17:LN:159:ARG:HB3	17:LN:164:LEU:HB2	2.01	0.41
34:Le:19:LYS:HE3	34:Le:19:LYS:HB3	1.90	0.41
34:Le:89:LEU:HD13	34:Le:118:LEU:HD22	2.03	0.41
34:Le:99:ILE:HD13	34:Le:108:ARG:HB2	2.03	0.41
47:Ls:57:LYS:O	47:Ls:61:MET:HG2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
51:SK:64:TRP:CD2	61:Sd:23:VAL:HG22	2.55	0.41
53:SP:86:LEU:H	53:SP:89:MET:CE	2.33	0.41
66:SC:212:LYS:HE2	66:SC:212:LYS:HB3	1.86	0.41
68:SG:191:ARG:NH1	82:S2:312:G:H2'	2.35	0.41
73:SN:7:PRO:HG3	82:S2:996:A:H5''	2.01	0.41
82:S2:352:U:H2'	82:S2:353:C:C6	2.56	0.41
82:S2:382:C:H2'	82:S2:383:G:C8	2.56	0.41
82:S2:1754:G:N7	82:S2:1779:G:N2	2.67	0.41
83:CB:27:HIS:HB3	83:CB:30:HIS:NE2	2.36	0.41
2:L5:270:U:H2'	2:L5:271:C:C6	2.56	0.41
2:L5:492:U:H2'	2:L5:493:G:O4'	2.20	0.41
2:L5:1174:G:H1	2:L5:1186:U:H3	1.68	0.41
2:L5:1972:G:H2'	2:L5:1973:G:C8	2.56	0.41
2:L5:2060:G:N2	22:LS:115:ALA:HB2	2.36	0.41
2:L5:2422:OMC:HM23	2:L5:2422:OMC:H1'	1.90	0.41
2:L5:2656:U:H5''	29:LZ:38:TYR:HB3	2.02	0.41
2:L5:2844:A:O2'	2:L5:4631:G:H4'	2.21	0.41
2:L5:3689:G:O2'	2:L5:3818:UY1:OP2	2.34	0.41
2:L5:3785:A2M:H2	2:L5:4551:U:O2	2.20	0.41
2:L5:4102:C:H1'	2:L5:4108:G:H1	1.86	0.41
2:L5:4260:U:H2'	2:L5:4261:C:H6	1.83	0.41
4:L8:39:G:H1'	4:L8:103:A:N6	2.36	0.41
4:L8:47:C:H1'	4:L8:61:A:H2'	2.01	0.41
6:LB:286:LYS:HB3	6:LB:332:MET:HB3	2.03	0.41
8:LD:209:ARG:O	8:LD:213:GLU:HG2	2.21	0.41
18:LO:28:LEU:HD23	18:LO:28:LEU:HA	1.95	0.41
22:LS:83:ARG:HG3	22:LS:125:GLN:HB2	2.02	0.41
27:LX:81:LEU:HG	27:LX:83:THR:HG23	2.03	0.41
55:SR:7:LYS:HG3	82:S2:1373:C:OP1	2.20	0.41
55:SR:109:LEU:HG	55:SR:111:PHE:HD2	1.85	0.41
62:Sf:117:LEU:HD12	62:Sf:118:ARG:HD3	2.01	0.41
64:SA:147:LEU:HD13	64:SA:161:ILE:HB	2.03	0.41
67:SE:27:PHE:O	82:S2:495:U:O2'	2.38	0.41
70:SI:114:GLU:HG3	70:SI:119:LEU:O	2.21	0.41
71:SJ:142:VAL:HG12	71:SJ:144:ILE:H	1.85	0.41
76:SW:106:THR:OG1	76:SW:111:MET:HE2	2.21	0.41
82:S2:1374:C:H2'	82:S2:1375:G:O4'	2.21	0.41
83:CB:397:TYR:HB2	83:CB:494:MET:SD	2.61	0.41
83:CB:712:ASP:O	83:CB:716:ARG:HG2	2.20	0.41
83:CB:751:CYS:O	83:CB:782:PHE:HB2	2.21	0.41
2:L5:135:G:N3	2:L5:135:G:H2'	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:L5:1308:C:H2'	2:L5:1309:C:C6	2.56	0.41
2:L5:3607:U:H2'	2:L5:3608:A:C8	2.56	0.41
2:L5:4291:G:H4'	2:L5:4292:A:H5''	2.03	0.41
2:L5:4306:OMU:HM23	2:L5:4306:OMU:H1'	1.93	0.41
2:L5:4419:U:O4'	83:CB:765:ARG:CG	2.66	0.41
2:L5:4578:G:H2'	2:L5:4579:PSU:C6	2.56	0.41
2:L5:4770:U:H2'	2:L5:4771:C:C6	2.56	0.41
8:LD:37:VAL:HG12	8:LD:50:ARG:HD3	2.02	0.41
11:LG:160:ASP:OD1	11:LG:160:ASP:N	2.54	0.41
15:LL:18:TRP:CD1	15:LL:18:TRP:H	2.38	0.41
29:LZ:95:VAL:HG12	29:LZ:110:ALA:HA	2.03	0.41
32:Lc:20:LEU:O	32:Lc:24:SER:HB3	2.21	0.41
34:Le:85:LEU:HD21	34:Le:115:ALA:HB2	2.02	0.41
35:Lf:29:LYS:HB2	35:Lf:83:MET:HE1	2.02	0.41
53:SP:133:ILE:HG22	83:CB:708:THR:HB	1.91	0.41
59:SZ:102:LYS:HA	59:SZ:102:LYS:HD3	1.81	0.41
64:SA:80:ARG:HH21	64:SA:126:ASP:HB2	1.86	0.41
65:SB:120:MET:HE1	82:S2:987:A:C6	2.56	0.41
66:SC:64:THR:HG22	66:SC:66:LEU:N	2.35	0.41
68:SG:195:LYS:HD3	82:S2:126:G:H5'	2.03	0.41
69:SH:58:LYS:HB2	69:SH:90:LYS:HG2	2.03	0.41
75:SV:27:LYS:HD3	75:SV:27:LYS:HA	1.86	0.41
77:SX:9:THR:HG22	82:S2:681:PSU:H4'	2.03	0.41
83:CB:330:LYS:HD3	83:CB:334:PRO:HB2	2.03	0.41
2:L5:260:C:H2'	2:L5:261:G:C8	2.55	0.41
2:L5:262:G:H2'	2:L5:263:G:H8	1.85	0.41
2:L5:1352:C:O2'	2:L5:1356:U:OP1	2.34	0.41
2:L5:1403:G:N2	2:L5:1415:G:C4	2.89	0.41
2:L5:1751:A:H2'	2:L5:1752:G:H8	1.86	0.41
2:L5:2276:A:H2'	2:L5:2277:C:O4'	2.21	0.41
2:L5:2448:G:H2'	2:L5:2449:A:C8	2.56	0.41
2:L5:2461:G:H2'	2:L5:2462:C:C6	2.55	0.41
2:L5:2543:A:H2	2:L5:2773:G:H22	1.68	0.41
2:L5:2876:OMG:HM22	2:L5:2877:G:H5'	2.02	0.41
2:L5:2878:G:OP2	2:L5:2879:A:O2'	2.28	0.41
2:L5:4236:G:H4'	2:L5:4328:G:O2'	2.21	0.41
2:L5:4680:G:H2'	2:L5:4681:A:C8	2.55	0.41
2:L5:4710:C:H2'	2:L5:4711:C:C6	2.56	0.41
2:L5:4749:C:H2'	2:L5:4750:G:O4'	2.21	0.41
2:L5:4920:C:H2'	2:L5:4921:C:H6	1.86	0.41
2:L5:5002:U:H2'	2:L5:5003:U:C6	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L7:7:G:H5''	8:LD:22:ARG:HD3	2.03	0.41
4:L8:149:G:H21	11:LG:64:GLN:HE22	1.69	0.41
6:LB:71:GLU:HB2	26:LW:2:LYS:HD3	2.02	0.41
6:LB:122:TRP:CE2	6:LB:127:LYS:HE3	2.56	0.41
13:LI:207:ASP:HA	13:LI:210:ARG:HG2	2.03	0.41
14:LJ:20:LEU:HD21	14:LJ:130:PHE:CD2	2.56	0.41
16:LM:37:LEU:HD22	22:LS:75:VAL:HG23	2.02	0.41
18:LO:142:ALA:HA	18:LO:145:VAL:HG12	2.02	0.41
28:LY:74:TYR:CE2	28:LY:77:LYS:HG3	2.56	0.41
34:Le:100:ALA:HB3	34:Le:103:VAL:HG23	2.03	0.41
35:Lf:92:LEU:HD23	35:Lf:92:LEU:HA	1.90	0.41
36:Lg:33:LEU:HD23	36:Lg:33:LEU:HA	1.91	0.41
47:Ls:139:GLN:OE1	83:CB:180:ARG:CB	2.69	0.41
47:Ls:145:THR:O	83:CB:183:GLU:CD	2.63	0.41
48:Lt:12:VAL:HG11	48:Lt:65:GLN:N	2.36	0.41
48:Lt:114:ARG:NH1	48:Lt:126:SER:O	2.44	0.41
52:SM:95:ASP:HB3	52:SM:99:LYS:HB3	2.03	0.41
53:SP:133:ILE:CG2	83:CB:708:THR:HA	2.35	0.41
54:SQ:128:GLU:HG2	54:SQ:137:ALA:HB1	2.02	0.41
57:ST:113:VAL:HG22	57:ST:123:LEU:HD23	2.02	0.41
59:SZ:68:ILE:HB	59:SZ:109:TYR:HB2	2.03	0.41
64:SA:122:LEU:HD22	64:SA:137:ALA:HB2	2.01	0.41
64:SA:172:GLY:HA3	64:SA:203:PHE:HD1	1.85	0.41
64:SA:219:GLU:HA	64:SA:222:VAL:HG12	2.03	0.41
67:SE:160:ILE:HD12	67:SE:162:ILE:HD11	2.02	0.41
69:SH:91:HIS:ND1	69:SH:169:LYS:HG2	2.35	0.41
70:SI:42:ARG:HH21	70:SI:59:ARG:NH1	2.19	0.41
70:SI:141:ARG:HA	70:SI:141:ARG:CZ	2.51	0.41
73:SN:37:ILE:HG23	73:SN:50:ILE:HG21	2.03	0.41
75:SV:11:LEU:HD23	75:SV:11:LEU:H	1.85	0.41
76:SW:57:ARG:NH2	80:Sb:26:GLN:HB2	2.36	0.41
76:SW:125:ILE:HA	76:SW:125:ILE:HD12	1.84	0.41
77:SX:139:GLU:HG2	83:CB:443:TYR:CE1	2.56	0.41
82:S2:43:U:OP2	82:S2:485:A:N6	2.47	0.41
82:S2:484:A2M:H8	82:S2:484:A2M:O5'	2.20	0.41
82:S2:693:A:H2	82:S2:739:C:H4'	1.84	0.41
82:S2:747:U:O2	82:S2:796:G:C2	2.74	0.41
82:S2:1223:A:H2'	82:S2:1224:G:O4'	2.21	0.41
82:S2:1446:A:O2'	82:S2:1447:G:H5''	2.20	0.41
83:CB:22:MET:HE2	83:CB:22:MET:HB2	1.95	0.41
83:CB:45:ILE:HG13	83:CB:46:ILE:N	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:CB:845:LYS:HA	83:CB:845:LYS:HD2	1.92	0.41
2:L5:126:C:H2'	2:L5:127:G:H8	1.85	0.41
2:L5:267:G:H2'	2:L5:268:G:C8	2.54	0.41
2:L5:1247:U:H2'	2:L5:1248:C:C6	2.56	0.41
2:L5:2412:A:H2'	2:L5:2413:U:C6	2.56	0.41
2:L5:2749:C:H2'	2:L5:2750:G:C8	2.56	0.41
3:L7:4:U:H2'	3:L7:5:A:C8	2.56	0.41
3:L7:26:C:O2'	14:LJ:147:ARG:NH1	2.52	0.41
20:LQ:59:PRO:HG3	20:LQ:143:ARG:HA	2.02	0.41
24:LU:80:LYS:HG2	24:LU:110:TYR:CE2	2.54	0.41
37:Lh:104:THR:O	37:Lh:108:GLN:HG2	2.21	0.41
48:Lt:131:GLU:OE2	48:Lt:155:ILE:HG21	2.21	0.41
50:SF:182:LYS:HE3	50:SF:182:LYS:HB2	1.89	0.41
51:SK:80:ARG:HH22	51:SK:90:VAL:HG12	1.86	0.41
52:SM:86:GLY:HA2	52:SM:89:VAL:HG12	2.02	0.41
53:SP:47:ARG:NE	82:S2:1619:A:OP1	2.40	0.41
55:SR:6:THR:HA	82:S2:1373:C:H5'	2.03	0.41
61:Sd:3:HIS:CE1	61:Sd:5:GLN:HB2	2.56	0.41
61:Sd:41:GLN:OE1	61:Sd:41:GLN:N	2.54	0.41
62:Sf:125:GLU:HG2	62:Sf:126:CYS:N	2.36	0.41
64:SA:164:ASN:OD1	64:SA:165:ASN:N	2.54	0.41
65:SB:136:ARG:O	65:SB:215:VAL:HA	2.21	0.41
68:SG:133:LEU:HB2	82:S2:65:C:C2	2.56	0.41
68:SG:136:LYS:O	68:SG:176:ILE:HG13	2.20	0.41
71:SJ:59:GLU:O	71:SJ:62:THR:OG1	2.32	0.41
79:Sa:36:ILE:HD11	79:Sa:75:VAL:HG12	2.02	0.41
82:S2:433:A:H2'	82:S2:434:G:C8	2.57	0.41
82:S2:462:OMC:HM23	82:S2:462:OMC:H1'	1.85	0.41
82:S2:692:G:N7	82:S2:693:A:N6	2.68	0.41
82:S2:815:U:C2	82:S2:816:A:C8	3.09	0.41
82:S2:1025:U:H2'	82:S2:1026:C:O4'	2.21	0.41
82:S2:1540:G:H2'	82:S2:1541:G:C8	2.56	0.41
83:CB:267:ASP:HB2	83:CB:285:LEU:HD23	2.02	0.41
2:L5:73:A:H5''	15:LL:105:LYS:HD3	2.02	0.40
2:L5:652:G:H2'	2:L5:653:U:C6	2.56	0.40
2:L5:1086:C:H2'	2:L5:1087:A:H8	1.85	0.40
2:L5:1631:A:C8	5:LA:199:VAL:HG21	2.56	0.40
2:L5:1962:A:H2	2:L5:2024:G:H21	1.67	0.40
2:L5:2497:C:H2'	2:L5:2498:C:H6	1.86	0.40
2:L5:4070:U:H2'	2:L5:4071:U:C6	2.56	0.40
5:LA:145:LYS:HA	5:LA:145:LYS:HD3	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:LC:158:VAL:HG12	7:LC:217:ILE:HD12	2.02	0.40
8:LD:239:MET:HA	8:LD:242:LYS:NZ	2.35	0.40
10:LF:148:LYS:O	10:LF:152:GLU:HG2	2.21	0.40
11:LG:207:VAL:O	11:LG:212:LYS:NZ	2.55	0.40
13:LI:51:HIS:ND1	13:LI:137:SER:OG	2.49	0.40
21:LR:82:LYS:HA	21:LR:82:LYS:HD2	1.89	0.40
23:LT:50:LYS:HB3	23:LT:50:LYS:HE2	1.80	0.40
28:LY:126:ARG:HG2	28:LY:130:LYS:HE2	2.03	0.40
36:Lg:60:ARG:HD2	36:Lg:60:ARG:HA	1.84	0.40
48:Lt:22:VAL:HA	48:Lt:48:LYS:HG2	2.02	0.40
48:Lt:28:LEU:O	48:Lt:32:ILE:HD12	2.20	0.40
58:SU:52:GLY:HA3	82:S2:1401:A:H4'	2.03	0.40
66:SC:256:TRP:CE2	76:SW:68:ARG:HD3	2.56	0.40
69:SH:17:ASP:OD1	69:SH:17:ASP:N	2.51	0.40
70:SI:192:GLY:O	70:SI:196:GLU:HG3	2.22	0.40
82:S2:368:U:H3'	82:S2:369:C:H2'	2.03	0.40
82:S2:496:C:H2'	82:S2:497:C:H6	1.86	0.40
82:S2:880:G:H3'	82:S2:881:G:H8	1.85	0.40
83:CB:13:MET:HE2	83:CB:468:ASN:HB3	2.03	0.40
83:CB:649:ILE:HD13	83:CB:663:THR:HB	2.03	0.40
84:Et:40:C:H2'	84:Et:41:U:H6	1.86	0.40
2:L5:302:C:H2'	2:L5:303:C:H6	1.87	0.40
2:L5:423:G:H2'	2:L5:424:U:C6	2.57	0.40
2:L5:1974:U:H4'	2:L5:1975:G:H3'	2.03	0.40
2:L5:2683:C:H2'	2:L5:2684:C:C6	2.57	0.40
2:L5:4196:OMG:HM23	2:L5:4196:OMG:H1'	1.70	0.40
2:L5:4232:U:H5'	44:Lo:3:ASN:HB3	2.03	0.40
2:L5:4616:A:H2'	2:L5:4617:G:O4'	2.21	0.40
2:L5:4906:C:H2'	2:L5:4907:G:H8	1.86	0.40
2:L5:5015:G:H2'	2:L5:5016:A:C2	2.57	0.40
12:LH:27:VAL:HG12	12:LH:84:VAL:HG21	2.03	0.40
12:LH:43:VAL:HG21	12:LH:73:ILE:HD13	2.03	0.40
27:LX:80:PRO:HA	27:LX:98:PHE:HA	2.01	0.40
48:Lt:114:ARG:O	48:Lt:117:ARG:HG2	2.22	0.40
48:Lt:150:ASP:OD1	48:Lt:151:ILE:N	2.53	0.40
63:Sg:191:HIS:CD2	63:Sg:195:LEU:HD11	2.56	0.40
65:SB:114:VAL:O	82:S2:1869:A:N6	2.53	0.40
70:SI:5:ARG:NE	82:S2:379:C:O2	2.54	0.40
82:S2:64:A:N6	82:S2:83:A:OP2	2.54	0.40
82:S2:835:C:H4'	82:S2:836:G:H8	1.86	0.40
82:S2:1112:U:O2	82:S2:1121:G:O6	2.40	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
82:S2:1719:A:N6	82:S2:1814:G:O2'	2.54	0.40
2:L5:31:U:H2'	2:L5:32:G:O4'	2.21	0.40
2:L5:1186:U:H2'	2:L5:1187:G:N3	2.36	0.40
2:L5:1558:A:H2'	2:L5:1559:G:C8	2.56	0.40
2:L5:1794:A:H5''	2:L5:4214:A:H61	1.86	0.40
2:L5:2632:PSU:H2'	2:L5:2633:U:C6	2.56	0.40
2:L5:3951:G:H1'	2:L5:4062:A:H61	1.86	0.40
2:L5:4169:G:H4'	2:L5:4171:C:C2	2.56	0.40
2:L5:4232:U:H5''	44:Lo:3:ASN:O	2.21	0.40
5:LA:75:LEU:HD12	5:LA:75:LEU:HA	1.91	0.40
5:LA:150:LEU:HD11	5:LA:156:LYS:HD2	2.03	0.40
26:LW:102:LYS:HA	26:LW:105:ARG:HG2	2.03	0.40
36:Lg:84:ALA:O	36:Lg:88:ARG:HG3	2.20	0.40
40:Lk:25:ILE:HD13	40:Lk:57:LYS:HZ3	1.84	0.40
45:Lp:23:ARG:HA	45:Lp:26:VAL:HG12	2.04	0.40
47:Ls:58:ASN:O	47:Ls:62:ARG:NE	2.42	0.40
48:Lt:37:LEU:HA	48:Lt:40:LYS:HE3	2.03	0.40
50:SF:100:ILE:HD11	50:SF:108:PRO:HB3	2.02	0.40
52:SM:112:LYS:HE2	52:SM:112:LYS:HB2	1.83	0.40
54:SQ:34:VAL:HG22	54:SQ:70:VAL:HB	2.03	0.40
63:Sg:230:LEU:HD11	63:Sg:259:TRP:CG	2.56	0.40
63:Sg:251:ALA:HA	63:Sg:256:ILE:HD13	2.04	0.40
65:SB:67:PHE:CE2	74:SO:48:SER:HB3	2.56	0.40
74:SO:140:THR:HB	82:S2:1046:PSU:H1'	2.03	0.40
77:SX:22:TRP:HE3	77:SX:28:LYS:HD2	1.85	0.40
81:Se:36:MET:SD	81:Se:40:ARG:NE	2.87	0.40
82:S2:323:C:H5'	82:S2:324:C:OP1	2.21	0.40
82:S2:737:G:H2'	82:S2:738:C:H4'	2.03	0.40
82:S2:1406:G:H2'	82:S2:1407:U:C6	2.57	0.40
83:CB:447:ILE:HG21	83:CB:472:LEU:HD22	2.03	0.40
2:L5:223:G:N7	7:LC:165:LYS:HE3	2.37	0.40
2:L5:1307:A:H2'	2:L5:1308:C:C6	2.57	0.40
2:L5:1494:U:H2'	2:L5:1495:G:C8	2.57	0.40
2:L5:1806:G:H2'	2:L5:1807:C:H6	1.86	0.40
2:L5:3652:A:H2'	2:L5:3653:A:C5	2.56	0.40
2:L5:4153:C:H2'	2:L5:4154:G:H8	1.87	0.40
2:L5:4571:A2M:H2'	2:L5:4572:U:H6	1.86	0.40
3:L7:4:U:H2'	3:L7:5:A:H8	1.86	0.40
3:L7:7:G:OP1	8:LD:33:ARG:NH1	2.52	0.40
5:LA:131:GLY:N	5:LA:169:VAL:HG13	2.36	0.40
8:LD:53:VAL:HG11	8:LD:159:VAL:HA	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LQ:32:TYR:HD1	20:LQ:32:TYR:HA	1.72	0.40
36:Lg:41:ALA:O	36:Lg:52:ARG:NH1	2.49	0.40
67:SE:89:VAL:HG11	67:SE:119:ALA:HB1	2.02	0.40
70:SI:129:LEU:HD12	70:SI:129:LEU:HA	1.91	0.40
77:SX:68:LYS:HG2	77:SX:91:LEU:HD22	2.04	0.40
82:S2:874:G:H2'	82:S2:875:A:C8	2.52	0.40
83:CB:521:VAL:HA	83:CB:524:LEU:HB2	2.03	0.40
83:CB:524:LEU:HD11	83:CB:546:ILE:HD11	2.04	0.40
84:Et:39:U:H2'	84:Et:40:C:H6	1.87	0.40
2:L5:683:C:H2'	2:L5:684:G:O4'	2.21	0.40
2:L5:1081:C:O2'	2:L5:1082:C:H5'	2.21	0.40
2:L5:1419:G:H5''	20:LQ:71:LYS:NZ	2.37	0.40
2:L5:1588:U:H2'	2:L5:1589:C:C6	2.57	0.40
2:L5:1645:C:H2'	2:L5:1646:A:C8	2.56	0.40
2:L5:4069:U:H2'	2:L5:4070:U:C6	2.57	0.40
2:L5:4305:G:C6	23:LT:80:VAL:HG21	2.56	0.40
2:L5:4415:A:OP1	13:LI:154:ARG:NH2	2.54	0.40
2:L5:4625:C:O2'	2:L5:4626:A:H5'	2.22	0.40
2:L5:4991:U:H2'	2:L5:4992:G:C8	2.56	0.40
5:LA:14:SER:OG	5:LA:15:VAL:N	2.54	0.40
14:LJ:40:LEU:HD23	14:LJ:40:LEU:HA	1.92	0.40
27:LX:88:LYS:HE3	27:LX:88:LYS:HB2	1.95	0.40
50:SF:97:PHE:HA	50:SF:100:ILE:HG12	2.03	0.40
63:Sg:66:VAL:HA	63:Sg:82:SER:HB2	2.03	0.40
63:Sg:314:ILE:HD12	63:Sg:314:ILE:HA	1.92	0.40
64:SA:57:LYS:HA	64:SA:57:LYS:HD2	1.79	0.40
65:SB:89:GLU:OE2	65:SB:99:ASN:HB3	2.21	0.40
69:SH:113:LYS:HA	69:SH:113:LYS:HD2	1.64	0.40
71:SJ:124:HIS:HD2	81:Se:31:ARG:HE	1.69	0.40
73:SN:94:LYS:HE2	73:SN:94:LYS:HB2	1.93	0.40
77:SX:52:LEU:N	77:SX:71:ARG:O	2.53	0.40
80:Sb:33:MET:HE3	80:Sb:48:SER:HA	2.04	0.40
82:S2:1351:G:O2'	82:S2:1378:A:N1	2.55	0.40
82:S2:1360:U:O2'	82:S2:1379:A:OP2	2.33	0.40
84:Et:25:C:H3'	84:Et:26:A:H5''	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	CI	29/31 (94%)	29 (100%)	0	0	100	100
5	LA	246/248 (99%)	228 (93%)	18 (7%)	0	100	100
6	LB	400/402 (100%)	383 (96%)	17 (4%)	0	100	100
7	LC	366/368 (100%)	351 (96%)	15 (4%)	0	100	100
8	LD	291/293 (99%)	283 (97%)	8 (3%)	0	100	100
9	LE	236/250 (94%)	224 (95%)	12 (5%)	0	100	100
10	LF	223/225 (99%)	216 (97%)	7 (3%)	0	100	100
11	LG	239/241 (99%)	225 (94%)	14 (6%)	0	100	100
12	LH	188/190 (99%)	184 (98%)	4 (2%)	0	100	100
13	LI	211/213 (99%)	204 (97%)	7 (3%)	0	100	100
14	LJ	168/176 (96%)	162 (96%)	6 (4%)	0	100	100
15	LL	208/210 (99%)	201 (97%)	7 (3%)	0	100	100
16	LM	137/139 (99%)	131 (96%)	6 (4%)	0	100	100
17	LN	201/203 (99%)	198 (98%)	3 (2%)	0	100	100
18	LO	199/201 (99%)	194 (98%)	5 (2%)	0	100	100
19	LP	151/153 (99%)	146 (97%)	5 (3%)	0	100	100
20	LQ	185/187 (99%)	181 (98%)	4 (2%)	0	100	100
21	LR	185/187 (99%)	181 (98%)	4 (2%)	0	100	100
22	LS	173/175 (99%)	164 (95%)	9 (5%)	0	100	100
23	LT	157/159 (99%)	153 (98%)	4 (2%)	0	100	100
24	LU	99/101 (98%)	94 (95%)	5 (5%)	0	100	100
25	LV	129/131 (98%)	123 (95%)	6 (5%)	0	100	100
26	LW	112/124 (90%)	107 (96%)	5 (4%)	0	100	100
27	LX	118/120 (98%)	117 (99%)	1 (1%)	0	100	100
28	LY	132/134 (98%)	129 (98%)	3 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
29	LZ	133/135 (98%)	125 (94%)	8 (6%)	0	100	100
30	La	145/147 (99%)	138 (95%)	7 (5%)	0	100	100
31	Lb	105/121 (87%)	99 (94%)	6 (6%)	0	100	100
32	Lc	96/98 (98%)	93 (97%)	3 (3%)	0	100	100
33	Ld	105/107 (98%)	101 (96%)	4 (4%)	0	100	100
34	Le	126/128 (98%)	125 (99%)	1 (1%)	0	100	100
35	Lf	107/109 (98%)	106 (99%)	1 (1%)	0	100	100
36	Lg	112/114 (98%)	111 (99%)	1 (1%)	0	100	100
37	Lh	120/122 (98%)	116 (97%)	4 (3%)	0	100	100
38	Li	100/102 (98%)	98 (98%)	2 (2%)	0	100	100
39	Lj	84/86 (98%)	83 (99%)	1 (1%)	0	100	100
40	Lk	67/69 (97%)	65 (97%)	2 (3%)	0	100	100
41	Ll	48/50 (96%)	48 (100%)	0	0	100	100
42	Lm	50/52 (96%)	50 (100%)	0	0	100	100
43	Ln	22/24 (92%)	22 (100%)	0	0	100	100
44	Lo	103/105 (98%)	98 (95%)	5 (5%)	0	100	100
45	Lp	89/91 (98%)	85 (96%)	4 (4%)	0	100	100
46	Lr	123/125 (98%)	121 (98%)	2 (2%)	0	100	100
47	Ls	194/196 (99%)	180 (93%)	14 (7%)	0	100	100
48	Lt	128/157 (82%)	111 (87%)	17 (13%)	0	100	100
49	SD	225/227 (99%)	219 (97%)	6 (3%)	0	100	100
50	SF	187/189 (99%)	175 (94%)	12 (6%)	0	100	100
51	SK	96/98 (98%)	87 (91%)	9 (9%)	0	100	100
52	SM	120/122 (98%)	113 (94%)	7 (6%)	0	100	100
53	SP	119/121 (98%)	116 (98%)	3 (2%)	0	100	100
54	SQ	142/144 (99%)	130 (92%)	12 (8%)	0	100	100
55	SR	133/135 (98%)	126 (95%)	6 (4%)	1 (1%)	16	41
56	SS	143/145 (99%)	134 (94%)	9 (6%)	0	100	100
57	ST	141/143 (99%)	138 (98%)	3 (2%)	0	100	100
58	SU	102/104 (98%)	100 (98%)	2 (2%)	0	100	100
59	SZ	73/75 (97%)	66 (90%)	7 (10%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
60	Sc	62/64 (97%)	59 (95%)	3 (5%)	0	100	100
61	Sd	53/55 (96%)	53 (100%)	0	0	100	100
62	Sf	65/67 (97%)	56 (86%)	9 (14%)	0	100	100
63	Sg	311/313 (99%)	291 (94%)	20 (6%)	0	100	100
64	SA	219/221 (99%)	207 (94%)	12 (6%)	0	100	100
65	SB	212/214 (99%)	202 (95%)	10 (5%)	0	100	100
66	SC	218/222 (98%)	203 (93%)	15 (7%)	0	100	100
67	SE	260/262 (99%)	247 (95%)	13 (5%)	0	100	100
68	SG	235/237 (99%)	222 (94%)	13 (6%)	0	100	100
69	SH	182/189 (96%)	169 (93%)	13 (7%)	0	100	100
70	SI	204/206 (99%)	192 (94%)	12 (6%)	0	100	100
71	SJ	183/185 (99%)	176 (96%)	7 (4%)	0	100	100
72	SL	151/153 (99%)	147 (97%)	4 (3%)	0	100	100
73	SN	148/150 (99%)	146 (99%)	2 (1%)	0	100	100
74	SO	135/140 (96%)	127 (94%)	8 (6%)	0	100	100
75	SV	81/83 (98%)	76 (94%)	5 (6%)	0	100	100
76	SW	127/129 (98%)	122 (96%)	5 (4%)	0	100	100
77	SX	139/141 (99%)	134 (96%)	5 (4%)	0	100	100
78	SY	129/131 (98%)	123 (95%)	6 (5%)	0	100	100
79	Sa	100/102 (98%)	98 (98%)	2 (2%)	0	100	100
80	Sb	81/83 (98%)	77 (95%)	4 (5%)	0	100	100
81	Se	56/58 (97%)	51 (91%)	5 (9%)	0	100	100
83	CB	842/856 (98%)	811 (96%)	30 (4%)	1 (0%)	48	76
All	All	12514/12763 (98%)	11976 (96%)	536 (4%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
83	CB	481	LYS
55	SR	129	LYS

