



## Full wwPDB EM Validation Report ⓘ

Mar 27, 2026 – 07:03 PM UTC

PDB ID : 9P7O / pdb\_00009p7o  
EMDB ID : EMD-71349  
Title : In situ human AT-P-Z state ribosome  
Authors : Zheng, W.; Xiong, Y.  
Deposited on : 2025-06-20  
Resolution : 2.65 Å (reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

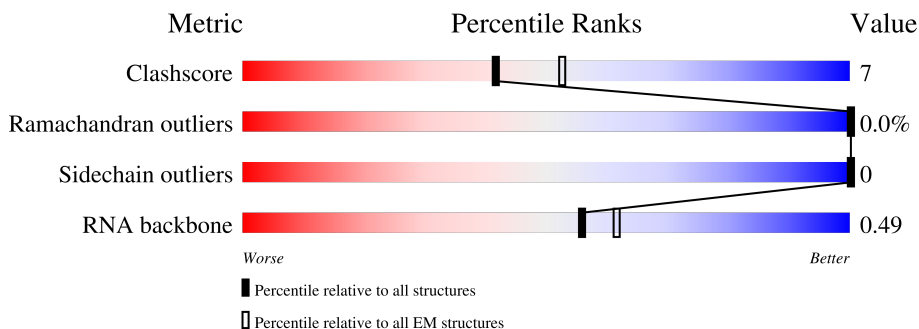
EMDB validation analysis : **FAILED**  
Mogul : 2022.3.0, CSD as543be (2022)  
MolProbity : 4-5-2 with Phenix2.0  
Buster-report : wwPDB partial adaption of 1.1.7 (2018)  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
EM percentile statistics : **NOT EXECUTED**  
MapQ : **FAILED**  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

# 1 Overall quality at a glance i

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

The reported resolution of this entry is 2.65 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	229148	23984
Ramachandran outliers	224038	23583
Sidechain outliers	223484	23102
RNA backbone	8273	3508

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	CI	31	71% (Green), 29% (Yellow)
2	Pt	74	55% (Green), 39% (Yellow), 5% (Orange)
3	CF	441	73% (Green), 26% (Yellow)
4	AT	76	34% (Green), 49% (Yellow), 17% (Orange)
5	L5	3655	58% (Green), 35% (Yellow), 7% (Orange)
6	L7	120	78% (Green), 22% (Yellow), . (Orange)
7	L8	156	64% (Green), 33% (Yellow), . (Orange)

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Mol	Chain	Length	Quality of chain	
8	LA	248	79%	21%
9	LB	402	78%	22%
10	LC	368	88%	12%
11	LD	293	85%	15%
12	LE	250	77%	19%
13	LF	225	82%	18%
14	LG	241	85%	15%
15	LH	190	84%	16%
16	LI	213	86%	14%
17	LJ	176	80%	16%
18	LL	210	87%	13%
19	LM	139	81%	19%
20	LN	203	85%	15%
21	LO	201	79%	21%
22	LP	153	85%	15%
23	LQ	187	90%	10%
24	LR	187	82%	18%
25	LS	175	89%	11%
26	LT	159	86%	14%
27	LU	101	76%	24%
28	LV	131	89%	11%
29	LW	118	79%	19%
30	LX	120	89%	11%
31	LY	134	87%	13%
32	LZ	135	82%	18%

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Mol	Chain	Length	Quality of chain		
33	La	147	91%	9%	
34	Lb	109	86%	14%	
35	Lc	98	89%	11%	
36	Ld	107	78%	22%	
37	Le	128	86%	14%	
38	Lf	109	87%	13%	
39	Lg	114	88%	12%	
40	Lh	122	83%	17%	
41	Li	102	91%	9%	
42	Lj	86	84%	16%	
43	Lk	69	83%	17%	
44	Ll	50	74%	26%	
45	Lm	52	90%	10%	
46	Ln	24	88%	12%	
47	Lo	105	88%	12%	
48	Lp	91	93%	7%	
49	Lr	125	91%	9%	
50	Ls	196	83%	17%	
51	Lt	141	75%	20%	5%
52	SD	227	81%	19%	
53	SF	189	76%	24%	
54	SK	98	70%	30%	
55	SM	122	68%	32%	
56	SP	121	79%	21%	
57	SQ	144	79%	21%	




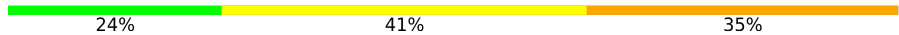
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Mol	Chain	Length	Quality of chain	
58	SR	135	85%	15%
59	SS	145	72%	28%
60	ST	143	73%	27%
61	SU	104	77%	23%
62	SZ	75	69%	31%
63	Sc	64	78%	22%
64	Sd	55	76%	24%
65	Sf	67	69%	31%
66	Sg	313	70%	30%
67	SA	221	74%	26%
68	SB	214	79%	21%
69	SC	222	75%	24%
70	SE	262	79%	21%
71	SG	237	77%	23%
72	SH	186	71%	28%
73	SI	206	78%	22%
74	SJ	185	90%	10%
75	SL	153	81%	19%
76	SN	150	91%	9%
77	SO	140	84%	14%
78	SV	83	81%	19%
79	SW	129	77%	23%
80	SX	141	79%	21%
81	SY	131	72%	28%
82	Sa	102	84%	16%

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Mol	Chain	Length	Quality of chain
83	Sb	83	 75% 25%
84	Se	58	 88% 12%
85	S2	1740	 52% 40% 8%
86	Zt	75	 24% 41% 35%

## 2 Entry composition [i](#)

There are 90 unique types of molecules in this entry. The entry contains 224970 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
			Total	C	N	O	S		
1	CI	31	247	153	55	38	1	0	0

- Molecule 2 is a RNA chain called P site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	Pt	74	1576	705	286	512	73	0	0

- Molecule 3 is a protein called Elongation factor 1-alpha 1.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	N	O	P			S
3	CF	441	3383	2148	581	636	1	17	0	0

- Molecule 4 is a RNA chain called A/T site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	AT	76	1616	723	291	527	75	0	0

- Molecule 5 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	L5	3655	78444	34968	14346	25475	3655	1	0

- Molecule 6 is a RNA chain called 5S rRNA.

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

- Molecule 7 is a RNA chain called 5.8S rRNA.

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

- Molecule 8 is a protein called 60S ribosomal protein L8.

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

- Molecule 9 is a protein called Large ribosomal subunit protein uL3.

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

- Molecule 10 is a protein called 60S ribosomal protein L4.

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

- Molecule 11 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 12 is a protein called Large ribosomal subunit protein eL6.

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

- Molecule 13 is a protein called 60S ribosomal protein L7.

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

- Molecule 14 is a protein called 60S ribosomal protein L7a.

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

- Molecule 15 is a protein called 60S ribosomal protein L9.

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

- Molecule 16 is a protein called Ribosomal protein uL16-like.

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

- Molecule 17 is a protein called 60S ribosomal protein L11.

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

- Molecule 18 is a protein called Large ribosomal subunit protein eL13.

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

- Molecule 19 is a protein called 60S ribosomal protein L14.

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

- Molecule 20 is a protein called 60S ribosomal protein L15.

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

- Molecule 21 is a protein called 60S ribosomal protein L13a.

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

- Molecule 22 is a protein called 60S ribosomal protein L17.

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

- Molecule 23 is a protein called 60S ribosomal protein L18.

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

- Molecule 24 is a protein called 60S ribosomal protein L19.

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

- Molecule 25 is a protein called 60S ribosomal protein L18a.

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

- Molecule 26 is a protein called 60S ribosomal protein L21.

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

- Molecule 27 is a protein called Heparin-binding protein HBp15.

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

- Molecule 28 is a protein called 60S ribosomal protein L23.

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

- Molecule 29 is a protein called Ribosomal protein L24.

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

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LW	?	-	SER	deletion	UNP A0A994J4A5
LW	?	-	GLU	deletion	UNP A0A994J4A5
LW	?	-	GLU	deletion	UNP A0A994J4A5
LW	?	-	ILE	deletion	UNP A0A994J4A5
LW	?	-	GLN	deletion	UNP A0A994J4A5
LW	?	-	LYS	deletion	UNP A0A994J4A5

- Molecule 30 is a protein called 60S ribosomal protein L23a.

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

- Molecule 31 is a protein called 60S ribosomal protein L26.

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

- Molecule 32 is a protein called 60S ribosomal protein L27.

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

- Molecule 33 is a protein called 60S ribosomal protein L27a.

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

- Molecule 34 is a protein called Large ribosomal subunit protein eL29.

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

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Lb	?	-	LYS	deletion	UNP P47914
Lb	?	-	PRO	deletion	UNP P47914
Lb	?	-	LYS	deletion	UNP P47914
Lb	?	-	GLU	deletion	UNP P47914
Lb	?	-	VAL	deletion	UNP P47914
Lb	?	-	LYS	deletion	UNP P47914
Lb	?	-	PRO	deletion	UNP P47914
Lb	?	-	LYS	deletion	UNP P47914
Lb	?	-	ILE	deletion	UNP P47914
Lb	?	-	PRO	deletion	UNP P47914
Lb	?	-	LYS	deletion	UNP P47914
Lb	?	-	GLY	deletion	UNP P47914

- Molecule 35 is a protein called 60S ribosomal protein L30.

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

- Molecule 36 is a protein called 60S ribosomal protein L31.

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

- Molecule 37 is a protein called 60S ribosomal protein L32.

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

- Molecule 38 is a protein called 60S ribosomal protein L35a.

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

- Molecule 39 is a protein called 60S ribosomal protein L34.

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

- Molecule 40 is a protein called 60S ribosomal protein L35.

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

- Molecule 41 is a protein called 60S ribosomal protein L36.

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

- Molecule 42 is a protein called 60S ribosomal protein L37.

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

- Molecule 43 is a protein called 60S ribosomal protein L38.

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

- Molecule 44 is a protein called 60S ribosomal protein L39.

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

- Molecule 45 is a protein called Large ribosomal subunit protein eL40.

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

- Molecule 46 is a protein called 60S ribosomal protein L41.

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

- Molecule 47 is a protein called 60S ribosomal protein L36a.

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

- Molecule 48 is a protein called 60S ribosomal protein L37a.

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

- Molecule 49 is a protein called 60S ribosomal protein L28.

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

- Molecule 50 is a protein called 60S acidic ribosomal protein P0.

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

- Molecule 51 is a protein called Large ribosomal subunit protein uL11.

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

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Lt	?	-	PRO	deletion	UNP P30050
Lt	?	-	PRO	deletion	UNP P30050
Lt	?	-	ARG	deletion	UNP P30050
Lt	?	-	ASP	deletion	UNP P30050
Lt	?	-	ARG	deletion	UNP P30050
Lt	?	-	LYS	deletion	UNP P30050
Lt	?	-	LYS	deletion	UNP P30050
Lt	?	-	GLN	deletion	UNP P30050
Lt	?	-	LYS	deletion	UNP P30050
Lt	?	-	ASN	deletion	UNP P30050
Lt	?	-	ILE	deletion	UNP P30050
Lt	?	-	LYS	deletion	UNP P30050
Lt	?	-	HIS	deletion	UNP P30050
Lt	?	-	SER	deletion	UNP P30050
Lt	?	-	GLY	deletion	UNP P30050
Lt	?	-	ASN	deletion	UNP P30050

- Molecule 52 is a protein called Small ribosomal subunit protein uS3.

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

- Molecule 53 is a protein called 40S ribosomal protein S5.

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

- Molecule 54 is a protein called 40S ribosomal protein S10.

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

- Molecule 55 is a protein called Small ribosomal subunit protein eS12.

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

- Molecule 56 is a protein called Small ribosomal subunit protein uS19.

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

- Molecule 57 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 58 is a protein called Small ribosomal subunit protein eS17.

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

- Molecule 59 is a protein called 40S ribosomal protein S18.

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

- Molecule 60 is a protein called 40S ribosomal protein S19.

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

- Molecule 61 is a protein called 40S ribosomal protein S20.

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

- Molecule 62 is a protein called Small ribosomal subunit protein eS25.

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

- Molecule 63 is a protein called 40S ribosomal protein S28.

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

- Molecule 64 is a protein called 40S ribosomal protein S29.

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

- Molecule 65 is a protein called Ubiquitin-40S ribosomal protein S27a.

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

- Molecule 66 is a protein called Receptor of activated protein C kinase 1.

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

- Molecule 67 is a protein called 40S ribosomal protein SA.

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

- Molecule 68 is a protein called 40S ribosomal protein S3a.

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

- Molecule 69 is a protein called 40S ribosomal protein S2.

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

- Molecule 70 is a protein called Small ribosomal subunit protein eS4, X isoform.

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

- Molecule 71 is a protein called 40S ribosomal protein S6.

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

- Molecule 72 is a protein called Small ribosomal subunit protein eS7.

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

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SH	?	-	SER	deletion	UNP P62081
SH	?	-	ARG	deletion	UNP P62081
SH	?	-	THR	deletion	UNP P62081

- Molecule 73 is a protein called 40S ribosomal protein S8.

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

- Molecule 74 is a protein called 40S ribosomal protein S9.

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

- Molecule 75 is a protein called 40S ribosomal protein S11.

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

- Molecule 76 is a protein called 40S ribosomal protein S13.

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

- Molecule 77 is a protein called Small ribosomal subunit protein uS11.

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

- Molecule 78 is a protein called Small ribosomal subunit protein eS21.

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

- Molecule 79 is a protein called 40S ribosomal protein S15a.

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

- Molecule 80 is a protein called 40S ribosomal protein S23.

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

- Molecule 81 is a protein called 40S ribosomal protein S24.

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

- Molecule 82 is a protein called 40S ribosomal protein S26.

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

- Molecule 83 is a protein called Small ribosomal subunit protein eS27.

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

- Molecule 84 is a protein called Small ribosomal subunit protein eS30.

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

- Molecule 85 is a RNA chain called 18S rRNA.

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

- Molecule 86 is a RNA chain called Z site tRNA.

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

- Molecule 87 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

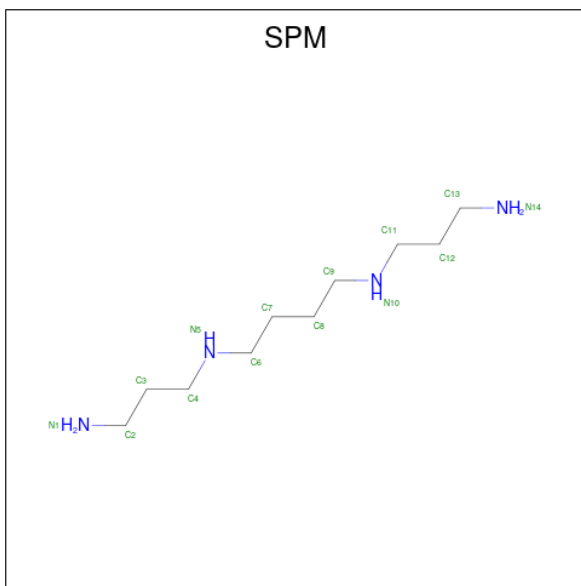
Mol	Chain	Residues	Atoms		AltConf
87	L5	179	Total	Mg	0
			179	179	
87	L7	3	Total	Mg	0
			3	3	
87	L8	4	Total	Mg	0
			4	4	
87	LA	1	Total	Mg	0
			1	1	
87	LP	1	Total	Mg	0
			1	1	
87	LV	1	Total	Mg	0
			1	1	
87	Le	1	Total	Mg	0
			1	1	
87	Lj	1	Total	Mg	0
			1	1	
87	SS	1	Total	Mg	0
			1	1	

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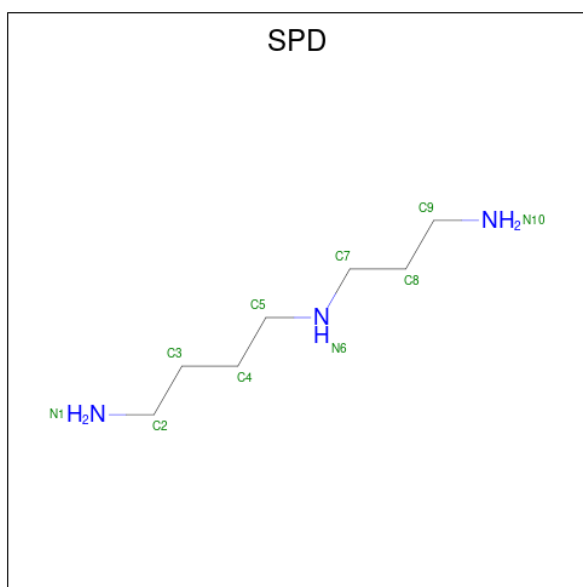
Mol	Chain	Residues	Atoms		AltConf
87	SG	1	Total	Mg	0
			1	1	
87	S2	26	Total	Mg	0
			26	26	

- Molecule 88 is SPERMINE (CCD ID: SPM) (formula:  $C_{10}H_{26}N_4$ ) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 89 is SPERMIDINE (CCD ID: SPD) (formula:  $C_7H_{19}N_3$ ) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 90 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

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

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<b>Mol</b>	<b>Chain</b>	<b>Residues</b>	<b>Atoms</b>		<b>AltConf</b>
90	Lj	1	Total 1	Zn 1	0
90	Lm	1	Total 1	Zn 1	0
90	Lo	1	Total 1	Zn 1	0
90	Lp	1	Total 1	Zn 1	0
90	Sa	1	Total 1	Zn 1	0

### 3 Residue-property plots [i](#)

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

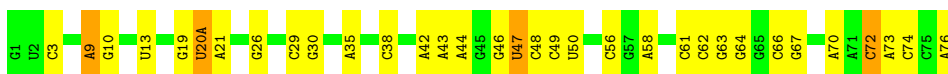
- Molecule 1: Transcription factor BTF3

Chain CI:  71% 29%




- Molecule 2: P site tRNA

Chain Pt:  55% 39% 5%



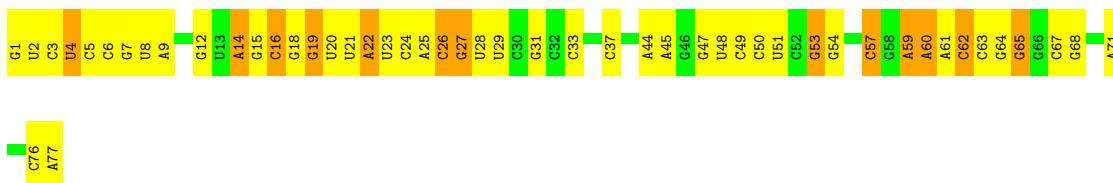
- Molecule 3: Elongation factor 1-alpha 1

Chain CF:  73% 26%



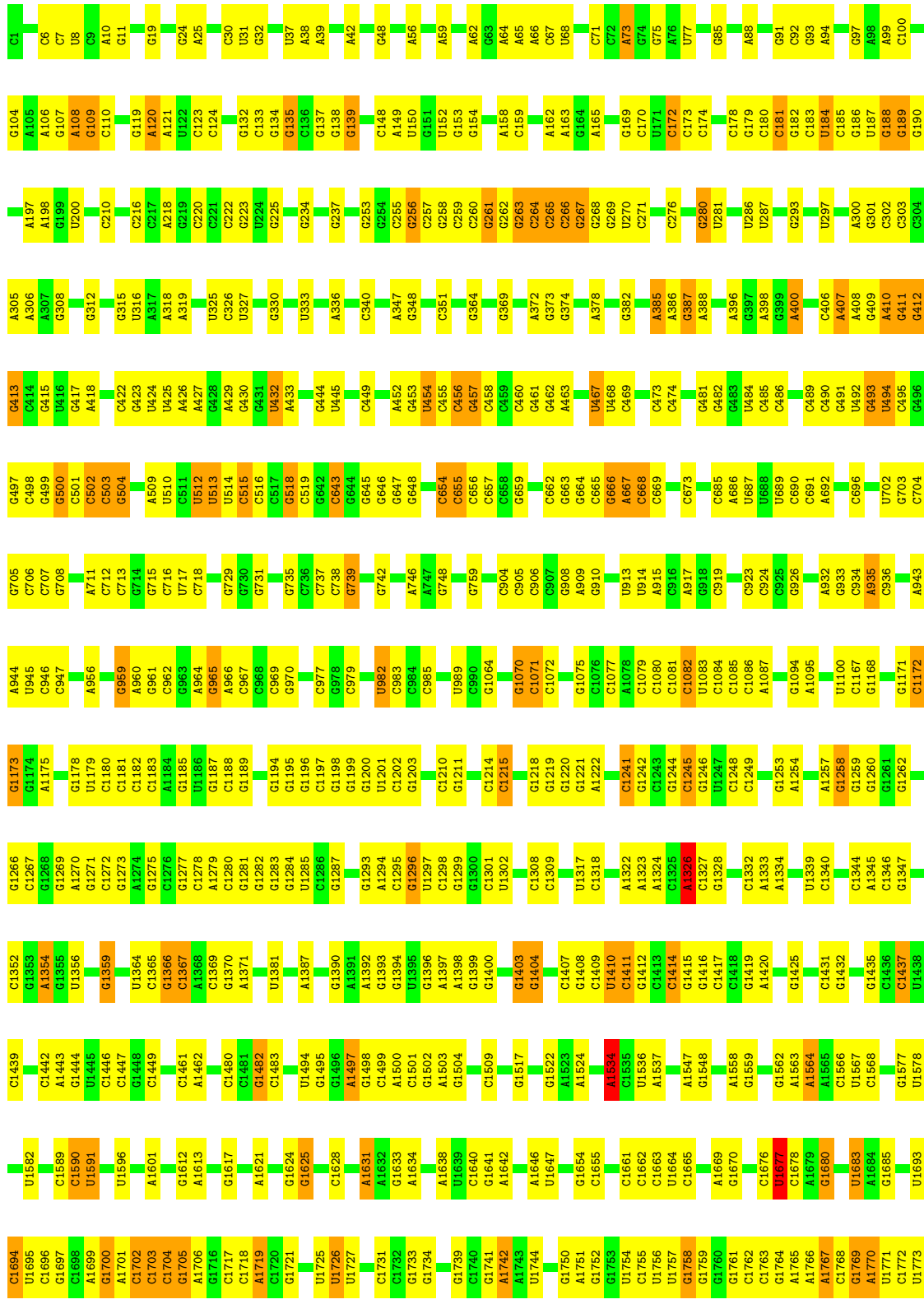
- Molecule 4: A/T site tRNA

Chain AT:  34% 49% 17%

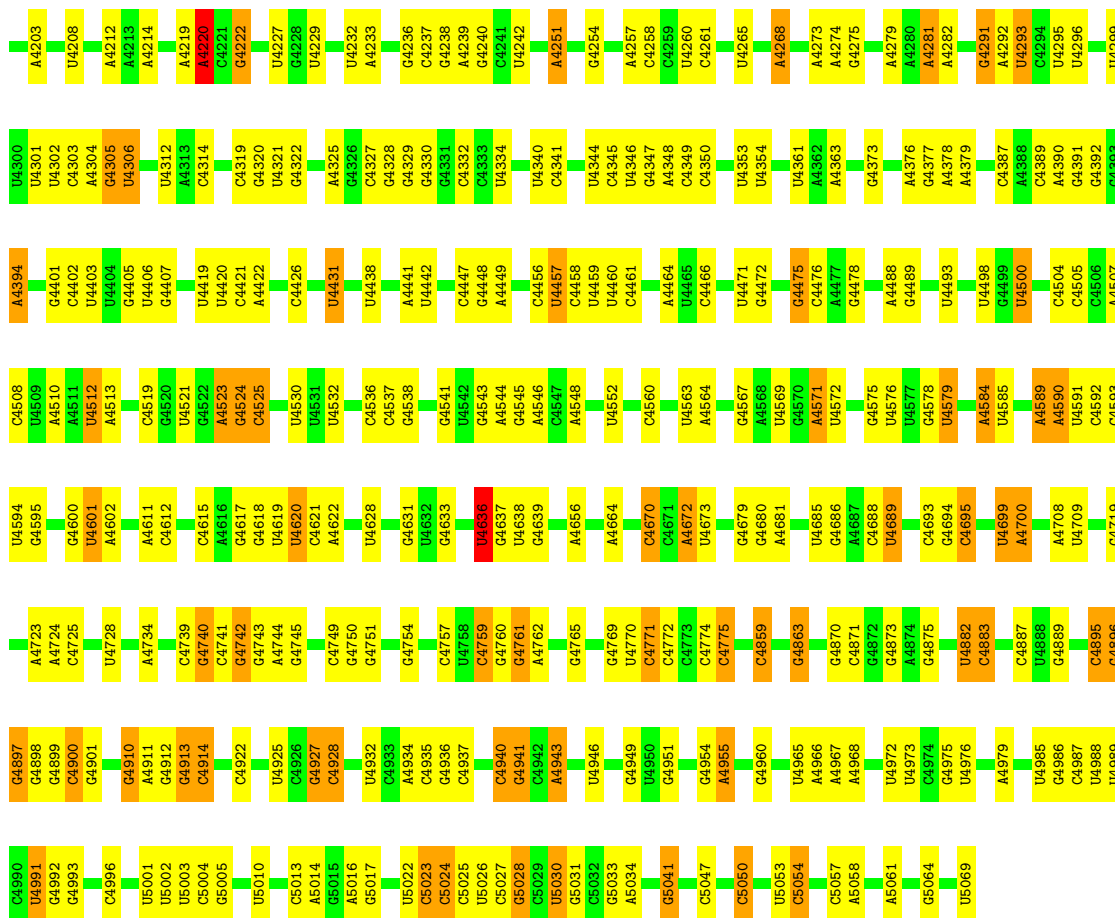


● Molecule 5: 28S rRNA

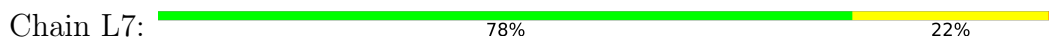
Chain L5:



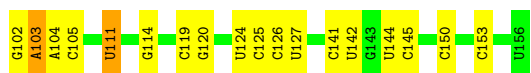
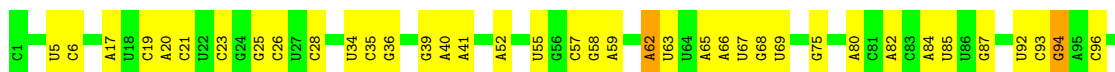
G4094	A3917	A3824	G3710	U5616	U2839	A2725	U2826	G2306	C2083	A1984	G1885	U1779
G4095	G3918	A3825	A3711	G3617	A2844	G2726	C2627	U2424	C2084	G1985	G1886	U1780
G4096	C3919	A3830	A3712	C3618	A2845	U2730	U2632	U2447	C2088	U1986	U1781	
A4098	U3920	A3839	U3713	G3619	A2846	C2731	C2633	G2448	C2091	C1987	U1782	
G4100	G4099	U3838	A3717	A3624	G2847	C2739	U2634	A2449	C2092	G1988	C1785	
C4101	C3924	G3839	A3718	G3625	G2848	C2742	U2635	G2450	A2093	A1989	A1786	
C4102	U3925	U3840	A3719	G3626	G2849	A2743	G2636	C2453	A2094	U1992	A1787	
C4103	A3928	U3844	U3721	A3630	G2855	A2744	U2638	A2453	C2095	A1991	C1788	
A4105	U3930	U3844	G3722	A3635	C2856	A2745	G2639	G2458	A2096	U1994	A1789	
G4106	U3931	U3848	A3723	C3636	C2861	A2746	A2641	G2459	U2097	C1993	A1802	
G4107	U3932	U3849	A3726	U3637	G2863	C2749	C2653	C2462	G2098	A1998	A1803	
G4108	G3933	A3850	A3727	G3638	A2864	A2750	C2654	G2463	C2101	A1999	A1804	
U4111	C3937	U3851	A3728	U3639	U2865	G2750	C2655	G2464	G2102	U1918	A1805	
C4112	G3938	A3852	U3729	U3640	C2866	A2763	U2656	C2465	G2099	U1917	G1806	
U4113	G3939	U3853	A3730	U3641	C2867	G2758	G2657	G2468	G2103	G1919	G1806	
C4114	A3942	A3856	A3732	U3644	A2895	A2766	G2658	U2468	A2105	G1920	G1810	
C4115	U3943	U3861	A3733	U3645	G2896	A2767	U2659	C2469	G2106	G1921	G1811	
C4116	A3945	A3862	G3735	A3646	A2897	G2762	G2662	G2470	C2107	G1922	G1815	
C4119	G3946	A3862	A3736	A3647	G2898	U2763	G2663	G2471	G2110	G1926	U2008	
G4122	A3947	A3867	A3737	A3648	G2899	A2764	G2664	G2474	G2111	U1927	U2009	
C4126	G3948	G3868	A3748	U3654	A2895	A2765	C2667	G2475	G2112	C1931	G1819	
A4127	A3949	U3869	G3753	U3649	G2896	A2766	G2668	C2476	G2249	A1932	C1820	
A3952	G3951	G3873	A3755	A3656	G2897	G2767	C2670	G2477	C2250	A1933	G1821	
G3953	G3952	G3874	A3760	G3657	C2899	U2769	C2671	G2478	G2251	G1934	U1822	
A3954	A3953	U3877	A3764	G3659	G2900	C2770	C2672	G2483	G2252	A1934	G1824	
A4056	A3954	C3878	U3764	C3660	G2901	A2773	G2675	U2484	G2253	G1940	G1824	
G4057	G3955	G3879	U3770	G3661	G2902	A2774	A2676	U2485	G2254	A1941	A1825	
U4058	A3956	C3879	A3774	A3662	G2903	A2775	A2677	U2486	G2255	A1942	G1826	
C4145	U4059	A3880	A3775	A3663	U2904	U2788	G2677	G2487	G2256	A1943	U1834	
C4146	C4059	G3881	A3776	G3664	G2905	A2789	G2678	G2488	G2257	G1948	G1836	
C4149	U4061	U3884	A3777	G3665	G2906	U2790	U2687	G2489	G2258	U1949	A1837	
G4150	U4062	G3886	G3777	C3670	U2907	A2790	G2688	U2490	G2259	U1950	G1842	
C4153	U4063	U3887	A3785	C3673	C2909	A2806	G2689	C2491	G2262	G1961	G1846	
U4163	C4064	G3888	U3786	G3674	G3589	A2807	G2694	G2492	A2263	A1962	C1847	
C4164	C4065	A3894	U3786	G3674	G3590	G2808	G2695	C2493	G2264	G1962	C1848	
G4168	U4067	G3897	G3792	U3688	C3585	G2811	C2702	U2494	G2269	G1965	G1885	
G4169	U4068	G3898	U3796	G3689	G3588	A2812	G2706	C2495	A2266	G1969	U1860	
A4170	U4070	G3899	C3808	U3690	G3589	A2813	U2707	U2496	G2267	A1970	U1861	
C4171	U4071	A3901	C3808	A3692	C3591	A2814	U2708	G2497	G2268	G1971	U1862	
G4183	G4076	A3906	G3811	U3693	C3594	G2822	U2709	C2498	G2269	G1973	G1885	
G4184	A4077	G3907	A3812	U3694	U3595	G2823	C2709	C2504	A2269	G1974	U1866	
U4188	G4084	G3908	A3813	U3695	U3596	C2824	C2710	C2505	G2270	G1975	A1867	
U4189	U4088	C3909	U3814	G3696	G3597	U2825	G2711	G2506	G2271	C1976	A1868	
U4190	C4088	C3910	A3817	U3697	A3604	U2826	G2712	A2513	G2272	G1977	A1869	
U4191	G4089	C3911	U3818	G3698	C3605	U2827	G2713	C2411	G2273	C1978	C1870	
G4191	U4190	U3912	G3819	C3701	G3606	U2828	C2714	C2412	G2274	A1979	A1871	
G4196	G4091	U3915	U3822	U3707	A3611	U2829	C2715	C2413	G2275	U1980	G1872	
G4196	G4092	C3708	G3823	G3708	A3611	U2830	C2716	U2414	G2276	G1981	C1875	
G4093	G4093	G3823	G3823	G3709	G3615	G2831	C2717	U2415	G2277	G1982	U1876	



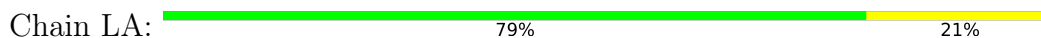
• Molecule 6: 5S rRNA



• Molecule 7: 5.8S rRNA

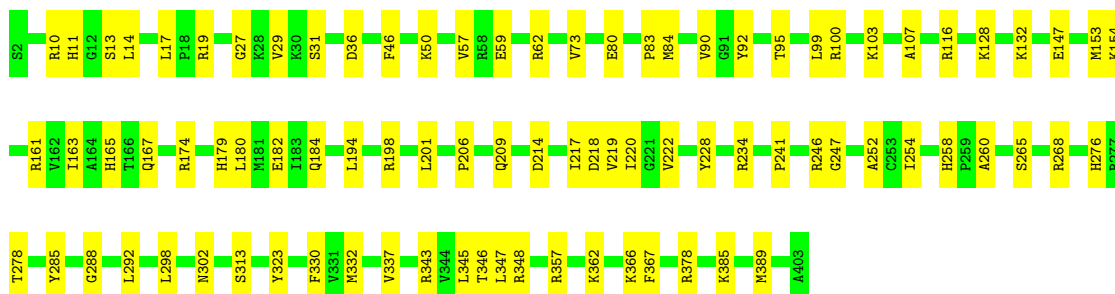
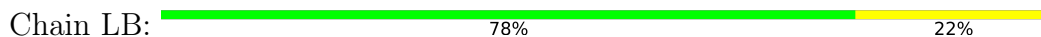


• Molecule 8: 60S ribosomal protein L8

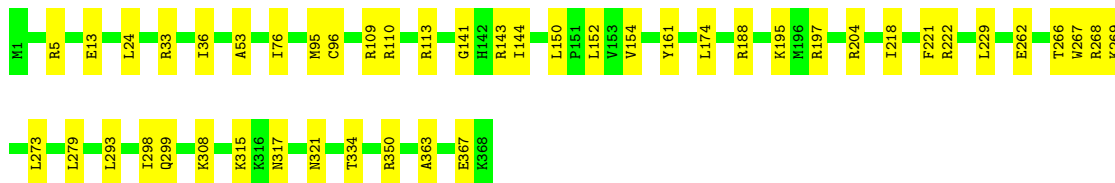




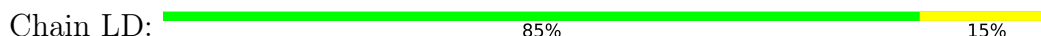
- Molecule 9: Large ribosomal subunit protein uL3



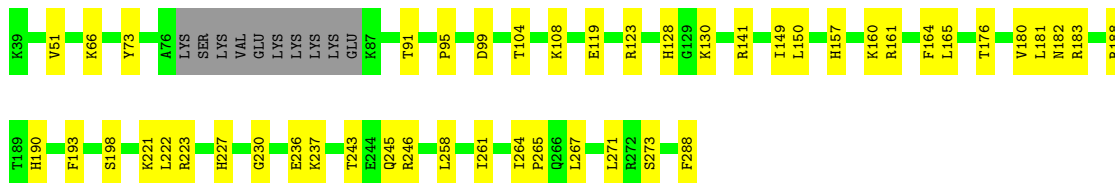
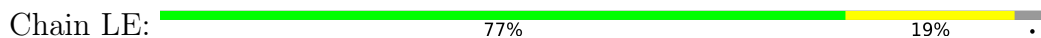
- Molecule 10: 60S ribosomal protein L4



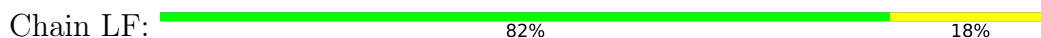
- Molecule 11: Large ribosomal subunit protein uL18

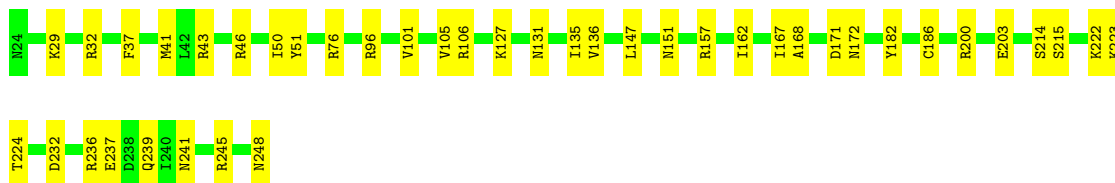


- Molecule 12: Large ribosomal subunit protein eL6



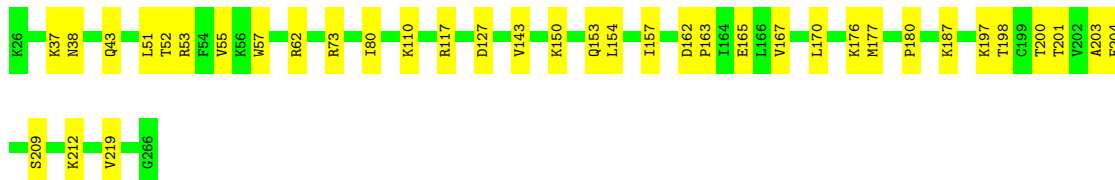
- Molecule 13: 60S ribosomal protein L7





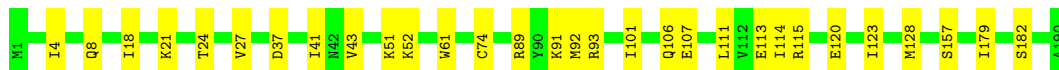
- Molecule 14: 60S ribosomal protein L7a

Chain LG: 85% 15%



- Molecule 15: 60S ribosomal protein L9

Chain LH: 84% 16%



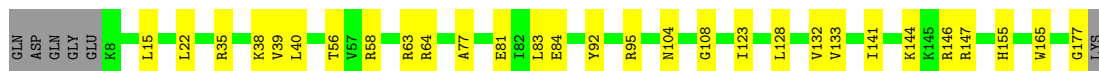
- Molecule 16: Ribosomal protein uL16-like

Chain LI: 86% 14%



- Molecule 17: 60S ribosomal protein L11

Chain LJ: 80% 16%



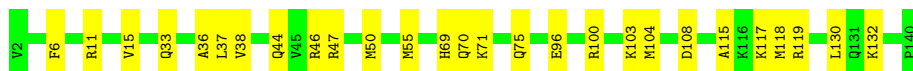
- Molecule 18: Large ribosomal subunit protein eL13

Chain LL: 87% 13%



- Molecule 19: 60S ribosomal protein L14

Chain LM: 81% 19%



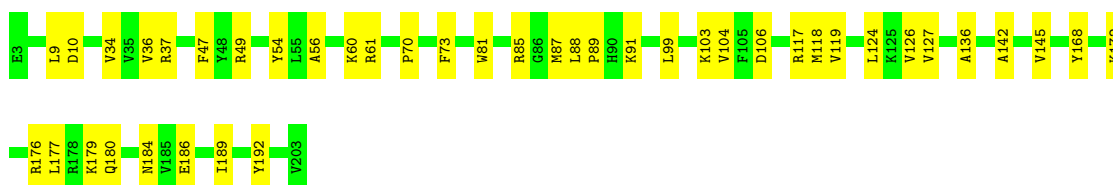
- Molecule 20: 60S ribosomal protein L15

Chain LN: 85% 15%



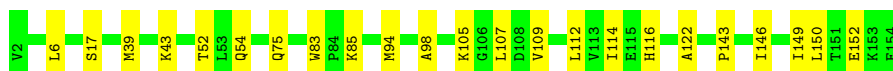
- Molecule 21: 60S ribosomal protein L13a

Chain LO: 79% 21%



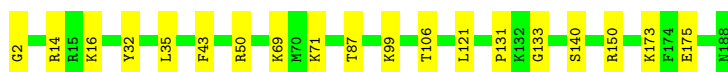
- Molecule 22: 60S ribosomal protein L17

Chain LP: 85% 15%



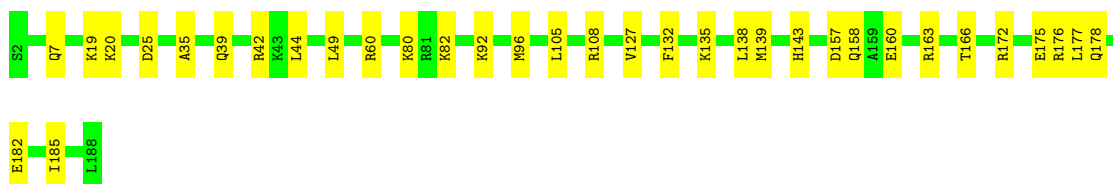
- Molecule 23: 60S ribosomal protein L18

Chain LQ: 90% 10%



- Molecule 24: 60S ribosomal protein L19

Chain LR: 82% 18%



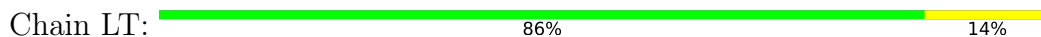
- Molecule 25: 60S ribosomal protein L18a

Chain LS: 89% 11%

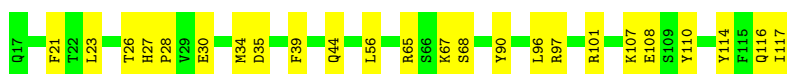
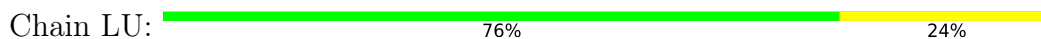




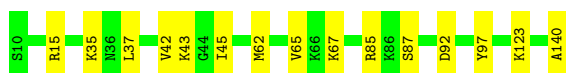
- Molecule 26: 60S ribosomal protein L21



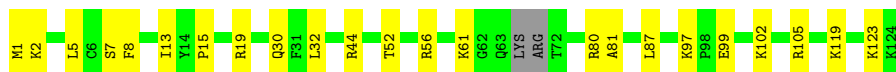
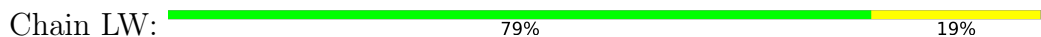
- Molecule 27: Heparin-binding protein HBp15



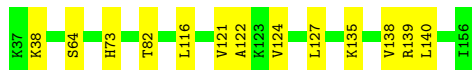
- Molecule 28: 60S ribosomal protein L23



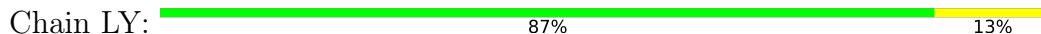
- Molecule 29: Ribosomal protein L24



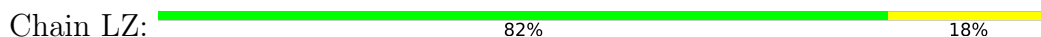
- Molecule 30: 60S ribosomal protein L23a

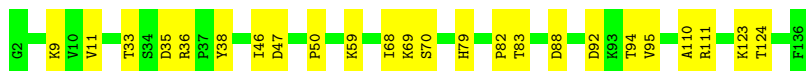


- Molecule 31: 60S ribosomal protein L26



- Molecule 32: 60S ribosomal protein L27





- Molecule 33: 60S ribosomal protein L27a

Chain La: 91% 9%



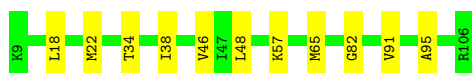
- Molecule 34: Large ribosomal subunit protein eL29

Chain Lb: 86% 14%



- Molecule 35: 60S ribosomal protein L30

Chain Lc: 89% 11%



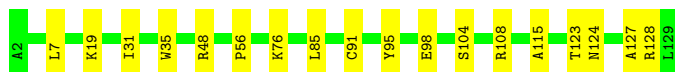
- Molecule 36: 60S ribosomal protein L31

Chain Ld: 78% 22%



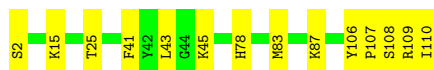
- Molecule 37: 60S ribosomal protein L32

Chain Le: 86% 14%



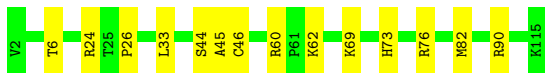
- Molecule 38: 60S ribosomal protein L35a

Chain Lf: 87% 13%

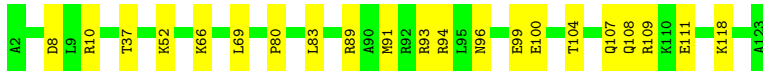
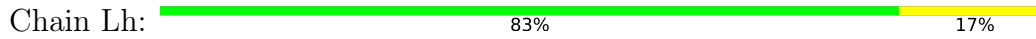


- Molecule 39: 60S ribosomal protein L34

Chain Lg: 88% 12%



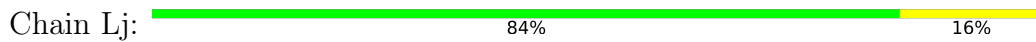
- Molecule 40: 60S ribosomal protein L35



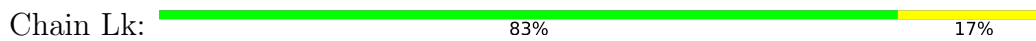
- Molecule 41: 60S ribosomal protein L36



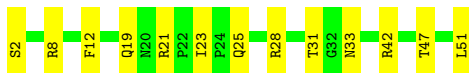
- Molecule 42: 60S ribosomal protein L37



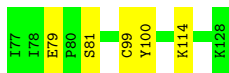
- Molecule 43: 60S ribosomal protein L38



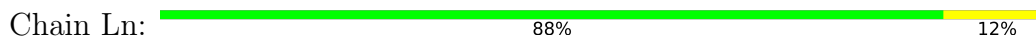
- Molecule 44: 60S ribosomal protein L39

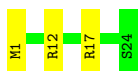


- Molecule 45: Large ribosomal subunit protein eL40

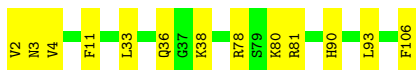
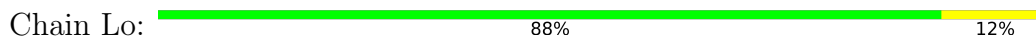


- Molecule 46: 60S ribosomal protein L41





- Molecule 47: 60S ribosomal protein L36a



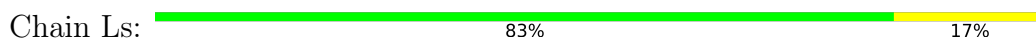
- Molecule 48: 60S ribosomal protein L37a



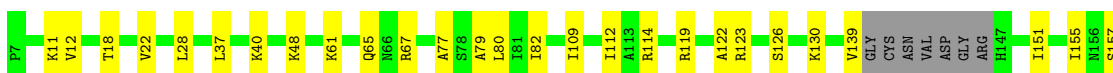
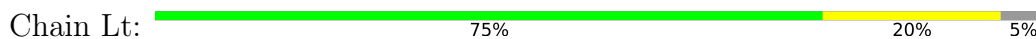
- Molecule 49: 60S ribosomal protein L28



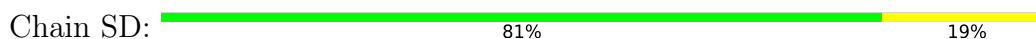
- Molecule 50: 60S acidic ribosomal protein P0

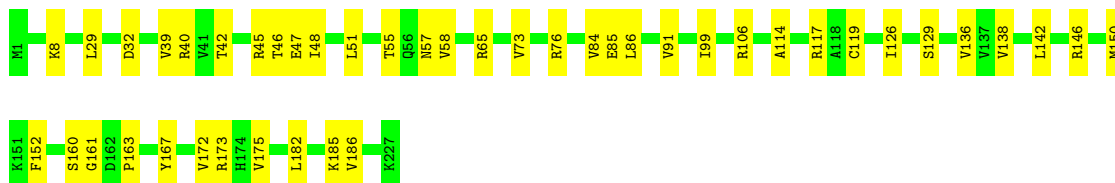


- Molecule 51: Large ribosomal subunit protein uL11



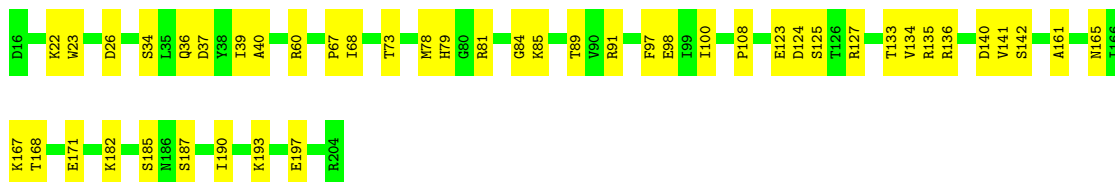
- Molecule 52: Small ribosomal subunit protein uS3





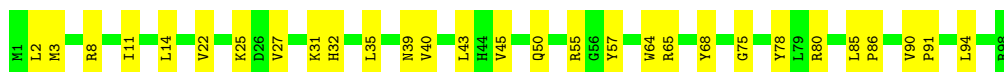
- Molecule 53: 40S ribosomal protein S5

Chain SF: 76% 24%



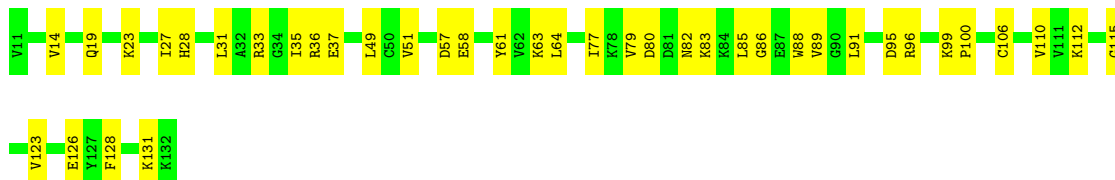
- Molecule 54: 40S ribosomal protein S10

Chain SK: 70% 30%



- Molecule 55: Small ribosomal subunit protein eS12

Chain SM: 68% 32%



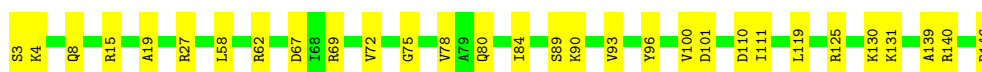
- Molecule 56: Small ribosomal subunit protein uS19

Chain SP: 79% 21%




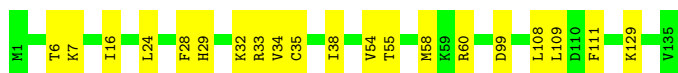
- Molecule 57: Small ribosomal subunit protein uS9

Chain SQ: 79% 21%



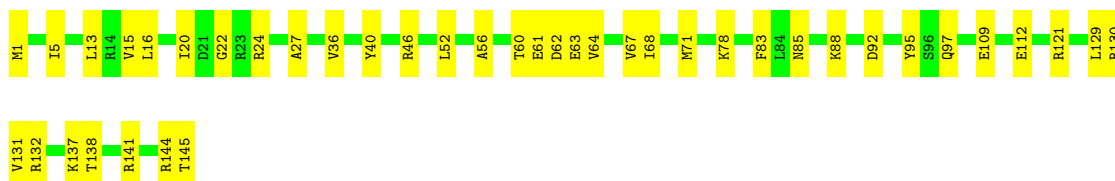
- Molecule 58: Small ribosomal subunit protein eS17

Chain SR:  85% 15%



- Molecule 59: 40S ribosomal protein S18

Chain SS:  72% 28%




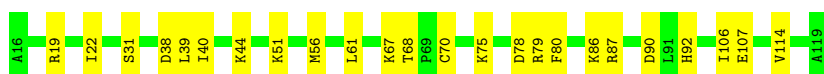
- Molecule 60: 40S ribosomal protein S19

Chain ST:  73% 27%



- Molecule 61: 40S ribosomal protein S20

Chain SU:  77% 23%




- Molecule 62: Small ribosomal subunit protein eS25

Chain SZ:  69% 31%




- Molecule 63: 40S ribosomal protein S28

Chain Sc:  78% 22%



- Molecule 64: 40S ribosomal protein S29

Chain Sd:  76% 24%



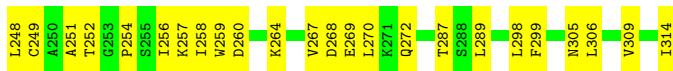
- Molecule 65: Ubiquitin-40S ribosomal protein S27a

Chain Sf: 69% 31%



- Molecule 66: Receptor of activated protein C kinase 1

Chain Sg: 70% 30%



- Molecule 67: 40S ribosomal protein SA

Chain SA: 74% 26%



- Molecule 68: 40S ribosomal protein S3a

Chain SB: 79% 21%



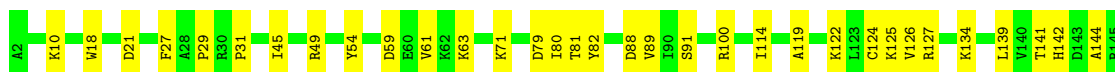
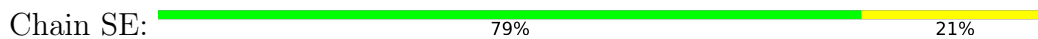
- Molecule 69: 40S ribosomal protein S2

Chain SC: 75% 24%

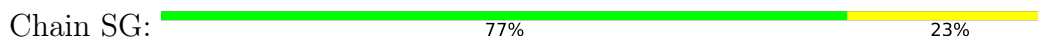




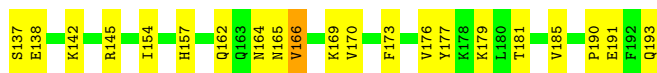
• Molecule 70: Small ribosomal subunit protein eS4, X isoform



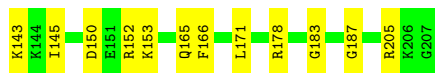
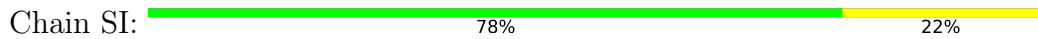
• Molecule 71: 40S ribosomal protein S6



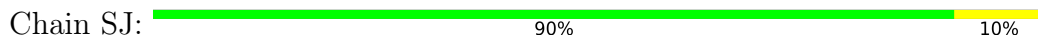
• Molecule 72: Small ribosomal subunit protein eS7




• Molecule 73: 40S ribosomal protein S8



• Molecule 74: 40S ribosomal protein S9



- Molecule 75: 40S ribosomal protein S11

Chain SL:  81% 19%




- Molecule 76: 40S ribosomal protein S13

Chain SN:  91% 9%




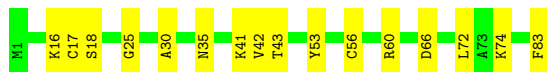
- Molecule 77: Small ribosomal subunit protein uS11

Chain SO:  84% 14% ..




