WORLDWIDE wwPDB PROTEIN DATA BANK

Full wwPDB EM Validation Report (i)

Dec 16, 2025 – 03:04 AM EST

PDB ID	:	9P72 / pdb_00009p72
EMDB ID	:	EMD-71331
Title	:	In situ human P-E state 80S ribosome
Authors	:	Wei, Z.; Yong, X.
Deposited on	:	2025-06-20
Resolution	:	2.80 Å(reported)

1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.80 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	Percentile Ranks	Value
Clashscore		7
Ramachandran outliers		0.0%
Sidechain outliers		0
RNA backbone		0.50

Worse   *Better*

▮ Percentile relative to all structures
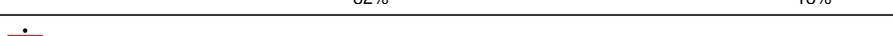
◻ Percentile relative to all EM structures

Metric	Model-Map Fit Percentile Ranks	Value
Q-score		0.508

Worse   *Better*

▮ Percentile relative to all EM structures

◻ Percentile relative to EM structures of similar resolution

Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	11806 (2.30 - 3.30)

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

Mol	Chain	Length	Quality of chain
1	Pt	74	53% 45% •
2	Et	75	24% 63% 13%
3	L5	3655	56% 37% 7%

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Mol	Chain	Length	Quality of chain
4	L7	120	70% 27%
5	L8	156	63% 34%
6	LA	248	76% 24%
7	LB	402	74% 26%
8	LC	368	88% 12%
9	LD	293	83% 17%
10	LE	240	85% 15%
11	LF	225	83% 17%
12	LG	241	5% 87% 13%
13	LH	190	86% 14%
14	LI	213	87% 13%
15	LJ	176	78% 18%
16	LL	210	86% 14%
17	LM	139	83% 17%
18	LN	203	87% 13%
19	LO	201	81% 19%
20	LP	153	82% 18%
21	LQ	187	82% 18%
22	LR	187	84% 16%
23	LS	175	86% 14%
24	LT	159	85% 15%
25	LU	101	82% 18%
26	LV	131	89% 11%
27	LW	118	5% 78% 20%
28	LX	120	96%

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Mol	Chain	Length	Quality of chain
29	LY	134	85% 15%
30	LZ	135	81% 19%
31	La	147	90% 10%
32	Lb	109	5% 83% 17%
33	Lc	98	77% 23%
34	Ld	107	79% 21%
35	Le	128	91% 9%
36	Lf	109	89% 11%
37	Lg	114	92% 8%
38	Lh	122	84% 16%
39	Li	102	91% 9%
40	Lj	86	80% 20%
41	Lk	69	77% 23%
42	Ll	50	88% 12%
43	Lm	52	90% 10%
44	Ln	24	92% 8%
45	Lo	105	88% 12%
46	Lp	91	91% 9%
47	Lr	125	88% 12%
48	Ls	196	29% 81% 19%
49	Lt	141	28% 74% 21% 5%
50	SD	227	85% 15%
51	SF	189	77% 23%
52	SK	98	76% 24%
53	SM	122	11% 70% 30%

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Mol	Chain	Length	Quality of chain
54	SP	121	88% 12%
55	SQ	144	72% 28%
56	SR	135	82% 17%
57	SS	145	70% 30%
58	ST	143	70% 30%
59	SU	104	79% 21%
60	SZ	75	79% 21%
61	Sc	64	73% 27%
62	Sd	55	71% 29%
63	Sf	67	7% 66% 34%
64	Sg	313	73% 27%
65	SA	221	78% 22%
66	SB	214	79% 21%
67	SC	222	71% 28%
68	SE	262	77% 23%
69	SG	237	73% 27%
70	SH	186	73% 27%
71	SI	206	79% 21%
72	SJ	185	83% 17%
73	SL	153	6% 88% 12%
74	SN	150	89% 11%
75	SO	140	81% 16%
76	SV	83	81% 19%
77	SW	129	79% 21%
78	SX	141	82% 18%

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Mol	Chain	Length	Quality of chain
79	SY	131	6% · 74% · 26%
80	Sa	102	87% · 13%
81	Sb	83	72% · 28%
82	Se	58	12% · 83% · 17%
83	S2	1740	50% · 41% · 8%
84	CI	31	68% · 32%
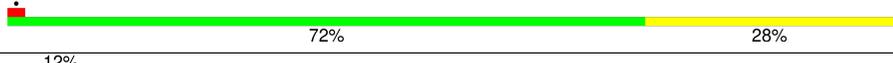
2 Entry composition (i)

There are 88 unique types of molecules in this entry. The entry contains 219971 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called P site tRNA.

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

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

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

- Molecule 3 is a RNA chain called 28S rRNA.

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

- Molecule 4 is a RNA chain called 5S rRNA.

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

- Molecule 5 is a RNA chain called 5.8S rRNA [Homo sapiens].

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

- Molecule 6 is a protein called 60S ribosomal protein L8.

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

- Molecule 7 is a protein called Large ribosomal subunit protein uL3.

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

- Molecule 8 is a protein called 60S ribosomal protein L4.

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

- Molecule 9 is a protein called Large ribosomal subunit protein uL18.

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

- Molecule 10 is a protein called Large ribosomal subunit protein eL6.

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

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LE	?	-	SER	deletion	UNP Q02878
LE	?	-	LYS	deletion	UNP Q02878
LE	?	-	VAL	deletion	UNP Q02878
LE	?	-	GLU	deletion	UNP Q02878
LE	?	-	LYS	deletion	UNP Q02878
LE	?	-	LYS	deletion	UNP Q02878
LE	?	-	LYS	deletion	UNP Q02878
LE	?	-	LYS	deletion	UNP Q02878
LE	?	-	GLU	deletion	UNP Q02878
LE	?	-	LYS	deletion	UNP Q02878

- Molecule 11 is a protein called 60S ribosomal protein L7.

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

- Molecule 12 is a protein called 60S ribosomal protein L7a.

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

- Molecule 13 is a protein called 60S ribosomal protein L9.

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

- Molecule 14 is a protein called Ribosomal protein uL16-like.

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

- Molecule 15 is a protein called 60S ribosomal protein L11.

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

- Molecule 16 is a protein called Large ribosomal subunit protein eL13.

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

- Molecule 17 is a protein called 60S ribosomal protein L14.

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

- Molecule 18 is a protein called 60S ribosomal protein L15.

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

- Molecule 19 is a protein called 60S ribosomal protein L13a.

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

- Molecule 20 is a protein called 60S ribosomal protein L17.

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

- Molecule 21 is a protein called 60S ribosomal protein L18.

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

- Molecule 22 is a protein called 60S ribosomal protein L19.

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

- Molecule 23 is a protein called 60S ribosomal protein L18a.

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

- Molecule 24 is a protein called 60S ribosomal protein L21.

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

- Molecule 25 is a protein called Heparin-binding protein HBp15.

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

- Molecule 26 is a protein called 60S ribosomal protein L23.

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

- Molecule 27 is a protein called Ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	LW	116	Total 945	C 592	N 193	O 156	S 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 28 is a protein called 60S ribosomal protein L23a.

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

- Molecule 29 is a protein called 60S ribosomal protein L26.

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

- Molecule 30 is a protein called 60S ribosomal protein L27.

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

- Molecule 31 is a protein called 60S ribosomal protein L27a.

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

• Molecule 32 is a protein called Large ribosomal subunit protein eL29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
32	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 33 is a protein called 60S ribosomal protein L30.

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

• Molecule 34 is a protein called 60S ribosomal protein L31.

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

• Molecule 35 is a protein called 60S ribosomal protein L32.

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

• Molecule 36 is a protein called 60S ribosomal protein L35a.

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

- Molecule 37 is a protein called 60S ribosomal protein L34.

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

- Molecule 38 is a protein called 60S ribosomal protein L35.

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

- Molecule 39 is a protein called 60S ribosomal protein L36.

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

- Molecule 40 is a protein called 60S ribosomal protein L37.

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

- Molecule 41 is a protein called 60S ribosomal protein L38.

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

- Molecule 42 is a protein called 60S ribosomal protein L39.

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

- Molecule 43 is a protein called Large ribosomal subunit protein eL40.

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

- Molecule 44 is a protein called 60S ribosomal protein L41.

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

- Molecule 45 is a protein called 60S ribosomal protein L36a.

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

- Molecule 46 is a protein called 60S ribosomal protein L37a.

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

- Molecule 47 is a protein called 60S ribosomal protein L28.

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

- Molecule 48 is a protein called 60S acidic ribosomal protein P0.

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

- Molecule 49 is a protein called Large ribosomal subunit protein uL11.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	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 50 is a protein called Small ribosomal subunit protein uS3.

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

- Molecule 51 is a protein called 40S ribosomal protein S5.

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

- Molecule 52 is a protein called 40S ribosomal protein S10.

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

- Molecule 53 is a protein called Small ribosomal subunit protein eS12.

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

- Molecule 54 is a protein called Small ribosomal subunit protein uS19.

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

- Molecule 55 is a protein called Small ribosomal subunit protein uS9.

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

- Molecule 56 is a protein called Small ribosomal subunit protein eS17.

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

- Molecule 57 is a protein called 40S ribosomal protein S18.

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

- Molecule 58 is a protein called 40S ribosomal protein S19.

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

- Molecule 59 is a protein called 40S ribosomal protein S20.

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

- Molecule 60 is a protein called Small ribosomal subunit protein eS25.

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

- Molecule 61 is a protein called 40S ribosomal protein S28.

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

- Molecule 62 is a protein called 40S ribosomal protein S29.

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

- Molecule 63 is a protein called Ubiquitin-40S ribosomal protein S27a.

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

- Molecule 64 is a protein called Receptor of activated protein C kinase 1.

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

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

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

- Molecule 66 is a protein called 40S ribosomal protein S3a.

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

- Molecule 67 is a protein called 40S ribosomal protein S2.

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

- Molecule 68 is a protein called Small ribosomal subunit protein eS4, X isoform.

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

- Molecule 69 is a protein called 40S ribosomal protein S6.

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

- Molecule 70 is a protein called Small ribosomal subunit protein eS7.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	SH	186	Total 1497	C 956	N 274	O 266	S 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 71 is a protein called 40S ribosomal protein S8.

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

- Molecule 72 is a protein called 40S ribosomal protein S9.

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

- Molecule 73 is a protein called 40S ribosomal protein S11.

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

- Molecule 74 is a protein called 40S ribosomal protein S13.

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

- Molecule 75 is a protein called Small ribosomal subunit protein uS11.

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

- Molecule 76 is a protein called Small ribosomal subunit protein eS21.

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

- Molecule 77 is a protein called 40S ribosomal protein S15a.

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

- Molecule 78 is a protein called 40S ribosomal protein S23.

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

- Molecule 79 is a protein called 40S ribosomal protein S24.

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

- Molecule 80 is a protein called 40S ribosomal protein S26.

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

- Molecule 81 is a protein called Small ribosomal subunit protein eS27.

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

- Molecule 82 is a protein called Small ribosomal subunit protein eS30.

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

- Molecule 83 is a RNA chain called 18S rRNA.

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

- Molecule 84 is a protein called Transcription factor BTF3.

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

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

Mol	Chain	Residues	Atoms		AltConf
85	L5	179	Total 179	Mg 179	0
85	L7	3	Total 3	Mg 3	0
85	L8	5	Total 5	Mg 5	0
85	LA	1	Total 1	Mg 1	0
85	LP	1	Total 1	Mg 1	0
85	LV	1	Total 1	Mg 1	0
85	Le	1	Total 1	Mg 1	0
85	SS	1	Total 1	Mg 1	0
85	S2	27	Total 27	Mg 27	0

- Molecule 86 is SPERMINE (CCD ID: SPM) (formula: $C_{10}H_{26}N_4$) (labeled as "Ligand of Interest" by depositor).
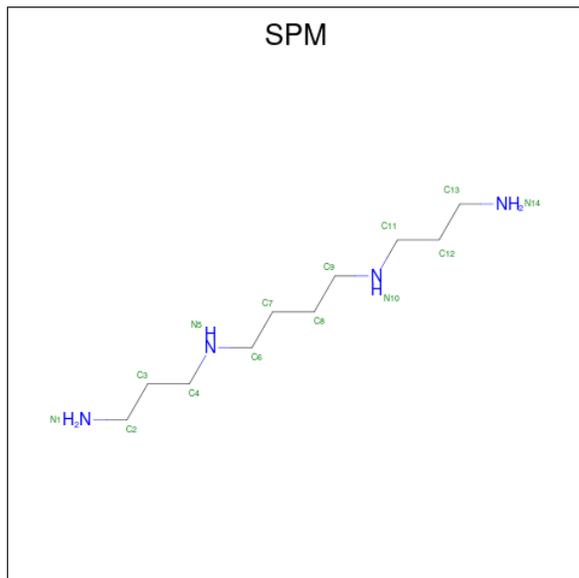
Mol	Chain	Residues	Atoms			AltConf
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	
86	L5	1	Total	C	N	0
			14	10	4	

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

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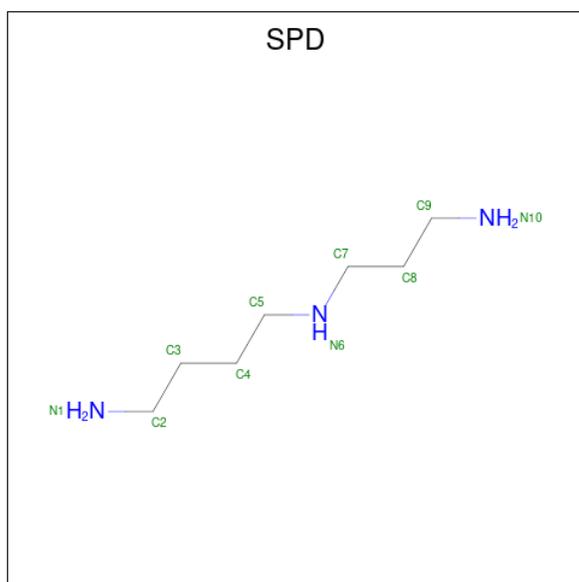
Mol	Chain	Residues	Atoms			AltConf
87	L5	1	Total 10	C 7	N 3	0
87	L5	1	Total 10	C 7	N 3	0
87	L5	1	Total 10	C 7	N 3	0
87	L5	1	Total 10	C 7	N 3	0
87	L5	1	Total 10	C 7	N 3	0
87	L5	1	Total 10	C 7	N 3	0
87	L5	1	Total 10	C 7	N 3	0
87	L5	1	Total 10	C 7	N 3	0
87	L5	1	Total 10	C 7	N 3	0
87	LN	1	Total 10	C 7	N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

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

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

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Mol	Chain	Residues	Atoms		AltConf
88	Lj	1	Total 1	Zn 1	0
88	Lm	1	Total 1	Zn 1	0
88	Lo	1	Total 1	Zn 1	0
88	Lp	1	Total 1	Zn 1	0
88	Sa	1	Total 1	Zn 1	0

3   Residue-property plots ⓘ

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

- Molecule 1: P site tRNA

Chain Pt:

- Molecule 2: E site tRNA

Chain Et:

- Molecule 3: 28S rRNA

Chain L5:

- Molecule 4: 5S rRNA

Chain L7:

70%   27%   ·

- Molecule 5: 5.8S rRNA [Homo sapiens]

Chain L8:

63%   34%   ·
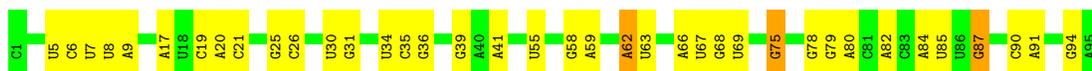
- Molecule 6: 60S ribosomal protein L8

Chain LA:

76%   24%

- Molecule 7: Large ribosomal subunit protein uL3
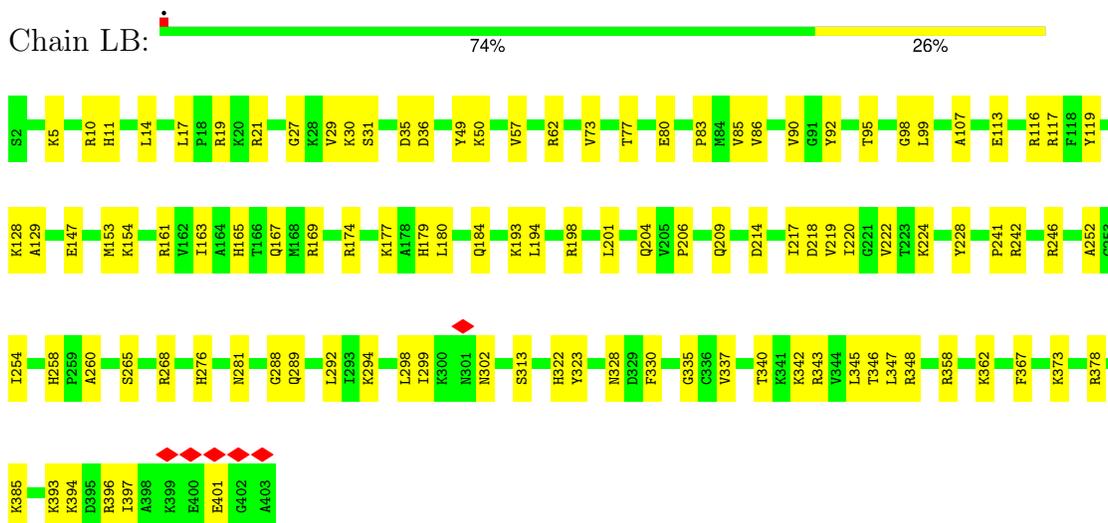
Chain LB:

• Molecule 8: 60S ribosomal protein L4
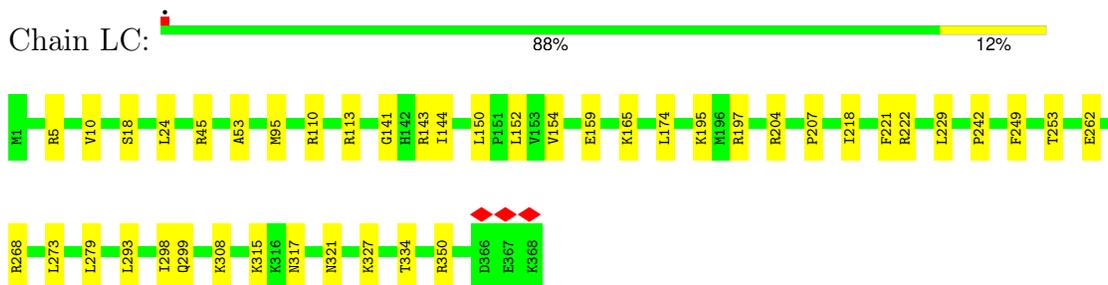
Chain LC:

• Molecule 9: Large ribosomal subunit protein uL18
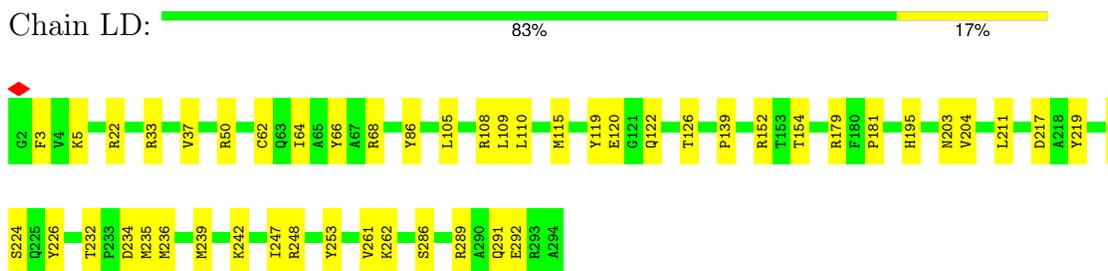
Chain LD:

• Molecule 10: Large ribosomal subunit protein eL6
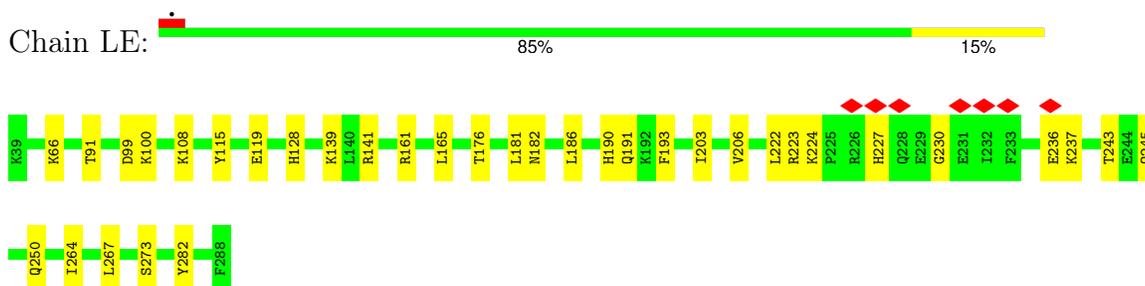
Chain LE:

• Molecule 11: 60S ribosomal protein L7

Chain LF:

83%   17%

N24 K29 R32 K36 F37 M41 R46 R47 V51 R76 R96 V105 K127 N131 I135 V136 L147 N151 Y155 K156 R157 I162 I167 A168 D171 N172 Y182 E188 R200 E203 L213 S214 S215 K222 K223 T224

D232 D238 N241 R242 L243 I244 R245 R246 M247 N248

• Molecule 12: 60S ribosomal protein L7a

5%

Chain LG:

87%   13%

K26 K37 T52 W57 R62 R73 F83 R103 K110 R117 A122 A123 G124 K125 G126 D127 V128 P129 T130 K131 V143 E148 N149 K150 I157 D160 V161 D162 P163 I164 E165 M177 P180 I183 K187 R192 T198 C199 T200 T201

V202 A203 S209 K212 V219 A262 T263 K264 L265 G266
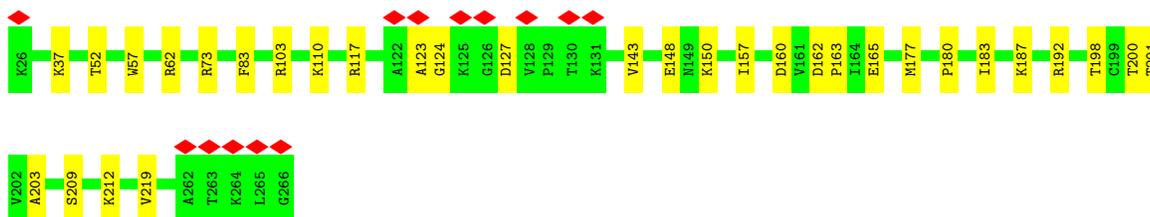
• Molecule 13: 60S ribosomal protein L9

Chain LH:

86%   14%

M1 I4 I18 T24 V27 D37 I41 N42 V43 E44 W61 R71 V84 M92 R93 Q106 E107 L111 V112 E113 I114 R115 E120 I123 R124 D142 I179 S182 V187 Q188 Q189 A190

• Molecule 14: Ribosomal protein uL16-like

Chain LI:

87%   13%

G2 R3 R4 K13 L36 K39 H51 S54 R69 N73 M87 K101 M102 C105 R110 L111 Q133 V134 I135 I138 L152 K158 I165 S168 K187 K188 C189 P205 L206 D207 K208 W209 R210 H213 S214

• Molecule 15: 60S ribosomal protein L11

Chain LJ:

78%   18%

GLN ASP GLN GLY GLU K8 L15 R16 I17 L22 R35 K38 V39 L40 T56 V57 R58 S59 F60 R63 R64 E80 L83 E84 Y92 R95 N104 G108 I123 L128 V132 V133 R136 I141 K144 K145 R146 R147 E161 W165

L175 P176 G177 LYS
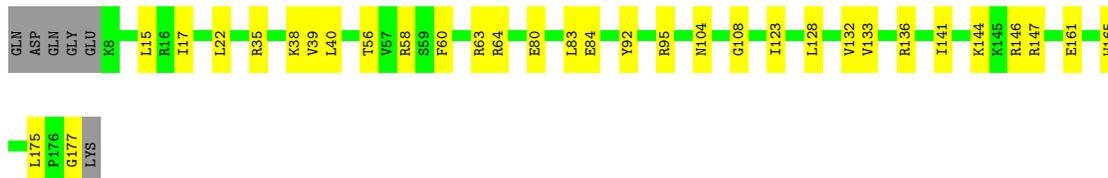
• Molecule 16: Large ribosomal subunit protein eL13

Chain LL:

86%   14%

A2 G7 L10 K16 D17 W18 R36 I46 A47 P48 R49 I55 P62 T63 V64 R65 Y66 H67 R74 A91 I96 S97 L110 Q111 V114 Q115 R116 R129 K135 E142 K145 L146 Q149 M155 I194 D206 V207 E208 K209 K210

K211

• Molecule 17: 60S ribosomal protein L14

Chain LM:

83% 17%

V2 V15 L24 Q33 A36 L37 V38 T43 Q44 M50 M55 H69 Q70 K71 Q75 W91 E96 R100 K103 A115 K116 K117 M118 R119 K128 K129 L130 P140

• Molecule 18: 60S ribosomal protein L15

Chain LN:

87% 13%

G2 Y6 R12 K13 K14 Q15 R26 D46 K47 R67 R68 V75 T80 L116 S125 I135 K140 P146 V155 H156 K157 R162 H178 H181 I184 R193 R194 L200 Y203 R204
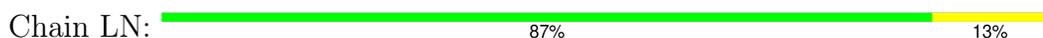
• Molecule 19: 60S ribosomal protein L13a

Chain LO:

81% 19%

E3 V4 L9 R18 V34 F47 Y54 R61 M62 N63 T64 P70 F73 R85 G86 M87 L88 P89 H90 K91 L99 K103 D106 M118 V119 V126 V127 A136 V145 Y149 T153 K165 I166 H167 Y168 R169 K172 R176 L177

R178 K179 Q180 N184 V185 E186 I189 Y192 V203
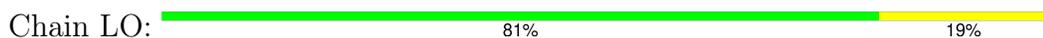
• Molecule 20: 60S ribosomal protein L17

Chain LP:

82% 18%

V2 L6 C15 K16 S17 R18 F26 M39 K43 T52 L53 Q54 F60 Q75 W78 W83 P84 K85 A98 L107 D108 V109 L112 Q118 V119 N120 K121 A122 H133 P138 Y139 M140 P143 E147 L150 T151 E152 K153 E154
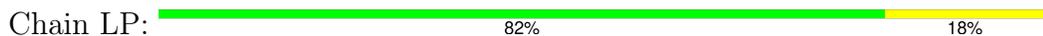
• Molecule 21: 60S ribosomal protein L18

Chain LQ:

82% 18%

G2 V3 D4 I5 R14 R15 K16 Y32 F43 R50 L51 F52 R55 T56 N57 R58 P59 R65 K71 I86 T87 V100 R110 I120 P131 K132 G133 T136 S140 R143 R150 H151 K154 A155 T158 K164 K173 F174 E175

N188
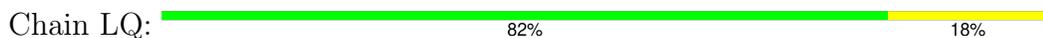
• Molecule 22: 60S ribosomal protein L19

Chain LR:
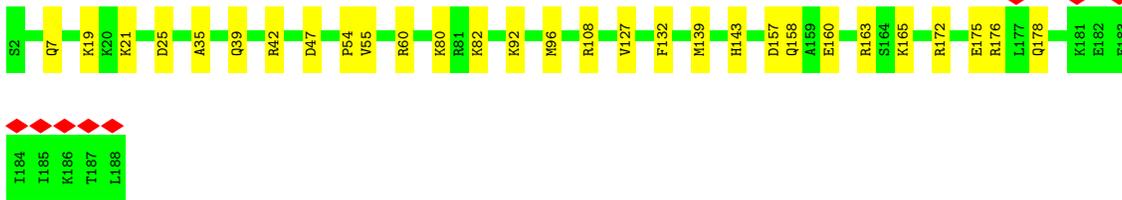
• Molecule 23: 60S ribosomal protein L18a

Chain LS:

• Molecule 24: 60S ribosomal protein L21

Chain LT:

• Molecule 25: Heparin-binding protein HBp15

Chain LU:

• Molecule 26: 60S ribosomal protein L23

Chain LV:

• Molecule 27: Ribosomal protein L24

Chain LW:

• Molecule 28: 60S ribosomal protein L23a

Chain LX:

K37 K38 R41 S64 P80 F98 I156

• Molecule 29: 60S ribosomal protein L26

Chain LY:　　　　85%　　　　15%

M1 K2 F3 N4 V7 D10 K13 P22 S23 H24 I25 R26 S46 Q56 R59 I67 Y74 R75 K76 R84 K103 K113 R126 K130 K134
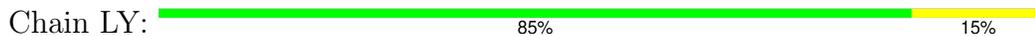
• Molecule 30: 60S ribosomal protein L27

Chain LZ:　　　　81%　　　　19%

G2 V11 R36 P37 Y38 A41 I46 D47 P50 R51 M57 G58 K59 K60 K61 I68 K69 S70 Y77 N78 H79 P82 D88 D92 K93 T94 V95 A110 R111 E119 R135 F136
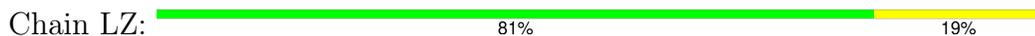
• Molecule 31: 60S ribosomal protein L27a

Chain La:　　　　90%　　　　10%

P2 K7 T8 G36 H40 N44 K47 Y48 H49 T72 D76 E84 R87 K94 K110 G115 K136 A148
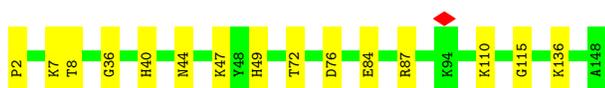
• Molecule 32: Large ribosomal subunit protein eL29

Chain Lb:　5%　　　　83%　　　　17%

A2 K3 S4 K5 T8 Q12 R18 R25 M43 K47 K52 M57 M65 R68 A69 E70 A71 I72 K73 A74 L75 V76 V89 S90 R109 A110 R111 I112 A113 R120 P121 K122
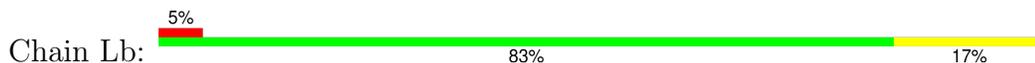
• Molecule 33: 60S ribosomal protein L30

Chain Lc:　　　　77%　　　　23%

K9 R17 V21 M22 K23 G30 Y31 T34 I38 V46 I47 L48 N51 K57 S58 E59 I60 Y63 N77 N78 G82 V91 C92 T93 L94 P99 I104 I105 R106
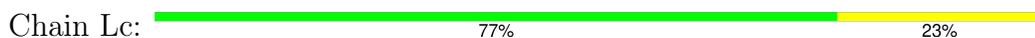
• Molecule 34: 60S ribosomal protein L31

Chain Ld:　　　　79%　　　　21%

N18 T22 R23 E24 Y25 I33 R44 A45 L46 K47 A53 M54 M57 P60 I64 I68 N69 K70 N79 R87 I88 S89 R90 E94 L102 F114 L117 V122 D123 E124
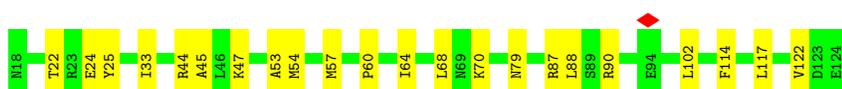
• Molecule 35: 60S ribosomal protein L32

Chain Le:

91%   9%

A2 L7 R16 K30 I31 R48 C91 Y95 I99 S104 R108 A127 R128 L129
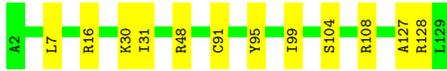
• Molecule 36: 60S ribosomal protein L35a

Chain Lf:

89%   11%

S2 T25 E31 L43 G44 K45 H78 M83 K87 P107 S108 R109 I110

• Molecule 37: 60S ribosomal protein L34

Chain Lg:

92%   8%

V2 R24 T25 P26 L33 S44 A45 C46 K62 R76 M82 Q114 K115

• Molecule 38: 60S ribosomal protein L35

Chain Lh:

84%   16%

A2 D8 K52 K66 L69 R70 Y73 K79 P80 L83 K86 K87 T88 R89 A90 M91 R92 R93 T104 Q107 Q108 R109 K110 E111 R112 K118 A123
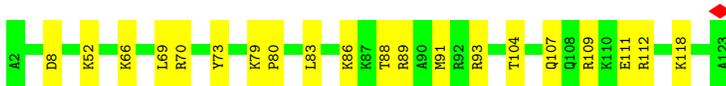
• Molecule 39: 60S ribosomal protein L36

Chain Li:

91%   9%

A2 Y5 R30 K35 R55 E59 R76 L90 V93 K103

• Molecule 40: 60S ribosomal protein L37

Chain Lj:

80%   20%

T2 K3 G4 T5 S6 R11 R12 N13 K14 Y27 C34 Y39 W49 R55 R56 T59 R63 L67 K85 P86 K87

• Molecule 41: 60S ribosomal protein L38

Chain Lk:

77%   23%

P2 R3 K4 I8 L12 R16 K24 I25 K26 K27 K33 F34 K35 L42 E54 K55 L56 K57 Q58 E68 L69 K70

• Molecule 42: 60S ribosomal protein L39

Chain Ll:

88%   12%

S2 L13 R28 T31 G32 N33 L51

- Molecule 43: Large ribosomal subunit protein eL40

Chain Lm:

90%   10%

I77 I78 E79 P80 S81 C99 Y100 K114 K128

- Molecule 44: 60S ribosomal protein L41

Chain Ln:

92%   8%

M1 R2 S24

- Molecule 45: 60S ribosomal protein L36a

Chain Lo:

88%   12%

V2 N3 V4 F11 K17 L33 Q36 G37 K38 P54 R81 H90 L93 F106

- Molecule 46: 60S ribosomal protein L37a

Chain Lp:

91%   9%

A2 T5 L22 R23 Q33 I54 S75 V79 L86 Q92

- Molecule 47: 60S ribosomal protein L28

Chain Lr:

88%   12%

S2 S26 T27 E28 N31 F38 H45 R46 K47 T48 V49 D56 I64 I97 R103 R107 S115 R119 K122 M125 V126

- Molecule 48: 60S acidic ribosomal protein P0

Chain Ls:

29%

81%   19%

D5 Y13 I17 D22 I29 V30 G31 A32 D33 N34 V35 G36 M40 Q41 R44 L54 N58 M61 R62 K63 H68 N71 E76 G84 N85 V86 G87 F88 T91 K92 E93 D94 L95 T96 E97 I98 R99 D100 M101 L102 L103 A104 A110 A111 R112
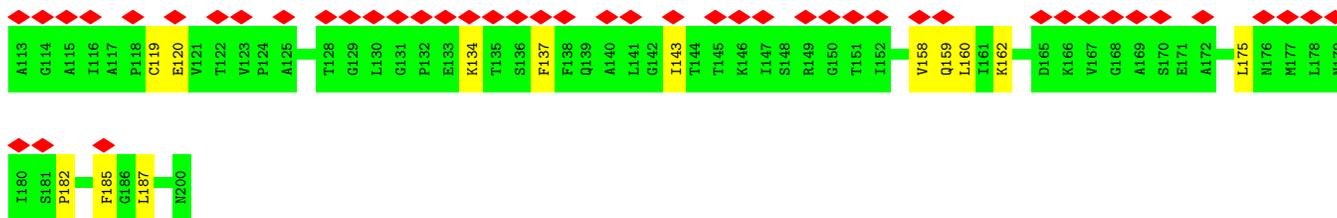
• Molecule 49: Large ribosomal subunit protein uL11

Chain Lt:
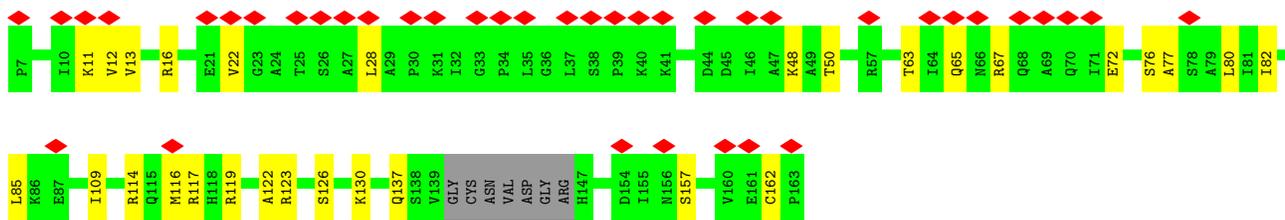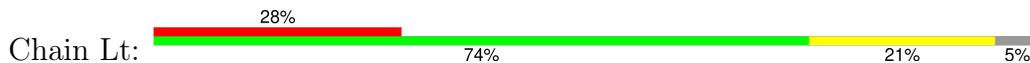
• Molecule 50: Small ribosomal subunit protein uS3

Chain SD:
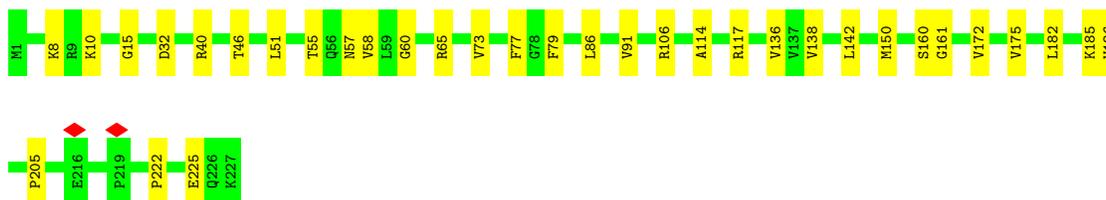
• Molecule 51: 40S ribosomal protein S5

Chain SF:
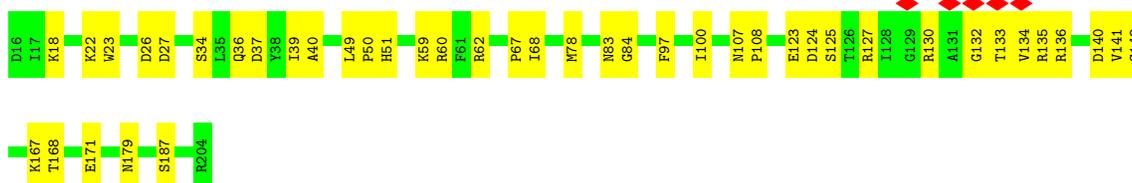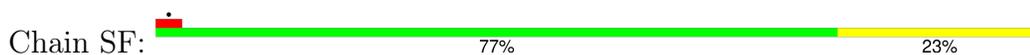
• Molecule 52: 40S ribosomal protein S10

Chain SK:
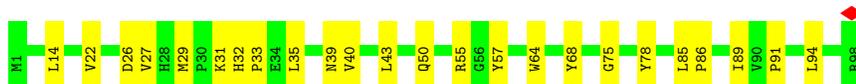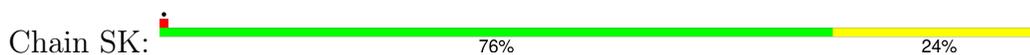
• Molecule 53: Small ribosomal subunit protein eS12

Chain SM:
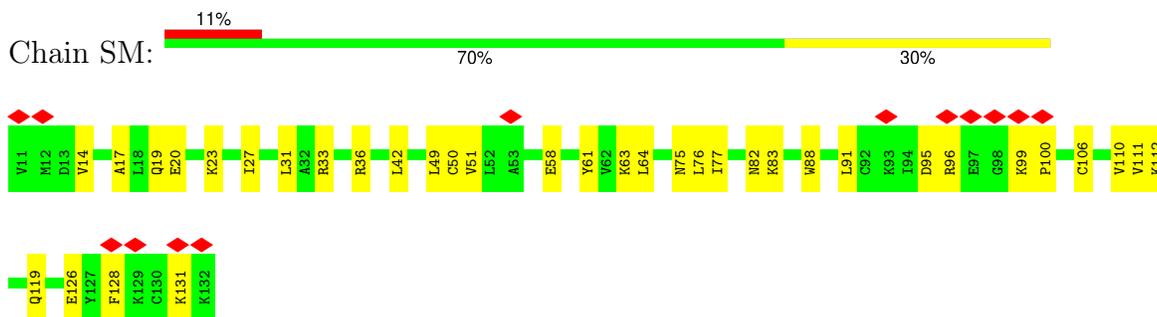
• Molecule 54: Small ribosomal subunit protein uS19

Chain SP:
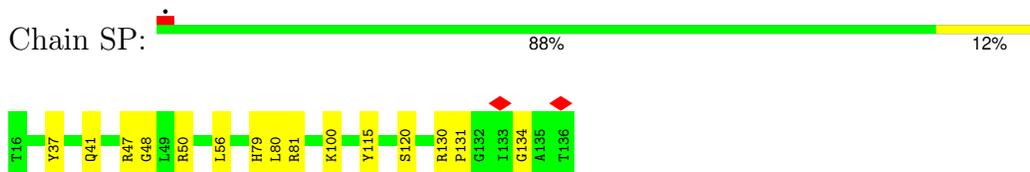
• Molecule 55: Small ribosomal subunit protein uS9

Chain SQ:
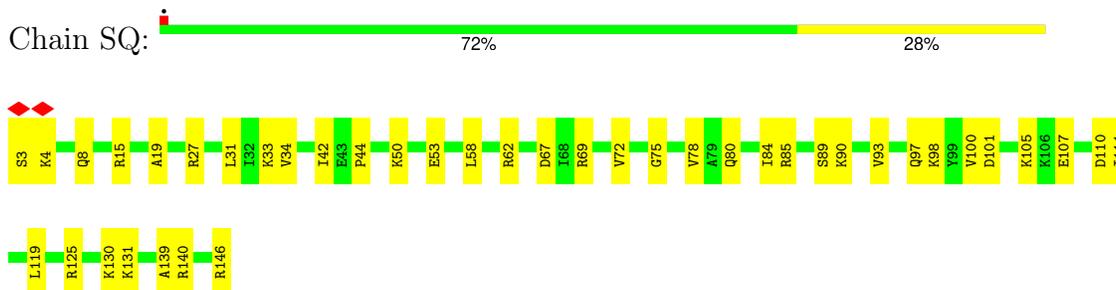
• Molecule 56: Small ribosomal subunit protein eS17

Chain SR:
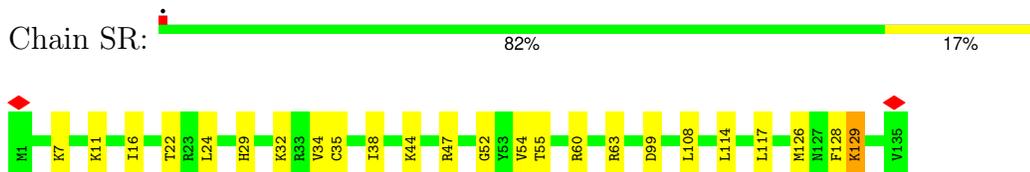
• Molecule 57: 40S ribosomal protein S18

Chain SS:
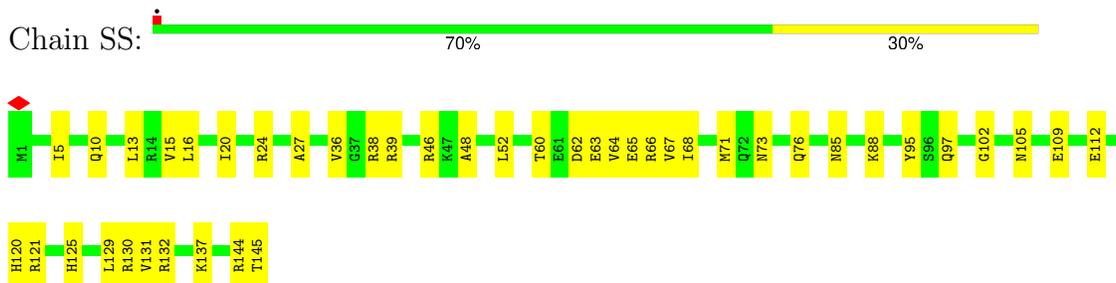
• Molecule 58: 40S ribosomal protein S19

Chain ST:

P2 V6 V9 N10 Q11 Q12 E13 L22 K23 L28 T36 L39 H42 K43 E44 L45 E50 N51 W52 T60 A61 R62 Y65 G73 S74 M75 I78 Q83 R84 S93 R94 G95 S96 R101 L104 V113 E114 R121 K122 L123 T124 P125

Q126 G127 Q128 R129 D132 A135 K144

• Molecule 59: 40S ribosomal protein S20

Chain SU:

79%   21%

A16 R19 I20 R21 I22 I40 K44 K51 M56 L61 T68 P69 C70 R79 F80 Q81 M82 K86 D90 L91 H92 E96 I97 V98 I106 E111 V114 T115 I116 A117 D118 A119
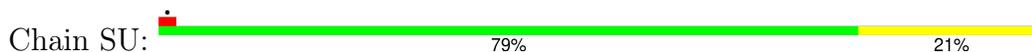
• Molecule 60: Small ribosomal subunit protein eS25

Chain SZ:

79%   21%

R41 D42 F50 L58 V62 A71 V72 E75 R80 R85 A86 Q89 L99 K102 Q106 V107 I108 K114 G115
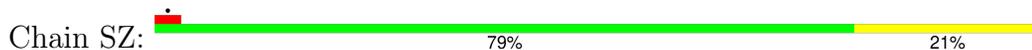
• Molecule 61: 40S ribosomal protein S28

Chain Sc:

73%   27%

R5 K10 R13 V14 T21 G22 Q29 V30 F34 M35 R44 K47 V50 V55 S61 E62 R63 R66 H67 L68

• Molecule 62: 40S ribosomal protein S29

Chain Sd:

71%   29%

G2 Y7 W8 F14 G15 Q16 G17 S18 R19 R22 V23 R27 N37 R40 I50 G51 F52 I53 K54 L55 D56

• Molecule 63: Ubiquitin-40S ribosomal protein S27a

Chain Sf:

7%

66%   34%

Y85 R95 K96 K97 V98 K99 V102 L103 K104 Y105 Y106 K107 V108 D109 E110 N111 G112 K113 I114 L117 R118 R119 S123 D124 E125 C126 M132 R138 C144 C145 L146 N151

• Molecule 64: Receptor of activated protein C kinase 1

Chain Sg:

73%   27%

T2 M5 Q26 L32 S35 R36 T39 I40 I41 M42 E49 R57 A58 L59 R60 S63 D68 G75 S82 W83 L87 G95 F101 K106 D107 V111 I120 R125 I129 W132 N133 T134 L135 G136 K139 V142 N159

S160 S161 I164 I165 V166 K175 V176 W177 N178 K183 L184 K185 T186 N187 G190 H191 L195 S201 P202 D203 G204 S205 L206 C207 A208 G211 K212 A216 M217 L218 W219 D220 L221 H226 T229 L230 L239 C240 F241 W247 L248 C249 A250 A251 T252 G253 P254 S255

I256 K257 I258 W259 D260 K264 V267 D268 E269 L270 K271 Q272 E273 V274 I275 K280 P283 P284 Q285 W310 I314

• Molecule 65: 40S ribosomal protein SA

Chain SA:

78%   22%

G3 A4 L5 D6 M10 K11 V15 F18 G22 T23 H24 M34 Y37 I38 Y39 K42 S43 I48 W55 E56 K57 E69 I77 K89 I99 T104 T107 Q111 F116 R117 E118 P119 K120 I121 L122 D126 P127 R128 L134 A137

L142 P143 T144 I145 D151 I159 P162 C163 N164 N165 G172 R184 I189 S190 R191 L201 Y202 F203 Q215 E219 K220 A221 V222 T223
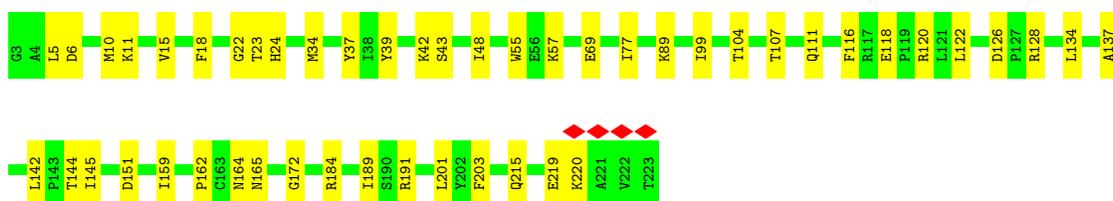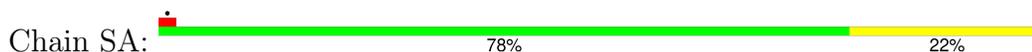
• Molecule 66: 40S ribosomal protein S3a

Chain SB:

79%   21%

V21 V22 D23 S26 D29 A35 N40 I41 R42 N43 I44 R51 I57 A58 S59 V69 S70 L71 A72 D73 N76 R82 K83 F84 K85 T98 N99 F100 H101 G102 M103 T106 E122 A123 D126 R136 V140 K144 I150 Y155 R165

K166 K167 M168 I171 R174 N186 I189 I197 H208 V215 L218 E224 K227 H232 G233 E234
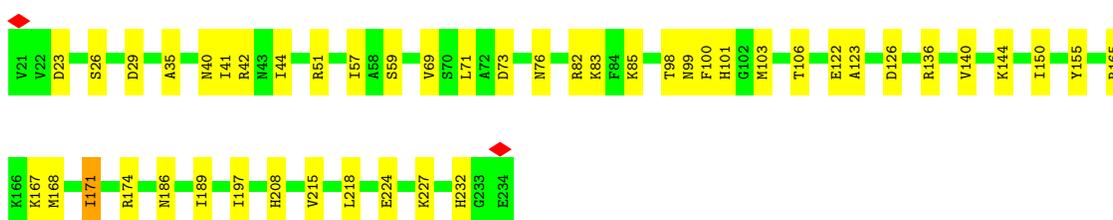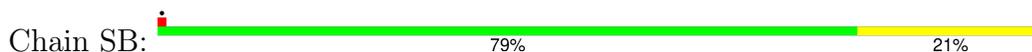
• Molecule 67: 40S ribosomal protein S2

Chain SC:

71%   28%

E59 T64 K65 L66 G67 R68 L69 V70 K71 D72 M73 K74 S77 L78 E79 E80 I81 S85 I93 I94 L98 L102 K103 D104 E105 I109 M110 R121 T122 R123 F124 K125 I130 I151 R166 I167 G168 Y169 G175 K176 P177 K183 V184 T185 G186 R187

V191 L192 V193 R194 L195 I196 R200 G201 T202 A207 P210 K211 K212 L213 L214 Y223 T224 R227 F236 T240 I244 T247 W256 K257 E258 T259 K263 Y266 Q267 T270 D271 H272 L273 V274 K275 T276 H277 T278 ARG VAL

• Molecule 68: Small ribosomal subunit protein eS4, X isoform

Chain SE:

77%   23%

A2 K10 V26 P29 R30 P31 H36 K37 L38 I45 R49 T57 G58 D59 E60 V61 K62 K63 I72 D73 G74 K75 V76 R77 T78 D79 I80 T81 Y82 G85 V89 R100 D104 A110 I114 E118 A119 K122 L123 C124 K125 V126 K134

G135 I136 T141 H142 D143 A144 R145 T146 Y149 P150 D151 P152 L153 I160 Q161 I162 K174 I192 I195 S204 F205 V208 H209 V210 K211 D212 N216 I225 K242 G243 T247 E250 D253 S262 G263

• Molecule 69: 40S ribosomal protein S6

Chain SG:　73%　27%

M1 K2 L3 F7 P8 A9 T10 G11 C12 Q13 K14 L15 I16 R22 R25 R31 E35 V49 N56 G66 V67 L68 T69 L77 R85 P86 R87 R92 K95 V108 L109 N110 L111 V112 I113 V114 K115 K116 L124 T125 D126 R132 L133 G134 P135

K136 I141 L147 S148 K149 E150 D151 L162 K167 R170 T171 K172 A173 P174 K175 I176 L179 V180 T181 P182 R183 R190 R191 I192 A193 L194 K195 Q196 R197 R198 N202 E205 L212 R216 R224 Q227 I228 A229 K230 R231 R232 S236 L237

• Molecule 70: Small ribosomal subunit protein eS7

Chain SH:　73%　27%

S5 A6 K7 I8 V9 K10 P11 M12 G13 E14 D17 E18 F19 E20 L30 E31 M32 N33 S34 D35 L36 K37 A38 Q39 A48 K49 E50 I51 E52 V53 I60 I75 Q76 V77 R78 L79 V80 H91 R99 I100 T105 R106 K107 K111 R118 T121 L122 H126

V140 G141 K142 R143 I154 K155 K160 A161 Q162 N165 V166 K169 T172 G175 V176 K179 L180 T181 V185 F189 Q193

• Molecule 71: 40S ribosomal protein S8

Chain SI:　79%　21%

G2 I3 S4 R5 K10 R18 H22 K23 K24 R25 K26 G30 H44 R49 R56 A57 E70 R77 V81 N84 N88 V91 K98 N99 C100 I101 V102 S106 E114 S115 H116 K124 K125 G126 A127 K128 E132 E133 I136 K139

K140 R141 I145 D150 E151 R152 K153 Q165 L171 R178 G183 R205 K206 G207

• Molecule 72: 40S ribosomal protein S9

Chain SJ:　83%　17%

P2 V3 A4 R5 K11 E28 L29 R38 N39 K40 R41 E42 V43 W44 R54 L60 R70 Q111 V114 K121 I123 A126 R136 V137 R138 V142 N143 I144 P145 R150 F159 S160 L161 R162 S163 P164 P170 K176 K179 G183 G184

A185 G186

• Molecule 73: 40S ribosomal protein S11

Chain SL:　6%　88%　12%

A2 D3 I4 K21 R22 V23 L24 L25 G26 E27 T28 G29 K30 E31 K32 L33 P34 R35 Y55 P61 M82 T85 E103 V111 P133 F140 N141 K153 Q154

• Molecule 74: 40S ribosomal protein S13

Chain SN:

89% 11%

G2 H5 S14 A15 R19 R20 T29 S30 D31 I37 I50 R55 R64 F65 V66 T67 K93 L117 A151

• Molecule 75: Small ribosomal subunit protein uS11

Chain SO:

81% 16%

GLU GLN VAL I15 G24 I33 F34 A35 S36 F41 V42 T45 D46 G49 T52 M75 A78 K96 L97 R104 Q113 A118 V132 T133 P134 I135 P136 S137 T140 R149 R150 L151

• Molecule 76: Small ribosomal subunit protein eS21

Chain SV:

81% 19%

M1 K16 C17 I23 I24 G25 A30 N35 D40 K41 V42 T43 G44 C56 R60 D66 K74 F83

• Molecule 77: 40S ribosomal protein S15a

Chain SW:

79% 21%

V2 R3 M4 N5 V6 R28 P29 C30 S31 I34 M42 K43 H44 D54 D55 H56 R57 V62 R68 K71 S76 P77 R78 F79 T106 S107 M111 D112 A116 K119 F130

• Molecule 78: 40S ribosomal protein S23

Chain SX:

82% 18%

G2 T9 A10 R11 R17 W22 K28 L32 H46 L52 K68 C69 V70 Q73 D88 C90 L91 N92 F93 I94 A103 G104 F105 G106 R107 H110 A111 V112 K121 V122 V123 K124 V128 K138 R142

• Molecule 79: 40S ribosomal protein S24

Chain SY:

6%

74% 26%

N2 D3 I7 R8 T9 R10 K11 K21 Q22 M23 V24 T34 V35 P36 K37 R41 E42 K43 T51 P52 D53 F56 K68 G73 M74 I75 Y76 D77 D80 Y81 E86 K100 K101 T102 S103 R104 K105 Q106 R107 K108 E109 R110 K111 G119 K122 A123

K129 K130 P131 K132

• Molecule 80: 40S ribosomal protein S26

Chain Sa:

87%   13%

T2 R6 N7 N8 K12 K13 G14 R15 K32 I36 I41 E46 D60 Y68 V75 I79 R102 P103

• Molecule 81: Small ribosomal subunit protein eS27

Chain Sb:

72%   28%

P2 L8 S11 E14 R17 K20 K21 K22 R23 L24 V25 Q26 S27 M33 D34 K42 S48 H49 V57 G58 V62 T67 G68 G69 K70 T74 F79 H84

• Molecule 82: Small ribosomal subunit protein eS30

12%

Chain Se:

83%   17%

V2 H3 G4 R8 K11 R31 A32 N39 R40 R41 F42 V43 N44 V45 V46 P47 T48 F49 G50 N56 A57 N58 S59

• Molecule 83: 18S rRNA

Chain S2:

50%   41%   8%

U1 C4 U5 G6 C14 U15 G16 C17 C18 C24 A25 U26 A27 U28 G29 C30 G33 U34 C35 A38 G41 A42 U43 U44 A45 A46 C49 A50 U51 G52 G56 U57 C58 U59 G62 U63 A64 C65 G66 C67 A68 G71 C72 C73 G74 G75 U76 A77 A83

A84 A85 C86 U93 G94 G95 C96 U97 C98 A99 A102 A103 A104 U105 C106 A107 G108 U109 G113 G114 U115 U116 C117 C118 U121 G122 C125 G126 G130 C136 U137 U143 U144 G145 G146 A149 A150 C151 U152 G153 U154 G155 A158 A159 U160 U161 C162 G165 A166

G167 C168 U169 A170 A171 U172 A175 C179 C186 G187 G190 A191 A192 C193 G194 C195 C196 U197 U198 C199 G200 G203 G204 G207 G208 A209 U214 C223 A224 G291 A292 C295 G298 A299 U300 A301 A302 C306 G307 G308 G309 G312 A313 G316 C317 A318

C319 C323 C324 C325 G326 G327 U328 G329 G330 C331 G332 G333 C334 A339 C340 C346 G347 A348 A349 G350 G351 U354 U359 A360 G361 C362 A363 A364 U367 U368 C369 G370 A371 U372 G373 G374 U375 A376 G377 U378 G379 G380 C381 G382 G383 U384 G385 C386 C387 U388 A389 G397 A398

C399 C399 U406 G407 A408 C409 A414 A415 G419 G420 A426 U427 U428 C429 C430 G431 G432 A433 G434 A435 C436 G437 G438 C441 A442 U443 G444 A445 A446 A447 A448 A449 G450 G451 G452 C453 U454 A455 C456 C462 G463 A464 A465 A468 G471 C472 A473 G474 C475 A476 G482 C483

A484 A485 A486 U487 U488 C492 A493 C494 U495 C496 C502 G503 G504 G505 G506 G507 A508 G509 G510 U511 A512 A516 C517 G518 A519 A520 A521 A522 A525 A526 C527 A528 A529 G530 A531 C532 A533 A536 C537 U540 A541 U542 C543 A544 A545 G546 G547 C550 U553 A554 U555 U556

U557 G558 G559 G563 A564 C570 U571 U572 U573 A576 C579 U582 A583 A587 G588 G589 A590 U591 C592 C593 A594 U595 U596 G600 G601 A604 A605 G606 U609 G610 G611 C614 C615 A616 G617 C623 G626 A627 A628 A629 U630 U631 A634 G635 C639 A640

• Molecule 84: Transcription factor BTF3

Chain CI:

68%   32%

I49 M50 Q59 R63 G66 A70 R71 R72 K73 K74 K75 V76 V77 H78 R79

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	67622	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TECNAI F30	Depositor
Voltage (kV)	300	Depositor
Electron dose $(e^-/\text{Å}^2)$	50	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.164	Depositor
Minimum map value	-0.057	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.0128	Depositor
Map size (Å)	546.816, 546.816, 546.816	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.068, 1.068, 1.068	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

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

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	Pt	0.12	0/1761	0.26	0/2741
2	Et	0.14	0/1778	0.31	0/2767
3	L5	0.19	0/85098	0.30	0/132762
4	L7	0.16	0/2861	0.25	0/4459
5	L8	0.17	0/3631	0.28	0/5657
6	LA	0.20	0/1936	0.38	0/2596
7	LB	0.18	0/3306	0.36	0/4424
8	LC	0.18	0/2981	0.35	0/4002
9	LD	0.16	0/2428	0.33	0/3252
10	LE	0.17	0/1973	0.41	0/2645
11	LF	0.18	0/1905	0.32	0/2539
12	LG	0.17	0/1960	0.39	0/2637
13	LH	0.16	0/1537	0.34	0/2066
14	LI	0.17	0/1751	0.33	0/2340
15	LJ	0.16	0/1385	0.36	0/1852
16	LL	0.17	0/1732	0.32	0/2315
17	LM	0.18	0/1161	0.36	0/1554
18	LN	0.19	0/1746	0.33	0/2338
19	LO	0.20	0/1682	0.35	0/2250
20	LP	0.19	0/1268	0.39	0/1701
21	LQ	0.19	0/1537	0.35	0/2052
22	LR	0.17	0/1582	0.35	0/2091
23	LS	0.19	0/1493	0.33	0/2003
24	LT	0.18	0/1326	0.32	0/1770
25	LU	0.18	0/839	0.43	0/1126
26	LV	0.17	0/993	0.36	0/1332
27	LW	0.17	0/959	0.37	0/1270
28	LX	0.16	0/1002	0.33	0/1345
29	LY	0.17	0/1132	0.36	0/1504
30	LZ	0.16	0/1130	0.35	0/1507
31	La	0.17	0/1191	0.31	0/1591

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
32	Lb	0.16	0/889	0.40	0/1175
33	Lc	0.17	0/774	0.36	0/1038
34	Ld	0.17	0/903	0.34	0/1216
35	Le	0.18	0/1071	0.31	0/1429
36	Lf	0.19	0/895	0.35	0/1198
37	Lg	0.17	0/916	0.35	0/1220
38	Lh	0.15	0/1023	0.32	0/1351
39	Li	0.15	0/843	0.32	0/1115
40	Lj	0.19	0/720	0.36	0/952
41	Lk	0.16	0/575	0.42	0/761
42	Ll	0.17	0/454	0.29	0/599
43	Lm	0.16	0/435	0.33	0/575
44	Ln	0.18	0/231	0.31	0/294
45	Lo	0.18	0/876	0.33	0/1156
46	Lp	0.17	0/718	0.33	0/953
47	Lr	0.17	0/1017	0.32	0/1364
48	Ls	0.12	0/1519	0.33	0/2052
49	Lt	0.17	0/1009	0.50	0/1363
50	SD	0.13	0/1793	0.30	0/2414
51	SF	0.15	0/1516	0.36	0/2037
52	SK	0.14	0/851	0.43	0/1147
53	SM	0.13	0/950	0.37	0/1275
54	SP	0.15	0/1003	0.42	0/1342
55	SQ	0.15	0/1160	0.39	0/1553
56	SR	0.16	0/1105	0.42	0/1484
57	SS	0.15	0/1216	0.36	0/1628
58	ST	0.14	0/1131	0.39	0/1515
59	SU	0.17	0/831	0.44	0/1115
60	SZ	0.16	0/604	0.48	0/810
61	Sc	0.15	0/508	0.36	0/680
62	Sd	0.14	0/470	0.34	0/623
63	Sf	0.15	0/560	0.45	0/745
64	Sg	0.13	0/2493	0.36	0/3394
65	SA	0.14	0/1778	0.34	0/2416
66	SB	0.14	0/1765	0.35	0/2362
67	SC	0.15	0/1744	0.35	0/2357
68	SE	0.14	0/2118	0.35	0/2849
69	SG	0.15	0/1946	0.37	0/2590
70	SH	0.16	0/1519	0.41	0/2033
71	SI	0.16	0/1715	0.36	0/2287
72	SJ	0.13	0/1550	0.32	0/2069
73	SL	0.15	0/1268	0.31	0/1696
74	SN	0.13	0/1232	0.27	0/1656

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
75	SO	0.17	0/1037	0.38	0/1391
76	SV	0.16	0/643	0.38	0/860
77	SW	0.17	0/1051	0.35	0/1406
78	SX	0.15	0/1116	0.36	0/1490
79	SY	0.15	0/1083	0.40	0/1438
80	Sa	0.17	0/836	0.33	0/1121
81	Sb	0.14	0/665	0.35	0/891
82	Se	0.14	0/465	0.41	0/612
83	S2	0.18	0/39756	0.28	0/61939
84	CI	0.16	0/247	0.30	0/323
All	All	0.17	0/231657	0.32	0/339847

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
55	SQ	0	1
66	SB	0	1
75	SO	0	1
All	All	0	3

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
66	SB	171	ILE	Peptide
75	SO	137	SER	Peptide
55	SQ	107	GLU	Peptide

5.2 Too-close contacts ⓘ

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	Pt	1576	0	803	20	0
2	Et	1593	0	810	37	0
3	L5	78444	0	39719	907	0
4	L7	2561	0	1295	21	0
5	L8	3315	0	1685	35	0
6	LA	1898	0	1993	45	0
7	LB	3238	0	3376	78	0
8	LC	2927	0	3104	32	0
9	LD	2382	0	2410	32	0
10	LE	1935	0	2096	25	0
11	LF	1870	0	1996	29	0
12	LG	1927	0	2074	21	0
13	LH	1518	0	1601	18	0
14	LI	1711	0	1749	21	0
15	LJ	1362	0	1399	22	0
16	LL	1701	0	1818	24	0
17	LM	1138	0	1204	20	0
18	LN	1701	0	1749	23	0
19	LO	1650	0	1794	29	0
20	LP	1242	0	1269	20	0
21	LQ	1513	0	1628	25	0
22	LR	1566	0	1729	21	0
23	LS	1453	0	1490	15	0
24	LT	1298	0	1366	17	0
25	LU	825	0	850	14	0
26	LV	979	0	1039	11	0
27	LW	945	0	1003	20	0
28	LX	985	0	1066	4	0
29	LY	1115	0	1205	13	0
30	LZ	1107	0	1182	18	0
31	La	1162	0	1213	12	0
32	Lb	876	0	948	17	0
33	Lc	764	0	804	13	0
34	Ld	888	0	930	17	0
35	Le	1053	0	1147	10	0
36	Lf	876	0	912	8	0
37	Lg	906	0	998	8	0
38	Lh	1015	0	1148	17	0
39	Li	832	0	917	7	0
40	Lj	705	0	737	16	0
41	Lk	569	0	637	14	0
42	Ll	444	0	483	5	0
43	Lm	429	0	465	3	0

Continued on next page...