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	CI	25/25 (100%)	25 (100%)	0	100	100
5	LA	190/190 (100%)	190 (100%)	0	100	100
6	LB	348/348 (100%)	348 (100%)	0	100	100
7	LC	306/306 (100%)	306 (100%)	0	100	100
8	LD	246/247 (100%)	246 (100%)	0	100	100
9	LE	212/222 (96%)	212 (100%)	0	100	100
10	LF	194/194 (100%)	194 (100%)	0	100	100
11	LG	203/205 (99%)	203 (100%)	0	100	100
12	LH	169/169 (100%)	169 (100%)	0	100	100
13	LI	180/180 (100%)	180 (100%)	0	100	100
14	LJ	143/148 (97%)	143 (100%)	0	100	100
15	LL	176/176 (100%)	176 (100%)	0	100	100
16	LM	118/118 (100%)	118 (100%)	0	100	100
17	LN	171/171 (100%)	171 (100%)	0	100	100
18	LO	173/173 (100%)	173 (100%)	0	100	100
19	LP	134/134 (100%)	134 (100%)	0	100	100
20	LQ	164/164 (100%)	164 (100%)	0	100	100
21	LR	166/166 (100%)	166 (100%)	0	100	100
22	LS	156/156 (100%)	156 (100%)	0	100	100
23	LT	139/139 (100%)	139 (100%)	0	100	100
24	LU	91/91 (100%)	91 (100%)	0	100	100
25	LV	101/101 (100%)	101 (100%)	0	100	100
26	LW	95/103 (92%)	95 (100%)	0	100	100
27	LX	108/108 (100%)	108 (100%)	0	100	100
28	LY	124/124 (100%)	124 (100%)	0	100	100
29	LZ	117/117 (100%)	117 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
30	La	120/120 (100%)	120 (100%)	0	100	100
31	Lb	88/101 (87%)	88 (100%)	0	100	100
32	Lc	83/83 (100%)	83 (100%)	0	100	100
33	Ld	98/98 (100%)	98 (100%)	0	100	100
34	Le	114/114 (100%)	114 (100%)	0	100	100
35	Lf	88/88 (100%)	88 (100%)	0	100	100
36	Lg	98/98 (100%)	98 (100%)	0	100	100
37	Lh	109/109 (100%)	109 (100%)	0	100	100
38	Li	86/86 (100%)	86 (100%)	0	100	100
39	Lj	73/73 (100%)	73 (100%)	0	100	100
40	Lk	64/64 (100%)	64 (100%)	0	100	100
41	Ll	47/47 (100%)	47 (100%)	0	100	100
42	Lm	48/48 (100%)	48 (100%)	0	100	100
43	Ln	23/23 (100%)	23 (100%)	0	100	100
44	Lo	93/93 (100%)	93 (100%)	0	100	100
45	Lp	74/74 (100%)	74 (100%)	0	100	100
46	Lr	109/109 (100%)	109 (100%)	0	100	100
47	Ls	162/164 (99%)	162 (100%)	0	100	100
48	Lt	107/130 (82%)	107 (100%)	0	100	100
49	SD	190/190 (100%)	190 (100%)	0	100	100
50	SF	159/159 (100%)	159 (100%)	0	100	100
51	SK	89/89 (100%)	89 (100%)	0	100	100
52	SM	102/104 (98%)	102 (100%)	0	100	100
53	SP	107/107 (100%)	107 (100%)	0	100	100
54	SQ	119/119 (100%)	119 (100%)	0	100	100
55	SR	122/122 (100%)	122 (100%)	0	100	100
56	SS	126/126 (100%)	126 (100%)	0	100	100
57	ST	113/113 (100%)	113 (100%)	0	100	100
58	SU	94/94 (100%)	94 (100%)	0	100	100
59	SZ	66/66 (100%)	66 (100%)	0	100	100
60	Sc	57/57 (100%)	57 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
61	Sd	48/48 (100%)	48 (100%)	0	100	100
62	Sf	60/60 (100%)	60 (100%)	0	100	100
63	Sg	272/272 (100%)	272 (100%)	0	100	100
64	SA	183/183 (100%)	183 (100%)	0	100	100
65	SB	195/195 (100%)	195 (100%)	0	100	100
66	SC	186/188 (99%)	186 (100%)	0	100	100
67	SE	224/224 (100%)	224 (100%)	0	100	100
68	SG	207/207 (100%)	207 (100%)	0	100	100
69	SH	166/169 (98%)	166 (100%)	0	100	100
70	SI	178/178 (100%)	178 (100%)	0	100	100
71	SJ	161/161 (100%)	161 (100%)	0	100	100
72	SL	137/137 (100%)	137 (100%)	0	100	100
73	SN	130/130 (100%)	130 (100%)	0	100	100
74	SO	107/110 (97%)	107 (100%)	0	100	100
75	SV	67/67 (100%)	67 (100%)	0	100	100
76	SW	112/112 (100%)	112 (100%)	0	100	100
77	SX	113/113 (100%)	113 (100%)	0	100	100
78	SY	113/113 (100%)	113 (100%)	0	100	100
79	Sa	89/89 (100%)	89 (100%)	0	100	100
80	Sb	75/75 (100%)	75 (100%)	0	100	100
81	Se	47/47 (100%)	47 (100%)	0	100	100
83	CB	722/728 (99%)	722 (100%)	0	100	100
All	All	10869/10949 (99%)	10869 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (81) such sidechains are listed below:

Mol	Chain	Res	Type
5	LA	97	ASN
6	LB	68	ASN
6	LB	145	GLN
6	LB	184	GLN
6	LB	203	GLN

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Mol	Chain	Res	Type
6	LB	301	ASN
7	LC	329	ASN
7	LC	347	HIS
10	LF	239	GLN
11	LG	64	GLN
11	LG	112	GLN
12	LH	98	HIS
12	LH	138	GLN
13	LI	59	GLN
14	LJ	112	HIS
15	LL	19	GLN
15	LL	149	GLN
16	LM	34	ASN
17	LN	117	ASN
18	LO	50	ASN
18	LO	199	HIS
19	LP	97	ASN
19	LP	118	GLN
19	LP	137	ASN
22	LS	23	HIS
22	LS	37	HIS
22	LS	108	GLN
23	LT	144	ASN
24	LU	94	ASN
25	LV	77	HIS
26	LW	79	GLN
26	LW	104	GLN
28	LY	61	HIS
30	La	34	ASN
30	La	67	GLN
30	La	120	GLN
31	Lb	60	ASN
34	Le	52	GLN
38	Li	15	HIS
39	Lj	66	HIS
41	Ll	33	ASN
42	Lm	117	HIS
45	Lp	33	GLN
46	Lr	4	HIS
46	Lr	21	ASN
47	Ls	71	ASN
48	Lt	65	GLN

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Mol	Chain	Res	Type
48	Lt	149	HIS
50	SF	29	GLN
51	SK	28	HIS
51	SK	32	HIS
52	SM	19	GLN
54	SQ	48	GLN
58	SU	81	GLN
58	SU	92	HIS
59	SZ	89	GLN
61	Sd	5	GLN
62	Sf	93	HIS
63	Sg	285	GLN
64	SA	9	GLN
64	SA	84	GLN
64	SA	132	GLN
65	SB	76	ASN
65	SB	95	ASN
65	SB	158	HIS
66	SC	267	GLN
68	SG	227	GLN
69	SH	76	GLN
69	SH	114	GLN
69	SH	162	GLN
70	SI	35	ASN
70	SI	52	ASN
72	SL	19	ASN
72	SL	65	ASN
73	SN	105	ASN
75	SV	35	ASN
77	SX	16	HIS
79	Sa	72	HIS
83	CB	168	GLN
83	CB	803	ASN
83	CB	807	GLN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	L5	3643/3675 (99%)	711 (19%)	15 (0%)
3	L7	119/120 (99%)	9 (7%)	0
4	L8	155/156 (99%)	24 (15%)	0

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
82	S2	1714/1740 (98%)	360 (21%)	4 (0%)
84	Et	73/76 (96%)	25 (34%)	0
All	All	5704/5767 (98%)	1129 (19%)	19 (0%)

All (1129) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	L5	2	G
2	L5	25	A
2	L5	30	C
2	L5	39	A
2	L5	42	A
2	L5	48	G
2	L5	56	A
2	L5	59	A
2	L5	64	A
2	L5	65	A
2	L5	73	A
2	L5	91	G
2	L5	104	G
2	L5	108	A
2	L5	109	G
2	L5	110	C
2	L5	119	G
2	L5	120	A
2	L5	127	G
2	L5	132	G
2	L5	133	C
2	L5	134	G
2	L5	135	G
2	L5	136	C
2	L5	159	C
2	L5	165	A
2	L5	172	C
2	L5	173	C
2	L5	181	C
2	L5	182	G
2	L5	183	C
2	L5	184	U
2	L5	185	C
2	L5	187	U
2	L5	188	G

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Mol	Chain	Res	Type
2	L5	189	G
2	L5	200	U
2	L5	209	U
2	L5	210	C
2	L5	216	C
2	L5	218	A
2	L5	220	C
2	L5	234	G
2	L5	237	G
2	L5	255	C
2	L5	256	G
2	L5	261	G
2	L5	263	G
2	L5	264	C
2	L5	265	C
2	L5	266	C
2	L5	267	G
2	L5	280	G
2	L5	297	U
2	L5	306	A
2	L5	315	G
2	L5	316	U
2	L5	340	C
2	L5	373	G
2	L5	385	A
2	L5	387	G
2	L5	388	A
2	L5	396	A
2	L5	407	A
2	L5	409	G
2	L5	410	A
2	L5	411	G
2	L5	412	G
2	L5	432	U
2	L5	449	C
2	L5	452	A
2	L5	453	G
2	L5	454	U
2	L5	456	C
2	L5	457	G
2	L5	467	U
2	L5	484	U

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Mol	Chain	Res	Type
2	L5	485	C
2	L5	486	C
2	L5	489	C
2	L5	494	U
2	L5	497	G
2	L5	498	C
2	L5	499	G
2	L5	500	G
2	L5	502	C
2	L5	503	C
2	L5	504	G
2	L5	509	A
2	L5	510	U
2	L5	512	U
2	L5	513	U
2	L5	514	U
2	L5	518	G
2	L5	643	C
2	L5	646	G
2	L5	653	U
2	L5	654	C
2	L5	655	C
2	L5	656	C
2	L5	657	C
2	L5	659	G
2	L5	666	G
2	L5	667	A
2	L5	668	C
2	L5	669	C
2	L5	672	C
2	L5	673	C
2	L5	685	C
2	L5	686	A
2	L5	687	U
2	L5	696	C
2	L5	704	C
2	L5	708	G
2	L5	730	G
2	L5	731	G
2	L5	738	C
2	L5	739	G
2	L5	742	G

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Mol	Chain	Res	Type
2	L5	746	A
2	L5	759	G
2	L5	904	C
2	L5	905	C
2	L5	910	G
2	L5	913	U
2	L5	914	U
2	L5	915	A
2	L5	917	A
2	L5	923	C
2	L5	924	C
2	L5	932	A
2	L5	933	G
2	L5	936	C
2	L5	943	A
2	L5	944	A
2	L5	945	U
2	L5	946	C
2	L5	956	A
2	L5	959	G
2	L5	960	A
2	L5	961	G
2	L5	962	C
2	L5	965	G
2	L5	966	A
2	L5	967	C
2	L5	969	C
2	L5	970	G
2	L5	977	C
2	L5	982	U
2	L5	985	C
2	L5	1070	G
2	L5	1071	C
2	L5	1072	C
2	L5	1075	G
2	L5	1082	C
2	L5	1083	U
2	L5	1168	G
2	L5	1171	G
2	L5	1172	C
2	L5	1173	G
2	L5	1179	U

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Mol	Chain	Res	Type
2	L5	1180	C
2	L5	1181	C
2	L5	1182	C
2	L5	1183	C
2	L5	1187	G
2	L5	1202	C
2	L5	1203	G
2	L5	1210	C
2	L5	1211	G
2	L5	1214	C
2	L5	1215	C
2	L5	1219	G
2	L5	1222	A
2	L5	1246	G
2	L5	1253	G
2	L5	1254	A
2	L5	1257	A
2	L5	1258	G
2	L5	1262	G
2	L5	1266	G
2	L5	1267	C
2	L5	1269	G
2	L5	1271	G
2	L5	1272	C
2	L5	1273	G
2	L5	1275	G
2	L5	1280	C
2	L5	1284	G
2	L5	1285	U
2	L5	1287	G
2	L5	1293	G
2	L5	1294	A
2	L5	1295	C
2	L5	1296	G
2	L5	1301	C
2	L5	1326	A2M
2	L5	1337	A
2	L5	1354	A
2	L5	1359	G
2	L5	1365	C
2	L5	1366	G
2	L5	1367	C

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Mol	Chain	Res	Type
2	L5	1379	C
2	L5	1387	A
2	L5	1394	G
2	L5	1397	A
2	L5	1398	A
2	L5	1403	G
2	L5	1404	G
2	L5	1407	C
2	L5	1409	C
2	L5	1410	U
2	L5	1411	C
2	L5	1414	C
2	L5	1417	C
2	L5	1420	A
2	L5	1425	G
2	L5	1437	C
2	L5	1439	C
2	L5	1442	C
2	L5	1443	A
2	L5	1444	G
2	L5	1446	C
2	L5	1447	C
2	L5	1482	G
2	L5	1483	C
2	L5	1497	A
2	L5	1498	G
2	L5	1502	G
2	L5	1517	G
2	L5	1524	A2M
2	L5	1534	A2M
2	L5	1537	A
2	L5	1547	A
2	L5	1566	C
2	L5	1578	U
2	L5	1591	U
2	L5	1596	U
2	L5	1621	A
2	L5	1624	G
2	L5	1625	OMG
2	L5	1631	A
2	L5	1633	G
2	L5	1634	A

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Mol	Chain	Res	Type
2	L5	1638	A
2	L5	1640	C
2	L5	1641	G
2	L5	1642	A
2	L5	1654	G
2	L5	1661	C
2	L5	1676	C
2	L5	1677	PSU
2	L5	1678	C
2	L5	1694	C
2	L5	1697	G
2	L5	1699	A
2	L5	1700	G
2	L5	1701	A
2	L5	1702	C
2	L5	1704	C
2	L5	1705	G
2	L5	1717	C
2	L5	1718	C
2	L5	1719	A
2	L5	1721	G
2	L5	1726	U
2	L5	1731	C
2	L5	1734	G
2	L5	1742	A
2	L5	1750	G
2	L5	1755	C
2	L5	1757	U
2	L5	1758	G
2	L5	1760	G
2	L5	1761	G
2	L5	1762	C
2	L5	1763	C
2	L5	1764	G
2	L5	1765	A
2	L5	1766	A
2	L5	1767	A
2	L5	1768	C
2	L5	1770	A
2	L5	1787	A
2	L5	1804	A
2	L5	1806	G

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Mol	Chain	Res	Type
2	L5	1810	G
2	L5	1815	G
2	L5	1821	G
2	L5	1822	U
2	L5	1834	U
2	L5	1836	G
2	L5	1837	A
2	L5	1842	G
2	L5	1855	G
2	L5	1869	G
2	L5	1882	U
2	L5	1897	A
2	L5	1917	A
2	L5	1918	U
2	L5	1919	G
2	L5	1920	C
2	L5	1921	C
2	L5	1922	G
2	L5	1925	G
2	L5	1930	U
2	L5	1931	C
2	L5	1932	A
2	L5	1940	G
2	L5	1948	G
2	L5	1951	G
2	L5	1961	G
2	L5	1962	A
2	L5	1974	U
2	L5	1975	G
2	L5	1978	C
2	L5	1980	U
2	L5	1981	G
2	L5	1982	G
2	L5	1983	A
2	L5	1984	A
2	L5	1985	G
2	L5	1986	U
2	L5	1991	A
2	L5	1993	C
2	L5	1997	U
2	L5	1998	A
2	L5	1999	A

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Mol	Chain	Res	Type
2	L5	2001	G
2	L5	2002	A
2	L5	2003	G
2	L5	2004	U
2	L5	2011	C
2	L5	2017	A
2	L5	2018	C
2	L5	2024	G
2	L5	2026	A
2	L5	2046	G
2	L5	2048	U
2	L5	2055	G
2	L5	2056	G
2	L5	2069	A
2	L5	2084	C
2	L5	2085	G
2	L5	2092	G
2	L5	2093	A
2	L5	2095	A
2	L5	2097	U
2	L5	2098	G
2	L5	2101	C
2	L5	2102	G
2	L5	2107	C
2	L5	2110	C
2	L5	2111	G
2	L5	2112	G
2	L5	2250	C
2	L5	2252	G
2	L5	2256	C
2	L5	2261	G
2	L5	2289	C
2	L5	2300	A
2	L5	2301	G
2	L5	2313	A
2	L5	2333	G
2	L5	2348	G
2	L5	2351	OMC
2	L5	2360	A
2	L5	2364	OMG
2	L5	2383	C
2	L5	2395	A

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Mol	Chain	Res	Type
2	L5	2397	G
2	L5	2417	A
2	L5	2425	U
2	L5	2450	G
2	L5	2453	A
2	L5	2464	C
2	L5	2465	C
2	L5	2469	C
2	L5	2471	G
2	L5	2474	G
2	L5	2475	G
2	L5	2478	C
2	L5	2479	G
2	L5	2483	G
2	L5	2484	A
2	L5	2485	U
2	L5	2487	G
2	L5	2488	C
2	L5	2489	C
2	L5	2490	U
2	L5	2494	U
2	L5	2504	C
2	L5	2505	C
2	L5	2506	G
2	L5	2507	A
2	L5	2513	A
2	L5	2519	U
2	L5	2529	A
2	L5	2537	A
2	L5	2544	G
2	L5	2546	G
2	L5	2547	G
2	L5	2554	U
2	L5	2555	G
2	L5	2556	G
2	L5	2560	C
2	L5	2565	A
2	L5	2567	G
2	L5	2573	A
2	L5	2583	C
2	L5	2587	A
2	L5	2589	C

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Mol	Chain	Res	Type
2	L5	2602	G
2	L5	2618	G
2	L5	2627	C
2	L5	2653	C
2	L5	2662	G
2	L5	2669	C
2	L5	2675	G
2	L5	2676	A
2	L5	2687	U
2	L5	2694	G
2	L5	2695	A
2	L5	2696	A
2	L5	2706	G
2	L5	2707	U
2	L5	2708	U
2	L5	2710	C
2	L5	2711	G
2	L5	2712	G
2	L5	2721	G
2	L5	2724	G
2	L5	2726	G
2	L5	2739	C
2	L5	2742	G
2	L5	2743	A
2	L5	2746	A
2	L5	2761	U
2	L5	2763	U
2	L5	2769	U
2	L5	2770	C
2	L5	2788	U
2	L5	2790	U
2	L5	2806	A
2	L5	2814	C
2	L5	2826	U
2	L5	2827	G
2	L5	2829	U
2	L5	2838	G
2	L5	2855	G
2	L5	2867	C
2	L5	2877	G
2	L5	2892	C
2	L5	2894	A

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Mol	Chain	Res	Type
2	L5	2899	C
2	L5	2900	U
2	L5	2902	G
2	L5	2903	G
2	L5	2904	U
2	L5	2905	C
2	L5	2907	G
2	L5	2908	U
2	L5	3590	G
2	L5	3591	C
2	L5	3592	G
2	L5	3594	C
2	L5	3595	U
2	L5	3596	A
2	L5	3597	G
2	L5	3604	A
2	L5	3605	C
2	L5	3616	U
2	L5	3617	G
2	L5	3626	G
2	L5	3630	A
2	L5	3635	A
2	L5	3644	U
2	L5	3646	A
2	L5	3648	A
2	L5	3662	A
2	L5	3664	G
2	L5	3670	C
2	L5	3673	C
2	L5	3674	G
2	L5	3691	G
2	L5	3701	OMC
2	L5	3710	G
2	L5	3711	A
2	L5	3713	U
2	L5	3726	A
2	L5	3727	A
2	L5	3748	A
2	L5	3753	G
2	L5	3760	A
2	L5	3770	U
2	L5	3774	A

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Mol	Chain	Res	Type
2	L5	3775	A
2	L5	3776	G
2	L5	3777	G
2	L5	3785	A2M
2	L5	3786	U
2	L5	3792	OMG
2	L5	3811	G
2	L5	3812	C
2	L5	3814	U
2	L5	3817	A
2	L5	3819	G
2	L5	3824	A
2	L5	3838	U
2	L5	3839	G
2	L5	3840	U
2	L5	3867	A2M
2	L5	3877	A
2	L5	3878	C
2	L5	3879	G
2	L5	3885	G
2	L5	3892	U
2	L5	3897	G
2	L5	3901	A
2	L5	3906	A
2	L5	3907	G
2	L5	3908	A
2	L5	3915	U
2	L5	3923	A
2	L5	3938	G
2	L5	3939	G
2	L5	3942	A
2	L5	3947	A
2	L5	3949	A
2	L5	3950	U
2	L5	3953	G
2	L5	4057	C
2	L5	4058	U
2	L5	4059	C
2	L5	4061	G
2	L5	4062	A
2	L5	4064	C
2	L5	4065	G

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Mol	Chain	Res	Type
2	L5	4068	U
2	L5	4076	G
2	L5	4084	G
2	L5	4095	G
2	L5	4097	G
2	L5	4098	A
2	L5	4099	G
2	L5	4101	C
2	L5	4104	G
2	L5	4108	G
2	L5	4111	U
2	L5	4112	C
2	L5	4114	C
2	L5	4115	G
2	L5	4116	C
2	L5	4122	G
2	L5	4127	A
2	L5	4133	C
2	L5	4140	C
2	L5	4141	G
2	L5	4142	C
2	L5	4143	G
2	L5	4144	C
2	L5	4146	G
2	L5	4149	C
2	L5	4162	C
2	L5	4163	U
2	L5	4170	A
2	L5	4183	G
2	L5	4184	G
2	L5	4191	G
2	L5	4203	A
2	L5	4222	G
2	L5	4225	G
2	L5	4229	U
2	L5	4233	A
2	L5	4251	A
2	L5	4254	G
2	L5	4257	A
2	L5	4258	C
2	L5	4265	U
2	L5	4268	A

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Mol	Chain	Res	Type
2	L5	4273	A
2	L5	4281	A
2	L5	4291	G
2	L5	4295	U
2	L5	4304	A
2	L5	4305	G
2	L5	4306	OMU
2	L5	4314	C
2	L5	4319	C
2	L5	4329	G
2	L5	4330	G
2	L5	4332	C
2	L5	4349	C
2	L5	4350	C
2	L5	4354	U
2	L5	4373	G
2	L5	4376	A
2	L5	4377	G
2	L5	4378	A
2	L5	4379	A
2	L5	4387	C
2	L5	4391	G
2	L5	4394	A
2	L5	4420	U
2	L5	4421	C
2	L5	4422	A
2	L5	4438	U
2	L5	4448	G
2	L5	4449	A
2	L5	4464	A
2	L5	4466	C
2	L5	4475	G
2	L5	4488	A
2	L5	4500	PSU
2	L5	4512	U
2	L5	4513	A
2	L5	4515	G
2	L5	4519	C
2	L5	4524	G
2	L5	4525	C
2	L5	4545	G
2	L5	4548	A

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Mol	Chain	Res	Type
2	L5	4557	U
2	L5	4560	C
2	L5	4567	G
2	L5	4575	G
2	L5	4584	A
2	L5	4589	A
2	L5	4590	A2M
2	L5	4600	G
2	L5	4601	U
2	L5	4617	G
2	L5	4636	PSU
2	L5	4637	OMG
2	L5	4652	G
2	L5	4656	A
2	L5	4670	C
2	L5	4672	A
2	L5	4679	G
2	L5	4687	A
2	L5	4694	G
2	L5	4695	C
2	L5	4700	A
2	L5	4708	A
2	L5	4709	U
2	L5	4719	G
2	L5	4733	C
2	L5	4734	A
2	L5	4740	G
2	L5	4741	C
2	L5	4742	G
2	L5	4745	G
2	L5	4754	G
2	L5	4757	C
2	L5	4759	C
2	L5	4761	G
2	L5	4765	G
2	L5	4771	C
2	L5	4772	C
2	L5	4775	C
2	L5	4859	C
2	L5	4870	G
2	L5	4871	C
2	L5	4875	G

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Mol	Chain	Res	Type
2	L5	4882	U
2	L5	4883	C
2	L5	4889	G
2	L5	4895	C
2	L5	4896	G
2	L5	4897	G
2	L5	4899	G
2	L5	4900	C
2	L5	4901	G
2	L5	4910	G
2	L5	4912	G
2	L5	4914	C
2	L5	4922	C
2	L5	4925	U
2	L5	4926	C
2	L5	4927	G
2	L5	4928	C
2	L5	4934	A
2	L5	4940	C
2	L5	4941	G
2	L5	4943	A
2	L5	4951	G
2	L5	4955	A
2	L5	4960	G
2	L5	4976	U
2	L5	4985	U
2	L5	4988	U
2	L5	4989	U
2	L5	4991	U
2	L5	4995	U
2	L5	5007	A
2	L5	5013	C
2	L5	5014	A
2	L5	5017	G
2	L5	5022	U
2	L5	5023	C
2	L5	5024	C
2	L5	5028	G
2	L5	5030	U
2	L5	5034	A
2	L5	5041	G
2	L5	5050	C

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Mol	Chain	Res	Type
2	L5	5054	C
2	L5	5055	G
2	L5	5061	A
2	L5	5069	U
3	L7	33	U
3	L7	38	U
3	L7	53	U
3	L7	54	A
3	L7	64	G
3	L7	97	G
3	L7	100	A
3	L7	110	G
3	L7	120	U
4	L8	23	C
4	L8	25	G
4	L8	34	U
4	L8	35	C
4	L8	59	A
4	L8	62	A
4	L8	63	U
4	L8	80	A
4	L8	82	A
4	L8	84	A
4	L8	85	U
4	L8	87	G
4	L8	94	G
4	L8	103	A
4	L8	105	C
4	L8	111	U
4	L8	114	G
4	L8	123	U
4	L8	124	U
4	L8	125	C
4	L8	126	C
4	L8	127	U
4	L8	147	G
4	L8	153	C
82	S2	13	C
82	S2	14	C
82	S2	17	C
82	S2	25	A
82	S2	33	G

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Mol	Chain	Res	Type
82	S2	41	G
82	S2	44	U
82	S2	45	A
82	S2	46	A
82	S2	56	G
82	S2	58	C
82	S2	59	U
82	S2	65	C
82	S2	67	C
82	S2	68	A
82	S2	72	C
82	S2	73	C
82	S2	74	G
82	S2	76	U
82	S2	99	A2M
82	S2	103	A
82	S2	113	G
82	S2	114	G
82	S2	115	U
82	S2	126	G
82	S2	130	G
82	S2	142	C
82	S2	143	U
82	S2	149	A
82	S2	158	A
82	S2	160	U
82	S2	162	C
82	S2	170	A
82	S2	175	A
82	S2	179	C
82	S2	190	G
82	S2	191	A
82	S2	196	C
82	S2	197	U
82	S2	198	U
82	S2	200	G
82	S2	203	G
82	S2	204	G
82	S2	207	G
82	S2	208	G
82	S2	214	U
82	S2	291	G

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Mol	Chain	Res	Type
82	S2	292	A
82	S2	295	C
82	S2	302	A
82	S2	306	C
82	S2	307	G
82	S2	308	G
82	S2	309	G
82	S2	311	C
82	S2	312	G
82	S2	313	A
82	S2	318	A
82	S2	319	C
82	S2	323	C
82	S2	324	C
82	S2	325	C
82	S2	326	C
82	S2	328	U
82	S2	329	G
82	S2	332	G
82	S2	339	A
82	S2	340	C
82	S2	347	G
82	S2	360	A
82	S2	362	C
82	S2	364	A
82	S2	368	U
82	S2	370	G
82	S2	385	G
82	S2	386	C
82	S2	398	A
82	S2	407	G
82	S2	408	A
82	S2	409	C
82	S2	436	OMG
82	S2	438	G
82	S2	448	A
82	S2	449	A
82	S2	450	C
82	S2	452	G
82	S2	464	A
82	S2	465	A
82	S2	471	G

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Mol	Chain	Res	Type
82	S2	472	C
82	S2	473	A
82	S2	474	G
82	S2	476	A
82	S2	482	G
82	S2	487	U
82	S2	488	U
82	S2	492	C
82	S2	493	A
82	S2	502	C
82	S2	516	A
82	S2	517	OMC
82	S2	531	A
82	S2	532	C
82	S2	536	A
82	S2	537	C
82	S2	540	U
82	S2	542	U
82	S2	544	G
82	S2	546	G
82	S2	547	G
82	S2	557	U
82	S2	558	G
82	S2	559	G
82	S2	563	G
82	S2	564	A
82	S2	576	A2M
82	S2	583	A
82	S2	587	A
82	S2	589	G
82	S2	590	A
82	S2	591	U
82	S2	593	C
82	S2	604	A
82	S2	614	C
82	S2	617	G
82	S2	623	G
82	S2	628	A
82	S2	631	U
82	S2	643	A
82	S2	644	OMG
82	S2	655	A

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Mol	Chain	Res	Type
82	S2	660	C
82	S2	664	A
82	S2	668	A2M
82	S2	669	A
82	S2	671	A
82	S2	672	A
82	S2	673	G
82	S2	683	OMG
82	S2	688	U
82	S2	689	U
82	S2	692	G
82	S2	696	G
82	S2	697	G
82	S2	698	G
82	S2	731	G
82	S2	732	U
82	S2	733	C
82	S2	736	C
82	S2	737	G
82	S2	738	C
82	S2	749	U
82	S2	751	G
82	S2	752	G
82	S2	753	C
82	S2	788	G
82	S2	791	C
82	S2	792	C
82	S2	798	G
82	S2	799	OMU
82	S2	801	PSU
82	S2	821	G
82	S2	822	U
82	S2	823	U
82	S2	824	C
82	S2	830	A
82	S2	834	C
82	S2	835	C
82	S2	836	G
82	S2	837	A
82	S2	838	G
82	S2	839	C
82	S2	842	C

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Mol	Chain	Res	Type
82	S2	844	U
82	S2	847	A
82	S2	867	OMG
82	S2	870	A
82	S2	874	G
82	S2	877	C
82	S2	878	G
82	S2	880	G
82	S2	888	U
82	S2	889	U
82	S2	891	G
82	S2	893	U
82	S2	894	G
82	S2	896	U
82	S2	897	U
82	S2	898	U
82	S2	899	U
82	S2	900	C
82	S2	901	G
82	S2	903	A
82	S2	913	A
82	S2	920	A
82	S2	930	C
82	S2	933	G
82	S2	934	G
82	S2	943	U
82	S2	963	A
82	S2	970	G
82	S2	971	G
82	S2	972	A
82	S2	985	G
82	S2	990	A
82	S2	992	A
82	S2	999	G
82	S2	1001	A
82	S2	1008	A
82	S2	1017	U
82	S2	1023	A
82	S2	1027	A
82	S2	1060	A
82	S2	1061	U
82	S2	1062	A

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Mol	Chain	Res	Type
82	S2	1080	A
82	S2	1083	A
82	S2	1085	C
82	S2	1109	C
82	S2	1113	A
82	S2	1114	U
82	S2	1116	C
82	S2	1121	G
82	S2	1123	C
82	S2	1133	A
82	S2	1138	C
82	S2	1148	A
82	S2	1150	A
82	S2	1153	C
82	S2	1154	U
82	S2	1195	A
82	S2	1207	G
82	S2	1208	A
82	S2	1215	C
82	S2	1216	C
82	S2	1217	A
82	S2	1224	G
82	S2	1227	G
82	S2	1242	U
82	S2	1243	U
82	S2	1248	B8N
82	S2	1251	A
82	S2	1253	A
82	S2	1256	G
82	S2	1257	G
82	S2	1259	A
82	S2	1271	C
82	S2	1272	OMC
82	S2	1274	G
82	S2	1275	G
82	S2	1283	C
82	S2	1286	G
82	S2	1288	OMU
82	S2	1294	G
82	S2	1295	A
82	S2	1301	A
82	S2	1302	G

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Mol	Chain	Res	Type
82	S2	1303	C
82	S2	1304	U
82	S2	1308	U
82	S2	1342	U
82	S2	1357	A
82	S2	1358	U
82	S2	1371	U
82	S2	1372	U
82	S2	1376	A
82	S2	1378	A
82	S2	1402	A
82	S2	1413	G
82	S2	1418	C
82	S2	1419	C
82	S2	1420	G
82	S2	1421	A
82	S2	1422	G
82	S2	1423	C
82	S2	1433	C
82	S2	1435	C
82	S2	1437	C
82	S2	1438	A
82	S2	1439	A
82	S2	1442	OMU
82	S2	1449	G
82	S2	1454	A
82	S2	1463	U
82	S2	1478	U
82	S2	1487	A
82	S2	1489	A
82	S2	1490	OMG
82	S2	1492	U
82	S2	1494	U
82	S2	1495	G
82	S2	1497	G
82	S2	1498	A
82	S2	1521	C
82	S2	1531	A
82	S2	1533	A
82	S2	1544	C
82	S2	1546	G
82	S2	1552	G

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Mol	Chain	Res	Type
82	S2	1553	C
82	S2	1556	A
82	S2	1558	C
82	S2	1574	C
82	S2	1575	G
82	S2	1578	U
82	S2	1580	A
82	S2	1581	C
82	S2	1587	G
82	S2	1588	A
82	S2	1600	G
82	S2	1604	G
82	S2	1606	G
82	S2	1621	U
82	S2	1623	A
82	S2	1631	U
82	S2	1633	A
82	S2	1634	A
82	S2	1637	A
82	S2	1648	G
82	S2	1654	G
82	S2	1663	A
82	S2	1665	G
82	S2	1683	C
82	S2	1686	G
82	S2	1695	A
82	S2	1698	C
82	S2	1699	A
82	S2	1715	A
82	S2	1721	U
82	S2	1722	G
82	S2	1744	G
82	S2	1745	A
82	S2	1752	C
82	S2	1753	C
82	S2	1754	G
82	S2	1755	C
82	S2	1757	G
82	S2	1759	G
82	S2	1761	U
82	S2	1772	C
82	S2	1773	C

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Mol	Chain	Res	Type
82	S2	1774	C
82	S2	1777	G
82	S2	1782	G
82	S2	1783	C
82	S2	1784	G
82	S2	1786	U
82	S2	1798	C
82	S2	1810	U
82	S2	1825	A
82	S2	1826	G
82	S2	1831	A
82	S2	1835	A
82	S2	1838	U
82	S2	1849	G
82	S2	1851	MA6
82	S2	1861	G
82	S2	1862	G
82	S2	1863	A
82	S2	1865	C
84	Et	4	C
84	Et	9	A
84	Et	11	C
84	Et	19	G
84	Et	20	U
84	Et	21	A
84	Et	26	A
84	Et	33	U
84	Et	35	U
84	Et	36	U
84	Et	37	A
84	Et	38	A
84	Et	39	U
84	Et	42	G
84	Et	44	G
84	Et	46	G
84	Et	47	U
84	Et	49	C
84	Et	50	A
84	Et	55	U
84	Et	56	C
84	Et	58	A
84	Et	70	G

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Mol	Chain	Res	Type
84	Et	71	G
84	Et	76	A