- Molecule 78: Small ribosomal subunit protein eS21

Chain SV:  81% 19%




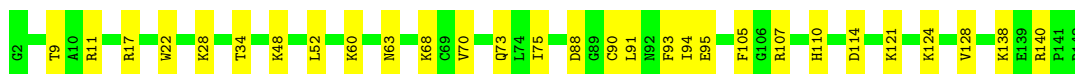
- Molecule 79: 40S ribosomal protein S15a

Chain SW:  77% 23%



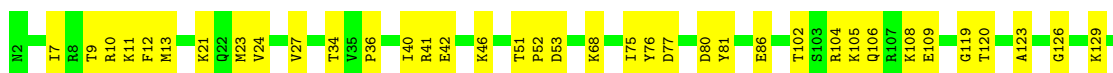
- Molecule 80: 40S ribosomal protein S23

Chain SX:  79% 21%



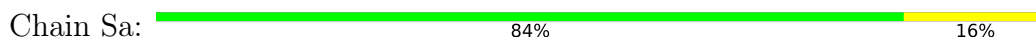
- Molecule 81: 40S ribosomal protein S24

Chain SY:  72% 28%



K132

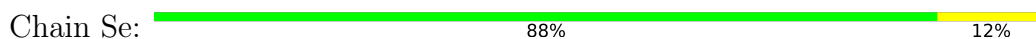
- Molecule 82: 40S ribosomal protein S26



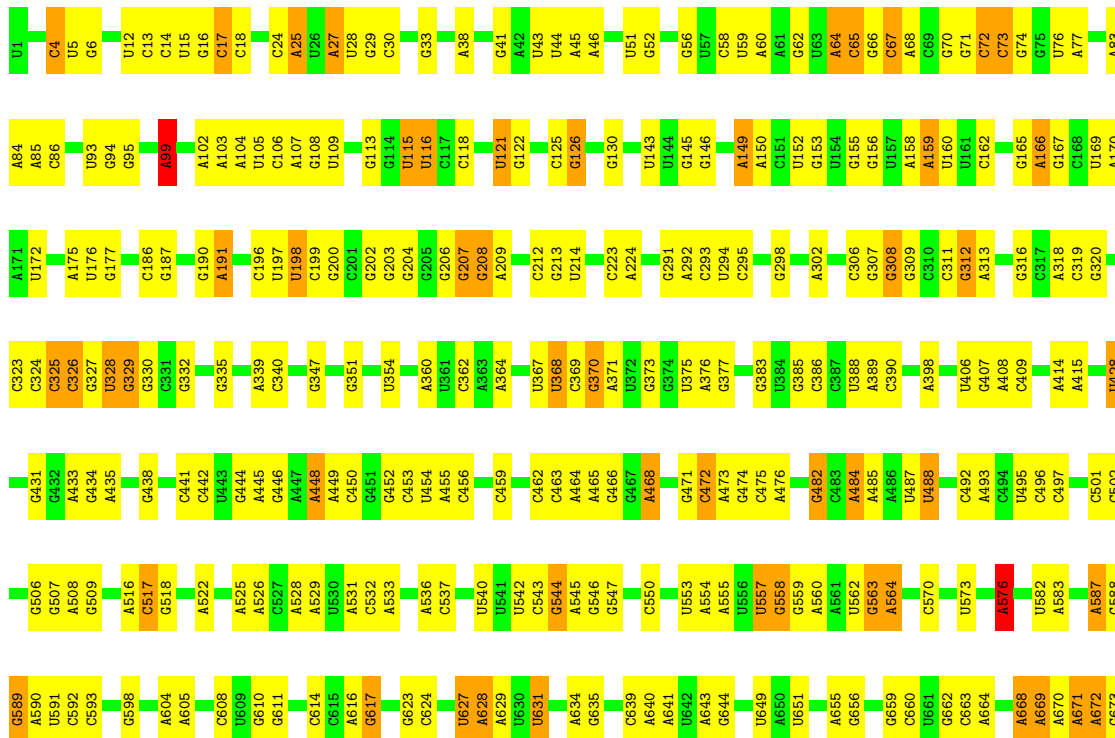
- Molecule 83: Small ribosomal subunit protein eS27

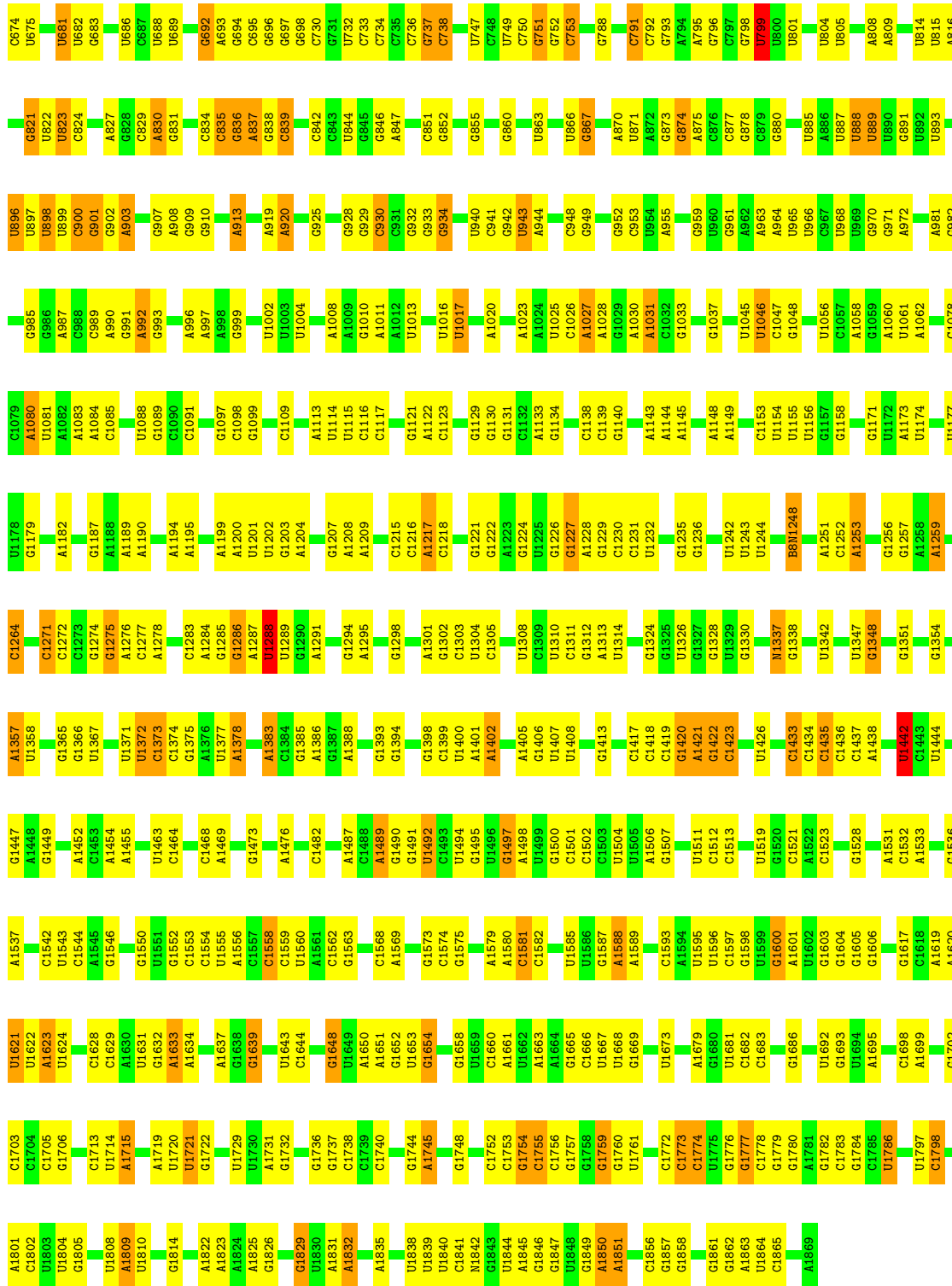


- Molecule 84: Small ribosomal subunit protein eS30

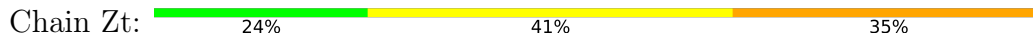


- Molecule 85: 18S rRNA





● Molecule 86: Z site tRNA



C68
G69
G70
G71
C72
G73
C74
C75
A76

## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	105399	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

## 5 Model quality

### 5.1 Standard geometry

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

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	Pt	0.17	0/1761	0.25	0/2741
3	CF	0.16	0/3442	0.39	0/4656
4	AT	0.13	0/1805	0.25	0/2809
5	L5	0.29	0/85098	0.32	0/132762
6	L7	0.27	0/2861	0.27	0/4459
7	L8	0.28	0/3631	0.29	0/5657
8	LA	0.30	0/1936	0.44	0/2596
9	LB	0.27	0/3306	0.39	0/4424
10	LC	0.27	0/2981	0.37	0/4002
11	LD	0.23	0/2428	0.34	0/3252
12	LE	0.22	0/1973	0.42	0/2645
13	LF	0.27	0/1905	0.34	0/2539
14	LG	0.23	0/1960	0.38	0/2637
15	LH	0.24	0/1537	0.36	0/2066
16	LI	0.24	0/1751	0.35	0/2340
17	LJ	0.20	0/1385	0.39	0/1852
18	LL	0.25	0/1732	0.34	0/2315
19	LM	0.27	0/1161	0.41	0/1554
20	LN	0.30	0/1746	0.35	0/2338
21	LO	0.28	0/1682	0.38	0/2250
22	LP	0.29	0/1268	0.45	0/1701
23	LQ	0.29	0/1537	0.38	0/2052
24	LR	0.24	0/1582	0.39	0/2091
25	LS	0.28	0/1493	0.36	0/2003
26	LT	0.25	0/1326	0.34	0/1770
27	LU	0.24	0/839	0.48	0/1126
28	LV	0.26	0/993	0.38	0/1332
29	LW	0.23	0/959	0.43	0/1270
30	LX	0.24	0/1002	0.37	0/1345
31	LY	0.25	0/1132	0.40	0/1504

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
32	LZ	0.24	0/1130	0.39	0/1507
33	La	0.27	0/1191	0.33	0/1591
34	Lb	0.22	0/889	0.40	0/1175
35	Lc	0.26	0/774	0.40	0/1038
36	Ld	0.25	0/903	0.39	0/1216
37	Le	0.28	0/1071	0.36	0/1429
38	Lf	0.29	0/895	0.40	0/1198
39	Lg	0.26	0/916	0.35	0/1220
40	Lh	0.24	0/1023	0.35	0/1351
41	Li	0.22	0/843	0.34	0/1115
42	Lj	0.29	0/720	0.39	0/952
43	Lk	0.22	0/575	0.40	0/761
44	Ll	0.27	0/454	0.30	0/599
45	Lm	0.23	0/435	0.34	0/575
46	Ln	0.27	0/231	0.38	0/294
47	Lo	0.26	0/876	0.35	0/1156
48	Lp	0.26	0/718	0.35	0/953
49	Lr	0.26	0/1017	0.34	0/1364
50	Ls	0.13	0/1519	0.36	0/2052
51	Lt	0.17	0/1009	0.50	0/1363
52	SD	0.16	0/1793	0.32	0/2414
53	SF	0.19	0/1516	0.37	0/2037
54	SK	0.18	0/851	0.43	0/1147
55	SM	0.14	0/950	0.38	0/1275
56	SP	0.19	0/1003	0.39	0/1342
57	SQ	0.19	0/1160	0.42	0/1553
58	SR	0.19	0/1105	0.45	0/1484
59	SS	0.18	0/1216	0.36	0/1628
60	ST	0.19	0/1131	0.43	0/1515
61	SU	0.20	0/831	0.47	0/1115
62	SZ	0.20	0/604	0.49	0/810
63	Sc	0.22	0/508	0.46	0/680
64	Sd	0.18	0/470	0.33	0/623
65	Sf	0.16	0/560	0.48	0/745
66	Sg	0.15	0/2493	0.40	0/3394
67	SA	0.20	0/1778	0.36	0/2416
68	SB	0.22	0/1765	0.41	0/2362
69	SC	0.21	0/1744	0.39	0/2357
70	SE	0.19	0/2118	0.38	0/2849
71	SG	0.17	0/1946	0.38	0/2590
72	SH	0.21	0/1519	0.46	1/2033 (0.0%)
73	SI	0.22	0/1715	0.39	0/2287
74	SJ	0.17	0/1550	0.34	0/2069

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
75	SL	0.22	0/1268	0.33	0/1696
76	SN	0.20	0/1232	0.28	0/1656
77	SO	0.24	0/1037	0.47	2/1391 (0.1%)
78	SV	0.20	0/643	0.39	0/860
79	SW	0.23	0/1051	0.38	0/1406
80	SX	0.21	0/1116	0.38	0/1490
81	SY	0.20	0/1083	0.44	0/1438
82	Sa	0.24	0/836	0.39	0/1121
83	Sb	0.21	0/665	0.38	0/891
84	Se	0.17	0/465	0.42	0/612
85	S2	0.24	0/39756	0.29	0/61939
86	Zt	0.15	0/1779	0.37	0/2771
All	All	0.25	0/236905	0.34	3/347316 (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
77	SO	0	1

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
77	SO	137	SER	CA-C-N	5.21	131.50	121.54
77	SO	137	SER	C-N-CA	5.21	131.50	121.54
72	SH	166	VAL	N-CA-C	-5.01	108.95	113.71