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	Ln	230	0	276	2	0
45	Lo	862	0	929	11	0
46	Lp	708	0	756	7	0
47	Lr	1002	0	1068	9	0
48	Ls	1496	0	1540	25	0
49	Lt	998	0	1032	20	0
50	SD	1765	0	1865	23	0
51	SF	1495	0	1549	38	0
52	SK	827	0	854	17	0
53	SM	940	0	965	23	0
54	SP	985	0	1031	13	0
55	SQ	1142	0	1213	29	0
56	SR	1090	0	1149	16	0
57	SS	1198	0	1261	32	0
58	ST	1112	0	1146	31	0
59	SU	821	0	883	16	0
60	SZ	598	0	656	15	0
61	Sc	506	0	536	11	0
62	Sd	459	0	452	16	0
63	Sf	548	0	551	19	0
64	Sg	2436	0	2393	58	0
65	SA	1741	0	1746	32	0
66	SB	1738	0	1809	29	0
67	SC	1707	0	1791	45	0
68	SE	2076	0	2177	41	0
69	SG	1923	0	2089	56	0
70	SH	1497	0	1590	32	0
71	SI	1686	0	1772	34	0
72	SJ	1525	0	1640	25	0
73	SL	1247	0	1323	14	0
74	SN	1208	0	1294	11	0
75	SO	1024	0	1050	15	0
76	SV	636	0	637	13	0
77	SW	1034	0	1080	25	0
78	SX	1098	0	1167	23	0
79	SY	1065	0	1142	26	0
80	Sa	821	0	870	10	0
81	Sb	651	0	672	16	0
82	Se	459	0	503	11	0
83	S2	36953	0	18679	529	0
84	CI	247	0	283	18	0
85	L5	179	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
85	L7	3	0	0	0	0
85	L8	5	0	0	0	0
85	LA	1	0	0	0	0
85	LP	1	0	0	0	0
85	LV	1	0	0	0	0
85	Le	1	0	0	0	0
85	S2	27	0	0	0	0
85	SS	1	0	0	0	0
86	L5	98	0	182	7	0
87	L5	90	0	171	5	0
87	LN	10	0	19	0	0
88	Lg	1	0	0	0	0
88	Lj	1	0	0	0	0
88	Lm	1	0	0	0	0
88	Lo	1	0	0	0	0
88	Lp	1	0	0	0	0
88	Sa	1	0	0	0	0
All	All	219971	0	163632	2637	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 (2637) 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)
3:L5:2708:U:O2'	84:CI:79:ARG:NH1	1.63	1.30
34:Ld:70:LYS:NZ	84:CI:66:GLY:HA3	1.81	0.96
83:S2:1033:G:H1	83:S2:1080:A:HO2'	1.07	0.95
83:S2:928:G:H1	83:S2:1013:U:H3	1.15	0.93
3:L5:1759:G:H1	3:L5:1773:U:H3	1.05	0.93
25:LU:116:GLN:O	84:CI:74:LYS:HA	1.66	0.93
2:Et:26:A:H61	2:Et:44:G:H1	1.04	0.92
2:Et:26:A:N6	2:Et:44:G:H1	1.67	0.92
3:L5:2007:G:H21	3:L5:2012:A:H62	0.96	0.90
3:L5:2007:G:N2	3:L5:2012:A:H62	1.69	0.89
83:S2:1656:G:H1	83:S2:1668:U:H3	1.19	0.89
83:S2:1748:G:H1	83:S2:1786:U:H3	0.92	0.89
16:LL:64:VAL:HA	16:LL:67:HIS:HD2	1.39	0.88
3:L5:3946:G:H1	3:L5:4067:U:H3	0.87	0.86
1:Pt:50:U:H3	1:Pt:64:G:H1	0.91	0.84
3:L5:2007:G:H21	3:L5:2012:A:N6	1.76	0.84