All (19) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	L5	406	C
2	L5	493	G
2	L5	914	U
2	L5	1082	C
2	L5	1590	C
2	L5	1633	G
2	L5	1703	C
2	L5	1977	C
2	L5	2416	G
2	L5	2675	G
2	L5	2760	G
2	L5	3673	C
2	L5	4600	G
2	L5	4699	U
2	L5	4913	G
82	S2	291	G
82	S2	563	G
82	S2	688	U
82	S2	1477	U

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

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

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
2	PSU	L5	4403	2	18,21,22	1.03	1 (5%)	21,30,33	1.98	6 (28%)
2	A2M	L5	400	2	18,25,26	1.39	4 (22%)	20,36,39	2.03	7 (35%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	A2M	L5	3830	2	18,25,26	1.34	2 (11%)	20,36,39	2.12	5 (25%)
82	PSU	S2	649	82	18,21,22	1.06	1 (5%)	21,30,33	2.01	5 (23%)
2	OMG	L5	4392	2	19,26,27	1.26	3 (15%)	21,38,41	0.80	1 (4%)
2	PSU	L5	1781	2	18,21,22	1.05	1 (5%)	21,30,33	1.83	4 (19%)
82	PSU	S2	1244	82	18,21,22	1.08	1 (5%)	21,30,33	1.93	5 (23%)
82	PSU	S2	801	82	18,21,22	1.11	1 (5%)	21,30,33	1.82	4 (19%)
2	PSU	L5	4521	2,85	18,21,22	1.11	3 (16%)	21,30,33	2.05	6 (28%)
2	OMG	L5	4196	2	19,26,27	1.25	3 (15%)	21,38,41	0.77	1 (4%)
2	PSU	L5	4532	2	18,21,22	1.07	1 (5%)	21,30,33	1.90	4 (19%)
82	PSU	S2	866	82	18,21,22	1.09	1 (5%)	21,30,33	1.98	5 (23%)
2	PSU	L5	3920	2,85	18,21,22	1.05	2 (11%)	21,30,33	1.97	5 (23%)
2	PSU	L5	3884	2	18,21,22	1.08	2 (11%)	21,30,33	1.96	4 (19%)
82	PSU	S2	1056	82	18,21,22	1.07	2 (11%)	21,30,33	1.97	5 (23%)
2	PSU	L5	4973	2	18,21,22	1.05	1 (5%)	21,30,33	1.98	5 (23%)
82	PSU	S2	1081	82	18,21,22	1.03	1 (5%)	21,30,33	1.96	5 (23%)
2	PSU	L5	2839	2	18,21,22	1.08	2 (11%)	21,30,33	2.01	5 (23%)
2	PSU	L5	5001	2	18,21,22	1.09	1 (5%)	21,30,33	1.89	4 (19%)
2	OMC	L5	3887	2	19,22,23	0.60	0	25,31,34	0.67	0
2	A2M	L5	398	2	18,25,26	1.33	2 (11%)	20,36,39	2.11	5 (25%)
2	OMC	L5	4536	2	19,22,23	0.65	0	25,31,34	0.75	0
2	PSU	L5	3853	2,85	18,21,22	1.09	1 (5%)	21,30,33	1.95	4 (19%)
2	OMU	L5	4227	2	19,22,23	3.27	7 (36%)	25,31,34	1.87	5 (20%)
2	PSU	L5	4552	2	18,21,22	1.11	2 (11%)	21,30,33	2.01	5 (23%)
2	A2M	L5	2363	2,85	18,25,26	1.39	3 (16%)	20,36,39	1.92	7 (35%)
82	OMU	S2	1442	82	19,22,23	3.33	7 (36%)	25,31,34	1.78	5 (20%)
2	UY1	L5	3818	2	19,22,23	4.82	10 (52%)	21,31,34	2.00	5 (23%)
2	PSU	L5	5010	2	18,21,22	1.10	1 (5%)	21,30,33	1.94	4 (19%)
82	OMC	S2	1703	82	19,22,23	0.61	0	25,31,34	0.59	0
82	PSU	S2	1046	82	18,21,22	1.09	1 (5%)	21,30,33	1.91	4 (19%)
2	OMG	L5	1522	2	19,26,27	1.30	3 (15%)	21,38,41	0.86	1 (4%)
2	A2M	L5	1534	2,85	18,25,26	1.46	4 (22%)	20,36,39	1.83	6 (30%)
82	PSU	S2	1177	82	18,21,22	1.08	2 (11%)	21,30,33	1.98	4 (19%)
2	6MZ	L5	4220	2	21,26,26	1.41	2 (9%)	22,39,39	3.24	9 (40%)
82	OMU	S2	172	82	19,22,23	3.31	7 (36%)	25,31,34	1.85	5 (20%)
82	G7M	S2	1639	82	20,26,27	2.39	7 (35%)	16,39,42	1.11	1 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
82	PSU	S2	651	82	18,21,22	1.08	1 (5%)	21,30,33	1.96	4 (19%)
2	OMG	L5	4228	2	19,26,27	1.26	3 (15%)	21,38,41	0.99	1 (4%)
2	A2M	L5	1524	2	18,25,26	1.43	3 (16%)	20,36,39	2.30	5 (25%)
2	PSU	L5	4312	2	18,21,22	1.09	2 (11%)	21,30,33	1.97	4 (19%)
2	PSU	L5	4296	2	18,21,22	1.05	1 (5%)	21,30,33	1.95	4 (19%)
82	A2M	S2	468	82	18,25,26	1.34	2 (11%)	20,36,39	2.07	6 (30%)
82	PSU	S2	1174	82	18,21,22	1.06	1 (5%)	21,30,33	1.95	4 (19%)
82	PSU	S2	1367	82	18,21,22	1.10	1 (5%)	21,30,33	1.91	4 (19%)
2	OMU	L5	2837	2	19,22,23	3.24	7 (36%)	25,31,34	1.88	5 (20%)
82	OMU	S2	428	82	19,22,23	3.32	7 (36%)	25,31,34	1.87	5 (20%)
82	OMG	S2	867	82	19,26,27	1.16	2 (10%)	21,38,41	0.83	1 (4%)
2	A2M	L5	3867	2	18,25,26	1.42	3 (16%)	20,36,39	1.85	7 (35%)
2	PSU	L5	4972	2	18,21,22	1.02	1 (5%)	21,30,33	1.92	5 (23%)
82	A2M	S2	166	82	18,25,26	1.31	2 (11%)	20,36,39	2.08	6 (30%)
2	A2M	L5	1323	2	18,25,26	1.36	3 (16%)	20,36,39	1.96	7 (35%)
2	OMG	L5	3744	2	19,26,27	1.24	3 (15%)	21,38,41	0.81	1 (4%)
2	OMG	L5	4499	2	19,26,27	1.23	3 (15%)	21,38,41	0.74	1 (4%)
2	A2M	L5	3825	2	18,25,26	1.36	3 (16%)	20,36,39	2.03	6 (30%)
2	PSU	L5	1683	2	18,21,22	1.09	2 (11%)	21,30,33	2.11	5 (23%)
82	OMU	S2	116	82	19,22,23	3.30	7 (36%)	25,31,34	1.76	5 (20%)
82	4AC	S2	1337	82	21,24,25	0.40	0	28,34,37	0.81	2 (7%)
2	OMG	L5	1625	2	19,26,27	1.31	3 (15%)	21,38,41	0.82	1 (4%)
2	OMC	L5	3808	2,85	19,22,23	0.69	0	25,31,34	0.81	1 (4%)
82	PSU	S2	966	85,82	18,21,22	1.07	1 (5%)	21,30,33	1.88	4 (19%)
82	OMG	S2	1328	82	19,26,27	1.17	3 (15%)	21,38,41	0.81	1 (4%)
2	OMC	L5	2422	2,85	19,22,23	0.63	0	25,31,34	0.69	0
2	OMC	L5	4456	2	19,22,23	0.71	1 (5%)	25,31,34	0.77	1 (4%)
2	OMG	L5	3627	2	19,26,27	1.26	3 (15%)	21,38,41	0.87	1 (4%)
82	PSU	S2	105	82	18,21,22	1.09	1 (5%)	21,30,33	1.90	4 (19%)
82	PSU	S2	1232	82	18,21,22	1.09	1 (5%)	21,30,33	1.91	4 (19%)
2	OMG	L5	4623	2	19,26,27	1.27	3 (15%)	21,38,41	0.86	1 (4%)
82	OMG	S2	601	82	19,26,27	1.19	2 (10%)	21,38,41	0.81	1 (4%)
2	A2M	L5	2787	2	18,25,26	1.35	2 (11%)	20,36,39	1.78	4 (20%)
82	OMG	S2	509	82	19,26,27	1.19	2 (10%)	21,38,41	0.81	1 (4%)
2	A2M	L5	4571	2	18,25,26	1.45	4 (22%)	20,36,39	2.00	8 (40%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	A2M	L5	2815	2	18,25,26	1.32	3 (16%)	20,36,39	1.92	7 (35%)
82	OMU	S2	799	82	19,22,23	3.36	7 (36%)	25,31,34	1.80	5 (20%)
2	OMU	L5	4620	2	19,22,23	3.17	7 (36%)	25,31,34	1.71	4 (16%)
82	OMG	S2	644	82	19,26,27	1.19	3 (15%)	21,38,41	0.82	1 (4%)
82	A2M	S2	159	82	18,25,26	1.24	2 (11%)	20,36,39	1.88	6 (30%)
82	A2M	S2	1031	82	18,25,26	1.30	3 (16%)	20,36,39	2.10	5 (25%)
82	A2M	S2	484	82	18,25,26	1.24	2 (11%)	20,36,39	1.77	6 (30%)
2	OMC	L5	3841	2	19,22,23	0.63	0	25,31,34	0.72	0
2	OMG	L5	2364	2,85	19,26,27	1.28	3 (15%)	21,38,41	0.76	1 (4%)
2	OMC	L5	2861	2	19,22,23	0.63	0	25,31,34	0.77	1 (4%)
2	UR3	L5	4530	2	19,22,23	2.63	7 (36%)	26,32,35	1.58	2 (7%)
82	OMC	S2	1391	82	19,22,23	0.56	0	25,31,34	0.68	0
82	OMU	S2	121	82	19,22,23	3.29	7 (36%)	25,31,34	1.82	5 (20%)
82	OMU	S2	627	82	19,22,23	3.38	7 (36%)	25,31,34	1.80	5 (20%)
2	OMC	L5	2824	2	19,22,23	0.61	0	25,31,34	0.63	0
2	OMG	L5	3899	2	19,26,27	1.30	3 (15%)	21,38,41	0.85	1 (4%)
82	A2M	S2	27	82	18,25,26	1.31	2 (11%)	20,36,39	2.04	6 (30%)
82	OMG	S2	1490	82	19,26,27	1.29	3 (15%)	21,38,41	0.64	0
2	PSU	L5	1862	2	18,21,22	1.04	1 (5%)	21,30,33	2.01	4 (19%)
2	PSU	L5	1792	2	18,21,22	1.01	1 (5%)	21,30,33	1.90	4 (19%)
2	A2M	L5	4590	2	18,25,26	1.30	2 (11%)	20,36,39	2.04	5 (25%)
2	A2M	L5	1326	2	18,25,26	1.38	3 (16%)	20,36,39	1.89	7 (35%)
2	1MA	L5	1322	2,85	17,25,26	1.07	2 (11%)	17,37,40	1.17	3 (17%)
2	PSU	L5	4293	2	18,21,22	1.08	2 (11%)	21,30,33	1.99	4 (19%)
2	OMU	L5	3925	2	19,22,23	3.21	7 (36%)	25,31,34	1.94	5 (20%)
2	PSU	L5	1744	2,85	18,21,22	1.08	1 (5%)	21,30,33	1.98	5 (23%)
2	PSU	L5	1582	2	18,21,22	1.05	1 (5%)	21,30,33	1.81	4 (19%)
2	A2M	L5	3785	2,85	18,25,26	1.43	3 (16%)	20,36,39	2.49	7 (35%)
2	PSU	L5	4471	2	18,21,22	1.05	1 (5%)	21,30,33	1.91	4 (19%)
2	PSU	L5	3844	2	18,21,22	1.12	1 (5%)	21,30,33	1.92	4 (19%)
82	OMC	S2	174	82	19,22,23	0.53	0	25,31,34	0.65	0
2	A2M	L5	3718	2	18,25,26	1.28	2 (11%)	20,36,39	2.03	5 (25%)
82	PSU	S2	686	82	18,21,22	1.05	1 (5%)	21,30,33	1.93	4 (19%)
2	OMG	L5	4637	2	19,26,27	1.25	3 (15%)	21,38,41	0.86	1 (4%)
82	A2M	S2	99	85,82	18,25,26	1.34	2 (11%)	20,36,39	2.06	5 (25%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	PSU	L5	4353	2	18,21,22	1.10	2 (11%)	21,30,33	2.05	6 (28%)
2	PSU	L5	4500	2	18,21,22	1.14	2 (11%)	21,30,33	2.05	5 (23%)
2	OMC	L5	3869	2	19,22,23	0.62	0	25,31,34	0.71	0
2	PSU	L5	3695	2	18,21,22	1.05	2 (11%)	21,30,33	2.00	5 (23%)
2	OMC	L5	2365	2,85	19,22,23	0.63	0	25,31,34	0.59	0
2	PSU	L5	3637	2	18,21,22	1.08	1 (5%)	21,30,33	2.02	5 (23%)
2	OMG	L5	4494	2	19,26,27	1.27	3 (15%)	21,38,41	0.81	1 (4%)
2	PSU	L5	4576	2	18,21,22	1.09	1 (5%)	21,30,33	1.94	4 (19%)
82	OMG	S2	683	82	19,26,27	1.20	2 (10%)	21,38,41	0.80	1 (4%)
82	PSU	S2	814	82	18,21,22	1.06	1 (5%)	21,30,33	1.83	4 (19%)
2	OMU	L5	4498	2	19,22,23	3.22	7 (36%)	25,31,34	1.85	5 (20%)
2	PSU	L5	4673	2,85	18,21,22	1.07	1 (5%)	21,30,33	1.93	4 (19%)
82	PSU	S2	93	82	18,21,22	1.08	1 (5%)	21,30,33	1.82	4 (19%)
2	PSU	L5	1536	2	18,21,22	1.05	1 (5%)	21,30,33	1.90	4 (19%)
2	5MC	L5	3782	2,85	19,22,23	0.69	0	26,32,35	0.80	1 (3%)
2	OMC	L5	1340	2	19,22,23	0.67	0	25,31,34	0.80	0
2	OMG	L5	2876	2	19,26,27	1.28	3 (15%)	21,38,41	0.82	1 (4%)
82	OMU	S2	354	82	19,22,23	3.25	7 (36%)	25,31,34	1.88	5 (20%)
2	OMC	L5	3701	2	19,22,23	0.71	0	25,31,34	1.74	4 (16%)
2	PSU	L5	2632	2	18,21,22	1.10	1 (5%)	21,30,33	1.97	5 (23%)
82	PSU	S2	406	82	18,21,22	1.06	1 (5%)	21,30,33	1.98	5 (23%)
82	PSU	S2	863	82	18,21,22	1.09	1 (5%)	21,30,33	1.91	4 (19%)
2	OMC	L5	2351	2,85	19,22,23	0.67	0	25,31,34	0.90	1 (4%)
2	PSU	L5	3851	2	18,21,22	1.04	1 (5%)	21,30,33	1.95	4 (19%)
2	PSU	L5	4493	2	18,21,22	1.06	1 (5%)	21,30,33	1.88	4 (19%)
2	PSU	L5	1860	2	18,21,22	1.10	1 (5%)	21,30,33	1.97	4 (19%)
82	PSU	S2	1045	82	18,21,22	1.06	1 (5%)	21,30,33	1.96	4 (19%)
2	PSU	L5	4579	2	18,21,22	1.07	1 (5%)	21,30,33	1.99	4 (19%)
4	OMG	L8	75	4	19,26,27	1.23	3 (15%)	21,38,41	0.80	1 (4%)
82	OMC	S2	1272	82	19,22,23	0.55	0	25,31,34	0.85	1 (4%)
4	PSU	L8	55	4	18,21,22	1.04	1 (5%)	21,30,33	1.98	4 (19%)
2	A2M	L5	1871	2,85	18,25,26	1.46	4 (22%)	20,36,39	2.24	6 (30%)
2	A2M	L5	2401	2	18,25,26	1.37	2 (11%)	20,36,39	2.11	7 (35%)
2	PSU	L5	1677	2	18,21,22	1.05	1 (5%)	21,30,33	1.91	3 (14%)
82	OMG	S2	436	82	19,26,27	1.22	3 (15%)	21,38,41	0.84	1 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
82	OMU	S2	1326	82	19,22,23	3.32	7 (36%)	25,31,34	1.84	5 (20%)
82	6MZ	S2	1832	85,82	21,26,26	1.27	1 (4%)	22,39,39	1.88	3 (13%)
2	PSU	L5	4299	2	18,21,22	1.05	1 (5%)	21,30,33	1.88	4 (19%)
2	OMG	L5	2424	2	19,26,27	1.27	3 (15%)	21,38,41	0.71	0
2	OMG	L5	4618	2	19,26,27	1.25	3 (15%)	21,38,41	0.79	1 (4%)
2	OMG	L5	1316	2	19,26,27	1.34	3 (15%)	21,38,41	0.82	1 (4%)
82	OMC	S2	517	82	19,22,23	0.56	0	25,31,34	0.64	0
2	PSU	L5	4689	2	18,21,22	1.07	2 (11%)	21,30,33	2.07	4 (19%)
2	PSU	L5	4361	2	18,21,22	1.05	1 (5%)	21,30,33	1.86	4 (19%)
2	PSU	L5	4636	2	18,21,22	1.10	1 (5%)	21,30,33	2.04	6 (28%)
2	5MC	L5	4447	2	19,22,23	0.87	0	26,32,35	0.65	0
2	PSU	L5	4628	2	18,21,22	1.01	1 (5%)	21,30,33	1.86	5 (23%)
82	4AC	S2	1842	82	21,24,25	0.39	0	28,34,37	0.48	0
82	A2M	S2	576	82	18,25,26	1.29	2 (11%)	20,36,39	1.96	5 (25%)
82	A2M	S2	668	85,82	18,25,26	1.43	3 (16%)	20,36,39	2.09	7 (35%)
2	OMC	L5	2804	2	19,22,23	0.63	0	25,31,34	0.67	0
82	MA6	S2	1851	82	19,26,27	1.47	3 (15%)	18,38,41	3.57	3 (16%)
2	PSU	L5	4442	2	18,21,22	1.09	1 (5%)	21,30,33	2.03	6 (28%)
82	PSU	S2	681	82	18,21,22	1.06	1 (5%)	21,30,33	1.87	4 (19%)
2	A2M	L5	4523	2,85	18,25,26	1.46	4 (22%)	20,36,39	2.17	5 (25%)
82	MA6	S2	1850	82	19,26,27	1.46	3 (15%)	18,38,41	3.46	3 (16%)
82	OMC	S2	462	82	19,22,23	0.54	0	25,31,34	0.69	0
2	PSU	L5	4431	2	18,21,22	1.04	1 (5%)	21,30,33	1.90	4 (19%)
82	PSU	S2	1004	82	18,21,22	1.09	1 (5%)	21,30,33	1.95	4 (19%)
82	PSU	S2	109	82	18,21,22	1.08	2 (11%)	21,30,33	1.93	4 (19%)
4	PSU	L8	69	4	18,21,22	1.08	1 (5%)	21,30,33	2.04	6 (28%)
2	PSU	L5	1782	2	18,21,22	1.07	1 (5%)	21,30,33	1.89	4 (19%)
82	OMU	S2	1288	82	19,22,23	3.40	7 (36%)	25,31,34	1.75	5 (20%)
82	B8N	S2	1248	82	25,29,30	3.25	6 (24%)	28,42,45	1.98	7 (25%)
2	PSU	L5	4457	2	18,21,22	1.05	2 (11%)	21,30,33	2.09	6 (28%)
2	PSU	L5	3822	2	18,21,22	1.09	1 (5%)	21,30,33	1.96	5 (23%)
2	PSU	L5	3639	2	18,21,22	1.08	2 (11%)	21,30,33	2.06	5 (23%)
2	OMG	L5	4370	2	19,26,27	1.28	3 (15%)	21,38,41	0.77	1 (4%)
82	A2M	S2	1383	82	18,25,26	1.29	2 (11%)	20,36,39	2.21	5 (25%)
2	OMG	L5	3792	2	19,26,27	1.28	3 (15%)	21,38,41	0.74	1 (4%)
2	OMU	L5	4306	2	19,22,23	3.22	7 (36%)	25,31,34	1.88	5 (20%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PSU	L5	4403	2	-	0/7/25/26	0/2/2/2
2	A2M	L5	400	2	-	1/5/27/28	0/3/3/3
2	A2M	L5	3830	2	-	0/5/27/28	0/3/3/3
82	PSU	S2	649	82	-	0/7/25/26	0/2/2/2
2	OMG	L5	4392	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	1781	2	-	1/7/25/26	0/2/2/2
82	PSU	S2	1244	82	-	0/7/25/26	0/2/2/2
82	PSU	S2	801	82	-	2/7/25/26	0/2/2/2
2	PSU	L5	4521	2,85	-	0/7/25/26	0/2/2/2
2	OMG	L5	4196	2	-	1/5/27/28	0/3/3/3
2	PSU	L5	4532	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	866	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	3920	2,85	-	0/7/25/26	0/2/2/2
2	PSU	L5	3884	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	1056	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	4973	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	1081	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	2839	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	5001	2	-	0/7/25/26	0/2/2/2
2	OMC	L5	3887	2	-	1/9/27/28	0/2/2/2
2	A2M	L5	398	2	-	1/5/27/28	0/3/3/3
2	OMC	L5	4536	2	-	0/9/27/28	0/2/2/2
2	PSU	L5	3853	2,85	-	0/7/25/26	0/2/2/2
2	OMU	L5	4227	2	-	0/9/27/28	0/2/2/2
2	PSU	L5	4552	2	-	0/7/25/26	0/2/2/2
2	A2M	L5	2363	2,85	-	0/5/27/28	0/3/3/3
82	OMU	S2	1442	82	-	2/9/27/28	0/2/2/2
2	UY1	L5	3818	2	-	2/9/27/28	0/2/2/2
2	PSU	L5	5010	2	-	0/7/25/26	0/2/2/2
82	OMC	S2	1703	82	-	1/9/27/28	0/2/2/2
82	PSU	S2	1046	82	-	0/7/25/26	0/2/2/2
2	OMG	L5	1522	2	-	0/5/27/28	0/3/3/3
2	A2M	L5	1534	2,85	-	1/5/27/28	0/3/3/3
82	PSU	S2	1177	82	-	0/7/25/26	0/2/2/2
2	6MZ	L5	4220	2	-	2/8/28/28	0/3/3/3
82	OMU	S2	172	82	-	0/9/27/28	0/2/2/2
82	G7M	S2	1639	82	-	2/3/25/26	0/3/3/3
82	PSU	S2	651	82	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	OMG	L5	4228	2	-	0/5/27/28	0/3/3/3
2	A2M	L5	1524	2	-	2/5/27/28	0/3/3/3
2	PSU	L5	4312	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4296	2	-	0/7/25/26	0/2/2/2
82	A2M	S2	468	82	-	0/5/27/28	0/3/3/3
82	PSU	S2	1174	82	-	0/7/25/26	0/2/2/2
82	PSU	S2	1367	82	-	0/7/25/26	0/2/2/2
2	OMU	L5	2837	2	-	0/9/27/28	0/2/2/2
82	OMU	S2	428	82	-	6/9/27/28	0/2/2/2
82	OMG	S2	867	82	-	3/5/27/28	0/3/3/3
2	A2M	L5	3867	2	-	2/5/27/28	0/3/3/3
2	PSU	L5	4972	2	-	0/7/25/26	0/2/2/2
82	A2M	S2	166	82	-	1/5/27/28	0/3/3/3
2	A2M	L5	1323	2	-	2/5/27/28	0/3/3/3
2	OMG	L5	3744	2	-	0/5/27/28	0/3/3/3
2	OMG	L5	4499	2	-	0/5/27/28	0/3/3/3
2	A2M	L5	3825	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	1683	2	-	0/7/25/26	0/2/2/2
82	OMU	S2	116	82	-	0/9/27/28	0/2/2/2
82	4AC	S2	1337	82	-	1/11/29/30	0/2/2/2
2	OMG	L5	1625	2	-	2/5/27/28	0/3/3/3
2	OMC	L5	3808	2,85	-	0/9/27/28	0/2/2/2
82	PSU	S2	966	85,82	-	0/7/25/26	0/2/2/2
82	OMG	S2	1328	82	-	0/5/27/28	0/3/3/3
2	OMC	L5	2422	2,85	-	2/9/27/28	0/2/2/2
2	OMC	L5	4456	2	-	0/9/27/28	0/2/2/2
2	OMG	L5	3627	2	-	0/5/27/28	0/3/3/3
82	PSU	S2	105	82	-	0/7/25/26	0/2/2/2
82	PSU	S2	1232	82	-	0/7/25/26	0/2/2/2
2	OMG	L5	4623	2	-	0/5/27/28	0/3/3/3
82	OMG	S2	601	82	-	1/5/27/28	0/3/3/3
2	A2M	L5	2787	2	-	2/5/27/28	0/3/3/3
82	OMG	S2	509	82	-	0/5/27/28	0/3/3/3
2	A2M	L5	4571	2	-	0/5/27/28	0/3/3/3
2	A2M	L5	2815	2	-	2/5/27/28	0/3/3/3
82	OMU	S2	799	82	-	2/9/27/28	0/2/2/2
2	OMU	L5	4620	2	-	0/9/27/28	0/2/2/2
82	OMG	S2	644	82	-	3/5/27/28	0/3/3/3
82	A2M	S2	159	82	-	1/5/27/28	0/3/3/3
82	A2M	S2	1031	82	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
82	A2M	S2	484	82	-	0/5/27/28	0/3/3/3
2	OMC	L5	3841	2	-	1/9/27/28	0/2/2/2
2	OMG	L5	2364	2,85	-	2/5/27/28	0/3/3/3
2	OMC	L5	2861	2	-	0/9/27/28	0/2/2/2
2	UR3	L5	4530	2	-	0/7/25/26	0/2/2/2
82	OMC	S2	1391	82	-	0/9/27/28	0/2/2/2
82	OMU	S2	121	82	-	0/9/27/28	0/2/2/2
82	OMU	S2	627	82	-	1/9/27/28	0/2/2/2
2	OMC	L5	2824	2	-	0/9/27/28	0/2/2/2
2	OMG	L5	3899	2	-	2/5/27/28	0/3/3/3
82	A2M	S2	27	82	-	1/5/27/28	0/3/3/3
82	OMG	S2	1490	82	-	1/5/27/28	0/3/3/3
2	PSU	L5	1862	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	1792	2	-	0/7/25/26	0/2/2/2
2	A2M	L5	4590	2	-	3/5/27/28	0/3/3/3
2	A2M	L5	1326	2	-	4/5/27/28	0/3/3/3
2	1MA	L5	1322	2,85	-	0/3/25/26	0/3/3/3
2	PSU	L5	4293	2	-	0/7/25/26	0/2/2/2
2	OMU	L5	3925	2	-	0/9/27/28	0/2/2/2
2	PSU	L5	1744	2,85	-	0/7/25/26	0/2/2/2
2	PSU	L5	1582	2	-	0/7/25/26	0/2/2/2
2	A2M	L5	3785	2,85	-	1/5/27/28	0/3/3/3
2	PSU	L5	4471	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	3844	2	-	1/7/25/26	0/2/2/2
82	OMC	S2	174	82	-	0/9/27/28	0/2/2/2
2	A2M	L5	3718	2	-	0/5/27/28	0/3/3/3
82	PSU	S2	686	82	-	0/7/25/26	0/2/2/2
2	OMG	L5	4637	2	-	2/5/27/28	0/3/3/3
82	A2M	S2	99	85,82	-	2/5/27/28	0/3/3/3
2	PSU	L5	4353	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4500	2	-	3/7/25/26	0/2/2/2
2	OMC	L5	3869	2	-	1/9/27/28	0/2/2/2
2	PSU	L5	3695	2	-	0/7/25/26	0/2/2/2
2	OMC	L5	2365	2,85	-	0/9/27/28	0/2/2/2
2	PSU	L5	3637	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	4494	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	4576	2	-	0/7/25/26	0/2/2/2
82	OMG	S2	683	82	-	2/5/27/28	0/3/3/3
82	PSU	S2	814	82	-	0/7/25/26	0/2/2/2
2	OMU	L5	4498	2	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	PSU	L5	4673	2,85	-	0/7/25/26	0/2/2/2
82	PSU	S2	93	82	-	0/7/25/26	0/2/2/2
2	PSU	L5	1536	2	-	2/7/25/26	0/2/2/2
2	5MC	L5	3782	2,85	-	1/7/25/26	0/2/2/2
2	OMC	L5	1340	2	-	1/9/27/28	0/2/2/2
2	OMG	L5	2876	2	-	2/5/27/28	0/3/3/3
82	OMU	S2	354	82	-	0/9/27/28	0/2/2/2
2	OMC	L5	3701	2	-	6/9/27/28	0/2/2/2
2	PSU	L5	2632	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	406	82	-	0/7/25/26	0/2/2/2
82	PSU	S2	863	82	-	0/7/25/26	0/2/2/2
2	OMC	L5	2351	2,85	-	2/9/27/28	0/2/2/2
2	PSU	L5	3851	2	-	1/7/25/26	0/2/2/2
2	PSU	L5	4493	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	1860	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	1045	82	-	2/7/25/26	0/2/2/2
2	PSU	L5	4579	2	-	0/7/25/26	0/2/2/2
4	OMG	L8	75	4	-	1/5/27/28	0/3/3/3
82	OMC	S2	1272	82	-	2/9/27/28	0/2/2/2
4	PSU	L8	55	4	-	0/7/25/26	0/2/2/2
2	A2M	L5	1871	2,85	-	0/5/27/28	0/3/3/3
2	A2M	L5	2401	2	-	0/5/27/28	0/3/3/3
2	PSU	L5	1677	2	-	3/7/25/26	0/2/2/2
82	OMG	S2	436	82	-	2/5/27/28	0/3/3/3
82	OMU	S2	1326	82	-	0/9/27/28	0/2/2/2
82	6MZ	S2	1832	85,82	-	3/8/28/28	0/3/3/3
2	PSU	L5	4299	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	2424	2	-	0/5/27/28	0/3/3/3
2	OMG	L5	4618	2	-	2/5/27/28	0/3/3/3
2	OMG	L5	1316	2	-	0/5/27/28	0/3/3/3
82	OMC	S2	517	82	-	2/9/27/28	0/2/2/2
2	PSU	L5	4689	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4361	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	4636	2	-	0/7/25/26	0/2/2/2
2	5MC	L5	4447	2	-	4/7/25/26	0/2/2/2
2	PSU	L5	4628	2	-	0/7/25/26	0/2/2/2
82	4AC	S2	1842	82	-	0/11/29/30	0/2/2/2
82	A2M	S2	576	82	-	3/5/27/28	0/3/3/3
82	A2M	S2	668	85,82	-	2/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	OMC	L5	2804	2	-	0/9/27/28	0/2/2/2
82	MA6	S2	1851	82	-	1/7/29/30	0/3/3/3
2	PSU	L5	4442	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	681	82	-	0/7/25/26	0/2/2/2
2	A2M	L5	4523	2,85	-	0/5/27/28	0/3/3/3
82	MA6	S2	1850	82	-	0/7/29/30	0/3/3/3
82	OMC	S2	462	82	-	0/9/27/28	0/2/2/2
2	PSU	L5	4431	2	-	0/7/25/26	0/2/2/2
82	PSU	S2	1004	82	-	0/7/25/26	0/2/2/2
82	PSU	S2	109	82	-	0/7/25/26	0/2/2/2
4	PSU	L8	69	4	-	0/7/25/26	0/2/2/2
2	PSU	L5	1782	2	-	0/7/25/26	0/2/2/2
82	OMU	S2	1288	82	-	2/9/27/28	0/2/2/2
82	B8N	S2	1248	82	-	4/16/34/35	0/2/2/2
2	PSU	L5	4457	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	3822	2	-	0/7/25/26	0/2/2/2
2	PSU	L5	3639	2	-	0/7/25/26	0/2/2/2
2	OMG	L5	4370	2	-	0/5/27/28	0/3/3/3
82	A2M	S2	1383	82	-	3/5/27/28	0/3/3/3
2	OMG	L5	3792	2	-	2/5/27/28	0/3/3/3
2	OMU	L5	4306	2	-	0/9/27/28	0/2/2/2