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
77	SO	137	SER	Peptide

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

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

atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	CI	247	0	283	13	0
2	Pt	1576	0	803	15	0
3	CF	3383	0	3431	75	0
4	AT	1616	0	824	30	0
5	L5	78444	0	39717	808	0
6	L7	2561	0	1295	13	0
7	L8	3315	0	1685	32	0
8	LA	1898	0	1993	37	0
9	LB	3238	0	3376	63	0
10	LC	2927	0	3104	34	0
11	LD	2382	0	2410	32	0
12	LE	1935	0	2096	34	0
13	LF	1870	0	1996	30	0
14	LG	1927	0	2074	27	0
15	LH	1518	0	1601	20	0
16	LI	1711	0	1749	22	0
17	LJ	1362	0	1399	19	0
18	LL	1701	0	1818	23	0
19	LM	1138	0	1204	20	0
20	LN	1701	0	1749	25	0
21	LO	1650	0	1794	32	0
22	LP	1242	0	1269	16	0
23	LQ	1513	0	1628	16	0
24	LR	1566	0	1729	25	0
25	LS	1453	0	1490	13	0
26	LT	1298	0	1366	18	0
27	LU	825	0	850	17	0
28	LV	979	0	1039	11	0
29	LW	945	0	1003	24	0
30	LX	985	0	1066	8	0
31	LY	1115	0	1205	13	0
32	LZ	1107	0	1182	15	0
33	La	1162	0	1213	10	0
34	Lb	876	0	948	14	0
35	Lc	764	0	804	6	0
36	Ld	888	0	930	17	0
37	Le	1053	0	1147	14	0
38	Lf	876	0	912	12	0
39	Lg	906	0	998	13	0
40	Lh	1015	0	1148	21	0
41	Li	832	0	917	7	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
42	Lj	705	0	737	14	0
43	Lk	569	0	637	9	0
44	Ll	444	0	483	11	0
45	Lm	429	0	465	3	0
46	Ln	230	0	276	3	0
47	Lo	862	0	929	9	0
48	Lp	708	0	756	5	0
49	Lr	1002	0	1068	7	0
50	Ls	1496	0	1540	22	0
51	Lt	998	0	1032	18	0
52	SD	1765	0	1865	28	0
53	SF	1495	0	1549	37	0
54	SK	827	0	854	23	0
55	SM	940	0	965	26	0
56	SP	985	0	1031	18	0
57	SQ	1142	0	1213	25	0
58	SR	1090	0	1149	16	0
59	SS	1198	0	1261	31	0
60	ST	1112	0	1146	25	0
61	SU	821	0	883	19	0
62	SZ	598	0	656	19	0
63	Sc	506	0	536	14	0
64	Sd	459	0	452	13	0
65	Sf	548	0	551	17	0
66	Sg	2436	0	2393	55	0
67	SA	1741	0	1746	41	0
68	SB	1738	0	1809	33	0
69	SC	1707	0	1791	37	0
70	SE	2076	0	2177	34	0
71	SG	1923	0	2089	47	0
72	SH	1497	0	1590	42	0
73	SI	1686	0	1772	36	0
74	SJ	1525	0	1640	15	0
75	SL	1247	0	1323	18	0
76	SN	1208	0	1294	11	0
77	SO	1024	0	1050	14	0
78	SV	636	0	637	12	0
79	SW	1034	0	1080	26	0
80	SX	1098	0	1167	20	0
81	SY	1065	0	1142	27	0
82	Sa	821	0	870	14	0
83	Sb	651	0	672	13	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
84	Se	459	0	503	7	0
85	S2	36953	0	18679	474	0
86	Zt	1593	0	809	42	0
87	L5	179	0	0	0	0
87	L7	3	0	0	0	0
87	L8	4	0	0	0	0
87	LA	1	0	0	0	0
87	LP	1	0	0	0	0
87	LV	1	0	0	0	0
87	Le	1	0	0	0	0
87	Lj	1	0	0	0	0
87	S2	26	0	0	0	0
87	SG	1	0	0	0	0
87	SS	1	0	0	0	0
88	L5	98	0	182	6	0
89	L5	90	0	171	5	0
89	LN	10	0	19	0	0
90	Lg	1	0	0	0	0
90	Lj	1	0	0	0	0
90	Lm	1	0	0	0	0
90	Lo	1	0	0	0	0
90	Lp	1	0	0	0	0
90	Sa	1	0	0	0	0
All	All	224970	0	167884	2605	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 (2605) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:CI:79:ARG:NH1	5:L5:2708:U:O2'	1.80	1.14
5:L5:184:U:H3	5:L5:253:G:H1	1.12	0.97
5:L5:4946:U:HO2'	38:Lf:2:SER:N	1.67	0.92
85:S2:1748:G:H1	85:S2:1786:U:H3	0.94	0.88
2:Pt:50:U:H3	2:Pt:64:G:H1	0.89	0.88
5:L5:1100:U:H3	5:L5:1194:G:H1	1.21	0.88
5:L5:1996:C:H42	5:L5:2000:G:H22	1.15	0.87
68:SB:103:MET:HG3	68:SB:215:VAL:HG12	1.57	0.86
4:AT:51:U:H3	4:AT:65:G:H1	1.20	0.86
5:L5:4775:C:H41	5:L5:4859:C:H42	1.22	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
85:S2:925:G:H1	85:S2:1017:U:H3	1.23	0.85
85:S2:1033:G:H1	85:S2:1080:A:HO2'	1.19	0.85
1:CI:78:HIS:NE2	5:L5:2706:G:N7	2.25	0.83
5:L5:1996:C:H42	5:L5:2000:G:N2	1.76	0.83
5:L5:2557:G:H1	5:L5:2570:U:H3	1.20	0.83
86:Zt:26:A:N6	86:Zt:44:G:H1	1.75	0.83
86:Zt:6:G:H1	86:Zt:67:U:H3	1.25	0.82
18:LL:64:VAL:HA	18:LL:67:HIS:HD2	1.44	0.82
57:SQ:72:VAL:HG11	57:SQ:80:GLN:HG3	1.62	0.81
5:L5:184:U:O2	5:L5:253:G:N2	2.13	0.81
85:S2:1776:G:N2	85:S2:1777:G:N7	2.30	0.80
86:Zt:26:A:N6	86:Zt:44:G:N1	2.29	0.79
5:L5:1996:C:N4	5:L5:2000:G:H22	1.79	0.79
66:Sg:247:TRP:HB3	66:Sg:258:ILE:HD11	1.64	0.78
65:Sf:126:CYS:SG	65:Sf:144:CYS:N	2.56	0.78
5:L5:387:G:HO2'	5:L5:412:G:H1	1.29	0.78
1:CI:50:MET:HG3	27:LU:114:TYR:CE2	2.19	0.78
69:SC:210:PRO:HB3	69:SC:240:THR:HG21	1.64	0.78
5:L5:5024:C:H41	5:L5:5028:G:H21	1.30	0.77
53:SF:185:SER:H	53:SF:190:ILE:HD11	1.50	0.77
5:L5:4774:C:O2'	5:L5:4775:C:O2	2.03	0.76
5:L5:1366:G:H5''	18:LL:36:ARG:HH12	1.50	0.76
5:L5:4242:U:H3	5:L5:4281:A:H2	1.32	0.76
5:L5:3594:C:O2	5:L5:3597:G:N2	2.19	0.75
88:L5:5293:SPM:H112	21:LO:91:LYS:HD3	1.68	0.75
53:SF:134:VAL:HG12	53:SF:135:ARG:HG2	1.68	0.75
3:CF:7:HIS:HA	3:CF:86:TYR:O	1.87	0.75
5:L5:1414:C:H2'	5:L5:1415:G:H8	1.51	0.75
3:CF:215:LYS:HZ1	3:CF:222:ASN:HB3	1.50	0.74
5:L5:2611:A:H5'	5:L5:2688:G:H4'	1.67	0.74
5:L5:664:G:N2	5:L5:666:G:O6	2.20	0.74
5:L5:1759:G:H1	5:L5:1773:U:H3	1.32	0.74
60:ST:12:GLN:NE2	85:S2:1593:C:O2	2.21	0.73
5:L5:1982:G:N2	5:L5:2009:A:O2'	2.21	0.73
69:SC:193:VAL:HG11	69:SC:240:THR:HG22	1.70	0.73
68:SB:122:GLU:HG2	68:SB:140:VAL:HG12	1.70	0.72
83:Sb:34:ASP:O	83:Sb:79:PHE:HA	1.90	0.72
38:Lf:78:HIS:O	38:Lf:83:MET:HB2	1.89	0.71
1:CI:78:HIS:CD2	5:L5:2706:G:N7	2.59	0.71
69:SC:121:ARG:HH12	69:SC:123:ARG:HE	1.39	0.71
85:S2:1417:C:H42	85:S2:1422:G:H22	1.36	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:2702:C:OP1	27:LU:101:ARG:NH2	2.24	0.71
85:S2:940:U:H3	85:S2:1002:U:H3	1.36	0.71
5:L5:2458:C:H5''	20:LN:67:ARG:HD2	1.72	0.71
19:LM:15:VAL:HG22	19:LM:50:MET:HE1	1.72	0.71
53:SF:168:THR:OG1	53:SF:171:GLU:OE1	2.09	0.71
5:L5:2103:G:N7	5:L5:2104:G:N2	2.39	0.70
9:LB:10:ARG:NH1	9:LB:11:HIS:O	2.24	0.70
3:CF:201:MET:HG3	3:CF:228:LEU:HD12	1.74	0.70
16:LI:205:PRO:HD2	16:LI:208:LYS:HE2	1.74	0.70
85:S2:928:G:H1	85:S2:1013:U:H3	1.39	0.70
5:L5:748:G:O6	25:LS:98:ARG:NH2	2.25	0.69
5:L5:2601:A:N6	5:L5:2744:A:OP2	2.25	0.69
79:SW:107:SER:HB2	85:S2:860:G:H21	1.56	0.69
5:L5:500:G:OP1	5:L5:504:G:N2	2.25	0.69
85:S2:94:G:HO2'	85:S2:508:A:HO2'	1.40	0.69
85:S2:888:U:H4'	85:S2:889:U:H5'	1.74	0.69
5:L5:989:U:H3	5:L5:1064:G:H1	1.41	0.69
5:L5:989:U:O2	5:L5:1064:G:N2	2.26	0.69
36:Ld:90:ARG:HD3	36:Ld:102:LEU:HD13	1.74	0.69
73:SI:133:GLU:HA	73:SI:136:ILE:HG12	1.73	0.69
3:CF:378:LYS:HE2	3:CF:391:PRO:HB3	1.74	0.68
5:L5:2554:U:O2	5:L5:2764:A:N7	2.25	0.68
5:L5:4910:G:H4'	9:LB:95:THR:HG22	1.75	0.68
5:L5:3641:U:OP2	5:L5:3646:A:N6	2.27	0.68
5:L5:1700:G:H5''	5:L5:1704:C:H42	1.57	0.68
8:LA:107:MET:HB3	8:LA:111:THR:HG21	1.74	0.68
60:ST:65:TYR:HE1	60:ST:128:GLN:HG3	1.59	0.68
5:L5:3701:OMC:H5	5:L5:3748:A:H62	1.39	0.68
49:Lr:28:GLU:OE2	49:Lr:31:ASN:ND2	2.26	0.68
85:S2:1417:C:O2	85:S2:1422:G:O6	2.11	0.68
85:S2:747:U:N3	85:S2:796:G:N1	2.42	0.68
5:L5:2486:G:O6	5:L5:2493:G:O6	2.12	0.67
5:L5:4094:G:N2	5:L5:4115:G:OP2	2.27	0.67
9:LB:222:VAL:O	9:LB:343:ARG:NH1	2.26	0.67
12:LE:223:ARG:NH2	12:LE:236:GLU:O	2.28	0.67
3:CF:15:HIS:HE1	3:CF:132:GLN:H	1.43	0.67
5:L5:4546:A:N7	8:LA:215:ASN:ND2	2.42	0.67
50:Ls:68:HIS:O	50:Ls:71:ASN:ND2	2.27	0.67
5:L5:2483:G:H1	5:L5:2495:U:H3	1.39	0.67
72:SH:154:ILE:HB	72:SH:185:VAL:HG22	1.75	0.67
5:L5:3937:C:H1'	20:LN:125:SER:HB3	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:Sg:87:LEU:HB2	66:Sg:101:PHE:HB2	1.77	0.67
29:LW:105:ARG:NH2	71:SG:149:LYS:O	2.28	0.67
53:SF:127:ARG:HG2	53:SF:136:ARG:HE	1.60	0.67
85:S2:1536:G:H2'	85:S2:1537:A:H8	1.60	0.67
54:SK:25:LYS:NZ	85:S2:1497:G:N7	2.42	0.67
57:SQ:3:SER:OG	57:SQ:4:LYS:N	2.27	0.67
5:L5:1759:G:N2	5:L5:1773:U:O2	2.26	0.66
5:L5:2351:OMC:HM22	10:LC:95:MET:HG3	1.77	0.66
9:LB:90:VAL:HG23	9:LB:163:ILE:HD11	1.77	0.66
17:LJ:146:ARG:HG2	17:LJ:147:ARG:HG3	1.77	0.66
5:L5:170:C:H42	5:L5:266:C:H42	1.41	0.66
5:L5:1499:C:OP1	23:LQ:150:ARG:NH2	2.28	0.66
68:SB:144:LYS:HD3	68:SB:208:HIS:HB3	1.77	0.66
5:L5:2626:U:O4	27:LU:97:ARG:NH1	2.29	0.66
21:LO:34:VAL:HG22	21:LO:103:LYS:HB2	1.77	0.66
55:SM:51:VAL:HG12	55:SM:77:ILE:HB	1.78	0.66
72:SH:58:LYS:HB2	72:SH:90:LYS:HG2	1.76	0.66
3:CF:93:PRO:HD2	3:CF:102:MET:HB3	1.78	0.66
71:SG:183:ARG:NH2	85:S2:316:G:OP2	2.28	0.66
5:L5:1702:C:H4'	10:LC:308:LYS:HD2	1.78	0.66
50:Ls:17:ILE:HD12	50:Ls:54:LEU:HD21	1.77	0.66
85:S2:1658:G:OP2	85:S2:1660:C:N4	2.28	0.66
5:L5:4910:G:N2	21:LO:106:ASP:O	2.28	0.66
8:LA:29:LEU:O	8:LA:123:ARG:NH1	2.29	0.66
5:L5:4098:A:N1	5:L5:4112:C:N4	2.44	0.66
9:LB:83:PRO:O	9:LB:167:GLN:NE2	2.29	0.66
43:Lk:54:GLU:OE2	43:Lk:58:GLN:NE2	2.28	0.66
2:Pt:50:U:O2	2:Pt:64:G:N2	2.22	0.66
5:L5:1669:A:OP1	34:Lb:18:ARG:NH2	2.28	0.65
43:Lk:8:ILE:HD11	43:Lk:56:LEU:HD13	1.77	0.65
52:SD:8:LYS:HG2	61:SU:61:LEU:HD11	1.76	0.65
85:S2:1324:G:H1	85:S2:1504:U:H3	1.44	0.65
85:S2:1754:G:N7	85:S2:1779:G:N2	2.44	0.65
85:S2:1550:G:H3'	85:S2:1579:A:H61	1.61	0.65
5:L5:513:U:N3	5:L5:516:C:OP2	2.29	0.65
79:SW:2:VAL:N	85:S2:1091:C:HO2'	1.95	0.65
50:Ls:143:ILE:HD12	50:Ls:158:VAL:HG11	1.77	0.65
85:S2:106:C:H2'	85:S2:107:A:H8	1.62	0.65
5:L5:3954:A:H1'	5:L5:4058:U:H5'	1.78	0.65
9:LB:107:ALA:HB2	9:LB:201:LEU:HD22	1.79	0.65
57:SQ:19:ALA:HB2	57:SQ:75:GLY:HA3	1.78	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:1961:G:N2	5:L5:2024:G:O2'	2.30	0.65
5:L5:2092:G:O2'	5:L5:2262:G:N2	2.29	0.65
72:SH:105:THR:HG23	72:SH:107:LYS:H	1.62	0.65
54:SK:50:GLN:HE22	85:S2:1276:A:H1'	1.62	0.65
58:SR:109:LEU:HD13	67:SA:52:LYS:HB2	1.79	0.65
5:L5:500:G:N2	5:L5:504:G:O2'	2.26	0.65
5:L5:1704:C:O3'	13:LF:46:ARG:NH1	2.30	0.65
5:L5:2520:C:O2	5:L5:2640:G:N2	2.29	0.65
85:S2:1354:G:N2	85:S2:1357:A:OP2	2.26	0.65
61:SU:79:ARG:NH2	85:S2:1669:G:OP1	2.29	0.65
85:S2:928:G:H2'	85:S2:929:G:C8	2.32	0.65
3:CF:353:ILE:HB	3:CF:394:LEU:HB2	1.78	0.64
17:LJ:104:ASN:HD22	17:LJ:133:VAL:HG13	1.62	0.64
36:Ld:64:ILE:HG23	36:Ld:68:LEU:HD23	1.78	0.64
85:S2:851:C:H5'	85:S2:852:G:H5'	1.78	0.64
86:Zt:19:G:O2'	86:Zt:48:C:N4	2.27	0.64
43:Lk:26:LYS:HB2	43:Lk:69:LEU:HD12	1.77	0.64
82:Sa:14:GLY:H	82:Sa:15:ARG:HH11	1.45	0.64
5:L5:68:U:OP1	20:LN:178:HIS:ND1	2.31	0.64
5:L5:4098:A:H2'	5:L5:4099:G:H4'	1.80	0.64
8:LA:104:VAL:HA	8:LA:107:MET:HE3	1.80	0.64
51:Lt:151:ILE:O	51:Lt:155:ILE:HB	1.97	0.64
80:SX:68:LYS:HB3	80:SX:91:LEU:HD13	1.78	0.64
3:CF:8:ILE:HB	3:CF:87:VAL:HG12	1.80	0.64
18:LL:64:VAL:HA	18:LL:67:HIS:CD2	2.31	0.64
66:Sg:252:THR:HG21	66:Sg:257:LYS:HD2	1.78	0.64
70:SE:144:ALA:HB3	85:S2:121:OMU:HM23	1.80	0.64
5:L5:1995:G:O2'	51:Lt:122:ALA:O	2.16	0.64
25:LS:76:LYS:NZ	25:LS:100:LEU:O	2.31	0.64
59:SS:85:ASN:OD1	59:SS:97:GLN:NE2	2.31	0.64
86:Zt:30:G:H2'	86:Zt:31:A:H8	1.62	0.64
5:L5:67:C:OP2	5:L5:312:G:N2	2.28	0.64
86:Zt:22:G:H2'	86:Zt:23:A:H8	1.63	0.64
70:SE:153:LEU:O	70:SE:174:LYS:NZ	2.31	0.64
5:L5:109:G:OP2	18:LL:74:ARG:NH2	2.31	0.64
5:L5:178:C:N4	5:L5:179:G:O6	2.32	0.63
5:L5:665:C:H4'	5:L5:666:G:H5'	1.80	0.63
22:LP:109:VAL:HA	22:LP:112:LEU:HD13	1.80	0.63
72:SH:114:GLN:HE22	85:S2:874:G:H21	1.45	0.63
85:S2:554:A:HO2'	85:S2:555:A:H8	1.45	0.63
27:LU:44:GLN:HB2	27:LU:56:LEU:HD21	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
70:SE:79:ASP:HB3	70:SE:82:TYR:HB2	1.80	0.63
86:Zt:26:A:N1	86:Zt:44:G:N2	2.45	0.63
3:CF:294:MET:HB2	3:CF:308:VAL:HG12	1.80	0.63
5:L5:1172:C:H42	5:L5:1188:C:H42	1.44	0.63
60:ST:124:THR:HG23	60:ST:127:GLY:H	1.63	0.63
71:SG:133:LEU:HD12	85:S2:65:C:C4	2.33	0.63
85:S2:1536:G:H2'	85:S2:1537:A:C8	2.33	0.63
5:L5:2484:A:H62	5:L5:2494:U:H3	1.45	0.63
66:Sg:176:VAL:HG23	66:Sg:185:LYS:HB2	1.80	0.63
85:S2:1277:C:H2'	85:S2:1278:A:H8	1.63	0.63
5:L5:1503:A:H62	23:LQ:87:THR:HG21	1.63	0.63
52:SD:40:ARG:NH2	61:SU:106:ILE:O	2.31	0.63
53:SF:34:SER:HA	63:Sc:55:VAL:HG23	1.80	0.63
79:SW:71:LYS:NZ	85:S2:1156:U:OP1	2.32	0.63
86:Zt:68:C:H2'	86:Zt:69:G:C8	2.33	0.63
5:L5:2658:G:N2	5:L5:2676:A:OP2	2.31	0.63
28:LV:92:ASP:O	29:LW:2:LYS:NZ	2.32	0.63
53:SF:171:GLU:OE2	62:SZ:106:GLN:NE2	2.32	0.63
56:SP:48:GLY:O	56:SP:50:ARG:NH1	2.32	0.63
85:S2:1228:A:H2'	85:S2:1229:G:C8	2.33	0.63
43:Lk:24:LYS:HD3	43:Lk:69:LEU:HD21	1.81	0.63
51:Lt:18:THR:O	51:Lt:61:LYS:NZ	2.32	0.63
74:SJ:162:ARG:NH1	85:S2:582:U:OP1	2.31	0.63
5:L5:512:U:H3	5:L5:647:G:H1	1.46	0.63
5:L5:4594:U:H2'	5:L5:4595:G:H8	1.64	0.63
11:LD:120:GLU:O	11:LD:248:ARG:NH1	2.32	0.63
28:LV:35:LYS:HB2	28:LV:67:LYS:HG3	1.80	0.63
83:Sb:14:GLU:HA	83:Sb:17:ARG:HG2	1.80	0.63
5:L5:1979:A:N6	5:L5:1984:A:OP1	2.31	0.62
5:L5:1994:C:H2'	5:L5:1995:G:C8	2.34	0.62
45:Lm:79:GLU:OE2	45:Lm:81:SER:OG	2.15	0.62
73:SI:98:LYS:HB3	85:S2:377:G:H5'	1.81	0.62
77:SO:135:ILE:O	85:S2:943:U:O2'	2.17	0.62
86:Zt:15:G:H22	86:Zt:48:C:H42	1.47	0.62
5:L5:1969:G:H4'	50:Ls:36:GLY:HA2	1.82	0.62
5:L5:4431:PSU:OP2	16:LI:3:ARG:NH2	2.31	0.62
71:SG:176:ILE:HG12	71:SG:179:LEU:HD11	1.81	0.62
3:CF:178:ILE:HB	3:CF:183:TYR:HB2	1.81	0.62
3:CF:246:LEU:O	3:CF:247:ARG:NH1	2.31	0.62
8:LA:137:ILE:HD11	8:LA:149:LYS:HB2	1.81	0.62
34:Lb:109:ARG:HA	34:Lb:112:ILE:HG12	1.80	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
85:S2:1228:A:H2'	85:S2:1229:G:H8	1.63	0.62
5:L5:4279:A:H5'	5:L5:4281:A:H1'	1.81	0.62
29:LW:80:ARG:NH2	71:SG:8:PRO:O	2.32	0.62
69:SC:227:ARG:NH2	85:S2:663:C:O2'	2.32	0.62
60:ST:126:GLN:HB2	60:ST:129:ARG:HH21	1.64	0.62
71:SG:2:LYS:HD3	71:SG:15:LEU:HD21	1.82	0.62
3:CF:380:ASP:HB2	3:CF:387:LEU:HD21	1.81	0.62
3:CF:430:ARG:HH22	4:AT:65:G:H4'	1.64	0.62
5:L5:3717:A:H2'	5:L5:3718:A2M:H8	1.82	0.62
24:LR:172:ARG:NH1	85:S2:909:G:OP1	2.30	0.62
52:SD:106:ARG:HG3	52:SD:175:VAL:HG22	1.80	0.62
5:L5:2020:U:H2'	5:L5:2021:G:H8	1.65	0.62
14:LG:209:SER:HA	14:LG:212:LYS:HG3	1.81	0.62
70:SE:10:LYS:NZ	85:S2:95:G:OP1	2.29	0.62
75:SL:33:LEU:HD12	75:SL:34:PRO:HD2	1.82	0.62
3:CF:72:THR:HB	3:CF:93:PRO:HA	1.82	0.62
67:SA:77:ILE:HG13	67:SA:99:ILE:HB	1.81	0.62
85:S2:508:A:H3'	85:S2:509:OMG:H8	1.63	0.62
86:Zt:15:G:N2	86:Zt:20:U:OP1	2.29	0.62
2:Pt:38:C:O2'	85:S2:1058:A:OP1	2.18	0.61
5:L5:2468:U:O2'	5:L5:2506:G:N2	2.31	0.61
85:S2:1581:C:H5'	85:S2:1582:C:H5	1.64	0.61
5:L5:1435:G:N2	5:L5:1449:C:O2	2.20	0.61
71:SG:135:PRO:HG2	71:SG:141:ILE:HG22	1.82	0.61
75:SL:35:ARG:NH2	75:SL:55:TYR:O	2.33	0.61
86:Zt:48:C:H2'	86:Zt:59:G:H1'	1.83	0.61
5:L5:267:G:H2'	5:L5:268:G:H8	1.65	0.61
21:LO:180:GLN:NE2	21:LO:184:ASN:OD1	2.32	0.61
85:S2:533:A:H61	85:S2:550:C:H42	1.46	0.61
1:CI:50:MET:HG3	27:LU:114:TYR:CD2	2.35	0.61
5:L5:1739:G:N3	5:L5:1742:A:N6	2.49	0.61
24:LR:39:GLN:OE1	24:LR:42:ARG:NH1	2.33	0.61
38:Lf:43:LEU:O	38:Lf:109:ARG:NH2	2.33	0.61
61:SU:80:PHE:HB3	64:Sd:52:PHE:HB3	1.82	0.61
66:Sg:68:ASP:HB3	66:Sg:111:VAL:HG22	1.83	0.61
5:L5:1396:G:N7	33:La:110:LYS:NZ	2.46	0.61
65:Sf:108:VAL:HG12	65:Sf:114:ILE:HA	1.81	0.61
85:S2:145:G:H2'	85:S2:146:G:C8	2.36	0.61
1:CI:79:ARG:NH1	5:L5:2708:U:HO2'	1.97	0.61
5:L5:3811:G:O2'	5:L5:3814:U:OP2	2.18	0.61
57:SQ:78:VAL:HG12	85:S2:1673:U:H5''	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:SR:32:LYS:NZ	85:S2:1452:A:OP2	2.33	0.61
29:LW:123:LYS:HD2	85:S2:320:G:H5'	1.81	0.61
57:SQ:131:LYS:HB2	57:SQ:140:ARG:HH22	1.65	0.61
5:L5:3822:PSU:OP1	88:L5:5292:SPM:N5	2.34	0.61
5:L5:4097:G:O6	5:L5:4098:A:N6	2.34	0.61
51:Lt:37:LEU:HA	51:Lt:40:LYS:HE3	1.81	0.61
57:SQ:8:GLN:HG3	57:SQ:27:ARG:HE	1.64	0.61
17:LJ:84:GLU:OE2	17:LJ:92:TYR:OH	2.19	0.61
71:SG:2:LYS:HB2	71:SG:108:VAL:HG12	1.83	0.61
53:SF:141:VAL:HG12	63:Sc:47:LYS:HG2	1.83	0.60
72:SH:51:ILE:HG21	72:SH:179:LYS:HG2	1.82	0.60
77:SO:104:ARG:NH2	85:S2:959:G:OP1	2.34	0.60
85:S2:1115:U:O2'	85:S2:1117:C:OP2	2.17	0.60
85:S2:1130:G:OP2	85:S2:1130:G:N2	2.31	0.60
5:L5:1094:G:O6	5:L5:1201:U:O2	2.19	0.60
51:Lt:65:GLN:HG3	51:Lt:67:ARG:H	1.66	0.60
3:CF:163:SEP:O2P	3:CF:165:LYS:NZ	2.35	0.60
85:S2:553:U:O4	85:S2:554:A:N6	2.33	0.60
2:Pt:3:C:H42	2:Pt:70:A:H61	1.49	0.60
71:SG:7:PHE:HD2	71:SG:10:THR:HG22	1.66	0.60
72:SH:10:LYS:NZ	72:SH:16:PRO:O	2.34	0.60
7:L8:62:A:OP1	40:Lh:52:LYS:NZ	2.31	0.60
5:L5:2516:G:O2'	39:Lg:62:LYS:NZ	2.34	0.60
9:LB:10:ARG:NH2	9:LB:265:SER:O	2.33	0.60
16:LI:87:MET:HG2	16:LI:138:ILE:HG12	1.82	0.60
19:LM:100:ARG:HA	19:LM:103:LYS:HG2	1.83	0.60
41:Li:2:ALA:N	41:Li:5:TYR:HH	1.99	0.60
85:S2:165:G:OP2	85:S2:165:G:N2	2.31	0.60
5:L5:2083:C:OP2	23:LQ:14:ARG:NH2	2.33	0.60
5:L5:4340:U:O2	89:L5:5262:SPD:N10	2.35	0.60
14:LG:150:LYS:NZ	14:LG:177:MET:O	2.34	0.60
5:L5:135:G:H22	40:Lh:94:ARG:HG2	1.67	0.60
5:L5:1480:C:O2'	5:L5:1482:G:OP2	2.20	0.60
5:L5:4472:G:O2'	45:Lm:100:TYR:O	2.20	0.60
20:LN:157:LYS:O	20:LN:162:ARG:NH1	2.35	0.60
85:S2:17:C:O2'	85:S2:1194:A:N1	2.33	0.60
85:S2:830:A:OP2	85:S2:846:G:N2	2.35	0.60
11:LD:156:GLY:HA2	11:LD:181:PRO:HG3	1.83	0.60
52:SD:142:LEU:HD13	52:SD:150:MET:HE2	1.83	0.60
55:SM:91:LEU:HD12	55:SM:106:CYS:HB2	1.83	0.60
5:L5:2758:G:O2'	5:L5:2765:A:N3	2.30	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:2910:G:N2	5:L5:3585:G:O2'	2.35	0.59
54:SK:8:ARG:NH2	85:S2:1314:U:O2'	2.35	0.59
5:L5:4107:G:N2	5:L5:4108:G:O6	2.34	0.59
14:LG:117:ARG:NH2	14:LG:127:ASP:O	2.34	0.59
59:SS:132:ARG:NH1	85:S2:1623:A:N1	2.50	0.59
5:L5:1095:A:N1	5:L5:1200:G:O6	2.35	0.59
5:L5:4302:U:H4'	26:LT:5:LYS:HD3	1.84	0.59
15:LH:106:GLN:NE2	15:LH:113:GLU:OE2	2.32	0.59
15:LH:106:GLN:HB2	15:LH:111:LEU:HB3	1.84	0.59
20:LN:155:VAL:O	20:LN:162:ARG:NH2	2.36	0.59
66:Sg:5:MET:HB3	66:Sg:270:LEU:HD21	1.84	0.59
71:SG:92:ARG:O	85:S2:453:C:O2'	2.20	0.59
85:S2:639:C:H2'	85:S2:640:A:H8	1.67	0.59
85:S2:889:U:OP2	85:S2:896:U:N3	2.35	0.59
5:L5:3946:G:N2	5:L5:4067:U:O2	2.34	0.59
58:SR:99:ASP:OD2	67:SA:42:LYS:NZ	2.27	0.59
62:SZ:85:ARG:NH2	85:S2:1597:C:OP2	2.32	0.59
70:SE:45:ILE:HG13	70:SE:61:VAL:HG11	1.83	0.59
8:LA:101:VAL:HG22	8:LA:165:VAL:HG22	1.83	0.59
59:SS:130:ARG:NH2	85:S2:1230:C:OP1	2.35	0.59
80:SX:68:LYS:NZ	85:S2:616:A:OP1	2.35	0.59
85:S2:640:A:H2'	85:S2:641:A:C8	2.37	0.59
5:L5:62:A:N3	5:L5:77:U:O2'	2.33	0.59
5:L5:2832:A:OP1	36:Ld:47:LYS:NZ	2.29	0.59
26:LT:43:LYS:O	26:LT:58:HIS:ND1	2.36	0.59
73:SI:106:SER:HB3	73:SI:171:LEU:HG	1.84	0.59
72:SH:177:TYR:O	72:SH:181:THR:HB	2.02	0.59
5:L5:3946:G:H1	5:L5:4067:U:H3	1.51	0.59
22:LP:39:MET:HG2	22:LP:43:LYS:HD3	1.85	0.59
73:SI:88:ASN:OD1	73:SI:205:ARG:NH2	2.36	0.59
77:SO:45:THR:HA	77:SO:52:THR:HA	1.85	0.59
5:L5:4992:G:H2'	5:L5:4993:G:C8	2.38	0.59
29:LW:56:ARG:HH21	29:LW:61:LYS:HB3	1.68	0.59
61:SU:70:CYS:SG	85:S2:1491:G:O2'	2.58	0.59
69:SC:187:ARG:NH2	85:S2:1143:A:OP2	2.35	0.59
85:S2:587:A:H5'	85:S2:592:C:H41	1.68	0.59
72:SH:7:LYS:HD3	72:SH:10:LYS:HB3	1.85	0.59
6:L7:120:U:H4'	11:LD:262:LYS:HG2	1.84	0.58
10:LC:268:ARG:HH12	10:LC:269:LYS:HE2	1.68	0.58
19:LM:36:ALA:HB3	19:LM:55:MET:HE1	1.84	0.58
17:LJ:141:ILE:HA	17:LJ:144:LYS:HD2	1.86	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:SR:24:LEU:HB2	58:SR:58:MET:HE1	1.84	0.58
67:SA:89:LYS:HD2	67:SA:201:LEU:HG	1.86	0.58
85:S2:1226:G:N1	85:S2:1639:G7M:OP2	2.33	0.58
66:Sg:254:PRO:O	66:Sg:272:GLN:NE2	2.36	0.58
5:L5:1591:U:OP2	5:L5:2856:C:O2'	2.18	0.58
5:L5:4126:C:OP1	14:LG:37:LYS:NZ	2.36	0.58
8:LA:114:CYS:HB3	8:LA:165:VAL:HB	1.85	0.58
68:SB:171:ILE:HG22	68:SB:174:ARG:HE	1.68	0.58
81:SY:21:LYS:HE2	81:SY:75:ILE:HD11	1.84	0.58
28:LV:87:SER:OG	29:LW:19:ARG:NH1	2.36	0.58
73:SI:141:ARG:HD3	73:SI:145:ILE:HG21	1.85	0.58
5:L5:4987:C:OP2	9:LB:116:ARG:NH2	2.37	0.58
7:L8:21:C:OP1	10:LC:195:LYS:NZ	2.33	0.58
12:LE:264:ILE:HD11	12:LE:267:LEU:HD22	1.83	0.58
24:LR:176:ARG:NH2	85:S2:910:G:OP1	2.36	0.58
49:Lr:26:SER:OG	49:Lr:28:GLU:OE1	2.20	0.58
85:S2:525:A:H2'	85:S2:526:A:H8	1.68	0.58
85:S2:557:U:H2'	85:S2:558:G:C8	2.38	0.58
4:AT:14:A:H3'	4:AT:15:G:H8	1.68	0.58
57:SQ:89:SER:OG	57:SQ:119:LEU:O	2.20	0.58
3:CF:290:LYS:HE3	85:S2:488:U:H5''	1.85	0.58
5:L5:262:G:H2'	5:L5:263:G:H8	1.69	0.58
5:L5:518:G:H1	5:L5:643:C:H2'	1.68	0.58
21:LO:9:LEU:HD23	21:LO:118:MET:HB2	1.86	0.58
39:Lg:45:ALA:HB3	39:Lg:82:MET:HE2	1.86	0.58
69:SC:68:ARG:HG2	69:SC:277:HIS:HB2	1.86	0.58
69:SC:183:LYS:HA	69:SC:195:LEU:O	2.04	0.58
3:CF:346:ILE:HD13	3:CF:353:ILE:HD13	1.86	0.58
5:L5:1364:U:OP2	18:LL:36:ARG:NH2	2.28	0.58
5:L5:4092:G:N7	5:L5:4114:C:N4	2.52	0.58
5:L5:919:C:OP1	19:LM:69:HIS:ND1	2.22	0.58
53:SF:36:GLN:NE2	53:SF:37:ASP:OD1	2.37	0.58
62:SZ:80:ARG:O	85:S2:1598:G:O2'	2.21	0.58
5:L5:135:G:N2	40:Lh:91:MET:O	2.37	0.57
5:L5:654:C:H2'	5:L5:655:C:C6	2.38	0.57
5:L5:1646:A:O2'	42:Lj:49:TRP:O	2.22	0.57
5:L5:4525:C:OP1	9:LB:246:ARG:NH2	2.37	0.57
55:SM:96:ARG:NH2	55:SM:100:PRO:O	2.37	0.57
57:SQ:96:TYR:HA	57:SQ:100:VAL:HG12	1.85	0.57
72:SH:99:ARG:NH1	85:S2:913:A:OP2	2.37	0.57
5:L5:2495:U:H2'	5:L5:2496:G:H8	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:4102:C:H1'	5:L5:4108:G:H1	1.70	0.57
70:SE:100:ARG:HB2	70:SE:114:ILE:HD13	1.85	0.57
81:SY:11:LYS:HB2	81:SY:24:VAL:HG12	1.86	0.57
5:L5:3611:A:H2	5:L5:5016:A:H8	1.52	0.57
5:L5:4967:A:H2'	5:L5:4968:A:C8	2.39	0.57
69:SC:200:ARG:O	74:SJ:54:ARG:NH2	2.34	0.57
5:L5:1942:A:H2'	5:L5:1943:A:C8	2.39	0.57
5:L5:2017:A:O2'	5:L5:2018:C:H6	1.87	0.57
5:L5:5023:C:OP2	73:SI:124:LYS:NZ	2.38	0.57
39:Lg:44:SER:OG	39:Lg:46:CYS:SG	2.62	0.57
46:Ln:1:MET:HG3	85:S2:1706:G:H5'	1.85	0.57
65:Sf:99:LYS:NZ	85:S2:1287:A:OP1	2.27	0.57
72:SH:137:SER:HB3	72:SH:162:GLN:HE21	1.69	0.57
1:CI:74:LYS:HA	27:LU:116:GLN:O	2.04	0.57
5:L5:1328:G:O2'	5:L5:2349:A:OP1	2.22	0.57
5:L5:4076:G:OP1	14:LG:73:ARG:NE	2.37	0.57
10:LC:298:ILE:HD13	23:LQ:131:PRO:HB3	1.87	0.57
27:LU:28:PRO:HB2	27:LU:34:MET:HG3	1.85	0.57
43:Lk:27:LYS:O	43:Lk:70:LYS:NZ	2.38	0.57
80:SX:48:LYS:HB3	80:SX:75:ILE:HD12	1.85	0.57
85:S2:1562:C:H2'	85:S2:1563:G:H8	1.67	0.57
2:Pt:20(A):U:O4'	17:LJ:58:ARG:NH2	2.38	0.57
3:CF:127:ILE:HG13	3:CF:134:ARG:HD3	1.86	0.57
5:L5:327:U:O2'	41:Li:30:ARG:NH1	2.37	0.57
5:L5:2007:G:H21	5:L5:2012:A:H62	1.52	0.57
54:SK:14:LEU:HD22	54:SK:35:LEU:HD23	1.85	0.57
67:SA:137:ALA:HB1	67:SA:142:LEU:HB3	1.86	0.57
15:LH:89:ARG:HD3	15:LH:91:LYS:HE3	1.87	0.57
22:LP:112:LEU:HD23	22:LP:150:LEU:HD13	1.86	0.57
52:SD:172:VAL:HG22	52:SD:185:LYS:HG2	1.87	0.57
65:Sf:144:CYS:HB2	65:Sf:146:LEU:HD23	1.86	0.57
69:SC:72:ASP:OD2	69:SC:272:HIS:NE2	2.33	0.57
85:S2:1401:A:H2'	85:S2:1402:A:C8	2.39	0.57
5:L5:1726:U:H5'	13:LF:135:ILE:HD11	1.87	0.57
5:L5:1992:U:H4'	5:L5:1993:C:H5''	1.85	0.57
5:L5:4260:U:H2'	5:L5:4261:C:C6	2.40	0.57
5:L5:4617:G:OP1	9:LB:62:ARG:NH1	2.32	0.57
55:SM:63:LYS:HD3	55:SM:64:LEU:HD22	1.87	0.57
76:SN:70:LYS:NZ	85:S2:1020:A:N7	2.53	0.57
5:L5:1767:A:H2'	5:L5:1769:G:H5''	1.85	0.57
73:SI:25:ARG:HA	85:S2:448:A:H5''	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:Zt:64:U:H2'	86:Zt:65:G:H8	1.69	0.57
86:Zt:68:C:H2'	86:Zt:69:G:H8	1.67	0.57
3:CF:272:LEU:HB3	3:CF:302:ALA:HB3	1.86	0.56
5:L5:5016:A:C2	5:L5:5033:G:N2	2.68	0.56
5:L5:5064:G:N2	22:LP:75:GLN:HE22	2.03	0.56
7:L8:65:A:O2'	40:Lh:10:ARG:NH2	2.38	0.56
7:L8:75:OMG:OP2	31:LY:74:TYR:OH	2.19	0.56
71:SG:198:ARG:NH1	85:S2:126:G:OP2	2.37	0.56
5:L5:4274:A:H2'	5:L5:4275:G:C8	2.40	0.56
5:L5:4728:U:OP1	9:LB:132:LYS:NZ	2.38	0.56
63:Sc:39:SER:O	82:Sa:51:ARG:NH1	2.37	0.56
66:Sg:63:SER:HB2	85:S2:1398:G:H1'	1.87	0.56
71:SG:22:ARG:HG3	71:SG:25:ARG:HH12	1.70	0.56
74:SJ:136:ARG:NH1	74:SJ:159:PHE:O	2.36	0.56
85:S2:543:C:H3'	85:S2:544:G:H8	1.70	0.56
5:L5:137:G:H2'	5:L5:138:G:H8	1.70	0.56
5:L5:654:C:O3'	10:LC:268:ARG:NH1	2.39	0.56
5:L5:1895:G:OP1	13:LF:96:ARG:NH2	2.39	0.56
5:L5:1971:C:O2	50:Ls:41:GLN:NE2	2.34	0.56
5:L5:2257:C:O2'	5:L5:2259:G:OP2	2.19	0.56
5:L5:2838:G:H5'	9:LB:247:GLY:HA2	1.87	0.56
11:LD:223:PHE:HB3	11:LD:226:TYR:HB2	1.87	0.56
34:Lb:65:MET:HG3	34:Lb:68:ARG:HH12	1.70	0.56
53:SF:60:ARG:HD2	85:S2:1679:A:H2'	1.86	0.56
57:SQ:4:LYS:HE3	85:S2:1423:C:H41	1.70	0.56
82:Sa:41:ILE:HD12	82:Sa:68:TYR:HD2	1.70	0.56
5:L5:387:G:O2'	5:L5:412:G:N1	2.31	0.56
5:L5:1258:G:H2'	5:L5:1259:G:C8	2.40	0.56
5:L5:2093:A:N3	5:L5:2094:G:N1	2.54	0.56
5:L5:2495:U:H2'	5:L5:2496:G:C8	2.41	0.56
5:L5:3661:G:N7	8:LA:152:SER:OG	2.37	0.56
5:L5:4537:C:H2'	5:L5:4538:G:H8	1.69	0.56
57:SQ:140:ARG:HB2	85:S2:1644:C:H4'	1.87	0.56
69:SC:259:THR:HG23	78:SV:16:LYS:HZ3	1.70	0.56
4:AT:57:C:H5	5:L5:2009:A:H1'	1.71	0.56
17:LJ:38:LYS:HD2	17:LJ:123:ILE:HD11	1.86	0.56
66:Sg:107:ASP:HB2	66:Sg:125:ARG:HG3	1.87	0.56
4:AT:16:C:O2'	4:AT:19:G:OP1	2.20	0.56
56:SP:130:ARG:HD3	56:SP:131:PRO:HD2	1.87	0.56
72:SH:63:PHE:HA	72:SH:95:ILE:O	2.05	0.56
75:SL:103:GLU:HG3	80:SX:11:ARG:HB2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:CF:11:VAL:HG12	3:CF:90:ILE:HB	1.88	0.56
3:CF:373:ALA:H	3:CF:404:MET:HA	1.71	0.56
5:L5:502:C:H3'	5:L5:503:C:H3'	1.88	0.56
5:L5:2017:A:O2'	5:L5:2018:C:O5'	2.20	0.56
50:Ls:62:ARG:HB3	50:Ls:66:ARG:HH12	1.71	0.56
68:SB:99:ASN:OD1	68:SB:100:PHE:N	2.39	0.56
70:SE:208:VAL:HG11	70:SE:225:ILE:HG13	1.86	0.56
1:CI:66:GLY:HA3	36:Ld:70:LYS:NZ	2.21	0.56
5:L5:1100:U:O4	5:L5:1194:G:O6	2.23	0.56
5:L5:2744:A:H2'	5:L5:2745:A:C8	2.41	0.56
5:L5:2745:A:H2'	5:L5:2746:A:H8	1.71	0.56
5:L5:3659:G:OP1	8:LA:241:ARG:NH1	2.38	0.56
67:SA:5:LEU:HD11	78:SV:41:LYS:HD2	1.88	0.56
70:SE:88:ASP:OD1	70:SE:122:LYS:NZ	2.26	0.56
85:S2:1372:U:OP1	85:S2:1385:G:N2	2.29	0.56
5:L5:3736:A:H2'	5:L5:3737:A:C8	2.41	0.56
59:SS:27:ALA:HB2	59:SS:52:LEU:HD12	1.87	0.56
66:Sg:249:CYS:HB3	66:Sg:258:ILE:HD13	1.88	0.56
67:SA:118:GLU:HG3	69:SC:65:LYS:HE2	1.87	0.56
67:SA:134:LEU:HD21	67:SA:144:THR:HG21	1.88	0.56
5:L5:2492:C:H2'	5:L5:2493:G:H8	1.69	0.56
5:L5:2848:G:O2'	5:L5:3838:U:O4	2.22	0.56
5:L5:4946:U:O2'	38:Lf:2:SER:N	2.36	0.56
7:L8:150:C:N4	14:LG:52:THR:O	2.37	0.56
9:LB:14:LEU:HD22	9:LB:17:LEU:HD11	1.87	0.56
13:LF:105:VAL:HG13	13:LF:136:VAL:HG12	1.87	0.56
70:SE:29:PRO:HA	85:S2:496:C:H5'	1.87	0.56
85:S2:67:C:N4	85:S2:70:G:N7	2.54	0.56
86:Zt:60:U:H2'	86:Zt:61:C:H5	1.70	0.56
5:L5:1332:C:H2'	5:L5:1333:A:H8	1.71	0.55
5:L5:1933:G:H2'	5:L5:1934:A:C8	2.41	0.55
5:L5:4725:C:OP1	9:LB:103:LYS:NZ	2.37	0.55
18:LL:142:GLU:HA	18:LL:146:LEU:HD12	1.87	0.55
20:LN:146:PRO:HB2	40:Lh:104:THR:HG23	1.88	0.55
64:Sd:8:TRP:HZ3	85:S2:1512:C:H5''	1.70	0.55
71:SG:11:GLY:HA2	85:S2:166:A2M:HM'1	1.86	0.55
75:SL:85:THR:HG21	85:S2:373:G:H4'	1.88	0.55
85:S2:482:G:N1	85:S2:485:A:OP2	2.38	0.55
85:S2:964:A:H2'	85:S2:965:U:H6	1.71	0.55
85:S2:1203:G:H2'	85:S2:1204:A:C8	2.41	0.55
5:L5:491:G:H2'	5:L5:492:U:C6	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:LD:62:CYS:HB3	11:LD:105:LEU:HD22	1.88	0.55
72:SH:20:GLU:HG2	72:SH:48:ALA:HB3	1.87	0.55
76:SN:14:SER:HB3	85:S2:1016:U:H5'	1.89	0.55
85:S2:207:G:H3'	85:S2:208:G:H8	1.70	0.55
85:S2:1010:G:H2'	85:S2:1011:A:C8	2.42	0.55
5:L5:262:G:H2'	5:L5:263:G:C8	2.41	0.55
9:LB:165:HIS:HB3	9:LB:180:LEU:HD23	1.88	0.55
10:LC:154:VAL:HG11	10:LC:174:LEU:HD11	1.87	0.55
13:LF:182:TYR:HB3	13:LF:200:ARG:HG3	1.89	0.55
51:Lt:114:ARG:NH2	51:Lt:126:SER:OG	2.38	0.55
5:L5:5002:U:OP2	9:LB:385:LYS:NZ	2.39	0.55
9:LB:17:LEU:O	9:LB:19:ARG:N	2.38	0.55
54:SK:55:ARG:NH1	54:SK:78:TYR:OH	2.40	0.55
66:Sg:18:VAL:O	66:Sg:287:THR:OG1	2.25	0.55
85:S2:639:C:H2'	85:S2:640:A:C8	2.41	0.55
86:Zt:30:G:H2'	86:Zt:31:A:C8	2.41	0.55
5:L5:3868:G:H22	5:L5:3900:G:H1'	1.72	0.55
5:L5:4419:U:OP1	5:L5:4475:G:N2	2.39	0.55
29:LW:99:GLU:HB3	29:LW:102:LYS:HE3	1.87	0.55
52:SD:99:ILE:HG23	52:SD:173:ARG:HH21	1.70	0.55
54:SK:27:VAL:HB	54:SK:43:LEU:HD12	1.87	0.55
54:SK:31:LYS:HZ3	54:SK:40:VAL:H	1.55	0.55
68:SB:205:TYR:CD1	85:S2:1122:A:H4'	2.41	0.55
71:SG:132:ARG:NH2	85:S2:152:U:O4'	2.37	0.55
74:SJ:124:HIS:HD2	84:Se:31:ARG:HE	1.55	0.55
80:SX:95:GLU:OE2	80:SX:140:ARG:NH2	2.40	0.55
81:SY:34:THR:O	85:S2:570:C:O2'	2.19	0.55
85:S2:1845:A:H2'	85:S2:1846:G:C8	2.41	0.55
86:Zt:9:A:O2'	86:Zt:45:G:N3	2.37	0.55
4:AT:3:C:H2'	4:AT:4:U:H6	1.72	0.55
27:LU:65:ARG:HG2	27:LU:67:LYS:H	1.71	0.55
69:SC:109:ILE:HD11	69:SC:151:ILE:HD11	1.89	0.55
80:SX:17:ARG:HH22	85:S2:659:G:H21	1.54	0.55
5:L5:1802:A:N3	26:LT:130:ARG:NH2	2.54	0.55
36:Ld:57:MET:HG2	36:Ld:88:LEU:HD23	1.87	0.55
64:Sd:19:ARG:NH2	85:S2:1661:A:OP1	2.40	0.55
67:SA:126:ASP:OD1	67:SA:165:ASN:ND2	2.40	0.55
5:L5:4967:A:H2'	5:L5:4968:A:H8	1.72	0.55
58:SR:16:ILE:HD11	58:SR:54:VAL:HG21	1.89	0.55
85:S2:692:G:N7	85:S2:693:A:N6	2.54	0.55
5:L5:2613:C:OP1	39:Lg:24:ARG:NH2	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:LI:66:GLU:OE2	16:LI:69:ARG:NH2	2.31	0.55
32:LZ:9:LYS:NZ	32:LZ:83:THR:O	2.33	0.55
75:SL:133:PRO:HG2	85:S2:383:G:H21	1.72	0.55
85:S2:107:A:H2'	85:S2:108:G:C8	2.42	0.55
2:Pt:47:U:O2'	2:Pt:50:U:OP1	2.21	0.55
5:L5:444:G:H2'	5:L5:445:U:C6	2.42	0.55
5:L5:4478:G:O2'	5:L5:4602:A:N1	2.39	0.55
8:LA:118:GLU:OE2	8:LA:156:LYS:NZ	2.40	0.55
11:LD:64:ILE:HD13	11:LD:109:LEU:HD22	1.88	0.55
61:SU:40:ILE:O	61:SU:44:LYS:HG2	2.07	0.55
65:Sf:102:VAL:HG22	65:Sf:104:LYS:HG2	1.89	0.55
5:L5:1870:C:H2'	5:L5:1871:A2M:H8	1.87	0.54
59:SS:109:GLU:HA	59:SS:112:GLU:HG2	1.89	0.54
70:SE:80:ILE:HG23	70:SE:81:THR:HG23	1.88	0.54
84:Se:41:ARG:NH2	85:S2:639:C:OP1	2.40	0.54
9:LB:366:LYS:HB3	29:LW:1:MET:HG2	1.88	0.54
61:SU:19:ARG:HB3	61:SU:92:HIS:CE1	2.42	0.54
66:Sg:213:ASP:OD2	66:Sg:215:GLN:NE2	2.40	0.54
67:SA:37:TYR:OH	67:SA:57:LYS:NZ	2.38	0.54
71:SG:49:VAL:HB	71:SG:115:LYS:HG2	1.89	0.54
81:SY:80:ASP:OD1	81:SY:81:TYR:N	2.41	0.54
86:Zt:64:U:H2'	86:Zt:65:G:C8	2.43	0.54
3:CF:42:PHE:HE1	3:CF:67:ARG:HH21	1.55	0.54
4:AT:53:G:H2'	4:AT:54:G:H8	1.73	0.54
9:LB:147:GLU:OE2	9:LB:198:ARG:NH2	2.33	0.54
5:L5:500:G:H21	5:L5:504:G:HO2'	1.55	0.54
5:L5:4941:G:OP2	12:LE:188:ARG:NH2	2.33	0.54
70:SE:126:VAL:HA	70:SE:141:THR:HA	1.89	0.54
72:SH:138:GLU:OE1	76:SN:19:ARG:NE	2.40	0.54
85:S2:149:A:H3'	85:S2:150:A:H8	1.73	0.54
85:S2:628:A:N6	85:S2:1500:G:O2'	2.41	0.54
5:L5:1408:G:O2'	5:L5:1411:C:N4	2.36	0.54
5:L5:1982:G:H1'	5:L5:2010:A:H4'	1.89	0.54
5:L5:4363:A:H5''	47:Lo:36:GLN:HG2	1.89	0.54
7:L8:111:U:OP2	44:Ll:8:ARG:NH1	2.40	0.54
13:LF:127:LYS:HB2	26:LT:133:ALA:HB3	1.89	0.54
40:Lh:80:PRO:HD2	40:Lh:83:LEU:HD12	1.89	0.54
71:SG:7:PHE:HD1	71:SG:113:ILE:HB	1.71	0.54
82:Sa:60:ASP:OD1	82:Sa:61:ALA:N	2.35	0.54
85:S2:84:A:N3	85:S2:150:A:O2'	2.39	0.54
85:S2:1588:A:H2'	85:S2:1589:A:C8	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:1437:C:H1'	5:L5:2098:G:H3'	1.90	0.54
5:L5:1982:G:H2'	5:L5:1983:A:O4'	2.07	0.54
5:L5:1996:C:O3'	50:Ls:44:ARG:NH1	2.41	0.54
5:L5:2745:A:H2'	5:L5:2746:A:C8	2.43	0.54
25:LS:69:GLU:HG3	25:LS:71:SER:H	1.72	0.54
30:LX:64:SER:HB2	40:Lh:69:LEU:HD13	1.90	0.54
80:SX:107:ARG:HG3	80:SX:110:HIS:HB3	1.90	0.54
5:L5:158:A:N1	5:L5:276:C:O2'	2.39	0.54
85:S2:1748:G:O6	85:S2:1786:U:O4	2.25	0.54
5:L5:1756:U:O2'	5:L5:1758:G:OP2	2.20	0.54
11:LD:204:VAL:HB	11:LD:236:MET:HE1	1.89	0.54
13:LF:157:ARG:HE	13:LF:248:ASN:HB2	1.73	0.54
18:LL:56:ARG:NH1	18:LL:74:ARG:O	2.37	0.54
47:Lo:33:LEU:HA	47:Lo:38:LYS:HG2	1.90	0.54
85:S2:367:U:H4'	85:S2:371:A:C8	2.43	0.54
5:L5:93:G:H2'	5:L5:94:A:C8	2.43	0.54
5:L5:1703:C:O2'	5:L5:1704:C:O5'	2.26	0.54
50:Ls:30:VAL:HG23	50:Ls:189:ILE:HA	1.90	0.54
64:Sd:12:ARG:NH1	85:S2:1513:C:OP1	2.29	0.54
68:SB:32:ASP:OD1	68:SB:46:LYS:NZ	2.39	0.54
68:SB:40:ASN:HD21	68:SB:76:ASN:HB2	1.73	0.54
72:SH:191:GLU:O	72:SH:193:GLN:NE2	2.35	0.54
73:SI:22:HIS:HB3	85:S2:433:A:H5''	1.88	0.54
77:SO:149:ARG:NH2	85:S2:961:G:OP1	2.41	0.54
85:S2:28:U:H2'	85:S2:29:G:H8	1.72	0.54
3:CF:76:SER:N	3:CF:91:ASP:OD1	2.39	0.54
4:AT:57:C:C5	5:L5:2009:A:H1'	2.43	0.54
19:LM:119:ARG:HG3	21:LO:189:ILE:HG23	1.89	0.54
55:SM:49:LEU:HD21	55:SM:123:VAL:HG11	1.89	0.54
66:Sg:89:LEU:HB3	66:Sg:99:ARG:HB3	1.88	0.54
85:S2:981:A:H2'	85:S2:982:G:C8	2.43	0.54
85:S2:1528:G:O2'	85:S2:1666:C:OP1	2.25	0.54
85:S2:1605:G:N2	85:S2:1633:A:OP2	2.36	0.54
3:CF:5:LYS:HG3	3:CF:85:TYR:HA	1.90	0.53
5:L5:162:A:H2'	5:L5:163:A:C8	2.43	0.53
25:LS:173:ASN:ND2	25:LS:175:PHE:O	2.40	0.53
53:SF:161:ALA:O	53:SF:165:ASN:ND2	2.35	0.53
67:SA:22:GLY:O	67:SA:24:HIS:ND1	2.41	0.53
72:SH:63:PHE:HB3	72:SH:97:GLN:HG3	1.90	0.53
5:L5:1281:G:N1	12:LE:128:HIS:HB2	2.23	0.53
5:L5:3717:A:H2'	5:L5:3718:A2M:C8	2.38	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:4281:A:H2'	5:L5:4282:A:H2'	1.89	0.53
5:L5:4537:C:H2'	5:L5:4538:G:C8	2.42	0.53
18:LL:111:GLN:HA	18:LL:114:VAL:HG22	1.90	0.53
53:SF:142:SER:HB3	63:Sc:50:VAL:HG22	1.90	0.53
62:SZ:58:LEU:HD12	62:SZ:62:VAL:HG21	1.90	0.53
69:SC:214:LEU:HD22	69:SC:244:ILE:HD11	1.90	0.53
85:S2:693:A:H2'	85:S2:694:G:C8	2.43	0.53
1:CI:78:HIS:NE2	5:L5:2706:G:C8	2.61	0.53
3:CF:111:CYS:SG	3:CF:112:ALA:N	2.82	0.53
12:LE:261:ILE:HG23	12:LE:267:LEU:HD23	1.90	0.53
22:LP:17:SER:HB2	22:LP:98:ALA:HB2	1.90	0.53
66:Sg:206:LEU:HD12	66:Sg:218:LEU:HD12	1.89	0.53
5:L5:1199:G:H2'	5:L5:1200:G:C8	2.44	0.53
9:LB:57:VAL:HG22	9:LB:73:VAL:HG22	1.91	0.53
29:LW:7:SER:HB2	29:LW:13:ILE:HD11	1.91	0.53
56:SP:28:MET:HE3	56:SP:32:GLN:HG3	1.90	0.53
56:SP:79:HIS:HD2	85:S2:1298:G:C4	2.27	0.53
61:SU:51:LYS:HB3	61:SU:90:ASP:HB2	1.90	0.53
64:Sd:54:LYS:NZ	85:S2:1482:C:OP1	2.35	0.53
71:SG:170:ARG:HA	85:S2:72:C:H42	1.74	0.53
77:SO:34:PHE:HB3	77:SO:41:PHE:HB2	1.90	0.53
85:S2:942:G:H2'	85:S2:943:U:C6	2.44	0.53
85:S2:1013:U:OP1	85:S2:1129:G:O2'	2.26	0.53
85:S2:1171:G:O2'	85:S2:1187:G:O6	2.22	0.53
5:L5:2407:G:O6	44:Ll:2:SER:N	2.41	0.53
5:L5:4927:G:H5''	5:L5:4928:C:H5	1.72	0.53
9:LB:220:ILE:HG12	9:LB:278:THR:HG23	1.90	0.53
66:Sg:166:VAL:HG12	66:Sg:176:VAL:HG12	1.91	0.53
69:SC:267:GLN:OE1	78:SV:35:ASN:ND2	2.41	0.53
85:S2:51:U:H2'	85:S2:52:G:H8	1.74	0.53
5:L5:2072:C:OP1	23:LQ:2:GLY:N	2.42	0.53
5:L5:2324:C:O2'	37:Le:98:GLU:OE1	2.26	0.53
5:L5:2899:C:OP1	24:LR:108:ARG:NH2	2.35	0.53
5:L5:4618:OMG:H5'	28:LV:15:ARG:HB2	1.90	0.53
11:LD:232:THR:OG1	11:LD:234:ASP:OD1	2.20	0.53
21:LO:10:ASP:OD2	21:LO:37:ARG:NH2	2.41	0.53
23:LQ:50:ARG:HH21	23:LQ:140:SER:HB2	1.72	0.53
54:SK:31:LYS:NZ	54:SK:40:VAL:H	2.07	0.53
59:SS:88:LYS:H	59:SS:95:TYR:HD1	1.55	0.53
63:Sc:39:SER:HB2	82:Sa:51:ARG:HH12	1.74	0.53
85:S2:1417:C:N3	85:S2:1422:G:N1	2.52	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:4940:C:H5'	5:L5:4941:G:H5''	1.91	0.53
37:Le:76:LYS:HD2	37:Le:98:GLU:CD	2.34	0.53
59:SS:13:LEU:HD22	59:SS:20:ILE:HD11	1.90	0.53
73:SI:150:ASP:HA	73:SI:153:LYS:HG2	1.91	0.53
5:L5:303:C:OP2	20:LN:68:ARG:NH2	2.40	0.53
5:L5:3707:U:H2'	5:L5:3708:C:C6	2.44	0.53
21:LO:168:TYR:CE2	21:LO:172:LYS:HD2	2.44	0.53
85:S2:1736:G:H2'	85:S2:1737:G:C8	2.43	0.53
5:L5:735:G:H5''	19:LM:70:GLN:HG3	1.91	0.53
5:L5:1509:C:H5''	33:La:2:PRO:HD3	1.90	0.53
5:L5:2362:U:H2'	5:L5:2363:A2M:H8	1.91	0.53
5:L5:2411:C:H2'	5:L5:2412:A:C8	2.44	0.53
5:L5:4251:A:H5''	17:LJ:108:GLY:HA3	1.91	0.53
5:L5:4594:U:H2'	5:L5:4595:G:C8	2.44	0.53
9:LB:50:LYS:HB2	9:LB:345:LEU:HD11	1.91	0.53
8:LA:229:ALA:HB3	8:LA:234:LYS:HB3	1.90	0.53
24:LR:92:LYS:HG2	24:LR:96:MET:HE3	1.91	0.53
29:LW:105:ARG:NE	71:SG:151:ASP:OD1	2.41	0.53
33:La:84:GLU:OE1	33:La:87:ARG:NH2	2.41	0.53
35:Lc:38:ILE:HD11	35:Lc:46:VAL:HG21	1.89	0.53
45:Lm:99:CYS:HB2	45:Lm:114:LYS:HE3	1.91	0.53
5:L5:1983:A:H4'	5:L5:1984:A:H8	1.74	0.52
64:Sd:2:GLY:N	85:S2:1271:C:O2	2.43	0.52
68:SB:98:THR:O	68:SB:232:HIS:NE2	2.42	0.52
86:Zt:15:G:N2	86:Zt:48:C:H42	2.07	0.52
4:AT:24:C:H2'	4:AT:25:A:C8	2.44	0.52
5:L5:490:C:H2'	5:L5:491:G:C8	2.45	0.52
51:Lt:22:VAL:HA	51:Lt:48:LYS:HG2	1.91	0.52
55:SM:58:GLU:HB3	55:SM:61:TYR:HB2	1.91	0.52
57:SQ:67:ASP:OD2	57:SQ:69:ARG:NH1	2.42	0.52
70:SE:204:SER:OG	70:SE:205:PHE:N	2.37	0.52
73:SI:126:GLY:O	73:SI:128:LYS:NZ	2.41	0.52
5:L5:1390:G:N2	5:L5:1393:G:OP2	2.41	0.52
5:L5:2693:G:OP1	43:Lk:35:LYS:HE2	2.10	0.52
5:L5:4260:U:H2'	5:L5:4261:C:H6	1.74	0.52
65:Sf:107:LYS:NZ	65:Sf:108:VAL:O	2.41	0.52
72:SH:64:VAL:HB	72:SH:72:PHE:CE2	2.44	0.52
73:SI:4:SER:OG	73:SI:6:ASP:OD2	2.25	0.52
85:S2:902:G:O2'	85:S2:903:A:O4'	2.27	0.52
85:S2:1421:A:H5''	85:S2:1422:G:H2'	1.90	0.52
53:SF:124:ASP:OD1	53:SF:125:SER:N	2.30	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:SM:23:LYS:O	55:SM:27:ILE:HG12	2.09	0.52
66:Sg:207:CYS:HB3	66:Sg:221:LEU:HD21	1.90	0.52
85:S2:388:U:H2'	85:S2:389:A:H8	1.75	0.52
3:CF:13:ILE:HD12	3:CF:136:HIS:HB3	1.89	0.52
3:CF:168:GLU:HA	3:CF:171:VAL:HG22	1.91	0.52
5:L5:3619:G:H22	5:L5:3624:A:H1'	1.74	0.52
5:L5:3717:A:OP2	5:L5:3735:G:N2	2.37	0.52
5:L5:4769:G:H5''	21:LO:176:ARG:HD3	1.92	0.52
5:L5:4887:C:H42	5:L5:4932:U:H3	1.57	0.52
58:SR:35:CYS:HA	58:SR:38:ILE:HG12	1.90	0.52
65:Sf:89:LYS:HZ1	65:Sf:92:LYS:HB2	1.75	0.52
73:SI:10:LYS:O	73:SI:18:ARG:NH1	2.42	0.52
79:SW:3:ARG:HH22	79:SW:28:ARG:HH21	1.57	0.52
85:S2:871:U:O2'	85:S2:873:G:OP1	2.27	0.52
85:S2:1277:C:H2'	85:S2:1278:A:C8	2.43	0.52
85:S2:1829:G:H1'	85:S2:1850:MA6:H2	1.91	0.52
86:Zt:49:C:H2'	86:Zt:50:A:H8	1.74	0.52
5:L5:1333:A:H2'	5:L5:1334:A:C8	2.45	0.52
5:L5:2808:G:O3'	24:LR:60:ARG:NH1	2.42	0.52
42:Lj:2:THR:HB	42:Lj:6:SER:HB2	1.91	0.52
57:SQ:100:VAL:HG22	57:SQ:101:ASP:H	1.74	0.52
9:LB:367:PHE:HB2	29:LW:1:MET:HB2	1.91	0.52
52:SD:161:GLY:HA3	85:S2:1388:A:H61	1.74	0.52
66:Sg:289:LEU:HD11	66:Sg:298:LEU:HD21	1.92	0.52
70:SE:192:ILE:HG12	70:SE:243:GLY:HA3	1.92	0.52
5:L5:691:C:H2'	5:L5:692:A:C8	2.44	0.52
44:Ll:25:GLN:OE1	44:Ll:28:ARG:NH2	2.40	0.52
77:SO:33:ILE:HB	77:SO:97:LEU:HD23	1.92	0.52
85:S2:1098:C:H2'	85:S2:1099:G:C8	2.44	0.52
5:L5:173:C:OP1	18:LL:129:ARG:NH1	2.43	0.52
5:L5:1077:C:OP1	5:L5:1215:C:O2'	2.27	0.52
5:L5:1548:G:O2'	5:L5:2812:A:N3	2.37	0.52
5:L5:2863:G:O2'	24:LR:82:LYS:O	2.27	0.52
5:L5:4069:U:H2'	5:L5:4070:U:H6	1.75	0.52
9:LB:218:ASP:OD2	9:LB:348:ARG:NH2	2.38	0.52
25:LS:27:LEU:HB3	26:LT:148:PRO:HB3	1.92	0.52
72:SH:126:HIS:CE1	72:SH:181:THR:HG23	2.45	0.52
76:SN:64:ARG:NH2	85:S2:919:A:OP2	2.36	0.52
5:L5:667:A:H5''	5:L5:668:C:H5''	1.91	0.52
5:L5:2318:G:N2	5:L5:2321:G:OP2	2.37	0.52
5:L5:3688:U:OP2	8:LA:198:ARG:NH2	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:LB:153:MET:HB3	9:LB:194:LEU:HD11	1.90	0.52
31:LY:76:LYS:HE2	44:L1:31:THR:HB	1.91	0.52
32:LZ:50:PRO:HD3	32:LZ:68:ILE:HG12	1.92	0.52
53:SF:84:GLY:O	85:S2:1673:U:O2'	2.21	0.52
58:SR:60:ARG:NH1	85:S2:1464:C:O3'	2.43	0.52
72:SH:51:ILE:HD11	72:SH:176:VAL:HG12	1.92	0.52
5:L5:1983:A:H4'	5:L5:1984:A:C8	2.45	0.51
5:L5:2543:A:H2	5:L5:2773:G:H22	1.56	0.51
9:LB:378:ARG:HE	29:LW:32:LEU:HD21	1.75	0.51
10:LC:218:ILE:HA	10:LC:229:LEU:HD22	1.91	0.51
11:LD:41:LYS:NZ	26:LT:32:ARG:O	2.42	0.51
51:Lt:114:ARG:NH2	51:Lt:162:CYS:SG	2.83	0.51
65:Sf:119:ARG:HB3	65:Sf:132:MET:HB2	1.93	0.51
72:SH:164:ASN:OD1	72:SH:165:ASN:ND2	2.44	0.51
79:SW:6:VAL:HG12	79:SW:34:ILE:HD11	1.92	0.51
5:L5:1175:A:H2	5:L5:1185:G:H22	1.59	0.51
5:L5:1270:A:H8	5:L5:2106:G:H21	1.56	0.51
5:L5:1932:A:OP1	21:LO:49:ARG:NH2	2.27	0.51
5:L5:4220:6MZ:H2'	5:L5:4222:G:H5''	1.91	0.51
57:SQ:125:ARG:HB2	85:S2:1648:G:H5''	1.91	0.51
59:SS:60:THR:OG1	59:SS:62:ASP:OD1	2.21	0.51
69:SC:121:ARG:NH1	69:SC:123:ARG:HE	2.05	0.51
70:SE:151:ASP:OD2	71:SG:216:ARG:NH2	2.38	0.51
75:SL:126:VAL:HG12	75:SL:145:VAL:HG22	1.92	0.51
80:SX:105:PHE:HD1	80:SX:121:LYS:HB3	1.74	0.51
84:Se:58:ASN:ND2	85:S2:608:C:O4'	2.43	0.51
85:S2:835:C:H5'	85:S2:836:G:H5'	1.91	0.51
5:L5:1070:G:O2'	5:L5:1071:C:O5'	2.28	0.51
5:L5:4088:C:OP1	8:LA:37:ARG:NH1	2.44	0.51
5:L5:4636:PSU:N1	36:Ld:79:ASN:OD1	2.42	0.51
55:SM:79:VAL:HG11	55:SM:85:LEU:HD22	1.93	0.51
59:SS:36:VAL:HG21	59:SS:71:MET:HE3	1.92	0.51
63:Sc:37:ASP:OD1	63:Sc:39:SER:OG	2.28	0.51
65:Sf:110:GLU:HG2	65:Sf:113:LYS:HD3	1.93	0.51
68:SB:143:THR:HB	68:SB:205:TYR:CE2	2.45	0.51
83:Sb:11:SER:OG	83:Sb:14:GLU:OE1	2.28	0.51
83:Sb:49:HIS:ND1	83:Sb:69:GLY:O	2.44	0.51
5:L5:4589:A:N1	5:L5:4621:C:O2'	2.42	0.51
13:LF:41:MET:HE2	34:Lb:113:ALA:HB2	1.91	0.51
61:SU:75:LYS:NZ	85:S2:1252:C:OP1	2.36	0.51
73:SI:44:HIS:ND1	85:S2:1740:C:OP1	2.39	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:SW:111:MET:HE3	79:SW:116:ALA:HA	1.93	0.51
81:SY:41:ARG:HH21	81:SY:53:ASP:HA	1.74	0.51
85:S2:1288:OMU:HN3	85:S2:1311:C:H42	1.58	0.51
85:S2:1736:G:H2'	85:S2:1737:G:H8	1.75	0.51
3:CF:292:VAL:HG23	3:CF:310:PHE:HB3	1.92	0.51
5:L5:1867:A:H2'	5:L5:1868:A:C8	2.46	0.51
5:L5:1927:U:OP1	5:L5:1949:U:O2'	2.25	0.51
5:L5:2588:C:OP1	5:L5:2768:C:O2'	2.25	0.51
5:L5:3664:G:H2'	5:L5:3665:G:H8	1.74	0.51
18:LL:91:ALA:HB1	18:LL:96:ILE:HB	1.92	0.51
69:SC:257:LYS:O	78:SV:16:LYS:NZ	2.44	0.51
86:Zt:4:C:H2'	86:Zt:5:G:C8	2.45	0.51
5:L5:71:C:H1'	18:LL:62:PRO:O	2.10	0.51
5:L5:1086:C:H2'	5:L5:1087:A:H8	1.76	0.51
5:L5:1866:U:OP1	16:LI:4:ARG:NH1	2.35	0.51
5:L5:2696:A:OP1	43:Lk:26:LYS:NZ	2.42	0.51
5:L5:4670:C:O2'	5:L5:4672:A:OP2	2.26	0.51
13:LF:171:ASP:OD1	13:LF:172:ASN:N	2.44	0.51
34:Lb:102:PRO:O	34:Lb:109:ARG:NH2	2.43	0.51
65:Sf:103:LEU:HB2	65:Sf:105:TYR:CE2	2.46	0.51
69:SC:191:VAL:HG11	69:SC:236:PHE:HA	1.92	0.51
85:S2:207:G:H3'	85:S2:208:G:C8	2.45	0.51
86:Zt:4:C:H2'	86:Zt:5:G:H8	1.76	0.51
5:L5:179:G:H2'	5:L5:180:C:C6	2.45	0.51
5:L5:1983:A:O2'	5:L5:2011:C:OP1	2.23	0.51
6:L7:6:C:O2'	11:LD:50:ARG:NH2	2.44	0.51
7:L8:67:U:H2'	7:L8:68:G:H8	1.76	0.51
7:L8:141:C:H2'	7:L8:142:U:C6	2.45	0.51
9:LB:217:ILE:HD12	9:LB:347:LEU:HB3	1.93	0.51
10:LC:268:ARG:NH1	10:LC:269:LYS:HE2	2.26	0.51
44:LI:28:ARG:HA	44:LI:33:ASN:ND2	2.25	0.51
59:SS:5:ILE:N	62:SZ:50:PHE:O	2.41	0.51
85:S2:94:G:O2'	85:S2:508:A:O2'	2.17	0.51
85:S2:528:A:H2'	85:S2:529:A:C8	2.46	0.51
5:L5:121:A:H62	5:L5:152:U:H3	1.59	0.51
5:L5:162:A:H2'	5:L5:163:A:H8	1.76	0.51
5:L5:267:G:OP1	40:Lh:109:ARG:NH2	2.43	0.51
5:L5:1339:U:H2'	5:L5:1340:OMC:C6	2.45	0.51
5:L5:2909:C:H1'	5:L5:3585:G:H1	1.75	0.51
5:L5:3595:U:H5''	5:L5:3597:G:OP2	2.11	0.51
5:L5:3823:G:OP2	5:L5:3823:G:N2	2.37	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:4095:G:N7	5:L5:4096:C:N4	2.59	0.51
5:L5:4347:G:H2'	5:L5:4348:A:C8	2.46	0.51
5:L5:4935:C:H2'	5:L5:4936:G:C8	2.46	0.51
66:Sg:191:HIS:CG	66:Sg:195:LEU:HD21	2.46	0.51
85:S2:1801:A:H2'	85:S2:1802:C:C6	2.45	0.51
5:L5:418:A:C2	7:L8:17:A:H1'	2.46	0.51
5:L5:4591:U:H2'	5:L5:4592:C:C6	2.46	0.51
62:SZ:62:VAL:HA	62:SZ:65:TYR:CE1	2.45	0.51
85:S2:1084:A:OP1	85:S2:1858:G:O2'	2.27	0.51
3:CF:364:HIS:CD2	3:CF:365:THR:H	2.29	0.51
5:L5:364:G:O6	42:Lj:55:ARG:NH2	2.44	0.51
5:L5:1503:A:H4'	5:L5:1504:G:H5'	1.93	0.51
5:L5:1733:G:N3	5:L5:4214:A:H2'	2.25	0.51
5:L5:3654:G:O2'	5:L5:3693:U:OP1	2.26	0.51
5:L5:4111:U:H2'	5:L5:4112:C:H5	1.76	0.51
14:LG:180:PRO:HG3	14:LG:219:VAL:HG13	1.93	0.51
36:Ld:22:THR:HG23	36:Ld:122:VAL:HG13	1.91	0.51
54:SK:32:HIS:CD2	54:SK:45:VAL:HG11	2.46	0.51
57:SQ:58:LEU:HB3	57:SQ:62:ARG:HD2	1.93	0.51
60:ST:74:SER:O	60:ST:78:ILE:HD12	2.10	0.51
70:SE:49:ARG:NH2	85:S2:496:C:OP1	2.37	0.51
80:SX:105:PHE:CD1	80:SX:121:LYS:HB3	2.46	0.51
81:SY:126:GLY:HA2	81:SY:129:LYS:HG2	1.92	0.51
2:Pt:10:G:N2	2:Pt:26:G:H1'	2.26	0.50
3:CF:274:PRO:HA	3:CF:289:VAL:HG13	1.93	0.50
5:L5:24:G:N7	42:Lj:46:LYS:NZ	2.59	0.50
5:L5:1298:C:H2'	5:L5:1299:G:C8	2.46	0.50
10:LC:110:ARG:O	10:LC:113:ARG:NH1	2.41	0.50
16:LI:73:ASN:HB2	16:LI:87:MET:HE1	1.93	0.50
54:SK:22:VAL:HG22	54:SK:68:TYR:HD1	1.74	0.50
71:SG:227:GLN:HB3	71:SG:231:ARG:HH21	1.76	0.50
85:S2:327:G:H5''	85:S2:328:U:C2	2.46	0.50
85:S2:1841:C:H2'	85:S2:1842:4AC:H6	1.93	0.50
5:L5:184:U:O2'	5:L5:189:G:O4'	2.28	0.50
5:L5:3663:A:N6	5:L5:4168:G:O2'	2.45	0.50
5:L5:4069:U:H2'	5:L5:4070:U:C6	2.46	0.50
7:L8:26:C:O2'	10:LC:53:ALA:O	2.28	0.50
32:LZ:11:VAL:HG12	32:LZ:82:PRO:HA	1.93	0.50
49:Lr:38:PHE:O	49:Lr:45:HIS:NE2	2.33	0.50
53:SF:39:ILE:HG23	53:SF:68:ILE:HD13	1.92	0.50
66:Sg:8:ARG:HB3	66:Sg:309:VAL:HG13	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:SG:135:PRO:HA	85:S2:169:U:H5'	1.93	0.50
81:SY:76:TYR:OH	81:SY:86:GLU:OE1	2.21	0.50
85:S2:5:U:H2'	85:S2:6:G:H8	1.76	0.50
85:S2:223:C:H2'	85:S2:224:A:C8	2.45	0.50
85:S2:455:A:H2'	85:S2:456:C:C6	2.46	0.50
85:S2:463:C:O2'	85:S2:466:G:O6	2.25	0.50
3:CF:28:ILE:HG21	3:CF:59:VAL:HG11	1.94	0.50
5:L5:462:G:H2'	5:L5:463:A:C8	2.46	0.50
5:L5:1662:C:H2'	5:L5:1663:C:C6	2.47	0.50
5:L5:2083:C:P	23:LQ:14:ARG:HH22	2.34	0.50
5:L5:4239:A:H2'	5:L5:4240:G:C8	2.46	0.50
7:L8:96:C:H5'	40:Lh:66:LYS:HG2	1.93	0.50
61:SU:68:THR:O	64:Sd:40:ARG:NH1	2.43	0.50
68:SB:136:ARG:HB3	68:SB:216:LYS:HG3	1.92	0.50
70:SE:139:LEU:HD22	70:SE:147:ILE:HD11	1.93	0.50
70:SE:160:ILE:HD12	70:SE:162:ILE:HD11	1.93	0.50
72:SH:10:LYS:HE3	72:SH:17:ASP:HB3	1.93	0.50
85:S2:996:A:H2'	85:S2:997:A:C8	2.47	0.50
86:Zt:67:U:H2'	86:Zt:68:C:C6	2.47	0.50
57:SQ:80:GLN:O	57:SQ:84:ILE:HG13	2.12	0.50
61:SU:19:ARG:HH11	61:SU:92:HIS:HB3	1.77	0.50
67:SA:37:TYR:OH	78:SV:66:ASP:OD2	2.25	0.50
85:S2:629:A:O2'	85:S2:631:U:OP1	2.30	0.50
5:L5:1410:U:H3	34:Lb:52:LYS:NZ	2.10	0.50
5:L5:2029:A:H2'	5:L5:2030:A:C8	2.46	0.50
50:Ls:13:TYR:O	50:Ls:17:ILE:HG12	2.12	0.50
56:SP:94:VAL:HG22	56:SP:107:ILE:HD11	1.93	0.50
57:SQ:110:ASP:OD1	57:SQ:111:ILE:HD12	2.11	0.50
66:Sg:129:ILE:HB	66:Sg:142:VAL:HB	1.92	0.50
71:SG:14:LYS:HG2	71:SG:124:LEU:HD12	1.92	0.50
82:Sa:41:ILE:HD12	82:Sa:68:TYR:CD2	2.45	0.50
85:S2:1422:G:H4'	85:S2:1423:C:H3'	1.93	0.50
4:AT:51:U:O4	4:AT:65:G:O6	2.29	0.50
5:L5:1411:C:H2'	5:L5:1412:G:C8	2.47	0.50
5:L5:1461:C:H2'	5:L5:1462:A:C8	2.47	0.50
5:L5:4064:C:N4	5:L5:4065:G:O6	2.45	0.50
52:SD:160:SER:OG	85:S2:1386:A:OP2	2.26	0.50
53:SF:22:LYS:HG3	53:SF:23:TRP:CD2	2.47	0.50
67:SA:177:MET:SD	67:SA:180:ARG:NH2	2.84	0.50
85:S2:64:A:N6	85:S2:83:A:OP2	2.44	0.50
85:S2:455:A:H2'	85:S2:456:C:H6	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:AT:4:U:H2'	4:AT:5:C:H6	1.75	0.50
4:AT:67:C:H2'	4:AT:68:G:C8	2.46	0.50
5:L5:1296:G:H2'	5:L5:1297:U:C6	2.47	0.50
22:LP:116:HIS:HB3	22:LP:149:ILE:HB	1.92	0.50
52:SD:163:PRO:O	52:SD:167:TYR:HB2	2.12	0.50
68:SB:168:MET:HB2	68:SB:197:ILE:HD13	1.93	0.50
73:SI:23:LYS:NZ	85:S2:435:A:OP1	2.44	0.50
85:S2:588:G:H4'	85:S2:589:G:H5'	1.94	0.50
3:CF:349:HIS:ND1	3:CF:351:GLY:O	2.44	0.50
5:L5:1100:U:O3'	5:L5:1167:C:N4	2.44	0.50
5:L5:1195:G:H2'	5:L5:1196:G:C8	2.47	0.50
5:L5:1683:PSU:OP1	33:La:44:ASN:ND2	2.43	0.50
5:L5:1985:G:N2	5:L5:2003:G:O2'	2.44	0.50
5:L5:2298:U:OP1	10:LC:204:ARG:NE	2.43	0.50
5:L5:3898:G:H5'	9:LB:254:ILE:HG13	1.94	0.50
5:L5:4742:G:OP1	5:L5:4900:C:N4	2.36	0.50
55:SM:110:VAL:O	55:SM:112:LYS:NZ	2.45	0.50
62:SZ:48:VAL:HG23	62:SZ:80:ARG:HD2	1.93	0.50
62:SZ:106:GLN:HG3	62:SZ:108:ILE:HD11	1.94	0.50
66:Sg:133:ASN:HB3	66:Sg:139:LYS:HD2	1.94	0.50
85:S2:1217:A:H2'	85:S2:1218:C:C6	2.46	0.50
85:S2:1407:U:H2'	85:S2:1408:U:C6	2.46	0.50
5:L5:2696:A:H62	43:Lk:35:LYS:NZ	2.10	0.50
5:L5:3697:U:H5''	5:L5:3698:G:H5'	1.92	0.50
5:L5:4612:C:C2	15:LH:120:GLU:HB2	2.47	0.50
12:LE:141:ARG:NH2	38:Lf:110:ILE:O	2.45	0.50
17:LJ:95:ARG:HD2	17:LJ:177:GLY:HA3	1.94	0.50
18:LL:55:ILE:O	18:LL:97:SER:OG	2.30	0.50
21:LO:186:GLU:OE1	21:LO:186:GLU:N	2.45	0.50
31:LY:4:ASN:HB3	31:LY:7:VAL:HG22	1.92	0.50
53:SF:60:ARG:NH2	85:S2:1679:A:OP1	2.43	0.50
53:SF:127:ARG:HG2	53:SF:136:ARG:HB2	1.92	0.50
63:Sc:66:ARG:HH12	63:Sc:68:LEU:HD23	1.76	0.50
66:Sg:82:SER:OG	66:Sg:83:TRP:N	2.44	0.50
85:S2:1617:G:N1	85:S2:1620:A:OP2	2.44	0.50
5:L5:325:U:H2'	5:L5:326:C:C6	2.47	0.49
5:L5:2517:A:H5'	39:Lg:62:LYS:HD3	1.93	0.49
5:L5:4122:G:O3'	39:Lg:90:ARG:NH2	2.45	0.49
27:LU:35:ASP:OD1	27:LU:35:ASP:N	2.45	0.49
33:La:72:THR:HG22	33:La:110:LYS:HB3	1.94	0.49
67:SA:18:PHE:HD1	67:SA:23:THR:HG21	1.75	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:SH:43:LEU:HB3	72:SH:72:PHE:HE1	1.77	0.49
86:Zt:22:G:H2'	86:Zt:23:A:C8	2.44	0.49
5:L5:2870:A:H2'	5:L5:2871:A:C8	2.47	0.49
5:L5:4188:U:H2'	5:L5:4189:U:C6	2.47	0.49
5:L5:4504:C:H2'	5:L5:4505:C:C6	2.47	0.49
53:SF:123:GLU:OE1	63:Sc:63:ARG:NH2	2.45	0.49
61:SU:92:HIS:HD2	85:S2:1433:C:H42	1.59	0.49
62:SZ:91:LEU:HG	62:SZ:96:LEU:HD21	1.93	0.49
68:SB:85:LYS:HB2	68:SB:101:HIS:HB3	1.94	0.49
73:SI:116:HIS:O	73:SI:152:ARG:NH2	2.33	0.49
5:L5:1696:C:H5'	5:L5:1719:A:H1'	1.93	0.49
5:L5:3660:C:OP1	8:LA:241:ARG:NH2	2.42	0.49
11:LD:211:LEU:HB3	11:LD:219:TYR:HB2	1.95	0.49
24:LR:7:GLN:NE2	24:LR:35:ALA:O	2.30	0.49
53:SF:168:THR:OG1	62:SZ:106:GLN:OE1	2.25	0.49
75:SL:61:PRO:HG3	75:SL:141:ASN:HB3	1.94	0.49
75:SL:128:VAL:HG12	75:SL:142:VAL:HA	1.94	0.49
85:S2:525:A:H2'	85:S2:526:A:C8	2.45	0.49
5:L5:75:G:O2'	18:LL:101:ARG:NH1	2.39	0.49
5:L5:257:C:H2'	5:L5:258:G:C8	2.47	0.49
5:L5:702:U:H2'	5:L5:703:G:O4'	2.12	0.49
5:L5:3911:C:H2'	5:L5:3912:U:H6	1.76	0.49
5:L5:4563:U:H2'	5:L5:4564:A:H8	1.78	0.49
5:L5:4672:A:OP1	28:LV:15:ARG:NH2	2.35	0.49
9:LB:258:HIS:HA	9:LB:260:ALA:N	2.26	0.49
25:LS:161:ARG:HD2	25:LS:164:LYS:HB2	1.94	0.49
29:LW:119:LYS:O	29:LW:123:LYS:HB2	2.12	0.49
56:SP:31:GLU:HA	56:SP:34:MET:HE2	1.93	0.49
66:Sg:124:SER:OG	66:Sg:125:ARG:N	2.44	0.49
72:SH:165:ASN:O	72:SH:169:LYS:NZ	2.39	0.49
73:SI:98:LYS:HG3	73:SI:178:ARG:HG2	1.95	0.49
85:S2:795:A:H2'	85:S2:796:G:C8	2.47	0.49
85:S2:874:G:H2'	85:S2:875:A:H8	1.77	0.49
85:S2:1773:C:H2'	85:S2:1774:C:H5''	1.94	0.49
3:CF:162:TYR:HB3	3:CF:208:MET:HB3	1.94	0.49
5:L5:432:U:H1'	88:L5:5293:SPM:H82	1.94	0.49
5:L5:1818:G:O2'	5:L5:1820:C:OP2	2.25	0.49
5:L5:4088:C:H2'	5:L5:4089:G:H8	1.77	0.49
11:LD:182:GLY:HA2	11:LD:194:VAL:HG23	1.95	0.49
15:LH:92:MET:HE2	15:LH:179:ILE:HG22	1.94	0.49
27:LU:23:LEU:HD23	27:LU:110:TYR:HB2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:LX:122:ALA:N	30:LX:139:ARG:O	2.42	0.49
51:Lt:77:ALA:HB3	51:Lt:80:LEU:HB2	1.93	0.49
52:SD:138:VAL:HG13	52:SD:182:LEU:HD21	1.95	0.49
55:SM:128:PHE:HA	55:SM:131:LYS:HG2	1.95	0.49
60:ST:60:THR:HG22	60:ST:75:MET:HE2	1.93	0.49
85:S2:198:U:H2'	85:S2:199:C:H2'	1.92	0.49
85:S2:563:G:O2'	85:S2:564:A:OP1	2.29	0.49
5:L5:1500:A:H5''	5:L5:1501:C:H5''	1.95	0.49
5:L5:1617:G:H1'	5:L5:2513:A:N6	2.27	0.49
5:L5:4076:G:H5'	14:LG:73:ARG:HG3	1.93	0.49
5:L5:4927:G:H5''	5:L5:4928:C:C5	2.47	0.49
14:LG:157:ILE:HA	14:LG:201:THR:HG22	1.94	0.49
16:LI:152:LEU:HB3	16:LI:165:ILE:HD12	1.93	0.49
60:ST:42:HIS:NE2	60:ST:43:LYS:HE3	2.28	0.49
70:SE:125:LYS:O	70:SE:142:HIS:N	2.46	0.49
76:SN:66:VAL:HG13	76:SN:67:THR:HG23	1.93	0.49
85:S2:60:A:N3	85:S2:316:G:O2'	2.41	0.49
5:L5:729:G:H5''	13:LF:76:ARG:HD2	1.95	0.49
5:L5:1241:C:H2'	5:L5:1242:G:H8	1.78	0.49
5:L5:2084:C:O2	23:LQ:16:LYS:NZ	2.41	0.49
5:L5:4584:A:H2'	5:L5:4585:U:O4'	2.13	0.49
11:LD:164:LYS:HG2	11:LD:195:HIS:CE1	2.48	0.49
15:LH:93:ARG:HG2	15:LH:182:SER:HB3	1.94	0.49
28:LV:43:LYS:HE2	28:LV:62:MET:HE3	1.93	0.49
37:Le:91:CYS:HB3	37:Le:95:TYR:HD2	1.78	0.49
41:Li:55:ARG:O	41:Li:59:GLU:HG2	2.13	0.49
79:SW:111:MET:HE1	79:SW:119:LYS:HD2	1.95	0.49
85:S2:118:C:H1'	85:S2:445:A:C5	2.48	0.49
85:S2:1010:G:H2'	85:S2:1011:A:H8	1.77	0.49
4:AT:4:U:H2'	4:AT:5:C:C6	2.48	0.49
5:L5:461:G:H2'	5:L5:462:G:H8	1.77	0.49
5:L5:1577:G:O2'	5:L5:1612:G:H4'	2.12	0.49
5:L5:2018:C:H2'	5:L5:2019:C:C6	2.47	0.49
5:L5:2638:G:H22	5:L5:2719:C:P	2.36	0.49
5:L5:3910:C:H2'	5:L5:3911:C:C6	2.48	0.49
5:L5:4088:C:H2'	5:L5:4089:G:C8	2.48	0.49
12:LE:190:HIS:HB3	12:LE:193:PHE:HD2	1.78	0.49
14:LG:165:GLU:OE2	20:LN:26:ARG:NH1	2.42	0.49
17:LJ:22:LEU:HD22	17:LJ:128:LEU:HD12	1.95	0.49
29:LW:81:ALA:HB2	29:LW:87:LEU:HG	1.94	0.49
36:Ld:23:ARG:HG2	36:Ld:121:ASN:HA	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:SS:46:ARG:NH1	60:ST:50:GLU:OE2	2.46	0.49
64:Sd:17:GLY:O	64:Sd:27:ARG:NH1	2.46	0.49
73:SI:114:GLU:HB3	73:SI:136:ILE:HD12	1.95	0.49
81:SY:10:ARG:HA	85:S2:839:C:H41	1.77	0.49
86:Zt:9:A:H1'	86:Zt:45:G:H2'	1.95	0.49
5:L5:305:A:OP2	20:LN:15:GLN:NE2	2.41	0.49
5:L5:374:G:OP2	42:Lj:56:ARG:NH1	2.37	0.49
5:L5:1079:C:O2	5:L5:1221:G:N2	2.36	0.49
5:L5:2903:G:H1'	5:L5:2904:U:H5	1.77	0.49
7:L8:39:G:O2'	7:L8:104:A:N1	2.44	0.49
24:LR:160:GLU:OE1	24:LR:163:ARG:NH2	2.40	0.49
40:Lh:89:ARG:O	40:Lh:93:ARG:HG2	2.13	0.49
52:SD:73:VAL:HG11	52:SD:86:LEU:HD11	1.95	0.49
74:SJ:145:PRO:HD2	85:S2:522:A:H5''	1.95	0.49
81:SY:105:LYS:O	81:SY:109:GLU:HG2	2.12	0.49
5:L5:150:U:OP2	14:LG:200:THR:OG1	2.25	0.49
5:L5:696:C:H42	12:LE:221:LYS:HG3	1.78	0.49
30:LX:121:VAL:HA	30:LX:140:LEU:HA	1.95	0.49
52:SD:51:LEU:HD12	52:SD:91:VAL:HG12	1.94	0.49
66:Sg:205:SER:HA	66:Sg:221:LEU:HB2	1.95	0.49
85:S2:885:U:O2	85:S2:901:G:O6	2.31	0.49
1:CI:72:ARG:NH2	24:LR:25:ASP:OD2	2.46	0.48
5:L5:88:A:N7	23:LQ:173:LYS:NZ	2.60	0.48
5:L5:300:A:H2'	5:L5:301:G:H8	1.78	0.48
5:L5:3886:G:OP1	21:LO:85:ARG:NH2	2.45	0.48
14:LG:154:LEU:HB3	14:LG:204:PHE:HB2	1.95	0.48
40:Lh:96:ASN:O	40:Lh:100:GLU:HB2	2.12	0.48
62:SZ:99:LEU:HD21	62:SZ:102:LYS:HB2	1.94	0.48
85:S2:106:C:H2'	85:S2:107:A:C8	2.46	0.48
3:CF:162:TYR:O	3:CF:210:TRP:NE1	2.46	0.48
5:L5:2579:G:N2	5:L5:2582:A:OP2	2.36	0.48
5:L5:4327:C:OP1	26:LT:70:HIS:NE2	2.46	0.48
13:LF:147:LEU:O	13:LF:151:ASN:ND2	2.38	0.48
24:LR:182:GLU:HG3	24:LR:185:ILE:HD13	1.94	0.48
25:LS:5:GLY:O	25:LS:111:ARG:NH2	2.46	0.48
47:Lo:2:VAL:N	47:Lo:90:HIS:O	2.45	0.48
71:SG:3:LEU:HD23	71:SG:109:LEU:HB3	1.94	0.48
71:SG:66:GLY:HA2	85:S2:1745:A:H1'	1.94	0.48
85:S2:51:U:H2'	85:S2:52:G:C8	2.48	0.48
85:S2:656:G:N2	85:S2:663:C:H5''	2.28	0.48
3:CF:255:LYS:HB2	3:CF:317:VAL:HG11	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:1332:C:H2'	5:L5:1333:A:C8	2.48	0.48
5:L5:2640:G:H2'	5:L5:2641:A:C8	2.49	0.48
5:L5:3664:G:H2'	5:L5:3665:G:C8	2.48	0.48
5:L5:3949:A:N1	5:L5:4064:C:N4	2.43	0.48
5:L5:3951:G:H1'	5:L5:4062:A:H61	1.77	0.48
54:SK:91:PRO:HB2	54:SK:94:LEU:HD23	1.95	0.48
59:SS:137:LYS:NZ	85:S2:1236:G:O6	2.46	0.48
68:SB:171:ILE:HD11	68:SB:197:ILE:HA	1.95	0.48
70:SE:59:ASP:O	70:SE:63:LYS:HG3	2.14	0.48
85:S2:1217:A:H2'	85:S2:1218:C:H6	1.77	0.48
3:CF:214:TRP:CZ2	3:CF:231:ALA:HB2	2.48	0.48
5:L5:1326:A2M:H2'	5:L5:1327:C:C6	2.48	0.48
5:L5:1461:C:H2'	5:L5:1462:A:H8	1.78	0.48
5:L5:3726:A:H2'	5:L5:3727:A:C8	2.48	0.48
5:L5:4897:G:H2'	5:L5:4898:G:H8	1.77	0.48
22:LP:114:ILE:HA	22:LP:150:LEU:HD23	1.96	0.48
48:Lp:75:SER:O	48:Lp:79:VAL:HG23	2.14	0.48
62:SZ:42:ASP:OD1	62:SZ:43:LYS:N	2.43	0.48
67:SA:10:MET:HE3	67:SA:55:TRP:HB2	1.94	0.48
78:SV:30:ALA:O	78:SV:60:ARG:HD3	2.13	0.48
85:S2:5:U:H2'	85:S2:6:G:C8	2.48	0.48
85:S2:835:C:H4'	85:S2:836:G:C8	2.48	0.48
3:CF:155:MET:O	3:CF:158:THR:OG1	2.27	0.48
3:CF:375:LEU:HD11	3:CF:394:LEU:HD11	1.93	0.48
5:L5:1404:G:N7	5:L5:1408:G:N1	2.61	0.48
5:L5:3641:U:H5	5:L5:3646:A:N7	2.12	0.48
5:L5:3880:G:H2'	5:L5:3881:G:C8	2.48	0.48
5:L5:4571:A2M:H2'	5:L5:4572:U:H6	1.77	0.48
35:Lc:34:THR:HG23	35:Lc:95:ALA:HB2	1.96	0.48
81:SY:104:ARG:NH1	85:S2:507:G:OP2	2.36	0.48
3:CF:178:ILE:HA	3:CF:181:ILE:HG22	1.95	0.48
3:CF:273:LYS:HE2	3:CF:301:GLU:HG2	1.96	0.48
4:AT:60:A:H2'	4:AT:61:A:O4'	2.14	0.48
5:L5:455:C:O2'	5:L5:456:C:H5'	2.14	0.48
5:L5:3873:G:H2'	5:L5:3874:G:C8	2.49	0.48
5:L5:4883:C:N4	12:LE:181:LEU:O	2.35	0.48
9:LB:80:GLU:OE1	9:LB:323:TYR:OH	2.22	0.48
15:LH:107:GLU:N	15:LH:107:GLU:OE1	2.47	0.48
28:LV:42:VAL:HB	28:LV:45:ILE:HG13	1.96	0.48
69:SC:167:ARG:HB3	69:SC:177:PRO:HB2	1.95	0.48
74:SJ:40:LYS:NZ	85:S2:641:A:OP1	2.36	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:SL:57:ASP:OD1	75:SL:84:ARG:NH1	2.46	0.48
77:SO:134:PRO:HB3	85:S2:944:A:H5''	1.95	0.48
85:S2:388:U:H2'	85:S2:389:A:C8	2.49	0.48
7:L8:58:G:N7	42:Lj:63:ARG:NH2	2.43	0.48
9:LB:302:ASN:HB2	9:LB:313:SER:HA	1.96	0.48
37:Le:108:ARG:HD2	37:Le:128:ARG:HB2	1.95	0.48
59:SS:15:VAL:HG12	59:SS:16:LEU:HG	1.95	0.48
71:SG:1:MET:HE2	71:SG:106:LEU:HB2	1.95	0.48
72:SH:64:VAL:HB	72:SH:72:PHE:HE2	1.77	0.48
81:SY:7:ILE:HD13	81:SY:27:VAL:HB	1.94	0.48
86:Zt:16:C:H1'	86:Zt:18:U:H5''	1.95	0.48
5:L5:713:C:O2	12:LE:130:LYS:NZ	2.46	0.48
5:L5:1725:U:H2'	5:L5:1726:U:H6	1.79	0.48
5:L5:2764:A:H2'	5:L5:2765:A:H8	1.79	0.48
5:L5:3732:A:H2'	5:L5:3733:A:H8	1.78	0.48
5:L5:4459:U:H2'	5:L5:4460:U:C6	2.48	0.48
15:LH:51:LYS:HG3	15:LH:52:LYS:H	1.79	0.48
38:Lf:15:LYS:HB3	38:Lf:25:THR:HG23	1.95	0.48
62:SZ:86:ALA:HA	62:SZ:89:GLN:HE21	1.79	0.48
71:SG:23:LYS:HE3	71:SG:41:LEU:HA	1.95	0.48
76:SN:29:THR:OG1	76:SN:31:ASP:OD1	2.26	0.48
85:S2:907:G:H2'	85:S2:908:A:C8	2.49	0.48
85:S2:1383:A2M:HM'3	85:S2:1383:A2M:H1'	1.57	0.48
86:Zt:34:U:H2'	86:Zt:35:U:C6	2.48	0.48
2:Pt:9:A:O2'	2:Pt:10:G:N7	2.32	0.48
5:L5:1259:G:H2'	5:L5:1260:G:H8	1.78	0.48
7:L8:39:G:H1'	7:L8:103:A:N6	2.29	0.48
8:LA:206:PRO:HG3	8:LA:213:GLY:HA3	1.96	0.48
12:LE:165:LEU:HD11	12:LE:176:THR:HG22	1.96	0.48
31:LY:2:LYS:HD2	31:LY:7:VAL:HG23	1.94	0.48
52:SD:32:ASP:OD1	52:SD:57:ASN:ND2	2.47	0.48
52:SD:55:THR:HA	52:SD:58:VAL:HG12	1.95	0.48
67:SA:184:ARG:NE	67:SA:191:ARG:HD3	2.28	0.48
68:SB:120:MET:HE1	85:S2:987:A:C6	2.49	0.48
84:Se:41:ARG:HG3	84:Se:42:PHE:HD1	1.78	0.48
86:Zt:37:A:H3'	86:Zt:38:A:H8	1.79	0.48
5:L5:280:G:H5''	20:LN:14:LYS:HE2	1.95	0.48
5:L5:400:A2M:HM'3	5:L5:400:A2M:H1'	1.58	0.48
5:L5:1172:C:O2'	5:L5:1173:G:H8	1.97	0.48
5:L5:4456:OMC:HM21	9:LB:241:PRO:HD3	1.96	0.48
5:L5:4965:U:H4'	5:L5:4966:A:H5'	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:LC:5:ARG:NE	10:LC:24:LEU:O	2.33	0.48
36:Ld:54:MET:HE3	36:Ld:60:PRO:HA	1.96	0.48
58:SR:6:THR:HA	85:S2:1373:C:H5'	1.95	0.48
59:SS:61:GLU:HA	59:SS:64:VAL:HG12	1.95	0.48
67:SA:198:MET:HG2	67:SA:200:ASP:H	1.79	0.48
70:SE:18:TRP:HH2	70:SE:31:PRO:HD3	1.79	0.48
73:SI:57:ALA:HB2	73:SI:183:GLY:HA2	1.95	0.48
85:S2:368:U:H3'	85:S2:369:C:H2'	1.95	0.48
85:S2:576:A2M:HM'3	85:S2:576:A2M:H1'	1.64	0.48
2:Pt:26:G:O6	2:Pt:44:A:N1	2.47	0.47
5:L5:170:C:H42	5:L5:266:C:N4	2.10	0.47
5:L5:1241:C:O2'	34:Lb:120:ARG:O	2.32	0.47
5:L5:4238:G:H2'	5:L5:4239:A:H8	1.79	0.47
7:L8:19:C:H2'	7:L8:20:A:C8	2.48	0.47
41:Li:59:GLU:HA	41:Li:62:LYS:HE3	1.96	0.47
69:SC:104:ASP:OD1	69:SC:105:GLU:N	2.47	0.47
85:S2:102:A:H4'	85:S2:104:A:C8	2.49	0.47
85:S2:159:A2M:O5'	85:S2:159:A2M:H8	2.14	0.47
85:S2:165:G:H2'	85:S2:166:A2M:H8	1.96	0.47
85:S2:941:C:H2'	85:S2:942:G:H8	1.77	0.47
3:CF:375:LEU:HB3	3:CF:391:PRO:HD2	1.95	0.47
5:L5:1359:G:H4'	20:LN:203:TYR:HB2	1.96	0.47
5:L5:1558:A:H2'	5:L5:1559:G:H8	1.80	0.47
5:L5:4066:U:H2'	5:L5:4067:U:C6	2.50	0.47
5:L5:4571:A2M:H2'	5:L5:4572:U:C6	2.49	0.47
8:LA:13:GLY:O	8:LA:17:ARG:HG3	2.14	0.47
15:LH:4:ILE:HG12	15:LH:61:TRP:CH2	2.48	0.47
74:SJ:5:ARG:HB3	85:S2:38:A:H5''	1.96	0.47
85:S2:71:G:N2	85:S2:73:C:OP1	2.47	0.47
85:S2:730:C:OP2	85:S2:734:C:N4	2.47	0.47
3:CF:266:ARG:HA	3:CF:307:ASN:HA	1.96	0.47
5:L5:408:A:O2'	5:L5:411:G:OP2	2.22	0.47
5:L5:1628:C:OP1	8:LA:14:SER:OG	2.32	0.47
5:L5:3732:A:H2'	5:L5:3733:A:C8	2.49	0.47
5:L5:4095:G:H2'	5:L5:4096:C:C6	2.49	0.47
5:L5:4476:C:O2'	5:L5:4478:G:OP2	2.28	0.47
14:LG:167:VAL:HG12	14:LG:170:LEU:HD12	1.95	0.47
24:LR:105:LEU:HD22	24:LR:135:LYS:HG3	1.96	0.47
31:LY:10:ASP:HB3	31:LY:13:LYS:HB2	1.97	0.47
66:Sg:258:ILE:HG23	66:Sg:267:VAL:HG23	1.96	0.47
71:SG:7:PHE:CE2	71:SG:9:ALA:HB3	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:501:C:O2'	5:L5:648:G:OP1	2.30	0.47
8:LA:181:LYS:HB2	8:LA:184:ARG:HG3	1.95	0.47
36:Ld:44:ARG:HA	36:Ld:47:LYS:HE3	1.96	0.47
47:Lo:4:VAL:HG23	47:Lo:93:LEU:HD23	1.95	0.47
56:SP:37:TYR:O	59:SS:88:LYS:NZ	2.47	0.47
58:SR:7:LYS:HG3	85:S2:1373:C:OP1	2.15	0.47
59:SS:64:VAL:O	59:SS:68:ILE:HG12	2.14	0.47
65:Sf:95:ARG:HH12	85:S2:1291:A:H62	1.61	0.47
68:SB:29:ASP:OD1	68:SB:29:ASP:N	2.48	0.47
68:SB:143:THR:HB	68:SB:205:TYR:HE2	1.78	0.47
79:SW:76:SER:OG	85:S2:1158:G:O3'	2.30	0.47
81:SY:108:LYS:NZ	85:S2:506:G:OP1	2.44	0.47
5:L5:1317:U:H2'	5:L5:1318:C:C6	2.49	0.47
5:L5:1942:A:H2'	5:L5:1943:A:H8	1.77	0.47
5:L5:2811:G:N1	5:L5:2814:C:OP2	2.42	0.47
5:L5:3841:OMC:HM23	5:L5:3841:OMC:H1'	1.72	0.47
5:L5:4066:U:H2'	5:L5:4067:U:H6	1.78	0.47
5:L5:4149:C:OP1	32:LZ:59:LYS:N	2.47	0.47
5:L5:4685:U:H2'	5:L5:4686:G:C8	2.49	0.47
19:LM:96:GLU:O	19:LM:100:ARG:HG2	2.14	0.47
51:Lt:12:VAL:HG11	51:Lt:65:GLN:H	1.79	0.47
57:SQ:110:ASP:OD1	57:SQ:110:ASP:N	2.45	0.47
69:SC:85:SER:OG	78:SV:25:GLY:O	2.28	0.47
77:SO:96:LYS:HD3	77:SO:132:VAL:HG11	1.95	0.47
83:Sb:36:LYS:HB2	83:Sb:78:SER:HB3	1.96	0.47
85:S2:1777:G:H2'	85:S2:1778:C:H6	1.79	0.47
3:CF:184:ASN:HD22	3:CF:187:THR:HG23	1.79	0.47
5:L5:138:G:H2'	5:L5:139:G:H8	1.80	0.47
5:L5:2411:C:H2'	5:L5:2412:A:H8	1.78	0.47
5:L5:2824:OMC:HM23	5:L5:2824:OMC:H1'	1.66	0.47
11:LD:41:LYS:HD2	26:LT:93:ILE:HD13	1.97	0.47
20:LN:75:VAL:HG21	20:LN:80:THR:HG22	1.95	0.47
24:LR:105:LEU:HD23	24:LR:138:LEU:HD23	1.95	0.47
29:LW:2:LYS:HE3	29:LW:15:PRO:HB3	1.95	0.47
56:SP:59:ARG:HH21	56:SP:76:VAL:HG23	1.79	0.47
68:SB:167:LYS:O	68:SB:171:ILE:HG12	2.14	0.47
79:SW:76:SER:HB2	85:S2:1158:G:H5''	1.96	0.47
82:Sa:59:PHE:HB2	82:Sa:62:TYR:HB2	1.96	0.47
85:S2:1417:C:N4	85:S2:1422:G:H22	2.08	0.47
86:Zt:49:C:H2'	86:Zt:50:A:C8	2.49	0.47
4:AT:3:C:H42	4:AT:71:A:H61	1.63	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:121:A:OP1	14:LG:110:LYS:NZ	2.28	0.47
5:L5:965:G:N2	5:L5:2092:G:H1'	2.30	0.47
5:L5:1601:A:OP1	42:Lj:5:THR:OG1	2.24	0.47
5:L5:1751:A:H2'	5:L5:1752:G:C8	2.49	0.47
5:L5:4153:C:H5''	30:LX:38:LYS:HD2	1.96	0.47
5:L5:4238:G:H2'	5:L5:4239:A:C8	2.49	0.47
5:L5:4322:G:N2	5:L5:4325:A:OP2	2.41	0.47
5:L5:4954:G:H2'	5:L5:4955:A:C8	2.49	0.47
12:LE:119:GLU:HG3	37:Le:7:LEU:HD22	1.96	0.47
17:LJ:63:ARG:HH11	47:Lo:106:PHE:HB2	1.79	0.47
22:LP:94:MET:HE1	22:LP:146:ILE:HB	1.97	0.47
65:Sf:105:TYR:OH	85:S2:1310:U:OP2	2.32	0.47
69:SC:102:LEU:HD22	69:SC:130:ILE:HD12	1.94	0.47
69:SC:196:ILE:HB	69:SC:223:TYR:HB2	1.95	0.47
74:SJ:150:ARG:HG3	85:S2:821:G:C6	2.50	0.47
84:Se:11:LYS:O	84:Se:15:GLN:HG3	2.15	0.47
85:S2:941:C:H2'	85:S2:942:G:C8	2.49	0.47
85:S2:1337:4AC:H2'	85:S2:1338:G:H8	1.79	0.47
85:S2:1643:U:H2'	85:S2:1644:C:C6	2.49	0.47
2:Pt:35:A:OP2	57:SQ:146:ARG:NH2	2.48	0.47
5:L5:256:G:H2'	5:L5:257:C:C6	2.50	0.47
5:L5:261:G:H2'	5:L5:262:G:C8	2.50	0.47
5:L5:268:G:H2'	5:L5:269:G:H8	1.80	0.47
5:L5:369:G:N2	5:L5:372:A:OP2	2.42	0.47
5:L5:481:G:H2'	5:L5:482:G:C8	2.50	0.47
5:L5:2539:C:H2'	5:L5:2540:C:C6	2.50	0.47
5:L5:4345:C:H2'	5:L5:4346:U:H6	1.80	0.47
9:LB:234:ARG:NH1	9:LB:268:ARG:O	2.47	0.47
20:LN:46:ASP:OD1	20:LN:47:LYS:N	2.46	0.47
22:LP:107:LEU:HD13	22:LP:152:GLU:HG3	1.96	0.47
26:LT:44:GLY:HA2	26:LT:95:HIS:HB3	1.97	0.47