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:1996:C:H42	3:L5:2000:G:H22	1.25	0.81
3:L5:1996:C:H42	3:L5:2000:G:N2	1.79	0.80
3:L5:2708:U:HO2'	84:CI:79:ARG:NH1	1.78	0.78
64:Sg:87:LEU:HB2	64:Sg:101:PHE:HB2	1.65	0.78
63:Sf:126:CYS:SG	63:Sf:144:CYS:N	2.54	0.77
83:S2:1776:G:N2	83:S2:1777:G:N7	2.32	0.77
66:SB:103:MET:HG3	66:SB:215:VAL:HG12	1.67	0.76
3:L5:1982:G:N2	3:L5:2009:A:O2'	2.19	0.76
3:L5:4774:C:O2'	3:L5:4775:C:O2	2.03	0.75
86:L5:5293:SPM:H112	19:LO:91:LYS:HD3	1.69	0.75
83:S2:925:G:H1	83:S2:1017:U:H3	1.34	0.75
49:Lt:12:VAL:HG11	49:Lt:65:GLN:H	1.51	0.74
7:LB:90:VAL:HG23	7:LB:163:ILE:HD11	1.68	0.74
2:Et:6:G:H1	2:Et:67:U:H3	1.36	0.73
3:L5:387:G:HO2'	3:L5:412:G:H1	1.33	0.73
83:S2:940:U:H3	83:S2:1002:U:H3	1.36	0.73
3:L5:5024:C:H41	3:L5:5028:G:H21	1.36	0.73
3:L5:2611:A:H5'	3:L5:2688:G:H4'	1.71	0.72
51:SF:134:VAL:HG12	51:SF:135:ARG:HG2	1.71	0.72
67:SC:210:PRO:HB3	67:SC:240:THR:HG21	1.70	0.72
3:L5:2520:C:O2	3:L5:2640:G:N2	2.22	0.72
55:SQ:72:VAL:HG11	55:SQ:80:GLN:HG3	1.71	0.72
70:SH:154:ILE:HB	70:SH:185:VAL:HG22	1.71	0.71
3:L5:3641:U:OP2	3:L5:3646:A:N6	2.23	0.71
3:L5:2103:G:N7	3:L5:2104:G:N2	2.38	0.71
3:L5:2702:C:OP1	25:LU:101:ARG:NH2	2.24	0.71
13:LH:106:GLN:HB2	13:LH:111:LEU:HB3	1.71	0.70
64:Sg:247:TRP:HB3	64:Sg:258:ILE:HD11	1.71	0.70
3:L5:184:U:O2	3:L5:253:G:N2	2.24	0.70
3:L5:1095:A:H2	3:L5:1200:G:H1	1.35	0.70
17:LM:15:VAL:HG22	17:LM:50:MET:HE1	1.74	0.70
78:SX:68:LYS:HB3	78:SX:91:LEU:HD13	1.74	0.70
3:L5:512:U:H3	3:L5:647:G:H1	1.40	0.70
25:LU:65:ARG:HG2	25:LU:67:LYS:H	1.57	0.69
3:L5:1366:G:H5"	16:LL:36:ARG:HH12	1.57	0.69
3:L5:664:G:N2	3:L5:666:G:O6	2.25	0.69
3:L5:1702:C:H4'	8:LC:308:LYS:HD2	1.75	0.69
7:LB:10:ARG:NH1	7:LB:11:HIS:O	2.24	0.69
15:LJ:146:ARG:HG2	15:LJ:147:ARG:HG3	1.74	0.69
3:L5:4910:G:H4'	7:LB:95:THR:HG22	1.75	0.69
34:Ld:70:LYS:HZ2	84:CI:66:GLY:HA3	1.54	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:Sg:107:ASP:HB2	64:Sg:125:ARG:HG3	1.75	0.69
20:LP:39:MET:HG2	20:LP:43:LYS:HD3	1.75	0.69
6:LA:137:ILE:HD11	6:LA:149:LYS:HB2	1.75	0.68
70:SH:105:THR:HG23	70:SH:107:LYS:H	1.58	0.68
65:SA:89:LYS:HD2	65:SA:201:LEU:HG	1.76	0.68
83:S2:851:C:H5"	83:S2:852:G:H5'	1.76	0.68
26:LV:35:LYS:HB2	26:LV:67:LYS:HG3	1.75	0.68
3:L5:2351:OMC:HM22	8:LC:95:MET:HG3	1.76	0.68
20:LP:109:VAL:HA	20:LP:112:LEU:HD13	1.76	0.68
67:SC:193:VAL:HG11	67:SC:240:THR:HG22	1.76	0.68
83:S2:1658:G:OP2	83:S2:1660:C:N4	2.27	0.68
3:L5:137:G:H2'	3:L5:138:G:H8	1.59	0.68
3:L5:3954:A:H1'	3:L5:4058:U:H5'	1.75	0.68
3:L5:4413:C:O2	14:LI:158:LYS:NZ	2.27	0.68
71:SI:133:GLU:HA	71:SI:136:ILE:HG12	1.75	0.68
3:L5:1172:C:H42	3:L5:1188:C:H42	1.42	0.67
3:L5:2484:A:H62	3:L5:2494:U:H3	1.42	0.67
3:L5:2557:G:H1	3:L5:2570:U:H3	1.40	0.67
48:Ls:68:HIS:O	48:Ls:71:ASN:ND2	2.26	0.67
83:S2:1030:A:H2'	83:S2:1031:A2M:H8	1.74	0.67
83:S2:554:A:HO2'	83:S2:555:A:H8	1.40	0.67
2:Et:9:A:H2'	2:Et:11:C:H41	1.58	0.67
3:L5:1995:G:O2'	49:Lt:122:ALA:O	2.12	0.67
25:LU:114:TYR:CE2	84:CI:50:MET:HG3	2.29	0.67
58:ST:124:THR:HG23	58:ST:127:GLY:H	1.60	0.67
3:L5:2758:G:O2'	3:L5:2765:A:N3	2.28	0.67
3:L5:3717:A:H2'	3:L5:3718:A2M:H8	1.77	0.67
47:Lr:28:GLU:OE2	47:Lr:31:ASN:ND2	2.26	0.67
69:SG:13:GLN:NE2	83:S2:153:G:N3	2.42	0.67
83:S2:587:A:H5'	83:S2:592:C:H41	1.60	0.67
3:L5:4618:OMG:H5'	26:LV:15:ARG:HB2	1.75	0.67
3:L5:1268:G:N7	32:Lb:111:ARG:NH2	2.43	0.67
3:L5:4546:A:N7	6:LA:215:ASN:ND2	2.43	0.67
69:SG:135:PRO:HG2	69:SG:141:ILE:HG22	1.77	0.67
6:LA:107:MET:HB3	6:LA:111:THR:HG21	1.75	0.66
3:L5:4242:U:H3	3:L5:4281:A:H2	1.43	0.66
41:Lk:26:LYS:HB2	41:Lk:69:LEU:HD12	1.77	0.66
67:SC:259:THR:HG23	76:SV:16:LYS:HZ3	1.61	0.66
3:L5:88:A:N7	21:LQ:173:LYS:NZ	2.43	0.66
3:L5:989:U:O2	3:L5:1064:G:N2	2.26	0.66
27:LW:80:ARG:NH2	69:SG:8:PRO:O	2.28	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:SX:70:VAL:HG11	78:SX:94:ILE:HG21	1.78	0.66
3:L5:4098:A:N1	3:L5:4112:C:N4	2.42	0.66
3:L5:4594:U:H2'	3:L5:4595:G:H8	1.61	0.66
3:L5:1414:C:H2'	3:L5:1415:G:H8	1.61	0.65
3:L5:4910:G:N2	19:LO:106:ASP:O	2.28	0.65
27:LW:80:ARG:NH1	83:S2:167:G:O2'	2.28	0.65
66:SB:144:LYS:HD3	66:SB:208:HIS:HB3	1.78	0.65
69:SG:22:ARG:HG3	69:SG:25:ARG:HH12	1.59	0.65
34:Ld:64:ILE:HG23	34:Ld:68:LEU:HD23	1.77	0.65
78:SX:68:LYS:NZ	83:S2:616:A:OP1	2.29	0.65
3:L5:2093:A:N3	3:L5:2094:G:N1	2.44	0.65
50:SD:106:ARG:HG3	50:SD:175:VAL:HG22	1.79	0.65
3:L5:68:U:OP1	18:LN:178:HIS:ND1	2.29	0.65
3:L5:67:C:OP2	3:L5:312:G:N2	2.29	0.65
3:L5:3937:C:H1'	18:LN:125:SER:HB3	1.78	0.65
77:SW:2:VAL:N	83:S2:1091:C:HO2'	1.95	0.65
3:L5:1396:G:N7	31:La:110:LYS:NZ	2.43	0.65
3:L5:1499:C:OP1	21:LQ:150:ARG:NH2	2.30	0.65
74:SN:93:LYS:HE2	74:SN:151:ALA:HB2	1.78	0.65
83:S2:1854:U:H2'	83:S2:1855:G:H8	1.62	0.65
16:LL:64:VAL:HA	16:LL:67:HIS:CD2	2.28	0.64
27:LW:80:ARG:HH22	83:S2:167:G:H4'	1.62	0.64
69:SG:162:LEU:HG	69:SG:167:LYS:HE3	1.79	0.64
3:L5:748:G:O6	23:LS:98:ARG:NH2	2.30	0.64
6:LA:114:CYS:HB3	6:LA:165:VAL:HB	1.79	0.64
53:SM:128:PHE:HD1	53:SM:131:LYS:HZ3	1.44	0.64
55:SQ:19:ALA:HB2	55:SQ:75:GLY:HA3	1.80	0.64
83:S2:1228:A:H2'	83:S2:1229:G:H8	1.63	0.64
3:L5:2083:C:OP2	21:LQ:14:ARG:NH2	2.30	0.64
54:SP:130:ARG:HD3	54:SP:131:PRO:HD2	1.79	0.64
7:LB:222:VAL:O	7:LB:343:ARG:NH1	2.30	0.64
83:S2:1228:A:H2'	83:S2:1229:G:C8	2.33	0.64
3:L5:1994:C:H2'	3:L5:1995:G:C8	2.33	0.64
3:L5:2745:A:H2'	3:L5:2746:A:H8	1.62	0.64
47:Lr:38:PHE:O	47:Lr:45:HIS:NE2	2.26	0.64
71:SI:91:VAL:HG11	71:SI:205:ARG:HH12	1.61	0.64
11:LF:243:LEU:O	11:LF:247:MET:HB2	1.98	0.64
39:Li:2:ALA:N	39:Li:5:TYR:HH	1.96	0.64
65:SA:77:ILE:HG13	65:SA:99:ILE:HB	1.79	0.64
70:SH:51:ILE:HG21	70:SH:179:LYS:HG2	1.80	0.64
3:L5:305:A:OP2	18:LN:15:GLN:NE2	2.28	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L7:38:U:N3	4:L7:41:G:OP2	2.31	0.64
2:Et:26:A:N1	2:Et:44:G:N2	2.46	0.63
3:L5:1996:C:N4	3:L5:2000:G:H22	1.95	0.63
64:Sg:40:ILE:HB	64:Sg:59:LEU:HB2	1.80	0.63
71:SI:22:HIS:HB3	83:S2:433:A:H5"	1.79	0.63
3:L5:4094:G:N2	3:L5:4115:G:OP2	2.32	0.63
3:L5:1739:G:N3	3:L5:1742:A:N6	2.46	0.63
69:SG:183:ARG:NH2	83:S2:316:G:OP2	2.30	0.63
3:L5:665:C:H4'	3:L5:666:G:H5'	1.78	0.63
31:La:72:THR:HG22	31:La:110:LYS:HB3	1.80	0.63
83:S2:533:A:H61	83:S2:550:C:H42	1.46	0.63
3:L5:1669:A:OP1	32:Lb:18:ARG:NH2	2.28	0.63
3:L5:4897:G:OP1	17:LM:128:LYS:NZ	2.32	0.63
64:Sg:252:THR:HG21	64:Sg:257:LYS:HD2	1.79	0.63
69:SG:176:ILE:HG12	69:SG:179:LEU:HD11	1.81	0.63
3:L5:1405:C:H2'	3:L5:1406:G:H8	1.64	0.63
32:Lb:109:ARG:HA	32:Lb:112:ILE:HG12	1.81	0.63
41:Lk:8:ILE:HD11	41:Lk:56:LEU:HD13	1.81	0.63
51:SF:168:THR:OG1	51:SF:171:GLU:OE1	2.16	0.63
3:L5:679:C:H2'	3:L5:680:G:H8	1.64	0.62
3:L5:2554:U:O2	3:L5:2764:A:N7	2.32	0.62
49:Lt:65:GLN:HG3	49:Lt:67:ARG:H	1.61	0.62
54:SP:37:TYR:O	57:SS:88:LYS:NZ	2.31	0.62
65:SA:10:MET:HE3	65:SA:55:TRP:HB2	1.80	0.62
83:S2:106:C:H2'	83:S2:107:A:H8	1.63	0.62
1:Pt:20(A):U:O4'	15:LJ:58:ARG:NH2	2.32	0.62
66:SB:171:ILE:HG22	66:SB:174:ARG:HE	1.64	0.62
74:SN:64:ARG:NH2	83:S2:919:A:OP2	2.31	0.62
2:Et:32:C:OP1	51:SF:135:ARG:NH2	2.31	0.62
49:Lt:114:ARG:NH2	49:Lt:126:SER:OG	2.32	0.62
50:SD:8:LYS:HG2	59:SU:61:LEU:HD11	1.81	0.62
68:SE:144:ALA:HB3	83:S2:121:OMU:HM23	1.81	0.62
68:SE:146:THR:HG21	83:S2:122:G:H21	1.64	0.62
83:S2:1422:G:H4'	83:S2:1423:C:H3'	1.82	0.62
69:SG:202:ASN:ND2	83:S2:125:C:OP1	2.31	0.62
15:LJ:141:ILE:HA	15:LJ:144:LYS:HD2	1.82	0.62
83:S2:1759:G:N2	83:S2:1760:G:O6	2.32	0.62
3:L5:1857:C:H2'	3:L5:1858:A:H8	1.65	0.62
9:LD:232:THR:OG1	9:LD:234:ASP:OD1	2.18	0.62
83:S2:1536:G:H2'	83:S2:1537:A:H8	1.63	0.62
58:ST:12:GLN:NE2	83:S2:1593:C:O2	2.31	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:4431:PSU:OP2	14:LI:3:ARG:NH2	2.31	0.62
6:LA:29:LEU:O	6:LA:123:ARG:NH1	2.32	0.62
62:Sd:19:ARG:NH2	83:S2:1661:A:OP1	2.33	0.62
69:SG:7:PHE:HD2	69:SG:10:THR:HG22	1.64	0.62
67:SC:72:ASP:OD2	67:SC:272:HIS:NE2	2.29	0.62
72:SJ:136:ARG:NH1	72:SJ:159:PHE:O	2.31	0.62
77:SW:107:SER:HB2	83:S2:860:G:H21	1.65	0.62
83:S2:1277:C:H2'	83:S2:1278:A:H8	1.63	0.62
3:L5:121:A:H62	3:L5:152:U:H3	1.48	0.62
3:L5:308:G:OP2	3:L5:308:G:N2	2.27	0.62
3:L5:327:U:O2'	39:Li:30:ARG:NH1	2.32	0.62
7:LB:107:ALA:HB2	7:LB:201:LEU:HD22	1.82	0.62
54:SP:48:GLY:O	54:SP:50:ARG:NH1	2.32	0.62
71:SI:106:SER:HB3	71:SI:171:LEU:HG	1.81	0.62
81:Sb:20:LYS:NZ	83:S2:1016:U:OP2	2.32	0.62
83:S2:94:G:O2'	83:S2:508:A:O2'	2.16	0.62
3:L5:2601:A:N6	3:L5:2744:A:OP2	2.29	0.61
3:L5:4525:C:OP1	7:LB:246:ARG:NH2	2.33	0.61
72:SJ:121:LYS:HD3	83:S2:527:C:H4'	1.80	0.61
83:S2:1010:G:H2'	83:S2:1011:A:H8	1.65	0.61
4:L7:23:A:N3	4:L7:118:C:O2'	2.31	0.61
77:SW:111:MET:HE3	77:SW:116:ALA:HA	1.81	0.61
83:S2:889:U:OP2	83:S2:896:U:N3	2.33	0.61
83:S2:1536:G:H2'	83:S2:1537:A:C8	2.35	0.61
3:L5:62:A:N3	3:L5:77:U:O2'	2.29	0.61
3:L5:4251:A:H5"	15:LJ:108:GLY:HA3	1.83	0.61
20:LP:52:THR:HG23	20:LP:85:LYS:HG3	1.80	0.61
68:SE:10:LYS:NZ	83:S2:95:G:OP1	2.34	0.61
83:S2:1203:G:H2'	83:S2:1204:A:C8	2.35	0.61
3:L5:4088:C:OP1	6:LA:37:ARG:NH1	2.33	0.61
6:LA:108:PRO:HB2	46:Lp:86:LEU:HD23	1.83	0.61
52:SK:85:LEU:HD21	52:SK:89:ILE:HB	1.83	0.61
63:Sf:144:CYS:HB2	63:Sf:146:LEU:HD23	1.83	0.61
83:S2:628:A:N6	83:S2:1500:G:O2'	2.31	0.61
3:L5:1726:U:H5'	11:LF:135:ILE:HD11	1.82	0.61
75:SO:104:ARG:NH2	83:S2:959:G:OP1	2.33	0.61
83:S2:165:G:OP2	83:S2:165:G:N2	2.29	0.61
3:L5:121:A:OP1	12:LG:110:LYS:NZ	2.27	0.61
55:SQ:58:LEU:HB3	55:SQ:62:ARG:HD2	1.81	0.61
22:LR:172:ARG:NH1	83:S2:909:G:OP1	2.33	0.61
41:Lk:27:LYS:O	41:Lk:70:LYS:NZ	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:SA:118:GLU:HG3	67:SC:65:LYS:HE2	1.82	0.61
59:SU:70:CYS:SG	83:S2:1491:G:O2'	2.56	0.61
3:L5:4472:G:O2'	43:Lm:100:TYR:O	2.19	0.61
63:Sf:99:LYS:NZ	83:S2:1287:A:OP1	2.28	0.61
3:L5:1480:C:O2'	3:L5:1482:G:OP2	2.18	0.60
60:SZ:58:LEU:HD12	60:SZ:62:VAL:HG21	1.81	0.60
3:L5:4992:G:H2'	3:L5:4993:G:C8	2.36	0.60
71:SI:150:ASP:HA	71:SI:153:LYS:HG2	1.83	0.60
34:Ld:90:ARG:HD3	34:Ld:102:LEU:HD13	1.82	0.60
77:SW:71:LYS:NZ	83:S2:1156:U:OP1	2.35	0.60
83:S2:695:C:N4	83:S2:736:C:O2'	2.34	0.60
50:SD:32:ASP:OD1	50:SD:57:ASN:ND2	2.34	0.60
83:S2:874:G:H2'	83:S2:875:A:H8	1.66	0.60
6:LA:104:VAL:HA	6:LA:107:MET:HE3	1.83	0.60
22:LR:176:ARG:NH2	83:S2:910:G:OP1	2.32	0.60
50:SD:161:GLY:HA3	83:S2:1388:A:H61	1.67	0.60
53:SM:91:LEU:HD12	53:SM:106:CYS:HB2	1.83	0.60
78:SX:107:ARG:HG3	78:SX:110:HIS:HB3	1.83	0.60
83:S2:747:U:O2	83:S2:796:G:N2	2.35	0.60
3:L5:5064:G:H21	20:LP:75:GLN:HE22	1.48	0.60
53:SM:63:LYS:HD3	53:SM:64:LEU:HD22	1.84	0.60
55:SQ:8:GLN:HG3	55:SQ:27:ARG:HE	1.66	0.60
73:SL:85:THR:HG21	83:S2:373:G:H4'	1.84	0.60
83:S2:609:U:H2'	83:S2:610:G:H8	1.67	0.60
3:L5:4076:G:OP1	12:LG:73:ARG:NE	2.34	0.60
12:LG:165:GLU:OE2	18:LN:26:ARG:NH1	2.34	0.60
69:SG:2:LYS:HD3	69:SG:15:LEU:HD21	1.84	0.60
78:SX:9:THR:HG22	83:S2:681:PSU:H4'	1.82	0.60
3:L5:513:U:N3	3:L5:516:C:OP2	2.33	0.60
3:L5:1703:C:O2'	3:L5:1704:C:O4'	2.18	0.60
3:L5:2899:C:OP1	22:LR:108:ARG:NH2	2.32	0.60
19:LO:34:VAL:HG22	19:LO:103:LYS:HB2	1.83	0.60
50:SD:40:ARG:NH2	59:SU:106:ILE:O	2.34	0.60
3:L5:2458:C:H5"	18:LN:67:ARG:HD2	1.83	0.60
25:LU:28:PRO:HB2	25:LU:34:MET:HG3	1.84	0.60
41:Lk:54:GLU:OE2	41:Lk:58:GLN:NE2	2.32	0.60
64:Sg:164:ILE:HG22	64:Sg:178:ASN:HA	1.84	0.60
3:L5:1390:G:N2	3:L5:1393:G:OP2	2.34	0.59
3:L5:3664:G:H2'	3:L5:3665:G:H8	1.67	0.59
3:L5:3701:OMC:H5	3:L5:3748:A:H62	1.47	0.59
3:L5:1563:A:N6	83:S2:1028:A:N1	2.50	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:LP:118:GLN:OE1	20:LP:120:ASN:ND2	2.35	0.59
23:LS:76:LYS:NZ	23:LS:100:LEU:O	2.35	0.59
70:SH:165:ASN:O	70:SH:169:LYS:NZ	2.34	0.59
3:L5:109:G:OP2	16:LL:74:ARG:NH2	2.34	0.59
3:L5:935:A:O2'	17:LM:44:GLN:O	2.20	0.59
81:Sb:14:GLU:HA	81:Sb:17:ARG:HG2	1.84	0.59
83:S2:508:A:H3'	83:S2:509:OMG:H8	1.67	0.59
51:SF:171:GLU:OE2	60:SZ:106:GLN:NE2	2.36	0.59
71:SI:141:ARG:HD3	71:SI:145:ILE:HG21	1.83	0.59
83:S2:747:U:N3	83:S2:796:G:N1	2.50	0.59
3:L5:3611:A:H2	3:L5:5016:A:H8	1.50	0.59
7:LB:299:ILE:HB	7:LB:313:SER:HB3	1.85	0.59
40:Lj:14:LYS:NZ	42:Ll:51:LEU:OXT	2.35	0.59
56:SR:99:ASP:OD2	65:SA:42:LYS:NZ	2.25	0.59
64:Sg:68:ASP:HB3	64:Sg:111:VAL:HG22	1.84	0.59
71:SI:70:GLU:OE2	73:SL:21:LYS:NZ	2.32	0.59
3:L5:1996:C:O3'	48:Ls:44:ARG:NH1	2.35	0.59
11:LF:105:VAL:HG13	11:LF:136:VAL:HG12	1.84	0.59
57:SS:109:GLU:HA	57:SS:112:GLU:HG2	1.84	0.59
83:S2:888:U:H4'	83:S2:889:U:H5'	1.83	0.59
3:L5:4084:G:O6	6:LA:72:ARG:NH2	2.35	0.59
67:SC:102:LEU:HD22	67:SC:130:ILE:HD12	1.83	0.59
69:SG:92:ARG:O	83:S2:453:C:O2'	2.20	0.59
3:L5:3822:PSU:OP1	86:L5:5292:SPM:N5	2.33	0.59
9:LD:204:VAL:HB	9:LD:236:MET:HE1	1.83	0.59
55:SQ:131:LYS:HB2	55:SQ:140:ARG:HH22	1.66	0.59
59:SU:51:LYS:HB3	59:SU:90:ASP:HB2	1.84	0.59
83:S2:1562:C:H2'	83:S2:1563:G:H8	1.65	0.59
3:L5:300:A:H2'	3:L5:301:G:H8	1.68	0.59
3:L5:989:U:H3	3:L5:1064:G:H1	1.49	0.59
3:L5:1326:A2M:H2'	3:L5:1327:C:C6	2.38	0.59
3:L5:2300:A:N7	8:LC:143:ARG:NH1	2.50	0.59
3:L5:2708:U:H1'	84:CI:79:ARG:HH22	1.68	0.59
5:L8:75:OMG:OP2	29:LY:74:TYR:OH	2.20	0.59
7:LB:83:PRO:O	7:LB:167:GLN:NE2	2.35	0.59
51:SF:36:GLN:NE2	51:SF:37:ASP:OD1	2.36	0.59
51:SF:127:ARG:HG2	51:SF:136:ARG:HE	1.68	0.59
69:SG:85:ARG:O	69:SG:87:ARG:NH1	2.36	0.59
3:L5:1704:C:O3'	11:LF:46:ARG:NH1	2.36	0.58
15:LJ:22:LEU:HD22	15:LJ:128:LEU:HD12	1.85	0.58
44:Ln:1:MET:HG3	83:S2:1706:G:H5'	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
67:SC:200:ARG:O	72:SJ:54:ARG:NH2	2.33	0.58
73:SL:133:PRO:HG2	83:S2:383:G:H21	1.68	0.58
79:SY:105:LYS:NZ	83:S2:507:G:O6	2.31	0.58
3:L5:4098:A:H2'	3:L5:4099:G:H4'	1.84	0.58
38:Lh:80:PRO:HD2	38:Lh:83:LEU:HD12	1.85	0.58
45:Lo:2:VAL:N	45:Lo:90:HIS:O	2.36	0.58
48:Ls:17:ILE:HD12	48:Ls:54:LEU:HD21	1.83	0.58
3:L5:268:G:H2'	3:L5:269:G:H8	1.68	0.58
58:ST:22:LEU:HG	58:ST:28:LEU:HD21	1.85	0.58
67:SC:257:LYS:O	76:SV:16:LYS:NZ	2.32	0.58
3:L5:3823:G:OP2	3:L5:3823:G:N2	2.30	0.58
69:SG:133:LEU:HD12	83:S2:65:C:C4	2.38	0.58
78:SX:105:PHE:HD1	78:SX:121:LYS:HB3	1.66	0.58
3:L5:1890:G:N2	3:L5:1890:G:OP2	2.32	0.58
3:L5:2335:C:H2'	3:L5:2336:G:H8	1.68	0.58
19:LO:9:LEU:HD23	19:LO:118:MET:HB2	1.85	0.58
50:SD:172:VAL:HG22	50:SD:185:LYS:HG2	1.85	0.58
83:S2:1288:OMU:HN3	83:S2:1311:C:H42	1.51	0.58
18:LN:146:PRO:HB2	38:Lh:104:THR:HG23	1.86	0.58
65:SA:128:ARG:NH2	65:SA:151:ASP:O	2.36	0.58
68:SE:29:PRO:HA	83:S2:496:C:H5'	1.86	0.58
3:L5:2613:C:OP1	37:Lg:24:ARG:NH2	2.37	0.58
9:LD:62:CYS:HB3	9:LD:105:LEU:HD22	1.84	0.58
25:LU:44:GLN:HB2	25:LU:56:LEU:HD21	1.84	0.58
59:SU:61:LEU:HB2	59:SU:82:MET:HB3	1.86	0.58
83:S2:981:A:H2'	83:S2:982:G:C8	2.39	0.58
3:L5:1332:C:H2'	3:L5:1333:A:H8	1.68	0.58
3:L5:4986:G:H1'	7:LB:174:ARG:NH2	2.19	0.58
51:SF:124:ASP:OD1	51:SF:125:SER:N	2.27	0.58
83:S2:948:C:H2'	83:S2:949:G:H8	1.69	0.58
33:Lc:99:PRO:HG3	33:Lc:104:ILE:HB	1.86	0.58
51:SF:142:SER:HB3	61:Sc:50:VAL:HG22	1.85	0.58
10:LE:227:HIS:HE1	10:LE:230:GLY:HA2	1.68	0.57
66:SB:26:SER:O	66:SB:51:ARG:NH2	2.37	0.57
68:SE:73:ASP:OD2	68:SE:122:LYS:NZ	2.37	0.57
69:SG:198:ARG:NH1	83:S2:126:G:OP2	2.36	0.57
83:S2:928:G:H2'	83:S2:929:G:C8	2.39	0.57
3:L5:1283:G:N1	3:L5:2076:G:OP1	2.33	0.57
3:L5:2658:G:N2	3:L5:2676:A:OP2	2.37	0.57
3:L5:3946:G:N2	3:L5:4067:U:O2	2.29	0.57
9:LD:64:ILE:HD13	9:LD:109:LEU:HD22	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
79:SY:41:ARG:NH2	79:SY:52:PRO:O	2.37	0.57
3:L5:4279:A:H5'	3:L5:4281:A:H1'	1.86	0.57
40:Lj:2:THR:HB	40:Lj:6:SER:HB2	1.86	0.57
3:L5:2624:G:OP2	25:LU:97:ARG:NH2	2.36	0.57
6:LA:101:VAL:HG22	6:LA:165:VAL:HG22	1.87	0.57
7:LB:394:LYS:HA	7:LB:397:ILE:HG12	1.86	0.57
75:SO:45:THR:HA	75:SO:52:THR:HA	1.86	0.57
4:L7:7:G:OP1	9:LD:33:ARG:NH1	2.37	0.57
5:L8:150:C:N4	12:LG:52:THR:O	2.38	0.57
8:LC:298:ILE:HD13	21:LQ:131:PRO:HB3	1.87	0.57
51:SF:127:ARG:HG2	51:SF:136:ARG:HB2	1.86	0.57
57:SS:85:ASN:OD1	57:SS:97:GLN:NE2	2.34	0.57
71:SI:88:ASN:OD1	71:SI:205:ARG:NH2	2.38	0.57
3:L5:4077:A:N1	3:L5:4171:C:N4	2.52	0.57
5:L8:87:G:O6	29:LY:113:LYS:NZ	2.35	0.57
15:LJ:63:ARG:HH11	45:Lo:106:PHE:HB2	1.68	0.57
66:SB:186:ASN:HA	66:SB:189:ILE:HD12	1.85	0.57
83:S2:1528:G:O2'	83:S2:1666:C:OP1	2.21	0.57
5:L8:21:C:OP1	8:LC:195:LYS:NZ	2.32	0.57
15:LJ:104:ASN:HD22	15:LJ:133:VAL:HG13	1.69	0.57
57:SS:130:ARG:NH2	83:S2:1230:C:OP1	2.37	0.57
63:Sf:95:ARG:HH12	83:S2:1291:A:H62	1.51	0.57
64:Sg:260:ASP:O	64:Sg:264:LYS:N	2.38	0.57
80:Sa:8:ASN:ND2	83:S2:1861:G:OP1	2.37	0.57
83:S2:640:A:H2'	83:S2:641:A:C8	2.40	0.57
3:L5:1500:A:H5"	3:L5:1501:C:H5"	1.87	0.57
3:L5:5002:U:OP2	7:LB:385:LYS:NZ	2.33	0.57
29:LY:67:ILE:O	29:LY:84:ARG:NH2	2.38	0.57
64:Sg:107:ASP:OD2	64:Sg:125:ARG:NH1	2.38	0.57
64:Sg:254:PRO:O	64:Sg:272:GLN:NE2	2.38	0.57
66:SB:40:ASN:HD21	66:SB:76:ASN:HB2	1.70	0.57
3:L5:2848:G:O2'	3:L5:3838:U:O4	2.21	0.57
3:L5:3811:G:O2'	3:L5:3814:U:OP2	2.20	0.57
3:L5:4617:G:OP1	7:LB:62:ARG:NH1	2.32	0.57
3:L5:2017:A:O2'	3:L5:2018:C:H6	1.87	0.57
3:L5:2017:A:O2'	3:L5:2018:C:O5'	2.20	0.57
3:L5:4451:G:N2	3:L5:4452:U:O4	2.34	0.57
20:LP:17:SER:HB2	20:LP:98:ALA:HB2	1.87	0.57
45:Lo:11:PHE:O	45:Lo:81:ARG:NH2	2.38	0.57
3:L5:1969:G:H4'	48:Ls:36:GLY:HA2	1.87	0.56
7:LB:17:LEU:O	7:LB:19:ARG:N	2.37	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:SM:110:VAL:O	53:SM:112:LYS:NZ	2.37	0.56
3:L5:3736:A:H2'	3:L5:3737:A:C8	2.40	0.56
22:LR:92:LYS:HG2	22:LR:96:MET:HE3	1.86	0.56
27:LW:119:LYS:O	27:LW:123:LYS:HB2	2.04	0.56
48:Ls:91:THR:OG1	48:Ls:93:GLU:OE1	2.23	0.56
3:L5:1971:C:O2	48:Ls:41:GLN:NE2	2.38	0.56
3:L5:2362:U:H2'	3:L5:2363:A2M:H8	1.87	0.56
3:L5:4092:G:N7	3:L5:4114:C:N4	2.53	0.56
3:L5:4775:C:H41	3:L5:4859:C:N4	2.03	0.56
3:L5:4940:C:H5'	3:L5:4941:G:H5"	1.85	0.56
52:SK:50:GLN:HE22	83:S2:1276:A:H1'	1.70	0.56
60:SZ:80:ARG:O	83:S2:1598:G:O2'	2.19	0.56
64:Sg:176:VAL:HG23	64:Sg:185:LYS:HB2	1.87	0.56
66:SB:122:GLU:HG2	66:SB:140:VAL:HG12	1.86	0.56
83:S2:1754:G:N7	83:S2:1779:G:N2	2.53	0.56
3:L5:518:G:H1	3:L5:643:C:H2'	1.70	0.56
3:L5:667:A:H5"	3:L5:668:C:H5"	1.86	0.56
3:L5:1754:U:H1'	9:LD:3:PHE:HZ	1.71	0.56
3:L5:2407:G:O6	42:Ll:2:SER:N	2.38	0.56
3:L5:4097:G:O6	3:L5:4098:A:N6	2.38	0.56
6:LA:229:ALA:HB3	6:LA:234:LYS:HB3	1.87	0.56
9:LD:223:PHE:HB3	9:LD:226:TYR:HB2	1.88	0.56
21:LQ:15:ARG:NH1	21:LQ:52:PHE:O	2.39	0.56
34:Ld:70:LYS:HZ1	84:CI:66:GLY:HA3	1.70	0.56
48:Ls:31:GLY:HA2	48:Ls:86:VAL:HG12	1.87	0.56
73:SL:33:LEU:HD12	73:SL:34:PRO:HD2	1.87	0.56
75:SO:149:ARG:NH2	83:S2:961:G:OP1	2.39	0.56
3:L5:1214:C:N3	32:Lb:90:SER:OG	2.38	0.56
3:L5:4107:G:N2	3:L5:4108:G:O6	2.38	0.56
10:LE:222:LEU:HB2	10:LE:237:LYS:HD2	1.87	0.56
17:LM:100:ARG:HA	17:LM:103:LYS:HG2	1.88	0.56
68:SE:49:ARG:NH2	83:S2:496:C:OP1	2.31	0.56
83:S2:1112:U:O2	83:S2:1121:G:O6	2.23	0.56
83:S2:1736:G:H2'	83:S2:1737:G:H8	1.70	0.56
3:L5:4274:A:H2'	3:L5:4275:G:C8	2.40	0.56
83:S2:64:A:N6	83:S2:83:A:OP2	2.39	0.56
3:L5:1100:U:O3'	3:L5:1167:C:N4	2.38	0.56
3:L5:3619:G:H22	3:L5:3624:A:H1'	1.70	0.56
3:L5:4873:G:N7	19:LO:179:LYS:NZ	2.50	0.56
64:Sg:206:LEU:HD12	64:Sg:218:LEU:HD12	1.88	0.56
71:SI:56:ARG:NH2	83:S2:380:G:OP1	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:SS:48:ALA:O	57:SS:66:ARG:NH2	2.39	0.56
83:S2:84:A:N3	83:S2:150:A:O2'	2.38	0.56
83:S2:1777:G:H2'	83:S2:1778:C:H6	1.71	0.56
3:L5:97:G:OP1	16:LL:16:LYS:NZ	2.37	0.56
3:L5:4594:U:H2'	3:L5:4595:G:C8	2.42	0.56
83:S2:1010:G:H2'	83:S2:1011:A:C8	2.40	0.56
3:L5:1516:G:O2'	16:LL:18:TRP:NE1	2.36	0.55
3:L5:1785:C:OP1	14:LI:133:GLN:NE2	2.39	0.55
15:LJ:136:ARG:NH2	15:LJ:161:GLU:OE2	2.32	0.55
28:LX:64:SER:HB2	38:Lh:69:LEU:HD13	1.89	0.55
48:Ls:34:ASN:HB3	48:Ls:185:PHE:HE1	1.71	0.55
3:L5:4093:G:H1	3:L5:4114:C:H2'	1.71	0.55
3:L5:4363:A:H5"	45:Lo:36:GLN:HG2	1.89	0.55
3:L5:4694:G:H4'	13:LH:71:ARG:HH12	1.72	0.55
64:Sg:32:LEU:HA	64:Sg:42:MET:HA	1.88	0.55
75:SO:135:ILE:O	83:S2:943:U:O2'	2.24	0.55
7:LB:292:LEU:HB2	7:LB:298:LEU:HD12	1.88	0.55
13:LH:18:ILE:HG12	13:LH:27:VAL:HG22	1.88	0.55
43:Lm:79:GLU:OE2	43:Lm:81:SER:OG	2.24	0.55
61:Sc:66:ARG:HH12	61:Sc:68:LEU:HD23	1.71	0.55
73:SL:61:PRO:HG3	73:SL:141:ASN:HB3	1.89	0.55
76:SV:42:VAL:HG23	76:SV:43:THR:HG23	1.88	0.55
83:S2:1748:G:O6	83:S2:1786:U:O4	2.25	0.55
3:L5:700:G:N1	3:L5:701:G:C6	2.74	0.55
7:LB:10:ARG:NH2	7:LB:265:SER:O	2.38	0.55
18:LN:157:LYS:O	18:LN:162:ARG:NH1	2.39	0.55
52:SK:55:ARG:NH1	52:SK:78:TYR:OH	2.39	0.55
59:SU:68:THR:O	62:Sd:40:ARG:NH1	2.39	0.55
6:LA:13:GLY:O	6:LA:17:ARG:HG3	2.07	0.55
15:LJ:83:LEU:HD22	15:LJ:132:VAL:HG11	1.88	0.55
50:SD:32:ASP:OD2	50:SD:65:ARG:NH1	2.39	0.55
59:SU:79:ARG:NH2	83:S2:1669:G:OP1	2.36	0.55
67:SC:121:ARG:NH1	67:SC:123:ARG:HE	2.04	0.55
67:SC:191:VAL:HG11	67:SC:236:PHE:HA	1.88	0.55
79:SY:80:ASP:OD1	79:SY:81:TYR:N	2.40	0.55
83:S2:1513:C:H2'	83:S2:1514:G:H8	1.71	0.55
3:L5:1591:U:OP2	3:L5:2856:C:O2'	2.19	0.55
3:L5:2764:A:H2'	3:L5:2765:A:H8	1.71	0.55
5:L8:67:U:H2'	5:L8:68:G:H8	1.71	0.55
68:SE:151:ASP:HA	69:SG:212:LEU:HD21	1.88	0.55
77:SW:111:MET:HE1	77:SW:119:LYS:HD2	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:S2:557:U:H2'	83:S2:558:G:C8	2.42	0.55
83:S2:1550:G:H3'	83:S2:1579:A:H61	1.71	0.55
3:L5:1895:G:OP1	11:LF:96:ARG:NH2	2.40	0.55
3:L5:2516:G:O2'	37:Lg:62:LYS:NZ	2.40	0.55
14:LI:87:MET:HG2	14:LI:138:ILE:HG12	1.88	0.55
27:LW:56:ARG:HH21	27:LW:61:LYS:HB3	1.72	0.55
64:Sg:120:ILE:HB	64:Sg:132:TRP:HB2	1.88	0.55
68:SE:45:ILE:HG13	68:SE:61:VAL:HG11	1.88	0.55
83:S2:43:U:OP2	83:S2:485:A:N6	2.38	0.55
3:L5:512:U:O4	3:L5:647:G:O6	2.24	0.55
3:L5:1683:PSU:OP1	31:La:44:ASN:ND2	2.37	0.55
15:LJ:84:GLU:OE2	15:LJ:92:TYR:OH	2.20	0.55
50:SD:60:GLY:HA3	50:SD:65:ARG:H	1.72	0.55
67:SC:121:ARG:HH12	67:SC:123:ARG:HE	1.55	0.55
67:SC:267:GLN:OE1	76:SV:35:ASN:ND2	2.39	0.55
70:SH:12:ASN:ND2	70:SH:14:GLU:OE2	2.39	0.55
72:SJ:164:PRO:HB3	72:SJ:170:PRO:HA	1.88	0.55
79:SY:36:PRO:HG3	83:S2:570:C:H4'	1.88	0.55
82:Se:31:ARG:NH2	83:S2:525:A:O3'	2.40	0.55
5:L8:62:A:OP1	38:Lh:52:LYS:NZ	2.37	0.55
10:LE:119:GLU:HG3	35:Le:7:LEU:HD22	1.88	0.55
3:L5:364:G:O6	40:Lj:55:ARG:NH2	2.40	0.55
3:L5:1396:G:HO2'	3:L5:1468:C:HO2'	1.50	0.55
3:L5:4220:6MZ:O5'	3:L5:4220:6MZ:H8	2.07	0.55
7:LB:95:THR:OG1	7:LB:98:GLY:O	2.20	0.55
19:LO:126:VAL:HG13	19:LO:127:VAL:HG13	1.89	0.55
48:Ls:58:ASN:ND2	48:Ls:84:GLY:O	2.31	0.55
3:L5:1100:U:H3	3:L5:1194:G:H1	1.55	0.54
3:L5:2084:C:O2	21:LQ:16:LYS:NZ	2.38	0.54
3:L5:4478:G:O2'	3:L5:4602:A:N1	2.37	0.54
7:LB:80:GLU:OE1	7:LB:323:TYR:OH	2.25	0.54
51:SF:78:MET:HE3	83:S2:1222:G:H5"	1.87	0.54
74:SN:5:HIS:HB3	74:SN:117:LEU:HD13	1.89	0.54
3:L5:1646:A:O2'	40:Lj:49:TRP:O	2.21	0.54
3:L5:2486:G:O6	3:L5:2493:G:O6	2.26	0.54
3:L5:4987:C:OP2	7:LB:116:ARG:NH2	2.41	0.54
10:LE:165:LEU:HD11	10:LE:176:THR:HG22	1.89	0.54
12:LG:103:ARG:NH2	12:LG:192:ARG:O	2.40	0.54
49:Lt:85:LEU:HD13	49:Lt:109:ILE:HD12	1.89	0.54
55:SQ:140:ARG:HB2	83:S2:1644:C:H4'	1.89	0.54
66:SB:99:ASN:OD1	66:SB:100:PHE:N	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:S2:5:U:H2'	83:S2:6:G:H8	1.72	0.54
83:S2:525:A:H2'	83:S2:526:A:C8	2.42	0.54
1:Pt:56:C:OP1	15:LJ:64:ARG:NH2	2.40	0.54
3:L5:4274:A:H2'	3:L5:4275:G:H8	1.73	0.54
17:LM:119:ARG:HG3	19:LO:189:ILE:HG23	1.87	0.54
51:SF:84:GLY:O	83:S2:1673:U:O2'	2.18	0.54
55:SQ:3:SER:OG	55:SQ:4:LYS:N	2.40	0.54
55:SQ:78:VAL:HG12	83:S2:1673:U:H5"	1.89	0.54
71:SI:25:ARG:HA	83:S2:448:A:H5"	1.87	0.54
3:L5:184:U:H3	3:L5:253:G:H1	1.53	0.54
23:LS:173:ASN:ND2	23:LS:175:PHE:O	2.40	0.54
60:SZ:99:LEU:HD21	60:SZ:102:LYS:HB2	1.89	0.54
67:SC:227:ARG:NH2	83:S2:663:C:O2'	2.40	0.54
75:SO:134:PRO:HB3	83:S2:944:A:H5"	1.88	0.54
82:Se:41:ARG:HG3	82:Se:42:PHE:HD1	1.73	0.54
83:S2:1265:A:O2'	83:S2:1327:G:OP2	2.19	0.54
3:L5:1259:G:H2'	3:L5:1260:G:H8	1.73	0.54
3:L5:4967:A:H2'	3:L5:4968:A:H8	1.72	0.54
13:LH:106:GLN:NE2	13:LH:113:GLU:OE2	2.37	0.54
37:Lg:45:ALA:HB3	37:Lg:82:MET:HE2	1.89	0.54
39:Li:55:ARG:O	39:Li:59:GLU:HG2	2.08	0.54
63:Sf:97:LYS:NZ	83:S2:1289:U:OP2	2.39	0.54
67:SC:109:ILE:HD11	67:SC:151:ILE:HD11	1.88	0.54
73:SL:103:GLU:HG3	78:SX:11:ARG:HB2	1.88	0.54
83:S2:629:A:O2'	83:S2:631:U:OP1	2.25	0.54
3:L5:2568:C:H2'	3:L5:2569:G:H8	1.71	0.54
7:LB:258:HIS:HA	7:LB:260:ALA:H	1.72	0.54
8:LC:262:GLU:HB3	8:LC:273:LEU:HD13	1.90	0.54
12:LG:117:ARG:NH2	12:LG:127:ASP:O	2.41	0.54
24:LT:44:GLY:HA2	24:LT:95:HIS:HB3	1.90	0.54
36:Lf:43:LEU:O	36:Lf:109:ARG:NH2	2.41	0.54
57:SS:120:HIS:ND1	83:S2:1622:U:OP1	2.40	0.54
83:S2:367:U:H4'	83:S2:371:A:C8	2.42	0.54
83:S2:1171:G:O2'	83:S2:1187:G:O6	2.23	0.54
83:S2:1845:A:H2'	83:S2:1846:G:C8	2.42	0.54
3:L5:1241:C:O2'	32:Lb:120:ARG:O	2.25	0.54
3:L5:1548:G:O2'	3:L5:2812:A:N3	2.37	0.54
3:L5:2092:G:O2'	3:L5:2262:G:N2	2.40	0.54
3:L5:2568:C:H2'	3:L5:2569:G:C8	2.43	0.54
41:Lk:24:LYS:HD3	41:Lk:69:LEU:HD21	1.90	0.54
60:SZ:85:ARG:NH2	83:S2:1597:C:OP2	2.33	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:SI:3:ILE:O	71:SI:30:GLY:N	2.40	0.54
83:S2:864:A:H2'	83:S2:865:A:H8	1.71	0.54
3:L5:3615:G:H1'	27:LW:44:ARG:HD3	1.90	0.54
3:L5:4501:U:OP1	7:LB:5:LYS:NZ	2.41	0.54
6:LA:140:ASN:ND2	6:LA:143:THR:OG1	2.41	0.54
32:Lb:43:MET:HE2	32:Lb:47:LYS:HZ1	1.72	0.54
48:Ls:143:ILE:HD12	48:Ls:158:VAL:HG11	1.90	0.54
67:SC:187:ARG:NH2	83:S2:1143:A:OP2	2.40	0.54
3:L5:2579:G:N2	3:L5:2582:A:OP2	2.36	0.54
3:L5:5047:C:O2'	3:L5:5050:C:OP2	2.22	0.54
30:LZ:11:VAL:HG12	30:LZ:82:PRO:HA	1.90	0.54
33:Lc:48:LEU:HD13	33:Lc:57:LYS:HG3	1.89	0.54
68:SE:100:ARG:HB2	68:SE:114:ILE:HD13	1.88	0.54
2:Et:6:G:H2'	2:Et:7:A:C8	2.43	0.54
3:L5:261:G:H2'	3:L5:262:G:C8	2.43	0.54
3:L5:1095:A:N1	3:L5:1200:G:O6	2.41	0.54
3:L5:1802:A:N3	24:LT:130:ARG:NH2	2.55	0.54
3:L5:1933:G:H2'	3:L5:1934:A:C8	2.43	0.54
3:L5:2809:G:O2'	3:L5:4644:G:OP1	2.22	0.54
3:L5:4620:OMU:OP2	3:L5:4670:C:N4	2.41	0.54
3:L5:5006:U:H4'	3:L5:5007:A:H5'	1.89	0.54
24:LT:43:LYS:O	24:LT:58:HIS:ND1	2.40	0.54
33:Lc:51:ASN:HB2	33:Lc:77:ASN:HB2	1.89	0.54
33:Lc:82:GLY:HA2	33:Lc:91:VAL:HG12	1.90	0.54
38:Lh:73:TYR:HB3	38:Lh:79:LYS:HG2	1.89	0.54
51:SF:83:ASN:OD1	83:S2:1651:A:O2'	2.25	0.54
75:SO:42:VAL:HG11	75:SO:78:ALA:HA	1.90	0.54
83:S2:885:U:O2	83:S2:901:G:O6	2.26	0.54
3:L5:4946:U:HO2'	36:Lf:2:SER:N	2.05	0.53
43:Lm:99:CYS:HB2	43:Lm:114:LYS:HE3	1.91	0.53
74:SN:29:THR:OG1	74:SN:31:ASP:OD1	2.24	0.53
83:S2:1337:4AC:H2'	83:S2:1338:G:H8	1.73	0.53
83:S2:1589:A:N3	83:S2:1653:U:O2'	2.41	0.53
3:L5:956:A:H1'	3:L5:2076:G:H5"	1.90	0.53
4:L7:26:C:O2'	15:LJ:147:ARG:NH1	2.39	0.53
7:LB:219:VAL:HG11	7:LB:337:VAL:HG13	1.90	0.53
19:LO:62:MET:HE2	19:LO:64:THR:HB	1.90	0.53
53:SM:36:ARG:NH1	83:S2:1310:U:OP1	2.42	0.53
70:SH:99:ARG:NH1	83:S2:913:A:OP2	2.42	0.53
71:SI:116:HIS:O	71:SI:152:ARG:NH2	2.39	0.53
81:Sb:49:HIS:ND1	81:Sb:69:GLY:O	2.41	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:2693:G:OP2	41:Lk:33:LYS:NZ	2.37	0.53
3:L5:2744:A:H2'	3:L5:2745:A:C8	2.42	0.53
3:L5:4769:G:H5"	19:LO:176:ARG:HD3	1.90	0.53
10:LE:141:ARG:NH2	36:Lf:110:ILE:O	2.41	0.53
48:Ls:13:TYR:O	48:Ls:17:ILE:HG12	2.08	0.53
64:Sg:82:SER:OG	64:Sg:83:TRP:N	2.41	0.53
70:SH:142:LYS:HB3	77:SW:54:ASP:HB3	1.91	0.53
83:S2:5:U:H2'	83:S2:6:G:C8	2.43	0.53
3:L5:702:U:H2'	3:L5:703:G:O4'	2.07	0.53
3:L5:3732:A:H2'	3:L5:3733:A:H8	1.73	0.53
56:SR:7:LYS:HB3	56:SR:11:LYS:HE2	1.89	0.53
3:L5:1258:G:H2'	3:L5:1259:G:C8	2.44	0.53
3:L5:2083:C:P	21:LQ:14:ARG:HH22	2.32	0.53
3:L5:2284:G:OP1	31:La:7:LYS:NZ	2.35	0.53
3:L5:2580:U:OP1	30:LZ:36:ARG:NH1	2.37	0.53
3:L5:3868:G:H22	3:L5:3900:G:H1'	1.72	0.53
51:SF:60:ARG:HD2	83:S2:1679:A:H2'	1.91	0.53
83:S2:159:A2M:O5'	83:S2:159:A2M:H8	2.08	0.53
83:S2:795:A:H2'	83:S2:796:G:C8	2.43	0.53
83:S2:1221:G:O2'	83:S2:1676:U:O2	2.25	0.53
83:S2:1417:C:O2	83:S2:1422:G:O6	2.27	0.53
3:L5:1328:G:O2'	3:L5:2349:A:OP1	2.26	0.53
3:L5:1759:G:N2	3:L5:1773:U:O2	2.27	0.53
3:L5:1942:A:H2'	3:L5:1943:A:C8	2.44	0.53
3:L5:2745:A:H2'	3:L5:2746:A:C8	2.41	0.53
3:L5:3867:A2M:H2'	3:L5:3868:G:O4'	2.08	0.53
3:L5:4769:G:OP1	19:LO:176:ARG:NH1	2.37	0.53
3:L5:4954:G:H2'	3:L5:4955:A:C8	2.44	0.53
4:L7:120:U:H4'	9:LD:262:LYS:HG2	1.89	0.53
51:SF:141:VAL:HG12	61:Sc:47:LYS:HG2	1.90	0.53
65:SA:120:ARG:HD2	67:SC:266:TYR:HB3	1.90	0.53
67:SC:207:ALA:HB2	83:S2:4:C:H4'	1.91	0.53
83:S2:98:C:OP2	83:S2:426:A:O2'	2.22	0.53
3:L5:150:U:OP2	12:LG:200:THR:OG1	2.23	0.53
27:LW:19:ARG:NH2	27:LW:37:GLU:OE2	2.42	0.53
69:SG:49:VAL:HB	69:SG:115:LYS:HG2	1.90	0.53
77:SW:3:ARG:HH22	77:SW:28:ARG:HH21	1.56	0.53
78:SX:105:PHE:CD1	78:SX:121:LYS:HB3	2.43	0.53
3:L5:4775:C:H41	3:L5:4859:C:H42	1.56	0.53
10:LE:161:ARG:NH1	10:LE:273:SER:OG	2.42	0.53
25:LU:23:LEU:HD23	25:LU:110:TYR:HB2	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:SG:116:LYS:HE3	69:SG:125:THR:HG21	1.90	0.53
77:SW:30:CYS:SG	77:SW:31:SER:N	2.81	0.53
83:S2:28:U:H2'	83:S2:29:G:H8	1.72	0.53
83:S2:528:A:H2'	83:S2:529:A:C8	2.44	0.53
83:S2:671:A:H4'	83:S2:672:A:H5"	1.91	0.53
83:S2:1347:U:H2'	83:S2:1348:G:N3	2.24	0.53
3:L5:1327:C:H2'	3:L5:1328:G:C8	2.43	0.53
10:LE:243:THR:HG22	10:LE:245:GLN:H	1.74	0.53
19:LO:186:GLU:OE1	19:LO:186:GLU:N	2.42	0.53
56:SR:60:ARG:HA	56:SR:63:ARG:HG2	1.91	0.53
83:S2:1115:U:O2'	83:S2:1117:C:OP2	2.24	0.53
3:L5:1700:G:H5"	3:L5:1704:C:H42	1.74	0.53
7:LB:14:LEU:HD22	7:LB:17:LEU:HD11	1.91	0.53
7:LB:165:HIS:HB3	7:LB:180:LEU:HD23	1.90	0.53
10:LE:91:THR:HA	10:LE:108:LYS:HA	1.90	0.53
31:La:84:GLU:OE1	31:La:87:ARG:NH2	2.41	0.53
66:SB:167:LYS:O	66:SB:171:ILE:HG12	2.08	0.53
67:SC:196:ILE:HB	67:SC:223:TYR:HB2	1.89	0.53
83:S2:656:G:N2	83:S2:663:C:H5"	2.24	0.53
2:Et:2:C:H2'	2:Et:3:C:C6	2.44	0.52
3:L5:1094:G:O6	3:L5:1201:U:O2	2.27	0.52
3:L5:1503:A:H4'	3:L5:1504:G:H5'	1.92	0.52
3:L5:1552:G:O2'	3:L5:1574:G:N2	2.31	0.52
3:L5:2588:C:OP1	3:L5:2768:C:O2'	2.22	0.52
3:L5:4163:U:H5'	3:L5:4164:C:H5"	1.91	0.52
3:L5:4305:G:N7	24:LT:87:LYS:NZ	2.50	0.52
12:LG:209:SER:HA	12:LG:212:LYS:HG3	1.91	0.52
54:SP:115:TYR:OH	83:S2:1620:A:OP1	2.25	0.52
58:ST:96:SER:OG	83:S2:1568:C:OP1	2.27	0.52
62:Sd:14:PHE:HB2	83:S2:1661:A:H8	1.75	0.52
70:SH:30:LEU:O	70:SH:33:ASN:ND2	2.42	0.52
1:Pt:35:A:OP2	55:SQ:146:ARG:NH2	2.42	0.52
3:L5:1306:C:H2'	3:L5:1307:A:H8	1.74	0.52
3:L5:2411:C:H2'	3:L5:2412:A:C8	2.44	0.52
3:L5:4260:U:H2'	3:L5:4261:C:C6	2.45	0.52
7:LB:50:LYS:HB2	7:LB:345:LEU:HD11	1.91	0.52
27:LW:7:SER:OG	27:LW:8:PHE:N	2.43	0.52
81:Sb:68:GLY:O	83:S2:928:G:N2	2.39	0.52
83:S2:543:C:H3'	83:S2:544:G:H8	1.74	0.52
83:S2:1337:4AC:H2'	83:S2:1338:G:C8	2.44	0.52
3:L5:1577:G:O2'	3:L5:1612:G:H4'	2.08	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:2832:A:OP1	34:Ld:47:LYS:NZ	2.33	0.52
3:L5:4122:G:O2'	30:LZ:136:PHE:OXT	2.23	0.52
23:LS:5:GLY:O	23:LS:111:ARG:NH2	2.42	0.52
68:SE:31:PRO:HA	68:SE:81:THR:HB	1.91	0.52
69:SG:132:ARG:NH2	83:S2:152:U:O4'	2.42	0.52
79:SY:21:LYS:HE2	79:SY:75:ILE:HD11	1.91	0.52
83:S2:1324:G:HO2'	83:S2:1510:G:HO2'	1.54	0.52
3:L5:1857:C:H2'	3:L5:1858:A:C8	2.45	0.52
3:L5:2706:G:N7	84:CI:78:HIS:NE2	2.57	0.52
3:L5:2765:A:H2'	3:L5:2766:A:C8	2.44	0.52
3:L5:4967:A:H2'	3:L5:4968:A:C8	2.45	0.52
13:LH:187:VAL:HG12	13:LH:188:GLN:HG3	1.91	0.52
19:LO:168:TYR:CE2	19:LO:172:LYS:HD2	2.44	0.52
26:LV:112:MET:SD	26:LV:135:ASN:ND2	2.75	0.52
36:Lf:78:HIS:HB3	36:Lf:83:MET:HB3	1.92	0.52
77:SW:57:ARG:HG2	83:S2:920:A:H4'	1.92	0.52
83:S2:1203:G:H2'	83:S2:1204:A:H8	1.75	0.52
3:L5:3717:A:H2'	3:L5:3718:A2M:C8	2.39	0.52
7:LB:29:VAL:HG12	7:LB:31:SER:H	1.75	0.52
55:SQ:80:GLN:O	55:SQ:84:ILE:HG13	2.10	0.52
55:SQ:139:ALA:HB2	83:S2:1650:A:H5"	1.90	0.52
59:SU:80:PHE:HB3	62:Sd:52:PHE:HB3	1.91	0.52
62:Sd:2:GLY:N	83:S2:1271:C:O2	2.42	0.52
83:S2:1101:U:H2'	83:S2:1102:G:H8	1.74	0.52
83:S2:1736:G:H2'	83:S2:1737:G:C8	2.44	0.52
3:L5:93:G:H2'	3:L5:94:A:C8	2.45	0.52
3:L5:2583:C:OP2	37:Lg:76:ARG:NH1	2.40	0.52
3:L5:3932:U:H2'	3:L5:3933:G:H8	1.74	0.52
3:L5:4537:C:H2'	3:L5:4538:G:H8	1.74	0.52
9:LD:120:GLU:O	9:LD:248:ARG:NH1	2.43	0.52
19:LO:54:TYR:OH	19:LO:73:PHE:O	2.27	0.52
55:SQ:53:GLU:OE1	55:SQ:85:ARG:NH2	2.43	0.52
59:SU:40:ILE:O	59:SU:44:LYS:HG2	2.10	0.52
69:SG:147:LEU:HD12	69:SG:151:ASP:HB2	1.91	0.52
83:S2:1829:G:H1'	83:S2:1850:MA6:H2	1.90	0.52
2:Et:23:A:H2'	2:Et:24:G:C8	2.43	0.52
3:L5:2018:C:H2'	3:L5:2019:C:C6	2.44	0.52
3:L5:2543:A:H2	3:L5:2773:G:H22	1.58	0.52
3:L5:4991:U:H2'	3:L5:4992:G:H8	1.75	0.52
51:SF:40:ALA:HB3	51:SF:67:PRO:HA	1.91	0.52
52:SK:85:LEU:HD12	52:SK:86:PRO:HD2	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:S2:1348:G:H2'	83:S2:1349:G:H8	1.75	0.52
83:S2:1773:C:H2'	83:S2:1774:C:H5"	1.92	0.52
3:L5:717:U:H2'	3:L5:718:C:C6	2.45	0.52
3:L5:4301:U:OP2	3:L5:4303:C:N4	2.42	0.52
33:Lc:47:ILE:HD12	33:Lc:94:LEU:HD11	1.92	0.52
49:Lt:82:ILE:HG12	49:Lt:137:GLN:HG2	1.92	0.52
50:SD:142:LEU:HD13	50:SD:150:MET:HE2	1.91	0.52
56:SR:29:HIS:CD2	64:Sg:36:ARG:HH21	2.28	0.52
58:ST:83:GLN:OE1	58:ST:93:SER:OG	2.21	0.52
64:Sg:205:SER:HA	64:Sg:221:LEU:HB2	1.91	0.52
65:SA:18:PHE:HD1	65:SA:23:THR:HG21	1.74	0.52
68:SE:208:VAL:HG11	68:SE:225:ILE:HG13	1.91	0.52
77:SW:6:VAL:HG12	77:SW:34:ILE:HD11	1.92	0.52
83:S2:106:C:OP1	83:S2:431:G:O2'	2.25	0.52
3:L5:1942:A:N3	3:L5:4432:C:O2'	2.40	0.52
3:L5:4188:U:H2'	3:L5:4189:U:C6	2.45	0.52
3:L5:4589:A:N1	3:L5:4621:C:O2'	2.38	0.52
5:L8:141:C:H2'	5:L8:142:U:C6	2.45	0.52
50:SD:114:ALA:HB3	50:SD:117:ARG:HG3	1.90	0.52
53:SM:96:ARG:NH2	53:SM:100:PRO:O	2.43	0.52
61:Sc:29:GLN:NE2	61:Sc:66:ARG:O	2.36	0.52
63:Sf:102:VAL:HG22	63:Sf:104:LYS:HG2	1.90	0.52
63:Sf:107:LYS:NZ	63:Sf:108:VAL:O	2.42	0.52
71:SI:49:ARG:HE	83:S2:446:G:H5"	1.75	0.52
74:SN:14:SER:HB3	83:S2:1016:U:H5"	1.92	0.52
3:L5:2520:C:H2'	3:L5:2521:G:H8	1.75	0.52
3:L5:2846:G:O2'	26:LV:19:GLY:O	2.27	0.52
3:L5:4991:U:H2'	3:L5:4992:G:C8	2.46	0.52
22:LR:127:VAL:HG12	22:LR:132:PHE:HD2	1.75	0.52
26:LV:92:ASP:O	27:LW:2:LYS:NZ	2.43	0.52
51:SF:59:LYS:HB3	51:SF:62:ARG:HG3	1.92	0.52
52:SK:31:LYS:NZ	52:SK:40:VAL:H	2.08	0.52
55:SQ:100:VAL:HG22	55:SQ:101:ASP:H	1.75	0.52
64:Sg:129:ILE:HB	64:Sg:142:VAL:HB	1.92	0.52
64:Sg:129:ILE:O	64:Sg:142:VAL:N	2.40	0.52
64:Sg:208:ALA:HB2	64:Sg:218:LEU:HD13	1.92	0.52
72:SJ:29:LEU:HD23	82:Se:41:ARG:HD2	1.92	0.52
79:SY:76:TYR:OH	79:SY:86:GLU:OE1	2.19	0.52
83:S2:1533:A:H2	83:S2:1536:G:N3	2.08	0.52
3:L5:1333:A:H2'	3:L5:1334:A:C8	2.45	0.51
3:L5:1514:U:H2'	3:L5:1515:A:C8	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:2521:G:H4'	37:Lg:26:PRO:HD2	1.92	0.51
3:L5:2749:C:H2'	3:L5:2750:G:H8	1.74	0.51
3:L5:3697:U:H5"	3:L5:3698:G:H5'	1.92	0.51
3:L5:4761:G:H2'	3:L5:4762:A:C8	2.45	0.51
5:L8:67:U:H2'	5:L8:68:G:C8	2.45	0.51
19:LO:180:GLN:NE2	19:LO:184:ASN:OD1	2.43	0.51
42:Ll:28:ARG:HA	42:Ll:33:ASN:ND2	2.25	0.51
57:SS:5:ILE:N	60:SZ:50:PHE:O	2.40	0.51
79:SY:34:THR:O	83:S2:570:C:O2'	2.19	0.51
83:S2:1360:U:O2'	83:S2:1379:A:OP2	2.25	0.51
3:L5:2749:C:H2'	3:L5:2750:G:C8	2.45	0.51
3:L5:4246:G:H2'	3:L5:4247:G:H8	1.75	0.51
11:LF:41:MET:HE2	32:Lb:113:ALA:HB2	1.91	0.51
14:LI:101:LYS:NZ	14:LI:102:MET:O	2.41	0.51
22:LR:25:ASP:OD2	84:CI:72:ARG:NH2	2.38	0.51
83:S2:955:A:N1	83:S2:968:U:O2'	2.40	0.51
3:L5:735:G:H5"	17:LM:70:GLN:HG3	1.93	0.51
3:L5:2021:G:OP1	48:Ls:58:ASN:N	2.38	0.51
7:LB:258:HIS:HA	7:LB:260:ALA:N	2.24	0.51
64:Sg:249:CYS:HB3	64:Sg:258:ILE:HD13	1.93	0.51
69:SG:136:LYS:HB2	83:S2:65:C:H41	1.76	0.51
83:S2:26:U:H2'	83:S2:27:A2M:H8	1.91	0.51
3:L5:3661:G:N7	6:LA:152:SER:OG	2.41	0.51
11:LF:157:ARG:HD2	11:LF:213:LEU:HD23	1.92	0.51
12:LG:180:PRO:HG3	12:LG:219:VAL:HG13	1.93	0.51
22:LR:54:PRO:HG3	84:CI:70:ALA:HB2	1.91	0.51
33:Lc:30:GLY:O	33:Lc:34:THR:OG1	2.25	0.51
51:SF:133:THR:HG22	51:SF:134:VAL:HG23	1.93	0.51
68:SE:125:LYS:O	68:SE:142:HIS:N	2.44	0.51
69:SG:11:GLY:HA2	83:S2:166:A2M:HM'1	1.91	0.51
83:S2:656:G:H21	83:S2:663:C:H5"	1.75	0.51
83:S2:941:C:H2'	83:S2:942:G:H8	1.76	0.51
3:L5:1305:C:OP1	5:L8:7:U:O2'	2.28	0.51
3:L5:2303:C:H5"	35:Le:104:SER:HB3	1.93	0.51
8:LC:293:LEU:O	8:LC:299:GLN:NE2	2.41	0.51
11:LF:96:ARG:HH12	11:LF:224:THR:HG22	1.75	0.51
72:SJ:5:ARG:HB3	83:S2:38:A:H5"	1.93	0.51
1:Pt:33:U:OP2	55:SQ:146:ARG:NH1	2.43	0.51
3:L5:444:G:H2'	3:L5:445:U:C6	2.45	0.51
3:L5:1727:U:OP1	11:LF:131:ASN:ND2	2.43	0.51
3:L5:3911:C:H2'	3:L5:3912:U:H6	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:LC:110:ARG:O	8:LC:113:ARG:NH1	2.39	0.51
57:SS:39:ARG:NH1	58:ST:36:THR:O	2.40	0.51
69:SG:3:LEU:HD23	69:SG:109:LEU:HB3	1.91	0.51
83:S2:693:A:H2'	83:S2:694:G:C8	2.45	0.51
83:S2:996:A:H2'	83:S2:997:A:C8	2.46	0.51
3:L5:267:G:OP1	38:Lh:109:ARG:NH2	2.43	0.51
3:L5:2045:G:O6	3:L5:3870:C:O2'	2.29	0.51
3:L5:3720:G:H22	3:L5:3733:A:H2	1.59	0.51
3:L5:5064:G:N2	20:LP:75:GLN:HE22	2.08	0.51
65:SA:126:ASP:OD1	65:SA:165:ASN:ND2	2.43	0.51
79:SY:11:LYS:HB2	79:SY:24:VAL:HG12	1.93	0.51
83:S2:888:U:O2'	83:S2:898:U:N3	2.43	0.51
3:L5:965:G:H21	3:L5:2092:G:H1'	1.76	0.51
6:LA:206:PRO:HG3	6:LA:213:GLY:HA3	1.93	0.51
26:LV:87:SER:OG	27:LW:19:ARG:NH1	2.44	0.51
62:Sd:8:TRP:HZ3	83:S2:1512:C:H5"	1.75	0.51
69:SG:7:PHE:HD1	69:SG:113:ILE:HB	1.74	0.51
75:SO:113:GLN:OE1	80:Sa:46:GLU:N	2.42	0.51
3:L5:729:G:H5"	11:LF:76:ARG:HD2	1.93	0.51
3:L5:1973:G:O2'	49:Lt:117:ARG:NH2	2.44	0.51
3:L5:1998:A:N6	48:Ls:40:MET:SD	2.84	0.51
7:LB:92:TYR:HB3	7:LB:99:LEU:HD22	1.92	0.51
14:LI:207:ASP:OD1	14:LI:210:ARG:NH1	2.44	0.51
25:LU:114:TYR:CD2	84:CI:50:MET:HG3	2.46	0.51
55:SQ:130:LYS:NZ	55:SQ:131:LYS:O	2.42	0.51
62:Sd:7:TYR:OH	83:S2:1274:G:N7	2.39	0.51
70:SH:162:GLN:HE22	70:SH:166:VAL:HB	1.75	0.51
1:Pt:50:U:O2	1:Pt:64:G:N2	2.24	0.51
3:L5:493:G:HO2'	3:L5:494:U:P	2.34	0.51
3:L5:2101:C:H2'	3:L5:2102:G:C8	2.45	0.51
3:L5:2296:G:O2'	8:LC:242:PRO:O	2.25	0.51
3:L5:4088:C:H2'	3:L5:4089:G:C8	2.46	0.51
3:L5:4986:G:H1'	7:LB:174:ARG:HH21	1.75	0.51
45:Lo:33:LEU:HA	45:Lo:38:LYS:HG2	1.92	0.51
72:SJ:136:ARG:HD3	72:SJ:160:SER:HA	1.92	0.51
83:S2:1144:A:H2'	83:S2:1145:A:C8	2.46	0.51
3:L5:1396:G:O2'	3:L5:1468:C:O2'	2.23	0.50
3:L5:2275:G:H2'	3:L5:2276:A:C8	2.46	0.50
3:L5:3659:G:OP1	6:LA:241:ARG:NH1	2.44	0.50
3:L5:4238:G:H2'	3:L5:4239:A:H8	1.76	0.50
12:LG:157:ILE:HA	12:LG:201:THR:HG22	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:ST:65:TYR:HE1	58:ST:128:GLN:HG3	1.75	0.50
68:SE:204:SER:OG	68:SE:205:PHE:N	2.43	0.50
79:SY:102:THR:OG1	79:SY:106:GLN:OE1	2.29	0.50
81:Sb:67:THR:OG1	81:Sb:70:LYS:O	2.20	0.50
83:S2:1845:A:H2'	83:S2:1846:G:H8	1.76	0.50
1:Pt:56:C:O4'	15:LJ:64:ARG:NE	2.41	0.50
3:L5:303:C:OP2	18:LN:68:ARG:NH2	2.41	0.50
3:L5:1308:C:H2'	3:L5:1309:C:C6	2.46	0.50
3:L5:1339:U:H2'	3:L5:1340:OMC:C6	2.46	0.50
3:L5:2765:A:H2'	3:L5:2766:A:H8	1.75	0.50
3:L5:3848:U:H2'	3:L5:3849:A:H8	1.77	0.50
3:L5:4239:A:H2'	3:L5:4240:G:C8	2.46	0.50
3:L5:4419:U:OP1	3:L5:4475:G:N2	2.43	0.50
83:S2:436:OMG:OP2	83:S2:471:G:O2'	2.25	0.50
83:S2:1372:U:OP1	83:S2:1385:G:N2	2.37	0.50
2:Et:37:A:H3'	2:Et:38:A:H8	1.76	0.50
3:L5:173:C:OP1	16:LL:129:ARG:NH1	2.44	0.50
3:L5:679:C:H2'	3:L5:680:G:C8	2.45	0.50
3:L5:730:G:OP2	11:LF:76:ARG:NE	2.41	0.50
3:L5:1628:C:OP1	6:LA:14:SER:OG	2.30	0.50
3:L5:1645:C:H2'	3:L5:1646:A:C8	2.45	0.50
3:L5:3732:A:H2'	3:L5:3733:A:C8	2.47	0.50
3:L5:4088:C:H2'	3:L5:4089:G:H8	1.76	0.50
3:L5:4537:C:H2'	3:L5:4538:G:C8	2.45	0.50
21:LQ:32:TYR:HD2	21:LQ:51:LEU:HD11	1.76	0.50
23:LS:161:ARG:HD2	23:LS:164:LYS:HB2	1.93	0.50
62:Sd:17:GLY:O	62:Sd:27:ARG:NH1	2.44	0.50
67:SC:78:LEU:HD12	67:SC:81:ILE:HD12	1.93	0.50
74:SN:66:VAL:HG13	74:SN:67:THR:HG23	1.93	0.50
3:L5:729:G:O6	23:LS:70:LYS:NZ	2.44	0.50
5:L8:39:G:OP1	38:Lh:86:LYS:NZ	2.44	0.50
7:LB:217:ILE:HD12	7:LB:347:LEU:HB3	1.92	0.50
11:LF:214:SER:OG	11:LF:215:SER:N	2.42	0.50
51:SF:26:ASP:OD1	51:SF:26:ASP:N	2.45	0.50
53:SM:51:VAL:HG12	53:SM:77:ILE:HB	1.93	0.50
63:Sf:123:SER:HG	63:Sf:126:CYS:H	1.59	0.50
83:S2:1595:U:H2'	83:S2:1596:U:C6	2.47	0.50
3:L5:1194:G:H2'	3:L5:1195:G:H8	1.76	0.50
3:L5:1760:G:N2	3:L5:1761:G:O6	2.45	0.50
59:SU:20:ILE:HG22	59:SU:116:ILE:HG22	1.92	0.50
71:SI:10:LYS:NZ	83:S2:370:G:O2'	2.44	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:SX:52:LEU:HD11	78:SX:73:GLN:HB2	1.93	0.50
82:Se:56:ASN:ND2	83:S2:606:G:O4'	2.43	0.50
83:S2:1226:G:N1	83:S2:1639:G7M:OP2	2.37	0.50
83:S2:1277:C:H2'	83:S2:1278:A:C8	2.45	0.50
1:Pt:23:C:H2'	1:Pt:24:A:H8	1.77	0.50
3:L5:1601:A:OP1	40:Lj:5:THR:OG1	2.22	0.50
3:L5:3886:G:OP1	19:LO:85:ARG:NH2	2.44	0.50
3:L5:3898:G:H5'	7:LB:254:ILE:HG13	1.94	0.50
3:L5:4887:C:H42	3:L5:4932:U:H3	1.60	0.50
19:LO:54:TYR:CD1	19:LO:145:VAL:HG21	2.46	0.50
31:La:36:GLY:HA3	31:La:40:HIS:CE1	2.47	0.50
51:SF:34:SER:HA	61:Sc:55:VAL:HG23	1.94	0.50
83:S2:907:G:H2'	83:S2:908:A:C8	2.46	0.50
3:L5:502:C:H3'	3:L5:503:C:H3'	1.94	0.50
3:L5:1867:A:H2'	3:L5:1868:A:C8	2.47	0.50
3:L5:2298:U:OP1	8:LC:204:ARG:NE	2.45	0.50
3:L5:2756:G:O6	30:LZ:51:ARG:NH2	2.30	0.50
3:L5:4149:C:OP1	30:LZ:59:LYS:N	2.43	0.50
6:LA:118:GLU:OE2	6:LA:156:LYS:NZ	2.45	0.50
69:SG:31:ARG:NH1	83:S2:1745:A:O3'	2.44	0.50
71:SI:98:LYS:HG3	71:SI:178:ARG:HG2	1.94	0.50
77:SW:4:MET:SD	83:S2:682:U:O2'	2.65	0.50
83:S2:942:G:H2'	83:S2:943:U:C6	2.47	0.50
83:S2:1731:A:H2'	83:S2:1732:G:C8	2.46	0.50
3:L5:500:G:OP1	3:L5:504:G:N2	2.45	0.50
3:L5:1459:A:OP1	21:LQ:65:ARG:NH1	2.44	0.50
3:L5:4459:U:H2'	3:L5:4460:U:C6	2.47	0.50
3:L5:4759:C:O2	19:LO:165:LYS:NZ	2.38	0.50
60:SZ:106:GLN:HG3	60:SZ:108:ILE:HD11	1.93	0.50
83:S2:149:A:H3'	83:S2:150:A:H8	1.77	0.50
83:S2:980:A:H2'	83:S2:981:A:C8	2.47	0.50
83:S2:1758:G:O6	83:S2:1772:C:N4	2.45	0.50
1:Pt:73:A:N3	14:LI:110:ARG:NH1	2.60	0.50
3:L5:1317:U:H2'	3:L5:1318:C:C6	2.46	0.50
3:L5:1320:U:O2'	3:L5:1891:A:N1	2.41	0.50
3:L5:1984:A:N6	3:L5:2010:A:O2'	2.44	0.50
3:L5:2539:C:H2'	3:L5:2540:C:C6	2.47	0.50
3:L5:4601:U:H2'	3:L5:4602:A:H8	1.77	0.50
7:LB:86:VAL:HG12	7:LB:201:LEU:HD23	1.94	0.50
55:SQ:98:LYS:O	64:Sg:57:ARG:NH1	2.37	0.50
83:S2:484:A2M:H8	83:S2:484:A2M:O5'	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Pt:23:C:H2'	1:Pt:24:A:C8	2.47	0.49
3:L5:519:C:H1'	3:L5:643:C:C2	2.47	0.49
3:L5:691:C:H2'	3:L5:692:A:C8	2.47	0.49
3:L5:1364:U:OP2	16:LL:36:ARG:NH2	2.29	0.49
3:L5:1413:C:H2'	3:L5:1414:C:C6	2.46	0.49
3:L5:4153:C:H5"	28:LX:38:LYS:HD2	1.93	0.49
3:L5:4489:G:H4'	87:L5:5290:SPD:H91	1.94	0.49
83:S2:751:G:H1'	83:S2:793:G:H21	1.77	0.49
83:S2:1801:A:H2'	83:S2:1802:C:C6	2.47	0.49
3:L5:382:G:N1	3:L5:385:A:OP2	2.40	0.49
3:L5:1669:A:H4'	3:L5:1685:G:N2	2.27	0.49
3:L5:2049:G:HO2'	3:L5:3884:PSU:HO2'	1.56	0.49
3:L5:4347:G:H2'	3:L5:4348:A:C8	2.47	0.49
3:L5:4582:C:O2'	7:LB:99:LEU:O	2.26	0.49
9:LD:211:LEU:HB3	9:LD:219:TYR:HB2	1.94	0.49
16:LL:46:ILE:HB	16:LL:49:ARG:HB2	1.94	0.49
16:LL:111:GLN:O	16:LL:115:GLN:HG2	2.13	0.49
34:Ld:24:GLU:OE2	34:Ld:87:ARG:NH2	2.40	0.49
58:ST:62:ARG:NH2	83:S2:1543:U:OP2	2.40	0.49
62:Sd:54:LYS:NZ	83:S2:1482:C:OP1	2.44	0.49
63:Sf:124:ASP:OD1	63:Sf:124:ASP:N	2.44	0.49
69:SG:135:PRO:HA	83:S2:169:U:H5"	1.94	0.49
71:SI:141:ARG:NH2	83:S2:192:C:OP2	2.45	0.49
83:S2:1129:G:H3'	83:S2:1130:G:H21	1.76	0.49
3:L5:500:G:H1'	3:L5:504:G:H3'	1.93	0.49
3:L5:1824:G:H2'	3:L5:1825:A:C8	2.47	0.49
3:L5:2614:C:O2'	3:L5:2808:G:OP1	2.28	0.49
3:L5:4095:G:N7	3:L5:4096:C:N4	2.60	0.49
3:L5:4260:U:H2'	3:L5:4261:C:H6	1.77	0.49
7:LB:161:ARG:HG2	7:LB:184:GLN:HA	1.95	0.49
27:LW:7:SER:HB2	27:LW:13:ILE:HD11	1.95	0.49
48:Ls:29:ILE:HG22	48:Ls:88:PHE:CD1	2.48	0.49
49:Lt:11:LYS:HG3	49:Lt:13:VAL:HG23	1.94	0.49
50:SD:77:PHE:HB2	50:SD:79:PHE:CE1	2.48	0.49
51:SF:18:LYS:HD2	51:SF:22:LYS:HA	1.94	0.49
52:SK:27:VAL:HB	52:SK:43:LEU:HD12	1.94	0.49
55:SQ:15:ARG:HH22	83:S2:1444:U:P	2.35	0.49
58:ST:74:SER:O	58:ST:78:ILE:HD12	2.12	0.49
68:SE:124:CYS:HB3	68:SE:141:THR:HB	1.93	0.49
78:SX:90:CYS:HA	78:SX:93:PHE:HD2	1.77	0.49
2:Et:43:A:H2'	2:Et:44:G:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:153:G:H2'	3:L5:154:G:H8	1.77	0.49
3:L5:654:C:O3'	8:LC:268:ARG:NH1	2.44	0.49
3:L5:1084:C:H2'	3:L5:1085:C:C6	2.47	0.49
3:L5:1332:C:H2'	3:L5:1333:A:C8	2.47	0.49
3:L5:1509:C:H5''	31:La:2:PRO:HD3	1.94	0.49
3:L5:1734:G:N2	3:L5:1735:U:O4	2.31	0.49
3:L5:2638:G:H22	3:L5:2719:C:P	2.35	0.49
3:L5:4126:C:OP1	12:LG:37:LYS:NZ	2.46	0.49
67:SC:77:SER:OG	67:SC:79:GLU:OE1	2.31	0.49
83:S2:49:C:H2'	83:S2:472:C:H41	1.78	0.49
3:L5:325:U:H2'	3:L5:326:C:C6	2.47	0.49
3:L5:374:G:OP2	40:Lj:56:ARG:NH1	2.38	0.49
3:L5:2459:G:N2	3:L5:2462:C:OP2	2.38	0.49
3:L5:3736:A:H2'	3:L5:3737:A:H8	1.78	0.49
10:LE:223:ARG:NH2	10:LE:236:GLU:O	2.46	0.49
49:Lt:114:ARG:NH2	49:Lt:162:CYS:SG	2.86	0.49
63:Sf:117:LEU:HD12	63:Sf:118:ARG:HD3	1.94	0.49
65:SA:184:ARG:HG2	65:SA:189:ILE:HB	1.94	0.49
69:SG:172:LYS:NZ	83:S2:67:C:OP2	2.40	0.49
79:SY:108:LYS:NZ	83:S2:506:G:OP1	2.42	0.49
83:S2:57:U:OP1	83:S2:504:G:O2'	2.29	0.49
83:S2:1652:G:H1	83:S2:1672:U:H3	1.58	0.49
2:Et:13:C:H2'	2:Et:14:A:H8	1.77	0.49
3:L5:158:A:H5''	3:L5:159:C:H2'	1.95	0.49
3:L5:3610:A:H2'	3:L5:3611:A:C8	2.47	0.49
3:L5:3932:U:H2'	3:L5:3933:G:C8	2.47	0.49
4:L7:119:U:C2	9:LD:261:VAL:HG11	2.47	0.49
41:Lk:24:LYS:HB2	41:Lk:35:LYS:HB2	1.95	0.49
48:Ls:134:LYS:HD2	48:Ls:137:PHE:HE2	1.78	0.49
57:SS:145:THR:OG1	83:S2:1523:C:OP1	2.27	0.49
58:ST:104:LEU:HD22	58:ST:121:ARG:HD2	1.94	0.49
58:ST:121:ARG:HH21	83:S2:1563:G:H5''	1.77	0.49
59:SU:19:ARG:HB3	59:SU:92:HIS:CE1	2.47	0.49
64:Sg:63:SER:HB2	83:S2:1398:G:H1'	1.94	0.49
70:SH:39:GLN:HG3	70:SH:75:ILE:HG21	1.95	0.49
78:SX:17:ARG:HH22	83:S2:659:G:H21	1.61	0.49
83:S2:1098:C:H2'	83:S2:1099:G:C8	2.48	0.49
83:S2:1201:U:H2'	83:S2:1202:U:C6	2.48	0.49
83:S2:1221:G:H2'	83:S2:1222:G:C8	2.48	0.49
3:L5:318:A:H2'	3:L5:319:A:C8	2.48	0.49
3:L5:1461:C:H2'	3:L5:1462:A:C8	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:1494:U:H2'	3:L5:1495:G:H8	1.76	0.49
3:L5:2870:A:H2'	3:L5:2871:A:C8	2.48	0.49
7:LB:393:LYS:HG3	7:LB:396:ARG:HH21	1.77	0.49
55:SQ:110:ASP:N	55:SQ:110:ASP:OD1	2.44	0.49
63:Sf:103:LEU:HB2	63:Sf:105:TYR:CE2	2.47	0.49
65:SA:22:GLY:O	65:SA:24:HIS:ND1	2.45	0.49
83:S2:1101:U:H2'	83:S2:1102:G:C8	2.48	0.49
83:S2:1568:C:H2'	83:S2:1569:A:C8	2.47	0.49
3:L5:1070:G:O2'	3:L5:1071:C:O5'	2.29	0.49
3:L5:1802:A:H5"	3:L5:1803:G:H5'	1.93	0.49
3:L5:2492:C:H2'	3:L5:2493:G:H8	1.77	0.49
9:LD:108:ARG:CZ	9:LD:253:TYR:HB2	2.43	0.49
10:LE:161:ARG:O	10:LE:182:ASN:ND2	2.46	0.49
26:LV:37:LEU:HD23	26:LV:65:VAL:HG12	1.94	0.49
78:SX:22:TRP:NE1	83:S2:359:U:OP1	2.41	0.49
2:Et:32:C:H5'	51:SF:134:VAL:HG13	1.94	0.49
3:L5:1503:A:H1'	3:L5:1504:G:C8	2.48	0.49
3:L5:4763:U:O2'	23:LS:174:THR:OG1	2.25	0.49
15:LJ:95:ARG:HD3	15:LJ:175:LEU:HB2	1.95	0.49
55:SQ:97:GLN:HB2	55:SQ:105:LYS:HG3	1.93	0.49
71:SI:10:LYS:O	71:SI:18:ARG:NH1	2.46	0.49
83:S2:107:A:H2'	83:S2:108:G:C8	2.48	0.49
83:S2:639:C:H2'	83:S2:640:A:C8	2.48	0.49
3:L5:424:U:H2'	3:L5:425:U:C6	2.47	0.49
3:L5:4966:A:H5"	7:LB:128:LYS:HG3	1.95	0.49
5:L8:19:C:H2'	5:L8:20:A:C8	2.47	0.49
9:LD:217:ASP:N	9:LD:217:ASP:OD1	2.41	0.49
10:LE:186:LEU:N	10:LE:250:GLN:OE1	2.44	0.49
12:LG:143:VAL:HG22	12:LG:203:ALA:HB2	1.95	0.49
35:Le:99:ILE:HD13	35:Le:108:ARG:HB2	1.94	0.49
83:S2:51:U:H2'	83:S2:52:G:H8	1.77	0.49
83:S2:595:U:H2'	83:S2:596:U:C6	2.48	0.49
3:L5:1662:C:H2'	3:L5:1663:C:C6	2.48	0.48
3:L5:4638:U:OP1	3:L5:5044:A:O2'	2.30	0.48
57:SS:46:ARG:NH1	58:ST:50:GLU:OE2	2.45	0.48
58:ST:44:GLU:HG3	58:ST:45:LEU:HD12	1.95	0.48
68:SE:212:ASP:OD1	68:SE:216:ASN:N	2.46	0.48
69:SG:191:ARG:HH12	83:S2:312:G:H2'	1.77	0.48
70:SH:30:LEU:HG	70:SH:33:ASN:HD22	1.78	0.48
71:SI:98:LYS:HB3	83:S2:377:G:H5'	1.94	0.48
72:SJ:40:LYS:NZ	83:S2:641:A:OP1	2.34	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:S2:118:C:H1'	83:S2:445:A:C5	2.48	0.48
83:S2:414:A:H2'	83:S2:415:A:H8	1.78	0.48
83:S2:553:U:O4	83:S2:554:A:N6	2.43	0.48
83:S2:866:PSU:H2'	83:S2:867:OMG:C8	2.48	0.48
3:L5:387:G:O2'	3:L5:412:G:N1	2.36	0.48
3:L5:4095:G:H2'	3:L5:4096:C:C6	2.48	0.48
7:LB:220:ILE:HB	7:LB:346:THR:HB	1.96	0.48
21:LQ:151:HIS:ND1	21:LQ:164:LYS:O	2.44	0.48
34:Ld:22:THR:HG23	34:Ld:122:VAL:HG13	1.94	0.48
50:SD:51:LEU:HD12	50:SD:91:VAL:HG12	1.94	0.48
50:SD:160:SER:OG	83:S2:1386:A:OP2	2.27	0.48
82:Se:41:ARG:HG3	82:Se:42:PHE:CD1	2.48	0.48
83:S2:1240:A:N3	83:S2:1267:C:O2'	2.37	0.48
83:S2:1393:G:H2'	83:S2:1394:G:C8	2.47	0.48
3:L5:495:C:H2'	3:L5:496:G:C8	2.49	0.48
3:L5:1270:A:H8	3:L5:2106:G:H21	1.60	0.48
3:L5:1558:A:H2'	3:L5:1559:G:H8	1.79	0.48
3:L5:1837:A:OP2	24:LT:130:ARG:NH1	2.43	0.48
3:L5:2407:G:H2'	42:Ll:13:LEU:HD22	1.96	0.48
3:L5:2743:A:H2'	3:L5:2744:A:C8	2.48	0.48
3:L5:2803:U:H2'	3:L5:2804:OMC:H6	1.79	0.48
3:L5:3689:G:O2'	3:L5:3818:UY1:OP2	2.28	0.48
11:LF:171:ASP:OD1	11:LF:172:ASN:N	2.46	0.48
63:Sf:108:VAL:HG12	63:Sf:114:ILE:HA	1.95	0.48
68:SE:100:ARG:NH2	68:SE:118:GLU:OE2	2.46	0.48
70:SH:53:VAL:HG12	70:SH:175:GLY:HA3	1.95	0.48
83:S2:525:A:H2'	83:S2:526:A:H8	1.79	0.48
83:S2:1779:G:H2'	83:S2:1780:G:C8	2.48	0.48
3:L5:2638:G:N1	3:L5:2718:U:H2'	2.28	0.48
3:L5:3777:G:O2'	3:L5:3815:G:O6	2.27	0.48
5:L8:39:G:O2'	5:L8:104:A:N1	2.43	0.48
7:LB:85:VAL:HG22	7:LB:204:GLN:HG2	1.95	0.48
12:LG:57:TRP:O	12:LG:62:ARG:NH1	2.46	0.48
49:Lt:22:VAL:HA	49:Lt:48:LYS:HG2	1.95	0.48
53:SM:82:ASN:OD1	53:SM:83:LYS:N	2.46	0.48
57:SS:121:ARG:HG3	57:SS:131:VAL:HB	1.94	0.48
58:ST:60:THR:HG22	58:ST:75:MET:HE2	1.95	0.48
72:SJ:60:LEU:HD22	72:SJ:70:ARG:HA	1.96	0.48
72:SJ:142:VAL:HG12	72:SJ:144:ILE:H	1.77	0.48
72:SJ:162:ARG:NH1	83:S2:582:U:OP1	2.46	0.48
83:S2:1457:U:H2'	83:S2:1458:G:H8	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:498:C:C4	3:L5:499:G:H1'	2.48	0.48
3:L5:1398:A:N1	3:L5:1419:G:O2'	2.44	0.48
3:L5:1993:C:H2'	3:L5:1994:C:C6	2.49	0.48
3:L5:2626:U:O4	25:LU:97:ARG:NH1	2.47	0.48
3:L5:3867:A2M:H8	3:L5:3867:A2M:H5"	1.94	0.48
3:L5:4636:PSU:N1	34:Ld:79:ASN:OD1	2.46	0.48
13:LH:4:ILE:HG12	13:LH:61:TRP:CH2	2.49	0.48
18:LN:46:ASP:OD1	18:LN:47:LYS:N	2.45	0.48
32:Lb:65:MET:HG3	32:Lb:68:ARG:HH12	1.78	0.48
34:Ld:54:MET:HE3	34:Ld:60:PRO:HA	1.95	0.48
34:Ld:57:MET:HG2	34:Ld:88:LEU:HD23	1.95	0.48
57:SS:137:LYS:NZ	83:S2:1236:G:O6	2.47	0.48
62:Sd:16:GLN:NE2	62:Sd:27:ARG:O	2.45	0.48
65:SA:42:LYS:HD2	65:SA:48:ILE:HD11	1.94	0.48
66:SB:123:ALA:HB2	66:SB:165:ARG:HG2	1.94	0.48
67:SC:259:THR:HG21	76:SV:16:LYS:H	1.78	0.48
68:SE:104:ASP:HB3	68:SE:110:ALA:HB2	1.96	0.48
72:SJ:145:PRO:HD2	83:S2:522:A:H5"	1.95	0.48
79:SY:119:GLY:O	83:S2:84:A:O2'	2.26	0.48
2:Et:55:U:H2'	2:Et:57:A:N7	2.29	0.48
3:L5:684:G:H5"	10:LE:100:LYS:HE3	1.94	0.48
3:L5:2041:A:N7	3:L5:4434:C:O2'	2.45	0.48
3:L5:3717:A:OP2	3:L5:3735:G:N2	2.38	0.48
3:L5:4063:U:H2'	3:L5:4064:C:C6	2.49	0.48
3:L5:4591:U:H2'	3:L5:4592:C:C6	2.48	0.48
3:L5:4743:G:H2'	3:L5:4744:A:C8	2.49	0.48
7:LB:29:VAL:HA	7:LB:220:ILE:HD13	1.96	0.48
8:LC:218:ILE:HA	8:LC:229:LEU:HD22	1.95	0.48
12:LG:150:LYS:NZ	12:LG:177:MET:O	2.43	0.48
13:LH:107:GLU:N	13:LH:107:GLU:OE1	2.47	0.48
29:LY:23:SER:HA	29:LY:26:ARG:HB2	1.95	0.48
60:SZ:42:ASP:OD1	60:SZ:42:ASP:N	2.43	0.48
1:Pt:51:C:H2'	1:Pt:52:G:H8	1.78	0.48
3:L5:369:G:N2	3:L5:372:A:OP2	2.40	0.48
3:L5:441:G:H2'	3:L5:442:G:H8	1.79	0.48
3:L5:711:A:H2'	3:L5:712:C:C6	2.48	0.48
3:L5:1084:C:H2'	3:L5:1085:C:H6	1.77	0.48
3:L5:1326:A2M:HM'3	3:L5:1326:A2M:H1'	1.69	0.48
3:L5:1695:U:O2'	3:L5:1719:A:N3	2.41	0.48
3:L5:4281:A:H2'	3:L5:4282:A:H2'	1.95	0.48
3:L5:4680:G:H2'	3:L5:4681:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:LM:71:LYS:O	17:LM:75:GLN:HG3	2.13	0.48
27:LW:97:LYS:O	27:LW:99:GLU:N	2.45	0.48
58:ST:126:GLN:HB2	58:ST:129:ARG:HH21	1.79	0.48
67:SC:110:MET:HG2	67:SC:125:LYS:HB3	1.95	0.48
73:SL:35:ARG:NH2	73:SL:55:TYR:O	2.47	0.48
83:S2:102:A:H4'	83:S2:104:A:C8	2.49	0.48
3:L5:907:C:H2'	3:L5:908:G:H8	1.79	0.48
3:L5:1175:A:H2	3:L5:1185:G:H1	1.62	0.48
3:L5:1340:OMC:HM23	3:L5:1340:OMC:H1'	1.72	0.48
3:L5:2580:U:O2'	30:LZ:79:HIS:ND1	2.43	0.48
3:L5:4069:U:H2'	3:L5:4070:U:C6	2.48	0.48
14:LI:73:ASN:HB2	14:LI:87:MET:HE1	1.96	0.48
45:Lo:4:VAL:HG23	45:Lo:93:LEU:HD23	1.95	0.48
55:SQ:90:LYS:HA	55:SQ:93:VAL:HG22	1.95	0.48
59:SU:22:ILE:HG23	59:SU:114:VAL:HG22	1.94	0.48
63:Sf:85:TYR:OH	83:S2:1509:U:OP1	2.17	0.48
83:S2:1588:A:H2'	83:S2:1589:A:C8	2.48	0.48
2:Et:22:G:H2'	2:Et:23:A:C8	2.49	0.48
3:L5:4238:G:H2'	3:L5:4239:A:C8	2.48	0.48
3:L5:4476:C:O2'	3:L5:4478:G:OP2	2.27	0.48
22:LR:39:GLN:OE1	22:LR:42:ARG:NH1	2.46	0.48
35:Le:108:ARG:HD2	35:Le:128:ARG:HB2	1.95	0.48
51:SF:168:THR:OG1	60:SZ:106:GLN:OE1	2.24	0.48
56:SR:29:HIS:HA	56:SR:32:LYS:HG2	1.96	0.48
66:SB:23:ASP:N	66:SB:23:ASP:OD1	2.47	0.48
69:SG:227:GLN:HB3	69:SG:231:ARG:HH21	1.79	0.48
83:S2:325:C:N3	83:S2:326:C:O2'	2.46	0.48
3:L5:2295:C:O2'	8:LC:45:ARG:NH2	2.47	0.48
3:L5:3707:U:H2'	3:L5:3708:C:C6	2.49	0.48
3:L5:3910:C:H2'	3:L5:3911:C:H6	1.79	0.48
5:L8:39:G:H1'	5:L8:103:A:N6	2.29	0.48
55:SQ:110:ASP:OD1	55:SQ:111:ILE:HD12	2.14	0.48
57:SS:63:GLU:O	57:SS:67:VAL:HG23	2.14	0.48
3:L5:408:A:O2'	3:L5:411:G:OP2	2.25	0.47
3:L5:1086:C:H2'	3:L5:1087:A:H8	1.78	0.47
3:L5:1733:G:N3	3:L5:4214:A:H2'	2.28	0.47
3:L5:3825:A2M:H2'	3:L5:3826:C:O4'	2.14	0.47
15:LJ:17:ILE:HD12	15:LJ:80:GLU:HG2	1.95	0.47
22:LR:157:ASP:OD1	22:LR:158:GLN:N	2.47	0.47
23:LS:27:LEU:HB3	24:LT:148:PRO:HB3	1.96	0.47
69:SG:190:ARG:NH2	83:S2:334:C:OP2	2.44	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:S2:198:U:H2'	83:S2:199:C:H2'	1.95	0.47
3:L5:85:G:O2'	3:L5:97:G:O6	2.23	0.47
3:L5:2764:A:H2'	3:L5:2765:A:C8	2.49	0.47
3:L5:3664:G:H2'	3:L5:3665:G:C8	2.47	0.47
3:L5:3718:A2M:H2'	3:L5:3719:A:O4'	2.14	0.47
23:LS:15:ARG:HD2	23:LS:25:PRO:HG2	1.96	0.47
26:LV:43:LYS:HE2	26:LV:62:MET:HE3	1.96	0.47
38:Lh:89:ARG:O	38:Lh:93:ARG:HG2	2.15	0.47
51:SF:49:LEU:HD12	51:SF:50:PRO:HD2	1.95	0.47
54:SP:79:HIS:HD2	83:S2:1298:G:C4	2.32	0.47
60:SZ:86:ALA:HA	60:SZ:89:GLN:HE21	1.79	0.47
66:SB:168:MET:HB2	66:SB:197:ILE:HD13	1.96	0.47
78:SX:28:LYS:O	78:SX:32:LEU:HB2	2.13	0.47
83:S2:683:OMG:N1	83:S2:1022:U:OP2	2.38	0.47
83:S2:1004:PSU:H2'	83:S2:1005:G:H8	1.78	0.47
83:S2:1348:G:OP2	83:S2:1348:G:N2	2.43	0.47
3:L5:965:G:N2	3:L5:2092:G:H1'	2.29	0.47
3:L5:1175:A:H2	3:L5:1185:G:H22	1.62	0.47
3:L5:1382:G:OP1	16:LL:66:TYR:OH	2.30	0.47
3:L5:1538:U:H2'	3:L5:1539:G:H8	1.79	0.47
3:L5:1749:A:H2'	3:L5:1750:G:C8	2.49	0.47
3:L5:2808:G:O3'	22:LR:60:ARG:NH1	2.47	0.47
3:L5:4345:C:H2'	3:L5:4346:U:C6	2.49	0.47
16:LL:91:ALA:HB1	16:LL:96:ILE:HB	1.97	0.47
36:Lf:25:THR:HB	36:Lf:87:LYS:HD3	1.96	0.47
57:SS:36:VAL:HG21	57:SS:71:MET:HE3	1.95	0.47
68:SE:153:LEU:O	68:SE:174:LYS:NZ	2.45	0.47
81:Sb:42:LYS:HE3	81:Sb:57:VAL:HG22	1.95	0.47
83:S2:145:G:H2'	83:S2:146:G:C8	2.49	0.47
83:S2:588:G:H4'	83:S2:589:G:H5'	1.96	0.47
83:S2:1130:G:OP2	83:S2:1130:G:N2	2.39	0.47
83:S2:1550:G:O2'	83:S2:1558:C:O2	2.24	0.47
3:L5:1097:C:H2'	3:L5:1098:G:C8	2.50	0.47
3:L5:1818:G:O2'	3:L5:1820:C:OP2	2.27	0.47
3:L5:2029:A:H2'	3:L5:2030:A:C8	2.48	0.47
3:L5:2537:A:OP1	41:Lk:42:LEU:N	2.46	0.47
3:L5:4457:PSU:H1'	7:LB:252:ALA:HB3	1.96	0.47
19:LO:119:VAL:N	23:LS:168:THR:O	2.46	0.47
33:Lc:38:ILE:HD11	33:Lc:46:VAL:HG21	1.95	0.47
64:Sg:239:LEU:HD11	64:Sg:248:LEU:HD21	1.96	0.47
83:S2:962:A:N1	83:S2:1055:A:O2'	2.46	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:S2:993:G:OP1	83:S2:1131:G:N2	2.39	0.47
3:L5:3861:A:H2'	3:L5:3862:A:H8	1.78	0.47
3:L5:3917:A:H2'	3:L5:3918:G:H8	1.79	0.47
27:LW:102:LYS:HA	27:LW:105:ARG:HG2	1.96	0.47
30:LZ:41:ALA:HB2	30:LZ:77:TYR:HE1	1.78	0.47
51:SF:39:ILE:HG23	51:SF:68:ILE:HD13	1.96	0.47
54:SP:134:GLY:H	83:S2:1236:G:H4'	1.80	0.47
70:SH:100:ILE:HG21	70:SH:122:LEU:HD12	1.97	0.47
83:S2:136:C:H5"	83:S2:137:U:H5"	1.97	0.47
83:S2:750:C:O2	83:S2:752:G:C2	2.68	0.47
83:S2:1405:A:H2'	83:S2:1406:G:O4'	2.14	0.47
1:Pt:29:C:H2'	1:Pt:30:G:H8	1.80	0.47
3:L5:7:C:H2'	3:L5:8:U:C6	2.50	0.47
3:L5:64:A:H1'	3:L5:76:A:H1'	1.94	0.47
3:L5:423:G:H21	20:LP:118:GLN:NE2	2.11	0.47
3:L5:3641:U:H5	3:L5:3646:A:N7	2.12	0.47
3:L5:3870:C:H2'	3:L5:3871:A:H8	1.79	0.47
3:L5:4584:A:H2'	3:L5:4585:U:O4'	2.15	0.47
3:L5:4935:C:H2'	3:L5:4936:G:C8	2.50	0.47
6:LA:225:ILE:HG12	6:LA:234:LYS:HA	1.97	0.47
9:LD:66:TYR:HE2	9:LD:68:ARG:HE	1.62	0.47
68:SE:152:PRO:HG2	69:SG:216:ARG:HG3	1.95	0.47
73:SL:133:PRO:O	83:S2:383:G:O2'	2.31	0.47
83:S2:17:C:O2'	83:S2:1194:A:N1	2.43	0.47
83:S2:419:G:N2	83:S2:661:U:O2	2.48	0.47
2:Et:22:G:H2'	2:Et:23:A:H8	1.79	0.47
3:L5:71:C:H1'	16:LL:62:PRO:O	2.15	0.47
3:L5:190:G:H2'	3:L5:191:G:H8	1.80	0.47
3:L5:293:G:OP1	86:L5:5264:SPM:N1	2.36	0.47
3:L5:308:G:O6	18:LN:12:ARG:NH1	2.46	0.47
3:L5:425:U:H4'	20:LP:6:LEU:HD21	1.95	0.47
3:L5:1351:G:O6	21:LQ:55:ARG:NH1	2.46	0.47
3:L5:1414:C:H2'	3:L5:1415:G:C8	2.46	0.47
3:L5:1545:G:H2'	3:L5:1546:C:C6	2.50	0.47
3:L5:1617:G:H1'	3:L5:2513:A:N6	2.30	0.47
3:L5:1670:G:OP1	32:Lb:12:GLN:NE2	2.36	0.47
3:L5:2411:C:H2'	3:L5:2412:A:H8	1.78	0.47
3:L5:3607:U:H2'	3:L5:3608:A:C8	2.50	0.47
3:L5:3708:C:H2'	3:L5:3709:U:C6	2.50	0.47
3:L5:3856:A:H5"	20:LP:83:TRP:O	2.15	0.47
3:L5:3916:G:H2'	3:L5:3917:A:C8	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:4642:U:H2'	3:L5:4643:G:H8	1.79	0.47
3:L5:4717:A:OP2	7:LB:30:LYS:NZ	2.32	0.47
3:L5:4883:C:N4	10:LE:181:LEU:O	2.38	0.47
3:L5:4954:G:H2'	3:L5:4955:A:H8	1.79	0.47
5:L8:30:U:H2'	5:L8:31:G:C8	2.49	0.47
7:LB:27:GLY:HA2	7:LB:276:HIS:CD2	2.50	0.47
7:LB:77:THR:OG1	7:LB:335:GLY:O	2.30	0.47
7:LB:113:GLU:OE2	7:LB:169:ARG:NH1	2.47	0.47
8:LC:141:GLY:O	8:LC:204:ARG:NH1	2.30	0.47
9:LD:179:ARG:HD3	9:LD:179:ARG:HA	1.76	0.47
10:LE:223:ARG:HA	10:LE:224:LYS:HA	1.71	0.47
11:LF:127:LYS:HB2	24:LT:133:ALA:HB3	1.97	0.47
14:LI:36:LEU:HD11	14:LI:69:ARG:HD2	1.97	0.47
16:LL:142:GLU:HA	16:LL:146:LEU:HD12	1.97	0.47
17:LM:24:LEU:HB2	17:LM:43:THR:HG21	1.97	0.47
33:Lc:38:ILE:HG21	33:Lc:63:TYR:HB3	1.95	0.47
57:SS:60:THR:OG1	57:SS:62:ASP:OD1	2.25	0.47
57:SS:88:LYS:H	57:SS:95:TYR:HD1	1.62	0.47
58:ST:101:ARG:NH1	83:S2:1566:G:O6	2.37	0.47
67:SC:104:ASP:OD1	67:SC:105:GLU:N	2.47	0.47
69:SG:66:GLY:HA2	83:S2:1745:A:H1'	1.97	0.47
69:SG:191:ARG:HH22	83:S2:312:G:H2'	1.80	0.47
75:SO:33:ILE:HB	75:SO:97:LEU:HD23	1.95	0.47
75:SO:34:PHE:HB3	75:SO:41:PHE:HB2	1.96	0.47
79:SY:51:THR:OG1	79:SY:53:ASP:OD1	2.25	0.47
83:S2:15:U:H2'	83:S2:16:G:O4'	2.13	0.47
83:S2:941:C:H2'	83:S2:942:G:C8	2.49	0.47
83:S2:1272:OMC:H1'	83:S2:1272:OMC:HM23	1.69	0.47
2:Et:23:A:H2'	2:Et:24:G:H8	1.80	0.47
3:L5:1195:G:H2'	3:L5:1196:G:C8	2.50	0.47
3:L5:1326:A2M:H2'	3:L5:1327:C:H6	1.79	0.47
3:L5:1942:A:H2'	3:L5:1943:A:H8	1.80	0.47
3:L5:2279:A:O2'	35:Le:48:ARG:NH2	2.48	0.47
3:L5:3633:C:H2'	3:L5:3634:G:C8	2.49	0.47
3:L5:4327:C:OP1	24:LT:70:HIS:NE2	2.48	0.47
11:LF:241:ASN:O	11:LF:245:ARG:HG2	2.14	0.47
24:LT:102:ARG:O	24:LT:106:LEU:HG	2.14	0.47
49:Lt:50:THR:OG1	49:Lt:72:GLU:OE1	2.23	0.47
53:SM:23:LYS:O	53:SM:27:ILE:HG12	2.15	0.47
58:ST:39:LEU:HD21	58:ST:52:TRP:CZ3	2.50	0.47
67:SC:169:TYR:OH	67:SC:175:GLY:O	2.22	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:Sb:23:ARG:NH1	81:Sb:27:SER:O	2.48	0.47
83:S2:1610:G:H2'	83:S2:1611:G:H8	1.80	0.47
83:S2:1616:U:O2'	83:S2:1661:A:N3	2.38	0.47
2:Et:43:A:H2'	2:Et:44:G:H8	1.80	0.47
3:L5:716:C:OP1	8:LC:317:ASN:HB2	2.15	0.47
3:L5:2691:U:O2'	41:Lk:4:LYS:NZ	2.46	0.47
3:L5:4523:A2M:HM'3	3:L5:4523:A2M:H1'	1.76	0.47
7:LB:322:HIS:O	7:LB:342:LYS:NZ	2.39	0.47
17:LM:96:GLU:O	17:LM:100:ARG:HG2	2.15	0.47
22:LR:7:GLN:NE2	22:LR:35:ALA:O	2.33	0.47
52:SK:31:LYS:HZ3	52:SK:40:VAL:H	1.61	0.47
57:SS:15:VAL:HG12	57:SS:16:LEU:HG	1.97	0.47
58:ST:6:VAL:HG12	58:ST:135:ALA:HB2	1.96	0.47
63:Sf:138:ARG:NH2	83:S2:1292:C:N3	2.50	0.47
83:S2:106:C:H2'	83:S2:107:A:C8	2.48	0.47
83:S2:382:C:H2'	83:S2:383:G:C8	2.50	0.47
83:S2:634:A:H2'	83:S2:635:G:H8	1.80	0.47
83:S2:1692:U:H2'	83:S2:1693:G:C8	2.49	0.47
83:S2:1731:A:H2'	83:S2:1732:G:H8	1.80	0.47
3:L5:92:C:OP1	87:L5:5261:SPD:N10	2.38	0.47
3:L5:455:C:O2'	3:L5:456:C:H5'	2.15	0.47
3:L5:1684:A:OP1	31:La:47:LYS:NZ	2.45	0.47
3:L5:2389:A:H4'	34:Ld:70:LYS:HG3	1.97	0.47
3:L5:2550:G:O2'	3:L5:2587:A:N1	2.48	0.47
3:L5:4196:OMG:HM23	3:L5:4196:OMG:H1'	1.67	0.47
3:L5:4481:U:H2'	3:L5:4482:U:H6	1.79	0.47
13:LH:93:ARG:NE	13:LH:142:ASP:O	2.46	0.47
13:LH:115:ARG:HD3	13:LH:123:ILE:HD12	1.96	0.47
18:LN:140:LYS:HD3	18:LN:140:LYS:HA	1.69	0.47
29:LY:22:PRO:HD2	29:LY:25:ILE:HD11	1.97	0.47
48:Ls:91:THR:HG21	48:Ls:98:ILE:HG13	1.96	0.47
66:SB:98:THR:O	66:SB:232:HIS:NE2	2.47	0.47
68:SE:26:VAL:HG22	72:SJ:4:ALA:HB2	1.97	0.47
71:SI:126:GLY:O	71:SI:128:LYS:NZ	2.46	0.47
74:SN:37:ILE:HG23	74:SN:50:ILE:HG21	1.96	0.47
78:SX:88:ASP:HA	83:S2:617:G:H4'	1.97	0.47
79:SY:119:GLY:HA2	83:S2:85:A:H5'	1.96	0.47
83:S2:455:A:H2'	83:S2:456:C:C6	2.50	0.47