All (402) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	3818	UY1	C6-C5	12.47	1.49	1.35
2	L5	3818	UY1	C2-N1	11.60	1.51	1.36
82	S2	1288	OMU	C2-N1	8.58	1.51	1.38
82	S2	799	OMU	C2-N1	8.31	1.51	1.38
82	S2	627	OMU	C2-N1	8.18	1.51	1.38
82	S2	1442	OMU	C2-N1	8.10	1.51	1.38
82	S2	172	OMU	C2-N1	8.09	1.51	1.38
82	S2	428	OMU	C2-N1	8.08	1.51	1.38
82	S2	116	OMU	C2-N1	8.08	1.51	1.38
82	S2	1248	B8N	C4-N3	-8.04	1.26	1.40
82	S2	1326	OMU	C2-N1	8.02	1.51	1.38
82	S2	121	OMU	C2-N1	8.00	1.51	1.38
2	L5	4227	OMU	C2-N1	7.97	1.50	1.38
2	L5	2837	OMU	C2-N1	7.86	1.50	1.38
2	L5	4306	OMU	C2-N1	7.85	1.50	1.38
82	S2	354	OMU	C2-N1	7.84	1.50	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	3925	OMU	C2-N1	7.82	1.50	1.38
82	S2	1248	B8N	C6-N1	7.78	1.55	1.36
2	L5	4498	OMU	C2-N1	7.64	1.50	1.38
2	L5	4620	OMU	C2-N1	7.60	1.50	1.38
2	L5	3818	UY1	C2-N3	7.57	1.49	1.37
82	S2	627	OMU	C2-N3	6.96	1.50	1.38
82	S2	1248	B8N	C4-C5	6.91	1.63	1.47
82	S2	1442	OMU	C2-N3	6.87	1.49	1.38
82	S2	799	OMU	C2-N3	6.86	1.49	1.38
82	S2	116	OMU	C2-N3	6.84	1.49	1.38
82	S2	1288	OMU	C2-N3	6.83	1.49	1.38
82	S2	1326	OMU	C2-N3	6.81	1.49	1.38
82	S2	428	OMU	C2-N3	6.79	1.49	1.38
82	S2	172	OMU	C2-N3	6.77	1.49	1.38
82	S2	121	OMU	C2-N3	6.72	1.49	1.38
2	L5	4227	OMU	C2-N3	6.68	1.49	1.38
82	S2	354	OMU	C2-N3	6.58	1.49	1.38
2	L5	2837	OMU	C2-N3	6.57	1.49	1.38
2	L5	4306	OMU	C2-N3	6.53	1.49	1.38
2	L5	4498	OMU	C2-N3	6.51	1.49	1.38
2	L5	3925	OMU	C2-N3	6.45	1.49	1.38
2	L5	4620	OMU	C2-N3	6.40	1.49	1.38
2	L5	4530	UR3	C6-C5	6.20	1.49	1.35
2	L5	4530	UR3	C2-N1	5.98	1.46	1.38
82	S2	627	OMU	C6-C5	5.89	1.48	1.35
82	S2	1288	OMU	C6-C5	5.88	1.48	1.35
82	S2	1248	B8N	C2-N1	5.86	1.56	1.39
82	S2	799	OMU	C6-C5	5.83	1.48	1.35
82	S2	172	OMU	C6-C5	5.80	1.48	1.35
82	S2	428	OMU	C6-C5	5.79	1.48	1.35
82	S2	1442	OMU	C6-C5	5.79	1.48	1.35
82	S2	1326	OMU	C6-C5	5.78	1.48	1.35
2	L5	4620	OMU	O4-C4	-5.72	1.13	1.24
82	S2	121	OMU	C6-C5	5.71	1.48	1.35
82	S2	354	OMU	C6-C5	5.71	1.48	1.35
2	L5	3925	OMU	O4-C4	-5.71	1.13	1.24
2	L5	4498	OMU	C6-C5	5.68	1.48	1.35
2	L5	4227	OMU	C6-C5	5.67	1.48	1.35
2	L5	4306	OMU	O4-C4	-5.66	1.13	1.24
82	S2	116	OMU	C6-C5	5.65	1.48	1.35
2	L5	2837	OMU	C6-C5	5.63	1.48	1.35
2	L5	4498	OMU	O4-C4	-5.62	1.13	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	4227	OMU	O4-C4	-5.59	1.13	1.24
2	L5	2837	OMU	O4-C4	-5.58	1.13	1.24
82	S2	116	OMU	O4-C4	-5.57	1.13	1.24
82	S2	354	OMU	O4-C4	-5.56	1.13	1.24
2	L5	4306	OMU	C6-C5	5.56	1.48	1.35
2	L5	4620	OMU	C6-C5	5.56	1.48	1.35
82	S2	1326	OMU	O4-C4	-5.55	1.13	1.24
2	L5	3925	OMU	C6-C5	5.54	1.47	1.35
2	L5	4530	UR3	C2-N3	5.49	1.49	1.39
82	S2	121	OMU	O4-C4	-5.48	1.13	1.24
82	S2	428	OMU	O4-C4	-5.48	1.13	1.24
82	S2	799	OMU	O4-C4	-5.47	1.13	1.24
82	S2	627	OMU	O4-C4	-5.46	1.13	1.24
82	S2	1442	OMU	O4-C4	-5.46	1.13	1.24
82	S2	1288	OMU	O4-C4	-5.44	1.13	1.24
82	S2	172	OMU	O4-C4	-5.43	1.13	1.24
2	L5	3818	UY1	C6-N1	5.26	1.44	1.36
82	S2	1639	G7M	C2-N3	5.24	1.46	1.33
82	S2	1248	B8N	C6-C5	5.17	1.42	1.35
82	S2	1639	G7M	C4-N3	4.84	1.48	1.37
82	S2	1639	G7M	C2-N2	4.83	1.45	1.34
2	L5	4220	6MZ	C6-C5	-4.57	1.37	1.44
82	S2	627	OMU	C4-N3	4.47	1.46	1.38
2	L5	3818	UY1	C4-N3	4.37	1.47	1.38
82	S2	1442	OMU	C4-N3	4.35	1.46	1.38
82	S2	172	OMU	C4-N3	4.32	1.46	1.38
82	S2	1288	OMU	C4-N3	4.32	1.46	1.38
82	S2	1326	OMU	C4-N3	4.31	1.46	1.38
82	S2	428	OMU	C4-N3	4.28	1.45	1.38
82	S2	116	OMU	C4-N3	4.25	1.45	1.38
82	S2	121	OMU	C4-N3	4.20	1.45	1.38
82	S2	799	OMU	C4-N3	4.20	1.45	1.38
82	S2	354	OMU	C4-N3	4.15	1.45	1.38
2	L5	4498	OMU	C4-N3	4.06	1.45	1.38
2	L5	2837	OMU	C4-N3	4.05	1.45	1.38
2	L5	4227	OMU	C4-N3	4.05	1.45	1.38
2	L5	4306	OMU	C4-N3	4.00	1.45	1.38
82	S2	1832	6MZ	C6-C5	-3.88	1.38	1.44
82	S2	1851	MA6	C6-C5	-3.86	1.38	1.44
2	L5	3925	OMU	C4-N3	3.84	1.45	1.38
82	S2	1850	MA6	C6-C5	-3.83	1.39	1.44
2	L5	4620	OMU	C4-N3	3.81	1.45	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	3818	UY1	O4-C4	-3.76	1.16	1.23
2	L5	2401	A2M	O5'-C5'	-3.70	1.33	1.44
2	L5	2876	OMG	C8-N7	-3.61	1.29	1.34
82	S2	801	PSU	C6-C5	3.60	1.39	1.35
82	S2	1639	G7M	C6-N1	3.60	1.43	1.37
2	L5	3825	A2M	O5'-C5'	-3.55	1.33	1.44
2	L5	2787	A2M	O5'-C5'	-3.53	1.33	1.44
82	S2	668	A2M	O5'-C5'	-3.53	1.33	1.44
82	S2	1248	B8N	C1'-C5	3.52	1.58	1.50
2	L5	3785	A2M	O5'-C5'	-3.49	1.34	1.44
82	S2	93	PSU	C6-C5	3.48	1.39	1.35
82	S2	99	A2M	O5'-C5'	-3.48	1.34	1.44
2	L5	3830	A2M	O5'-C5'	-3.48	1.34	1.44
2	L5	3844	PSU	C6-C5	3.47	1.39	1.35
2	L5	1326	A2M	O5'-C5'	-3.47	1.34	1.44
2	L5	5010	PSU	C6-C5	3.46	1.39	1.35
2	L5	4500	PSU	C6-C5	3.46	1.39	1.35
2	L5	1871	A2M	O5'-C5'	-3.46	1.34	1.44
82	S2	1367	PSU	C6-C5	3.46	1.39	1.35
82	S2	1031	A2M	O5'-C5'	-3.46	1.34	1.44
2	L5	400	A2M	O5'-C5'	-3.46	1.34	1.44
82	S2	1232	PSU	C6-C5	3.46	1.39	1.35
2	L5	1625	OMG	C8-N7	-3.45	1.29	1.34
2	L5	1323	A2M	O5'-C5'	-3.45	1.34	1.44
82	S2	468	A2M	O5'-C5'	-3.44	1.34	1.44
82	S2	1244	PSU	C6-C5	3.44	1.39	1.35
2	L5	1524	A2M	O5'-C5'	-3.43	1.34	1.44
82	S2	866	PSU	C6-C5	3.42	1.39	1.35
2	L5	2363	A2M	O5'-C5'	-3.42	1.34	1.44
82	S2	966	PSU	C6-C5	3.41	1.39	1.35
82	S2	1383	A2M	O5'-C5'	-3.40	1.34	1.44
82	S2	1004	PSU	C6-C5	3.40	1.39	1.35
82	S2	27	A2M	O5'-C5'	-3.40	1.34	1.44
2	L5	2815	A2M	O5'-C5'	-3.40	1.34	1.44
82	S2	651	PSU	C6-C5	3.39	1.39	1.35
2	L5	1860	PSU	C6-C5	3.39	1.39	1.35
2	L5	4571	A2M	O5'-C5'	-3.39	1.34	1.44
82	S2	105	PSU	C6-C5	3.38	1.39	1.35
82	S2	1851	MA6	C6-N6	3.38	1.45	1.37
2	L5	2632	PSU	C6-C5	3.38	1.39	1.35
82	S2	576	A2M	O5'-C5'	-3.38	1.34	1.44
2	L5	4552	PSU	C6-C5	3.37	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	4312	PSU	C6-C5	3.37	1.39	1.35
82	S2	863	PSU	C6-C5	3.37	1.39	1.35
82	S2	1850	MA6	C6-N6	3.36	1.45	1.37
2	L5	1782	PSU	C6-C5	3.36	1.39	1.35
2	L5	5001	PSU	C6-C5	3.36	1.39	1.35
82	S2	1177	PSU	C6-C5	3.35	1.39	1.35
2	L5	3867	A2M	O5'-C5'	-3.35	1.34	1.44
2	L5	3792	OMG	C8-N7	-3.34	1.29	1.34
82	S2	814	PSU	C6-C5	3.32	1.39	1.35
2	L5	398	A2M	O5'-C5'	-3.32	1.34	1.44
82	S2	166	A2M	O5'-C5'	-3.32	1.34	1.44
2	L5	4590	A2M	O5'-C5'	-3.32	1.34	1.44
82	S2	109	PSU	C6-C5	3.31	1.39	1.35
2	L5	3718	A2M	O5'-C5'	-3.31	1.34	1.44
82	S2	484	A2M	O5'-C5'	-3.31	1.34	1.44
2	L5	4523	A2M	O5'-C5'	-3.30	1.34	1.44
2	L5	3818	UY1	O2-C2	-3.30	1.16	1.23
2	L5	4576	PSU	C6-C5	3.30	1.38	1.35
2	L5	1522	OMG	C8-N7	-3.30	1.29	1.34
2	L5	1781	PSU	C6-C5	3.29	1.38	1.35
2	L5	1316	OMG	C8-N7	-3.29	1.29	1.34
2	L5	4493	PSU	C6-C5	3.28	1.38	1.35
2	L5	3818	UY1	C1'-C5	3.27	1.57	1.50
82	S2	1174	PSU	C6-C5	3.27	1.38	1.35
82	S2	1045	PSU	C6-C5	3.26	1.38	1.35
82	S2	1046	PSU	C6-C5	3.26	1.38	1.35
82	S2	686	PSU	C6-C5	3.26	1.38	1.35
2	L5	2364	OMG	C8-N7	-3.25	1.29	1.34
2	L5	4618	OMG	C8-N7	-3.25	1.29	1.34
82	S2	1490	OMG	C8-N7	-3.25	1.29	1.34
2	L5	1744	PSU	C6-C5	3.25	1.38	1.35
2	L5	4532	PSU	C6-C5	3.25	1.38	1.35
2	L5	4392	OMG	C8-N7	-3.24	1.29	1.34
2	L5	4636	PSU	C6-C5	3.24	1.38	1.35
82	S2	649	PSU	C6-C5	3.23	1.38	1.35
2	L5	3853	PSU	C6-C5	3.23	1.38	1.35
82	S2	406	PSU	C6-C5	3.23	1.38	1.35
2	L5	1862	PSU	C6-C5	3.23	1.38	1.35
4	L8	69	PSU	C6-C5	3.21	1.38	1.35
2	L5	4353	PSU	C6-C5	3.21	1.38	1.35
2	L5	3822	PSU	C6-C5	3.20	1.38	1.35
2	L5	4196	OMG	C8-N7	-3.20	1.29	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	4579	PSU	C6-C5	3.20	1.38	1.35
2	L5	4673	PSU	C6-C5	3.20	1.38	1.35
2	L5	4521	PSU	C6-C5	3.19	1.38	1.35
2	L5	4494	OMG	C8-N7	-3.19	1.29	1.34
2	L5	1683	PSU	C6-C5	3.19	1.38	1.35
2	L5	4442	PSU	C6-C5	3.19	1.38	1.35
82	S2	1639	G7M	C5-C6	3.18	1.53	1.45
2	L5	3637	PSU	C6-C5	3.18	1.38	1.35
2	L5	4296	PSU	C6-C5	3.18	1.38	1.35
2	L5	4293	PSU	C6-C5	3.18	1.38	1.35
82	S2	681	PSU	C6-C5	3.18	1.38	1.35
2	L5	3899	OMG	C8-N7	-3.17	1.29	1.34
2	L5	4370	OMG	C8-N7	-3.17	1.29	1.34
2	L5	4637	OMG	C8-N7	-3.17	1.29	1.34
82	S2	159	A2M	O5'-C5'	-3.16	1.35	1.44
2	L5	4973	PSU	C6-C5	3.15	1.38	1.35
2	L5	4299	PSU	C6-C5	3.15	1.38	1.35
2	L5	4431	PSU	C6-C5	3.14	1.38	1.35
4	L8	75	OMG	C8-N7	-3.14	1.29	1.34
82	S2	1056	PSU	C6-C5	3.14	1.38	1.35
2	L5	2424	OMG	C8-N7	-3.13	1.29	1.34
4	L8	55	PSU	C6-C5	3.13	1.38	1.35
2	L5	4361	PSU	C6-C5	3.13	1.38	1.35
2	L5	3744	OMG	C8-N7	-3.13	1.29	1.34
2	L5	4471	PSU	C6-C5	3.12	1.38	1.35
2	L5	1582	PSU	C6-C5	3.12	1.38	1.35
2	L5	3627	OMG	C8-N7	-3.12	1.30	1.34
2	L5	2839	PSU	C6-C5	3.11	1.38	1.35
2	L5	3884	PSU	C6-C5	3.10	1.38	1.35
82	S2	436	OMG	C8-N7	-3.10	1.30	1.34
2	L5	4499	OMG	C8-N7	-3.09	1.30	1.34
2	L5	4689	PSU	C6-C5	3.09	1.38	1.35
2	L5	1534	A2M	O5'-C5'	-3.09	1.35	1.44
2	L5	4623	OMG	C8-N7	-3.09	1.30	1.34
2	L5	4972	PSU	C6-C5	3.08	1.38	1.35
82	S2	601	OMG	C8-N7	-3.06	1.30	1.34
82	S2	644	OMG	C8-N7	-3.06	1.30	1.34
2	L5	3695	PSU	C6-C5	3.06	1.38	1.35
82	S2	1081	PSU	C6-C5	3.05	1.38	1.35
82	S2	668	A2M	O4'-C4'	-3.04	1.38	1.45
2	L5	3851	PSU	C6-C5	3.04	1.38	1.35
82	S2	1490	OMG	C5-C6	-3.04	1.41	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	4228	OMG	C8-N7	-3.03	1.30	1.34
2	L5	1792	PSU	C6-C5	3.03	1.38	1.35
2	L5	4628	PSU	C6-C5	2.99	1.38	1.35
82	S2	509	OMG	C8-N7	-2.99	1.30	1.34
82	S2	683	OMG	C8-N7	-2.98	1.30	1.34
2	L5	1871	A2M	C1'-N9	-2.96	1.42	1.49
2	L5	3785	A2M	C1'-N9	-2.96	1.42	1.49
82	S2	867	OMG	C8-N7	-2.95	1.30	1.34
2	L5	3639	PSU	C6-C5	2.93	1.38	1.35
2	L5	3920	PSU	C6-C5	2.93	1.38	1.35
2	L5	1536	PSU	C6-C5	2.92	1.38	1.35
82	S2	1328	OMG	C8-N7	-2.91	1.30	1.34
2	L5	1316	OMG	C5-C6	-2.89	1.41	1.47
2	L5	4403	PSU	C6-C5	2.88	1.38	1.35
82	S2	627	OMU	C5-C4	2.87	1.49	1.43
2	L5	2424	OMG	C5-C6	-2.86	1.41	1.47
2	L5	1534	A2M	C1'-N9	-2.86	1.42	1.49
2	L5	4523	A2M	C1'-N9	-2.85	1.42	1.49
2	L5	4457	PSU	C6-C5	2.84	1.38	1.35
2	L5	4370	OMG	C5-C6	-2.83	1.41	1.47
2	L5	1522	OMG	C5-C6	-2.82	1.41	1.47
2	L5	4494	OMG	C5-C6	-2.81	1.41	1.47
82	S2	1288	OMU	C5-C4	2.80	1.49	1.43
2	L5	1625	OMG	C5-C6	-2.80	1.41	1.47
2	L5	1322	1MA	C8-N7	-2.79	1.30	1.34
2	L5	1677	PSU	C6-C5	2.79	1.38	1.35
82	S2	799	OMU	C5-C4	2.79	1.49	1.43
2	L5	3792	OMG	C5-C6	-2.78	1.41	1.47
2	L5	4623	OMG	C5-C6	-2.78	1.42	1.47
2	L5	2364	OMG	C5-C6	-2.78	1.42	1.47
82	S2	1326	OMU	C5-C4	2.78	1.49	1.43
82	S2	172	OMU	C5-C4	2.77	1.49	1.43
2	L5	4530	UR3	O2-C2	-2.76	1.17	1.22
82	S2	1639	G7M	C2-N1	2.75	1.44	1.37
2	L5	3825	A2M	C1'-N9	-2.75	1.43	1.49
2	L5	2401	A2M	C1'-N9	-2.74	1.43	1.49
2	L5	3627	OMG	C5-C6	-2.73	1.42	1.47
2	L5	4637	OMG	C5-C6	-2.72	1.42	1.47
2	L5	3899	OMG	C5-C6	-2.71	1.42	1.47
2	L5	3744	OMG	C5-C6	-2.71	1.42	1.47
82	S2	428	OMU	C5-C4	2.71	1.49	1.43
2	L5	4228	OMG	C5-C6	-2.70	1.42	1.47

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	4392	OMG	C5-C6	-2.70	1.42	1.47
82	S2	1442	OMU	C5-C4	2.70	1.49	1.43
2	L5	4196	OMG	C5-C6	-2.69	1.42	1.47
2	L5	4498	OMU	C5-C4	2.68	1.49	1.43
82	S2	1288	OMU	C6-N1	2.68	1.44	1.38
2	L5	4571	A2M	C1'-N9	-2.68	1.43	1.49
4	L8	75	OMG	C5-C6	-2.68	1.42	1.47
2	L5	2876	OMG	C5-C6	-2.68	1.42	1.47
2	L5	4499	OMG	C5-C6	-2.66	1.42	1.47
82	S2	627	OMU	C6-N1	2.65	1.44	1.38
2	L5	4227	OMU	C5-C4	2.65	1.49	1.43
82	S2	121	OMU	C5-C4	2.64	1.49	1.43
82	S2	436	OMG	C5-C6	-2.63	1.42	1.47
82	S2	354	OMU	C5-C4	2.63	1.49	1.43
2	L5	2837	OMU	C5-C4	2.62	1.49	1.43
2	L5	4618	OMG	C5-C6	-2.62	1.42	1.47
82	S2	1442	OMU	C6-N1	2.62	1.44	1.38
82	S2	799	OMU	C6-N1	2.62	1.44	1.38
82	S2	867	OMG	C5-C6	-2.62	1.42	1.47
2	L5	3925	OMU	C5-C4	2.61	1.49	1.43
82	S2	683	OMG	C5-C6	-2.61	1.42	1.47
82	S2	509	OMG	C5-C6	-2.61	1.42	1.47
2	L5	1524	A2M	O4'-C4'	-2.61	1.39	1.45
2	L5	1322	1MA	C5-C4	-2.60	1.36	1.43
2	L5	4571	A2M	O4'-C4'	-2.60	1.39	1.45
82	S2	576	A2M	C1'-N9	-2.59	1.43	1.49
82	S2	644	OMG	C5-C6	-2.59	1.42	1.47
82	S2	601	OMG	C5-C6	-2.58	1.42	1.47
82	S2	468	A2M	C1'-N9	-2.58	1.43	1.49
82	S2	116	OMU	C5-C4	2.57	1.49	1.43
82	S2	121	OMU	C6-N1	2.56	1.44	1.38
2	L5	4498	OMU	C6-N1	2.56	1.44	1.38
82	S2	354	OMU	C6-N1	2.55	1.44	1.38
82	S2	668	A2M	C1'-N9	-2.54	1.43	1.49
82	S2	1328	OMG	C5-C6	-2.54	1.42	1.47
82	S2	428	OMU	C6-N1	2.54	1.44	1.38
2	L5	2363	A2M	O4'-C4'	-2.53	1.39	1.45
2	L5	1534	A2M	O4'-C4'	-2.53	1.39	1.45
82	S2	1326	OMU	C6-N1	2.52	1.44	1.38
2	L5	3830	A2M	C1'-N9	-2.51	1.43	1.49
82	S2	1383	A2M	C1'-N9	-2.51	1.43	1.49
2	L5	1524	A2M	C1'-N9	-2.51	1.43	1.49

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	2787	A2M	C1'-N9	-2.50	1.43	1.49
2	L5	1326	A2M	C1'-N9	-2.49	1.43	1.49
82	S2	99	A2M	C1'-N9	-2.48	1.43	1.49
2	L5	4306	OMU	C5-C4	2.47	1.49	1.43
2	L5	4620	OMU	C6-N1	2.47	1.44	1.38
82	S2	172	OMU	C6-N1	2.45	1.43	1.38
2	L5	4590	A2M	C1'-N9	-2.44	1.43	1.49
2	L5	4530	UR3	C6-N1	2.43	1.43	1.38
2	L5	2837	OMU	C6-N1	2.43	1.43	1.38
82	S2	116	OMU	C6-N1	2.43	1.43	1.38
2	L5	4306	OMU	C6-N1	2.42	1.43	1.38
82	S2	166	A2M	C1'-N9	-2.41	1.44	1.49
2	L5	2363	A2M	C1'-N9	-2.41	1.44	1.49
2	L5	4620	OMU	C5-C4	2.40	1.48	1.43
2	L5	3867	A2M	O4'-C4'	-2.40	1.39	1.45
2	L5	4227	OMU	C6-N1	2.39	1.43	1.38
2	L5	3925	OMU	C6-N1	2.37	1.43	1.38
2	L5	1323	A2M	O4'-C4'	-2.36	1.39	1.45
2	L5	1316	OMG	C5-C4	-2.34	1.37	1.43
2	L5	400	A2M	C1'-N9	-2.33	1.44	1.49
2	L5	1326	A2M	O4'-C4'	-2.31	1.39	1.45
82	S2	1031	A2M	C1'-N9	-2.31	1.44	1.49
2	L5	398	A2M	C1'-N9	-2.29	1.44	1.49
2	L5	1871	A2M	O4'-C4'	-2.29	1.39	1.45
2	L5	2815	A2M	O4'-C4'	-2.29	1.39	1.45
82	S2	159	A2M	C1'-N9	-2.27	1.44	1.49
2	L5	4523	A2M	O3'-C3'	-2.26	1.37	1.43
82	S2	27	A2M	C1'-N9	-2.26	1.44	1.49
2	L5	4370	OMG	C5-C4	-2.26	1.37	1.43
2	L5	1522	OMG	C5-C4	-2.26	1.37	1.43
2	L5	3867	A2M	C1'-N9	-2.25	1.44	1.49
2	L5	2364	OMG	C5-C4	-2.22	1.37	1.43
2	L5	3818	UY1	O4'-C1'	-2.22	1.40	1.43
2	L5	4392	OMG	C5-C4	-2.22	1.37	1.43
2	L5	3718	A2M	C1'-N9	-2.21	1.44	1.49
2	L5	2424	OMG	C5-C4	-2.21	1.37	1.43
2	L5	3627	OMG	C5-C4	-2.20	1.37	1.43
2	L5	4530	UR3	C5-C4	2.19	1.49	1.43
82	S2	1851	MA6	C2-N3	2.19	1.35	1.32
2	L5	4523	A2M	O4'-C4'	-2.19	1.40	1.45
2	L5	4494	OMG	C5-C4	-2.18	1.37	1.43
2	L5	3785	A2M	O4'-C1'	-2.18	1.38	1.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	400	A2M	O3'-C3'	-2.17	1.37	1.43
2	L5	4228	OMG	C5-C4	-2.17	1.37	1.43
2	L5	4220	6MZ	C6-N1	-2.16	1.31	1.34
2	L5	3744	OMG	C5-C4	-2.16	1.37	1.43
2	L5	3899	OMG	C5-C4	-2.16	1.37	1.43
82	S2	1850	MA6	C2-N3	2.16	1.35	1.32
2	L5	4623	OMG	C5-C4	-2.14	1.37	1.43
2	L5	4353	PSU	C4-C5	-2.14	1.38	1.44
2	L5	4196	OMG	C5-C4	-2.14	1.37	1.43
2	L5	4637	OMG	C5-C4	-2.12	1.37	1.43
82	S2	1490	OMG	C5-C4	-2.12	1.37	1.43
2	L5	2876	OMG	C5-C4	-2.11	1.37	1.43
2	L5	4689	PSU	C4-C5	-2.11	1.38	1.44
2	L5	4521	PSU	C4-C5	-2.11	1.38	1.44
2	L5	3884	PSU	C4-C5	-2.10	1.38	1.44
4	L8	75	OMG	C5-C4	-2.09	1.37	1.43
2	L5	4499	OMG	C5-C4	-2.09	1.38	1.43
82	S2	484	A2M	C1'-N9	-2.09	1.44	1.49
2	L5	1323	A2M	C1'-N9	-2.08	1.44	1.49
2	L5	1625	OMG	C5-C4	-2.08	1.38	1.43
2	L5	4293	PSU	C4-C5	-2.07	1.38	1.44
2	L5	3639	PSU	C4-C5	-2.07	1.38	1.44
2	L5	3825	A2M	O4'-C4'	-2.06	1.40	1.45
2	L5	2839	PSU	C4-C5	-2.05	1.38	1.44
2	L5	1871	A2M	O3'-C3'	-2.05	1.37	1.43
82	S2	644	OMG	C5-C4	-2.05	1.38	1.43
2	L5	3695	PSU	C4-C5	-2.04	1.38	1.44
2	L5	4500	PSU	C4-C5	-2.04	1.38	1.44
2	L5	400	A2M	O4'-C4'	-2.04	1.40	1.45
82	S2	1639	G7M	O6-C6	-2.04	1.18	1.23
2	L5	4618	OMG	C5-C4	-2.04	1.38	1.43
2	L5	3792	OMG	C5-C4	-2.04	1.38	1.43
82	S2	1031	A2M	O4'-C4'	-2.03	1.40	1.45
2	L5	4521	PSU	O4'-C1'	-2.03	1.41	1.43
2	L5	2815	A2M	C1'-N9	-2.03	1.44	1.49
2	L5	4456	OMC	C4-N3	-2.03	1.30	1.34
82	S2	1177	PSU	C4-C5	-2.03	1.38	1.44
2	L5	1683	PSU	C4-C5	-2.03	1.38	1.44
2	L5	4530	UR3	C3U-N3	2.02	1.50	1.47
2	L5	4552	PSU	C4-C5	-2.02	1.38	1.44
82	S2	1328	OMG	C5-C4	-2.02	1.38	1.43
82	S2	1056	PSU	C4-C5	-2.02	1.38	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	L5	3818	UY1	C4-C5	2.01	1.49	1.44
82	S2	436	OMG	C5-C4	-2.01	1.38	1.43
2	L5	4312	PSU	C4-C5	-2.01	1.38	1.44
2	L5	1534	A2M	O3'-C3'	-2.01	1.38	1.43
2	L5	3920	PSU	C4-C5	-2.01	1.38	1.44
2	L5	4571	A2M	O3'-C3'	-2.01	1.38	1.43
82	S2	109	PSU	C4-C5	-2.01	1.38	1.44
2	L5	4457	PSU	C4-C5	-2.00	1.38	1.44