32:LZ:123:LYS:O	32:LZ:124:THR:OG1	2.28	0.47
35:Lc:82:GLY:HA2	35:Lc:91:VAL:HG12	1.97	0.47
40:Lh:107:GLN:O	40:Lh:111:GLU:HG3	2.15	0.47
65:Sf:124:ASP:OD1	65:Sf:124:ASP:N	2.44	0.47
66:Sg:101:PHE:CE2	66:Sg:136:GLY:HA2	2.50	0.47
71:SG:136:LYS:HB2	85:S2:65:C:H41	1.79	0.47
71:SG:147:LEU:HD12	71:SG:151:ASP:HB2	1.96	0.47
85:S2:1435:C:O2'	85:S2:1436:C:O4'	2.27	0.47
85:S2:1692:U:H2'	85:S2:1693:G:C8	2.50	0.47
5:L5:106:A:H2'	5:L5:107:G:O4'	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:308:G:O6	20:LN:12:ARG:NH1	2.46	0.47
5:L5:1770:A:N7	5:L5:1771:U:N3	2.63	0.47
5:L5:1837:A:OP2	26:LT:130:ARG:NH1	2.43	0.47
5:L5:4389:C:H2'	5:L5:4390:A:C8	2.50	0.47
11:LD:181:PRO:HD2	11:LD:195:HIS:CD2	2.50	0.47
17:LJ:83:LEU:HD22	17:LJ:132:VAL:HG11	1.97	0.47
22:LP:54:GLN:HA	22:LP:83:TRP:CD1	2.50	0.47
24:LR:157:ASP:OD1	24:LR:158:GLN:N	2.48	0.47
49:Lr:47:LYS:O	49:Lr:103:ARG:HD2	2.15	0.47
51:Lt:12:VAL:HG11	51:Lt:65:GLN:N	2.30	0.47
54:SK:80:ARG:HH22	54:SK:90:VAL:HG12	1.80	0.47
55:SM:95:ASP:HB3	55:SM:99:LYS:HB3	1.97	0.47
72:SH:142:LYS:HB3	79:SW:54:ASP:HB3	1.97	0.47
85:S2:1351:G:O2'	85:S2:1378:A:N1	2.43	0.47
85:S2:1653:U:H2'	85:S2:1654:G:C8	2.49	0.47
3:CF:116:VAL:HG11	3:CF:123:PHE:HD1	1.80	0.47
5:L5:433:A:C2	5:L5:3867:A2M:H4'	2.50	0.47
5:L5:454:U:H2'	5:L5:455:C:O4'	2.15	0.47
5:L5:717:U:H2'	5:L5:718:C:C6	2.50	0.47
5:L5:947:C:H5''	12:LE:51:VAL:HG11	1.97	0.47
5:L5:1283:G:N1	5:L5:2076:G:OP1	2.33	0.47
5:L5:2303:C:H5''	37:Le:104:SER:HB3	1.97	0.47
5:L5:2306:G:H1'	5:L5:2332:A:N6	2.30	0.47
5:L5:2521:G:H4'	39:Lg:26:PRO:HD2	1.97	0.47
5:L5:3861:A:H2'	5:L5:3862:A:C8	2.50	0.47
5:L5:3917:A:H2'	5:L5:3918:G:H8	1.80	0.47
5:L5:3923:A:H2'	5:L5:3924:C:C6	2.50	0.47
9:LB:46:PHE:CZ	9:LB:84:MET:HG2	2.50	0.47
18:LL:110:LEU:O	18:LL:114:VAL:HG13	2.15	0.47
29:LW:7:SER:OG	29:LW:8:PHE:N	2.48	0.47
53:SF:26:ASP:N	53:SF:26:ASP:OD1	2.47	0.47
58:SR:29:HIS:CD2	66:Sg:36:ARG:HH21	2.33	0.47
75:SL:40:ILE:HD12	75:SL:143:LEU:HD22	1.97	0.47
80:SX:70:VAL:HG11	80:SX:94:ILE:HG21	1.97	0.47
85:S2:1405:A:H2'	85:S2:1406:G:O4'	2.14	0.47
86:Zt:75:C:H3'	86:Zt:76:A:C8	2.50	0.47
3:CF:347:LEU:O	3:CF:396:SER:OG	2.30	0.46
5:L5:267:G:H2'	5:L5:268:G:C8	2.49	0.46
5:L5:515:C:H41	5:L5:647:G:H21	1.63	0.46
5:L5:1727:U:OP1	13:LF:131:ASN:ND2	2.47	0.46
9:LB:288:GLY:HA3	9:LB:330:PHE:CE1	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:LI:101:LYS:NZ	16:LI:102:MET:O	2.47	0.46
20:LN:43:THR:OG1	20:LN:131:GLU:OE2	2.25	0.46
35:Lc:48:LEU:HD13	35:Lc:57:LYS:HG3	1.96	0.46
55:SM:82:ASN:OD1	55:SM:83:LYS:N	2.48	0.46
56:SP:47:ARG:NH2	85:S2:1619:A:OP2	2.38	0.46
60:ST:11:GLN:HB2	85:S2:1542:C:H4'	1.97	0.46
60:ST:121:ARG:HH21	85:S2:1563:G:H5''	1.81	0.46
68:SB:124:HIS:HA	68:SB:137:LEU:O	2.15	0.46
73:SI:91:VAL:HG21	73:SI:205:ARG:HH12	1.79	0.46
85:S2:1275:G:N2	85:S2:1506:A:OP2	2.35	0.46
3:CF:273:LYS:HG2	3:CF:276:MET:HE1	1.98	0.46
5:L5:737:C:C5	5:L5:739:G:H5''	2.50	0.46
5:L5:1971:C:H2'	5:L5:1972:G:C8	2.50	0.46
5:L5:2583:C:OP2	39:Lg:76:ARG:NH1	2.45	0.46
50:Ls:77:LYS:HE2	50:Ls:193:PHE:HE1	1.78	0.46
53:SF:193:LYS:O	53:SF:197:GLU:HG2	2.14	0.46
68:SB:97:LEU:HD23	68:SB:232:HIS:CG	2.50	0.46
81:SY:68:LYS:HE2	81:SY:68:LYS:HB3	1.75	0.46
82:Sa:12:LYS:HG3	82:Sa:15:ARG:HB2	1.97	0.46
85:S2:1337:4AC:H2'	85:S2:1338:G:C8	2.49	0.46
85:S2:1720:U:H5''	85:S2:1721:U:H5''	1.97	0.46
5:L5:153:G:H2'	5:L5:154:G:H8	1.80	0.46
5:L5:260:C:H2'	5:L5:261:G:C8	2.50	0.46
12:LE:128:HIS:ND1	12:LE:128:HIS:O	2.48	0.46
18:LL:59:VAL:HG21	18:LL:73:GLY:HA3	1.97	0.46
31:LY:22:PRO:HD2	31:LY:25:ILE:HD11	1.97	0.46
55:SM:51:VAL:HA	55:SM:77:ILE:O	2.15	0.46
66:Sg:120:ILE:HB	66:Sg:132:TRP:HB2	1.97	0.46
85:S2:1568:C:H2'	85:S2:1569:A:C8	2.50	0.46
85:S2:1850:MA6:H8	85:S2:1850:MA6:O5'	2.15	0.46
3:CF:85:TYR:OH	3:CF:232:LEU:O	2.19	0.46
3:CF:113:VAL:HA	3:CF:149:ILE:O	2.16	0.46
5:L5:1677:PSU:H4'	5:L5:1680:G:C2	2.51	0.46
5:L5:2483:G:O6	5:L5:2495:U:O4	2.34	0.46
7:L8:93:C:HO2'	7:L8:94:G:H8	1.63	0.46
9:LB:206:PRO:HG2	9:LB:209:GLN:HG3	1.97	0.46
14:LG:143:VAL:HG22	14:LG:203:ALA:HB2	1.97	0.46
21:LO:61:ARG:HA	21:LO:70:PRO:HD2	1.98	0.46
53:SF:78:MET:HE3	85:S2:1222:G:H5''	1.97	0.46
54:SK:64:TRP:HB3	64:Sd:23:VAL:HA	1.98	0.46
65:Sf:89:LYS:O	85:S2:1507:G:N2	2.39	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
85:S2:955:A:N1	85:S2:968:U:O2'	2.37	0.46
85:S2:1189:A:H2'	85:S2:1190:A:H8	1.81	0.46
85:S2:1759:G:N2	85:S2:1760:G:O6	2.48	0.46
5:L5:491:G:H2'	5:L5:492:U:H6	1.79	0.46
5:L5:1340:OMC:HM23	5:L5:1340:OMC:H1'	1.69	0.46
5:L5:1785:C:OP1	16:LI:133:GLN:NE2	2.49	0.46
5:L5:1802:A:H5''	5:L5:1803:G:H5'	1.98	0.46
5:L5:2765:A:H2'	5:L5:2766:A:C8	2.50	0.46
5:L5:3689:G:O2'	5:L5:3818:UY1:OP2	2.29	0.46
6:L7:23:A:N3	6:L7:118:C:O2'	2.38	0.46
6:L7:110:G:H2'	6:L7:111:C:C6	2.50	0.46
12:LE:227:HIS:HE1	12:LE:230:GLY:HA2	1.80	0.46
15:LH:41:ILE:HG22	15:LH:43:VAL:HG13	1.97	0.46
29:LW:56:ARG:HE	29:LW:61:LYS:HB2	1.81	0.46
53:SF:187:SER:OG	53:SF:190:ILE:HG12	2.15	0.46
60:ST:44:GLU:HG3	60:ST:45:LEU:HD12	1.98	0.46
66:Sg:10:THR:HB	66:Sg:306:LEU:HD21	1.98	0.46
72:SH:157:HIS:HB3	72:SH:190:PRO:HG3	1.98	0.46
78:SV:17:CYS:HB2	78:SV:56:CYS:HB3	1.98	0.46
81:SY:42:GLU:HA	81:SY:52:PRO:HB3	1.98	0.46
85:S2:656:G:H5'	85:S2:662:G:N2	2.30	0.46
85:S2:1550:G:O2'	85:S2:1558:C:O2	2.22	0.46
85:S2:1667:U:H2'	85:S2:1668:U:C6	2.50	0.46
3:CF:215:LYS:NZ	3:CF:216:VAL:O	2.48	0.46
5:L5:1846:G:H2'	5:L5:1847:C:C6	2.50	0.46
5:L5:2716:C:O3'	27:LU:107:LYS:NZ	2.49	0.46
5:L5:4441:A:H5''	16:LI:114:GLY:HA2	1.98	0.46
9:LB:36:ASP:N	9:LB:36:ASP:OD1	2.49	0.46
12:LE:149:ILE:HD12	12:LE:271:LEU:HD21	1.97	0.46
32:LZ:46:ILE:HA	32:LZ:70:SER:HA	1.98	0.46
32:LZ:92:ASP:OD1	32:LZ:94:THR:OG1	2.32	0.46
38:Lf:41:PHE:HE1	38:Lf:110:ILE:HD13	1.80	0.46
53:SF:140:ASP:OD1	53:SF:140:ASP:N	2.48	0.46
60:ST:114:GLU:OE1	60:ST:114:GLU:N	2.48	0.46
71:SG:31:ARG:NH1	85:S2:1745:A:O3'	2.49	0.46
73:SI:70:GLU:OE2	75:SL:21:LYS:NZ	2.34	0.46
5:L5:85:G:O2'	5:L5:97:G:O6	2.26	0.46
5:L5:1197:C:H2'	5:L5:1198:G:C8	2.50	0.46
5:L5:2102:G:H1'	5:L5:2103:G:C8	2.51	0.46
5:L5:2111:G:N2	5:L5:2251:G:O2'	2.48	0.46
5:L5:4089:G:H2'	5:L5:4090:G:C8	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:4345:C:H2'	5:L5:4346:U:C6	2.51	0.46
5:L5:4611:A:H2'	5:L5:4612:C:H6	1.81	0.46
18:LL:126:LEU:N	18:LL:138:ASP:OD2	2.29	0.46
68:SB:136:ARG:HB2	68:SB:218:LEU:HD11	1.98	0.46
69:SC:77:SER:OG	69:SC:79:GLU:OE1	2.33	0.46
85:S2:737:G:H8	85:S2:738:C:H4'	1.80	0.46
85:S2:909:G:H2'	85:S2:910:G:C8	2.50	0.46
85:S2:1139:C:H5	85:S2:1149:A:H62	1.64	0.46
85:S2:1797:U:H2'	85:S2:1798:C:C6	2.51	0.46
2:Pt:62:C:H2'	2:Pt:63:G:H8	1.80	0.46
3:CF:372:PHE:HD1	3:CF:404:MET:HB3	1.81	0.46
4:AT:44:A:H2'	4:AT:45:A:C8	2.51	0.46
5:L5:137:G:H2'	5:L5:138:G:C8	2.50	0.46
5:L5:424:U:H2'	5:L5:425:U:C6	2.51	0.46
5:L5:1345:A:H2'	5:L5:1346:C:C6	2.51	0.46
5:L5:1558:A:H2'	5:L5:1559:G:C8	2.51	0.46
5:L5:1912:G:N2	21:LO:87:MET:HE2	2.31	0.46
5:L5:2580:U:O2'	32:LZ:79:HIS:ND1	2.46	0.46
5:L5:3720:G:H22	5:L5:3733:A:H2	1.63	0.46
5:L5:3856:A:H5''	22:LP:83:TRP:O	2.16	0.46
5:L5:4680:G:H2'	5:L5:4681:A:C8	2.50	0.46
11:LD:152:ARG:O	11:LD:157:ASN:ND2	2.48	0.46
13:LF:46:ARG:HH21	34:Lb:102:PRO:HG3	1.81	0.46
21:LO:54:TYR:CD1	21:LO:145:VAL:HG21	2.50	0.46
24:LR:127:VAL:HG12	24:LR:132:PHE:HD2	1.81	0.46
59:SS:78:LYS:HD3	59:SS:78:LYS:HA	1.74	0.46
69:SC:64:THR:HG22	69:SC:66:LEU:H	1.81	0.46
71:SG:195:LYS:HD3	85:S2:126:G:H5'	1.97	0.46
72:SH:30:LEU:HG	72:SH:33:ASN:HD22	1.81	0.46
85:S2:1037:G:H4'	85:S2:1845:A:H4'	1.96	0.46
85:S2:1589:A:N3	85:S2:1653:U:O2'	2.47	0.46
5:L5:138:G:H2'	5:L5:139:G:C8	2.50	0.46
5:L5:1248:C:H2'	5:L5:1249:C:C6	2.51	0.46
11:LD:205:ALA:HB1	11:LD:233:PRO:HB3	1.98	0.46
21:LO:88:LEU:HD12	21:LO:99:LEU:HD13	1.98	0.46
28:LV:37:LEU:HD23	28:LV:65:VAL:HG12	1.98	0.46
53:SF:81:ARG:O	53:SF:85:LYS:NZ	2.47	0.46
68:SB:26:SER:O	68:SB:51:ARG:NH2	2.49	0.46
85:S2:1144:A:H2'	85:S2:1145:A:C8	2.51	0.46
85:S2:1845:A:H2'	85:S2:1846:G:H8	1.78	0.46
86:Zt:72:C:H3'	86:Zt:73:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:407:A:O2'	5:L5:410:A:OP1	2.27	0.46
5:L5:457:G:H2'	5:L5:458:C:C6	2.51	0.46
5:L5:1084:C:H2'	5:L5:1085:C:H6	1.80	0.46
5:L5:1095:A:H2	5:L5:1200:G:H1	1.58	0.46
5:L5:4077:A:N1	5:L5:4171:C:N4	2.62	0.46
5:L5:4536:OMC:HM22	5:L5:4537:C:O4'	2.16	0.46
5:L5:4895:C:O2'	19:LM:132:LYS:NZ	2.33	0.46
8:LA:116:LEU:HB3	8:LA:126:LEU:HB2	1.97	0.46
9:LB:27:GLY:HA2	9:LB:276:HIS:CD2	2.51	0.46
50:Ls:29:ILE:HG22	50:Ls:88:PHE:CD1	2.51	0.46
52:SD:46:THR:HG23	52:SD:84:VAL:HG23	1.98	0.46
56:SP:93:MET:HE1	56:SP:106:GLU:OE1	2.16	0.46
58:SR:108:LEU:HD12	67:SA:39:TYR:HE1	1.81	0.46
67:SA:80:ARG:NH2	67:SA:165:ASN:O	2.39	0.46
81:SY:12:PHE:HZ	81:SY:21:LYS:HD2	1.81	0.46
85:S2:495:U:H2'	85:S2:496:C:O4'	2.16	0.46
85:S2:1628:C:H2'	85:S2:1629:C:C6	2.51	0.46
86:Zt:27:U:H2'	86:Zt:28:C:C6	2.51	0.46
4:AT:3:C:H2'	4:AT:4:U:C6	2.49	0.45
5:L5:1296:G:H2'	5:L5:1297:U:H6	1.82	0.45
5:L5:1855:G:OP1	34:Lb:4:SER:HB2	2.17	0.45
5:L5:4401:G:H2'	5:L5:4402:C:H6	1.81	0.45
8:LA:65:ASP:OD2	8:LA:72:ARG:NE	2.36	0.45
14:LG:187:LYS:HB2	14:LG:198:THR:HG23	1.98	0.45
27:LU:34:MET:HB3	27:LU:96:LEU:HD11	1.97	0.45
55:SM:57:ASP:OD1	85:S2:1285:G:N1	2.44	0.45
59:SS:22:GLY:HA2	59:SS:56:ALA:HB3	1.98	0.45
85:S2:1139:C:H2'	85:S2:1140:G:O4'	2.16	0.45
3:CF:113:VAL:HG23	3:CF:149:ILE:HG13	1.98	0.45
5:L5:37:U:H2'	5:L5:38:A:O4'	2.16	0.45
5:L5:1282:G:OP2	12:LE:128:HIS:NE2	2.50	0.45
5:L5:2664:G:H4'	5:L5:2677:G:H4'	1.97	0.45
5:L5:2667:C:O4'	24:LR:96:MET:HG2	2.16	0.45
5:L5:3722:G:H2'	5:L5:3723:A:H8	1.81	0.45
5:L5:4457:PSU:H1'	9:LB:252:ALA:HB3	1.98	0.45
5:L5:4896:G:H2'	5:L5:4897:G:C8	2.51	0.45
5:L5:4913:G:H4'	5:L5:4914:C:O5'	2.16	0.45
5:L5:4991:U:H2'	5:L5:4992:G:C8	2.52	0.45
26:LT:48:VAL:HG21	26:LT:94:GLU:HG2	1.98	0.45
38:Lf:45:LYS:NZ	38:Lf:108:SER:HA	2.31	0.45
56:SP:115:TYR:OH	85:S2:1620:A:OP1	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:SZ:62:VAL:HA	62:SZ:65:TYR:HE1	1.81	0.45
69:SC:207:ALA:HB2	85:S2:4:C:H4'	1.97	0.45
73:SI:47:ARG:HH22	85:S2:446:G:P	2.38	0.45
85:S2:85:A:H2'	85:S2:86:C:H6	1.81	0.45
3:CF:62:LYS:O	3:CF:67:ARG:NH1	2.50	0.45
5:L5:1086:C:H2'	5:L5:1087:A:C8	2.51	0.45
5:L5:1824:G:H2'	5:L5:1825:A:C8	2.51	0.45
5:L5:2400:G:H21	39:Lg:6:THR:HG22	1.82	0.45
5:L5:2743:A:H2'	5:L5:2744:A:C8	2.51	0.45
5:L5:4863:G:OP1	15:LH:21:LYS:NZ	2.42	0.45
5:L5:5064:G:H21	22:LP:75:GLN:HE22	1.63	0.45
8:LA:22:HIS:O	8:LA:24:LYS:NZ	2.47	0.45
38:Lf:106:TYR:HB2	38:Lf:107:PRO:HD3	1.98	0.45
55:SM:19:GLN:HE22	55:SM:88:TRP:CG	2.35	0.45
60:ST:96:SER:OG	85:S2:1568:C:OP1	2.34	0.45
66:Sg:175:LYS:HB3	66:Sg:184:LEU:HD11	1.99	0.45
67:SA:42:LYS:HD2	67:SA:48:ILE:HD11	1.97	0.45
70:SE:212:ASP:OD1	70:SE:216:ASN:N	2.49	0.45
77:SO:120:ALA:HB2	82:Sa:53:ILE:HD13	1.98	0.45
85:S2:468:A2M:HM'3	85:S2:468:A2M:H1'	1.65	0.45
85:S2:634:A:H2'	85:S2:635:G:H8	1.82	0.45
5:L5:92:C:OP2	5:L5:4341:C:O2'	2.24	0.45
5:L5:1979:A:H1'	5:L5:1988:G:N2	2.32	0.45
5:L5:4113:U:H4'	5:L5:4115:G:C6	2.52	0.45
5:L5:4699:U:H1'	5:L5:4700:A:H5''	1.98	0.45
7:L8:67:U:H2'	7:L8:68:G:C8	2.52	0.45
7:L8:102:G:OP2	7:L8:104:A:O2'	2.31	0.45
7:L8:102:G:H5''	42:Lj:39:TYR:HE1	1.80	0.45
18:LL:7:GLY:O	33:La:49:HIS:NE2	2.38	0.45
31:LY:31:SER:HA	31:LY:48:PRO:HA	1.98	0.45
32:LZ:95:VAL:HG12	32:LZ:110:ALA:HA	1.99	0.45
50:Ls:58:ASN:C	50:Ls:62:ARG:HE	2.24	0.45
56:SP:135:ALA:HB2	85:S2:1235:G:H21	1.82	0.45
67:SA:34:MET:HE1	67:SA:162:PRO:HB3	1.98	0.45
67:SA:184:ARG:HG3	67:SA:189:ILE:HD12	1.99	0.45
70:SE:122:LYS:HE2	70:SE:124:CYS:SG	2.56	0.45
78:SV:74:LYS:NZ	78:SV:83:PHE:HB3	2.31	0.45
79:SW:11:LEU:HD12	79:SW:74:VAL:HB	1.99	0.45
79:SW:28:ARG:HB3	79:SW:29:PRO:HD3	1.98	0.45
84:Se:41:ARG:HG3	84:Se:42:PHE:CD1	2.52	0.45
3:CF:34:ILE:HD11	3:CF:39:ILE:HD12	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:293:G:OP1	88:L5:5265:SPM:N1	2.32	0.45
5:L5:425:U:H4'	22:LP:6:LEU:HD21	1.99	0.45
5:L5:1369:C:OP2	5:L5:1370:G:O2'	2.30	0.45
5:L5:1494:U:H2'	5:L5:1495:G:H8	1.81	0.45
5:L5:1693:U:H2'	5:L5:1694:C:O4'	2.15	0.45
5:L5:1695:U:O2'	5:L5:1719:A:N3	2.45	0.45
8:LA:115:CYS:SG	8:LA:124:GLY:HA3	2.56	0.45
8:LA:131:GLY:H	8:LA:169:VAL:HG13	1.82	0.45
29:LW:56:ARG:HE	29:LW:61:LYS:CB	2.30	0.45
55:SM:86:GLY:HA2	55:SM:89:VAL:HG12	1.99	0.45
57:SQ:130:LYS:NZ	57:SQ:131:LYS:O	2.49	0.45
71:SG:170:ARG:HG3	85:S2:72:C:N3	2.32	0.45
85:S2:15:U:H2'	85:S2:16:G:O4'	2.16	0.45
85:S2:99:A2M:H8	85:S2:99:A2M:O5'	2.16	0.45
85:S2:375:U:H2'	85:S2:376:A:C8	2.51	0.45
85:S2:1201:U:H2'	85:S2:1202:U:C6	2.52	0.45
85:S2:1801:A:H2'	85:S2:1802:C:H6	1.82	0.45
5:L5:1414:C:H2'	5:L5:1415:G:C8	2.41	0.45
5:L5:1703:C:OP2	5:L5:1704:C:N4	2.49	0.45
5:L5:3861:A:H2'	5:L5:3862:A:H8	1.82	0.45
5:L5:4344:U:H2'	5:L5:4345:C:C6	2.52	0.45
10:LC:262:GLU:HB3	10:LC:273:LEU:HD13	1.99	0.45
10:LC:363:ALA:O	10:LC:367:GLU:HB3	2.17	0.45
42:Lj:67:LEU:HD23	42:Lj:67:LEU:HA	1.83	0.45
44:Ll:12:PHE:CE2	44:Ll:51:LEU:HD22	2.52	0.45
59:SS:40:TYR:CZ	59:SS:97:GLN:HG2	2.51	0.45
66:Sg:20:GLN:HG2	66:Sg:69:VAL:H	1.82	0.45
78:SV:53:TYR:CD1	78:SV:72:LEU:HD23	2.52	0.45
82:Sa:36:ILE:HD11	82:Sa:75:VAL:HG12	1.98	0.45
85:S2:329:G:H2'	85:S2:330:G:C8	2.51	0.45
85:S2:1560:U:O2	85:S2:1575:G:O6	2.35	0.45
85:S2:1822:A:H2'	85:S2:1823:A:C8	2.51	0.45
3:CF:261:THR:HG22	3:CF:317:VAL:HG13	1.99	0.45
5:L5:908:G:H2'	5:L5:909:A:H8	1.81	0.45
5:L5:2491:C:O2'	5:L5:2492:C:O4'	2.24	0.45
5:L5:2580:U:OP1	32:LZ:36:ARG:NH1	2.41	0.45
5:L5:2607:C:O5'	24:LR:96:MET:HE1	2.17	0.45
5:L5:4274:A:H2'	5:L5:4275:G:H8	1.78	0.45
5:L5:4305:G:C6	26:LT:80:VAL:HG21	2.51	0.45
5:L5:4620:OMU:OP2	5:L5:4670:C:N4	2.45	0.45
5:L5:4991:U:H2'	5:L5:4992:G:H8	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L8:58:G:O6	42:Lj:63:ARG:NH1	2.46	0.45
9:LB:17:LEU:HA	9:LB:17:LEU:HD23	1.70	0.45
14:LG:73:ARG:HD3	14:LG:73:ARG:HA	1.78	0.45
17:LJ:15:LEU:HD12	17:LJ:165:TRP:HB2	1.98	0.45
19:LM:71:LYS:O	19:LM:75:GLN:HG3	2.15	0.45
26:LT:102:ARG:O	26:LT:106:LEU:HG	2.16	0.45
29:LW:97:LYS:O	29:LW:99:GLU:N	2.47	0.45
50:Ls:91:THR:HG21	50:Ls:98:ILE:HG13	1.99	0.45
52:SD:32:ASP:OD2	52:SD:65:ARG:NH1	2.50	0.45
52:SD:136:VAL:HG12	52:SD:186:VAL:HG22	1.99	0.45
63:Sc:21:THR:OG1	63:Sc:22:GLY:N	2.50	0.45
71:SG:92:ARG:NH1	85:S2:1738:C:OP1	2.37	0.45
71:SG:202:ASN:ND2	85:S2:125:C:OP1	2.42	0.45
75:SL:28:THR:HA	75:SL:29:GLY:HA2	1.69	0.45
77:SO:140:THR:HB	85:S2:1046:PSU:H1'	1.99	0.45
80:SX:128:VAL:HG23	80:SX:138:LYS:HD2	1.98	0.45
86:Zt:75:C:OP2	86:Zt:76:A:N6	2.50	0.45
5:L5:1084:C:H2'	5:L5:1085:C:C6	2.51	0.45
5:L5:1259:G:H2'	5:L5:1260:G:C8	2.52	0.45
5:L5:1497:A:N6	23:LQ:175:GLU:O	2.50	0.45
5:L5:1697:G:H22	5:L5:2084:C:P	2.40	0.45
67:SA:164:ASN:OD1	67:SA:165:ASN:N	2.50	0.45
75:SL:153:LYS:HA	75:SL:153:LYS:HD3	1.83	0.45
85:S2:433:A:H2'	85:S2:434:G:C8	2.52	0.45
85:S2:671:A:H4'	85:S2:672:A:H5''	1.98	0.45
85:S2:747:U:O2	85:S2:796:G:N2	2.50	0.45
85:S2:1406:G:H2'	85:S2:1407:U:C6	2.52	0.45
3:CF:194:SER:HB3	3:CF:199:ASP:HB2	1.98	0.45
5:L5:308:G:OP2	5:L5:308:G:N2	2.41	0.45
5:L5:492:U:H2'	5:L5:493:G:O4'	2.16	0.45
5:L5:494:U:H2'	5:L5:495:C:C6	2.51	0.45
5:L5:1324:A:O2'	5:L5:1326:A2M:OP1	2.29	0.45
5:L5:4622:A:H4'	9:LB:13:SER:HB2	1.98	0.45
5:L5:4761:G:H2'	5:L5:4762:A:C8	2.52	0.45
5:L5:5004:C:H2'	5:L5:5005:G:O4'	2.16	0.45
9:LB:219:VAL:HG11	9:LB:337:VAL:HG13	1.99	0.45
54:SK:57:TYR:HB3	54:SK:75:GLY:HA2	1.97	0.45
59:SS:129:LEU:HA	59:SS:144:ARG:HH21	1.82	0.45
59:SS:145:THR:OG1	85:S2:1523:C:OP1	2.26	0.45
66:Sg:114:SER:OG	66:Sg:116:ASP:OD1	2.35	0.45
67:SA:102:ARG:HH12	85:S2:1377:U:H3'	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:SA:102:ARG:NH1	85:S2:1378:A:OP2	2.50	0.45
71:SG:87:ARG:HD3	71:SG:87:ARG:HA	1.74	0.45
85:S2:17:C:H2'	85:S2:18:C:C6	2.52	0.45
85:S2:29:G:H2'	85:S2:30:C:C6	2.52	0.45
85:S2:176:U:H2'	85:S2:177:G:C8	2.52	0.45
85:S2:674:C:H2'	85:S2:675:U:C6	2.52	0.45
85:S2:932:G:O2'	85:S2:934:G:OP2	2.33	0.45
85:S2:1705:C:H2'	85:S2:1706:G:C8	2.52	0.45
86:Zt:75:C:H3'	86:Zt:76:A:H8	1.81	0.45
2:Pt:72:C:H3'	2:Pt:73:A:H8	1.82	0.45
3:CF:220:ASP:OD1	3:CF:221:GLY:N	2.50	0.45
5:L5:172:C:H4'	5:L5:173:C:H5'	1.99	0.45
5:L5:1199:G:H2'	5:L5:1200:G:H8	1.82	0.45
7:L8:57:C:OP2	42:Lj:68:LYS:NZ	2.50	0.45
7:L8:92:U:H2'	7:L8:93:C:O4'	2.17	0.45
19:LM:130:LEU:HB3	21:LO:177:LEU:HD11	1.98	0.45
24:LR:80:LYS:HA	24:LR:80:LYS:HD2	1.88	0.45
38:Lf:45:LYS:HA	38:Lf:107:PRO:HD2	1.98	0.45
67:SA:220:LYS:HA	67:SA:220:LYS:HD3	1.84	0.45
72:SH:134:VAL:HG12	72:SH:173:PHE:CD2	2.52	0.45
5:L5:1194:G:H2'	5:L5:1195:G:H8	1.80	0.44
5:L5:2459:G:N2	5:L5:2462:C:OP2	2.45	0.44
5:L5:4301:U:OP2	5:L5:4303:C:N4	2.50	0.44
7:L8:52:A:H5'	44:Ll:21:ARG:HD3	1.99	0.44
9:LB:165:HIS:HA	9:LB:179:HIS:O	2.16	0.44
16:LI:183:ASP:OD1	16:LI:184:MET:N	2.50	0.44
18:LL:111:GLN:O	18:LL:115:GLN:HG2	2.17	0.44
31:LY:21:ALA:HB1	31:LY:25:ILE:HG13	1.98	0.44
50:Ls:77:LYS:HD2	50:Ls:198:ILE:HD11	1.99	0.44
68:SB:23:ASP:N	68:SB:23:ASP:OD1	2.48	0.44
70:SE:242:LYS:HD3	70:SE:242:LYS:HA	1.75	0.44
81:SY:42:GLU:O	81:SY:46:LYS:HG3	2.17	0.44
82:Sa:39:PHE:CE2	82:Sa:41:ILE:HD11	2.52	0.44
85:S2:16:G:H2'	85:S2:17:C:C6	2.52	0.44
85:S2:753:C:C4	85:S2:791:C:H4'	2.52	0.44
85:S2:1179:G:N2	85:S2:1182:A:OP2	2.45	0.44
85:S2:1420:G:O2'	85:S2:1421:A:N3	2.49	0.44
85:S2:1554:C:OP2	85:S2:1555:U:O2'	2.30	0.44
5:L5:223:G:H4'	5:L5:225:G:N7	2.32	0.44
5:L5:1327:C:H2'	5:L5:1328:G:C8	2.53	0.44
5:L5:2448:G:H2'	5:L5:2449:A:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:4111:U:H2'	5:L5:4112:C:C5	2.52	0.44
5:L5:4507:A:H2'	5:L5:4508:C:C6	2.52	0.44
5:L5:4619:U:H2'	5:L5:4620:OMU:H6	1.99	0.44
10:LC:13:GLU:OE1	10:LC:161:TYR:OH	2.30	0.44
11:LD:89:LYS:HE2	11:LD:229:ASN:HB2	1.97	0.44
23:LQ:99:LYS:HZ2	23:LQ:121:LEU:HD11	1.82	0.44
47:Lo:78:ARG:O	47:Lo:80:LYS:NZ	2.51	0.44
52:SD:114:ALA:HB3	52:SD:117:ARG:HG3	1.99	0.44
54:SK:85:LEU:HD12	54:SK:86:PRO:HD2	1.99	0.44
60:ST:96:SER:HB3	60:ST:99:VAL:HB	1.99	0.44
70:SE:134:LYS:N	85:S2:298:G:OP1	2.40	0.44
73:SI:143:LYS:NZ	85:S2:202:G:OP1	2.42	0.44
85:S2:27:A2M:HM'3	85:S2:27:A2M:H1'	1.66	0.44
85:S2:441:C:H2'	85:S2:442:C:C6	2.52	0.44
5:L5:500:G:H1'	5:L5:504:G:H3'	1.99	0.44
5:L5:2611:A:H2'	5:L5:2612:G:C8	2.52	0.44
5:L5:4986:G:H1'	9:LB:174:ARG:NH2	2.32	0.44
9:LB:29:VAL:HG12	9:LB:31:SER:H	1.83	0.44
11:LD:52:ILE:HA	11:LD:147:ASP:HB3	1.99	0.44
15:LH:115:ARG:HD3	15:LH:123:ILE:HD12	1.99	0.44
24:LR:176:ARG:NH1	24:LR:177:LEU:HG	2.33	0.44
63:Sc:44:ARG:HH22	63:Sc:63:ARG:HH11	1.65	0.44
71:SG:20:ASP:HB3	71:SG:23:LYS:HB2	2.00	0.44
81:SY:36:PRO:O	81:SY:40:ILE:HD12	2.17	0.44
85:S2:544:G:H2'	85:S2:545:A:C8	2.53	0.44
3:CF:21:SER:HA	3:CF:24:THR:HG22	1.99	0.44
3:CF:343:GLN:HE22	3:CF:399:ALA:HB1	1.82	0.44
5:L5:108:A:N1	5:L5:333:U:O2'	2.45	0.44
5:L5:198:A:OP2	31:LY:126:ARG:NH2	2.50	0.44
5:L5:264:C:H2'	5:L5:265:C:C4	2.53	0.44
5:L5:2079:G:H2'	5:L5:2080:U:C6	2.53	0.44
5:L5:2724:G:O2'	5:L5:2726:G:OP2	2.33	0.44
5:L5:3615:G:H1'	29:LW:44:ARG:HD3	2.00	0.44
8:LA:142:GLU:O	8:LA:143:THR:OG1	2.34	0.44
10:LC:150:LEU:O	10:LC:152:LEU:N	2.50	0.44
16:LI:48:LEU:O	16:LI:139:ARG:HA	2.18	0.44
16:LI:85:PHE:HE2	16:LI:87:MET:HE2	1.83	0.44
19:LM:115:ALA:HB1	21:LO:192:TYR:HB3	1.99	0.44
32:LZ:47:ASP:N	32:LZ:69:LYS:O	2.49	0.44
34:Lb:5:LYS:HE2	34:Lb:8:THR:HB	1.98	0.44
38:Lf:25:THR:HB	38:Lf:87:LYS:HD3	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:SL:111:VAL:HG12	75:SL:140:PHE:HB2	2.00	0.44
80:SX:88:ASP:HA	85:S2:617:G:H4'	1.99	0.44
85:S2:751:G:H2'	85:S2:753:C:H41	1.83	0.44
85:S2:808:A:H2	85:S2:855:G:H22	1.65	0.44
85:S2:1259:A:H1'	85:S2:1264:C:N4	2.32	0.44
85:S2:1393:G:H2'	85:S2:1394:G:C8	2.52	0.44
85:S2:1562:C:H2'	85:S2:1563:G:C8	2.49	0.44
85:S2:1808:U:H2'	85:S2:1809:A:H8	1.82	0.44
85:S2:1844:U:H2'	85:S2:1845:A:C8	2.52	0.44
2:Pt:29:C:H2'	2:Pt:30:G:H8	1.83	0.44
4:AT:18:G:H21	4:AT:59:A:H5'	1.83	0.44
5:L5:10:A:H2'	5:L5:11:G:C8	2.53	0.44
5:L5:270:U:H2'	5:L5:271:C:C6	2.52	0.44
5:L5:473:C:H2'	5:L5:474:C:C6	2.52	0.44
5:L5:2347:A:C4	37:Le:31:ILE:HD11	2.53	0.44
5:L5:2568:C:H2'	5:L5:2569:G:C8	2.53	0.44
5:L5:3867:A2M:HM'3	5:L5:3867:A2M:H1'	1.64	0.44
5:L5:3937:C:O2'	20:LN:124:ASP:OD1	2.35	0.44
5:L5:4940:C:O2'	12:LE:246:ARG:NH2	2.51	0.44
9:LB:92:TYR:HB3	9:LB:99:LEU:HD22	1.99	0.44
13:LF:101:VAL:O	13:LF:106:ARG:NH1	2.51	0.44
24:LR:175:GLU:O	24:LR:178:GLN:HG3	2.17	0.44
29:LW:5:LEU:HB3	29:LW:30:GLN:HG3	1.99	0.44
39:Lg:69:LYS:HG3	39:Lg:73:HIS:CD2	2.53	0.44
53:SF:79:HIS:O	53:SF:81:ARG:N	2.47	0.44
60:ST:39:LEU:HD21	60:ST:52:TRP:CZ3	2.52	0.44
60:ST:83:GLN:OE1	60:ST:93:SER:OG	2.32	0.44
71:SG:174:PRO:HB3	85:S2:65:C:C6	2.52	0.44
72:SH:17:ASP:OD1	72:SH:17:ASP:N	2.49	0.44
81:SY:51:THR:OG1	81:SY:53:ASP:OD1	2.29	0.44
85:S2:155:G:H2'	85:S2:156:G:H8	1.83	0.44
85:S2:496:C:H2'	85:S2:497:C:H6	1.83	0.44
85:S2:929:G:H2'	85:S2:930:C:O4'	2.17	0.44
85:S2:1286:G:N2	85:S2:1312:G:O2'	2.50	0.44
85:S2:1713:C:H2'	85:S2:1714:U:C6	2.53	0.44
85:S2:1755:C:H2'	85:S2:1756:C:C6	2.51	0.44
4:AT:22:A:H2'	4:AT:23:U:C6	2.53	0.44
5:L5:982:U:OP1	12:LE:73:TYR:OH	2.23	0.44
5:L5:1419:G:H5''	23:LQ:71:LYS:NZ	2.33	0.44
5:L5:1914:C:H4'	21:LO:89:PRO:HD3	1.99	0.44
5:L5:2876:OMG:HM22	5:L5:2877:G:H5'	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:3867:A2M:H2'	5:L5:3868:G:O4'	2.17	0.44
5:L5:4389:C:H2'	5:L5:4390:A:H8	1.83	0.44
5:L5:4563:U:H2'	5:L5:4564:A:C8	2.52	0.44
5:L5:4882:U:OP1	19:LM:117:LYS:NZ	2.50	0.44
8:LA:20:VAL:HA	8:LA:23:ARG:HG3	1.98	0.44
12:LE:180:VAL:HG21	12:LE:258:LEU:HD11	1.99	0.44
13:LF:29:LYS:HD2	13:LF:32:ARG:HH21	1.83	0.44
14:LG:162:ASP:HB3	14:LG:163:PRO:HD3	1.99	0.44
16:LI:87:MET:HE3	16:LI:87:MET:HB2	1.76	0.44
21:LO:124:LEU:HD23	21:LO:124:LEU:HA	1.86	0.44
32:LZ:88:ASP:OD1	32:LZ:88:ASP:N	2.39	0.44
51:Lt:130:LYS:NZ	51:Lt:157:SER:O	2.51	0.44
52:SD:42:THR:OG1	52:SD:45:ARG:O	2.24	0.44
54:SK:3:MET:HE1	54:SK:11:ILE:HD12	2.00	0.44
54:SK:65:ARG:NH1	64:Sd:20:SER:OG	2.50	0.44
55:SM:36:ARG:NH1	85:S2:1310:U:OP1	2.51	0.44
56:SP:56:LEU:HD22	56:SP:80:LEU:HD11	2.00	0.44
60:ST:6:VAL:HG12	60:ST:135:ALA:HB2	2.00	0.44
66:Sg:239:LEU:HD11	66:Sg:248:LEU:HD21	2.00	0.44
67:SA:6:ASP:OD1	67:SA:6:ASP:N	2.50	0.44
69:SC:94:ILE:HD11	69:SC:159:LYS:HG2	1.99	0.44
69:SC:94:ILE:HG13	69:SC:95:ASP:N	2.32	0.44
85:S2:887:U:N3	85:S2:898:U:O4	2.51	0.44
85:S2:1468:C:H2'	85:S2:1469:A:H8	1.83	0.44
85:S2:1597:C:H4'	85:S2:1603:G:O6	2.18	0.44
5:L5:3848:U:H2'	5:L5:3849:A:C8	2.52	0.44
5:L5:4163:U:OP2	14:LG:53:ARG:NH2	2.50	0.44
5:L5:4769:G:OP1	21:LO:176:ARG:NH1	2.47	0.44
5:L5:5057:C:H2'	5:L5:5058:A:C8	2.53	0.44
6:L7:119:U:C2	11:LD:261:VAL:HG11	2.53	0.44
9:LB:59:GLU:HB2	9:LB:366:LYS:HE2	1.98	0.44
13:LF:241:ASN:O	13:LF:245:ARG:HG2	2.18	0.44
19:LM:104:MET:HG3	19:LM:108:ASP:HB2	1.99	0.44
30:LX:127:LEU:HD11	30:LX:135:LYS:HE3	2.00	0.44
52:SD:76:ARG:HG3	54:SK:68:TYR:HE1	1.82	0.44
54:SK:64:TRP:CD2	64:Sd:23:VAL:HG22	2.52	0.44
58:SR:109:LEU:HG	58:SR:111:PHE:HD2	1.81	0.44
61:SU:67:LYS:HG2	61:SU:78:ASP:HB2	1.99	0.44
66:Sg:268:ASP:OD1	66:Sg:269:GLU:N	2.50	0.44
67:SA:42:LYS:HD3	67:SA:46:ILE:HB	1.98	0.44
85:S2:1221:G:H2'	85:S2:1222:G:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Pt:56:C:O4'	17:LJ:64:ARG:NE	2.43	0.44
3:CF:6:THR:O	3:CF:85:TYR:HB2	2.18	0.44
5:L5:386:A:O2'	31:LY:87:ARG:NH1	2.51	0.44
5:L5:1431:C:H2'	5:L5:1432:G:O4'	2.18	0.44
5:L5:1613:A:H5''	8:LA:183:GLY:HA2	2.00	0.44
5:L5:1881:C:H5'	5:L5:2281:U:H1'	1.98	0.44
5:L5:4232:U:H5''	47:Lo:3:ASN:O	2.18	0.44
9:LB:258:HIS:HA	9:LB:260:ALA:H	1.82	0.44
23:LQ:32:TYR:CD1	23:LQ:35:LEU:HD12	2.53	0.44
25:LS:15:ARG:HD2	25:LS:25:PRO:HG2	1.99	0.44
63:Sc:10:LYS:HE2	63:Sc:34:PHE:CD2	2.52	0.44
69:SC:78:LEU:HD12	69:SC:81:ILE:HD12	2.00	0.44
72:SH:137:SER:HB3	72:SH:162:GLN:NE2	2.31	0.44
3:CF:277:VAL:HA	3:CF:288:GLU:HA	2.00	0.44
5:L5:197:A:N1	5:L5:225:G:O2'	2.44	0.44
5:L5:1081:C:C2'	5:L5:1082:C:H5'	2.48	0.44
5:L5:1826:G:H4'	34:Lb:43:MET:HE3	1.99	0.44
5:L5:1982:G:O2'	5:L5:2010:A:O2'	2.24	0.44
5:L5:2864:A:H2'	5:L5:2865:U:C6	2.52	0.44
5:L5:5041:G:N2	9:LB:389:MET:O	2.45	0.44
88:L5:5292:SPM:HN11	88:L5:5292:SPM:H41	1.63	0.44
13:LF:237:GLU:HG2	25:LS:38:VAL:HG22	1.99	0.44
19:LM:118:MET:HG2	21:LO:192:TYR:CZ	2.53	0.44
21:LO:126:VAL:HG13	21:LO:127:VAL:HG13	2.00	0.44
33:La:36:GLY:HA3	33:La:40:HIS:CE1	2.52	0.44
37:Le:98:GLU:HG2	37:Le:123:THR:OG1	2.18	0.44
52:SD:138:VAL:HG12	52:SD:142:LEU:HD11	2.00	0.44
60:ST:72:VAL:O	60:ST:76:THR:HG23	2.18	0.44
67:SA:32:PHE:CD1	85:S2:1097:G:H4'	2.53	0.44
80:SX:22:TRP:HE3	80:SX:28:LYS:HD2	1.83	0.44
85:S2:159:A2M:HM'3	85:S2:159:A2M:H1'	1.55	0.44
85:S2:1374:C:H2'	85:S2:1375:G:O4'	2.18	0.44
3:CF:8:ILE:HD13	3:CF:85:TYR:CD1	2.53	0.43
5:L5:75:G:O6	18:LL:103:ARG:NH1	2.51	0.43
5:L5:264:C:H2'	5:L5:265:C:C5	2.53	0.43
5:L5:1270:A:OP1	34:Lb:107:ARG:NH1	2.47	0.43
5:L5:1392:A:H2'	5:L5:1393:G:C8	2.53	0.43
5:L5:2326:G:H5''	37:Le:127:ALA:HB1	2.00	0.43
10:LC:279:LEU:HD23	10:LC:279:LEU:HA	1.88	0.43
11:LD:164:LYS:HG2	11:LD:195:HIS:HE1	1.82	0.43
13:LF:50:ILE:HD12	13:LF:186:CYS:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:LH:18:ILE:HG12	15:LH:27:VAL:HG22	2.00	0.43
20:LN:200:LEU:HD22	20:LN:204:ARG:NH1	2.33	0.43
26:LT:28:ALA:O	26:LT:32:ARG:HG2	2.18	0.43
40:Lh:8:ASP:OD1	40:Lh:8:ASP:N	2.49	0.43
42:Lj:85:LYS:HB3	42:Lj:85:LYS:HE3	1.71	0.43
57:SQ:69:ARG:HH21	85:S2:1426:U:P	2.41	0.43
58:SR:28:PHE:HA	58:SR:55:THR:HG21	2.00	0.43
59:SS:138:THR:HA	59:SS:141:ARG:HH21	1.83	0.43
60:ST:62:ARG:NH2	85:S2:1543:U:OP2	2.38	0.43
67:SA:81:ASN:OD1	67:SA:82:THR:N	2.51	0.43
70:SE:21:ASP:HB2	85:S2:829:C:OP1	2.18	0.43
71:SG:56:ASN:HB2	71:SG:108:VAL:HG22	2.00	0.43
77:SO:101:GLY:HA3	77:SO:134:PRO:HD2	2.00	0.43
82:Sa:13:LYS:HD3	82:Sa:13:LYS:HA	1.68	0.43
85:S2:508:A:H3'	85:S2:509:OMG:C8	2.50	0.43
85:S2:835:C:H4'	85:S2:836:G:H8	1.82	0.43
85:S2:1025:U:H2'	85:S2:1026:C:O4'	2.17	0.43
85:S2:1047:C:H2'	85:S2:1048:G:O4'	2.18	0.43
85:S2:1328:OMG:H1'	85:S2:1328:OMG:HM23	1.72	0.43
5:L5:286:U:H2'	5:L5:287:U:C6	2.53	0.43
5:L5:347:A:H2'	5:L5:348:G:C8	2.53	0.43
5:L5:426:A:H2'	5:L5:427:A:C8	2.53	0.43
5:L5:1662:C:H2'	5:L5:1663:C:H6	1.84	0.43
5:L5:1772:C:H2'	5:L5:1773:U:H6	1.83	0.43
5:L5:1961:G:O2'	5:L5:2025:A:N6	2.50	0.43
5:L5:2018:C:H2'	5:L5:2019:C:H6	1.83	0.43
5:L5:4489:G:H4'	89:L5:5290:SPD:H91	2.00	0.43
9:LB:92:TYR:OH	9:LB:182:GLU:OE1	2.34	0.43
15:LH:113:GLU:OE1	15:LH:115:ARG:NH2	2.51	0.43
24:LR:44:LEU:HD22	24:LR:49:LEU:HD12	1.99	0.43
35:Lc:65:MET:HE3	35:Lc:65:MET:HB3	1.91	0.43
56:SP:47:ARG:HE	85:S2:1619:A:P	2.41	0.43
59:SS:62:ASP:OD1	59:SS:62:ASP:N	2.51	0.43
66:Sg:213:ASP:OD1	66:Sg:213:ASP:N	2.51	0.43
67:SA:111:GLN:HA	67:SA:116:PHE:CG	2.53	0.43
69:SC:110:MET:HG2	69:SC:125:LYS:HB3	2.00	0.43
74:SJ:174:LYS:HD3	85:S2:560:A:H5'	2.00	0.43
80:SX:60:LYS:H	80:SX:114:ASP:HB2	1.83	0.43
82:Sa:15:ARG:NH2	85:S2:992:A:C8	2.86	0.43
85:S2:562:U:H2'	85:S2:563:G:C8	2.54	0.43
85:S2:1595:U:H2'	85:S2:1596:U:C6	2.53	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
85:S2:1778:C:H2'	85:S2:1779:G:O4'	2.18	0.43
5:L5:417:G:OP1	5:L5:2329:U:O2'	2.31	0.43
5:L5:1081:C:O2'	5:L5:1082:C:H5'	2.18	0.43
5:L5:4688:C:H2'	5:L5:4689:PSU:C6	2.53	0.43
6:L7:35:U:O2	6:L7:45:U:O2'	2.36	0.43
44:L1:25:GLN:HE22	44:L1:28:ARG:HH12	1.67	0.43
53:SF:127:ARG:H	53:SF:135:ARG:HD2	1.82	0.43
58:SR:24:LEU:HD23	58:SR:34:VAL:HG21	2.00	0.43
58:SR:29:HIS:HA	58:SR:32:LYS:HG2	2.01	0.43
60:ST:5:THR:HG23	60:ST:7:LYS:H	1.83	0.43
85:S2:28:U:H2'	85:S2:29:G:C8	2.50	0.43
85:S2:484:A2M:HM'3	85:S2:484:A2M:H1'	1.78	0.43
85:S2:1501:C:H2'	85:S2:1502:C:H6	1.84	0.43
5:L5:1403:G:N2	5:L5:1415:G:C4	2.87	0.43
5:L5:1994:C:H2'	5:L5:1995:G:H8	1.81	0.43
5:L5:4163:U:H5'	5:L5:4164:C:H5''	2.00	0.43
5:L5:4578:G:H2'	5:L5:4579:PSU:C6	2.53	0.43
12:LE:161:ARG:O	12:LE:182:ASN:ND2	2.51	0.43
21:LO:56:ALA:O	21:LO:60:LYS:HG2	2.18	0.43
21:LO:119:VAL:N	25:LS:168:THR:O	2.47	0.43
29:LW:80:ARG:HH22	85:S2:167:G:H4'	1.83	0.43
39:Lg:82:MET:HE3	39:Lg:82:MET:HB2	1.90	0.43
52:SD:126:ILE:O	52:SD:129:SER:OG	2.32	0.43
53:SF:91:ARG:HD2	62:SZ:103:HIS:CE1	2.53	0.43
60:ST:105:GLN:HA	60:ST:108:GLU:CD	2.44	0.43
64:Sd:43:PHE:O	64:Sd:47:ALA:HB2	2.17	0.43
65:Sf:103:LEU:HD12	65:Sf:105:TYR:CZ	2.53	0.43
68:SB:138:PHE:O	68:SB:213:ARG:N	2.51	0.43
69:SC:81:ILE:HG21	69:SC:88:ILE:HD11	2.00	0.43
72:SH:43:LEU:HD13	72:SH:72:PHE:CE1	2.53	0.43
80:SX:52:LEU:HD11	80:SX:73:GLN:HB2	2.00	0.43
85:S2:804:U:H2'	85:S2:805:U:C6	2.54	0.43
86:Zt:27:U:H2'	86:Zt:28:C:H6	1.84	0.43
3:CF:41:LYS:HA	3:CF:44:LYS:HE2	2.00	0.43
5:L5:711:A:H2'	5:L5:712:C:C6	2.53	0.43
5:L5:1669:A:H4'	5:L5:1685:G:N2	2.33	0.43
5:L5:2577:C:OP1	32:LZ:111:ARG:NH2	2.51	0.43
5:L5:3893:C:H2'	5:L5:3894:A:C8	2.54	0.43
5:L5:4541:G:N2	5:L5:4544:A:OP2	2.45	0.43
5:L5:4750:G:H2'	5:L5:4751:G:C8	2.54	0.43
5:L5:4761:G:OP2	21:LO:37:ARG:NH1	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:L8:36:G:C5	40:Lh:89:ARG:HD3	2.53	0.43
12:LE:99:ASP:OD1	12:LE:99:ASP:N	2.50	0.43
25:LS:83:ARG:HG3	25:LS:125:GLN:HB2	2.01	0.43
29:LW:52:THR:O	29:LW:56:ARG:HG2	2.18	0.43
30:LX:82:THR:HG21	40:Lh:37:THR:HG22	2.00	0.43
36:Ld:123:ASP:OD1	36:Ld:123:ASP:N	2.49	0.43
52:SD:39:VAL:HG12	52:SD:48:ILE:HG12	1.98	0.43
56:SP:18:ARG:NE	59:SS:88:LYS:HG2	2.33	0.43
60:ST:39:LEU:HD23	60:ST:39:LEU:HA	1.74	0.43
61:SU:22:ILE:HG23	61:SU:114:VAL:HG22	1.98	0.43
68:SB:136:ARG:O	68:SB:215:VAL:HA	2.19	0.43
3:CF:96:ARG:CZ	3:CF:430:ARG:HG3	2.47	0.43
5:L5:223:G:H4'	5:L5:225:G:C8	2.53	0.43
5:L5:1333:A:H2'	5:L5:1334:A:H8	1.82	0.43
5:L5:1563:A:H2'	5:L5:1564:A:C8	2.54	0.43
5:L5:1589:C:H2'	5:L5:1590:C:C6	2.54	0.43
5:L5:1875:C:H2'	5:L5:1876:U:C6	2.54	0.43
5:L5:2279:A:O2'	37:Le:48:ARG:NH2	2.52	0.43
36:Ld:59:THR:OG1	36:Ld:104:THR:OG1	2.29	0.43
41:Li:99:LYS:HE2	41:Li:99:LYS:HB2	1.77	0.43
51:Lt:28:LEU:HD23	51:Lt:28:LEU:H	1.84	0.43
62:SZ:68:ILE:HB	62:SZ:109:TYR:HB2	2.00	0.43
71:SG:67:VAL:HG12	71:SG:69:THR:HG22	2.00	0.43
71:SG:126:ASP:OD1	71:SG:126:ASP:N	2.48	0.43
74:SJ:169:ARG:HH12	74:SJ:175:ARG:CZ	2.32	0.43
75:SL:3:ASP:OD1	75:SL:4:ILE:N	2.52	0.43
77:SO:63:LYS:HD3	77:SO:63:LYS:HA	1.85	0.43
85:S2:24:C:O2'	85:S2:25:A:H8	2.02	0.43
85:S2:325:C:N3	85:S2:326:C:O2'	2.47	0.43
85:S2:610:G:H2'	85:S2:611:G:H8	1.83	0.43
3:CF:15:HIS:CE1	3:CF:132:GLN:H	2.30	0.43
4:AT:28:U:H2'	4:AT:29:U:C6	2.54	0.43
5:L5:1194:G:H2'	5:L5:1195:G:C8	2.53	0.43
5:L5:1298:C:H2'	5:L5:1299:G:H8	1.82	0.43
5:L5:1613:A:H5''	8:LA:183:GLY:CA	2.49	0.43
5:L5:2351:OMC:H1'	5:L5:2351:OMC:HM23	1.67	0.43
10:LC:293:LEU:O	10:LC:299:GLN:NE2	2.43	0.43
38:Lf:78:HIS:HB3	38:Lf:83:MET:HB3	2.00	0.43
54:SK:31:LYS:HZ3	54:SK:39:ASN:N	2.17	0.43
81:SY:119:GLY:O	85:S2:84:A:O2'	2.30	0.43
83:Sb:67:THR:OG1	83:Sb:70:LYS:O	2.22	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
85:S2:1231:C:O2'	85:S2:1253:A:N6	2.52	0.43
3:CF:214:TRP:HZ2	3:CF:231:ALA:HB2	1.83	0.43
5:L5:188:G:O2'	5:L5:190:G:OP2	2.25	0.43
5:L5:302:C:H2'	5:L5:303:C:C6	2.53	0.43
5:L5:716:C:OP1	10:LC:317:ASN:HB2	2.19	0.43
5:L5:934:C:N4	10:LC:350:ARG:HH12	2.16	0.43
5:L5:979:C:OP2	12:LE:66:LYS:HD3	2.18	0.43
5:L5:1995:G:H2'	5:L5:1996:C:C6	2.54	0.43
5:L5:2656:U:H5''	32:LZ:38:TYR:HB3	2.00	0.43
5:L5:4524:G:N3	9:LB:252:ALA:HB1	2.34	0.43
5:L5:4749:C:H2'	5:L5:4750:G:O4'	2.19	0.43
8:LA:48:ILE:HG22	48:Lp:54:ILE:HG12	2.00	0.43
11:LD:152:ARG:HG3	11:LD:154:THR:HG23	1.99	0.43
36:Ld:53:ALA:HA	36:Ld:88:LEU:HD21	2.00	0.43
53:SF:73:THR:O	53:SF:89:THR:HG21	2.18	0.43
53:SF:133:THR:HG22	53:SF:134:VAL:HG23	2.00	0.43
57:SQ:90:LYS:HA	57:SQ:93:VAL:HG22	2.00	0.43
57:SQ:139:ALA:HB2	85:S2:1650:A:H5''	2.01	0.43
59:SS:63:GLU:O	59:SS:67:VAL:HG23	2.18	0.43
59:SS:92:ASP:OD1	59:SS:92:ASP:N	2.48	0.43
60:ST:71:GLY:O	60:ST:75:MET:HG2	2.19	0.43
66:Sg:314:ILE:HD12	66:Sg:314:ILE:HA	1.92	0.43
67:SA:145:ILE:HG12	67:SA:159:ILE:HB	2.00	0.43
79:SW:4:MET:SD	85:S2:682:U:O2'	2.68	0.43
79:SW:55:ASP:HB3	83:Sb:25:VAL:HG13	2.01	0.43
85:S2:747:U:C2	85:S2:796:G:N1	2.87	0.43
85:S2:1407:U:H2'	85:S2:1408:U:H6	1.84	0.43
85:S2:1531:A:H2'	85:S2:1532:C:C6	2.54	0.43
4:AT:61:A:OP1	4:AT:63:C:N4	2.51	0.43
5:L5:959:G:C8	12:LE:123:ARG:HG2	2.54	0.43
5:L5:2292:C:H2'	5:L5:2293:U:C6	2.53	0.43
5:L5:2671:C:H2'	5:L5:2672:C:C6	2.54	0.43
5:L5:4750:G:H2'	5:L5:4751:G:H8	1.84	0.43
24:LR:19:LYS:HB2	24:LR:19:LYS:HE2	1.84	0.43
40:Lh:52:LYS:HA	40:Lh:52:LYS:HD3	1.79	0.43
53:SF:182:LYS:HE3	53:SF:182:LYS:HB2	1.85	0.43
63:Sc:44:ARG:NH2	63:Sc:63:ARG:HH11	2.16	0.43
68:SB:167:LYS:HB2	68:SB:167:LYS:HE2	1.85	0.43
85:S2:1189:A:H2'	85:S2:1190:A:C8	2.53	0.43
85:S2:1856:C:H2'	85:S2:1857:G:C8	2.53	0.43
5:L5:1647:U:OP1	89:L5:5291:SPD:H51	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:3910:C:H2'	5:L5:3911:C:H6	1.84	0.43
5:L5:4615:C:H5''	9:LB:357:ARG:HH11	1.84	0.43
5:L5:4638:U:H2'	5:L5:4639:G:N3	2.34	0.43
8:LA:108:PRO:HB2	48:Lp:86:LEU:HD23	2.00	0.43
10:LC:144:ILE:O	10:LC:144:ILE:HG13	2.19	0.43
23:LQ:43:PHE:CD2	23:LQ:133:GLY:HA3	2.54	0.43
50:Ls:29:ILE:HG12	50:Ls:191:GLN:HG2	2.01	0.43
50:Ls:47:LEU:HD11	50:Ls:51:ALA:HB3	2.01	0.43
60:ST:84:ARG:NH1	85:S2:1605:G:OP1	2.43	0.43
62:SZ:56:ASP:OD1	62:SZ:57:LYS:N	2.52	0.43
66:Sg:207:CYS:SG	66:Sg:219:TRP:HB2	2.59	0.43
67:SA:10:MET:SD	67:SA:15:VAL:HG22	2.59	0.43
68:SB:83:LYS:HD3	68:SB:106:THR:HG22	2.01	0.43
73:SI:165:GLN:HB3	73:SI:171:LEU:HD23	2.00	0.43
74:SJ:143:ASN:OD1	85:S2:823:U:N3	2.45	0.43
80:SX:90:CYS:HA	80:SX:93:PHE:CD2	2.54	0.43
85:S2:43:U:OP2	85:S2:485:A:N6	2.45	0.43
85:S2:106:C:OP1	85:S2:431:G:O2'	2.31	0.43
85:S2:867:OMG:HM23	85:S2:867:OMG:H1'	1.79	0.43
85:S2:900:C:H5'	85:S2:901:G:N7	2.34	0.43
85:S2:1199:A:H2'	85:S2:1200:A:C8	2.54	0.43
85:S2:1558:C:H2'	85:S2:1559:C:C6	2.54	0.43
85:S2:1779:G:H2'	85:S2:1780:G:C8	2.54	0.43
86:Zt:19:G:H3'	86:Zt:20:U:H4'	2.00	0.43
5:L5:460:C:H2'	5:L5:461:G:H8	1.84	0.42
5:L5:707:C:O2'	5:L5:4943:A:N1	2.48	0.42
5:L5:1399:G:H2'	5:L5:1400:G:C8	2.53	0.42
5:L5:2415:U:H2'	5:L5:2416:G:C8	2.53	0.42
5:L5:2492:C:H2'	5:L5:2493:G:C8	2.52	0.42
5:L5:2730:U:H2'	5:L5:2731:C:C6	2.54	0.42
5:L5:4392:OMG:HM21	5:L5:4394:A:H2'	2.00	0.42
5:L5:4601:U:H2'	5:L5:4602:A:H8	1.84	0.42
10:LC:33:ARG:HG2	10:LC:36:ILE:HD12	2.00	0.42
12:LE:161:ARG:NH1	12:LE:273:SER:OG	2.52	0.42
13:LF:162:ILE:HD12	13:LF:167:ILE:HB	2.01	0.42
15:LH:24:THR:HA	15:LH:37:ASP:HA	2.01	0.42
43:Lk:25:ILE:HG21	43:Lk:57:LYS:HZ3	1.82	0.42
50:Ls:29:ILE:HG22	50:Ls:88:PHE:HD1	1.84	0.42
51:Lt:109:ILE:HA	51:Lt:112:ILE:HG12	2.00	0.42
53:SF:100:ILE:HD11	53:SF:108:PRO:HB3	2.00	0.42
68:SB:30:TRP:CG	77:SO:19:PRO:HB3	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:SV:18:SER:HB3	78:SV:72:LEU:HD21	1.99	0.42
80:SX:63:ASN:OD1	85:S2:624:C:N4	2.40	0.42
83:Sb:36:LYS:HG2	83:Sb:43:ILE:HD12	2.01	0.42
83:Sb:62:VAL:HG23	83:Sb:74:THR:HG21	2.01	0.42
85:S2:27:A2M:H2'	85:S2:28:U:O4'	2.18	0.42
85:S2:1681:U:H2'	85:S2:1682:C:C6	2.54	0.42
86:Zt:15:G:N1	86:Zt:48:C:N3	2.67	0.42
4:AT:63:C:H2'	4:AT:64:G:C8	2.53	0.42
5:L5:106:A:H1'	5:L5:336:A:N3	2.34	0.42
5:L5:1178:G:H2'	11:LD:286:SER:HB3	2.00	0.42
5:L5:1248:C:H2'	5:L5:1249:C:H6	1.84	0.42
5:L5:1700:G:H5''	5:L5:1704:C:N4	2.27	0.42
5:L5:1703:C:O2'	5:L5:1704:C:O4'	2.31	0.42
5:L5:1751:A:H2'	5:L5:1752:G:H8	1.84	0.42
5:L5:3928:A:H2'	5:L5:3929:G:O4'	2.18	0.42
5:L5:4723:A:H2'	5:L5:4724:A:C8	2.53	0.42
5:L5:4873:G:N7	21:LO:179:LYS:NZ	2.60	0.42
5:L5:4966:A:H5''	9:LB:128:LYS:HG3	2.01	0.42
14:LG:80:ILE:HD11	20:LN:18:VAL:HG23	2.01	0.42
20:LN:140:LYS:HD3	20:LN:140:LYS:HA	1.67	0.42
50:Ls:99:ARG:HG3	50:Ls:103:LEU:HD13	2.01	0.42
66:Sg:251:ALA:HA	66:Sg:256:ILE:HD13	2.01	0.42
68:SB:154:SER:HB3	68:SB:205:TYR:OH	2.19	0.42
74:SJ:60:LEU:HD22	74:SJ:70:ARG:HA	2.01	0.42
79:SW:62:VAL:HG11	83:Sb:8:LEU:HG	2.01	0.42
85:S2:212:C:H2'	85:S2:213:G:C8	2.54	0.42
85:S2:598:G:O2'	85:S2:605:A:N1	2.47	0.42
85:S2:1227:G:C2	85:S2:1228:A:C8	3.07	0.42
5:L5:378:A:O2'	5:L5:413:G:N2	2.48	0.42
5:L5:1308:C:H2'	5:L5:1309:C:C6	2.54	0.42
5:L5:1344:C:H1'	18:LL:10:LEU:HD11	2.01	0.42
5:L5:2823:G:N7	24:LR:20:LYS:HD3	2.33	0.42
5:L5:3610:A:H2'	5:L5:3611:A:C8	2.54	0.42
7:L8:66:A:H2'	7:L8:67:U:C6	2.54	0.42
27:LU:39:PHE:HD1	27:LU:90:TYR:CD2	2.37	0.42
47:Lo:11:PHE:O	47:Lo:81:ARG:NH2	2.51	0.42
61:SU:38:ASP:OD1	61:SU:39:LEU:N	2.52	0.42
70:SE:127:ARG:HG3	70:SE:142:HIS:HA	2.01	0.42
79:SW:30:CYS:SG	79:SW:31:SER:N	2.92	0.42
85:S2:1337:4AC:O5'	85:S2:1337:4AC:H6	2.19	0.42
5:L5:99:A:H5''	20:LN:184:ILE:HD12	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:197:A:N3	5:L5:222:C:O2'	2.48	0.42
5:L5:2424:OMG:H1'	5:L5:2424:OMG:HM23	1.78	0.42
5:L5:4268:A:H61	5:L5:4281:A:H62	1.67	0.42
5:L5:4770:U:H2'	5:L5:4771:C:C6	2.55	0.42
17:LJ:40:LEU:HD23	17:LJ:40:LEU:HA	1.89	0.42
59:SS:24:ARG:H	59:SS:24:ARG:HG2	1.71	0.42
61:SU:31:SER:HB2	61:SU:107:GLU:OE2	2.18	0.42
73:SI:26:LYS:HE3	85:S2:444:G:O6	2.19	0.42
79:SW:77:PRO:HG2	79:SW:79:PHE:CE2	2.54	0.42
79:SW:106:THR:OG1	79:SW:111:MET:HE2	2.19	0.42
80:SX:124:LYS:NZ	85:S2:29:G:OP1	2.50	0.42
81:SY:77:ASP:OD1	81:SY:77:ASP:N	2.45	0.42
85:S2:1714:U:H2'	85:S2:1715:A:C8	2.54	0.42
86:Zt:26:A:N6	86:Zt:44:G:C6	2.81	0.42
3:CF:146:LYS:NZ	3:CF:423:ARG:HH22	2.17	0.42
5:L5:19:G:P	40:Lh:93:ARG:HE	2.42	0.42
5:L5:73:A:N7	18:LL:103:ARG:NH2	2.68	0.42
5:L5:123:C:H2'	5:L5:124:C:H6	1.84	0.42
5:L5:662:C:H2'	5:L5:663:G:C8	2.55	0.42
5:L5:4113:U:H4'	5:L5:4115:G:C5	2.54	0.42
5:L5:4593:C:H2'	5:L5:4594:U:H6	1.84	0.42
7:L8:144:U:H2'	7:L8:145:C:C6	2.54	0.42
10:LC:266:THR:HG22	10:LC:267:TRP:H	1.83	0.42
26:LT:50:LYS:HB3	26:LT:50:LYS:HE2	1.84	0.42
35:Lc:18:LEU:O	35:Lc:22:MET:HG2	2.19	0.42
53:SF:40:ALA:HB3	53:SF:67:PRO:HA	2.02	0.42
55:SM:91:LEU:HD23	55:SM:91:LEU:HA	1.85	0.42
69:SC:263:LYS:HA	69:SC:267:GLN:HE21	1.84	0.42
72:SH:50:GLU:HG2	72:SH:60:ILE:HD13	2.01	0.42
5:L5:351:C:OP2	10:LC:197:ARG:NH1	2.39	0.42
5:L5:935:A:N7	19:LM:46:ARG:NH2	2.67	0.42
5:L5:1095:A:N1	5:L5:1200:G:C6	2.87	0.42
5:L5:1371:A:N1	7:L8:28:C:O2'	2.53	0.42
5:L5:2389:A:H4'	36:Ld:70:LYS:HG3	2.02	0.42
5:L5:2570:U:H2'	5:L5:2571:C:C6	2.54	0.42
5:L5:2676:A:OP2	5:L5:2676:A:H8	2.03	0.42
5:L5:3893:C:O2'	5:L5:4979:A:N1	2.52	0.42
5:L5:4208:U:OP1	5:L5:4334:U:O2'	2.33	0.42
5:L5:5025:C:H2'	5:L5:5028:G:H1'	2.02	0.42
10:LC:141:GLY:O	10:LC:204:ARG:NH1	2.25	0.42
13:LF:96:ARG:HH12	13:LF:224:THR:HG22	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:LG:57:TRP:O	14:LG:62:ARG:NH1	2.53	0.42
16:LI:36:LEU:HD11	16:LI:69:ARG:HD2	2.02	0.42
24:LR:139:MET:HG2	24:LR:143:HIS:CE1	2.54	0.42
26:LT:144:ASN:HB2	26:LT:146:LYS:HE2	2.01	0.42
37:Le:35:TRP:CZ2	37:Le:56:PRO:HD2	2.54	0.42
52:SD:47:GLU:OE1	52:SD:85:GLU:HB2	2.19	0.42
55:SM:36:ARG:HB3	85:S2:1286:G:O6	2.20	0.42
61:SU:56:MET:HB2	61:SU:86:LYS:HG3	2.00	0.42
61:SU:87:ARG:HH22	85:S2:1447:G:P	2.42	0.42
70:SE:89:VAL:HG11	70:SE:119:ALA:HB1	2.02	0.42
71:SG:175:LYS:HG3	85:S2:77:A:H2	1.85	0.42
72:SH:145:ARG:HE	79:SW:51:GLU:HB2	1.85	0.42
73:SI:132:GLU:O	73:SI:136:ILE:HG23	2.19	0.42
85:S2:496:C:H2'	85:S2:497:C:C6	2.55	0.42
85:S2:1651:A:H2'	85:S2:1652:G:H8	1.83	0.42
86:Zt:15:G:N1	86:Zt:21:A:N3	2.65	0.42
5:L5:148:C:OP2	14:LG:197:LYS:NZ	2.49	0.42
5:L5:422:C:H2'	5:L5:423:G:H8	1.85	0.42
5:L5:715:G:OP1	10:LC:321:ASN:ND2	2.44	0.42
5:L5:1703:C:HO2'	5:L5:1704:C:C5'	2.32	0.42
5:L5:2007:G:H2'	5:L5:2008:U:C6	2.54	0.42
12:LE:222:LEU:HB2	12:LE:237:LYS:HD2	2.01	0.42
15:LH:128:MET:SD	15:LH:157:SER:HB3	2.60	0.42
48:Lp:61:MET:HE3	48:Lp:61:MET:HB3	1.85	0.42
51:Lt:11:LYS:HD2	51:Lt:11:LYS:HA	1.91	0.42
53:SF:22:LYS:NZ	53:SF:98:GLU:OE2	2.40	0.42
55:SM:37:GLU:OE2	85:S2:1286:G:N1	2.42	0.42
65:Sf:123:SER:HG	65:Sf:144:CYS:HB3	1.85	0.42
72:SH:30:LEU:O	72:SH:33:ASN:ND2	2.52	0.42
73:SI:45:THR:OG1	85:S2:308:G:OP1	2.31	0.42
76:SN:15:ALA:HB2	83:Sb:20:LYS:HD3	2.02	0.42
81:SY:9:THR:OG1	81:SY:23:MET:HG3	2.20	0.42
85:S2:948:C:H2'	85:S2:949:G:H8	1.85	0.42
85:S2:1702:G:H2'	85:S2:1703:OMC:O4'	2.20	0.42
3:CF:58:TRP:CD1	3:CF:67:ARG:HG2	2.54	0.42
3:CF:149:ILE:HA	3:CF:188:VAL:HG23	2.02	0.42
5:L5:99:A:H2'	5:L5:100:C:O2	2.20	0.42
5:L5:982:U:H2'	5:L5:983:C:C6	2.55	0.42
5:L5:1175:A:H2	5:L5:1185:G:H1	1.66	0.42
5:L5:1754:U:H1'	11:LD:3:PHE:HZ	1.85	0.42
5:L5:1976:G:H22	51:Lt:139:VAL:HG11	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:1977:C:O2'	5:L5:1978:C:OP1	2.34	0.42
5:L5:2749:C:H2'	5:L5:2750:G:C8	2.55	0.42
5:L5:2844:A:O2'	5:L5:4631:G:H4'	2.20	0.42
5:L5:2895:A:H2'	5:L5:2896:G:C8	2.55	0.42
5:L5:4236:G:H4'	5:L5:4328:G:O2'	2.20	0.42
5:L5:4508:C:N3	5:L5:4512:U:H5	2.17	0.42
6:L7:82:G:H2'	6:L7:83:A:C8	2.54	0.42
14:LG:153:GLN:N	14:LG:204:PHE:O	2.45	0.42
51:Lt:119:ARG:NH2	51:Lt:123:ARG:HH12	2.18	0.42
55:SM:80:ASP:OD1	55:SM:80:ASP:N	2.53	0.42
57:SQ:101:ASP:OD1	57:SQ:101:ASP:N	2.53	0.42
58:SR:33:ARG:HD3	58:SR:33:ARG:HA	1.79	0.42
66:Sg:200:VAL:HA	66:Sg:206:LEU:O	2.19	0.42
67:SA:206:ASP:O	67:SA:210:ILE:HD12	2.19	0.42
75:SL:8:ARG:HH21	85:S2:390:C:HO2'	1.64	0.42
81:SY:102:THR:OG1	81:SY:106:GLN:OE1	2.36	0.42
85:S2:1804:U:H2'	85:S2:1805:G:C8	2.55	0.42
1:CI:63:ARG:HD2	1:CI:63:ARG:HA	1.85	0.42
4:AT:53:G:H2'	4:AT:54:G:C8	2.52	0.42
5:L5:31:U:H2'	5:L5:32:G:O4'	2.20	0.42
5:L5:1195:G:H2'	5:L5:1196:G:H8	1.83	0.42
5:L5:2345:G:N7	33:La:9:ARG:NH2	2.68	0.42
5:L5:2610:G:H2'	5:L5:2611:A:C8	2.55	0.42
5:L5:3911:C:H2'	5:L5:3912:U:C6	2.54	0.42
5:L5:4089:G:H2'	5:L5:4090:G:H8	1.84	0.42
5:L5:4460:U:H2'	5:L5:4461:C:C6	2.55	0.42
9:LB:29:VAL:HA	9:LB:220:ILE:HD13	2.02	0.42
12:LE:243:THR:HG22	12:LE:245:GLN:H	1.84	0.42
13:LF:222:LYS:N	13:LF:232:ASP:OD1	2.45	0.42
13:LF:236:ARG:HD3	13:LF:239:GLN:HB2	2.02	0.42
16:LI:54:SER:OG	16:LI:130:HIS:O	2.38	0.42
17:LJ:56:THR:OG1	17:LJ:64:ARG:N	2.49	0.42
46:Ln:12:ARG:NH2	85:S2:1847:G:O6	2.53	0.42
52:SD:146:ARG:NH1	85:S2:1489:A:N3	2.67	0.42
65:Sf:107:LYS:O	65:Sf:115:SER:OG	2.33	0.42
66:Sg:57:ARG:NH2	66:Sg:94:THR:O	2.53	0.42
66:Sg:164:ILE:HG22	66:Sg:178:ASN:HA	2.01	0.42
66:Sg:241:PHE:CE2	66:Sg:248:LEU:HD12	2.55	0.42
67:SA:147:LEU:HD13	67:SA:161:ILE:HB	2.02	0.42
69:SC:185:THR:OG1	85:S2:1155:U:OP1	2.30	0.42
85:S2:115:U:H2'	85:S2:116:OMU:C6	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
85:S2:1719:A:N6	85:S2:1814:G:O2'	2.53	0.42
3:CF:360:VAL:HA	3:CF:369:ALA:HA	2.01	0.42
5:L5:268:G:H2'	5:L5:269:G:C8	2.55	0.42
5:L5:935:A:O2'	19:LM:44:GLN:O	2.33	0.42
5:L5:2021:G:OP1	50:Ls:58:ASN:N	2.48	0.42
5:L5:2300:A:N7	10:LC:143:ARG:NH1	2.67	0.42
5:L5:4102:C:H42	5:L5:4106:G:H22	1.68	0.42
8:LA:80:GLU:HB2	8:LA:170:ALA:HA	2.01	0.42
11:LD:263:LYS:HD3	11:LD:263:LYS:HA	1.83	0.42
12:LE:91:THR:HA	12:LE:108:LYS:HA	2.01	0.42
21:LO:36:VAL:HG21	21:LO:117:ARG:HD3	2.00	0.42
55:SM:35:ILE:HG12	85:S2:1285:G:H5'	2.01	0.42
63:Sc:66:ARG:NH1	63:Sc:68:LEU:HD23	2.35	0.42
67:SA:76:VAL:HG12	67:SA:123:VAL:HB	2.01	0.42
68:SB:145:LYS:HB2	68:SB:145:LYS:HE3	1.72	0.42
77:SO:42:VAL:HG11	77:SO:78:ALA:HA	2.01	0.42
79:SW:5:ASN:HB3	79:SW:8:ALA:HB3	2.02	0.42
85:S2:186:C:H2'	85:S2:187:G:C8	2.55	0.42
85:S2:414:A:H2'	85:S2:415:A:H8	1.85	0.42
3:CF:322:ARG:NH2	4:AT:1:G:O5'	2.53	0.41
4:AT:26:C:H2'	4:AT:27:G:H8	1.84	0.41
5:L5:382:G:H4'	5:L5:407:A:N1	2.35	0.41
5:L5:964:A:H2'	5:L5:965:G:H4'	2.02	0.41
5:L5:1741:G:O6	6:L7:103:A:O2'	2.26	0.41
5:L5:1993:C:H2'	5:L5:1994:C:C6	2.54	0.41
5:L5:2846:G:OP1	28:LV:85:ARG:NH2	2.53	0.41
5:L5:3932:U:H2'	5:L5:3933:G:H8	1.85	0.41
5:L5:4291:G:H5'	5:L5:4293:PSU:C6	2.55	0.41
5:L5:4523:A2M:H5''	5:L5:4524:G:H5'	2.02	0.41
11:LD:179:ARG:HD3	11:LD:179:ARG:HA	1.73	0.41
12:LE:150:LEU:HD11	12:LE:164:PHE:HB2	2.02	0.41
13:LF:46:ARG:O	13:LF:50:ILE:HG12	2.20	0.41
32:LZ:33:THR:C	32:LZ:35:ASP:H	2.28	0.41
53:SF:167:LYS:HA	62:SZ:71:ALA:HB1	2.01	0.41
55:SM:112:LYS:HE2	55:SM:112:LYS:HB2	1.83	0.41
67:SA:85:ARG:NH1	67:SA:203:PHE:O	2.50	0.41
68:SB:186:ASN:HA	68:SB:189:ILE:HD12	2.02	0.41
71:SG:191:ARG:HH12	85:S2:312:G:H2'	1.84	0.41
73:SI:65:PHE:HA	73:SI:187:GLY:O	2.20	0.41
73:SI:125:LYS:HB2	73:SI:128:LYS:HZ3	1.85	0.41
85:S2:66:G:H2'	85:S2:67:C:H4'	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
85:S2:815:U:C2	85:S2:816:A:C8	3.08	0.41
85:S2:1330:G:N7	85:S2:1492:U:H3'	2.35	0.41
85:S2:1729:U:H3	85:S2:1805:G:H1	1.68	0.41
5:L5:1567:U:H2'	5:L5:1568:C:C6	2.55	0.41
5:L5:4543:G:H2'	5:L5:4544:A:C8	2.55	0.41
5:L5:5002:U:H2'	5:L5:5003:U:C6	2.55	0.41
7:L8:75:OMG:HM23	7:L8:75:OMG:H1'	1.77	0.41
7:L8:119:C:H2'	7:L8:120:G:H8	1.84	0.41
11:LD:41:LYS:NZ	26:LT:30:TYR:O	2.34	0.41
12:LE:183:ARG:HA	12:LE:183:ARG:HD2	1.84	0.41
13:LF:37:PHE:HZ	34:Lb:113:ALA:HB1	1.86	0.41
23:LQ:69:LYS:HA	23:LQ:69:LYS:HD3	1.89	0.41
37:Le:85:LEU:HD21	37:Le:115:ALA:HB2	2.02	0.41
40:Lh:104:THR:O	40:Lh:108:GLN:HG2	2.21	0.41
50:Ls:16:LYS:O	50:Ls:19:GLN:HG3	2.20	0.41
61:SU:92:HIS:CD2	85:S2:1433:C:H42	2.37	0.41
66:Sg:195:LEU:HA	66:Sg:211:GLY:HA3	2.02	0.41
66:Sg:260:ASP:O	66:Sg:264:LYS:N	2.53	0.41
71:SG:2:LYS:HB3	71:SG:15:LEU:HD11	2.02	0.41
72:SH:25:GLN:O	72:SH:28:LEU:HG	2.20	0.41
72:SH:166:VAL:O	72:SH:170:VAL:HG13	2.20	0.41
74:SJ:176:LYS:HA	74:SJ:179:LYS:HG2	2.01	0.41
86:Zt:19:G:HO2'	86:Zt:48:C:N4	2.17	0.41
5:L5:330:G:N7	89:L5:5284:SPD:N1	2.68	0.41
5:L5:457:G:H2'	5:L5:458:C:H6	1.85	0.41
5:L5:3610:A:H2'	5:L5:3611:A:H8	1.85	0.41
5:L5:3796:U:O2'	85:S2:1720:U:O2'	2.32	0.41
8:LA:180:LEU:HD22	48:Lp:18:TYR:HB3	2.03	0.41
9:LB:220:ILE:HB	9:LB:346:THR:HB	2.02	0.41
12:LE:95:PRO:HA	12:LE:104:THR:HG22	2.01	0.41
15:LH:8:GLN:HG2	15:LH:74:CYS:SG	2.61	0.41
17:LJ:104:ASN:HB2	17:LJ:133:VAL:HA	2.02	0.41
19:LM:38:VAL:O	19:LM:47:ARG:HA	2.19	0.41
52:SD:119:CYS:HB3	52:SD:152:PHE:HD2	1.85	0.41
59:SS:1:MET:SD	59:SS:1:MET:N	2.93	0.41
66:Sg:59:LEU:HD23	66:Sg:90:TRP:CD2	2.55	0.41
68:SB:155:TYR:OH	85:S2:989:C:OP2	2.27	0.41
69:SC:60:TRP:CZ2	69:SC:62:PRO:HB3	2.55	0.41
70:SE:146:THR:HG21	85:S2:122:G:H21	1.86	0.41
72:SH:18:GLU:OE1	72:SH:18:GLU:N	2.53	0.41
72:SH:33:ASN:ND2	72:SH:36:LEU:HB3	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
72:SH:37:LYS:HA	72:SH:40:LEU:HB3	2.02	0.41
73:SI:49:ARG:HE	85:S2:446:G:H5''	1.85	0.41
75:SL:23:VAL:HG23	75:SL:25:LEU:HG	2.01	0.41
79:SW:42:MET:HB3	79:SW:42:MET:HE2	1.89	0.41
85:S2:12:U:H2'	85:S2:13:C:C6	2.55	0.41
85:S2:1631:U:H2'	85:S2:1632:G:O4'	2.19	0.41
86:Zt:48:C:C4	86:Zt:59:G:C5	3.08	0.41
3:CF:185:PRO:HA	3:CF:188:VAL:HG12	2.02	0.41
5:L5:318:A:H2'	5:L5:319:A:C8	2.55	0.41
5:L5:423:G:H2'	5:L5:424:U:C6	2.56	0.41
5:L5:689:U:H2'	5:L5:690:C:C6	2.56	0.41
5:L5:1080:C:C2	5:L5:1220:G:N2	2.89	0.41
5:L5:1625:OMG:HM23	20:LN:81:TYR:HE2	1.85	0.41
5:L5:2059:C:O2	25:LS:118:ARG:NH2	2.54	0.41
5:L5:4406:U:C2	5:L5:4407:G:C8	3.09	0.41
6:L7:55:A:H4'	17:LJ:155:HIS:HB2	2.03	0.41
8:LA:7:GLY:HA2	8:LA:10:LYS:HG3	2.02	0.41
9:LB:337:VAL:HG11	9:LB:345:LEU:HD13	2.02	0.41
10:LC:334:THR:HG21	13:LF:51:TYR:OH	2.20	0.41
11:LD:239:MET:HA	11:LD:242:LYS:NZ	2.35	0.41
16:LI:84:GLY:O	16:LI:140:THR:OG1	2.26	0.41
16:LI:88:ARG:HG2	16:LI:90:ARG:HD2	2.01	0.41
18:LL:48:PRO:HG3	40:Lh:118:LYS:HE2	2.00	0.41
19:LM:6:PHE:H	19:LM:11:ARG:NH2	2.18	0.41
21:LO:81:TRP:HB2	21:LO:104:VAL:HG21	2.02	0.41
33:La:89:ASN:O	33:La:93:ASN:HB2	2.20	0.41
50:Ls:180:ILE:O	50:Ls:182:PRO:HD3	2.20	0.41
55:SM:31:LEU:HG	55:SM:33:ARG:HG3	2.03	0.41
56:SP:34:MET:HB3	56:SP:42:ARG:HG3	2.02	0.41
60:ST:110:LEU:O	60:ST:111:LYS:HG3	2.20	0.41
67:SA:11:LYS:O	67:SA:15:VAL:HG23	2.20	0.41
69:SC:74:LYS:HA	69:SC:74:LYS:HD3	1.91	0.41
74:SJ:124:HIS:CD2	84:Se:35:ARG:HD2	2.55	0.41
76:SN:55:ARG:HD3	85:S2:1017:U:H5'	2.02	0.41
79:SW:6:VAL:HG13	79:SW:29:PRO:HB2	2.02	0.41
83:Sb:42:LYS:HE3	83:Sb:58:GLY:H	1.84	0.41
85:S2:993:G:OP1	85:S2:1131:G:N2	2.48	0.41
1:CI:75:LYS:H	27:LU:117:ILE:C	2.29	0.41
3:CF:370:CYS:HA	3:CF:406:PRO:HA	2.02	0.41
4:AT:2:U:H2'	4:AT:3:C:C6	2.56	0.41
4:AT:61:A:H5''	4:AT:62:C:C5	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:965:G:H21	5:L5:2092:G:H1'	1.84	0.41
5:L5:1278:C:H2'	5:L5:1279:A:O4'	2.20	0.41
5:L5:1435:G:N1	5:L5:1449:C:N3	2.36	0.41
5:L5:4070:U:H2'	5:L5:4071:U:C6	2.56	0.41
5:L5:4578:G:H2'	5:L5:4579:PSU:H6	1.86	0.41
14:LG:38:ASN:OD1	14:LG:38:ASN:N	2.52	0.41
18:LL:18:TRP:CD1	18:LL:18:TRP:H	2.37	0.41
20:LN:149:GLN:NE2	40:Lh:99:GLU:O	2.53	0.41
21:LO:47:PHE:HA	21:LO:136:ALA:HB2	2.02	0.41
28:LV:87:SER:HA	28:LV:97:TYR:HB3	2.02	0.41
31:LY:13:LYS:O	31:LY:17:ARG:HD3	2.20	0.41
36:Ld:33:ILE:HD11	36:Ld:45:ALA:HA	2.01	0.41
44:Ll:23:ILE:HD11	44:Ll:28:ARG:HE	1.84	0.41
44:Ll:42:ARG:HG3	44:Ll:47:THR:HG23	2.01	0.41
55:SM:28:HIS:CE1	55:SM:115:GLY:HA3	2.55	0.41
63:Sc:23:SER:O	85:S2:1681:U:O2'	2.38	0.41
67:SA:18:PHE:CD1	67:SA:23:THR:HG21	2.54	0.41
74:SJ:114:VAL:HG23	74:SJ:126:ALA:HB1	2.02	0.41
85:S2:24:C:HO2'	85:S2:25:A:C5'	2.34	0.41
4:AT:6:C:H2'	4:AT:7:G:C8	2.56	0.41
5:L5:169:G:O6	5:L5:170:C:N4	2.53	0.41
5:L5:1415:G:H2'	5:L5:1416:G:C8	2.56	0.41
5:L5:1631:A:C2	8:LA:204:MET:HG2	2.55	0.41
5:L5:1811:G:H21	34:Lb:57:MET:HE2	1.85	0.41
5:L5:1979:A:H61	5:L5:1984:A:P	2.44	0.41
5:L5:2412:A:H2'	5:L5:2413:U:C6	2.56	0.41
5:L5:3690:U:H2'	5:L5:3691:G:O4'	2.21	0.41
5:L5:4593:C:H2'	5:L5:4594:U:C6	2.56	0.41
9:LB:285:TYR:N	9:LB:332:MET:O	2.52	0.41
12:LE:264:ILE:HA	12:LE:265:PRO:HD3	1.97	0.41
13:LF:182:TYR:CZ	13:LF:203:GLU:HG2	2.55	0.41
14:LG:176:LYS:HD3	41:Li:43:MET:HE1	2.03	0.41
15:LH:101:ILE:HG23	15:LH:114:ILE:HG23	2.01	0.41
16:LI:36:LEU:HD21	16:LI:69:ARG:NH1	2.36	0.41
22:LP:52:THR:HG23	22:LP:85:LYS:HG3	2.01	0.41
51:Lt:79:ALA:HA	51:Lt:82:ILE:HG22	2.03	0.41
59:SS:121:ARG:HG3	59:SS:131:VAL:HB	2.03	0.41
66:Sg:135:LEU:HD23	66:Sg:135:LEU:HA	1.92	0.41
73:SI:89:GLU:OE1	73:SI:92:ARG:NH2	2.54	0.41
78:SV:42:VAL:HG23	78:SV:43:THR:HG23	2.03	0.41
79:SW:79:PHE:N	79:SW:125:ILE:HG22	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
85:S2:428:OMU:H6	85:S2:428:OMU:H2'	1.86	0.41
85:S2:959:G:H1'	85:S2:964:A:N6	2.36	0.41
85:S2:991:G:C6	85:S2:1134:G:H4'	2.55	0.41
85:S2:1088:U:H4'	85:S2:1089:G:OP2	2.21	0.41
85:S2:1304:U:H2'	85:S2:1305:C:C6	2.55	0.41
85:S2:1731:A:H2'	85:S2:1732:G:C8	2.55	0.41
5:L5:1352:C:O2'	5:L5:1356:U:OP1	2.34	0.41
5:L5:1354:A:OP2	23:LQ:106:THR:HG21	2.21	0.41
5:L5:2654:C:H2'	5:L5:2655:C:H6	1.86	0.41
5:L5:3932:U:H2'	5:L5:3933:G:C8	2.55	0.41
13:LF:214:SER:OG	13:LF:215:SER:N	2.51	0.41
14:LG:38:ASN:ND2	14:LG:43:GLN:OE1	2.53	0.41
20:LN:178:HIS:HA	20:LN:181:HIS:NE2	2.36	0.41
46:Ln:17:ARG:NH1	85:S2:1173:A:OP1	2.54	0.41
59:SS:15:VAL:HG13	59:SS:68:ILE:HD11	2.03	0.41
62:SZ:65:TYR:HB3	86:Zt:34:U:H5'	2.02	0.41
67:SA:215:GLN:O	67:SA:219:GLU:HG2	2.21	0.41
70:SE:195:ILE:HD13	70:SE:210:VAL:HG22	2.03	0.41
72:SH:25:GLN:O	72:SH:28:LEU:N	2.53	0.41
72:SH:113:LYS:HA	72:SH:113:LYS:HD2	1.66	0.41
73:SI:10:LYS:NZ	85:S2:370:G:O2'	2.54	0.41
81:SY:119:GLY:HA2	85:S2:85:A:H5'	2.03	0.41
85:S2:634:A:H2'	85:S2:635:G:C8	2.55	0.41
85:S2:672:A:N6	85:S2:1027:A:OP1	2.45	0.41
85:S2:952:G:H2'	85:S2:953:C:C6	2.54	0.41
85:S2:1442:OMU:HM23	85:S2:1442:OMU:H1'	1.92	0.41
5:L5:180:C:H2'	5:L5:181:C:H6	1.86	0.41
5:L5:382:G:N1	5:L5:385:A:OP2	2.49	0.41
5:L5:468:U:C6	5:L5:469:C:H5	2.39	0.41
5:L5:667:A:H5'	49:Lr:46:ARG:HH22	1.86	0.41
5:L5:1399:G:H2'	5:L5:1400:G:H8	1.86	0.41
5:L5:1869:G:C6	89:L5:5286:SPD:H32	2.55	0.41
5:L5:2262:G:OP2	49:Lr:98:ARG:NH2	2.41	0.41
5:L5:2264:C:H2'	5:L5:2265:G:O4'	2.21	0.41
5:L5:2299:G:O6	10:LC:188:ARG:NH2	2.54	0.41
5:L5:2399:G:O2'	5:L5:2822:G:O2'	2.36	0.41
5:L5:2421:G:OP2	5:L5:2828:U:H1'	2.21	0.41
5:L5:4236:G:H2'	5:L5:4237:C:C6	2.56	0.41
5:L5:4291:G:H4'	5:L5:4292:A:H5''	2.02	0.41
9:LB:154:LYS:HE2	9:LB:154:LYS:HB2	1.74	0.41
10:LC:221:PHE:O	10:LC:222:ARG:HG2	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:LY:50:ARG:HB3	31:LY:53:ASP:OD2	2.21	0.41
31:LY:126:ARG:HG2	31:LY:130:LYS:HE2	2.01	0.41
37:Le:19:LYS:HE3	37:Le:19:LYS:HB3	1.88	0.41
52:SD:29:LEU:HD22	52:SD:58:VAL:HG23	2.03	0.41
54:SK:64:TRP:CE3	64:Sd:23:VAL:HG22	2.56	0.41
56:SP:83:MET:HB3	56:SP:116:LEU:HD12	2.03	0.41
66:Sg:21:ILE:HG21	66:Sg:299:PHE:HB2	2.02	0.41
66:Sg:230:LEU:HD21	66:Sg:259:TRP:CZ2	2.56	0.41
70:SE:71:LYS:HB3	70:SE:91:SER:HB2	2.02	0.41
70:SE:247:THR:OG1	70:SE:250:GLU:OE1	2.38	0.41
72:SH:25:GLN:HG3	72:SH:29:GLU:OE2	2.21	0.41
73:SI:45:THR:HG23	73:SI:53:LYS:HG3	2.03	0.41
80:SX:9:THR:HG22	85:S2:681:PSU:H4'	2.03	0.41
85:S2:454:U:H2'	85:S2:455:A:H8	1.85	0.41
85:S2:1221:G:H2'	85:S2:1222:G:H8	1.86	0.41
85:S2:1511:U:H2'	85:S2:1512:C:C6	2.56	0.41
86:Zt:72:C:C2	86:Zt:73:G:C8	3.09	0.41
5:L5:66:A:O2'	5:L5:326:C:O2	2.39	0.41
5:L5:1346:C:H2'	5:L5:1347:G:H8	1.86	0.41
5:L5:1563:A:N6	85:S2:1028:A:N1	2.68	0.41
5:L5:1704:C:OP1	13:LF:43:ARG:HD3	2.21	0.41
5:L5:1981:G:N1	5:L5:1982:G:O6	2.54	0.41
5:L5:2090:U:H4'	5:L5:2091:C:H3'	2.02	0.41
5:L5:2376:A:H2'	5:L5:2377:C:C6	2.56	0.41
5:L5:2497:C:H2'	5:L5:2498:C:H6	1.86	0.41
5:L5:2521:G:H5'	5:L5:2640:G:H1'	2.03	0.41
5:L5:2542:G:H2'	5:L5:2543:A:C8	2.55	0.41
5:L5:2566:G:H2'	5:L5:2567:G:H8	1.86	0.41
5:L5:2621:A:H2'	5:L5:2622:G:C8	2.56	0.41
5:L5:2765:A:H2'	5:L5:2766:A:H8	1.86	0.41
5:L5:3796:U:HO2'	85:S2:1720:U:HO2'	1.59	0.41
5:L5:4115:G:O2'	5:L5:4116:C:O5'	2.31	0.41
5:L5:4232:U:H5'	47:Lo:3:ASN:HB3	2.03	0.41
5:L5:4305:G:N7	26:LT:87:LYS:NZ	2.60	0.41
5:L5:4693:C:O2'	5:L5:4695:C:N4	2.41	0.41
5:L5:4759:C:H2'	5:L5:4760:G:C8	2.56	0.41
5:L5:4770:U:H2'	5:L5:4771:C:C5	2.55	0.41
5:L5:5047:C:O2'	5:L5:5050:C:OP2	2.31	0.41
10:LC:109:ARG:O	10:LC:109:ARG:HG2	2.21	0.41
15:LH:51:LYS:HG3	15:LH:52:LYS:N	2.36	0.41
21:LO:142:ALA:HA	21:LO:145:VAL:HG12	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:LP:122:ALA:HB3	22:LP:143:PRO:HG2	2.03	0.41
24:LR:166:THR:OG1	85:S2:873:G:OP2	2.33	0.41
30:LX:73:HIS:HB3	30:LX:116:LEU:HD23	2.03	0.41
40:Lh:94:ARG:HE	40:Lh:94:ARG:HB3	1.73	0.41
42:Lj:2:THR:HG22	42:Lj:4:GLY:H	1.85	0.41
49:Lr:119:ARG:HA	49:Lr:122:LYS:HE3	2.02	0.41
50:Ls:57:LYS:O	50:Ls:61:MET:HG2	2.21	0.41
56:SP:92:SER:O	56:SP:93:MET:HE2	2.20	0.41
66:Sg:11:LEU:HB3	66:Sg:43:TRP:CZ3	2.56	0.41
66:Sg:212:LYS:HA	66:Sg:235:ILE:HG13	2.03	0.41
70:SE:54:TYR:HD1	81:SY:13:MET:HE1	1.85	0.41
73:SI:106:SER:HB2	73:SI:166:PHE:CE1	2.56	0.41
73:SI:141:ARG:HA	73:SI:141:ARG:CZ	2.51	0.41
76:SN:94:LYS:HE2	76:SN:94:LYS:HB2	1.92	0.41
82:Sa:85:ARG:NE	85:S2:1209:A:O2'	2.54	0.41
83:Sb:33:MET:HE3	83:Sb:48:SER:HA	2.03	0.41
85:S2:484:A2M:H8	85:S2:484:A2M:O5'	2.20	0.41
85:S2:517:OMC:H2'	85:S2:518:G:O4'	2.21	0.41
85:S2:669:A:H2'	85:S2:670:A:C8	2.56	0.41
85:S2:1284:A:N6	85:S2:1313:A:O2'	2.54	0.41
85:S2:1620:A:H1'	85:S2:1624:U:OP2	2.21	0.41
1:CI:71:ARG:HD2	5:L5:2624:G:OP1	2.21	0.41
3:CF:164:GLN:OE1	3:CF:210:TRP:HB2	2.21	0.41
4:AT:67:C:H2'	4:AT:68:G:H8	1.86	0.41
5:L5:705:G:H2'	5:L5:706:C:C6	2.56	0.41
5:L5:1244:G:H2'	5:L5:1245:C:C6	2.56	0.41
5:L5:1705:G:H2'	5:L5:1706:A:O4'	2.20	0.41
5:L5:3848:U:H2'	5:L5:3849:A:H8	1.85	0.41
5:L5:3925:OMU:HM23	5:L5:3925:OMU:H1'	1.84	0.41
5:L5:4196:OMG:HM23	5:L5:4196:OMG:H1'	1.69	0.41
5:L5:4935:C:H2'	5:L5:4936:G:H8	1.86	0.41
6:L7:111:C:H2'	6:L7:112:U:O4'	2.20	0.41
7:L8:52:A:H4'	44:L1:19:GLN:HA	2.03	0.41
8:LA:225:ILE:HG12	8:LA:234:LYS:HA	2.03	0.41
12:LE:157:HIS:HA	12:LE:160:LYS:HE3	2.02	0.41
15:LH:91:LYS:O	15:LH:182:SER:N	2.51	0.41
16:LI:207:ASP:OD1	16:LI:210:ARG:NH1	2.54	0.41
19:LM:33:GLN:O	19:LM:33:GLN:HG2	2.20	0.41
21:LO:54:TYR:OH	21:LO:73:PHE:O	2.36	0.41
36:Ld:68:LEU:HD22	36:Ld:106:VAL:HG12	2.03	0.41
53:SF:97:PHE:HA	53:SF:100:ILE:HG12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
66:Sg:35:SER:OG	66:Sg:36:ARG:N	2.54	0.41
66:Sg:201:SER:OG	66:Sg:203:ASP:OD1	2.30	0.41
67:SA:184:ARG:HG2	67:SA:189:ILE:HB	2.03	0.41
70:SE:186:GLY:HA3	85:S2:809:A:OP1	2.21	0.41
71:SG:164:LYS:HE2	71:SG:164:LYS:HB2	1.91	0.41
79:SW:57:ARG:HG2	85:S2:920:A:H4'	2.03	0.41
80:SX:34:THR:HG21	85:S2:1189:A:H4'	2.02	0.41
85:S2:472:C:O2	85:S2:475:C:N4	2.50	0.41
85:S2:799:OMU:HM23	85:S2:799:OMU:H1'	1.84	0.41
85:S2:1473:G:N1	85:S2:1476:A:OP2	2.49	0.41
85:S2:1839:U:H2'	85:S2:1840:U:C6	2.56	0.41
3:CF:380:ASP:HB3	3:CF:385:LYS:HB2	2.03	0.40
5:L5:1779:U:H2'	5:L5:1780:A:C8	2.56	0.40
5:L5:1896:A:OP1	13:LF:223:LYS:NZ	2.52	0.40
5:L5:4458:C:H2'	5:L5:4459:U:C6	2.56	0.40
5:L5:4996:C:H4'	36:Ld:26:THR:HG23	2.03	0.40
6:L7:49:A:N6	11:LD:57:ASN:O	2.54	0.40
17:LJ:35:ARG:O	17:LJ:39:VAL:HG23	2.22	0.40
28:LV:123:LYS:N	28:LV:140:ALA:OXT	2.51	0.40
39:Lg:60:ARG:HD2	39:Lg:60:ARG:HA	1.82	0.40
55:SM:14:VAL:HG21	55:SM:126:GLU:HG3	2.02	0.40
66:Sg:16:GLY:O	66:Sg:305:ASN:HA	2.21	0.40
66:Sg:37:ASP:OD1	66:Sg:39:THR:OG1	2.34	0.40
69:SC:212:LYS:HE2	69:SC:212:LYS:HB3	1.85	0.40
70:SE:27:PHE:O	85:S2:495:U:O2'	2.38	0.40
71:SG:170:ARG:NH1	85:S2:72:C:O2	2.54	0.40
73:SI:3:ILE:O	73:SI:30:GLY:N	2.47	0.40
76:SN:29:THR:O	76:SN:33:VAL:HG23	2.21	0.40
81:SY:120:THR:OG1	81:SY:123:ALA:HB3	2.21	0.40
85:S2:85:A:H2'	85:S2:86:C:C6	2.56	0.40
85:S2:508:A:H5'	85:S2:509:OMG:OP2	2.21	0.40
85:S2:573:U:O2	85:S2:576:A2M:H8	2.21	0.40
85:S2:943:U:C2	85:S2:944:A:C8	3.09	0.40
85:S2:1365:G:H2'	85:S2:1366:G:C8	2.55	0.40
3:CF:155:MET:HA	3:CF:158:THR:HG23	2.04	0.40
5:L5:305:A:P	20:LN:15:GLN:HE22	2.45	0.40
5:L5:382:G:O2'	5:L5:407:A:N6	2.43	0.40
5:L5:519:C:H1'	5:L5:643:C:C2	2.56	0.40
5:L5:1655:C:OP2	33:La:26:ARG:NH1	2.55	0.40
5:L5:1725:U:H2'	5:L5:1726:U:C6	2.56	0.40
5:L5:1739:G:H5''	6:L7:102:U:H1'	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L5:2323:C:H2'	5:L5:2324:C:C6	2.56	0.40
5:L5:2519:U:H1'	5:L5:2520:C:C6	2.55	0.40
5:L5:3656:A:H2'	5:L5:3657:U:H6	1.86	0.40
5:L5:4739:C:H2'	5:L5:4740:G:H5'	2.03	0.40
6:L7:4:U:H2'	6:L7:5:A:H8	1.87	0.40
8:LA:75:LEU:HD12	8:LA:75:LEU:HA	1.90	0.40
16:LI:207:ASP:HA	16:LI:210:ARG:HG2	2.03	0.40
17:LJ:77:ALA:O	17:LJ:81:GLU:HG2	2.20	0.40
19:LM:37:LEU:HD12	19:LM:37:LEU:HA	1.86	0.40
27:LU:26:THR:OG1	27:LU:68:SER:OG	2.40	0.40
39:Lg:33:LEU:HD23	39:Lg:33:LEU:HA	1.90	0.40
57:SQ:15:ARG:HH22	85:S2:1444:U:P	2.43	0.40
59:SS:40:TYR:HA	59:SS:83:PHE:HE2	1.87	0.40
66:Sg:242:SER:HB3	66:Sg:245:ARG:HB2	2.01	0.40
68:SB:227:LYS:O	68:SB:230:GLU:HG3	2.21	0.40
69:SC:256:TRP:CE2	79:SW:68:ARG:HD3	2.56	0.40
71:SG:121:ILE:HB	71:SG:125:THR:HG23	2.04	0.40
73:SI:141:ARG:NE	85:S2:191:A:OP1	2.54	0.40
75:SL:18:GLN:HG2	75:SL:33:LEU:HD11	2.04	0.40
85:S2:145:G:H2'	85:S2:146:G:H8	1.86	0.40
85:S2:293:C:O2'	85:S2:294:U:H3'	2.21	0.40
85:S2:1347:U:H2'	85:S2:1348:G:N3	2.37	0.40
85:S2:1832:6MZ:H5'2	85:S2:1840:U:H5''	2.03	0.40
4:AT:5:C:H2'	4:AT:6:C:H6	1.86	0.40
5:L5:173:C:H2'	5:L5:174:C:C6	2.57	0.40
5:L5:490:C:H2'	5:L5:491:G:H8	1.85	0.40
5:L5:1188:C:H2'	5:L5:1189:G:H8	1.86	0.40
5:L5:4184:G:H5'	8:LA:233:ARG:HB2	2.03	0.40
88:L5:5293:SPM:H31	88:L5:5293:SPM:H62	1.83	0.40
9:LB:214:ASP:OD2	9:LB:362:LYS:HA	2.21	0.40
9:LB:292:LEU:HB2	9:LB:298:LEU:HD12	2.03	0.40
10:LC:315:LYS:HD2	13:LF:168:ALA:HB1	2.03	0.40
11:LD:66:TYR:HE2	11:LD:68:ARG:HE	1.68	0.40
11:LD:203:ASN:OD1	11:LD:203:ASN:N	2.51	0.40
12:LE:198:SER:OG	12:LE:288:PHE:O	2.30	0.40
16:LI:162:ARG:HH12	25:LS:88:SER:HB2	1.87	0.40
27:LU:21:PHE:HD1	27:LU:108:GLU:HA	1.86	0.40
41:Li:76:ARG:HD3	41:Li:76:ARG:HA	1.77	0.40
85:S2:152:U:H2'	85:S2:153:G:C8	2.57	0.40
85:S2:750:C:H42	85:S2:793:G:H1'	1.87	0.40
85:S2:1399:C:H2'	85:S2:1400:U:H6	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
85:S2:1600:G:O2'	85:S2:1601:A:H4'	2.22	0.40
2:Pt:43:A:H2'	2:Pt:44:A:C8	2.57	0.40
5:L5:6:C:H2'	5:L5:7:C:H6	1.86	0.40
5:L5:7:C:H2'	5:L5:8:U:C6	2.57	0.40
5:L5:429:A:H2'	5:L5:430:G:C8	2.56	0.40
5:L5:467:U:C4	5:L5:468:U:H1'	2.56	0.40
5:L5:1244:G:H2'	5:L5:1245:C:H6	1.85	0.40
5:L5:1534:A2M:N3	42:Lj:11:ARG:HB2	2.36	0.40
5:L5:1664:U:H2'	5:L5:1665:C:C6	2.56	0.40
5:L5:1847:C:H2'	5:L5:1848:C:C6	2.56	0.40
5:L5:1872:G:O2'	5:L5:4219:A:N3	2.50	0.40
5:L5:2632:PSU:H2'	5:L5:2633:U:C6	2.56	0.40
5:L5:2634:C:H2'	5:L5:2635:U:C6	2.57	0.40
5:L5:3589:G:N2	5:L5:3590:G:N7	2.69	0.40
5:L5:4320:G:H2'	5:L5:4321:U:C6	2.57	0.40
5:L5:4633:G:N2	5:L5:4664:A:N7	2.70	0.40
5:L5:4911:A:OP2	9:LB:100:ARG:HD3	2.21	0.40
5:L5:5053:U:H5'	5:L5:5054:C:C5	2.55	0.40
7:L8:5:U:H2'	7:L8:6:C:C6	2.56	0.40
7:L8:40:A:H2'	7:L8:41:A:C8	2.57	0.40
8:LA:145:LYS:HA	8:LA:145:LYS:HD3	1.85	0.40
10:LC:76:ILE:HG12	10:LC:96:CYS:SG	2.61	0.40
14:LG:51:LEU:O	14:LG:55:VAL:HG23	2.22	0.40
22:LP:105:LYS:HB3	22:LP:105:LYS:HE2	1.88	0.40
27:LU:27:HIS:O	27:LU:30:GLU:HG3	2.21	0.40
53:SF:40:ALA:H	53:SF:68:ILE:HG23	1.86	0.40
54:SK:2:LEU:HD21	85:S2:1289:U:H4'	2.03	0.40
57:SQ:90:LYS:HB3	57:SQ:90:LYS:HE2	1.82	0.40
72:SH:18:GLU:C	72:SH:20:GLU:H	2.30	0.40
76:SN:99:ARG:NH2	76:SN:119:GLU:OE2	2.42	0.40
81:SY:9:THR:HG22	85:S2:837:A:N6	2.37	0.40
85:S2:1030:A:H2'	85:S2:1031:A2M:H8	2.02	0.40
85:S2:1621:U:O2'	85:S2:1622:U:H2'	2.22	0.40
5:L5:120:A:H2'	5:L5:149:A:H61	1.87	0.40
5:L5:258:G:H2'	5:L5:259:C:C6	2.56	0.40
5:L5:1367:C:O2'	5:L5:1369:C:OP2	2.33	0.40
5:L5:1664:U:H2'	5:L5:1665:C:H6	1.87	0.40
5:L5:4743:G:H2'	5:L5:4744:A:C8	2.57	0.40
5:L5:4979:A:OP1	9:LB:228:TYR:HB2	2.22	0.40
5:L5:5030:U:H2'	5:L5:5031:G:H8	1.86	0.40
9:LB:161:ARG:HG2	9:LB:184:GLN:HA	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:LD:289:ARG:O	11:LD:293:ARG:HG2	2.22	0.40
20:LN:164:LEU:O	20:LN:169:ARG:NH2	2.55	0.40
29:LW:5:LEU:HD12	29:LW:30:GLN:NE2	2.36	0.40
30:LX:124:VAL:HG22	30:LX:138:VAL:HG13	2.04	0.40
37:Le:124:ASN:OD1	37:Le:124:ASN:N	2.53	0.40
52:SD:76:ARG:HG3	54:SK:68:TYR:CE1	2.57	0.40
69:SC:256:TRP:CD2	79:SW:68:ARG:HD3	2.56	0.40
71:SG:191:ARG:HH22	85:S2:312:G:H2'	1.87	0.40
81:SY:11:LYS:NZ	85:S2:831:G:O6	2.55	0.40
85:S2:543:C:H3'	85:S2:544:G:C8	2.54	0.40
85:S2:1114:U:O2'	85:S2:1115:U:H2'	2.21	0.40
85:S2:1259:A:N6	85:S2:1519:U:O5'	2.55	0.40