2:Et:8:U:N3	2:Et:15:G:O6	2.48	0.46
3:L5:1504:G:H2'	3:L5:1505:C:C6	2.50	0.46
3:L5:2347:A:C4	35:Le:31:ILE:HD11	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:4272:G:OP2	3:L5:4272:G:N2	2.29	0.46
4:L7:49:A:H5"	9:LD:224:SER:HB2	1.96	0.46
5:L8:5:U:H2'	5:L8:6:C:H6	1.80	0.46
5:L8:58:G:N7	40:Lj:63:ARG:NH2	2.48	0.46
6:LA:48:ILE:HG22	46:Lp:54:ILE:HG12	1.97	0.46
18:LN:184:ILE:O	18:LN:194:ARG:NH1	2.30	0.46
39:Li:35:LYS:HE3	39:Li:35:LYS:HB3	1.79	0.46
71:SI:139:LYS:HE2	71:SI:139:LYS:HB2	1.71	0.46
80:Sa:13:LYS:HD3	80:Sa:13:LYS:HA	1.71	0.46
82:Se:32:ALA:HB2	83:S2:525:A:H5"	1.97	0.46
83:S2:24:C:O2'	83:S2:25:A:H8	1.97	0.46
83:S2:1221:G:H2'	83:S2:1222:G:H8	1.81	0.46
3:L5:407:A:O2'	3:L5:410:A:OP1	2.30	0.46
3:L5:2739:C:O2	6:LA:188:LYS:NZ	2.46	0.46
3:L5:3654:G:O2'	3:L5:3693:U:OP1	2.25	0.46
3:L5:3785:A2M:H2	3:L5:4551:U:O2	2.16	0.46
3:L5:4676:G:OP1	7:LB:281:ASN:ND2	2.43	0.46
5:L8:8:U:H2'	5:L8:9:A:C8	2.51	0.46
15:LJ:56:THR:OG1	15:LJ:64:ARG:N	2.45	0.46
25:LU:98:ASP:OD2	84:CI:59:GLN:HG2	2.15	0.46
66:SB:126:ASP:OD2	66:SB:136:ARG:NH2	2.47	0.46
74:SN:15:ALA:HB2	81:Sb:20:LYS:HD3	1.97	0.46
74:SN:20:ARG:HH21	77:SW:56:HIS:HB3	1.80	0.46
76:SV:17:CYS:HB2	76:SV:56:CYS:HB3	1.97	0.46
77:SW:76:SER:HB2	83:S2:1158:G:H5"	1.96	0.46
82:Se:8:ARG:HG2	82:Se:11:LYS:HD3	1.97	0.46
3:L5:1178:G:H2'	9:LD:286:SER:HB3	1.96	0.46
3:L5:1281:G:N1	10:LE:128:HIS:HB2	2.31	0.46
3:L5:2910:G:N2	3:L5:3585:G:O2'	2.49	0.46
3:L5:4364:G:H2'	3:L5:4365:C:H6	1.80	0.46
6:LA:180:LEU:HD21	46:Lp:22:LEU:HB3	1.96	0.46
9:LD:181:PRO:HD2	9:LD:195:HIS:CD2	2.50	0.46
13:LH:24:THR:HA	13:LH:37:ASP:HA	1.96	0.46
17:LM:38:VAL:HG21	17:LM:50:MET:HB3	1.97	0.46
18:LN:116:LEU:HD22	18:LN:135:ILE:HD11	1.97	0.46
52:SK:64:TRP:HB3	62:Sd:23:VAL:HA	1.98	0.46
66:SB:71:LEU:HD22	66:SB:82:ARG:HD2	1.97	0.46
69:SG:3:LEU:HD22	69:SG:111:LEU:HD11	1.98	0.46
69:SG:67:VAL:HG12	69:SG:69:THR:HG22	1.98	0.46
70:SH:20:GLU:HG2	70:SH:48:ALA:HB3	1.96	0.46
83:S2:659:G:O2'	83:S2:662:G:O2'	2.22	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:S2:1438:A:H2'	83:S2:1439:A:C8	2.50	0.46
3:L5:4739:C:H2'	3:L5:4740:G:H5'	1.97	0.46
11:LF:222:LYS:N	11:LF:232:ASP:OD1	2.46	0.46
23:LS:69:GLU:HG3	23:LS:71:SER:H	1.80	0.46
38:Lh:107:GLN:O	38:Lh:111:GLU:HG3	2.16	0.46
49:Lt:119:ARG:NH2	49:Lt:123:ARG:HH12	2.13	0.46
79:SY:105:LYS:O	79:SY:109:GLU:HG2	2.16	0.46
3:L5:161:G:H2'	3:L5:162:A:H8	1.81	0.46
3:L5:280:G:H5"	18:LN:14:LYS:HE2	1.96	0.46
3:L5:418:A:C2	5:L8:17:A:H1'	2.51	0.46
3:L5:462:G:H2'	3:L5:463:A:C8	2.50	0.46
3:L5:2249:C:H2'	3:L5:2250:C:H5	1.80	0.46
3:L5:2777:G:H5"	3:L5:2778:G:H5'	1.97	0.46
3:L5:4184:G:H5'	6:LA:233:ARG:HB2	1.97	0.46
3:L5:4340:U:O2	87:L5:5261:SPD:N10	2.48	0.46
3:L5:4563:U:H2'	3:L5:4564:A:H8	1.81	0.46
3:L5:4571:A2M:H2'	3:L5:4572:U:H6	1.79	0.46
3:L5:4882:U:OP1	17:LM:117:LYS:NZ	2.48	0.46
9:LD:234:ASP:OD1	9:LD:235:MET:N	2.49	0.46
57:SS:13:LEU:HD22	57:SS:20:ILE:HD11	1.97	0.46
58:ST:114:GLU:OE1	58:ST:114:GLU:N	2.47	0.46
64:Sg:166:VAL:HG12	64:Sg:176:VAL:HG12	1.97	0.46
64:Sg:175:LYS:HB3	64:Sg:184:LEU:HD11	1.97	0.46
65:SA:145:ILE:HG23	65:SA:159:ILE:HB	1.97	0.46
67:SC:166:ARG:HB3	67:SC:247:THR:HB	1.98	0.46
67:SC:167:ARG:HB3	67:SC:177:PRO:HB2	1.97	0.46
83:S2:27:A2M:H2'	83:S2:28:U:O4'	2.16	0.46
83:S2:35:C:H5"	83:S2:579:C:H5"	1.97	0.46
83:S2:482:G:N1	83:S2:485:A:OP2	2.47	0.46
3:L5:268:G:H2'	3:L5:269:G:C8	2.48	0.46
3:L5:1253:G:H2'	3:L5:1256:G:H5'	1.97	0.46
3:L5:1392:A:H2'	3:L5:1393:G:C8	2.50	0.46
3:L5:1751:A:H2'	3:L5:1752:G:C8	2.51	0.46
3:L5:2491:C:O2'	3:L5:2492:C:O4'	2.28	0.46
3:L5:2656:U:H5"	30:LZ:38:TYR:HB3	1.97	0.46
3:L5:2671:C:H2'	3:L5:2672:C:C6	2.51	0.46
3:L5:2856:C:O2	7:LB:242:ARG:NH2	2.39	0.46
3:L5:3610:A:H2'	3:L5:3611:A:H8	1.80	0.46
3:L5:4322:G:N2	3:L5:4325:A:OP2	2.41	0.46
3:L5:4504:C:H2'	3:L5:4505:C:C6	2.51	0.46
14:LI:152:LEU:HB3	14:LI:165:ILE:HD12	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:LO:47:PHE:HA	19:LO:136:ALA:HB2	1.97	0.46
22:LR:175:GLU:O	22:LR:178:GLN:HG3	2.16	0.46
46:Lp:75:SER:O	46:Lp:79:VAL:HG23	2.16	0.46
48:Ls:159:GLN:NE2	48:Ls:162:LYS:HG3	2.31	0.46
59:SU:56:MET:HB2	59:SU:86:LYS:HG3	1.97	0.46
63:Sf:110:GLU:HG2	63:Sf:113:LYS:HD3	1.97	0.46
67:SC:202:THR:HG23	72:SJ:54:ARG:HH22	1.81	0.46
70:SH:31:GLU:HA	70:SH:37:LYS:HG3	1.97	0.46
70:SH:126:HIS:CE1	70:SH:181:THR:HG23	2.50	0.46
80:Sa:36:ILE:HD11	80:Sa:75:VAL:HG12	1.97	0.46
83:S2:327:G:H5"	83:S2:328:U:C2	2.50	0.46
83:S2:750:C:H42	83:S2:793:G:H1'	1.80	0.46
83:S2:1004:PSU:H2'	83:S2:1005:G:C8	2.51	0.46
3:L5:10:A:H2'	3:L5:11:G:C8	2.51	0.46
3:L5:1787:A:O5'	86:L5:5259:SPM:N14	2.47	0.46
3:L5:2634:C:H2'	3:L5:2635:U:H6	1.81	0.46
5:L8:8:U:H2'	5:L8:9:A:H8	1.80	0.46
7:LB:36:ASP:N	7:LB:36:ASP:OD1	2.49	0.46
13:LH:114:ILE:HB	13:LH:124:ARG:HB2	1.98	0.46
55:SQ:42:ILE:HG23	55:SQ:44:PRO:HD2	1.98	0.46
68:SE:80:ILE:HG23	68:SE:81:THR:HG23	1.96	0.46
68:SE:242:LYS:HD3	68:SE:242:LYS:HA	1.75	0.46
69:SG:224:ARG:HH21	69:SG:227:GLN:HG3	1.81	0.46
83:S2:454:U:H2'	83:S2:455:A:H8	1.80	0.46
83:S2:649:PSU:H2'	83:S2:650:A:H8	1.81	0.46
83:S2:1428:G:N1	83:S2:1585:U:O4'	2.49	0.46
3:L5:2845:A:H61	3:L5:3843:C:H42	1.63	0.46
3:L5:4291:G:H5'	3:L5:4293:PSU:C6	2.51	0.46
3:L5:4524:G:OP1	3:L5:4559:A:N6	2.37	0.46
10:LE:264:ILE:HD11	10:LE:267:LEU:HD22	1.97	0.46
29:LY:2:LYS:HD2	29:LY:7:VAL:HG23	1.96	0.46
36:Lf:45:LYS:HA	36:Lf:107:PRO:HD2	1.96	0.46
67:SC:271:ASP:O	67:SC:275:LYS:HG3	2.16	0.46
68:SE:79:ASP:HB3	68:SE:82:TYR:HB2	1.98	0.46
83:S2:1617:G:N1	83:S2:1620:A:OP2	2.48	0.46
83:S2:1670:C:H2'	83:S2:1671:G:C8	2.50	0.46
3:L5:1461:C:H2'	3:L5:1462:A:H8	1.80	0.46
3:L5:1478:C:H2'	3:L5:1479:G:H8	1.81	0.46
3:L5:2611:A:H2'	3:L5:2612:G:C8	2.51	0.46
20:LP:107:LEU:HD13	20:LP:152:GLU:HG3	1.97	0.46
34:Ld:53:ALA:HA	34:Ld:88:LEU:HD21	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:Ls:110:ALA:HA	48:Ls:182:PRO:HG2	1.97	0.46
52:SK:14:LEU:HD22	52:SK:35:LEU:HD23	1.97	0.46
53:SM:14:VAL:HG21	53:SM:126:GLU:HG3	1.98	0.46
55:SQ:125:ARG:HB2	83:S2:1648:G:H5"	1.97	0.46
61:Sc:14:VAL:HG13	61:Sc:30:VAL:HB	1.98	0.46
65:SA:184:ARG:NE	65:SA:191:ARG:HD3	2.31	0.46
76:SV:16:LYS:HG2	76:SV:23:ILE:HD13	1.97	0.46
83:S2:1139:C:H2'	83:S2:1140:G:O4'	2.16	0.46
3:L5:1244:G:H2'	3:L5:1245:C:H6	1.81	0.46
3:L5:1683:PSU:H2'	3:L5:1684:A:C8	2.51	0.46
3:L5:2622:G:O6	25:LU:81:ARG:NH2	2.49	0.46
3:L5:4070:U:H2'	3:L5:4071:U:C6	2.51	0.46
13:LH:41:ILE:HG22	13:LH:43:VAL:HG13	1.97	0.46
24:LT:48:VAL:HG21	24:LT:94:GLU:HG2	1.96	0.46
56:SR:108:LEU:HD12	65:SA:39:TYR:HE1	1.81	0.46
68:SE:192:ILE:HG12	68:SE:243:GLY:HA3	1.98	0.46
82:Se:41:ARG:NH2	83:S2:639:C:OP1	2.49	0.46
83:S2:1279:C:H2'	83:S2:1280:G:H8	1.81	0.46
3:L5:1411:C:H2'	3:L5:1412:G:C8	2.51	0.45
3:L5:1878:G:H2'	3:L5:1879:C:C6	2.52	0.45
3:L5:2072:C:OP1	21:LQ:2:GLY:N	2.49	0.45
3:L5:2831:G:H2'	3:L5:2832:A:H8	1.80	0.45
3:L5:3841:OMC:HM23	3:L5:3841:OMC:H1'	1.74	0.45
3:L5:4246:G:H2'	3:L5:4247:G:C8	2.51	0.45
3:L5:4611:A:H2'	3:L5:4612:C:H6	1.82	0.45
3:L5:4699:U:H1'	3:L5:4700:A:H5"	1.98	0.45
7:LB:153:MET:HB3	7:LB:194:LEU:HD11	1.98	0.45
51:SF:60:ARG:NH2	83:S2:1679:A:OP1	2.46	0.45
54:SP:56:LEU:HD22	54:SP:80:LEU:HD11	1.99	0.45
65:SA:215:GLN:O	65:SA:219:GLU:HG2	2.16	0.45
70:SH:51:ILE:HD11	70:SH:176:VAL:HG12	1.98	0.45
71:SI:44:HIS:ND1	83:S2:1740:C:OP1	2.32	0.45
83:S2:16:G:H2'	83:S2:17:C:C6	2.51	0.45
83:S2:1217:A:H2'	83:S2:1218:C:C6	2.49	0.45
3:L5:1558:A:H2'	3:L5:1559:G:C8	2.51	0.45
3:L5:1960:A:C8	48:Ls:63:LYS:HE2	2.51	0.45
3:L5:2763:U:H4'	3:L5:2764:A:H5"	1.98	0.45
3:L5:3595:U:H5"	3:L5:3597:G:OP2	2.16	0.45
3:L5:3726:A:H2'	3:L5:3727:A:C8	2.51	0.45
3:L5:3848:U:H2'	3:L5:3849:A:C8	2.51	0.45
3:L5:3893:C:H2'	3:L5:3894:A:C8	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:4439:U:O2'	14:LI:105:CYS:O	2.34	0.45
3:L5:4672:A:OP1	26:LV:15:ARG:NH2	2.37	0.45
3:L5:5057:C:H2'	3:L5:5058:A:C8	2.51	0.45
4:L7:58:A:H2'	4:L7:59:G:H8	1.81	0.45
16:LL:55:ILE:O	16:LL:97:SER:OG	2.31	0.45
21:LQ:57:ASN:HA	21:LQ:143:ARG:HD2	1.97	0.45
22:LR:139:MET:HG2	22:LR:143:HIS:CE1	2.51	0.45
32:Lb:5:LYS:HE2	32:Lb:8:THR:HB	1.98	0.45
49:Lt:77:ALA:HB3	49:Lt:80:LEU:HB2	1.96	0.45
56:SR:22:THR:O	64:Sg:212:LYS:NZ	2.49	0.45
57:SS:38:ARG:HD2	58:ST:45:LEU:HD11	1.98	0.45
59:SU:96:GLU:OE2	59:SU:98:VAL:N	2.48	0.45
64:Sg:35:SER:OG	64:Sg:36:ARG:N	2.49	0.45
65:SA:104:THR:O	65:SA:107:THR:OG1	2.32	0.45
77:SW:44:HIS:NE2	77:SW:112:ASP:OD2	2.40	0.45
83:S2:116:OMU:HM23	83:S2:116:OMU:H1'	1.77	0.45
83:S2:186:C:H2'	83:S2:187:G:C8	2.51	0.45
83:S2:517:OMC:H2'	83:S2:518:G:O4'	2.16	0.45
83:S2:808:A:H2	83:S2:855:G:H22	1.65	0.45
3:L5:287:U:H2'	3:L5:288:G:C8	2.51	0.45
3:L5:1912:G:N2	19:LO:87:MET:HE2	2.31	0.45
3:L5:2521:G:H5'	3:L5:2640:G:H1'	1.98	0.45
3:L5:4113:U:H4'	3:L5:4115:G:C5	2.51	0.45
3:L5:4619:U:H2'	3:L5:4620:OMU:H6	1.97	0.45
5:L8:102:G:H5"	40:Lj:39:TYR:HE1	1.81	0.45
7:LB:17:LEU:HD23	7:LB:17:LEU:HA	1.79	0.45
14:LI:51:HIS:CD2	14:LI:168:SER:HB3	2.52	0.45
30:LZ:68:ILE:HD12	30:LZ:119:GLU:HG2	1.97	0.45
51:SF:97:PHE:HA	51:SF:100:ILE:HG12	1.97	0.45
53:SM:19:GLN:HE22	53:SM:88:TRP:CG	2.34	0.45
57:SS:15:VAL:HG13	57:SS:68:ILE:HD11	1.99	0.45
64:Sg:133:ASN:HB3	64:Sg:139:LYS:HD2	1.98	0.45
65:SA:6:ASP:OD1	65:SA:6:ASP:N	2.49	0.45
79:SY:7:ILE:HG12	79:SY:43:LYS:HD3	1.98	0.45
83:S2:317:C:H2'	83:S2:318:A:C4	2.51	0.45
3:L5:400:A2M:HM'3	3:L5:400:A2M:H1'	1.52	0.45
3:L5:433:A:C2	3:L5:3867:A2M:H4'	2.51	0.45
3:L5:2693:G:OP1	41:Lk:35:LYS:HE2	2.17	0.45
3:L5:4239:A:H2'	3:L5:4240:G:H8	1.81	0.45
3:L5:4288:C:O2'	3:L5:4321:U:OP1	2.35	0.45
3:L5:4345:C:H2'	3:L5:4346:U:H6	1.80	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L8:102:G:OP2	5:L8:104:A:O2'	2.27	0.45
14:LI:39:LYS:HE3	14:LI:39:LYS:HB2	1.81	0.45
30:LZ:46:ILE:HA	30:LZ:70:SER:HA	1.99	0.45
48:Ls:29:ILE:HG22	48:Ls:88:PHE:HD1	1.81	0.45
49:Lt:76:SER:OG	49:Lt:116:MET:SD	2.73	0.45
53:SM:49:LEU:HB2	53:SM:111:VAL:HB	1.99	0.45
58:ST:132:ASP:OD2	83:S2:1415:C:O2'	2.26	0.45
64:Sg:101:PHE:CE2	64:Sg:136:GLY:HA2	2.52	0.45
69:SG:14:LYS:HD3	69:SG:124:LEU:HD12	1.98	0.45
75:SO:96:LYS:HD3	75:SO:132:VAL:HG11	1.97	0.45
83:S2:1243:U:OP2	83:S2:1518:C:O2'	2.26	0.45
83:S2:1259:A:N6	83:S2:1519:U:O5'	2.49	0.45
3:L5:1510:G:H2'	3:L5:1511:U:C6	2.51	0.45
3:L5:2468:U:O2'	3:L5:2506:G:N2	2.49	0.45
3:L5:2824:OMC:HM23	3:L5:2824:OMC:H1'	1.66	0.45
3:L5:2875:C:OP1	46:Lp:23:ARG:NH2	2.50	0.45
3:L5:3910:C:H2'	3:L5:3911:C:C6	2.51	0.45
3:L5:4093:G:H3'	3:L5:4094:G:H8	1.81	0.45
3:L5:4113:U:H4'	3:L5:4115:G:C6	2.52	0.45
3:L5:4305:G:O5'	24:LT:83:LYS:NZ	2.49	0.45
3:L5:4642:U:H2'	3:L5:4643:G:C8	2.52	0.45
12:LG:83:PHE:HA	12:LG:183:ILE:HD13	1.98	0.45
20:LP:18:ARG:NH2	20:LP:147:GLU:OE1	2.50	0.45
20:LP:138:PRO:HB3	20:LP:140:MET:HE2	1.97	0.45
56:SR:32:LYS:NZ	83:S2:1452:A:OP2	2.50	0.45
57:SS:62:ASP:OD1	57:SS:62:ASP:N	2.49	0.45
59:SU:19:ARG:HH11	59:SU:92:HIS:HB3	1.81	0.45
70:SH:33:ASN:ND2	70:SH:36:LEU:HB3	2.31	0.45
70:SH:111:LYS:HE3	83:S2:796:G:H21	1.82	0.45
2:Et:7:A:O2'	2:Et:49:C:O4'	2.33	0.45
3:L5:1725:U:H2'	3:L5:1726:U:H6	1.82	0.45
3:L5:2306:G:H1'	3:L5:2332:A:N6	2.31	0.45
3:L5:2558:C:H2'	3:L5:2559:G:H8	1.82	0.45
3:L5:2577:C:OP1	30:LZ:111:ARG:NH2	2.49	0.45
10:LE:139:LYS:O	10:LE:191:GLN:NE2	2.39	0.45
40:Lj:85:LYS:HB3	40:Lj:85:LYS:HE3	1.72	0.45
51:SF:27:ASP:OD1	51:SF:107:ASN:ND2	2.50	0.45
57:SS:27:ALA:HB2	57:SS:52:LEU:HD12	1.99	0.45
64:Sg:230:LEU:HD21	64:Sg:259:TRP:CE2	2.52	0.45
65:SA:164:ASN:OD1	65:SA:165:ASN:N	2.50	0.45
69:SG:7:PHE:CE2	69:SG:9:ALA:HB3	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
71:SI:84:ASN:HD22	71:SI:100:CYS:HB3	1.81	0.45
79:SY:77:ASP:OD1	79:SY:77:ASP:N	2.49	0.45
83:S2:17:C:H2'	83:S2:18:C:C6	2.51	0.45
83:S2:809:A:H2'	83:S2:810:A:O4'	2.17	0.45
83:S2:1716:C:H2'	83:S2:1717:C:H6	1.82	0.45
83:S2:1797:U:H2'	83:S2:1798:C:C6	2.52	0.45
3:L5:158:A:N1	3:L5:276:C:O2'	2.35	0.45
3:L5:422:C:H2'	3:L5:423:G:H8	1.81	0.45
3:L5:1194:G:H2'	3:L5:1195:G:C8	2.51	0.45
3:L5:3946:G:O6	3:L5:4067:U:O4	2.35	0.45
8:LC:327:LYS:O	11:LF:47:ARG:NH1	2.42	0.45
29:LY:4:ASN:HB3	29:LY:7:VAL:HG22	1.97	0.45
30:LZ:47:ASP:N	30:LZ:69:LYS:O	2.47	0.45
51:SF:167:LYS:HA	60:SZ:71:ALA:HB1	1.98	0.45
57:SS:125:HIS:CD2	57:SS:131:VAL:HG11	2.52	0.45
67:SC:185:THR:OG1	83:S2:1155:U:OP1	2.30	0.45
67:SC:256:TRP:CD2	77:SW:68:ARG:HD3	2.51	0.45
68:SE:122:LYS:HE2	68:SE:124:CYS:SG	2.56	0.45
78:SX:90:CYS:HA	78:SX:93:PHE:CD2	2.52	0.45
83:S2:674:C:H2'	83:S2:675:U:C6	2.52	0.45
83:S2:1345:G:OP1	83:S2:1688:C:O2'	2.35	0.45
83:S2:1562:C:H2'	83:S2:1563:G:C8	2.49	0.45
83:S2:1856:C:H2'	83:S2:1857:G:H8	1.82	0.45
2:Et:66:U:H2'	2:Et:67:U:H6	1.82	0.45
2:Et:68:C:H2'	2:Et:69:G:H8	1.81	0.45
3:L5:264:C:H2'	3:L5:265:C:C4	2.52	0.45
3:L5:429:A:H2'	3:L5:430:G:C8	2.52	0.45
3:L5:1866:U:OP1	14:LI:4:ARG:NH1	2.41	0.45
3:L5:4590:A2M:HM'3	3:L5:4590:A2M:H1'	1.76	0.45
4:L7:58:A:H2'	4:L7:59:G:C8	2.52	0.45
12:LG:187:LYS:HB2	12:LG:198:THR:HG23	1.98	0.45
34:Ld:44:ARG:HA	34:Ld:47:LYS:HE3	1.98	0.45
72:SJ:28:GLU:OE2	72:SJ:44:TRP:NE1	2.37	0.45
72:SJ:111:GLN:HE21	72:SJ:123:ILE:HG13	1.82	0.45
83:S2:223:C:H2'	83:S2:224:A:C8	2.52	0.45
83:S2:1217:A:H2'	83:S2:1218:C:H6	1.81	0.45
2:Et:75:C:O2'	45:Lo:54:PRO:O	2.28	0.45
3:L5:662:C:H2'	3:L5:663:G:H8	1.82	0.45
3:L5:1982:G:H2'	3:L5:1983:A:O4'	2.15	0.45
3:L5:2706:G:N7	84:CI:78:HIS:CD2	2.85	0.45
3:L5:3873:G:H2'	3:L5:3874:G:C8	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:LB:147:GLU:OE2	7:LB:198:ARG:NH2	2.34	0.45
7:LB:302:ASN:HB2	7:LB:313:SER:HA	1.99	0.45
16:LL:48:PRO:HG3	38:Lh:118:LYS:HE2	1.99	0.45
21:LQ:133:GLY:O	21:LQ:136:THR:OG1	2.26	0.45
65:SA:111:GLN:HA	65:SA:116:PHE:CG	2.51	0.45
66:SB:44:ILE:HG23	66:SB:69:VAL:HG11	1.98	0.45
66:SB:85:LYS:HB2	66:SB:101:HIS:HB3	1.99	0.45
70:SH:53:VAL:HG21	70:SH:172:THR:HG22	1.99	0.45
70:SH:143:ARG:HB2	70:SH:155:LYS:HB2	1.98	0.45
83:S2:948:C:H2'	83:S2:949:G:C8	2.51	0.45
83:S2:1581:C:H5'	83:S2:1582:C:H5	1.81	0.45
3:L5:1359:G:H4'	18:LN:203:TYR:HB2	1.99	0.45
3:L5:1696:C:H5'	3:L5:1719:A:H1'	1.99	0.45
3:L5:1994:C:H2'	3:L5:1995:G:H8	1.80	0.45
3:L5:4456:OMC:HM21	7:LB:241:PRO:HD3	1.99	0.45
3:L5:4633:G:N2	3:L5:4664:A:N7	2.64	0.45
4:L7:63:C:H5'	4:L7:64:G:H5"	1.99	0.45
7:LB:35:ASP:OD2	7:LB:193:LYS:NZ	2.50	0.45
7:LB:378:ARG:HE	27:LW:32:LEU:HD21	1.82	0.45
17:LM:36:ALA:HB3	17:LM:55:MET:HE1	1.99	0.45
17:LM:118:MET:HG2	19:LO:192:TYR:CZ	2.52	0.45
49:Lt:16:ARG:CZ	49:Lt:63:THR:HB	2.47	0.45
64:Sg:270:LEU:HD13	64:Sg:310:TRP:CD2	2.52	0.45
83:S2:1383:A2M:H1'	83:S2:1383:A2M:HM'3	1.57	0.45
83:S2:1648:G:O2'	83:S2:1674:G:O6	2.31	0.45
3:L5:10:A:H2'	3:L5:11:G:H8	1.82	0.44
3:L5:190:G:H2'	3:L5:191:G:C8	2.52	0.44
3:L5:1309:C:H2'	3:L5:1310:C:C6	2.52	0.44
3:L5:2730:U:H2'	3:L5:2731:C:C6	2.52	0.44
3:L5:4541:G:N2	3:L5:4544:A:OP2	2.43	0.44
4:L7:4:U:H2'	4:L7:5:A:H8	1.82	0.44
7:LB:206:PRO:HG2	7:LB:209:GLN:HG3	1.97	0.44
8:LC:150:LEU:O	8:LC:152:LEU:N	2.50	0.44
9:LD:86:TYR:HE1	9:LD:247:ILE:HG13	1.81	0.44
17:LM:130:LEU:HB3	19:LO:177:LEU:HD11	1.98	0.44
33:Lc:23:LYS:HE3	33:Lc:23:LYS:HB3	1.86	0.44
66:SB:40:ASN:OD1	66:SB:41:ILE:HD12	2.17	0.44
68:SE:59:ASP:O	68:SE:63:LYS:HG3	2.17	0.44
69:SG:183:ARG:HH22	83:S2:316:G:H5"	1.83	0.44
73:SL:111:VAL:HG12	73:SL:140:PHE:HB2	1.99	0.44
79:SY:10:ARG:HA	83:S2:839:C:H41	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:S2:1189:A:H2'	83:S2:1190:A:H8	1.82	0.44
83:S2:1667:U:H2'	83:S2:1668:U:C6	2.51	0.44
3:L5:223:G:OP2	8:LC:165:LYS:NZ	2.49	0.44
3:L5:481:G:H2'	3:L5:482:G:C8	2.53	0.44
3:L5:1348:U:H2'	3:L5:1349:G:H8	1.82	0.44
3:L5:1875:C:H2'	3:L5:1876:U:C6	2.52	0.44
3:L5:2640:G:H2'	3:L5:2641:A:C8	2.53	0.44
3:L5:3923:A:H2'	3:L5:3924:C:C6	2.53	0.44
3:L5:4178:A:H2'	3:L5:4179:G:C8	2.52	0.44
3:L5:4305:G:C6	24:LT:80:VAL:HG21	2.53	0.44
3:L5:4637:OMG:HM23	3:L5:4637:OMG:H1'	1.68	0.44
5:L8:66:A:H2'	5:L8:67:U:C6	2.52	0.44
14:LI:54:SER:HB3	14:LI:135:ILE:HD11	1.99	0.44
22:LR:21:LYS:HE3	22:LR:55:VAL:HA	1.98	0.44
27:LW:5:LEU:HD12	27:LW:30:GLN:NE2	2.32	0.44
30:LZ:95:VAL:HG12	30:LZ:110:ALA:HA	1.99	0.44
47:Lr:119:ARG:HA	47:Lr:122:LYS:HE3	2.00	0.44
50:SD:73:VAL:HG11	50:SD:86:LEU:HD11	2.00	0.44
51:SF:127:ARG:H	51:SF:135:ARG:HD2	1.81	0.44
62:Sd:56:ASP:OXT	83:S2:1480:A:O2'	2.30	0.44
68:SE:89:VAL:HG11	68:SE:119:ALA:HB1	1.98	0.44
80:Sa:79:ILE:HD11	83:S2:1864:U:H5'	2.00	0.44
83:S2:51:U:H2'	83:S2:52:G:C8	2.52	0.44
83:S2:1410:C:H2'	83:S2:1411:G:H8	1.81	0.44
3:L5:1324:A:O2'	3:L5:1326:A2M:OP1	2.30	0.44
3:L5:1995:G:H2'	3:L5:1996:C:C6	2.53	0.44
3:L5:2520:C:H2'	3:L5:2521:G:C8	2.53	0.44
3:L5:2634:C:H2'	3:L5:2635:U:C6	2.53	0.44
3:L5:2667:C:O4'	22:LR:96:MET:HG2	2.17	0.44
3:L5:3727:A:H2'	3:L5:3728:A:C8	2.51	0.44
3:L5:3866:C:H2'	3:L5:3867:A2M:O4'	2.18	0.44
3:L5:4742:G:H2'	3:L5:4743:G:H8	1.81	0.44
13:LH:93:ARG:HG2	13:LH:182:SER:HB3	1.99	0.44
27:LW:56:ARG:HE	27:LW:61:LYS:CB	2.31	0.44
54:SP:37:TYR:HB3	54:SP:41:GLN:HB2	1.98	0.44
56:SR:35:CYS:HA	56:SR:38:ILE:HG12	1.98	0.44
61:Sc:21:THR:OG1	61:Sc:22:GLY:N	2.50	0.44
67:SC:85:SER:OG	76:SV:25:GLY:O	2.27	0.44
71:SI:26:LYS:HE3	83:S2:444:G:O6	2.17	0.44
78:SX:105:PHE:CE2	78:SX:112:VAL:HB	2.52	0.44
79:SY:68:LYS:HE2	79:SY:68:LYS:HB3	1.76	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:Sb:22:LYS:HE3	83:S2:1129:G:H5"	1.98	0.44
83:S2:512:A:H4'	83:S2:576:A2M:H2	2.00	0.44
83:S2:1856:C:H2'	83:S2:1857:G:C8	2.53	0.44
2:Et:68:C:H2'	2:Et:69:G:C8	2.52	0.44
3:L5:44:A:H5"	86:L5:5264:SPM:H81	1.98	0.44
3:L5:318:A:H2'	3:L5:319:A:H8	1.83	0.44
3:L5:457:G:H2'	3:L5:458:C:H6	1.83	0.44
3:L5:513:U:H3'	3:L5:514:U:H4'	1.99	0.44
3:L5:1662:C:H2'	3:L5:1663:C:H6	1.83	0.44
3:L5:1979:A:N6	3:L5:1984:A:OP1	2.51	0.44
3:L5:4306:OMU:HM23	3:L5:4306:OMU:H1'	1.77	0.44
5:L8:90:C:H2'	5:L8:91:A:C8	2.53	0.44
52:SK:31:LYS:HZ3	52:SK:39:ASN:N	2.16	0.44
56:SR:16:ILE:HD11	56:SR:54:VAL:HG21	1.98	0.44
64:Sg:135:LEU:HD23	64:Sg:135:LEU:HA	1.88	0.44
65:SA:37:TYR:OH	65:SA:57:LYS:NZ	2.46	0.44
83:S2:159:A2M:HM'3	83:S2:159:A2M:H1'	1.59	0.44
83:S2:420:G:O2'	83:S2:660:C:N3	2.46	0.44
83:S2:433:A:H2'	83:S2:434:G:C8	2.53	0.44
83:S2:750:C:C2	83:S2:752:G:N2	2.86	0.44
83:S2:867:OMG:HM23	83:S2:867:OMG:H1'	1.82	0.44
83:S2:1320:G:H2'	83:S2:1321:G:O4'	2.16	0.44
83:S2:1390:U:H2'	83:S2:1391:OMC:C6	2.53	0.44
3:L5:950:G:H2'	3:L5:951:G:H8	1.82	0.44
3:L5:966:A:OP2	3:L5:2092:G:N2	2.49	0.44
3:L5:1431:C:H2'	3:L5:1432:G:O4'	2.17	0.44
3:L5:3660:C:OP1	6:LA:241:ARG:NH2	2.42	0.44
3:L5:4507:A:H2'	3:L5:4508:C:C6	2.52	0.44
5:L8:148:A:H2'	5:L8:149:G:C8	2.53	0.44
7:LB:73:VAL:O	26:LV:89:ARG:NH2	2.50	0.44
8:LC:315:LYS:HD2	11:LF:168:ALA:HB1	1.99	0.44
11:LF:182:TYR:CZ	11:LF:203:GLU:HG2	2.52	0.44
14:LI:205:PRO:HD2	14:LI:208:LYS:HE2	1.99	0.44
16:LL:110:LEU:O	16:LL:114:VAL:HG13	2.17	0.44
27:LW:2:LYS:HE3	27:LW:15:PRO:HB3	2.00	0.44
53:SM:31:LEU:HG	53:SM:33:ARG:HG3	1.98	0.44
64:Sg:251:ALA:HA	64:Sg:256:ILE:HD13	2.00	0.44
65:SA:37:TYR:OH	76:SV:66:ASP:OD2	2.22	0.44
65:SA:69:GLU:HB2	67:SC:270:THR:HG21	1.99	0.44
71:SI:56:ARG:HH22	83:S2:380:G:P	2.40	0.44
83:S2:71:G:H2'	83:S2:72:C:H4'	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:S2:1610:G:H2'	83:S2:1611:G:C8	2.53	0.44
83:S2:1720:U:H5"	83:S2:1721:U:H5"	2.00	0.44
3:L5:1346:C:H2'	3:L5:1347:G:H8	1.82	0.44
3:L5:1756:U:O2'	3:L5:1758:G:OP2	2.25	0.44
3:L5:1846:G:H2'	3:L5:1847:C:C6	2.52	0.44
3:L5:2385:U:H2'	3:L5:2386:U:H6	1.83	0.44
3:L5:3911:C:H2'	3:L5:3912:U:C6	2.51	0.44
6:LA:22:HIS:O	6:LA:24:LYS:NZ	2.48	0.44
6:LA:142:GLU:O	6:LA:143:THR:OG1	2.34	0.44
13:LH:27:VAL:HG12	13:LH:84:VAL:HG21	2.00	0.44
17:LM:115:ALA:HB1	19:LO:192:TYR:HB3	1.99	0.44
20:LP:54:GLN:HA	20:LP:83:TRP:CD1	2.51	0.44
47:Lr:49:VAL:HG23	47:Lr:64:ILE:HG22	1.97	0.44
58:ST:39:LEU:HA	58:ST:39:LEU:HD23	1.72	0.44
60:SZ:99:LEU:HD11	60:SZ:102:LYS:HB2	2.00	0.44
63:Sf:97:LYS:HE2	83:S2:1289:U:C5	2.53	0.44
64:Sg:268:ASP:OD1	64:Sg:269:GLU:N	2.51	0.44
68:SE:149:TYR:CD2	69:SG:205:GLU:HB3	2.52	0.44
69:SG:56:ASN:HB2	69:SG:108:VAL:HG22	2.00	0.44
69:SG:183:ARG:HH12	83:S2:316:G:H5"	1.83	0.44
83:S2:886:A:N6	83:S2:901:G:N3	2.66	0.44
83:S2:946:U:H2'	83:S2:947:G:C8	2.53	0.44
83:S2:1232:PSU:H2'	83:S2:1233:G:C8	2.53	0.44
83:S2:1683:C:H2'	83:S2:1684:C:H6	1.83	0.44
83:S2:1752:C:H41	83:S2:1755:C:N4	2.15	0.44
3:L5:20:U:H3'	3:L5:21:G:H8	1.82	0.44
3:L5:92:C:OP2	3:L5:4341:C:O2'	2.29	0.44
3:L5:457:G:H2'	3:L5:458:C:C6	2.53	0.44
3:L5:689:U:H2'	3:L5:690:C:C6	2.53	0.44
3:L5:1100:U:O4	3:L5:1194:G:O6	2.36	0.44
3:L5:2376:A:H2'	3:L5:2377:C:C6	2.53	0.44
3:L5:2415:U:H2'	3:L5:2416:G:C8	2.53	0.44
3:L5:3597:G:H2'	3:L5:3598:C:H6	1.83	0.44
3:L5:3690:U:H2'	3:L5:3691:G:O4'	2.18	0.44
3:L5:3805:U:H2'	3:L5:3806:G:H8	1.83	0.44
3:L5:4920:C:H2'	3:L5:4921:C:C6	2.52	0.44
25:LU:66:SER:HB3	25:LU:69:LYS:HB2	2.00	0.44
30:LZ:50:PRO:HD3	30:LZ:68:ILE:HG12	2.00	0.44
48:Ls:54:LEU:HG	48:Ls:61:MET:HE1	1.99	0.44
51:SF:51:HIS:O	55:SQ:50:LYS:NZ	2.42	0.44
51:SF:60:ARG:HE	83:S2:1679:A:P	2.41	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:Sg:216:ALA:N	64:Sg:230:LEU:O	2.51	0.44
69:SG:14:LYS:HE2	69:SG:16:ILE:HD11	2.00	0.44
69:SG:181:THR:HG22	69:SG:183:ARG:H	1.83	0.44
75:SO:75:MET:HG3	75:SO:118:ALA:HB2	1.98	0.44
83:S2:375:U:H2'	83:S2:376:A:C8	2.53	0.44
83:S2:432:G:H2'	83:S2:433:A:C8	2.53	0.44
83:S2:1351:G:O2'	83:S2:1378:A:N1	2.46	0.44
1:Pt:38:C:O2'	83:S2:1058:A:OP1	2.33	0.44
3:L5:690:C:H2'	3:L5:691:C:C6	2.53	0.44
3:L5:1294:A:H1'	3:L5:1296:G:C2	2.53	0.44
3:L5:1534:A2M:N3	40:Lj:11:ARG:HB2	2.32	0.44
3:L5:1563:A:H2'	3:L5:1564:A:C8	2.52	0.44
3:L5:1631:A:C8	6:LA:199:VAL:HG21	2.52	0.44
3:L5:1855:G:OP1	32:Lb:4:SER:HB2	2.18	0.44
3:L5:1881:C:H5'	3:L5:2281:U:H1'	2.00	0.44
3:L5:2109:G:H2'	3:L5:2110:C:C6	2.53	0.44
3:L5:2811:G:N1	3:L5:2814:C:OP2	2.45	0.44
3:L5:3870:C:H2'	3:L5:3871:A:C8	2.52	0.44
3:L5:4775:C:H2'	3:L5:4776:G:H8	1.83	0.44
49:Lt:12:VAL:HG11	49:Lt:65:GLN:N	2.27	0.44
66:SB:57:ILE:HG22	66:SB:59:SER:H	1.83	0.44
67:SC:271:ASP:OD1	67:SC:272:HIS:N	2.50	0.44
70:SH:18:GLU:OE1	70:SH:18:GLU:N	2.51	0.44
71:SI:57:ALA:HB2	71:SI:183:GLY:HA2	2.00	0.44
83:S2:24:C:HO2'	83:S2:25:A:P	2.41	0.44
83:S2:866:PSU:H2'	83:S2:867:OMG:H8	1.83	0.44
83:S2:1036:A:H4'	83:S2:1855:G:N2	2.33	0.44
1:Pt:29:C:H2'	1:Pt:30:G:C8	2.53	0.44
3:L5:138:G:H2'	3:L5:139:G:H8	1.83	0.44
3:L5:223:G:H4'	3:L5:225:G:C8	2.52	0.44
3:L5:1290:G:H2'	3:L5:1291:G:C8	2.53	0.44
3:L5:2323:C:H2'	3:L5:2324:C:C6	2.53	0.44
3:L5:3867:A2M:HM'3	3:L5:3867:A2M:H1'	1.59	0.44
3:L5:4627:U:H4'	7:LB:373:LYS:HE2	2.00	0.44
9:LD:152:ARG:HG3	9:LD:154:THR:HG23	1.99	0.44
13:LH:61:TRP:CZ3	17:LM:33:GLN:HG3	2.53	0.44
26:LV:42:VAL:HB	26:LV:45:ILE:HG13	1.98	0.44
51:SF:22:LYS:HG3	51:SF:23:TRP:CD2	2.53	0.44
65:SA:137:ALA:HB1	65:SA:142:LEU:HB3	1.98	0.44
66:SB:29:ASP:OD1	66:SB:29:ASP:N	2.51	0.44
67:SC:212:LYS:HE2	67:SC:212:LYS:HB3	1.86	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:SG:87:ARG:HD3	69:SG:87:ARG:HA	1.77	0.44
70:SH:17:ASP:OD1	70:SH:17:ASP:N	2.50	0.44
75:SO:150:ARG:NH2	83:S2:1854:U:OP1	2.38	0.44
77:SW:55:ASP:HB3	81:Sb:25:VAL:HG13	2.00	0.44
83:S2:17:C:H2'	83:S2:18:C:H6	1.83	0.44
83:S2:291:G:H2'	83:S2:292:A:C8	2.53	0.44
83:S2:399:C:H5	83:S2:680:G:H5”	1.83	0.44
83:S2:544:G:H2'	83:S2:545:A:C8	2.53	0.44
83:S2:857:U:H2'	83:S2:858:A:C8	2.52	0.44
83:S2:1128:C:H2'	83:S2:1129:G:H8	1.82	0.44
83:S2:1409:A:H2'	83:S2:1410:C:C6	2.52	0.44
83:S2:1441:U:O2	83:S2:1443:C:N4	2.46	0.44
3:L5:161:G:H2'	3:L5:162:A:C8	2.53	0.43
3:L5:381:U:H4'	3:L5:415:G:H5'	2.00	0.43
3:L5:677:G:H2'	3:L5:678:C:C6	2.53	0.43
3:L5:1338:G:H4'	3:L5:1339:U:H6	1.83	0.43
3:L5:1403:G:N7	3:L5:1408:G:N2	2.66	0.43
3:L5:1977:C:O2'	3:L5:1978:C:OP1	2.36	0.43
3:L5:4742:G:H2'	3:L5:4743:G:C8	2.53	0.43
3:L5:4965:U:H4'	3:L5:4966:A:H5'	2.00	0.43
3:L5:5027:C:OP2	71:SI:77:ARG:NH2	2.51	0.43
6:LA:65:ASP:OD2	6:LA:72:ARG:NE	2.37	0.43
15:LJ:15:LEU:HD12	15:LJ:165:TRP:HB2	2.00	0.43
22:LR:160:GLU:OE1	22:LR:163:ARG:NH2	2.40	0.43
38:Lh:52:LYS:HA	38:Lh:52:LYS:HD3	1.78	0.43
40:Lj:67:LEU:HD23	40:Lj:67:LEU:HA	1.84	0.43
52:SK:64:TRP:CD2	62:Sd:23:VAL:HG22	2.52	0.43
63:Sf:103:LEU:HD12	63:Sf:105:TYR:CZ	2.53	0.43
69:SG:170:ARG:HA	83:S2:72:C:H42	1.81	0.43
69:SG:170:ARG:HG3	83:S2:72:C:N3	2.33	0.43
83:S2:516:A:N1	83:S2:643:A:O2'	2.47	0.43
83:S2:639:C:H2'	83:S2:640:A:H8	1.81	0.43
3:L5:1177:U:O4	3:L5:1183:C:N4	2.49	0.43
3:L5:1847:C:H2'	3:L5:1848:C:C6	2.53	0.43
3:L5:3945:A:H2'	3:L5:3946:G:C8	2.53	0.43
3:L5:4536:OMC:HM22	3:L5:4537:C:O4'	2.18	0.43
3:L5:4761:G:H2'	3:L5:4762:A:H8	1.82	0.43
5:L8:144:U:H2'	5:L8:145:C:C6	2.53	0.43
7:LB:289:GLN:HE22	7:LB:292:LEU:HD11	1.81	0.43
21:LQ:86:ILE:HD11	21:LQ:100:VAL:HG11	2.00	0.43
63:Sf:119:ARG:HB3	63:Sf:132:MET:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:SA:220:LYS:HA	65:SA:220:LYS:HD3	1.86	0.43
76:SV:74:LYS:NZ	76:SV:83:PHE:HB3	2.33	0.43
83:S2:573:U:O2	83:S2:576:A2M:H8	2.17	0.43
3:L5:1282:G:OP2	10:LE:128:HIS:NE2	2.52	0.43
3:L5:1613:A:H5"	6:LA:183:GLY:CA	2.49	0.43
3:L5:3606:U:H2'	3:L5:3607:U:C6	2.53	0.43
3:L5:3723:A:H2'	3:L5:3724:A:C8	2.53	0.43
3:L5:3880:G:H2'	3:L5:3881:G:C8	2.53	0.43
3:L5:4253:A:H5'	3:L5:4254:G:C8	2.53	0.43
3:L5:4578:G:H2'	3:L5:4579:PSU:H6	1.84	0.43
3:L5:4612:C:C2	13:LH:120:GLU:HB2	2.54	0.43
4:L7:35:U:O2	4:L7:45:U:O2'	2.33	0.43
4:L7:37:G:H2'	4:L7:38:U:O4'	2.18	0.43
6:LA:114:CYS:N	6:LA:165:VAL:O	2.46	0.43
9:LD:110:LEU:HB3	9:LD:115:MET:O	2.19	0.43
19:LO:88:LEU:HD12	19:LO:99:LEU:HD13	2.00	0.43
67:SC:214:LEU:HD22	67:SC:244:ILE:HD11	2.00	0.43
68:SE:38:LEU:HD23	83:S2:346:C:H5"	2.00	0.43
76:SV:40:ASP:OD1	76:SV:44:GLY:N	2.51	0.43
79:SY:23:MET:O	79:SY:73:GLY:N	2.46	0.43
79:SY:56:PHE:HB2	79:SY:74:MET:HB2	2.00	0.43
83:S2:165:G:H2'	83:S2:166:A2M:H8	1.99	0.43
83:S2:1215:C:O2'	83:S2:1645:C:OP2	2.33	0.43
83:S2:1702:G:H2'	83:S2:1703:OMC:O4'	2.17	0.43
3:L5:700:G:C6	3:L5:701:G:O6	2.72	0.43
3:L5:1494:U:H2'	3:L5:1495:G:C8	2.53	0.43
3:L5:1705:G:H2'	3:L5:1706:A:O4'	2.18	0.43
3:L5:1751:A:H2'	3:L5:1752:G:H8	1.83	0.43
3:L5:1858:A:H2'	3:L5:1859:C:H6	1.82	0.43
3:L5:2017:A:HO2'	3:L5:2018:C:C5'	2.31	0.43
3:L5:2102:G:H1'	3:L5:2103:G:C8	2.53	0.43
3:L5:2413:U:H2'	3:L5:2414:G:H8	1.84	0.43
3:L5:3599:A:H2'	3:L5:3600:G:C8	2.52	0.43
3:L5:4481:U:H2'	3:L5:4482:U:C6	2.53	0.43
3:L5:4670:C:O2'	3:L5:4672:A:OP2	2.29	0.43
3:L5:5004:C:H2'	3:L5:5005:G:O4'	2.17	0.43
6:LA:20:VAL:HA	6:LA:23:ARG:HG3	1.98	0.43
12:LG:52:THR:HG22	28:LX:41:ARG:HG3	2.00	0.43
18:LN:200:LEU:HD22	18:LN:204:ARG:NH1	2.33	0.43
29:LY:126:ARG:HG2	29:LY:130:LYS:HE2	2.00	0.43
47:Lr:26:SER:OG	47:Lr:28:GLU:OE1	2.21	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:Sg:230:LEU:HD11	64:Sg:259:TRP:CD1	2.53	0.43
67:SC:94:ILE:O	67:SC:98:LEU:N	2.39	0.43
67:SC:263:LYS:HA	67:SC:267:GLN:HE21	1.82	0.43
68:SE:57:THR:HG21	83:S2:494:C:H5"	2.00	0.43
69:SG:126:ASP:OD1	69:SG:126:ASP:N	2.48	0.43
71:SI:114:GLU:HB3	71:SI:136:ILE:HD12	2.01	0.43
81:Sb:33:MET:HE3	81:Sb:48:SER:HA	2.00	0.43
83:S2:194:C:H2'	83:S2:195:C:H6	1.84	0.43
83:S2:437:G:H2'	83:S2:438:G:O4'	2.19	0.43
83:S2:468:A2M:HM'3	83:S2:468:A2M:H1'	1.67	0.43
83:S2:737:G:H8	83:S2:738:C:H4'	1.83	0.43
2:Et:12:U:H2'	2:Et:13:C:C6	2.53	0.43
3:L5:197:A:N3	3:L5:222:C:O2'	2.46	0.43
3:L5:907:C:H2'	3:L5:908:G:C8	2.53	0.43
3:L5:2095:A:H4'	3:L5:2096:G:H5'	1.99	0.43
3:L5:2683:C:H2'	3:L5:2684:C:H6	1.84	0.43
3:L5:3687:A:O2'	6:LA:236:GLY:N	2.51	0.43
3:L5:3865:A:H61	3:L5:3881:G:H1	1.65	0.43
3:L5:4139:G:H1'	3:L5:4146:G:N1	2.34	0.43
67:SC:65:LYS:HD2	67:SC:273:LEU:HD13	2.01	0.43
70:SH:7:LYS:HD3	70:SH:10:LYS:HB3	1.99	0.43
77:SW:106:THR:OG1	77:SW:111:MET:HE2	2.19	0.43
80:Sa:6:ARG:NH1	83:S2:1147:C:OP1	2.52	0.43
83:S2:388:U:H2'	83:S2:389:A:C8	2.54	0.43
83:S2:454:U:H2'	83:S2:455:A:C8	2.54	0.43
83:S2:1279:C:H2'	83:S2:1280:G:C8	2.54	0.43
83:S2:1653:U:H2'	83:S2:1654:G:C8	2.53	0.43
3:L5:138:G:H2'	3:L5:139:G:C8	2.54	0.43
3:L5:1326:A2M:OP2	3:L5:4445:U:O2'	2.31	0.43
3:L5:1906:U:H2'	3:L5:1907:A:H8	1.83	0.43
3:L5:2020:U:H2'	3:L5:2021:G:H8	1.84	0.43
3:L5:2706:G:C8	84:CI:78:HIS:NE2	2.82	0.43
3:L5:4318:C:H4'	45:Lo:17:LYS:HA	1.99	0.43
3:L5:4524:G:C2	7:LB:252:ALA:HB1	2.54	0.43
6:LA:117:GLU:O	6:LA:162:ASN:ND2	2.42	0.43
8:LC:10:VAL:O	8:LC:18:SER:OG	2.25	0.43
11:LF:162:ILE:HD12	11:LF:167:ILE:HB	2.00	0.43
12:LG:162:ASP:HB3	12:LG:163:PRO:HD3	1.99	0.43
29:LY:10:ASP:HB3	29:LY:13:LYS:HB2	2.00	0.43
35:Le:30:LYS:HG3	35:Le:31:ILE:HG12	2.00	0.43
38:Lh:70:ARG:HG2	38:Lh:83:LEU:HD22	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:SA:5:LEU:HD11	76:SV:41:LYS:HD2	2.01	0.43
66:SB:224:GLU:HB2	66:SB:227:LYS:HD3	2.01	0.43
73:SL:3:ASP:OD1	73:SL:4:ILE:N	2.50	0.43
81:Sb:11:SER:OG	81:Sb:14:GLU:OE1	2.36	0.43
83:S2:329:G:H2'	83:S2:330:G:C8	2.54	0.43
83:S2:462:OMC:HM23	83:S2:462:OMC:H1'	1.74	0.43
2:Et:32:C:H2'	2:Et:33:U:C2	2.54	0.43
3:L5:1806:G:H2'	3:L5:1807:C:H6	1.83	0.43
3:L5:3722:G:H2'	3:L5:3723:A:H8	1.83	0.43
3:L5:5023:C:OP2	71:SI:124:LYS:NZ	2.51	0.43
16:LL:7:GLY:O	31:La:49:HIS:NE2	2.40	0.43
31:La:76:ASP:HB3	31:La:115:GLY:HA3	2.01	0.43
35:Le:91:CYS:HB3	35:Le:95:TYR:HD2	1.84	0.43
53:SM:58:GLU:HB3	53:SM:61:TYR:HB2	2.01	0.43
57:SS:64:VAL:O	57:SS:68:ILE:HG12	2.18	0.43
57:SS:102:GLY:HA2	57:SS:105:ASN:HD21	1.84	0.43
57:SS:129:LEU:HA	57:SS:144:ARG:NH2	2.34	0.43
64:Sg:57:ARG:HE	64:Sg:95:GLY:HA3	1.83	0.43
68:SE:75:LYS:NZ	83:S2:122:G:OP1	2.37	0.43
81:Sb:26:GLN:NE2	83:S2:921:G:OP2	2.50	0.43
83:S2:656:G:H5'	83:S2:662:G:N2	2.33	0.43
83:S2:1102:G:H2'	83:S2:1103:C:C6	2.54	0.43
83:S2:1199:A:H2'	83:S2:1200:A:C8	2.53	0.43
3:L5:173:C:H2'	3:L5:174:C:C6	2.53	0.43
3:L5:184:U:O2'	3:L5:189:G:O4'	2.37	0.43
3:L5:724:C:OP1	8:LC:350:ARG:HD3	2.19	0.43
3:L5:755:C:H2'	3:L5:756:G:H8	1.84	0.43
3:L5:1327:C:H2'	3:L5:1328:G:H8	1.83	0.43
3:L5:1344:C:H1'	16:LL:10:LEU:HD11	2.01	0.43
3:L5:1426:G:N1	3:L5:1458:C:OP2	2.40	0.43
3:L5:1628:C:H5"	6:LA:15:VAL:HG21	2.01	0.43
3:L5:1787:A:N3	3:L5:4210:U:O2'	2.52	0.43
3:L5:3896:C:H1'	7:LB:268:ARG:NH2	2.33	0.43
3:L5:4934:A:H2'	3:L5:4935:C:H6	1.83	0.43
3:L5:5002:U:H2'	3:L5:5003:U:C6	2.53	0.43
87:L5:5284:SPD:H82	87:L5:5284:SPD:H51	1.78	0.43
4:L7:15:C:H2'	4:L7:16:A:H8	1.84	0.43
8:LC:144:ILE:HG13	8:LC:144:ILE:O	2.19	0.43
10:LE:190:HIS:HB3	10:LE:193:PHE:HD2	1.84	0.43
20:LP:15:CYS:SG	20:LP:150:LEU:HB2	2.59	0.43
22:LR:47:ASP:HB3	84:CI:76:VAL:O	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:LY:76:LYS:HE2	42:Ll:31:THR:HB	2.01	0.43
51:SF:100:ILE:HD11	51:SF:108:PRO:HB3	2.00	0.43
55:SQ:89:SER:OG	55:SQ:119:LEU:O	2.35	0.43
57:SS:73:ASN:HB3	57:SS:76:GLN:OE1	2.19	0.43
58:ST:10:ASN:HB3	58:ST:13:GLU:OE2	2.19	0.43
67:SC:183:LYS:HA	67:SC:195:LEU:O	2.18	0.43
70:SH:76:GLN:O	70:SH:80:VAL:HG23	2.19	0.43
73:SL:23:VAL:HG23	73:SL:25:LEU:HG	2.00	0.43
78:SX:17:ARG:HH12	83:S2:659:G:N2	2.17	0.43
83:S2:348:A:H2'	83:S2:349:A:C8	2.54	0.43
83:S2:834:C:H42	83:S2:839:C:H42	1.64	0.43
83:S2:1093:A:H2'	83:S2:1094:C:H6	1.83	0.43
83:S2:1401:A:H2'	83:S2:1402:A:C8	2.54	0.43
3:L5:252:C:H2'	3:L5:253:G:H8	1.83	0.43
3:L5:1269:G:O2'	3:L5:1270:A:O4'	2.27	0.43
3:L5:1307:A:H2'	3:L5:1308:C:C6	2.52	0.43
3:L5:1589:C:H2'	3:L5:1590:C:C6	2.54	0.43
3:L5:2683:C:H2'	3:L5:2684:C:C6	2.54	0.43
3:L5:4638:U:H2'	3:L5:4639:G:N3	2.34	0.43
4:L7:92:C:H2'	4:L7:93:G:H8	1.84	0.43
5:L8:26:C:O2'	8:LC:53:ALA:O	2.36	0.43
5:L8:58:G:O6	40:Lj:63:ARG:NH1	2.50	0.43
7:LB:288:GLY:HA3	7:LB:330:PHE:CE1	2.53	0.43
10:LE:99:ASP:OD1	10:LE:99:ASP:N	2.52	0.43
27:LW:113:LYS:O	27:LW:117:LYS:HG2	2.18	0.43
72:SJ:38:ARG:N	72:SJ:42:GLU:OE2	2.35	0.43
72:SJ:121:LYS:NZ	83:S2:528:A:H5'	2.34	0.43
77:SW:77:PRO:HG2	77:SW:79:PHE:CE2	2.54	0.43
79:SY:42:GLU:HA	79:SY:52:PRO:HB3	2.00	0.43
80:Sa:60:ASP:OD1	80:Sa:60:ASP:N	2.43	0.43
83:S2:1457:U:H2'	83:S2:1458:G:C8	2.53	0.43
83:S2:1643:U:H2'	83:S2:1644:C:C6	2.54	0.43
1:Pt:50:U:H2'	1:Pt:51:C:C6	2.54	0.43
2:Et:58:A:O2'	2:Et:59:G:H5"	2.19	0.43
3:L5:170:C:H42	3:L5:266:C:H42	1.67	0.43
3:L5:1281:G:C6	10:LE:128:HIS:HB2	2.54	0.43
3:L5:1503:A:H62	21:LQ:87:THR:HG21	1.83	0.43
3:L5:1870:C:H2'	3:L5:1871:A2M:H8	2.01	0.43
3:L5:2864:A:H2'	3:L5:2865:U:C6	2.53	0.43
3:L5:3748:A:H5"	6:LA:243:THR:HB	2.01	0.43
3:L5:4492:U:O2'	3:L5:4512:U:O2	2.31	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:LF:37:PHE:HZ	32:Lb:113:ALA:HB1	1.83	0.43
14:LI:207:ASP:HA	14:LI:210:ARG:HG2	2.01	0.43
15:LJ:95:ARG:HD2	15:LJ:177:GLY:HA3	2.01	0.43
23:LS:93:MET:HE1	23:LS:117:HIS:CE1	2.54	0.43
40:Lj:2:THR:HG22	40:Lj:4:GLY:H	1.84	0.43
41:Lk:12:LEU:HD12	41:Lk:16:ARG:HH12	1.83	0.43
50:SD:225:GLU:N	64:Sg:187:ASN:O	2.49	0.43
53:SM:112:LYS:HE2	53:SM:112:LYS:HB2	1.78	0.43
54:SP:47:ARG:NE	83:S2:1619:A:OP1	2.39	0.43
58:ST:73:GLY:O	58:ST:94:ARG:NH2	2.50	0.43
60:SZ:72:VAL:HA	60:SZ:75:GLU:HG2	2.00	0.43
64:Sg:201:SER:OG	64:Sg:203:ASP:OD1	2.26	0.43
64:Sg:226:HIS:NE2	64:Sg:229:THR:OG1	2.47	0.43
67:SC:176:LYS:O	67:SC:200:ARG:NH2	2.52	0.43
69:SG:195:LYS:HD3	83:S2:126:G:H5'	2.01	0.43
82:Se:8:ARG:NH1	83:S2:615:C:O3'	2.51	0.43
83:S2:27:A2M:HM'3	83:S2:27:A2M:H1'	1.65	0.43
83:S2:520:A:O2'	83:S2:825:A:N3	2.48	0.43
83:S2:747:U:O2	83:S2:796:G:C2	2.71	0.43
83:S2:964:A:H2'	83:S2:965:U:H6	1.83	0.43
83:S2:1259:A:H1'	83:S2:1264:C:N4	2.33	0.43
3:L5:6:C:H2'	3:L5:7:C:H6	1.84	0.42
3:L5:423:G:H2'	3:L5:424:U:C6	2.54	0.42
3:L5:494:U:H2'	3:L5:495:C:C6	2.54	0.42
3:L5:737:C:C5	3:L5:739:G:H5"	2.54	0.42
3:L5:966:A:H5"	3:L5:2092:G:H22	1.85	0.42
3:L5:1280:C:O2'	8:LC:321:ASN:OD1	2.21	0.42
3:L5:2610:G:H2'	3:L5:2611:A:C8	2.54	0.42
3:L5:4344:U:H2'	3:L5:4345:C:C6	2.54	0.42
3:L5:4392:OMG:HM21	3:L5:4394:A:H2'	2.00	0.42
3:L5:4723:A:H2'	3:L5:4724:A:C8	2.53	0.42
3:L5:4771:C:H2'	3:L5:4772:C:C6	2.54	0.42
3:L5:4913:G:H4'	3:L5:4914:C:O5'	2.18	0.42
4:L7:57:C:H2'	4:L7:58:A:H8	1.84	0.42
24:LT:119:ALA:O	24:LT:123:GLY:N	2.52	0.42
53:SM:19:GLN:HE22	53:SM:88:TRP:CD1	2.36	0.42
54:SP:81:ARG:NH1	54:SP:120:SER:OG	2.52	0.42
58:ST:84:ARG:HH12	83:S2:1605:G:P	2.42	0.42
64:Sg:283:PRO:O	64:Sg:285:GLN:NE2	2.52	0.42
66:SB:155:TYR:OH	83:S2:989:C:OP2	2.25	0.42
81:Sb:62:VAL:HG23	81:Sb:74:THR:HG21	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:S2:692:G:N7	83:S2:693:A:N6	2.67	0.42
2:Et:4:C:H2'	2:Et:5:G:C8	2.54	0.42
2:Et:9:A:O2'	2:Et:45:G:N3	2.47	0.42
3:L5:239:C:OP1	29:LY:46:SER:OG	2.37	0.42
3:L5:267:G:H2'	3:L5:268:G:C8	2.54	0.42
3:L5:1398:A:OP1	31:La:136:LYS:NZ	2.52	0.42
5:L8:96:C:H5"	38:Lh:66:LYS:HG2	2.01	0.42
9:LD:291:GLN:NE2	14:LI:213:HIS:O	2.33	0.42
15:LJ:38:LYS:HD2	15:LJ:123:ILE:HD11	2.02	0.42
37:Lg:44:SER:OG	37:Lg:46:CYS:SG	2.69	0.42
47:Lr:97:ILE:HD13	47:Lr:107:ARG:HA	2.01	0.42
50:SD:46:THR:HG21	50:SD:79:PHE:CE2	2.54	0.42
50:SD:138:VAL:HG13	50:SD:182:LEU:HD21	2.01	0.42
50:SD:205:PRO:HB3	83:S2:1389:C:H4'	2.00	0.42
56:SR:44:LYS:HG3	56:SR:47:ARG:HH21	1.83	0.42
66:SB:136:ARG:HB2	66:SB:218:LEU:HD11	2.01	0.42
71:SI:165:GLN:HB3	71:SI:171:LEU:HD23	2.00	0.42
83:S2:115:U:H2'	83:S2:116:OMU:C6	2.49	0.42
83:S2:194:C:H2'	83:S2:195:C:C6	2.53	0.42
83:S2:363:A:N1	83:S2:397:G:O2'	2.46	0.42
83:S2:1093:A:H2'	83:S2:1094:C:C6	2.53	0.42
83:S2:1724:A:H2'	83:S2:1725:U:C6	2.54	0.42
2:Et:28:C:H2'	2:Et:29:A:H8	1.84	0.42
3:L5:99:A:H5"	18:LN:184:ILE:HD12	2.01	0.42
3:L5:221:C:H2'	3:L5:222:C:C6	2.54	0.42
3:L5:270:U:H2'	3:L5:271:C:C6	2.54	0.42
3:L5:1081:C:C2'	3:L5:1082:C:H5'	2.49	0.42
3:L5:1298:C:H2'	3:L5:1299:G:C8	2.54	0.42
3:L5:2876:OMG:HM22	3:L5:2877:G:H5'	2.00	0.42
3:L5:5053:U:H3'	3:L5:5054:C:C6	2.53	0.42
4:L7:112:U:H2'	4:L7:113:G:H8	1.84	0.42
6:LA:75:LEU:HD12	6:LA:75:LEU:HA	1.91	0.42
7:LB:49:TYR:OH	7:LB:179:HIS:ND1	2.49	0.42
8:LC:207:PRO:HB3	8:LC:249:PHE:CD2	2.55	0.42
8:LC:221:PHE:O	8:LC:222:ARG:HG2	2.20	0.42
9:LD:33:ARG:O	9:LD:37:VAL:HG22	2.20	0.42
22:LR:19:LYS:HB2	22:LR:19:LYS:HE2	1.85	0.42
22:LR:82:LYS:HA	22:LR:82:LYS:HD2	1.83	0.42
23:LS:83:ARG:HG3	23:LS:125:GLN:HB2	2.01	0.42
28:LX:80:PRO:HA	28:LX:98:PHE:HA	2.01	0.42
65:SA:11:LYS:O	65:SA:15:VAL:HG23	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:SG:174:PRO:HB3	83:S2:65:C:C6	2.53	0.42
72:SJ:41:ARG:N	83:S2:642:U:OP1	2.51	0.42
74:SN:55:ARG:HD3	83:S2:1017:U:H5'	2.02	0.42
78:SX:22:TRP:HE3	78:SX:28:LYS:HD2	1.83	0.42
82:Se:58:ASN:ND2	83:S2:606:G:H1'	2.34	0.42
83:S2:349:A:H2'	83:S2:350:C:C6	2.53	0.42
83:S2:441:C:H2'	83:S2:442:C:C6	2.54	0.42
83:S2:600:G:H2'	83:S2:601:OMG:H8	1.83	0.42
83:S2:943:U:C2	83:S2:944:A:C8	3.07	0.42
83:S2:1084:A:OP1	83:S2:1858:G:O2'	2.29	0.42
83:S2:1407:U:H2'	83:S2:1408:U:C6	2.54	0.42
3:L5:264:C:H1'	38:Lh:112:ARG:HH21	1.85	0.42
3:L5:438:G:OP1	35:Le:16:ARG:NH1	2.43	0.42
3:L5:1294:A:H1'	3:L5:1296:G:N1	2.34	0.42
3:L5:1806:G:H2'	3:L5:1807:C:C6	2.54	0.42
3:L5:2378:G:N2	3:L5:2381:A:OP2	2.49	0.42
3:L5:2708:U:O2'	84:CI:79:ARG:CZ	2.55	0.42
3:L5:3772:U:H3	3:L5:3776:G:H22	1.66	0.42
3:L5:4115:G:O2'	3:L5:4116:C:O5'	2.35	0.42
3:L5:4678:G:N2	3:L5:4713:G:H1'	2.34	0.42
11:LF:29:LYS:HD2	11:LF:32:ARG:HH21	1.84	0.42
12:LG:148:GLU:OE2	18:LN:6:TYR:OH	2.35	0.42
16:LL:111:GLN:HA	16:LL:114:VAL:HG22	2.00	0.42
54:SP:100:LYS:HB2	83:S2:1240:A:C5	2.54	0.42
56:SR:52:GLY:O	56:SR:55:THR:OG1	2.37	0.42
64:Sg:183:LYS:HA	64:Sg:183:LYS:HD2	1.83	0.42
65:SA:34:MET:HE1	65:SA:162:PRO:HB3	2.01	0.42
70:SH:18:GLU:C	70:SH:20:GLU:H	2.28	0.42
72:SJ:176:LYS:HA	72:SJ:179:LYS:HG2	2.01	0.42
83:S2:1273:C:O2'	83:S2:1506:A:N1	2.50	0.42
83:S2:1620:A:H1'	83:S2:1624:U:OP2	2.19	0.42
3:L5:444:G:H2'	3:L5:445:U:H6	1.84	0.42
3:L5:493:G:O2'	3:L5:494:U:OP1	2.32	0.42
3:L5:728:U:H5"	11:LF:76:ARG:NH1	2.35	0.42
3:L5:1346:C:H2'	3:L5:1347:G:C8	2.55	0.42
3:L5:1631:A:C2	6:LA:204:MET:HG2	2.54	0.42
3:L5:1779:U:H2'	3:L5:1780:A:C8	2.55	0.42
3:L5:1895:G:H2'	3:L5:1896:A:O4'	2.18	0.42
3:L5:2385:U:H2'	3:L5:2386:U:C6	2.54	0.42
3:L5:2739:C:OP2	46:Lp:33:GLN:NE2	2.53	0.42
3:L5:4981:G:O6	7:LB:21:ARG:NH2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:LF:238:ASP:O	11:LF:241:ASN:ND2	2.51	0.42
18:LN:178:HIS:HA	18:LN:181:HIS:NE2	2.34	0.42
21:LQ:50:ARG:HH21	21:LQ:140:SER:HB2	1.84	0.42
24:LT:122:LYS:NZ	24:LT:124:THR:HB	2.34	0.42
48:Ls:58:ASN:C	48:Ls:62:ARG:HE	2.27	0.42
53:SM:17:ALA:O	53:SM:20:GLU:HG3	2.18	0.42
53:SM:91:LEU:HD23	53:SM:91:LEU:HA	1.85	0.42
53:SM:95:ASP:HB3	53:SM:99:LYS:HB3	2.01	0.42
64:Sg:5:MET:HB3	64:Sg:270:LEU:HD21	2.01	0.42
68:SE:126:VAL:HA	68:SE:141:THR:HA	2.02	0.42
77:SW:76:SER:OG	83:S2:1158:G:O3'	2.27	0.42
83:S2:29:G:H2'	83:S2:30:C:C6	2.55	0.42
83:S2:874:G:H2'	83:S2:875:A:C8	2.51	0.42
83:S2:1289:U:O4	83:S2:1311:C:N4	2.52	0.42
3:L5:2079:G:H2'	3:L5:2080:U:C6	2.54	0.42
3:L5:4304:A:OP2	3:L5:4305:G:N2	2.52	0.42
3:L5:4458:C:H2'	3:L5:4459:U:C6	2.54	0.42
3:L5:4460:U:H2'	3:L5:4461:C:H6	1.84	0.42
3:L5:4651:A:H2'	3:L5:4652:G:O4'	2.19	0.42
6:LA:80:GLU:HB2	6:LA:170:ALA:HA	2.00	0.42
9:LD:37:VAL:HG12	9:LD:50:ARG:HD3	2.00	0.42
23:LS:99:ASP:OD1	23:LS:100:LEU:N	2.51	0.42
51:SF:179:ASN:HB2	51:SF:187:SER:HB3	2.02	0.42
56:SR:114:LEU:HB2	56:SR:117:LEU:HG	2.01	0.42
76:SV:30:ALA:O	76:SV:60:ARG:HD3	2.20	0.42
80:Sa:12:LYS:HG3	80:Sa:15:ARG:HB2	2.02	0.42
3:L5:256:G:H2'	3:L5:257:C:C6	2.55	0.42
3:L5:330:G:N7	87:L5:5284:SPD:N1	2.67	0.42
3:L5:481:G:H2'	3:L5:482:G:H8	1.84	0.42
3:L5:1339:U:OP1	31:La:8:THR:OG1	2.32	0.42
3:L5:1523:A:N3	3:L5:4389:C:O2'	2.51	0.42
3:L5:1591:U:N3	3:L5:4555:U:OP1	2.44	0.42
3:L5:2558:C:H2'	3:L5:2559:G:C8	2.53	0.42
3:L5:4113:U:H3'	3:L5:4114:C:H4'	2.02	0.42
3:L5:4153:C:H2'	3:L5:4154:G:C8	2.55	0.42
3:L5:5002:U:H2'	3:L5:5003:U:H6	1.85	0.42
86:L5:5263:SPM:H111	86:L5:5263:SPM:H82	1.87	0.42
4:L7:7:G:H5"	9:LD:22:ARG:HD3	2.00	0.42
38:Lh:8:ASP:OD1	38:Lh:8:ASP:N	2.52	0.42
39:Li:76:ARG:HD3	39:Li:76:ARG:HA	1.81	0.42
60:SZ:41:ARG:HA	60:SZ:41:ARG:HD2	1.82	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:Sg:39:THR:HG22	64:Sg:60:ARG:HG2	2.02	0.42
72:SJ:121:LYS:HZ1	83:S2:528:A:H5'	1.85	0.42
77:SW:62:VAL:HG11	81:Sb:8:LEU:HG	2.01	0.42
83:S2:96:C:H2'	83:S2:97:U:C6	2.55	0.42
83:S2:455:A:H2'	83:S2:456:C:H6	1.83	0.42
83:S2:601:OMG:H1'	83:S2:601:OMG:HM23	1.77	0.42
83:S2:876:C:H2'	83:S2:877:C:C6	2.54	0.42
83:S2:902:G:O2'	83:S2:903:A:O4'	2.38	0.42
3:L5:163:A:H2'	3:L5:164:G:H8	1.84	0.42
3:L5:441:G:H2'	3:L5:442:G:C8	2.55	0.42
3:L5:1779:U:OP2	9:LD:5:LYS:NZ	2.45	0.42
3:L5:2056:G:H4'	19:LO:18:ARG:HH22	1.84	0.42
3:L5:2090:U:H4'	3:L5:2091:C:H3'	2.01	0.42
3:L5:2561:C:H2'	3:L5:2562:G:O4'	2.19	0.42
3:L5:3600:G:H2'	3:L5:3601:C:C6	2.55	0.42
3:L5:4578:G:H2'	3:L5:4579:PSU:C6	2.55	0.42
3:L5:5015:G:H2'	3:L5:5016:A:C2	2.55	0.42
5:L8:41:A:H4'	40:Lj:59:THR:HG23	2.01	0.42
9:LD:289:ARG:O	9:LD:292:GLU:HG3	2.18	0.42
10:LE:203:ILE:O	10:LE:206:VAL:HG22	2.20	0.42
20:LP:60:PHE:O	20:LP:78:TRP:NE1	2.50	0.42
20:LP:122:ALA:HB3	20:LP:143:PRO:HG2	2.01	0.42
21:LQ:3:VAL:HG13	21:LQ:5:ILE:HG12	2.02	0.42
32:Lb:43:MET:HE2	32:Lb:47:LYS:NZ	2.34	0.42
34:Ld:25:TYR:CD1	34:Ld:88:LEU:HD13	2.55	0.42
36:Lf:45:LYS:NZ	36:Lf:108:SER:HA	2.35	0.42
37:Lg:33:LEU:HD23	37:Lg:33:LEU:HA	1.89	0.42
51:SF:123:GLU:OE1	61:Sc:63:ARG:NH2	2.53	0.42
58:ST:9:VAL:O	58:ST:11:GLN:NE2	2.48	0.42
58:ST:42:HIS:NE2	58:ST:43:LYS:HE3	2.34	0.42
68:SE:72:ILE:HD12	68:SE:77:ARG:HB2	2.02	0.42
78:SX:107:ARG:HG2	78:SX:112:VAL:HG22	2.02	0.42
79:SY:9:THR:H	83:S2:837:A:N6	2.18	0.42
83:S2:509:OMG:H2'	83:S2:510:G:H8	1.85	0.42
83:S2:853:C:C2	83:S2:854:A:C8	3.08	0.42
83:S2:1013:U:C2	83:S2:1014:G:C8	3.08	0.42
83:S2:1112:U:H2'	83:S2:1113:A:C8	2.55	0.42
1:Pt:22:U:H2'	1:Pt:23:C:H6	1.85	0.42
3:L5:99:A:H2'	3:L5:100:C:O2	2.20	0.42
3:L5:406:C:O2'	3:L5:407:A:OP1	2.33	0.42
3:L5:700:G:C6	3:L5:701:G:C6	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:919:C:OP1	17:LM:69:HIS:ND1	2.31	0.42
3:L5:5030:U:H2'	3:L5:5031:G:H8	1.85	0.42
6:LA:145:LYS:HD3	6:LA:145:LYS:HA	1.83	0.42
30:LZ:92:ASP:OD1	30:LZ:94:THR:OG1	2.34	0.42
30:LZ:135:ARG:HD2	30:LZ:135:ARG:HA	1.82	0.42
34:Ld:33:ILE:HD11	34:Ld:45:ALA:HA	2.01	0.42
53:SM:128:PHE:HA	53:SM:131:LYS:HG2	2.02	0.42
56:SR:126:MET:HG2	65:SA:43:SER:HB2	2.02	0.42
57:SS:132:ARG:HD3	83:S2:1623:A:N6	2.34	0.42
58:ST:23:LYS:HD3	58:ST:51:ASN:HD22	1.85	0.42
83:S2:28:U:H2'	83:S2:29:G:C8	2.53	0.42
83:S2:223:C:H2'	83:S2:224:A:H8	1.85	0.42
84:CI:63:ARG:HD2	84:CI:63:ARG:HA	1.85	0.42
3:L5:21:G:H1'	5:L8:103:A:N3	2.34	0.42
3:L5:120:A:N1	3:L5:148:C:O2'	2.45	0.42
3:L5:351:C:OP2	8:LC:197:ARG:NH1	2.35	0.42
3:L5:1677:PSU:H4'	3:L5:1680:G:C2	2.55	0.42
3:L5:1872:G:O2'	3:L5:4219:A:N3	2.42	0.42
3:L5:2295:C:H2'	3:L5:2296:G:H8	1.83	0.42
3:L5:2519:U:H1'	3:L5:2520:C:C6	2.55	0.42
3:L5:4061:G:C5	3:L5:4062:A:C8	3.07	0.42
3:L5:4208:U:OP1	3:L5:4334:U:O2'	2.32	0.42
3:L5:4232:U:H5'	45:Lo:3:ASN:HB3	2.02	0.42
6:LA:7:GLY:HA2	6:LA:10:LYS:HG3	2.02	0.42
7:LB:224:LYS:HD2	7:LB:340:THR:HG22	2.02	0.42
15:LJ:35:ARG:O	15:LJ:39:VAL:HG23	2.20	0.42
19:LO:61:ARG:HA	19:LO:70:PRO:HD2	2.00	0.42
30:LZ:88:ASP:OD1	30:LZ:88:ASP:N	2.40	0.42
47:Lr:47:LYS:O	47:Lr:103:ARG:HD2	2.20	0.42
53:SM:42:LEU:HD21	53:SM:50:CYS:SG	2.59	0.42
65:SA:134:LEU:HD21	65:SA:144:THR:HG21	2.02	0.42
66:SB:83:LYS:HD3	66:SB:106:THR:HG22	2.02	0.42
69:SG:92:ARG:NH1	83:S2:1738:C:OP1	2.39	0.42
70:SH:34:SER:OG	70:SH:78:ARG:NH2	2.50	0.42
71:SI:132:GLU:O	71:SI:136:ILE:HG23	2.20	0.42
77:SW:28:ARG:HB3	77:SW:29:PRO:HD3	2.01	0.42
83:S2:1129:G:H3'	83:S2:1130:G:N2	2.35	0.42
83:S2:1174:PSU:H2'	83:S2:1175:G:H8	1.85	0.42
83:S2:1324:G:H1	83:S2:1504:U:H3	1.68	0.42
83:S2:1442:OMU:HM23	83:S2:1442:OMU:H1'	1.90	0.42
83:S2:1708:C:H2'	83:S2:1709:G:H8	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:86:U:H2'	3:L5:87:A:C8	2.54	0.41
3:L5:106:A:H2'	3:L5:107:G:O4'	2.19	0.41
3:L5:135:G:N3	3:L5:135:G:H2'	2.35	0.41
3:L5:423:G:H5'	20:LP:26:PHE:HZ	1.84	0.41
3:L5:982:U:H2'	3:L5:983:C:C6	2.55	0.41
3:L5:1978:C:H2'	3:L5:1979:A:O4'	2.20	0.41
3:L5:2422:OMC:HM23	3:L5:2422:OMC:H1'	1.91	0.41
3:L5:2481:G:H2'	3:L5:2482:C:C6	2.55	0.41
3:L5:2542:G:H2'	3:L5:2543:A:C8	2.55	0.41
3:L5:3893:C:O2'	3:L5:4979:A:N1	2.51	0.41
3:L5:4524:G:N3	7:LB:252:ALA:HB1	2.35	0.41
4:L7:75:G:N2	4:L7:100:A:OP2	2.42	0.41
5:L8:75:OMG:HM23	5:L8:75:OMG:H1'	1.79	0.41
7:LB:154:LYS:HE2	7:LB:154:LYS:HB2	1.72	0.41
11:LF:182:TYR:HB3	11:LF:200:ARG:HG3	2.02	0.41
13:LH:92:MET:HE2	13:LH:179:ILE:HG22	2.02	0.41
16:LL:194:ILE:HD12	16:LL:194:ILE:HA	1.88	0.41
19:LO:166:ILE:HG12	19:LO:169:ARG:HH21	1.85	0.41
21:LQ:43:PHE:CD2	21:LQ:133:GLY:HA3	2.55	0.41
30:LZ:57:MET:HG2	30:LZ:61:LYS:HD3	2.02	0.41
33:Lc:78:ASN:OD1	33:Lc:78:ASN:N	2.53	0.41
49:Lt:28:LEU:HD23	49:Lt:28:LEU:H	1.85	0.41
50:SD:55:THR:HA	50:SD:58:VAL:HG12	2.02	0.41
53:SM:20:GLU:HG2	53:SM:119:GLN:HB2	2.01	0.41
57:SS:24:ARG:H	57:SS:24:ARG:HG2	1.69	0.41
63:Sf:103:LEU:HG	63:Sf:104:LYS:H	1.85	0.41
64:Sg:159:ASN:HD21	64:Sg:161:SER:HB2	1.84	0.41
64:Sg:207:CYS:SG	64:Sg:219:TRP:HB2	2.60	0.41
64:Sg:230:LEU:HD21	64:Sg:259:TRP:CZ2	2.55	0.41
68:SE:195:ILE:HD13	68:SE:210:VAL:HG22	2.01	0.41
69:SG:77:LEU:HD12	69:SG:95:LYS:HD3	2.02	0.41
69:SG:133:LEU:HB2	83:S2:65:C:C2	2.55	0.41
81:Sb:34:ASP:O	81:Sb:79:PHE:HA	2.20	0.41
1:Pt:3:C:H42	1:Pt:70:A:H61	1.68	0.41
3:L5:252:C:H2'	3:L5:253:G:C8	2.55	0.41
3:L5:1172:C:O2'	3:L5:1173:G:H8	2.03	0.41
3:L5:1333:A:H2'	3:L5:1334:A:H8	1.84	0.41
3:L5:1510:G:H2'	3:L5:1511:U:H6	1.84	0.41
3:L5:1697:G:H2'	3:L5:1698:C:O4'	2.20	0.41
3:L5:1826:G:H4'	32:Lb:43:MET:HE3	2.01	0.41
3:L5:1979:A:H1'	3:L5:1988:G:N2	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:L8:36:G:C5	38:Lh:89:ARG:HD3	2.55	0.41
10:LE:282:TYR:HE1	36:Lf:31:GLU:HG2	1.84	0.41
24:LT:50:LYS:HB3	24:LT:50:LYS:HE2	1.79	0.41
24:LT:142:ARG:NH1	24:LT:144:ASN:OD1	2.53	0.41
29:LY:59:ARG:HB2	29:LY:103:LYS:HD2	2.02	0.41
48:Ls:119:CYS:SG	48:Ls:120:GLU:N	2.93	0.41
50:SD:136:VAL:HG12	50:SD:186:VAL:HG22	2.01	0.41
65:SA:122:LEU:HD22	65:SA:137:ALA:HB2	2.02	0.41
67:SC:74:LYS:HA	67:SC:74:LYS:HD3	1.88	0.41
83:S2:85:A:H2'	83:S2:86:C:H6	1.85	0.41
83:S2:1468:C:H2'	83:S2:1469:A:C8	2.55	0.41
83:S2:1733:U:H2'	83:S2:1734:G:O4'	2.20	0.41
3:L5:86:U:H2'	3:L5:87:A:H8	1.86	0.41
3:L5:327:U:HO2'	39:Li:30:ARG:HH11	1.63	0.41
3:L5:1844:G:H5"	32:Lb:25:ARG:NH2	2.35	0.41
3:L5:2696:A:H62	41:Lk:35:LYS:NZ	2.17	0.41
3:L5:2732:G:H2'	3:L5:2733:C:C6	2.55	0.41
3:L5:3799:A:N3	3:L5:4506:C:O2'	2.43	0.41
3:L5:3855:C:H2'	3:L5:3856:A:H8	1.85	0.41
3:L5:3930:U:H3	3:L5:4180:G:H1	1.69	0.41
4:L7:110:G:H2'	4:L7:111:C:C6	2.54	0.41
5:L8:19:C:H2'	5:L8:20:A:H8	1.85	0.41
33:Lc:60:ILE:HD13	33:Lc:93:THR:HG21	2.01	0.41
38:Lh:88:THR:HB	38:Lh:91:MET:HB2	2.03	0.41
44:Ln:2:ARG:NE	83:S2:1842:4AC:OP2	2.38	0.41
52:SK:26:ASP:HB3	52:SK:29:MET:HB2	2.02	0.41
61:Sc:44:ARG:NH1	61:Sc:61:SER:O	2.53	0.41
69:SG:149:LYS:HD2	69:SG:149:LYS:HA	1.93	0.41
70:SH:160:LYS:HD3	70:SH:189:PHE:HB3	2.00	0.41
71:SI:99:ASN:HB2	83:S2:377:G:O5'	2.21	0.41
73:SL:82:MET:HE3	73:SL:82:MET:HB2	1.95	0.41
78:SX:28:LYS:NZ	83:S2:1189:A:OP1	2.43	0.41
79:SY:111:LYS:NZ	83:S2:56:G:OP1	2.43	0.41
83:S2:1802:C:H2'	83:S2:1803:U:C6	2.55	0.41
3:L5:6:C:H2'	3:L5:7:C:C6	2.55	0.41
3:L5:171:U:H5'	16:LL:135:LYS:HD3	2.01	0.41
3:L5:466:A:H2'	3:L5:467:U:C6	2.56	0.41
3:L5:2264:C:H2'	3:L5:2265:G:O4'	2.20	0.41
3:L5:2404:A:O2'	40:Lj:12:ARG:O	2.32	0.41
7:LB:367:PHE:HB2	27:LW:1:MET:HB2	2.02	0.41
19:LO:149:TYR:O	19:LO:153:THR:OG1	2.34	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:Ls:160:LEU:HD11	48:Ls:175:LEU:HD21	2.02	0.41
56:SR:24:LEU:HD23	56:SR:34:VAL:HG21	2.03	0.41
66:SB:73:ASP:OD1	66:SB:73:ASP:N	2.53	0.41
68:SE:160:ILE:HD12	68:SE:162:ILE:HD11	2.02	0.41
68:SE:253:ASP:OD1	68:SE:253:ASP:N	2.54	0.41
75:SO:34:PHE:CE1	75:SO:36:SER:HB3	2.55	0.41
77:SW:57:ARG:HD2	83:S2:919:A:H4'	2.00	0.41
83:S2:626:G:N2	83:S2:626:G:OP2	2.52	0.41
83:S2:649:PSU:H2'	83:S2:650:A:C8	2.54	0.41
83:S2:1174:PSU:H2'	83:S2:1175:G:C8	2.55	0.41
83:S2:1304:U:H2'	83:S2:1305:C:C6	2.55	0.41
1:Pt:76:A:N7	3:L5:4548:A:N6	2.69	0.41
3:L5:169:G:O6	3:L5:170:C:N4	2.53	0.41
3:L5:432:U:H1'	86:L5:5293:SPM:H82	2.02	0.41
3:L5:1248:C:H2'	3:L5:1249:C:C6	2.56	0.41
3:L5:2326:G:H5"	35:Le:127:ALA:HB1	2.03	0.41
3:L5:3660:C:P	6:LA:241:ARG:HH22	2.43	0.41
3:L5:4460:U:H2'	3:L5:4461:C:C6	2.56	0.41
3:L5:4920:C:H2'	3:L5:4921:C:H6	1.85	0.41
8:LC:5:ARG:NE	8:LC:24:LEU:O	2.37	0.41
21:LQ:154:LYS:HB3	21:LQ:154:LYS:HE2	1.82	0.41
33:Lc:31:TYR:OH	33:Lc:59:GLU:OE1	2.28	0.41
45:Lo:33:LEU:HD12	45:Lo:38:LYS:HE3	2.02	0.41
49:Lt:11:LYS:HD2	49:Lt:11:LYS:HA	1.94	0.41
52:SK:57:TYR:HB3	52:SK:75:GLY:HA2	2.03	0.41
75:SO:140:THR:HB	83:S2:1046:PSU:H1'	2.02	0.41
79:SY:37:LYS:HG3	83:S2:571:U:H5"	2.02	0.41
83:S2:300:U:H2'	83:S2:301:A:C8	2.56	0.41
83:S2:588:G:OP2	83:S2:588:G:N2	2.39	0.41
83:S2:1047:C:H2'	83:S2:1048:G:O4'	2.21	0.41
83:S2:1128:C:H2'	83:S2:1129:G:C8	2.56	0.41
83:S2:1755:C:H2'	83:S2:1756:C:C6	2.55	0.41
2:Et:39:U:H2'	2:Et:40:C:C6	2.56	0.41
3:L5:267:G:H2'	3:L5:268:G:H8	1.85	0.41
3:L5:1307:A:H2'	3:L5:1308:C:H6	1.86	0.41
3:L5:1687:U:H2'	3:L5:1688:G:C8	2.56	0.41
3:L5:2412:A:H2'	3:L5:2413:U:C6	2.56	0.41
3:L5:2570:U:H2'	3:L5:2571:C:C6	2.56	0.41
3:L5:2890:C:H2'	3:L5:2891:U:C6	2.56	0.41
5:L8:78:G:H2'	5:L8:79:G:C8	2.56	0.41
7:LB:119:TYR:OH	7:LB:129:ALA:N	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:LF:155:TYR:OH	11:LF:188:GLU:OE2	2.31	0.41
22:LR:80:LYS:HA	22:LR:80:LYS:HD2	1.87	0.41
23:LS:95:ARG:NH2	23:LS:112:ASP:OD2	2.53	0.41
34:Ld:114:PHE:HA	34:Ld:117:LEU:HD12	2.02	0.41
68:SE:247:THR:N	68:SE:250:GLU:OE2	2.51	0.41
70:SH:50:GLU:HG2	70:SH:60:ILE:HD13	2.03	0.41
72:SJ:150:ARG:HG3	83:S2:821:G:C6	2.56	0.41
83:S2:1681:U:H2'	83:S2:1682:C:C6	2.56	0.41
2:Et:27:U:H2'	2:Et:28:C:C6	2.56	0.41
2:Et:35:U:O4	51:SF:130:ARG:NH2	2.42	0.41
3:L5:429:A:H2'	3:L5:430:G:H8	1.86	0.41
3:L5:499:G:H2'	3:L5:499:G:N3	2.35	0.41
3:L5:979:C:OP2	10:LE:66:LYS:HD3	2.20	0.41
3:L5:980:U:H2'	3:L5:981:C:C6	2.55	0.41
3:L5:1702:C:H42	11:LF:36:LYS:NZ	2.19	0.41
3:L5:2018:C:H2'	3:L5:2019:C:H6	1.83	0.41
3:L5:2608:G:H2'	3:L5:2609:G:H8	1.85	0.41
3:L5:2696:A:OP1	41:Lk:26:LYS:NZ	2.42	0.41
3:L5:3933:G:H2'	3:L5:3934:G:H8	1.85	0.41
3:L5:4870:G:H5"	17:LM:91:TRP:CD2	2.55	0.41
6:LA:115:CYS:SG	6:LA:124:GLY:HA3	2.60	0.41
6:LA:131:GLY:H	6:LA:169:VAL:HG13	1.85	0.41
7:LB:397:ILE:O	7:LB:401:GLU:HG2	2.21	0.41
16:LL:49:ARG:O	16:LL:149:GLN:NE2	2.53	0.41
16:LL:116:ARG:NH2	16:LL:155:MET:O	2.49	0.41
21:LQ:59:PRO:HG3	21:LQ:143:ARG:HA	2.02	0.41
50:SD:15:GLY:HA3	62:Sd:50:ILE:HG23	2.03	0.41
50:SD:222:PRO:HB3	64:Sg:190:GLY:HA3	2.03	0.41
54:SP:120:SER:OG	54:SP:120:SER:O	2.38	0.41
64:Sg:241:PHE:CE2	64:Sg:248:LEU:HD12	2.55	0.41
64:Sg:314:ILE:HD12	64:Sg:314:ILE:HA	1.92	0.41
70:SH:118:ARG:HD3	70:SH:121:THR:HG21	2.02	0.41
72:SJ:38:ARG:NH2	83:S2:522:A:N7	2.69	0.41
77:SW:42:MET:HB3	77:SW:42:MET:HE2	1.86	0.41
83:S2:186:C:H2'	83:S2:187:G:H8	1.84	0.41
83:S2:376:A:H2'	83:S2:377:G:O4'	2.21	0.41
83:S2:1417:C:N3	83:S2:1422:G:N1	2.66	0.41
83:S2:1628:C:H2'	83:S2:1629:C:C6	2.55	0.41
3:L5:223:G:H4'	3:L5:225:G:N7	2.36	0.41
3:L5:1867:A:OP1	14:LI:13:LYS:NZ	2.50	0.41
3:L5:2448:G:H2'	3:L5:2449:A:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L5:4934:A:H2'	3:L5:4935:C:C6	2.55	0.41
7:LB:80:GLU:OE2	7:LB:328:ASN:ND2	2.49	0.41
8:LC:279:LEU:HD23	8:LC:279:LEU:HA	1.89	0.41
9:LD:119:TYR:OH	9:LD:139:PRO:O	2.31	0.41
10:LE:115:TYR:CD1	47:Lr:115:SER:HB3	2.55	0.41
18:LN:155:VAL:O	18:LN:162:ARG:NH2	2.53	0.41
21:LQ:110:ARG:HG3	21:LQ:120:ILE:HD12	2.02	0.41
24:LT:127:GLN:NE2	24:LT:129:LYS:O	2.53	0.41
27:LW:52:THR:O	27:LW:56:ARG:HG2	2.21	0.41
29:LY:56:GLN:HB3	29:LY:67:ILE:HD13	2.03	0.41
57:SS:62:ASP:O	57:SS:65:GLU:HG3	2.21	0.41
64:Sg:106:LYS:HB3	64:Sg:125:ARG:HB2	2.01	0.41
68:SE:134:LYS:N	83:S2:298:G:OP1	2.40	0.41
70:SH:91:HIS:ND1	70:SH:169:LYS:HG2	2.35	0.41
83:S2:563:G:HO2'	83:S2:564:A:P	2.44	0.41
83:S2:1531:A:H2'	83:S2:1532:C:C6	2.55	0.41
83:S2:1570:G:O2'	83:S2:1614:A:O2'	2.36	0.41
2:Et:35:U:H2'	2:Et:36:U:C6	2.56	0.41
3:L5:302:C:H2'	3:L5:303:C:H6	1.86	0.41
3:L5:398:A2M:O5'	3:L5:398:A2M:H8	2.21	0.41
3:L5:1306:C:H2'	3:L5:1307:A:C8	2.53	0.41
3:L5:1405:C:N4	3:L5:1408:G:N3	2.43	0.41
3:L5:1413:C:H2'	3:L5:1414:C:H6	1.85	0.41
3:L5:1600:A:H5'	20:LP:133:HIS:HA	2.03	0.41
3:L5:1703:C:O2'	3:L5:1704:C:O5'	2.39	0.41
3:L5:1811:G:H2'	3:L5:1812:C:C6	2.56	0.41
3:L5:1914:C:H4'	19:LO:89:PRO:HD3	2.03	0.41
3:L5:2424:OMG:HM23	3:L5:2424:OMG:H1'	1.93	0.41
3:L5:2517:A:H5'	37:Lg:62:LYS:HD3	2.02	0.41
3:L5:3925:OMU:HM23	3:L5:3925:OMU:H1'	1.83	0.41
3:L5:4257:A:C2	15:LJ:60:PHE:HB3	2.56	0.41
3:L5:4364:G:H2'	3:L5:4365:C:C6	2.55	0.41
3:L5:4688:C:H2'	3:L5:4689:PSU:C6	2.56	0.41
3:L5:4892:A:H2'	3:L5:4893:A:O4'	2.20	0.41
3:L5:4979:A:OP1	7:LB:228:TYR:HB2	2.21	0.41
5:L8:39:G:H1'	5:L8:103:A:H61	1.85	0.41
6:LA:112:ILE:HG22	6:LA:135:THR:HG23	2.02	0.41
7:LB:337:VAL:HG11	7:LB:345:LEU:HD13	2.02	0.41
8:LC:159:GLU:HG3	8:LC:253:THR:HG21	2.01	0.41
8:LC:334:THR:HG21	11:LF:51:TYR:OH	2.21	0.41
14:LI:187:LYS:HE3	14:LI:189:CYS:SG	2.61	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:LJ:40:LEU:HD23	15:LJ:40:LEU:HA	1.91	0.41
17:LM:33:GLN:O	17:LM:33:GLN:HG2	2.20	0.41
18:LN:75:VAL:HG21	18:LN:80:THR:HG22	2.02	0.41
20:LP:112:LEU:HD23	20:LP:150:LEU:HD13	2.03	0.41
25:LU:22:THR:HA	25:LU:71:THR:HA	2.03	0.41
49:Lt:130:LYS:NZ	49:Lt:157:SER:O	2.53	0.41
51:SF:140:ASP:N	51:SF:140:ASP:OD1	2.54	0.41
54:SP:100:LYS:HD3	83:S2:1240:A:C8	2.56	0.41
55:SQ:31:LEU:HD12	55:SQ:33:LYS:HE2	2.03	0.41
57:SS:132:ARG:NH1	83:S2:1623:A:N1	2.69	0.41
64:Sg:205:SER:C	64:Sg:221:LEU:HD23	2.46	0.41
66:SB:35:ALA:O	66:SB:42:ARG:NE	2.53	0.41
67:SC:68:ARG:HG2	67:SC:277:HIS:HB2	2.02	0.41
68:SE:36:HIS:ND1	68:SE:85:GLY:HA3	2.36	0.41
69:SG:35:GLU:HG2	69:SG:114:VAL:HG21	2.03	0.41
69:SG:174:PRO:O	83:S2:77:A:O2'	2.31	0.41
69:SG:193:ALA:O	69:SG:196:LYS:N	2.53	0.41
70:SH:140:VAL:HG12	74:SN:19:ARG:HD3	2.02	0.41
71:SI:5:ARG:NE	83:S2:379:C:O2	2.54	0.41
80:Sa:32:LYS:NZ	83:S2:989:C:O2	2.54	0.41
82:Se:39:ASN:HA	82:Se:43:VAL:HG12	2.03	0.41
83:S2:688:U:H1'	83:S2:689:U:OP2	2.21	0.41
83:S2:1088:U:H4'	83:S2:1089:G:OP2	2.21	0.41
83:S2:1354:G:N2	83:S2:1357:A:OP2	2.38	0.41
83:S2:1671:G:H2'	83:S2:1672:U:H6	1.85	0.41
1:Pt:43:A:H2'	1:Pt:44:A:C8	2.56	0.41
2:Et:9:A:H4'	2:Et:47:U:P	2.61	0.41
3:L5:1350:C:H2'	3:L5:1351:G:C8	2.56	0.41
3:L5:1497:A:N6	21:LQ:175:GLU:O	2.54	0.41
3:L5:1727:U:H2'	3:L5:1728:U:C6	2.56	0.41
3:L5:2864:A:H2'	3:L5:2865:U:H6	1.85	0.41
3:L5:4617:G:OP2	7:LB:358:ARG:NH2	2.54	0.41
3:L5:4685:U:H2'	3:L5:4686:G:C8	2.56	0.41
4:L7:11:A:N1	4:L7:66:G:O2'	2.51	0.41
7:LB:117:ARG:HA	7:LB:177:LYS:HD2	2.03	0.41
14:LI:87:MET:HE3	14:LI:87:MET:HB2	1.93	0.41
22:LR:165:LYS:NZ	83:S2:908:A:OP2	2.46	0.41
52:SK:22:VAL:HG22	52:SK:68:TYR:HD1	1.84	0.41
66:SB:150:ILE:HG12	83:S2:1124:C:H5"	2.02	0.41
75:SO:46:ASP:OD1	75:SO:49:GLY:N	2.51	0.41
78:SX:123:VAL:HG12	78:SX:124:LYS:HG3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
80:Sa:41:ILE:HD12	80:Sa:68:TYR:CD2	2.56	0.41
83:S2:66:G:H2'	83:S2:67:C:H4'	2.03	0.41
2:Et:39:U:H1'	51:SF:132:GLY:O	2.21	0.40
3:L5:305:A:P	18:LN:15:GLN:HE22	2.39	0.40
3:L5:1251:C:H2'	3:L5:1252:C:C6	2.56	0.40
3:L5:1259:G:H2'	3:L5:1260:G:C8	2.54	0.40
3:L5:1309:C:H2'	3:L5:1310:C:H6	1.86	0.40
3:L5:1354:A:N1	3:L5:1385:G:O2'	2.46	0.40
3:L5:4186:A:H2'	3:L5:4187:G:C8	2.56	0.40
7:LB:218:ASP:OD2	7:LB:348:ARG:NH2	2.41	0.40
12:LG:160:ASP:OD1	12:LG:160:ASP:N	2.54	0.40
48:Ls:102:LEU:HD11	48:Ls:187:LEU:HD23	2.02	0.40
50:SD:10:LYS:NZ	59:SU:111:GLU:HG3	2.36	0.40
53:SM:75:ASN:OD1	53:SM:76:LEU:N	2.54	0.40
55:SQ:67:ASP:OD2	55:SQ:69:ARG:NH1	2.54	0.40
61:Sc:13:ARG:CZ	61:Sc:35:MET:HE1	2.51	0.40
66:SB:167:LYS:HB2	66:SB:167:LYS:HE2	1.84	0.40
67:SC:195:LEU:HD23	67:SC:224:THR:HG23	2.03	0.40
72:SJ:114:VAL:HG23	72:SJ:126:ALA:HB1	2.03	0.40
78:SX:128:VAL:HG23	78:SX:138:LYS:HD2	2.03	0.40
79:SY:104:ARG:HG2	79:SY:108:LYS:HE2	2.02	0.40
83:S2:1144:A:H5'	83:S2:1355:C:H5	1.85	0.40
83:S2:1259:A:H1'	83:S2:1264:C:H42	1.86	0.40
3:L5:28:C:P	18:LN:193:ARG:HH22	2.44	0.40
3:L5:919:C:H2'	3:L5:920:C:H6	1.86	0.40
3:L5:1661:C:H2'	3:L5:1662:C:H6	1.86	0.40
3:L5:1811:G:H21	32:Lb:57:MET:HE2	1.86	0.40
3:L5:2732:G:H2'	3:L5:2733:C:H6	1.86	0.40
3:L5:2844:A:O2'	3:L5:4631:G:H4'	2.22	0.40
9:LD:203:ASN:OD1	9:LD:203:ASN:N	2.52	0.40
11:LF:147:LEU:O	11:LF:151:ASN:ND2	2.46	0.40
13:LH:44:GLU:OE2	17:LM:2:VAL:N	2.54	0.40
47:Lr:56:ASP:OD1	47:Lr:56:ASP:N	2.48	0.40
52:SK:64:TRP:CE3	62:Sd:23:VAL:HG22	2.56	0.40
55:SQ:34:VAL:HG11	55:SQ:84:ILE:HD13	2.03	0.40
55:SQ:90:LYS:HB3	55:SQ:90:LYS:HE2	1.86	0.40
64:Sg:207:CYS:HB3	64:Sg:221:LEU:HD21	2.03	0.40
73:SL:30:LYS:HA	73:SL:30:LYS:HD2	1.97	0.40
77:SW:28:ARG:NH2	83:S2:1093:A:H5"	2.36	0.40
79:SY:41:ARG:HH21	79:SY:53:ASP:HA	1.86	0.40
83:S2:430:C:H2'	83:S2:431:G:H8	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:S2:1103:C:H2'	83:S2:1104:G:H8	1.86	0.40
83:S2:1269:G:H2'	83:S2:1270:G:C8	2.56	0.40
83:S2:1438:A:H2'	83:S2:1439:A:H8	1.84	0.40
1:Pt:18:G:H21	1:Pt:58:A:H5'	1.85	0.40
3:L5:218:A:H1'	3:L5:219:G:C8	2.56	0.40
3:L5:1419:G:H5"	21:LQ:71:LYS:NZ	2.36	0.40
3:L5:2364:OMG:HM23	3:L5:2364:OMG:H1'	1.94	0.40
3:L5:3758:U:H2'	3:L5:3765:G:N2	2.37	0.40
3:L5:4228:OMG:H5"	3:L5:4229:U:O4'	2.22	0.40
3:L5:4232:U:H5"	45:Lo:3:ASN:O	2.21	0.40
3:L5:4390:A:H2'	3:L5:4391:G:O4'	2.22	0.40
3:L5:4523:A2M:H5"	3:L5:4524:G:H5'	2.04	0.40
7:LB:294:LYS:HD3	7:LB:298:LEU:HD11	2.04	0.40
8:LC:154:VAL:HG11	8:LC:174:LEU:HD11	2.04	0.40
9:LD:122:GLN:NE2	9:LD:126:THR:HG22	2.36	0.40
12:LG:123:ALA:HA	12:LG:124:GLY:HA2	1.79	0.40
33:Lc:17:ARG:O	33:Lc:21:VAL:HG23	2.22	0.40
39:Li:90:LEU:HA	39:Li:93:VAL:HG22	2.03	0.40
56:SR:128:PHE:CD2	56:SR:129:LYS:HG3	2.57	0.40
58:ST:78:ILE:HD11	83:S2:1587:G:C5	2.56	0.40
62:Sd:22:ARG:HH21	62:Sd:37:ASN:HB2	1.87	0.40
64:Sg:191:HIS:CG	64:Sg:195:LEU:HD21	2.56	0.40
65:SA:172:GLY:HA3	65:SA:203:PHE:HD1	1.86	0.40
66:SB:136:ARG:O	66:SB:215:VAL:HA	2.22	0.40
67:SC:64:THR:HG22	67:SC:66:LEU:H	1.86	0.40
71:SI:81:VAL:HG22	71:SI:102:VAL:HG12	2.02	0.40
73:SL:153:LYS:HA	73:SL:153:LYS:HD3	1.86	0.40
83:S2:508:A:H3'	83:S2:509:OMG:C8	2.53	0.40
83:S2:929:G:H2'	83:S2:930:C:O4'	2.21	0.40
83:S2:1491:G:H2'	83:S2:1492:U:C6	2.57	0.40
3:L5:35:U:H4'	3:L5:1525:A:C2	2.57	0.40
3:L5:1095:A:N1	3:L5:1200:G:C6	2.90	0.40
3:L5:1628:C:OP2	6:LA:9:ARG:HD2	2.22	0.40
3:L5:1664:U:H2'	3:L5:1665:C:C6	2.56	0.40
3:L5:1982:G:H5'	49:Lt:28:LEU:HD13	2.03	0.40
3:L5:4918:C:H2'	3:L5:4919:G:C8	2.56	0.40
9:LD:239:MET:HA	9:LD:242:LYS:NZ	2.37	0.40
21:LQ:155:ALA:O	21:LQ:158:THR:OG1	2.35	0.40
41:Lk:68:GLU:HG3	41:Lk:70:LYS:H	1.86	0.40
52:SK:91:PRO:HB2	52:SK:94:LEU:HD23	2.03	0.40
58:ST:11:GLN:HB2	83:S2:1542:C:H4'	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:SZ:102:LYS:HA	60:SZ:102:LYS:HD3	1.74	0.40
64:Sg:26:GLN:NE2	64:Sg:75:GLY:HA3	2.36	0.40
64:Sg:195:LEU:HA	64:Sg:211:GLY:HA3	2.04	0.40
68:SE:45:ILE:HD12	68:SE:80:ILE:HD11	2.04	0.40
68:SE:136:ILE:HD12	68:SE:149:TYR:CE1	2.57	0.40
72:SJ:11:LYS:NZ	83:S2:24:C:OP1	2.41	0.40
83:S2:99:A2M:HM'3	83:S2:99:A2M:H1'	1.64	0.40
83:S2:747:U:C2	83:S2:796:G:N1	2.89	0.40
83:S2:871:U:O2'	83:S2:873:G:OP1	2.30	0.40
83:S2:1227:G:C2	83:S2:1228:A:C8	3.09	0.40
83:S2:1231:C:O2'	83:S2:1253:A:N6	2.54	0.40
83:S2:1705:C:H2'	83:S2:1706:G:C8	2.56	0.40
2:Et:4:C:H2'	2:Et:5:G:H8	1.87	0.40
3:L5:1408:G:O2'	3:L5:1411:C:N4	2.54	0.40
3:L5:1410:U:H3	32:Lb:52:LYS:NZ	2.19	0.40
3:L5:1505:C:H2'	3:L5:1506:G:C8	2.56	0.40
3:L5:1554:A:OP1	46:Lp:5:THR:OG1	2.26	0.40
3:L5:1700:G:H5'	3:L5:1702:C:OP2	2.22	0.40
3:L5:1908:A:H2'	3:L5:1909:G:O4'	2.22	0.40
3:L5:3893:C:H2'	3:L5:3894:A:H8	1.87	0.40
3:L5:4237:C:H2'	3:L5:4238:G:C8	2.56	0.40
3:L5:4237:C:H2'	3:L5:4238:G:H8	1.87	0.40
3:L5:4563:U:C2	3:L5:4564:A:C8	3.09	0.40
7:LB:57:VAL:HG22	7:LB:73:VAL:HG22	2.03	0.40
7:LB:214:ASP:OD2	7:LB:362:LYS:HA	2.21	0.40
40:Lj:27:TYR:HA	40:Lj:34:CYS:HA	2.03	0.40
52:SK:32:HIS:ND1	52:SK:33:PRO:HD2	2.37	0.40
57:SS:10:GLN:HE21	57:SS:13:LEU:HG	1.86	0.40
58:ST:113:VAL:HG22	58:ST:123:LEU:HD23	2.03	0.40
61:Sc:10:LYS:HE2	61:Sc:34:PHE:HD2	1.86	0.40
64:Sg:258:ILE:HG23	64:Sg:267:VAL:HG23	2.04	0.40
67:SC:70:VAL:HG21	67:SC:93:ILE:HG23	2.04	0.40
71:SI:23:LYS:HG2	83:S2:434:G:OP1	2.21	0.40
77:SW:28:ARG:HH22	83:S2:1093:A:H5"	1.86	0.40
78:SX:46:HIS:CD2	78:SX:103:ALA:HB2	2.56	0.40
83:S2:1162:C:H2'	83:S2:1163:C:O4'	2.21	0.40
83:S2:1446:A:O2'	83:S2:1447:G:H5"	2.21	0.40
83:S2:1801:A:H2'	83:S2:1802:C:H6	1.87	0.40