All (647) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
82	S2	1851	MA6	N1-C6-N6	-12.91	101.91	116.83
82	S2	1850	MA6	N1-C6-N6	-12.66	102.21	116.83
2	L5	3785	A2M	C4'-O4'-C1'	-7.88	102.70	109.92
2	L5	1524	A2M	C4'-O4'-C1'	-6.98	103.54	109.92
82	S2	1851	MA6	N3-C2-N1	-6.55	119.78	128.67
82	S2	1832	6MZ	N3-C2-N1	-6.51	119.84	128.67
2	L5	4220	6MZ	N3-C2-N1	-6.50	119.85	128.67
82	S2	1850	MA6	N3-C2-N1	-6.22	120.23	128.67
2	L5	3925	OMU	C4-N3-C2	-6.11	119.03	126.61
2	L5	4220	6MZ	O3P-P-O2P	-5.96	87.63	110.83
2	L5	4227	OMU	C4-N3-C2	-5.85	119.35	126.61
82	S2	428	OMU	C4-N3-C2	-5.79	119.42	126.61
2	L5	4498	OMU	C4-N3-C2	-5.76	119.45	126.61
82	S2	1326	OMU	C4-N3-C2	-5.76	119.46	126.61
2	L5	4306	OMU	C4-N3-C2	-5.76	119.46	126.61
82	S2	354	OMU	C4-N3-C2	-5.75	119.47	126.61
82	S2	172	OMU	C4-N3-C2	-5.73	119.50	126.61
2	L5	4523	A2M	C4'-O4'-C1'	-5.70	104.71	109.92
2	L5	2837	OMU	C4-N3-C2	-5.69	119.55	126.61
82	S2	627	OMU	C4-N3-C2	-5.60	119.66	126.61
2	L5	4530	UR3	C4-N3-C2	-5.60	120.08	124.58
82	S2	1383	A2M	C4'-O4'-C1'	-5.56	104.83	109.92
82	S2	121	OMU	C4-N3-C2	-5.56	119.71	126.61
82	S2	799	OMU	C4-N3-C2	-5.53	119.74	126.61
2	L5	4220	6MZ	O3P-P-O5'	-5.52	92.28	106.67
82	S2	1442	OMU	C4-N3-C2	-5.51	119.77	126.61
2	L5	1871	A2M	C4'-O4'-C1'	-5.49	104.89	109.92
2	L5	4220	6MZ	C9-N6-C6	-5.46	117.78	122.85
2	L5	1683	PSU	N1-C2-N3	5.45	120.92	115.17
2	L5	3701	OMC	C1'-N1-C2	5.39	130.35	118.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L5	4689	PSU	N1-C2-N3	5.38	120.84	115.17
2	L5	4457	PSU	C4-N3-C2	-5.37	118.98	126.37
2	L5	3637	PSU	N1-C2-N3	5.31	120.77	115.17
2	L5	4220	6MZ	O3P-P-O1P	-5.27	88.03	107.80
82	S2	116	OMU	C4-N3-C2	-5.26	120.08	126.61
2	L5	4636	PSU	C4-N3-C2	-5.26	119.13	126.37
82	S2	1288	OMU	C4-N3-C2	-5.25	120.09	126.61
2	L5	4457	PSU	N1-C2-N3	5.25	120.70	115.17
2	L5	1677	PSU	C4-N3-C2	-5.20	119.21	126.37
2	L5	3830	A2M	C4'-O4'-C1'	-5.18	105.18	109.92
82	S2	1248	B8N	C5-C4-N3	5.18	125.56	116.15
2	L5	4353	PSU	N1-C2-N3	5.17	120.62	115.17
2	L5	1683	PSU	C4-N3-C2	-5.16	119.27	126.37
2	L5	3637	PSU	C4-N3-C2	-5.15	119.27	126.37
2	L5	3639	PSU	N1-C2-N3	5.14	120.59	115.17
2	L5	4521	PSU	N1-C2-N3	5.13	120.58	115.17
2	L5	4220	6MZ	O1P-P-O2P	5.13	130.82	110.83
2	L5	4552	PSU	N1-C2-N3	5.13	120.57	115.17
2	L5	4403	PSU	C4-N3-C2	-5.11	119.33	126.37
2	L5	1862	PSU	C4-N3-C2	-5.11	119.33	126.37
2	L5	4500	PSU	N1-C2-N3	5.09	120.54	115.17
4	L8	69	PSU	N1-C2-N3	5.09	120.53	115.17
2	L5	1862	PSU	N1-C2-N3	5.08	120.52	115.17
2	L5	4442	PSU	N1-C2-N3	5.06	120.51	115.17
82	S2	1081	PSU	C4-N3-C2	-5.06	119.40	126.37
2	L5	2839	PSU	N1-C2-N3	5.06	120.51	115.17
2	L5	4521	PSU	C4-N3-C2	-5.06	119.40	126.37
2	L5	3695	PSU	C4-N3-C2	-5.05	119.41	126.37
2	L5	4312	PSU	N1-C2-N3	5.05	120.49	115.17
2	L5	4293	PSU	C4-N3-C2	-5.05	119.42	126.37
2	L5	4293	PSU	N1-C2-N3	5.04	120.49	115.17
2	L5	3695	PSU	N1-C2-N3	5.03	120.48	115.17
2	L5	4579	PSU	N1-C2-N3	5.03	120.47	115.17
82	S2	649	PSU	N1-C2-N3	5.03	120.47	115.17
82	S2	1056	PSU	C4-N3-C2	-5.02	119.45	126.37
2	L5	3639	PSU	C4-N3-C2	-5.02	119.45	126.37
4	L8	55	PSU	N1-C2-N3	5.01	120.46	115.17
2	L5	3884	PSU	C4-N3-C2	-5.00	119.48	126.37
82	S2	649	PSU	C4-N3-C2	-5.00	119.48	126.37
2	L5	2632	PSU	N1-C2-N3	4.99	120.43	115.17
2	L5	3920	PSU	N1-C2-N3	4.99	120.43	115.17
82	S2	1045	PSU	C4-N3-C2	-4.99	119.50	126.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L5	3853	PSU	N1-C2-N3	4.98	120.42	115.17
4	L8	55	PSU	C4-N3-C2	-4.98	119.51	126.37
2	L5	4636	PSU	N1-C2-N3	4.98	120.42	115.17
2	L5	4973	PSU	C4-N3-C2	-4.98	119.52	126.37
82	S2	1177	PSU	N1-C2-N3	4.98	120.42	115.17
2	L5	4973	PSU	N1-C2-N3	4.98	120.42	115.17
82	S2	1177	PSU	C4-N3-C2	-4.98	119.52	126.37
2	L5	4471	PSU	N1-C2-N3	4.97	120.42	115.17
2	L5	3818	UY1	C4-N3-C2	-4.97	119.52	126.37
4	L8	69	PSU	C4-N3-C2	-4.97	119.53	126.37
2	L5	1744	PSU	N1-C2-N3	4.97	120.41	115.17
82	S2	406	PSU	C4-N3-C2	-4.97	119.53	126.37
82	S2	651	PSU	N1-C2-N3	4.96	120.40	115.17
2	L5	3851	PSU	N1-C2-N3	4.96	120.40	115.17
2	L5	4442	PSU	C4-N3-C2	-4.96	119.54	126.37
2	L5	4689	PSU	C4-N3-C2	-4.96	119.54	126.37
82	S2	406	PSU	N1-C2-N3	4.96	120.40	115.17
2	L5	1860	PSU	N1-C2-N3	4.96	120.40	115.17
82	S2	1045	PSU	N1-C2-N3	4.96	120.40	115.17
2	L5	3844	PSU	N1-C2-N3	4.96	120.40	115.17
2	L5	4620	OMU	C4-N3-C2	-4.95	120.47	126.61
2	L5	4579	PSU	C4-N3-C2	-4.94	119.57	126.37
82	S2	866	PSU	C4-N3-C2	-4.94	119.57	126.37
2	L5	1860	PSU	C4-N3-C2	-4.93	119.58	126.37
2	L5	4353	PSU	C4-N3-C2	-4.93	119.58	126.37
2	L5	4500	PSU	C4-N3-C2	-4.93	119.58	126.37
2	L5	4552	PSU	C4-N3-C2	-4.93	119.58	126.37
2	L5	3822	PSU	N1-C2-N3	4.93	120.36	115.17
2	L5	4296	PSU	C4-N3-C2	-4.92	119.59	126.37
82	S2	1004	PSU	C4-N3-C2	-4.92	119.59	126.37
82	S2	1081	PSU	N1-C2-N3	4.92	120.36	115.17
2	L5	5010	PSU	N1-C2-N3	4.92	120.35	115.17
82	S2	1004	PSU	N1-C2-N3	4.91	120.35	115.17
2	L5	4673	PSU	N1-C2-N3	4.91	120.35	115.17
2	L5	2839	PSU	C4-N3-C2	-4.91	119.60	126.37
2	L5	1792	PSU	C4-N3-C2	-4.91	119.61	126.37
82	S2	866	PSU	N1-C2-N3	4.90	120.34	115.17
2	L5	3884	PSU	N1-C2-N3	4.90	120.34	115.17
82	S2	686	PSU	C4-N3-C2	-4.90	119.62	126.37
82	S2	1174	PSU	C4-N3-C2	-4.90	119.63	126.37
2	L5	3853	PSU	C4-N3-C2	-4.89	119.63	126.37
82	S2	1056	PSU	N1-C2-N3	4.89	120.33	115.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
82	S2	105	PSU	N1-C2-N3	4.89	120.32	115.17
82	S2	1046	PSU	C4-N3-C2	-4.88	119.65	126.37
82	S2	863	PSU	C4-N3-C2	-4.87	119.66	126.37
82	S2	651	PSU	C4-N3-C2	-4.87	119.67	126.37
82	S2	1174	PSU	N1-C2-N3	4.86	120.30	115.17
82	S2	1232	PSU	N1-C2-N3	4.86	120.30	115.17
2	L5	4673	PSU	C4-N3-C2	-4.86	119.67	126.37
82	S2	109	PSU	C4-N3-C2	-4.86	119.68	126.37
82	S2	1832	6MZ	C2-N1-C6	4.86	120.37	116.60
2	L5	4296	PSU	N1-C2-N3	4.85	120.29	115.17
2	L5	2632	PSU	C4-N3-C2	-4.85	119.69	126.37
2	L5	1782	PSU	N1-C2-N3	4.85	120.28	115.17
2	L5	4493	PSU	C4-N3-C2	-4.85	119.69	126.37
2	L5	4576	PSU	N1-C2-N3	4.85	120.28	115.17
2	L5	4972	PSU	N1-C2-N3	4.84	120.28	115.17
2	L5	3851	PSU	C4-N3-C2	-4.84	119.70	126.37
2	L5	4403	PSU	N1-C2-N3	4.84	120.27	115.17
2	L5	1744	PSU	C4-N3-C2	-4.84	119.71	126.37
2	L5	5010	PSU	C4-N3-C2	-4.83	119.72	126.37
82	S2	1244	PSU	N1-C2-N3	4.83	120.26	115.17
2	L5	4299	PSU	C4-N3-C2	-4.83	119.72	126.37
82	S2	1046	PSU	N1-C2-N3	4.83	120.26	115.17
82	S2	1244	PSU	C4-N3-C2	-4.82	119.73	126.37
2	L5	1792	PSU	N1-C2-N3	4.82	120.25	115.17
2	L5	5001	PSU	N1-C2-N3	4.82	120.25	115.17
2	L5	4532	PSU	C4-N3-C2	-4.82	119.73	126.37
82	S2	1232	PSU	C4-N3-C2	-4.82	119.73	126.37
2	L5	3920	PSU	C4-N3-C2	-4.82	119.73	126.37
2	L5	4312	PSU	C4-N3-C2	-4.82	119.73	126.37
82	S2	966	PSU	N1-C2-N3	4.82	120.25	115.17
2	L5	4431	PSU	C4-N3-C2	-4.82	119.74	126.37
2	L5	4972	PSU	C4-N3-C2	-4.81	119.74	126.37
82	S2	686	PSU	N1-C2-N3	4.81	120.24	115.17
2	L5	1536	PSU	C4-N3-C2	-4.81	119.75	126.37
82	S2	109	PSU	N1-C2-N3	4.81	120.24	115.17
82	S2	1031	A2M	C4'-O4'-C1'	-4.80	105.53	109.92
2	L5	4576	PSU	C4-N3-C2	-4.80	119.76	126.37
82	S2	1367	PSU	N1-C2-N3	4.80	120.23	115.17
82	S2	863	PSU	N1-C2-N3	4.79	120.22	115.17
2	L5	4628	PSU	N1-C2-N3	4.79	120.22	115.17
82	S2	105	PSU	C4-N3-C2	-4.78	119.78	126.37
2	L5	5001	PSU	C4-N3-C2	-4.78	119.78	126.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L5	4431	PSU	N1-C2-N3	4.78	120.21	115.17
2	L5	3822	PSU	C4-N3-C2	-4.78	119.79	126.37
82	S2	468	A2M	C4'-O4'-C1'	-4.78	105.55	109.92
82	S2	814	PSU	C4-N3-C2	-4.78	119.79	126.37
2	L5	1536	PSU	N1-C2-N3	4.77	120.20	115.17
82	S2	1367	PSU	C4-N3-C2	-4.77	119.81	126.37
2	L5	4299	PSU	N1-C2-N3	4.76	120.19	115.17
82	S2	681	PSU	N1-C2-N3	4.76	120.18	115.17
2	L5	4361	PSU	C4-N3-C2	-4.75	119.83	126.37
2	L5	4532	PSU	N1-C2-N3	4.74	120.16	115.17
2	L5	4493	PSU	N1-C2-N3	4.73	120.16	115.17
2	L5	1677	PSU	N1-C2-N3	4.73	120.15	115.17
2	L5	4471	PSU	C4-N3-C2	-4.72	119.86	126.37
82	S2	166	A2M	C4'-O4'-C1'	-4.72	105.60	109.92
82	S2	99	A2M	C4'-O4'-C1'	-4.70	105.62	109.92
2	L5	1582	PSU	N1-C2-N3	4.70	120.12	115.17
2	L5	1782	PSU	C4-N3-C2	-4.69	119.91	126.37
2	L5	4590	A2M	C4'-O4'-C1'	-4.68	105.64	109.92
2	L5	1781	PSU	C4-N3-C2	-4.67	119.93	126.37
82	S2	27	A2M	C4'-O4'-C1'	-4.67	105.65	109.92
2	L5	1781	PSU	N1-C2-N3	4.67	120.09	115.17
2	L5	3844	PSU	C4-N3-C2	-4.67	119.94	126.37
82	S2	801	PSU	N1-C2-N3	4.67	120.09	115.17
2	L5	4361	PSU	N1-C2-N3	4.66	120.09	115.17
82	S2	93	PSU	N1-C2-N3	4.65	120.07	115.17
82	S2	1248	B8N	C4-N3-C2	-4.64	119.90	125.62
82	S2	681	PSU	C4-N3-C2	-4.64	119.97	126.37
2	L5	4628	PSU	C4-N3-C2	-4.64	119.97	126.37
82	S2	93	PSU	C4-N3-C2	-4.63	119.99	126.37
82	S2	966	PSU	C4-N3-C2	-4.61	120.02	126.37
2	L5	1582	PSU	C4-N3-C2	-4.59	120.04	126.37
82	S2	801	PSU	C4-N3-C2	-4.55	120.11	126.37
2	L5	398	A2M	C4'-O4'-C1'	-4.52	105.78	109.92
82	S2	814	PSU	N1-C2-N3	4.52	119.94	115.17
2	L5	3718	A2M	C4'-O4'-C1'	-4.46	105.84	109.92
2	L5	2401	A2M	C4'-O4'-C1'	-4.43	105.87	109.92
2	L5	3818	UY1	N1-C2-N3	4.39	119.80	115.17
82	S2	668	A2M	C4'-O4'-C1'	-4.34	105.95	109.92
2	L5	1871	A2M	C3'-C2'-C1'	-4.32	94.53	102.81
82	S2	668	A2M	C1'-N9-C4	-4.24	119.18	126.64
2	L5	2401	A2M	C1'-N9-C4	-4.24	119.19	126.64
2	L5	3825	A2M	C4'-O4'-C1'	-4.24	106.05	109.92

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
82	S2	1383	A2M	C3'-C2'-C1'	-4.21	94.74	102.81
2	L5	3701	OMC	C1'-N1-C6	-4.20	111.81	120.78
2	L5	4523	A2M	C3'-C2'-C1'	-4.15	94.86	102.81
2	L5	3925	OMU	N3-C2-N1	4.15	120.30	114.89
2	L5	4220	6MZ	C2-N1-C6	4.15	119.82	116.60
2	L5	3830	A2M	C3'-C2'-C1'	-4.13	94.90	102.81
82	S2	354	OMU	N3-C2-N1	4.08	120.21	114.89
2	L5	400	A2M	C4'-O4'-C1'	-4.02	106.24	109.92
2	L5	4306	OMU	N3-C2-N1	4.02	120.12	114.89
2	L5	2837	OMU	N3-C2-N1	4.01	120.11	114.89
2	L5	4498	OMU	N3-C2-N1	3.99	120.09	114.89
2	L5	1871	A2M	C1'-N9-C4	-3.99	119.64	126.64
82	S2	121	OMU	N3-C2-N1	3.98	120.08	114.89
82	S2	468	A2M	C1'-N9-C4	-3.98	119.64	126.64
82	S2	1851	MA6	C2-N1-C6	3.96	120.73	116.84
82	S2	172	OMU	N3-C2-N1	3.91	119.98	114.89
2	L5	4227	OMU	N3-C2-N1	3.91	119.97	114.89
2	L5	398	A2M	C3'-C2'-C1'	-3.90	95.33	102.81
2	L5	3925	OMU	C5-C4-N3	3.89	120.25	114.80
82	S2	166	A2M	C1'-N9-C4	-3.88	119.83	126.64
82	S2	799	OMU	N3-C2-N1	3.87	119.92	114.89
82	S2	428	OMU	N3-C2-N1	3.86	119.92	114.89
2	L5	3825	A2M	C1'-N9-C4	-3.84	119.89	126.64
82	S2	576	A2M	C4'-O4'-C1'	-3.82	106.42	109.92
82	S2	1326	OMU	N3-C2-N1	3.82	119.86	114.89
82	S2	1031	A2M	C1'-N9-C4	-3.82	119.93	126.64
2	L5	398	A2M	C1'-N9-C4	-3.80	119.96	126.64
2	L5	4498	OMU	C5-C4-N3	3.80	120.12	114.80
2	L5	4227	OMU	C5-C4-N3	3.80	120.12	114.80
2	L5	4590	A2M	C1'-N9-C4	-3.78	120.00	126.64
82	S2	1383	A2M	C1'-N9-C4	-3.77	120.01	126.64
82	S2	27	A2M	C1'-N9-C4	-3.77	120.02	126.64
2	L5	2363	A2M	C4'-O4'-C1'	-3.76	106.48	109.92
82	S2	428	OMU	C5-C4-N3	3.75	120.05	114.80
82	S2	99	A2M	C1'-N9-C4	-3.74	120.06	126.64
2	L5	2815	A2M	C4'-O4'-C1'	-3.74	106.50	109.92
2	L5	4306	OMU	C5-C4-N3	3.73	120.03	114.80
2	L5	4620	OMU	N3-C2-N1	3.72	119.74	114.89
82	S2	159	A2M	C1'-N9-C4	-3.72	120.11	126.64
82	S2	1442	OMU	N3-C2-N1	3.72	119.73	114.89
2	L5	4530	UR3	C5-C4-N3	3.70	119.91	115.04
82	S2	1326	OMU	C5-C4-N3	3.69	119.97	114.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
82	S2	1031	A2M	C3'-C2'-C1'	-3.69	95.74	102.81
2	L5	4571	A2M	C1'-N9-C4	-3.67	120.19	126.64
82	S2	627	OMU	C5-C4-N3	3.67	119.94	114.80
2	L5	398	A2M	O3'-C3'-C2'	3.65	121.40	111.19
2	L5	4523	A2M	C1'-N9-C4	-3.64	120.24	126.64
2	L5	4571	A2M	C4'-O4'-C1'	-3.64	106.59	109.92
2	L5	2401	A2M	O3'-C3'-C2'	3.64	121.37	111.19
82	S2	116	OMU	N3-C2-N1	3.64	119.63	114.89
82	S2	627	OMU	N3-C2-N1	3.64	119.63	114.89
82	S2	1288	OMU	N3-C2-N1	3.64	119.63	114.89
82	S2	354	OMU	C5-C4-N3	3.63	119.89	114.80
82	S2	1442	OMU	C5-C4-N3	3.63	119.89	114.80
82	S2	1850	MA6	C2-N1-C6	3.62	120.39	116.84
82	S2	484	A2M	C1'-N9-C4	-3.61	120.29	126.64
82	S2	799	OMU	C5-C4-N3	3.61	119.86	114.80
82	S2	1248	B8N	C1'-C5-C4	3.61	123.09	117.61
82	S2	99	A2M	C3'-C2'-C1'	-3.60	95.91	102.81
2	L5	1326	A2M	C1'-N9-C4	-3.60	120.32	126.64
82	S2	576	A2M	C1'-N9-C4	-3.60	120.32	126.64
2	L5	3867	A2M	C1'-N9-C4	-3.58	120.35	126.64
2	L5	3718	A2M	C3'-C2'-C1'	-3.58	95.95	102.81
82	S2	121	OMU	C5-C4-N3	3.58	119.81	114.80
2	L5	2837	OMU	C5-C4-N3	3.55	119.78	114.80
82	S2	1248	B8N	N3-C2-N1	3.54	121.04	116.72
2	L5	1534	A2M	C4'-O4'-C1'	-3.52	106.70	109.92
82	S2	116	OMU	C5-C4-N3	3.52	119.72	114.80
82	S2	172	OMU	C5-C4-N3	3.51	119.72	114.80
2	L5	1326	A2M	C4'-O4'-C1'	-3.51	106.71	109.92
2	L5	3830	A2M	C1'-N9-C4	-3.51	120.48	126.64
2	L5	3785	A2M	C1'-N9-C4	-3.50	120.49	126.64
82	S2	1288	OMU	C5-C4-N3	3.48	119.68	114.80
2	L5	3718	A2M	C1'-N9-C4	-3.47	120.55	126.64
2	L5	4590	A2M	C3'-C2'-C1'	-3.45	96.21	102.81
2	L5	2787	A2M	O3'-C3'-C2'	3.42	120.77	111.19
2	L5	400	A2M	C1'-N9-C4	-3.42	120.63	126.64
2	L5	3825	A2M	C3'-C2'-C1'	-3.41	96.27	102.81
82	S2	468	A2M	C3'-C2'-C1'	-3.41	96.27	102.81
82	S2	159	A2M	C4'-O4'-C1'	-3.41	106.80	109.92
2	L5	1323	A2M	C4'-O4'-C1'	-3.40	106.81	109.92
2	L5	4220	6MZ	O5'-P-O2P	3.39	115.61	106.44
82	S2	576	A2M	O3'-C3'-C2'	3.39	120.68	111.19
2	L5	3867	A2M	C4'-O4'-C1'	-3.39	106.82	109.92

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L5	4620	OMU	C5-C4-N3	3.39	119.54	114.80
82	S2	27	A2M	C3'-C2'-C1'	-3.34	96.41	102.81
2	L5	2363	A2M	C1'-N9-C4	-3.34	120.77	126.64
82	S2	1383	A2M	O3'-C3'-C2'	3.34	120.52	111.19
82	S2	166	A2M	O3'-C3'-C2'	3.31	120.44	111.19
2	L5	2401	A2M	C3'-C2'-C1'	-3.29	96.51	102.81
82	S2	576	A2M	C3'-C2'-C1'	-3.29	96.51	102.81
2	L5	2787	A2M	C1'-N9-C4	-3.26	120.91	126.64
2	L5	2815	A2M	C1'-N9-C4	-3.25	120.92	126.64
2	L5	1683	PSU	O2-C2-N1	-3.25	119.44	122.79
2	L5	1534	A2M	C3'-C2'-C1'	-3.24	96.60	102.81
2	L5	4689	PSU	C6-N1-C2	-3.24	119.69	122.69
4	L8	69	PSU	O2-C2-N1	-3.22	119.47	122.79
2	L5	1323	A2M	O3'-C3'-C2'	3.22	120.20	111.19
82	S2	1174	PSU	O2-C2-N1	-3.21	119.47	122.79
82	S2	166	A2M	C3'-C2'-C1'	-3.20	96.68	102.81
2	L5	1524	A2M	O3'-C3'-C2'	3.20	120.14	111.19
2	L5	4579	PSU	O2-C2-N1	-3.20	119.49	122.79
2	L5	3718	A2M	O3'-C3'-C2'	3.19	120.11	111.19
2	L5	400	A2M	C3'-C2'-C1'	-3.18	96.71	102.81
2	L5	3830	A2M	O3'-C3'-C2'	3.18	120.08	111.19
2	L5	1871	A2M	O3'-C3'-C2'	3.16	120.02	111.19
82	S2	99	A2M	O3'-C3'-C2'	3.15	120.01	111.19
82	S2	159	A2M	O3'-C3'-C2'	3.15	120.00	111.19
82	S2	1031	A2M	O3'-C3'-C2'	3.14	119.98	111.19
2	L5	400	A2M	O3'-C3'-C2'	3.13	119.96	111.19
2	L5	3825	A2M	O3'-C3'-C2'	3.13	119.95	111.19
2	L5	4689	PSU	O2-C2-N1	-3.12	119.57	122.79
2	L5	1323	A2M	C2'-C1'-N9	3.12	119.49	112.56
82	S2	428	OMU	O4-C4-C5	-3.12	119.78	125.16
2	L5	4500	PSU	O2-C2-N1	-3.11	119.58	122.79
2	L5	1524	A2M	C1'-N9-C4	-3.10	121.19	126.64
2	L5	3639	PSU	O2-C2-N1	-3.10	119.59	122.79
2	L5	1536	PSU	O2-C2-N1	-3.10	119.59	122.79
82	S2	116	OMU	O4-C4-C5	-3.08	119.85	125.16
2	L5	1323	A2M	C1'-N9-C4	-3.08	121.23	126.64
2	L5	4306	OMU	O4-C4-C5	-3.07	119.87	125.16
82	S2	468	A2M	O3'-C3'-C2'	3.07	119.77	111.19
2	L5	4576	PSU	O2-C2-N1	-3.07	119.63	122.79
2	L5	3844	PSU	O2-C2-N1	-3.04	119.65	122.79
2	L5	3818	UY1	C6-C5-C4	3.03	120.22	118.17
82	S2	1442	OMU	O4-C4-C5	-3.03	119.93	125.16

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L5	3851	PSU	O2-C2-N1	-3.03	119.67	122.79
2	L5	4296	PSU	O2-C2-N1	-3.02	119.68	122.79
2	L5	1860	PSU	O2-C2-N1	-3.01	119.68	122.79
2	L5	2839	PSU	O2-C2-N1	-3.01	119.68	122.79
82	S2	627	OMU	O4-C4-C5	-3.01	119.97	125.16
82	S2	27	A2M	O3'-C3'-C2'	3.01	119.61	111.19
82	S2	1639	G7M	C2-N1-C6	-3.00	119.62	125.11
2	L5	4457	PSU	O2-C2-N1	-3.00	119.70	122.79
2	L5	1862	PSU	O2-C2-N1	-2.99	119.71	122.79
82	S2	649	PSU	O2-C2-N1	-2.99	119.71	122.79
2	L5	2363	A2M	C3'-C2'-C1'	-2.99	97.09	102.81
2	L5	4571	A2M	C3'-C2'-C1'	-2.98	97.10	102.81
82	S2	1337	4AC	N4-C4-N3	2.98	118.70	113.87
2	L5	3853	PSU	O2-C2-N1	-2.97	119.72	122.79
2	L5	3920	PSU	O2-C2-N1	-2.97	119.73	122.79
4	L8	55	PSU	O2-C2-N1	-2.96	119.74	122.79
2	L5	4532	PSU	O2-C2-N1	-2.96	119.74	122.79
82	S2	668	A2M	O3'-C3'-C2'	2.96	119.46	111.19
82	S2	1326	OMU	O4-C4-C5	-2.95	120.07	125.16
2	L5	3925	OMU	O4-C4-C5	-2.95	120.07	125.16
2	L5	4227	OMU	O4-C4-C5	-2.95	120.08	125.16
2	L5	4552	PSU	O2-C2-N1	-2.93	119.76	122.79
82	S2	109	PSU	O2-C2-N1	-2.93	119.77	122.79
2	L5	3818	UY1	C6-N1-C2	-2.93	119.97	122.69
2	L5	2837	OMU	O4-C4-C5	-2.93	120.11	125.16
2	L5	1744	PSU	O2-C2-N1	-2.92	119.77	122.79
2	L5	4571	A2M	O3'-C3'-C2'	2.92	119.37	111.19
2	L5	4521	PSU	O2-C2-N1	-2.92	119.78	122.79
2	L5	3785	A2M	O3'-C3'-C2'	2.92	119.35	111.19
82	S2	1004	PSU	O2-C2-N1	-2.91	119.79	122.79
82	S2	121	OMU	O4-C4-C5	-2.91	120.15	125.16
82	S2	1177	PSU	O2-C2-N1	-2.90	119.80	122.79
2	L5	5010	PSU	O2-C2-N1	-2.89	119.81	122.79
2	L5	4590	A2M	O3'-C3'-C2'	2.88	119.25	111.19
2	L5	3701	OMC	O2-C2-N3	-2.88	117.79	122.33
2	L5	4498	OMU	O4-C4-C5	-2.88	120.20	125.16
82	S2	1288	OMU	O4-C4-C5	-2.87	120.21	125.16
82	S2	172	OMU	O4-C4-C5	-2.87	120.21	125.16
82	S2	1244	PSU	O2-C2-N1	-2.87	119.83	122.79
82	S2	799	OMU	O4-C4-C5	-2.87	120.21	125.16
2	L5	3695	PSU	O2-C2-N1	-2.86	119.83	122.79
2	L5	2815	A2M	C2'-C1'-N9	2.86	118.92	112.56

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L5	4442	PSU	O2-C2-N1	-2.86	119.84	122.79
82	S2	1367	PSU	O2-C2-N1	-2.86	119.84	122.79
82	S2	354	OMU	O4-C4-C5	-2.85	120.25	125.16
2	L5	4312	PSU	C6-N1-C2	-2.85	120.05	122.69
2	L5	1534	A2M	C1'-N9-C4	-2.84	121.64	126.64
2	L5	2363	A2M	O3'-C3'-C2'	2.84	119.14	111.19
82	S2	686	PSU	O2-C2-N1	-2.84	119.86	122.79
2	L5	4523	A2M	O3'-C3'-C2'	2.83	119.11	111.19
2	L5	2632	PSU	O2-C2-N1	-2.83	119.87	122.79
2	L5	4312	PSU	O2-C2-N1	-2.83	119.87	122.79
2	L5	4293	PSU	O2-C2-N1	-2.83	119.87	122.79
82	S2	406	PSU	O2-C2-N1	-2.82	119.88	122.79
2	L5	4673	PSU	O2-C2-N1	-2.82	119.88	122.79
2	L5	2839	PSU	C6-N1-C2	-2.81	120.09	122.69
82	S2	651	PSU	O2-C2-N1	-2.81	119.89	122.79
82	S2	1232	PSU	O2-C2-N1	-2.81	119.89	122.79
2	L5	3844	PSU	C6-N1-C2	-2.80	120.09	122.69
2	L5	4403	PSU	O2-C2-N1	-2.80	119.90	122.79
82	S2	668	A2M	O4'-C1'-C2'	2.80	111.38	106.61
82	S2	681	PSU	C6-N1-C2	-2.80	120.10	122.69
2	L5	4431	PSU	O2-C2-N1	-2.77	119.94	122.79
2	L5	4500	PSU	C6-N1-C2	-2.77	120.12	122.69
82	S2	1045	PSU	O2-C2-N1	-2.76	119.94	122.79
82	S2	1081	PSU	O2-C2-N1	-2.76	119.94	122.79
2	L5	1326	A2M	O3'-C3'-C2'	2.76	118.91	111.19
82	S2	484	A2M	O3'-C3'-C2'	2.76	118.91	111.19
2	L5	1677	PSU	O2-C2-N1	-2.76	119.94	122.79
82	S2	1046	PSU	O2-C2-N1	-2.75	119.95	122.79
82	S2	966	PSU	O2-C2-N1	-2.75	119.96	122.79
2	L5	3822	PSU	O2-C2-N1	-2.74	119.96	122.79
2	L5	3884	PSU	O2-C2-N1	-2.74	119.96	122.79
2	L5	4972	PSU	O2-C2-N1	-2.74	119.97	122.79
2	L5	4353	PSU	O2-C2-N1	-2.73	119.97	122.79
2	L5	3785	A2M	C4-C5-N7	2.73	112.22	109.34
82	S2	866	PSU	O2-C2-N1	-2.73	119.97	122.79
2	L5	1871	A2M	C4-C5-N7	2.73	112.22	109.34
2	L5	4973	PSU	O2-C2-N1	-2.72	119.98	122.79
2	L5	1792	PSU	O2-C2-N1	-2.71	119.99	122.79
2	L5	1781	PSU	O2-C2-N1	-2.71	120.00	122.79
2	L5	1582	PSU	O2-C2-N1	-2.71	120.00	122.79
2	L5	4361	PSU	O2-C2-N1	-2.70	120.00	122.79
82	S2	966	PSU	C6-N1-C2	-2.69	120.19	122.69

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L5	1683	PSU	C6-N1-C2	-2.68	120.20	122.69
2	L5	1326	A2M	C3'-C2'-C1'	-2.68	97.67	102.81
82	S2	1248	B8N	O4-C4-N3	-2.68	115.64	119.99
82	S2	801	PSU	O2-C2-N1	-2.67	120.03	122.79
2	L5	4636	PSU	O2-C2-N1	-2.67	120.03	122.79
82	S2	863	PSU	O2-C2-N1	-2.67	120.03	122.79
2	L5	2815	A2M	O3'-C3'-C2'	2.67	118.65	111.19
82	S2	1056	PSU	O2-C2-N1	-2.67	120.04	122.79
2	L5	1524	A2M	O4'-C1'-C2'	2.66	111.15	106.61
2	L5	3867	A2M	C2'-C1'-N9	2.66	118.47	112.56
2	L5	4620	OMU	O4-C4-C5	-2.66	120.58	125.16
2	L5	4353	PSU	C6-N1-C2	-2.66	120.22	122.69
2	L5	3818	UY1	O2-C2-N1	-2.65	120.05	122.79
2	L5	1782	PSU	O2-C2-N1	-2.64	120.07	122.79
2	L5	4552	PSU	C6-N1-C2	-2.63	120.25	122.69
2	L5	1782	PSU	C6-N1-C2	-2.63	120.25	122.69
2	L5	4353	PSU	C6-C5-C4	2.63	119.95	118.17
2	L5	3785	A2M	C3'-C2'-C1'	-2.63	97.77	102.81
2	L5	2815	A2M	C3'-C2'-C1'	-2.63	97.77	102.81
2	L5	4628	PSU	O2-C2-N1	-2.63	120.08	122.79
2	L5	3822	PSU	C6-N1-C2	-2.63	120.25	122.69
82	S2	159	A2M	C3'-C2'-C1'	-2.62	97.79	102.81
82	S2	105	PSU	O2-C2-N1	-2.62	120.09	122.79
2	L5	4220	6MZ	O1P-P-O5'	2.62	113.50	106.67
2	L5	3695	PSU	C6-N1-C2	-2.62	120.26	122.69
82	S2	1367	PSU	C6-N1-C2	-2.62	120.26	122.69
2	L5	2351	OMC	C1'-N1-C2	2.61	124.22	118.44
2	L5	4628	PSU	C6-N1-C2	-2.61	120.27	122.69
82	S2	93	PSU	O2-C2-N1	-2.61	120.09	122.79
82	S2	801	PSU	C6-N1-C2	-2.61	120.27	122.69
2	L5	4293	PSU	C6-N1-C2	-2.60	120.28	122.69
2	L5	3701	OMC	O2-C2-N1	2.60	124.00	118.90
2	L5	3920	PSU	C6-N1-C2	-2.60	120.28	122.69
2	L5	1323	A2M	C3'-C2'-C1'	-2.60	97.83	102.81
2	L5	4471	PSU	C6-N1-C2	-2.60	120.28	122.69
2	L5	4576	PSU	C6-N1-C2	-2.60	120.28	122.69
2	L5	3639	PSU	C6-N1-C2	-2.59	120.28	122.69
2	L5	2787	A2M	O4'-C1'-C2'	2.59	111.02	106.61
4	L8	69	PSU	C6-N1-C2	-2.59	120.29	122.69
2	L5	3718	A2M	C4-C5-N7	2.58	112.06	109.34
2	L5	3785	A2M	O4'-C1'-N9	2.58	112.16	108.75
2	L5	4579	PSU	C6-N1-C2	-2.57	120.31	122.69