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

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

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	CI	29/31 (94%)	29 (100%)	0	0	100	100
3	CF	438/441 (99%)	427 (98%)	11 (2%)	0	100	100
8	LA	246/248 (99%)	228 (93%)	18 (7%)	0	100	100
9	LB	400/402 (100%)	382 (96%)	18 (4%)	0	100	100
10	LC	366/368 (100%)	350 (96%)	16 (4%)	0	100	100
11	LD	291/293 (99%)	278 (96%)	13 (4%)	0	100	100
12	LE	236/250 (94%)	222 (94%)	14 (6%)	0	100	100
13	LF	223/225 (99%)	214 (96%)	9 (4%)	0	100	100
14	LG	239/241 (99%)	224 (94%)	15 (6%)	0	100	100
15	LH	188/190 (99%)	182 (97%)	6 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	LI	211/213 (99%)	204 (97%)	7 (3%)	0	100	100
17	LJ	168/176 (96%)	163 (97%)	5 (3%)	0	100	100
18	LL	208/210 (99%)	200 (96%)	8 (4%)	0	100	100
19	LM	137/139 (99%)	130 (95%)	7 (5%)	0	100	100
20	LN	201/203 (99%)	197 (98%)	4 (2%)	0	100	100
21	LO	199/201 (99%)	193 (97%)	6 (3%)	0	100	100
22	LP	151/153 (99%)	145 (96%)	6 (4%)	0	100	100
23	LQ	185/187 (99%)	181 (98%)	4 (2%)	0	100	100
24	LR	185/187 (99%)	180 (97%)	5 (3%)	0	100	100
25	LS	173/175 (99%)	164 (95%)	9 (5%)	0	100	100
26	LT	157/159 (99%)	153 (98%)	4 (2%)	0	100	100
27	LU	99/101 (98%)	92 (93%)	7 (7%)	0	100	100
28	LV	129/131 (98%)	122 (95%)	7 (5%)	0	100	100
29	LW	112/118 (95%)	106 (95%)	6 (5%)	0	100	100
30	LX	118/120 (98%)	117 (99%)	1 (1%)	0	100	100
31	LY	132/134 (98%)	130 (98%)	2 (2%)	0	100	100
32	LZ	133/135 (98%)	124 (93%)	9 (7%)	0	100	100
33	La	145/147 (99%)	140 (97%)	5 (3%)	0	100	100
34	Lb	105/109 (96%)	98 (93%)	7 (7%)	0	100	100
35	Lc	96/98 (98%)	93 (97%)	3 (3%)	0	100	100
36	Ld	105/107 (98%)	102 (97%)	3 (3%)	0	100	100
37	Le	126/128 (98%)	125 (99%)	1 (1%)	0	100	100
38	Lf	107/109 (98%)	106 (99%)	1 (1%)	0	100	100
39	Lg	112/114 (98%)	110 (98%)	2 (2%)	0	100	100
40	Lh	120/122 (98%)	115 (96%)	5 (4%)	0	100	100
41	Li	100/102 (98%)	97 (97%)	3 (3%)	0	100	100
42	Lj	84/86 (98%)	83 (99%)	1 (1%)	0	100	100
43	Lk	67/69 (97%)	66 (98%)	1 (2%)	0	100	100
44	Ll	48/50 (96%)	47 (98%)	1 (2%)	0	100	100
45	Lm	50/52 (96%)	49 (98%)	1 (2%)	0	100	100
46	Ln	22/24 (92%)	22 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
47	Lo	103/105 (98%)	96 (93%)	7 (7%)	0	100	100
48	Lp	89/91 (98%)	86 (97%)	3 (3%)	0	100	100
49	Lr	123/125 (98%)	120 (98%)	3 (2%)	0	100	100
50	Ls	194/196 (99%)	183 (94%)	11 (6%)	0	100	100
51	Lt	128/141 (91%)	110 (86%)	18 (14%)	0	100	100
52	SD	225/227 (99%)	218 (97%)	7 (3%)	0	100	100
53	SF	187/189 (99%)	174 (93%)	13 (7%)	0	100	100
54	SK	96/98 (98%)	89 (93%)	7 (7%)	0	100	100
55	SM	120/122 (98%)	111 (92%)	9 (8%)	0	100	100
56	SP	119/121 (98%)	115 (97%)	4 (3%)	0	100	100
57	SQ	142/144 (99%)	130 (92%)	12 (8%)	0	100	100
58	SR	133/135 (98%)	124 (93%)	8 (6%)	1 (1%)	16	27
59	SS	143/145 (99%)	133 (93%)	10 (7%)	0	100	100
60	ST	141/143 (99%)	137 (97%)	4 (3%)	0	100	100
61	SU	102/104 (98%)	98 (96%)	4 (4%)	0	100	100
62	SZ	73/75 (97%)	69 (94%)	4 (6%)	0	100	100
63	Sc	62/64 (97%)	58 (94%)	4 (6%)	0	100	100
64	Sd	53/55 (96%)	52 (98%)	1 (2%)	0	100	100
65	Sf	65/67 (97%)	56 (86%)	9 (14%)	0	100	100
66	Sg	311/313 (99%)	296 (95%)	15 (5%)	0	100	100
67	SA	219/221 (99%)	205 (94%)	14 (6%)	0	100	100
68	SB	212/214 (99%)	202 (95%)	10 (5%)	0	100	100
69	SC	218/222 (98%)	202 (93%)	16 (7%)	0	100	100
70	SE	260/262 (99%)	249 (96%)	11 (4%)	0	100	100
71	SG	235/237 (99%)	223 (95%)	12 (5%)	0	100	100
72	SH	182/186 (98%)	167 (92%)	15 (8%)	0	100	100
73	SI	204/206 (99%)	195 (96%)	9 (4%)	0	100	100
74	SJ	183/185 (99%)	176 (96%)	7 (4%)	0	100	100
75	SL	151/153 (99%)	146 (97%)	5 (3%)	0	100	100
76	SN	148/150 (99%)	147 (99%)	1 (1%)	0	100	100
77	SO	135/140 (96%)	126 (93%)	9 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
78	SV	81/83 (98%)	75 (93%)	6 (7%)	0	100	100
79	SW	127/129 (98%)	122 (96%)	5 (4%)	0	100	100
80	SX	139/141 (99%)	131 (94%)	8 (6%)	0	100	100
81	SY	129/131 (98%)	124 (96%)	5 (4%)	0	100	100
82	Sa	100/102 (98%)	96 (96%)	4 (4%)	0	100	100
83	Sb	81/83 (98%)	76 (94%)	5 (6%)	0	100	100
84	Se	56/58 (97%)	52 (93%)	4 (7%)	0	100	100
All	All	12110/12311 (98%)	11559 (96%)	550 (4%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
58	SR	129	LYS

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	CI	25/25 (100%)	25 (100%)	0	100	100
3	CF	365/366 (100%)	365 (100%)	0	100	100
8	LA	190/190 (100%)	190 (100%)	0	100	100
9	LB	348/348 (100%)	348 (100%)	0	100	100
10	LC	306/306 (100%)	306 (100%)	0	100	100
11	LD	246/247 (100%)	246 (100%)	0	100	100
12	LE	212/222 (96%)	212 (100%)	0	100	100
13	LF	194/194 (100%)	194 (100%)	0	100	100
14	LG	203/205 (99%)	203 (100%)	0	100	100
15	LH	169/169 (100%)	169 (100%)	0	100	100
16	LI	180/180 (100%)	180 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
17	LJ	143/148 (97%)	143 (100%)	0	100	100
18	LL	176/176 (100%)	176 (100%)	0	100	100
19	LM	118/118 (100%)	118 (100%)	0	100	100
20	LN	171/171 (100%)	171 (100%)	0	100	100
21	LO	173/173 (100%)	173 (100%)	0	100	100
22	LP	134/134 (100%)	134 (100%)	0	100	100
23	LQ	164/164 (100%)	164 (100%)	0	100	100
24	LR	166/166 (100%)	166 (100%)	0	100	100
25	LS	156/156 (100%)	156 (100%)	0	100	100
26	LT	139/139 (100%)	139 (100%)	0	100	100
27	LU	91/91 (100%)	91 (100%)	0	100	100
28	LV	101/101 (100%)	101 (100%)	0	100	100
29	LW	95/97 (98%)	95 (100%)	0	100	100
30	LX	108/108 (100%)	108 (100%)	0	100	100
31	LY	124/124 (100%)	124 (100%)	0	100	100
32	LZ	117/117 (100%)	117 (100%)	0	100	100
33	La	120/120 (100%)	120 (100%)	0	100	100
34	Lb	88/90 (98%)	88 (100%)	0	100	100
35	Lc	83/83 (100%)	83 (100%)	0	100	100
36	Ld	98/98 (100%)	98 (100%)	0	100	100
37	Le	114/114 (100%)	114 (100%)	0	100	100
38	Lf	88/88 (100%)	88 (100%)	0	100	100
39	Lg	98/98 (100%)	98 (100%)	0	100	100
40	Lh	109/109 (100%)	109 (100%)	0	100	100
41	Li	86/86 (100%)	86 (100%)	0	100	100
42	Lj	73/73 (100%)	73 (100%)	0	100	100
43	Lk	64/64 (100%)	64 (100%)	0	100	100
44	Ll	47/47 (100%)	47 (100%)	0	100	100
45	Lm	48/48 (100%)	48 (100%)	0	100	100
46	Ln	23/23 (100%)	23 (100%)	0	100	100
47	Lo	93/93 (100%)	93 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
48	Lp	74/74 (100%)	74 (100%)	0	100	100
49	Lr	109/109 (100%)	109 (100%)	0	100	100
50	Ls	162/164 (99%)	162 (100%)	0	100	100
51	Lt	107/115 (93%)	107 (100%)	0	100	100
52	SD	190/190 (100%)	190 (100%)	0	100	100
53	SF	159/159 (100%)	159 (100%)	0	100	100
54	SK	89/89 (100%)	89 (100%)	0	100	100
55	SM	102/104 (98%)	102 (100%)	0	100	100
56	SP	107/107 (100%)	107 (100%)	0	100	100
57	SQ	119/119 (100%)	119 (100%)	0	100	100
58	SR	122/122 (100%)	122 (100%)	0	100	100
59	SS	126/126 (100%)	126 (100%)	0	100	100
60	ST	113/113 (100%)	113 (100%)	0	100	100
61	SU	94/94 (100%)	94 (100%)	0	100	100
62	SZ	66/66 (100%)	66 (100%)	0	100	100
63	Sc	57/57 (100%)	57 (100%)	0	100	100
64	Sd	48/48 (100%)	48 (100%)	0	100	100
65	Sf	60/60 (100%)	60 (100%)	0	100	100
66	Sg	272/272 (100%)	272 (100%)	0	100	100
67	SA	183/183 (100%)	183 (100%)	0	100	100
68	SB	195/195 (100%)	195 (100%)	0	100	100
69	SC	186/188 (99%)	186 (100%)	0	100	100
70	SE	224/224 (100%)	224 (100%)	0	100	100
71	SG	207/207 (100%)	207 (100%)	0	100	100
72	SH	166/166 (100%)	166 (100%)	0	100	100
73	SI	178/178 (100%)	178 (100%)	0	100	100
74	SJ	161/161 (100%)	161 (100%)	0	100	100
75	SL	137/137 (100%)	137 (100%)	0	100	100
76	SN	130/130 (100%)	130 (100%)	0	100	100
77	SO	107/110 (97%)	107 (100%)	0	100	100
78	SV	67/67 (100%)	67 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
79	SW	112/112 (100%)	112 (100%)	0	100	100
80	SX	113/113 (100%)	113 (100%)	0	100	100
81	SY	113/113 (100%)	113 (100%)	0	100	100
82	Sa	89/89 (100%)	89 (100%)	0	100	100
83	Sb	75/75 (100%)	75 (100%)	0	100	100
84	Se	47/47 (100%)	47 (100%)	0	100	100
All	All	10512/10552 (100%)	10512 (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 (95) such sidechains are listed below:

Mol	Chain	Res	Type
3	CF	184	ASN
3	CF	296	HIS
3	CF	331	ASN
9	LB	68	ASN
9	LB	121	ASN
9	LB	301	ASN
10	LC	215	ASN
10	LC	310	HIS
10	LC	329	ASN
10	LC	347	HIS
11	LD	267	ASN
12	LE	227	HIS
13	LF	39	GLN
13	LF	235	ASN
13	LF	239	GLN
14	LG	64	GLN
14	LG	112	GLN
15	LH	98	HIS
15	LH	138	GLN
16	LI	59	GLN
16	LI	73	ASN
16	LI	166	HIS
17	LJ	23	ASN
18	LL	19	GLN
18	LL	205	GLN
19	LM	34	ASN
19	LM	66	HIS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
20	LN	37	HIS
20	LN	199	GLN
21	LO	50	ASN
22	LP	75	GLN
22	LP	97	ASN
22	LP	137	ASN
23	LQ	21	GLN
24	LR	134	ASN
26	LT	144	ASN
27	LU	94	ASN
28	LV	77	HIS
29	LW	79	GLN
31	LY	61	HIS
33	La	34	ASN
33	La	120	GLN
37	Le	52	GLN
40	Lh	98	HIS
41	Li	15	HIS
44	Ll	33	ASN
48	Lp	33	GLN
49	Lr	4	HIS
49	Lr	21	ASN
49	Lr	30	ASN
50	Ls	179	ASN
51	Lt	65	GLN
51	Lt	66	ASN
52	SD	145	GLN
52	SD	159	HIS
53	SF	29	GLN
53	SF	79	HIS
53	SF	101	HIS
53	SF	118	ASN
54	SK	32	HIS
54	SK	84	HIS
55	SM	19	GLN
57	SQ	48	GLN
58	SR	56	HIS
62	SZ	89	GLN
64	Sd	37	ASN
65	Sf	93	HIS
66	Sg	159	ASN
67	SA	9	GLN