There are no symmetry-related clashes.

5.3 Torsion angles ⓘ

5.3.1 Protein backbone ⓘ

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	LA	246/248 (99%)	230 (94%)	16 (6%)	0	100	100
7	LB	400/402 (100%)	386 (96%)	14 (4%)	0	100	100
8	LC	366/368 (100%)	354 (97%)	12 (3%)	0	100	100
9	LD	291/293 (99%)	282 (97%)	9 (3%)	0	100	100
10	LE	236/240 (98%)	221 (94%)	15 (6%)	0	100	100
11	LF	223/225 (99%)	215 (96%)	8 (4%)	0	100	100
12	LG	239/241 (99%)	224 (94%)	15 (6%)	0	100	100
13	LH	188/190 (99%)	183 (97%)	5 (3%)	0	100	100
14	LI	211/213 (99%)	205 (97%)	6 (3%)	0	100	100
15	LJ	168/176 (96%)	161 (96%)	7 (4%)	0	100	100
16	LL	208/210 (99%)	198 (95%)	10 (5%)	0	100	100
17	LM	137/139 (99%)	132 (96%)	5 (4%)	0	100	100
18	LN	201/203 (99%)	199 (99%)	2 (1%)	0	100	100
19	LO	199/201 (99%)	195 (98%)	4 (2%)	0	100	100
20	LP	151/153 (99%)	146 (97%)	5 (3%)	0	100	100
21	LQ	185/187 (99%)	181 (98%)	4 (2%)	0	100	100
22	LR	185/187 (99%)	180 (97%)	5 (3%)	0	100	100
23	LS	173/175 (99%)	164 (95%)	9 (5%)	0	100	100
24	LT	157/159 (99%)	152 (97%)	5 (3%)	0	100	100
25	LU	99/101 (98%)	93 (94%)	6 (6%)	0	100	100
26	LV	129/131 (98%)	121 (94%)	8 (6%)	0	100	100
27	LW	112/118 (95%)	108 (96%)	4 (4%)	0	100	100
28	LX	118/120 (98%)	117 (99%)	1 (1%)	0	100	100
29	LY	132/134 (98%)	127 (96%)	5 (4%)	0	100	100
30	LZ	133/135 (98%)	125 (94%)	8 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
31	La	145/147 (99%)	142 (98%)	3 (2%)	0	100	100
32	Lb	105/109 (96%)	100 (95%)	5 (5%)	0	100	100
33	Lc	96/98 (98%)	93 (97%)	3 (3%)	0	100	100
34	Ld	105/107 (98%)	102 (97%)	3 (3%)	0	100	100
35	Le	126/128 (98%)	125 (99%)	1 (1%)	0	100	100
36	Lf	107/109 (98%)	107 (100%)	0	0	100	100
37	Lg	112/114 (98%)	111 (99%)	1 (1%)	0	100	100
38	Lh	120/122 (98%)	117 (98%)	3 (2%)	0	100	100
39	Li	100/102 (98%)	100 (100%)	0	0	100	100
40	Lj	84/86 (98%)	82 (98%)	2 (2%)	0	100	100
41	Lk	67/69 (97%)	66 (98%)	1 (2%)	0	100	100
42	Ll	48/50 (96%)	46 (96%)	2 (4%)	0	100	100
43	Lm	50/52 (96%)	50 (100%)	0	0	100	100
44	Ln	22/24 (92%)	22 (100%)	0	0	100	100
45	Lo	103/105 (98%)	99 (96%)	4 (4%)	0	100	100
46	Lp	89/91 (98%)	86 (97%)	3 (3%)	0	100	100
47	Lr	123/125 (98%)	119 (97%)	4 (3%)	0	100	100
48	Ls	194/196 (99%)	183 (94%)	11 (6%)	0	100	100
49	Lt	128/141 (91%)	112 (88%)	16 (12%)	0	100	100
50	SD	225/227 (99%)	219 (97%)	6 (3%)	0	100	100
51	SF	187/189 (99%)	174 (93%)	13 (7%)	0	100	100
52	SK	96/98 (98%)	87 (91%)	9 (9%)	0	100	100
53	SM	120/122 (98%)	111 (92%)	9 (8%)	0	100	100
54	SP	119/121 (98%)	115 (97%)	4 (3%)	0	100	100
55	SQ	142/144 (99%)	131 (92%)	11 (8%)	0	100	100
56	SR	133/135 (98%)	125 (94%)	7 (5%)	1 (1%)	16	44
57	SS	143/145 (99%)	134 (94%)	9 (6%)	0	100	100
58	ST	141/143 (99%)	137 (97%)	4 (3%)	0	100	100
59	SU	102/104 (98%)	100 (98%)	2 (2%)	0	100	100
60	SZ	73/75 (97%)	70 (96%)	3 (4%)	0	100	100
61	Sc	62/64 (97%)	60 (97%)	2 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
62	Sd	53/55 (96%)	52 (98%)	1 (2%)	0	100	100
63	Sf	65/67 (97%)	57 (88%)	8 (12%)	0	100	100
64	Sg	311/313 (99%)	295 (95%)	16 (5%)	0	100	100
65	SA	219/221 (99%)	206 (94%)	13 (6%)	0	100	100
66	SB	212/214 (99%)	205 (97%)	7 (3%)	0	100	100
67	SC	218/222 (98%)	207 (95%)	11 (5%)	0	100	100
68	SE	260/262 (99%)	251 (96%)	9 (4%)	0	100	100
69	SG	235/237 (99%)	225 (96%)	10 (4%)	0	100	100
70	SH	182/186 (98%)	169 (93%)	13 (7%)	0	100	100
71	SI	204/206 (99%)	197 (97%)	7 (3%)	0	100	100
72	SJ	183/185 (99%)	175 (96%)	7 (4%)	1 (0%)	25	56
73	SL	151/153 (99%)	147 (97%)	4 (3%)	0	100	100
74	SN	148/150 (99%)	147 (99%)	1 (1%)	0	100	100
75	SO	135/140 (96%)	126 (93%)	9 (7%)	0	100	100
76	SV	81/83 (98%)	74 (91%)	7 (9%)	0	100	100
77	SW	127/129 (98%)	123 (97%)	4 (3%)	0	100	100
78	SX	139/141 (99%)	135 (97%)	4 (3%)	0	100	100
79	SY	129/131 (98%)	126 (98%)	3 (2%)	0	100	100
80	Sa	100/102 (98%)	98 (98%)	2 (2%)	0	100	100
81	Sb	81/83 (98%)	76 (94%)	5 (6%)	0	100	100
82	Se	56/58 (97%)	50 (89%)	6 (11%)	0	100	100
84	CI	29/31 (94%)	29 (100%)	0	0	100	100
All	All	11672/11860 (98%)	11194 (96%)	476 (4%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
56	SR	129	LYS
72	SJ	138	ARG

5.3.2　Protein sidechains ⓘ

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

entries.

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
6	LA	190/190 (100%)	190 (100%)	0	100	100
7	LB	348/348 (100%)	348 (100%)	0	100	100
8	LC	306/306 (100%)	306 (100%)	0	100	100
9	LD	246/247 (100%)	246 (100%)	0	100	100
10	LE	212/212 (100%)	212 (100%)	0	100	100
11	LF	194/194 (100%)	194 (100%)	0	100	100
12	LG	203/205 (99%)	203 (100%)	0	100	100
13	LH	169/169 (100%)	169 (100%)	0	100	100
14	LI	180/180 (100%)	180 (100%)	0	100	100
15	LJ	143/148 (97%)	143 (100%)	0	100	100
16	LL	176/176 (100%)	176 (100%)	0	100	100
17	LM	118/118 (100%)	118 (100%)	0	100	100
18	LN	171/171 (100%)	171 (100%)	0	100	100
19	LO	173/173 (100%)	173 (100%)	0	100	100
20	LP	134/134 (100%)	134 (100%)	0	100	100
21	LQ	164/164 (100%)	164 (100%)	0	100	100
22	LR	166/166 (100%)	166 (100%)	0	100	100
23	LS	156/156 (100%)	156 (100%)	0	100	100
24	LT	139/139 (100%)	139 (100%)	0	100	100
25	LU	91/91 (100%)	91 (100%)	0	100	100
26	LV	101/101 (100%)	101 (100%)	0	100	100
27	LW	95/97 (98%)	95 (100%)	0	100	100
28	LX	108/108 (100%)	108 (100%)	0	100	100
29	LY	124/124 (100%)	124 (100%)	0	100	100
30	LZ	117/117 (100%)	117 (100%)	0	100	100
31	La	120/120 (100%)	120 (100%)	0	100	100
32	Lb	88/90 (98%)	88 (100%)	0	100	100
33	Lc	83/83 (100%)	83 (100%)	0	100	100
34	Ld	98/98 (100%)	98 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
35	Le	114/114 (100%)	114 (100%)	0	100	100
36	Lf	88/88 (100%)	88 (100%)	0	100	100
37	Lg	98/98 (100%)	98 (100%)	0	100	100
38	Lh	109/109 (100%)	109 (100%)	0	100	100
39	Li	86/86 (100%)	86 (100%)	0	100	100
40	Lj	73/73 (100%)	73 (100%)	0	100	100
41	Lk	64/64 (100%)	64 (100%)	0	100	100
42	Ll	47/47 (100%)	47 (100%)	0	100	100
43	Lm	48/48 (100%)	48 (100%)	0	100	100
44	Ln	23/23 (100%)	23 (100%)	0	100	100
45	Lo	93/93 (100%)	93 (100%)	0	100	100
46	Lp	74/74 (100%)	74 (100%)	0	100	100
47	Lr	109/109 (100%)	109 (100%)	0	100	100
48	Ls	162/164 (99%)	162 (100%)	0	100	100
49	Lt	107/115 (93%)	107 (100%)	0	100	100
50	SD	190/190 (100%)	190 (100%)	0	100	100
51	SF	159/159 (100%)	159 (100%)	0	100	100
52	SK	89/89 (100%)	89 (100%)	0	100	100
53	SM	102/104 (98%)	102 (100%)	0	100	100
54	SP	107/107 (100%)	107 (100%)	0	100	100
55	SQ	119/119 (100%)	119 (100%)	0	100	100
56	SR	122/122 (100%)	122 (100%)	0	100	100
57	SS	126/126 (100%)	126 (100%)	0	100	100
58	ST	113/113 (100%)	113 (100%)	0	100	100
59	SU	94/94 (100%)	94 (100%)	0	100	100
60	SZ	66/66 (100%)	66 (100%)	0	100	100
61	Sc	57/57 (100%)	57 (100%)	0	100	100
62	Sd	48/48 (100%)	48 (100%)	0	100	100
63	Sf	60/60 (100%)	60 (100%)	0	100	100
64	Sg	272/272 (100%)	272 (100%)	0	100	100
65	SA	183/183 (100%)	183 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
66	SB	195/195 (100%)	195 (100%)	0	100	100
67	SC	186/188 (99%)	186 (100%)	0	100	100
68	SE	224/224 (100%)	224 (100%)	0	100	100
69	SG	207/207 (100%)	207 (100%)	0	100	100
70	SH	166/166 (100%)	166 (100%)	0	100	100
71	SI	178/178 (100%)	178 (100%)	0	100	100
72	SJ	161/161 (100%)	161 (100%)	0	100	100
73	SL	137/137 (100%)	137 (100%)	0	100	100
74	SN	130/130 (100%)	130 (100%)	0	100	100
75	SO	107/110 (97%)	107 (100%)	0	100	100
76	SV	67/67 (100%)	67 (100%)	0	100	100
77	SW	112/112 (100%)	112 (100%)	0	100	100
78	SX	113/113 (100%)	113 (100%)	0	100	100
79	SY	113/113 (100%)	113 (100%)	0	100	100
80	Sa	89/89 (100%)	89 (100%)	0	100	100
81	Sb	75/75 (100%)	75 (100%)	0	100	100
82	Se	47/47 (100%)	47 (100%)	0	100	100
84	CI	25/25 (100%)	25 (100%)	0	100	100
All	All	10147/10176 (100%)	10147 (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 (89) such sidechains are listed below:

Mol	Chain	Res	Type
6	LA	38	HIS
6	LA	97	ASN
7	LB	68	ASN
7	LB	145	GLN
7	LB	184	GLN
7	LB	203	GLN
7	LB	204	GLN
7	LB	209	GLN
7	LB	289	GLN
8	LC	329	ASN

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Mol	Chain	Res	Type
8	LC	347	HIS
9	LD	202	GLN
10	LE	227	HIS
11	LF	39	GLN
12	LG	64	GLN
12	LG	112	GLN
13	LH	78	GLN
13	LH	98	HIS
13	LH	138	GLN
13	LH	163	GLN
14	LI	59	GLN
15	LJ	110	GLN
17	LM	34	ASN
17	LM	66	HIS
18	LN	87	HIS
18	LN	109	HIS
18	LN	117	ASN
19	LO	50	ASN
20	LP	75	GLN
20	LP	97	ASN
20	LP	116	HIS
23	LS	23	HIS
23	LS	50	GLN
23	LS	125	GLN
25	LU	94	ASN
26	LV	77	HIS
27	LW	50	ASN
27	LW	79	GLN
29	LY	61	HIS
31	La	34	ASN
31	La	67	GLN
31	La	120	GLN
33	Lc	19	GLN
33	Lc	72	HIS
35	Le	52	GLN
36	Lf	99	HIS
43	Lm	117	HIS
43	Lm	120	ASN
48	Ls	179	ASN
49	Lt	65	GLN
49	Lt	115	GLN
49	Lt	149	HIS

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Mol	Chain	Res	Type
51	SF	29	GLN
51	SF	79	HIS
52	SK	28	HIS
52	SK	32	HIS
52	SK	50	GLN
53	SM	19	GLN
55	SQ	77	HIS
57	SS	87	GLN
59	SU	81	GLN
62	Sd	37	ASN
63	Sf	93	HIS
64	Sg	119	GLN
64	Sg	159	ASN
64	Sg	272	GLN
64	Sg	285	GLN
65	SA	9	GLN
65	SA	50	ASN
65	SA	84	GLN
65	SA	141	ASN
66	SB	76	ASN
66	SB	101	HIS
66	SB	202	GLN
67	SC	267	GLN
67	SC	277	HIS
68	SE	50	ASN
70	SH	76	GLN
70	SH	165	ASN
71	SI	35	ASN
71	SI	181	GLN
73	SL	11	GLN
74	SN	105	ASN
76	SV	35	ASN
77	SW	5	ASN
77	SW	90	GLN
78	SX	16	HIS
79	SY	89	HIS
81	Sb	51	GLN

5.3.3 RNA (i)

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	Pt	72/74 (97%)	15 (20%)	0
2	Et	73/75 (97%)	25 (34%)	0
3	L5	3643/3655 (99%)	726 (19%)	16 (0%)
4	L7	119/120 (99%)	9 (7%)	0
5	L8	155/156 (99%)	21 (13%)	0
83	S2	1714/1740 (98%)	369 (21%)	3 (0%)
All	All	5776/5820 (99%)	1165 (20%)	19 (0%)

All (1165) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	Pt	9	A
1	Pt	13	U
1	Pt	19	G
1	Pt	21	A
1	Pt	46	G
1	Pt	47	U
1	Pt	48	C
1	Pt	49	C
1	Pt	58	A
1	Pt	59	A
1	Pt	66	C
1	Pt	67	G
1	Pt	72	C
1	Pt	74	C
1	Pt	76	A
2	Et	9	A
2	Et	10	G
2	Et	11	C
2	Et	19	G
2	Et	20	U
2	Et	21	A
2	Et	31	A
2	Et	33	U
2	Et	36	U
2	Et	40	C
2	Et	42	G
2	Et	46	G
2	Et	47	U
2	Et	48	C
2	Et	49	C

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Mol	Chain	Res	Type
2	Et	55	U
2	Et	58	A
2	Et	60	U
2	Et	61	C
2	Et	65	G
2	Et	66	U
2	Et	70	G
2	Et	72	C
2	Et	73	G
2	Et	76	A
3	L5	25	A
3	L5	30	C
3	L5	39	A
3	L5	42	A
3	L5	48	G
3	L5	56	A
3	L5	59	A
3	L5	64	A
3	L5	65	A
3	L5	66	A
3	L5	73	A
3	L5	74	G
3	L5	91	G
3	L5	98	A
3	L5	104	G
3	L5	108	A
3	L5	109	G
3	L5	110	C
3	L5	119	G
3	L5	120	A
3	L5	132	G
3	L5	133	C
3	L5	134	G
3	L5	135	G
3	L5	136	C
3	L5	145	G
3	L5	159	C
3	L5	165	A
3	L5	181	C
3	L5	182	G
3	L5	183	C
3	L5	184	U

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Mol	Chain	Res	Type
3	L5	185	C
3	L5	186	G
3	L5	187	U
3	L5	188	G
3	L5	189	G
3	L5	200	U
3	L5	209	U
3	L5	210	C
3	L5	216	C
3	L5	218	A
3	L5	234	G
3	L5	237	G
3	L5	255	C
3	L5	256	G
3	L5	261	G
3	L5	262	G
3	L5	263	G
3	L5	264	C
3	L5	265	C
3	L5	266	C
3	L5	267	G
3	L5	280	G
3	L5	297	U
3	L5	306	A
3	L5	315	G
3	L5	316	U
3	L5	340	C
3	L5	373	G
3	L5	387	G
3	L5	388	A
3	L5	407	A
3	L5	409	G
3	L5	410	A
3	L5	411	G
3	L5	412	G
3	L5	413	G
3	L5	432	U
3	L5	440	U
3	L5	449	C
3	L5	452	A
3	L5	453	G
3	L5	454	U

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Mol	Chain	Res	Type
3	L5	456	C
3	L5	457	G
3	L5	467	U
3	L5	468	U
3	L5	484	U
3	L5	485	C
3	L5	486	C
3	L5	489	C
3	L5	493	G
3	L5	494	U
3	L5	497	G
3	L5	498	C
3	L5	499	G
3	L5	500	G
3	L5	502	C
3	L5	503	C
3	L5	504	G
3	L5	509	A
3	L5	510	U
3	L5	512	U
3	L5	513	U
3	L5	514	U
3	L5	518	G
3	L5	643	C
3	L5	646	G
3	L5	654	C
3	L5	655	C
3	L5	656	C
3	L5	657	C
3	L5	659	G
3	L5	666	G
3	L5	667	A
3	L5	668	C
3	L5	669	C
3	L5	672	C
3	L5	673	C
3	L5	685	C
3	L5	686	A
3	L5	687	U
3	L5	704	C
3	L5	730	G
3	L5	731	G

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Mol	Chain	Res	Type
3	L5	738	C
3	L5	739	G
3	L5	742	G
3	L5	746	A
3	L5	759	G
3	L5	904	C
3	L5	905	C
3	L5	910	G
3	L5	913	U
3	L5	914	U
3	L5	915	A
3	L5	917	A
3	L5	923	C
3	L5	924	C
3	L5	932	A
3	L5	933	G
3	L5	935	A
3	L5	936	C
3	L5	941	C
3	L5	943	A
3	L5	944	A
3	L5	945	U
3	L5	956	A
3	L5	958	G
3	L5	959	G
3	L5	960	A
3	L5	961	G
3	L5	962	C
3	L5	965	G
3	L5	966	A
3	L5	967	C
3	L5	969	C
3	L5	970	G
3	L5	982	U
3	L5	985	C
3	L5	1070	G
3	L5	1071	C
3	L5	1072	C
3	L5	1075	G
3	L5	1082	C
3	L5	1083	U
3	L5	1168	G

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Mol	Chain	Res	Type
3	L5	1171	G
3	L5	1172	C
3	L5	1173	G
3	L5	1179	U
3	L5	1180	C
3	L5	1181	C
3	L5	1182	C
3	L5	1183	C
3	L5	1184	A
3	L5	1187	G
3	L5	1202	C
3	L5	1203	G
3	L5	1210	C
3	L5	1211	G
3	L5	1214	C
3	L5	1215	C
3	L5	1219	G
3	L5	1222	A
3	L5	1241	C
3	L5	1246	G
3	L5	1253	G
3	L5	1254	A
3	L5	1257	A
3	L5	1258	G
3	L5	1266	G
3	L5	1267	C
3	L5	1269	G
3	L5	1271	G
3	L5	1272	C
3	L5	1273	G
3	L5	1275	G
3	L5	1280	C
3	L5	1284	G
3	L5	1287	G
3	L5	1293	G
3	L5	1294	A
3	L5	1295	C
3	L5	1296	G
3	L5	1301	C
3	L5	1302	U
3	L5	1314	C
3	L5	1326	A2M

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Mol	Chain	Res	Type
3	L5	1337	A
3	L5	1354	A
3	L5	1359	G
3	L5	1365	C
3	L5	1366	G
3	L5	1367	C
3	L5	1387	A
3	L5	1394	G
3	L5	1397	A
3	L5	1403	G
3	L5	1404	G
3	L5	1407	C
3	L5	1409	C
3	L5	1410	U
3	L5	1411	C
3	L5	1414	C
3	L5	1415	G
3	L5	1417	C
3	L5	1420	A
3	L5	1437	C
3	L5	1439	C
3	L5	1442	C
3	L5	1443	A
3	L5	1444	G
3	L5	1446	C
3	L5	1447	C
3	L5	1457	G
3	L5	1482	G
3	L5	1483	C
3	L5	1497	A
3	L5	1498	G
3	L5	1502	G
3	L5	1504	G
3	L5	1517	G
3	L5	1524	A2M
3	L5	1534	A2M
3	L5	1535	C
3	L5	1537	A
3	L5	1547	A
3	L5	1566	C
3	L5	1578	U
3	L5	1591	U

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Mol	Chain	Res	Type
3	L5	1596	U
3	L5	1621	A
3	L5	1624	G
3	L5	1625	OMG
3	L5	1631	A
3	L5	1633	G
3	L5	1634	A
3	L5	1638	A
3	L5	1640	C
3	L5	1641	G
3	L5	1642	A
3	L5	1654	G
3	L5	1661	C
3	L5	1676	C
3	L5	1677	PSU
3	L5	1678	C
3	L5	1697	G
3	L5	1699	A
3	L5	1700	G
3	L5	1701	A
3	L5	1702	C
3	L5	1704	C
3	L5	1705	G
3	L5	1717	C
3	L5	1718	C
3	L5	1719	A
3	L5	1726	U
3	L5	1731	C
3	L5	1734	G
3	L5	1742	A
3	L5	1750	G
3	L5	1753	G
3	L5	1755	C
3	L5	1757	U
3	L5	1758	G
3	L5	1761	G
3	L5	1762	C
3	L5	1763	C
3	L5	1764	G
3	L5	1765	A
3	L5	1766	A
3	L5	1767	A

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Mol	Chain	Res	Type
3	L5	1768	C
3	L5	1770	A
3	L5	1787	A
3	L5	1804	A
3	L5	1806	G
3	L5	1810	G
3	L5	1815	G
3	L5	1821	G
3	L5	1822	U
3	L5	1836	G
3	L5	1837	A
3	L5	1842	G
3	L5	1855	G
3	L5	1869	G
3	L5	1882	U
3	L5	1892	A
3	L5	1893	C
3	L5	1897	A
3	L5	1917	A
3	L5	1918	U
3	L5	1919	G
3	L5	1920	C
3	L5	1921	C
3	L5	1922	G
3	L5	1925	G
3	L5	1931	C
3	L5	1932	A
3	L5	1936	C
3	L5	1948	G
3	L5	1951	G
3	L5	1961	G
3	L5	1962	A
3	L5	1974	U
3	L5	1975	G
3	L5	1978	C
3	L5	1980	U
3	L5	1981	G
3	L5	1982	G
3	L5	1983	A
3	L5	1984	A
3	L5	1985	G
3	L5	1986	U

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Mol	Chain	Res	Type
3	L5	1990	A
3	L5	1991	A
3	L5	1993	C
3	L5	1997	U
3	L5	1998	A
3	L5	1999	A
3	L5	2001	G
3	L5	2002	A
3	L5	2003	G
3	L5	2004	U
3	L5	2005	G
3	L5	2007	G
3	L5	2011	C
3	L5	2014	C
3	L5	2017	A
3	L5	2018	C
3	L5	2024	G
3	L5	2026	A
3	L5	2046	G
3	L5	2048	U
3	L5	2055	G
3	L5	2056	G
3	L5	2069	A
3	L5	2084	C
3	L5	2085	G
3	L5	2092	G
3	L5	2093	A
3	L5	2095	A
3	L5	2096	G
3	L5	2097	U
3	L5	2098	G
3	L5	2101	C
3	L5	2102	G
3	L5	2107	C
3	L5	2110	C
3	L5	2111	G
3	L5	2112	G
3	L5	2250	C
3	L5	2252	G
3	L5	2253	A
3	L5	2256	C
3	L5	2258	C

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Mol	Chain	Res	Type
3	L5	2289	C
3	L5	2300	A
3	L5	2301	G
3	L5	2313	A
3	L5	2331	G
3	L5	2333	G
3	L5	2345	G
3	L5	2348	G
3	L5	2351	OMC
3	L5	2360	A
3	L5	2364	OMG
3	L5	2395	A
3	L5	2397	G
3	L5	2417	A
3	L5	2425	U
3	L5	2450	G
3	L5	2453	A
3	L5	2464	C
3	L5	2465	C
3	L5	2469	C
3	L5	2471	G
3	L5	2474	G
3	L5	2475	G
3	L5	2478	C
3	L5	2479	G
3	L5	2483	G
3	L5	2484	A
3	L5	2485	U
3	L5	2486	G
3	L5	2487	G
3	L5	2488	C
3	L5	2489	C
3	L5	2490	U
3	L5	2494	U
3	L5	2504	C
3	L5	2505	C
3	L5	2506	G
3	L5	2513	A
3	L5	2519	U
3	L5	2520	C
3	L5	2529	A
3	L5	2537	A

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Mol	Chain	Res	Type
3	L5	2544	G
3	L5	2546	G
3	L5	2547	G
3	L5	2554	U
3	L5	2555	G
3	L5	2556	G
3	L5	2559	G
3	L5	2560	C
3	L5	2565	A
3	L5	2573	A
3	L5	2583	C
3	L5	2587	A
3	L5	2589	C
3	L5	2627	C
3	L5	2653	C
3	L5	2662	G
3	L5	2669	C
3	L5	2670	C
3	L5	2675	G
3	L5	2676	A
3	L5	2687	U
3	L5	2694	G
3	L5	2695	A
3	L5	2696	A
3	L5	2706	G
3	L5	2707	U
3	L5	2708	U
3	L5	2709	C
3	L5	2710	C
3	L5	2711	G
3	L5	2712	G
3	L5	2721	G
3	L5	2724	G
3	L5	2726	G
3	L5	2738	C
3	L5	2739	C
3	L5	2742	G
3	L5	2743	A
3	L5	2746	A
3	L5	2761	U
3	L5	2762	G
3	L5	2763	U

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Mol	Chain	Res	Type
3	L5	2769	U
3	L5	2770	C
3	L5	2788	U
3	L5	2790	U
3	L5	2806	A
3	L5	2814	C
3	L5	2815	A2M
3	L5	2826	U
3	L5	2827	G
3	L5	2838	G
3	L5	2855	G
3	L5	2867	C
3	L5	2877	G
3	L5	2894	A
3	L5	2895	A
3	L5	2900	U
3	L5	2902	G
3	L5	2903	G
3	L5	2904	U
3	L5	2905	C
3	L5	2907	G
3	L5	2908	U
3	L5	3590	G
3	L5	3591	C
3	L5	3594	C
3	L5	3595	U
3	L5	3596	A
3	L5	3597	G
3	L5	3604	A
3	L5	3605	C
3	L5	3626	G
3	L5	3635	A
3	L5	3644	U
3	L5	3646	A
3	L5	3648	A
3	L5	3662	A
3	L5	3664	G
3	L5	3670	C
3	L5	3673	C
3	L5	3674	G
3	L5	3701	OMC
3	L5	3710	G

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Mol	Chain	Res	Type
3	L5	3711	A
3	L5	3713	U
3	L5	3726	A
3	L5	3727	A
3	L5	3748	A
3	L5	3753	G
3	L5	3760	A
3	L5	3770	U
3	L5	3774	A
3	L5	3775	A
3	L5	3776	G
3	L5	3777	G
3	L5	3785	A2M
3	L5	3786	U
3	L5	3792	OMG
3	L5	3811	G
3	L5	3812	C
3	L5	3814	U
3	L5	3817	A
3	L5	3819	G
3	L5	3824	A
3	L5	3838	U
3	L5	3839	G
3	L5	3840	U
3	L5	3867	A2M
3	L5	3877	A
3	L5	3878	C
3	L5	3879	G
3	L5	3880	G
3	L5	3885	G
3	L5	3892	U
3	L5	3897	G
3	L5	3901	A
3	L5	3906	A
3	L5	3907	G
3	L5	3908	A
3	L5	3915	U
3	L5	3923	A
3	L5	3938	G
3	L5	3939	G
3	L5	3942	A
3	L5	3944	G

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Mol	Chain	Res	Type
3	L5	3947	A
3	L5	3949	A
3	L5	3950	U
3	L5	3953	G
3	L5	4057	C
3	L5	4058	U
3	L5	4059	C
3	L5	4060	U
3	L5	4061	G
3	L5	4062	A
3	L5	4064	C
3	L5	4068	U
3	L5	4076	G
3	L5	4084	G
3	L5	4093	G
3	L5	4095	G
3	L5	4097	G
3	L5	4098	A
3	L5	4099	G
3	L5	4101	C
3	L5	4104	G
3	L5	4108	G
3	L5	4111	U
3	L5	4114	C
3	L5	4115	G
3	L5	4116	C
3	L5	4117	U
3	L5	4122	G
3	L5	4127	A
3	L5	4141	G
3	L5	4142	C
3	L5	4143	G
3	L5	4144	C
3	L5	4146	G
3	L5	4149	C
3	L5	4150	G
3	L5	4162	C
3	L5	4163	U
3	L5	4168	G
3	L5	4170	A
3	L5	4177	C
3	L5	4183	G

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Mol	Chain	Res	Type
3	L5	4184	G
3	L5	4191	G
3	L5	4203	A
3	L5	4212	A
3	L5	4222	G
3	L5	4225	G
3	L5	4229	U
3	L5	4233	A
3	L5	4242	U
3	L5	4251	A
3	L5	4254	G
3	L5	4257	A
3	L5	4258	C
3	L5	4265	U
3	L5	4268	A
3	L5	4273	A
3	L5	4281	A
3	L5	4282	A
3	L5	4291	G
3	L5	4296	PSU
3	L5	4304	A
3	L5	4305	G
3	L5	4314	C
3	L5	4319	C
3	L5	4329	G
3	L5	4330	G
3	L5	4332	C
3	L5	4349	C
3	L5	4350	C
3	L5	4354	U
3	L5	4373	G
3	L5	4376	A
3	L5	4377	G
3	L5	4378	A
3	L5	4379	A
3	L5	4387	C
3	L5	4391	G
3	L5	4394	A
3	L5	4405	G
3	L5	4420	U
3	L5	4421	C
3	L5	4422	A