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
82	S2	1177	PSU	C6-N1-C2	-2.57	120.31	122.69
2	L5	2632	PSU	C6-N1-C2	-2.56	120.31	122.69
2	L5	4493	PSU	O2-C2-N1	-2.56	120.14	122.79
82	S2	681	PSU	O2-C2-N1	-2.56	120.14	122.79
2	L5	1744	PSU	C6-N1-C2	-2.56	120.31	122.69
2	L5	4471	PSU	O2-C2-N1	-2.56	120.15	122.79
82	S2	1232	PSU	C6-N1-C2	-2.56	120.32	122.69
2	L5	5001	PSU	O2-C2-N1	-2.56	120.15	122.79
2	L5	4442	PSU	C6-N1-C2	-2.55	120.32	122.69
2	L5	5010	PSU	C6-N1-C2	-2.55	120.32	122.69
2	L5	4673	PSU	C6-N1-C2	-2.55	120.32	122.69
82	S2	93	PSU	C6-N1-C2	-2.55	120.33	122.69
82	S2	484	A2M	C4'-O4'-C1'	-2.54	107.60	109.92
2	L5	1860	PSU	C6-N1-C2	-2.54	120.34	122.69
82	S2	651	PSU	C6-N1-C2	-2.54	120.34	122.69
82	S2	1046	PSU	C6-N1-C2	-2.53	120.34	122.69
2	L5	2787	A2M	C4-C5-N7	2.52	112.00	109.34
4	L8	55	PSU	C6-N1-C2	-2.52	120.35	122.69
82	S2	649	PSU	C6-N1-C2	-2.51	120.36	122.69
2	L5	3853	PSU	C6-N1-C2	-2.51	120.36	122.69
82	S2	105	PSU	C6-N1-C2	-2.51	120.36	122.69
82	S2	1004	PSU	C6-N1-C2	-2.50	120.37	122.69
2	L5	4521	PSU	C6-N1-C2	-2.50	120.37	122.69
2	L5	4523	A2M	C4-C5-N7	2.50	111.97	109.34
2	L5	1323	A2M	C4-C5-N7	2.49	111.97	109.34
2	L5	3867	A2M	C4-C5-N7	2.49	111.97	109.34
82	S2	1174	PSU	C6-N1-C2	-2.49	120.38	122.69
2	L5	4973	PSU	C6-N1-C2	-2.49	120.38	122.69
2	L5	4299	PSU	O2-C2-N1	-2.49	120.22	122.79
82	S2	866	PSU	C6-C5-C4	2.48	119.85	118.17
2	L5	4571	A2M	C4-C5-N7	2.48	111.96	109.34
2	L5	4500	PSU	C6-C5-C4	2.48	119.84	118.17
82	S2	1383	A2M	C4-C5-N7	2.48	111.95	109.34
82	S2	354	OMU	O2-C2-N1	-2.47	119.58	122.80
2	L5	2815	A2M	C4-C5-N7	2.47	111.95	109.34
2	L5	1536	PSU	C6-N1-C2	-2.47	120.40	122.69
2	L5	400	A2M	C4-C5-N7	2.47	111.94	109.34
2	L5	5001	PSU	C6-N1-C2	-2.47	120.40	122.69
82	S2	814	PSU	O2-C2-N1	-2.47	120.25	122.79
2	L5	4442	PSU	C6-C5-C4	2.46	119.83	118.17
2	L5	1534	A2M	C4-C5-N7	2.46	111.94	109.34
2	L5	3808	OMC	C1'-N1-C2	2.46	123.87	118.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L5	4498	OMU	O2-C2-N1	-2.45	119.61	122.80
2	L5	1323	A2M	O4'-C1'-C2'	2.45	110.78	106.61
82	S2	109	PSU	C6-N1-C2	-2.45	120.42	122.69
2	L5	4637	OMG	O6-C6-C5	2.45	129.17	124.32
82	S2	27	A2M	C4-C5-N7	2.45	111.92	109.34
2	L5	4972	PSU	C6-N1-C2	-2.44	120.42	122.69
2	L5	1524	A2M	C4-C5-N7	2.44	111.92	109.34
2	L5	4590	A2M	C4-C5-N7	2.44	111.92	109.34
82	S2	668	A2M	C2'-C1'-N9	2.43	117.96	112.56
82	S2	1244	PSU	C6-N1-C2	-2.43	120.44	122.69
82	S2	1272	OMC	C1'-N1-C2	2.43	123.81	118.44
2	L5	3639	PSU	C6-C5-C4	2.43	119.81	118.17
2	L5	400	A2M	C2'-C1'-N9	2.43	117.95	112.56
2	L5	3925	OMU	O2-C2-N1	-2.43	119.64	122.80
2	L5	3884	PSU	C6-N1-C2	-2.42	120.44	122.69
2	L5	2401	A2M	C4-C5-N7	2.42	111.90	109.34
2	L5	3851	PSU	C6-N1-C2	-2.42	120.45	122.69
2	L5	4521	PSU	C6-C5-C4	2.41	119.80	118.17
2	L5	2363	A2M	C4-C5-N7	2.41	111.88	109.34
2	L5	2363	A2M	C2'-C1'-N9	2.41	117.90	112.56
2	L5	1326	A2M	C4-C5-N7	2.40	111.88	109.34
2	L5	4431	PSU	C6-N1-C2	-2.40	120.46	122.69
2	L5	2861	OMC	C1'-N1-C2	2.40	123.74	118.44
2	L5	1534	A2M	O3'-C3'-C4'	-2.40	104.19	111.08
2	L5	3830	A2M	C4-C5-N7	2.40	111.87	109.34
82	S2	863	PSU	C6-N1-C2	-2.40	120.47	122.69
82	S2	1031	A2M	C4-C5-N7	2.39	111.86	109.34
82	S2	99	A2M	C4-C5-N7	2.39	111.86	109.34
82	S2	484	A2M	O4'-C1'-C2'	2.39	110.68	106.61
82	S2	406	PSU	C6-N1-C2	-2.39	120.48	122.69
82	S2	1328	OMG	O6-C6-C5	2.38	129.05	124.32
2	L5	1582	PSU	C6-N1-C2	-2.38	120.48	122.69
82	S2	1045	PSU	C6-N1-C2	-2.38	120.48	122.69
2	L5	4228	OMG	O6-C6-C5	2.37	129.03	124.32
82	S2	468	A2M	C4-C5-N7	2.37	111.85	109.34
2	L5	3822	PSU	O4'-C1'-C2'	2.37	108.42	105.15
2	L5	1781	PSU	C6-N1-C2	-2.36	120.50	122.69
2	L5	3744	OMG	O6-C6-C5	2.36	128.99	124.32
2	L5	4296	PSU	C6-N1-C2	-2.35	120.51	122.69
82	S2	166	A2M	C4-C5-N7	2.35	111.83	109.34
82	S2	576	A2M	C4-C5-N7	2.35	111.83	109.34
82	S2	436	OMG	O6-C6-C5	2.35	128.99	124.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
82	S2	686	PSU	C6-N1-C2	-2.35	120.51	122.69
82	S2	866	PSU	C6-N1-C2	-2.34	120.52	122.69
2	L5	2837	OMU	O2-C2-N1	-2.34	119.75	122.80
2	L5	3637	PSU	C6-N1-C2	-2.34	120.52	122.69
2	L5	3825	A2M	C4-C5-N7	2.34	111.81	109.34
82	S2	601	OMG	O6-C6-C5	2.34	128.96	124.32
2	L5	4299	PSU	C6-N1-C2	-2.33	120.53	122.69
2	L5	4636	PSU	C6-C5-C4	2.33	119.74	118.17
82	S2	484	A2M	C4-C5-N7	2.32	111.79	109.34
82	S2	1056	PSU	C6-N1-C2	-2.32	120.54	122.69
2	L5	4392	OMG	O6-C6-C5	2.32	128.91	124.32
2	L5	3899	OMG	O6-C6-C5	2.31	128.91	124.32
2	L5	4457	PSU	C6-N1-C2	-2.31	120.55	122.69
82	S2	1248	B8N	O4'-C1'-C2'	2.30	108.34	105.15
82	S2	509	OMG	O6-C6-C5	2.30	128.88	124.32
2	L5	4494	OMG	O6-C6-C5	2.30	128.87	124.32
2	L5	2363	A2M	O4'-C1'-C2'	2.29	110.52	106.61
2	L5	4361	PSU	C6-N1-C2	-2.29	120.56	122.69
2	L5	1683	PSU	C6-C5-C4	2.29	119.72	118.17
2	L5	398	A2M	C4-C5-N7	2.29	111.76	109.34
82	S2	159	A2M	C4-C5-N7	2.29	111.76	109.34
2	L5	4532	PSU	C6-N1-C2	-2.29	120.57	122.69
82	S2	428	OMU	O2-C2-N1	-2.27	119.84	122.80
2	L5	4571	A2M	O4'-C1'-C2'	2.27	110.48	106.61
2	L5	4571	A2M	C2'-C1'-N9	2.27	117.60	112.56
82	S2	1288	OMU	C1'-N1-C2	2.27	121.67	117.59
2	L5	1744	PSU	C6-C5-C4	2.27	119.70	118.17
2	L5	1862	PSU	C6-N1-C2	-2.27	120.59	122.69
2	L5	2815	A2M	O4'-C1'-C2'	2.27	110.47	106.61
2	L5	4623	OMG	O6-C6-C5	2.26	128.81	124.32
2	L5	1322	1MA	C5-C6-N1	-2.26	110.70	113.95
4	L8	69	PSU	O4'-C1'-C2'	2.26	108.28	105.15
82	S2	867	OMG	O6-C6-C5	2.26	128.81	124.32
82	S2	172	OMU	O2-C2-N1	-2.26	119.85	122.80
82	S2	1326	OMU	O2-C2-N1	-2.26	119.85	122.80
82	S2	668	A2M	C4-C5-N7	2.26	111.72	109.34
82	S2	1337	4AC	C5-C4-N4	-2.26	119.14	122.94
2	L5	1326	A2M	O4'-C1'-C2'	2.24	110.43	106.61
2	L5	4493	PSU	C6-N1-C2	-2.24	120.61	122.69
2	L5	3627	OMG	O6-C6-C5	2.23	128.75	124.32
4	L8	75	OMG	O6-C6-C5	2.23	128.75	124.32
2	L5	2876	OMG	O6-C6-C5	2.23	128.75	124.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L5	3867	A2M	O3'-C3'-C2'	2.23	117.43	111.19
82	S2	644	OMG	O6-C6-C5	2.23	128.73	124.32
2	L5	1522	OMG	O6-C6-C5	2.23	128.73	124.32
2	L5	1322	1MA	N1-C6-N6	2.22	125.29	119.71
82	S2	406	PSU	C6-C5-C4	2.22	119.67	118.17
82	S2	683	OMG	O6-C6-C5	2.21	128.70	124.32
2	L5	4457	PSU	C6-C5-C4	2.21	119.66	118.17
82	S2	1056	PSU	C6-C5-C4	2.21	119.66	118.17
2	L5	3637	PSU	C6-C5-C4	2.21	119.66	118.17
2	L5	1326	A2M	C2'-C1'-N9	2.21	117.46	112.56
2	L5	4227	OMU	O2-C2-N1	-2.20	119.93	122.80
2	L5	4403	PSU	O4'-C1'-C2'	2.20	108.20	105.15
82	S2	814	PSU	C6-N1-C2	-2.20	120.65	122.69
82	S2	159	A2M	O4'-C1'-C2'	2.19	110.34	106.61
82	S2	1248	B8N	O4-C4-C5	-2.19	118.80	122.58
2	L5	2632	PSU	C6-C5-C4	2.18	119.65	118.17
2	L5	1792	PSU	C6-N1-C2	-2.18	120.67	122.69
82	S2	166	A2M	O4'-C1'-C2'	2.18	110.32	106.61
2	L5	4196	OMG	O6-C6-C5	2.18	128.63	124.32
2	L5	4618	OMG	O6-C6-C5	2.17	128.63	124.32
2	L5	4636	PSU	O4'-C1'-C2'	2.17	108.15	105.15
2	L5	2364	OMG	O6-C6-C5	2.17	128.62	124.32
2	L5	1534	A2M	O4'-C1'-C2'	2.16	110.29	106.61
82	S2	116	OMU	O2-C2-N1	-2.16	119.99	122.80
2	L5	4552	PSU	C6-C5-C4	2.15	119.63	118.17
4	L8	69	PSU	C6-C5-C4	2.15	119.63	118.17
2	L5	3782	5MC	C1'-N1-C6	-2.15	117.61	121.15
2	L5	4442	PSU	O4'-C1'-C2'	2.15	108.12	105.15
82	S2	649	PSU	C6-C5-C4	2.15	119.62	118.17
2	L5	2839	PSU	C6-C5-C4	2.15	119.62	118.17
2	L5	4370	OMG	O6-C6-C5	2.14	128.57	124.32
82	S2	627	OMU	O2-C2-N1	-2.14	120.01	122.80
2	L5	1322	1MA	CM1-N1-C6	-2.14	116.83	120.15
2	L5	3785	A2M	O4'-C4'-C3'	2.12	109.36	105.15
2	L5	2401	A2M	O4'-C1'-C2'	2.12	110.21	106.61
2	L5	4499	OMG	O6-C6-C5	2.12	128.52	124.32
82	S2	1081	PSU	C6-N1-C2	-2.11	120.73	122.69
82	S2	1081	PSU	O4'-C1'-C2'	2.11	108.07	105.15
82	S2	468	A2M	O4'-C1'-C2'	2.10	110.18	106.61
2	L5	3637	PSU	O2-C2-N1	-2.10	120.63	122.79
82	S2	799	OMU	C1'-N1-C2	2.09	121.34	117.59
82	S2	484	A2M	O4'-C4'-C3'	2.09	109.29	105.15

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	L5	4306	OMU	O2-C2-N1	-2.08	120.08	122.80
2	L5	400	A2M	O4'-C1'-C2'	2.08	110.16	106.61
2	L5	4636	PSU	C6-N1-C2	-2.08	120.76	122.69
2	L5	4403	PSU	C6-N1-C2	-2.08	120.76	122.69
2	L5	4403	PSU	C6-C5-C4	2.07	119.57	118.17
82	S2	1832	6MZ	O1P-P-O2P	2.07	118.91	110.83
2	L5	3792	OMG	O6-C6-C5	2.07	128.42	124.32
82	S2	121	OMU	O2-C2-N1	-2.07	120.11	122.80
2	L5	3867	A2M	O4'-C1'-C2'	2.07	110.13	106.61
2	L5	4571	A2M	O3'-C3'-C4'	-2.06	105.15	111.08
2	L5	3867	A2M	C3'-C2'-C1'	-2.06	98.85	102.81
2	L5	4457	PSU	O4'-C1'-C2'	2.06	108.00	105.15
2	L5	1316	OMG	O6-C6-C5	2.06	128.40	124.32
2	L5	4456	OMC	C1'-N1-C2	2.05	122.98	118.44
2	L5	4628	PSU	O4'-C1'-C2'	2.05	107.99	105.15
2	L5	1625	OMG	O6-C6-C5	2.05	128.39	124.32
2	L5	4353	PSU	O4'-C1'-C2'	2.05	107.99	105.15
2	L5	3825	A2M	O4'-C1'-C2'	2.04	110.09	106.61
82	S2	1442	OMU	O2-C2-N1	-2.04	120.14	122.80
2	L5	4973	PSU	C6-C5-C4	2.04	119.55	118.17
2	L5	4972	PSU	C6-C5-C4	2.03	119.55	118.17
2	L5	2401	A2M	C6-C5-C4	-2.03	113.95	117.90
2	L5	1871	A2M	C6-C5-C4	-2.03	113.95	117.90
82	S2	27	A2M	O4'-C1'-C2'	2.02	110.05	106.61
2	L5	4521	PSU	O4'-C1'-C2'	2.02	107.94	105.15
82	S2	1244	PSU	C6-C5-C4	2.01	119.53	118.17
2	L5	3920	PSU	C6-C5-C4	2.01	119.53	118.17
2	L5	3695	PSU	O4'-C1'-C2'	2.00	107.92	105.15
82	S2	668	A2M	O3'-C3'-C4'	-2.00	105.34	111.08

There are no chirality outliers.

All (129) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	L8	75	OMG	C1'-C2'-O2'-CM2
2	L5	1326	A2M	O4'-C4'-C5'-O5'
2	L5	1326	A2M	C1'-C2'-O2'-CM'
2	L5	1340	OMC	C1'-C2'-O2'-CM2
2	L5	1625	OMG	O4'-C4'-C5'-O5'
2	L5	2351	OMC	C1'-C2'-O2'-CM2
2	L5	2787	A2M	C1'-C2'-O2'-CM'
2	L5	3701	OMC	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
2	L5	3792	OMG	O4'-C4'-C5'-O5'
2	L5	4196	OMG	C1'-C2'-O2'-CM2
2	L5	4220	6MZ	C5'-O5'-P-O2P
2	L5	4220	6MZ	C5'-O5'-P-O3P
2	L5	4637	OMG	O4'-C4'-C5'-O5'
82	S2	27	A2M	C1'-C2'-O2'-CM'
82	S2	159	A2M	C1'-C2'-O2'-CM'
82	S2	601	OMG	C1'-C2'-O2'-CM2
82	S2	644	OMG	O4'-C4'-C5'-O5'
82	S2	1248	B8N	O4'-C4'-C5'-O5'
82	S2	1272	OMC	O4'-C4'-C5'-O5'
82	S2	1288	OMU	O4'-C4'-C5'-O5'
82	S2	1337	4AC	N3-C4-N4-C7
82	S2	1383	A2M	C1'-C2'-O2'-CM'
82	S2	1442	OMU	O4'-C4'-C5'-O5'
82	S2	1832	6MZ	C5-C6-N6-C9
82	S2	1832	6MZ	N1-C6-N6-C9
2	L5	3701	OMC	C2'-C1'-N1-C2
2	L5	2364	OMG	O4'-C4'-C5'-O5'
2	L5	3701	OMC	C3'-C4'-C5'-O5'
2	L5	4500	PSU	C3'-C4'-C5'-O5'
2	L5	4500	PSU	O4'-C4'-C5'-O5'
2	L5	4590	A2M	O4'-C4'-C5'-O5'
2	L5	4590	A2M	C3'-C4'-C5'-O5'
82	S2	436	OMG	O4'-C4'-C5'-O5'
82	S2	576	A2M	O4'-C4'-C5'-O5'
82	S2	576	A2M	C3'-C4'-C5'-O5'
82	S2	683	OMG	C3'-C4'-C5'-O5'
82	S2	799	OMU	C3'-C4'-C5'-O5'
82	S2	799	OMU	O4'-C4'-C5'-O5'
82	S2	801	PSU	C3'-C4'-C5'-O5'
82	S2	867	OMG	C3'-C4'-C5'-O5'
82	S2	1272	OMC	C3'-C4'-C5'-O5'
82	S2	1288	OMU	C3'-C4'-C5'-O5'
2	L5	1323	A2M	O4'-C4'-C5'-O5'
2	L5	1536	PSU	C3'-C4'-C5'-O5'
2	L5	1536	PSU	O4'-C4'-C5'-O5'
2	L5	1625	OMG	C3'-C4'-C5'-O5'
2	L5	2815	A2M	O4'-C4'-C5'-O5'
2	L5	3792	OMG	C3'-C4'-C5'-O5'
2	L5	3867	A2M	C3'-C4'-C5'-O5'
82	S2	99	A2M	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
82	S2	683	OMG	O4'-C4'-C5'-O5'
82	S2	1442	OMU	C3'-C4'-C5'-O5'
2	L5	3701	OMC	C2'-C1'-N1-C6
2	L5	1326	A2M	C3'-C4'-C5'-O5'
82	S2	644	OMG	C3'-C4'-C5'-O5'
2	L5	4447	5MC	C2'-C1'-N1-C6
2	L5	1677	PSU	C3'-C4'-C5'-O5'
2	L5	2364	OMG	C3'-C4'-C5'-O5'
2	L5	2876	OMG	C3'-C4'-C5'-O5'
2	L5	3899	OMG	C3'-C4'-C5'-O5'
2	L5	4637	OMG	C3'-C4'-C5'-O5'
82	S2	436	OMG	C3'-C4'-C5'-O5'
82	S2	517	OMC	C3'-C4'-C5'-O5'
82	S2	668	A2M	O4'-C4'-C5'-O5'
82	S2	668	A2M	C3'-C4'-C5'-O5'
82	S2	1248	B8N	C3'-C4'-C5'-O5'
82	S2	428	OMU	C2'-C1'-N1-C6
2	L5	1677	PSU	O4'-C4'-C5'-O5'
2	L5	2787	A2M	C3'-C4'-C5'-O5'
2	L5	2815	A2M	C3'-C4'-C5'-O5'
82	S2	801	PSU	O4'-C4'-C5'-O5'
82	S2	867	OMG	O4'-C4'-C5'-O5'
2	L5	1524	A2M	O4'-C4'-C5'-O5'
2	L5	1524	A2M	C3'-C4'-C5'-O5'
2	L5	3867	A2M	O4'-C4'-C5'-O5'
82	S2	517	OMC	O4'-C4'-C5'-O5'
2	L5	3899	OMG	O4'-C4'-C5'-O5'
2	L5	4618	OMG	C3'-C4'-C5'-O5'
2	L5	1323	A2M	C3'-C4'-C5'-O5'
2	L5	2876	OMG	O4'-C4'-C5'-O5'
82	S2	99	A2M	C3'-C4'-C5'-O5'
2	L5	4590	A2M	C4'-C5'-O5'-P
2	L5	2422	OMC	O4'-C4'-C5'-O5'
82	S2	1045	PSU	O4'-C4'-C5'-O5'
2	L5	3841	OMC	C1'-C2'-O2'-CM2
82	S2	166	A2M	C1'-C2'-O2'-CM'
82	S2	867	OMG	C1'-C2'-O2'-CM2
2	L5	2422	OMC	C3'-C4'-C5'-O5'
2	L5	3851	PSU	C3'-C4'-C5'-O5'
82	S2	428	OMU	O4'-C4'-C5'-O5'
82	S2	1248	B8N	C31-C32-C33-C34
82	S2	1045	PSU	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
82	S2	1248	B8N	N34-C33-C34-O36
82	S2	1639	G7M	C3'-C4'-C5'-O5'
2	L5	4447	5MC	O4'-C1'-N1-C6
82	S2	428	OMU	O4'-C1'-N1-C6
2	L5	4447	5MC	O4'-C1'-N1-C2
2	L5	3818	UY1	C4'-C5'-O5'-P
2	L5	4447	5MC	C2'-C1'-N1-C2
82	S2	1383	A2M	O4'-C4'-C5'-O5'
2	L5	3701	OMC	O4'-C1'-N1-C6
2	L5	1534	A2M	C4'-C5'-O5'-P
2	L5	4500	PSU	C4'-C5'-O5'-P
2	L5	3818	UY1	O4'-C1'-C5-C4
82	S2	428	OMU	C3'-C4'-C5'-O5'
82	S2	1383	A2M	C3'-C4'-C5'-O5'
82	S2	576	A2M	C4'-C5'-O5'-P
2	L5	1781	PSU	C3'-C4'-C5'-O5'
82	S2	428	OMU	C2'-C1'-N1-C2
2	L5	3887	OMC	C4'-C5'-O5'-P
82	S2	627	OMU	O4'-C4'-C5'-O5'
2	L5	3785	A2M	C3'-C2'-O2'-CM'
82	S2	1490	OMG	C4'-C5'-O5'-P
2	L5	3782	5MC	O4'-C4'-C5'-O5'
2	L5	4618	OMG	O4'-C4'-C5'-O5'
82	S2	1703	OMC	O4'-C4'-C5'-O5'
82	S2	644	OMG	C4'-C5'-O5'-P
82	S2	1851	MA6	C4'-C5'-O5'-P
2	L5	398	A2M	O4'-C4'-C5'-O5'
82	S2	428	OMU	O4'-C1'-N1-C2
2	L5	400	A2M	C1'-C2'-O2'-CM'
2	L5	3844	PSU	C4'-C5'-O5'-P
2	L5	1677	PSU	O4'-C1'-C5-C6
2	L5	3869	OMC	C3'-C2'-O2'-CM2
2	L5	3701	OMC	O4'-C1'-N1-C2
2	L5	2351	OMC	O4'-C4'-C5'-O5'
82	S2	1832	6MZ	O4'-C4'-C5'-O5'
82	S2	1639	G7M	O4'-C4'-C5'-O5'
2	L5	1326	A2M	C4'-C5'-O5'-P

There are no ring outliers.

67 monomers are involved in 89 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	L5	400	A2M	1	0
2	L5	4392	OMG	1	0
2	L5	4196	OMG	1	0
2	L5	3884	PSU	1	0
2	L5	398	A2M	1	0
2	L5	4536	OMC	2	0
2	L5	4227	OMU	1	0
2	L5	2363	A2M	1	0
2	L5	3818	UY1	1	0
82	S2	1046	PSU	1	0
2	L5	4220	6MZ	2	0
82	S2	1639	G7M	3	0
82	S2	468	A2M	1	0
82	S2	867	OMG	1	0
2	L5	3867	A2M	3	0
82	S2	166	A2M	2	0
2	L5	1683	PSU	2	0
82	S2	116	OMU	2	0
82	S2	1337	4AC	3	0
2	L5	1625	OMG	1	0
82	S2	1328	OMG	1	0
2	L5	2422	OMC	1	0
2	L5	4456	OMC	1	0
82	S2	1232	PSU	2	0
82	S2	601	OMG	1	0
82	S2	509	OMG	2	0
2	L5	4571	A2M	1	0
2	L5	4620	OMU	2	0
82	S2	159	A2M	2	0
82	S2	484	A2M	1	0
2	L5	3841	OMC	1	0
2	L5	2861	OMC	1	0
82	S2	121	OMU	1	0
82	S2	27	A2M	1	0
2	L5	4590	A2M	1	0
2	L5	1326	A2M	3	0
2	L5	4293	PSU	1	0
2	L5	3785	A2M	1	0
2	L5	3718	A2M	3	0
2	L5	4637	OMG	1	0
82	S2	99	A2M	1	0
2	L5	3782	5MC	1	0
2	L5	1340	OMC	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	L5	2876	OMG	1	0
2	L5	3701	OMC	1	0
2	L5	2632	PSU	1	0
2	L5	2351	OMC	1	0
2	L5	4579	PSU	1	0
4	L8	75	OMG	2	0
2	L5	1871	A2M	1	0
2	L5	1677	PSU	1	0
82	S2	436	OMG	1	0
2	L5	2424	OMG	1	0
2	L5	4618	OMG	1	0
82	S2	517	OMC	1	0
2	L5	4636	PSU	1	0
2	L5	4447	5MC	1	0
82	S2	576	A2M	2	0
82	S2	681	PSU	1	0
82	S2	1850	MA6	2	0
82	S2	462	OMC	1	0
2	L5	4431	PSU	1	0
82	S2	1288	OMU	1	0
2	L5	4457	PSU	1	0
2	L5	3822	PSU	1	0
82	S2	1383	A2M	1	0
2	L5	4306	OMU	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 242 ligands modelled in this entry, 225 are monoatomic - leaving 17 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
87	SPD	L5	5260	-	9,9,9	0.31	0	8,8,8	0.95	0
86	SPM	L5	5262	-	13,13,13	0.36	0	12,12,12	0.88	0
87	SPD	L5	5284	-	9,9,9	0.32	0	8,8,8	0.82	0
87	SPD	L5	5288	-	9,9,9	0.33	0	8,8,8	0.80	0
87	SPD	L5	5283	-	9,9,9	0.33	0	8,8,8	0.91	0
87	SPD	L5	5281	-	9,9,9	0.33	0	8,8,8	0.84	0
87	SPD	L5	5285	-	9,9,9	0.32	0	8,8,8	0.84	0
86	SPM	L5	5258	-	13,13,13	0.35	0	12,12,12	0.99	0
86	SPM	L5	5286	85	13,13,13	0.36	0	12,12,12	1.00	0
87	SPD	L5	5287	-	9,9,9	0.31	0	8,8,8	0.85	0
87	SPD	LN	301	-	9,9,9	0.33	0	8,8,8	0.85	0
87	SPD	L8	202	-	9,9,9	0.33	0	8,8,8	0.93	0
87	SPD	L5	5282	-	9,9,9	0.31	0	8,8,8	0.77	0
86	SPM	L5	5266	-	13,13,13	0.37	0	12,12,12	1.12	0
86	SPM	L5	5263	-	13,13,13	0.35	0	12,12,12	1.00	0
86	SPM	L5	5290	-	13,13,13	0.36	0	12,12,12	0.87	0
86	SPM	L5	5289	-	13,13,13	0.36	0	12,12,12	0.86	0

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
87	SPD	L5	5260	-	-	0/7/7/7	-
86	SPM	L5	5262	-	-	2/11/11/11	-
87	SPD	L5	5284	-	-	0/7/7/7	-
87	SPD	L5	5288	-	-	3/7/7/7	-
87	SPD	L5	5283	-	-	4/7/7/7	-
87	SPD	L5	5281	-	-	1/7/7/7	-
87	SPD	L5	5285	-	-	1/7/7/7	-
86	SPM	L5	5258	-	-	2/11/11/11	-
86	SPM	L5	5286	85	-	4/11/11/11	-
87	SPD	L5	5287	-	-	1/7/7/7	-
87	SPD	LN	301	-	-	1/7/7/7	-
87	SPD	L8	202	-	-	3/7/7/7	-
87	SPD	L5	5282	-	-	1/7/7/7	-
86	SPM	L5	5266	-	-	5/11/11/11	-
86	SPM	L5	5263	-	-	4/11/11/11	-
86	SPM	L5	5290	-	-	3/11/11/11	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
86	SPM	L5	5289	-	-	3/11/11/11	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (38) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
87	L5	5283	SPD	C3-C4-C5-N6
86	L5	5289	SPM	C7-C8-C9-N10
87	L8	202	SPD	C3-C4-C5-N6
87	L5	5283	SPD	N6-C7-C8-C9
87	L5	5282	SPD	C3-C4-C5-N6
86	L5	5266	SPM	N10-C11-C12-C13
86	L5	5258	SPM	C3-C4-N5-C6
86	L5	5286	SPM	C12-C11-N10-C9
86	L5	5289	SPM	N10-C11-C12-C13
86	L5	5290	SPM	C8-C9-N10-C11
87	L5	5283	SPD	C4-C5-N6-C7
87	L5	5283	SPD	C2-C3-C4-C5
86	L5	5266	SPM	C7-C8-C9-N10
86	L5	5286	SPM	C7-C6-N5-C4
86	L5	5286	SPM	C8-C9-N10-C11
86	L5	5266	SPM	C2-C3-C4-N5
86	L5	5262	SPM	C6-C7-C8-C9
86	L5	5258	SPM	C6-C7-C8-C9
86	L5	5266	SPM	C6-C7-C8-C9
86	L5	5290	SPM	C6-C7-C8-C9
86	L5	5263	SPM	N5-C6-C7-C8
86	L5	5263	SPM	C7-C6-N5-C4
86	L5	5290	SPM	C7-C6-N5-C4
87	L5	5288	SPD	C4-C5-N6-C7
87	L5	5287	SPD	C2-C3-C4-C5
87	L5	5281	SPD	C2-C3-C4-C5
87	LN	301	SPD	C4-C5-N6-C7
86	L5	5263	SPM	N10-C11-C12-C13
86	L5	5286	SPM	N1-C2-C3-C4
87	L5	5288	SPD	C8-C7-N6-C5
86	L5	5266	SPM	N5-C6-C7-C8
87	L5	5288	SPD	N1-C2-C3-C4
86	L5	5263	SPM	C2-C3-C4-N5

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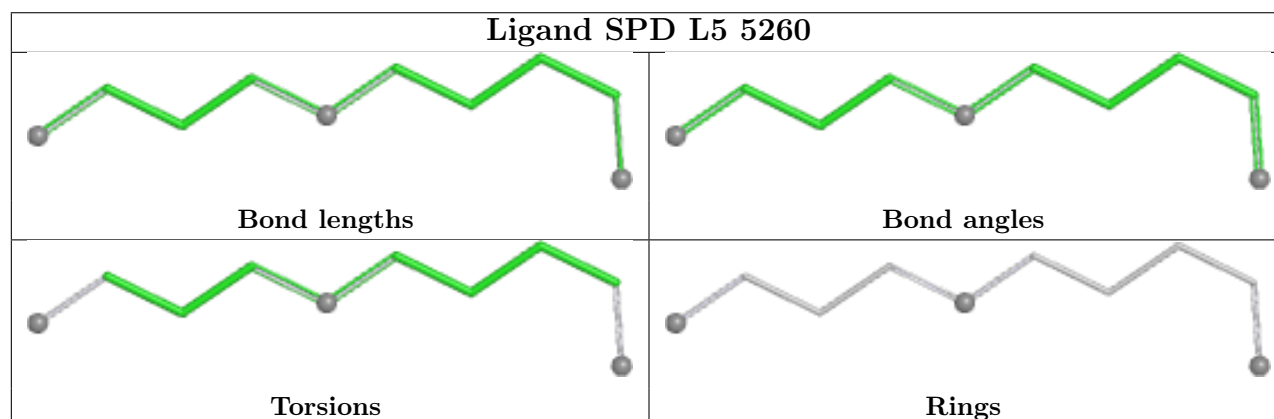
Mol	Chain	Res	Type	Atoms
87	L8	202	SPD	N6-C7-C8-C9
86	L5	5262	SPM	C3-C4-N5-C6
87	L8	202	SPD	C8-C7-N6-C5
86	L5	5289	SPM	N5-C6-C7-C8
87	L5	5285	SPD	C8-C7-N6-C5