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Mol	Chain	Res	Type
67	SA	84	GLN
68	SB	53	GLN
68	SB	95	ASN
68	SB	101	HIS
68	SB	118	GLN
68	SB	158	HIS
69	SC	115	GLN
69	SC	267	GLN
70	SE	50	ASN
70	SE	188	ASN
71	SG	56	ASN
72	SH	76	GLN
72	SH	114	GLN
72	SH	162	GLN
73	SI	35	ASN
73	SI	52	ASN
73	SI	181	GLN
75	SL	11	GLN
75	SL	19	ASN
76	SN	105	ASN
78	SV	35	ASN
80	SX	16	HIS
80	SX	31	HIS
80	SX	92	ASN
81	SY	112	ASN
82	Sa	72	HIS

### 5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	Pt	72/74 (97%)	17 (23%)	0
4	AT	74/76 (97%)	27 (36%)	0
5	L5	3643/3655 (99%)	727 (19%)	16 (0%)
6	L7	119/120 (99%)	10 (8%)	0
7	L8	155/156 (99%)	22 (14%)	0
85	S2	1714/1740 (98%)	364 (21%)	4 (0%)
86	Zt	74/75 (98%)	45 (60%)	0
All	All	5851/5896 (99%)	1212 (20%)	20 (0%)

All (1212) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	Pt	9	A
2	Pt	13	U
2	Pt	19	G
2	Pt	20(A)	U
2	Pt	21	A
2	Pt	42	A
2	Pt	46	G
2	Pt	47	U
2	Pt	48	C
2	Pt	49	C
2	Pt	58	A
2	Pt	61	C
2	Pt	66	C
2	Pt	67	G
2	Pt	72	C
2	Pt	74	C
2	Pt	76	A
4	AT	4	U
4	AT	8	U
4	AT	9	A
4	AT	12	G
4	AT	14	A
4	AT	16	C
4	AT	19	G
4	AT	20	U
4	AT	21	U
4	AT	22	A
4	AT	26	C
4	AT	27	G
4	AT	31	G
4	AT	33	C
4	AT	37	C
4	AT	47	G
4	AT	48	U
4	AT	49	C
4	AT	50	C
4	AT	53	G
4	AT	57	C
4	AT	59	A
4	AT	60	A
4	AT	62	C
4	AT	65	G
4	AT	76	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
4	AT	77	A
5	L5	25	A
5	L5	30	C
5	L5	39	A
5	L5	42	A
5	L5	48	G
5	L5	56	A
5	L5	59	A
5	L5	64	A
5	L5	65	A
5	L5	73	A
5	L5	91	G
5	L5	104	G
5	L5	108	A
5	L5	109	G
5	L5	110	C
5	L5	119	G
5	L5	120	A
5	L5	132	G
5	L5	133	C
5	L5	134	G
5	L5	135	G
5	L5	139	G
5	L5	159	C
5	L5	165	A
5	L5	172	C
5	L5	181	C
5	L5	182	G
5	L5	183	C
5	L5	184	U
5	L5	185	C
5	L5	186	G
5	L5	187	U
5	L5	188	G
5	L5	189	G
5	L5	200	U
5	L5	210	C
5	L5	216	C
5	L5	218	A
5	L5	220	C
5	L5	234	G
5	L5	237	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	255	C
5	L5	256	G
5	L5	261	G
5	L5	263	G
5	L5	264	C
5	L5	265	C
5	L5	266	C
5	L5	267	G
5	L5	280	G
5	L5	281	U
5	L5	297	U
5	L5	306	A
5	L5	315	G
5	L5	316	U
5	L5	340	C
5	L5	373	G
5	L5	385	A
5	L5	387	G
5	L5	388	A
5	L5	396	A
5	L5	407	A
5	L5	409	G
5	L5	410	A
5	L5	411	G
5	L5	412	G
5	L5	413	G
5	L5	415	G
5	L5	432	U
5	L5	449	C
5	L5	452	A
5	L5	453	G
5	L5	454	U
5	L5	456	C
5	L5	457	G
5	L5	467	U
5	L5	484	U
5	L5	485	C
5	L5	486	C
5	L5	489	C
5	L5	494	U
5	L5	497	G
5	L5	498	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	499	G
5	L5	500	G
5	L5	502	C
5	L5	503	C
5	L5	504	G
5	L5	509	A
5	L5	510	U
5	L5	512	U
5	L5	513	U
5	L5	514	U
5	L5	515	C
5	L5	518	G
5	L5	643	C
5	L5	645	G
5	L5	646	G
5	L5	654	C
5	L5	655	C
5	L5	656	C
5	L5	657	C
5	L5	659	G
5	L5	666	G
5	L5	667	A
5	L5	668	C
5	L5	669	C
5	L5	673	C
5	L5	685	C
5	L5	686	A
5	L5	687	U
5	L5	704	C
5	L5	708	G
5	L5	731	G
5	L5	738	C
5	L5	739	G
5	L5	742	G
5	L5	746	A
5	L5	759	G
5	L5	904	C
5	L5	905	C
5	L5	906	C
5	L5	910	G
5	L5	913	U
5	L5	914	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	915	A
5	L5	917	A
5	L5	923	C
5	L5	924	C
5	L5	926	G
5	L5	932	A
5	L5	933	G
5	L5	935	A
5	L5	936	C
5	L5	943	A
5	L5	944	A
5	L5	945	U
5	L5	946	C
5	L5	956	A
5	L5	959	G
5	L5	960	A
5	L5	961	G
5	L5	962	C
5	L5	965	G
5	L5	966	A
5	L5	967	C
5	L5	969	C
5	L5	970	G
5	L5	977	C
5	L5	982	U
5	L5	985	C
5	L5	1070	G
5	L5	1071	C
5	L5	1072	C
5	L5	1075	G
5	L5	1082	C
5	L5	1083	U
5	L5	1168	G
5	L5	1171	G
5	L5	1172	C
5	L5	1173	G
5	L5	1179	U
5	L5	1180	C
5	L5	1181	C
5	L5	1182	C
5	L5	1183	C
5	L5	1187	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	1202	C
5	L5	1203	G
5	L5	1210	C
5	L5	1211	G
5	L5	1214	C
5	L5	1215	C
5	L5	1218	G
5	L5	1219	G
5	L5	1222	A
5	L5	1241	C
5	L5	1245	C
5	L5	1246	G
5	L5	1253	G
5	L5	1254	A
5	L5	1257	A
5	L5	1258	G
5	L5	1262	G
5	L5	1266	G
5	L5	1267	C
5	L5	1269	G
5	L5	1271	G
5	L5	1272	C
5	L5	1273	G
5	L5	1275	G
5	L5	1277	G
5	L5	1280	C
5	L5	1284	G
5	L5	1285	U
5	L5	1287	G
5	L5	1293	G
5	L5	1294	A
5	L5	1295	C
5	L5	1296	G
5	L5	1301	C
5	L5	1302	U
5	L5	1326	A2M
5	L5	1354	A
5	L5	1359	G
5	L5	1365	C
5	L5	1366	G
5	L5	1367	C
5	L5	1381	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	1387	A
5	L5	1394	G
5	L5	1397	A
5	L5	1398	A
5	L5	1403	G
5	L5	1404	G
5	L5	1407	C
5	L5	1409	C
5	L5	1410	U
5	L5	1411	C
5	L5	1414	C
5	L5	1417	C
5	L5	1420	A
5	L5	1425	G
5	L5	1437	C
5	L5	1439	C
5	L5	1442	C
5	L5	1443	A
5	L5	1444	G
5	L5	1446	C
5	L5	1447	C
5	L5	1482	G
5	L5	1483	C
5	L5	1497	A
5	L5	1498	G
5	L5	1502	G
5	L5	1517	G
5	L5	1534	A2M
5	L5	1537	A
5	L5	1547	A
5	L5	1562	G
5	L5	1564	A
5	L5	1566	C
5	L5	1578	U
5	L5	1591	U
5	L5	1596	U
5	L5	1621	A
5	L5	1624	G
5	L5	1625	OMG
5	L5	1631	A
5	L5	1633	G
5	L5	1634	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	1638	A
5	L5	1640	C
5	L5	1641	G
5	L5	1642	A
5	L5	1654	G
5	L5	1661	C
5	L5	1670	G
5	L5	1676	C
5	L5	1677	PSU
5	L5	1678	C
5	L5	1680	G
5	L5	1694	C
5	L5	1699	A
5	L5	1700	G
5	L5	1701	A
5	L5	1702	C
5	L5	1704	C
5	L5	1705	G
5	L5	1717	C
5	L5	1718	C
5	L5	1719	A
5	L5	1721	G
5	L5	1726	U
5	L5	1731	C
5	L5	1734	G
5	L5	1742	A
5	L5	1750	G
5	L5	1755	C
5	L5	1757	U
5	L5	1758	G
5	L5	1761	G
5	L5	1762	C
5	L5	1763	C
5	L5	1764	G
5	L5	1765	A
5	L5	1766	A
5	L5	1767	A
5	L5	1768	C
5	L5	1769	G
5	L5	1770	A
5	L5	1787	A
5	L5	1803	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	1804	A
5	L5	1806	G
5	L5	1810	G
5	L5	1815	G
5	L5	1821	G
5	L5	1822	U
5	L5	1834	U
5	L5	1836	G
5	L5	1837	A
5	L5	1842	G
5	L5	1855	G
5	L5	1869	G
5	L5	1882	U
5	L5	1892	A
5	L5	1897	A
5	L5	1917	A
5	L5	1918	U
5	L5	1919	G
5	L5	1920	C
5	L5	1921	C
5	L5	1922	G
5	L5	1925	G
5	L5	1931	C
5	L5	1932	A
5	L5	1940	G
5	L5	1948	G
5	L5	1951	G
5	L5	1961	G
5	L5	1962	A
5	L5	1965	G
5	L5	1974	U
5	L5	1975	G
5	L5	1978	C
5	L5	1980	U
5	L5	1981	G
5	L5	1982	G
5	L5	1984	A
5	L5	1985	G
5	L5	1986	U
5	L5	1991	A
5	L5	1993	C
5	L5	1997	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	1998	A
5	L5	1999	A
5	L5	2001	G
5	L5	2002	A
5	L5	2003	G
5	L5	2004	U
5	L5	2011	C
5	L5	2014	C
5	L5	2017	A
5	L5	2018	C
5	L5	2024	G
5	L5	2026	A
5	L5	2046	G
5	L5	2048	U
5	L5	2055	G
5	L5	2056	G
5	L5	2069	A
5	L5	2084	C
5	L5	2092	G
5	L5	2093	A
5	L5	2095	A
5	L5	2097	U
5	L5	2098	G
5	L5	2101	C
5	L5	2102	G
5	L5	2107	C
5	L5	2110	C
5	L5	2112	G
5	L5	2250	C
5	L5	2252	G
5	L5	2253	A
5	L5	2254	G
5	L5	2256	C
5	L5	2258	C
5	L5	2269	C
5	L5	2289	C
5	L5	2300	A
5	L5	2301	G
5	L5	2313	A
5	L5	2331	G
5	L5	2333	G
5	L5	2348	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	2351	OMC
5	L5	2360	A
5	L5	2364	OMG
5	L5	2395	A
5	L5	2397	G
5	L5	2408	U
5	L5	2417	A
5	L5	2425	U
5	L5	2447	U
5	L5	2450	G
5	L5	2453	A
5	L5	2464	C
5	L5	2465	C
5	L5	2469	C
5	L5	2471	G
5	L5	2474	G
5	L5	2475	G
5	L5	2478	C
5	L5	2479	G
5	L5	2483	G
5	L5	2484	A
5	L5	2485	U
5	L5	2486	G
5	L5	2487	G
5	L5	2488	C
5	L5	2489	C
5	L5	2490	U
5	L5	2494	U
5	L5	2504	C
5	L5	2505	C
5	L5	2506	G
5	L5	2513	A
5	L5	2519	U
5	L5	2520	C
5	L5	2529	A
5	L5	2537	A
5	L5	2544	G
5	L5	2546	G
5	L5	2547	G
5	L5	2554	U
5	L5	2555	G
5	L5	2556	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	2560	C
5	L5	2565	A
5	L5	2567	G
5	L5	2573	A
5	L5	2583	C
5	L5	2586	G
5	L5	2587	A
5	L5	2589	C
5	L5	2601	A
5	L5	2602	G
5	L5	2618	G
5	L5	2627	C
5	L5	2653	C
5	L5	2662	G
5	L5	2669	C
5	L5	2676	A
5	L5	2687	U
5	L5	2694	G
5	L5	2695	A
5	L5	2696	A
5	L5	2706	G
5	L5	2708	U
5	L5	2709	C
5	L5	2710	C
5	L5	2711	G
5	L5	2712	G
5	L5	2721	G
5	L5	2724	G
5	L5	2726	G
5	L5	2739	C
5	L5	2742	G
5	L5	2743	A
5	L5	2746	A
5	L5	2761	U
5	L5	2763	U
5	L5	2769	U
5	L5	2770	C
5	L5	2788	U
5	L5	2790	U
5	L5	2806	A
5	L5	2814	C
5	L5	2815	A2M

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	2826	U
5	L5	2827	G
5	L5	2838	G
5	L5	2855	G
5	L5	2867	C
5	L5	2877	G
5	L5	2900	U
5	L5	2902	G
5	L5	2903	G
5	L5	2904	U
5	L5	2905	C
5	L5	2907	G
5	L5	2908	U
5	L5	3588	C
5	L5	3590	G
5	L5	3591	C
5	L5	3594	C
5	L5	3595	U
5	L5	3596	A
5	L5	3597	G
5	L5	3604	A
5	L5	3605	C
5	L5	3616	U
5	L5	3617	G
5	L5	3626	G
5	L5	3630	A
5	L5	3635	A
5	L5	3644	U
5	L5	3646	A
5	L5	3648	A
5	L5	3662	A
5	L5	3664	G
5	L5	3670	C
5	L5	3673	C
5	L5	3674	G
5	L5	3691	G
5	L5	3701	OMC
5	L5	3710	G
5	L5	3711	A
5	L5	3713	U
5	L5	3726	A
5	L5	3727	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	3729	U
5	L5	3753	G
5	L5	3760	A
5	L5	3764	U
5	L5	3770	U
5	L5	3774	A
5	L5	3775	A
5	L5	3776	G
5	L5	3777	G
5	L5	3785	A2M
5	L5	3786	U
5	L5	3792	OMG
5	L5	3811	G
5	L5	3812	C
5	L5	3814	U
5	L5	3817	A
5	L5	3819	G
5	L5	3824	A
5	L5	3838	U
5	L5	3839	G
5	L5	3840	U
5	L5	3877	A
5	L5	3878	C
5	L5	3879	G
5	L5	3885	G
5	L5	3892	U
5	L5	3897	G
5	L5	3901	A
5	L5	3906	A
5	L5	3907	G
5	L5	3908	A
5	L5	3915	U
5	L5	3923	A
5	L5	3930	U
5	L5	3938	G
5	L5	3939	G
5	L5	3942	A
5	L5	3945	A
5	L5	3947	A
5	L5	3949	A
5	L5	3950	U
5	L5	3952	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	3953	G
5	L5	4057	C
5	L5	4058	U
5	L5	4059	C
5	L5	4060	U
5	L5	4061	G
5	L5	4062	A
5	L5	4064	C
5	L5	4065	G
5	L5	4068	U
5	L5	4076	G
5	L5	4084	G
5	L5	4095	G
5	L5	4097	G
5	L5	4098	A
5	L5	4099	G
5	L5	4101	C
5	L5	4104	G
5	L5	4108	G
5	L5	4111	U
5	L5	4114	C
5	L5	4115	G
5	L5	4116	C
5	L5	4119	C
5	L5	4122	G
5	L5	4127	A
5	L5	4141	G
5	L5	4142	C
5	L5	4143	G
5	L5	4144	C
5	L5	4146	G
5	L5	4149	C
5	L5	4150	G
5	L5	4162	C
5	L5	4163	U
5	L5	4168	G
5	L5	4170	A
5	L5	4183	G
5	L5	4184	G
5	L5	4191	G
5	L5	4203	A
5	L5	4212	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	4220	6MZ
5	L5	4222	G
5	L5	4229	U
5	L5	4233	A
5	L5	4251	A
5	L5	4254	G
5	L5	4257	A
5	L5	4258	C
5	L5	4265	U
5	L5	4268	A
5	L5	4273	A
5	L5	4281	A
5	L5	4291	G
5	L5	4295	U
5	L5	4304	A
5	L5	4305	G
5	L5	4306	OMU
5	L5	4314	C
5	L5	4319	C
5	L5	4329	G
5	L5	4330	G
5	L5	4332	C
5	L5	4349	C
5	L5	4350	C
5	L5	4354	U
5	L5	4373	G
5	L5	4376	A
5	L5	4377	G
5	L5	4378	A
5	L5	4379	A
5	L5	4387	C
5	L5	4391	G
5	L5	4394	A
5	L5	4405	G
5	L5	4420	U
5	L5	4421	C
5	L5	4422	A
5	L5	4426	C
5	L5	4438	U
5	L5	4448	G
5	L5	4449	A
5	L5	4464	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	4466	C
5	L5	4475	G
5	L5	4488	A
5	L5	4500	PSU
5	L5	4510	A
5	L5	4512	U
5	L5	4513	A
5	L5	4519	C
5	L5	4524	G
5	L5	4525	C
5	L5	4545	G
5	L5	4548	A
5	L5	4560	C
5	L5	4567	G
5	L5	4569	U
5	L5	4575	G
5	L5	4584	A
5	L5	4589	A
5	L5	4590	A2M
5	L5	4600	G
5	L5	4601	U
5	L5	4636	PSU
5	L5	4637	OMG
5	L5	4656	A
5	L5	4670	C
5	L5	4672	A
5	L5	4679	G
5	L5	4694	G
5	L5	4695	C
5	L5	4700	A
5	L5	4708	A
5	L5	4709	U
5	L5	4719	G
5	L5	4734	A
5	L5	4740	G
5	L5	4741	C
5	L5	4742	G
5	L5	4745	G
5	L5	4754	G
5	L5	4757	C
5	L5	4759	C
5	L5	4761	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	4765	G
5	L5	4771	C
5	L5	4772	C
5	L5	4775	C
5	L5	4859	C
5	L5	4863	G
5	L5	4870	G
5	L5	4871	C
5	L5	4875	G
5	L5	4882	U
5	L5	4883	C
5	L5	4889	G
5	L5	4895	C
5	L5	4896	G
5	L5	4897	G
5	L5	4899	G
5	L5	4900	C
5	L5	4901	G
5	L5	4910	G
5	L5	4912	G
5	L5	4914	C
5	L5	4922	C
5	L5	4925	U
5	L5	4927	G
5	L5	4928	C
5	L5	4934	A
5	L5	4937	C
5	L5	4940	C
5	L5	4941	G
5	L5	4943	A
5	L5	4949	G
5	L5	4951	G
5	L5	4955	A
5	L5	4960	G
5	L5	4975	G
5	L5	4976	U
5	L5	4985	U
5	L5	4988	U
5	L5	4989	U
5	L5	4991	U
5	L5	5013	C
5	L5	5014	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	5017	G
5	L5	5022	U
5	L5	5023	C
5	L5	5024	C
5	L5	5026	U
5	L5	5027	C
5	L5	5028	G
5	L5	5030	U
5	L5	5034	A
5	L5	5041	G
5	L5	5050	C
5	L5	5054	C
5	L5	5061	A
5	L5	5069	U
6	L7	7	G
6	L7	22	A
6	L7	24	C
6	L7	33	U
6	L7	38	U
6	L7	53	U
6	L7	54	A
6	L7	64	G
6	L7	100	A
6	L7	110	G
7	L8	23	C
7	L8	25	G
7	L8	34	U
7	L8	35	C
7	L8	59	A
7	L8	62	A
7	L8	63	U
7	L8	80	A
7	L8	82	A
7	L8	84	A
7	L8	85	U
7	L8	87	G
7	L8	94	G
7	L8	103	A
7	L8	105	C
7	L8	111	U
7	L8	114	G
7	L8	124	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
7	L8	125	C
7	L8	126	C
7	L8	127	U
7	L8	153	C
85	S2	4	C
85	S2	14	C
85	S2	17	C
85	S2	25	A
85	S2	33	G
85	S2	41	G
85	S2	44	U
85	S2	45	A
85	S2	46	A
85	S2	56	G
85	S2	58	C
85	S2	59	U
85	S2	62	G
85	S2	64	A
85	S2	65	C
85	S2	67	C
85	S2	68	A
85	S2	72	C
85	S2	73	C
85	S2	74	G
85	S2	76	U
85	S2	99	A2M
85	S2	103	A
85	S2	113	G
85	S2	115	U
85	S2	126	G
85	S2	130	G
85	S2	143	U
85	S2	149	A
85	S2	158	A
85	S2	160	U
85	S2	162	C
85	S2	170	A
85	S2	175	A
85	S2	190	G
85	S2	191	A
85	S2	196	C
85	S2	197	U

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
85	S2	198	U
85	S2	200	G
85	S2	203	G
85	S2	204	G
85	S2	206	G
85	S2	207	G
85	S2	208	G
85	S2	209	A
85	S2	214	U
85	S2	291	G
85	S2	292	A
85	S2	295	C
85	S2	302	A
85	S2	306	C
85	S2	307	G
85	S2	308	G
85	S2	309	G
85	S2	311	C
85	S2	312	G
85	S2	313	A
85	S2	318	A
85	S2	319	C
85	S2	323	C
85	S2	324	C
85	S2	325	C
85	S2	326	C
85	S2	328	U
85	S2	329	G
85	S2	332	G
85	S2	335	G
85	S2	339	A
85	S2	340	C
85	S2	347	G
85	S2	351	G
85	S2	360	A
85	S2	362	C
85	S2	364	A
85	S2	368	U
85	S2	370	G
85	S2	385	G
85	S2	386	C
85	S2	398	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
85	S2	407	G
85	S2	408	A
85	S2	409	C
85	S2	438	G
85	S2	448	A
85	S2	449	A
85	S2	450	C
85	S2	452	G
85	S2	459	C
85	S2	464	A
85	S2	465	A
85	S2	471	G
85	S2	472	C
85	S2	473	A
85	S2	474	G
85	S2	476	A
85	S2	482	G
85	S2	487	U
85	S2	488	U
85	S2	492	C
85	S2	493	A
85	S2	501	C
85	S2	502	C
85	S2	516	A
85	S2	517	OMC
85	S2	531	A
85	S2	532	C
85	S2	536	A
85	S2	537	C
85	S2	540	U
85	S2	542	U
85	S2	544	G
85	S2	546	G
85	S2	547	G
85	S2	557	U
85	S2	558	G
85	S2	559	G
85	S2	563	G
85	S2	564	A
85	S2	576	A2M
85	S2	583	A
85	S2	587	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
85	S2	589	G
85	S2	590	A
85	S2	591	U
85	S2	593	C
85	S2	604	A
85	S2	614	C
85	S2	617	G
85	S2	623	G
85	S2	627	OMU
85	S2	628	A
85	S2	631	U
85	S2	643	A
85	S2	644	OMG
85	S2	655	A
85	S2	660	C
85	S2	664	A
85	S2	668	A2M
85	S2	669	A
85	S2	671	A
85	S2	672	A
85	S2	673	G
85	S2	683	OMG
85	S2	688	U
85	S2	689	U
85	S2	692	G
85	S2	695	C
85	S2	696	G
85	S2	697	G
85	S2	698	G
85	S2	732	U
85	S2	733	C
85	S2	736	C
85	S2	737	G
85	S2	738	C
85	S2	749	U
85	S2	751	G
85	S2	752	G
85	S2	753	C
85	S2	788	G
85	S2	791	C
85	S2	792	C
85	S2	798	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
85	S2	799	OMU
85	S2	821	G
85	S2	822	U
85	S2	823	U
85	S2	824	C
85	S2	827	A
85	S2	830	A
85	S2	834	C
85	S2	835	C
85	S2	836	G
85	S2	837	A
85	S2	838	G
85	S2	839	C
85	S2	842	C
85	S2	844	U
85	S2	847	A
85	S2	867	OMG
85	S2	870	A
85	S2	874	G
85	S2	877	C
85	S2	878	G
85	S2	880	G
85	S2	888	U
85	S2	889	U
85	S2	891	G
85	S2	893	U
85	S2	896	U
85	S2	897	U
85	S2	898	U
85	S2	899	U
85	S2	900	C
85	S2	901	G
85	S2	903	A
85	S2	913	A
85	S2	920	A
85	S2	930	C
85	S2	933	G
85	S2	934	G
85	S2	943	U
85	S2	963	A
85	S2	970	G
85	S2	971	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
85	S2	972	A
85	S2	985	G
85	S2	990	A
85	S2	992	A
85	S2	999	G
85	S2	1008	A
85	S2	1017	U
85	S2	1023	A
85	S2	1027	A
85	S2	1060	A
85	S2	1061	U
85	S2	1062	A
85	S2	1078	C
85	S2	1080	A
85	S2	1083	A
85	S2	1085	C
85	S2	1109	C
85	S2	1113	A
85	S2	1116	C
85	S2	1121	G
85	S2	1123	C
85	S2	1133	A
85	S2	1138	C
85	S2	1148	A
85	S2	1153	C
85	S2	1154	U
85	S2	1195	A
85	S2	1207	G
85	S2	1208	A
85	S2	1215	C
85	S2	1216	C
85	S2	1217	A
85	S2	1224	G
85	S2	1227	G
85	S2	1242	U
85	S2	1243	U
85	S2	1248	B8N
85	S2	1251	A
85	S2	1253	A
85	S2	1256	G
85	S2	1257	G
85	S2	1259	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
85	S2	1264	C
85	S2	1271	C
85	S2	1272	OMC
85	S2	1274	G
85	S2	1275	G
85	S2	1283	C
85	S2	1286	G
85	S2	1288	OMU
85	S2	1294	G
85	S2	1295	A
85	S2	1301	A
85	S2	1302	G
85	S2	1303	C
85	S2	1308	U
85	S2	1342	U
85	S2	1348	G
85	S2	1357	A
85	S2	1358	U
85	S2	1371	U
85	S2	1372	U
85	S2	1373	C
85	S2	1378	A
85	S2	1402	A
85	S2	1413	G
85	S2	1418	C
85	S2	1419	C
85	S2	1420	G
85	S2	1421	A
85	S2	1422	G
85	S2	1423	C
85	S2	1433	C
85	S2	1434	C
85	S2	1435	C
85	S2	1437	C
85	S2	1438	A
85	S2	1442	OMU
85	S2	1449	G
85	S2	1454	A
85	S2	1455	A
85	S2	1463	U
85	S2	1487	A
85	S2	1489	A

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
85	S2	1490	OMG
85	S2	1492	U
85	S2	1494	U
85	S2	1495	G
85	S2	1497	G
85	S2	1498	A
85	S2	1521	C
85	S2	1533	A
85	S2	1544	C
85	S2	1546	G
85	S2	1552	G
85	S2	1553	C
85	S2	1556	A
85	S2	1558	C
85	S2	1573	G
85	S2	1574	C
85	S2	1580	A
85	S2	1581	C
85	S2	1585	U
85	S2	1587	G
85	S2	1588	A
85	S2	1600	G
85	S2	1604	G
85	S2	1606	G
85	S2	1621	U
85	S2	1623	A
85	S2	1633	A
85	S2	1634	A
85	S2	1637	A
85	S2	1648	G
85	S2	1654	G
85	S2	1663	A
85	S2	1665	G
85	S2	1683	C
85	S2	1686	G
85	S2	1695	A
85	S2	1698	C
85	S2	1699	A
85	S2	1715	A
85	S2	1721	U
85	S2	1722	G
85	S2	1744	G

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
85	S2	1745	A
85	S2	1752	C
85	S2	1753	C
85	S2	1754	G
85	S2	1755	C
85	S2	1757	G
85	S2	1759	G
85	S2	1761	U
85	S2	1772	C
85	S2	1773	C
85	S2	1774	C
85	S2	1777	G
85	S2	1782	G
85	S2	1783	C
85	S2	1784	G
85	S2	1786	U
85	S2	1798	C
85	S2	1809	A
85	S2	1810	U
85	S2	1825	A
85	S2	1826	G
85	S2	1829	G
85	S2	1831	A
85	S2	1835	A
85	S2	1838	U
85	S2	1849	G
85	S2	1851	MA6
85	S2	1861	G
85	S2	1862	G
85	S2	1863	A
85	S2	1864	U
85	S2	1865	C
86	Zt	4	C
86	Zt	6	G
86	Zt	7	A
86	Zt	8	U
86	Zt	9	A
86	Zt	10	G
86	Zt	11	C
86	Zt	14	A
86	Zt	15	G
86	Zt	16	C

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
86	Zt	18	U
86	Zt	19	G
86	Zt	20	U
86	Zt	21	A
86	Zt	22	G
86	Zt	24	G
86	Zt	26	A
86	Zt	29	A
86	Zt	30	G
86	Zt	33	U
86	Zt	34	U
86	Zt	35	U
86	Zt	36	U
86	Zt	37	A
86	Zt	38	A
86	Zt	42	G
86	Zt	43	A
86	Zt	45	G
86	Zt	47	U
86	Zt	48	C
86	Zt	49	C
86	Zt	53	G
86	Zt	56	C
86	Zt	57	A
86	Zt	58	A
86	Zt	59	G
86	Zt	60	U
86	Zt	61	C
86	Zt	63	C
86	Zt	66	U
86	Zt	67	U
86	Zt	68	C
86	Zt	69	G
86	Zt	71	G
86	Zt	72	C

All (20) RNA pucker outliers are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
5	L5	406	C
5	L5	493	G
5	L5	914	U

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Mol	Chain	Res	Type
5	L5	1082	C
5	L5	1590	C
5	L5	1633	G
5	L5	1703	C
5	L5	1977	C
5	L5	2416	G
5	L5	2485	U
5	L5	2675	G
5	L5	2760	G
5	L5	3673	C
5	L5	4600	G
5	L5	4699	U
5	L5	4913	G
85	S2	291	G
85	S2	531	A
85	S2	563	G
85	S2	688	U

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

179 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$
85	OMG	S2	683	85	23,26,27	0.56	0	32,38,41	0.47	0
85	OMC	S2	517	85	19,22,23	0.56	0	25,31,34	0.64	0
85	PSU	S2	681	85	18,21,22	1.03	1 (5%)	21,30,33	1.82	4 (19%)
5	OMG	L5	2364	87,5	23,26,27	0.57	0	32,38,41	0.45	0
5	OMC	L5	2351	87,5	19,22,23	0.68	0	25,31,34	0.86	1 (4%)
5	PSU	L5	4521	87,5	18,21,22	1.11	2 (11%)	21,30,33	2.05	5 (23%)
85	A2M	S2	27	85	22,25,26	1.20	1 (4%)	30,36,39	1.53	6 (20%)
85	A2M	S2	484	85	22,25,26	1.15	1 (4%)	30,36,39	1.47	5 (16%)
85	PSU	S2	686	85	18,21,22	1.06	1 (5%)	21,30,33	1.90	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
85	PSU	S2	93	85	18,21,22	1.09	1 (5%)	21,30,33	1.82	4 (19%)
5	OMC	L5	3841	5	19,22,23	0.62	0	25,31,34	0.71	0
5	A2M	L5	1524	5	22,25,26	1.32	2 (9%)	30,36,39	1.52	6 (20%)
85	A2M	S2	166	85	22,25,26	1.29	1 (4%)	30,36,39	1.60	7 (23%)
85	OMC	S2	462	85	19,22,23	0.56	0	25,31,34	0.74	1 (4%)
5	OMU	L5	3925	5	19,22,23	3.22	7 (36%)	25,31,34	2.00	5 (20%)
5	UR3	L5	4530	5	19,22,23	2.67	7 (36%)	26,32,35	1.59	3 (11%)
5	PSU	L5	4552	5	18,21,22	1.08	2 (11%)	21,30,33	1.94	4 (19%)
5	PSU	L5	2632	5	18,21,22	1.08	1 (5%)	21,30,33	1.92	4 (19%)
5	PSU	L5	3853	87,5	18,21,22	1.04	1 (5%)	21,30,33	1.87	4 (19%)
85	OMU	S2	116	85	19,22,23	3.32	7 (36%)	25,31,34	1.79	4 (16%)
5	A2M	L5	398	5	22,25,26	1.18	1 (4%)	30,36,39	1.60	7 (23%)
5	PSU	L5	4636	5	18,21,22	1.12	2 (11%)	21,30,33	2.09	6 (28%)
5	PSU	L5	1782	5	18,21,22	1.04	1 (5%)	21,30,33	1.92	4 (19%)
5	PSU	L5	3822	5	18,21,22	1.07	1 (5%)	21,30,33	1.94	5 (23%)
85	OMC	S2	174	85	19,22,23	0.55	0	25,31,34	0.67	0
5	OMG	L5	3744	5	23,26,27	0.55	0	32,38,41	0.46	0
5	OMG	L5	1316	5	23,26,27	0.62	0	32,38,41	0.58	0
5	A2M	L5	3825	5	22,25,26	1.24	2 (9%)	30,36,39	1.56	8 (26%)
5	PSU	L5	4628	5	18,21,22	1.02	1 (5%)	21,30,33	1.88	4 (19%)
85	OMG	S2	601	85	23,26,27	0.52	0	32,38,41	0.45	0
5	OMC	L5	2824	5	19,22,23	0.60	0	25,31,34	0.64	0
5	PSU	L5	2839	5	18,21,22	1.05	2 (11%)	21,30,33	1.93	4 (19%)
85	PSU	S2	406	85	18,21,22	1.10	2 (11%)	21,30,33	2.03	5 (23%)
5	PSU	L5	5010	5	18,21,22	1.09	2 (11%)	21,30,33	1.94	4 (19%)
5	OMC	L5	3701	5	19,22,23	0.72	1 (5%)	25,31,34	1.76	4 (16%)
5	A2M	L5	2363	87,5	22,25,26	1.27	2 (9%)	30,36,39	1.57	9 (30%)
5	PSU	L5	1860	5	18,21,22	1.10	1 (5%)	21,30,33	1.95	4 (19%)
5	A2M	L5	3830	5	22,25,26	1.19	1 (4%)	30,36,39	1.55	5 (16%)
5	A2M	L5	2401	5	22,25,26	1.22	1 (4%)	30,36,39	1.58	7 (23%)
5	OMG	L5	3899	5	23,26,27	0.62	0	32,38,41	0.58	0
5	OMG	L5	4196	5,2	23,26,27	0.54	0	32,38,41	0.46	0
5	PSU	L5	3851	5	18,21,22	1.09	1 (5%)	21,30,33	1.92	4 (19%)
5	PSU	L5	4673	87,5	18,21,22	1.10	2 (11%)	21,30,33	1.93	4 (19%)
5	PSU	L5	4689	5	18,21,22	1.07	2 (11%)	21,30,33	1.98	4 (19%)
85	4AC	S2	1842	85	21,24,25	0.40	0	28,34,37	0.48	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
5	A2M	L5	2815	5	22,25,26	1.22	2 (9%)	30,36,39	1.50	8 (26%)
85	PSU	S2	651	85	18,21,22	1.12	1 (5%)	21,30,33	1.95	4 (19%)
85	A2M	S2	99	87,85	22,25,26	1.19	1 (4%)	30,36,39	1.54	8 (26%)
85	OMG	S2	509	85	23,26,27	0.51	0	32,38,41	0.49	0
85	OMU	S2	1442	85	19,22,23	3.34	7 (36%)	25,31,34	1.82	5 (20%)
5	5MC	L5	3782	87,5	19,22,23	0.69	0	26,32,35	0.77	0
85	OMU	S2	627	85	19,22,23	3.34	7 (36%)	25,31,34	1.80	5 (20%)
85	PSU	S2	105	85	18,21,22	1.06	1 (5%)	21,30,33	1.90	4 (19%)
85	A2M	S2	1031	85	22,25,26	1.19	2 (9%)	30,36,39	1.53	7 (23%)
7	PSU	L8	69	7	18,21,22	1.04	1 (5%)	21,30,33	1.93	5 (23%)
5	A2M	L5	1323	5	22,25,26	1.26	2 (9%)	30,36,39	1.59	8 (26%)
85	OMU	S2	172	85	19,22,23	3.32	7 (36%)	25,31,34	1.85	5 (20%)
85	PSU	S2	1174	85	18,21,22	1.07	1 (5%)	21,30,33	1.92	4 (19%)
5	OMU	L5	4620	5	19,22,23	3.16	7 (36%)	25,31,34	1.73	4 (16%)
85	PSU	S2	1004	85	18,21,22	1.11	2 (11%)	21,30,33	1.87	4 (19%)
5	PSU	L5	1536	5	18,21,22	1.05	1 (5%)	21,30,33	1.89	4 (19%)
5	PSU	L5	3844	5	18,21,22	1.10	1 (5%)	21,30,33	1.84	4 (19%)
5	PSU	L5	5001	5	18,21,22	1.09	1 (5%)	21,30,33	1.81	4 (19%)
5	OMG	L5	2424	5	23,26,27	0.54	0	32,38,41	0.41	0
5	OMG	L5	3792	5	23,26,27	0.55	0	32,38,41	0.52	0
85	PSU	S2	1045	85	18,21,22	1.04	1 (5%)	21,30,33	1.90	4 (19%)
5	OMG	L5	4228	5	23,26,27	0.55	0	32,38,41	0.61	0
5	OMG	L5	3627	5	23,26,27	0.56	0	32,38,41	0.65	0
85	PSU	S2	1081	85	18,21,22	1.00	1 (5%)	21,30,33	1.77	4 (19%)
5	A2M	L5	4590	5	22,25,26	1.25	2 (9%)	30,36,39	1.56	5 (16%)
5	PSU	L5	1582	5	18,21,22	1.06	1 (5%)	21,30,33	1.76	4 (19%)
5	PSU	L5	4296	5	18,21,22	1.08	2 (11%)	21,30,33	1.95	4 (19%)
5	OMC	L5	2861	5	19,22,23	0.62	0	25,31,34	0.77	1 (4%)
7	PSU	L8	55	7	18,21,22	1.08	1 (5%)	21,30,33	1.95	4 (19%)
5	PSU	L5	1862	5	18,21,22	1.07	1 (5%)	21,30,33	1.99	4 (19%)
5	PSU	L5	3884	5	18,21,22	1.09	2 (11%)	21,30,33	1.96	4 (19%)
85	PSU	S2	814	85	18,21,22	1.08	1 (5%)	21,30,33	1.87	4 (19%)
85	PSU	S2	1244	85	18,21,22	1.05	1 (5%)	21,30,33	1.93	5 (23%)
85	A2M	S2	1383	85	22,25,26	1.20	1 (4%)	30,36,39	1.62	6 (20%)
5	OMG	L5	4623	5	23,26,27	0.56	0	32,38,41	0.56	0
85	A2M	S2	468	85	22,25,26	1.26	1 (4%)	30,36,39	1.59	7 (23%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
85	PSU	S2	1056	85	18,21,22	1.06	1 (5%)	21,30,33	1.95	5 (23%)
5	PSU	L5	4500	5	18,21,22	1.12	2 (11%)	21,30,33	2.10	5 (23%)
85	MA6	S2	1850	85	23,26,27	1.29	2 (8%)	33,38,41	3.32	12 (36%)
5	PSU	L5	3695	5	18,21,22	1.08	1 (5%)	21,30,33	1.94	5 (23%)
5	A2M	L5	2787	5	22,25,26	1.16	1 (4%)	30,36,39	1.50	7 (23%)
5	OMC	L5	4536	5	19,22,23	0.64	0	25,31,34	0.74	0
85	PSU	S2	966	87,85	18,21,22	1.04	1 (5%)	21,30,33	1.84	4 (19%)
85	OMG	S2	436	85	23,26,27	0.52	0	32,38,41	0.57	0
5	PSU	L5	3637	5	18,21,22	1.06	1 (5%)	21,30,33	2.00	3 (14%)
85	OMU	S2	1326	85	19,22,23	3.29	7 (36%)	25,31,34	1.83	5 (20%)
5	OMG	L5	4494	5	23,26,27	0.56	0	32,38,41	0.51	0
5	OMC	L5	3887	5	19,22,23	0.59	0	25,31,34	0.70	0
5	PSU	L5	4361	5	18,21,22	1.03	1 (5%)	21,30,33	1.82	4 (19%)
5	A2M	L5	3718	5	22,25,26	1.15	1 (4%)	30,36,39	1.51	4 (13%)
85	PSU	S2	109	85	18,21,22	1.07	1 (5%)	21,30,33	1.97	4 (19%)
5	OMC	L5	2422	87,5	19,22,23	0.66	0	25,31,34	0.78	1 (4%)
5	PSU	L5	1744	87,5	18,21,22	1.09	1 (5%)	21,30,33	1.93	4 (19%)
85	OMU	S2	799	85	19,22,23	3.37	7 (36%)	25,31,34	1.78	5 (20%)
85	OMU	S2	121	85	19,22,23	3.30	7 (36%)	25,31,34	1.83	5 (20%)
5	PSU	L5	4353	5	18,21,22	1.08	2 (11%)	21,30,33	2.02	6 (28%)
5	OMC	L5	2804	5	19,22,23	0.63	0	25,31,34	0.67	0
85	OMG	S2	1328	85	23,26,27	0.47	0	32,38,41	0.44	0
5	OMG	L5	4392	5	23,26,27	0.57	0	32,38,41	0.49	0
5	PSU	L5	1792	5	18,21,22	1.01	1 (5%)	21,30,33	1.86	4 (19%)
5	PSU	L5	4493	5	18,21,22	1.04	1 (5%)	21,30,33	1.84	4 (19%)
85	OMG	S2	1490	85	23,26,27	0.56	0	32,38,41	0.48	0
5	UY1	L5	3818	5	19,22,23	4.78	9 (47%)	21,31,34	2.03	5 (23%)
5	1MA	L5	1322	87,5	21,25,26	0.65	0	30,37,40	0.80	2 (6%)
85	A2M	S2	668	87,85	22,25,26	1.35	2 (9%)	30,36,39	1.59	7 (23%)
85	PSU	S2	1046	85	18,21,22	1.09	2 (11%)	21,30,33	1.89	4 (19%)
5	A2M	L5	400	5	22,25,26	1.22	3 (13%)	30,36,39	1.57	9 (30%)
5	PSU	L5	3920	87,5	18,21,22	1.05	2 (11%)	21,30,33	1.99	4 (19%)
85	OMU	S2	1288	85	19,22,23	3.38	7 (36%)	25,31,34	1.80	4 (16%)
5	PSU	L5	4457	5	18,21,22	1.05	2 (11%)	21,30,33	1.98	5 (23%)
5	OMG	L5	4618	5	23,26,27	0.57	0	32,38,41	0.52	0
5	OMG	L5	4499	5	23,26,27	0.54	0	32,38,41	0.48	0
5	A2M	L5	1534	87,5	22,25,26	1.21	2 (9%)	30,36,39	1.43	7 (23%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
5	OMC	L5	2365	87,5	19,22,23	0.59	0	25,31,34	0.57	0
5	5MC	L5	4447	5	19,22,23	0.92	1 (5%)	26,32,35	0.69	0
5	OMU	L5	4227	5	19,22,23	3.24	7 (36%)	25,31,34	1.91	5 (20%)
5	6MZ	L5	4220	5	22,25,26	3.94	11 (50%)	29,36,39	2.48	11 (37%)
5	PSU	L5	1677	5	18,21,22	1.06	2 (11%)	21,30,33	1.85	5 (23%)
5	OMU	L5	4498	5	19,22,23	3.21	7 (36%)	25,31,34	1.86	5 (20%)
85	PSU	S2	649	85	18,21,22	1.10	2 (11%)	21,30,33	1.98	4 (19%)
5	PSU	L5	4576	5	18,21,22	1.07	1 (5%)	21,30,33	1.90	4 (19%)
5	PSU	L5	4403	5	18,21,22	1.04	1 (5%)	21,30,33	2.07	6 (28%)
85	OMG	S2	867	85	23,26,27	0.52	0	32,38,41	0.48	0
5	OMU	L5	2837	5	19,22,23	3.26	7 (36%)	25,31,34	1.90	5 (20%)
85	OMU	S2	428	85	19,22,23	3.30	7 (36%)	25,31,34	1.88	5 (20%)
5	PSU	L5	4299	5	18,21,22	1.03	1 (5%)	21,30,33	1.88	4 (19%)
3	SEP	CF	163	3	8,9,10	1.61	1 (12%)	7,12,14	1.22	1 (14%)
5	OMG	L5	4370	5	23,26,27	0.55	0	32,38,41	0.53	0
85	PSU	S2	1177	85	18,21,22	1.09	1 (5%)	21,30,33	1.97	4 (19%)
5	PSU	L5	1781	5	18,21,22	1.05	1 (5%)	21,30,33	1.85	4 (19%)
5	OMG	L5	2876	5	23,26,27	0.54	0	32,38,41	0.54	0
5	A2M	L5	4523	87,5	22,25,26	1.33	3 (13%)	30,36,39	1.54	7 (23%)
85	6MZ	S2	1832	87,85	26,26,26	2.82	5 (19%)	36,39,39	2.08	10 (27%)
85	PSU	S2	801	85	18,21,22	1.04	1 (5%)	21,30,33	1.82	4 (19%)
5	PSU	L5	4312	5	18,21,22	1.08	2 (11%)	21,30,33	1.90	4 (19%)
85	OMC	S2	1391	85	19,22,23	0.55	0	25,31,34	0.68	0
85	OMC	S2	1703	85	19,22,23	0.59	0	25,31,34	0.64	0
5	A2M	L5	3785	87,5	22,25,26	1.17	1 (4%)	30,36,39	1.60	9 (30%)
85	OMG	S2	644	85	23,26,27	0.50	0	32,38,41	0.51	0
85	MA6	S2	1851	85	23,26,27	1.29	2 (8%)	33,38,41	3.41	13 (39%)
5	OMG	L5	4637	5	23,26,27	0.54	0	32,38,41	0.49	0
5	PSU	L5	4532	5	18,21,22	1.04	1 (5%)	21,30,33	1.85	4 (19%)
5	PSU	L5	4293	5	18,21,22	1.09	2 (11%)	21,30,33	2.07	4 (19%)
5	A2M	L5	1871	87,5	22,25,26	1.29	3 (13%)	30,36,39	1.56	6 (20%)
85	OMU	S2	354	85	19,22,23	3.26	7 (36%)	25,31,34	1.89	5 (20%)
5	A2M	L5	3867	5	22,25,26	1.28	2 (9%)	30,36,39	1.44	7 (23%)
5	PSU	L5	4973	5	18,21,22	1.05	1 (5%)	21,30,33	1.96	4 (19%)
85	PSU	S2	1232	85	18,21,22	1.10	1 (5%)	21,30,33	1.89	4 (19%)
5	OMC	L5	4456	5	19,22,23	0.67	0	25,31,34	0.77	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z  > 2	Counts	RMSZ	# Z  > 2
5	A2M	L5	4571	5	22,25,26	1.25	2 (9%)	30,36,39	1.57	8 (26%)
5	OMC	L5	3808	5	19,22,23	0.68	0	25,31,34	0.77	1 (4%)
7	OMG	L8	75	7	23,26,27	0.50	0	32,38,41	0.48	0
85	4AC	S2	1337	85	21,24,25	0.39	0	28,34,37	0.74	1 (3%)
5	PSU	L5	1683	5	18,21,22	1.06	1 (5%)	21,30,33	1.98	4 (19%)
5	PSU	L5	4579	5	18,21,22	1.04	1 (5%)	21,30,33	1.93	4 (19%)
85	PSU	S2	1367	85	18,21,22	1.07	1 (5%)	21,30,33	1.93	4 (19%)
5	A2M	L5	1326	5	22,25,26	1.21	2 (9%)	30,36,39	1.47	8 (26%)
5	PSU	L5	3639	5	18,21,22	1.11	2 (11%)	21,30,33	2.04	5 (23%)
5	OMC	L5	1340	5	19,22,23	0.64	0	25,31,34	0.78	0
5	PSU	L5	4471	5	18,21,22	1.03	1 (5%)	21,30,33	1.90	4 (19%)
5	OMG	L5	1522	5	23,26,27	0.57	0	32,38,41	0.62	1 (3%)
5	OMC	L5	3869	5	19,22,23	0.65	0	25,31,34	0.70	0
5	PSU	L5	4442	5	18,21,22	1.08	1 (5%)	21,30,33	2.03	6 (28%)
5	OMU	L5	4306	5	19,22,23	3.22	7 (36%)	25,31,34	1.89	4 (16%)
85	OMC	S2	1272	85	19,22,23	0.56	0	25,31,34	0.69	0
85	A2M	S2	576	85	22,25,26	1.20	1 (4%)	30,36,39	1.50	5 (16%)
85	PSU	S2	863	85	18,21,22	1.07	1 (5%)	21,30,33	1.91	4 (19%)
85	G7M	S2	1639	85,2	23,26,27	2.63	9 (39%)	34,39,42	2.56	11 (32%)
85	PSU	S2	866	85	18,21,22	1.10	1 (5%)	21,30,33	1.90	4 (19%)
85	B8N	S2	1248	85	25,29,30	3.24	7 (28%)	28,42,45	1.96	8 (28%)
5	PSU	L5	4972	5	18,21,22	1.03	1 (5%)	21,30,33	1.95	4 (19%)
85	A2M	S2	159	85	22,25,26	1.21	1 (4%)	30,36,39	1.51	6 (20%)
5	PSU	L5	4431	5	18,21,22	1.05	1 (5%)	21,30,33	1.91	4 (19%)
5	OMG	L5	1625	5	23,26,27	0.55	0	32,38,41	0.46	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
85	OMG	S2	683	85	-	2/9/27/28	0/3/3/3
85	OMC	S2	517	85	-	2/9/27/28	0/2/2/2
85	PSU	S2	681	85	-	0/7/25/26	0/2/2/2
5	OMG	L5	2364	87,5	-	3/9/27/28	0/3/3/3
5	OMC	L5	2351	87,5	-	2/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	PSU	L5	4521	87,5	-	0/7/25/26	0/2/2/2
85	A2M	S2	27	85	-	1/9/27/28	0/3/3/3
85	A2M	S2	484	85	-	0/9/27/28	0/3/3/3
85	PSU	S2	686	85	-	0/7/25/26	0/2/2/2
85	PSU	S2	93	85	-	0/7/25/26	0/2/2/2
5	OMC	L5	3841	5	-	1/9/27/28	0/2/2/2
5	A2M	L5	1524	5	-	2/9/27/28	0/3/3/3
85	A2M	S2	166	85	-	0/9/27/28	0/3/3/3
85	OMC	S2	462	85	-	0/9/27/28	0/2/2/2
5	OMU	L5	3925	5	-	0/9/27/28	0/2/2/2
5	UR3	L5	4530	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	4552	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	2632	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	3853	87,5	-	0/7/25/26	0/2/2/2
85	OMU	S2	116	85	-	0/9/27/28	0/2/2/2
5	A2M	L5	398	5	-	1/9/27/28	0/3/3/3
5	PSU	L5	4636	5	-	1/7/25/26	0/2/2/2
5	PSU	L5	1782	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	3822	5	-	0/7/25/26	0/2/2/2
85	OMC	S2	174	85	-	0/9/27/28	0/2/2/2
5	OMG	L5	3744	5	-	0/9/27/28	0/3/3/3
5	OMG	L5	1316	5	-	0/9/27/28	0/3/3/3
5	A2M	L5	3825	5	-	0/9/27/28	0/3/3/3
5	PSU	L5	4628	5	-	0/7/25/26	0/2/2/2
85	OMG	S2	601	85	-	1/9/27/28	0/3/3/3
5	OMC	L5	2824	5	-	1/9/27/28	0/2/2/2
5	PSU	L5	2839	5	-	0/7/25/26	0/2/2/2
85	PSU	S2	406	85	-	0/7/25/26	0/2/2/2
5	PSU	L5	5010	5	-	0/7/25/26	0/2/2/2
5	OMC	L5	3701	5	-	6/9/27/28	0/2/2/2
5	A2M	L5	2363	87,5	-	0/9/27/28	0/3/3/3
5	PSU	L5	1860	5	-	0/7/25/26	0/2/2/2
5	A2M	L5	3830	5	-	0/9/27/28	0/3/3/3
5	A2M	L5	2401	5	-	0/9/27/28	0/3/3/3
5	OMG	L5	3899	5	-	2/9/27/28	0/3/3/3
5	OMG	L5	4196	5,2	-	1/9/27/28	0/3/3/3
5	PSU	L5	3851	5	-	1/7/25/26	0/2/2/2
5	PSU	L5	4673	87,5	-	0/7/25/26	0/2/2/2
5	PSU	L5	4689	5	-	0/7/25/26	0/2/2/2
85	4AC	S2	1842	85	-	0/11/29/30	0/2/2/2
5	A2M	L5	2815	5	-	2/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
85	PSU	S2	651	85	-	0/7/25/26	0/2/2/2
85	A2M	S2	99	87,85	-	2/9/27/28	0/3/3/3
85	OMG	S2	509	85	-	0/9/27/28	0/3/3/3
85	OMU	S2	1442	85	-	2/9/27/28	0/2/2/2
5	5MC	L5	3782	87,5	-	1/7/25/26	0/2/2/2
85	OMU	S2	627	85	-	4/9/27/28	0/2/2/2
85	PSU	S2	105	85	-	0/7/25/26	0/2/2/2
85	A2M	S2	1031	85	-	0/9/27/28	0/3/3/3
7	PSU	L8	69	7	-	0/7/25/26	0/2/2/2
5	A2M	L5	1323	5	-	2/9/27/28	0/3/3/3
85	OMU	S2	172	85	-	0/9/27/28	0/2/2/2
85	PSU	S2	1174	85	-	0/7/25/26	0/2/2/2
5	OMU	L5	4620	5	-	0/9/27/28	0/2/2/2
85	PSU	S2	1004	85	-	0/7/25/26	0/2/2/2
5	PSU	L5	1536	5	-	2/7/25/26	0/2/2/2
5	PSU	L5	3844	5	-	1/7/25/26	0/2/2/2
5	PSU	L5	5001	5	-	0/7/25/26	0/2/2/2
5	OMG	L5	2424	5	-	1/9/27/28	0/3/3/3
5	OMG	L5	3792	5	-	2/9/27/28	0/3/3/3
85	PSU	S2	1045	85	-	2/7/25/26	0/2/2/2
5	OMG	L5	4228	5	-	0/9/27/28	0/3/3/3
5	OMG	L5	3627	5	-	0/9/27/28	0/3/3/3
85	PSU	S2	1081	85	-	1/7/25/26	0/2/2/2
5	A2M	L5	4590	5	-	3/9/27/28	0/3/3/3
5	PSU	L5	1582	5	-	1/7/25/26	0/2/2/2
5	PSU	L5	4296	5	-	2/7/25/26	0/2/2/2
5	OMC	L5	2861	5	-	1/9/27/28	0/2/2/2
7	PSU	L8	55	7	-	0/7/25/26	0/2/2/2
5	PSU	L5	1862	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	3884	5	-	0/7/25/26	0/2/2/2
85	PSU	S2	814	85	-	0/7/25/26	0/2/2/2
85	PSU	S2	1244	85	-	0/7/25/26	0/2/2/2
85	A2M	S2	1383	85	-	1/9/27/28	0/3/3/3
5	OMG	L5	4623	5	-	0/9/27/28	0/3/3/3
85	A2M	S2	468	85	-	1/9/27/28	0/3/3/3
85	PSU	S2	1056	85	-	0/7/25/26	0/2/2/2
5	PSU	L5	4500	5	-	4/7/25/26	0/2/2/2
85	MA6	S2	1850	85	-	0/11/29/30	0/3/3/3
5	PSU	L5	3695	5	-	0/7/25/26	0/2/2/2
5	A2M	L5	2787	5	-	5/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	OMC	L5	4536	5	-	0/9/27/28	0/2/2/2
85	PSU	S2	966	87,85	-	0/7/25/26	0/2/2/2
85	OMG	S2	436	85	-	0/9/27/28	0/3/3/3
5	PSU	L5	3637	5	-	0/7/25/26	0/2/2/2
85	OMU	S2	1326	85	-	0/9/27/28	0/2/2/2
5	OMG	L5	4494	5	-	1/9/27/28	0/3/3/3
5	OMC	L5	3887	5	-	1/9/27/28	0/2/2/2
5	PSU	L5	4361	5	-	0/7/25/26	0/2/2/2
5	A2M	L5	3718	5	-	0/9/27/28	0/3/3/3
85	PSU	S2	109	85	-	0/7/25/26	0/2/2/2
5	OMC	L5	2422	87,5	-	1/9/27/28	0/2/2/2
5	PSU	L5	1744	87,5	-	0/7/25/26	0/2/2/2
85	OMU	S2	799	85	-	2/9/27/28	0/2/2/2
85	OMU	S2	121	85	-	0/9/27/28	0/2/2/2
5	PSU	L5	4353	5	-	0/7/25/26	0/2/2/2
5	OMC	L5	2804	5	-	0/9/27/28	0/2/2/2
85	OMG	S2	1328	85	-	1/9/27/28	0/3/3/3
5	OMG	L5	4392	5	-	0/9/27/28	0/3/3/3
5	PSU	L5	1792	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	4493	5	-	0/7/25/26	0/2/2/2
85	OMG	S2	1490	85	-	1/9/27/28	0/3/3/3
5	UY1	L5	3818	5	-	2/9/27/28	0/2/2/2
5	1MA	L5	1322	87,5	-	2/7/25/26	0/3/3/3
85	A2M	S2	668	87,85	-	4/9/27/28	0/3/3/3
85	PSU	S2	1046	85	-	0/7/25/26	0/2/2/2
5	A2M	L5	400	5	-	1/9/27/28	0/3/3/3
5	PSU	L5	3920	87,5	-	0/7/25/26	0/2/2/2
85	OMU	S2	1288	85	-	2/9/27/28	0/2/2/2
5	PSU	L5	4457	5	-	0/7/25/26	0/2/2/2
5	OMG	L5	4618	5	-	2/9/27/28	0/3/3/3
5	OMG	L5	4499	5	-	1/9/27/28	0/3/3/3
5	A2M	L5	1534	87,5	-	1/9/27/28	0/3/3/3
5	OMC	L5	2365	87,5	-	0/9/27/28	0/2/2/2
5	5MC	L5	4447	5	-	4/7/25/26	0/2/2/2
5	OMU	L5	4227	5	-	0/9/27/28	0/2/2/2
5	6MZ	L5	4220	5	-	2/9/27/28	0/3/3/3
5	PSU	L5	1677	5	-	2/7/25/26	0/2/2/2
5	OMU	L5	4498	5	-	0/9/27/28	0/2/2/2
85	PSU	S2	649	85	-	0/7/25/26	0/2/2/2
5	PSU	L5	4576	5	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	PSU	L5	4403	5	-	0/7/25/26	0/2/2/2
85	OMG	S2	867	85	-	2/9/27/28	0/3/3/3
5	OMU	L5	2837	5	-	0/9/27/28	0/2/2/2
85	OMU	S2	428	85	-	6/9/27/28	0/2/2/2
5	PSU	L5	4299	5	-	0/7/25/26	0/2/2/2
3	SEP	CF	163	3	-	3/6/8/10	-
5	OMG	L5	4370	5	-	1/9/27/28	0/3/3/3
85	PSU	S2	1177	85	-	0/7/25/26	0/2/2/2
5	PSU	L5	1781	5	-	2/7/25/26	0/2/2/2
5	OMG	L5	2876	5	-	0/9/27/28	0/3/3/3
5	A2M	L5	4523	87,5	-	0/9/27/28	0/3/3/3
85	6MZ	S2	1832	87,85	-	3/12/28/28	0/3/3/3
85	PSU	S2	801	85	-	2/7/25/26	0/2/2/2
5	PSU	L5	4312	5	-	0/7/25/26	0/2/2/2
85	OMC	S2	1391	85	-	0/9/27/28	0/2/2/2
85	OMC	S2	1703	85	-	2/9/27/28	0/2/2/2
5	A2M	L5	3785	87,5	-	1/9/27/28	0/3/3/3
85	OMG	S2	644	85	-	3/9/27/28	0/3/3/3
85	MA6	S2	1851	85	-	1/11/29/30	0/3/3/3
5	OMG	L5	4637	5	-	3/9/27/28	0/3/3/3
5	PSU	L5	4532	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	4293	5	-	0/7/25/26	0/2/2/2
5	A2M	L5	1871	87,5	-	0/9/27/28	0/3/3/3
85	OMU	S2	354	85	-	0/9/27/28	0/2/2/2
5	A2M	L5	3867	5	-	2/9/27/28	0/3/3/3
5	PSU	L5	4973	5	-	0/7/25/26	0/2/2/2
85	PSU	S2	1232	85	-	0/7/25/26	0/2/2/2
5	OMC	L5	4456	5	-	0/9/27/28	0/2/2/2
5	A2M	L5	4571	5	-	0/9/27/28	0/3/3/3
5	OMC	L5	3808	5	-	0/9/27/28	0/2/2/2
7	OMG	L8	75	7	-	1/9/27/28	0/3/3/3
85	4AC	S2	1337	85	-	1/11/29/30	0/2/2/2
5	PSU	L5	1683	5	-	0/7/25/26	0/2/2/2
5	PSU	L5	4579	5	-	0/7/25/26	0/2/2/2
85	PSU	S2	1367	85	-	0/7/25/26	0/2/2/2
5	A2M	L5	1326	5	-	4/9/27/28	0/3/3/3
5	PSU	L5	3639	5	-	0/7/25/26	0/2/2/2
5	OMC	L5	1340	5	-	1/9/27/28	0/2/2/2
5	PSU	L5	4471	5	-	1/7/25/26	0/2/2/2
5	OMG	L5	1522	5	-	0/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	OMC	L5	3869	5	-	0/9/27/28	0/2/2/2
5	PSU	L5	4442	5	-	0/7/25/26	0/2/2/2
5	OMU	L5	4306	5	-	0/9/27/28	0/2/2/2
85	OMC	S2	1272	85	-	2/9/27/28	0/2/2/2
85	A2M	S2	576	85	-	4/9/27/28	0/3/3/3
85	PSU	S2	863	85	-	0/7/25/26	0/2/2/2
85	G7M	S2	1639	85,2	-	1/7/25/26	0/3/3/3
85	PSU	S2	866	85	-	0/7/25/26	0/2/2/2
85	B8N	S2	1248	85	-	4/16/34/35	0/2/2/2
5	PSU	L5	4972	5	-	0/7/25/26	0/2/2/2
85	A2M	S2	159	85	-	1/9/27/28	0/3/3/3
5	PSU	L5	4431	5	-	0/7/25/26	0/2/2/2
5	OMG	L5	1625	5	-	2/9/27/28	0/3/3/3