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Mol	Chain	Res	Type
3	L5	4438	U
3	L5	4448	G
3	L5	4449	A
3	L5	4452	U
3	L5	4464	A
3	L5	4466	C
3	L5	4475	G
3	L5	4488	A
3	L5	4500	PSU
3	L5	4512	U
3	L5	4513	A
3	L5	4515	G
3	L5	4519	C
3	L5	4524	G
3	L5	4545	G
3	L5	4548	A
3	L5	4557	U
3	L5	4560	C
3	L5	4567	G
3	L5	4575	G
3	L5	4584	A
3	L5	4589	A
3	L5	4590	A2M
3	L5	4601	U
3	L5	4617	G
3	L5	4636	PSU
3	L5	4637	OMG
3	L5	4652	G
3	L5	4656	A
3	L5	4657	U
3	L5	4670	C
3	L5	4672	A
3	L5	4679	G
3	L5	4687	A
3	L5	4694	G
3	L5	4695	C
3	L5	4700	A
3	L5	4708	A
3	L5	4709	U
3	L5	4719	G
3	L5	4734	A
3	L5	4740	G

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Mol	Chain	Res	Type
3	L5	4741	C
3	L5	4742	G
3	L5	4745	G
3	L5	4750	G
3	L5	4754	G
3	L5	4757	C
3	L5	4759	C
3	L5	4761	G
3	L5	4765	G
3	L5	4771	C
3	L5	4772	C
3	L5	4775	C
3	L5	4859	C
3	L5	4862	G
3	L5	4870	G
3	L5	4871	C
3	L5	4875	G
3	L5	4881	U
3	L5	4882	U
3	L5	4883	C
3	L5	4889	G
3	L5	4895	C
3	L5	4896	G
3	L5	4897	G
3	L5	4899	G
3	L5	4900	C
3	L5	4901	G
3	L5	4910	G
3	L5	4912	G
3	L5	4914	C
3	L5	4922	C
3	L5	4925	U
3	L5	4926	C
3	L5	4927	G
3	L5	4928	C
3	L5	4934	A
3	L5	4941	G
3	L5	4943	A
3	L5	4947	U
3	L5	4951	G
3	L5	4955	A
3	L5	4960	G

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Mol	Chain	Res	Type
3	L5	4975	G
3	L5	4976	U
3	L5	4985	U
3	L5	4988	U
3	L5	4989	U
3	L5	4990	C
3	L5	4991	U
3	L5	5013	C
3	L5	5014	A
3	L5	5017	G
3	L5	5022	U
3	L5	5023	C
3	L5	5024	C
3	L5	5028	G
3	L5	5030	U
3	L5	5034	A
3	L5	5041	G
3	L5	5050	C
3	L5	5054	C
3	L5	5055	G
3	L5	5061	A
3	L5	5069	U
4	L7	22	A
4	L7	33	U
4	L7	38	U
4	L7	53	U
4	L7	54	A
4	L7	64	G
4	L7	97	G
4	L7	100	A
4	L7	110	G
5	L8	25	G
5	L8	34	U
5	L8	35	C
5	L8	59	A
5	L8	62	A
5	L8	63	U
5	L8	80	A
5	L8	82	A
5	L8	84	A
5	L8	85	U
5	L8	87	G

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Mol	Chain	Res	Type
5	L8	94	G
5	L8	103	A
5	L8	105	C
5	L8	111	U
5	L8	114	G
5	L8	123	U
5	L8	124	U
5	L8	125	C
5	L8	126	C
5	L8	127	U
83	S2	4	C
83	S2	14	C
83	S2	25	A
83	S2	33	G
83	S2	41	G
83	S2	44	U
83	S2	45	A
83	S2	46	A
83	S2	56	G
83	S2	58	C
83	S2	59	U
83	S2	62	G
83	S2	64	A
83	S2	65	C
83	S2	67	C
83	S2	68	A
83	S2	72	C
83	S2	73	C
83	S2	74	G
83	S2	76	U
83	S2	99	A2M
83	S2	103	A
83	S2	113	G
83	S2	115	U
83	S2	126	G
83	S2	130	G
83	S2	143	U
83	S2	149	A
83	S2	155	G
83	S2	158	A
83	S2	160	U
83	S2	162	C

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Mol	Chain	Res	Type
83	S2	170	A
83	S2	171	A
83	S2	175	A
83	S2	179	C
83	S2	190	G
83	S2	191	A
83	S2	196	C
83	S2	197	U
83	S2	198	U
83	S2	200	G
83	S2	203	G
83	S2	204	G
83	S2	207	G
83	S2	208	G
83	S2	209	A
83	S2	214	U
83	S2	291	G
83	S2	292	A
83	S2	295	C
83	S2	302	A
83	S2	306	C
83	S2	307	G
83	S2	308	G
83	S2	309	G
83	S2	312	G
83	S2	313	A
83	S2	318	A
83	S2	319	C
83	S2	323	C
83	S2	324	C
83	S2	325	C
83	S2	326	C
83	S2	328	U
83	S2	329	G
83	S2	332	G
83	S2	339	A
83	S2	340	C
83	S2	347	G
83	S2	351	G
83	S2	360	A
83	S2	362	C
83	S2	364	A

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Mol	Chain	Res	Type
83	S2	368	U
83	S2	370	G
83	S2	383	G
83	S2	385	G
83	S2	386	C
83	S2	398	A
83	S2	407	G
83	S2	408	A
83	S2	409	C
83	S2	426	A
83	S2	436	OMG
83	S2	438	G
83	S2	448	A
83	S2	449	A
83	S2	450	C
83	S2	452	G
83	S2	464	A
83	S2	465	A
83	S2	471	G
83	S2	472	C
83	S2	473	A
83	S2	474	G
83	S2	476	A
83	S2	482	G
83	S2	487	U
83	S2	488	U
83	S2	492	C
83	S2	493	A
83	S2	502	C
83	S2	516	A
83	S2	517	OMC
83	S2	531	A
83	S2	532	C
83	S2	536	A
83	S2	537	C
83	S2	540	U
83	S2	542	U
83	S2	544	G
83	S2	546	G
83	S2	547	G
83	S2	557	U
83	S2	558	G

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Mol	Chain	Res	Type
83	S2	559	G
83	S2	563	G
83	S2	564	A
83	S2	576	A2M
83	S2	583	A
83	S2	587	A
83	S2	589	G
83	S2	590	A
83	S2	591	U
83	S2	593	C
83	S2	604	A
83	S2	611	G
83	S2	614	C
83	S2	617	G
83	S2	623	G
83	S2	628	A
83	S2	631	U
83	S2	643	A
83	S2	644	OMG
83	S2	655	A
83	S2	660	C
83	S2	664	A
83	S2	668	A2M
83	S2	669	A
83	S2	671	A
83	S2	672	A
83	S2	673	G
83	S2	683	OMG
83	S2	688	U
83	S2	689	U
83	S2	692	G
83	S2	695	C
83	S2	696	G
83	S2	697	G
83	S2	698	G
83	S2	732	U
83	S2	733	C
83	S2	736	C
83	S2	737	G
83	S2	738	C
83	S2	749	U
83	S2	750	C

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Mol	Chain	Res	Type
83	S2	751	G
83	S2	752	G
83	S2	753	C
83	S2	788	G
83	S2	791	C
83	S2	792	C
83	S2	798	G
83	S2	799	OMU
83	S2	801	PSU
83	S2	821	G
83	S2	822	U
83	S2	823	U
83	S2	824	C
83	S2	830	A
83	S2	834	C
83	S2	835	C
83	S2	836	G
83	S2	837	A
83	S2	838	G
83	S2	839	C
83	S2	842	C
83	S2	847	A
83	S2	867	OMG
83	S2	870	A
83	S2	874	G
83	S2	877	C
83	S2	880	G
83	S2	888	U
83	S2	889	U
83	S2	891	G
83	S2	893	U
83	S2	894	G
83	S2	896	U
83	S2	897	U
83	S2	898	U
83	S2	899	U
83	S2	900	C
83	S2	901	G
83	S2	903	A
83	S2	904	A
83	S2	913	A
83	S2	919	A

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Mol	Chain	Res	Type
83	S2	920	A
83	S2	933	G
83	S2	934	G
83	S2	943	U
83	S2	963	A
83	S2	969	U
83	S2	970	G
83	S2	971	G
83	S2	972	A
83	S2	985	G
83	S2	990	A
83	S2	992	A
83	S2	999	G
83	S2	1008	A
83	S2	1017	U
83	S2	1023	A
83	S2	1027	A
83	S2	1060	A
83	S2	1061	U
83	S2	1062	A
83	S2	1080	A
83	S2	1083	A
83	S2	1085	C
83	S2	1109	C
83	S2	1113	A
83	S2	1114	U
83	S2	1116	C
83	S2	1121	G
83	S2	1123	C
83	S2	1133	A
83	S2	1138	C
83	S2	1148	A
83	S2	1153	C
83	S2	1154	U
83	S2	1170	A
83	S2	1195	A
83	S2	1207	G
83	S2	1208	A
83	S2	1215	C
83	S2	1216	C
83	S2	1217	A
83	S2	1224	G

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Mol	Chain	Res	Type
83	S2	1227	G
83	S2	1242	U
83	S2	1243	U
83	S2	1248	B8N
83	S2	1251	A
83	S2	1253	A
83	S2	1256	G
83	S2	1257	G
83	S2	1259	A
83	S2	1271	C
83	S2	1272	OMC
83	S2	1274	G
83	S2	1275	G
83	S2	1283	C
83	S2	1286	G
83	S2	1288	OMU
83	S2	1290	G
83	S2	1294	G
83	S2	1295	A
83	S2	1301	A
83	S2	1302	G
83	S2	1303	C
83	S2	1308	U
83	S2	1342	U
83	S2	1357	A
83	S2	1371	U
83	S2	1372	U
83	S2	1373	C
83	S2	1376	A
83	S2	1378	A
83	S2	1382	A
83	S2	1401	A
83	S2	1402	A
83	S2	1413	G
83	S2	1418	C
83	S2	1419	C
83	S2	1420	G
83	S2	1421	A
83	S2	1422	G
83	S2	1423	C
83	S2	1432	U
83	S2	1433	C

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Mol	Chain	Res	Type
83	S2	1435	C
83	S2	1437	C
83	S2	1438	A
83	S2	1439	A
83	S2	1442	OMU
83	S2	1449	G
83	S2	1454	A
83	S2	1455	A
83	S2	1463	U
83	S2	1480	A
83	S2	1489	A
83	S2	1490	OMG
83	S2	1492	U
83	S2	1494	U
83	S2	1495	G
83	S2	1497	G
83	S2	1498	A
83	S2	1521	C
83	S2	1522	A
83	S2	1531	A
83	S2	1533	A
83	S2	1544	C
83	S2	1546	G
83	S2	1552	G
83	S2	1553	C
83	S2	1556	A
83	S2	1558	C
83	S2	1575	G
83	S2	1580	A
83	S2	1581	C
83	S2	1585	U
83	S2	1587	G
83	S2	1588	A
83	S2	1600	G
83	S2	1604	G
83	S2	1621	U
83	S2	1623	A
83	S2	1631	U
83	S2	1633	A
83	S2	1634	A
83	S2	1637	A
83	S2	1648	G

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Mol	Chain	Res	Type
83	S2	1654	G
83	S2	1663	A
83	S2	1665	G
83	S2	1683	C
83	S2	1686	G
83	S2	1695	A
83	S2	1698	C
83	S2	1699	A
83	S2	1715	A
83	S2	1721	U
83	S2	1722	G
83	S2	1744	G
83	S2	1745	A
83	S2	1752	C
83	S2	1753	C
83	S2	1754	G
83	S2	1755	C
83	S2	1757	G
83	S2	1759	G
83	S2	1761	U
83	S2	1772	C
83	S2	1773	C
83	S2	1774	C
83	S2	1777	G
83	S2	1782	G
83	S2	1783	C
83	S2	1784	G
83	S2	1786	U
83	S2	1798	C
83	S2	1810	U
83	S2	1821	U
83	S2	1825	A
83	S2	1829	G
83	S2	1831	A
83	S2	1835	A
83	S2	1838	U
83	S2	1849	G
83	S2	1851	MA6
83	S2	1861	G
83	S2	1862	G
83	S2	1863	A
83	S2	1864	U

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Mol	Chain	Res	Type
83	S2	1865	C

All (19) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
3	L5	406	C
3	L5	493	G
3	L5	914	U
3	L5	1082	C
3	L5	1590	C
3	L5	1633	G
3	L5	1703	C
3	L5	1977	C
3	L5	2416	G
3	L5	2485	U
3	L5	2675	G
3	L5	2760	G
3	L5	3673	C
3	L5	4600	G
3	L5	4699	U
3	L5	4913	G
83	S2	291	G
83	S2	563	G
83	S2	688	U

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
3	A2M	L5	3830	3	18,25,26	1.34	2 (11%)	20,36,39	2.15	5 (25%)
3	PSU	L5	5010	3	18,21,22	1.12	1 (5%)	21,30,33	1.88	4 (19%)
3	PSU	L5	4361	3	18,21,22	1.08	1 (5%)	21,30,33	1.79	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
3	PSU	L5	3853	85,3	18,21,22	1.05	1 (5%)	21,30,33	1.79	4 (19%)
83	PSU	S2	649	83	18,21,22	1.12	1 (5%)	21,30,33	1.91	4 (19%)
83	OMG	S2	683	83	19,26,27	1.15	2 (10%)	21,38,41	0.83	1 (4%)
3	A2M	L5	2363	85,3	18,25,26	1.35	3 (16%)	20,36,39	1.88	7 (35%)
83	6MZ	S2	1832	85,83	21,26,26	1.27	2 (9%)	22,39,39	1.86	3 (13%)
3	PSU	L5	4500	3	18,21,22	1.13	1 (5%)	21,30,33	2.01	5 (23%)
83	OMG	S2	436	83	19,26,27	1.17	2 (10%)	21,38,41	0.85	1 (4%)
3	PSU	L5	4972	3	18,21,22	1.08	1 (5%)	21,30,33	1.87	4 (19%)
3	PSU	L5	1862	3	18,21,22	1.09	1 (5%)	21,30,33	1.90	4 (19%)
3	PSU	L5	4579	3	18,21,22	1.07	1 (5%)	21,30,33	1.86	4 (19%)
3	PSU	L5	3920	85,3	18,21,22	1.09	1 (5%)	21,30,33	1.89	4 (19%)
3	A2M	L5	4590	3	18,25,26	1.31	2 (11%)	20,36,39	2.03	5 (25%)
3	OMC	L5	3869	3	19,22,23	0.55	0	25,31,34	0.72	0
3	PSU	L5	3851	3	18,21,22	1.11	1 (5%)	21,30,33	1.86	4 (19%)
3	OMC	L5	2351	85,3	19,22,23	0.60	0	25,31,34	1.19	2 (8%)
83	OMG	S2	1490	83	19,26,27	1.24	2 (10%)	21,38,41	0.71	0
83	PSU	S2	1046	83	18,21,22	1.11	1 (5%)	21,30,33	1.83	4 (19%)
3	PSU	L5	4353	3	18,21,22	1.10	1 (5%)	21,30,33	1.89	4 (19%)
3	A2M	L5	2815	3	18,25,26	1.28	1 (5%)	20,36,39	1.82	7 (35%)
83	OMU	S2	116	83	19,22,23	3.35	7 (36%)	25,31,34	1.73	4 (16%)
83	OMC	S2	1272	83	19,22,23	0.56	0	25,31,34	1.05	2 (8%)
3	OMG	L5	2364	85,3	19,26,27	1.20	2 (10%)	21,38,41	0.85	1 (4%)
83	OMU	S2	172	83	19,22,23	3.36	7 (36%)	25,31,34	1.85	5 (20%)
3	PSU	L5	1744	85,3	18,21,22	1.09	1 (5%)	21,30,33	1.86	4 (19%)
83	OMC	S2	517	83	19,22,23	0.50	0	25,31,34	0.65	0
83	OMC	S2	1703	83	19,22,23	0.52	0	25,31,34	0.60	0
3	OMU	L5	2837	3	19,22,23	3.37	7 (36%)	25,31,34	1.85	4 (16%)
3	OMU	L5	4498	3	19,22,23	3.33	7 (36%)	25,31,34	1.83	5 (20%)
3	PSU	L5	3637	3	18,21,22	1.11	1 (5%)	21,30,33	1.97	4 (19%)
83	OMG	S2	644	83	19,26,27	1.13	2 (10%)	21,38,41	0.88	1 (4%)
3	OMU	L5	4306	3	19,22,23	3.33	7 (36%)	25,31,34	1.82	4 (16%)
83	PSU	S2	1177	83	18,21,22	1.08	1 (5%)	21,30,33	1.84	4 (19%)
3	A2M	L5	4571	3	18,25,26	1.38	3 (16%)	20,36,39	1.97	6 (30%)
83	PSU	S2	801	83	18,21,22	1.12	1 (5%)	21,30,33	1.87	4 (19%)
3	PSU	L5	4312	3	18,21,22	1.10	1 (5%)	21,30,33	1.91	4 (19%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
3	5MC	L5	3782	85,3	19,22,23	0.59	0	26,32,35	0.71	0
3	A2M	L5	1534	85,3	18,25,26	1.30	2 (11%)	20,36,39	1.80	7 (35%)
3	PSU	L5	4532	3	18,21,22	1.10	1 (5%)	21,30,33	1.81	4 (19%)
3	PSU	L5	4299	3	18,21,22	1.05	1 (5%)	21,30,33	1.91	5 (23%)
83	OMC	S2	462	83	19,22,23	0.53	0	25,31,34	0.73	0
3	UY1	L5	3818	3	19,22,23	4.93	10 (52%)	21,31,34	2.02	6 (28%)
3	OMC	L5	3887	3	19,22,23	0.54	0	25,31,34	0.77	0
83	A2M	S2	27	83	18,25,26	1.32	2 (11%)	20,36,39	2.00	6 (30%)
3	A2M	L5	3867	3	18,25,26	1.34	2 (11%)	20,36,39	1.78	6 (30%)
3	PSU	L5	4576	3	18,21,22	1.10	1 (5%)	21,30,33	1.81	4 (19%)
3	A2M	L5	4523	85,3	18,25,26	1.42	3 (16%)	20,36,39	2.13	5 (25%)
83	A2M	S2	668	85,83	18,25,26	1.36	3 (16%)	20,36,39	1.98	6 (30%)
3	PSU	L5	4493	3	18,21,22	1.09	1 (5%)	21,30,33	1.88	4 (19%)
3	A2M	L5	398	3	18,25,26	1.30	2 (11%)	20,36,39	2.11	5 (25%)
3	PSU	L5	5001	3	18,21,22	1.12	1 (5%)	21,30,33	1.88	4 (19%)
3	OMC	L5	2422	85,3	19,22,23	0.53	0	25,31,34	0.71	0
83	A2M	S2	159	83	18,25,26	1.23	1 (5%)	20,36,39	1.87	6 (30%)
3	PSU	L5	3884	3	18,21,22	1.10	1 (5%)	21,30,33	1.89	4 (19%)
83	OMU	S2	1326	83	19,22,23	3.35	7 (36%)	25,31,34	1.85	5 (20%)
3	A2M	L5	1524	3	18,25,26	1.43	3 (16%)	20,36,39	2.28	5 (25%)
83	OMU	S2	627	83	19,22,23	3.40	7 (36%)	25,31,34	1.79	5 (20%)
83	OMU	S2	799	83	19,22,23	3.40	7 (36%)	25,31,34	1.80	4 (16%)
83	PSU	S2	966	85,83	18,21,22	1.09	1 (5%)	21,30,33	1.83	4 (19%)
3	OMC	L5	1340	3	19,22,23	0.55	0	25,31,34	0.76	0
83	PSU	S2	1081	83	18,21,22	1.08	1 (5%)	21,30,33	1.88	5 (23%)
3	OMU	L5	4227	3	19,22,23	3.36	7 (36%)	25,31,34	1.83	4 (16%)
83	A2M	S2	576	83	18,25,26	1.27	2 (11%)	20,36,39	1.97	5 (25%)
3	OMG	L5	4637	3	19,26,27	1.16	2 (10%)	21,38,41	0.87	1 (4%)
83	4AC	S2	1337	83	21,24,25	0.39	0	28,34,37	0.74	1 (3%)
83	B8N	S2	1248	83	25,29,30	3.27	6 (24%)	28,42,45	1.99	7 (25%)
3	PSU	L5	1782	3	18,21,22	1.08	1 (5%)	21,30,33	1.88	4 (19%)
3	OMG	L5	3899	3	19,26,27	1.20	2 (10%)	21,38,41	0.88	1 (4%)
3	A2M	L5	3718	3	18,25,26	1.23	2 (11%)	20,36,39	1.89	5 (25%)
3	PSU	L5	3844	3	18,21,22	1.14	1 (5%)	21,30,33	1.81	4 (19%)
83	PSU	S2	814	83	18,21,22	1.12	1 (5%)	21,30,33	1.82	4 (19%)
83	OMC	S2	174	83	19,22,23	0.49	0	25,31,34	0.64	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
83	OMC	S2	1391	83	19,22,23	0.50	0	25,31,34	0.69	0
83	PSU	S2	93	83	18,21,22	1.11	1 (5%)	21,30,33	1.74	4 (19%)
83	PSU	S2	681	83	18,21,22	1.08	1 (5%)	21,30,33	1.81	4 (19%)
3	PSU	L5	4431	3	18,21,22	1.09	1 (5%)	21,30,33	1.86	4 (19%)
83	A2M	S2	484	83	18,25,26	1.22	1 (5%)	20,36,39	1.80	6 (30%)
3	OMC	L5	3808	3	19,22,23	0.58	0	25,31,34	0.85	1 (4%)
3	PSU	L5	1781	3	18,21,22	1.05	1 (5%)	21,30,33	1.75	4 (19%)
83	OMU	S2	1442	83	19,22,23	3.39	7 (36%)	25,31,34	1.76	4 (16%)
3	OMC	L5	4536	3	19,22,23	0.55	0	25,31,34	0.71	0
3	1MA	L5	1322	85,3	17,25,26	1.00	2 (11%)	17,37,40	1.14	2 (11%)
3	OMG	L5	3627	3	19,26,27	1.16	2 (10%)	21,38,41	0.91	1 (4%)
83	PSU	S2	105	83	18,21,22	1.12	1 (5%)	21,30,33	1.83	4 (19%)
3	OMG	L5	4228	3	19,26,27	1.18	2 (10%)	21,38,41	0.95	1 (4%)
3	OMC	L5	2824	3	19,22,23	0.55	0	25,31,34	0.72	0
83	PSU	S2	1232	83	18,21,22	1.15	1 (5%)	21,30,33	1.92	4 (19%)
3	OMC	L5	3841	3	19,22,23	0.54	0	25,31,34	0.65	0
5	PSU	L8	55	5	18,21,22	1.07	1 (5%)	21,30,33	1.94	5 (23%)
3	OMU	L5	4620	3	19,22,23	3.28	7 (36%)	25,31,34	1.72	4 (16%)
3	A2M	L5	400	3	18,25,26	1.38	2 (11%)	20,36,39	1.96	7 (35%)
3	PSU	L5	1683	3	18,21,22	1.09	1 (5%)	21,30,33	1.89	4 (19%)
3	PSU	L5	4973	3	18,21,22	1.11	1 (5%)	21,30,33	1.90	4 (19%)
83	PSU	S2	1045	83	18,21,22	1.08	1 (5%)	21,30,33	1.82	4 (19%)
3	OMG	L5	4494	3	19,26,27	1.18	2 (10%)	21,38,41	0.88	1 (4%)
83	A2M	S2	1383	83	18,25,26	1.30	2 (11%)	20,36,39	2.15	5 (25%)
3	PSU	L5	3822	3	18,21,22	1.12	1 (5%)	21,30,33	1.91	5 (23%)
83	PSU	S2	651	83	18,21,22	1.12	1 (5%)	21,30,33	1.91	4 (19%)
83	PSU	S2	109	83	18,21,22	1.12	1 (5%)	21,30,33	1.89	4 (19%)
83	PSU	S2	1004	83	18,21,22	1.14	1 (5%)	21,30,33	1.89	4 (19%)
83	PSU	S2	686	83	18,21,22	1.13	1 (5%)	21,30,33	1.92	4 (19%)
83	OMU	S2	121	83	19,22,23	3.36	7 (36%)	25,31,34	1.81	5 (20%)
83	OMG	S2	1328	83	19,26,27	1.10	2 (10%)	21,38,41	0.84	1 (4%)
3	6MZ	L5	4220	3	17,25,26	3.53	6 (35%)	15,36,39	2.65	4 (26%)
3	OMG	L5	2876	3	19,26,27	1.15	2 (10%)	21,38,41	0.84	1 (4%)
83	PSU	S2	866	83	18,21,22	1.11	1 (5%)	21,30,33	1.86	5 (23%)
3	OMC	L5	2804	3	19,22,23	0.59	0	25,31,34	0.97	1 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
3	PSU	L5	4636	3	18,21,22	1.13	1 (5%)	21,30,33	2.04	6 (28%)
83	A2M	S2	166	83	18,25,26	1.33	2 (11%)	20,36,39	2.06	6 (30%)
3	PSU	L5	4442	3	18,21,22	1.14	1 (5%)	21,30,33	1.89	5 (23%)
83	PSU	S2	1244	83	18,21,22	1.12	1 (5%)	21,30,33	1.88	4 (19%)
83	4AC	S2	1842	83	21,24,25	0.37	0	28,34,37	0.46	0
83	A2M	S2	468	83	18,25,26	1.31	2 (11%)	20,36,39	2.01	6 (30%)
3	A2M	L5	1871	85,3	18,25,26	1.43	2 (11%)	20,36,39	2.21	5 (25%)
3	UR3	L5	4530	3	19,22,23	2.73	7 (36%)	26,32,35	1.57	3 (11%)
83	MA6	S2	1851	83	19,26,27	1.49	3 (15%)	18,38,41	3.47	3 (16%)
83	OMG	S2	867	83	19,26,27	1.12	2 (10%)	21,38,41	0.88	1 (4%)
83	PSU	S2	1056	83	18,21,22	1.11	1 (5%)	21,30,33	1.89	4 (19%)
3	PSU	L5	1677	3	18,21,22	1.08	1 (5%)	21,30,33	2.01	5 (23%)
3	PSU	L5	3695	3	18,21,22	1.09	1 (5%)	21,30,33	1.90	5 (23%)
3	OMC	L5	4456	3	19,22,23	0.59	0	25,31,34	0.91	1 (4%)
3	PSU	L5	4673	85,3	18,21,22	1.08	1 (5%)	21,30,33	1.89	4 (19%)
83	G7M	S2	1639	1,83	20,26,27	2.45	6 (30%)	16,39,42	1.06	1 (6%)
3	OMG	L5	3744	3	19,26,27	1.16	2 (10%)	21,38,41	0.88	1 (4%)
3	A2M	L5	2401	3	18,25,26	1.33	2 (11%)	20,36,39	2.01	6 (30%)
3	OMU	L5	3925	3	19,22,23	3.31	7 (36%)	25,31,34	1.85	5 (20%)
3	5MC	L5	4447	3	19,22,23	0.72	0	26,32,35	0.62	0
3	PSU	L5	4403	3	18,21,22	1.09	1 (5%)	21,30,33	1.97	6 (28%)
83	A2M	S2	1031	83	18,25,26	1.28	2 (11%)	20,36,39	2.08	5 (25%)
83	OMU	S2	354	83	19,22,23	3.34	7 (36%)	25,31,34	1.84	5 (20%)
83	PSU	S2	1174	83	18,21,22	1.12	1 (5%)	21,30,33	1.86	4 (19%)
3	A2M	L5	3785	85,3	18,25,26	1.30	2 (11%)	20,36,39	2.38	7 (35%)
3	PSU	L5	2632	3	18,21,22	1.07	1 (5%)	21,30,33	1.84	4 (19%)
3	PSU	L5	1536	3	18,21,22	1.09	1 (5%)	21,30,33	1.90	4 (19%)
3	PSU	L5	4552	3	18,21,22	1.10	1 (5%)	21,30,33	1.91	4 (19%)
3	OMG	L5	1316	3	19,26,27	1.20	2 (10%)	21,38,41	0.92	1 (4%)
3	OMG	L5	4392	3	19,26,27	1.15	2 (10%)	21,38,41	0.89	1 (4%)
83	PSU	S2	406	83	18,21,22	1.10	1 (5%)	21,30,33	1.98	5 (23%)
3	OMG	L5	4618	3	19,26,27	1.17	2 (10%)	21,38,41	0.83	1 (4%)
83	OMG	S2	601	83	19,26,27	1.13	2 (10%)	21,38,41	0.86	1 (4%)
3	PSU	L5	4457	3	18,21,22	1.08	1 (5%)	21,30,33	1.88	5 (23%)
83	OMU	S2	1288	83	19,22,23	3.37	7 (36%)	25,31,34	1.78	5 (20%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
3	PSU	L5	3639	3	18,21,22	1.12	1 (5%)	21,30,33	1.90	5 (23%)
3	OMG	L5	4623	3	19,26,27	1.17	2 (10%)	21,38,41	0.93	1 (4%)
83	PSU	S2	863	83	18,21,22	1.12	1 (5%)	21,30,33	1.87	4 (19%)
3	A2M	L5	1323	3	18,25,26	1.44	4 (22%)	20,36,39	2.00	7 (35%)
3	OMG	L5	3792	3	19,26,27	1.16	2 (10%)	21,38,41	0.83	1 (4%)
3	A2M	L5	3825	3	18,25,26	1.37	2 (11%)	20,36,39	2.04	5 (25%)
3	PSU	L5	4471	3	18,21,22	1.10	1 (5%)	21,30,33	1.86	4 (19%)
83	MA6	S2	1850	83	19,26,27	1.48	3 (15%)	18,38,41	3.40	3 (16%)
3	OMC	L5	2365	85,3	19,22,23	0.53	0	25,31,34	0.62	0
5	OMG	L8	75	5	19,26,27	1.15	2 (10%)	21,38,41	0.89	1 (4%)
3	PSU	L5	1792	3	18,21,22	1.07	1 (5%)	21,30,33	1.80	4 (19%)
3	PSU	L5	4293	3	18,21,22	1.11	1 (5%)	21,30,33	1.98	4 (19%)
3	PSU	L5	1860	3	18,21,22	1.09	1 (5%)	21,30,33	1.91	4 (19%)
83	PSU	S2	1367	83	18,21,22	1.13	1 (5%)	21,30,33	1.87	4 (19%)
3	PSU	L5	4689	3	18,21,22	1.08	1 (5%)	21,30,33	1.93	4 (19%)
3	PSU	L5	4628	3	18,21,22	1.09	1 (5%)	21,30,33	1.84	5 (23%)
3	PSU	L5	4521	85,3	18,21,22	1.10	1 (5%)	21,30,33	2.01	5 (23%)
83	A2M	S2	99	85,83	18,25,26	1.34	2 (11%)	20,36,39	1.99	5 (25%)
3	OMC	L5	2861	3	19,22,23	0.54	0	25,31,34	0.86	1 (4%)
3	A2M	L5	1326	3	18,25,26	1.34	2 (11%)	20,36,39	1.78	6 (30%)
3	OMG	L5	4370	3	19,26,27	1.18	2 (10%)	21,38,41	0.86	1 (4%)
3	A2M	L5	2787	3	18,25,26	1.32	2 (11%)	20,36,39	1.80	6 (30%)
5	PSU	L8	69	5	18,21,22	1.10	1 (5%)	21,30,33	1.87	5 (23%)
3	PSU	L5	4296	3	18,21,22	1.11	1 (5%)	21,30,33	1.90	4 (19%)
3	OMG	L5	2424	3	19,26,27	1.18	2 (10%)	21,38,41	0.82	1 (4%)
3	OMC	L5	3701	3	19,22,23	0.65	0	25,31,34	1.70	4 (16%)
3	OMG	L5	4196	1,3	19,26,27	1.14	2 (10%)	21,38,41	0.85	1 (4%)
3	OMG	L5	4499	3	19,26,27	1.14	2 (10%)	21,38,41	0.85	1 (4%)
83	OMG	S2	509	83	19,26,27	1.14	2 (10%)	21,38,41	0.85	1 (4%)
3	OMG	L5	1625	3	19,26,27	1.21	2 (10%)	21,38,41	0.85	1 (4%)
3	PSU	L5	1582	3	18,21,22	1.12	1 (5%)	21,30,33	1.85	4 (19%)
83	OMU	S2	428	83	19,22,23	3.37	7 (36%)	25,31,34	1.83	5 (20%)
3	OMG	L5	1522	3	19,26,27	1.19	2 (10%)	21,38,41	0.93	1 (4%)
3	PSU	L5	2839	3	18,21,22	1.09	1 (5%)	21,30,33	1.84	4 (19%)

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
3	A2M	L5	3830	3	-	0/5/27/28	0/3/3/3
3	PSU	L5	5010	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4361	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	3853	85,3	-	0/7/25/26	0/2/2/2
83	PSU	S2	649	83	-	0/7/25/26	0/2/2/2
83	OMG	S2	683	83	-	2/5/27/28	0/3/3/3
3	A2M	L5	2363	85,3	-	0/5/27/28	0/3/3/3
83	6MZ	S2	1832	85,83	-	3/8/28/28	0/3/3/3
3	PSU	L5	4500	3	-	3/7/25/26	0/2/2/2
83	OMG	S2	436	83	-	2/5/27/28	0/3/3/3
3	PSU	L5	4972	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	1862	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4579	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	3920	85,3	-	0/7/25/26	0/2/2/2
3	A2M	L5	4590	3	-	3/5/27/28	0/3/3/3
3	OMC	L5	3869	3	-	1/9/27/28	0/2/2/2
3	PSU	L5	3851	3	-	1/7/25/26	0/2/2/2
3	OMC	L5	2351	85,3	-	3/9/27/28	0/2/2/2
83	OMG	S2	1490	83	-	1/5/27/28	0/3/3/3
83	PSU	S2	1046	83	-	0/7/25/26	0/2/2/2
3	PSU	L5	4353	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	2815	3	-	2/5/27/28	0/3/3/3
83	OMU	S2	116	83	-	1/9/27/28	0/2/2/2
83	OMC	S2	1272	83	-	5/9/27/28	0/2/2/2
3	OMG	L5	2364	85,3	-	2/5/27/28	0/3/3/3
83	OMU	S2	172	83	-	0/9/27/28	0/2/2/2
3	PSU	L5	1744	85,3	-	0/7/25/26	0/2/2/2
83	OMC	S2	517	83	-	2/9/27/28	0/2/2/2
83	OMC	S2	1703	83	-	1/9/27/28	0/2/2/2
3	OMU	L5	2837	3	-	0/9/27/28	0/2/2/2
3	OMU	L5	4498	3	-	0/9/27/28	0/2/2/2
3	PSU	L5	3637	3	-	0/7/25/26	0/2/2/2
83	OMG	S2	644	83	-	3/5/27/28	0/3/3/3
3	OMU	L5	4306	3	-	1/9/27/28	0/2/2/2
83	PSU	S2	1177	83	-	0/7/25/26	0/2/2/2
3	A2M	L5	4571	3	-	0/5/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
83	PSU	S2	801	83	-	2/7/25/26	0/2/2/2
3	PSU	L5	4312	3	-	0/7/25/26	0/2/2/2
3	5MC	L5	3782	85,3	-	1/7/25/26	0/2/2/2
3	A2M	L5	1534	85,3	-	1/5/27/28	0/3/3/3
3	PSU	L5	4532	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4299	3	-	0/7/25/26	0/2/2/2
83	OMC	S2	462	83	-	1/9/27/28	0/2/2/2
3	UY1	L5	3818	3	-	2/9/27/28	0/2/2/2
3	OMC	L5	3887	3	-	1/9/27/28	0/2/2/2
83	A2M	S2	27	83	-	1/5/27/28	0/3/3/3
3	A2M	L5	3867	3	-	3/5/27/28	0/3/3/3
3	PSU	L5	4576	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	4523	85,3	-	0/5/27/28	0/3/3/3
83	A2M	S2	668	85,83	-	2/5/27/28	0/3/3/3
3	PSU	L5	4493	3	-	0/7/25/26	0/2/2/2
3	A2M	L5	398	3	-	1/5/27/28	0/3/3/3
3	PSU	L5	5001	3	-	0/7/25/26	0/2/2/2
3	OMC	L5	2422	85,3	-	2/9/27/28	0/2/2/2
83	A2M	S2	159	83	-	1/5/27/28	0/3/3/3
3	PSU	L5	3884	3	-	0/7/25/26	0/2/2/2
83	OMU	S2	1326	83	-	0/9/27/28	0/2/2/2
3	A2M	L5	1524	3	-	3/5/27/28	0/3/3/3
83	OMU	S2	627	83	-	4/9/27/28	0/2/2/2
83	OMU	S2	799	83	-	2/9/27/28	0/2/2/2
83	PSU	S2	966	85,83	-	0/7/25/26	0/2/2/2
3	OMC	L5	1340	3	-	1/9/27/28	0/2/2/2
83	PSU	S2	1081	83	-	0/7/25/26	0/2/2/2
3	OMU	L5	4227	3	-	0/9/27/28	0/2/2/2
83	A2M	S2	576	83	-	3/5/27/28	0/3/3/3
3	OMG	L5	4637	3	-	3/5/27/28	0/3/3/3
83	4AC	S2	1337	83	-	1/11/29/30	0/2/2/2
83	B8N	S2	1248	83	-	4/16/34/35	0/2/2/2
3	PSU	L5	1782	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	3899	3	-	3/5/27/28	0/3/3/3
3	A2M	L5	3718	3	-	0/5/27/28	0/3/3/3
3	PSU	L5	3844	3	-	1/7/25/26	0/2/2/2
83	PSU	S2	814	83	-	0/7/25/26	0/2/2/2
83	OMC	S2	174	83	-	0/9/27/28	0/2/2/2
83	OMC	S2	1391	83	-	0/9/27/28	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
83	PSU	S2	93	83	-	0/7/25/26	0/2/2/2
83	PSU	S2	681	83	-	0/7/25/26	0/2/2/2
3	PSU	L5	4431	3	-	0/7/25/26	0/2/2/2
83	A2M	S2	484	83	-	0/5/27/28	0/3/3/3
3	OMC	L5	3808	3	-	0/9/27/28	0/2/2/2
3	PSU	L5	1781	3	-	2/7/25/26	0/2/2/2
83	OMU	S2	1442	83	-	2/9/27/28	0/2/2/2
3	OMC	L5	4536	3	-	0/9/27/28	0/2/2/2
3	1MA	L5	1322	85,3	-	0/3/25/26	0/3/3/3
3	OMG	L5	3627	3	-	0/5/27/28	0/3/3/3
83	PSU	S2	105	83	-	0/7/25/26	0/2/2/2
3	OMG	L5	4228	3	-	0/5/27/28	0/3/3/3
3	OMC	L5	2824	3	-	1/9/27/28	0/2/2/2
83	PSU	S2	1232	83	-	0/7/25/26	0/2/2/2
3	OMC	L5	3841	3	-	1/9/27/28	0/2/2/2
5	PSU	L8	55	5	-	0/7/25/26	0/2/2/2
3	OMU	L5	4620	3	-	1/9/27/28	0/2/2/2
3	A2M	L5	400	3	-	1/5/27/28	0/3/3/3
3	PSU	L5	1683	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4973	3	-	0/7/25/26	0/2/2/2
83	PSU	S2	1045	83	-	2/7/25/26	0/2/2/2
3	OMG	L5	4494	3	-	0/5/27/28	0/3/3/3
83	A2M	S2	1383	83	-	1/5/27/28	0/3/3/3
3	PSU	L5	3822	3	-	0/7/25/26	0/2/2/2
83	PSU	S2	651	83	-	0/7/25/26	0/2/2/2
83	PSU	S2	109	83	-	0/7/25/26	0/2/2/2
83	PSU	S2	1004	83	-	0/7/25/26	0/2/2/2
83	PSU	S2	686	83	-	0/7/25/26	0/2/2/2
83	OMU	S2	121	83	-	0/9/27/28	0/2/2/2
83	OMG	S2	1328	83	-	1/5/27/28	0/3/3/3
3	6MZ	L5	4220	3	-	0/5/27/28	0/3/3/3
3	OMG	L5	2876	3	-	0/5/27/28	0/3/3/3
83	PSU	S2	866	83	-	0/7/25/26	0/2/2/2
3	OMC	L5	2804	3	-	1/9/27/28	0/2/2/2
3	PSU	L5	4636	3	-	1/7/25/26	0/2/2/2
83	A2M	S2	166	83	-	0/5/27/28	0/3/3/3
3	PSU	L5	4442	3	-	0/7/25/26	0/2/2/2
83	PSU	S2	1244	83	-	0/7/25/26	0/2/2/2
83	4AC	S2	1842	83	-	0/11/29/30	0/2/2/2
83	A2M	S2	468	83	-	1/5/27/28	0/3/3/3
3	A2M	L5	1871	85,3	-	0/5/27/28	0/3/3/3
3	UR3	L5	4530	3	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
83	MA6	S2	1851	83	-	1/7/29/30	0/3/3/3
83	OMG	S2	867	83	-	2/5/27/28	0/3/3/3
83	PSU	S2	1056	83	-	0/7/25/26	0/2/2/2
3	PSU	L5	1677	3	-	4/7/25/26	0/2/2/2
3	PSU	L5	3695	3	-	0/7/25/26	0/2/2/2
3	OMC	L5	4456	3	-	0/9/27/28	0/2/2/2
3	PSU	L5	4673	85,3	-	0/7/25/26	0/2/2/2
83	G7M	S2	1639	1,83	-	0/3/25/26	0/3/3/3
3	OMG	L5	3744	3	-	0/5/27/28	0/3/3/3
3	A2M	L5	2401	3	-	0/5/27/28	0/3/3/3
3	OMU	L5	3925	3	-	0/9/27/28	0/2/2/2
3	5MC	L5	4447	3	-	4/7/25/26	0/2/2/2
3	PSU	L5	4403	3	-	0/7/25/26	0/2/2/2
83	A2M	S2	1031	83	-	0/5/27/28	0/3/3/3
83	OMU	S2	354	83	-	0/9/27/28	0/2/2/2
83	PSU	S2	1174	83	-	0/7/25/26	0/2/2/2
3	A2M	L5	3785	85,3	-	0/5/27/28	0/3/3/3
3	PSU	L5	2632	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	1536	3	-	2/7/25/26	0/2/2/2
3	PSU	L5	4552	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	1316	3	-	0/5/27/28	0/3/3/3
3	OMG	L5	4392	3	-	0/5/27/28	0/3/3/3
83	PSU	S2	406	83	-	0/7/25/26	0/2/2/2
3	OMG	L5	4618	3	-	1/5/27/28	0/3/3/3
83	OMG	S2	601	83	-	1/5/27/28	0/3/3/3
3	PSU	L5	4457	3	-	0/7/25/26	0/2/2/2
83	OMU	S2	1288	83	-	2/9/27/28	0/2/2/2
3	PSU	L5	3639	3	-	0/7/25/26	0/2/2/2
3	OMG	L5	4623	3	-	0/5/27/28	0/3/3/3
83	PSU	S2	863	83	-	0/7/25/26	0/2/2/2
3	A2M	L5	1323	3	-	2/5/27/28	0/3/3/3
3	OMG	L5	3792	3	-	2/5/27/28	0/3/3/3
3	A2M	L5	3825	3	-	0/5/27/28	0/3/3/3
3	PSU	L5	4471	3	-	0/7/25/26	0/2/2/2
83	MA6	S2	1850	83	-	0/7/29/30	0/3/3/3
3	OMC	L5	2365	85,3	-	0/9/27/28	0/2/2/2
5	OMG	L8	75	5	-	0/5/27/28	0/3/3/3
3	PSU	L5	1792	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4293	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	1860	3	-	0/7/25/26	0/2/2/2
83	PSU	S2	1367	83	-	0/7/25/26	0/2/2/2

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	PSU	L5	4689	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4628	3	-	0/7/25/26	0/2/2/2
3	PSU	L5	4521	85,3	-	0/7/25/26	0/2/2/2
83	A2M	S2	99	85,83	-	3/5/27/28	0/3/3/3
3	OMC	L5	2861	3	-	0/9/27/28	0/2/2/2
3	A2M	L5	1326	3	-	4/5/27/28	0/3/3/3
3	OMG	L5	4370	3	-	0/5/27/28	0/3/3/3
3	A2M	L5	2787	3	-	2/5/27/28	0/3/3/3
5	PSU	L8	69	5	-	0/7/25/26	0/2/2/2
3	PSU	L5	4296	3	-	2/7/25/26	0/2/2/2
3	OMG	L5	2424	3	-	0/5/27/28	0/3/3/3
3	OMC	L5	3701	3	-	6/9/27/28	0/2/2/2
3	OMG	L5	4196	1,3	-	1/5/27/28	0/3/3/3
3	OMG	L5	4499	3	-	1/5/27/28	0/3/3/3
83	OMG	S2	509	83	-	0/5/27/28	0/3/3/3
3	OMG	L5	1625	3	-	2/5/27/28	0/3/3/3
3	PSU	L5	1582	3	-	0/7/25/26	0/2/2/2
83	OMU	S2	428	83	-	4/9/27/28	0/2/2/2
3	OMG	L5	1522	3	-	0/5/27/28	0/3/3/3
3	PSU	L5	2839	3	-	0/7/25/26	0/2/2/2

All (347) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	L5	3818	UY1	C6-C5	12.91	1.49	1.35
3	L5	3818	UY1	C2-N1	11.87	1.52	1.36
83	S2	799	OMU	C2-N1	8.50	1.51	1.38
3	L5	2837	OMU	C2-N1	8.38	1.51	1.38
83	S2	1442	OMU	C2-N1	8.38	1.51	1.38
83	S2	627	OMU	C2-N1	8.36	1.51	1.38
3	L5	4227	OMU	C2-N1	8.36	1.51	1.38
3	L5	4220	6MZ	C3'-C2'	-8.32	1.30	1.53
83	S2	354	OMU	C2-N1	8.24	1.51	1.38
83	S2	1288	OMU	C2-N1	8.23	1.51	1.38
83	S2	121	OMU	C2-N1	8.21	1.51	1.38
83	S2	428	OMU	C2-N1	8.21	1.51	1.38
3	L5	4306	OMU	C2-N1	8.19	1.51	1.38
83	S2	116	OMU	C2-N1	8.18	1.51	1.38
83	S2	172	OMU	C2-N1	8.18	1.51	1.38
3	L5	3925	OMU	C2-N1	8.16	1.51	1.38
83	S2	1326	OMU	C2-N1	8.13	1.51	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	L5	4498	OMU	C2-N1	8.11	1.51	1.38
3	L5	4620	OMU	C2-N1	8.00	1.51	1.38
83	S2	1248	B8N	C6-N1	7.87	1.55	1.36
83	S2	1248	B8N	C4-N3	-7.86	1.26	1.40
3	L5	3818	UY1	C2-N3	7.71	1.50	1.37
3	L5	4220	6MZ	O4'-C1'	-7.45	1.31	1.40
83	S2	1248	B8N	C4-C5	7.04	1.63	1.47
83	S2	116	OMU	C2-N3	6.98	1.50	1.38
83	S2	1442	OMU	C2-N3	6.97	1.50	1.38
83	S2	627	OMU	C2-N3	6.96	1.50	1.38
83	S2	172	OMU	C2-N3	6.93	1.50	1.38
83	S2	121	OMU	C2-N3	6.91	1.50	1.38
83	S2	799	OMU	C2-N3	6.89	1.50	1.38
83	S2	428	OMU	C2-N3	6.86	1.49	1.38
83	S2	1288	OMU	C2-N3	6.85	1.49	1.38
83	S2	1326	OMU	C2-N3	6.84	1.49	1.38
3	L5	2837	OMU	C2-N3	6.81	1.49	1.38
3	L5	4498	OMU	C2-N3	6.80	1.49	1.38
3	L5	4227	OMU	C2-N3	6.78	1.49	1.38
83	S2	354	OMU	C2-N3	6.78	1.49	1.38
3	L5	4306	OMU	C2-N3	6.78	1.49	1.38
3	L5	4620	OMU	C2-N3	6.71	1.49	1.38
3	L5	3925	OMU	C2-N3	6.67	1.49	1.38
3	L5	4530	UR3	C2-N1	6.44	1.47	1.38
3	L5	4530	UR3	C6-C5	6.29	1.49	1.35
83	S2	1248	B8N	C2-N1	5.92	1.56	1.39
83	S2	1288	OMU	C6-C5	5.91	1.48	1.35
83	S2	1326	OMU	C6-C5	5.90	1.48	1.35
83	S2	627	OMU	C6-C5	5.90	1.48	1.35
83	S2	428	OMU	C6-C5	5.88	1.48	1.35
83	S2	172	OMU	C6-C5	5.88	1.48	1.35
83	S2	121	OMU	C6-C5	5.86	1.48	1.35
83	S2	1442	OMU	C6-C5	5.85	1.48	1.35
3	L5	2837	OMU	C6-C5	5.83	1.48	1.35
83	S2	799	OMU	C6-C5	5.83	1.48	1.35
3	L5	4227	OMU	C6-C5	5.82	1.48	1.35
83	S2	116	OMU	C6-C5	5.81	1.48	1.35
3	L5	4498	OMU	C6-C5	5.80	1.48	1.35
3	L5	3925	OMU	C6-C5	5.79	1.48	1.35
83	S2	354	OMU	C6-C5	5.77	1.48	1.35
3	L5	4306	OMU	C6-C5	5.77	1.48	1.35
3	L5	4620	OMU	C6-C5	5.73	1.48	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	L5	4530	UR3	C2-N3	5.69	1.50	1.39
3	L5	2837	OMU	O4-C4	-5.53	1.13	1.24
3	L5	3925	OMU	O4-C4	-5.51	1.13	1.24
3	L5	4227	OMU	O4-C4	-5.50	1.13	1.24
3	L5	4306	OMU	O4-C4	-5.49	1.13	1.24
83	S2	428	OMU	O4-C4	-5.49	1.13	1.24
3	L5	4620	OMU	O4-C4	-5.48	1.13	1.24
3	L5	4498	OMU	O4-C4	-5.48	1.13	1.24
83	S2	799	OMU	O4-C4	-5.46	1.13	1.24
83	S2	1326	OMU	O4-C4	-5.46	1.13	1.24
83	S2	116	OMU	O4-C4	-5.44	1.13	1.24
83	S2	627	OMU	O4-C4	-5.44	1.13	1.24
83	S2	172	OMU	O4-C4	-5.43	1.13	1.24
83	S2	354	OMU	O4-C4	-5.42	1.13	1.24
83	S2	1288	OMU	O4-C4	-5.41	1.14	1.24
83	S2	1639	G7M	C2-N3	5.40	1.46	1.33
3	L5	3818	UY1	C6-N1	5.40	1.45	1.36
83	S2	121	OMU	O4-C4	-5.40	1.14	1.24
83	S2	1442	OMU	O4-C4	-5.37	1.14	1.24
83	S2	1248	B8N	C6-C5	5.33	1.42	1.35
83	S2	1639	G7M	C4-N3	5.06	1.49	1.37
83	S2	1639	G7M	C2-N2	4.93	1.45	1.34
3	L5	4220	6MZ	O4'-C4'	4.77	1.55	1.45
3	L5	4220	6MZ	C6-C5	-4.62	1.37	1.44
83	S2	627	OMU	C4-N3	4.51	1.46	1.38
83	S2	428	OMU	C4-N3	4.48	1.46	1.38
83	S2	1288	OMU	C4-N3	4.45	1.46	1.38
3	L5	3818	UY1	C4-N3	4.44	1.47	1.38
83	S2	172	OMU	C4-N3	4.43	1.46	1.38
83	S2	1442	OMU	C4-N3	4.41	1.46	1.38
83	S2	116	OMU	C4-N3	4.38	1.46	1.38
3	L5	4498	OMU	C4-N3	4.33	1.46	1.38
83	S2	1326	OMU	C4-N3	4.32	1.46	1.38
83	S2	354	OMU	C4-N3	4.31	1.46	1.38
3	L5	4220	6MZ	C5'-C4'	-4.31	1.38	1.51
83	S2	121	OMU	C4-N3	4.31	1.46	1.38
83	S2	799	OMU	C4-N3	4.30	1.46	1.38
3	L5	2837	OMU	C4-N3	4.27	1.45	1.38
3	L5	4306	OMU	C4-N3	4.19	1.45	1.38
3	L5	4227	OMU	C4-N3	4.16	1.45	1.38
3	L5	4620	OMU	C4-N3	4.13	1.45	1.38
3	L5	3925	OMU	C4-N3	4.09	1.45	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
83	S2	1832	6MZ	C6-C5	-3.87	1.38	1.44
83	S2	1232	PSU	C6-C5	3.84	1.39	1.35
3	L5	3844	PSU	C6-C5	3.80	1.39	1.35
83	S2	93	PSU	C6-C5	3.79	1.39	1.35
83	S2	1004	PSU	C6-C5	3.77	1.39	1.35
83	S2	814	PSU	C6-C5	3.75	1.39	1.35
83	S2	863	PSU	C6-C5	3.75	1.39	1.35
83	S2	1367	PSU	C6-C5	3.74	1.39	1.35
83	S2	686	PSU	C6-C5	3.73	1.39	1.35
83	S2	801	PSU	C6-C5	3.73	1.39	1.35
83	S2	1244	PSU	C6-C5	3.73	1.39	1.35
83	S2	1174	PSU	C6-C5	3.71	1.39	1.35
83	S2	1248	B8N	C1'-C5	3.71	1.58	1.50
3	L5	1582	PSU	C6-C5	3.70	1.39	1.35
83	S2	651	PSU	C6-C5	3.70	1.39	1.35
3	L5	5010	PSU	C6-C5	3.70	1.39	1.35
83	S2	1639	G7M	C6-N1	3.70	1.43	1.37
83	S2	649	PSU	C6-C5	3.68	1.39	1.35
83	S2	105	PSU	C6-C5	3.68	1.39	1.35
3	L5	3637	PSU	C6-C5	3.64	1.39	1.35
3	L5	3851	PSU	C6-C5	3.64	1.39	1.35
3	L5	3822	PSU	C6-C5	3.64	1.39	1.35
83	S2	866	PSU	C6-C5	3.64	1.39	1.35
3	L5	1862	PSU	C6-C5	3.64	1.39	1.35
3	L5	4442	PSU	C6-C5	3.64	1.39	1.35
3	L5	4296	PSU	C6-C5	3.64	1.39	1.35
3	L5	4532	PSU	C6-C5	3.63	1.39	1.35
83	S2	109	PSU	C6-C5	3.63	1.39	1.35
83	S2	1046	PSU	C6-C5	3.62	1.39	1.35
3	L5	5001	PSU	C6-C5	3.62	1.39	1.35
83	S2	1851	MA6	C6-C5	-3.62	1.39	1.44
3	L5	4471	PSU	C6-C5	3.61	1.39	1.35
3	L5	4493	PSU	C6-C5	3.61	1.39	1.35
3	L5	4576	PSU	C6-C5	3.60	1.39	1.35
83	S2	966	PSU	C6-C5	3.60	1.39	1.35
3	L5	4312	PSU	C6-C5	3.60	1.39	1.35
83	S2	1851	MA6	C6-N6	3.60	1.45	1.37
3	L5	1782	PSU	C6-C5	3.60	1.39	1.35
3	L5	4500	PSU	C6-C5	3.59	1.39	1.35
3	L5	4552	PSU	C6-C5	3.59	1.39	1.35
3	L5	4973	PSU	C6-C5	3.59	1.39	1.35
3	L5	1860	PSU	C6-C5	3.59	1.39	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
83	S2	1045	PSU	C6-C5	3.59	1.39	1.35
3	L5	2632	PSU	C6-C5	3.58	1.39	1.35
83	S2	1056	PSU	C6-C5	3.58	1.39	1.35
3	L5	4293	PSU	C6-C5	3.58	1.39	1.35
3	L5	3818	UY1	O4-C4	-3.58	1.16	1.23
3	L5	1683	PSU	C6-C5	3.57	1.39	1.35
83	S2	1850	MA6	C6-N6	3.57	1.45	1.37
3	L5	1792	PSU	C6-C5	3.56	1.39	1.35
3	L5	1744	PSU	C6-C5	3.56	1.39	1.35
3	L5	3639	PSU	C6-C5	3.56	1.39	1.35
3	L5	4361	PSU	C6-C5	3.55	1.39	1.35
3	L5	4431	PSU	C6-C5	3.55	1.39	1.35
3	L5	4636	PSU	C6-C5	3.55	1.39	1.35
3	L5	4353	PSU	C6-C5	3.55	1.39	1.35
5	L8	69	PSU	C6-C5	3.55	1.39	1.35
83	S2	406	PSU	C6-C5	3.54	1.39	1.35
3	L5	4628	PSU	C6-C5	3.54	1.39	1.35
83	S2	1850	MA6	C6-C5	-3.54	1.39	1.44
83	S2	1081	PSU	C6-C5	3.53	1.39	1.35
83	S2	1177	PSU	C6-C5	3.53	1.39	1.35
3	L5	4972	PSU	C6-C5	3.53	1.39	1.35
3	L5	1536	PSU	C6-C5	3.53	1.39	1.35
3	L5	2839	PSU	C6-C5	3.52	1.39	1.35
3	L5	1781	PSU	C6-C5	3.51	1.39	1.35
3	L5	3920	PSU	C6-C5	3.50	1.39	1.35
5	L8	55	PSU	C6-C5	3.50	1.39	1.35
3	L5	3695	PSU	C6-C5	3.50	1.39	1.35
3	L5	3884	PSU	C6-C5	3.48	1.39	1.35
3	L5	4579	PSU	C6-C5	3.47	1.39	1.35
83	S2	681	PSU	C6-C5	3.47	1.39	1.35
3	L5	4673	PSU	C6-C5	3.46	1.39	1.35
3	L5	1871	A2M	O5'-C5'	-3.45	1.34	1.44
3	L5	4457	PSU	C6-C5	3.45	1.39	1.35
3	L5	3853	PSU	C6-C5	3.45	1.39	1.35
3	L5	3825	A2M	O5'-C5'	-3.45	1.34	1.44
3	L5	1323	A2M	O5'-C5'	-3.44	1.34	1.44
3	L5	4521	PSU	C6-C5	3.44	1.39	1.35
3	L5	400	A2M	O5'-C5'	-3.43	1.34	1.44
3	L5	3785	A2M	O5'-C5'	-3.43	1.34	1.44
83	S2	99	A2M	O5'-C5'	-3.43	1.34	1.44
83	S2	576	A2M	O5'-C5'	-3.43	1.34	1.44
3	L5	1524	A2M	O5'-C5'	-3.41	1.34	1.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	L5	4689	PSU	C6-C5	3.40	1.39	1.35
3	L5	2815	A2M	O5'-C5'	-3.40	1.34	1.44
3	L5	3830	A2M	O5'-C5'	-3.40	1.34	1.44
3	L5	4299	PSU	C6-C5	3.39	1.39	1.35
3	L5	2401	A2M	O5'-C5'	-3.38	1.34	1.44
83	S2	166	A2M	O5'-C5'	-3.38	1.34	1.44
83	S2	668	A2M	O5'-C5'	-3.37	1.34	1.44
83	S2	468	A2M	O5'-C5'	-3.37	1.34	1.44
83	S2	1383	A2M	O5'-C5'	-3.36	1.34	1.44
3	L5	2787	A2M	O5'-C5'	-3.35	1.34	1.44
3	L5	4571	A2M	O5'-C5'	-3.35	1.34	1.44
83	S2	1031	A2M	O5'-C5'	-3.33	1.34	1.44
3	L5	4403	PSU	C6-C5	3.33	1.39	1.35
3	L5	3867	A2M	O5'-C5'	-3.32	1.34	1.44
3	L5	2363	A2M	O5'-C5'	-3.32	1.34	1.44
3	L5	1326	A2M	O5'-C5'	-3.31	1.34	1.44
3	L5	3718	A2M	O5'-C5'	-3.30	1.34	1.44
83	S2	1639	G7M	C5-C6	3.30	1.54	1.45
3	L5	3818	UY1	C1'-C5	3.27	1.57	1.50
3	L5	3818	UY1	O2-C2	-3.25	1.16	1.23
3	L5	398	A2M	O5'-C5'	-3.25	1.34	1.44
3	L5	1677	PSU	C6-C5	3.23	1.38	1.35
3	L5	4523	A2M	O5'-C5'	-3.22	1.34	1.44
83	S2	484	A2M	O5'-C5'	-3.21	1.34	1.44
3	L5	4590	A2M	O5'-C5'	-3.19	1.34	1.44
83	S2	1490	OMG	C8-N7	-3.17	1.29	1.34
3	L5	2364	OMG	C8-N7	-3.16	1.29	1.34
83	S2	27	A2M	O5'-C5'	-3.15	1.35	1.44
3	L5	1534	A2M	O5'-C5'	-3.12	1.35	1.44
3	L5	3792	OMG	C8-N7	-3.11	1.30	1.34
83	S2	159	A2M	O5'-C5'	-3.10	1.35	1.44
3	L5	4370	OMG	C8-N7	-3.07	1.30	1.34
3	L5	4618	OMG	C8-N7	-3.06	1.30	1.34
3	L5	2876	OMG	C8-N7	-3.05	1.30	1.34
3	L5	1625	OMG	C8-N7	-3.05	1.30	1.34
3	L5	3899	OMG	C8-N7	-3.01	1.30	1.34
3	L5	4637	OMG	C8-N7	-3.01	1.30	1.34
3	L5	4494	OMG	C8-N7	-3.00	1.30	1.34
3	L5	1522	OMG	C8-N7	-3.00	1.30	1.34
83	S2	601	OMG	C8-N7	-3.00	1.30	1.34
3	L5	4196	OMG	C8-N7	-2.99	1.30	1.34
3	L5	1316	OMG	C8-N7	-2.97	1.30	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
83	S2	683	OMG	C8-N7	-2.97	1.30	1.34
3	L5	3744	OMG	C8-N7	-2.94	1.30	1.34
83	S2	627	OMU	C5-C4	2.94	1.50	1.43
83	S2	436	OMG	C8-N7	-2.92	1.30	1.34
3	L5	4392	OMG	C8-N7	-2.92	1.30	1.34
83	S2	1490	OMG	C5-C6	-2.92	1.41	1.47
3	L5	4499	OMG	C8-N7	-2.91	1.30	1.34
3	L5	1871	A2M	C1'-N9	-2.91	1.42	1.49
5	L8	75	OMG	C8-N7	-2.90	1.30	1.34
3	L5	2424	OMG	C8-N7	-2.90	1.30	1.34
83	S2	1288	OMU	C5-C4	2.90	1.50	1.43
83	S2	509	OMG	C8-N7	-2.90	1.30	1.34
83	S2	799	OMU	C5-C4	2.90	1.50	1.43
3	L5	4623	OMG	C8-N7	-2.89	1.30	1.34
83	S2	1326	OMU	C5-C4	2.88	1.50	1.43
83	S2	867	OMG	C8-N7	-2.88	1.30	1.34
83	S2	172	OMU	C5-C4	2.87	1.49	1.43
3	L5	3627	OMG	C8-N7	-2.87	1.30	1.34
83	S2	644	OMG	C8-N7	-2.87	1.30	1.34
83	S2	1639	G7M	C2-N1	2.84	1.44	1.37
3	L5	4227	OMU	C5-C4	2.84	1.49	1.43
83	S2	1442	OMU	C5-C4	2.83	1.49	1.43
83	S2	1328	OMG	C8-N7	-2.83	1.30	1.34
83	S2	428	OMU	C5-C4	2.82	1.49	1.43
83	S2	354	OMU	C5-C4	2.81	1.49	1.43
3	L5	4228	OMG	C8-N7	-2.81	1.30	1.34
3	L5	3925	OMU	C5-C4	2.79	1.49	1.43
83	S2	121	OMU	C5-C4	2.78	1.49	1.43
3	L5	2837	OMU	C5-C4	2.76	1.49	1.43
3	L5	4306	OMU	C5-C4	2.75	1.49	1.43
3	L5	4498	OMU	C5-C4	2.74	1.49	1.43
83	S2	1288	OMU	C6-N1	2.72	1.44	1.38
83	S2	1442	OMU	C6-N1	2.72	1.44	1.38
83	S2	799	OMU	C6-N1	2.72	1.44	1.38
3	L5	4220	6MZ	O3'-C3'	2.72	1.49	1.43
83	S2	121	OMU	C6-N1	2.70	1.44	1.38
83	S2	354	OMU	C6-N1	2.69	1.44	1.38
3	L5	2837	OMU	C6-N1	2.69	1.44	1.38
3	L5	4523	A2M	C1'-N9	-2.68	1.43	1.49
83	S2	1326	OMU	C6-N1	2.68	1.44	1.38
83	S2	627	OMU	C6-N1	2.67	1.44	1.38
83	S2	116	OMU	C5-C4	2.67	1.49	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
83	S2	428	OMU	C6-N1	2.67	1.44	1.38
3	L5	4498	OMU	C6-N1	2.66	1.44	1.38
3	L5	4530	UR3	C6-N1	2.66	1.44	1.38
3	L5	2364	OMG	C5-C6	-2.66	1.42	1.47
83	S2	116	OMU	C6-N1	2.66	1.44	1.38
3	L5	4306	OMU	C6-N1	2.65	1.44	1.38
3	L5	2424	OMG	C5-C6	-2.64	1.42	1.47
3	L5	4227	OMU	C6-N1	2.64	1.44	1.38
3	L5	4620	OMU	C5-C4	2.63	1.49	1.43
83	S2	172	OMU	C6-N1	2.62	1.44	1.38
3	L5	4620	OMU	C6-N1	2.61	1.44	1.38
3	L5	3925	OMU	C6-N1	2.61	1.44	1.38
3	L5	4494	OMG	C5-C6	-2.61	1.42	1.47
3	L5	1625	OMG	C5-C6	-2.61	1.42	1.47
3	L5	1316	OMG	C5-C6	-2.60	1.42	1.47
3	L5	3899	OMG	C5-C6	-2.58	1.42	1.47
3	L5	4530	UR3	O2-C2	-2.57	1.17	1.22
3	L5	1322	1MA	C5-C4	-2.57	1.36	1.43
3	L5	4370	OMG	C5-C6	-2.56	1.42	1.47
83	S2	1850	MA6	C2-N3	2.56	1.36	1.32
3	L5	3792	OMG	C5-C6	-2.55	1.42	1.47
3	L5	4623	OMG	C5-C6	-2.55	1.42	1.47
3	L5	1522	OMG	C5-C6	-2.55	1.42	1.47
3	L5	4228	OMG	C5-C6	-2.53	1.42	1.47
83	S2	436	OMG	C5-C6	-2.53	1.42	1.47
3	L5	1326	A2M	C1'-N9	-2.52	1.43	1.49
3	L5	3627	OMG	C5-C6	-2.52	1.42	1.47
83	S2	683	OMG	C5-C6	-2.52	1.42	1.47
3	L5	1322	1MA	C8-N7	-2.52	1.30	1.34
3	L5	2876	OMG	C5-C6	-2.51	1.42	1.47
3	L5	4637	OMG	C5-C6	-2.50	1.42	1.47
3	L5	3825	A2M	C1'-N9	-2.49	1.43	1.49
3	L5	3830	A2M	C1'-N9	-2.49	1.43	1.49
3	L5	3785	A2M	C1'-N9	-2.49	1.43	1.49
3	L5	2787	A2M	C1'-N9	-2.49	1.43	1.49
3	L5	2401	A2M	C1'-N9	-2.48	1.43	1.49
3	L5	4392	OMG	C5-C6	-2.48	1.42	1.47
3	L5	4618	OMG	C5-C6	-2.48	1.42	1.47
3	L5	3744	OMG	C5-C6	-2.47	1.42	1.47
83	S2	1851	MA6	C2-N3	2.47	1.35	1.32
3	L5	4196	OMG	C5-C6	-2.47	1.42	1.47
3	L5	1524	A2M	O4'-C4'	-2.47	1.39	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	L5	4571	A2M	C1'-N9	-2.46	1.43	1.49
5	L8	75	OMG	C5-C6	-2.45	1.42	1.47
83	S2	601	OMG	C5-C6	-2.44	1.42	1.47
83	S2	668	A2M	O4'-C4'	-2.44	1.39	1.45
83	S2	99	A2M	C1'-N9	-2.44	1.43	1.49
83	S2	867	OMG	C5-C6	-2.43	1.42	1.47
3	L5	4499	OMG	C5-C6	-2.43	1.42	1.47
83	S2	644	OMG	C5-C6	-2.43	1.42	1.47
3	L5	4590	A2M	C1'-N9	-2.43	1.43	1.49
83	S2	509	OMG	C5-C6	-2.41	1.42	1.47
3	L5	1323	A2M	C1'-N9	-2.40	1.44	1.49
83	S2	1328	OMG	C5-C6	-2.38	1.42	1.47
83	S2	166	A2M	C1'-N9	-2.37	1.44	1.49
3	L5	1524	A2M	C1'-N9	-2.35	1.44	1.49
3	L5	400	A2M	C1'-N9	-2.34	1.44	1.49
3	L5	1323	A2M	O4'-C4'	-2.33	1.39	1.45
83	S2	668	A2M	C1'-N9	-2.32	1.44	1.49
83	S2	576	A2M	C1'-N9	-2.31	1.44	1.49
83	S2	1031	A2M	C1'-N9	-2.31	1.44	1.49
3	L5	3867	A2M	C1'-N9	-2.31	1.44	1.49
3	L5	2363	A2M	C1'-N9	-2.29	1.44	1.49
83	S2	1383	A2M	C1'-N9	-2.27	1.44	1.49
3	L5	4530	UR3	C5-C4	2.26	1.49	1.43
83	S2	468	A2M	C1'-N9	-2.23	1.44	1.49
83	S2	27	A2M	C1'-N9	-2.22	1.44	1.49
3	L5	3818	UY1	O4'-C1'	-2.19	1.40	1.43
3	L5	1534	A2M	C1'-N9	-2.16	1.44	1.49
3	L5	4530	UR3	C3U-N3	2.16	1.50	1.47
3	L5	1323	A2M	O3'-C3'	-2.14	1.37	1.43
3	L5	3818	UY1	C4-C5	2.14	1.50	1.44
83	S2	1832	6MZ	C2-N3	2.14	1.35	1.32
3	L5	4571	A2M	O4'-C4'	-2.10	1.40	1.45
3	L5	3718	A2M	C1'-N9	-2.07	1.44	1.49
3	L5	2363	A2M	O4'-C4'	-2.06	1.40	1.45
3	L5	398	A2M	C1'-N9	-2.06	1.44	1.49
3	L5	4523	A2M	O3'-C3'	-2.02	1.38	1.43