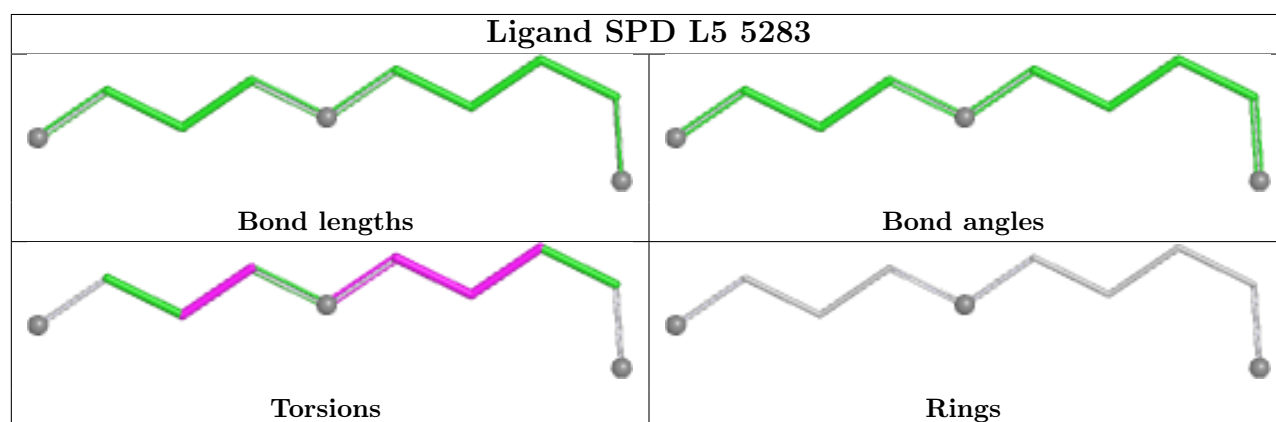
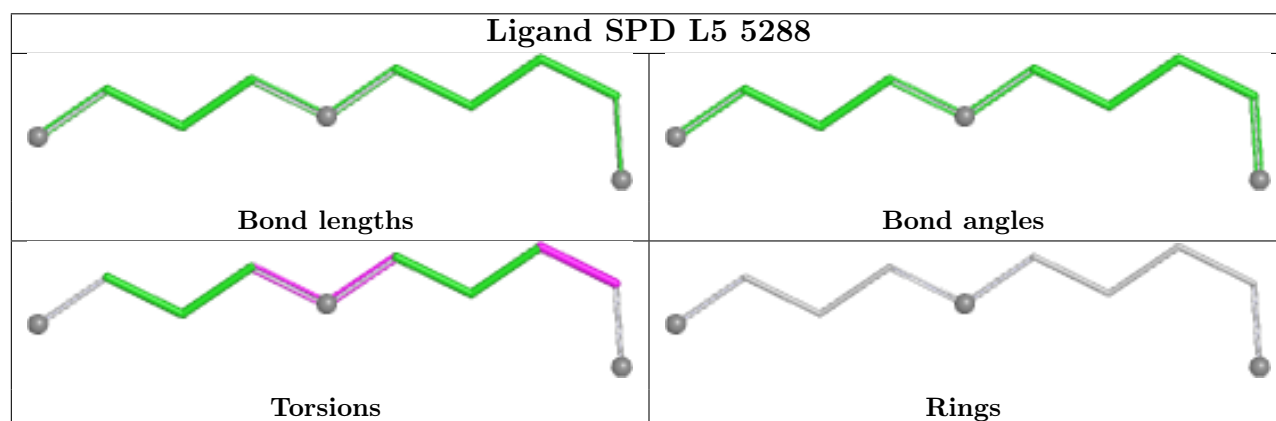
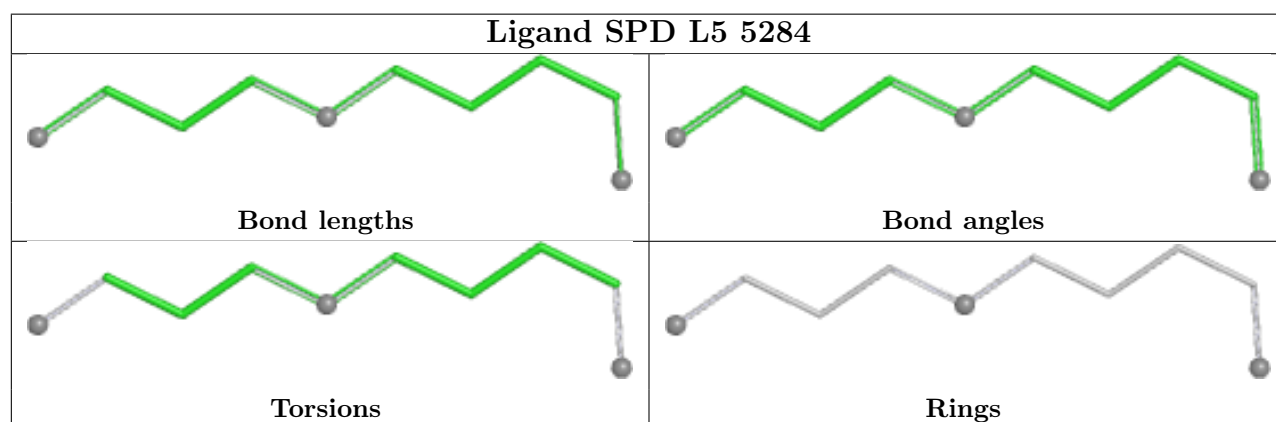
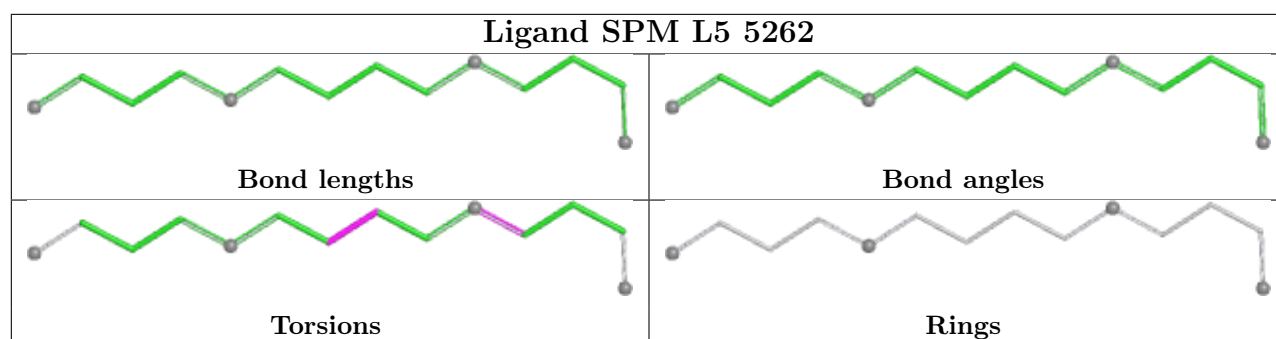
There are no ring outliers.

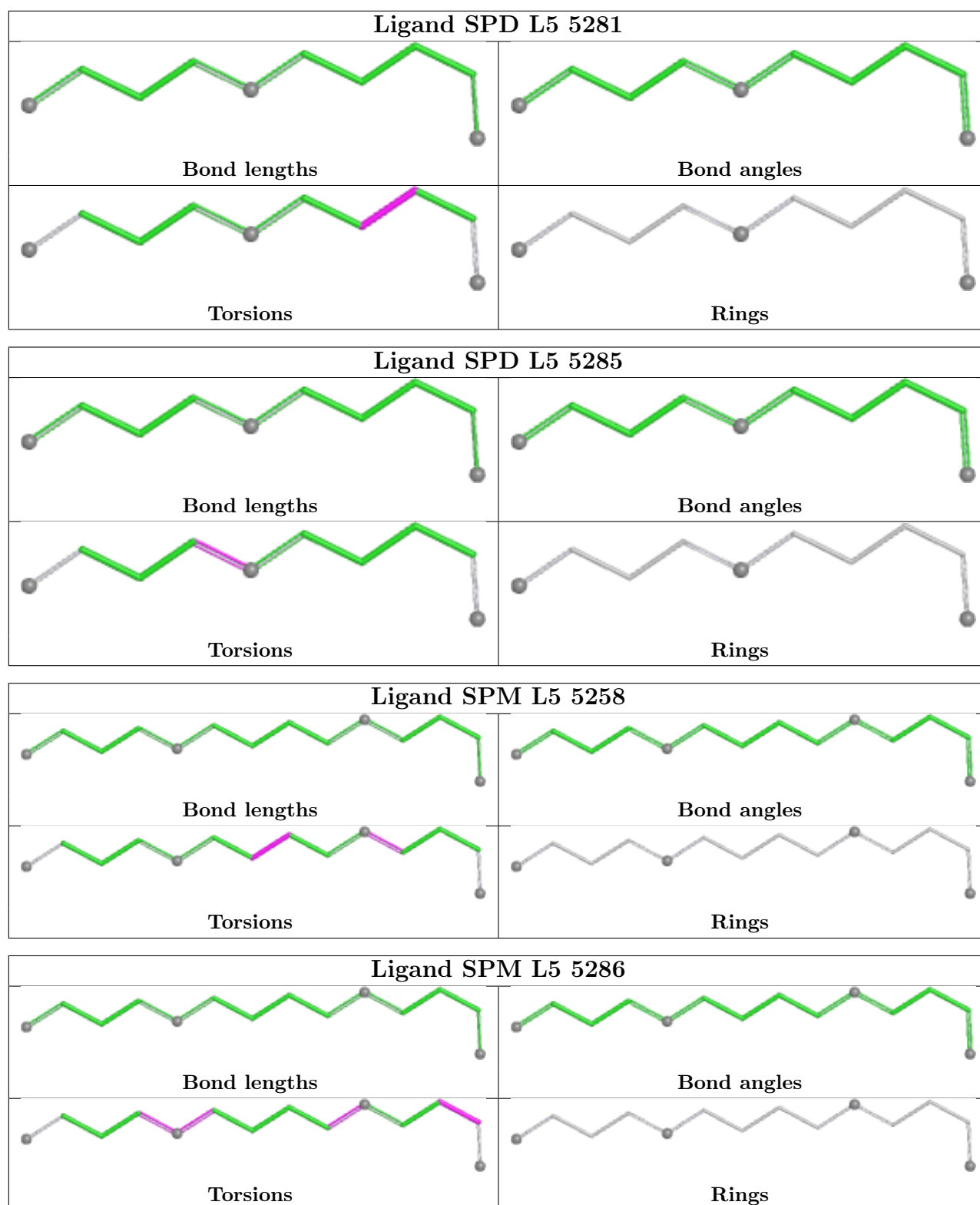
8 monomers are involved in 9 short contacts:

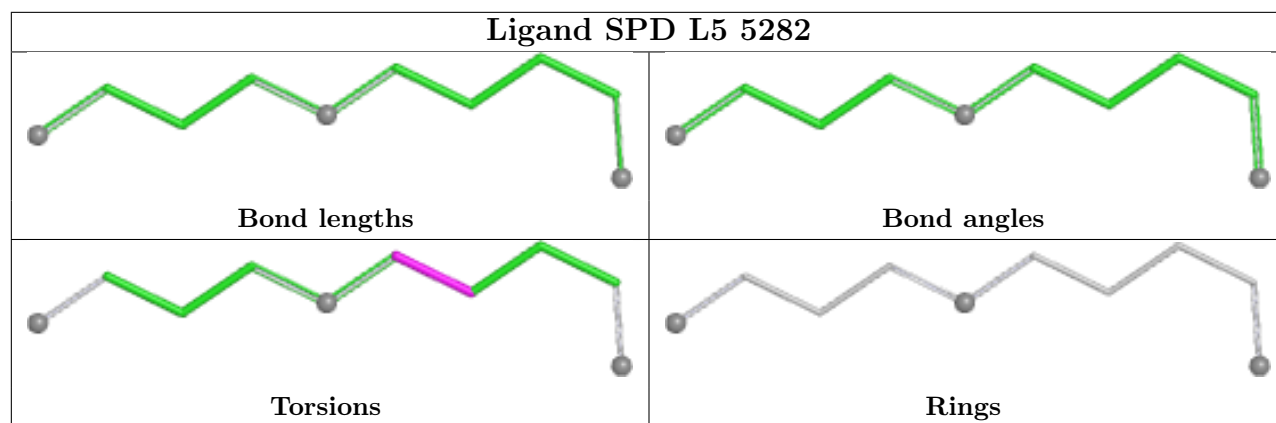
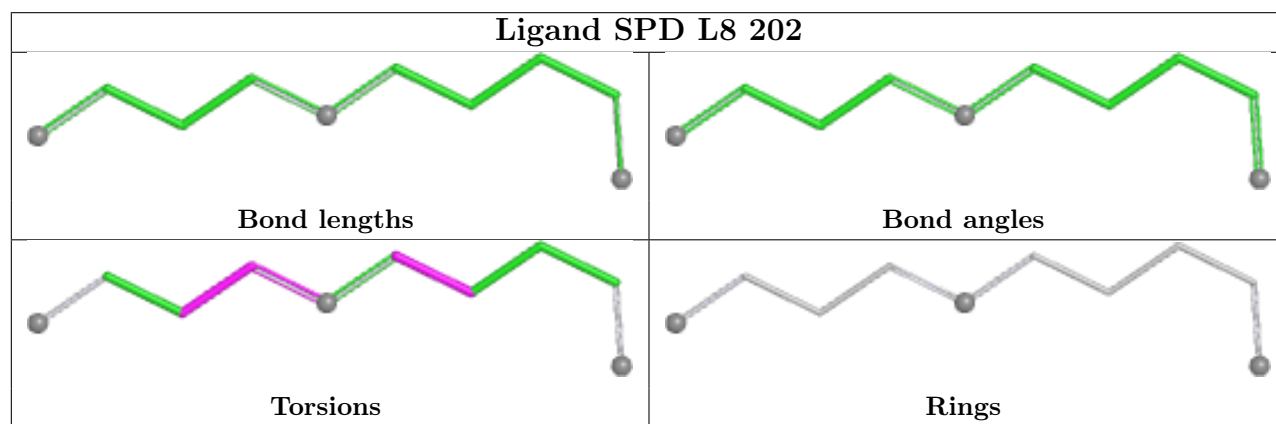
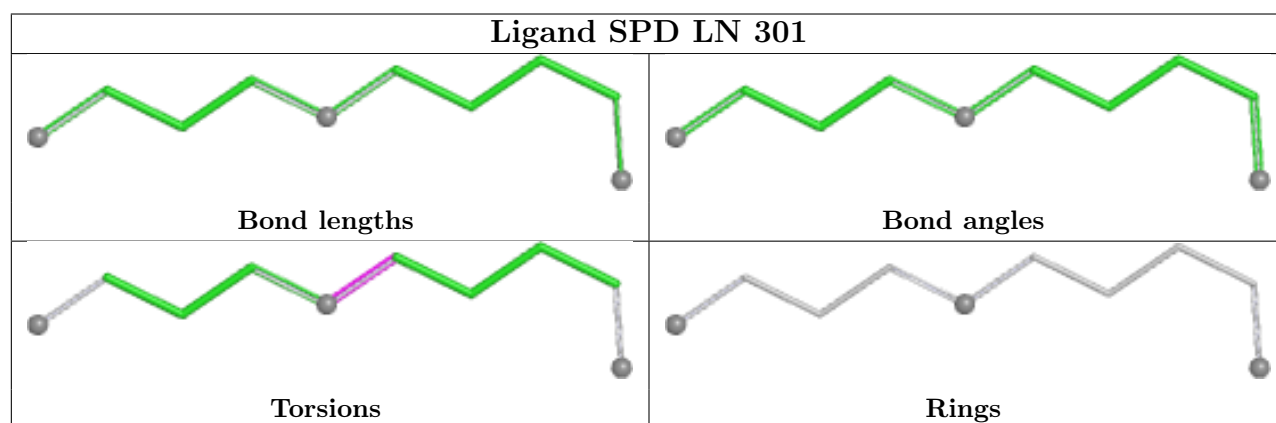
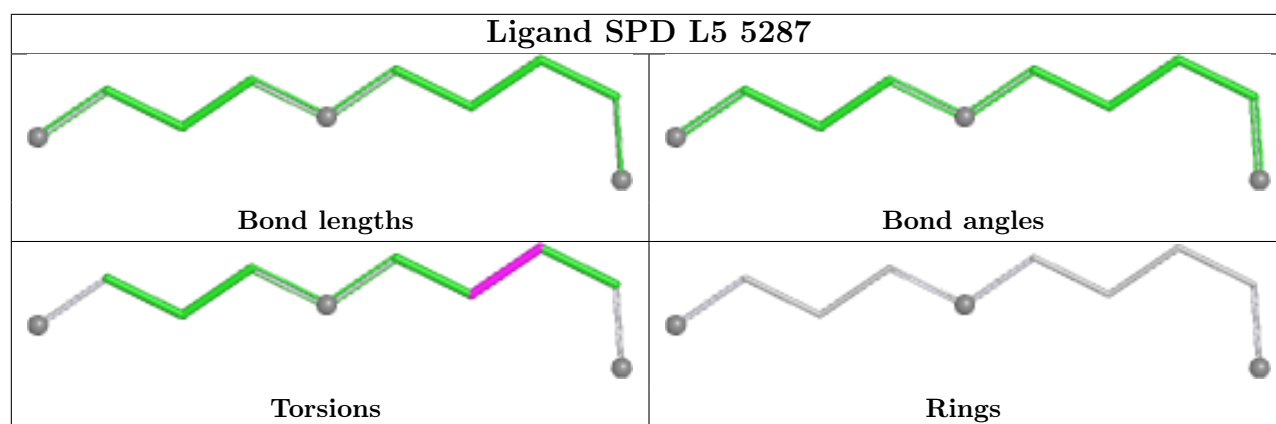
Mol	Chain	Res	Type	Clashes	Symm-Clashes
87	L5	5260	SPD	1	0
87	L5	5284	SPD	1	0
87	L5	5288	SPD	1	0
87	LN	301	SPD	1	0
87	L5	5282	SPD	1	0
86	L5	5266	SPM	1	0
86	L5	5290	SPM	2	0
86	L5	5289	SPM	1	0

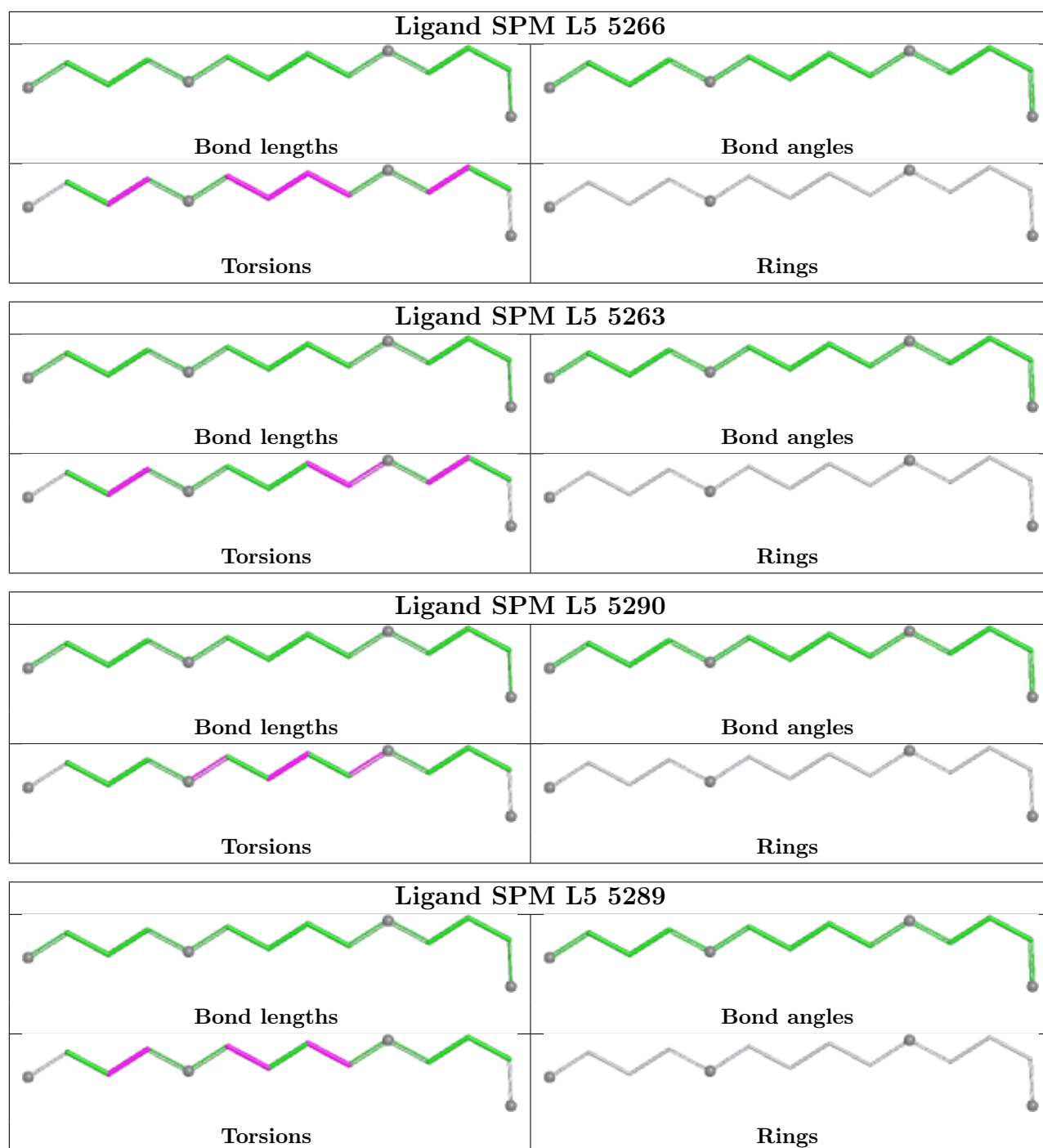
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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
2	L5	8
82	S2	5

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	S2	753:C	O3'	785:C	P	29.36
1	L5	2910:G	O3'	3584:C	P	21.20
1	L5	760:G	O3'	903:C	P	16.82
1	L5	519:C	O3'	642:G	P	15.80
1	L5	2112:G	O3'	2249:C	P	15.23
1	L5	4776:G	O3'	4858:C	P	15.05
1	S2	698:G	O3'	730:C	P	14.63
1	L5	3954:A	O3'	4056:A	P	13.42
1	S2	739:C	O3'	746:C	P	12.44
1	L5	990:C	O3'	1064:G	P	12.35
1	S2	225:G	O3'	287:U	P	7.53
1	L5	1100:U	O3'	1167:C	P	7.01
1	S2	1831:A	O3'	1832:6MZ	P	4.27

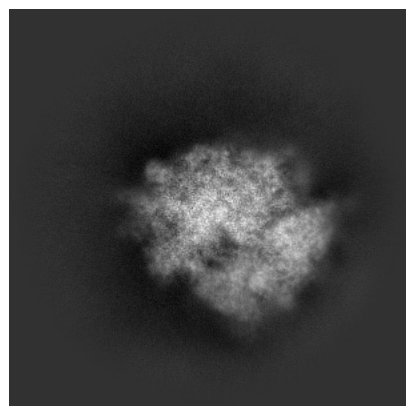
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-71412. These allow visual inspection of the internal detail of the map and identification of artifacts.

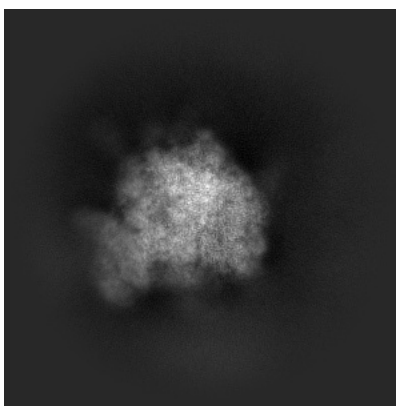
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

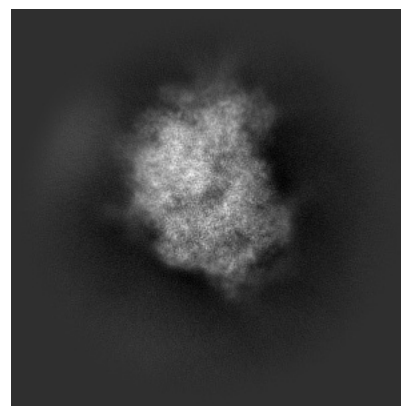
6.1.1 Primary map



X

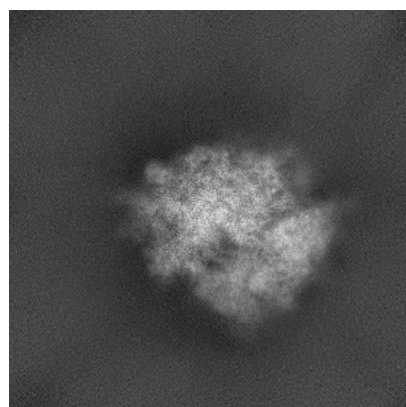


Y

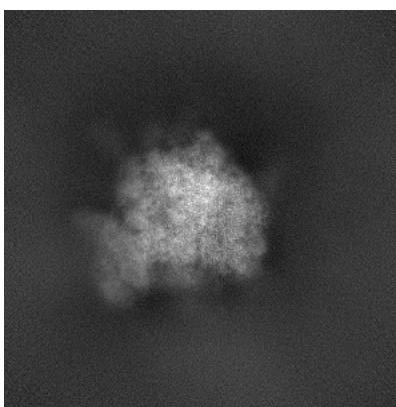


Z

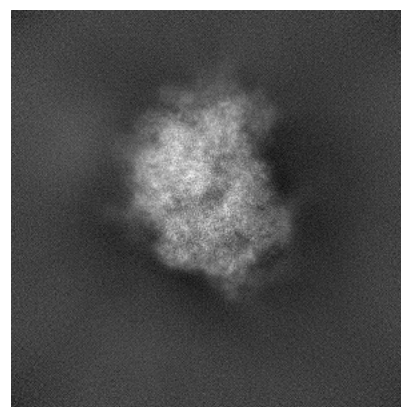
6.1.2 Raw map



X



Y

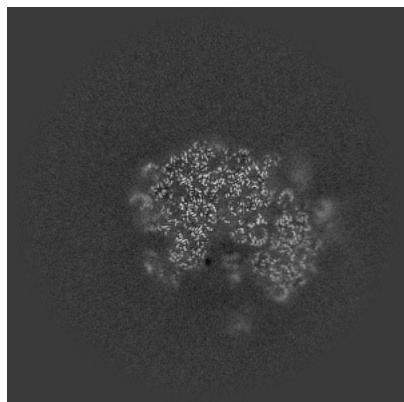


Z

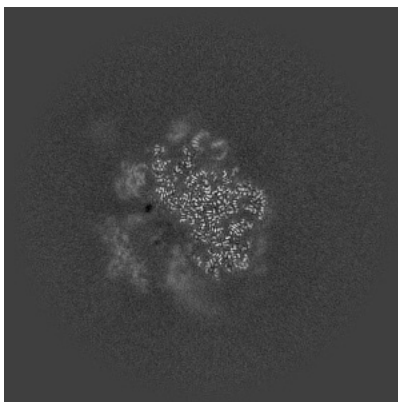
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

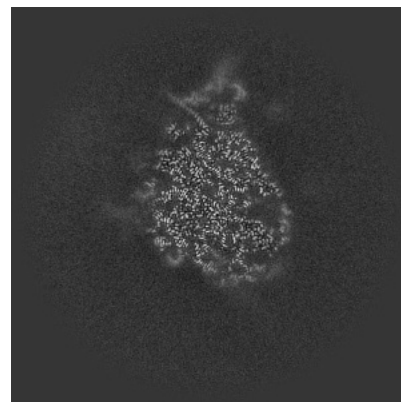
6.2.1 Primary map



X Index: 256

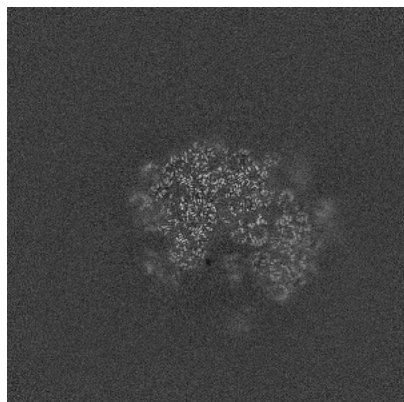


Y Index: 256

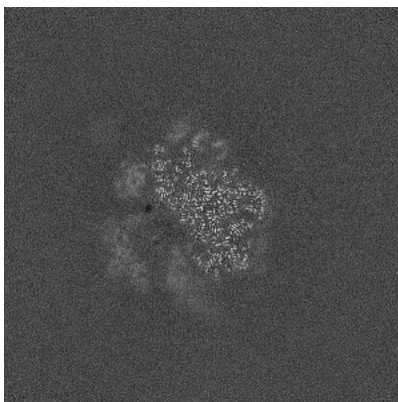


Z Index: 256

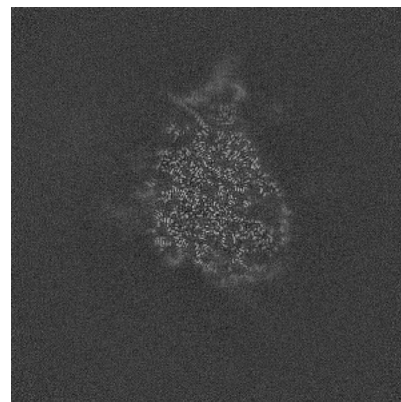
6.2.2 Raw map



X Index: 256



Y Index: 256

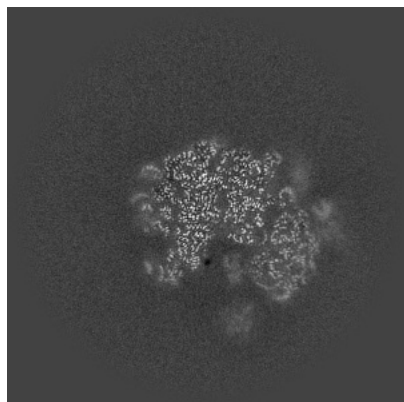


Z Index: 256

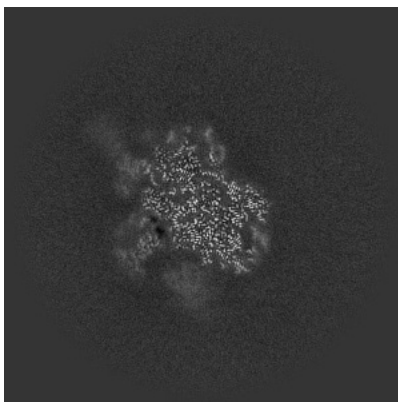
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

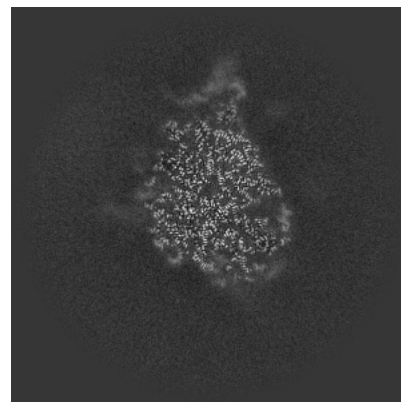
6.3.1 Primary map



X Index: 253

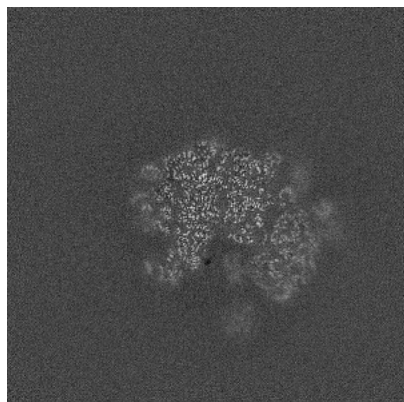


Y Index: 243

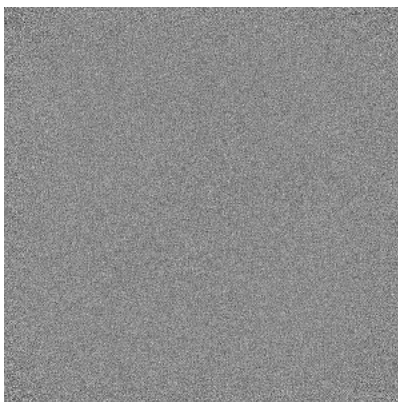


Z Index: 258

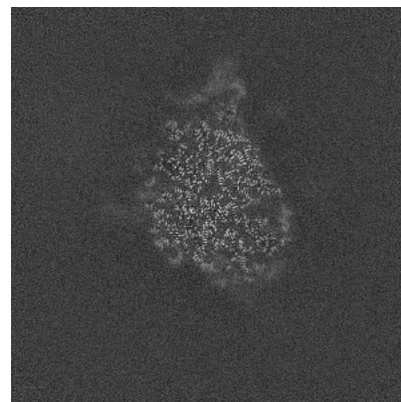
6.3.2 Raw map



X Index: 253



Y Index: 0

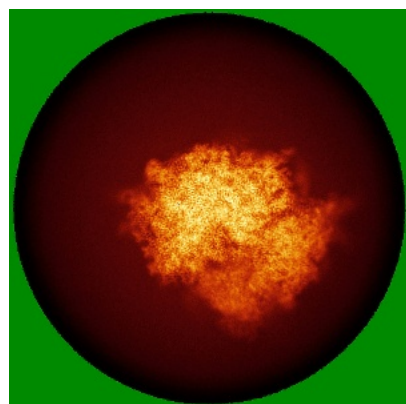


Z Index: 258

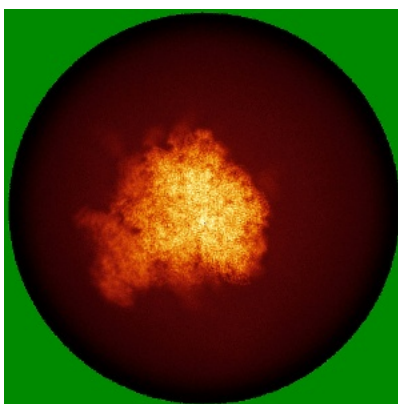
The images above show the largest variance slices of the map in three orthogonal directions.