All (307) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
85	S2	1832	6MZ	C6-N6	12.57	1.48	1.34
5	L5	3818	UY1	C6-C5	12.45	1.49	1.35
5	L5	4220	6MZ	C6-N6	11.87	1.47	1.34
5	L5	3818	UY1	C2-N1	11.45	1.51	1.36
85	S2	799	OMU	C2-N1	8.52	1.51	1.38
5	L5	4220	6MZ	C3'-C2'	-8.47	1.30	1.53
85	S2	1288	OMU	C2-N1	8.43	1.51	1.38
85	S2	1442	OMU	C2-N1	8.13	1.51	1.38
85	S2	172	OMU	C2-N1	8.08	1.51	1.38
85	S2	1248	B8N	C4-N3	-8.06	1.26	1.40
85	S2	116	OMU	C2-N1	8.04	1.51	1.38
85	S2	627	OMU	C2-N1	8.01	1.51	1.38
85	S2	121	OMU	C2-N1	7.99	1.51	1.38
85	S2	428	OMU	C2-N1	7.99	1.51	1.38
85	S2	354	OMU	C2-N1	7.86	1.50	1.38
5	L5	4227	OMU	C2-N1	7.85	1.50	1.38
5	L5	3925	OMU	C2-N1	7.84	1.50	1.38
85	S2	1326	OMU	C2-N1	7.84	1.50	1.38
5	L5	2837	OMU	C2-N1	7.82	1.50	1.38
5	L5	4306	OMU	C2-N1	7.82	1.50	1.38
85	S2	1248	B8N	C6-N1	7.71	1.55	1.36
5	L5	4498	OMU	C2-N1	7.70	1.50	1.38
5	L5	4620	OMU	C2-N1	7.63	1.50	1.38
5	L5	3818	UY1	C2-N3	7.52	1.49	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
85	S2	627	OMU	C2-N3	6.92	1.50	1.38
85	S2	116	OMU	C2-N3	6.90	1.50	1.38
85	S2	1248	B8N	C4-C5	6.87	1.63	1.47
85	S2	1442	OMU	C2-N3	6.86	1.49	1.38
85	S2	172	OMU	C2-N3	6.84	1.49	1.38
85	S2	1288	OMU	C2-N3	6.81	1.49	1.38
85	S2	799	OMU	C2-N3	6.80	1.49	1.38
85	S2	1326	OMU	C2-N3	6.78	1.49	1.38
85	S2	121	OMU	C2-N3	6.77	1.49	1.38
85	S2	428	OMU	C2-N3	6.76	1.49	1.38
5	L5	2837	OMU	C2-N3	6.71	1.49	1.38
85	S2	354	OMU	C2-N3	6.61	1.49	1.38
5	L5	4227	OMU	C2-N3	6.60	1.49	1.38
85	S2	1639	G7M	C4-N3	6.55	1.49	1.34
5	L5	4306	OMU	C2-N3	6.52	1.49	1.38
5	L5	4498	OMU	C2-N3	6.48	1.49	1.38
5	L5	3925	OMU	C2-N3	6.47	1.49	1.38
5	L5	4620	OMU	C2-N3	6.41	1.49	1.38
5	L5	4530	UR3	C6-C5	6.24	1.49	1.35
5	L5	4530	UR3	C2-N1	6.20	1.47	1.38
85	S2	1288	OMU	C6-C5	5.87	1.48	1.35
85	S2	627	OMU	C6-C5	5.86	1.48	1.35
85	S2	1326	OMU	C6-C5	5.81	1.48	1.35
85	S2	1248	B8N	C2-N1	5.81	1.56	1.39
85	S2	1442	OMU	C6-C5	5.81	1.48	1.35
85	S2	121	OMU	C6-C5	5.80	1.48	1.35
85	S2	116	OMU	C6-C5	5.79	1.48	1.35
85	S2	172	OMU	C6-C5	5.78	1.48	1.35
85	S2	428	OMU	C6-C5	5.77	1.48	1.35
5	L5	2837	OMU	C6-C5	5.75	1.48	1.35
5	L5	3925	OMU	O4-C4	-5.73	1.13	1.24
85	S2	799	OMU	C6-C5	5.70	1.48	1.35
5	L5	4227	OMU	C6-C5	5.69	1.48	1.35
85	S2	354	OMU	C6-C5	5.69	1.48	1.35
5	L5	4620	OMU	O4-C4	-5.69	1.13	1.24
5	L5	4306	OMU	O4-C4	-5.67	1.13	1.24
5	L5	4227	OMU	O4-C4	-5.63	1.13	1.24
85	S2	354	OMU	O4-C4	-5.63	1.13	1.24
5	L5	4498	OMU	C6-C5	5.62	1.48	1.35
5	L5	3925	OMU	C6-C5	5.59	1.48	1.35
5	L5	4306	OMU	C6-C5	5.58	1.48	1.35
85	S2	428	OMU	O4-C4	-5.56	1.13	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	L5	4498	OMU	O4-C4	-5.56	1.13	1.24
5	L5	4620	OMU	C6-C5	5.55	1.47	1.35
85	S2	116	OMU	O4-C4	-5.52	1.13	1.24
5	L5	4530	UR3	C2-N3	5.52	1.49	1.39
85	S2	1326	OMU	O4-C4	-5.51	1.13	1.24
5	L5	2837	OMU	O4-C4	-5.50	1.13	1.24
85	S2	1442	OMU	O4-C4	-5.48	1.13	1.24
85	S2	799	OMU	O4-C4	-5.48	1.13	1.24
85	S2	172	OMU	O4-C4	-5.46	1.13	1.24
85	S2	121	OMU	O4-C4	-5.44	1.13	1.24
85	S2	627	OMU	O4-C4	-5.43	1.13	1.24
85	S2	1288	OMU	O4-C4	-5.42	1.13	1.24
85	S2	1639	G7M	C2-N3	5.34	1.46	1.33
5	L5	3818	UY1	C6-N1	5.19	1.44	1.36
85	S2	1248	B8N	C6-C5	5.18	1.42	1.35
85	S2	1639	G7M	C5-N7	-4.95	1.33	1.39
5	L5	4220	6MZ	O4'-C1'	-4.85	1.30	1.42
85	S2	1639	G7M	C2-N2	4.84	1.45	1.34
5	L5	4220	6MZ	O4'-C4'	4.64	1.55	1.45
85	S2	627	OMU	C4-N3	4.49	1.46	1.38
5	L5	4220	6MZ	C5'-C4'	-4.47	1.38	1.51
85	S2	1288	OMU	C4-N3	4.36	1.46	1.38
85	S2	172	OMU	C4-N3	4.31	1.46	1.38
85	S2	1442	OMU	C4-N3	4.31	1.46	1.38
5	L5	3818	UY1	C4-N3	4.30	1.46	1.38
85	S2	121	OMU	C4-N3	4.27	1.45	1.38
85	S2	428	OMU	C4-N3	4.27	1.45	1.38
85	S2	799	OMU	C4-N3	4.26	1.45	1.38
85	S2	116	OMU	C4-N3	4.26	1.45	1.38
85	S2	1326	OMU	C4-N3	4.24	1.45	1.38
5	L5	2837	OMU	C4-N3	4.08	1.45	1.38
5	L5	4498	OMU	C4-N3	4.05	1.45	1.38
85	S2	354	OMU	C4-N3	4.04	1.45	1.38
5	L5	4227	OMU	C4-N3	3.93	1.45	1.38
5	L5	4306	OMU	C4-N3	3.92	1.45	1.38
5	L5	3925	OMU	C4-N3	3.82	1.45	1.38
5	L5	4620	OMU	C4-N3	3.80	1.45	1.38
5	L5	3818	UY1	O4-C4	-3.75	1.16	1.23
85	S2	1639	G7M	C5-C6	3.74	1.53	1.43
85	S2	1248	B8N	C1'-C5	3.64	1.58	1.50
5	L5	2401	A2M	O5'-C5'	-3.61	1.33	1.44
5	L5	3785	A2M	O5'-C5'	-3.60	1.33	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	L5	3825	A2M	O5'-C5'	-3.59	1.33	1.44
85	S2	651	PSU	C6-C5	3.57	1.39	1.35
85	S2	1004	PSU	C6-C5	3.54	1.39	1.35
85	S2	1232	PSU	C6-C5	3.54	1.39	1.35
5	L5	1524	A2M	O5'-C5'	-3.53	1.33	1.44
5	L5	3830	A2M	O5'-C5'	-3.53	1.33	1.44
5	L5	2787	A2M	O5'-C5'	-3.52	1.33	1.44
85	S2	668	A2M	O5'-C5'	-3.52	1.33	1.44
5	L5	1323	A2M	O5'-C5'	-3.51	1.33	1.44
3	CF	163	SEP	P-O1P	3.50	1.61	1.50
85	S2	93	PSU	C6-C5	3.49	1.39	1.35
5	L5	2815	A2M	O5'-C5'	-3.49	1.34	1.44
85	S2	866	PSU	C6-C5	3.48	1.39	1.35
85	S2	468	A2M	O5'-C5'	-3.47	1.34	1.44
5	L5	400	A2M	O5'-C5'	-3.46	1.34	1.44
85	S2	99	A2M	O5'-C5'	-3.45	1.34	1.44
5	L5	3844	PSU	C6-C5	3.44	1.39	1.35
5	L5	4220	6MZ	C5-C4	-3.44	1.33	1.39
85	S2	1031	A2M	O5'-C5'	-3.43	1.34	1.44
85	S2	1367	PSU	C6-C5	3.42	1.39	1.35
5	L5	4571	A2M	O5'-C5'	-3.42	1.34	1.44
5	L5	1871	A2M	O5'-C5'	-3.41	1.34	1.44
85	S2	166	A2M	O5'-C5'	-3.41	1.34	1.44
5	L5	1326	A2M	O5'-C5'	-3.41	1.34	1.44
5	L5	3867	A2M	O5'-C5'	-3.40	1.34	1.44
5	L5	1860	PSU	C6-C5	3.39	1.39	1.35
5	L5	5010	PSU	C6-C5	3.39	1.39	1.35
85	S2	801	PSU	C6-C5	3.39	1.39	1.35
5	L5	5001	PSU	C6-C5	3.39	1.39	1.35
5	L5	1744	PSU	C6-C5	3.38	1.39	1.35
85	S2	649	PSU	C6-C5	3.38	1.39	1.35
85	S2	814	PSU	C6-C5	3.38	1.39	1.35
5	L5	4220	6MZ	C5-N7	-3.37	1.32	1.39
85	S2	1177	PSU	C6-C5	3.37	1.39	1.35
85	S2	484	A2M	O5'-C5'	-3.36	1.34	1.44
85	S2	27	A2M	O5'-C5'	-3.36	1.34	1.44
85	S2	576	A2M	O5'-C5'	-3.36	1.34	1.44
5	L5	2632	PSU	C6-C5	3.35	1.39	1.35
5	L5	3718	A2M	O5'-C5'	-3.35	1.34	1.44
5	L5	4590	A2M	O5'-C5'	-3.35	1.34	1.44
5	L5	398	A2M	O5'-C5'	-3.35	1.34	1.44
7	L8	55	PSU	C6-C5	3.34	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	L5	4500	PSU	C6-C5	3.34	1.39	1.35
5	L5	4296	PSU	C6-C5	3.34	1.39	1.35
5	L5	2363	A2M	O5'-C5'	-3.34	1.34	1.44
85	S2	1383	A2M	O5'-C5'	-3.33	1.34	1.44
5	L5	1862	PSU	C6-C5	3.33	1.39	1.35
5	L5	4673	PSU	C6-C5	3.33	1.39	1.35
85	S2	1244	PSU	C6-C5	3.33	1.39	1.35
85	S2	406	PSU	C6-C5	3.33	1.39	1.35
85	S2	105	PSU	C6-C5	3.33	1.39	1.35
85	S2	863	PSU	C6-C5	3.32	1.39	1.35
5	L5	4523	A2M	O5'-C5'	-3.32	1.34	1.44
85	S2	1174	PSU	C6-C5	3.32	1.39	1.35
5	L5	3818	UY1	O2-C2	-3.31	1.16	1.23
5	L5	4552	PSU	C6-C5	3.30	1.38	1.35
5	L5	4636	PSU	C6-C5	3.30	1.38	1.35
5	L5	4353	PSU	C6-C5	3.29	1.38	1.35
5	L5	4293	PSU	C6-C5	3.29	1.38	1.35
85	S2	686	PSU	C6-C5	3.28	1.38	1.35
5	L5	1781	PSU	C6-C5	3.28	1.38	1.35
85	S2	966	PSU	C6-C5	3.27	1.38	1.35
5	L5	3695	PSU	C6-C5	3.27	1.38	1.35
85	S2	109	PSU	C6-C5	3.27	1.38	1.35
85	S2	1046	PSU	C6-C5	3.26	1.38	1.35
5	L5	4312	PSU	C6-C5	3.26	1.38	1.35
85	S2	1045	PSU	C6-C5	3.26	1.38	1.35
5	L5	1782	PSU	C6-C5	3.25	1.38	1.35
5	L5	4521	PSU	C6-C5	3.25	1.38	1.35
85	S2	1832	6MZ	C5-N7	-3.25	1.33	1.39
5	L5	4576	PSU	C6-C5	3.24	1.38	1.35
5	L5	1582	PSU	C6-C5	3.24	1.38	1.35
5	L5	3822	PSU	C6-C5	3.21	1.38	1.35
5	L5	4431	PSU	C6-C5	3.18	1.38	1.35
5	L5	4442	PSU	C6-C5	3.16	1.38	1.35
5	L5	3851	PSU	C6-C5	3.16	1.38	1.35
85	S2	1832	6MZ	C5-C4	-3.16	1.33	1.39
5	L5	3639	PSU	C6-C5	3.16	1.38	1.35
5	L5	4493	PSU	C6-C5	3.16	1.38	1.35
85	S2	1850	MA6	C6-N6	3.15	1.45	1.36
85	S2	681	PSU	C6-C5	3.15	1.38	1.35
85	S2	1056	PSU	C6-C5	3.14	1.38	1.35
5	L5	3884	PSU	C6-C5	3.13	1.38	1.35
5	L5	1683	PSU	C6-C5	3.13	1.38	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
85	S2	1851	MA6	C6-N6	3.13	1.45	1.36
5	L5	2839	PSU	C6-C5	3.12	1.38	1.35
5	L5	4972	PSU	C6-C5	3.12	1.38	1.35
5	L5	4689	PSU	C6-C5	3.11	1.38	1.35
85	S2	159	A2M	O5'-C5'	-3.11	1.35	1.44
5	L5	4471	PSU	C6-C5	3.10	1.38	1.35
5	L5	4532	PSU	C6-C5	3.10	1.38	1.35
5	L5	4973	PSU	C6-C5	3.08	1.38	1.35
85	S2	1081	PSU	C6-C5	3.08	1.38	1.35
5	L5	3818	UY1	C1'-C5	3.08	1.57	1.50
5	L5	4579	PSU	C6-C5	3.07	1.38	1.35
5	L5	3637	PSU	C6-C5	3.06	1.38	1.35
5	L5	1792	PSU	C6-C5	3.06	1.38	1.35
5	L5	4361	PSU	C6-C5	3.05	1.38	1.35
5	L5	4299	PSU	C6-C5	3.04	1.38	1.35
7	L8	69	PSU	C6-C5	3.03	1.38	1.35
5	L5	3853	PSU	C6-C5	3.03	1.38	1.35
5	L5	1534	A2M	O5'-C5'	-3.02	1.35	1.44
5	L5	4220	6MZ	C2'-C1'	3.00	1.62	1.53
85	S2	1832	6MZ	C8-N9	-3.00	1.32	1.37
5	L5	4220	6MZ	C8-N9	-2.99	1.32	1.37
5	L5	1536	PSU	C6-C5	2.98	1.38	1.35
85	S2	668	A2M	O4'-C4'	-2.95	1.38	1.45
5	L5	4628	PSU	C6-C5	2.95	1.38	1.35
5	L5	2363	A2M	O4'-C4'	-2.93	1.38	1.45
5	L5	4457	PSU	C6-C5	2.93	1.38	1.35
5	L5	3920	PSU	C6-C5	2.91	1.38	1.35
5	L5	1524	A2M	O4'-C4'	-2.87	1.38	1.45
85	S2	1288	OMU	C5-C4	2.85	1.49	1.43
85	S2	627	OMU	C5-C4	2.85	1.49	1.43
5	L5	4403	PSU	C6-C5	2.85	1.38	1.35
85	S2	799	OMU	C5-C4	2.78	1.49	1.43
5	L5	4530	UR3	O2-C2	-2.77	1.17	1.22
85	S2	1442	OMU	C5-C4	2.76	1.49	1.43
5	L5	1677	PSU	C6-C5	2.75	1.38	1.35
85	S2	1326	OMU	C5-C4	2.74	1.49	1.43
85	S2	428	OMU	C5-C4	2.73	1.49	1.43
85	S2	1288	OMU	C6-N1	2.71	1.44	1.38
85	S2	116	OMU	C5-C4	2.69	1.49	1.43
5	L5	1323	A2M	O4'-C4'	-2.69	1.39	1.45
85	S2	799	OMU	C6-N1	2.67	1.44	1.38
85	S2	1639	G7M	C2-N1	2.66	1.44	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
85	S2	172	OMU	C5-C4	2.66	1.49	1.43
5	L5	4498	OMU	C5-C4	2.65	1.49	1.43
5	L5	2837	OMU	C5-C4	2.64	1.49	1.43
85	S2	121	OMU	C5-C4	2.63	1.49	1.43
85	S2	627	OMU	C6-N1	2.63	1.44	1.38
5	L5	4227	OMU	C5-C4	2.63	1.49	1.43
5	L5	3925	OMU	C5-C4	2.62	1.49	1.43
85	S2	121	OMU	C6-N1	2.62	1.44	1.38
85	S2	1851	MA6	C5-C4	-2.62	1.34	1.39
5	L5	4220	6MZ	O3'-C3'	2.61	1.49	1.43
85	S2	1442	OMU	C6-N1	2.59	1.44	1.38
85	S2	1326	OMU	C6-N1	2.58	1.44	1.38
85	S2	354	OMU	C5-C4	2.57	1.49	1.43
85	S2	354	OMU	C6-N1	2.57	1.44	1.38
85	S2	1850	MA6	C5-C4	-2.56	1.34	1.39
85	S2	1639	G7M	O6-C6	-2.56	1.18	1.23
85	S2	428	OMU	C6-N1	2.54	1.44	1.38
85	S2	172	OMU	C6-N1	2.52	1.44	1.38
5	L5	4498	OMU	C6-N1	2.51	1.44	1.38
85	S2	116	OMU	C6-N1	2.51	1.44	1.38
5	L5	2837	OMU	C6-N1	2.50	1.44	1.38
5	L5	4530	UR3	C6-N1	2.50	1.44	1.38
5	L5	4523	A2M	O3'-C3'	-2.49	1.36	1.43
5	L5	1534	A2M	O4'-C4'	-2.49	1.39	1.45
5	L5	3867	A2M	O4'-C4'	-2.45	1.39	1.45
5	L5	4306	OMU	C5-C4	2.45	1.49	1.43
5	L5	4306	OMU	C6-N1	2.44	1.43	1.38
5	L5	4227	OMU	C6-N1	2.43	1.43	1.38
5	L5	3925	OMU	C6-N1	2.41	1.43	1.38
5	L5	4220	6MZ	C6-N1	-2.41	1.31	1.35
5	L5	4571	A2M	O4'-C4'	-2.37	1.39	1.45
5	L5	4620	OMU	C6-N1	2.35	1.43	1.38
5	L5	3818	UY1	O4'-C1'	-2.35	1.40	1.43
5	L5	1326	A2M	O4'-C4'	-2.34	1.39	1.45
5	L5	4523	A2M	O4'-C4'	-2.34	1.39	1.45
5	L5	2815	A2M	O4'-C4'	-2.34	1.39	1.45
5	L5	3825	A2M	O4'-C4'	-2.33	1.39	1.45
5	L5	1871	A2M	O4'-C4'	-2.31	1.39	1.45
85	S2	1832	6MZ	C6-N1	-2.31	1.31	1.35
5	L5	1871	A2M	O3'-C3'	-2.30	1.37	1.43
5	L5	4620	OMU	C5-C4	2.30	1.48	1.43
85	S2	1639	G7M	C6-N1	2.29	1.43	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	L5	3639	PSU	C4-C5	-2.15	1.38	1.44
5	L5	4530	UR3	C5-C4	2.14	1.49	1.43
85	S2	1639	G7M	C4-N9	-2.14	1.32	1.38
85	S2	1031	A2M	O4'-C4'	-2.13	1.40	1.45
5	L5	3884	PSU	C4-C5	-2.13	1.38	1.44
5	L5	1677	PSU	C4-C5	-2.10	1.38	1.44
5	L5	4590	A2M	O4'-C4'	-2.10	1.40	1.45
5	L5	4447	5MC	C4-N3	-2.09	1.30	1.34
5	L5	400	A2M	O4'-C4'	-2.09	1.40	1.45
5	L5	4500	PSU	C4-C5	-2.09	1.38	1.44
5	L5	4521	PSU	C4-C5	-2.08	1.38	1.44
5	L5	4636	PSU	C4-C5	-2.08	1.38	1.44
5	L5	4673	PSU	C4-C5	-2.07	1.38	1.44
5	L5	3920	PSU	C4-C5	-2.06	1.38	1.44
5	L5	4689	PSU	C4-C5	-2.05	1.38	1.44
5	L5	4353	PSU	C4-C5	-2.04	1.38	1.44
5	L5	4552	PSU	C4-C5	-2.04	1.38	1.44
5	L5	4312	PSU	C4-C5	-2.04	1.38	1.44
85	S2	649	PSU	C4-C5	-2.04	1.38	1.44
5	L5	4530	UR3	C3U-N3	2.03	1.50	1.47
5	L5	5010	PSU	C4-C5	-2.02	1.38	1.44
5	L5	4457	PSU	C4-C5	-2.02	1.38	1.44
5	L5	2839	PSU	C4-C5	-2.02	1.38	1.44
5	L5	400	A2M	O3'-C3'	-2.02	1.38	1.43
5	L5	4296	PSU	C4-C5	-2.02	1.38	1.44
5	L5	4293	PSU	C4-C5	-2.02	1.38	1.44
85	S2	406	PSU	C4-C5	-2.01	1.38	1.44
85	S2	1004	PSU	C4-C5	-2.01	1.38	1.44
85	S2	1046	PSU	C4-C5	-2.01	1.38	1.44
85	S2	1248	B8N	O4'-C1'	-2.00	1.41	1.43
5	L5	3701	OMC	C4-N3	-2.00	1.30	1.34

All (668) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S2	1851	MA6	N1-C6-N6	-12.19	102.00	116.86
85	S2	1850	MA6	N1-C6-N6	-11.56	102.77	116.86
85	S2	1851	MA6	C5-C6-N6	8.16	138.24	125.33
85	S2	1850	MA6	C5-C6-N6	7.80	137.68	125.33
85	S2	1639	G7M	C1'-N9-C4	7.48	148.57	126.49
85	S2	1639	G7M	C1'-N9-C8	-7.35	101.91	126.74
5	L5	3925	OMU	C4-N3-C2	-6.26	118.84	126.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L5	4227	OMU	C4-N3-C2	-5.99	119.17	126.61
85	S2	428	OMU	C4-N3-C2	-5.83	119.38	126.61
85	S2	1851	MA6	N1-C2-N3	-5.82	119.78	128.58
5	L5	4498	OMU	C4-N3-C2	-5.80	119.41	126.61
85	S2	1832	6MZ	N1-C2-N3	-5.75	119.87	128.58
5	L5	4220	6MZ	N1-C2-N3	-5.75	119.88	128.58
5	L5	4306	OMU	C4-N3-C2	-5.73	119.50	126.61
85	S2	172	OMU	C4-N3-C2	-5.70	119.54	126.61
85	S2	1326	OMU	C4-N3-C2	-5.69	119.55	126.61
5	L5	2837	OMU	C4-N3-C2	-5.67	119.57	126.61
85	S2	627	OMU	C4-N3-C2	-5.65	119.59	126.61
85	S2	354	OMU	C4-N3-C2	-5.65	119.60	126.61
85	S2	1442	OMU	C4-N3-C2	-5.61	119.64	126.61
85	S2	1288	OMU	C4-N3-C2	-5.58	119.68	126.61
85	S2	1850	MA6	N1-C2-N3	-5.50	120.25	128.58
85	S2	121	OMU	C4-N3-C2	-5.48	119.80	126.61
85	S2	116	OMU	C4-N3-C2	-5.48	119.81	126.61
85	S2	1851	MA6	N9-C8-N7	-5.44	106.22	113.94
5	L5	3701	OMC	C1'-N1-C2	5.42	130.42	118.44
5	L5	4530	UR3	C4-N3-C2	-5.41	120.22	124.58
85	S2	1850	MA6	N9-C8-N7	-5.36	106.33	113.94
85	S2	799	OMU	C4-N3-C2	-5.35	119.97	126.61
5	L5	4636	PSU	C4-N3-C2	-5.32	119.05	126.37
5	L5	4403	PSU	C4-N3-C2	-5.26	119.13	126.37
5	L5	4500	PSU	N1-C2-N3	5.24	120.70	115.17
5	L5	4293	PSU	N1-C2-N3	5.24	120.70	115.17
5	L5	3637	PSU	N1-C2-N3	5.23	120.68	115.17
5	L5	4457	PSU	C4-N3-C2	-5.21	119.19	126.37
85	S2	1248	B8N	C5-C4-N3	5.20	125.59	116.15
5	L5	3639	PSU	N1-C2-N3	5.20	120.65	115.17
5	L5	1862	PSU	C4-N3-C2	-5.17	119.25	126.37
5	L5	4293	PSU	C4-N3-C2	-5.16	119.26	126.37
5	L5	4636	PSU	N1-C2-N3	5.14	120.59	115.17
5	L5	3637	PSU	C4-N3-C2	-5.13	119.30	126.37
5	L5	4403	PSU	N1-C2-N3	5.13	120.58	115.17
5	L5	4353	PSU	N1-C2-N3	5.13	120.58	115.17
5	L5	4521	PSU	N1-C2-N3	5.13	120.57	115.17
5	L5	4442	PSU	N1-C2-N3	5.12	120.56	115.17
5	L5	4521	PSU	C4-N3-C2	-5.11	119.33	126.37
5	L5	1683	PSU	N1-C2-N3	5.10	120.54	115.17
85	S2	406	PSU	N1-C2-N3	5.09	120.54	115.17
5	L5	4220	6MZ	C9-N6-C6	-5.08	118.14	122.85

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L5	3920	PSU	N1-C2-N3	5.07	120.52	115.17
5	L5	1862	PSU	N1-C2-N3	5.06	120.51	115.17
5	L5	4689	PSU	N1-C2-N3	5.06	120.50	115.17
5	L5	3884	PSU	C4-N3-C2	-5.06	119.40	126.37
85	S2	1177	PSU	C4-N3-C2	-5.04	119.43	126.37
5	L5	3639	PSU	C4-N3-C2	-5.04	119.44	126.37
85	S2	109	PSU	C4-N3-C2	-5.03	119.44	126.37
85	S2	406	PSU	C4-N3-C2	-5.03	119.45	126.37
85	S2	649	PSU	C4-N3-C2	-5.00	119.48	126.37
5	L5	4972	PSU	N1-C2-N3	5.00	120.44	115.17
5	L5	4442	PSU	C4-N3-C2	-5.00	119.49	126.37
5	L5	1683	PSU	C4-N3-C2	-4.99	119.49	126.37
5	L5	4500	PSU	C4-N3-C2	-4.99	119.49	126.37
5	L5	4973	PSU	C4-N3-C2	-4.99	119.50	126.37
85	S2	651	PSU	N1-C2-N3	4.99	120.43	115.17
5	L5	3695	PSU	C4-N3-C2	-4.98	119.51	126.37
5	L5	4353	PSU	C4-N3-C2	-4.98	119.51	126.37
5	L5	1860	PSU	C4-N3-C2	-4.98	119.51	126.37
7	L8	55	PSU	N1-C2-N3	4.97	120.41	115.17
5	L5	4620	OMU	C4-N3-C2	-4.96	120.45	126.61
5	L5	4471	PSU	N1-C2-N3	4.96	120.40	115.17
5	L5	3920	PSU	C4-N3-C2	-4.96	119.54	126.37
85	S2	649	PSU	N1-C2-N3	4.96	120.40	115.17
5	L5	1677	PSU	C4-N3-C2	-4.95	119.55	126.37
85	S2	1177	PSU	N1-C2-N3	4.94	120.38	115.17
5	L5	3818	UY1	C4-N3-C2	-4.94	119.57	126.37
85	S2	863	PSU	C4-N3-C2	-4.93	119.58	126.37
5	L5	4673	PSU	N1-C2-N3	4.93	120.36	115.17
5	L5	4552	PSU	N1-C2-N3	4.92	120.36	115.17
5	L5	1860	PSU	N1-C2-N3	4.92	120.36	115.17
85	S2	1045	PSU	C4-N3-C2	-4.92	119.60	126.37
5	L5	3884	PSU	N1-C2-N3	4.91	120.35	115.17
5	L5	4296	PSU	C4-N3-C2	-4.91	119.61	126.37
5	L5	4579	PSU	C4-N3-C2	-4.91	119.61	126.37
85	S2	109	PSU	N1-C2-N3	4.91	120.34	115.17
85	S2	105	PSU	N1-C2-N3	4.91	120.34	115.17
5	L5	4457	PSU	N1-C2-N3	4.90	120.34	115.17
5	L5	5010	PSU	C4-N3-C2	-4.90	119.62	126.37
5	L5	1782	PSU	N1-C2-N3	4.90	120.34	115.17
5	L5	3695	PSU	N1-C2-N3	4.90	120.33	115.17
85	S2	1232	PSU	C4-N3-C2	-4.90	119.63	126.37
85	S2	1244	PSU	C4-N3-C2	-4.89	119.64	126.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L5	4972	PSU	C4-N3-C2	-4.89	119.64	126.37
5	L5	3851	PSU	N1-C2-N3	4.88	120.31	115.17
85	S2	651	PSU	C4-N3-C2	-4.88	119.65	126.37
85	S2	1174	PSU	C4-N3-C2	-4.87	119.66	126.37
85	S2	1056	PSU	C4-N3-C2	-4.87	119.66	126.37
5	L5	2632	PSU	N1-C2-N3	4.87	120.31	115.17
7	L8	55	PSU	C4-N3-C2	-4.87	119.66	126.37
85	S2	686	PSU	C4-N3-C2	-4.87	119.66	126.37
85	S2	1367	PSU	C4-N3-C2	-4.87	119.66	126.37
85	S2	814	PSU	C4-N3-C2	-4.87	119.67	126.37
85	S2	866	PSU	C4-N3-C2	-4.87	119.67	126.37
85	S2	1367	PSU	N1-C2-N3	4.87	120.30	115.17
85	S2	1832	6MZ	C5-C4-N3	-4.86	120.03	126.72
5	L5	5010	PSU	N1-C2-N3	4.86	120.29	115.17
5	L5	4973	PSU	N1-C2-N3	4.86	120.29	115.17
5	L5	4552	PSU	C4-N3-C2	-4.85	119.69	126.37
5	L5	4299	PSU	C4-N3-C2	-4.85	119.69	126.37
5	L5	1536	PSU	N1-C2-N3	4.85	120.28	115.17
5	L5	1744	PSU	N1-C2-N3	4.84	120.28	115.17
5	L5	4579	PSU	N1-C2-N3	4.84	120.27	115.17
5	L5	4628	PSU	N1-C2-N3	4.84	120.27	115.17
85	S2	1244	PSU	N1-C2-N3	4.84	120.27	115.17
85	S2	1056	PSU	N1-C2-N3	4.83	120.27	115.17
5	L5	2839	PSU	C4-N3-C2	-4.83	119.72	126.37
5	L5	4431	PSU	N1-C2-N3	4.83	120.26	115.17
5	L5	4296	PSU	N1-C2-N3	4.83	120.26	115.17
5	L5	4431	PSU	C4-N3-C2	-4.82	119.72	126.37
5	L5	4576	PSU	C4-N3-C2	-4.82	119.72	126.37
5	L5	3822	PSU	C4-N3-C2	-4.81	119.74	126.37
5	L5	4532	PSU	C4-N3-C2	-4.81	119.74	126.37
5	L5	3822	PSU	N1-C2-N3	4.81	120.24	115.17
85	S2	105	PSU	C4-N3-C2	-4.81	119.74	126.37
5	L5	4689	PSU	C4-N3-C2	-4.81	119.74	126.37
5	L5	1782	PSU	C4-N3-C2	-4.81	119.75	126.37
5	L5	4312	PSU	C4-N3-C2	-4.81	119.75	126.37
5	L5	2839	PSU	N1-C2-N3	4.80	120.23	115.17
7	L8	69	PSU	N1-C2-N3	4.80	120.23	115.17
85	S2	1045	PSU	N1-C2-N3	4.79	120.22	115.17
5	L5	1744	PSU	C4-N3-C2	-4.79	119.77	126.37
5	L5	3853	PSU	N1-C2-N3	4.78	120.21	115.17
85	S2	863	PSU	N1-C2-N3	4.77	120.20	115.17
5	L5	4673	PSU	C4-N3-C2	-4.77	119.80	126.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S2	1046	PSU	C4-N3-C2	-4.77	119.80	126.37
5	L5	4299	PSU	N1-C2-N3	4.77	120.20	115.17
85	S2	1174	PSU	N1-C2-N3	4.77	120.20	115.17
7	L8	69	PSU	C4-N3-C2	-4.77	119.80	126.37
5	L5	4493	PSU	C4-N3-C2	-4.77	119.81	126.37
5	L5	2632	PSU	C4-N3-C2	-4.76	119.81	126.37
5	L5	4471	PSU	C4-N3-C2	-4.76	119.81	126.37
5	L5	1792	PSU	C4-N3-C2	-4.76	119.81	126.37
5	L5	1781	PSU	N1-C2-N3	4.75	120.18	115.17
5	L5	3851	PSU	C4-N3-C2	-4.75	119.83	126.37
5	L5	1792	PSU	N1-C2-N3	4.74	120.17	115.17
85	S2	1046	PSU	N1-C2-N3	4.74	120.17	115.17
85	S2	1832	6MZ	N9-C8-N7	-4.74	107.22	113.94
85	S2	686	PSU	N1-C2-N3	4.73	120.16	115.17
5	L5	4361	PSU	C4-N3-C2	-4.72	119.86	126.37
5	L5	1536	PSU	C4-N3-C2	-4.72	119.87	126.37
5	L5	1781	PSU	C4-N3-C2	-4.72	119.88	126.37
85	S2	866	PSU	N1-C2-N3	4.71	120.14	115.17
5	L5	4312	PSU	N1-C2-N3	4.71	120.14	115.17
5	L5	4576	PSU	N1-C2-N3	4.71	120.13	115.17
85	S2	801	PSU	N1-C2-N3	4.71	120.13	115.17
85	S2	1232	PSU	N1-C2-N3	4.70	120.13	115.17
85	S2	814	PSU	N1-C2-N3	4.68	120.11	115.17
85	S2	966	PSU	N1-C2-N3	4.68	120.11	115.17
5	L5	4628	PSU	C4-N3-C2	-4.68	119.92	126.37
5	L5	4220	6MZ	N9-C8-N7	-4.68	107.30	113.94
85	S2	1004	PSU	N1-C2-N3	4.68	120.10	115.17
5	L5	3844	PSU	N1-C2-N3	4.67	120.10	115.17
85	S2	1004	PSU	C4-N3-C2	-4.67	119.94	126.37
85	S2	93	PSU	N1-C2-N3	4.66	120.08	115.17
5	L5	3853	PSU	C4-N3-C2	-4.65	119.96	126.37
85	S2	93	PSU	C4-N3-C2	-4.65	119.96	126.37
85	S2	966	PSU	C4-N3-C2	-4.65	119.97	126.37
5	L5	5001	PSU	C4-N3-C2	-4.64	119.98	126.37
85	S2	1081	PSU	C4-N3-C2	-4.63	119.99	126.37
5	L5	4532	PSU	N1-C2-N3	4.62	120.04	115.17
85	S2	681	PSU	N1-C2-N3	4.62	120.04	115.17
5	L5	4493	PSU	N1-C2-N3	4.60	120.02	115.17
5	L5	1677	PSU	N1-C2-N3	4.59	120.01	115.17
5	L5	5001	PSU	N1-C2-N3	4.59	120.01	115.17
5	L5	1582	PSU	N1-C2-N3	4.58	120.00	115.17
85	S2	801	PSU	C4-N3-C2	-4.58	120.07	126.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S2	681	PSU	C4-N3-C2	-4.56	120.09	126.37
5	L5	3844	PSU	C4-N3-C2	-4.55	120.10	126.37
5	L5	4361	PSU	N1-C2-N3	4.55	119.97	115.17
5	L5	4220	6MZ	C5-C4-N3	-4.52	120.49	126.72
85	S2	1850	MA6	C5-C4-N3	-4.52	120.50	126.72
85	S2	1248	B8N	C4-N3-C2	-4.49	120.09	125.62
5	L5	3818	UY1	N1-C2-N3	4.47	119.89	115.17
5	L5	3925	OMU	N3-C2-N1	4.44	120.67	114.89
5	L5	1582	PSU	C4-N3-C2	-4.44	120.26	126.37
85	S2	1081	PSU	N1-C2-N3	4.40	119.81	115.17
85	S2	1639	G7M	C2-N3-C4	4.37	119.83	112.30
85	S2	1851	MA6	C5-C4-N3	-4.34	120.74	126.72
85	S2	1383	A2M	C3'-C2'-C1'	-4.28	94.61	102.81
5	L5	2837	OMU	N3-C2-N1	4.26	120.43	114.89
5	L5	3701	OMC	C1'-N1-C6	-4.17	111.86	120.78
85	S2	1851	MA6	C4-N9-C8	4.16	110.11	105.74
5	L5	4227	OMU	N3-C2-N1	4.14	120.28	114.89
85	S2	1850	MA6	C4-N9-C8	4.12	110.07	105.74
85	S2	121	OMU	N3-C2-N1	4.12	120.26	114.89
85	S2	354	OMU	N3-C2-N1	4.11	120.25	114.89
5	L5	4306	OMU	N3-C2-N1	4.11	120.25	114.89
5	L5	3830	A2M	C3'-C2'-C1'	-4.09	94.97	102.81
5	L5	1871	A2M	C3'-C2'-C1'	-4.05	95.06	102.81
5	L5	4498	OMU	N3-C2-N1	4.00	120.10	114.89
85	S2	1639	G7M	C5-C6-N1	3.99	120.09	111.84
85	S2	1639	G7M	C5-C4-N3	-3.94	120.70	128.15
5	L5	4523	A2M	C3'-C2'-C1'	-3.94	95.27	102.81
85	S2	116	OMU	N3-C2-N1	3.90	119.97	114.89
85	S2	428	OMU	N3-C2-N1	3.89	119.96	114.89
5	L5	398	A2M	C3'-C2'-C1'	-3.89	95.35	102.81
85	S2	1442	OMU	N3-C2-N1	3.89	119.96	114.89
5	L5	3925	OMU	C5-C4-N3	3.89	120.25	114.80
85	S2	1326	OMU	N3-C2-N1	3.89	119.95	114.89
5	L5	4227	OMU	C5-C4-N3	3.85	120.19	114.80
85	S2	1850	MA6	C4-C5-C6	3.84	119.88	115.91
85	S2	172	OMU	N3-C2-N1	3.83	119.88	114.89
5	L5	398	A2M	O3'-C3'-C2'	3.83	121.89	111.19
5	L5	4498	OMU	C5-C4-N3	3.82	120.15	114.80
85	S2	1288	OMU	N3-C2-N1	3.81	119.86	114.89
5	L5	4620	OMU	N3-C2-N1	3.78	119.81	114.89
5	L5	4590	A2M	C3'-C2'-C1'	-3.76	95.61	102.81
5	L5	1323	A2M	C2'-C1'-N9	3.74	119.90	113.75

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S2	428	OMU	C5-C4-N3	3.72	120.01	114.80
5	L5	4530	UR3	C5-C4-N3	3.72	119.94	115.04
85	S2	627	OMU	N3-C2-N1	3.70	119.70	114.89
85	S2	799	OMU	C5-C4-N3	3.69	119.97	114.80
85	S2	1326	OMU	C5-C4-N3	3.67	119.94	114.80
5	L5	4306	OMU	C5-C4-N3	3.64	119.90	114.80
85	S2	1248	B8N	C1'-C5-C4	3.63	123.12	117.61
85	S2	1288	OMU	C5-C4-N3	3.62	119.88	114.80
85	S2	627	OMU	C5-C4-N3	3.62	119.87	114.80
85	S2	1851	MA6	C2-N1-C6	3.62	120.67	111.83
5	L5	3718	A2M	C3'-C2'-C1'	-3.61	95.89	102.81
85	S2	354	OMU	C5-C4-N3	3.60	119.84	114.80
85	S2	172	OMU	C5-C4-N3	3.59	119.83	114.80
85	S2	1442	OMU	C5-C4-N3	3.59	119.83	114.80
5	L5	2401	A2M	O3'-C3'-C2'	3.58	121.19	111.19
85	S2	799	OMU	N3-C2-N1	3.57	119.53	114.89
5	L5	3825	A2M	C3'-C2'-C1'	-3.55	96.02	102.81
85	S2	468	A2M	C3'-C2'-C1'	-3.51	96.08	102.81
85	S2	116	OMU	C5-C4-N3	3.51	119.72	114.80
85	S2	1850	MA6	C2-N1-C6	3.48	120.32	111.83
85	S2	1832	6MZ	C2-N3-C4	3.47	120.30	111.83
85	S2	1031	A2M	C3'-C2'-C1'	-3.46	96.18	102.81
85	S2	99	A2M	C3'-C2'-C1'	-3.44	96.22	102.81
85	S2	1248	B8N	N3-C2-N1	3.43	120.91	116.72
85	S2	121	OMU	C5-C4-N3	3.43	119.61	114.80
5	L5	2787	A2M	O3'-C3'-C2'	3.42	120.75	111.19
85	S2	166	A2M	O3'-C3'-C2'	3.40	120.70	111.19
5	L5	2837	OMU	C5-C4-N3	3.36	119.50	114.80
5	L5	4220	6MZ	C2-N3-C4	3.36	120.03	111.83
85	S2	1639	G7M	O6-C6-C5	-3.34	120.55	128.01
5	L5	3818	UY1	C6-C5-C4	3.34	120.43	118.17
85	S2	166	A2M	C3'-C2'-C1'	-3.31	96.46	102.81
5	L5	4571	A2M	O3'-C3'-C2'	3.31	120.44	111.19
5	L5	4620	OMU	C5-C4-N3	3.30	119.42	114.80
85	S2	1850	MA6	N3-C4-N9	3.29	132.77	127.17
85	S2	99	A2M	O3'-C3'-C2'	3.29	120.40	111.19
5	L5	4500	PSU	O2-C2-N1	-3.29	119.39	122.79
85	S2	576	A2M	O3'-C3'-C2'	3.28	120.36	111.19
5	L5	1534	A2M	C3'-C2'-C1'	-3.28	96.53	102.81
85	S2	1851	MA6	C2-N3-C4	3.26	119.80	111.83
85	S2	1850	MA6	C5-N7-C8	3.25	108.56	103.45
85	S2	1851	MA6	C4-C5-C6	3.24	119.27	115.91

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S2	1383	A2M	O3'-C3'-C2'	3.24	120.24	111.19
5	L5	2401	A2M	C3'-C2'-C1'	-3.23	96.61	102.81
85	S2	1639	G7M	CN7-N7-C5	3.23	130.82	126.80
5	L5	4571	A2M	C3'-C2'-C1'	-3.22	96.64	102.81
5	L5	3830	A2M	O3'-C3'-C2'	3.22	120.19	111.19
85	S2	1832	6MZ	C5-N7-C8	3.21	108.50	103.45
85	S2	1851	MA6	C5-N7-C8	3.21	108.50	103.45
85	S2	1832	6MZ	N3-C4-N9	3.20	132.61	127.17
5	L5	4293	PSU	O2-C2-N1	-3.18	119.51	122.79
5	L5	3718	A2M	O3'-C3'-C2'	3.18	120.09	111.19
85	S2	1639	G7M	N9-C4-N3	3.18	132.31	125.95
85	S2	27	A2M	C3'-C2'-C1'	-3.18	96.72	102.81
85	S2	428	OMU	O4-C4-C5	-3.16	119.71	125.16
85	S2	1832	6MZ	C4-C5-C6	3.15	119.40	116.78
5	L5	4689	PSU	C6-N1-C2	-3.15	119.77	122.69
85	S2	1850	MA6	C2-N3-C4	3.14	119.51	111.83
85	S2	159	A2M	O3'-C3'-C2'	3.13	119.96	111.19
5	L5	4306	OMU	O4-C4-C5	-3.12	119.78	125.16
5	L5	4296	PSU	O2-C2-N1	-3.10	119.60	122.79
5	L5	1524	A2M	O3'-C3'-C2'	3.09	119.84	111.19
5	L5	4220	6MZ	C4-N9-C8	3.09	108.98	105.74
85	S2	27	A2M	O3'-C3'-C2'	3.09	119.82	111.19
85	S2	484	A2M	O3'-C3'-C2'	3.08	119.81	111.19
5	L5	3785	A2M	O3'-C3'-C2'	3.08	119.80	111.19
85	S2	468	A2M	O3'-C3'-C2'	3.08	119.80	111.19
85	S2	1851	MA6	N3-C4-N9	3.06	132.38	127.17
5	L5	1323	A2M	O3'-C3'-C2'	3.06	119.76	111.19
85	S2	1442	OMU	O4-C4-C5	-3.06	119.89	125.16
85	S2	668	A2M	C4-N9-C1'	-3.04	119.53	126.63
5	L5	4220	6MZ	N3-C4-N9	3.03	132.33	127.17
5	L5	2363	A2M	C2'-C1'-N9	3.03	118.74	113.75
85	S2	468	A2M	C4-N9-C1'	-3.03	119.55	126.63
5	L5	2815	A2M	C2'-C1'-N9	3.03	118.73	113.75
85	S2	1832	6MZ	C4-N9-C8	3.03	108.92	105.74
5	L5	400	A2M	O3'-C3'-C2'	3.03	119.66	111.19
85	S2	1174	PSU	O2-C2-N1	-3.03	119.67	122.79
85	S2	668	A2M	O3'-C3'-C2'	3.02	119.63	111.19
85	S2	172	OMU	O4-C4-C5	-3.01	119.97	125.16
5	L5	2839	PSU	O2-C2-N1	-3.00	119.69	122.79
5	L5	3818	UY1	C6-N1-C2	-2.99	119.92	122.69
5	L5	1536	PSU	O2-C2-N1	-2.99	119.71	122.79
7	L8	69	PSU	O2-C2-N1	-2.98	119.71	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L5	400	A2M	C3'-C2'-C1'	-2.98	97.10	102.81
5	L5	4521	PSU	O2-C2-N1	-2.98	119.72	122.79
5	L5	3639	PSU	O2-C2-N1	-2.98	119.72	122.79
5	L5	3825	A2M	O3'-C3'-C2'	2.97	119.51	111.19
85	S2	1031	A2M	O3'-C3'-C2'	2.97	119.51	111.19
85	S2	406	PSU	O2-C2-N1	-2.97	119.72	122.79
85	S2	1639	G7M	C2-N1-C6	-2.96	119.74	125.11
5	L5	3925	OMU	O4-C4-C5	-2.96	120.05	125.16
5	L5	2363	A2M	C3'-C2'-C1'	-2.96	97.15	102.81
5	L5	3701	OMC	O2-C2-N3	-2.95	117.67	122.33
5	L5	4689	PSU	O2-C2-N1	-2.95	119.74	122.79
85	S2	116	OMU	O4-C4-C5	-2.94	120.09	125.16
5	L5	4442	PSU	O2-C2-N1	-2.94	119.76	122.79
85	S2	1288	OMU	O4-C4-C5	-2.93	120.10	125.16
5	L5	4498	OMU	O4-C4-C5	-2.93	120.11	125.16
5	L5	4590	A2M	C4-N9-C1'	-2.92	119.79	126.63
85	S2	1046	PSU	O2-C2-N1	-2.92	119.78	122.79
5	L5	3867	A2M	C2'-C1'-N9	2.91	118.55	113.75
5	L5	4220	6MZ	C5-N7-C8	2.91	108.03	103.45
85	S2	627	OMU	O4-C4-C5	-2.91	120.14	125.16
85	S2	668	A2M	C1'-N9-C8	2.91	133.56	127.09
5	L5	2401	A2M	C4-N9-C1'	-2.91	119.83	126.63
5	L5	4579	PSU	O2-C2-N1	-2.90	119.79	122.79
85	S2	1383	A2M	C4-N9-C1'	-2.90	119.84	126.63
5	L5	4673	PSU	O2-C2-N1	-2.90	119.80	122.79
5	L5	2632	PSU	O2-C2-N1	-2.90	119.80	122.79
5	L5	4227	OMU	O4-C4-C5	-2.90	120.17	125.16
5	L5	4403	PSU	O2-C2-N1	-2.90	119.80	122.79
85	S2	799	OMU	O4-C4-C5	-2.89	120.17	125.16
85	S2	121	OMU	O4-C4-C5	-2.89	120.18	125.16
5	L5	2837	OMU	O4-C4-C5	-2.88	120.20	125.16
5	L5	1871	A2M	O3'-C3'-C2'	2.88	119.24	111.19
5	L5	1860	PSU	O2-C2-N1	-2.87	119.82	122.79
5	L5	5010	PSU	O2-C2-N1	-2.87	119.83	122.79
5	L5	4973	PSU	O2-C2-N1	-2.87	119.83	122.79
85	S2	576	A2M	C3'-C2'-C1'	-2.87	97.31	102.81
85	S2	1367	PSU	O2-C2-N1	-2.86	119.83	122.79
85	S2	686	PSU	O2-C2-N1	-2.85	119.84	122.79
85	S2	1326	OMU	O4-C4-C5	-2.85	120.24	125.16
85	S2	354	OMU	O4-C4-C5	-2.85	120.24	125.16
85	S2	1232	PSU	O2-C2-N1	-2.85	119.85	122.79
5	L5	4590	A2M	O3'-C3'-C2'	2.85	119.16	111.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L5	1744	PSU	O2-C2-N1	-2.85	119.85	122.79
7	L8	55	PSU	O2-C2-N1	-2.85	119.85	122.79
5	L5	4431	PSU	O2-C2-N1	-2.84	119.86	122.79
85	S2	109	PSU	O2-C2-N1	-2.84	119.86	122.79
85	S2	166	A2M	C4-N9-C1'	-2.84	119.99	126.63
85	S2	27	A2M	C4-N9-C1'	-2.84	119.99	126.63
5	L5	3785	A2M	C4'-O4'-C1'	-2.83	103.21	109.47
5	L5	3844	PSU	O2-C2-N1	-2.83	119.87	122.79
5	L5	3851	PSU	O2-C2-N1	-2.83	119.87	122.79
5	L5	4500	PSU	C6-N1-C2	-2.82	120.07	122.69
5	L5	3822	PSU	O2-C2-N1	-2.82	119.88	122.79
5	L5	4636	PSU	O2-C2-N1	-2.82	119.89	122.79
5	L5	1323	A2M	C3'-C2'-C1'	-2.81	97.42	102.81
5	L5	3920	PSU	O2-C2-N1	-2.80	119.90	122.79
5	L5	4312	PSU	O2-C2-N1	-2.79	119.91	122.79
85	S2	1244	PSU	O2-C2-N1	-2.79	119.91	122.79
85	S2	651	PSU	O2-C2-N1	-2.78	119.92	122.79
5	L5	4552	PSU	O2-C2-N1	-2.78	119.92	122.79
5	L5	4532	PSU	O2-C2-N1	-2.78	119.92	122.79
5	L5	3853	PSU	O2-C2-N1	-2.78	119.93	122.79
85	S2	1177	PSU	O2-C2-N1	-2.77	119.93	122.79
5	L5	1524	A2M	C4'-O4'-C1'	-2.77	103.35	109.47
5	L5	1862	PSU	O2-C2-N1	-2.77	119.93	122.79
5	L5	1871	A2M	C4-N9-C1'	-2.77	120.16	126.63
5	L5	4576	PSU	O2-C2-N1	-2.77	119.94	122.79
5	L5	1781	PSU	O2-C2-N1	-2.76	119.94	122.79
5	L5	4673	PSU	C6-N1-C2	-2.76	120.13	122.69
5	L5	3639	PSU	C6-N1-C2	-2.75	120.14	122.69
5	L5	4620	OMU	O4-C4-C5	-2.75	120.42	125.16
85	S2	1056	PSU	O2-C2-N1	-2.75	119.95	122.79
85	S2	468	A2M	C1'-N9-C8	2.74	133.17	127.09
5	L5	4500	PSU	C6-C5-C4	2.74	120.02	118.17
5	L5	4972	PSU	O2-C2-N1	-2.73	119.97	122.79
5	L5	3884	PSU	O2-C2-N1	-2.73	119.97	122.79
5	L5	1782	PSU	O2-C2-N1	-2.73	119.98	122.79
5	L5	4353	PSU	O2-C2-N1	-2.73	119.98	122.79
5	L5	2815	A2M	O3'-C3'-C2'	2.72	118.80	111.19
85	S2	649	PSU	O2-C2-N1	-2.72	119.99	122.79
5	L5	2401	A2M	C1'-N9-C8	2.71	133.12	127.09
85	S2	681	PSU	C6-N1-C2	-2.71	120.18	122.69
5	L5	3701	OMC	O2-C2-N1	2.71	124.20	118.90
5	L5	1683	PSU	O2-C2-N1	-2.70	120.00	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S2	576	A2M	C4-N9-C1'	-2.70	120.32	126.63
5	L5	4220	6MZ	C4-C5-C6	2.69	119.02	116.78
85	S2	159	A2M	C4-N9-C1'	-2.69	120.34	126.63
5	L5	4471	PSU	O2-C2-N1	-2.69	120.02	122.79
5	L5	3844	PSU	C6-N1-C2	-2.69	120.20	122.69
85	S2	93	PSU	O2-C2-N1	-2.69	120.02	122.79
85	S2	966	PSU	O2-C2-N1	-2.69	120.02	122.79
5	L5	4590	A2M	C1'-N9-C8	2.68	133.05	127.09
5	L5	4523	A2M	C4-N9-C1'	-2.68	120.36	126.63
85	S2	1031	A2M	C4-N9-C1'	-2.68	120.36	126.63
85	S2	27	A2M	C1'-N9-C8	2.68	133.04	127.09
5	L5	4628	PSU	C6-N1-C2	-2.67	120.21	122.69
85	S2	1248	B8N	O4-C4-N3	-2.67	115.65	119.99
5	L5	1792	PSU	O2-C2-N1	-2.67	120.04	122.79
5	L5	2787	A2M	O4'-C1'-C2'	2.67	111.18	106.59
5	L5	1744	PSU	C6-N1-C2	-2.66	120.22	122.69
5	L5	4457	PSU	O2-C2-N1	-2.66	120.04	122.79
5	L5	1326	A2M	O3'-C3'-C2'	2.66	118.64	111.19
5	L5	4293	PSU	C6-N1-C2	-2.66	120.22	122.69
5	L5	4523	A2M	O3'-C3'-C2'	2.66	118.62	111.19
85	S2	1004	PSU	O2-C2-N1	-2.65	120.05	122.79
85	S2	99	A2M	C4-N9-C1'	-2.65	120.43	126.63
85	S2	1045	PSU	O2-C2-N1	-2.65	120.06	122.79
85	S2	814	PSU	O2-C2-N1	-2.65	120.06	122.79
5	L5	2363	A2M	O3'-C3'-C2'	2.64	118.58	111.19
7	L8	55	PSU	C6-N1-C2	-2.64	120.25	122.69
85	S2	166	A2M	C1'-N9-C8	2.63	132.94	127.09
5	L5	3825	A2M	C4-N9-C1'	-2.63	120.48	126.63
5	L5	1536	PSU	C6-N1-C2	-2.63	120.25	122.69
5	L5	4353	PSU	C6-N1-C2	-2.63	120.25	122.69
5	L5	4628	PSU	O2-C2-N1	-2.62	120.09	122.79
5	L5	3818	UY1	O2-C2-N1	-2.62	120.09	122.79
85	S2	1337	4AC	N4-C4-N3	2.62	118.12	113.87
85	S2	681	PSU	O2-C2-N1	-2.62	120.09	122.79
85	S2	105	PSU	O2-C2-N1	-2.61	120.09	122.79
5	L5	1871	A2M	C1'-N9-C8	2.61	132.89	127.09
85	S2	159	A2M	C1'-N9-C8	2.61	132.89	127.09
85	S2	1639	G7M	CN7-N7-C8	-2.61	120.84	124.79
5	L5	3785	A2M	C4-N9-C1'	-2.61	120.54	126.63
5	L5	2787	A2M	C4-N9-C1'	-2.60	120.54	126.63
5	L5	4442	PSU	C6-N1-C2	-2.60	120.28	122.69
5	L5	1683	PSU	C6-N1-C2	-2.60	120.28	122.69

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S2	1383	A2M	C1'-N9-C8	2.59	132.84	127.09
5	L5	1326	A2M	C3'-C2'-C1'	-2.59	97.86	102.81
5	L5	4552	PSU	C6-N1-C2	-2.59	120.29	122.69
5	L5	1782	PSU	C6-N1-C2	-2.58	120.30	122.69
85	S2	649	PSU	C6-N1-C2	-2.58	120.30	122.69
5	L5	1677	PSU	O2-C2-N1	-2.58	120.13	122.79
85	S2	801	PSU	O2-C2-N1	-2.58	120.13	122.79
85	S2	863	PSU	O2-C2-N1	-2.57	120.14	122.79
85	S2	1004	PSU	C6-N1-C2	-2.57	120.31	122.69
85	S2	651	PSU	C6-N1-C2	-2.57	120.31	122.69
5	L5	3830	A2M	C4-N9-C1'	-2.57	120.63	126.63
5	L5	1582	PSU	C6-N1-C2	-2.57	120.31	122.69
5	L5	1326	A2M	C4-N9-C1'	-2.56	120.64	126.63
5	L5	3853	PSU	C6-N1-C2	-2.56	120.32	122.69
5	L5	4493	PSU	O2-C2-N1	-2.56	120.15	122.79
5	L5	398	A2M	C4-N9-C1'	-2.56	120.65	126.63
85	S2	159	A2M	C3'-C2'-C1'	-2.56	97.91	102.81
5	L5	400	A2M	C4-N9-C1'	-2.55	120.66	126.63
5	L5	2839	PSU	C6-N1-C2	-2.55	120.32	122.69
5	L5	3851	PSU	C6-N1-C2	-2.55	120.32	122.69
85	S2	1031	A2M	C1'-N9-C8	2.55	132.75	127.09
85	S2	801	PSU	C6-N1-C2	-2.55	120.33	122.69
85	S2	866	PSU	O2-C2-N1	-2.55	120.16	122.79
85	S2	799	OMU	C1'-N1-C2	2.54	122.16	117.59
5	L5	2363	A2M	C4-N9-C1'	-2.54	120.68	126.63
5	L5	3920	PSU	C6-N1-C2	-2.54	120.33	122.69
5	L5	2363	A2M	O4'-C1'-C2'	2.54	110.96	106.59
85	S2	406	PSU	C6-N1-C2	-2.54	120.34	122.69
5	L5	4431	PSU	C6-N1-C2	-2.54	120.34	122.69
85	S2	668	A2M	O4'-C1'-C2'	2.53	110.94	106.59
5	L5	1323	A2M	O4'-C1'-C2'	2.53	110.94	106.59
5	L5	4972	PSU	C6-N1-C2	-2.53	120.35	122.69
5	L5	4220	6MZ	C5-C6-N1	2.53	120.86	118.15
5	L5	1524	A2M	O4'-C1'-C2'	2.52	110.93	106.59
5	L5	4571	A2M	C4-N9-C1'	-2.52	120.74	126.63
85	S2	668	A2M	C2'-C1'-N9	2.52	117.90	113.75
85	S2	576	A2M	C1'-N9-C8	2.52	132.68	127.09
7	L8	69	PSU	C6-N1-C2	-2.52	120.36	122.69
85	S2	484	A2M	C1'-N9-C8	2.51	132.67	127.09
5	L5	2815	A2M	C3'-C2'-C1'	-2.51	98.00	102.81
5	L5	3695	PSU	O2-C2-N1	-2.51	120.20	122.79
85	S2	105	PSU	C6-N1-C2	-2.51	120.36	122.69