All (620) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
83	S2	1851	MA6	N1-C6-N6	-12.50	102.39	116.83
83	S2	1850	MA6	N1-C6-N6	-12.18	102.75	116.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L5	1524	A2M	C4'-O4'-C1'	-7.12	103.40	109.92
3	L5	3785	A2M	C4'-O4'-C1'	-7.08	103.44	109.92
3	L5	4220	6MZ	N3-C2-N1	-6.64	119.66	128.67
83	S2	1832	6MZ	N3-C2-N1	-6.60	119.72	128.67
83	S2	1851	MA6	N3-C2-N1	-6.45	119.92	128.67
83	S2	1850	MA6	N3-C2-N1	-6.40	119.98	128.67
83	S2	1326	OMU	C4-N3-C2	-5.78	119.43	126.61
3	L5	3925	OMU	C4-N3-C2	-5.75	119.48	126.61
83	S2	172	OMU	C4-N3-C2	-5.73	119.50	126.61
83	S2	428	OMU	C4-N3-C2	-5.71	119.52	126.61
3	L5	4227	OMU	C4-N3-C2	-5.69	119.55	126.61
3	L5	4498	OMU	C4-N3-C2	-5.69	119.55	126.61
83	S2	799	OMU	C4-N3-C2	-5.63	119.62	126.61
3	L5	4306	OMU	C4-N3-C2	-5.61	119.65	126.61
83	S2	627	OMU	C4-N3-C2	-5.59	119.67	126.61
83	S2	354	OMU	C4-N3-C2	-5.56	119.71	126.61
3	L5	1871	A2M	C4'-O4'-C1'	-5.56	104.83	109.92
83	S2	1288	OMU	C4-N3-C2	-5.54	119.73	126.61
3	L5	2837	OMU	C4-N3-C2	-5.54	119.73	126.61
3	L5	4523	A2M	C4'-O4'-C1'	-5.50	104.89	109.92
3	L5	4530	UR3	C4-N3-C2	-5.44	120.20	124.58
83	S2	1442	OMU	C4-N3-C2	-5.39	119.92	126.61
83	S2	121	OMU	C4-N3-C2	-5.38	119.93	126.61
3	L5	3830	A2M	C4'-O4'-C1'	-5.30	105.07	109.92
83	S2	1383	A2M	C4'-O4'-C1'	-5.29	105.08	109.92
3	L5	3637	PSU	N1-C2-N3	5.27	120.73	115.17
83	S2	1248	B8N	C5-C4-N3	5.26	125.70	116.15
83	S2	116	OMU	C4-N3-C2	-5.20	120.15	126.61
3	L5	3701	OMC	C1'-N1-C2	5.11	129.73	118.44
83	S2	1031	A2M	C4'-O4'-C1'	-5.09	105.27	109.92
3	L5	1677	PSU	N1-C2-N3	5.08	120.52	115.17
3	L5	4293	PSU	N1-C2-N3	5.07	120.52	115.17
3	L5	4636	PSU	N1-C2-N3	5.04	120.49	115.17
3	L5	4500	PSU	N1-C2-N3	5.02	120.47	115.17
3	L5	4620	OMU	C4-N3-C2	-5.01	120.39	126.61
3	L5	4521	PSU	N1-C2-N3	5.00	120.45	115.17
3	L5	1677	PSU	C4-N3-C2	-5.00	119.48	126.37
3	L5	4689	PSU	N1-C2-N3	4.97	120.41	115.17
5	L8	55	PSU	N1-C2-N3	4.96	120.40	115.17
83	S2	406	PSU	N1-C2-N3	4.95	120.39	115.17
3	L5	3818	UY1	C4-N3-C2	-4.94	119.57	126.37
3	L5	4636	PSU	C4-N3-C2	-4.93	119.58	126.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L5	4299	PSU	N1-C2-N3	4.92	120.36	115.17
83	S2	166	A2M	C4'-O4'-C1'	-4.91	105.43	109.92
3	L5	1860	PSU	N1-C2-N3	4.90	120.33	115.17
83	S2	406	PSU	C4-N3-C2	-4.88	119.64	126.37
3	L5	4312	PSU	N1-C2-N3	4.88	120.32	115.17
3	L5	4521	PSU	C4-N3-C2	-4.88	119.65	126.37
3	L5	1862	PSU	N1-C2-N3	4.88	120.31	115.17
3	L5	4403	PSU	N1-C2-N3	4.87	120.30	115.17
83	S2	651	PSU	N1-C2-N3	4.87	120.30	115.17
3	L5	3920	PSU	N1-C2-N3	4.86	120.30	115.17
3	L5	1536	PSU	N1-C2-N3	4.85	120.28	115.17
3	L5	4293	PSU	C4-N3-C2	-4.84	119.70	126.37
83	S2	1232	PSU	N1-C2-N3	4.84	120.27	115.17
3	L5	4590	A2M	C4'-O4'-C1'	-4.84	105.49	109.92
83	S2	1232	PSU	C4-N3-C2	-4.83	119.72	126.37
3	L5	3822	PSU	N1-C2-N3	4.83	120.26	115.17
83	S2	649	PSU	N1-C2-N3	4.83	120.26	115.17
3	L5	1782	PSU	N1-C2-N3	4.83	120.26	115.17
83	S2	686	PSU	N1-C2-N3	4.82	120.25	115.17
3	L5	1683	PSU	N1-C2-N3	4.82	120.25	115.17
83	S2	863	PSU	N1-C2-N3	4.81	120.24	115.17
3	L5	4403	PSU	C4-N3-C2	-4.81	119.75	126.37
3	L5	4493	PSU	N1-C2-N3	4.81	120.24	115.17
3	L5	4673	PSU	N1-C2-N3	4.81	120.24	115.17
3	L5	4552	PSU	N1-C2-N3	4.81	120.24	115.17
3	L5	4500	PSU	C4-N3-C2	-4.80	119.75	126.37
3	L5	4973	PSU	N1-C2-N3	4.80	120.23	115.17
3	L5	4471	PSU	N1-C2-N3	4.80	120.23	115.17
3	L5	4973	PSU	C4-N3-C2	-4.80	119.77	126.37
83	S2	686	PSU	C4-N3-C2	-4.79	119.77	126.37
3	L5	4972	PSU	N1-C2-N3	4.79	120.22	115.17
83	S2	801	PSU	N1-C2-N3	4.79	120.22	115.17
3	L5	5010	PSU	N1-C2-N3	4.78	120.21	115.17
3	L5	3639	PSU	N1-C2-N3	4.78	120.21	115.17
83	S2	1004	PSU	N1-C2-N3	4.78	120.21	115.17
3	L5	398	A2M	C4'-O4'-C1'	-4.77	105.56	109.92
83	S2	1056	PSU	N1-C2-N3	4.77	120.20	115.17
83	S2	1244	PSU	N1-C2-N3	4.77	120.20	115.17
3	L5	1582	PSU	N1-C2-N3	4.76	120.19	115.17
3	L5	3695	PSU	N1-C2-N3	4.76	120.19	115.17
3	L5	4353	PSU	N1-C2-N3	4.76	120.19	115.17
3	L5	2632	PSU	N1-C2-N3	4.76	120.19	115.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L5	3637	PSU	C4-N3-C2	-4.75	119.83	126.37
3	L5	5001	PSU	N1-C2-N3	4.75	120.18	115.17
5	L8	55	PSU	C4-N3-C2	-4.75	119.83	126.37
3	L5	3884	PSU	N1-C2-N3	4.75	120.17	115.17
3	L5	3851	PSU	N1-C2-N3	4.74	120.17	115.17
3	L5	4552	PSU	C4-N3-C2	-4.73	119.86	126.37
83	S2	1081	PSU	N1-C2-N3	4.73	120.15	115.17
3	L5	3825	A2M	C4'-O4'-C1'	-4.73	105.60	109.92
3	L5	3695	PSU	C4-N3-C2	-4.72	119.87	126.37
3	L5	4296	PSU	C4-N3-C2	-4.72	119.87	126.37
3	L5	4628	PSU	N1-C2-N3	4.72	120.14	115.17
3	L5	4353	PSU	C4-N3-C2	-4.72	119.87	126.37
83	S2	651	PSU	C4-N3-C2	-4.72	119.87	126.37
3	L5	4296	PSU	N1-C2-N3	4.72	120.14	115.17
3	L5	4457	PSU	N1-C2-N3	4.71	120.14	115.17
5	L8	69	PSU	N1-C2-N3	4.71	120.14	115.17
83	S2	109	PSU	N1-C2-N3	4.71	120.14	115.17
83	S2	1081	PSU	C4-N3-C2	-4.71	119.88	126.37
3	L5	4457	PSU	C4-N3-C2	-4.71	119.89	126.37
83	S2	649	PSU	C4-N3-C2	-4.70	119.89	126.37
3	L5	1862	PSU	C4-N3-C2	-4.70	119.90	126.37
3	L5	1744	PSU	N1-C2-N3	4.69	120.12	115.17
3	L5	4431	PSU	N1-C2-N3	4.69	120.12	115.17
83	S2	1177	PSU	N1-C2-N3	4.69	120.11	115.17
3	L5	5001	PSU	C4-N3-C2	-4.69	119.91	126.37
83	S2	1244	PSU	C4-N3-C2	-4.69	119.91	126.37
83	S2	1367	PSU	C4-N3-C2	-4.69	119.91	126.37
3	L5	4579	PSU	N1-C2-N3	4.69	120.11	115.17
3	L5	3884	PSU	C4-N3-C2	-4.69	119.92	126.37
83	S2	1174	PSU	N1-C2-N3	4.68	120.11	115.17
3	L5	3844	PSU	N1-C2-N3	4.68	120.10	115.17
83	S2	105	PSU	N1-C2-N3	4.68	120.10	115.17
83	S2	1367	PSU	N1-C2-N3	4.67	120.09	115.17
3	L5	1782	PSU	C4-N3-C2	-4.67	119.94	126.37
3	L5	1860	PSU	C4-N3-C2	-4.67	119.94	126.37
83	S2	863	PSU	C4-N3-C2	-4.66	119.95	126.37
3	L5	4442	PSU	C4-N3-C2	-4.66	119.95	126.37
3	L5	3639	PSU	C4-N3-C2	-4.66	119.95	126.37
3	L5	5010	PSU	C4-N3-C2	-4.66	119.95	126.37
3	L5	4493	PSU	C4-N3-C2	-4.66	119.95	126.37
83	S2	1177	PSU	C4-N3-C2	-4.66	119.95	126.37
83	S2	1046	PSU	N1-C2-N3	4.66	120.08	115.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(º)	Ideal(º)
3	L5	4312	PSU	C4-N3-C2	-4.66	119.96	126.37
3	L5	4431	PSU	C4-N3-C2	-4.65	119.96	126.37
3	L5	4673	PSU	C4-N3-C2	-4.65	119.96	126.37
83	S2	866	PSU	N1-C2-N3	4.65	120.08	115.17
83	S2	814	PSU	C4-N3-C2	-4.65	119.96	126.37
83	S2	468	A2M	C4'-O4'-C1'	-4.65	105.67	109.92
3	L5	4442	PSU	N1-C2-N3	4.65	120.07	115.17
83	S2	966	PSU	N1-C2-N3	4.65	120.07	115.17
3	L5	4299	PSU	C4-N3-C2	-4.64	119.97	126.37
3	L5	1536	PSU	C4-N3-C2	-4.64	119.97	126.37
83	S2	109	PSU	C4-N3-C2	-4.64	119.97	126.37
3	L5	1683	PSU	C4-N3-C2	-4.64	119.98	126.37
3	L5	2839	PSU	N1-C2-N3	4.63	120.06	115.17
83	S2	1056	PSU	C4-N3-C2	-4.63	119.99	126.37
3	L5	1582	PSU	C4-N3-C2	-4.63	120.00	126.37
83	S2	1004	PSU	C4-N3-C2	-4.63	120.00	126.37
83	S2	866	PSU	C4-N3-C2	-4.62	120.00	126.37
5	L8	69	PSU	C4-N3-C2	-4.62	120.01	126.37
3	L5	4579	PSU	C4-N3-C2	-4.62	120.01	126.37
3	L5	4220	6MZ	C9-N6-C6	-4.61	118.57	122.85
83	S2	1046	PSU	C4-N3-C2	-4.61	120.02	126.37
3	L5	3822	PSU	C4-N3-C2	-4.61	120.02	126.37
3	L5	4532	PSU	N1-C2-N3	4.61	120.03	115.17
3	L5	1744	PSU	C4-N3-C2	-4.60	120.03	126.37
83	S2	681	PSU	N1-C2-N3	4.60	120.02	115.17
3	L5	4972	PSU	C4-N3-C2	-4.59	120.05	126.37
3	L5	1792	PSU	N1-C2-N3	4.59	120.00	115.17
83	S2	801	PSU	C4-N3-C2	-4.58	120.06	126.37
83	S2	1045	PSU	C4-N3-C2	-4.58	120.06	126.37
83	S2	1174	PSU	C4-N3-C2	-4.58	120.06	126.37
83	S2	814	PSU	N1-C2-N3	4.58	120.00	115.17
83	S2	1045	PSU	N1-C2-N3	4.57	119.99	115.17
83	S2	966	PSU	C4-N3-C2	-4.57	120.08	126.37
83	S2	105	PSU	C4-N3-C2	-4.56	120.08	126.37
3	L5	4576	PSU	C4-N3-C2	-4.56	120.09	126.37
3	L5	3851	PSU	C4-N3-C2	-4.55	120.10	126.37
3	L5	4689	PSU	C4-N3-C2	-4.55	120.10	126.37
3	L5	3853	PSU	N1-C2-N3	4.55	119.97	115.17
3	L5	3920	PSU	C4-N3-C2	-4.55	120.10	126.37
3	L5	4532	PSU	C4-N3-C2	-4.55	120.11	126.37
83	S2	681	PSU	C4-N3-C2	-4.54	120.11	126.37
3	L5	4361	PSU	N1-C2-N3	4.54	119.96	115.17

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L5	3818	UY1	N1-C2-N3	4.54	119.95	115.17
83	S2	1248	B8N	C4-N3-C2	-4.53	120.04	125.62
83	S2	27	A2M	C4'-O4'-C1'	-4.53	105.78	109.92
3	L5	4576	PSU	N1-C2-N3	4.52	119.94	115.17
3	L5	1781	PSU	N1-C2-N3	4.52	119.93	115.17
3	L5	2839	PSU	C4-N3-C2	-4.52	120.15	126.37
3	L5	1792	PSU	C4-N3-C2	-4.52	120.15	126.37
3	L5	4471	PSU	C4-N3-C2	-4.52	120.15	126.37
3	L5	4361	PSU	C4-N3-C2	-4.50	120.17	126.37
3	L5	4628	PSU	C4-N3-C2	-4.50	120.17	126.37
3	L5	2632	PSU	C4-N3-C2	-4.49	120.19	126.37
83	S2	93	PSU	N1-C2-N3	4.48	119.89	115.17
83	S2	1832	6MZ	C2-N1-C6	4.47	120.07	116.60
3	L5	3853	PSU	C4-N3-C2	-4.47	120.22	126.37
83	S2	93	PSU	C4-N3-C2	-4.38	120.34	126.37
3	L5	2401	A2M	C4'-O4'-C1'	-4.35	105.94	109.92
3	L5	3844	PSU	C4-N3-C2	-4.35	120.38	126.37
83	S2	99	A2M	C4'-O4'-C1'	-4.35	105.94	109.92
3	L5	4220	6MZ	C2-N1-C6	4.34	119.97	116.60
3	L5	1781	PSU	C4-N3-C2	-4.32	120.42	126.37
83	S2	668	A2M	C4'-O4'-C1'	-4.32	105.97	109.92
3	L5	3830	A2M	C3'-C2'-C1'	-4.20	94.76	102.81
3	L5	1871	A2M	C1'-N9-C4	-4.20	119.27	126.64
3	L5	1871	A2M	C3'-C2'-C1'	-4.16	94.83	102.81
83	S2	121	OMU	N3-C2-N1	4.12	120.25	114.89
3	L5	3925	OMU	N3-C2-N1	4.11	120.24	114.89
3	L5	3701	OMC	C1'-N1-C6	-4.07	112.08	120.78
3	L5	1323	A2M	C4'-O4'-C1'	-4.06	106.21	109.92
83	S2	1383	A2M	C3'-C2'-C1'	-4.06	95.04	102.81
3	L5	4498	OMU	N3-C2-N1	4.04	120.15	114.89
3	L5	2401	A2M	C1'-N9-C4	-4.01	119.59	126.64
3	L5	4523	A2M	C3'-C2'-C1'	-4.00	95.16	102.81
3	L5	2837	OMU	N3-C2-N1	3.97	120.06	114.89
3	L5	398	A2M	C3'-C2'-C1'	-3.97	95.21	102.81
83	S2	354	OMU	N3-C2-N1	3.96	120.04	114.89
83	S2	1326	OMU	N3-C2-N1	3.95	120.03	114.89
83	S2	576	A2M	C4'-O4'-C1'	-3.94	106.32	109.92
3	L5	4523	A2M	C1'-N9-C4	-3.93	119.73	126.64
3	L5	4306	OMU	N3-C2-N1	3.92	119.99	114.89
83	S2	668	A2M	C1'-N9-C4	-3.89	119.81	126.64
83	S2	172	OMU	N3-C2-N1	3.89	119.95	114.89
3	L5	4227	OMU	N3-C2-N1	3.88	119.94	114.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L5	3718	A2M	C4'-O4'-C1'	-3.87	106.38	109.92
83	S2	1248	B8N	C1'-C5-C4	3.87	123.47	117.61
3	L5	400	A2M	C4'-O4'-C1'	-3.84	106.41	109.92
3	L5	4220	6MZ	C4'-O4'-C1'	-3.83	106.42	109.92
3	L5	4571	A2M	C4'-O4'-C1'	-3.81	106.43	109.92
83	S2	799	OMU	N3-C2-N1	3.80	119.84	114.89
83	S2	27	A2M	C1'-N9-C4	-3.78	120.00	126.64
83	S2	1851	MA6	C2-N1-C6	3.78	120.55	116.84
3	L5	4227	OMU	C5-C4-N3	3.77	120.08	114.80
83	S2	1383	A2M	C1'-N9-C4	-3.77	120.02	126.64
83	S2	428	OMU	C5-C4-N3	3.77	120.08	114.80
3	L5	4571	A2M	C1'-N9-C4	-3.77	120.03	126.64
83	S2	1031	A2M	C3'-C2'-C1'	-3.76	95.60	102.81
83	S2	1850	MA6	C2-N1-C6	3.76	120.52	116.84
3	L5	3830	A2M	C1'-N9-C4	-3.75	120.06	126.64
83	S2	428	OMU	N3-C2-N1	3.75	119.77	114.89
3	L5	398	A2M	C1'-N9-C4	-3.74	120.07	126.64
83	S2	1326	OMU	C5-C4-N3	3.73	120.03	114.80
83	S2	1288	OMU	N3-C2-N1	3.73	119.75	114.89
83	S2	468	A2M	C1'-N9-C4	-3.73	120.09	126.64
83	S2	1442	OMU	N3-C2-N1	3.73	119.74	114.89
83	S2	116	OMU	N3-C2-N1	3.71	119.73	114.89
83	S2	799	OMU	C5-C4-N3	3.70	119.98	114.80
3	L5	3785	A2M	C1'-N9-C4	-3.70	120.14	126.64
83	S2	1031	A2M	C1'-N9-C4	-3.69	120.16	126.64
3	L5	4530	UR3	C5-C4-N3	3.69	119.90	115.04
3	L5	2363	A2M	C4'-O4'-C1'	-3.69	106.55	109.92
83	S2	99	A2M	C1'-N9-C4	-3.68	120.17	126.64
83	S2	627	OMU	C5-C4-N3	3.67	119.95	114.80
3	L5	1534	A2M	C4'-O4'-C1'	-3.67	106.56	109.92
3	L5	4306	OMU	C5-C4-N3	3.67	119.94	114.80
3	L5	4590	A2M	C1'-N9-C4	-3.66	120.22	126.64
83	S2	1288	OMU	C5-C4-N3	3.65	119.91	114.80
83	S2	166	A2M	C1'-N9-C4	-3.64	120.24	126.64
83	S2	484	A2M	C1'-N9-C4	-3.64	120.24	126.64
3	L5	3925	OMU	C5-C4-N3	3.62	119.87	114.80
83	S2	627	OMU	N3-C2-N1	3.62	119.61	114.89
3	L5	4590	A2M	C3'-C2'-C1'	-3.62	95.88	102.81
3	L5	3825	A2M	C1'-N9-C4	-3.61	120.30	126.64
83	S2	354	OMU	C5-C4-N3	3.61	119.86	114.80
3	L5	4620	OMU	N3-C2-N1	3.59	119.57	114.89
3	L5	3825	A2M	C3'-C2'-C1'	-3.59	95.94	102.81

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
83	S2	172	OMU	C5-C4-N3	3.58	119.81	114.80
83	S2	159	A2M	C1'-N9-C4	-3.57	120.36	126.64
3	L5	2837	OMU	C5-C4-N3	3.55	119.78	114.80
3	L5	4498	OMU	C5-C4-N3	3.54	119.76	114.80
83	S2	576	A2M	O3'-C3'-C2'	3.54	121.10	111.19
83	S2	1442	OMU	C5-C4-N3	3.53	119.74	114.80
3	L5	398	A2M	O3'-C3'-C2'	3.50	121.00	111.19
83	S2	576	A2M	C1'-N9-C4	-3.50	120.49	126.64
83	S2	116	OMU	C5-C4-N3	3.44	119.62	114.80
83	S2	99	A2M	C3'-C2'-C1'	-3.44	96.21	102.81
3	L5	2351	OMC	C1'-N1-C2	3.44	126.04	118.44
83	S2	159	A2M	C4'-O4'-C1'	-3.43	106.79	109.92
3	L5	4620	OMU	C5-C4-N3	3.42	119.59	114.80
83	S2	166	A2M	O3'-C3'-C2'	3.42	120.76	111.19
3	L5	3867	A2M	C4'-O4'-C1'	-3.42	106.79	109.92
3	L5	2787	A2M	O3'-C3'-C2'	3.39	120.68	111.19
3	L5	2815	A2M	C4'-O4'-C1'	-3.39	106.82	109.92
3	L5	2363	A2M	C1'-N9-C4	-3.39	120.69	126.64
3	L5	3718	A2M	C1'-N9-C4	-3.38	120.70	126.64
3	L5	2787	A2M	C1'-N9-C4	-3.37	120.73	126.64
83	S2	121	OMU	C5-C4-N3	3.35	119.50	114.80
3	L5	400	A2M	C1'-N9-C4	-3.34	120.77	126.64
83	S2	99	A2M	O3'-C3'-C2'	3.33	120.50	111.19
3	L5	1326	A2M	C1'-N9-C4	-3.32	120.80	126.64
3	L5	1323	A2M	C1'-N9-C4	-3.32	120.81	126.64
83	S2	27	A2M	C3'-C2'-C1'	-3.31	96.47	102.81
83	S2	1248	B8N	N3-C2-N1	3.30	120.75	116.72
3	L5	3830	A2M	O3'-C3'-C2'	3.29	120.40	111.19
83	S2	576	A2M	C3'-C2'-C1'	-3.27	96.55	102.81
3	L5	3867	A2M	C1'-N9-C4	-3.27	120.90	126.64
3	L5	4689	PSU	C6-N1-C2	-3.26	119.66	122.69
83	S2	1383	A2M	O3'-C3'-C2'	3.25	120.28	111.19
3	L5	1326	A2M	C4'-O4'-C1'	-3.24	106.95	109.92
3	L5	2401	A2M	C3'-C2'-C1'	-3.24	96.60	102.81
3	L5	3718	A2M	O3'-C3'-C2'	3.23	120.24	111.19
3	L5	3818	UY1	C6-C5-C4	3.21	120.34	118.17
83	S2	468	A2M	O3'-C3'-C2'	3.19	120.12	111.19
3	L5	2401	A2M	O3'-C3'-C2'	3.17	120.06	111.19
3	L5	1534	A2M	C1'-N9-C4	-3.16	121.09	126.64
83	S2	159	A2M	O3'-C3'-C2'	3.16	120.03	111.19
83	S2	166	A2M	C3'-C2'-C1'	-3.13	96.80	102.81
83	S2	1272	OMC	C1'-N1-C2	3.11	125.30	118.44

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L5	3785	A2M	O3'-C3'-C2'	3.11	119.88	111.19
83	S2	468	A2M	C3'-C2'-C1'	-3.10	96.87	102.81
3	L5	1871	A2M	O3'-C3'-C2'	3.09	119.83	111.19
3	L5	3818	UY1	C6-N1-C2	-3.08	119.83	122.69
3	L5	1524	A2M	C1'-N9-C4	-3.07	121.24	126.64
83	S2	1031	A2M	O3'-C3'-C2'	3.07	119.78	111.19
3	L5	1677	PSU	O2-C2-N1	-3.05	119.64	122.79
3	L5	1536	PSU	O2-C2-N1	-3.05	119.65	122.79
3	L5	4571	A2M	O3'-C3'-C2'	3.04	119.71	111.19
3	L5	1524	A2M	O3'-C3'-C2'	3.04	119.70	111.19
3	L5	3825	A2M	O3'-C3'-C2'	3.04	119.70	111.19
3	L5	1534	A2M	C3'-C2'-C1'	-3.04	96.99	102.81
83	S2	428	OMU	O4-C4-C5	-3.04	119.92	125.16
3	L5	2815	A2M	C1'-N9-C4	-3.01	121.35	126.64
83	S2	627	OMU	O4-C4-C5	-3.00	119.98	125.16
83	S2	116	OMU	O4-C4-C5	-2.98	120.02	125.16
83	S2	1442	OMU	O4-C4-C5	-2.98	120.03	125.16
3	L5	4500	PSU	O2-C2-N1	-2.97	119.72	122.79
3	L5	400	A2M	O3'-C3'-C2'	2.97	119.50	111.19
83	S2	484	A2M	O3'-C3'-C2'	2.97	119.49	111.19
83	S2	668	A2M	O3'-C3'-C2'	2.96	119.46	111.19
3	L5	4620	OMU	O4-C4-C5	-2.95	120.07	125.16
3	L5	3718	A2M	C3'-C2'-C1'	-2.95	97.16	102.81
3	L5	4521	PSU	O2-C2-N1	-2.95	119.75	122.79
3	L5	4306	OMU	O4-C4-C5	-2.95	120.08	125.16
3	L5	4571	A2M	C3'-C2'-C1'	-2.95	97.17	102.81
3	L5	4689	PSU	O2-C2-N1	-2.94	119.75	122.79
3	L5	4227	OMU	O4-C4-C5	-2.93	120.10	125.16
83	S2	1174	PSU	O2-C2-N1	-2.93	119.77	122.79
3	L5	1860	PSU	O2-C2-N1	-2.92	119.77	122.79
83	S2	172	OMU	O4-C4-C5	-2.92	120.12	125.16
83	S2	354	OMU	O4-C4-C5	-2.92	120.13	125.16
3	L5	3925	OMU	O4-C4-C5	-2.92	120.13	125.16
83	S2	1326	OMU	O4-C4-C5	-2.90	120.16	125.16
83	S2	1288	OMU	O4-C4-C5	-2.90	120.16	125.16
83	S2	799	OMU	O4-C4-C5	-2.89	120.18	125.16
83	S2	27	A2M	O3'-C3'-C2'	2.88	119.25	111.19
83	S2	484	A2M	C4'-O4'-C1'	-2.87	107.29	109.92
3	L5	4293	PSU	C6-N1-C2	-2.87	120.03	122.69
3	L5	4498	OMU	O4-C4-C5	-2.86	120.22	125.16
3	L5	2837	OMU	O4-C4-C5	-2.86	120.22	125.16
3	L5	2815	A2M	O3'-C3'-C2'	2.86	119.20	111.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L5	1323	A2M	C3'-C2'-C1'	-2.85	97.34	102.81
3	L5	3844	PSU	C6-N1-C2	-2.85	120.05	122.69
83	S2	121	OMU	O4-C4-C5	-2.84	120.26	125.16
83	S2	1639	G7M	C2-N1-C6	-2.84	119.92	125.11
83	S2	1248	B8N	O4-C4-N3	-2.84	115.39	119.99
3	L5	1323	A2M	C2'-C1'-N9	2.83	118.84	112.56
3	L5	400	A2M	C3'-C2'-C1'	-2.82	97.40	102.81
83	S2	109	PSU	O2-C2-N1	-2.82	119.88	122.79
3	L5	3701	OMC	O2-C2-N1	2.82	124.42	118.90
3	L5	4296	PSU	O2-C2-N1	-2.81	119.89	122.79
83	S2	1004	PSU	O2-C2-N1	-2.81	119.89	122.79
3	L5	4523	A2M	O3'-C3'-C2'	2.81	119.05	111.19
3	L5	3637	PSU	C6-N1-C2	-2.80	120.09	122.69
83	S2	1056	PSU	O2-C2-N1	-2.79	119.91	122.79
3	L5	1677	PSU	C6-C5-C4	2.79	120.06	118.17
3	L5	4500	PSU	C6-N1-C2	-2.79	120.10	122.69
83	S2	686	PSU	O2-C2-N1	-2.79	119.91	122.79
83	S2	649	PSU	O2-C2-N1	-2.79	119.91	122.79
3	L5	3701	OMC	O2-C2-N3	-2.79	117.94	122.33
3	L5	4403	PSU	O2-C2-N1	-2.79	119.92	122.79
83	S2	406	PSU	O2-C2-N1	-2.77	119.93	122.79
3	L5	3853	PSU	O2-C2-N1	-2.77	119.93	122.79
3	L5	4628	PSU	C6-N1-C2	-2.77	120.12	122.69
83	S2	801	PSU	O2-C2-N1	-2.77	119.93	122.79
3	L5	4293	PSU	O2-C2-N1	-2.77	119.93	122.79
3	L5	3920	PSU	C6-N1-C2	-2.76	120.13	122.69
83	S2	1367	PSU	O2-C2-N1	-2.76	119.94	122.79
3	L5	4312	PSU	C6-N1-C2	-2.76	120.13	122.69
83	S2	1004	PSU	C6-N1-C2	-2.76	120.13	122.69
3	L5	1536	PSU	C6-N1-C2	-2.76	120.13	122.69
3	L5	1683	PSU	O2-C2-N1	-2.75	119.95	122.79
83	S2	1045	PSU	O2-C2-N1	-2.75	119.95	122.79
3	L5	1323	A2M	O3'-C3'-C2'	2.75	118.89	111.19
3	L5	4579	PSU	O2-C2-N1	-2.74	119.96	122.79
3	L5	4471	PSU	C6-N1-C2	-2.74	120.15	122.69
3	L5	4673	PSU	C6-N1-C2	-2.74	120.15	122.69
3	L5	3851	PSU	O2-C2-N1	-2.74	119.97	122.79
83	S2	159	A2M	C3'-C2'-C1'	-2.74	97.57	102.81
3	L5	2632	PSU	C6-N1-C2	-2.73	120.16	122.69
3	L5	4493	PSU	O2-C2-N1	-2.72	119.98	122.79
3	L5	2363	A2M	O3'-C3'-C2'	2.72	118.80	111.19
83	S2	1056	PSU	C6-N1-C2	-2.71	120.17	122.69

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L5	5010	PSU	O2-C2-N1	-2.71	119.99	122.79
3	L5	2804	OMC	C1'-N1-C2	2.71	124.43	118.44
3	L5	4636	PSU	O2-C2-N1	-2.71	119.99	122.79
83	S2	801	PSU	C6-N1-C2	-2.71	120.18	122.69
3	L5	2787	A2M	O4'-C1'-C2'	2.71	111.23	106.61
3	L5	4312	PSU	O2-C2-N1	-2.71	120.00	122.79
83	S2	649	PSU	C6-N1-C2	-2.71	120.18	122.69
3	L5	4636	PSU	C6-C5-C4	2.71	120.00	118.17
83	S2	1046	PSU	O2-C2-N1	-2.70	120.00	122.79
3	L5	5001	PSU	O2-C2-N1	-2.70	120.01	122.79
3	L5	1524	A2M	O4'-C1'-C2'	2.70	111.20	106.61
3	L5	3822	PSU	O2-C2-N1	-2.69	120.01	122.79
3	L5	3785	A2M	C3'-C2'-C1'	-2.69	97.66	102.81
3	L5	4471	PSU	O2-C2-N1	-2.69	120.01	122.79
3	L5	1323	A2M	O4'-C1'-C2'	2.69	111.19	106.61
3	L5	4590	A2M	O3'-C3'-C2'	2.69	118.70	111.19
3	L5	2839	PSU	O2-C2-N1	-2.68	120.02	122.79
3	L5	3884	PSU	C6-N1-C2	-2.68	120.20	122.69
83	S2	866	PSU	O2-C2-N1	-2.68	120.02	122.79
83	S2	1337	4AC	N4-C4-N3	2.68	118.22	113.87
3	L5	1683	PSU	C6-N1-C2	-2.67	120.21	122.69
5	L8	55	PSU	O2-C2-N1	-2.67	120.04	122.79
3	L5	4628	PSU	O2-C2-N1	-2.67	120.04	122.79
83	S2	1244	PSU	O2-C2-N1	-2.67	120.04	122.79
5	L8	55	PSU	C6-N1-C2	-2.66	120.22	122.69
3	L5	3695	PSU	O2-C2-N1	-2.66	120.04	122.79
3	L5	3822	PSU	C6-N1-C2	-2.65	120.23	122.69
83	S2	1174	PSU	C6-N1-C2	-2.65	120.23	122.69
3	L5	4673	PSU	O2-C2-N1	-2.65	120.05	122.79
3	L5	1782	PSU	O2-C2-N1	-2.65	120.06	122.79
3	L5	3920	PSU	O2-C2-N1	-2.65	120.06	122.79
83	S2	651	PSU	O2-C2-N1	-2.65	120.06	122.79
83	S2	668	A2M	O4'-C1'-C2'	2.65	111.12	106.61
83	S2	966	PSU	O2-C2-N1	-2.64	120.06	122.79
3	L5	1781	PSU	C6-N1-C2	-2.64	120.24	122.69
83	S2	1232	PSU	O2-C2-N1	-2.64	120.07	122.79
3	L5	4442	PSU	O2-C2-N1	-2.64	120.07	122.79
3	L5	3639	PSU	O2-C2-N1	-2.63	120.07	122.79
3	L5	4299	PSU	C6-N1-C2	-2.63	120.25	122.69
3	L5	4392	OMG	O6-C6-C5	2.63	129.53	124.32
83	S2	863	PSU	C6-N1-C2	-2.63	120.25	122.69
3	L5	2632	PSU	O2-C2-N1	-2.63	120.08	122.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L5	4579	PSU	C6-N1-C2	-2.63	120.25	122.69
3	L5	4576	PSU	O2-C2-N1	-2.62	120.08	122.79
83	S2	681	PSU	C6-N1-C2	-2.62	120.26	122.69
3	L5	4972	PSU	O2-C2-N1	-2.62	120.08	122.79
3	L5	4552	PSU	C6-N1-C2	-2.62	120.26	122.69
3	L5	4552	PSU	O2-C2-N1	-2.62	120.09	122.79
3	L5	2839	PSU	C6-N1-C2	-2.62	120.26	122.69
3	L5	3884	PSU	O2-C2-N1	-2.62	120.09	122.79
3	L5	4623	OMG	O6-C6-C5	2.61	129.50	124.32
3	L5	4972	PSU	C6-N1-C2	-2.61	120.27	122.69
3	L5	1860	PSU	C6-N1-C2	-2.61	120.27	122.69
3	L5	4431	PSU	C6-N1-C2	-2.61	120.27	122.69
3	L5	1326	A2M	O3'-C3'-C2'	2.60	118.46	111.19
83	S2	1081	PSU	O2-C2-N1	-2.59	120.11	122.79
83	S2	109	PSU	C6-N1-C2	-2.59	120.28	122.69
3	L5	3639	PSU	C6-N1-C2	-2.59	120.29	122.69
3	L5	4521	PSU	C6-N1-C2	-2.59	120.29	122.69
3	L5	1744	PSU	C6-N1-C2	-2.59	120.29	122.69
3	L5	5010	PSU	C6-N1-C2	-2.59	120.29	122.69
3	L5	1782	PSU	C6-N1-C2	-2.59	120.29	122.69
3	L5	5001	PSU	C6-N1-C2	-2.59	120.29	122.69
3	L5	3695	PSU	C6-N1-C2	-2.58	120.30	122.69
83	S2	651	PSU	C6-N1-C2	-2.58	120.30	122.69
3	L5	4431	PSU	O2-C2-N1	-2.57	120.13	122.79
3	L5	4636	PSU	C6-N1-C2	-2.57	120.31	122.69
3	L5	1792	PSU	O2-C2-N1	-2.57	120.14	122.79
3	L5	4532	PSU	O2-C2-N1	-2.57	120.14	122.79
3	L5	2861	OMC	C1'-N1-C2	2.57	124.11	118.44
83	S2	1046	PSU	C6-N1-C2	-2.56	120.31	122.69
83	S2	863	PSU	O2-C2-N1	-2.56	120.14	122.79
3	L5	3844	PSU	O2-C2-N1	-2.56	120.15	122.79
3	L5	3627	OMG	O6-C6-C5	2.56	129.39	124.32
3	L5	3744	OMG	O6-C6-C5	2.56	129.39	124.32
5	L8	69	PSU	O2-C2-N1	-2.56	120.15	122.79
83	S2	93	PSU	C6-N1-C2	-2.56	120.32	122.69
83	S2	686	PSU	C6-N1-C2	-2.56	120.32	122.69
83	S2	1244	PSU	C6-N1-C2	-2.55	120.32	122.69
5	L8	69	PSU	C6-N1-C2	-2.55	120.32	122.69
83	S2	966	PSU	C6-N1-C2	-2.55	120.33	122.69
83	S2	105	PSU	C6-N1-C2	-2.55	120.33	122.69
3	L5	1781	PSU	O2-C2-N1	-2.55	120.16	122.79
3	L5	1862	PSU	C6-N1-C2	-2.54	120.33	122.69

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L5	1582	PSU	C6-N1-C2	-2.54	120.33	122.69
3	L5	4500	PSU	C6-C5-C4	2.54	119.89	118.17
3	L5	2363	A2M	C3'-C2'-C1'	-2.54	97.94	102.81
5	L8	75	OMG	O6-C6-C5	2.54	129.36	124.32
83	S2	1232	PSU	C6-N1-C2	-2.54	120.34	122.69
3	L5	1862	PSU	O2-C2-N1	-2.53	120.17	122.79
3	L5	3851	PSU	C6-N1-C2	-2.53	120.34	122.69
3	L5	4299	PSU	O2-C2-N1	-2.53	120.18	122.79
3	L5	4457	PSU	O2-C2-N1	-2.53	120.18	122.79
3	L5	4196	OMG	O6-C6-C5	2.53	129.33	124.32
3	L5	4361	PSU	C6-N1-C2	-2.53	120.34	122.69
83	S2	866	PSU	C6-N1-C2	-2.53	120.34	122.69
3	L5	4493	PSU	C6-N1-C2	-2.53	120.35	122.69
3	L5	3818	UY1	O2-C2-N1	-2.52	120.19	122.79
3	L5	4973	PSU	O2-C2-N1	-2.52	120.19	122.79
83	S2	681	PSU	O2-C2-N1	-2.52	120.19	122.79
3	L5	2363	A2M	O4'-C1'-C2'	2.52	110.90	106.61
3	L5	4973	PSU	C6-N1-C2	-2.52	120.36	122.69
83	S2	644	OMG	O6-C6-C5	2.52	129.31	124.32
3	L5	3867	A2M	C2'-C1'-N9	2.51	118.14	112.56
3	L5	4456	OMC	C1'-N1-C2	2.51	123.99	118.44
3	L5	2363	A2M	C2'-C1'-N9	2.51	118.14	112.56
3	L5	3808	OMC	C1'-N1-C2	2.51	123.98	118.44
83	S2	105	PSU	O2-C2-N1	-2.50	120.21	122.79
3	L5	4494	OMG	O6-C6-C5	2.50	129.27	124.32
83	S2	406	PSU	C6-N1-C2	-2.50	120.37	122.69
3	L5	1522	OMG	O6-C6-C5	2.50	129.27	124.32
3	L5	4353	PSU	O2-C2-N1	-2.49	120.22	122.79
3	L5	4353	PSU	C6-N1-C2	-2.49	120.38	122.69
3	L5	2787	A2M	C4-C5-N7	2.49	111.96	109.34
3	L5	2351	OMC	C1'-N1-C6	-2.48	115.48	120.78
3	L5	4457	PSU	C6-N1-C2	-2.48	120.39	122.69
83	S2	1177	PSU	C6-N1-C2	-2.48	120.39	122.69
3	L5	4521	PSU	C6-C5-C4	2.48	119.85	118.17
3	L5	4499	OMG	O6-C6-C5	2.48	129.23	124.32
83	S2	93	PSU	O2-C2-N1	-2.47	120.24	122.79
83	S2	814	PSU	O2-C2-N1	-2.47	120.24	122.79
3	L5	1744	PSU	O2-C2-N1	-2.47	120.24	122.79
3	L5	4361	PSU	O2-C2-N1	-2.47	120.25	122.79
83	S2	601	OMG	O6-C6-C5	2.46	129.20	124.32
3	L5	3830	A2M	C4-C5-N7	2.46	111.94	109.34
3	L5	4637	OMG	O6-C6-C5	2.46	129.19	124.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L5	1792	PSU	C6-N1-C2	-2.45	120.41	122.69
3	L5	4442	PSU	C6-N1-C2	-2.45	120.41	122.69
3	L5	4530	UR3	C6-N1-C2	-2.45	119.79	121.80
3	L5	4370	OMG	O6-C6-C5	2.45	129.18	124.32
3	L5	1677	PSU	C6-N1-C2	-2.45	120.42	122.69
3	L5	4228	OMG	O6-C6-C5	2.45	129.18	124.32
83	S2	1328	OMG	O6-C6-C5	2.45	129.18	124.32
3	L5	1871	A2M	C4-C5-N7	2.45	111.93	109.34
83	S2	1367	PSU	C6-N1-C2	-2.45	120.42	122.69
3	L5	4532	PSU	C6-N1-C2	-2.45	120.42	122.69
3	L5	1323	A2M	C4-C5-N7	2.44	111.92	109.34
3	L5	1316	OMG	O6-C6-C5	2.44	129.15	124.32
3	L5	4576	PSU	C6-N1-C2	-2.44	120.43	122.69
3	L5	2815	A2M	C2'-C1'-N9	2.43	117.96	112.56
83	S2	509	OMG	O6-C6-C5	2.43	129.14	124.32
3	L5	1326	A2M	C4-C5-N7	2.43	111.91	109.34
3	L5	4403	PSU	C6-N1-C2	-2.43	120.44	122.69
3	L5	4296	PSU	C6-N1-C2	-2.43	120.44	122.69
83	S2	1045	PSU	C6-N1-C2	-2.43	120.44	122.69
3	L5	3785	A2M	C4-C5-N7	2.43	111.90	109.34
83	S2	1177	PSU	O2-C2-N1	-2.42	120.29	122.79
3	L5	1524	A2M	C4-C5-N7	2.42	111.89	109.34
3	L5	400	A2M	C4-C5-N7	2.41	111.88	109.34
3	L5	2364	OMG	O6-C6-C5	2.41	129.09	124.32
3	L5	3899	OMG	O6-C6-C5	2.40	129.09	124.32
83	S2	1272	OMC	C1'-N1-C6	-2.40	115.65	120.78
3	L5	3792	OMG	O6-C6-C5	2.40	129.08	124.32
83	S2	1031	A2M	C4-C5-N7	2.40	111.87	109.34
83	S2	683	OMG	O6-C6-C5	2.40	129.07	124.32
3	L5	3825	A2M	C4-C5-N7	2.39	111.86	109.34
83	S2	867	OMG	O6-C6-C5	2.39	129.05	124.32
83	S2	1081	PSU	C6-N1-C2	-2.38	120.48	122.69
3	L5	2876	OMG	O6-C6-C5	2.38	129.04	124.32
83	S2	166	A2M	C4-C5-N7	2.37	111.84	109.34
3	L5	3853	PSU	C6-N1-C2	-2.36	120.50	122.69
3	L5	1582	PSU	O2-C2-N1	-2.36	120.36	122.79
3	L5	2424	OMG	O6-C6-C5	2.35	128.99	124.32
3	L5	4590	A2M	C4-C5-N7	2.35	111.82	109.34
3	L5	4442	PSU	O4'-C1'-C2'	2.35	108.40	105.15
83	S2	814	PSU	C6-N1-C2	-2.35	120.52	122.69
3	L5	1326	A2M	O4'-C1'-C2'	2.34	110.60	106.61
83	S2	1383	A2M	C4-C5-N7	2.34	111.81	109.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	L5	4618	OMG	O6-C6-C5	2.34	128.97	124.32
3	L5	3867	A2M	O3'-C3'-C2'	2.34	117.74	111.19
3	L5	3867	A2M	C4-C5-N7	2.34	111.81	109.34
83	S2	436	OMG	O6-C6-C5	2.34	128.96	124.32
3	L5	2363	A2M	C4-C5-N7	2.34	111.81	109.34
3	L5	4403	PSU	O4'-C1'-C2'	2.33	108.38	105.15
3	L5	2787	A2M	C4'-O4'-C1'	-2.32	107.80	109.92
83	S2	406	PSU	C6-C5-C4	2.32	119.74	118.17
3	L5	1322	1MA	N1-C6-N6	2.32	125.53	119.71
3	L5	4523	A2M	C4-C5-N7	2.31	111.78	109.34
3	L5	2401	A2M	C4-C5-N7	2.31	111.78	109.34
3	L5	2815	A2M	C4-C5-N7	2.31	111.78	109.34
3	L5	4571	A2M	C4-C5-N7	2.30	111.77	109.34
83	S2	484	A2M	C4-C5-N7	2.30	111.77	109.34
83	S2	1248	B8N	O4'-C1'-C2'	2.30	108.33	105.15
3	L5	3718	A2M	C4-C5-N7	2.30	111.77	109.34
3	L5	1322	1MA	C5-C6-N1	-2.29	110.67	113.95
83	S2	99	A2M	C4-C5-N7	2.28	111.75	109.34
3	L5	4403	PSU	C6-C5-C4	2.28	119.71	118.17
3	L5	400	A2M	C2'-C1'-N9	2.28	117.62	112.56
3	L5	3867	A2M	C3'-C2'-C1'	-2.28	98.45	102.81
3	L5	1625	OMG	O6-C6-C5	2.27	128.82	124.32
3	L5	398	A2M	C4-C5-N7	2.27	111.73	109.34
3	L5	3822	PSU	O4'-C1'-C2'	2.27	108.28	105.15
3	L5	1534	A2M	C4-C5-N7	2.26	111.73	109.34
3	L5	4571	A2M	O4'-C1'-C2'	2.26	110.45	106.61
3	L5	400	A2M	O4'-C1'-C2'	2.25	110.44	106.61
5	L8	69	PSU	O4'-C1'-C2'	2.25	108.26	105.15
83	S2	484	A2M	O4'-C1'-C2'	2.25	110.44	106.61
83	S2	27	A2M	C4-C5-N7	2.24	111.70	109.34
83	S2	1326	OMU	O2-C2-N1	-2.24	119.88	122.80
83	S2	468	A2M	C4-C5-N7	2.24	111.70	109.34
3	L5	3785	A2M	O4'-C4'-C3'	2.23	109.59	105.15
83	S2	576	A2M	C4-C5-N7	2.23	111.69	109.34
3	L5	4636	PSU	O4'-C1'-C2'	2.23	108.23	105.15
3	L5	2815	A2M	C3'-C2'-C1'	-2.22	98.56	102.81
83	S2	468	A2M	O4'-C1'-C2'	2.22	110.38	106.61
83	S2	27	A2M	O4'-C1'-C2'	2.21	110.38	106.61
83	S2	159	A2M	C4-C5-N7	2.21	111.67	109.34
3	L5	2787	A2M	O4'-C4'-C3'	2.20	109.52	105.15
83	S2	172	OMU	O2-C2-N1	-2.20	119.94	122.80
83	S2	1081	PSU	O4'-C1'-C2'	2.19	108.19	105.15

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	L5	1326	A2M	C3'-C2'-C1'	-2.19	98.61	102.81
3	L5	3785	A2M	O4'-C1'-N9	2.17	111.62	108.75
3	L5	2401	A2M	O4'-C1'-C2'	2.15	110.28	106.61
83	S2	866	PSU	O4'-C1'-C2'	2.15	108.13	105.15
83	S2	668	A2M	C4-C5-N7	2.15	111.61	109.34
3	L5	4498	OMU	O2-C2-N1	-2.14	120.01	122.80
83	S2	668	A2M	C2'-C1'-N9	2.13	117.28	112.56
83	S2	1248	B8N	O4-C4-C5	-2.12	118.91	122.58
83	S2	484	A2M	C3'-C2'-C1'	-2.12	98.74	102.81
83	S2	166	A2M	O4'-C1'-C2'	2.11	110.20	106.61
83	S2	354	OMU	O2-C2-N1	-2.11	120.05	122.80
3	L5	4299	PSU	C6-C5-C4	2.11	119.59	118.17
3	L5	4457	PSU	O4'-C1'-C2'	2.09	108.04	105.15
3	L5	3637	PSU	C6-C5-C4	2.09	119.58	118.17
83	S2	159	A2M	O4'-C1'-C2'	2.08	110.16	106.61
83	S2	428	OMU	O2-C2-N1	-2.08	120.09	122.80
3	L5	2815	A2M	O4'-C1'-C2'	2.08	110.15	106.61
3	L5	1534	A2M	O4'-C1'-C2'	2.07	110.14	106.61
5	L8	55	PSU	C6-C5-C4	2.07	119.57	118.17
83	S2	1288	OMU	O2-C2-N1	-2.05	120.12	122.80
3	L5	1534	A2M	O3'-C3'-C2'	2.05	116.93	111.19
83	S2	1832	6MZ	O1P-P-O2P	2.05	118.83	110.83
3	L5	3695	PSU	O4'-C1'-C2'	2.05	107.98	105.15
83	S2	121	OMU	O2-C2-N1	-2.04	120.14	122.80
3	L5	1534	A2M	C2'-C1'-N9	2.04	117.08	112.56
3	L5	3818	UY1	O4'-C1'-C2'	2.02	108.10	104.56
83	S2	627	OMU	O2-C2-N1	-2.02	120.17	122.80
3	L5	3925	OMU	O2-C2-N1	-2.01	120.17	122.80
3	L5	4628	PSU	O4'-C1'-C2'	2.01	107.93	105.15
3	L5	3639	PSU	O4'-C1'-C2'	2.00	107.92	105.15

There are no chirality outliers.