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

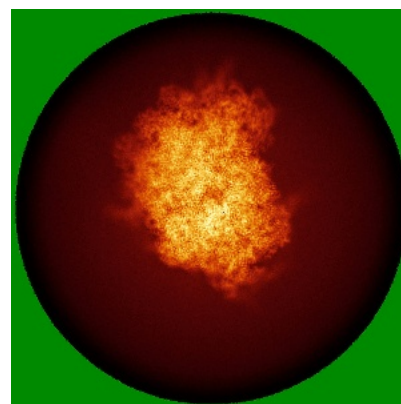
6.4.1 Primary map



X

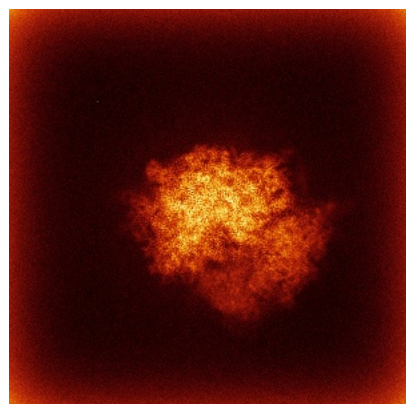


Y

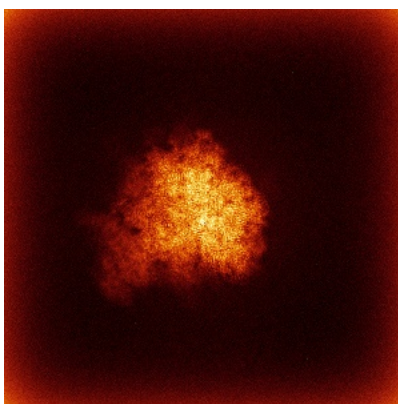


Z

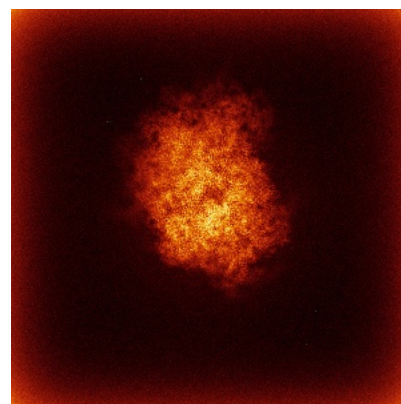
6.4.2 Raw map



X



Y

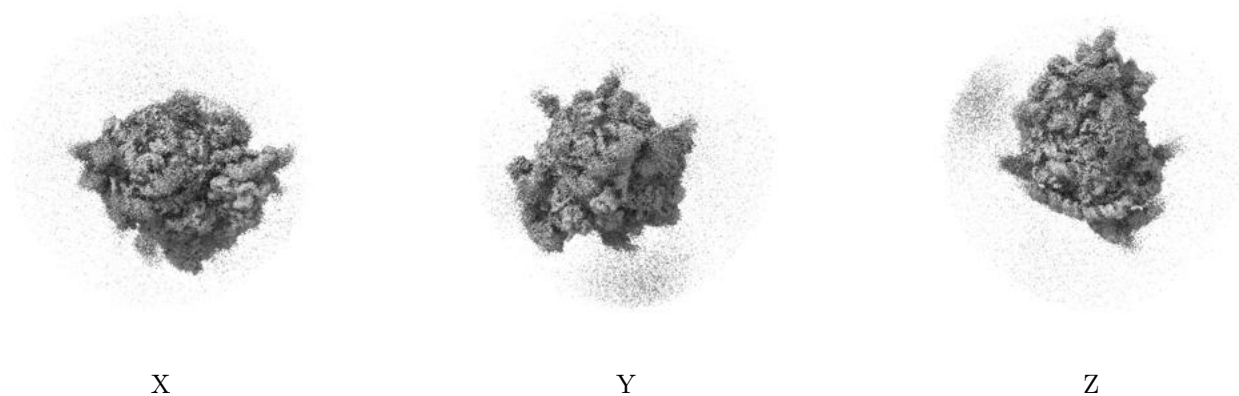


Z

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

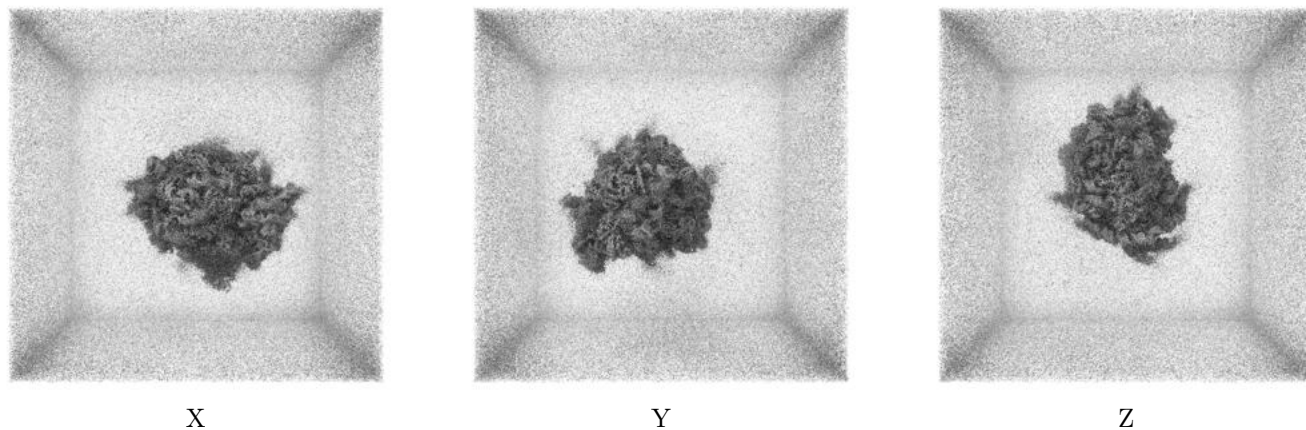
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0123. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

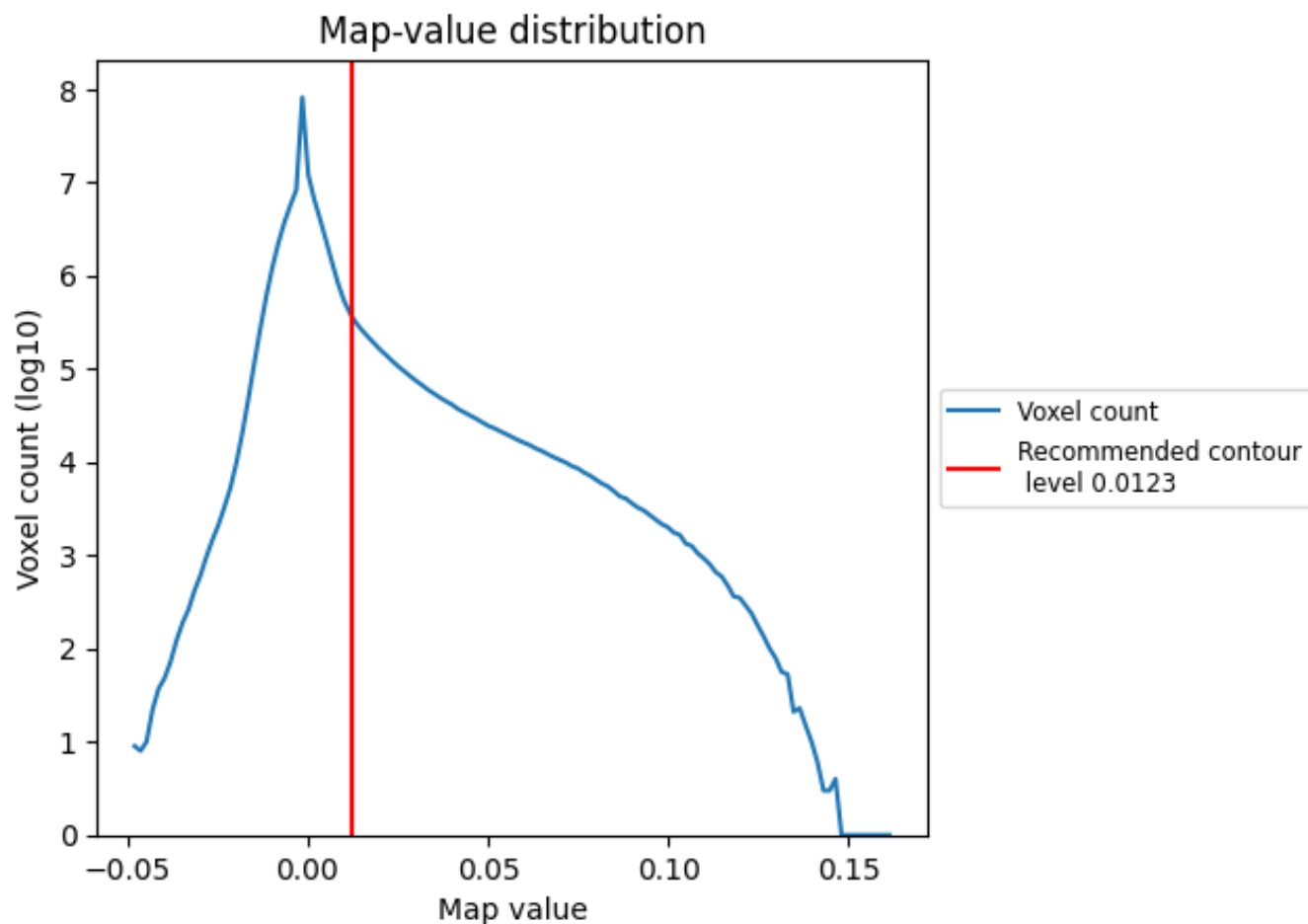
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

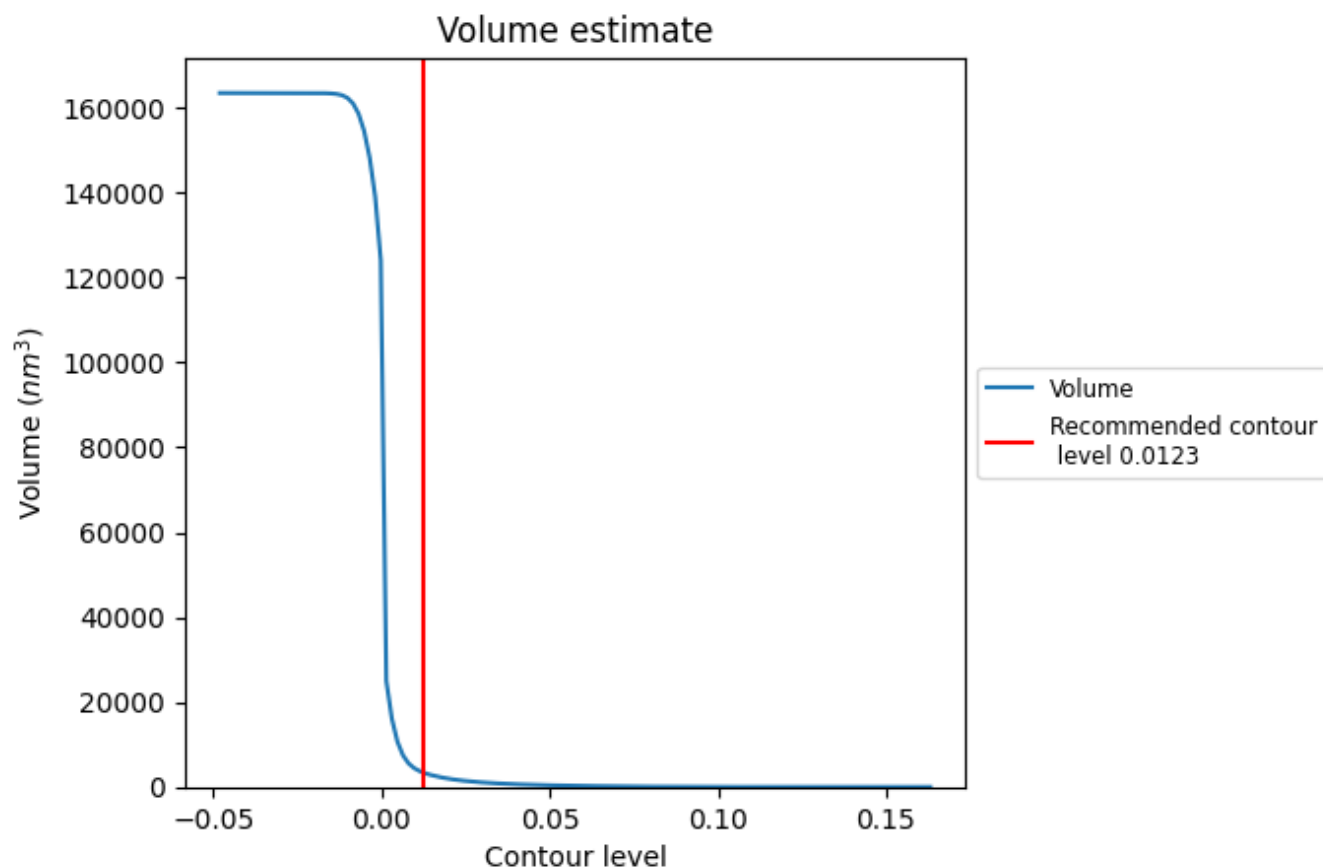
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

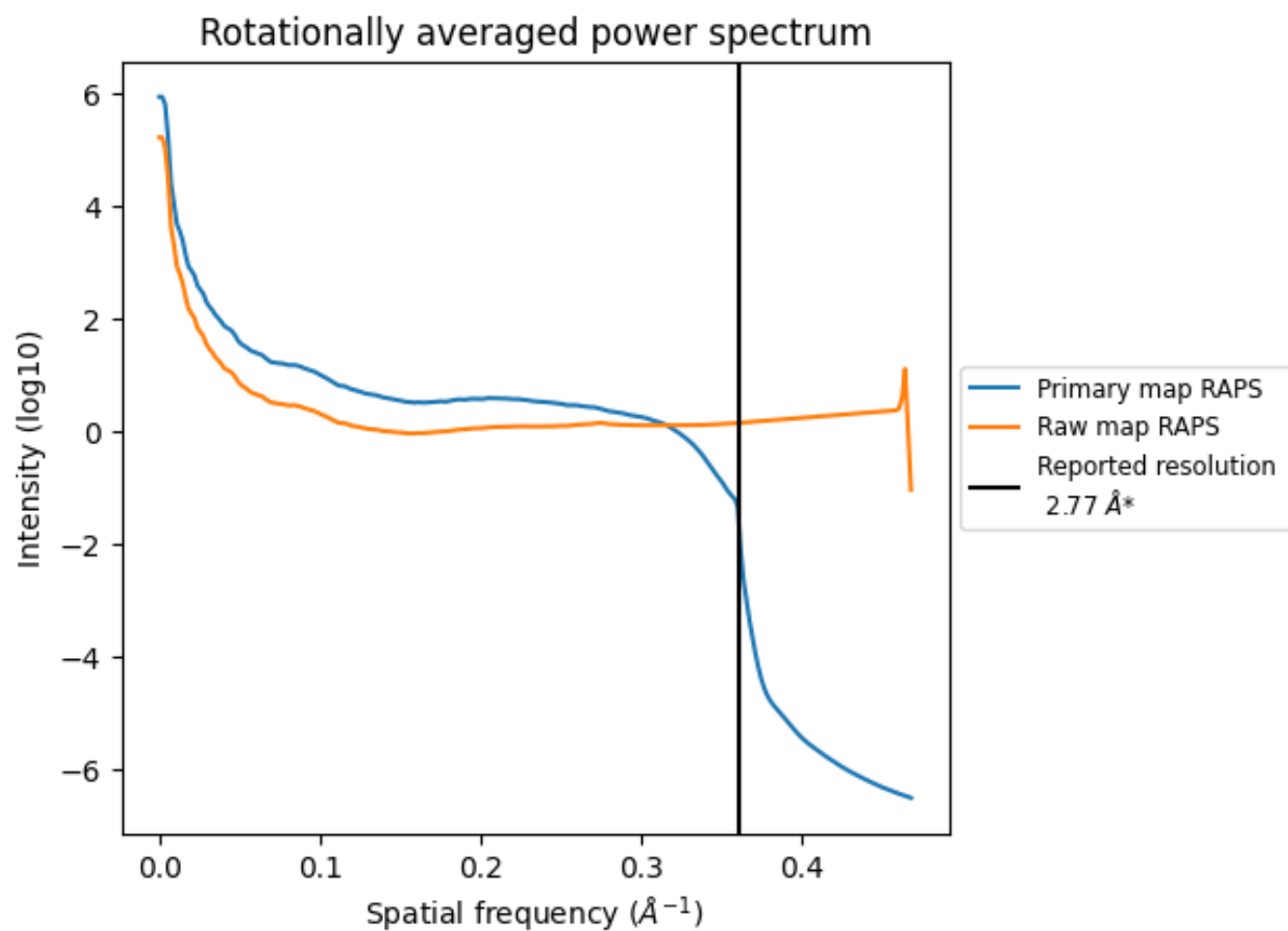
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 3443 nm³; this corresponds to an approximate mass of 3110 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 ⓘ

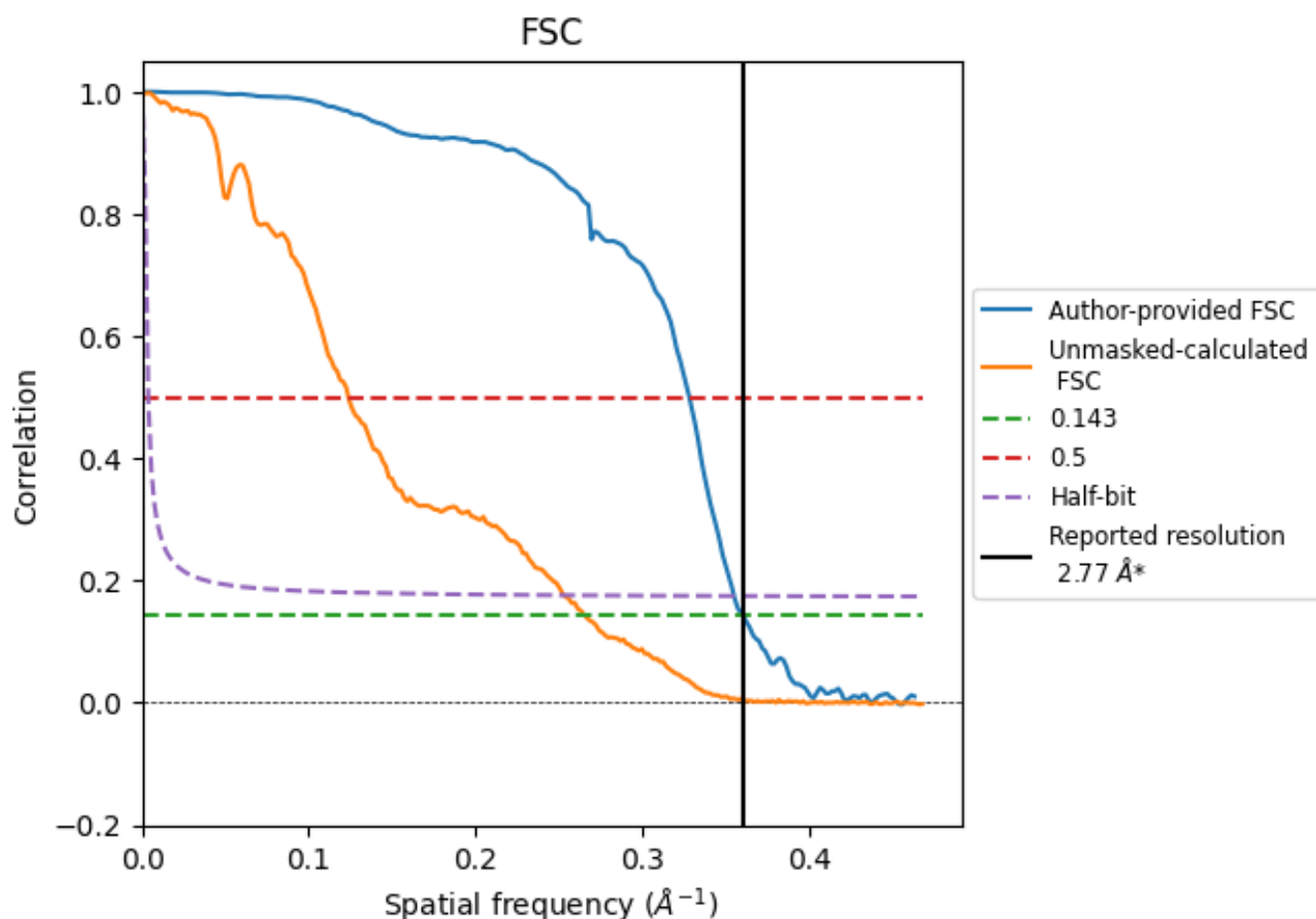


*Reported resolution corresponds to spatial frequency of 0.361 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.361 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

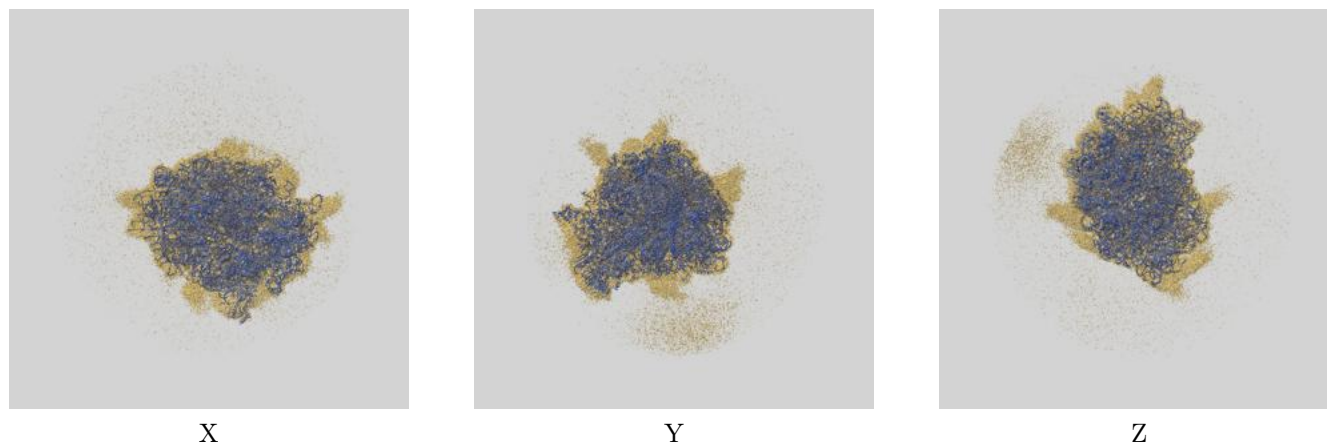
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.77	-	-
Author-provided FSC curve	2.77	3.05	2.81
Unmasked-calculated*	3.77	8.08	3.95

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.77 differs from the reported value 2.77 by more than 10 %

9 Map-model fit [i](#)

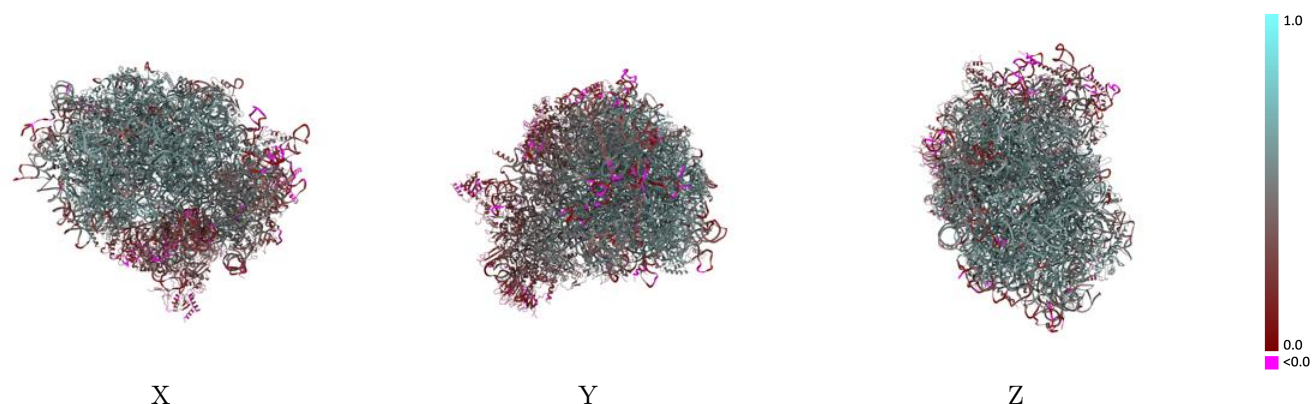
This section contains information regarding the fit between EMDB map EMD-71412 and PDB model 9P9I. Per-residue inclusion information can be found in section [3](#) on page [23](#).

9.1 Map-model overlay [i](#)



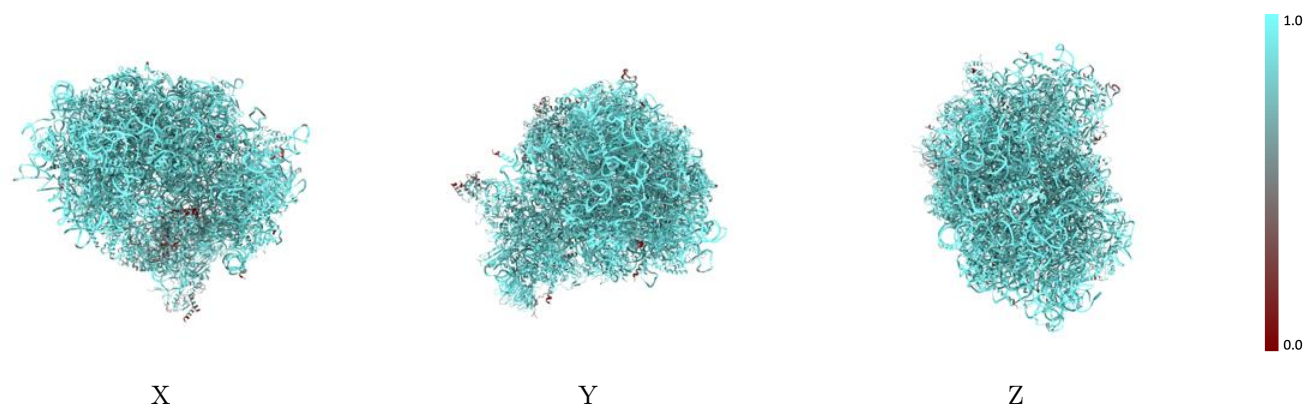
The images above show the 3D surface view of the map at the recommended contour level 0.0123 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



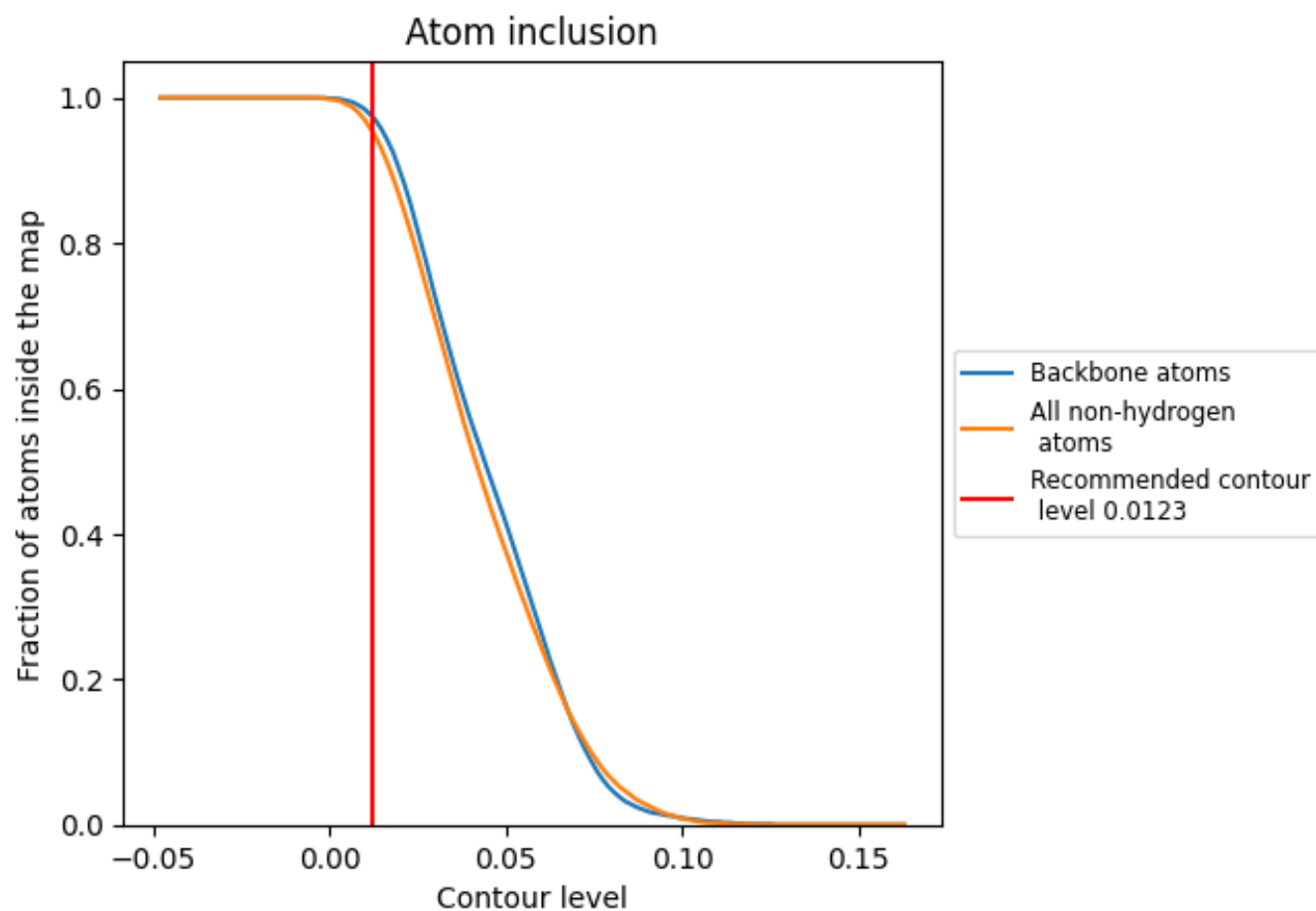
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0123).

9.4 Atom inclusion ⓘ



At the recommended contour level, 97% of all backbone atoms, 95% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0123) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9520	 0.4780
CB	 0.6900	 0.2250
CI	 0.8200	 0.4180
Et	 0.7570	 0.1460
L5	 0.9860	 0.5340
L7	 0.9980	 0.5840
L8	 0.9890	 0.5600
LA	 0.9880	 0.5980
LB	 0.9610	 0.5740
LC	 0.9630	 0.5740
LD	 0.9620	 0.5280
LE	 0.9390	 0.5020
LF	 0.9820	 0.5760
LG	 0.9150	 0.5070
LH	 0.9670	 0.5600
LI	 0.9570	 0.5640
LJ	 0.9300	 0.4780
LL	 0.9400	 0.5450
LM	 0.9750	 0.5590
LN	 0.9930	 0.6110
LO	 0.9760	 0.5750
LP	 0.9700	 0.5860
LQ	 0.9860	 0.6000
LR	 0.9240	 0.5150
LS	 0.9850	 0.5940
LT	 0.9590	 0.5590
LU	 0.9370	 0.4850
LV	 0.9700	 0.5790
LW	 0.8880	 0.3740
LX	 0.9560	 0.5530
LY	 0.9680	 0.5610
LZ	 0.9800	 0.5500
La	 0.9790	 0.5990
Lb	 0.9110	 0.4970
Lc	 0.9510	 0.5360



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Chain	Atom inclusion	Q-score
Ld	 0.9490	 0.5490
Le	 0.9820	 0.5950
Lf	 0.9830	 0.6040
Lg	 0.9740	 0.5680
Lh	 0.9480	 0.5530
Li	 0.9550	 0.5410
Lj	 0.9880	 0.5990
Lk	 0.9070	 0.4810
Ll	 0.9760	 0.5800
Lm	 0.9620	 0.5670
Ln	 0.9710	 0.5660
Lo	 0.9460	 0.5740
Lp	 0.9590	 0.5710
Lr	 0.9660	 0.5800
Ls	 0.7460	 0.1810
Lt	 0.5970	 0.0650
S2	 0.9860	 0.4330
SA	 0.9210	 0.4480
SB	 0.9290	 0.4630
SC	 0.9610	 0.4810
SD	 0.9120	 0.2990
SE	 0.9590	 0.4220
SF	 0.8660	 0.3320
SG	 0.9010	 0.3260
SH	 0.9030	 0.3810
SI	 0.9240	 0.4540
SJ	 0.9320	 0.4220
SK	 0.8940	 0.2420
SL	 0.9100	 0.4840
SM	 0.5740	 0.1220
SN	 0.9600	 0.5280
SO	 0.9320	 0.4770
SP	 0.8250	 0.2730
SQ	 0.9300	 0.2990
SR	 0.9000	 0.3230
SS	 0.8580	 0.2910
ST	 0.9220	 0.2800
SU	 0.9040	 0.2680
SV	 0.9630	 0.4670
SW	 0.9790	 0.5240
SX	 0.9280	 0.4780
SY	 0.9070	 0.3260

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Chain	Atom inclusion	Q-score
SZ	 0.8180	 0.2500
Sa	 0.9370	 0.4840
Sb	 0.9440	 0.4750
Sc	 0.8700	 0.3380
Sd	 0.9480	 0.3240
Se	 0.8470	 0.3460
Sf	 0.7300	 0.1000
Sg	 0.8750	 0.1980