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S2	1046	PSU	C6-N1-C2	-2.51	120.36	122.69
5	L5	2837	OMU	O2-C2-N1	-2.51	119.53	122.80
5	L5	4530	UR3	C6-N1-C2	-2.50	119.75	121.80
5	L5	3785	A2M	C3'-C2'-C1'	-2.50	98.02	102.81
5	L5	400	A2M	C2'-C1'-N9	2.50	117.86	113.75
85	S2	99	A2M	C1'-N9-C8	2.50	132.64	127.09
5	L5	3830	A2M	C1'-N9-C8	2.49	132.63	127.09
5	L5	3718	A2M	C1'-N9-C8	2.49	132.62	127.09
85	S2	484	A2M	C4-N9-C1'	-2.49	120.82	126.63
5	L5	4471	PSU	C6-N1-C2	-2.48	120.39	122.69
5	L5	2351	OMC	C1'-N1-C2	2.48	123.92	118.44
85	S2	93	PSU	C6-N1-C2	-2.48	120.39	122.69
5	L5	3825	A2M	C1'-N9-C8	2.48	132.59	127.09
5	L5	2632	PSU	C6-N1-C2	-2.48	120.39	122.69
5	L5	1582	PSU	O2-C2-N1	-2.47	120.24	122.79
5	L5	5001	PSU	O2-C2-N1	-2.47	120.24	122.79
5	L5	4636	PSU	C6-C5-C4	2.46	119.84	118.17
85	S2	1326	OMU	O2-C2-N1	-2.46	119.59	122.80
85	S2	966	PSU	C6-N1-C2	-2.46	120.41	122.69
5	L5	5010	PSU	C6-N1-C2	-2.45	120.42	122.69
85	S2	1174	PSU	C6-N1-C2	-2.45	120.42	122.69
5	L5	4579	PSU	C6-N1-C2	-2.45	120.42	122.69
5	L5	1326	A2M	C1'-N9-C8	2.45	132.53	127.09
5	L5	4523	A2M	C1'-N9-C8	2.45	132.53	127.09
5	L5	5001	PSU	C6-N1-C2	-2.45	120.42	122.69
5	L5	1792	PSU	C6-N1-C2	-2.44	120.42	122.69
5	L5	4312	PSU	C6-N1-C2	-2.44	120.42	122.69
5	L5	398	A2M	C1'-N9-C8	2.44	132.51	127.09
5	L5	1781	PSU	C6-N1-C2	-2.44	120.43	122.69
5	L5	2787	A2M	C1'-N9-C8	2.43	132.49	127.09
5	L5	2363	A2M	C1'-N9-C8	2.43	132.49	127.09
85	S2	1056	PSU	C6-N1-C2	-2.43	120.44	122.69
85	S2	1367	PSU	C6-N1-C2	-2.43	120.44	122.69
85	S2	484	A2M	O4'-C1'-C2'	2.42	110.76	106.59
5	L5	1524	A2M	C4-N9-C1'	-2.42	120.97	126.63
5	L5	4521	PSU	C6-N1-C2	-2.42	120.44	122.69
5	L5	3884	PSU	C6-N1-C2	-2.42	120.45	122.69
5	L5	4361	PSU	O2-C2-N1	-2.42	120.30	122.79
5	L5	3718	A2M	C4-N9-C1'	-2.41	120.99	126.63
5	L5	1860	PSU	C6-N1-C2	-2.41	120.46	122.69
5	L5	3695	PSU	C6-N1-C2	-2.41	120.46	122.69
5	L5	4299	PSU	O2-C2-N1	-2.39	120.32	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
85	S2	1177	PSU	C6-N1-C2	-2.39	120.47	122.69
5	L5	400	A2M	C1'-N9-C8	2.39	132.40	127.09
5	L5	3925	OMU	O2-C2-N1	-2.38	119.70	122.80
85	S2	354	OMU	O2-C2-N1	-2.38	119.70	122.80
5	L5	3785	A2M	C1'-N9-C8	2.37	132.36	127.09
5	L5	4296	PSU	C6-N1-C2	-2.36	120.50	122.69
85	S2	109	PSU	C6-N1-C2	-2.36	120.50	122.69
5	L5	2861	OMC	C1'-N1-C2	2.36	123.66	118.44
5	L5	4571	A2M	C1'-N9-C8	2.36	132.34	127.09
85	S2	1850	MA6	C1'-N9-C8	-2.36	121.86	127.09
5	L5	3867	A2M	C4-N9-C1'	-2.36	121.12	126.63
85	S2	627	OMU	O2-C2-N1	-2.36	119.73	122.80
85	S2	1081	PSU	O2-C2-N1	-2.36	120.36	122.79
85	S2	814	PSU	C6-N1-C2	-2.35	120.51	122.69
85	S2	863	PSU	C6-N1-C2	-2.35	120.52	122.69
5	L5	3822	PSU	C6-N1-C2	-2.34	120.52	122.69
85	S2	1244	PSU	C6-N1-C2	-2.34	120.52	122.69
5	L5	3808	OMC	C1'-N1-C2	2.34	123.61	118.44
5	L5	3822	PSU	O4'-C1'-C2'	2.34	108.39	105.15
5	L5	400	A2M	O4'-C1'-C2'	2.33	110.60	106.59
85	S2	428	OMU	O2-C2-N1	-2.32	119.78	122.80
3	CF	163	SEP	OG-CB-CA	2.32	110.40	108.14
5	L5	1534	A2M	O3'-C3'-C4'	-2.32	104.43	111.08
5	L5	4576	PSU	C6-N1-C2	-2.31	120.54	122.69
5	L5	4521	PSU	C6-C5-C4	2.31	119.73	118.17
5	L5	4299	PSU	C6-N1-C2	-2.31	120.55	122.69
85	S2	686	PSU	C6-N1-C2	-2.31	120.55	122.69
5	L5	4227	OMU	O2-C2-N1	-2.31	119.79	122.80
5	L5	4498	OMU	O2-C2-N1	-2.30	119.80	122.80
5	L5	4973	PSU	C6-N1-C2	-2.30	120.56	122.69
5	L5	3867	A2M	C1'-N9-C8	2.30	132.19	127.09
85	S2	866	PSU	C6-N1-C2	-2.30	120.56	122.69
5	L5	4590	A2M	C6-C5-C4	-2.29	114.05	117.18
5	L5	4361	PSU	C6-N1-C2	-2.29	120.56	122.69
85	S2	468	A2M	C6-C5-C4	-2.29	114.05	117.18
85	S2	1056	PSU	C6-C5-C4	2.29	119.72	118.17
5	L5	3637	PSU	C6-N1-C2	-2.29	120.57	122.69
85	S2	1248	B8N	O4'-C1'-C2'	2.28	108.31	105.15
5	L5	4403	PSU	C6-N1-C2	-2.28	120.57	122.69
5	L5	1524	A2M	C1'-N9-C8	2.28	132.16	127.09
5	L5	1322	1MA	N1-C6-N6	2.28	125.44	119.71
85	S2	1232	PSU	C6-N1-C2	-2.28	120.58	122.69

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L5	1326	A2M	O4'-C1'-C2'	2.27	110.50	106.59
5	L5	1871	A2M	C6-C5-C4	-2.27	114.08	117.18
5	L5	3785	A2M	C2-N1-C6	-2.27	115.01	118.73
5	L5	4403	PSU	O4'-C1'-C2'	2.26	108.28	105.15
85	S2	1832	6MZ	C4-C5-N7	-2.26	108.00	110.58
85	S2	406	PSU	C6-C5-C4	2.26	119.70	118.17
85	S2	27	A2M	C6-C5-C4	-2.24	114.11	117.18
7	L8	69	PSU	O4'-C1'-C2'	2.24	108.25	105.15
5	L5	2815	A2M	O4'-C1'-C2'	2.24	110.44	106.59
5	L5	4493	PSU	C6-N1-C2	-2.24	120.62	122.69
85	S2	668	A2M	C6-C5-C4	-2.24	114.12	117.18
5	L5	3785	A2M	O4'-C4'-C3'	2.23	109.59	105.15
85	S2	166	A2M	C6-C5-C4	-2.22	114.14	117.18
5	L5	2815	A2M	C4-N9-C1'	-2.22	121.44	126.63
85	S2	121	OMU	O2-C2-N1	-2.22	119.91	122.80
85	S2	468	A2M	O4'-C1'-C2'	2.22	110.41	106.59
85	S2	1639	G7M	N9-C8-N7	-2.22	107.10	112.48
5	L5	2422	OMC	C1'-N1-C2	2.21	123.33	118.44
85	S2	1248	B8N	O4-C4-C5	-2.21	118.76	122.58
5	L5	4636	PSU	C6-N1-C2	-2.21	120.64	122.69
5	L5	1862	PSU	C6-N1-C2	-2.21	120.64	122.69
85	S2	1851	MA6	C1'-N9-C8	-2.20	122.20	127.09
5	L5	4403	PSU	C6-C5-C4	2.20	119.66	118.17
85	S2	1045	PSU	C6-N1-C2	-2.20	120.65	122.69
5	L5	1534	A2M	C1'-N9-C8	2.18	131.93	127.09
5	L5	2815	A2M	C1'-N9-C8	2.18	131.93	127.09
85	S2	159	A2M	O4'-C1'-C2'	2.18	110.33	106.59
5	L5	3867	A2M	O3'-C3'-C2'	2.17	117.26	111.19
5	L5	4457	PSU	C6-N1-C2	-2.16	120.69	122.69
5	L5	3785	A2M	C5-C6-N1	2.16	123.00	117.51
5	L5	4442	PSU	O4'-C1'-C2'	2.16	108.14	105.15
5	L5	4523	A2M	C6-C5-C4	-2.16	114.23	117.18
5	L5	1323	A2M	C4-N9-C1'	-2.16	121.58	126.63
85	S2	1383	A2M	C6-C5-C4	-2.16	114.23	117.18
5	L5	2401	A2M	C6-C5-C4	-2.15	114.24	117.18
85	S2	1442	OMU	O2-C2-N1	-2.15	120.00	122.80
5	L5	1534	A2M	C2-N1-C6	-2.15	115.20	118.73
5	L5	1677	PSU	C6-C5-C4	2.15	119.62	118.17
5	L5	1326	A2M	C6-C5-C4	-2.14	114.25	117.18
5	L5	1677	PSU	C6-N1-C2	-2.14	120.70	122.69
5	L5	1322	1MA	CM1-N1-C6	-2.14	116.83	120.15
85	S2	172	OMU	O2-C2-N1	-2.14	120.01	122.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L5	4442	PSU	C6-C5-C4	2.14	119.62	118.17
5	L5	4353	PSU	C6-C5-C4	2.13	119.61	118.17
85	S2	1081	PSU	C6-N1-C2	-2.13	120.72	122.69
5	L5	2787	A2M	C6-C5-C4	-2.13	114.27	117.18
5	L5	3867	A2M	O4'-C1'-C2'	2.13	110.25	106.59
5	L5	3825	A2M	C2'-C1'-N9	2.12	117.24	113.75
85	S2	166	A2M	O4'-C1'-C2'	2.12	110.23	106.59
5	L5	1534	A2M	C2'-C1'-N9	2.12	117.24	113.75
5	L5	4636	PSU	O4'-C1'-C2'	2.11	108.07	105.15
5	L5	3867	A2M	C6-C5-C4	-2.11	114.29	117.18
85	S2	1031	A2M	C6-C5-C4	-2.11	114.29	117.18
5	L5	1534	A2M	C4-N9-C1'	-2.11	121.70	126.63
5	L5	4523	A2M	C4'-O4'-C1'	-2.11	104.81	109.47
5	L5	4571	A2M	C6-C5-C4	-2.10	114.31	117.18
5	L5	2787	A2M	O4'-C4'-C3'	2.10	109.33	105.15
85	S2	99	A2M	O4'-C1'-C2'	2.10	110.20	106.59
5	L5	1522	OMG	C2'-C1'-N9	-2.10	110.25	114.24
5	L5	3785	A2M	C6-C5-C4	-2.10	114.31	117.18
5	L5	2401	A2M	O4'-C1'-C2'	2.10	110.20	106.59
5	L5	1323	A2M	C1'-N9-C8	2.09	131.74	127.09
5	L5	3825	A2M	C6-C5-C4	-2.09	114.32	117.18
5	L5	1524	A2M	C6-C5-C4	-2.09	114.32	117.18
5	L5	4220	6MZ	C3'-C2'-C1'	2.09	105.42	101.46
5	L5	1326	A2M	C2-N1-C6	-2.09	115.30	118.73
5	L5	4532	PSU	C6-N1-C2	-2.09	120.75	122.69
5	L5	400	A2M	C6-C5-C4	-2.08	114.33	117.18
85	S2	484	A2M	O4'-C4'-C3'	2.08	109.28	105.15
5	L5	3825	A2M	C2-N1-C6	-2.08	115.31	118.73
5	L5	400	A2M	C5-C6-N1	2.07	122.78	117.51
5	L5	1323	A2M	C2-N1-C6	-2.07	115.33	118.73
85	S2	99	A2M	C6-C5-C4	-2.07	114.35	117.18
5	L5	4457	PSU	O4'-C1'-C2'	2.07	108.01	105.15
85	S2	576	A2M	C6-C5-C4	-2.07	114.36	117.18
85	S2	462	OMC	C1'-N1-C2	2.06	123.00	118.44
5	L5	1871	A2M	O4'-C1'-C2'	2.06	110.14	106.59
85	S2	1244	PSU	C6-C5-C4	2.06	119.56	118.17
85	S2	668	A2M	O3'-C3'-C4'	-2.06	105.17	111.08
5	L5	2363	A2M	C5-C6-N1	2.06	122.74	117.51
85	S2	27	A2M	O4'-C1'-C2'	2.06	110.13	106.59
85	S2	1031	A2M	O4'-C1'-C2'	2.05	110.13	106.59
5	L5	400	A2M	C2-N1-C6	-2.05	115.36	118.73
5	L5	3867	A2M	C2-N1-C6	-2.05	115.36	118.73

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	L5	1326	A2M	C5-C6-N1	2.05	122.72	117.51
5	L5	4571	A2M	C5-C6-N1	2.05	122.72	117.51
5	L5	398	A2M	C6-C5-C4	-2.05	114.38	117.18
5	L5	398	A2M	C5-C6-N1	2.04	122.70	117.51
85	S2	159	A2M	C6-C5-C4	-2.04	114.39	117.18
85	S2	1248	B8N	C31-N3-C4	2.04	120.07	117.18
85	S2	1031	A2M	C5-C6-N1	2.04	122.69	117.51
5	L5	3830	A2M	C6-C5-C4	-2.04	114.40	117.18
5	L5	2363	A2M	C2-N1-C6	-2.04	115.38	118.73
5	L5	2363	A2M	C6-C5-C4	-2.03	114.40	117.18
85	S2	1832	6MZ	C5-C6-N1	2.03	120.33	118.15
5	L5	3825	A2M	C5-C6-N1	2.03	122.67	117.51
5	L5	4571	A2M	C2-N1-C6	-2.03	115.40	118.73
5	L5	2787	A2M	C5-C6-N1	2.02	122.65	117.51
85	S2	166	A2M	C5-C6-N1	2.02	122.64	117.51
5	L5	3639	PSU	C6-C5-C4	2.02	119.54	118.17
5	L5	2401	A2M	C2-N1-C6	-2.02	115.42	118.73
5	L5	4353	PSU	O4'-C1'-C2'	2.02	107.94	105.15
5	L5	398	A2M	C2-N1-C6	-2.02	115.42	118.73
5	L5	2815	A2M	C2-N1-C6	-2.01	115.42	118.73
5	L5	4571	A2M	O4'-C1'-C2'	2.01	110.06	106.59
85	S2	468	A2M	C5-C6-N1	2.01	122.62	117.51
5	L5	1323	A2M	C5-C6-N1	2.01	122.62	117.51
85	S2	1383	A2M	C5-C6-N1	2.01	122.61	117.51
85	S2	1851	MA6	C4-C5-N7	-2.01	108.29	110.58
5	L5	2815	A2M	C5-C6-N1	2.01	122.60	117.51
5	L5	3695	PSU	O4'-C1'-C2'	2.00	107.92	105.15
5	L5	4523	A2M	C5-C6-N1	2.00	122.60	117.51
85	S2	99	A2M	C2-N1-C6	-2.00	115.44	118.73
85	S2	99	A2M	C5-C6-N1	2.00	122.59	117.51
5	L5	1534	A2M	C5-C6-N1	2.00	122.59	117.51

There are no chirality outliers.

All (150) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	CF	163	SEP	C-CA-CB-OG
3	CF	163	SEP	CA-CB-OG-P
5	L5	400	A2M	C1'-C2'-O2'-CM'
5	L5	1326	A2M	O4'-C4'-C5'-O5'
5	L5	1326	A2M	C1'-C2'-O2'-CM'
5	L5	1340	OMC	C1'-C2'-O2'-CM2

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Mol	Chain	Res	Type	Atoms
5	L5	1625	OMG	O4'-C4'-C5'-O5'
5	L5	2351	OMC	C1'-C2'-O2'-CM2
5	L5	2364	OMG	C1'-C2'-O2'-CM2
5	L5	2787	A2M	C1'-C2'-O2'-CM'
5	L5	2824	OMC	C1'-C2'-O2'-CM2
5	L5	3701	OMC	O4'-C4'-C5'-O5'
5	L5	3792	OMG	O4'-C4'-C5'-O5'
5	L5	3841	OMC	C1'-C2'-O2'-CM2
5	L5	4196	OMG	C1'-C2'-O2'-CM2
5	L5	4220	6MZ	O4'-C4'-C5'-O5'
5	L5	4500	PSU	O4'-C4'-C5'-O5'
5	L5	4637	OMG	O4'-C4'-C5'-O5'
5	L5	4637	OMG	C1'-C2'-O2'-CM2
85	S2	159	A2M	C1'-C2'-O2'-CM'
85	S2	576	A2M	C1'-C2'-O2'-CM'
85	S2	601	OMG	C1'-C2'-O2'-CM2
85	S2	644	OMG	O4'-C4'-C5'-O5'
85	S2	1272	OMC	C3'-C4'-C5'-O5'
85	S2	1272	OMC	O4'-C4'-C5'-O5'
85	S2	1288	OMU	O4'-C4'-C5'-O5'
85	S2	1328	OMG	C1'-C2'-O2'-CM2
85	S2	1337	4AC	N3-C4-N4-C7
85	S2	1383	A2M	C1'-C2'-O2'-CM'
85	S2	1442	OMU	O4'-C4'-C5'-O5'
85	S2	1832	6MZ	C5-C6-N6-C9
85	S2	1832	6MZ	N1-C6-N6-C9
5	L5	3701	OMC	C2'-C1'-N1-C2
5	L5	1625	OMG	C3'-C4'-C5'-O5'
5	L5	2364	OMG	O4'-C4'-C5'-O5'
5	L5	2815	A2M	O4'-C4'-C5'-O5'
5	L5	4500	PSU	C3'-C4'-C5'-O5'
5	L5	4590	A2M	O4'-C4'-C5'-O5'
5	L5	4590	A2M	C3'-C4'-C5'-O5'
85	S2	576	A2M	O4'-C4'-C5'-O5'
85	S2	576	A2M	C3'-C4'-C5'-O5'
85	S2	683	OMG	C3'-C4'-C5'-O5'
85	S2	867	OMG	C3'-C4'-C5'-O5'
85	S2	1248	B8N	O4'-C4'-C5'-O5'
85	S2	1288	OMU	C3'-C4'-C5'-O5'
85	S2	1442	OMU	C3'-C4'-C5'-O5'
5	L5	3701	OMC	C2'-C1'-N1-C6
5	L5	1323	A2M	O4'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
5	L5	1536	PSU	C3'-C4'-C5'-O5'
5	L5	1536	PSU	O4'-C4'-C5'-O5'
5	L5	3701	OMC	C3'-C4'-C5'-O5'
5	L5	3899	OMG	O4'-C4'-C5'-O5'
5	L5	3899	OMG	C3'-C4'-C5'-O5'
85	S2	99	A2M	O4'-C4'-C5'-O5'
85	S2	517	OMC	C3'-C4'-C5'-O5'
85	S2	801	PSU	C3'-C4'-C5'-O5'
85	S2	428	OMU	C2'-C1'-N1-C6
5	L5	1326	A2M	C3'-C4'-C5'-O5'
5	L5	3792	OMG	C3'-C4'-C5'-O5'
5	L5	3867	A2M	C3'-C4'-C5'-O5'
5	L5	4637	OMG	C3'-C4'-C5'-O5'
85	S2	644	OMG	C3'-C4'-C5'-O5'
5	L5	4447	5MC	C2'-C1'-N1-C6
5	L5	2787	A2M	C3'-C4'-C5'-O5'
5	L5	4220	6MZ	C3'-C4'-C5'-O5'
85	S2	668	A2M	O4'-C4'-C5'-O5'
85	S2	668	A2M	C3'-C4'-C5'-O5'
85	S2	799	OMU	C3'-C4'-C5'-O5'
5	L5	1677	PSU	O4'-C4'-C5'-O5'
5	L5	2815	A2M	C3'-C4'-C5'-O5'
85	S2	517	OMC	O4'-C4'-C5'-O5'
85	S2	683	OMG	O4'-C4'-C5'-O5'
85	S2	867	OMG	O4'-C4'-C5'-O5'
85	S2	1248	B8N	C3'-C4'-C5'-O5'
85	S2	1703	OMC	O4'-C4'-C5'-O5'
5	L5	1677	PSU	C3'-C4'-C5'-O5'
5	L5	1781	PSU	C3'-C4'-C5'-O5'
85	S2	627	OMU	O4'-C4'-C5'-O5'
5	L5	2364	OMG	C3'-C4'-C5'-O5'
5	L5	4590	A2M	C4'-C5'-O5'-P
85	S2	428	OMU	C2'-C1'-N1-C2
5	L5	1323	A2M	C3'-C4'-C5'-O5'
85	S2	99	A2M	C3'-C4'-C5'-O5'
85	S2	428	OMU	O4'-C4'-C5'-O5'
85	S2	801	PSU	O4'-C4'-C5'-O5'
5	L5	2787	A2M	C2'-C1'-N9-C8
85	S2	1248	B8N	N34-C33-C34-O36
5	L5	3782	5MC	O4'-C4'-C5'-O5'
85	S2	799	OMU	O4'-C4'-C5'-O5'
7	L8	75	OMG	C1'-C2'-O2'-CM2

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Mol	Chain	Res	Type	Atoms
85	S2	468	A2M	C1'-C2'-O2'-CM'
85	S2	1248	B8N	C31-C32-C33-C34
5	L5	1524	A2M	C3'-C4'-C5'-O5'
5	L5	4618	OMG	C3'-C4'-C5'-O5'
85	S2	428	OMU	C3'-C4'-C5'-O5'
85	S2	1045	PSU	C3'-C4'-C5'-O5'
85	S2	1045	PSU	O4'-C4'-C5'-O5'
85	S2	428	OMU	O4'-C1'-N1-C6
5	L5	4494	OMG	C3'-C2'-O2'-CM2
5	L5	3851	PSU	C3'-C4'-C5'-O5'
5	L5	4296	PSU	C3'-C4'-C5'-O5'
5	L5	1534	A2M	C4'-C5'-O5'-P
5	L5	3818	UY1	C4'-C5'-O5'-P
5	L5	4447	5MC	O4'-C1'-N1-C6
5	L5	4447	5MC	O4'-C1'-N1-C2
5	L5	4447	5MC	C2'-C1'-N1-C2
3	CF	163	SEP	N-CA-CB-OG
5	L5	4499	OMG	C3'-C2'-O2'-CM2
5	L5	4500	PSU	C4'-C5'-O5'-P
5	L5	3818	UY1	O4'-C1'-C5-C4
5	L5	4500	PSU	O4'-C1'-C5-C4
5	L5	2787	A2M	C2'-C1'-N9-C4
85	S2	428	OMU	O4'-C1'-N1-C2
5	L5	4296	PSU	O4'-C4'-C5'-O5'
5	L5	1524	A2M	O4'-C4'-C5'-O5'
5	L5	3701	OMC	O4'-C1'-N1-C6
85	S2	1490	OMG	C4'-C5'-O5'-P
85	S2	627	OMU	C3'-C2'-O2'-CM2
5	L5	3844	PSU	C4'-C5'-O5'-P
5	L5	3887	OMC	C4'-C5'-O5'-P
85	S2	576	A2M	C4'-C5'-O5'-P
5	L5	398	A2M	O4'-C4'-C5'-O5'
5	L5	4618	OMG	O4'-C4'-C5'-O5'
85	S2	1832	6MZ	O4'-C4'-C5'-O5'
5	L5	1322	1MA	C2'-C1'-N9-C8
5	L5	2424	OMG	C1'-C2'-O2'-CM2
5	L5	2861	OMC	C1'-C2'-O2'-CM2
85	S2	27	A2M	C1'-C2'-O2'-CM'
5	L5	1322	1MA	C2'-C1'-N9-C4
85	S2	644	OMG	C4'-C5'-O5'-P
85	S2	1851	MA6	C4'-C5'-O5'-P
5	L5	2422	OMC	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
85	S2	1639	G7M	C3'-C4'-C5'-O5'
5	L5	4636	PSU	O4'-C1'-C5-C6
85	S2	627	OMU	O4'-C1'-N1-C6
5	L5	3701	OMC	O4'-C1'-N1-C2
85	S2	627	OMU	C2'-C1'-N1-C6
5	L5	3867	A2M	O4'-C4'-C5'-O5'
85	S2	1081	PSU	C4'-C5'-O5'-P
5	L5	1781	PSU	O4'-C4'-C5'-O5'
5	L5	3785	A2M	C3'-C2'-O2'-CM'
5	L5	4370	OMG	C3'-C2'-O2'-CM2
5	L5	2351	OMC	O4'-C4'-C5'-O5'
85	S2	1703	OMC	C3'-C4'-C5'-O5'
5	L5	2787	A2M	O4'-C1'-N9-C8
85	S2	668	A2M	O4'-C1'-N9-C8
85	S2	668	A2M	C2'-C1'-N9-C8
5	L5	1326	A2M	C4'-C5'-O5'-P
5	L5	1582	PSU	C3'-C4'-C5'-O5'
5	L5	4471	PSU	C3'-C4'-C5'-O5'

There are no ring outliers.

65 monomers are involved in 85 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
85	S2	517	OMC	1	0
85	S2	681	PSU	1	0
5	L5	2351	OMC	2	0
85	S2	27	A2M	2	0
85	S2	484	A2M	2	0
5	L5	3841	OMC	1	0
85	S2	166	A2M	2	0
5	L5	3925	OMU	1	0
5	L5	2632	PSU	1	0
85	S2	116	OMU	1	0
5	L5	4636	PSU	1	0
5	L5	3822	PSU	1	0
5	L5	2824	OMC	1	0
5	L5	3701	OMC	1	0
5	L5	2363	A2M	1	0
5	L5	4196	OMG	1	0
5	L5	4689	PSU	1	0
85	S2	1842	4AC	1	0
85	S2	99	A2M	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
85	S2	509	OMG	3	0
85	S2	1442	OMU	1	0
85	S2	1031	A2M	1	0
5	L5	4620	OMU	2	0
5	L5	2424	OMG	1	0
85	S2	1383	A2M	1	0
85	S2	468	A2M	1	0
85	S2	1850	MA6	2	0
5	L5	4536	OMC	1	0
5	L5	3718	A2M	2	0
85	S2	799	OMU	1	0
85	S2	121	OMU	1	0
85	S2	1328	OMG	1	0
5	L5	4392	OMG	1	0
5	L5	3818	UY1	1	0
85	S2	1046	PSU	1	0
5	L5	400	A2M	1	0
85	S2	1288	OMU	1	0
5	L5	4457	PSU	1	0
5	L5	4618	OMG	1	0
5	L5	1534	A2M	1	0
5	L5	4220	6MZ	1	0
5	L5	1677	PSU	1	0
85	S2	867	OMG	1	0
85	S2	428	OMU	1	0
3	CF	163	SEP	1	0
5	L5	2876	OMG	1	0
5	L5	4523	A2M	1	0
85	S2	1832	6MZ	1	0
85	S2	1703	OMC	1	0
5	L5	4293	PSU	1	0
5	L5	1871	A2M	1	0
5	L5	3867	A2M	3	0
5	L5	4456	OMC	1	0
5	L5	4571	A2M	2	0
7	L8	75	OMG	2	0
85	S2	1337	4AC	3	0
5	L5	1683	PSU	1	0
5	L5	4579	PSU	2	0
5	L5	1326	A2M	2	0
5	L5	1340	OMC	2	0
85	S2	576	A2M	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
85	S2	1639	G7M	1	0
85	S2	159	A2M	2	0
5	L5	4431	PSU	1	0
5	L5	1625	OMG	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	$\# Z  > 2$
89	SPD	L5	5288	-	9,9,9	0.32	0	8,8,8	0.81	0
89	SPD	L5	5262	-	9,9,9	0.31	0	8,8,8	0.93	0
89	SPD	L5	5284	-	9,9,9	0.32	0	8,8,8	0.83	0
88	SPM	L5	5293	-	13,13,13	0.36	0	12,12,12	0.89	0
89	SPD	L5	5286	-	9,9,9	0.32	0	8,8,8	0.83	0
89	SPD	L5	5283	-	9,9,9	0.34	0	8,8,8	0.84	0
89	SPD	LN	301	-	9,9,9	0.33	0	8,8,8	0.86	0
89	SPD	L5	5291	-	9,9,9	0.32	0	8,8,8	0.81	0
88	SPM	L5	5264	-	13,13,13	0.34	0	12,12,12	0.95	0
88	SPM	L5	5289	-	13,13,13	0.37	0	12,12,12	1.02	0
88	SPM	L5	5265	-	13,13,13	0.36	0	12,12,12	1.05	0
88	SPM	L5	5268	-	13,13,13	0.36	0	12,12,12	1.02	0
88	SPM	L5	5292	-	13,13,13	0.37	0	12,12,12	0.94	0
89	SPD	L5	5285	-	9,9,9	0.33	0	8,8,8	0.90	0
89	SPD	L5	5290	-	9,9,9	0.31	0	8,8,8	0.84	0
88	SPM	L5	5259	-	13,13,13	0.34	0	12,12,12	0.99	0
89	SPD	L5	5287	-	9,9,9	0.32	0	8,8,8	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
89	SPD	L5	5288	-	-	2/7/7/7	-
89	SPD	L5	5262	-	-	0/7/7/7	-
89	SPD	L5	5284	-	-	3/7/7/7	-
88	SPM	L5	5293	-	-	5/11/11/11	-
89	SPD	L5	5286	-	-	0/7/7/7	-
89	SPD	L5	5283	-	-	1/7/7/7	-
89	SPD	LN	301	-	-	1/7/7/7	-
89	SPD	L5	5291	-	-	5/7/7/7	-
88	SPM	L5	5264	-	-	5/11/11/11	-
88	SPM	L5	5289	-	-	6/11/11/11	-
88	SPM	L5	5265	-	-	3/11/11/11	-
88	SPM	L5	5268	-	-	4/11/11/11	-
88	SPM	L5	5292	-	-	7/11/11/11	-
89	SPD	L5	5285	-	-	5/7/7/7	-
89	SPD	L5	5290	-	-	2/7/7/7	-
88	SPM	L5	5259	-	-	3/11/11/11	-
89	SPD	L5	5287	-	-	4/7/7/7	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (56) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
89	L5	5285	SPD	C3-C4-C5-N6
89	L5	5285	SPD	N6-C7-C8-C9
88	L5	5265	SPM	N5-C6-C7-C8
88	L5	5292	SPM	C7-C8-C9-N10
88	L5	5268	SPM	C2-C3-C4-N5
88	L5	5293	SPM	N10-C11-C12-C13
89	L5	5287	SPD	N6-C7-C8-C9
89	LN	301	SPD	C4-C5-N6-C7
89	L5	5284	SPD	C3-C4-C5-N6
89	L5	5287	SPD	C2-C3-C4-C5
88	L5	5259	SPM	C3-C4-N5-C6

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Mol	Chain	Res	Type	Atoms
89	L5	5285	SPD	C2-C3-C4-C5
88	L5	5292	SPM	N10-C11-C12-C13
88	L5	5289	SPM	C12-C11-N10-C9
88	L5	5292	SPM	N1-C2-C3-C4
88	L5	5293	SPM	C8-C9-N10-C11
89	L5	5291	SPD	C4-C5-N6-C7
89	L5	5287	SPD	C3-C4-C5-N6
88	L5	5264	SPM	N5-C6-C7-C8
89	L5	5288	SPD	N1-C2-C3-C4
88	L5	5293	SPM	C7-C6-N5-C4
88	L5	5259	SPM	C6-C7-C8-C9
89	L5	5283	SPD	C2-C3-C4-C5
88	L5	5293	SPM	C6-C7-C8-C9
88	L5	5289	SPM	C2-C3-C4-N5
88	L5	5268	SPM	C6-C7-C8-C9
88	L5	5264	SPM	C11-C12-C13-N14
88	L5	5289	SPM	N1-C2-C3-C4
88	L5	5268	SPM	N10-C11-C12-C13
89	L5	5284	SPD	C2-C3-C4-C5
89	L5	5290	SPD	N6-C7-C8-C9
88	L5	5289	SPM	C8-C9-N10-C11
88	L5	5289	SPM	N10-C11-C12-C13
88	L5	5264	SPM	C7-C8-C9-N10
89	L5	5287	SPD	C8-C7-N6-C5
89	L5	5291	SPD	C3-C4-C5-N6
89	L5	5291	SPD	C2-C3-C4-C5
88	L5	5292	SPM	C11-C12-C13-N14
88	L5	5293	SPM	C11-C12-C13-N14
89	L5	5284	SPD	C7-C8-C9-N10
89	L5	5285	SPD	C4-C5-N6-C7
89	L5	5291	SPD	C8-C7-N6-C5
88	L5	5265	SPM	C12-C11-N10-C9
88	L5	5289	SPM	C7-C6-N5-C4
89	L5	5291	SPD	N6-C7-C8-C9
88	L5	5264	SPM	C7-C6-N5-C4
88	L5	5264	SPM	C6-C7-C8-C9
88	L5	5292	SPM	C7-C6-N5-C4
88	L5	5265	SPM	C8-C9-N10-C11
89	L5	5285	SPD	C7-C8-C9-N10
88	L5	5259	SPM	N10-C11-C12-C13
89	L5	5290	SPD	N1-C2-C3-C4
88	L5	5292	SPM	C8-C9-N10-C11

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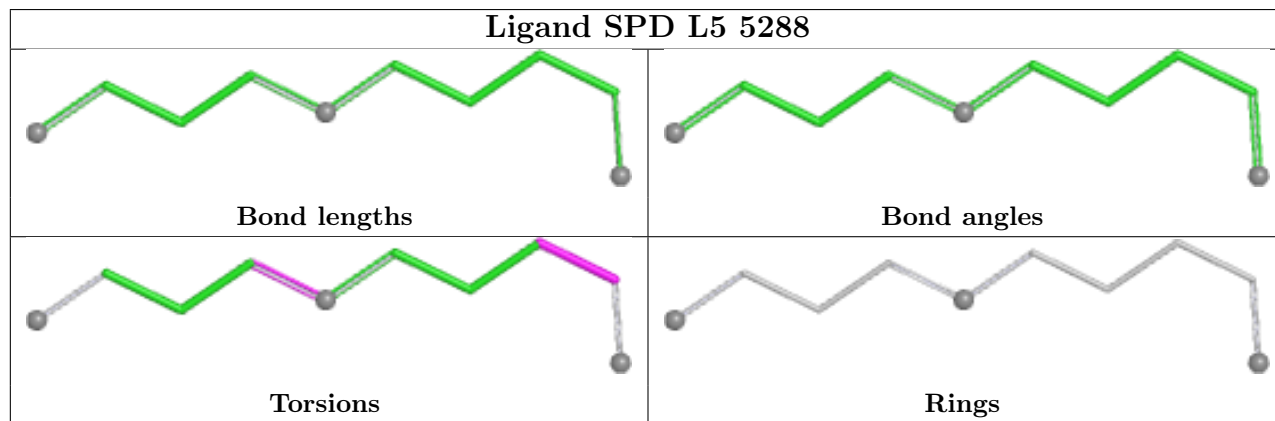
Mol	Chain	Res	Type	Atoms
89	L5	5288	SPD	C8-C7-N6-C5
88	L5	5268	SPM	C7-C8-C9-N10
88	L5	5292	SPM	N5-C6-C7-C8

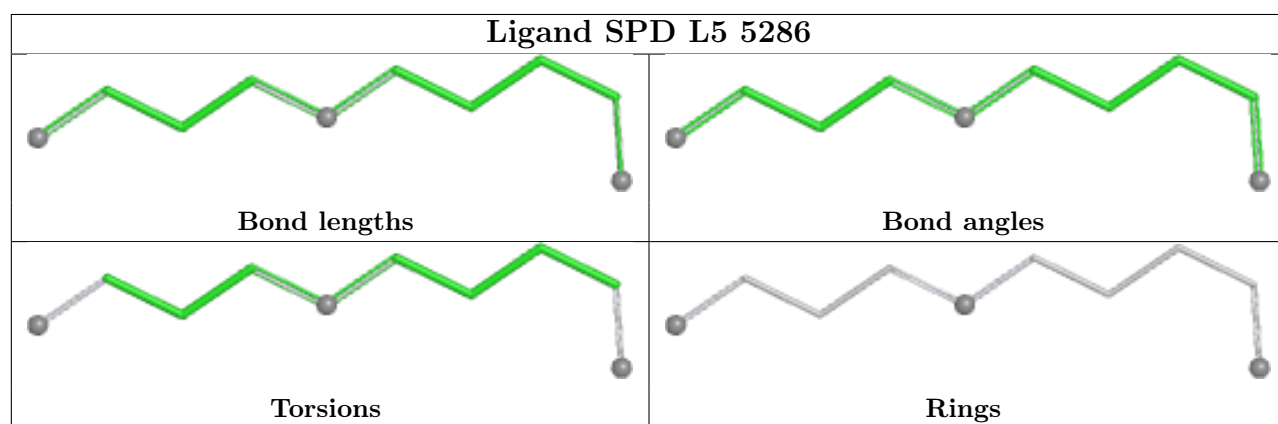
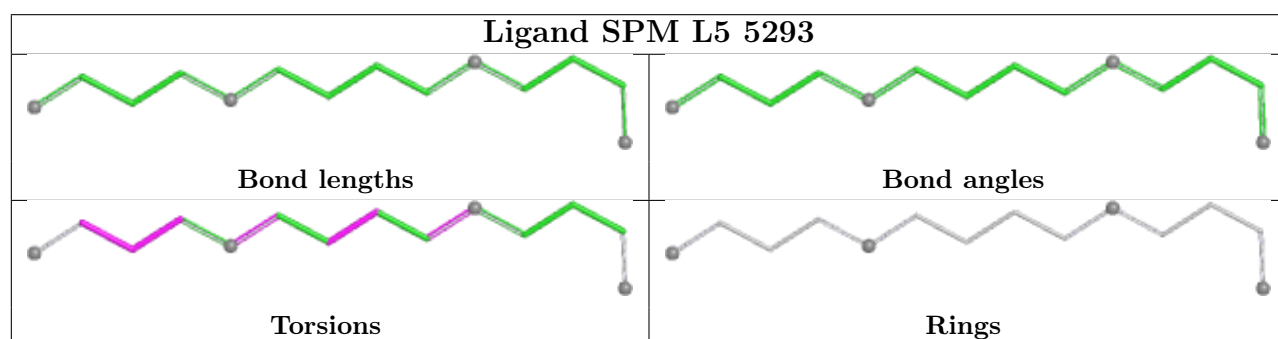
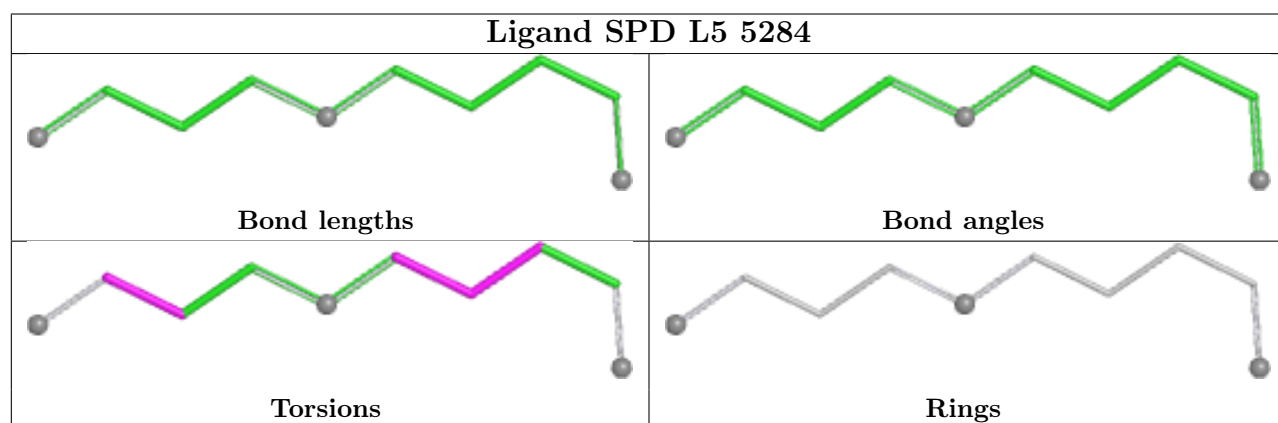
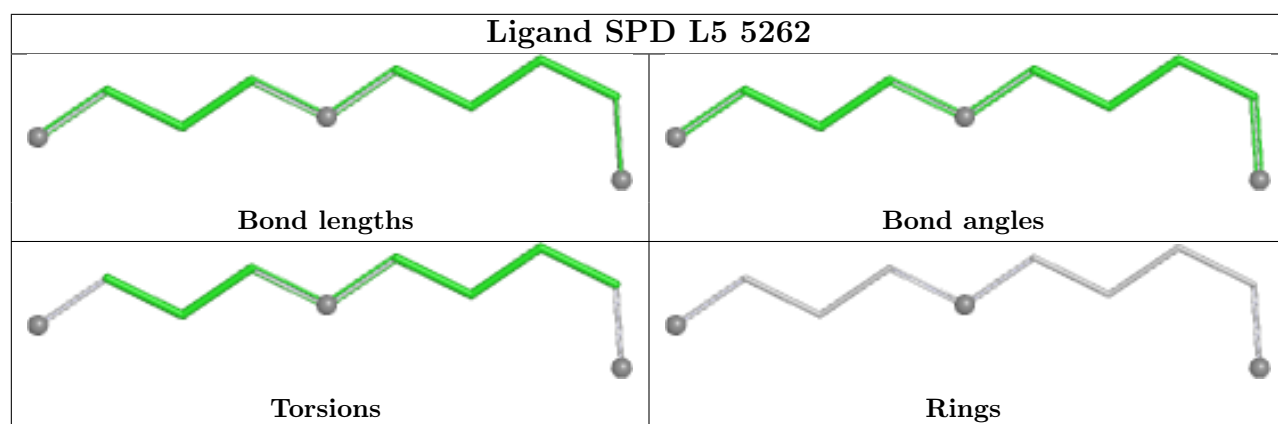
There are no ring outliers.

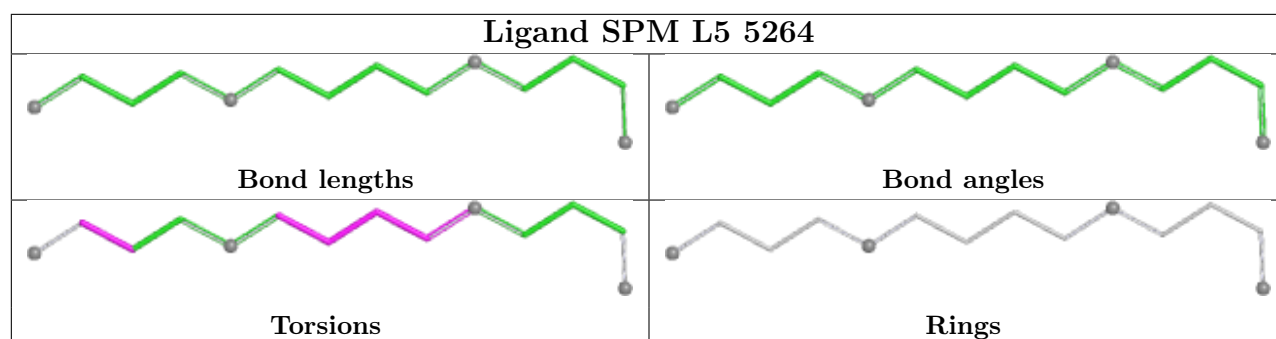
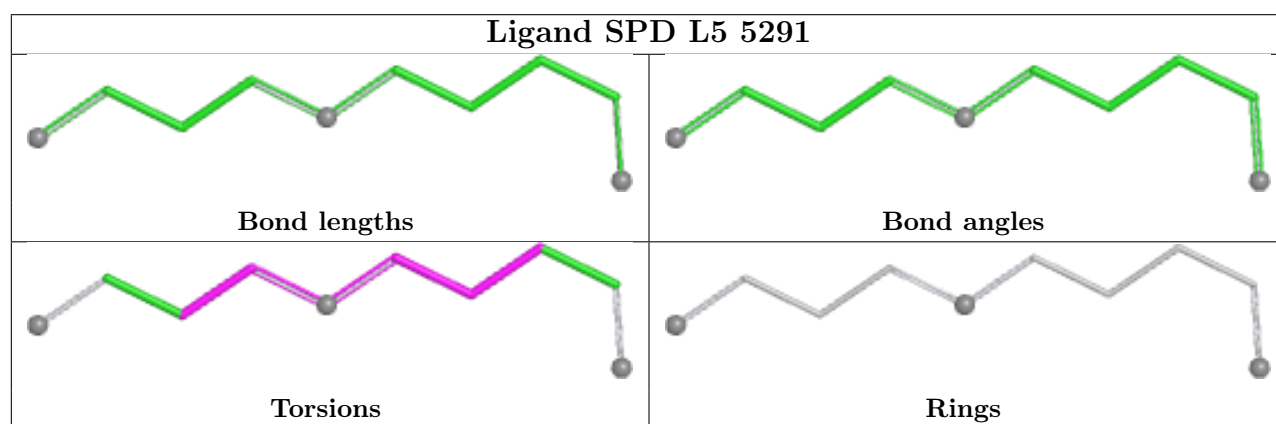
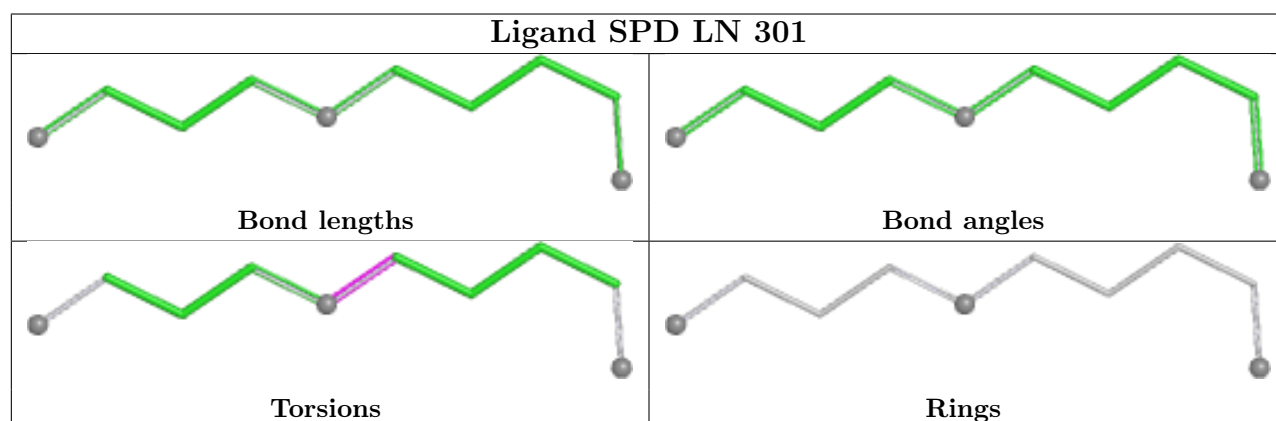
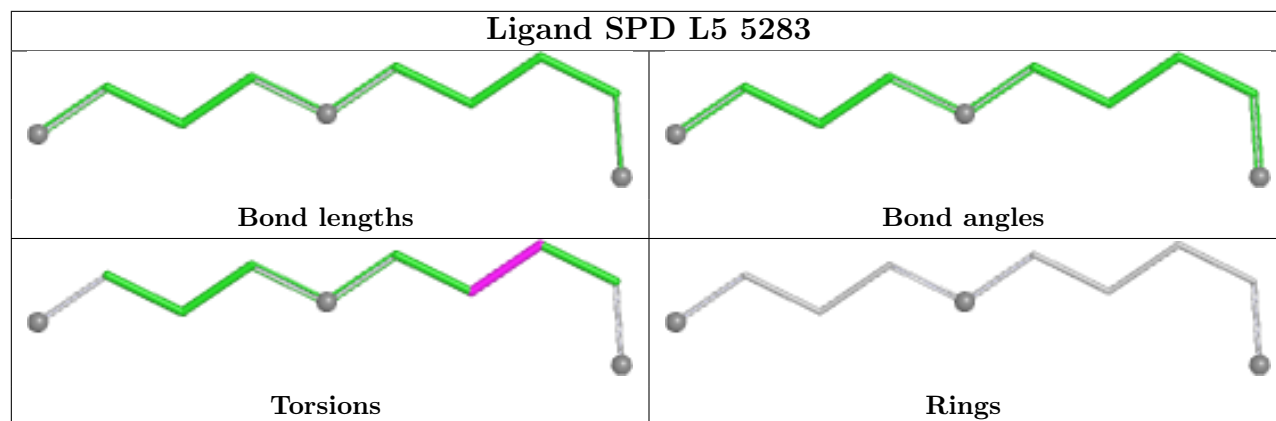
8 monomers are involved in 11 short contacts:

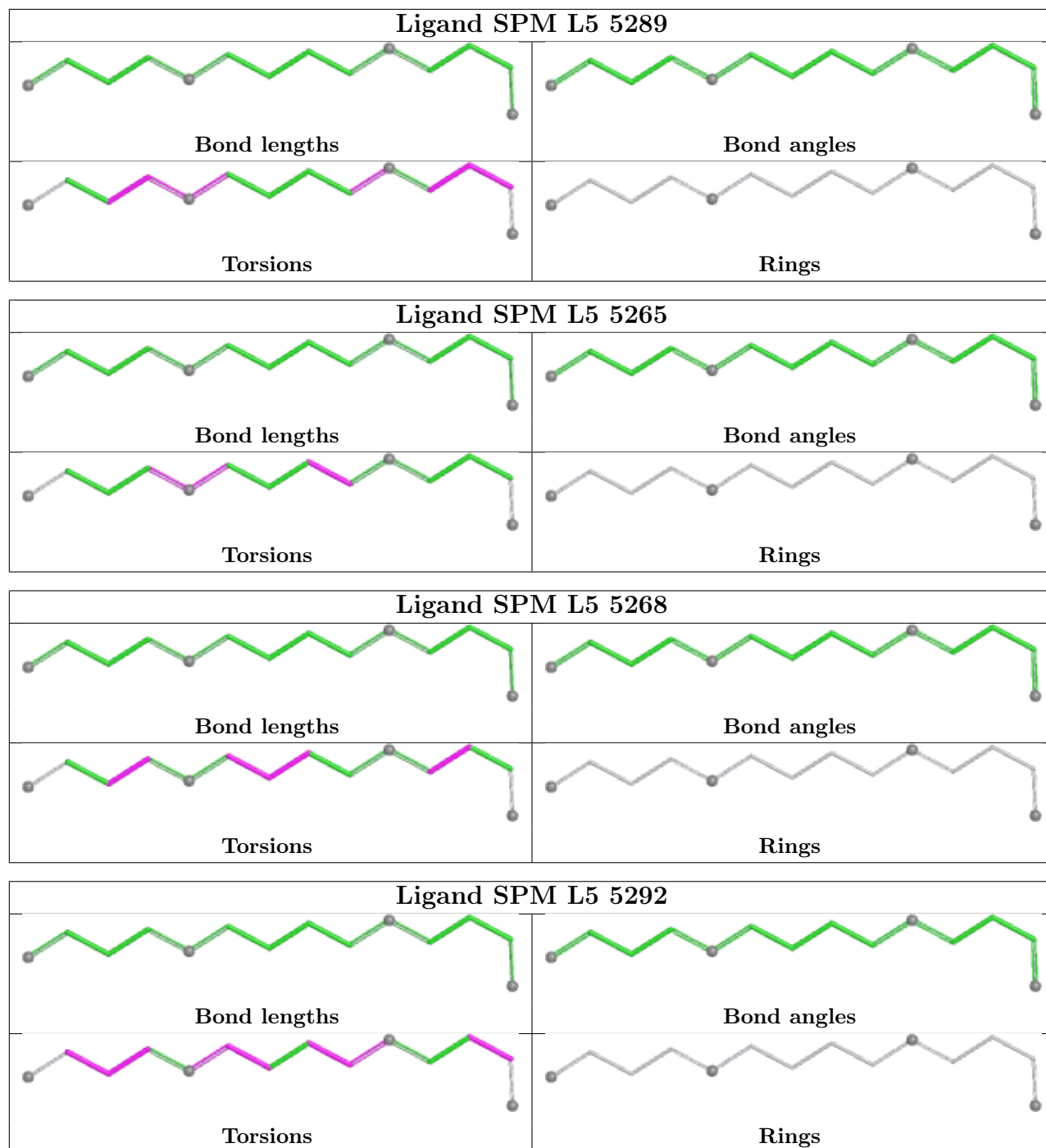
Mol	Chain	Res	Type	Clashes	Symm-Clashes
89	L5	5262	SPD	1	0
89	L5	5284	SPD	1	0
88	L5	5293	SPM	3	0
89	L5	5286	SPD	1	0
89	L5	5291	SPD	1	0
88	L5	5265	SPM	1	0
88	L5	5292	SPM	2	0
89	L5	5290	SPD	1	0

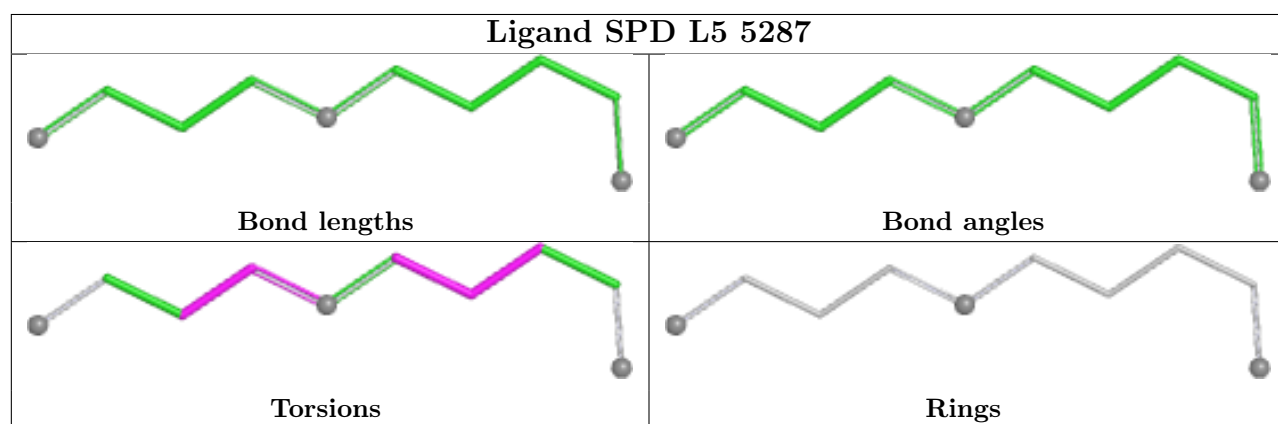
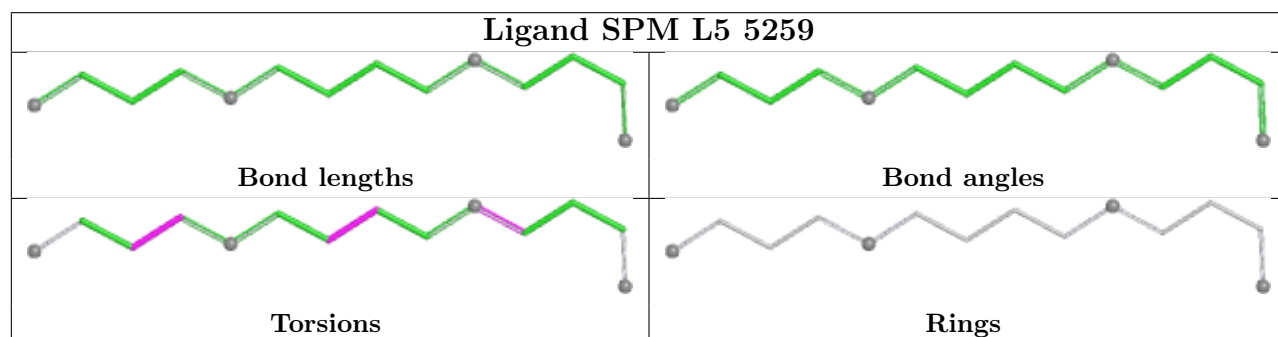
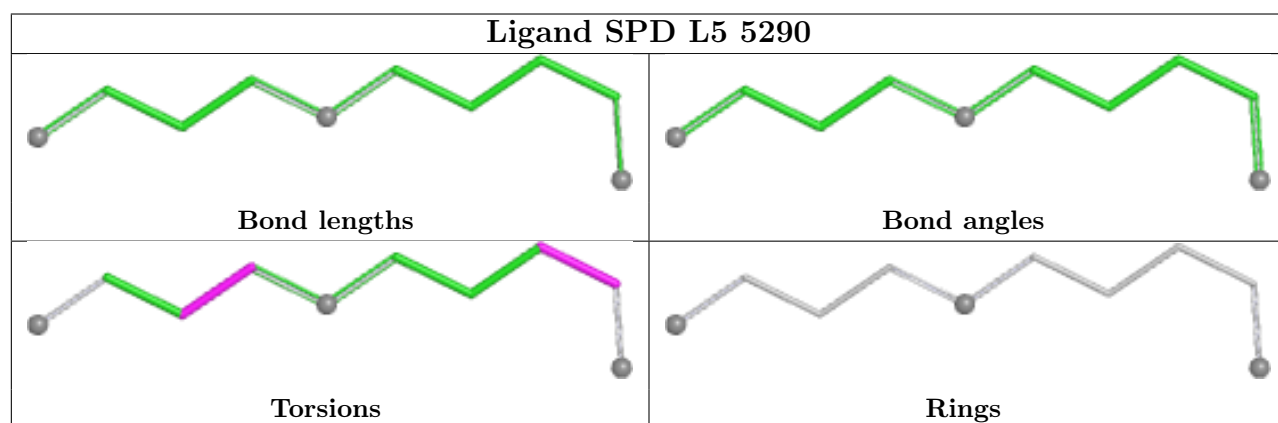
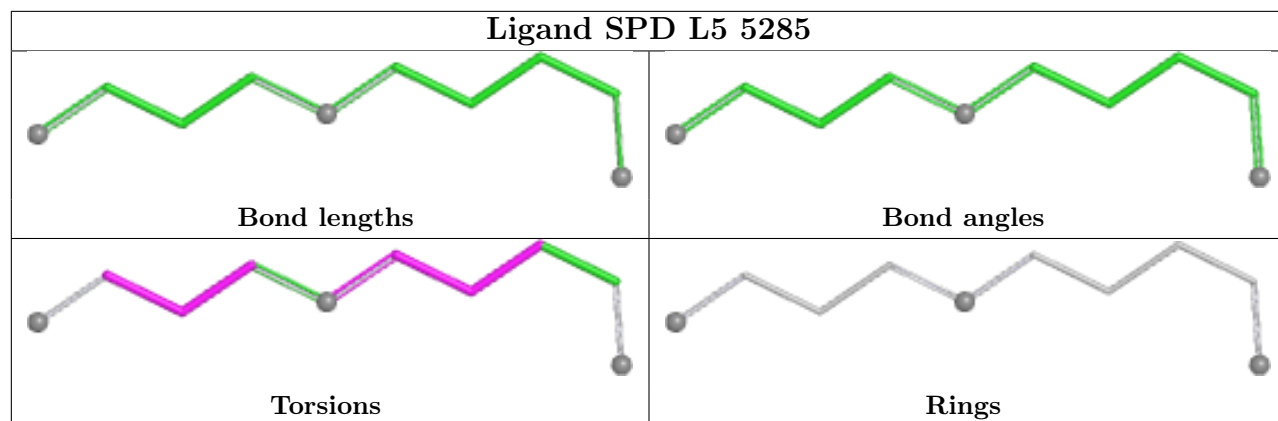
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. 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
5	L5	10
85	S2	5
34	Lb	1
51	Lt	1
72	SH	1
2	Pt	1
4	AT	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	Lb	76:VAL	C	89:VAL	N	34.47
1	S2	753:C	O3'	785:C	P	29.36
1	L5	2910:G	O3'	3584:C	P	21.05
1	L5	1706:A	O3'	1716:G	P	20.97
1	L5	760:G	O3'	903:C	P	17.05
1	L5	519:C	O3'	642:G	P	15.73
1	L5	4776:G	O3'	4858:C	P	15.31
1	S2	698:G	O3'	730:C	P	15.08
1	L5	2112:G	O3'	2249:C	P	14.92
1	Lt	87:GLU	C	104:ILE	N	14.08
1	L5	3954:A	O3'	4056:A	P	13.02
1	S2	739:C	O3'	746:C	P	12.84
1	L5	990:C	O3'	1064:G	P	12.76
1	SH	107:LYS	C	111:LYS	N	11.44
1	L5	1222:A	O3'	1234:G	P	9.84
1	Pt	15:G	O3'	18:G	P	9.69
1	S2	225:G	O3'	287:U	P	7.47
1	L5	1100:U	O3'	1167:C	P	6.90
1	AT	16:C	O3'	18:G	P	4.56
1	S2	1831:A	O3'	1832:6MZ	P	4.24