All (140) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	L5	400	A2M	C1'-C2'-O2'-CM'
3	L5	1326	A2M	O4'-C4'-C5'-O5'
3	L5	1340	OMC	C1'-C2'-O2'-CM2
3	L5	1625	OMG	O4'-C4'-C5'-O5'
3	L5	2351	OMC	C1'-C2'-O2'-CM2
3	L5	2364	OMG	O4'-C4'-C5'-O5'
3	L5	2787	A2M	C1'-C2'-O2'-CM'

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Mol	Chain	Res	Type	Atoms
3	L5	2824	OMC	C1'-C2'-O2'-CM2
3	L5	3701	OMC	O4'-C4'-C5'-O5'
3	L5	3792	OMG	O4'-C4'-C5'-O5'
3	L5	3841	OMC	C1'-C2'-O2'-CM2
3	L5	3867	A2M	C1'-C2'-O2'-CM'
3	L5	4196	OMG	C1'-C2'-O2'-CM2
3	L5	4306	OMU	C1'-C2'-O2'-CM2
3	L5	4500	PSU	O4'-C4'-C5'-O5'
3	L5	4590	A2M	O4'-C4'-C5'-O5'
3	L5	4620	OMU	C1'-C2'-O2'-CM2
3	L5	4637	OMG	O4'-C4'-C5'-O5'
3	L5	4637	OMG	C1'-C2'-O2'-CM2
83	S2	27	A2M	C1'-C2'-O2'-CM'
83	S2	99	A2M	C1'-C2'-O2'-CM'
83	S2	159	A2M	C1'-C2'-O2'-CM'
83	S2	436	OMG	O4'-C4'-C5'-O5'
83	S2	462	OMC	C1'-C2'-O2'-CM2
83	S2	601	OMG	C1'-C2'-O2'-CM2
83	S2	644	OMG	O4'-C4'-C5'-O5'
83	S2	1248	B8N	O4'-C4'-C5'-O5'
83	S2	1272	OMC	C1'-C2'-O2'-CM2
83	S2	1272	OMC	O4'-C4'-C5'-O5'
83	S2	1288	OMU	C3'-C4'-C5'-O5'
83	S2	1288	OMU	O4'-C4'-C5'-O5'
83	S2	1337	4AC	N3-C4-N4-C7
83	S2	1383	A2M	C1'-C2'-O2'-CM'
83	S2	1442	OMU	O4'-C4'-C5'-O5'
83	S2	1832	6MZ	C5-C6-N6-C9
83	S2	1832	6MZ	N1-C6-N6-C9
3	L5	3701	OMC	C2'-C1'-N1-C2
3	L5	1326	A2M	C3'-C4'-C5'-O5'
3	L5	1536	PSU	O4'-C4'-C5'-O5'
3	L5	2815	A2M	O4'-C4'-C5'-O5'
3	L5	3701	OMC	C3'-C4'-C5'-O5'
3	L5	3867	A2M	C3'-C4'-C5'-O5'
3	L5	4500	PSU	C3'-C4'-C5'-O5'
3	L5	4590	A2M	C3'-C4'-C5'-O5'
83	S2	99	A2M	O4'-C4'-C5'-O5'
83	S2	576	A2M	O4'-C4'-C5'-O5'
83	S2	576	A2M	C3'-C4'-C5'-O5'
83	S2	683	OMG	C3'-C4'-C5'-O5'
83	S2	799	OMU	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
83	S2	799	OMU	O4'-C4'-C5'-O5'
83	S2	801	PSU	C3'-C4'-C5'-O5'
83	S2	867	OMG	C3'-C4'-C5'-O5'
83	S2	1272	OMC	C3'-C4'-C5'-O5'
3	L5	1323	A2M	O4'-C4'-C5'-O5'
3	L5	1536	PSU	C3'-C4'-C5'-O5'
3	L5	1625	OMG	C3'-C4'-C5'-O5'
3	L5	3867	A2M	O4'-C4'-C5'-O5'
83	S2	517	OMC	C3'-C4'-C5'-O5'
83	S2	517	OMC	O4'-C4'-C5'-O5'
83	S2	801	PSU	O4'-C4'-C5'-O5'
83	S2	867	OMG	O4'-C4'-C5'-O5'
83	S2	1442	OMU	C3'-C4'-C5'-O5'
3	L5	3701	OMC	C2'-C1'-N1-C6
3	L5	4447	5MC	C2'-C1'-N1-C6
3	L5	2364	OMG	C3'-C4'-C5'-O5'
3	L5	2815	A2M	C3'-C4'-C5'-O5'
3	L5	3792	OMG	C3'-C4'-C5'-O5'
3	L5	4637	OMG	C3'-C4'-C5'-O5'
83	S2	436	OMG	C3'-C4'-C5'-O5'
83	S2	644	OMG	C3'-C4'-C5'-O5'
3	L5	1524	A2M	C3'-C4'-C5'-O5'
83	S2	668	A2M	O4'-C4'-C5'-O5'
83	S2	1248	B8N	C3'-C4'-C5'-O5'
83	S2	1248	B8N	N34-C33-C34-O36
3	L5	1677	PSU	O4'-C4'-C5'-O5'
3	L5	1781	PSU	C3'-C4'-C5'-O5'
83	S2	99	A2M	C3'-C4'-C5'-O5'
83	S2	668	A2M	C3'-C4'-C5'-O5'
83	S2	683	OMG	O4'-C4'-C5'-O5'
83	S2	627	OMU	C2'-C1'-N1-C6
3	L5	1524	A2M	O4'-C4'-C5'-O5'
3	L5	1677	PSU	C3'-C4'-C5'-O5'
3	L5	2422	OMC	O4'-C4'-C5'-O5'
3	L5	4296	PSU	O4'-C4'-C5'-O5'
3	L5	2787	A2M	C3'-C4'-C5'-O5'
3	L5	4296	PSU	C3'-C4'-C5'-O5'
3	L5	4590	A2M	C4'-C5'-O5'-P
83	S2	428	OMU	C2'-C1'-N1-C6
3	L5	4447	5MC	C2'-C1'-N1-C2
3	L5	1323	A2M	C3'-C4'-C5'-O5'
3	L5	2422	OMC	C3'-C4'-C5'-O5'

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Mol	Chain	Res	Type	Atoms
83	S2	116	OMU	C1'-C2'-O2'-CM2
83	S2	468	A2M	C1'-C2'-O2'-CM'
83	S2	1328	OMG	C1'-C2'-O2'-CM2
83	S2	1045	PSU	C3'-C4'-C5'-O5'
3	L5	3899	OMG	C3'-C4'-C5'-O5'
3	L5	398	A2M	O4'-C4'-C5'-O5'
83	S2	1045	PSU	O4'-C4'-C5'-O5'
83	S2	1703	OMC	O4'-C4'-C5'-O5'
3	L5	3701	OMC	O4'-C1'-N1-C6
3	L5	4447	5MC	O4'-C1'-N1-C6
83	S2	428	OMU	O4'-C1'-N1-C6
83	S2	627	OMU	O4'-C1'-N1-C6
3	L5	4447	5MC	O4'-C1'-N1-C2
3	L5	3869	OMC	C3'-C2'-O2'-CM2
3	L5	3818	UY1	C4'-C5'-O5'-P
3	L5	3818	UY1	O4'-C1'-C5-C4
3	L5	1534	A2M	C4'-C5'-O5'-P
3	L5	3844	PSU	C4'-C5'-O5'-P
3	L5	4500	PSU	C4'-C5'-O5'-P
83	S2	1851	MA6	C4'-C5'-O5'-P
3	L5	1781	PSU	O4'-C4'-C5'-O5'
3	L5	4618	OMG	C3'-C4'-C5'-O5'
83	S2	576	A2M	C4'-C5'-O5'-P
3	L5	4499	OMG	C3'-C2'-O2'-CM2
3	L5	3887	OMC	C4'-C5'-O5'-P
83	S2	644	OMG	C4'-C5'-O5'-P
3	L5	3851	PSU	C3'-C4'-C5'-O5'
3	L5	3701	OMC	O4'-C1'-N1-C2
83	S2	627	OMU	C2'-C1'-N1-C2
83	S2	1490	OMG	C4'-C5'-O5'-P
83	S2	627	OMU	O4'-C1'-N1-C2
3	L5	1326	A2M	C1'-C2'-O2'-CM'
3	L5	1677	PSU	O4'-C1'-C5-C6
3	L5	4636	PSU	O4'-C1'-C5-C6
3	L5	2351	OMC	C2'-C1'-N1-C6
83	S2	428	OMU	C2'-C1'-N1-C2
3	L5	1524	A2M	C3'-C2'-O2'-CM'
3	L5	3899	OMG	C3'-C2'-O2'-CM2
83	S2	428	OMU	O4'-C1'-N1-C2
3	L5	1677	PSU	C2'-C1'-C5-C6
83	S2	1832	6MZ	O4'-C4'-C5'-O5'
3	L5	1326	A2M	C4'-C5'-O5'-P

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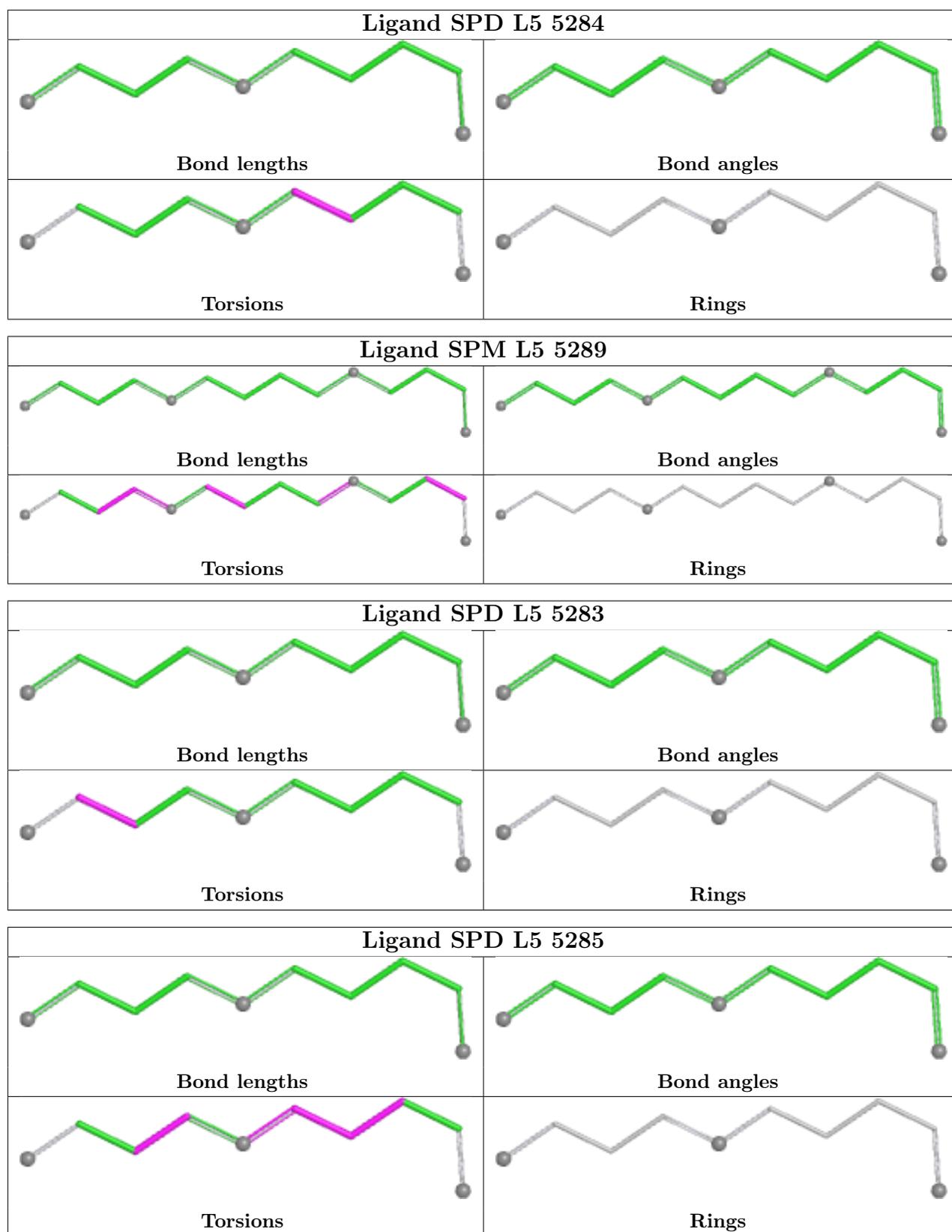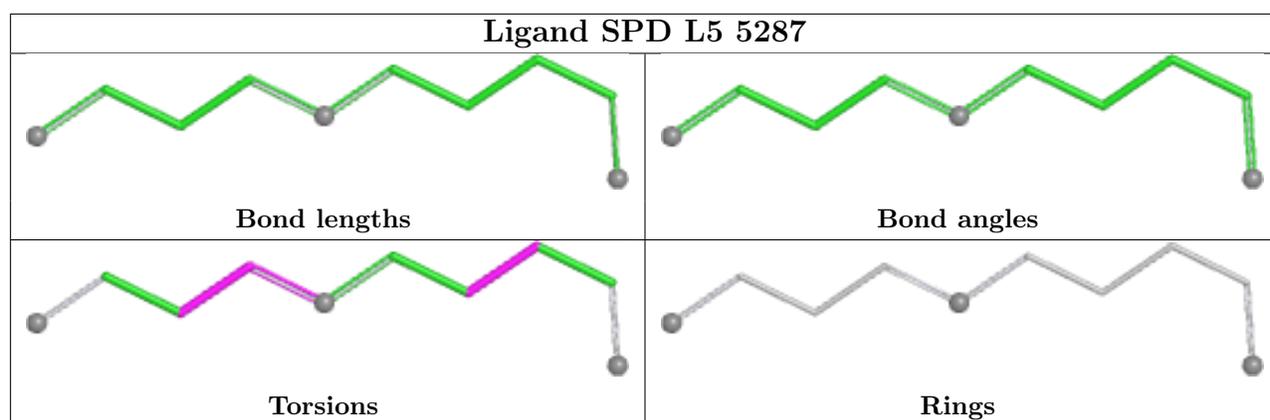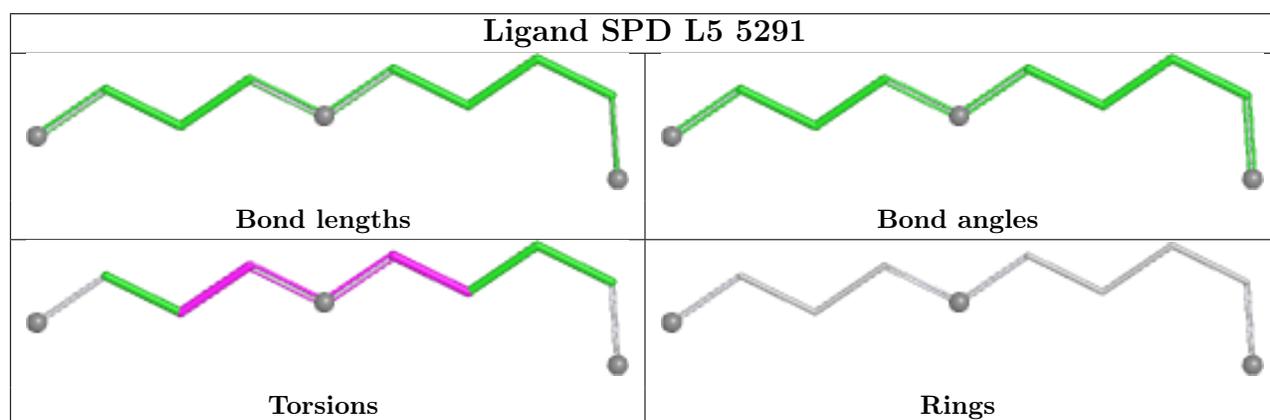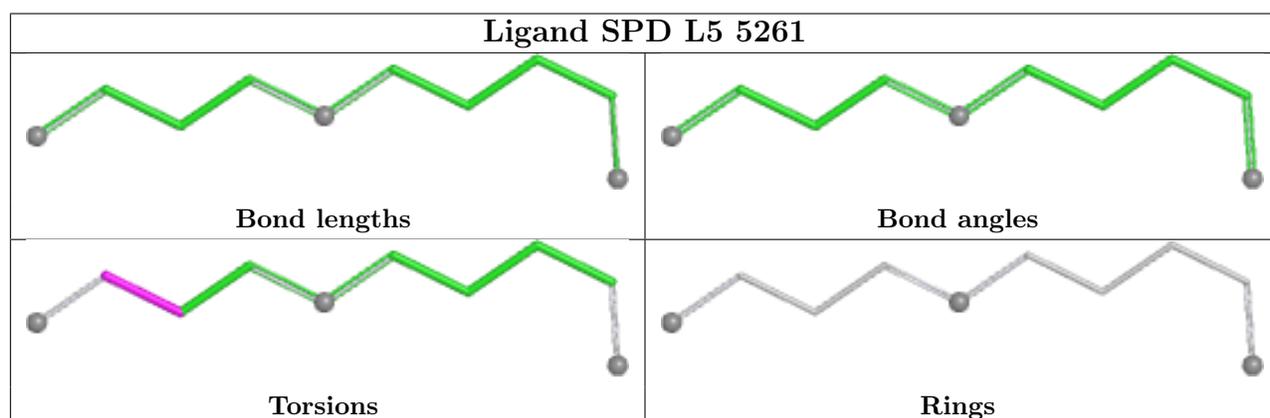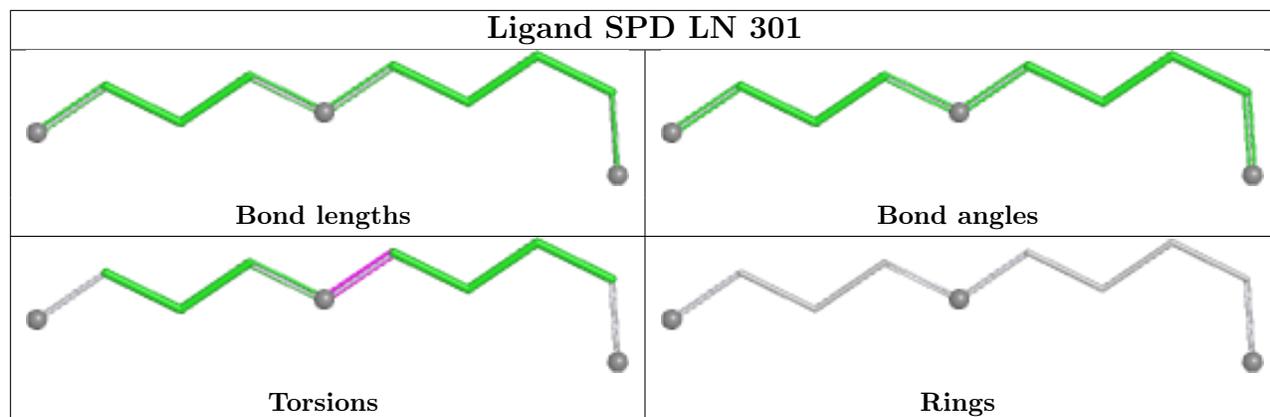| Mol	Chain	Res	Type	Atoms
83	S2	1272	OMC	C4'-C5'-O5'-P
3	L5	2804	OMC	C2'-C1'-N1-C2
83	S2	1272	OMC	C2'-C1'-N1-C2
83	S2	1248	B8N	N34-C33-C34-O35
3	L5	2351	OMC	O4'-C4'-C5'-O5'
3	L5	3782	5MC	O4'-C4'-C5'-O5'
3	L5	3899	OMG	O4'-C4'-C5'-O5'

There are no ring outliers.

80 monomers are involved in 110 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
83	S2	649	PSU	2	0
83	S2	683	OMG	1	0
3	L5	2363	A2M	1	0
83	S2	436	OMG	1	0
3	L5	4579	PSU	2	0
3	L5	4590	A2M	1	0
3	L5	2351	OMC	1	0
83	S2	1046	PSU	1	0
83	S2	116	OMU	2	0
83	S2	1272	OMC	1	0
3	L5	2364	OMG	1	0
83	S2	517	OMC	1	0
83	S2	1703	OMC	1	0
3	L5	4306	OMU	1	0
3	L5	4571	A2M	1	0
3	L5	1534	A2M	1	0
83	S2	462	OMC	1	0
3	L5	3818	UY1	1	0
83	S2	27	A2M	3	0
3	L5	3867	A2M	5	0
3	L5	4523	A2M	2	0
3	L5	398	A2M	1	0
3	L5	2422	OMC	1	0
83	S2	159	A2M	2	0
3	L5	3884	PSU	1	0
3	L5	1340	OMC	2	0
83	S2	576	A2M	2	0
3	L5	4637	OMG	1	0
83	S2	1337	4AC	2	0
3	L5	3718	A2M	3	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
83	S2	1391	OMC	1	0
83	S2	681	PSU	1	0
3	L5	4431	PSU	1	0
83	S2	484	A2M	1	0
83	S2	1442	OMU	1	0
3	L5	4536	OMC	1	0
3	L5	4228	OMG	1	0
3	L5	2824	OMC	1	0
83	S2	1232	PSU	1	0
3	L5	3841	OMC	1	0
3	L5	4620	OMU	2	0
3	L5	400	A2M	1	0
3	L5	1683	PSU	2	0
83	S2	1383	A2M	1	0
3	L5	3822	PSU	1	0
83	S2	1004	PSU	2	0
83	S2	121	OMU	1	0
3	L5	4220	6MZ	1	0
3	L5	2876	OMG	1	0
83	S2	866	PSU	2	0
3	L5	2804	OMC	1	0
3	L5	4636	PSU	1	0
83	S2	166	A2M	2	0
83	S2	1842	4AC	1	0
83	S2	468	A2M	1	0
3	L5	1871	A2M	1	0
83	S2	867	OMG	3	0
3	L5	1677	PSU	1	0
3	L5	4456	OMC	1	0
83	S2	1639	G7M	1	0
3	L5	3925	OMU	1	0
83	S2	1031	A2M	1	0
83	S2	1174	PSU	2	0
3	L5	3785	A2M	1	0
3	L5	4392	OMG	1	0
3	L5	4618	OMG	1	0
83	S2	601	OMG	2	0
3	L5	4457	PSU	1	0
83	S2	1288	OMU	1	0
3	L5	3825	A2M	1	0
83	S2	1850	MA6	1	0
5	L8	75	OMG	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	L5	4293	PSU	1	0
3	L5	4689	PSU	1	0
83	S2	99	A2M	1	0
3	L5	1326	A2M	5	0
3	L5	2424	OMG	1	0
3	L5	3701	OMC	1	0
3	L5	4196	OMG	1	0
83	S2	509	OMG	3	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	$\#\|Z\| > 2$
86	SPM	L5	5263	-	13,13,13	0.34	0	12,12,12	0.98	0
86	SPM	L5	5292	-	13,13,13	0.35	0	12,12,12	0.90	0
87	SPD	L5	5284	-	9,9,9	0.31	0	8,8,8	0.79	0
86	SPM	L5	5289	-	13,13,13	0.37	0	12,12,12	1.01	0
87	SPD	L5	5283	-	9,9,9	0.34	0	8,8,8	0.86	0
87	SPD	L5	5285	-	9,9,9	0.32	0	8,8,8	0.88	0
87	SPD	LN	301	-	9,9,9	0.31	0	8,8,8	0.91	0
87	SPD	L5	5261	-	9,9,9	0.32	0	8,8,8	0.94	0
87	SPD	L5	5291	-	9,9,9	0.31	0	8,8,8	0.81	0
87	SPD	L5	5287	-	9,9,9	0.32	0	8,8,8	0.85	0
87	SPD	L5	5288	-	9,9,9	0.31	0	8,8,8	0.83	0
86	SPM	L5	5293	-	13,13,13	0.36	0	12,12,12	0.87	0
86	SPM	L5	5259	-	13,13,13	0.35	0	12,12,12	0.99	0
87	SPD	L5	5286	-	9,9,9	0.32	0	8,8,8	0.84	0
87	SPD	L5	5290	-	9,9,9	0.33	0	8,8,8	0.85	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
86	SPM	L5	5264	-	13,13,13	0.34	0	12,12,12	1.01	0
86	SPM	L5	5267	-	13,13,13	0.36	0	12,12,12	1.09	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
86	SPM	L5	5263	-	-	2/11/11/11	-
86	SPM	L5	5292	-	-	4/11/11/11	-
87	SPD	L5	5284	-	-	1/7/7/7	-
86	SPM	L5	5289	-	-	5/11/11/11	-
87	SPD	L5	5283	-	-	1/7/7/7	-
87	SPD	L5	5285	-	-	4/7/7/7	-
87	SPD	LN	301	-	-	1/7/7/7	-
87	SPD	L5	5261	-	-	1/7/7/7	-
87	SPD	L5	5291	-	-	4/7/7/7	-
87	SPD	L5	5287	-	-	3/7/7/7	-
87	SPD	L5	5288	-	-	3/7/7/7	-
86	SPM	L5	5293	-	-	5/11/11/11	-
86	SPM	L5	5259	-	-	2/11/11/11	-
87	SPD	L5	5286	-	-	0/7/7/7	-
87	SPD	L5	5290	-	-	2/7/7/7	-
86	SPM	L5	5264	-	-	4/11/11/11	-
86	SPM	L5	5267	-	-	4/11/11/11	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (46) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
86	L5	5264	SPM	N5-C6-C7-C8
87	L5	5285	SPD	C3-C4-C5-N6
86	L5	5292	SPM	C7-C8-C9-N10
87	L5	5285	SPD	N6-C7-C8-C9
86	L5	5264	SPM	C7-C6-N5-C4

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Mol	Chain	Res	Type	Atoms
86	L5	5293	SPM	C8-C9-N10-C11
87	L5	5285	SPD	C2-C3-C4-C5
86	L5	5292	SPM	N10-C11-C12-C13
86	L5	5289	SPM	C7-C6-N5-C4
86	L5	5289	SPM	C12-C11-N10-C9
87	L5	5291	SPD	C4-C5-N6-C7
86	L5	5259	SPM	C6-C7-C8-C9
87	L5	5288	SPD	N6-C7-C8-C9
86	L5	5267	SPM	N5-C6-C7-C8
86	L5	5267	SPM	C7-C8-C9-N10
86	L5	5259	SPM	N5-C6-C7-C8
86	L5	5263	SPM	C6-C7-C8-C9
87	L5	5290	SPD	C2-C3-C4-C5
87	L5	5287	SPD	C2-C3-C4-C5
87	L5	5287	SPD	C8-C7-N6-C5
86	L5	5293	SPM	C6-C7-C8-C9
87	L5	5287	SPD	N6-C7-C8-C9
87	L5	5284	SPD	C3-C4-C5-N6
86	L5	5264	SPM	C12-C11-N10-C9
86	L5	5267	SPM	N10-C11-C12-C13
86	L5	5289	SPM	N1-C2-C3-C4
86	L5	5293	SPM	C11-C12-C13-N14
86	L5	5293	SPM	N10-C11-C12-C13
86	L5	5267	SPM	C6-C7-C8-C9
86	L5	5293	SPM	C7-C6-N5-C4
86	L5	5289	SPM	N10-C11-C12-C13
86	L5	5263	SPM	C11-C12-C13-N14
87	L5	5288	SPD	C7-C8-C9-N10
87	L5	5291	SPD	C8-C7-N6-C5
87	L5	5291	SPD	N6-C7-C8-C9
87	L5	5285	SPD	C4-C5-N6-C7
87	LN	301	SPD	C4-C5-N6-C7
86	L5	5292	SPM	C7-C6-N5-C4
86	L5	5292	SPM	C8-C9-N10-C11
86	L5	5264	SPM	C8-C9-N10-C11
87	L5	5288	SPD	C8-C7-N6-C5
86	L5	5289	SPM	C7-C8-C9-N10
87	L5	5291	SPD	C3-C4-C5-N6
87	L5	5261	SPD	C7-C8-C9-N10
87	L5	5283	SPD	C7-C8-C9-N10
87	L5	5290	SPD	N6-C7-C8-C9

There are no ring outliers.

8 monomers are involved in 12 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
86	L5	5263	SPM	1	0
86	L5	5292	SPM	1	0
87	L5	5284	SPD	2	0
87	L5	5261	SPD	2	0
86	L5	5293	SPM	2	0
86	L5	5259	SPM	1	0
87	L5	5290	SPD	1	0
86	L5	5264	SPM	2	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 then 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.

Ligand SPM L5 5263

Bond lengths | Bond angles

Torsions | Rings

Ligand SPM L5 5292

Bond lengths | Bond angles

Torsions | Rings

Ligand SPD L5 5284

Bond lengths

Bond angles

Torsions

Rings

Ligand SPM L5 5289

Bond lengths

Bond angles

Torsions

Rings

Ligand SPD L5 5283

Bond lengths

Bond angles

Torsions

Rings

Ligand SPD L5 5285

Bond lengths

Bond angles

Torsions

Rings

Ligand SPD LN 301

Bond lengths

Bond angles

Torsions

Rings

Ligand SPD L5 5261

Bond lengths

Bond angles

Torsions

Rings

Ligand SPD L5 5291

Bond lengths

Bond angles

Torsions

Rings

Ligand SPD L5 5287

Bond lengths

Bond angles

Torsions

Rings

Ligand SPD L5 5288

Bond lengths

Bond angles

Torsions

Rings

Ligand SPM L5 5293

Bond lengths

Bond angles

Torsions

Rings

Ligand SPM L5 5259

Bond lengths

Bond angles

Torsions

Rings

Ligand SPD L5 5286

Bond lengths

Bond angles

Torsions

Rings

Ligand SPD L5 5290

Bond lengths

Bond angles

Torsions

Rings

Ligand SPM L5 5264

Bond lengths

Bond angles

Torsions

Rings

Ligand SPM L5 5267

Bond lengths

Bond angles

Torsions

Rings

5.7   Other polymers ⓘ

There are no such residues in this entry.

5.8   Polymer linkage issues ⓘ

The following chains have linkage breaks:

Mol	Chain	Number of breaks
3	L5	10
83	S2	5
32	Lb	1
10	LE	1
49	Lt	1

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Mol	Chain	Number of breaks
70	SH	1
1	Pt	1
2	Et	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	35.06
1	S2	753:C	O3'	785:C	P	29.06
1	LE	76:ALA	C	87:LYS	N	21.90
1	L5	2910:G	O3'	3584:C	P	21.12
1	L5	1706:A	O3'	1716:G	P	20.98
1	L5	760:G	O3'	903:C	P	16.74
1	L5	519:C	O3'	642:G	P	15.41
1	S2	698:G	O3'	730:C	P	15.10
1	L5	2112:G	O3'	2249:C	P	15.05
1	L5	4776:G	O3'	4858:C	P	15.05
1	Lt	87:GLU	C	104:ILE	N	13.36
1	L5	3954:A	O3'	4056:A	P	13.15
1	S2	739:C	O3'	746:C	P	12.53
1	L5	990:C	O3'	1064:G	P	12.05
1	L5	1222:A	O3'	1234:G	P	10.97
1	SH	107:LYS	C	111:LYS	N	10.88
1	Pt	15:G	O3'	18:G	P	10.02
1	S2	225:G	O3'	287:U	P	7.34
1	L5	1100:U	O3'	1167:C	P	7.25
1	Et	16:C	O3'	18:U	P	6.28
1	S2	1831:A	O3'	1832:6MZ	P	4.47

6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-71331. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections ⓘ
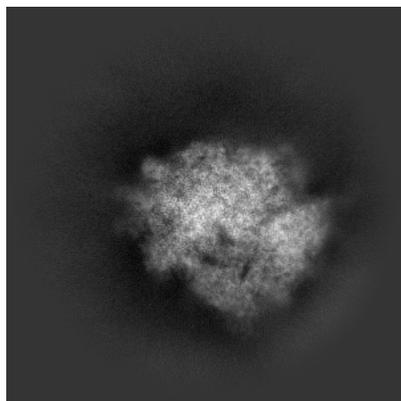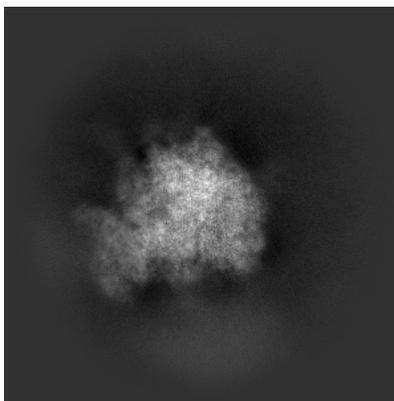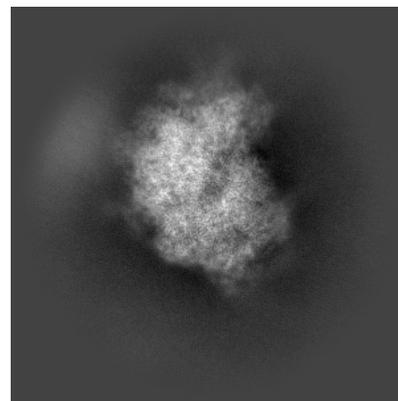
6.1.1 Primary map

X   Y   Z

6.1.2 Raw map

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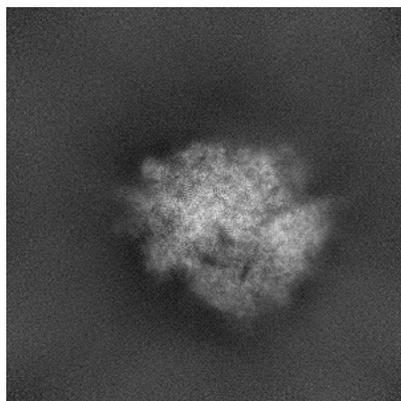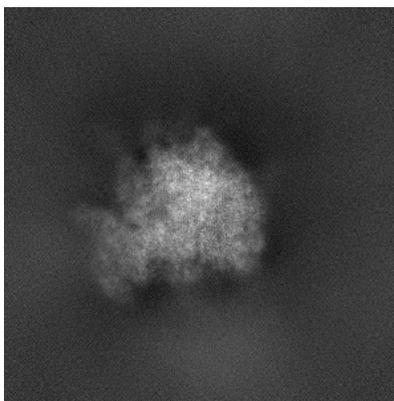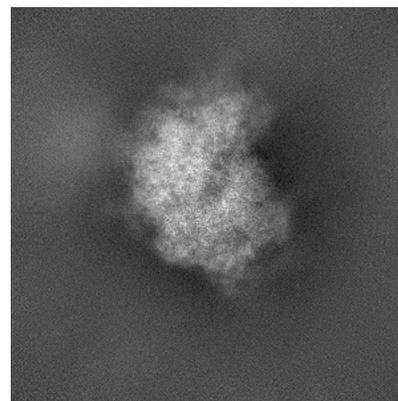
The images above show the map projected in three orthogonal directions.

6.2   Central slices   ⓘ
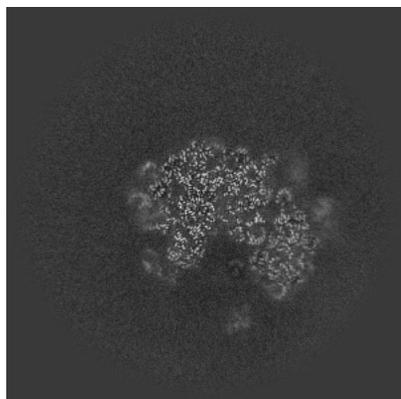
6.2.1   Primary map
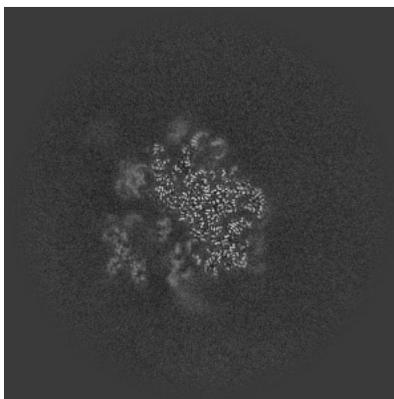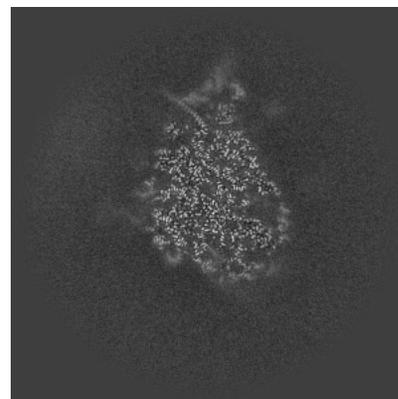
| X Index: 256 | Y Index: 256 | Z Index: 256 |

6.2.2   Raw map
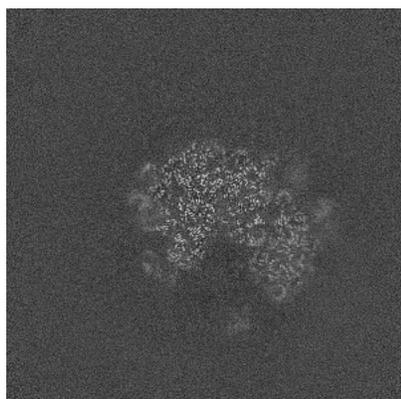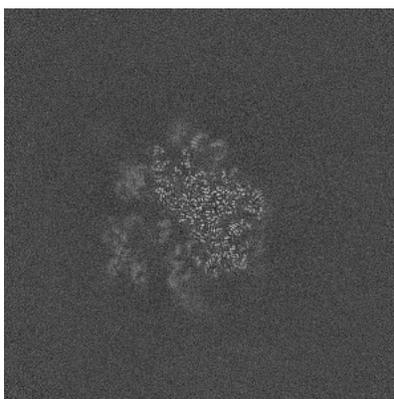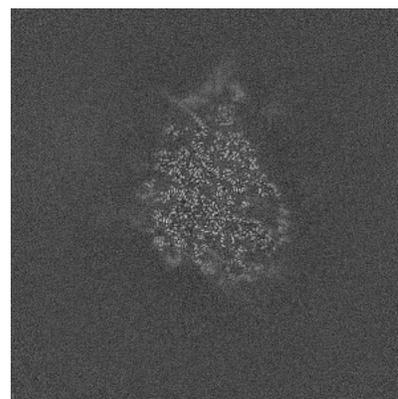
| X Index: 256 | Y Index: 256 | Z Index: 256 |

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

6.3 Largest variance slices (i)

6.3.1 Primary map
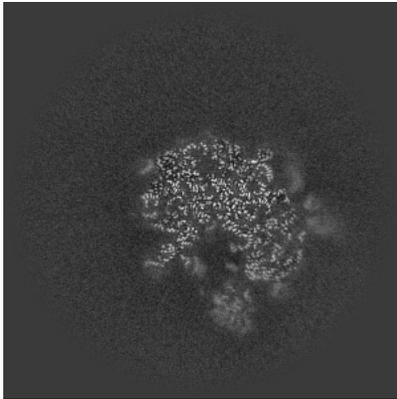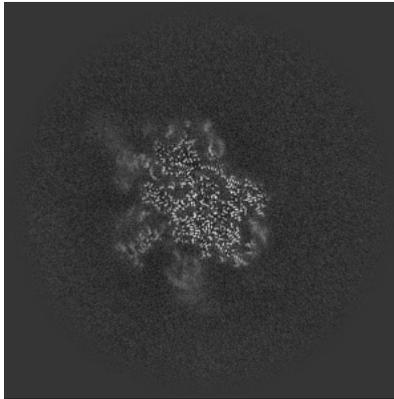
X Index: 243	Y Index: 243	Z Index: 258
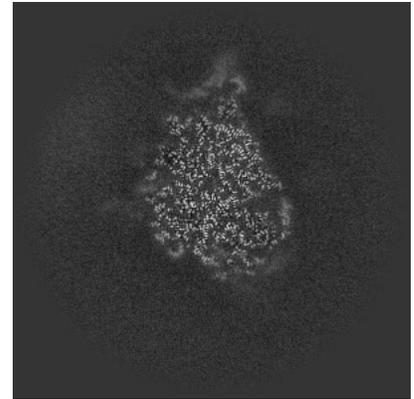
6.3.2 Raw map
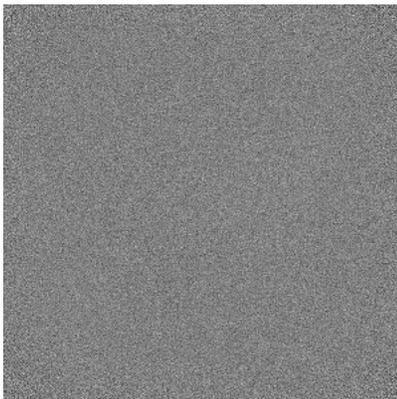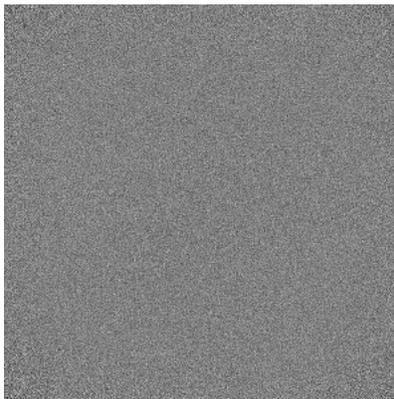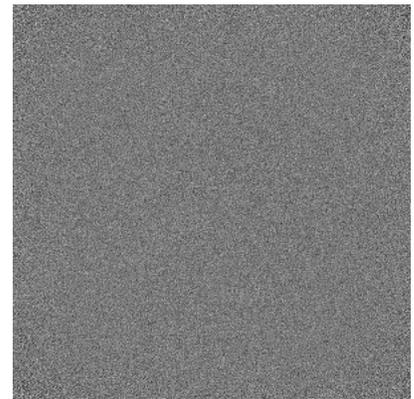
X Index: 0	Y Index: 0	Z Index: 0

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

6.4 Orthogonal standard-deviation projections (False-color) (i)

6.4.1 Primary map

X Y Z

6.4.2 Raw map

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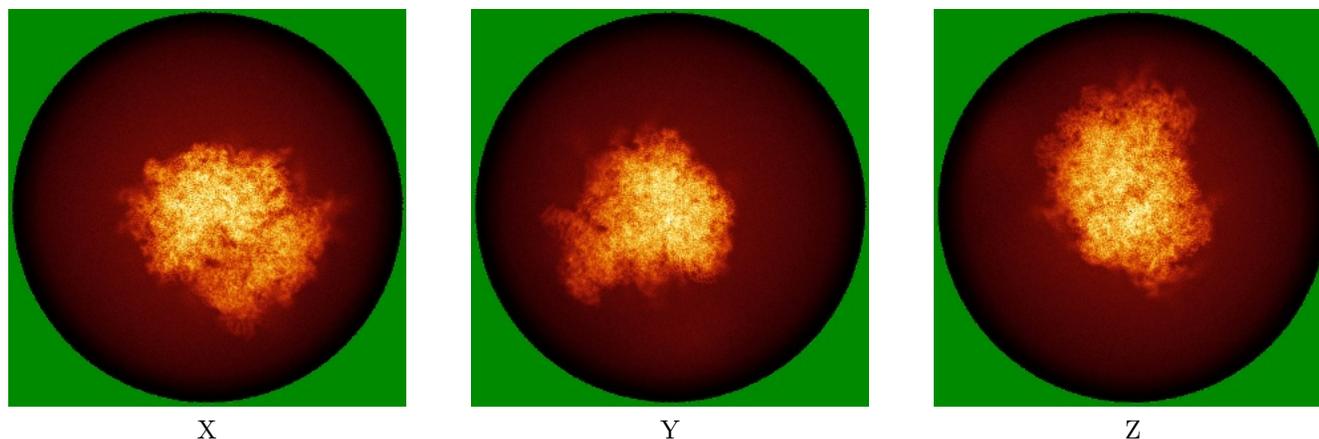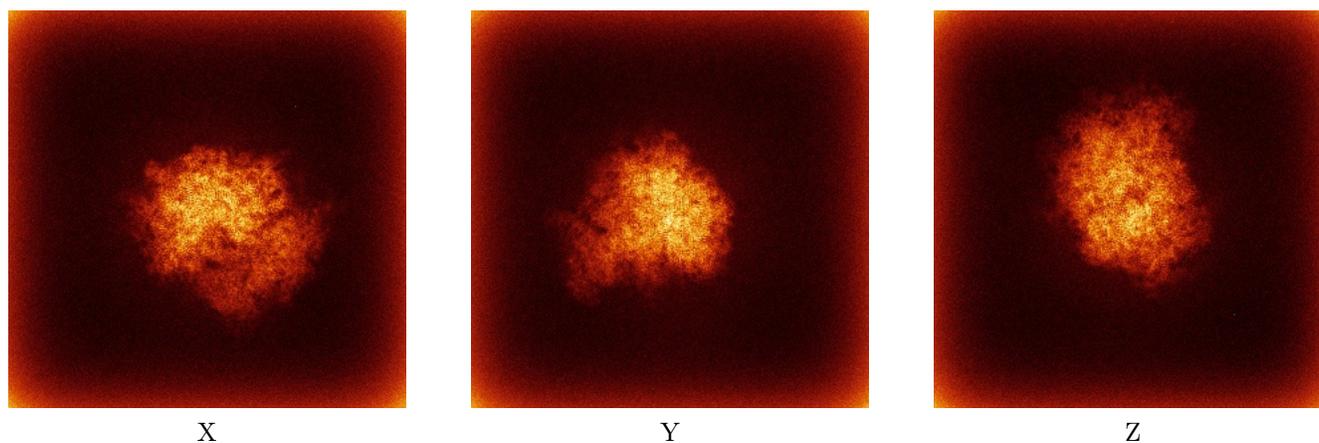
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map
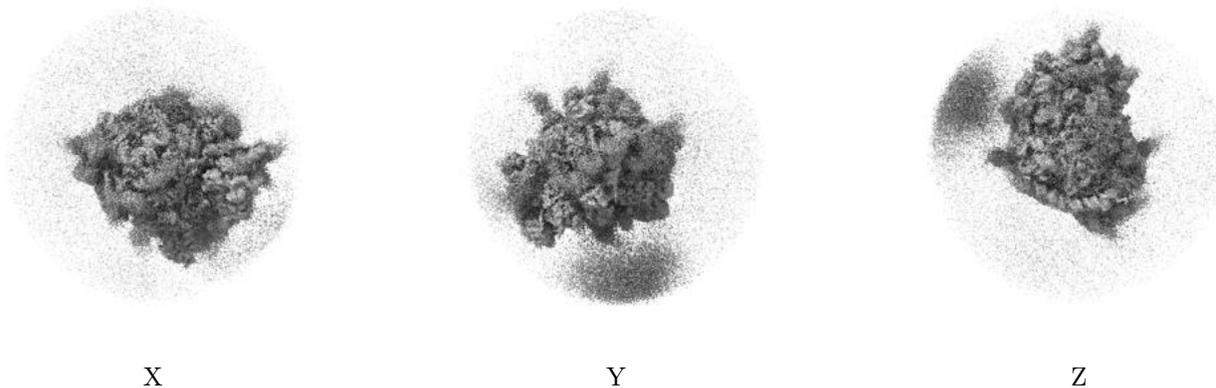
The images above show the 3D surface view of the map at the recommended contour level 0.0128. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

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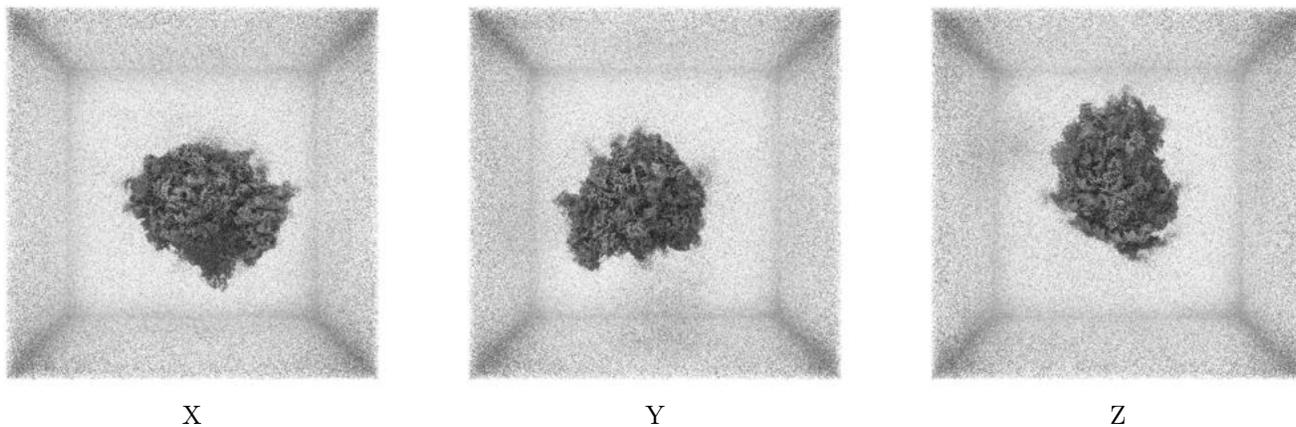
These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

6.6 Mask visualisation ⓘ

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

A mask typically either:

- Encompasses the whole structure

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

6.6.1 emd_71331_msk_1.map ⓘ

X   Y   Z
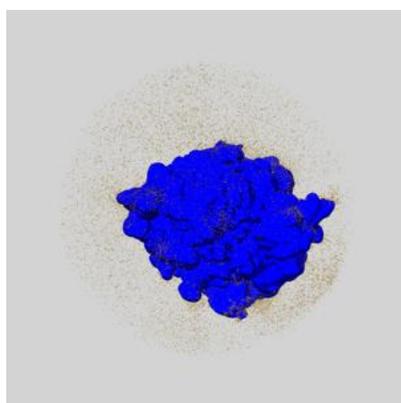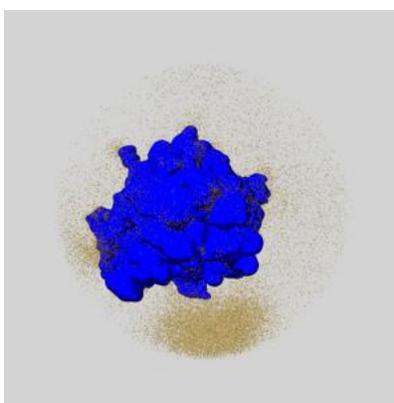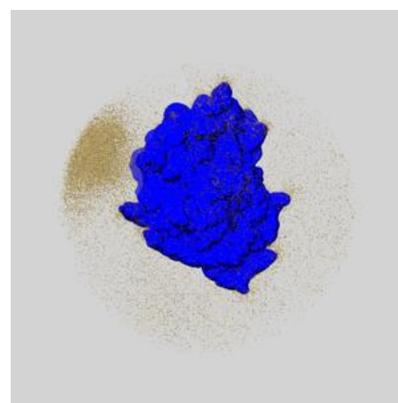
7 Map analysis ⓘ

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

7.1 Map-value distribution ⓘ

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

7.2 Volume estimate ⓘ
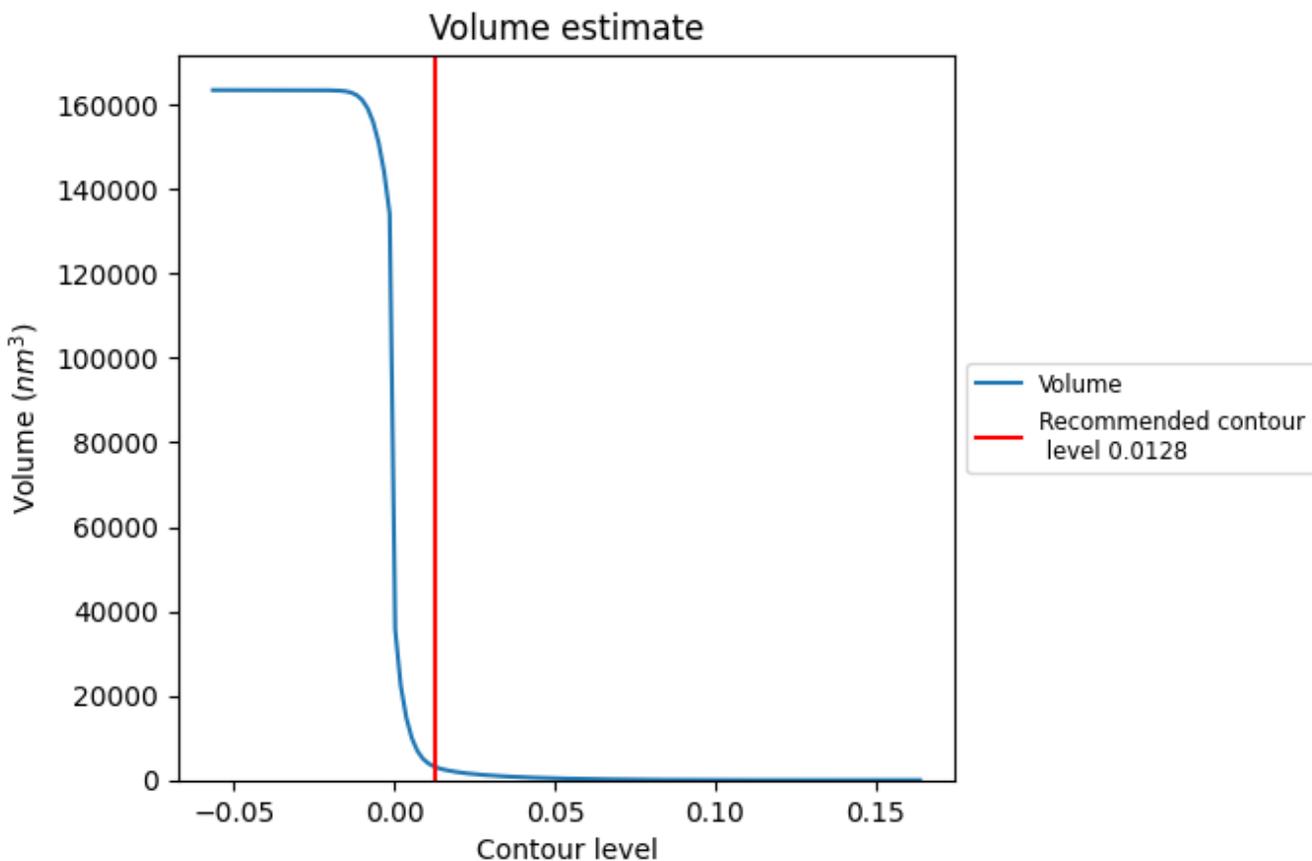
The volume at the recommended contour level is 3105 nm^3; this corresponds to an approximate mass of 2804 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum ⓘ
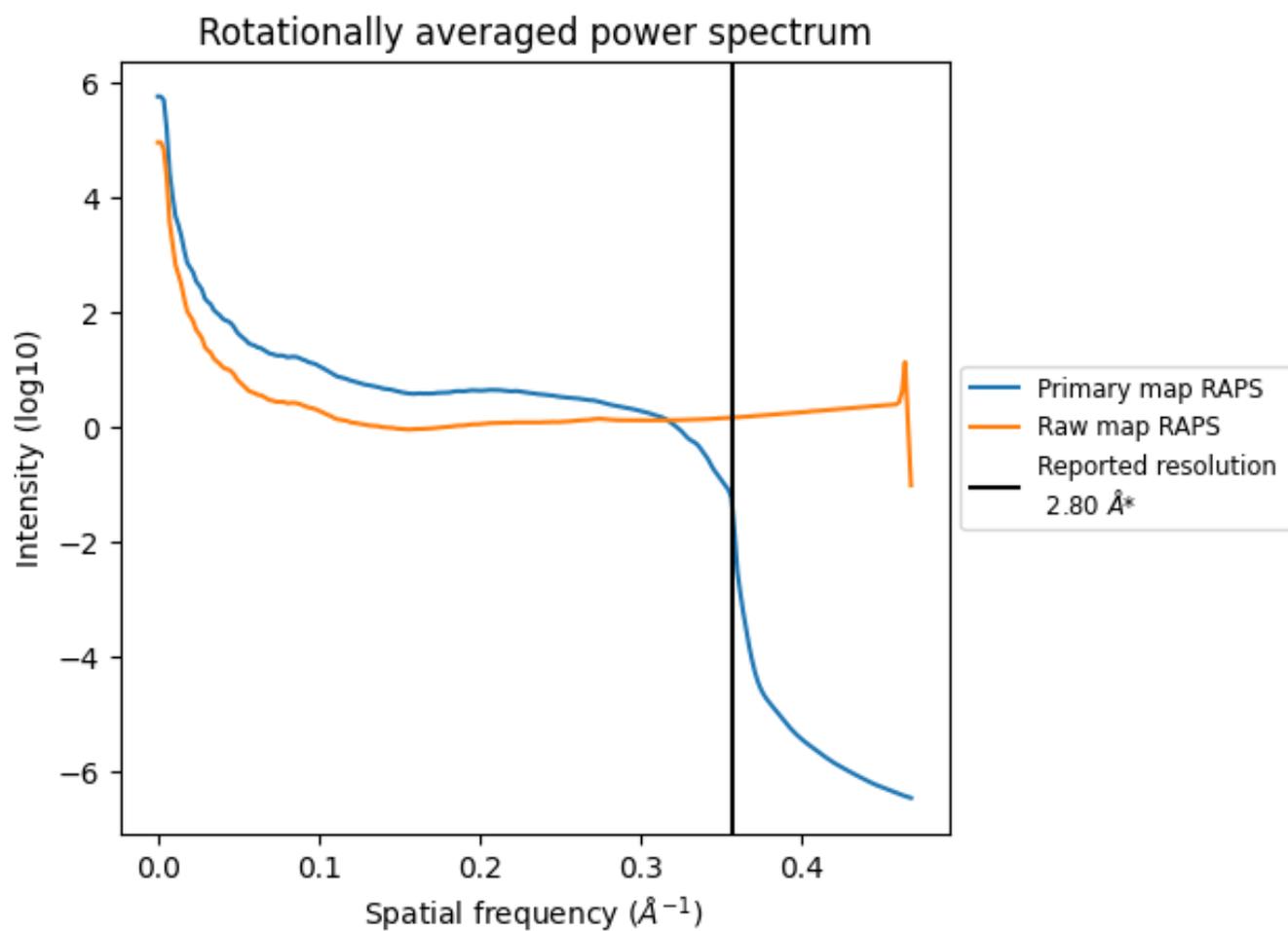
*Reported resolution corresponds to spatial frequency of 0.357 Å^{-1}

8   Fourier-Shell correlation ⓘ

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

8.1   FSC ⓘ
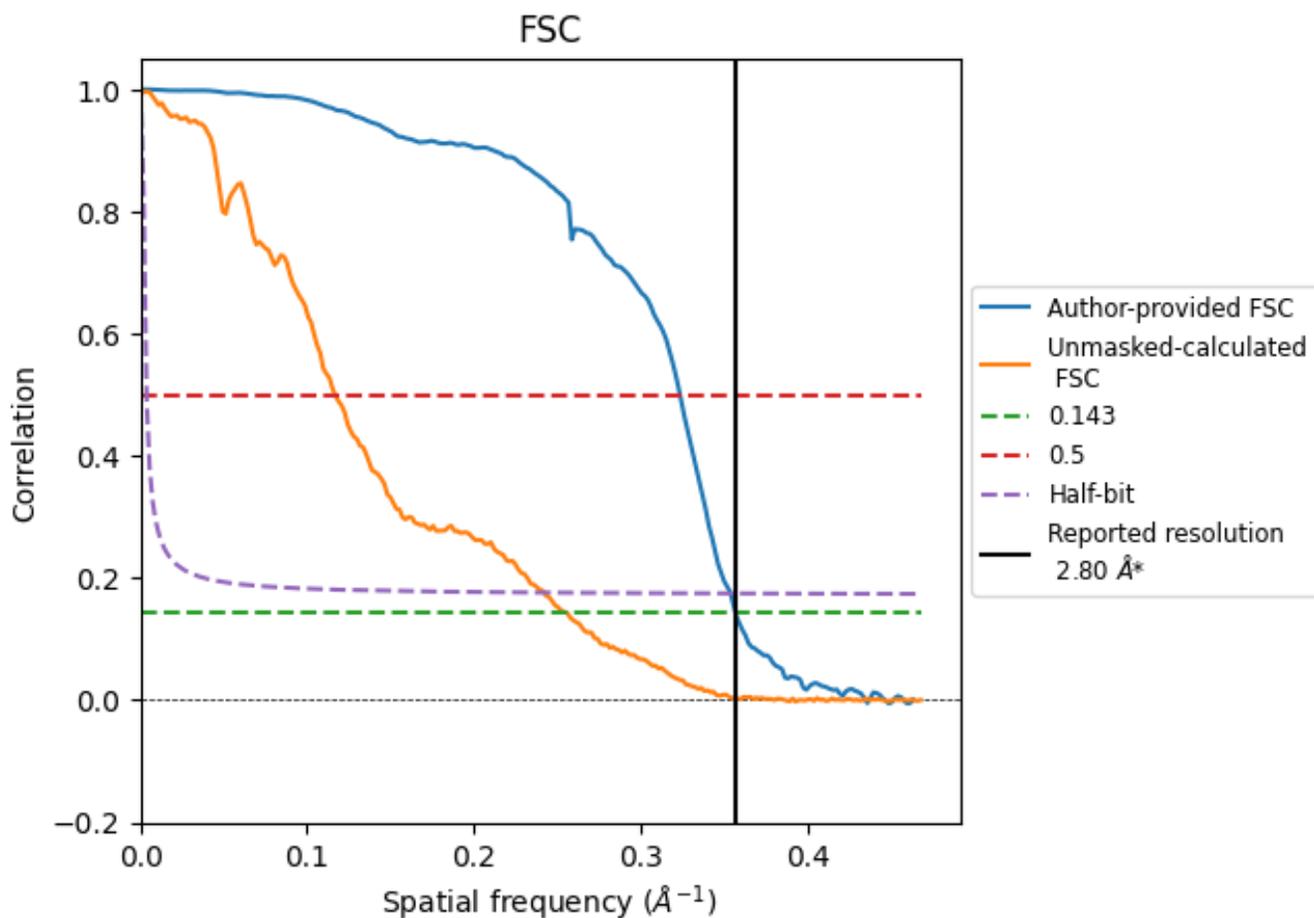
*Reported resolution corresponds to spatial frequency of 0.357 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.80	-	-
Author-provided FSC curve	2.80	3.09	2.82
Unmasked-calculated*	3.91	8.56	4.13

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.91 differs from the reported value 2.8 by more than 10 %

9   Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-71331 and PDB model 9P72. Per-residue inclusion information can be found in section 3 on page 24.

9.1   Map-model overlay ⓘ
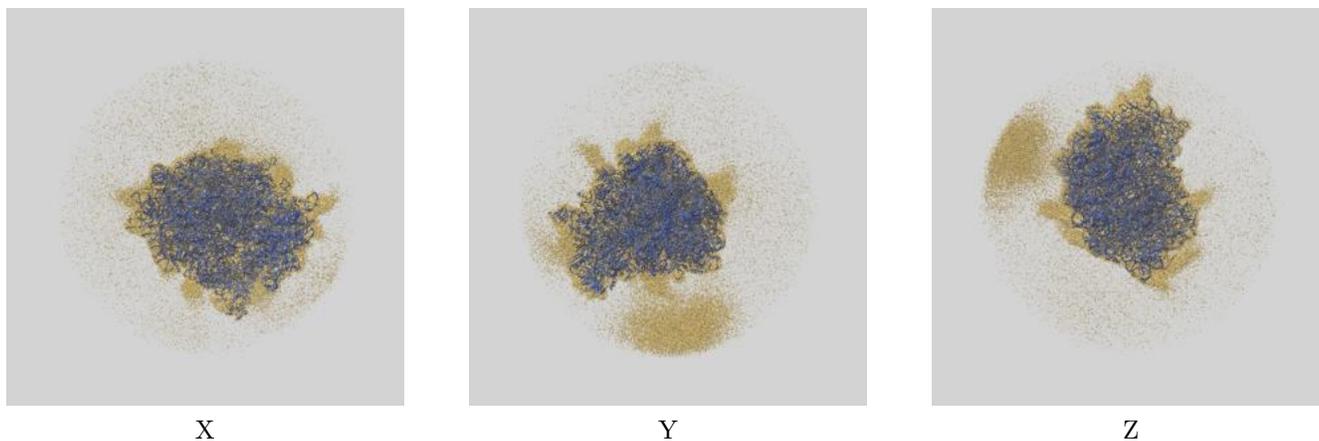
| X | Y | Z |

The images above show the 3D surface view of the map at the recommended contour level 0.0128 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2   Q-score mapped to coordinate model ⓘ
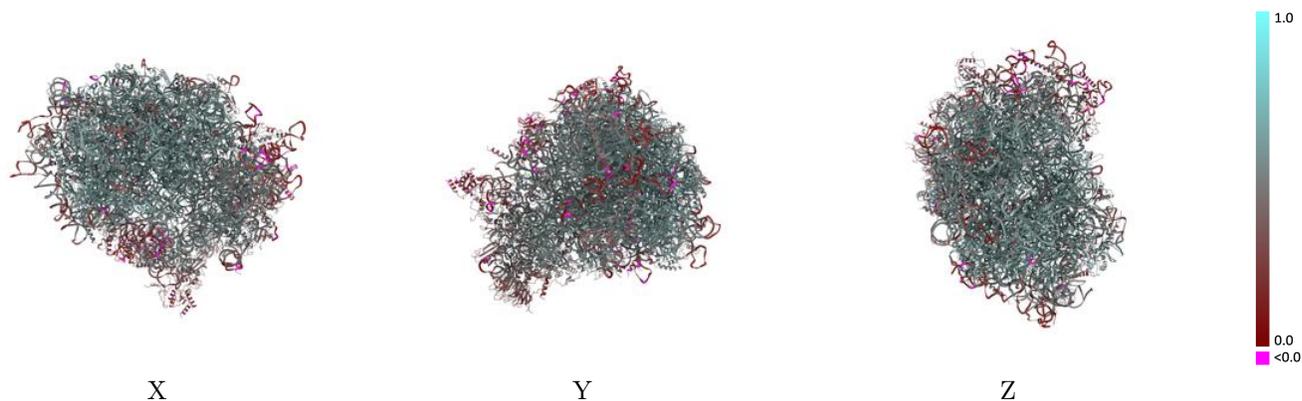

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3   Atom inclusion mapped to coordinate model ⓘ
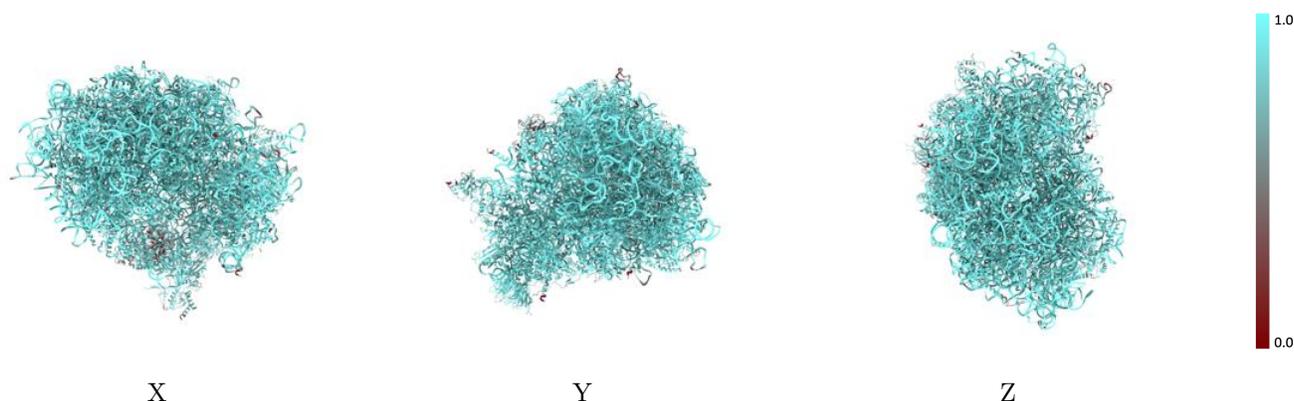
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.0128).
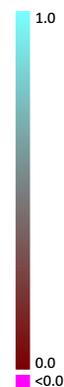
9.4 Atom inclusion ⓘ
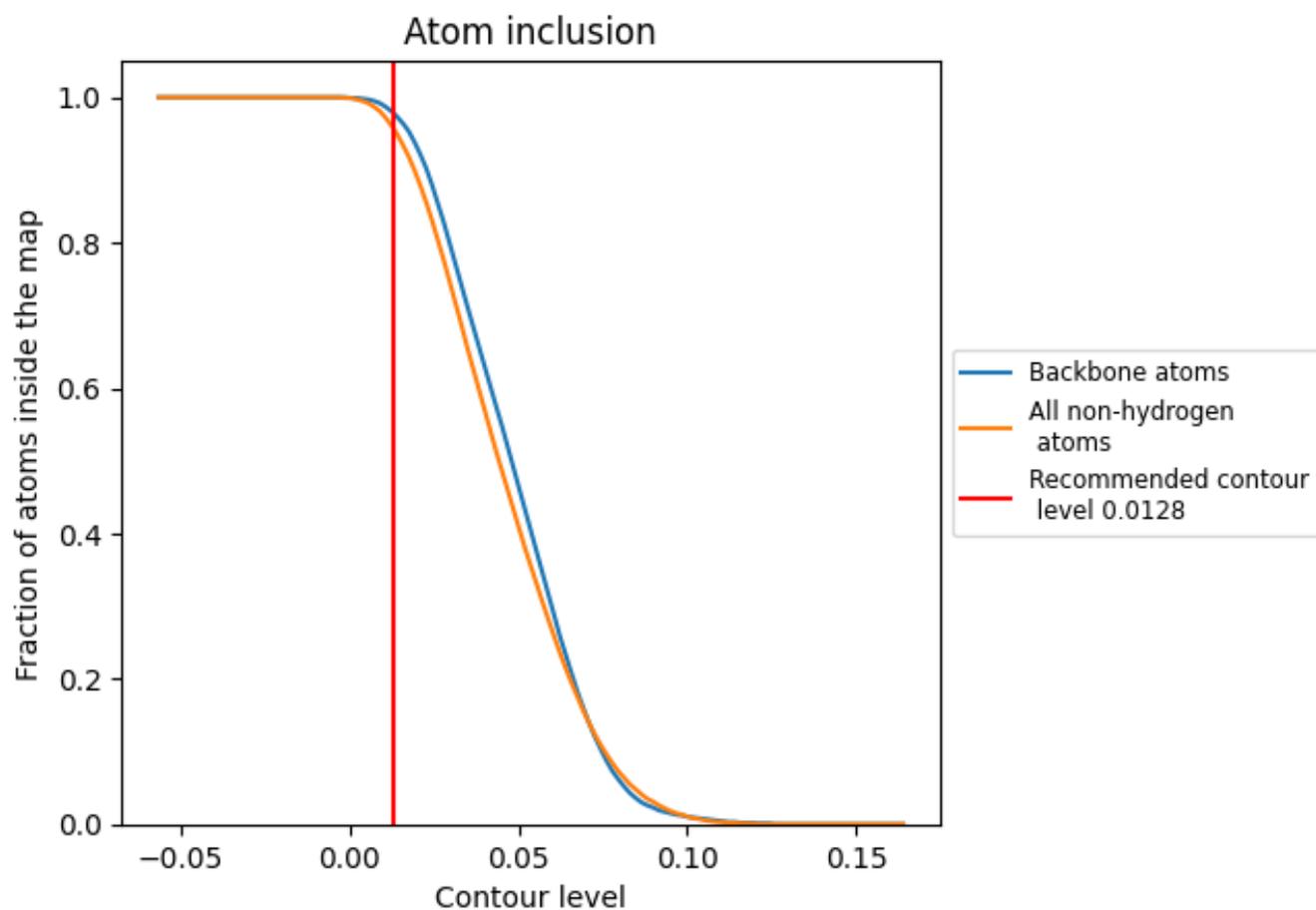
At the recommended contour level, 98% of all backbone atoms, 96% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

The table lists the average atom inclusion at the recommended contour level (0.0128) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9580	0.5080
CI	0.8160	0.4450
Et	0.9350	0.2290
L5	0.9820	0.5310
L7	0.9980	0.5770
L8	0.9880	0.5580
LA	0.9790	0.5940
LB	0.9580	0.5730
LC	0.9580	0.5710
LD	0.9480	0.5330
LE	0.9200	0.5110
LF	0.9770	0.5740
LG	0.9110	0.5130
LH	0.9570	0.5630
LI	0.9550	0.5640
LJ	0.9390	0.5100
LL	0.9360	0.5470
LM	0.9670	0.5530
LN	0.9910	0.6080
LO	0.9700	0.5700
LP	0.9710	0.5830
LQ	0.9790	0.5950
LR	0.9130	0.5200
LS	0.9840	0.5940
LT	0.9530	0.5570
LU	0.9460	0.4940
LV	0.9650	0.5810
LW	0.8710	0.4130
LX	0.9500	0.5530
LY	0.9530	0.5540
LZ	0.9640	0.5460
La	0.9760	0.6000
Lb	0.9130	0.4960
Lc	0.9650	0.5450
Ld	0.9480	0.5610

1.0

0.0
<0.0

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Chain	Atom inclusion	Q-score
Le	0.9780	0.5940
Lf	0.9850	0.5990
Lg	0.9630	0.5700
Lh	0.9450	0.5470
Li	0.9590	0.5480
Lj	0.9900	0.5940
Lk	0.9080	0.5030
Ll	0.9810	0.5800
Lm	0.9590	0.5700
Ln	0.9860	0.5700
Lo	0.9570	0.5690
Lp	0.9670	0.5720
Lr	0.9710	0.5780
Ls	0.6350	0.2060
Lt	0.5870	0.1380
Pt	0.9680	0.4760
S2	0.9840	0.4850
SA	0.9120	0.4780
SB	0.9200	0.5060
SC	0.9530	0.5110
SD	0.8970	0.4140
SE	0.9520	0.4840
SF	0.9110	0.4370
SG	0.8790	0.3930
SH	0.8590	0.4030
SI	0.9170	0.4900
SJ	0.9230	0.4660
SK	0.8920	0.3600
SL	0.9070	0.5120
SM	0.7000	0.1900
SN	0.9520	0.5360
SO	0.9370	0.5230
SP	0.8710	0.3920
SQ	0.9070	0.4350
SR	0.8660	0.4110
SS	0.9050	0.4280
ST	0.9310	0.4340
SU	0.8950	0.3700
SV	0.9490	0.4870
SW	0.9720	0.5350
SX	0.9470	0.5250
SY	0.8710	0.3920

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Chain	Atom inclusion	Q-score
SZ	0.8490	0.4040
Sa	0.9400	0.5230
Sb	0.9190	0.4810
Sc	0.8870	0.4320
Sd	0.9500	0.4760
Se	0.8110	0.4000
Sf	0.7790	0.2470
Sg	0.8920	0.3480